

Standard Special Provisions

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ADA COUNTY HIGHWAY DISTRICT

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These Standard Special Provisions (SSP) cover those construction and bid items not addressed by the currently adopted version of the Idaho Standards for Public Works Construction (ISPWC) or adopted supplements. These provisions are to be used whenever any of these individual items are listed in any ACHD bid proposal document, unless otherwise approved in writing by authorized ACHD staff.

Table of Contents

| | | | |
|-----|-----------|--|----|
| 1. | SSP 20200 | Salvage Topsoil | 5 |
| 2. | SSP 20201 | Bioretention Soil Mix (BSM) | 6 |
| 3. | SSP 20202 | Soil Amendments | 13 |
| 4. | SSP 2020X | Planting Trees/Shrubs/Vines/Ground Cover | 13 |
| 5. | SSP 2020X | Plant Material..... | 17 |
| 6. | SSP 20219 | Watering..... | 20 |
| 7. | SSP 20220 | Fertilizer (Commercial)..... | 21 |
| 8. | SSP 20221 | Plant Establishment Plan..... | 21 |
| 9. | SSP 02022 | 3/8" Chipseal Aggregate..... | 23 |
| 10. | SSP 02023 | 1/4" Chipseal Aggregate..... | 24 |
| 11. | SSP 06007 | Abandon Existing Domestic Well | 25 |
| 12. | SSP 06013 | Stormwater Management Plan Preparation & Approval..... | 26 |
| 13. | SSP 06018 | Install New Domestic Water Well | 27 |
| 14. | SSP 06027 | Abandon Existing Monitoring Well | 28 |
| 15. | SSP 06032 | Remove and Reset Irrigation Pipe..... | 28 |
| 16. | SSP 06033 | New Manhole Frame and Lid | 29 |
| 17. | SSP 07005 | Extruded Concrete Curb..... | 29 |
| 18. | SSP 07009 | Median Curb..... | 30 |
| 19. | SSP 07013 | Patterned Concrete..... | 30 |
| 20. | SSP 07015 | Detectable Warning Devices – Retrofit..... | 30 |
| 21. | SSP 07016 | Sidewalk Trip Hazard Removal Via Cutting | 32 |
| 22. | SSP 08105 | Temporary Paving | 33 |
| 23. | SSP 08106 | Reclaiming Existing Pavement | 34 |
| 24. | SSP 08115 | Rotomill..... | 38 |
| 25. | SSP 08120 | Asphalt Repair – Arterial & Collector | 39 |
| 26. | SSP 08125 | Asphalt Repair - Other..... | 40 |
| 27. | SSP 08133 | Scrub Coat | 40 |
| 28. | SSP 08142 | Clean and Fill Cracks as per Specifications..... | 41 |
| 29. | SSP 08300 | Epoxy Overlay..... | 43 |

| | | | |
|-----|---------------|--|----|
| 30. | SSP 08301 | Chip Seal Removal..... | 48 |
| 31. | SSP 11001 | Temporary Traffic Signal | 49 |
| 32. | SSP 11002 | Portable Changeable Message Sign | 49 |
| 33. | SSP 11008 | Portable Flood Lights..... | 51 |
| 34. | SSP 11010 | Remove and Reset Yard Light | 52 |
| 35. | SSP 11235 | Video Detection Camera | 52 |
| 36. | SSP 11400 | Obliterate Pavement Markings | 53 |
| 37. | SSP 11450 | Temporary Pavement Markings..... | 54 |
| 38. | SSP 20009 | Remove and Reset Fence | 54 |
| 39. | SSP 20020 | Install Removable Bollards..... | 55 |
| 40. | SSP 20105.A | W Beam Guardrail for Minor Structures (One Post Missing Option) | 55 |
| 41. | SSP 20105.B | W Beam Guardrail for Minor Structures (Two Posts Missing Option)..... | 56 |
| 42. | SSP 20105.C | W Beam Guardrail for Minor Structures (Three Posts Missing Option) | 56 |
| 43. | SSP 20105.01A | Metal Guardrail Terminal Type 1A | 57 |
| 44. | SSP 20105.03 | Metal Guardrail Terminal Type 3 | 57 |
| 45. | SSP 20105.07 | Metal Guardrail Terminal Type 7 | 57 |
| 46. | SSP 20105.08 | Metal Guardrail Terminal Type 8 | 58 |
| 47. | SSP 20105.010 | Metal Guardrail Terminal Type 10..... | 58 |
| 48. | SSP 20105.011 | Metal Guardrail Terminal Type 11..... | 58 |
| 49. | SSP 20107 | Bike Railing | 59 |
| 50. | SSP 20108 | Combo Pedestrian and Bike Traffic Railing | 60 |
| 51. | SSP 20109 | Bridge Railing..... | 61 |
| 52. | SSP 25020 | Erosion Control Mat | 62 |
| 53. | SSP 25030 | Demolish and Remove Existing Building | 63 |
| 54. | SSP 25050 | 4" Topsoil..... | 64 |
| 55. | SSP 25060 | Property Owner Meeting | 65 |
| 56. | SSP 25062 | Remove Underground Septic Tank | 66 |
| 57. | SSP 25080 | Remove and Reset Mailbox..... | 66 |
| 58. | SSP 25115 | Temporary Cofferd Dam..... | 67 |
| 59. | SSP 29050 | Temporary Soil Stabilization..... | 67 |
| 60. | SSP 29060 | Hydroseeding | 68 |

| | | | |
|-----|------------|--|----|
| 61. | SSP 29064 | Sod Repair | 69 |
| 62. | SSP 29067A | Repair Landscaping | 70 |
| 63. | SSP 29067B | Repair Landscaping | 71 |
| 64. | SSP 29090 | Trim Tree | 71 |
| 65. | SSP 29093 | Remove Tree 6"+ | 72 |
| 66. | SSP 29101 | Remove and Reset Sprinkler System..... | 72 |
| 67. | SSP 29110 | Groundwater Observation Well | 73 |
| 68. | SSP 29800 | Abandon Existing Septic System | 74 |

1. SSP 20200 Salvage Topsoil

Description: This item shall include all costs associated with salvaging suitable on site topsoil from within the project limits, if available, and storing in stockpiles for later use in the project.

Materials: Topsoil shall consist of fertile, friable soil of loamy character that contains an amount of organic matter normal to the region. Obtain topsoil from well-drained arable land, reasonably free from subsoil, refuse, roots, heavy or stiff clay, large stones, coarse sand, sticks, brush, litter, and other deleterious substances. Incorporate vegetative matter into topsoil, except brush, trees, and noxious weeds.

As determined by the Engineer, provide microorganism inoculants that contain a diverse mix of regional specific mycorrhizal species for specific condition, provide macronutrients and micronutrients to plants that are tolerant of chemical imbalances in the soil, produce humic compounds and binding compounds, and improve soil structure.

Workmanship: Excavate to a depth of at least 6 inches, unless otherwise directed. Place topsoil excavated from the project site directly on cut and fill slopes or other specified areas without use of stockpiles whenever conditions and the progress of construction permit. Where this procedure is not possible, excavate topsoil, and stockpile along the project.

Stockpile topsoil so as not to interfere with natural drainage or cause off-site sediment damage. Surround topsoil stockpile with sediment controls. Treat topsoil stockpile with temporary soil stabilization measures immediately upon stockpile completion.

Ensure topsoil stockpiles do not exceed 4 ft in height unless otherwise Engineer approved. If the stockpile is undisturbed for longer than 3 months, mix the top 1 ft with the remainder of the stockpile to ensure that living organisms are distributed throughout at the time of final placement, or add microorganism inoculants, after final placement, in accordance with manufacturer recommendations. Apply microorganism inoculants as dry granular mixes, tablets, or injectable soluble.

Topsoil shall not be placed in its final position until the areas to be covered have been properly prepared. Place topsoil at locations shown on the plans to a minimum depth of 6 inches and key into the underlying material by the use of harrows, rollers, or other equipment suitable for the purpose.

Measurement and Payment:

Payment shall be on a cubic yard basis.

SSP 20200 Salvage Topsoil.....Per Cubic Yard

2. SSP 20201 Bioretention Soil Mix (BSM)

Description: The BSM shall be a mixture of 60% Fine Aggregate (Sand), 20% Loamy Sand and 20% Compost conforming to the following requirements.

Materials: This item covers BSM material testing, producing and construction requirements.

- 1) FINE AGGREGATE (SAND) – 60% of BSM
 - a. Fine Aggregate shall be washed and free of wood, waste or any other foreign material.
 - b. Fine Aggregate shall be analyzed using AASHTO T-11/T-27 and meet the following gradations requirements:

| ISPWC – Section 801.2.2 Filter Sand | |
|--|------------------------|
| SIEVE SIZE | PERCENT PASSING |
| 3/8 inch | 100 |
| No. 4 | 95-100 |
| No. 8 | <i>Report Only</i> |
| No. 16 | 45-80 |
| No. 30 | <i>Report Only</i> |
| No. 50 | 10-30 |
| No. 100 | 2-10 |
| No. 200 | 0-4 |

- c. Fine Aggregate Sand shall be analyzed to meet the following requirements:

| Test Method | SPECIFICATIONS |
|--------------------|-----------------------|
| Soluble salt | < 3.0 dS/m |
| Boron | < 0.8 ppm |
| SAR | < 2.0 |

- 2) LOAMY SAND – 20% of BSM
 - a. Loamy sand shall be free of weeds, roots, stems, seeds, heavy metals and all other foreign material.

- b. Loamy Sand shall be classified using ASTM D-422 and meet the following requirements:

| COMPONENT | PERCENT IN SAMPLE |
|-----------|-------------------|
| Sand | 70-90 |
| Silt | 0-30 |
| Clay | 10-20 |

- c. Loamy Sand shall be analyzed and meet the following requirements:

| TEST METHOD | SPECIFICATIONS |
|---|----------------|
| Phosphorus – Olsen P | <60 mg/kg |
| Comprehensive Soil Analysis including: TEC, pH, soluble salt, major and minor nutrients, half saturation, SAR, & percent organic matter | Typical Range |

3) COMPOST – 20% of BSM

- a. The Compost shall be a mature, well decomposed, weed free, herbicide free, pesticide free, and absent of garbage. Organic matter source shall be derived from waste (feedstock) including yard debris, wood waste, or crop by-products. This product shall not include straight manure or bio-solids. Any manufactured materials (plastic, concrete, ceramics, or metal) shall be less than 1.0% by dry weight of the product.

- b. Compost shall be analyzed and meet the following requirements:

| TEST METHOD | SPECIFICATIONS |
|--|--------------------------------|
| Sieve Analysis – AASHTO T-11/T27 | ½" Screen – 100% passing |
| | No. 200 Screen – 0-20% passing |
| Percent Moisture | 35%-50% |
| Organic Matter – ASTM F-1647 or TMECC 05.07A | 35%-65% |
| pH – TMECC 4.11 | 6-8 |

| | | |
|------------------------------------|---------------|-----|
| Carbon: Nitrogen Ratio | 15:1 – 35:1** | |
| Soluble Salt | ≤ 6 dS/m | |
| Maturity – TMECC 05.05A or Solvita | >80% | >5% |
| Pathogens: | | |
| Fecal Coliform – TMECC 07.01AB | <1000 MPN/g | |
| Salmonella – TMECC 07.02A | <3 MPN/4g | |

***Failing test results may require an action plan be submitted to ACHD detailing by what means the C:N ratio will be adjusted to specification during placement.*

4) **BSM MIXTURE**

a. BSM Mixture shall be analyzed and meet the following requirements:

| TEST METHOD | SPECIFICATIONS |
|--|-----------------|
| Organic Matter – ASTM F-1647 or TMECC 05.07A | 2%-13% |
| pH – TMECC 4.11 | 6-8 |
| Cation Exchange Capacity (CEC) – ASTM D-7503 | ≥5 meq/100g |
| Constant Head Permeability – ASTM D-2434 | > 5 inches/hour |

- b. A description of the equipment and methods used to completely mix the three components of the BSM and the delivery to the project site.
- c. Tests should be conducted no more than 120 days prior to the delivery date of the BSM to the project site. Batch-specific test results and certification will be required for projects installing more than 100 cubic yards of BSM.
- d. The Contractor shall submit the following for approval:
 - i. All required test data for each individual component and on the BSM mixture.
 - ii. A one gallon sample of the BSM mixture shall be submitted to ACHD for review within 10 business days of the contract date.
 - iii. ACHD may request additional samples of any individual component and/or the BSM mixture to be submitted.

Workmanship:

- 1) After excavation to subgrade, the BSM shall be placed over the surface of the specified area to the limits as shown on the plans.
 - a. Erosion and sediment control practices during construction should be employed to protect the long-term functionality of the bio-retention. The following practices shall be followed for this reason.
 - i. Provide erosion control in the contributing drainage areas to the facility and stabilize upslope areas.
 - ii. Facilities should not be used as sediment control facilities, unless installation of all bio-retention related materials are withheld towards the end of construction, allowing the temporary use of the location as a sediment control facility, and appropriate excavation of sediment is provided prior to installation of bio-retention materials.
 - b. Do not excavate, place soils, or amend soils during wet or saturated conditions.
 - c. Operate equipment adjacent to the facility. Equipment operation within the facility should be avoided to prevent soil compaction. If machinery must operate in the facility, use lightweight, low ground contact pressure equipment.
 - d. If constructing an infiltrating facility, the subgrade should be ripped or scarified to a minimum depth of 9 inches to promote greater infiltration.
 - i. The BSM should be mixed prior to being delivered to the site.
 - ii. Place soil in 6 to 12 inch lifts with machinery adjacent to the facility (to ensure equipment is not driven across soil). If working within the facility, to avoid over-compacting, place first lifts at far end from entrance and place backwards towards entrance.
 - iii. Allow BSM lifts to settle naturally, lightly water to provide settlement and natural compaction between lifts. After lightly watering, allow soil to dry between lifts. Soil cannot be worked when saturated, so this method should be used with caution to ensure dry conditions. After all lifts are placed, wait two days to check for settlement, and add additional media as needed. No mechanical compaction is allowed.
 - iv. The long-term hydraulic conductivity rate should not be less than 5 inches per hour when tested with a double ring infiltrometer (in accordance with ASTM D-3385, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer), a single ring

infiltrometer, a Modified Philip-Dunne Infiltrometer, or other approved methods.

- v. Vehicular traffic and construction equipment shall not drive on, move onto, or disturb the BSM once placed and water compacted.
- vi. Rake bio-retention soil as needed to level out. Verify BSM elevations before applying mulch or installing plants.

Measurement and Payment:

Payment shall be on a cubic yard quantity basis. No final measurement will be made.

SSP 20201 Bioretention Soil Mix (BSM).....Per Cubic Yard

SSP 20201 – BIORETENTION SOIL MIX (BSM) TESTING REQUIREMENTS

1. FINE AGGREGATE (SAND) – 60% of BSM

| TEST | METHOD | SPECIFICATION | RESULTS | Pass/Fail |
|----------------|------------------|-----------------|---------------|-----------|
| Sieve Analysis | AASHTO T-11/T-27 | Percent Passing | | |
| | | 3/8" | 100 | |
| | | No. 4 | 95-100 | |
| | | No.8 | <i>Report</i> | |
| | | No. 16 | 45-80 | |
| | | No.30 | <i>Report</i> | |
| | | No. 50 | 10-30 | |
| | | No. 100 | 2-10 | |
| | | No. 200 | 0-4 | |
| Soluble Salt | | < 3.0 dS/M | | |
| Boron | | < 0.8 ppm | | |
| SAR | | < 2.0 | | |

2. LOAMY SAND – 20% of BSM

| TEST | METHOD | SPECIFICATION | RESULTS | Pass/Fail |
|-----------------------------|------------|---------------|---------|-----------|
| Texture Analysis | ASTM D-422 | Sand | 70%-90% | |
| | | Silt | 0%-30% | |
| | | Clay | 10%-20% | |
| Phosphorus | Olsen P | < 60 mg/kg | | |
| Comprehensive Soil Analysis | | Typical Range | | |
| TEC | | | | |
| pH | | | | |
| ECe as dS/m | | | | |
| Major and Minor Nutrients | | | | |
| Half Saturation | | | | |
| Sodium SAR | | | | |
| % Organic Matter | | | | |

SSP 20201 – BIORETENTION SOIL MIX (BSM) TESTING REQUIREMENTS

3. COMPOST – 20% of BSM

| TEST | METHOD | SPECIFICATION | RESULTS | Pass/Fail |
|--|-----------------------------|--------------------------|---------|-----------|
| Sieve Analysis | AASHTO T-11/T-27 | Percent Passing | | |
| | | ½" 100 | | |
| | | No.200 0-20 | | |
| % Moisture Content | | 35%-50% | | |
| Organic Matter | ASTM F-1647 or TMECC 05.07A | 35%-65% | | |
| pH | TMECC 4.11 | 6 - 8 | | |
| Carbon:Nitrogen Ratio | | 15:1-35:1* | | |
| Soluble Salt | | ≤ 6 dS/m | | |
| Maturity | TMECC 05.05A or Solvita | ≥ 80% ≥ 5% | | |
| Pathogens: Fecal Coliform Salmonella | TMECC 07.01AB | <1000 MPN/g <3 MPN/4g | | |
| | TMECC 07.02A | | | |

**Failing test results may require an action plan be submitted to ACHD detailing by what means the C:N Ratio will be adjusted to specifications during placement.*

4. BSM MIXTURE

| TEST | METHOD | SPECIFICATION | RESULTS | Pass/Fail |
|--------------------------------|-----------------------------|-----------------|---------|-----------|
| Organic Matter | ASTM F-1647 or TMECC 05.07A | 2%-13% | | |
| pH | TMECC 4.11 | 6 - 8 | | |
| Cation Exchange Capacity (CEC) | ASTM D-7503 | ≥5 meq/100g | | |
| Constant Head Permeability | ASTM D-2434 | > 5 inches/hour | | |

3. SSP 20202 Soil Amendments

Description: This item shall include all costs associated with providing and incorporating soil amendments in areas shown on the plans

Materials: Soil amendments are organic soil- applied compost or manufactured organic soil amendments. Compost shall be weed-free, aerobically composted organic compost derived from a variety of feed stocks including forestry, food, leaf and yard trimmings, manure and tree wood with no substances toxic to plants.

Soil Amendments shall be in compliance with the standards set by the **US Composting Council**, 5400 Grosvenor Lane, Bethesda, MD 20814.

