



WASHOE COUNTY COMMUNITY SERVICES DEPARTMENT

**LOWER WOOD CREEK PHASE 1
WATER QUALITY IMPROVEMENT PROJECT EIP #01.01.01.0111
PWP-WA-2021-130
WASHOE COUNTY, NEVADA**

SPECIAL PROVISIONS

FOR USE WITH

Standard Specifications, as referred to in these Special Provisions, are the Standard Specifications for Public Works Construction, 2012 edition, Revision 8 dated 10/19/2018. The Special Provisions are supplemental to the Standard Specifications.

January 2021

100% DRAFT

TABLE OF CONTENTS

PART 3	CONSTRUCTION METHODS	2
SECTION 300	- CLEARING AND GRUBBING	2
SECTION 301	- REMOVAL OF EXISTING IMPROVEMENTS	2
SECTION 303	- UNCLASSIFIED EXCAVATION	4
SECTION 305	- TRENCH AND STRUCTURE EXCAVATION AND BACKFILL	4
SECTION 306	- STORM DRAIN, CULVERTS, AND SANITARY SEWER CONSTRUCTION ...	5
SECTION 307	- DOMESTIC WATER	7
SECTION 308	- AGGREGATE BASE COURSES	10
SECTION 311	- CONCRETE STRUCTURES	10
SECTION 312	- CONCRETE FLATWORK, CURBS, GUTTERS, WALKS, AND DRIVEWAYS	12
SECTION 316	- TACK COAT	13
SECTION 320	- BITUMINOUS PLANTMIX/HOT MIX ASPHALT (HMA)	14
SECTION 323	- ADJUSTMENT OF NEW AND EXISTING MANHOLES, CATCH BASINS, VAULTS, WATER AND GAS VALVES, AND MONUMENTS TO FINAL GRADES	17
SECTION 324	- PAINTING, PAVEMENT STRIPING, AND MARKING	18
SECTION 332	- SIGNS, PERMANENT AND TEMPORARY	18
SECTION 339	- REVEGETATION	19
SECTION 340	- ROCK SLOPE PROTECTION AND ROCK LINED CHANNEL	26
SECTION 341	- ARTICULATED BLOCKS/BLOCK SHOULDER TREATMENT	27
SECTION 342	- SNOW STORAGE AREAS AND INFILTRATION BASINS	30
SECTION 350	- MOBILIZATION AND DEMOBILIZATION	35
SECTION 355	- CONSTRUCTION TRAFFIC CONTROL	36
SECTION 360	- TEMPORARY EROSION CONTROL MEASURES	40
SECTION 370	- PROJECT SIGN	42

PART 3 CONSTRUCTION METHODS

SECTION 300 - CLEARING AND GRUBBING

300.01 Description. Clearing and grubbing includes, but is not limited to, the removal of shrubs, trees less than 6 inches in diameter, downed trees, stumps and roots, litter and duff, and relocation of boulders. The contractor shall coordinate all areas to be cleared and grubbed on site with the County. Removed trees shall be removed to within 6 inches of existing ground surface and the stumps shall be removed or “ground” or chipped in place to at least 12 inches below finished grade. Shavings not used as wood chip mulch shall be removed and disposed of by the Contractor outside of the Lake Tahoe Basin. All clearing and grubbing activity shall conform to Section 300 in the Standard Specifications.

300.03 Removal of Materials. Excavated material, trash, and debris that are not to be incorporated into the work shall be hauled outside of the Lake Tahoe Basin by the Contractor at no additional cost to the County. All waste material shall be disposed of in accordance with Tahoe Regional Planning Agency (TRPA) ordinances and Nevada Administrative Code (NAC) 444 “Sanitation”.

300.05 Measurement and Payment. No direct payment will be made for clearing and grubbing. Conforming to the requirements of this section shall be included in the contract prices paid for other items of work.

300.06 Tree Removal.

300.06.01 Description. Tree removal includes the removal of trees 6 inches in diameter (dbh) and greater. The contractor shall coordinate all trees to be removed on site with the County prior to the start of construction. All trees shall be flagged on site for removal. Removed trees shall be removed to within 6 inches of existing ground surface and the stumps shall be removed or “ground” or chipped in place to at least 12 inches below finished grade. Shavings not used as wood chip mulch shall be removed and disposed of by the Contractor outside of the Lake Tahoe Basin. All tree removal activity shall conform to Section 300 in the Standard Specifications.

300.06.02 Measurement and Payment.

300.06.02.01 TREE REMOVAL 6-INCH TO 18-INCH DIAMETER will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the TREE REMOVAL 6-INCH TO 18-INCH DIAMETER as shown on the plans, as specified in these Special Provisions, and as directed by the County.

300.06.02.02 TREE REMOVAL 19-INCH TO 24-INCH DIAMETER will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the TREE REMOVAL 19-INCH TO 24-INCH DIAMETER as shown on the plans, as specified in these Special Provisions, and as directed by the County.

SECTION 301 - REMOVAL OF EXISTING IMPROVEMENTS

301.01 Description. Work shall conform to the requirements of Section 301 of the Standard Specifications. The excavations shall be backfilled with material conforming to Section 200.03.06 of the Standard

Specifications. If a new structure is specified to replace the old structure, unsuitable material shall be removed as directed by the County.

301.02.02 Bituminous Pavement. Bituminous pavement shall be removed according to the Standard Specifications and as shown on the plans. Verify pavement depth and depth of pavement layers before milling. Existing records show 2.5-inch-thick overlays. Submit observed pavement layer thicknesses to engineer prior to pavement milling. Mill depth shall be 3 inches nominal and shall be adjusted to remove the upper pavement layer plus 0.5 inches. Milling shall include in general the full road width between lips of gutter, except where indicated on the drawings the centerline of the road is the limit for pavement milling. The milled pavement surface shall be cleared of loose material by a road sweeper. Road sweeping shall be performed at a minimum immediately after pavement milling and immediately prior to applying a tack coat for paving. Pavement milling shall not be performed more than 3 days prior to the planned placement of bituminous pavement.

301.03 Removal of Materials. Material and structures scheduled for removal shall be removed entirely and disposed in appropriate disposal facilities outside the Lake Tahoe Basin. All waste material shall be disposed of in accordance with Tahoe Regional Planning Agency (TRPA) ordinances and Nevada Administrative Code (NAC) 444 "Sanitation".

301.05 Measurement and Payment. Only those items specifically identified in this section for measurement and payment will be measured and paid as separate bid items. All other material and structures required to be removed to perform the work shall be considered as included in the cost of the other items of work for which the removal is related.

301.05.01 Remove Storm Drain Pipe. REMOVE STORM DRAIN PIPE will be measured per LINEAR FOOT. Payment shall be made at the contract unit price per linear foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to REMOVE STORM DRAIN PIPE of the various sizes as indicated on the plans, including driveway culverts. This item includes, but is not limited to, pavement removal, excavation, removal and disposal of storm drain pipe of the various materials, backfill and compaction, complete and in place.

301.05.02 Remove Catch Basin / Sediment Trap. REMOVE CATCH BASIN / SEDIMENT TRAP will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to REMOVE CATCH BASIN / SEDIMENT TRAP as indicated on the plans. This item includes, but is not limited to, excavation, removal and disposal of the various materials, backfill and compaction, complete and in place.

301.05.03 Remove Storm Drain Manhole. REMOVE STORM DRAIN MANHOLE will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to REMOVE STORM DRAIN MANHOLE as indicated on the plans. This item includes, but is not limited to, salvaging manhole frame and cover, demolishing manhole structure, excavation, and removal and disposal of the various materials, backfill and compaction, complete and in place. Plugging of the storm drain pipes connected to the manholes scheduled to be removed shall be paid for under Bid Item "Plug and Abandon Storm Drain Pipe."

301.05.04 Remove Bituminous Pavement. REMOVE BITUMINOUS PAVEMENT will be measured per SQUARE YARD. Payment shall be made at the contract unit price per square yard and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to remove

and dispose bituminous pavement as indicated on the plans. This item includes, but is not limited to, pavement removal and disposal, road sweeping as necessary, complete and in place.

SECTION 303 – UNCLASSIFIED EXCAVATION

303.01 Description. Work associated with all excavations and fills shall conform to the requirements of Section 303 and 304 of the Standard Specifications. All excavations and fills shall be constructed to the dimensions and limits as shown on the Plans. The Contractor shall be prepared to work in areas of seasonally high groundwater and is required to provide adequate means of maintaining groundwater and surface water below the level of the work.

303.04 Measurement and Payment. No direct payment will be made for unclassified excavation, including handling high ground water. Unclassified excavation shall be included in the contract prices paid for other items of work to which they are associated.

SECTION 305 – TRENCH AND STRUCTURE EXCAVATION AND BACKFILL

305.01 Description. Refer to the “Geotechnical Exploration and TRPA Soils Hydrologic Report Lower Wood Creek WQIP”, prepared by Construction Materials Engineers, Inc., dated March 2019 for general excavation recommendations. Contractor work activities shall conform to Section 305 of the Standard Specifications.

305.01.01 Coordination with Incline Village General Improvement District. The Incline Village General Improvement District (IVGID) owns and operates potable water distribution mains and services and sanitary sewer mains and laterals that may be impacted by construction of this project. The Contractor shall coordinate all construction activities with IVGID to minimize impact to water and sewer mains. The Contractor is required to attend a preconstruction meeting with IVGID. The Contractor shall locate, by potholing or other similar physical locating method, the water and sewer mains in the construction area to confirm elevations prior to starting construction. IVGID will have an inspector on-site during activities that have the potential to impact water and sewer mains. The Contractor shall contact IVGID Utility Manager Jeff Bendorf at (775) 832-1271 a minimum of 1 week prior to the start of construction.

305.01.02 Coordination with Utility Companies. The Contractor shall coordinate construction activities with NV Energy, AT&T, and Southwest Gas to minimize impacts to existing utilities. The Contractor shall contact the following a minimum of 1 week prior to the start of construction:

NV Energy
Will Morgan (775) 843-7376

AT&T
Cliff Cooper (775) 453-7578

Southwest Gas
Steven Young (775) 887-2872

Charter Communication
Elias Ruiz (775) 850-1290

305.02 Maximum Length of Open Trench. The maximum length of open trench is 500 feet in accordance with the Standard Specifications.

305.02.01 Trenches Within Local Roadways. Complete backfill of trench in street right of way at the end of each workday. Place steel plates at the end of each workday and until final paving is complete. No trench shall be left open overnight.

305.08 Bedding. Bedding material shall meet the requirements of Class A backfill per Standard Specification 200.03.02.

305.09 Backfill and Densification. Backfill shall meet the requirements of Class E backfill per Standard Specification 200.03.06.

305.19.02 Dewatering. Dewatering for the excavation and construction of the 48-inch RCP culvert at the Wood Creek crossing shall be performed per the Standard Specifications. The dewatering measures shall be installed, operated, maintained, and at the end of the project removed, and any disturbed areas associated with dewatering equipment restored to the satisfaction of the Engineer.

Dewatering that may be required for the construction of the storm drain pipes, manholes, and sediment and infiltration basins shall be included in the price for the related items. Average monthly flows for the months of July, August, and September are approximately 3.9 cfs, 1.4 cfs, and 1.1 cfs, respectively. It shall be the Contractor's responsibility to size the dewatering system to handle anticipated flows including and appropriate contingency. Contractor shall submit a dewatering for review by the Engineer.

305.20 Measurement and Payment.

305.20.01 No direct payment will be made for trench and structure excavation and backfill.

305.20.02 Dewatering. Payment for DEWATERING will be made at the contract LUMP SUM price on a percentage-completed basis in direct proportion to the percentage contract value of project work completed, or as determined by the County based upon satisfactory implementation operation and maintenance and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete, operate, and maintain the work. Increases in the total Contract Price for any reason do not justify an increase in the lump sum bid price for DEWATERING.

SECTION 306 – STORM DRAIN, CULVERTS, AND SANITARY SEWER CONSTRUCTION

306.01 Description. This work shall consist of furnishing all materials, labor, equipment, tools, and appurtenances necessary to construct storm drainpipes, culverts, sediment cans, culvert headwalls and end sections, and sanitary sewer lateral relocations. Work shall conform to the requirements of Section 306 of the Standard Specifications and as modified by these Special Provisions.

306.02 Materials.

306.02.01 Reinforced Concrete Storm Drain Pipe. RCP pipe shall conform to Section 203.10 of the Standard Specifications and ASTM C76 for round pipe. Integral bell and spigot joints shall be watertight per ASTM D 3212 with gaskets conforming to ATM F 477.

306.02.02 Corrugated Metal Pipe. Corrugated metal pipe shall be helical steel pipe (2 2/3" x 1/2" corrugation profile) and shall conform to Standard Specification Section 203.02 and ASTM A 929. Fabrication shall conform to ASTM A 760.

306.02.03 High Density Polyethylene Pipe. High Density Polyethylene pipe shall conform to Section 203.17 of the Standard Specifications and ASTM F 2306 or ASTM F 2648. Integral bell and spigot joints shall be watertight per ASTM D 3212 with gaskets conforming to ASTM F 477. Pipe shall be Type S (smooth inner surface) solid or perforated. Perforations shall be as shown on the plans and per manufacturer recommendations.

306.02.04 Sediment Trap. Corrugated metal pipe used for sediment trap risers shall be helical steel pipe (2 2/3" x 1/2" corrugation profile) as per Standard Specification Section 203.02. CMP sediment trap risers shall be perforated as shown on the Plans. Sediment traps with connecting pipe shall have a one-foot stub of continuously welded corrugated metal pipe for each connection at the size and elevation indicated on the plans. Metal grate and appurtenances shall be hot dip galvanized after fabrication.

306.02.05 Storm Drain Outlet. The flared end section for storm drain outlet shall be Steel or HDPE and shall have a connecting band compatible with the pipe material. Rock and filter fabric shall be as specified in Section 340 of these Special Provisions.

306.02.06 PVC Gravity Pipe. PVC pipe used for sanitary sewer laterals shall conform to Section 203.20 of the Standard Specifications and ASTM D 3034 SDR 35.

306.02.07 Rock and Filter Fabric. Rock and filter fabric shall be as specified in Section 340 of these Special Provisions.

306.07 Measurement and Payment.

306.07.01 48" RCP Culvert. 48-INCH RCP CULVERT will be measured per LINEAR FOOT. Payment shall be made at the contract unit price per linear foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the 48-INCH RCP CULVERT. This item includes, but is not limited to, excavation, subgrade preparation, abandonment of the existing 60-inch culvert pipe and removal of inlet/outlet structures, any backfill required to establish subgrade for replacement pipe, pipe placement and compaction, and backfill, complete and in place. Sawcut, removal of existing asphalt and aggregate base and construction of patch paving is included in a separate bid item.

This item does not include the sawcut and removal of existing pavement for installation of storm drain, curb and gutter, and other underground facilities. Payment for sawcut and removal of existing pavement for before mentioned items shall be included in bid item, PLANTMIX BITUMINOUS PATCH PAVEMENT.

306.07.02 HDPE Storm Drain Pipe. HDPE STORM DRAIN PIPE of the various sizes listed in the Bid Schedule will be measured per LINEAR FOOT. Payment shall be made at the contract unit price per linear foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the HDPE STORM DRAIN PIPE. This item includes, but is not limited to, excavation, subgrade preparation, bedding, pipe placement and compaction, backfill, and incidentals associated with the installation, complete and in place. Sawcut, removal of existing asphalt and aggregate base and construction of patch paving is included in a separate bid item.

This item does not include the sawcut and removal of existing pavement for installation of storm drain, curb and gutter, and other underground facilities. Payment for sawcut and removal of existing pavement for before mentioned items shall be included in bid item, BITUMINOUS PLANTMIX/HMA (6-INCH).

306.07.03 Sediment Trap. SEDIMENT TRAP 24-INCH and SEDIMENT TRAP 36-INCH will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the SEDIMENT TRAP 24-INCH and SEDIMENT TRAP 36-INCH. This item includes, but is not limited to, excavation, subgrade preparation, filter fabric, drain rock, grate or solid cover, pipe placement and compaction, backfill, and incidentals associated with the installation, complete and in place.

306.07.04 Culvert Headwall with Rock Slope Protection (RSP). CULVERT HEADWALL WITH RSP will be measured per EACH. Measurement shall include all work from the connection to the storm drain to a point approximately 20 feet from the face of the headwall as shown on the Plans. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the CULVERT HEADWALL WITH RSP. This item includes, but is not limited to, excavation, subgrade preparation, headwall, filter fabric, rock, grading and compaction, and incidentals associated with the installation, complete and in place.

306.07.05 Storm Drain Outlet. STORM DRAIN OUTLET 12-INCH will be measured per EACH. Measurement shall include all work from the connection to the storm drain to a point approximately 6 feet from the end of the flared end section as shown on the Plans. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the STORM DRAIN OUTLET 12-INCH. This item includes, but is not limited to, excavation, subgrade preparation, flared end section, filter fabric, rock, grading and compaction, and incidentals associated with the installation, complete and in place.

306.07.06 Storm Drain Outlet. STORM DRAIN OUTLET 24-INCH will be measured per EACH. Measurement shall include all work from the connection to the storm drain to a point approximately 6 feet from the end of the flared end section as shown on the Plans. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the STORM DRAIN OUTLET 24-INCH. This item includes, but is not limited to, excavation, subgrade preparation, flared end section, filter fabric, rock, grading and compaction, and incidentals associated with the installation, complete and in place.

SECTION 307 – DOMESTIC WATER

307.01 Description. This work shall consist of furnishing all materials, labor, equipment, tools, and appurtenances necessary to relocate water services and water main. Work shall conform to the requirements of the Incline Village General Improvement District (IVGID) “Requirements for Construction Water and Sewer” (2019).

307.02 Materials. Materials for water services shall be per IVGID’s “Requirements for Construction of Water and Sewer”. The Contractor shall furnish all incidental items required to complete the work that are not specifically referred to herein. Incidental items, which shall be furnished by the Contractor, include, but are not limited to potholing, as-built drawings, thrust blocks, warning tape, tracer wire, flange gaskets, bolts, nuts, pipe coatings, corrosion protection, etc.

307.03 Potholing. Potholing involving exploratory excavation at connection to existing water facilities, marked utility crossings, and other areas is required. The Contractor will be required to acquire the following information from these investigations:

1. Verification of pipe type, size (i.e., outside diameter), depth to existing surface, and location for all connections to existing water facilities.
2. Verification of type, size, and location for all known utility crossings.
3. Information required for surveying and staking of pipeline alignment.

All potholing shall be completed prior to the start of construction of the facility. Potholing shall be considered part of the trenching and is not a separate item.

307.04 Disinfection of Water Mains. Prior to acceptance of the project, water pipe shall be disinfected and pressure tested. All work involved in disinfecting and pressure testing the water pipe shall conform to AWWA Standards.

Disinfection shall be accomplished by using calcium hypochlorite tablets as outlined in AWWA C651, Tablet Method, latest edition. An NSF-61 certified, food-grade adhesive (Loctite AA H3101, no equal) shall be used to adhere calcium hypochlorite tablets to the interior of the pipe lengths as the pipe is installed. Loctite AA H3101 shall be used alone, and not with the Primer 2000 product. It is imperative that the pipeline be kept clean and dry during construction to ensure proper disinfection of the pipeline and to allow flushing of the pipeline. If excessive debris is discovered in the pipeline during disinfection and testing, the Contractor will be responsible for removal of the debris and retesting, flushing, and disinfection of the entire pipeline.

Disposal of the chlorinated water shall be the responsibility of the Contractor. The water shall be disposed of in a manner conforming to all local, state, and federal regulations. The Contractor will be required to designate a disposal site or method and shall coordinate the disposal of the chlorinated water with the IVGID Inspector and local/state authorities. Disposal of water into storm drain and/or sanitary sewer facilities shall only be allowed when permitted by the authority having jurisdiction over said storm drain and/or sanitary sewer facilities. Water shall be completely de-chlorinated prior to discharge into any storm drain and/or sanitary sewer facility. Testing of the discharge water for chlorine residual will be required to document that discharge water has been completely de-chlorinated.

All work included in disinfecting and testing of the pipeline shall be included in the price for pipe installation. No separate payment will be made.

307.04 Pressure Testing of Water Mains. All pressure pipe testing shall be accomplished with water pressure. Air pressure testing will not be permitted. Test pressure will be 1.5 times the working pressure and shall not be less than 1.25 times the working pressure at the highest point along the test section. Working pressure is 100 psi. Test pressure shall not vary more than ± 5 psi for the duration of the test. Test pressure shall not exceed pipe or thrust restraint design pressures. The hydrostatic test shall be at least 2-hour duration.

Before applying the specified test pressure, air shall be completely expelled from the sections of piping under test. Allowable leakage shall be measured in gallons per hour as defined in AWWA C600 for ductile iron pipe. Pressure testing shall conform to AWWA C600 Standards for Installation of Ductile Iron Water Mains and Appurtenances. All work included in pressure testing of the pipeline shall be included in the price for pipe installation. No separate payment will be made.

307.05 Bacteriological (BACT-T) Testing of Water Mains. Bacteriological (Bac-T) Testing in accordance with AWWA C651 is required of all new water mains. Bacteriological testing will be coordinated by the IVGID Inspector and IVGID lab personnel, at no cost to the Contractor. Two (2)

consecutive sets of acceptable samples, taken a minimum of 24 hours apart, shall be collected from new water mains.

Results of bacteriological testing are available a minimum of 24-hours after each sample was collected. Absolutely no standby time will be paid to the Contractor during this period. Connections to existing water mains, service tie-overs, and/or new water services may only be installed after the IVGID Inspector has been notified of satisfactory bacteriological test results. Bacteriological test samples will NOT be collected on Fridays, weekends, IVGID observed Holidays, or the day before a IVGID observed Holiday.

307.06 Asbestos Cement Pipe (AC) Removal, Handling and Disposal Requirements. If asbestos cement pipe (ACP) (aka Transite), and/or pipe with coatings containing asbestos are to be retired they shall be legally removed, stored, transported, and disposed of per applicable OSHA, Washoe County, and these requirements. Only employees trained and currently certified in the handling and disposal of asbestos containing materials shall conduct any work related to the removal, storage, and disposal of asbestos material.

The Contractor shall be required to provide current asbestos abatement certificates submittals for each employee that will conduct work on pipe containing asbestos materials. Any work on the removal of pipe containing asbestos by unauthorized employees not currently certified shall result in an immediate stop work order with no additional cost for standby time, added delays, backfilling/re-excavation, steel plates and/or any work needed to secure the site until properly trained personnel can complete the work.

307.07 Asbestos Abatement, Handling, Storage and Disposal Plan (AAHSD). The Contractor shall be required to provide a AAHSD submittal that a minimum shall contain the following:

1. List of all employees that are trained and currently certified in asbestos abatement, handling, and disposal.
2. Method(s) to cut and remove pipe materials containing asbestos.
3. Methods to protect employees and/or public from exposure.
4. Methods to store on-site if not going directly to landfill.
5. Waste manifest that documents location removed, quantities, where/when stored, when disposed at landfill and landfill disposal ticket.
 - a. In Appendix A of these Special Provisions an "Asbestos Cement Pipe (AKA Transite) and/or Pipe with Coatings Containing Asbestos Log" is provided that will need to be completed by Contractor for each location pipe containing asbestos is removed. This log documents removal and on-site storage if not taken directly to landfill and is addition to the waste manifest that documents final disposal in an approved landfill. This form must be completed/signed by the Contractor's designated asbestos trained/certified personnel.

Verification, removal, and disposal of any abandoned utilities, facilities, and/or structures encountered during excavation shall be considered incidental to the work being performed with no direct payment to the Contractor.

307.13 Measurement and Payment.

RELOCATE 10" WATER MAIN will not be measured separately. Payment shall be made at the contract LUMP SUM price and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to RELOCATE 10" WATER MAIN. This item includes, but is not limited to, coordination with IVGID, excavation and backfill, pipe, fittings, pipe bedding, joint restraints, thrustblocks, locator wire, pressure testing, disinfection, and surface repair, including pavement patching, complete in place. Final payment of retention shall not be made until all documentation on the disposal of pipe containing asbestos materials is provided, no exceptions or pro-rated payment due to lack of documentation shall be made.