Workmanship: All soil amendments shall be placed at the location and thickness as outlined in the plans or as directed by the engineer.

Measurement and Payment:

Payment for these items will be made under the following:

SSP 20202 Soil Amendments.....Per Cubic Yard

4. SSP 2020X Planting Trees/Shrubs/Vines/Ground Cover

Description: This item shall include all costs associated with providing and planting trees, shrubs, vines and ground cover.

Materials: Provide plants that meet the applicable requirements of the American Standard for Nursery Stock. Ensure plants are true to type and name in accordance with Standardized Plant Names prepared by the American Joint Committee on Horticultural Nomenclature. Provide plants that are sound, healthy, vigorous, well branched, and densely foliated when leaves are present, and without disease or insects including adult eggs, pupae, or larvae. Provide plants without disfiguring limbs, knots, limb scars, sun scald, abrasions of the bark, wind or freezing damage, or other disfigurements. Do not cut back plants from larger sizes to meet specified sizes. The Engineer will reject plants with the presence of noxious weeds in the containers or at the source.

Provide nursery grown plants unless collected plants are specified. Grow or condition plants to an environment similar to the project site including elevation, site and soil conditions, and climate.

The term “nursery grown” consists of natural seedling trees and shrubs, provided such trees and shrubs have been growing continuously in one nursery for the minimum periods of time specified in table below.

Plant Age

| Plant Material | Time in Nursery |
|---------------------------|--------------------------|
| Trees | 2 growing seasons |
| Shrubs, Evergreens | 2 growing seasons |
| Shrubs, Deciduous | 1 growing season |
| Wetland Plants | 2 growing seasons |
| Vines | 1 growing season |

Provide trees with straight trunks, well branched with symmetrical tops and no unhealed scars more than ¼ in diameter.

Provide well established containerized plants with a root system sufficiently developed to retain its shape and hold together when removed from the container. The Engineer may reject plants that are pot bound, or have kinked, circling, or bent roots.

Provide plants in pots or containers of a size shown on the plans.

Deciduous plants may be supplied bareroot (B.R.) unless specified otherwise.

Provide B.R. plants that are one size group larger than the sizes specified before pruning and are packed in moisture retaining material.

Provide broadleaf evergreen plants and conifers Balled and Burlapped (B&B) or in suitable containers. Pack B&B plants, except seedlings, with a firm ball of earth surrounded with burlap firmly held in place by a cord or wire wrapping. Provide B&B plants with firm, natural earth balls of standard size in accordance with the American Standard for Nursery Stock and the root collar located within the top two inches of the soil ball. Handle B&B plants by the earth ball only and protect against drying and freezing. The Engineer will reject broken or loose balls or plants without an adequate root system.

Pack and ship the plants in accordance with the American Standard for Nursery Stock.

File required state and federal inspection certificates for plant shipments with the Engineer.

Do not substitute plant materials unless previously authorized and approved by the Engineer.

Label plants according to size and scientific plant name with durable and legible tags. Deliver plants with labels securely attached to plants, bundles, and containers of plant materials. Provide actual certificate of inspection, or a copy, for injurious insects, plant diseases, and other plant pests for each shipment or delivery of plant materials. Indicate the name, address and the source of the stock on the certificate.

Leave the labels on at least one plant of a group of the same species and on each plant for individual planting during and after planting operations within the same area.

Workmanship: Ensure adequate and proper care of plant material. Adequate and proper care includes keeping plant materials in a healthy, growing condition by appropriate handling, storing, watering, cultivating, pruning and spraying.

Unless otherwise approved by the Engineer, perform planting operations between May 15 and September 15, and take advantage of favorable planting conditions. Plant bare root plants before the leaves open or new needles have started forming.

Grade and/or level both the irrigated and sodded area(s) to be planted before staking or marking planting locations. Disk natural or unmaintained area(s) or leave in a roughened condition before staking planting locations. Mark out and stake tree locations and the general layouts of planting areas for shrubs, vines, and ground cover. Do not begin planting until the area(s), tree locations and general layouts of the planting site(s) are approved by the Engineer.

Cultivate planting areas for shrubs and vines to at least 4 inches deep. Remove and dispose of weeds and other vegetative growth, large clods, rocks, and other debris encountered in the cultivating work.

When excavating holes for planting, keep topsoil separate from subsoil and make loose and friable. Remove and dispose of soils containing a pH greater than 8, a pH less than 4, gravel, stones, or other detrimental material encountered during excavation. A soil auger may be used if approved by the Engineer. Sufficiently roughen glazed surfaces inside planting holes before backfilling.

Remove plants from plastic, metal, or biodegradable containers before planting.

Take care to prevent disturbance of the root systems or earth. For bare-root plants, spread out their roots in a natural position, without bunching, kinking or circling.

Mulch planted areas immediately after planting work in each area is complete and the ground is smooth and clean. Place mulch 3 to 4 inches thick using wood chips or small bark. Cover the entire area of shrub and vine root systems as well as around trees as shown on the plans.

Remove mulch from plants, structures, roadway areas and grassed areas not to be covered.

Thoroughly water trees, shrubs, vines and ground cover during and immediately after planting. Repeat watering as often as necessary during the established period until the work is accepted by the Engineer. Exercise care to prevent puddled soil conditions and avoid compaction around the plants after watering.

Prune trees and shrubs when planting and remove broken or damaged twigs, branches, or roots in a manner that retains or encourages plants natural growth characteristics. Paint cut surfaces with a diameter of 1 inch or greater immediately with approved tree wound dressing.

Ensure the establishment of plantings by watering, cultivating, replacing plants or mulch, and other work necessary to maintain the plants in a healthy condition, throughout the plant establishment period.

If herbicides are used to control weeds, replace and maintain plants and lawn damaged by its use at no additional cost to ACHD.

At completion of the original planting, the Engineer will perform an inspection with the Contractor of plant material to note and correct discrepancies. The Contractor shall remove and replace dead plants at no additional cost. Plants that do not show expected growth, but retain green leaves, stems, or buds and the Engineer will inspect again during the plant establishment period.

After the original planting the Engineer will periodically inspect the condition of plants and planting areas. The Engineer will notify the Contractor of apparent defects, faults and conditions, and dead plants discovered by the inspection. All replacement plants shall be of the same species and quality as the plants they replace. Plants may vary in size reflecting one season of growth should the Contractor elect to hold plant material under nursery conditions for an additional year to serve as replacement plants. Correct apparent defects, faults and conditions, and remove, dispose and replace dead plants within 10 days after notification or as directed by the Engineer.

If immediate replacement of dead or rejected plants is impossible due to seasonal conditions or the lack of specified plants, place a marker at the spot of replacement and replace plants next planting season. ACHD will require a plant establishment period of six months for replacement plants. Ensure the establishment of the new plantings as specified.

If infestation by insects or disease occurs, treat plants using effective remedial measures that are good horticultural practices and in accordance with best management practices.

ACHD will make progress payments for plants at 80 percent of the contract unit price at the completion of the original planting. ACHD will pay the remaining 20 percent at the completion of the plant establishment period when defective plants have been replaced.

Measurement and Payment:

Payment for these items will be made under the following:

- SSP 20203 Planting Trees (Seedlings or Container)Per Each*
- SSP 20204 Planting Shrubs (Bare-root or Container).....Per Each*
- SSP 20205 Planting Vines (Bare-root or Container)Per Each*
- SSP 20206 Planting Ground Cover.....Per Each*

5. SSP 2020X Plant Material

Description: This item shall include all costs associated with applying seed including: seed bed preparation, seeding, soil amendments, mulch mixtures, mulching, mulch anchoring (mechanical or tackifiers), hydraulically applied erosion control products, erosion blankets, and watering.

Materials: Provide materials as specified in:

USE TAX TABLE

| Item No. | Quantity | Supplied By | Description |
|-----------|----------|-------------|-------------|
| SSP-202XX | | ACHD | |

Workmanship:

A. General. Perform seeding operations as specified.

Perform seeding between Oct 15 and Nov 15, except for seeding used as a temporary erosion and sediment control measure.

Do not perform seeding when soil is too wet or dry, frozen or otherwise unillable.

B. Seedbed Preparation. Maintain areas to be seeded reasonably free of weeds throughout the growing season using mechanical methods, or by applying appropriate chemicals, or both until seeding time. Keep weeds from going to seed. Apply chemicals for treating weeds in accordance with manufacturer recommendations.

Cultivate areas to be broadcast seeded immediately before seeding at least 3 inches deep and leave in a rough condition, similar to that obtained by walking a cleated-crawler tractor up and down the slopes. Where slopes are benched or serrated, ACHD will not require additional preparation.

Roughen and serrate or cross-rip slopes in a horizontal direction for slopes 3:1 or flatter that includes topsoil application before placement of the topsoil. After topsoil has been spread, prepare the surface for seeding.

On areas subject to severe erosion, ensure the extent of seedbed preparation does not exceed the area on which the entire seeding and mulching can be applied within a one-day operation. If conditions occur that prevent seeding at specified furrow depths, or if the roughened condition is destroyed, prepare the seedbed again at no cost to the District.

C. Seeding. Unless otherwise specified, ACHD will provide seed at no cost to the Contractor. Use the mix and rate of seeding specified. Apply native shrub and forb species separately from grass species. Rake the soil or mechanically roughen the soil before applying seed, mulch mixture, or both. Contractor shall pay use tax for all material supplied.

Apply seed uniformly over the seeded area by the most appropriate method (as determined by slope, soil or site conditions) using one of the following methods:

- a. Broadcast seeding:
- b. Hydro-seeder.
- c. Dry (whirlwind) - for embankment slopes or cut slopes as approved by the Engineer.

Broadcast the seed using a hydro-seeder or dry broadcast equipment as specified. Apply seed, fertilizer, mulch or combined fertilizer and mulch in separate applications. Do not mix fertilizer with the seed in the hydro-seeder. Apply seed to the seeded area first followed by the mulch, or fertilizer mulch combined application second. Ensure agitation of seed in hydro-seeder does not exceed 12 minutes. Do not apply hydroseeding mixture if rainy conditions are anticipated outside manufacturer's application recommendations. In the event of unanticipated rainy conditions, re-apply the hydroseeding mixture to uncured areas at no additional cost to the District.

Perform hydro-applications involving combinations of seeding, fertilizing, soil amendments, mulch mixtures, mulching, mulch anchoring (tackifier), and hydraulically applied mulch, with hydro-application equipment, equipped with appropriate pump (preferably centrifugal) and engine size, mechanical agitation (preferably paddle-type) and independent liquid bypass circulation capable of handling and applying a thick homogenous slurry.

Do not allow trucks or equipment to drive on the area after seed is in place.

Inspection of seeded areas will be made upon completion of seeding. The work in any area will not be measured for payment until a uniform distribution of the materials is accomplished at the specified rate. Areas that have not received a uniform application of seed, fertilizer, or mulch at the specified rate, as determined by the Engineer, shall be re-seeded, re-fertilized, or re-mulched at the Contractor's expense prior to payment.

D. Mulch, Mulch Anchoring, and Hydraulically Applied Erosion Control Products.

1. Mulch

Do not use hydro-mulch applications on slopes flatter than 3:1 or in conjunction with drill seeding applications. Do not perform mulching when wind interferes with mulch placement. Apply straw, grass hay, wood fiber, soil amendments, mulch mixture, or any combination of these materials as Engineer directed. Ensure material applied to the ground allows for the absorption and percolation of moisture. Apply at the following rates:

- a. Straw or grass hay (air dry). 2 Ton/Acre
- b. Wood fiber. 1 Ton/Acre
- c. Soil Amendments..... As specified

2. Mulch Anchoring

a. Mechanical. Use mechanical mulch anchoring on slopes 3:1 or flatter as Engineer directed. Anchor mulch into the soil by use of a heavy disc with flat scalloped discs approximately ¼ inch thick, having dull edges and spaced at least 9 in apart. Ensure anchoring to a depth of at least 2 inches with no more than one pass of the equipment on the same surface.

Install mechanical anchoring in a horizontal to the slope face.

b. Tackifier. Use mulch tackifiers on slopes 2:1 or steeper. Anchor mulch using a tackifier applied in accordance with the manufacturer's written instructions and at a rate for the material, soil types, conditions, and degree of slope.

If applied separately, incorporate a method to differentiate between the tackifier and mulch material, by color or tracer material, during tacking operations. Do not apply tacking when wind interferes with tackifier placement.

3. Hydraulically Applied Erosion Control Product

Provide a mixture that is nontoxic to animals, soil microorganisms, aquatic and plant life. Ensure the hydraulically applied erosion control product does not interfere with or impede seed germination or vegetative growth and establishment.

a. Hydraulic Mulch. Mix and apply the mixture, in accordance with the manufacturer's written instructions and at a rate for the soil type, roughness of surface, conditions and degree of slope.

b. Stabilized Mulch Matrix. Mix and apply the mixture, in accordance with the manufacturer's written instructions and at a rate for the soil type, roughness of surface, conditions and degree of slope.

c. Bonded Fiber Matrix. Mix and apply in accordance with the manufacturer's written instructions and at a rate for the soil type, roughness of surface, conditions and degree of slope.

d. Fiber Reinforced Matrix. Mix and apply the mixture, in accordance with the manufacturer's written instructions and at a rate for the soil type, roughness of surface, conditions and degree of slope.

E. Erosion Blankets. Install erosion blankets on slopes in a vertical direction and in accordance with the manufacturer's recommendations or as Engineer directed.

F. Watering. Provide a temporary water delivery system by use of either sprinklers or trucks.

Provide an approved source for irrigation water that is without oil, acid, salt, or other substances harmful to plants. Reclaimed water shall not be used for irrigation.

Apply water when directed by the Engineer. Keep pipe connections tight to avoid leakage and washing. Maintain sprinklers in proper working order. Should runoff begin, stop watering and apply the balance after initial watering has penetrated the soil. ACHD considers the standard application rate to be 16,000

gal/acre. This constitutes the quantity of water that saturates the soil to a depth of 4 inches under average conditions.

The Engineer will inspect for the 4 inch depth of saturation by excavating to a depth of 4 inches and observing wetness. ACHD intends that the locations of inspection for wetness be reasonable and not on “slick spots” or in unrepresentative areas.

G. Weeding. ACHD considers weed control the responsibility of the Contractor during the establishment period, and to be provided at no additional cost to ACHD. Obtain the Engineer’s approval for the method of weed control.

Measurement and Payment: Payment for these items will be made under the following:

| | | |
|-----------|---|-----------------|
| SSP 20207 | Seedbed Preparation | Per Square Yard |
| SSP 20208 | Seed..... | Per Square Yard |
| SSP 20209 | Seeding..... | Per Square Yard |
| SSP 20210 | Mulch..... | Per Square Yard |
| SSP 20211 | Mulch Anchoring (Mechanical)..... | Per Square Yard |
| SSP 20212 | Mulch Anchoring (Tackifier)..... | Per Square Yard |
| SSP 20213 | Soil Amendments | Per Square Yard |
| SSP 20214 | Mulch Mixture..... | Per Square Yard |
| SSP 20215 | Mulch plus Tackifier..... | Per Square Yard |
| SSP 20216 | Hydraulically Applied Erosion Control Products..... | Per Square Yard |
| SSP 20217 | Erosion Blanket..... | Per Square Yard |
| SSP 20218 | Fertilizing..... | Per Square Yard |

6. SSP 20219 Watering

Description: The work under this section shall consist of furnishing all water required for establishing vegetation within the project limits, during the establishment period. This work shall include securing and transporting water to the project site. All costs, and all labor, equipment, and materials required to secure, transport, and furnish water to the project limits, shall be considered as included in the work.

The Contractor shall be responsible for maintaining the desired level of moisture necessary to maintain vigorous and healthy growth.

Materials: Water used for the irrigation of revegetated areas shall be free of pollutants that will have a detrimental effect on the plants.

Workmanship: Revegetated areas shall require irrigation coverage of 100%. The Contractor shall water the planted areas as necessary, using a suitable fine spray which shall not disturb the vegetation and which will not cause any erosion.

The Contractor shall ensure that the planted area receives the minimum amount of water per the table below. The total monthly amount from the table shall be equally dispersed per week of the entire month and shall be applied uniformly over the whole area.

| Inches/month | May | June | July | August | Sept |
|---------------------------|------|------|------|--------|------|
| Long season range grasses | 2.48 | 4.20 | 4.96 | 3.10 | 0.90 |

Measurement and Payment: Payment for these items will be made under the following:

SSP-20219 Watering.....Per Lump Sum

7. SSP 20220 Fertilizer (Commercial)

Description: This item shall include all costs associated with providing and applying commercial fertilizer to areas specified.

Materials: Fertilizer shall be slow-release or controlled-release fertilizer in a pelleted or granular form, with a nutrient release over an 8 to 12 month period. Provide fertilizer in containers marked with the weight, volume or both along with the manufacturer’s guaranteed analysis of the contents. Ensure dry fertilizers are free from lumps or cakes.

Provide the type and application rate of fertilizer as specified by soil analysis results.

Workmanship: Dry fertilizers may be applied directly to the soil and lightly incorporated into the soil surface (not for slopes greater than 3:1) followed by the seed application. Apply fertilizer when average noontime temperatures are 60 °F or lower on established stands.

Measurement and Payment: Payment for these items will be made under the following:

SSP 20220 Fertilizer (Commercial).....Per Pound

8. SSP 20221 Plant Establishment Plan

Description: This item includes all costs to prepare and implement a plant establishment plan.

Workmanship: From the time of installation, during construction, and throughout the establishment period the Contractor shall maintain all plant material and seeded areas in a healthy and vigorous growing condition, and ensure the successful establishment of vegetation. This includes performing establishment, replacement work, and landscape maintenance work as described below.

The Contractor shall submit a first-year plant establishment plan, for approval by the Engineer. The first year of plant establishment shall begin immediately upon written notification from the Engineer of the completion of initial planting for the project. The first year plant establishment period shall be a minimum of 1 calendar year. During the first-year plant establishment period, the Contractor shall perform all Work necessary to ensure the growth of the planted material. This care shall include, but not be limited to, labor and materials necessary for removal of foreign, dead, or rejected plant material, maintaining a weed-free condition, the replacement of all unsatisfactory plant material planted under the Contract, and periodic watering as required for proper plant establishment. If plants are stolen or damaged by the acts of others, ACHD will pay invoice cost only for the replacement plants with no mark-up and the Contractor will be responsible for the labor to install the replacement plants.

During the plant establishment period, the Contractor shall meet with the Engineer between April and October for the purpose of joint inspection of the planting material on a mutually agreed upon schedule. The Contractor shall correct all conditions unsatisfactory to the Engineer within a 10-day period immediately following the inspection.

1. Live Plants

If plant replacement is required, the Contractor shall, within the 10-day period, submit a plan and schedule for the plant replacement to occur immediately at the beginning of the planting period. At the end of the plant establishment period, plants that do not show normal growth shall be replaced.

The Contractor shall water, cultivate, and prune the plants as required or directed by the Engineer. The Contractor shall reshape plant saucers, repair washouts and gullies, replace lost wood chip mulch, keep all planting sites free from weeds and do other work necessary to maintain the plants in a healthy and vigorous growing condition. This includes seasonal spraying or deep root watering with approved insecticides or fungicides as required.

2. Seeded Areas

The Contractor shall restore and reseed eroded areas and areas of poor establishment. Payment for water used to water in plants, or hand watering of plant material or lawn areas unless otherwise specified, is the responsibility of the Contractor during the first-year plant establishment period. Subsequent year plant establishment periods, when included in the Contract, shall begin immediately at the completion of the preceding year’s plant establishment period. Each subsequent year plant establishment period shall be one (1) full calendar year in duration.

Measurement and Payment:

Payment for these items will be made under the following:

SSP 20221 Plant Establishment Plan.....Per Year

9. SSP 02022 3/8" Chipseal Aggregate

Description: This item includes all material, labor and equipment necessary to provide the materials outlined below.

Materials:

1. Chipseal aggregate material shall meet the applicable requirements of Section 802 and 808 of the currently adopted Idaho Standards for Public Works Construction (ISPWC).
2. The material for this item shall be screenings of crushed stone or crushed aggregate. Material shall consist of clean, durable fragments free from an excess of flat, elongated, soft or disintegrated pieces, clay balls, or other objectionable material.
3. Produced chips shall have a clean, crisp appearance, and be free from adherent films of clay or rock dust. If chips do not meet a cleanliness value of 86, as per Idaho Department of Transportation T-72-95, they shall be washed thoroughly. If the chips require washing, it will be considered as incidental to this item and no additional compensation will be allowed therefore.
4. The material shall not exceed wear of more than 40%, at 500 revolutions, as determined by Association of State Highway Transportation Officials (AASHTO) T-96 (Los Angeles Abrasion Test). The abrasion test shall be run using a 5,000 gram sample charge of material between the 3/8-inch and Number 4 sieves with an abrasive charge of 8-balls.
5. Chips shall be manufactured by crushing and screening the material that has first been screened in such a manner that not less than 95% of the material for crushing, when tested by laboratory methods, is retained on a sieve having 3/4-inch square openings.
6. Aggregate material shall be tested for soundness in accordance with American AASHTO T -104. The number of cycles shall be 5; the solution shall be sodium sulfate; and the maximum loss shall not exceed 12%.
7. The filler or coarse aggregate, or a composite mixture thereof, shall show no detrimental amount of stripping when tested in accordance with AASHTO T-165. The minimum retained strength between the dry and wet samples shall be 75%. The minimum dry strength shall be not less than 195-pounds per square inch.
8. For all gradings, that portion of the aggregate passing a No. 40 sieve shall have a liquid limit of not more than 25 and a plasticity index of not more than 6, as determined by AASHTO T-89 and T-90.
9. The crushing shall result in a product such that at least 70% of the material retained on a No. 4 mesh sieve will have at least two fractured faces, as determined by AASHTO TP-61.
10. When tested by AASHTO Methods T-11 and T-27, in conjunction with water wash, chips shall meet the grading requirements established in the following table.

| Sieve Designation | Percent of Weight Passing Sieves |
|---------------------------|----------------------------------|
| 1/2-inch Sieve (12 .5 mm) | 100% |
| 3/8-inch Sieve (9.5 mm) | 95-100% |

| | |
|------------------------------|------|
| Number 4 Sieve (4 .75 mm) | 0-5% |
| Number 8 Sieve (2 .36 mm) | 0-3% |
| Number 200 Sieve (0 .075 mm) | 0-2% |

11. Non-Compliance with any of the above specifications will result in rejection of the chips produced during the entire day the chips are in non-compliance. If the chips that are in non-compliance are combined with chips that have been produced on previous days the entire pile containing the non-compliant chips shall be considered contaminated and therefore rejected.

Measurement and Payment: 3/8” Chipseal Aggregate shall be measured per ton as shown on the plans or as directed by ACHD.

Payment for this item will be made under:

SP 02022 3/8” Chipseal Aggregate.....Per Ton

10. SSP 02023 1/4” Chipseal Aggregate

Description: This item includes all material, labor and equipment necessary to provide the materials outlined below.

Materials:

1. Chipseal aggregate material shall meet the applicable requirements of Section 802 and 808 of the currently adopted Idaho Standards for Public Works Construction (ISPWC).
2. The material for this item shall be screenings of crushed stone or crushed aggregate. Material shall consist of clean, durable fragments free from an excess of flat, elongated, soft or disintegrated pieces, clay balls, or other objectionable material.
3. Produced chips shall have a clean, crisp appearance, and be free from adherent films of clay or rock dust. If chips do not meet a cleanliness value of 86, as per Idaho Department of Transportation T-72-95, they shall be washed thoroughly. If the chips require washing, it will be considered as incidental to this item and no additional compensation will be allowed therefore.
4. Chips shall be manufactured by crushing and screening the material that has first been screened in such a manner that not less than 95% of the material for crushing, when tested by laboratory methods, is retained on a sieve having 1/2-inch square openings.
5. Aggregate material shall be tested for soundness in accordance with American AASHTO T -104. The number of cycles shall be 5; the solution shall be sodium sulfate; and the maximum loss shall not exceed 12%.
6. The filler or coarse aggregate, or a composite mixture thereof, shall show no detrimental amount of stripping when tested in accordance with AASHTO T-165. The minimum retained strength between the dry and wet samples shall be 75%. The minimum dry strength shall be not less than 195-pounds per square inch.
7. The crushing shall result in a product such that at least 70% of the material retained on a No. 4 mesh

sieve will have at least two fractured faces, as determined by AASHTO TP-61.

8. When tested by AASHTO Methods T-11 and T-27, in conjunction with water wash, chips shall meet the grading requirements established in the following table.

| Sieve Designation | Percent of Weight Passing Sieves |
|-----------------------------|----------------------------------|
| 3/8-inch Sieve (9.5 mm) | 100% |
| 1/4-inch Sieve (6.3 mm) | 85-100% |
| Number 4 Sieve (4.75 mm) | 30-60% |
| Number 8 Sieve (2.36 mm) | 0-5% |
| Number 200 Sieve (0.075 mm) | 0-2% |

9. Non-Compliance with any of the above specifications will result in rejection of the chips produced during the entire day the chips are in non-compliance. If the chips that are in non-compliance are combined with chips that have been produced on previous days the entire pile containing the non-compliant chips shall be considered contaminated and therefore rejected.

Measurement and Payment: 1/4" Chipseal Aggregate shall be measured per ton as shown on the plans or as directed by ACHD.

Payment for this item will be made under:

SP 02023 1/4" Chipseal Aggregate.....Per Ton

11. SSP 06007 Abandon Existing Domestic Well

Description: This item shall include all costs required to abandon an existing potable water well in accordance with the requirements of the Idaho Department of Water Resources.

Materials & Workmanship: All existing wells designated to be abandoned shall be permanently abandoned in accordance with IDAPA 37.03.09.025.12 Well Construction Standards Rules of Idaho Administrative Code. At a minimum all existing pumping equipment shall be removed, the well casing filled with bentonite granules as required to stop the upward or downward movement of water. The well casing shall be cut off 2 feet below subgrade or at a level that does not interfere with the new

roadway improvements. The contractor shall prepare a written plan of the method he proposes to use to abandon the well and shall submit the plan to ACHD and the Idaho Department of Water Resources for approval prior to construction. The Contractor shall submit any forms and pay for any fees as required by the Idaho Department of Water Resources to abandon the well.

Measurement and Payment: Abandon Existing Well will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item. The accepted quantity of Abandon Existing Well will be paid at the contract unit price for the item listed below.

Payment for this item will be made under:

SSP 06007 Abandon Existing Domestic WellPer Each

12. SSP 06013 Stormwater Management Plan Preparation & Approval

Description: This item shall consist of all work associated with contractor plan preparation and approvals to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) and/or the Construction Site Discharge Control (CSDC) Program as required. The contractor is considered an operator having day-to-day control as defined in the EPA CGP; therefore, the contractor is a co-permittee with ACHD in the implementation of the CGP requirements. A Stormwater Pollution Prevention Plan (SWPPP) will be accepted by ACHD in lieu of the CSDC Plan provided that the SWPPP meets the CSDC Program requirements listed in 8305 and 8306 of the ACHD Policy Manual.

Workmanship: The contractor is responsible for the completion, submittal, and implementation of the ACHD provided SWPPP drawing and narrative, filing of the Notice of Intent (NOI), and filing of the Notice of Termination (NOT). The CGP and instructions for completing the NOI and NOT forms can be found on the EPA website: <http://www.epa.gov/npdes/stormwater/cgp>. The SWPPP shall have been prepared and submitted to ACHD for acceptance prior to the filing of the NOI. Prior to filing the NOT, the conditions listed in Part 5 of the CGP shall be met.

Once a SWPPP has been prepared, the Contractor and ACHD shall both submit an electronic NOI on the website listed above. There is a fourteen calendar day wait after the acknowledgement of receipt has been posted on the EPA website for the SWPPP to be considered approved and construction allowed to commence.

Prior to starting construction, the ACHD accepted SWPPP/CSDC Plan must be implemented. No Construction Activity or Land Disturbing Activity will be allowed to commence until the Contractor has fully implemented the accepted SWPPP/CSDC Plan as required by the District and set forth in the ACHD Policy Manual.

Additionally the contractor is responsible for installing, maintaining, and removing all Best Management Practices (BMPs) and for all documentation required to keep the SWPPP current. For compliance with

the District’s CSDC Program, the SWPPP/CSDC Plan should address all potential pollutants outlined in the ACHD Policy Manual.

A Rainfall Erosivity Waiver is available and defined in Appendix D, Part A of the CGP. If the waiver is utilized, and the conditions on which the waiver is based change, the contractor is responsible for updating the waiver and/or development and implementation of a SWPPP.

BMPs for controlling pollutant transport from the construction site can be found in a number of publications including, but not limited to:

- a) Idaho Department of Environmental Quality, Catalog of Storm Water Best Management Practices for Idaho Cities and Counties: Phone: (208) 373-0502 or on the internet: http://www.deq.state.id.us/water/stormwater_catalog/index.asp
- b) United States Environmental Protection Agency – Region 10: (800) 424-4372 or on the internet at: www.epa.gov/r10earth/stormwater.htm
- c) Boise City Planning and Development Services: phone: (208) 395-7818
- d) Idaho Transportation Department, Erosion and Sediment Control Manual, phone: (208) 334-8476

Measurement and Payment: Payment for work items to implement the SWPPP or CSDC shall be per other specific bid items noted in this contract.

Payment for this plan preparation and approval item will be made under:

SSP 06013 Stormwater Management Plan Preparation & Approval.....Per Lump Sum

13. SSP 06018 Install New Domestic Water Well

Description: This item shall include all work and costs associated with installation of a new domestic water well as shown on the plans.

Materials and Workmanship: The new domestic water well shall be completed within the first 45 days of the construction schedule, unless otherwise approved by the Engineer. This work shall be coordinated so that Bid Item 504.4.1.D.1 Sewer Service Connection to Main – Size 4 Inch is completed at the same time.

Contractor will be required to reconnect the residence to the new well reusing the existing well pump and appurtenances.

Contractor is required to contact property owner 14 days in advance to coordinate the timing for the installation of the new domestic water well.

Contractor shall obtain any permits necessary for the installation of a New Domestic Water Well and be considered incidental to this item.

This item shall also consist of the removal of all drilling waste and restoration of the existing area.

Measurement and Payment: Install New Domestic Water Well will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item. The accepted quantity of Install New Domestic Water Well will be paid at the contract unit price for the item listed below.

Payment for this item will be made under:

SSP 06018 *Install New Domestic Water Well.....Per Each*

14. SSP 06027 Abandon Existing Monitoring Well

Description: This item shall include all costs, materials, and labor associated with the abandonment of an existing monitoring well as indicated in the project plans or as directed by the engineer.

Materials: The concrete used for filling the existing well shall meet the ISPWC, Section 703 – Concrete, flowable fill.

Workmanship: The well casing is to be removed to a 6 inch depth below the new roadway subgrade. The remaining casing will be filled with Concrete to seal the existing well. Once sealed, the well casing shall be capped before being backfilled and prepped for roadway subgrade

Measurement and Payment: Abandonment of an existing monitoring well will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SP 06027 *Abandon Existing Monitoring Well.....Per Each*

15. SSP 06032 Remove and Reset Irrigation Pipe

Description: This Item shall consist of all labor, equipment, materials and appurtenances necessary to remove and reset the irrigation pipe as indicated on the project plans or as directed by the engineer.

Materials: Materials shall consist of all existing materials indicated for irrigation pipe removal and resetting. Any new or replaced materials due to contractor damage shall meet or exceed the quality of the original irrigation pipe materials. All new or replaced materials shall meet the requirements of the ISPWC - Division 600.

Workmanship: The Contractor shall use caution when removing the irrigation pipe in order to reuse existing material. If an instance arises where a portion of the irrigation pipe needs to be replaced the contractor shall be responsible for all associated costs and expenses. The irrigation pipe shall be replaced to its original condition, or to a condition that’s acceptable to both the Engineer and the property owner.

The work to remove and reset irrigation pipe shall occur during the non-irrigation season between November 1st and March 15th or as approved. If removal and resetting must occur during irrigation season the contractor must maintain any irrigation use without interruption. All facilities required to maintain the existing irrigation rotation schedule shall be at the contractor’s expense with no additional

compensation.

Any additional required movement or storage of the irrigation pipe shall be included in this item.

Measurement and Payment: All irrigation pipe to be removed and reset, as outlined in the project plans shall be paid per lineal foot of pipe reset and approved upon final inspection of both the Engineer and property owner.

Payment for this item will be made under:

SP 06032 Remove and Reset Irrigation Pipe.....Per Lineal Foot

16. SSP 06033 New Manhole Frame and Lid

Description: This item shall consist of removing existing non-compliant storm drain manhole lid with a new storm drain manhole frame, cover and riser.

Materials: Manhole lids shall be a minimum of 1" thick. Materials shall conform to currently adopted ACHD Supplement to the ISPWC Standard Drawing SD-617.

Workmanship: Placement shall conform to the criteria outlined in the currently adopted ACHD Supplement to the ISPWC Standard Drawing SD-617. Remove existing non-compliant storm manhole lids and frames and replace with new storm manhole frames and lids at the locations shown in the construction documents or as directed by the Engineer. The new manhole lids shall be cast with the utility (Storm Drain) designation displayed.

Measurement and Payment: New Manhole Frame and Lid shall be measured per each and include all costs associated with removing and delivering of the existing frame and lid to the ACHD Adams Maintenance Yard. This item includes all labor, materials and workmanship associated with furnishing and installing the new frame and lid.

Payment for this item will be made under:

SP 06033 New Manhole Frame and Lid.....Per Each

17. SSP 07005 Extruded Concrete Curb

Description: This item shall consist of constructing an extruded concrete curb at the location detailed in the plans and detail sheets.

Materials and Workmanship: The curb shall conform to the details shown on the plans and in conformance with Division 700 of the ISPWC and ACHD supplemental details to the ISPWC. Concrete shall be Class 3000.

Extruded cement concrete curb shall be placed, shaped, and compacted true to line and grade. The pavement shall be dry and cleaned of loose and deleterious material prior to curb placement. Joints in the curb shall be cut vertically and spaced at 5-foot intervals.

Measurement and Payment: Extruded Concrete Curb shall be shall be measured per lineal foot, complete, in-place as shown on the plans or as directed by ACHD.

Payment for this item will be made under:

SSP 07005 Extruded Concrete Curb.....Per Lineal Foot

18. SSP 07009 Median Curb

Description: This item shall include all costs associated with constructing a new concrete median curb, as shown on the plans or as directed by the engineer.

Materials and Workmanship: Raised channelization median curb shall be constructed per Division 700 - Concrete of the ISPWC Specifications and in accordance with the currently adopted ACHD Supplement to the ISPWC – SD 701-C. Concrete shall be Class 3000. Joints in the curb shall be cut vertically and spaced at 5-foot intervals.

Measurement and Payment: Median Curb shall be shall be measured per lineal foot, complete, in-place as shown on the plans or as directed by ACHD.

Payment for this item will be made under:

SSP 07009 Median Curb.....Per Lineal Foot

19. SSP 07013 Patterned Concrete

Description: This item shall consist of constructing patterned concrete at the location and grades detailed in the plans and detail sheets.

Materials: Concrete shall be Class 3000 and shall meet all applicable requirements of Division 700 of the ISPWC. The Contractor shall submit pattern samples for approval prior to construction.

Workmanship: The pattern shall be Brick Basket Weave or approved equal. When the concrete is still in the plastic stage of set, imprinting tools shall be applied to make the approved patterned surface. The pattern shall be formed with 3/8-inch maximum depth grooves and be placed simultaneously with the adjacent concrete sidewalk. No cold joints are allowed for the placement of the patterned concrete between the patterned concrete and the smooth section of sidewalk.

Measurement and Payment: All costs associated with construction of the patterned sidewalk, including concrete, imprinting tools, curing, and sealing, shall be included in the unit price bid for this item. Payment shall be per square yard, complete, in place.

Payment for this item will be made under:

SSP 07013 Patterned Concrete Per Square Yard

20. SSP 07015 Detectable Warning Devices – Retrofit

Description: This item consists of removing, constructing, reconstructing and retrofitting existing pedestrian ramps at locations shown on the plans, or as directed by the Engineer.

Materials: All materials shall conform to the Idaho Standards for Public Works Construction (ISPWC) – Division 700 Concrete and all ACHD adopted revisions and supplements. Section

706 of the ISPWC and the ACHD Supplement to the ISPWC shall apply for all concrete placement requirements under this item.