This item includes surface repair, including plantmix bituminous paving. No additional payment will be made for surface repair. RELOCATE WATER MAIN shall be billed by the Contractor directly to IVGID after IVGID has accepted the work in writing.

RELOCATE WATER SERVICE 2-INCH AND SMALLER will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to RELOCATE WATER SERVICE 2-INCH AND SMALLER. This item includes, but is not limited to, coordination with IVGID, excavation and backfill, corporation stops, pipe bedding, pipe, connection piping, pipe sleeves, connections required to complete operable water service lateral, locator wire, hydrostatic testing, disinfection, and surface repair, including pavement patching of streets and driveways, revegetation, and landscape repair, complete in place.

This item includes surface repair, including plantmix bituminous paving. No additional payment will be made for surface repair. RELOCATE WATER SERVICE 2-INCH AND SMALLER shall be billed by the Contractor directly to IVGID after IVGID has accepted the work and approved the final count in writing.

SECTION 308 – AGGREGATE BASE COURSES

308.01 Description. This work shall consist of furnishing, placing, and compacting the aggregate base courses, in conformity with the lines, grades, and thicknesses, shown on the Plans. Work shall conform to the requirements of Section 308 of the Standard Specifications and as modified by these Special Provisions.

308.02 Materials.

308.02.01 Aggregate Base. Aggregate base course shall conform to the material requirements of Type 2, Class B in Section 200.01.03-I and 200.01.03-II for Crushed Aggregate Base.

308.03 Placement and Compaction.

308.03.01 Aggregate Base. Aggregate base course shall be placed to the thickness shown on the Plans and compacted to a minimum of 95 percent maximum dry density at optimum moisture.

308.07 Measurement and Payment.

308.07.01 6" Aggregate Base. 6-INCH AGGREGATE BASE will be measured per TON. Payment shall be made at the contract unit price per ton and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to install 6-INCH AGGREGATE BASE. This item includes, but is not limited to, subgrade preparation, placement of aggregate base, and compaction, complete and in place. This item includes aggregate base placed as part of plantmix bituminous patch paving for the trench repair and transitions in front of the new curb and gutter, HMA path, and HMA driveway paving. All other base course material and placement shall be considered as included in the cost of the other items of work for which the base course is related.

SECTION 311 – CONCRETE STRUCTURES

311.01.01 Description. This work shall consist of furnishing and placing concrete for drainage structures as shown on the plans and as described in these Special Provisions. Work shall conform to the requirements of Section 311 of the Standard Specifications and as modified by these Special Provisions.

311.02 Materials. Unless otherwise specified, Portland Cement for concrete shall be Type II, low alkali. Concrete materials shall be in conformance with Sections 200 and 202 of the Standard Specifications. All concrete mixes shall meet requirements of Section 337.10 of the Standard Specifications. Reinforcing steel shall conform to the requirements of Section 206 of the Standard Specifications. All concrete mixes shall meet the requirements of Section 337.10.01.03, Portland Cement Concrete Exposed to Freeze-Thaw Cycles of the Standard Specifications.

Diversion Storm Drain Manholes. Diversion storm drain manholes shall be *Contech Stormgate Manhole High Flow Bypass* or approved equal. The specific Stormgate manhole data is indicated on the detail sheets.

Alternative materials may be considered. Alternative material packages must be submitted to the County for review and approval by the County and Engineer within eight (8) days following bid date. Submittal packages must include, as a minimum, the following:

1. Full-scale laboratory testing and associated engineered calculations quantifying the required hydraulic capacity, function, maintenance considerations, constructability, and flow rates of the proposed flow diversion system in similar conditions to the specific project.
2. A list of 5 comparable projects, in terms of size and applications, in the United States, where the results of the specific alternate flow diversion system use can be verified after a minimum of five (5) years of service life.

311.03.01.04 Drainage Structure Shop Drawings. Reinforced concrete storm drain manhole bases may be cast in place or pre-cast. Catch basins shall be pre-cast. Cast-in place catch basins may be allowed, if approved by the Engineer. Complete working drawings for storm water structures shall be submitted for review and approved by the County and Engineer a minimum of two weeks prior to the start of any work. Five (5) sets of all working drawings prepared specifically for the Contract shall be submitted to the County for review and approval. Working drawings shall not exceed 24 inches by 36 inches in size and each drawing shall include the job site station of the structure as shown on the construction drawings.

311.03.05 Existing Improvements and Systems. Contractor shall pothole existing facilities where connections are proposed to verify facilities and proposed connection, prior to construction. The Contractor shall immediately notify the County of discrepancies between the information shown on the plans and the conditions existing in the field. If the Contractor fails to notify the County in a timely manner of any apparent error or omission on the plans or specifications, the Contractor shall be responsible for correcting work incorrectly done at the Contractor's own expense.

At those locations indicated on the plans where new catch basins are connected to existing culverts or catch basins, the Contractor shall clean each existing culvert or catch basin to the satisfaction of the County prior to installing the new catch basin. The Contractor shall dispose of material removed from culverts outside of the Tahoe Basin as specified in Section 301 of these Special Provisions. Construction of said items shall be done according to the plans and these specifications. No blind storm drain connection will be allowed. No direct payment will be made for connections to existing drainage facilities. Such work shall be included in the contract prices paid for each improvement associated with making these connections. Storm drain that is damaged during the removal of existing drainage structures shall, at the discretion of the County, be either repaired or replaced at the Contractor's expense. Contractor shall assume all risks of damage to the work or to existing improvements that may be attributable to the method of construction.

311.05 Measurement and Payment.

311.05.01 Storm Drain Manhole. STORM DRAIN MANHOLE 60-INCH will be measured per EACH.

Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of STORM DRAIN MANHOLE 60-INCH. This item includes, but is not limited to, sawcutting, excavation, shoring, offsite disposal of materials, dewatering, connection to storm drain system, manhole placement, appurtenances, bedding, backfill, frame, cover, concrete collar, adjustments, and incidentals associated with the installation, complete and in place.

311.05.02 60" Diversion Storm Drain Manhole. DIVERSION STORM DRAIN MANHOLE 72-INCH will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of DIVERSION STORM DRAIN MANHOLE 72-INCH. This item includes, but is not limited to, sawcutting, excavation, shoring, offsite disposal of materials, dewatering, connection to storm drain system, manhole placement, appurtenances, bedding, backfill, frame, cover, concrete collar, adjustments, and incidentals associated with the installation, complete and in place.

311.05.03 Catch Basin Type 3-R. CATCH BASIN TYPE 3-R will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the CATCH BASIN TYPE 3-R. This item includes, but is not limited to, excavation, subgrade preparation, filter fabric, rebar, frame and grate, outlet pipe connection, backfill, and incidentals associated with the installation, complete and in place.

311.05.04 Catch Basin Type 4-R. CATCH BASIN TYPE 4-R will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the CATCH BASIN TYPE 4-R. This item includes, but is not limited to, excavation, subgrade preparation, filter fabric, rebar, frame and grate, outlet pipe connection, backfill, and incidentals associated with the installation, complete and in place.

311.05.05 Dual Catch Basin Type 4-R. CATCH BASIN TYPE 4-R DUAL will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of the CATCH BASIN TYPE 4-R DUAL. This item includes, but is not limited to, excavation, subgrade preparation, filter fabric, rebar, frame and grate, outlet pipe connection, backfill, and incidentals associated with the installation, complete and in place.

SECTION 312 - CONCRETE FLATWORK, CURBS, GUTTERS, WALKS, AND DRIVEWAYS

312.01.01 Description. This work shall consist of furnishing all materials, labor, equipment, tools, and appurtenances necessary to construct concrete curb and gutter, sidewalk, pedestrian ramps, outlet curb with apron, and driveway apron. All work shall comply with Section 312 of the Standard Specifications.

Unless otherwise specified, Portland cement for concrete shall be Type II, low alkali. Concrete materials shall be in conformance with Sections 200 and 202 of the Standard Specifications. All concrete mixes shall meet requirements of Section 337.10 of the Standard Specifications. All concrete mixes shall meet the requirements of Section 337.10.01.03, Portland Cement Concrete Exposed to Freeze-Thaw Cycles of the Standard Specifications.

312.04 Measurement and Payment.

312.04.01 Type 1 PCC Curb and Gutter. TYPE 1 PCC CURB AND GUTTER will be measured per LINEAR FOOT. Payment shall be made at the contract unit price per linear foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of TYPE 1 PCC CURB AND GUTTER. This item includes, but is not limited to, excavation, subgrade preparation, aggregate base course, base course placement, compaction, reinforcing, concrete, and incidentals associated with the installation, complete and in place.

312.04.02 PCC Post Curb. PCC POST CURB will be measured per LINEAR FOOT. Payment shall be made at the contract unit price per LINEAR FOOT and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of PCC POST CURB. This item includes, but is not limited to, excavation, subgrade preparation, aggregate base course, base course placement, compaction, reinforcing, concrete, and incidentals associated with the installation, complete and in place.

312.04.03 PCC Pedestrian Ramp. PCC PEDESTRIAN RAMP will be measured per SQUARE FOOT. Payment shall be made at the contract unit price per square foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of PCC PEDESTRIAN RAMP. This item includes, but is not limited to, excavation, subgrade preparation, aggregate base course, base course placement, compaction, concrete, truncated domes, and incidentals associated with the installation, complete and in place.

312.04.04 PCC Driveway Apron. PCC DRIVEWAY APRON will be measured per SQUARE FOOT. Payment shall be made at the contract unit price per square foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of PCC DRIVEWAY APRON. This item includes, but is not limited to, excavation, subgrade preparation, aggregate base course, base course placement, compaction, concrete, and incidentals associated with the installation, complete and in place.

312.04.05 Outlet Curb with Apron. CURB OUTLET WITH APRON will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the installation of CURB OUTLET WITH APRON. This item includes, but is not limited to, excavation, subgrade preparation, aggregate base course, base course placement, compaction, concrete, and incidentals associated with the installation of transition curb, median curb, and apron, complete and in place. Where sediment traps are part of the outlet, the sediment trap will be paid for under Bid Item "Sediment Trap 36-Inch."

SECTION 316 – TACK COAT

316.01 Description. Tack coat work shall consist of preparing and treating an existing surface in preparation for an overlay with bituminous material in accordance with these Special Provisions, and as shown on the plans, or as directed by the County. Tack coat and existing surface preparation shall conform to the requirements of Table 201.04-II SS-1h and Sections 201 and 316 in the Standard Specifications.

316.05 Measurement and Payment. No direct payment will be made for tack coat. Tack coat shall be included in the contract prices paid for other items of work.

SECTION 320 – BITUMINOUS PLANTMIX/HOT MIX ASPHALT (HMA)

320.01 Description

Contractor shall conform to the provisions of Section 320 of the Standard Specifications and these Special Provisions. This work shall consist of furnishing all materials, equipment and labor required for the preparation, mixing, hauling, placement and compaction of Bituminous Plantmix/HMA as shown on the plans and as directed by the County. Bituminous Plantmix/HMA shall have a mixture of asphalt cement, plantmix aggregate, and mineral filler.

Bituminous Plantmix/HMA, Type 3 with mineral filler shall be used for the trench patch and overlay of streets to the compacted thickness, widths and lengths as shown on the Plans. Contractor shall verify all measurements.

320.01.01 Plantmix Aggregate. The following physical properties (Section 200.02.03) and test requirements shall be used for Plantmix Aggregate Type 3 and Bituminous Plantmix/HMA Type 3. Aggregate mined from the Allight Pit shall not be acceptable for making Bituminous Plantmix /HMA for this contract regardless of passing these specifications herein.