Detectable warning surfaces (Tactile Warning Surface) shall meet all applicable ADA requirements. Criteria outlined in the ACHD Supplement to the ISPWC shall be met prior to final acceptance. Gravel shall be Crushed Aggregate for Base Type I per Section 802 of the ISPWC.

Workmanship: Existing pavement, curb and gutter, curb ramps, and sidewalks shall be removed as directed or as indicated in the project plans. The Contractor is responsible for determining the exact extent of removal at each curb ramp location required to meet the following requirements:

1. Construction of curb ramp(s) that meet ADA requirements for the curb ramp and pedestrian crossing
2. Maintain existing drainage patterns
3. Match existing curb, gutter, sidewalk and pavement grades
4. Concrete curb and gutter shall be carefully removed from the edge of existing pavement. The pavement edge can be used as the outside form for the replacement curb and gutter.

Construction of new curb ramps, curbs and gutters and pavement shall meet the following requirements:

Curb ramps shall meet the requirements of ADA. Elements that will be measured to determine ADA compliance and acceptance of the work shall include, but not be limited to:

- a. Landing width, depth and slope
- b. Ramp Width, cross slope and running slope
- c. Flare slopes
- d. Truncated dome depth, distance from leading edge of curb line, depth, width, color and dome dimensions
- e. Gutter transition within the width of the curb ramp
- f. Smoothness and discontinuities

Curb and gutter shall match existing curb and gutter type as directed. Curb height may be varied by +/- 2 inches of the standard height to facilitate grading of the curb ramp to meet ADA requirements. The lip of gutter grade may be adjusted as needed to facilitate curb ramp construction as long as existing drainage patterns are maintained and a minimum longitudinal gutter slope of 0.4 percent is maintained.

1. Work shall consist of constructing, reconstructing, and/or improving curb ramps as specified on the Contract Documents. Include the following.
2. Removal and disposal of existing curb ramps (ramps, landings, flares, detectable warning surfaces, curb transitions, gutters and aggregate).

Measurement and Payment: All detectable warning device retrofits will be measured per each pedestrian ramp regardless of modification type identified on the

plans and shall include all labor, equipment and material necessary for the completion of the bid item.

The cost will include all removal and disposal of the existing curb ramps (ramps, landings, flares, detectable warning surfaces, curb transitions, gutters and aggregate), installation of new curb ramps (ramps, landings, flares, detectable warning surfaces, curb transitions, gutters - within the ramp, and aggregate). No additional measurement and payment will be made. Vertical curbing as required on the side or at the back of certain pedestrian ramp types is incidental to this item and no additional payment will be made.

The cost to construct temporary pedestrian ramps and temporary facilities to accommodate pedestrian and bicycle detours required during construction are incidental to this item.

Payment for this item will be made under:

SP 07015 Detectable Warning Devices – Retrofit.....Per Each

21. SSP 07016 Sidewalk Trip Hazard Removal Via Cutting

Description: This item shall include all costs associated with the cutting existing concrete sidewalk to remove trip hazards.

Materials and Workmanship: This item shall include labor, material, and equipment necessary to complete cutting to meet ADA compliance meeting the following criteria:

- a) All trip hazards will be saw cut in accordance with the requirements of the ADA. Each offset between ¼" and ½" will be tapered at a 1:1 slope or flatter and each offset greater than ½" will be tapered at a 1:12 slope or flatter and shall have smooth uniform appearance and texture. The method of trip hazard mitigation shall entail precise saw **cutting/trimming** of the concrete only. Grinding, grooving or pulverization of the concrete is NOT acceptable or allowed.
- b) All saw work shall be done with equipment capable of cutting at any angle and able to remove the concrete completely to all edges of the trip hazard and around obstacles that may be encountered.
- c) All saw cutting shall be taken to an absolute zero point of the adjacent opposing panel, and to both edges of the sidewalk panel to mitigate the trip hazard in its entirety over the full width of the sidewalk panel as needed. Some panels may not require the full width of the sidewalk panel to be mitigated.
- d) The adjacent sidewalk panel, along with any wall and/or obstacles butting up to the sidewalk panel, shall not be cut into or marked in any way. Cutting into any landscaping (i.e. grass, rocks, walls, etc) is not permitted.
- e) Final mitigated surface shall be smooth and free of any grooves greater than that of a fine broom finish.

f) Dust shall be collected using a high powered vacuum dust control system, eliminating the dust from entering into the atmosphere. The suction device shall be attached to the cutting equipment or positioned to assure a maximum amount of dust will be collected before it can be released into the atmosphere.

g) All debris and concrete dust that remain on the sidewalk shall be completely cleaned from the surface as well as the surrounding area (i.e. landscaping, walls, etc.) and be hauled off and dumped at an approved site. All costs incurred for disposal of waste material shall be included in unit cost and will not be paid for separately.

h) The maximum height of a trip hazard allowed for repair is 2". This will be cut at a slope of 1:12 or flatter.

Measurement and Payment: Per Inch-Feet. Inch-feet shall be calculated by multiplying the average depth of the cut by the length of the cut measured perpendicular to the trip hazard. Example: If a joint is cut 1" on one side and tapered to 0" on the other a full 4-foot width of the sidewalk, it shall be calculated as follows:

$$\frac{1" + 0"}{2} \times 4' = 2 \text{ inch} - \text{feet}$$

Payment for this item will be under:

SSP 07016 Sidewalk Trip Hazard Removal Via Cutting.....Per Inch-Foot

22. SSP 08105 Temporary Paving

Description: This item shall consist of furnishing all labor, equipment and material necessary to construct temporary asphalt plant mix pavement at locations required to accommodate construction traffic control or as directed by ACHD. This item includes the removal and disposal of the temporary pavement when it is no longer needed.

Materials: Plant mix pavement for temporary pavement shall be Class III, 1/2" aggregate mix, with PG 58-28 asphalt and additive.

Workmanship: Saw cut existing pavement adjacent to temporary pavement areas. Place and compact a minimum of 2-inch thickness of plant mix pavement on a minimum of 6-inch thickness of compacted Crushed Aggregate for Base Type 1 on compacted subgrade. Compact the area to Class A compaction requirements. After temporary pavement is no longer needed, remove and dispose of the temporary pavement and base.

An asphalt tack coat shall be applied on the edges of existing plant mix pavement.

Measurement and Payment: Temporary Paving will be measured by the square yard and shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP 08105 Temporary Paving.....Per Square Yard

23. SSP 08106 Reclaiming Existing Pavement

Description: This work shall consist of reclaiming the roadway to the full thickness of existing pavement and a portion of the underlying base in accordance with these specifications and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or as established. This item shall include the preparation of the roadbed, pulverizing, documentation of existing pavement thickness, the wetting or drying of the material, mixing and compacting reclaimed material.

Reclaiming Existing Pavement Class I grade control shall be used for the purpose of grade control as specified in the plans. Reclaiming Class I shall include the work described in this specification with Class I grade control requirements and field established elevations.

Materials: Materials shall conform to the requirements specified in the following sections and subsections:

The water source shall be as approved by the Engineer. Water shall be reasonably clear and free from oil and other contaminants.

Density Tests shall be performed using an uncorrected nuclear gage in accordance with the following Standard method.

In-Place Density of Bituminous Mix Using the Nuclear Moisture Density Gauge, WAQTC TM8 Method B (Direct Transmission only).

Workmanship: Prior to mobilization, the Contractor shall submit a plan of operations for the Reclaiming processing, including traffic control, for review and comment by the Engineer. The Engineer’s review and comments on the plan do not constitute approval.

Reclaim Existing Surface: The entire existing roadway material shall be loosened and pulverized to the width(s) shown on the typical section and at a minimum, the full existing pavement, and to the extent it will conform to the following sieve sizes:

| Percent by Weight | |
|-------------------|-----------------|
| Sieve Sizes | Percent Passing |
| 1 ½" | 100 |

The Contractor shall document the existing pavement thickness every 0.3 mile in each lane. This documentation shall be provided to the Engineer upon request. The measurements will be spot checked once or more per day as necessary by the designated ACHD representative to ensure that accurate measurements are being made and that the full thickness of pavement is being pulverized.

The fracture of aggregates shall be kept to a minimum during pulverization and mixing.

The Contractor shall notify the Engineer of any poor quality subbase materials, soft spots, clays, silts, or organic materials as soon as they are encountered.

The road mix machine shall be pugmill, auger, or cross-shaft type mixer capable of providing a uniform homogeneous mixture throughout the material to the depth indicated on the typical section.

The Contractor shall document the blending thickness every 0.3 mi. in each lane. This documentation shall be provided to the Engineer upon request. The measurements will be spot checked once or more per day as necessary for the Engineer to ensure that accurate measurements are being made.

The pulverized and blended material shall be shaped and rolled where necessary to allow the roadway to be open to traffic (i.e., approaches to businesses and residences).

The road mixing machine shall have provisions for introducing water at the time of blending, through a metering device or by approved methods. The water shall be applied by means of controls that will supply the correct quantity of water to produce a completed mixture with uniform moisture content. Leakage of water from equipment will not be permitted. Care shall be exercised to avoid the addition of any excessive water.

The percentage of moisture for compaction shall be 4-7% by weight of pulverized material.

The resulting mixture shall be uniform and more than one (1) pass of the mixer through the material may be required. If equipment is used that requires more than one (1) pass of the mixer, water distribution on the roadway as approved shall be at the time of the final blending pass.

The Contractor shall be responsible for continuous grade control and cross slope control including any surveying (blue-topping or wire line control) as required. The Contractor shall furnish all labor, materials and equipment required to performing the grade control work.

It is expected that the pulverized material will swell 15 to 30 percent prior to compaction. The typical section control line shall be vertically parallel to the centerline of the existing roadway unless otherwise shown in the plans. The cross-slope shall be constructed as shown on the plans. The Contractor shall also be required, as determined by the Engineer, to make adjustments to the existing roadway profile to provide a consistent grade and to avoid adding new material or wasting existing material in excess of that allowed in the contract. If necessary as determined by the Engineer, the Contractor shall re-establish the roadway profile and cross-slopes to provide a roadway section which is consistent with the typical section shown on the plans.

Equipment used for shaping and setting of grade shall be capable of automated (either mechanical or electronic) setting of grade and cross-slope angle. The grading operation shall be capable of accounting for the swell, which may leave the finished processed surface above the adjacent surface. All pulverized material shall be incorporated into the Reclaimed layer. The Contractor shall shape and finish the Reclaimed surface without adding new material or wasting existing material. Pulverized material shall not be used as shoulder material without the approval of the Field Engineer.

On Class I projects, the final elevation of the Reclaimed surface shall be established in the field by the contractor. The pulverized surface shall be finished to within 0.03 feet of the field-established elevation, and within 0.03 feet of the elevation required to provide the field-established or plan specified cross slope at 12 feet from centerline and at the edge of the pulverized surface.

The pulverized material shall be re-laid, compacted firmly as determined by the Engineer and open to local traffic at the end of each working day.

Access to driveways and approaches within the project limits shall be maintained at all times, except when working directly next to or within the driveway or approach. Local traffic within the project limits must be accommodated at all times.

After the materials have been satisfactorily blended, a motor grader, mechanical spreader, paver, or grade trimmer of approved type shall shape the mixture. The typical section shall be as specified in the accompanying contract documents.

The compaction train shall include at least one rubber tired roller, one vibratory roller and one vibratory pad-foot soil compactor.

The vibratory pad-foot soil compactor and its use shall meet the following requirements:

The Contractor shall provide a vibratory pad-foot soil compactor with minimum operating weight of 15 Tons, minimum drum width of 60 inches, and pad height of 3 ½ inches. This roller shall be used after the pulverization and blending and prior to shaping and grading. Three complete passes shall be required. Additional passes may be required to achieve compaction. Payment will be considered incidental to this item.

The roller pattern shall be established by using in-place density from an uncorrected nuclear gauge. The required compaction is achieved and final process rolling is defined as when the final roller pass adds no more than 0.5 lb/ft³ to the previous in-place density. Sufficient additional roller passes shall be made to determine that a “false break” or leveling-off point is not used for compaction density. The roller pattern shall be reestablished when mixture properties in the processed material change and at a minimum of every 7,200 SY of finished surface. Additional tests shall be performed where soil conditions have changed or at the discretion of the Engineer to ensure that the required compaction is achieved.

The surface shall be kept uniformly moist during the compaction process and then it shall be kept continuously moist until the prime coat is placed. The surface shall be satisfactorily maintained until the surface course has been placed.

Equipment used for finishing shall be capable of automated setting of grade and cross-slope.

The processed material shall be kept moist (but not wet) until the prime coat is placed. Water equipment shall be of a type that will apply moisture in a fog or mist type application free of pressure on the surface being treated.

Prior to placement of the initial lift of plant mix pavement, a prime coat shall be applied full width at a rate of 0.20 gallons per square yard or as directed. The Reclaimed layer shall be free of standing water at the time of application of the prime coat.

The completed recycled base material shall be covered with a bituminous prime coat as protection against drying. The prime coat shall be applied as soon as possible but no later than twenty four (24) hours after the completion of final rolling. Additional grading and /or rolling may be required prior to applying the prime coat due to surface deformation by traffic upon the processed surface. Any additional grading and/or rolling shall be considered incidental with no separate payment made. Prime coat shall be emulsified asphalt, Type CSS-1h, or as directed. The prime coat shall be applied in accordance with the requirements of Section 807 of the ISPWC and in sufficient quantity to provide a continuous membrane over the surface. At the time of application of the prime coat, the surface shall be tightly knit, free from all loose material and shall contain sufficient moisture to prevent excess penetration of the asphalt. If necessary to insure this, sufficient water to fill the surface voids shall be applied immediately before the asphalt is applied.

Equipment or traffic may be permitted on the recycled base stabilization when approved by the Engineer, after the prime coat has been applied. A uniform application of blotter material shall be applied as required by the Engineer. Loose, excess blotter material shall be broomed from the surface prior to paving. No separate payment will be made for blotter material or brooming excess blotter material.

Paving: The initial lift of plant mix shall be placed within forty eight hours of application of the prime coat, unless otherwise approved.

When the approved traffic control plan requires traffic to be detoured to an alternate roadway, the forty eight hour requirement may be waived provided the Contractor can demonstrate the ability to keep the Reclaimed surface sufficiently moist until paving occurs. Failure to keep the Reclaimed surface sufficiently moist may result in the Engineer requiring paving to take place within forty eight hours. The contractor is advised to pave over the Reclaimed surface as soon as possible after the required compaction is achieved and the surface is primed.

Tight-blading and rolling, subsequent to final process rolling as defined in Compacting and Finishing, may be required before applying the initial lift of plant mix and/or prime coat due to surface deformation, raveling, or other irregularities created by traffic. At the time of placement of the initial lift of plant mix, the primed surface shall be free from all loose material.

Asphalt for Prime Coat will be paid under 807.4.1.A.1

Water shall be incidental to the other items listed. Rejects shall be incidental to the other items listed.

All Costs associated with Reclaiming activities not listed in the Pay Item column above shall be borne by the Contractor and considered incidental to these items, with no separate payment to be made. Such activities shall include, but are not limited to the following:

- Stripping and disposing of unsuitable materials
- Grade control work
- Additional required pulverization and blending passes
- Grading, rolling and shaping
- Blending water and water required to keep the Reclaimed surface moist

Measurement and Payment: Reclaiming Existing Pavement will be measured per square yard, complete, in place.

Payment for this item will be made under:

SP 08106 Reclaiming Existing Asphalt.....Per Square Yard

24. SSP 08115 Rotomill

Description: This item consists of furnishing all labor, materials and equipment necessary to mill and remove the existing asphalt pavement as shown on the plans or as directed by ACHD.

Materials: The equipment for rotomilling the pavement surface shall be a power operated self-propelled planing machine or grinder capable of removing, in one pass, a thickness of asphalt pavement necessary to provide the desired profile and cross slope. The planed surface shall provide a smooth surface, free from gouges greater than 3/8-inch in depth. The equipment shall be self-propelled with sufficient power, traction and stability (rigid suspension, non-pneumatic tired) to maintain accurate depth of cut and slope. The equipment shall be capable of accurately and automatically establishing profile grades along each edge of the machine (within +/- 1/8-inch) by referencing from existing

pavement by means of a ski or matching shoe unless otherwise directed by the Engineer. The rotomill shall be equipped with a floating mold board cutting device behind the cutting mandrel. The mold board shall have an infinitely variable down pressure from 0-2000 psi and shall be equipped with means to control dust and other particulate matter created by the cutting action.

Workmanship: The Engineer may direct the Contractor to modify the rotomilling operation or equipment to protect the existing roadway from damage caused by rotomilling activity. The modifications shall include, but shall not be limited to, equipment track velocity, cutting drum revolutions per minute and total depth of cut by the rotomilling equipment. The modifications directed by the Engineer shall be considered incidental to the bid, and no additional payment shall be made therefore.

If the Contractor is unable to remove all of the existing pavement adjacent to curbs, water valves, gas valves, traffic control boxes, manholes, intersections or any other item not specifically identified herein, with the rotomilling equipment, they shall remove the remaining pavement by another mechanical process approved by the Engineer.

After completion of the rotomilling operation, and prior to allowing traffic to pass though the project site, the surface shall be broomed and any excess material removed from the project site.

Measurement and Payment: Rotomill areas will be measured per square yard of surface area and shall include all labor, equipment and material necessary for the completion of the bid item. Brooming, loading, hauling, and disposal shall be considered as incidental and no separate payment will be made. Areas to be removed under another process (Along valves, manholes, etc.) shall be paid at the unit price for Rotomill.

Payment for this item will be made under:

SSP 08115 Rotomill.....Per Square Yard

25. SSP 08120 Asphalt Repair – Arterial & Collector

Description: This item shall include all work and costs associated with the repair of the existing asphalt roadway to match the grade of curbs, sidewalks, driveway approaches and existing asphalt.

Materials: This item shall include placement of a 6” (inch) thickness of 3/4” (inch) aggregate base course in accordance with Section 802 – Crushed Aggregates of the ISPWC, on a compacted sub-grade, and a 5” (inch) thickness of 1/2” Plant Mix Asphalt in accordance with Section 814 of the ACHD supplement to the ISPWC . The asphalt cement performance grade shall be SP-3 PG 64-28 and shall contain ½% of heat-stable anti-stripping agent per ton of asphalt cement added immediately prior to use at the location of the asphalt batch plant. Asphalt tack material shall be an SS-1 emulsified asphalt diluted as specified in accordance with ISPWC Division 800 – Aggregate and Asphalt.

Workmanship: This item shall also include excavation, labor, equipment necessary to complete the repair of the existing asphalt roadway to match the grade of curbs, sidewalks, driveway approaches and existing asphalt.

Measurement and Payment: Material costs associated with the furnishing and placement of an asphalt tack coat on the lip of the gutter and on the edges of previously placed asphalt are considered incidental to this item. The 3/4" (inch) aggregate base course shall be paid under that respective item. All placed asphalt paid under this item shall be measured by the square yard.

Payment for this item will be made under:

SSP 08120 Asphalt Repair-Arterial & Collector.....Per Square Yard

26. SSP 08125 Asphalt Repair - Other

Description: This item shall include all work and costs associated with the repair of existing local roads, asphalt driveways, parking lots, and sidewalks abutting the project to match the grade of curbs, sidewalks, driveway approaches, and existing asphalt.

Materials: This item shall include excavation, labor, equipment, and materials necessary to complete placement of a 4" (inch) thickness of 3/4" (inch) aggregate base course, on a compacted sub-grade, and a 3" (inch) thickness of 1/2" SP-3 Plant Mix Asphalt in accordance with Section 814 of the ACHD supplement to the ISPWC. The asphalt cement performance grade shall be PG 64-28 and shall contain 1/2% of heat-stable anti-stripping agent per ton of asphalt cement added immediately prior to use at the location of the asphalt batch plant. Asphalt tack material shall be an SS-1 emulsified asphalt diluted as specified in accordance with ISPWC Division 800 – "Aggregate and Asphalt."

Workmanship: This item shall also include all costs associated with the furnishing and placement of an asphalt tack coat on the lip of the gutter and on the edges of previously placed asphalt.

Measurement and Payment: Material costs associated with the furnishing and placement of an asphalt tack coat on the lip of the gutter and on the edges of previously placed asphalt are considered incidental to this item. The 3/4" (inch) aggregate base course shall be paid under that respective item. All placed asphalt paid under this item shall be measured by the square yard.

Payment for this item will be made under:

SSP 08125 Asphalt Repair – Other.....Per Square Yard

27. SSP 08133 Scrub Coat

Description: This item shall include all costs associated with repair of any areas where the pavement has been totally removed as a result of the rotomilling operation.

Materials: All gravel shall conform to Section 802 – Aggregates and all asphalt shall conform to Section 805 – Asphalt of the ISPWC.

Workmanship: Required work shall include, but not necessarily be limited to, excavation of the exposed rotomilled area to a depth of 2-inches below the rotomilled surface; providing any necessary 3/4-inch minus gravel; compaction of the gravel; tack coat; 2-inch thick asphalt repair; cleaning of the work area; labor, tools and any other incidentals, including traffic control, necessary to complete the work.

As part of this effort the contractor is required to have all scrub coating completed within 24 hours after rotomilling operations have exposed the area of repair.

This item shall only be used as directed by the Engineer.

Measurement and Payment: The 3/4" (inch) aggregate base course shall be paid under that respective item. The asphalt identified in the contract documents shall be used for all asphalt repair outlined under this item and will be paid by the square yard.

Item 29 "Variations in Quantities," page GC-16 of the General Conditions, second paragraph, shall not apply to this item.

Payment for this item shall be made under:

SSP 08133 Scrub Coat.....Per Square Yard

28. SSP 08142 Clean and Fill Cracks as per Specifications

Description: The work involved for this item includes the furnishing of all materials, labor, equipment, tools, and transportation required to seal the cracks in the pavement of various streets. The work includes the cleaning of the cracks, placement of the crack sealant, and all traffic control required to accomplish the project. Work on arterial roads shall be night work with hours of lane restrictions from 8:00 PM to 6:00AM. Work on collectors with less than 50% residential frontage shall follow the same requirements as arterial roads. Work on collectors with greater than 50% residential frontage shall be completed between the hours of 8:00 AM to 4:30 PM; no weekend work will be permitted.

Materials: The material used for the crack filling shall be a hot pour Polymeric Asphalt-Rubber Sealant. The Polymeric Asphalt-Rubber Sealant shall meet or exceed all of the requirements of ASTM D6690 Type II (AASHTO M324). The Contractor shall include a copy of the specifications for the proposed material to be used on this project with their Bid Proposal.

The supplier shall conduct laboratory tests on all material supplied and submit certification documenting the material meets or exceeds the contract specifications outlined herein. The Contractor shall deliver to the ACHD the test results from the supplier and a certification signed by an authorized representative of the supplier that all material delivered meets or exceeds all contract specifications.

Two copies of the sealant manufacturer's recommendations for preparation, handling, mixing, and application shall be furnished to the ACHD prior to commencement of work.

If the material does not meet the project specifications, the material will be rejected and shall be removed, including all work in which the rejected material has been incorporated and replaced at no cost to the ACHD.

Workmanship: Sealing Cracks in normal Asphaltic Concrete Pavement (hot mix): The equipment used by the Contractor shall include a hot compressed air lance of sufficient capacity to clean out all cracks, an asphalt kettle with pressure hose nozzle, squeegees, and any other equipment recommended by the manufacturer.

The asphalt-rubber crack seal mixture shall be combined, mixed, heated and placed in accordance with the manufacturer's recommendations. The heating pot shall be capable of maintaining a uniform temperature of the asphalt-rubber crack seal material within the temperature range specified by the manufacturer.

Cracks of less than **one-quarter inch** in width will not need to be sealed. All cracks in excess of **one-quarter inch** shall be sealed.

Immediately prior to placing the crack sealant, all cracks that are to be sealed shall be thoroughly cleaned by blowing them out with a **hot air lance**. The purpose of cleaning the cracks is to ensure a good clean asphalt surface to which the sealant can bond. The Contractor's operation will be monitored to ensure that these objectives are met. Of particular importance is the requirement that all dirt with the weeds and grass shall be removed from the cracks in the cleaning operation to a **depth of one inch**.

Older re-opened cracks shall go through the cleaning and blowing process described herein before refilling with new material.

After the cracks are cleaned and free from moisture, which shall require the use of a **hot air lance** in wet weather, they shall be filled with crack sealant from the bottom up to the pavement surface or just below. If sealant is more than **one-quarter inch** below the pavement surface, a second application will be required. This condition is more likely to occur on the larger cracks. Many cracks will be full-depth (through the pavement to the aggregate base course). If they are not filled from the bottom up, a ridging effect will occur, in which the top of the crack sealer rises above the pavement surface.

After filling the cracks, the use of a squeegee may be required. It is necessary for the operator to push down on the back of the squeegee handle so a small hump is not left over the crack (See figure below). The squeegee shall be "V" shaped and must have a flexible surface wiper.

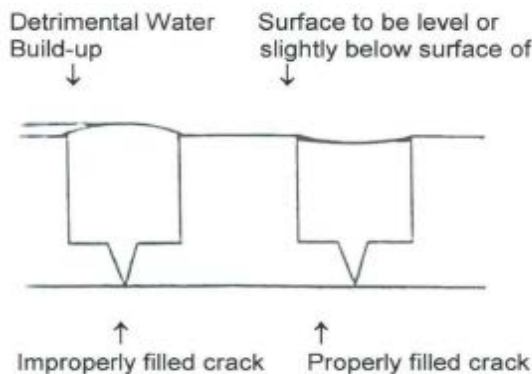


Figure 1: Proper versus Improper

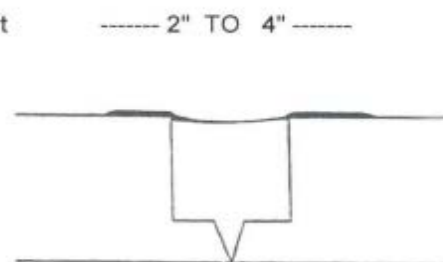


Figure 2: Band-Aid Effect

Other than the slight band-aid effect shown above, no excess sealant will be allowed to be retained on the pavement surface. All delivery tickets shall indicate the Owners name, date, type of material, truck number, project street location, gross weight, tare weight, and net weight of each material.

Measurement and Payment: Payments shall be made at the unit price per ton placed and accepted for crack sealing. This price and payment shall be full compensation for furnishing all material, equipment, and labor, necessary to complete this item in accordance with these specifications. All Traffic control required shall be paid under their respective items identified in the adjoining contract documents.

Payment for this item shall be made under:

SP 08142 Clean and Fill Cracks as per Specifications.....Per Ton

29. SSP 08300 Epoxy Overlay

Description: This work shall consist of preparing a concrete bridge deck surface to apply an epoxy and aggregate overlay in accordance with this specification. The overlay shall be applied over entire bridge deck area between the faces of raised sidewalks and from Begin Bridge to End Bridge as shown on the Plans or as directed.

Materials: The epoxy shall consist of epoxy resin base and hardener that is a modified Type III, two component system which meets requirements given by ASTM-C-881, Grade 1, Classes B & C. The epoxy shall be stored according to the manufacturer's specifications. Epoxy shall have the properties listed below in Table 1.

| TABLE 1 – EPOXY REQUIREMENTS | | |
|--|--------------------------------------|---|
| Property | Requirement | Test Method |
| Pot Life | 15 min to 45 max | ASTM C881, Paragraph 11.2 modified |
| Tensile Strength (neat) | 2,000 min to 5,000 psi max at 7 days | ASTM D638 |
| Tensile Elongation (neat) | 40% min to 80% max at 7 | ASTM D638 |
| Viscosity | 7 min to 25 max poises | ASTM D2393, Brookfield RVT Spindle No. 3 at 20 rpm |
| Minimum Compressive Strength at 3 hours | 1,000 psi at 75°F | ASTM C579 modified (with plastic inserts), mixed with aggregate |
| Minimum Compressive Strength at 24 hours | 5,000 psi at 75°F | ASTM C579 modified (with plastic inserts)), mixed with aggregate |
| Minimum Adhesion Strength at 24 hours | 250 psi at 75°F | ACI 503R, Appendix A, VTM 92 |
| Permeability to chloride ion at 28 days | 100 coulombs Max | AASHTO T277 |

All materials shall be packed in puncture, rupture and leak proof containers. Each container shall be labeled as Part A or Part B and shall be plainly marked with the name and address of the manufacturer, name of the product, mixing proportions and instructions, lot and batch numbers, date of manufacture and quantity contained therein. The aggregate shall meet the physical properties of the Tables 2 and 3 and be non-friable, non-polishing, clean and free of surface moisture. It should have a proven record of durability in this type of application. 100% of the aggregate is to have at least 1 mechanically fractured face for materials being retained on the #10 sieve. The aggregate is to be thoroughly washed, kiln dried to maximum moisture content of 0.2% by weight (ASTM C- 566). The recommended aggregate is Washington Stone. Alternate aggregates may be allowed upon approval by the manufacturer and Engineer.

| TABLE 2 AGGREGATE REQUIREMENTS | |
|---|---------|
| Ignition Loss | <1.8% |
| Soundness Loss AASHTO T104 5 cycles in Magnesium Sulfate | 8% Max |
| Micro-Deval AASHTO TP58 | 10% Max |
| Mohs Scale Hardness | 7 Min |
| Evaporative Moisture Content ASTM C566 | <0.2% |

| TABLE 3 AGGREGATE GRADATION | |
|--|-----------------|
| SIEVE SIZE | PERCENT PASSING |
| 0.187 in; No. 4 | 100 |
| 0.078 in; No. 10 | 10 – 35 |
| 0.033 in; No. 20 | 0 – 10 |

Workmanship: At the Pre-Construction Meeting, the Contractor shall submit the name of the manufacturer of the intended epoxy overlay materials including the name and phone number of the Manufacturers Technical Representative. At least 10 days prior to the overlay placement the Contractor shall submit a Certificate of Compliance from an independent nationally recognized laboratory stating that the epoxy materials meet the requirements listed in Tables 1, 2, 3 as well as all other material requirements contained herein.

The epoxy overlay manufacturer shall have a representative on the job site at all times who, upon consultation with the Engineer, may suspend any item of work that is suspect and does not meet the

requirements of this specification. Resumption of work will occur only after the manufacturer's representative and the Engineer are satisfied that appropriate remedial action has been taken by the Contractor.

The Contractor shall plan and prosecute the work to allow for the minimum curing periods as specified herein, or other longer curing periods as prescribed by the manufacturer, prior to opening to public or traffic.

A. Equipment

For mechanical applications, equipment shall consist of not less than epoxy distribution system, aggregate spreader, application squeegee, moisture-and-oil-free compressed air and a source of lighting if work will be performed at night. The epoxy distribution system shall accurately blend the epoxy materials according to the manufacturer's specifications and distribute epoxy to the bridge deck at the specified application rates in such a manner as to cover 100% of the work area. The aggregate spreader shall be propelled in such a manner as to uniformly and accurately apply the aggregate.

For manual applications, equipment shall consist of calibrated containers for measuring epoxy volumes, a paddle-type mixer, squeegees, shovels and brooms which are suitable for mixing the epoxy and applying the epoxy and aggregate at the specified application rates.

B. Preparation of Concrete Surfaces

Minor potholes and delamination in the deck surface shall be repaired by removing the damaged concrete and patching with a cementitious patching material that meets other specifications prior to installation of the overlay. Epoxy Overlay material is an acceptable patching material. Strike off patches so they are level with the existing deck and finish with wooden floats. Portland cement concrete patches require a minimum cure period of 28 days before application of the overlay.

Before placing the overlay, the entire concrete deck shall be thoroughly cleaned by steel shot blasting to ensure proper bonding between the epoxy and the concrete substrate. A final surface texture meeting the International Concrete Repair Institute's (ICRI) concrete surface profile numbers 5 through 7 shall be achieved as defined in ICRI Guideline No. 03732 and as shown by Surface Profile Samples available from ICRI, or ASTM E 965 Pavement Macrotexture Depth of 0.04 to 0.08 inch. Shot blasting is meant to expose the coarse aggregate and the surface shall be free of asphalt material, oil, dirt, rubber, curing compounds, paint carbonation, laitance, weak surface mortar and other potentially detrimental materials, which may interfere with the bonding or curing of the overlay. Loosely bonded patches shall be removed and repaired. Traffic marking lines shall also be removed. Moisture-and-oil-free compressed air or high volume leaf blowers shall be used to remove all dust that adheres to the prepared surface. The surface shall then be blown again with moisture-and-oil-free compressed air or high volume leaf blowers.

In order to determine the adequacy of the surface preparation, perform bond tests at a minimum of one test per lane of each bridge. For each test, apply palm sized patties of binder aggregate 1/4 to 3/8 inch thick at three locations. After the samples have cured, the patties shall be removed with a hammer and chisel to examine the fracture and delamination plane. Concrete with fractured aggregate shall be attached to the entire underside of the patty. If only lattice or a small amount of concrete is attached, further deck preparation is required.

C. Overlay Application

Handling and mixing of the epoxy resin and hardening agent shall be performed in a safe manner to achieve the desired results in accordance with the specifications, and with the manufacturer's recommendations as approved/directed by the Engineer. The epoxy overlay materials shall not be applied when weather or surface conditions are such that the material cannot be properly handled, placed and cured within the specified requirements for project sequencing or traffic control, or when rain is imminent within the manufacturers recommended cure times.

The prepared surface shall be completely dry (no visible moisture) at the time of epoxy application. Moisture-and oil-free heat sources or torches may be used to dry the surface. The temperature of the deck surface and all epoxy and aggregate components shall be a minimum of 55°F and rising at the time of application. The epoxy shall not be applied if the gel time is less than five minutes or if pavement temperatures exceed 115°F. In situations where road closures are not under strict time constraints, epoxy may be applied at lower temperatures with the Engineer's approval.

The epoxy overlay and aggregate shall be applied using a double pass method. The double pass method applies the epoxy and aggregate in two separate layers at the corresponding application rates shown in Table 4.

| TABLE 4 - DOUBLE PASS METHOD | | |
|---|--------------------|-----------|
| EPOXY & AGGREGATE APPLICATION RATES | | |
| Double Pass Method | Epoxy Rate | Aggregate |
| 1 st course | Not less than 0.22 | 10 |
| 2 nd course | Not less than 0.45 | 14.5 |
| **Application of aggregate shall be of sufficient quantity to completely cover the epoxy. | | |

The epoxy shall be mixed at a volume ratio of 1 Part A & 1 Part B. It shall be mechanically stirred by a paddle type mixer for three minutes or according to the epoxy manufacturer's recommendations.

After the epoxy has been properly mixed, it shall be immediately and uniformly applied to the pavement surface with a 3/16 to 1/2 inch V-notched squeegee. The aggregate shall be applied in such a manner as to cover the epoxy material while the epoxy is still fluid. First course applications that do not receive enough aggregate prior to gelling shall be removed and replaced.

Each course of epoxy overlay shall be cured before removing the excess unbonded aggregate to prevent tearing or damaging of the surface. Moisture-and-oil-free compressed air or high volume leaf blowers, vacuum or mechanical broom shall be used to remove excess aggregate. After all loose aggregate is removed any remaining dust shall also be removed using moisture-and-oil-free compressed air or high

volume leaf blowers, vacuum or mechanical broom. The first course shall not be opened to traffic without the Engineer's approval. Application of the second course may begin after all dust is removed. Under no circumstances shall traffic be permitted on the overlay until it has been cured sufficiently to prevent damage from wheel loads.

Typical curing times are specified in Table 5.

| TABLE 5 TYPICAL CURING TIMES | | | | | | |
|--|--|-------|--------|-------|--------|-----------------|
| Course | Average Temperature of Deck, Epoxy, and Aggregate Components in °F | | | | | |
| | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | * above 85 |
| 1 | 4 hr | 3 hr | 2.5 hr | 2 hr | 1.5 hr | 1 hr |
| 2 | 6.5 hr | 5 hr | 4 hr | 3 hr | 3 hr | less than 3 hrs |
| * Refer to manufacturer's recommendation | | | | | | |

The second course shall be applied at the rates specified in Table 4. Epoxy shall be applied using flat-bladed squeegee. The aggregate shall be applied in such a manner as to cover the epoxy mixture before polymerization. Special care shall be taken to ensure that the wet epoxy does not coat the wear surface (top) of the aggregate. Once the epoxy is cured, all loose aggregate shall be removed from the surface by moisture-and-oil-free compressed air or high volume leaf blowers, vacuum or mechanical broom. After all loose aggregate is removed, and if there are any areas where the top surface of the stone has been coated with epoxy, the excess epoxy shall be removed using a light shot or sand blast.