Plantmix Aggregate Type 3 (from Table 200.02.03-I)

Sieve Size	Percent Passing by Weight
1 inch	
3/4 inch	
1/2 inch	100
3/8 inch	85-100
No. 4	50-75
No. 10	32-52
No. 16	
No. 40	12-26
No. 200	3-8

<u>Project Control Tests</u>	<u>Test Method</u>	<u>Requirements</u>
Sieve Analysis.....	ASTM C 136 & C117	Above
Sampling Aggregate.....	ASTM D75	----
Fractured Faces	Nev. T230	35 Percent Min. for Type 3
Plasticity Index	ASTM D4318 ⁽¹⁾	Table 1 (200.02.03-II2 Standard Specifications)
Liquid Limit.....	ASTM D4318 ⁽¹⁾	35 Percent Max.
Absorption of Coarse Aggregate ..	Nev. T111*	4 Percent Max.

*Sampling every 3,000 tons from cold feed belt at hot plant per Engineer's request.

<u>Source Requirement Tests</u>		
Percentage of Wear (500 Rev)...	ASTM C131	37 Percent Max.
Soundness (Coarse Aggregate) ..	ASTM C88	12 Percent Max. 5 Cycles Na ₂ SO ₄
Soundness (Fine Aggregate)	ASTM C88	15 Percent Max. 5 Cycles Na ₂ SO ₄

320.01.02 Asphalt Cement. Asphalt cement shall be performance grade **PG 64-28NV** and shall meet the requirements of Section 201 “Bituminous Materials” of the Standard Specifications.

320.01.03 Emulsified Asphalt. Emulsified asphalt shall meet the requirements of SS-1 per Table 201.04-II of Section 201 “Bituminous Materials” of the Standard Specifications.

320.02 Composition of Mixtures.

320.02.01 Mix Design Submittal. The Contractor shall submit, at the preconstruction conference or sooner, three (3) copies of the project mix designs, prepared and stamped by a civil engineer for a *50 blow mix* with a target value of 3% Marshall air voids for Type 3 PG 64-28NV Bituminous Plantmix/HMA to be used on the project, prepared and dated within four (4) months of the bid date, which clearly denotes the unit weight of compacted Bituminous Plantmix/HMA at the recommended asphalt content from the mix design.

The job-mix formula shall conform to Standard Specifications Subsections 320.02.01 and 337.04 for a 50-blow mix with Marshall Air Voids between 2% and 4%. All properties related to air voids shall be reported at 3% Marshall air voids for all work within this contract. The mix design shall be within $\pm 3\%$ of the laboratory density reported from field samples. If field densities are greater or less than 3% of the laboratory density, then a new mix design shall be completed at no charge to the County.

The absorption percent on coarse aggregate shall be reported (max 4% requirement per Washoe County).

RAP (recycled asphalt pavement) material is acceptable at a maximum amount no greater than 15% and shall be listed in the mix design and designated in the class as Type 3 and 2 AC-20 RAP.

320.03 Construction

320.03.01 Smoke and Dust Control

All construction procedures and methods, including field and plant operations, shall result in conformance to Washoe County Air Quality Standards.

320.03.02 Hauling Equipment

Trucks used for hauling bituminous mixtures shall be equipped with a tarp or other means of covering the material to prevent cooling and solidification of portions of the load, as directed by the County. Belly dump trucks shall not be used on cul-de-sacs and dead-end roads.

320.03.06 Preparation of Existing Surface

The surface of the existing pavement shall be cleaned per Section 316.03.03 of the Standard Specifications. A tack coat conforming to the requirements of Section 316.03.04 of the Standard Specifications shall be applied to the vertical faces of the existing asphalt pavement and to the base material, immediately prior to placement of bituminous plantmix/HMA.

320.04 Acceptance

The County will consider the "Asphalt Deficiency Mitigation Matrix" (Exhibit C at the end of these Special Provisions), input from the Contractor, and sound engineering analysis and judgment before requiring mitigation (i.e. removal and replacement, increased thickness, or surface treatment) and/or payment reduction for Bituminous Plantmix/HMA, which deviates from specified target ranges. Since the matrix does not include all factors and site conditions which may affect the overall performance of the pavement, the County may, upon consideration of the specific circumstances, reduce or waive mitigation and/or payment reduction, or combine portions of mitigation and payment reduction.

If the County makes a preliminary determination that mitigation, and/or payment reduction is necessary, the Contractor may submit a written request to the County for retests. The retests may be performed by the County or by any other approved independent testing laboratory (the contractor shall request the laboratory in writing, for County approval). Retests shall be undertaken at Contractor's expense. If the results of any retests are significantly different from initial testing, an independent testing lab will perform a "referee" test, which is mutually acceptable to the County and Contractor (the County may waive the "referee" test

if after consulting with the Engineer it is determined that the "referee" test is unnecessary). Fifty percent (50%) of the cost of "referee" tests shall be paid by the County and fifty percent (50%) shall be paid by the Contractor (the County may elect to make full payment and deduct the Contractor's fifty percent from progress or final payment to the Contractor). The County will make a final determination regarding mitigation and/or payment reduction based upon the preponderance of test results and other factors.

320.06 Measurement and Payment.

320.06.01 Bituminous Plantmix/HMA Paving (3-inch). BITUMINOUS PLANTMIX/HMA PAVING (3-INCH) will be measured by the TON as determined by the addition of certified weight tickets submitted to the County.

This item shall include all labor, equipment, and materials necessary to provide HMA roadway paving within the limits of pavement milling and as shown on the plans. Final pavement thickness shall be adjusted based on actual milling depth was confirmed by the Contractor. BITUMINOUS PLANTMIX/HMA PAVING (3-INCH) will be paid by the TON for the amount actually placed and compacted in the field as approved by the County. This price shall be full compensation for furnishing all materials, labor, equipment, tools and equipment necessary to complete the work. This item includes, but is not limited to; sawcut where required, hauling, tack coat application, bituminous plantmix/HMA, compaction and protection, and no additional compensation will be allowed therefor.

In all cases, the quantities shown are estimated and the final job pay amount will be based on actual field measurements and test results as described in these Special Provisions.

320.06.02 Bituminous Plantmix/HMA (6-inch). BITUMINOUS PLANTMIX/HMA (6-INCH) will be measured by the TON as determined by the addition of certified weight tickets submitted to the County.

This item shall include all labor, equipment, and materials necessary to provide HMA trench cut paving within the existing pavement section and paving of the transition in front of the new curb and gutter. The limits of the pavement patches shall be as determined in the field and as required prior to paving. BITUMINOUS PLANTMIX/HMA (6-INCH) will be paid by the TON for the amount actually placed and compacted in the field as approved by the County. This price shall be full compensation for furnishing all materials, labor, equipment, tools and equipment necessary to complete the work. This item includes, but is not limited to; sawcut and removal of existing asphalt pavement and aggregate base to limits and depths shown on the Plans or determined in the field by the County to provide smooth transitions, hauling, tack coat application, bituminous plantmix/HMA, and compaction, and no additional compensation will be allowed therefor.

In all cases, the quantities shown are estimated and the final job pay amount will be based on actual field measurements and test results as described in these Special Provisions.

320.06.03 Bituminous Plantmix/HMA Driveway Paving (3-inch). BITUMINOUS PLANTMIX/HMA DRIVEWAY PAVING (3-INCH) will be measured by the TON as determined by the addition of certified weight tickets submitted to the County.

This item shall include all labor, equipment, and materials necessary to provide driveway paving at the locations indicated on the Plans. The limits of driveway paving shall be as determined in the field and as required prior to paving. BITUMINOUS PLANTMIX/HMA DRIVEWAY PAVING (3-INCH) will be paid by the TON for the amount actually placed and compacted in the field as approved by the County. This price shall be full compensation for furnishing all materials, labor, equipment, tools and equipment necessary to complete the work. This item includes, but is not limited to; sawcut and removal of existing

asphalt pavement and aggregate base to limits and depths shown on the Plans or determined in the field by the County to provide smooth transitions, hauling, tack coat application, bituminous plantmix /HMA, and compaction, and no additional compensation will be allowed therefor.

In all cases, the quantities shown are estimated and the final job pay amount will be based on actual field measurements and test results as described in these Special Provisions.

320.06.04 Bituminous Plantmix/HMA Path Paving (3-inch). BITUMINOUS PLANTMIX/HMA PATH PAVING (3-INCH) will be measured by the TON as determined by the addition of certified weight tickets submitted to the County.

This item shall include all labor, equipment, and materials necessary to provide transition and driveway paving at the locations indicated on the Plans. The limits of driveway paving shall be as determined in the field and as required prior to paving. BITUMINOUS PLANTMIX/HMA PATH PAVING (3-INCH) will be paid by the TON for the amount actually placed and compacted in the field as approved by the County. This price shall be full compensation for furnishing all materials, labor, equipment, tools and equipment necessary to complete the work. This item includes, but is not limited to; sawcut and removal of existing asphalt pavement and aggregate base to limits and depths shown on the Plans or determined in the field by the County to provide smooth transitions, hauling, tack coat application, bituminous plantmix /HMA, and compaction, and no additional compensation will be allowed therefor.

In all cases, the quantities shown are estimated and the final job pay amount will be based on actual field measurements and test results as described in these Special Provisions.

SECTION 323 – ADJUSTMENT OF NEW AND EXISTING MANHOLES, CATCH BASINS, VAULTS, WATER AND GAS VALVES, AND MONUMENTS TO FINAL GRADES

323.01 Description. This work shall consist of all labor, equipment, and materials necessary to adjust new and existing manholes, catch basins, vaults, water and gas valves, monuments. And similar structures to final grade.

323.04 Abandonment of Existing Structures. Storm drain manholes shall be abandoned by tightly plugging all pipes entering the manhole with portland cement concrete not less than 12 inches thick. The manhole shall be demolished to an elevation 3 feet below finished grade and backfilled with suitable backfill material.

Storm drain pipes called out to be abandoned shall be grouted with neat cement grout and according to Section 305.19.07.

323.07 Measurement and Payment. Only those items specifically identified in this section for measurement and payment will be measured and paid as separate bid items. All other material and structures required to be abandoned to perform the work shall be considered as included in the cost of the other items of work for which the abandonment is related.

323.07.01 Plug and Abandon Storm Drain Pipe. PLUG AND ABANDON STORM DRAIN PIPE will be measured per LINEAR FOOT. Payment shall be made at the contract unit price per linear foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to

PLUG AND ABANDON STORM DRAIN PIPE. This item includes, but is not limited to, excavation, portland cement concrete plug, cement grout, complete and in place.

323.07.02 Abandon Storm Drain Manhole. ABANDON STORM DRAIN MANHOLE will be measured per EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to ABANDON STORM DRAIN MANHOLE. This item includes, but is not limited to, excavation, non-shrink grout, portland cement concrete plug, demolition of the structure to 3 feet below finish grade, backfill and compaction, and surface restoration., complete and in place.

SECTION 324 – PAINTING, PAVEMENT STRIPING, AND MARKING

324.01 Description. This work shall consist of the preparation of surfaces to be painted, pavement to be striped or marked, and the application, protection, and drying of the required number of coats of paint of the kinds and at the points specified or ordered by the Engineer. Refer to Section 324.04 and following for materials and construction, and surface preparation.

324.13 Measurement and Payment

324.13.01 Traffic Striping and Marking. TRAFFIC STRIPING AND MARKING will not be measured separately. Payment for TRAFFIC STRIPING AND MARKING will be made at the contract LUMP SUM price and shall include full compensation for furnishing all labor, materials, tools, and equipment, and for doing all work involved in, or appurtenant to, the painting of all traffic striping or markings as shown on the Plans, indicated in the Special Provisions, or as directed by the Engineer.

All costs for temporary pavement painting for the convenience of the Contractor, including costs for sandblasting of existing lines and markings, shall be at his sole expense.

SECTION 332 – SIGNS, PERMANENT AND TEMPORARY

332.01 Description. This work shall consist of furnishing, resetting, and installing all signs, sign supports, and all other related appurtenances required for permanent and temporary signs.

Materials shall conform to Section 332.02 Materials of the Standard Specifications. Reset signs and posts as indicated on the plans and in coordination with the County. All sign locations for signs to be installed or reset shall be accepted by the County prior to installation.

332.06 Measurement and Payment.

332.06.01 Remove and Reset Post and Sign. REMOVE AND RESET POST AND SIGN will be measured by EACH. Payment shall be made at the contract unit price per each and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to remove and reset sign and sign posts. This item includes, but is not limited to, furnishing and installing new posts and signs if required, removal of post foundation, constructing post foundation, and installing post and sign, complete in place, as specified in these Special Provisions and as directed by the County.

SECTION 339 – REVEGETATION

339.01 Description. Areas to receive revegetation treatments shall include all areas disturbed during construction. The materials and equipment specified for use shall conform to the applicable requirements outlined in this document. Any alterations in materials or methods from those specified in this document shall be subject to review and approval by the County prior to their use. All required certificates and samples shall be submitted prior to performing soil conditioning and revegetation treatments. The revegetation work shall consist of all site preparation associated with the revegetation treatments and, seeding, application of mulch, tackifier, and temporary irrigation.

339.02 Submittals. Submit to the County within ten days following the award of Contract proof that orders for all materials (soil testing, seed, plantings, fertilizer (if required), compost, mulch, and tackifier) have been received and accepted by the supplier(s). The statement(s) shall include product specifications and quantity of product(s) to be delivered and the estimated date(s) of delivery. Submit seed labels a minimum of 20 working days prior to application for approval and acceptance. Labels shall show seed vendor's certification for required seed mixtures and all requirements listed in Seed Section 339.05.02. Any proposed substitutes for unavailable materials shall be included in this submittal for acceptance or rejection by the County. Submit the manufacturer's specifications for the following:

- Seed mix labels with required certifications
- Mulch material samples
- Fertilizer
- Compost soil amendment
- Tackifier binder material
- Tackifier mulch material
- Irrigation system components

339.03 Inspections. The Contractor shall request the following inspections from the County prior to progressing with the work. Work shall not continue until the following inspections take place:

- 1) Boundaries for Revegetation Treatment Types
- 2) Substantial Completion
- 3) Final Completion

339.04 Site Preparation and Grading. Soil disturbance shall be minimized and limited to those areas that require treatment. All existing vegetation within the project limits not designated for removal shall be protected, especially mature shrubs and trees. Any existing vegetation damaged or destroyed shall be replaced by the Contractor at the Contractor's expense as directed by the County.

339.05 Materials

The Contractor shall furnish tickets at the end of each day for each revegetation material placed, including but not limited to, compost, seed, mulch, fertilizer, and tackifier.

339.05.01 Compost (Soil Amendment). Compost shall be "Full Circle 25% Integrated Tahoe Blend" or equivalent. Compost shall be derived from materials originating in the Tahoe Basin and have a ratio of 75% woody material (particle sizes between 1/2" and 3") to 25% humus (particle sizes less than 3/8"). Compost should be ordered from the supplier at least two (2) months in advance.

If any soil nutrient deficiencies are determined by laboratory tests, organic fertilizer shall be used to compensate. The fertilizer shall be approved in writing by the Engineer prior to application.

339.05.02 Seed. The following seed mixes shall be used.

Table 1: Seed Mix 1 Upland Areas (Type A)		
Species (Common Name)	Species (Botanical Name)	PLS* (lb/acre)
Blue Wildrye (Stanislaus 5000 or high elevation collection)	<i>Elymus glaucus</i> (Stanislaus 5000)	5
Mokelumne or El Dorado Brome (or other high elevation collection)	<i>Bromus carinatus</i> (Mokelumne)	5
Squirreltail (high elevation collection)	<i>Elymus elymoides ssp. elymoides</i> (Sierra)	7
Lupine (Tahoe collection relative to availability, subject to approval by project engineer)	<i>Lupinus arbustus</i>	5
Mountain Rose	<i>Rosa woodsii var. ultramontana</i>	7
Wax Currant	<i>Ribes cereum var. cereum</i>	5
Yarrow	<i>Achillea millefolium</i>	2
Rocky Mountain Penstamon	<i>Penstemon strictus</i>	1
TOTAL PLS lbs/acre RATE		37
*PLS is "pure live seed" and represents the amount of seed that is expected to grow. PLS is calculated by determining the germination percentage and the purity of the seed.		

Table 2: Seed Mix 2 Infiltration Basins (Type B)		
Species (Common Name)	Species (Botanical Name)	PLS* (lb/acre)
Blue Wildrye (Stanislaus 5000 or high elevation collection)	<i>Elymus glaucus</i> (Stanislaus 5000)	20
Mokelumne or El Dorado Brome (or other high elevation collection)	<i>Bromus carinatus</i> (Mokelumne)	20
Tufted hairgrass	<i>Deschampsia cespitosa</i>	15
Red Fescue	<i>Festuca Rubra</i>	15
Lupine (Tahoe collection relative to availability, subject to approval by project engineer)	<i>Lupinus arbustus</i>	2
TOTAL PLS lbs/acre RATE		72
*PLS is "pure live seed" and represents the amount of seed that is expected to grow. PLS is calculated by determining the germination percentage and the purity of the seed.		

339.05.02.01 Laws and Regulations. All seed shall conform with all laws and regulations pertaining to the sale and shipment of seed required by the Nevada State Department of Agriculture and the Federal Seed Act. All shipments of seed shall be reported to the Nevada State Department of Agriculture for inspection.

339.05.02.02 Seed Mix Standards. Seed shall be of a quality which has a minimum Pure Live Seed as specified. Weed seed shall not exceed 0.5 percent of the pure live seed and inert material. Seed shall come from sources within the Lake Tahoe Basin whenever possible, or from approved locations within 50 miles of the Lake Tahoe Basin and within 1000 vertical feet of the project elevation. Exceptions may be made for non-local, commercially available native grass seed that originates from locations more than 50 miles from the project. Any changes to the seed mix described in the tables above must be approved in writing by the County.

All seed is subject to inspection and tags shall be submitted to the County for approval and acceptance. Each seed mix shall be delivered in sealed and clearly marked bags that indicate:

- a) Species
- b) Purity
- c) Percent germination
- d) Vendor’s guarantee
- e) Dates of tests
- f) Content of Pure Live Seed (PLS)

Prior to applying any seed, the Contractor shall provide a letter of certification, original Association of Official Seed Analysts (AOSA) seed test results, and calculations of PLS content to the County.

339.05.03 Container Plants. The following container plants shall be used.

Table 3: Seedling Mix 1 No-Parking Shoulders			
Species (Common Name)	Species (Botanical Name)	Pot Size (gallon)	Planting Density/ Spacing
Woods’ rose	<i>Rosa woodsii</i>	1	Cluster 2-3 plants 3ft on center
Wax currant	<i>Ribes cereum</i>	1	Cluster 2-3 plants 3ft on center
Green leaf manzanita	<i>Arctostaphylos patula</i>	1	Cluster 2-3 plants 3ft on center
Big sagebrush	<i>Artemisia tridentata</i>	1	Cluster 2-3 plants 3ft on center
Sierra chinquapin	<i>Chrysolepis sempervirens</i>	1	Cluster 2-3 plants 3ft on center
Antelope bitterbrush	<i>Purshia tridentata</i>	1	Cluster 2-3 plants 3ft on center
Wooly mule’s ears	<i>Wyethia mollis</i>	1	Cluster 2-3 plants 2ft on center

339.05.03 Mulch. Pine needle mulch must be obtained from weed free sources and shall be clean and free of rocks, trash, or other unsuitable material. Mulch can be collected on site or obtained from alternate sources. Mulch shall contain less than ten percent (10%) large pieces such as twigs and pinecones and less than ten percent (10%) decomposed organic matter. Mulch shall contain less than one percent (1%) mineral soil. Unsuitable material must represent less than one-half percent (0.5%) of the total volume and shall be removed to the satisfaction of the County.

339.05.04 Tackifier. Tackifier shall be a 100% organic psyllium based material such as Ecology Control M-binder or an equivalent product approved by the County and Engineer prior to application. Tackifier

shall be mixed with clean wood fiber mulch. Paper mulch shall not be used. Color of mixture and quantity of wood fiber mulch must be such that an even application of tackifier mixture can be determined visually. Tackifier shall not contain agents that are toxic to seed germination.

339.05.05 Irrigation System. The irrigation system shall consist of a system capable of delivering a slow, steady rate of water to the entire irrigated area including areas surrounding ditches and swales that have received revegetation treatment. Water shall be applied such that no standing water or runoff will occur. The Contractor shall be responsible for limiting the supply pressure to a maximum of 75 psi. Contractor can determine if a temporary system or water truck is preferred irrigation system.

339.06 Soil Sample. Soil samples shall be collected by the Contractor from the locations identified in the field by the Engineer and sent to a laboratory for analysis according to the laboratory instructions. For bidding purposes, the Contractor should assume that up to 5 samples will be required. The samples shall be analyzed for the following constituents:

- Organic Matter
- Nitrate
- Zinc
- Manganese
- Iron
- Copper
- Boron
- Estimated Nitrogen Release
- Phosphorus (Weak Bray and Sodium Bicarbonate-P)
- Extractable Cations (Potassium, Magnesium, Calcium, Sodium)
- Hydrogen Sulfate-S
- pH \
- Cation Exchange Capacity Percent cation saturation
- Total Kjeldahl Nitrogen (TKN)

The results shall be submitted to the County to determine the appropriate fertilizer type and application rate to ensure soil health. The fertilizer shall be approved in writing by the County prior to application. For bidding purposes, the Contractor should assume the soil test results will indicate that fertilizer will be required for all revegetation areas.

Potential Laboratories:

1. A&L Laboratories, Modesto, CA 209-529-4080

339.07 Revegetation Treatment Summary. Revegetation shall progress in the order outlined below and as described in this section. No work shall be performed without prior approval by the County. Revegetation shall occur on any areas disturbed during construction activities and in upland areas.

339.07.01 Revegetation Treatment Type A (Upland Areas flatter than 2:1).

The activities that will take place in the areas designated as Revegetation Type A on the Plans shall occur in the following order:

- Collect and analyze soil samples in locations identified in the field by the Engineer
- Remove and store topsoil (depending on quality of topsoil)
- Perform earthwork and grading
- Apply salvaged topsoil OR soil amendment to 4 inches

- Till soil to depth of 24 inches
- Prepare surface
- Test for compaction
- Apply seed mix 1 and incorporate to a depth of ¼ inch
- Apply fertilizer
- Apply mulch
- Apply tackifier
- Temporary irrigation for two seasons

339.07.02 Revegetation Treatment Type B (Infiltration Basins 2:1 slope).

The activities that will take place in the areas designated as Revegetation Type B on the Plans shall occur in the following order:

- Collect and analyze soil samples in locations identified in the field by the Engineer
- Remove and store topsoil (depending on quality of topsoil)
- Perform earthwork and grading
- Apply salvaged topsoil OR soil amendment to 4 inches
- Till soil to depth of 24 inches
- Prepare surface
- Test for compaction
- Apply seed mix 2 and incorporate to a depth of ¼ inch
- Apply fertilizer
- Apply mulch
- Apply tackifier
- Temporary irrigation for two seasons

339.07.03 Surface Stabilization.

The activities that will take place in the areas designated as Revegetation Type C on the Plans shall occur in the following order:

- Perform earthwork and grading
- Apply mulch
- Apply tackifier

339.08 Execution. The Contractor shall notify the County not less than 72 hours in advance of beginning any revegetation work and shall not begin the work until the prepared treatment areas have been approved.

339.08.01 Topsoil Removal and Storage. In areas where grading and earthwork is required, any existing topsoil (depth of approximately 6”) shall be removed and stored appropriately prior to excavation activities. Topsoil in this case is defined as the mulch, duff, and top organic matter layer of the soil. The County will identify both the extent and depth of topsoil that will be removed. The requirements surrounding removal and storage of topsoil include:

- Topsoil shall be removed and stored with a minimum of handling to preserve its nature.
- Topsoil shall be stored for as short a time period as possible and shall be replaced immediately after grading and excavation is finished.
- In no case shall topsoil be stored for over two (2) weeks without written approval from the County.
- Any areas negatively affected by the storage of topsoil shall be revegetated following the specifications outlined in this document at the Contractor’s expense.

339.08.02 Earthwork and Grading. Grading and earthwork shall be completed as shown on the Plans

prior to the revegetation activities described below.