The overlay shall not be applied over expansion joints of a bridge deck. All expansion joints shall be coated with a bond breaker (e.g. duct tape) that can adequately seal the joints from the epoxy. Duct tape may also be used to delineate application areas. It is recommended that all taped areas or bond breakers be removed before epoxy starts to harden. Epoxy may also be removed by scoring the overlay prior to gelling or by saw cutting after cure. The overlay should be feathered out at the end of bridge or approach slab and at expansion joints (edge of armor angle) per the manufacturer's recommendation.

Should the Contractor's operations or actions damage or mar the overlay, the Contractor shall remove the damaged areas and reapply the overlay to the Engineer's satisfaction at no additional cost. In the event that part of the epoxy mixture does not cure, all portions of the overlay shall be completely removed from the affected area and discarded. Any residual epoxy remaining on the pavement shall be completely removed by mechanical means such as steel shot or abrasive blasting or scarifying before the overlay can be re-applied.

For each batch provided, the Contractor shall maintain and provide to the Engineer, records including but not limited to, the following:

- Number of batches mixed and volume per batch
- Location of batches as placed on deck
- Batch time
- Gel Time (50 ml sample)
- Temperature of the air, deck surface and epoxy components

- Loose aggregate removal
- Time open to traffic

Measurement and Payment: Epoxy Overlay will be measured by the square foot of deck surface, complete, in place.

Payment for accepted work will be made under:

SP 08300 Epoxy Overlay.....Per Square Foot

30. SSP 08301 Chip Seal Removal

Description: This work shall consist of furnishing, all labor, equipment and material to remove the existing chip seal surface over the concrete bridge deck before the surface preparation for the epoxy overlay. The existing chip seal shall be removed from the entire bridge deck area between the faces of raised sidewalks and from the Begin Bridge to End Bridge as shown on the plans or as directed.

Materials: Not applicable to this SP.

Workmanship: The Contractor shall submit, at the Pre-Construction Meeting a plan and method, in accordance with these specifications, for removing the chip seal surface to the Engineer for approval. No work shall begin until the Contractor has received approval of the planned method for removal.

In the process of removing the chip seal surface, the grinding operation shall not grind more than 1/2 inch into the existing concrete deck. The metal expansion joints shall be protected from damage at all times during the surface removal operation. The Contractor shall repair any damages to the expansion joints at his expense.

All grinding shall be done parallel to the roadway centerline. Once grinding is completed, the entire area shall be swept to remove all chip seal grinding from the bridge deck.

The grinding equipment shall be a power-driven machine that is specifically designed to operate on Portland Cement Concrete pavement with diamond blades. The effective wheelbase of the machine shall not be less than 12 feet wide and cutting width shall be at least 3 feet wide. In lieu of diamond grinding, a self-propelled milling machine of the type used for removal of asphalt pavement may be used provided a special milling head is used that is designed to provide a texture similar to diamond grinding. The cutting teeth on the milling head shall have a maximum spacing of 0.3 inches. The forward speed of the machine is restricted to 10-feet per minute while milling. Grinding or milling machine shall be of a shape and dimension that does not encroach on traffic movement.

Measurement and Payment: Chip Seal Removal will be measured by the square yard of chip seal area removed from the bridge deck surface. The cost of such Chip Seal Removal by grinding or milling shall include the cost of disposal of milled material, required surface sweeping, repairs to expansion joints and/or surface areas that have been ground or milled.

Payment for this item will be made as under:

SP 08301 Chip Seal Removal.....Per Square Yard

31. SSP 11001 Temporary Traffic Signal

Description: This item consists of furnishing all labor, materials and equipment necessary to install a temporary traffic signal or make modifications to the existing traffic signal at the designated intersection(s) shown on the plans to accommodate the approved construction traffic control phasing for the project duration. This item includes the removal and disposal or salvage to ACHD as required of the temporary traffic signal equipment when it is no longer needed.

Materials: Materials and workmanship shall meet the requirements of the ACHD Supplemental Provisions to ISPWC Division 1100.

Workmanship: The Contractor shall modify the existing traffic signal systems or the proposed traffic signal systems shown on the plans to accommodate traffic operations required for the construction phasing. The contractor shall install the video detection cabling. The Contractor shall coordinate with ACHD for the proposed camera locations, and shall coil 10 feet of cabling at the proposed camera locations and in the signal cabinet. ACHD will furnish the signal equipment for a permanent traffic signal installation, including the video detection processing unit, cameras, mounting brackets, cabling and other equipment required for operation. ACHD will install the cameras, terminate cabling, orient the camera, establish detection zones and calibrate the system for operation. The contractor is required to provide ACHD a minimum of 48 hours advanced notice prior to temporary traffic signal installation.

Measurement and Payment: Temporary Traffic Signal will be measured by the lump sum and shall include all labor, equipment and material necessary for the completion of the bid item regardless of the number of times the signal items have to be adjusted during construction.

Payment for this item will be made under:

SSP 11001 Temporary Traffic Signal.....Per Lump Sum

32. SSP 11002 Portable Changeable Message Sign

Description: This item consists of furnishing all labor, materials and equipment necessary to provide and operate a Portable Changeable Message Sign (PCMS) at the location shown on the plans or as directed by the Engineer.

Materials: PCMS shall be of modular design for ease of maintenance and cost effective repairs. The sign cabinet shall be constructed of seamless aluminum extrusion with continuous welded corners and shall be an all-weather cabinet appropriately sealed to withstand all types of weather conditions. The sign and all of its elements and systems shall be manufactured to operate in an ambient air temperature range of -20°F to +160°F. The PCMS shall consist of message sign panel, control system, power source, and mounting and transportation trailer as follows:

Message Sign Panel - Message sign panel shall be capable of displaying a minimum of three message lines each consisting of a minimum of eight characters per line. Each character module shall have an 18

inch minimum height and shall use, as a minimum, a five wide-pixel by seven high-pixel matrix with a minimum of 3 inches between characters. Each character module shall be completely interchangeable with all other character modules. The message sign panel background shall be black. The front face of the message sign panel shall be covered with a UV stable, impact resistant, non-glare protective material. Each sign message shall be legible from a distance of zero to 900 feet. The viewing angle left and right of center shall be a minimum of 17 degrees. Light emitting diodes (LEDs) used for the character module pixel matrix, shall operate at a dominant wavelength between 590 nm and 650 nm as defined in the 1931 CIE Chromaticity Diagram. Under low light level conditions, the sign shall automatically adjust its light source so as to meet the legibility requirements and not impair the drivers' vision. If a Flip Disc system is used, either as a supplement to (LEDs) in a Hybrid PCMS or as the sole display element of the PCMS, colors shall be retroreflective fluorescent yellow. All other minimum requirements for character and message display stated above shall be met. The sign panel shall have the capability to rotate about its vertical axis 360 degrees plus or minus one degree.

Power Source - The PCMS shall be equipped with a primary power source (Battery or Internal Combustion) and a Solar or battery backup to provide continuing operation when failure of the primary power source occurs. All batteries shall be Marine/RV deep cycle. The unit shall be equipped with a weatherproof 120 VAC standard receptacle to allow for connection to an external power source and must have a built-in temperature stable battery charger to allow for the maintenance of a full charge in the Marine/RV battery source.

Control System - The control system shall include keyboard, display screen, software, backup battery and any other hardware necessary for complete programming and operation of the sign. The software shall have in memory a minimum of fifty (50) standard Manual on Uniform Traffic Control Devices (MUTCD) messages and symbols and must provide for at least fifty (50) custom messages and symbols created by the user. The software system must also allow for download by the user of system software and the MUTCD message and symbol library upgrades. The software must be a multiple site license to allow for installation of sign panel programming by more than one laptop computer or by an off-site computer via modem. The control system shall incorporate a modem that is compatible with the Department's existing equipment to allow for remote operation by computer and cellular phone and emergency notification via computer, cellular phone and pager. Software shall also allow for checking battery charge level. The software system shall be capable of showing the message on the display screen before displaying the message on the sign panel. The software system shall be capable of providing an automatic programmed default message for low battery conditions and emergency notification if an operational failure occurs. Emergency notification shall be available by both cellular phone and pager. The system shall be capable of maintaining continuous memory via a backup battery when power is unavailable.

Mounting and Transportation Trailer - The entire PCMS system shall be mounted on a transportation trailer with standard ball type hitch, safety chains and an easily removable or collapsible tongue. The solar panel should be angled to prevent the accumulation of rain or snow. An internal combustion engine, if part of the system, shall be securely mounted to prevent vibration of the rest of the assembly

and a fuel gauge shall be included. The trailer shall be equipped with a battery charge level indicator, as a minimum and additional ammeter gauges if powered by an internal combustion power source. The message sign panel mounting apparatus shall be extendible so that the panel can operate at a minimum height of 7 feet from the roadway surface to bottom of the panel. The PCMS and the solar panel shall be capable of withstanding wind gusts up to 80 mph when in operating position with outriggers in place. The trailer wire harness shall extend a minimum of 24 inches beyond the hitch ball and shall be equipped with an automotive style trailer plug to match the Department's specifications.

Workmanship: The Contractor shall be responsible for furnishing, erecting, programming, and maintaining the PCMS. The Contractor shall also be responsible for changing display messages and relocating the PCMS as shown on the approved traffic control plans or as otherwise directed by ACHD, for the duration of the project. The PCMS shall be capable of being operated 24 hours per day during construction operations in accordance with American Traffic Safety Service Association (ATSSA) Guidelines for the Use of Portable Changeable Message Signs and in accordance with Part VI of the MUTCD as adopted by the State of Idaho.

Measurement and Payment: Portable Changeable Message Sign will be measured by the hour of sign operation for each sign and shall include all labor, equipment and material as necessary for completion of the bid item. Contractor shall weekly submit a detailed usage report including location, date and hours used.

ITEM 29, "VARIATIONS IN QUANTITIES", ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 11002 Portable Changeable Message Sign.....Per Hour

33. SSP 11008 Portable Flood Lights

Description: This item shall include all costs associated with the installation, operation, movement and maintenance of portable flood lights during darkness at the locations shown on the plans or as directed by the Engineer.

Materials: Light towers shall be self-generating (Gas or Diesel) with fixtures using metal halide or high pressure sodium lamps capable of producing required illumination from a minimum height of 30 feet. The contractor shall ensure all equipment with automotive type light sources be mounted in such a manner as to illuminate all work areas at the levels specified herein. Illumination shall be optimized using the requirements of Section 6F.82 of the Manual on Uniform Traffic Control Devices as adopted by the State.

Workmanship: The Contractor's working hours for schedule this item shall be limited to the hours of darkness. Portable lighting will be required during the hours of darkness at each operation. Illumination of each flagging station and work area shall be maintained at a minimum of 5 foot-candles. Necessary lights or other devices shall provide a safe environment for all operations and personnel doing the work

and inspection. The contractor shall maintain on site one additional light plant as a backup. The backup light plant will be used to illuminate flagging station when the flagging station is being moved to another location.

Measurement and Payment: Contractor shall weekly submit a detailed usage report including location, date and hours used. Usage rates will be paid on a per hour basis.

Payment for this item will be made under:

SSP 11008 Portable Flood Lights.....Per Hour

34. SSP 11010 Remove and Reset Yard Light

Description: This item shall include all labor, equipment and material necessary to remove and reset the existing residential yard lighting poles and appurtenances where indicated on the plans or as directed by the Engineer.

Materials: Poles and appurtenance materials damaged by the Contractor shall be replaced in-kind at no additional cost to the ACHD. The Contractor shall replace existing materials that are deteriorated and not suitable for use during relocation of the yard lighting. The cost of all new materials required to relocate the yard lighting shall be included in the unit cost for this item and no separate payment will be made.

Workmanship: The Contractor shall use appropriate care during the removal, salvage, and relocation process to avoid damaging existing materials.

Measurement and Payment: This item shall be paid per each installation outlined in the contract documents. It shall include all costs associated with removing, salvaging, providing, and installing all items necessary to relocate the yard lighting, complete in place, in working order to the satisfaction of the owner.

Payment for this item will be made under:

SP 11010 Remove and Reset Yard Light.....Per Each

35. SSP 11235 Video Detection Camera

Description: This item shall include all costs associated with the installation of video detection cameras and associated wiring onto existing signal systems as shown on the plans or as directed by the engineer.

Materials: ACHD shall provide the cameras, associated hardware and special cable. All applicable use tax shall be paid by the contractor. For tax purposes use the use tax table that can be obtained from the Traffic Engineering Department, or as indicated in the contract documents.

Workmanship: All work shall be in accordance with Section 1131.03 of the ACHD Supplemental Traffic Provisions. The contractor shall install the cameras and pull the cables from the cameras into the controller cabinet.

ACHD Traffic personnel will be responsible to make all required connections at the controller cabinet and at the camera once the cables have been installed. ACHD Traffic personnel will require a minimum of 24-hours advance notice so that they can be onsite to monitor layout and provide inspections when the cameras and cables are installed.

One camera will be installed for each direction as shown on the project drawings, or as directed.

Contact Mr. Brian Crespin at 387-6287 to coordinate with the ACHD Traffic Operations.

On June 16, 2010, Ada County Highway District (ACHD) received guidance from the Idaho Division of Building Safety concerning the installation of Video Detection Cameras. The guidance requires camera installations to be completed by a journeyman electrician licensed in the State of Idaho. The guidance also requires that subcontractor to be in possession of a 16700 Communications Specialty Public Works License. ACHD requires all Bidders to list the information required to comply with Idaho Code 67-2310 in the matrix provided under Paragraph 13 of the Proposal Form contained within the Contract Documents. Failure to name subcontractors as required by this section and Idaho Code shall render any bid submitted by the Bidder as unresponsive and void.

Measurement and Payment:

Payment shall be on a per each camera installed basis.

SSP 11235 Video Detection Camera.....Per Each

36. SSP 11400 Obliterate Pavement Markings

Description: This item consists of furnishing all labor, materials and equipment necessary to obliterate the existing pavement markings (stop bars, cross walks, turn arrows, tum lane text, 8" turn lane separation lines, edge lines, or skip lines) as shown on the plans, in conflict with proposed construction traffic control phasing, or as directed by ACHD.

Workmanship: Workmanship shall meet the requirements of ACHD DIVISION 1100 SUPPLEMENTAL PROVISIONS, SUBSECTION 1134.02.

Measurement and Payment: Obliterate Pavement Markings will be measured by the square foot of the pavement markings removed and shall include all labor, equipment and material necessary for the completion of the bid item.

ITEM 29, "VARIATIONS IN QUANTITIES", ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SP 11400 Obliterate Pavement Markings.....Per Square Foot

37. SSP 11450 Temporary Pavement Markings

Description: This item consists of furnishing all labor, materials and equipment necessary to survey and to establish temporary pavement markings.

Materials: The Contractor shall record the location of existing pavement markings on plans or sketches and produce a report explaining the recording procedure for submittal to ACHD. The Contractor shall also place field reference stakes that show offsets to those existing pavement markings to facilitate their replacement. Temporary pavement markings shall consist of reflective adhesive traffic tape accepted by the Engineer.

Workmanship: All plans or sketches and reports shall be the responsibility of the Contractor. These plans or sketches shall be produced to scale. All reports shall be comprehensible and complete with details sufficient to replace all existing pavement markings that are within the project limits. Two copies of the plans, sketches and report shall be delivered to ACHD prior to the start of any construction activity that would affect the existing pavement markings. The re-establishment of pavement markings shall be the placement of reference spots using paint and temporary tape. The paint or tape used to reestablish pavement markings should match the color of the corresponding pavement markings.

It shall be the contractor’s responsibility for accomplishing the re-establishment of the temporary pavement markings on each course of each day prior to allowing the traffic to travel on the roadway.

On each lane line, a reference spot shall be placed a distance no greater than 50 foot intervals. On tapers, the interval shall be 25 feet. The beginning and end of no passing zones shall be marked by placing 2 spots to the right of the lane line spot to signify the beginning of a no passing zone, and placing 1 spot to the right of the lane line spot at the end of the no passing zone. All arrows and miscellaneous message markings shall be marked to indicate the center line location of each item.

Workmanship shall also meet the requirements of ACHD DIVISION 1100 SUPPLEMENTAL PROVISIONS, SUBSECTION 1134.08.

Measurement and Payment: Temporary Pavement Markings will be paid for by the lump sum and shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP 11450 Temporary Pavement MarkingsPer Lump Sum

38. SSP 20009 Remove and Reset Fence

Description: This item shall consist of all labor, equipment, braces, posts, gates, and all additional appurtenances necessary to remove and reset where indicated on the plans, to the existing parallel property line, or as directed.

Materials: Fencing materials shall consist of new materials for fence replacement, which shall match as closely as possible with existing arrangements, and shall meet the requirements outlined in the contract documents.

Workmanship: The Contractor shall ensure the new fence meets installation requirements associated with each type of specified fencing to be removed and relocated. It shall be the Contractor's responsibility to coordinate with the property owner to ensure the fence to be removed and replaced is consistent with the compensation summary as approved by the ACHD right-of-way Agent. If this information is not provided in the contract documents it can be obtained by Contacting Dave Serdar, ACHD right-of-way Supervisor, at 208-387-6224. The fence will be complete and sturdy and placed at the lines and grades indicated on the project plans, or as direct, upon final inspection.

Measurement and Payment: Removal and Replacement of fencing shall be measured on the per foot basis, complete, in place. This item and includes any associated cost for permits necessary for approval by the city located within the boundary of the project limit. This item includes all costs associated with coordination with the property owner to ensure permit compliance and adherence to that agreed upon in the compensation summary.

Payment for this item will be made under:

SSP 20009 Remove and Reset Fence.....Per Lineal Foot

39. SSP 20020 Install Removable Bollards

Description: This item consists of furnishing all labor, equipment and material necessary for providing and installing removable bollards where indicated on the plans or as directed by the Engineer.

Materials: Bollards are to be constructed of materials outlined in the project plans, or as directed by the Engineer.

Workmanship: Bollards shall be placed at the locations shown on the plans. Bollards at entrances to driveways or roadways shall be spaced 6 feet center to center, unless otherwise directed. Refer to the project plan details for additional information.

Measurement and Payment: The item shall include all material, labor, and appurtenances necessary for complete placement of one removable bollard each, complete in place.