339.08.03 Soil Amendment Application. Compost shall be applied to a depth of four inches. Depending upon laboratory testing results of soil samples, fertilizer or mineral amendments may be required. If fertilizer or mineral amendments are necessary, the type and application rate will be specified by the County. All amendments shall be applied according to the manufacturer's recommendations.

339.08.04 Soil Tilling. Prior to surface treatments, disturbed soil shall be loosened unless otherwise noted. Any topsoil removed shall be replaced when grading, excavation, and tilling are finished, unless otherwise directed by the County. The County shall be notified at least five (5) days before soil tilling takes place and shall be on-site when tilling begins in order to approve the loosening method. After soil tilling has occurred, construction equipment shall not be allowed on tilled areas. If tilled areas are recompacted, those areas shall be re-loosened at the Contractor's expense.

339.08.04.01 Mechanical Tilling. The County will determine in the field where mechanical soil tilling treatment is appropriate. Soil shall be loosened mechanically using a backhoe or excavator equipped with a bucket capable of mixing in topsoil and amendments and loosening the soil to the prescribed depth. A bucket equipped with cutting teeth may be used if soil can be tilled appropriately without pulverizing it. Soil shall be loosened in such a way that clods remain, and soil is not reduced to powder.

339.08.04.02 Existing Roots. Exceptions to the tilling depth requirements will be made in areas where shrub or tree roots may be negatively affected by tilling. Tree roots and existing plants shall be avoided wherever possible during tilling activities. No mechanical loosening shall take place within the drip line of mature trees or shrubs. If tree roots are encountered, tilling shall occur by hand using tools such as pick, mattock, Pulaski or equivalent.

339.08.05 Surface Preparation. Prior to seed application, tilled areas shall be lightly smoothed by rake in such a way that some surface roughness is attained. The result shall be a soil surface that mimics natural conditions, with relief between three and six inches (3"-6") over a twenty-four-inch (24") distance. The County will inspect and approve tilled and raked areas prior to any further revegetation activities.

339.08.06 Compaction Testing. Following surface preparation, treated areas shall be tested for compaction by the Contractor using a handheld cone penetrometer or equivalent tool. The results of the tests shall be provided to the County within 24 hours. If an area requires a force greater than 200 pounds per square inch to reach a depth of twelve inches (12"), that area shall be retreated following the methods described above.

339.08.07 Seeding. Seeding shall be conducted in the fall prior to snow accumulation and ground freeze unless otherwise approved by the County and Engineer. Soils shall be moist to two inches unless otherwise approved by the County and Engineer. Seed shall not be planted unless the seed mix and soil preparation activities have been approved by the County and Engineer.

339.08.09 Application of Mulch. Pine needle mulch may be applied by hand or blower and must be applied in such a way as to achieve an even layer two inches (2") thick. Mulch shall be applied so that no bare areas exist after application. The County shall be notified five (5) days prior to mulch application. Mulched areas shall be approved on-site by the County after application and before further revegetation activities.

339.08.10 Application of Tackifier. All pine needle mulch in Revegetation Type A shall be immediately tackified unless otherwise directed by the County. Application of tackifier shall not be delayed until the next growing season. Care shall be taken to ensure the tackifier is not applied to the foliage of existing vegetation. Plants and structures shall be covered in areas where the tackifier cannot be applied without

overspray onto adjacent vegetation or structures on private property. The coverings shall be removed after the tackifier has been applied. Tackifier shall be applied at a rate of 120 pounds per acre, and shall be mixed with clean wood fiber mulch at a rate of 200 lb/ac. Tackifier shall be applied using a hydroseeder or other equipment capable of adequately mixing, suspending, and delivering specified rates of tackifier and wood fiber. Color of mixture and quantity of wood fiber mulch must be such that an even application of tackifier mixture can be determined visually.

339.09 Temporary Irrigation.

339.09.01 Temporary Irrigation Treatment Revegetation Areas A, and B. A quantity of water shall be applied to penetrate to a depth of eight inches (8”), but not to fully saturate the soil. Frequency of irrigation will depend on air and soil temperatures but is expected to occur every two to three (2-3) days for the first four (4) weeks as soon as revegetation work is completed and every five to seven (5-7) days for the remainder of the growing season as well as the next growing season. If rain occurs during the irrigation program, the schedule may be modified under the direction and written approval of the County. **Irrigation shall continue for at least two growing seasons until written direction is given by the County to stop.**

339.09.02 Irrigation Log. The Contractor shall keep a log of all irrigation activities performed, with one log entry per irrigation event. Each entry shall include:

- Date and time of irrigation
- Quantity of water applied expressed as a ratio of gallons per square foot of surface area
- Depth of water penetration
- Estimated air temperature and general weather observations
- Operator’s name and affiliation

339.09.03 Irrigation Log Submittal. The Contractor shall submit the irrigation log entries to the County on a monthly basis for two (2) calendar years after irrigation begins or until the County has given written notice to stop irrigating, whichever is first.

339.10 Revegetation Maintenance and Survival Guarantee. Work under this item shall consist of maintaining all revegetation areas for two years following completion of construction so that there is no evidence of erosion, such as rills or gullies, or sheet erosion. This re-treatment may include re-application of seed, mulches, tackifiers, and container plants. The Project must achieve 50% total plant cover before the Notice of Termination (NOT) will be issued. Large bare sections, defined as two feet by three feet (2’ x 3’) or larger in upland areas, where vegetation establishment was unsuccessful will not be accepted even if 50% of plant cover is established across the entire project area (This bare area requirement does not apply to areas treated with shrub seedlings). Mulch shall cover the soil surface where there is no plant cover to a cover level of 95 percent (95%) in the first season and second season following application. Mulch cover shall be determined by visual estimate. Where mulch cover does not meet the 95 percent (95%) level, the Contractor shall reapply mulch to meet this standard.

Revegetation maintenance shall further include the following:

- Ensure sufficient species diversity with establishment of **ALL** seed species in revegetation seed mix.
- Invasive weeds shall not represent more than 5% of the vegetation cover after 1st year and not more than 7% after 2nd year. If these criteria are not met, weeds must be removed in accordance with USFS and TRPA standards.

The maintenance period start date and end date will be as follows:

- Start Date = final payment
- End Date = 2 years after final payment

All of the revegetation will have final acceptance upon completion of all aspects of the associated work. The County will not accept portions of the revegetation work nor will it “stagger” the start of the two year maintenance period.

A Maintenance Bond, in an acceptable format to the County, shall be supplied by the Contractor prior to acceptance of the revegetation work by the County. The Maintenance Bond shall be in the amount of 25% of the total costs of Bid Items described in Section 339.11 of these Special Provisions, for a length of two years from the date of final payment.

339.11 Measurement and Payment.

The Contractor shall furnish tickets at the end of each day for each revegetation material placed, including but not limited to, compost, seed, fertilizer, mulch, and tackifier.

339.11.01 Revegetation Type A. REVEGETATION TYPE A will be measured per SQUARE YARD installed and accepted by the County. Measurement will be made in the plane of the area revegetated as approved by the County. Payment shall be made at the contract unit price per square yard and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work. This item includes, but is not limited to, soil testing, removal and storage of topsoil, grading, fill materials if needed, topsoil replacement, compost application, soil tilling, surface preparation, seed application, fertilizer application, mulch application, tackifier application, temporary irrigation, and maintenance and survival guarantee.

339.11.02 Revegetation Type B. REVEGETATION TYPE B for slopes 2:1 and steeper will not be measured separately but shall be included in the lump sum price for the related bid items North Infiltration Basin and South Infiltration Basin.

SECTION 340 – ROCK SLOPE PROTECTION AND ROCK LINED CHANNEL

340.01 Description. Rock inlet and outfall protection and riprap will be used for soil stabilization in flow lines associated with culverts and swales.

340.02 Materials.

340.02.01 Rock Riprap. Rock for use in the rock inlet and outfall protection and for the rock lined channel shall be of the type and size indicated on the Plans and shall conform to the requirements of Section 200.07 of the Standard Specifications. Rock shall be angular to sub-rounded with minimum and maximum size as indicated on the Plans. Rock shall be solid and non-friable and shall conform to the provisions in Table 200.07.03-II of the Standard Specifications including resistance to wear (ASTM C 535), absorption (ASTM C 127), apparent specific gravity (ASTM 97), and durability (ASTM 3744).

Rocks should be of such an angular shape to form a stable protection structure. Rounded boulders, flat or needle shapes will not be accepted. All rock shall blend with the natural surrounding colors and match existing native soils and rock found in the Incline Village area. All rock used for rock slope protection shall have variations in shades and hues to blend with the natural surroundings. Color variations shall be uniform throughout the rock slope protection. Material with shiny or reflective surfaces shall not be used. Rock type and color for rock slope protection shall be selected to match the following site settings.

- Existing brown soil with gray to brown volcanic outcrop
- Existing granitic soils with granodiorite boulders and outcrop

- Where existing light gray granite rock slope protection (RSP) exists, the color and type of rock shall be selected to blend with the existing RSP.

340.02.02 Filter Fabric. Non-woven geotextile filter fabric shall be used for all applications unless specified otherwise. Non-woven geotextile filter fabric specified on the Plans shall meet or exceed the following minimum specifications.

Non-Woven Geotextile Filter Fabric Specifications

Grab Tensile Strength	120 lbs.	ASTM D-4632
Grab Elongation	50%	ASTM D-4632
Puncture Strength	310 lbs.	ASTM D-6241
Trapezoidal Tear	50 lbs.	ASTM D-4533
Apparent opening Size (AOS)	70 U.S. Sieve	ASTM D-4751
Permittivity	1.7 sec ⁻¹	ASTM D-4491
Water Flow Rate	135 gpm/sq.ft.	ASTM D-4491
UV Resistance	70 %	ASTM D-4355

340.03 Submittals. Rock type and color shall be approved by the County, Engineer, and TRPA prior to construction. The Contractor shall submit a sample of the non-woven geotextile filter fabric and product specifications to the County for review and approval by the County and Engineer.

340.04 Construction.

340.04.01 Rock Inlet and Outlet Protection. Channels and inlets shall be excavated and constructed to the lines and dimensions shown on the plans. Non-woven geotextile filter fabric shall be installed on the prepared surface as shown on the Plans. Rock shall be placed on the prepared surface by hand or mechanical means in a manner that will produce a well-graded mass of stone with a minimum practicable percentage of voids. In no case shall the underlying filter fabric be visible through voids between rocks. Place the rock so as to be in close conformity with the details shown on the Plans. Place rock to its full course thickness in one operation and in such a manner as to avoid displacement of the underlying material. Do not place rock in layers or by dumping into chutes or by similar methods likely to cause segregation.

340.05 Measurement and Payment.

340.05.01 Rock Lined Channel. ROCK LINED CHANNEL will be measured per SQUARE FOOT installed. Payment shall be made at the contract unit price per square foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work. This item includes, but is not limited to, excavation, filter fabric, and specified rock, complete and in place.

340.05.02 Rock Inlet/Outlet Protection. ROCK INLET PROTECTION will be measured by the SQUARE FOOT. Payment will be made for rock inlet/outlet protection to be placed at sediment traps as indicated on the plans. Payment shall be made at the contract unit price per square foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work. This item includes, but is not limited to, excavation, furnishing and placing filter fabric, and specified rock, complete and in place.

SECTION 341 – ARTICULATED BLOCKS/BLOCK SHOULDER TREATMENT

341.01 Description. The work covered by this section includes furnishing all labor, materials, equipment and incidentals for the construction of articulated block concrete grid pavement system for road shoulder stabilization including subgrade treatment, filter fabric placement and concrete units placement as shown on the construction drawings and as described by the Special Provisions and the Standard Specifications.

341.02 Materials.

341.02.01 Articulated Concrete Blocks. Articulated concrete blocks shall be Turfstone™ dry-cast concrete units as manufactured by Basalite, Turfston concrete grid pavers as manufactured by Belgard, that interlock together to form a supported turf matrix, or equal. The individual units shall meet or exceed the following requirements.

1. The concrete blocks shall be 16” x 24” x 3.125” with a maximum tolerance of plus or minus .25” for each dimension.
2. The concrete units shall have a minimum weight of 62 lbs. per block.
3. The concrete units shall have a minimum 28-day compressive strength of 5000 psi as tested in accordance with ASTM C140. The concrete shall have a maximum moisture absorption rate of 5 percent to ensure adequate freeze-thaw protection.
4. The concrete units shall be tan in color.

341.02.02 Bedding Sand. Bedding sand shall conform to the grading requirements in the following table:

Bedding Sand Grading Requirements

Percent Passing by Weight	
Sieve Size	Percent Passing
3/8 in	100
No. 4	90 to 100
No. 8	85 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

341.02.03 Open Graded Aggregate. The open graded aggregate base shall conform to Section 200.05.03 of the Standard Specifications for Coarse Aggregates and shall conform to the following table:

Size No. 7 (1/2” to No. 4)

Percent Passing by Weight	
Sieve Size	Percent Passing
¾ in	100
1/2 in	90 to 100
3/8 in	40 to 70
No. 4	0 to 15
No. 8	0 to 5
No. 200	0 to 1

341.02.04 Filter Fabric. Non-woven geotextile filter fabric shall be used for all applications unless specified otherwise. Non-woven geotextile filter fabric specified on the Plans shall meet or exceed the following minimum specifications.

Non-Woven Geotextile Filter Fabric Specifications

Grab Tensile Strength	120 lbs.	ASTM D-4632
Grab Elongation	50%	ASTM D-4632
Puncture Strength	310 lbs.	ASTM D-6241
Trapezoidal Tear	50 lbs.	ASTM D-4533
Apparent opening Size (AOS)	70 U.S. Sieve	ASTM D-4751
Permittivity	1.7 sec ⁻¹	ASTM D-4491
Water Flow Rate	135 gpm/sq.ft.	ASTM D-4491
UV Resistance	70 %	ASTM D-4355

The Contractor shall submit a sample of the non-woven geotextile filter fabric and product specifications to the County for review and approval.

341.02.05 Concrete. Concrete used for construction of edge restraints shall have a minimum compressive strength of 4000 psi. Unless otherwise specified, Portland cement for concrete shall be Type II, low alkali. Concrete materials shall be in conformance with sections 200 and 202 of the Standard Specifications. All concrete mixes shall meet requirements of Section 337.10 of the Standard Specifications. All concrete mixes shall meet the requirements of Section 337.10.01.03, Portland Cement Concrete Exposed to Freeze-Thaw Cycles of the Standard Specifications.

341.02.06 Loose Riprap. Loose riprap for the 2-foot wide band adjacent to the block shoulder and concrete curb shall be Class 150/Class 300/400 Bedding with a D₅₀ of 6 inches according to Table 200.07.03-I of the Standard Specifications.

341.03 Construction.

341.03.01 Subgrade. Subgrade shall be excavated and shaped to the limits and dimensions shown on the Plans and prepared as follows.

1. For road shoulder treatments, subgrade shall be compacted thoroughly to a minimum of 90% maximum dry density, until no further movement of the soil is observed.
2. For drainage swales, subgrade shall be neatly trimmed to undisturbed soil and loose material shall be lightly compacted to achieve similar compaction to the native soils.

341.03.02 Filter Fabric. Non-woven geotextile filter fabric shall be placed to the limits and dimensions shown on the Plans as follows.

1. Filter fabric shall be placed directly on the prepared area. Longitudinal and transverse edge seams shall be overlapped at least 12 inches.
2. The filter fabric panels shall be placed so that the upstream strip of fabric will overlap the downstream strip.
3. As needed, securing staples shall be inserted through both strips of overlapped fabric along one line through the midpoint of the overlap to temporarily hold the filter fabric panels in place until the articulated concrete blocks can be placed.

341.03.03 Open Graded Aggregate. Open graded aggregate shall be placed to the depth shown on the plans and plate compactor compacted until firm.

341.03.04 Edge Restraints. Concrete edge restraint shall be provided along the perimeter of all road shoulder treatment areas as shown on the Plans. All concrete edge restraints shall be constructed to dimensions and height shown on the Plans and shall be supported on a compacted subbase not less than 6 inches thick. Sawcut joint in concrete curb every 5-feet.

341.03.05 Concrete Units Installation.

1. The bedding sand shall be spread evenly over the base course and screeded to uniform 1" to 1.5" thickness. The screeded sand should be maintained in a loose condition and not be disturbed.
 - a. Protect from rain and traffic prior to and following screeding. Do not screed in advance of the installation to an extent that paving will not be completed over sand setting bed on the same day.
 - b. The sand bedding layer shall not exceed 1" to 1.5" in thickness following compaction of the units.
2. Setting Concrete Units
 - a. Install paver in the pattern shown on the drawings. Maintain straight joint lines.
 - b. Pavers with excessive chips, cracks, or other defects shall not be installed.
 - c. Use string lines or chalk lines to maintain true pattern lines.
 - d. Joints between the grids shall not exceed 3/16".
 - e. Required cuts shall be made with a masonry saw to provide clean, sharp, unchipped edges.
3. Compacting
 - a. After the units are set in place, they shall be swept clean and inspected.
 - b. Before ending each day's work, fully compact installed units within 3 feet of the laying surface. Cover remaining uncompacted edge of the laying surface and sand with waterproof covering.
 - c. Compact with 3 or more passes of a plate-type compactor capable of 3500-5000-pound centrifugal force. A rubber mat should be attached to the compactor to protect the units from cracking or chipping.
4. Spreading Open Grade Aggregate
 - a. Aggregate shall be placed into the openings.
 - b. Final level of aggregate should be .25" below the surface of the Turfstone.
 - c. The Turfstone should be vibrated again once the voids are full.

341.04 Measurement and Payment.

341.04.01 Block Shoulder Treatment. BLOCK SHOULDER TREATMENT will be measured per SQUARE FOOT installed, to the dimensions outside the concrete curb and the back of curb where curb and gutter is adjacent to the block shoulder treatment. Payment shall be made at the contract unit price per square foot and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work. This item includes, but is not limited to, excavation, grading, compaction filter fabric, open graded aggregate, sand bedding, articulated concrete blocks, Class 150/Class 300/400 Bedding, and concrete curb, complete and in place. Curb and gutter immediately adjacent to the block shoulder treatment will be paid for under Bid Item "Type 1 PCC Curb and Gutter".

SECTION 342 – SNOW STORAGE AREAS AND INFILTRATION BASINS

342.01 Description. The Contractor shall furnish all labor, materials, equipment, and incidentals required and perform all operations in connection with the construction of snow storage areas and infiltration basins in accordance with the lines, grades, design and dimensions shown on the Plans and as specified herein.

342.02 Submittals. The Contractor shall furnish the manufacturer's certificates of compliance for cellular concrete blocks/mats, revetment cable, and any revetment cable fittings and connectors. The Contractor shall also furnish the manufacturer's specifications, color samples, literature, shop plans for the layout of the mats, and any recommendations, if applicable, that are specifically related to the project.

Alternative materials may be considered. Alternative material packages must be submitted to the County for review and approval by the County and Engineer within eight (8) days following bid date. Submittal packages must include, as a minimum, the following:

1. Full-scale laboratory testing and associated engineered calculations quantifying the hydraulic capacity of the proposed cellular concrete mat system in similar conditions to the specific project.
2. A list of 5 comparable projects, in terms of size and applications, in the United States, where the results of the specific alternate revetment system use can be verified after a minimum of five (5) years of service life.

342.03 Materials.

342.03.01 Cellular Concrete Blocks. This specification covers erosion control mats used in revetments for soil stabilization. All cellular concrete mats shall be prefabricated as an assembly of concrete blocks laced with revetment cables. Cellular concrete mats may be assembled on-site by hand-placing the individual units with or subsequent insertion of cables. The color of the mats shall be dark chocolate brown as selected by the County from standard colors offered by manufacturer.

Individual units in the system shall be staggered and interlocked for enhanced stability. The mats shall be constructed of open and/or closed cell units as shown on the contract plans. The open cell units have two (2) vertical openings of rectangular cross section with sufficient wall thickness to resist breakage during shipping and installation. Parallel strands of cable shall extend through two (2) cable ducts in each block allowing for longitudinal binding of the units within a mat. Each row of units shall be laterally offset by one-half of a block width from the adjacent row so that any given block is cabled to four other blocks (two in the row above and two in the row below).

Each block shall incorporate interlocking surfaces that minimize lateral displacement of the blocks within the mats when they are lifted by the longitudinal revetment cables. The interlocking surfaces must not protrude beyond the perimeter of the blocks to such an extent that they reduce the flexibility or articulation capability of the cellular mats or become damaged or broken when the mats are lifted during shipment or placement. Once the mats are in place, the interlocking surfaces shall minimize the lateral displacement of the blocks even if the cables should become damaged or removed. The mats must be able to flex a minimum of 18° between any given row or column of blocks in the uplift direction and a minimum of 45° in the downward direction.

The cables inserted into the mats shall form lifting loops at one end of the mat with the corresponding cable ends spliced together to form a lifting loop at the other end of the mat. The cables shall be inserted after sufficient time has been allowed for the concrete to complete the curing process.

Concrete units may be fabricated from lightweight or normal weight aggregates, or both. The concrete units shall be produced by a dry cast method. The dry cast units obtain strength in a shorter duration as well as provide an increase in the durability and overall quality of product.

At the time of delivery to the work site, the units shall conform to the physical requirements prescribed in the following Table.

Physical Requirements

Compressive Strength Net Area Min. psi		Water Absorption Max. lb/ft³	
Avg. of 3 units	Individual Unit	Avg. of 3 units	Individual Unit
4,000	3,500	10	12

The manufacturer shall meet all requirements pertaining to a concrete unit’s durability pertaining to freeze-thaw environments.

Units shall be sampled and tested in accordance with ASTM D 6684-04, Standard Specification for Materials and Manufacture of Articulating Concrete Block (ACB) Revetment Systems.

All units shall be sound and free of defects that would interfere with either the proper placement of the unit or impair the performance of the system. Surface cracks incidental to the usual methods of manufacture, or surface chipping resulting from customary methods of handling in shipment and delivery, will not be deemed grounds for rejection.

Cracks exceeding 0.25 inches in width and/or 1.0 inch in depth shall be deemed grounds for rejection. Chipping resulting in a weight loss exceeding 10% of the average weight of a concrete unit shall be deemed grounds for rejection. Blocks rejected at the job site shall be repaired with structural grout or replaced at the expense of the contractor.

Cellular concrete blocks shall be ARMORFLEX Class 50S, or equal, as sold and distributed by:

CONTECH Engineered Solutions, LLC
 9025 Centre Pointe Drive, Suite 400
 West Chester, OH 45069
 (800) 338-1122
 www.ContechES.com

The individual blocks comprising the mat shall have the nominal characteristics that are presented in the following Table.

Standard Properties of ARMORFLEX Blocks

Class	Type	Lbs	Lbs/Sq. ft	Length Inches	Width Inches	Height Inches	Open Area %
50S	Open	45-52	45-53	13.0	11.6	6.0	22 – 36

342.03.02 Revetment Cable and Fittings. Revetment cable shall be constructed of preformed galvanized aircraft cable. The cables shall be made from individual wires and strands that have been formed during the manufacture into the shape they have in finished cable.

Cable shall consist of a core construction comprised of six (6) or seven (7) wires wrapped within seven (7) or nineteen (19) wire strands. The revetment cable shall have the following physical properties:

Nominal Cable Diam.	Approx. Avg. Strength Lbs.	Weight - Lbs./100 ft	
		Min. Lbs.	Max Lbs.
1/8"	1,700	2.8	2.9
3/16"	3,700	6.2	6.5
1/4"	6,100	10.6	11.0
3/8"	13,300	23.6	24.3

The revetment cable shall exhibit resistance to mild concentrations of acids, alkalis, and solvents. Fittings such as sleeves and stops shall be aluminum, and the washers shall be galvanized steel. Selection of cable and fittings shall be made in a manner that ensures a safe design factor for mats being lifted from both ends, thereby forming a catenary. Consideration shall be taken for the bending of the cables around hooks or pins during lifting. Revetment cable splicing fittings shall be selected so that the resultant splice shall provide a minimum of 75% of the minimum rated cable strength.