Payment for this item will be made under:

SSP 20020 Install Removable Bollards.....Per Each

40. SSP 20105.A W Beam Guardrail for Minor Structures (One Post Missing Option)

Description: This item shall include all costs associated with furnishing and installing one W Beam Guardrail Installation for Minor Structures (One Post Missing Option) in reasonably close conformity to where shown on the plans or as directed by the engineer.

Materials and Workmanship: W Beam Guardrail for Minor Structures (One Post Missing Option) shall be installed per the plans, ITD specifications Section 612, and ITD Standard Drawing G-1-L. Guardrail slope treatment shown on ITD Standard Drawing G-A-1-A, Type B, shall apply for slope treatment and post installation.

Measurement and Payment: W Beam Guardrail for Minor Structures (One Post Missing Option) will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP 20105.A W Beam Guardrail for Minor Structures (One Post Missing Option).....Per Each

41. SSP 20105.B W Beam Guardrail for Minor Structures (Two Posts Missing Option)

Description: This item shall include all costs associated with furnishing and installing one W Beam Guardrail Installation for Minor Structures (Two Post Missing Option) in reasonably close conformity to where shown on the plans or as directed by the engineer.

Materials and Workmanship: W Beam Guardrail for Minor Structures (Two Posts Missing Option) shall be installed per the plans, ITD specifications Section 612, and ITD Standard Drawing G-1-L. Guardrail slope treatment shown on ITD Standard Drawing G-A-1-A, Type B, shall apply for slope treatment and post installation.

Measurement and Payment: W Beam Guardrail for Minor Structures (Two Posts Missing Option) will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP20105.B W Beam Guardrail for Minor Structures (Two Posts Missing Option).....Per Each

42. SSP 20105.C W Beam Guardrail for Minor Structures (Three Posts Missing Option)

Description: This item shall include all costs associated with furnishing and installing one W Beam Guardrail Installation for Minor Structures (Three Post Missing Option) in reasonably close conformity to where shown on the plans or as directed by the engineer.

Materials and Workmanship: W Beam Guardrail for Minor Structures (Three Posts Missing Option) shall be installed per the plans, ITD specifications Section 612, and ITD Standard Drawing G-1-L. Guardrail slope treatment shown on ITD Standard Drawing G-A-1-A, Type B, shall apply for slope treatment and post installation.

Measurement and Payment: W Beam Guardrail for Minor Structures (Three Posts Missing Option) will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP20105.C W Beam Guardrail for Minor Structures (Three Posts Missing Option).....Per Each

43. SSP 20105.01A Metal Guardrail Terminal Type 1A

Description: This item shall include all costs associated with furnishing and installing a Type 1A terminus in reasonably close conformity to where shown on the plans or as directed by the Engineer.

Materials & Workmanship: Terminal section shall be installed per ITD Specifications and Standard Drawing G-1-E and G-1-B.

Measurement and Payment: This item shall include guardrail, guardrail posts, guardrail transition sections, and related hardware required for the installation as shown on the plans. Payment shall be on a per each basis, complete in place.

Payment for this item will be made under:

SSP 20105.01A Metal Guardrail Terminal Type 1A.....Per Each

44. SSP 20105.03 Metal Guardrail Terminal Type 3

Description: This item shall include all costs associated with furnishing and installing a Type 3 terminus in reasonably close conformity to where shown on the plans or as directed by the Engineer.

Materials and Workmanship: Terminal section shall be installed per ITD Specifications and Standard Drawing G-1-E and G-1-B.

Measurement and Payment: This item shall include guardrail, guardrail posts, guardrail transition sections, and related hardware required for the installation as shown on the plans. Payment shall be on a per each basis, complete in place.

Payment for this item will be made under:

SSP 20105.03 Metal Guardrail Terminal Type 3.....Per Each

45. SSP 20105.07 Metal Guardrail Terminal Type 7

Description: This item shall include all costs associated with furnishing and installing a Type 7 terminus in reasonably close conformity to where shown on the plans or as directed by the Engineer.

Materials and Workmanship: Terminal section shall be installed per ITD Specifications and Standard Drawing G-1-E and 612-3.

Measurement and Payment: This item shall include guardrail, guardrail posts, guardrail transition sections, and related hardware required for the installation as shown on the plans. Payment shall be on a per each basis, complete in place.

Payment for this item will be made under:

SSP 20105.07 Metal Guardrail Terminal Type 7.....Per Each

46. SSP 20105.08 Metal Guardrail Terminal Type 8

Description: This item shall include all costs associated with furnishing and installing a Type 8 terminus in reasonably close conformity to where shown on the plans or as directed by the Engineer.

Materials and Workmanship: Terminal section shall be installed per ITD Specifications and Standard Drawing G-1-E and 612-3.

Measurement and Payment: This item shall include guardrail, guardrail posts, guardrail transition sections, and related hardware required for the installation as shown on the plans. Payment shall be on a per each basis, complete in place.

Payment for this item will be made under:

SSP 20105.08 Metal Guardrail Terminal Type 8.....Per Each

47. SSP 20105.010 Metal Guardrail Terminal Type 10

Description: This item shall include all costs associated with furnishing and installing a Type 10 terminus in reasonably close conformity to where shown on the plans or as directed by the Engineer.

Materials and Workmanship: Terminal section shall be installed per ITD Specifications and Standard Drawing G-1-E and G-1-M.

Measurement and Payment: This item shall include guardrail, guardrail posts, guardrail transition sections, and related hardware required for the installation as shown on the plans. Payment shall be on a per each basis, complete in place.

Payment for this item will be made under:

SSP 20105.010 Metal Guardrail Terminal Type 1.....Per Each

48. SSP 20105.011 Metal Guardrail Terminal Type 11

Description: This item shall include all costs associated with furnishing and installing a Type 11 terminus in reasonably close conformity to where shown on the plans or as directed by the Engineer.

Materials and Workmanship: Terminal section shall be installed per ITD Specifications and Standard Drawing G-1-E and G-1-I.

Measurement and Payment: This item shall include guardrail, guardrail posts, guardrail transition sections, and related hardware required for the installation as shown on the plans. Payment shall be on a per each basis, complete in place.

Payment for this item will be made under:

SSP 20105.011 Metal Guardrail Terminal Type 11.....Per Each

49. SSP 20107 Bike Railing

Description: This item consists of furnishing and installing bike railing at locations shown on the drawings, or as directed. Bike railing shall be installed in accordance with the details specified in the currently adopted ACHD supplement to the ISPWC – SD 2040-L.

Materials and Workmanship: All materials supplied shall meet the requirements outlined below as well as the requirements outlined in the currently adopted ACHD supplement to the ISPWC – SD 2040-L.

All joints shall be welded unless the Engineer specifically approves other fastening methods. Finish exposed welds flush and smooth. Accurately set and securely attach work plumb and level.

This item shall include furnishing and applying paint in accordance with the manufacturer’s recommendations and ITD Standard Specification, Section 627.03, Part C. The railing shall be painted with No. D Paint System, Powder Coating for New Steel Bridge Rails.

Primer – Generic Type, Zinc-rich epoxy powder coating

Topcoat – Generic Type, TGIC – Polyester powder coating. Color – Black

Special Requirements for Paint System D.

Coating shall have the following minimum thicknesses:

| <u>Coat</u> | <u>Formula</u> | <u>Minimum Dry Film Thickness</u> |
|-------------|--------------------------------|-----------------------------------|
| Prime | Zinc-rich epoxy powder coating | 3 mils |
| Topcoat | TGIC-Polyester powder coating | 2 mils |

Coating shall conform to the following performance criteria:

| Property | Reference |
|-----------------|------------------------------|
| Adhesion | ASTM Designation: D 3359B |
| Pencil hardness | ASTM Designation: D 3363 |

| | |
|-----------------------|---------------------------------------|
| Flexibility | ASTM Designation: D 522 |
| Impact resistance | ASTM Designation: D 2794, Modified |
| Abrasion resistance | ASTM Designation: D 4060, Modified |
| Salt spray resistance | ASTM Designation: B 117 |
| Humidity resistance | ASTM Designation D 2247 |

Measurement and Payment: Bike railing will be measured per lineal foot installed, complete in place. This shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP 20107 Bike Railing.....Per Lineal Foot

50. SSP 20108 Combo Pedestrian and Bike Traffic Railing

Description: This item consists of furnishing and installing bike railing at locations shown on the drawings, or as directed. Combo pedestrian and bike traffic railing shall be installed in accordance with the details specified in the currently adopted ACHD supplement to the ISPWC – SD 2040-K.

Materials and Workmanship: All materials supplied shall meet the requirements outlined below as well as the requirements outlined in the currently adopted ACHD supplement to the ISPWC – SD 2040-K.

All joints shall be welded unless the Engineer specifically approves other fastening methods. Finish exposed welds flush and smooth. Accurately set and securely attach work plumb and level.

This item shall include furnishing and applying paint in accordance with the manufacturer’s recommendations and ITD Standard Specification, Section 627.03, Part C. The railing shall be painted with No. D Paint System, Powder Coating for New Steel Bridge Rails.

Primer – Generic Type, Zinc-rich epoxy powder coating

Topcoat – Generic Type, TGIC – Polyester powder coating. Color – Black

Special Requirements for Paint System D.

Coating shall have the following minimum thicknesses:

| <u>Coat</u> | <u>Formula</u> | <u>Minimum Dry Film Thickness</u> |
|-------------|--------------------------------|-----------------------------------|
| Prime | Zinc-rich epoxy powder coating | 3 mils |
| Topcoat | TGIC-Polyester powder coating | 2 mils |

Coating shall conform to the following performance criteria:

| Property | Reference |
|-----------------------|---------------------------------------|
| Adhesion | ASTM Designation: D 3359B |
| Pencil hardness | ASTM Designation: D 3363 |
| Flexibility | ASTM Designation: D 522 |
| Impact resistance | ASTM Designation: D 2794, Modified |
| Abrasion resistance | ASTM Designation: D 4060, Modified |
| Salt spray resistance | ASTM Designation: B 117 |
| Humidity resistance | ASTM Designation D 2247 |

Measurement and Payment: Combo pedestrian and bike traffic railing will be measured per lineal foot installed, complete in place. This shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP 20108 Combo Pedestrian and Bike Traffic Railing.....Per Lineal Foot

51. SSP 20109 Bridge Railing

Description: This item consists of furnishing and installing the pedestrian rail on the bridge at locations shown on the drawings. Combo pedestrian and bike traffic railing shall be installed in accordance with the details specified in the currently adopted ACHD supplement to the ISPWC – SD 2040-M.

Materials and Workmanship: All materials supplied shall meet the requirements outlined below as well as the requirements outlined in the currently adopted ACHD supplement to the ISPWC – SD 2040-K.

All joints shall be welded unless the Engineer specifically approves other fastening methods. Finish exposed welds flush and smooth. Accurately set and securely attach work plumb and level.

This item shall include furnishing and applying paint in accordance with the manufacturer’s recommendations and ITD Standard Specification, Section 627.03, Part C. The railing shall be painted with No. D Paint System, Powder Coating for New Steel Bridge Rails.

Primer – Generic Type, Zinc-rich epoxy powder coating

Topcoat – Generic Type, TGIC – Polyester powder coating. Color – Black

Special Requirements for Paint System D.

Coating shall have the following minimum thicknesses:

| <u>Coat</u> | <u>Formula</u> | <u>Minimum Dry Film Thickness</u> |
|-------------|--------------------------------|-----------------------------------|
| Prime | Zinc-rich epoxy powder coating | 3 mils |
| Topcoat | TGIC-Polyester powder coating | 2 mils |

Coating shall conform to the following performance criteria:

| Property | Reference |
|-----------------------|---------------------------------------|
| Adhesion | ASTM Designation: D 3359B |
| Pencil hardness | ASTM Designation: D 3363 |
| Flexibility | ASTM Designation: D 522 |
| Impact resistance | ASTM Designation: D 2794, Modified |
| Abrasion resistance | ASTM Designation: D 4060, Modified |
| Salt spray resistance | ASTM Designation: B 117 |
| Humidity resistance | ASTM Designation D 2247 |

Measurement and Payment: Bridge railing will be measured per lineal foot installed, complete in place. This shall include all labor, equipment and material necessary for the completion of the bid item.

Payment for this item will be made under:

SSP 20109 Bridge Railing.....Per Lineal Foot

52. SSP 25020 Erosion Control Mat

Description: This work consists of furnishing and installing Erosion Control Mat (ECM) on the bottoms and side slopes of embankments, channels or as shown on the plans or as directed by the Engineer.

Materials: The ECM shall conform to the following properties:

| Geotextile Property | Test Method | Typical |
|------------------------|-------------|-------------------------|
| Thickness: | ASTM D-6525 | 0.4 in |
| Resiliency: | ASTM D-6524 | 80% |
| Mass per Unit Area: | ASTM D-6566 | 13.5 oz/yd ² |
| Tensile Strength: | ASTM D-6818 | 4000x3000 lbs/ft |
| Tensile Elongation: | ASTM D-6818 | 65% |
| Light Penetration | ASTM D-6567 | 10% |
| Flexibility/Stiffness: | ASTM D-6575 | 0.534 in-lbs |
| UV Resistance: | ASTM D-4355 | 90% at 6000 hrs |

The ECM shall be constructed of a three-dimensional matrix of polypropylene yarns designed in a uniform, dimensionally stable and homogenous configuration of pyramid-like structures.

Workmanship: In areas where ECM is to be installed, the Contractor shall prepare the topsoil by removing all rocks, clods, vegetation or other obstructions so that the installed ECM will have direct contact with the soil surface. Lay the ECM loose to maintain direct contact with the soil and anchor as specified by manufacturer for the specific application (banks or channel bottom). Apply seed and fertilizer as specified in SSP 29060 Hydroseeding. After seeding, spread and rake ½ inch of fine topsoil into the ECM and completely fill the voids. Use the backside of a rake or other flat tools to ensure a smooth soil-filled surface. Use shovels, rakes or brooms for fine grading and finishing. Smooth soil fill in order to just expose the top of the ECM matrix.

After completion of the work, the Contractor shall request an inspection by the Engineer. The Contractor shall correct all conditions unsatisfactory to the Engineer within a 5-day period immediately following the inspection.

Measurement and Payment: ECM will be measured by the square yard complete in place, including but not limited to preparation of the topsoil base and topsoil filling. Placement of ECM shall be limited to the areas defined on the plans, or as directed by the Engineer.

Payment for this item will be made under:

SSP 25020 Erosion Control Mat.....Per Square Yard

53. SSP 25030 Demolish and Remove Existing Building

Description: This item shall include all work and costs associated with building demolition and removal in the areas as shown on the plans.

Materials and Workmanship: These removals shall be completed within the first 30 days of the construction schedule, unless otherwise approved by the Engineer. Contact the ACHD Utility Coordinator at 387-6258 prior to building demolition to coordinate the capping of existing utilities. The cost to cap the utilities to the individual properties is included in this item. Contractor is required to schedule an inspection with city inspector to verify that the utilities have been capped. Contractor is required to provide a copy of the city certification that the utilities have been capped to ACHD Property Manager.

Contractor shall obtain any permits necessary to demolish the structure, including but not limited to asbestos/hazard materials.

The Contractor shall entirely remove all structures, foundations, slabs, underground tanks, or other appurtenances both above and below ground.

Also included in this item are the following: Removal of all asphalt and gravel, placement of backfill to fill cavities left by removal of items to the level of the surrounding ground, and scarification of the entire work area to a depth of 12 inches to loosen existing material. The parcel shall be finished graded to present a pleasing appearance with slopes rounded and flattened to blend naturally with the adjacent topography.

Backfill shall be 6" Minus Uncrushed Aggregate conforming to ISPWC Division 800 compacted to 95 % maximum density as determined by IDAHO T-99.

Four (4) inches of topsoil conforming to SSP 25050, hydroseed with wood mulch and tackifier shall be placed on graded areas outside the roadway section adjacent to the building removal.

Measurement and Payment: This item shall be paid on the per each basis, for each individual building demolish and remove existing building identified on the project plans, or as directed. Backfill is considered incidental to this item. Topsoil, hydro-seed, wood fiber, and tackifier shall be paid for under those respective items outlined in the contract.

Payment for this item will be made under:

SSP 25030 Demolish and Remove Existing Building.....Per Each

54. SSP 25050 4" Topsoil

Description: This item shall include all work and costs associated with installing 4" of compacted topsoil in the areas as shown on the construction plans or as directed by the Engineer.

Materials: Topsoil shall be friable, fertile, agricultural soil, containing normal amounts of macro and micro nutrients capable of sustaining vigorous plant growth. It shall be of uniform composition throughout, without admixture of subsoil. It shall be free of stones 1" (one inch) or larger, lumps, sticks, live plants and their root, and other extraneous matter. It shall not be infested with nematodes or other pest or disease organisms. It shall be free of seed of noxious weeds and other material detrimental to

vegetative growth. ACHD reserves the right to request soil samples be tested at the Contractor's expense to verify the topsoil is capable of sustaining vigorous plant growth

Workmanship: Topsoil shall not be placed in its final position until the areas to be covered have been properly prepared and grading operations in the area have been substantially complete. Topsoil shall be placed and spread at locations shown on the plans and thickness of topsoil placement shall be 4" (four inches) when compacted.

Measurement and Payment: Measurement for this item shall consist of placement of topsoil to a 4" depth on a per square yard basis.

ITEM 29, "VARIATIONS IN QUANTITIES," ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 25050 4" Topsoil.....Per Square Yard

55. SSP 25060 Property Owner Meeting

Description: This item shall include all work and costs associated with conducting property owner meetings as directed by the Engineer.

Workmanship: The contractor shall arrange to have a meeting with all interested property owners at least once a month during the contract period to inform them of work that has been completed and what work is expected to be completed before the next scheduled meeting.

At each meeting, the contractor shall answer all questions and complaints by concerned property owners. The contractor shall provide a flyer that is to be delivered to properties along the project corridor. This flyer, at a minimum, shall designate the location and time of the property owner meetings, construction phases or milestones, detour routes, and a contact person for the contractor. The flyer must be approved by the Engineer and distributed to the affected property owners and/or residents and ACHD's Business Relations contact person before the start of any construction activities on site. These meetings shall be held at the same location and time as established on the contractor's initial flyer to the property owners. The contractor shall provide a representative (and phone number) for the duration of the project that the property owners along the project corridor may contact if they have questions.

Measurement and Payment:

Payment for this item will be for each individual property owner meeting conducted, as identified in this provision.

SSP 25060 Property Owner Meeting.....Per Each

56. SSP 25062 Remove Underground Septic Tank

Description: This item shall include all work and costs associated with removing an underground septic tank as identified on the construction plans, or as may be encountered during construction.

Workmanship: The Contractor shall remove the septic tank and backfill the hole with pit run gravel material compacted to 95% density requirement. The septic drain field shall be abandoned in accordance with Central District Health Department requirements. The Contractor shall field verify the location of the tank and drain field. Any permits required to complete this work shall be the requirement of the contractor and shall be included in the unit bid price for this item.

Measurement and Payment: Payment for this item will be for each individual septic tank removal as identified in the project plans or as directed.

Payment for this item will be made under

SSP 25062 Remove Underground Septic Tank.....Per Each

57. SSP 25080 Remove and Reset Mailbox

Description: This item consists of furnishing all labor, equipment and material necessary to remove existing mailboxes and supports, make temporary arrangements to assure uninterrupted mail service during construction, and install new mailboxes and supports.

Materials: All materials shall conform to the ISPWC and the ACHD revisions and supplements except as noted herein. Mailbox post support and foundation shall conform to Section 1105 for a D-1 (4-inch by 4-inch) wood post. Mailboxes shall be Postmaster General approved.

Workmanship: The existing mailbox and support shall be removed and returned to the owner. A new mailbox, the same size and shape as existing, shall be furnished and installed on a wood post support and foundation. The name and address as shown on the existing mailbox shall be placed on the new mailbox. Should the owner be satisfied with the condition of the existing mailbox, the Contractor may reinstall the existing mailbox at the end of construction. The final location shall be marked in the field by the Engineer.

Mail service shall not be disrupted. Access to mailbox shall be provided at all times. An acceptable temporary mailbox stand may be installed by the Contractor during construction operations prior to installation of the new mailbox and support.

Measurement and Payment: Remove and Reset Mailbox will be measured per each new and final post installation and shall include all labor, equipment and material necessary for the completion of the bid item, including all work necessary to assure uninterrupted mail service during construction. The accepted quantity for Remove and Reset Mailbox will be paid at the contract unit price for the item listed below. The cost of the temporary mailbox and support is considered incidental to this bid item and no additional payment will be made.

Payment for this item will be made under:

SSP 25080 Remove and Reset Mailbox.....Per Each

58. SSP 25115 Temporary Cofferd Dam

Description: This item includes all material, labor, and equipment necessary to provide and a temporary coffer dam at the locations specified and detailed on project plans.

Materials and Workmanship: Any other variation of the specified coffer dam must be approved by ACHD prior to utilization and may require the 404 permit to be revised. No additional time shall be granted for any delay to a revision of the 404 permit. All items to construct the Cofferd dam and a stilling basin, including any pipe or pumping shall be covered under this item and no additional compensation shall be granted.

Measurement and Payment: All material, labor and equipment necessary to construct, install and maintain the coffer dam, including any piping or pumps, will be considered incidental to this bid item and no additional compensation will be considered.

Payment for this item will be made under:

SSP 25115 Temporary Cofferd Dam.....Per Lump Sum

59. SSP 29050 Temporary Soil Stabilization

Description: This item shall include all work and costs associated with the application of Temporary Soil Stabilization as shown on the plans or as directed by the Engineer.

Materials: Temporary soil stabilization shall consist of applying the following:

- Wood fiber mulch and tackifier (hydro-applied)
- Soil binders or tackifiers in combination or alone (hydro-applied)

The hydro-application should be mixed and hydro-applied as follows:

1. Plant-derived soil binder or tackifier containing psyllium or guar gum in accordance with the manufacturer’s written instruction for the soil types, conditions and degree of slope.
2. Bonding fibers at 20 lb/ac.
3. Wood fiber mulch at 500 lb/ac. to 1000 lb/ac.

Workmanship: The Contractor is responsible for erosion and sediment control until permanent measures are applied. Prior to application, the contractor shall provide documentation describing the soil binder or tackifier, bonding fibers and wood fiber mulch for review and approval. The contractor shall also provide certification from the manufacturer that the materials are noxious weed free, nontoxic to animals, soil microorganisms, aquatic and plant life. The soil binder or tackifier, bonding fibers and wood fiber mulch will not interfere with or impede seed germination or vegetative growth/establishment.

All materials should be thoroughly mixed in water slurry using mechanical and liquid bypass agitation and applied uniformly to avoid runoff of the applied product. Temporary surface/soil stabilization, unless otherwise specified, shall take place within five (5) calendar days following the last construction activity within the designated area, or in accordance with the SWPPP. The time limit may be extended to 14 calendar days during the seasonal dry period (June 15 to October 15).

The Contractor shall make field adjustments as necessary to ensure proper performance. Conduct reapplications in the same manner as the original application. If permanent seeding is to be performed on areas where temporary surface/soil stabilization materials have been applied, the Contractor shall reapply mulch to permanent levels.

Measurement and Payment: Temporary soil stabilization will be measured per square yard and shall include all labor, equipment and material necessary for the completion of the bid item.

ITEM 29, "VARIATIONS IN QUANTITIES," ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SP 29050 Temporary Soil Stabilization.....Per Square Yard

60. SSP 29060 Hydroseeding

Description: This item shall include all work and costs associated with hydroseeding in the areas designated on the plans or as directed by ACHD.

Materials: Hydroseeding shall consist of furnishing and installing, seed, fertilizer, mulch, and water using the hydroseeding method. Seed shall be a dry land grass mixture prepared by a local nursery appropriate for the Treasure Valley. Application rate of the seed mixture shall be 30 lbs/acre.

Each variety of seed shall be tested seed from the latest crop available, and shall be delivered in standard sealed containers labeled in accordance with State and Federal Laws. The label shall show the variety of seed, the percentage of germination, purity and weed content. All varieties of seed shall have a minimum tested germination of 85% and contain a minimum of 80% pure seed by weight. Seed shall not be agitated in the hydro-seeder over 30 minutes.

Fertilizer shall be of any standard brand suitable for use with the hydroseeding method, furnished in moisture proof bags. Each bag shall be marked with the weight and manufacturer's analysis of the ingredients. Fertilizer shall contain a minimum of 22% available nitrogen. Fertilizer shall be applied uniformly at 440 pounds per acre. Fertilizer shall not be mixed with the seed in the hydro-seeder.

Mulch shall be a wood fiber mulch commonly used in the hydroseeding process. Mulch shall be applied at a rate of 2,000 lbs/acre.

Contractor shall provide certification for hydraulically applied erosion control products from the manufacturer that the materials are nontoxic to animals, soil microorganisms, aquatic and plant life, and will not interfere with or impede seed germination or vegetative growth and establishment.

Workmanship: Seeding shall be performed only at times when local weather conditions are favorable for growth, which normally will occur between September 15 and November 30, or between February 15 and May 15. The Contractor shall be responsible to protect and maintain the seeded areas until germination, including watering if necessary.

Measurement and Payment: Construction limits for this item shall be as shown on the plans. Any hydroseeding restoration required beyond the specified construction limits shall be made by the Contractor at his expense and no separate payment will be made, unless additional areas are as directed by the Engineer.

Hydroseeding will be measured per square yard and shall include all labor, equipment and material necessary for the completion of the bid item. The accepted quantity of Hydroseeding will be paid at the contract unit price for the item listed below.

ITEM 29, "VARIATIONS IN QUANTITIES," ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 29060 Hydroseeding.....Per Square Yard

61. SSP 29064 Sod Repair

Description: This item consists of furnishing all labor, equipment and material necessary to repair lawn areas with sod as shown on the plans or as directed by ACHD.

Materials: Topsoil shall be paid under its respective item outlined in the contract documents.

Fertilizers shall be paid under and meet the requirements specified in its respective item outlined in the contract documents.

Sod shall consist of Merrion, Parks, Delta or Windsor Kentucky Bluegrass or combinations of approved fine textured grasses suitable for the area to be sodded and closely matching adjacent grass.

Sod repair shall take place only on those disturbed areas which currently have established lawns, or as shown on the project plans or directed by the Engineer.

Workmanship: The lawn areas shall be tilled to a minimum depth of 6 inches by such means as will loosen the soil and bring it to condition suitable for fine grading. Prior to and during the operation, the surface shall be made free of vegetative growth. All stones, hard clods, roots, sticks, debris and other matter encountered during tilling which are detrimental to the preparation of a good seed bed, or which

are toxic to the growth of grass, shall be removed. Four inches of topsoil shall then be placed under the areas to receive sod.

The area shall be floated and rolled to bring it to the finished grade. All irregularities in the surface that form pockets where water will stand shall be smoothed out to provide good drainage. The finished grade of lawn area adjacent to walks, curbs, driveways and pavements shall be approximately 1 inch below adjacent grades.

Fertilizers shall be spread evenly over the cultivated areas at a rate outlined under that respective item.

Sod shall be placed in straight strips. The joints between strips shall be butted together, tight and without gaps. Sod shall be placed in a manner to stagger the end joints of the rolls. The sod shall be rolled with a 100-pound roller after placement. The surface of the finished sod shall be smooth, uniform and mowable.

The Contractor shall supply a letter to the property owner once the sod is installed notifying them the sod is installed and giving them a suggested watering schedule. Contractor shall notify property owner in writing if property owner is not following the suggested watering schedule. A copy of the letter will be forwarded to the Engineer.

Measurement and Payment: Lawn areas outside the construction limits that are damaged by the Contractor shall be repaired in accordance with this special provision at the Contractor's expense.

Sod Repair will be measured per square yard of ground surface on which sod is installed and shall include all labor, equipment and material necessary for the completion of the bid item. Topsoil shall be measured and paid as a separate bid item. Fertilizer shall be measured and paid as a separate bid item.

ITEM 29, "VARIATIONS IN QUANTITIES", ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 29065 Sod Repair.....Per Square Yard

62. SSP 29067A Repair Landscaping

Description: This item consists of furnishing all labor, equipment and material necessary to repair the existing landscaping at locations shown on the plans or as directed by ACHD.

Materials: All materials shall conform to the ISPWC and the ACHD ADOPTED REVISIONS AND SUPPLEMENTS, if applicable, and shall be equal to, or of better quality than existing materials. Materials may include landscape edging, landscaping bark, perma-bark, small bushes, trees smaller than 2-inch caliper, various annuals, perennials and grasses or other plants and materials as required.

Workmanship: The Contractor shall photograph the landscape repair areas prior to construction to document the existing landscaping and shall furnish copies of the photos to ACHD prior to commencing landscape repair. The Contractor shall replace landscaping to equal or better condition.

Measurement and Payment: Repair Landscaping will be measured by the lump sum and shall include all labor, equipment and material necessary for the completion of the bid item.

ITEM 29, "VARIATIONS IN QUANTITIES", ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 29067A Repair Landscaping.....Per Lump Sum

63. SSP 29067B Repair Landscaping

Description: This item consists of furnishing all labor, equipment and material necessary to repair the existing landscaping at locations shown on the plans or as directed by ACHD.

Materials: All materials shall conform to the ISPWC and the ACHD ADOPTED REVISIONS AND SUPPLEMENTS, if applicable, and shall be equal to, or of better quality than existing materials. Materials may include landscape edging, landscaping bark, perma-bark, small bushes, trees smaller than 2-inch caliper, various annuals, perennials and grasses or other plants and materials as required.

Workmanship: The Contractor shall photograph the landscape repair areas prior to construction to document the existing landscaping and shall furnish copies of the photos to ACHD prior to commencing landscape repair. The Contractor shall replace landscaping to equal or better condition.

Measurement and Payment: Repair Landscaping will be measured for each respective item placed by the square yard and shall include all labor, equipment and material necessary for the completion of the bid item.

ITEM 29, "VARIATIONS IN QUANTITIES", ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 29067B Repair Landscaping.....Per Square Yard

64. SSP 29090 Trim Tree

Description: This item consists of furnishing all labor, equipment and material necessary to trim existing tree branches and prune roots at the location shown on the plans, as directed in these specifications, or as directed by the Engineer. In general, tree trimming shall be kept to a minimum to establish clearance for sidewalks, bike lanes, and travel lanes, and to provide a balanced looking tree when completed.

Materials and Workmanship: The Contractor shall coordinate the work with the Engineer prior to commencing trimming. Tree trimming and root pruning shall be performed under the direct on-site supervision of a licensed arborist.

Trim existing tree branches that hang over the sidewalk areas that are less than eight-feet above the finished elevation. Prune tree roots within 3 inches of the back of curb to a depth of 18 inches. Trees to be trimmed and pruned will be identified on the plans or identified by the Engineer.

Measurement and Payment: Trim Tree will be measured per each tree trimmed and shall include all labor, equipment and material necessary for the completion of the bid item.

ITEM 29, "VARIATIONS IN QUANTITIES," ON PAGE GC-16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 29090 Trim Tree.....Per Each

65. SSP 29093 Remove Tree 6"+

Description: This item shall include all work and costs associated with the removal of trees measuring 6 inches or more in diameter, measured 2 feet above the ground.

Workmanship: The entire tree shall be removed, including the stump and roots, or if removal of the roots could damage nearby structures or utilities, the Contractor shall grind up the stump and shallow roots. Grinding operations shall be included in the unit contract price for this item.

Measurement and Payment: The removal of trees less than 6 inches in diameter and all stumps will not be paid for separately, but shall be considered as incidental to the work of removal of obstructions. Trees for removal shall be marked in the field by the Engineer prior to removal.

Payment for this item will be made under:

SSP 29093 Remove Tree 6"+.....Per Each

66. SSP 29101 Remove and Reset Sprinkler System

Description: This item consists of furnishing all labor, equipment and material necessary to remove existing sprinkler systems, install and maintain temporary sprinkler systems during construction, adjust/relocate existing sprinkler systems, or install new sprinkler systems at the locations shown on the plans or as directed by the Engineer.

Materials: All materials shall conform to the ISPWC and all ACHD ADOPTED SUPPLEMENTS and shall be equal to, or of better quality than, existing materials. Additional compensation may be granted through a change order for sprinkler lines greater than 1 ½" diameter, required backflow preventers, and new controllers, if necessary.

Workmanship: Prior to commencement of construction, the Contractor shall document the locations of existing sprinkler systems within the construction zone. Documentation shall include, but is not limited to, type and location of existing sprinkler heads, pipe, controllers, valves and control wires. Documentation shall be provided to the Engineer prior to demolition of existing sprinkler systems. Costs associated with providing documentation of existing sprinkler systems shall be considered incidental to this item.

Adjusted/relocated sprinklers shall be installed to restore adequate coverage to remaining landscape areas and new sod areas. Over-spray onto the roadway and sidewalks will not be allowed. Existing sprinklers in the project area shall be adjusted to prevent over-spray onto the roadway and sidewalks as directed by the Engineer.

The Contractor shall maintain all sprinkler systems outside of the construction zone that are impacted by the Contractor’s activities. This may require the Contractor to install temporary sprinkler main lines around the construction zone. All costs associated with installing and maintaining temporary sprinkler systems and providing temporary water during construction shall be considered incidental to this item. Contractor shall cut and cap existing lines and supplement existing systems with additional materials as necessary.

Measurement and Payment: Remove and Reset Sprinkler System shall be measured by the linear foot of mainline and lateral pipe that is adjusted/relocated or newly installed, and shall include all labor, equipment and material as necessary for completion of the bid item. Providing and adjusting of individual sprinkler heads shall be measured as ten linear feet each. Adjusting of existing individual sprinkler heads not required to be relocated by the project shall be measured as two linear feet each.

ITEM 29, “VARIATIONS IN QUANTITIES”, ON PAGE GC16 OF THE ACHD GENERAL CONDITIONS, SECOND PARAGRAPH, shall not apply to this bid item.

Payment for this item will be made under:

SSP 29101 Remove and Reset Sprinkler System.....Per Lineal Foot

67. SSP 29110 Groundwater Observation Well

Description: This item shall consist of furnishing all labor; material, and equipment necessary to construct a groundwater observation well at the location shown on the plans or as directed by the Engineer in accordance with the currently adopted ACHD supplement to the ISPWC SD-627.

Materials: Groundwater observation wells shall consist of either a 6” or 4” diameter non-perforated PVC from finished surface to the top of the drain trench, and either a 6” or 4” diameter perforated PVC pipe from the top of the drain trench to the bottom of the sand bed as detailed on the plans. Reference the currently adopted ACHD supplement to the ISPWC SD-627 to determine which pipe size shall be used based on the proposed action.

Workmanship: A PVC cap shall be placed on the bottom of the perforated PVC pipe and a 8"x12" watertight manhole with 12" galvanized skirt, Item number 318101201 as manufactured by Morris Industries, 777 Route 23, Pompton Plains, NH 07044, (800) 835-0777, or approved equal, shall be set flush with the finished surface on the top of the non-perforated PVC pipe. The pipe shall be set straight and plumb. The cast iron cover shall be set flush with the finish surface in a concrete collar.

Measurement and Payment: Groundwater observation wells shall be placed in the locations indicated on the plans.

Payment for this item will be made under:

SSP 29110 Groundwater Observation Well.....Per Each

68. SSP 29800 Abandon Existing Septic System

Description: This item shall include all work and costs associated with abandoning of an existing septic tank in the location shown on the plans.

Materials and Workmanship: These removals shall be completed within the first 45 days of the construction schedule, unless otherwise approved by the Engineer. This work shall be coordinated so that Bid Item 504.4.1.D.1 Sewer Service Connection to Main – Size 4 Inch is completed at the same time. Work associated with Sewer service connections shall be paid for under that respective item.

Contractor is required to contact property owner 14 days in advance to coordinate the timing for the abandonment of the septic tank.

Contractor is to obtain any permits necessary to abandon existing septic tank.

Contractor shall punch holes in the bottom of the tank to facilitate drainage and then backfill the tank with sand conforming to ISPWC Division 800.

The area shall be finished graded to present a pleasing appearance with slopes rounded and flattened to blend naturally with the adjacent topography.

Four (4) inches of topsoil conforming to SSP 25050 and hydro-seed shall be placed on graded areas. All topsoil placed shall be paid for under that respective item.

Backfill, topsoil and hydro-seed are considered incidental to this item.

Measurement and Payment: Abandon Existing Septic System will be measured per each and shall include all labor, equipment and material necessary for the completion of the bid item. The accepted quantity of Abandon Existing Septic System will be paid at the contract unit price for the item listed below.

Payment for this item will be made under:

SSP 29800 Abandon Existing Septic System.....Per Each