342.03.03 Filter Fabric. Non-woven geotextile filter fabric specified on the construction drawings shall meet or exceed the following minimum specifications.

Non-Woven Geotextile Filter Fabric Specifications

Grab Tensile Strength	120 lbs.	ASTM D-4632
Grab Elongation	50%	ASTM D-4632
Puncture Strength	310 lbs.	ASTM D-6241
Trapezoidal Tear	50 lbs.	ASTM D-4533
Apparent opening Size (AOS)	70 U.S. Sieve	ASTM D-4751
Permittivity	1.7 sec ⁻¹	ASTM D-4491
Water Flow Rate	135 gpm/sq.ft.	ASTM D-4491
UV Resistance	70 %	ASTM D-4355

342.03.04 Revegetation. Revegetation treatment shall be installed per Section 339 of these Special Provisions.

342.03.05 Drain Rock. The storage volume below the cellular concrete blocks at the bottom of the snow storage or infiltration basin shall be filled with washed Class D backfill per Section 200.03.05 of the Standard Specifications.

Where cellular concrete blocks are placed on the side slope of the basin, e.g. at the maintenance access points, the cellular concrete blocks shall be placed on a 6-inch layer of Class C backfill, per Section 200.03.04 of the Standard Specifications that is covered by a filter fabric as specified in paragraph 342.03.03.

342.03.06 Basin Outfall Standpipe. Corrugated metal pipe used for basin outfall standpipe shall be helical steel pipe (2 2/3" x 1/2" corrugation profile) as per Standard Specification Section 203.02. CMP sediment trap risers shall be perforated as shown on the Plans. The Standpipe shall have a one-foot stub of continuously welded corrugated metal pipe for the outfall pipe connection at the size and elevation indicated on the plans. Metal grate and appurtenances shall be hot dip galvanized after fabrication.

342.04 Construction.

342.04.01 Foundation Preparation. Areas on which filter fabric and cellular concrete blocks are to be placed shall be constructed to the lines and grades shown on the Plans and approved by the County.

The slope shall be graded to a smooth plane surface to ensure that direct contact is achieved between the slope face and the geotextile (filter fabric), and between the geotextile and the entire bottom surface of the cellular concrete blocks. All slope deformities, roots, grade stakes, and stones which project normal to the local slope face must be re-graded or removed. No grooves or depressions greater than 0.5 inches in depth normal to the local slope face with a dimension exceeding 1.0 foot in any direction shall be permitted. Where such areas are evident, they shall be brought to grade by placing compacted homogeneous material. Immediately prior to placing the filter fabric and cellular concrete blocks, the prepared subgrade shall be inspected by the County. No fabric or blocks shall be placed thereon until that area has been approved.

342.04.02 Drain Rock and Geotextile Filter Fabric. Class D backfill/drain rock, as specified in paragraph 342.03.05, shall be placed and wrapped in filter fabric. Filter Fabric shall be placed within the limits shown on the Plans. The filter fabric shall be placed directly on the prepared area, in direct contact with the subgrade, and free of folds or wrinkles. The geotextile shall not be walked on or disturbed when the result is a loss of direct contact between the cellular concrete block and the geotextile or between the geotextile and the subgrade. The geotextile filter fabric shall be placed so that the upstream strip of fabric overlaps the downstream strip. The longitudinal and transverse joints shall be overlapped at least two (2) feet. The geotextile shall extend at least one foot beyond the top and bottom revetment termination points. If cellular concrete blocks are assembled and placed as large mattresses, the top lap edge of the geotextile shall not occur in the same location as a space between cellular concrete mats unless the space is concrete filled.

Class C backfill shall be placed on graded and compacted subgrade, compacted to 95% relative compaction, and covered with filter fabric to receive the cellular concrete blocks.

342.04.03 Cellular Concrete Blocks/Mats. Cellular concrete blocks/mats shall be installed within the specified lines and grades shown on the Plans. The cellular concrete blocks shall be placed on the filter fabric in such a manner as to produce a smooth plane surface in direct contact with the filter fabric. No individual block within the plane of placed cellular concrete blocks shall protrude more than one-half inch. To ensure that the cellular concrete blocks are flush and develop direct contact with the subgrade, the blocks shall be "seated" with a roller or other means as approved by the County.

If assembled and placed as large mattresses, the cellular concrete mats shall be attached to a spreader bar or other approved device to aid in the lifting and placing of the mats in their proper position by the use of a crane or other approved equipment. The equipment used shall have adequate capacity to place the mats without bumping, dragging, tearing or otherwise damaging the underlying fabric. The mats shall be placed side-by-side and/or end-to-end, so that the mats abut each other. Mat seams or openings between mats greater than two (2) inches shall be filled with 4000 psi concrete or grout. Whether placed by hand or in large mattresses, distinct changes in grade that results in a discontinuous revetment surface in the direction of flow shall require a concrete/grout seam at the grade change location so as to produce a continuous surface.

The cells or openings in the cellular concrete blocks shall be backfilled with open graded aggregate. The Contractor shall revegetate the disturbed area outside of the snow storage area and infiltration basins.

342.04.04 Loose Riprap. Loose riprap for the slope protection where the rock lined channel meets the infiltration basin shall be Class 150/Class 300/400 Bedding with a D_{50} of 6 inches according to Table 200.07.03-I of the Standard Specifications.

342.05 Measurement and Payment.

342.05.01 SOUTHWOOD BOULEVARD SNOW STORAGE AREA. Payment for SOUTHWOOD BOULEVARD SNOW STORAGE AREA will be made at the contract LUMP SUM price and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work. This item includes, but is not limited to, excavation, soil disposal, grading and compacting native and imported materials, installation of cellular concrete blocks, connecting cables, concrete anchoring, erosion control mat, drain rock, filter fabric, infiltration bed, concrete curb, and revegetation treatment. Sawcut, removal of existing asphalt and aggregate base and construction of patch paving is included in a separate bid item.

342.05.02 MAYS BOULEVARD SNOW STORAGE AREA. Payment for MAYS BOULEVARD SNOW STORAGE AREA will be made at the contract LUMP SUM price and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work. This item includes, but is not limited to, excavation, soil disposal, grading and compacting native and imported materials, installation of cellular concrete blocks, connecting cables, concrete anchoring, erosion control mat, drain rock, filter fabric, infiltration bed, concrete curb, and revegetation treatment. Sawcut, removal of existing asphalt and aggregate base and construction of patch paving is included in a separate bid item.

342.05.03 INFILTRATION BASINS. Payment for NORTH INFILTRATION BASIN will be made at the contract LUMP SUM price and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work as shown on the plans and details. This item includes, but is not limited to, excavation, soil disposal, grading and compacting native and imported materials, installation of cellular concrete blocks, connecting cables, concrete anchoring, erosion control mat, drain rock, filter fabric, infiltration bed, CMP outfall standpipe and connection to the storm drain, staff gauges, and revegetation treatment.

Payment for SOUTH INFILTRATION BASIN will be made at the contract LUMP SUM price and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete the work as shown on the plans and details. This item includes, but is not limited to, excavation, soil disposal, grading and compacting native and imported materials, installation of cellular concrete blocks, connecting cables, concrete anchoring, erosion control mat, drain rock, filter fabric, infiltration bed, rock slope protection, staff gauges, and revegetation treatment.

SECTION 350 – MOBILIZATION AND DEMOBILIZATION

350.01 Mobilization. This item shall include all labor, materials, and equipment required to mobilize for the project, as specified herein. This item includes but is not limited to storage of equipment, materials, temporary power source and installation, establishment of staging areas, and sanitation facilities.

The Contractor shall be responsible for locating staging/storage areas and shall install temporary BMPs and maintain them to function as intended at all times during construction and until project closeout with TRPA. Staging/storage areas must be identified and approved by Washoe County, the Engineer, and TRPA prior to the TRPA Pre-grade Inspection. All necessary temporary BMPs shall be installed at the staging/storage

areas prior to the TRPA Pre-Grade Inspection and will be inspected during said inspection to ensure proper installation and protection. Payment for work related to installing BMPs will be made under Bid Item Temporary Erosion Control Measures.

350.02 Demobilization. Demobilization shall consist of the removal of all materials, equipment, signage, temporary pollution control materials, filter fabric under the drainage grates and other items imported with the Project improvements or slated for removal as a part of the Work and as directed by the County. Acceptance of the Project improvements must be in the form of a written "Notice of Completion." The Contractor is directed to Section 100.37 Protection of Work and Cleaning Up of the Standard Specifications.

350.03 Measurement and Payment. Payment for MOBILIZATION AND DEMOBILIZATION will be made on a LUMP SUM basis according to the following schedule:

- 1) When 5% of the total original contract amount is earned from other bid items, an amount equal to 50% of the amount bid for MOBILIZATION AND DEMOBILIZATION, or 5% of the total original contract amount, whichever is the least, will be paid.
- 2) When 10% of the total original contract amount is earned from other bid items, an amount will be paid resulting in a total amount equal to 90% of the amount bid for MOBILIZATION AND DEMOBILIZATION, or 10% of the total original contract amount, whichever is the least.
- 3) Upon satisfactory completion of all work on the Project, including completion of punch list work and submittal of record drawings by the Contractor, 100% of the remaining contract price for MOBILIZATION AND DEMOBILIZATION will be paid.

SECTION 355 – CONSTRUCTION TRAFFIC CONTROL

355.01 Traffic Control Plans. In addition to adhering to Section 100.33.01 of the Standard Specifications the Contractor shall comply with the following. All traffic control shall conform to the latest editions of the Manual on Uniform Traffic Control Devices (MUTCD) and the State of Nevada Department of Transportation (NDOT) Standard Plans for Road and Bridge Construction, specifically, Plans T-35.1.1 through T-35.1.7, and as directed by the County.

The Contractor shall submit four (4) copies of proposed traffic control plan (TCP), with the same number of copies of the proposed project schedule, to the County for review and comments at least seven (7) calendar days prior to the Preconstruction Conference. The proposed TCP shall be prepared and signed by a Professional Traffic Operations Engineer (PTOE) or a Traffic Control Supervisor certified by the American Traffic Safety Services Association (ATSSA), hereinafter designated "TCS". If the Contractor makes significant changes to the TCP, these changes must also be prepared and signed by the PTOE/TCS. The final TCP signed by the PTOE/TCS shall be submitted to the County within five (5) working days after receipt of review comments to the proposed TCP.

The Contractor's TCP shall include, but not be limited to, the following:

- Proposed construction zone and existing speed limits
- All construction signing
- Message Board locations

- Location of flaggers
- Types and location of traffic control devices
- Temporary lane striping
- Construction phasing (including phasing of detours, if any)
- Detours
- 8 ½" x 11" individual access plans for multi-access properties
- Accommodations for pedestrians and bicycles
- Letter of conformance stating that all Category 1 and 2 traffic control devices used on the project meet the evaluation criteria of National Cooperative Highway Research Program (NCHRP) Report 350. Note that a sign together with its portable support is considered as a system, which together must meet the NCHRP Report 350 Requirements.

The County will provide written comments and/or corrections to the TCP. If necessary, the Contractor and County will meet to consider the comments and/or corrections to the plan prior to the Preconstruction Conference to resolve any issue relative to the TCP. Upon resolution of all issues or acceptance of the TCP as submitted, the County will accept the plans in writing.

Acceptance by the County of the submitted TCP shall in no way relieve the Contractor of the responsibility for safety requirements. Acceptance of the TCP by the County indicates that the plans generally appear to conform to the contract requirements. Such acceptance shall in no way be construed as confirmation of the technical accuracy or adequacy of the contents of the plans and shall not relieve the Contractor of the obligation to institute traffic control measures in full compliance with contract requirements, and which function safely and correctly, and are in conformance with applicable statutes, ordinances, and regulations.

Immediately after setting up of new or modified TCP, the Contractor shall have the TCS inspect the controls installed in the field to determine if all required controls have been installed and are operating as intended. The TCS shall submit to the County a written inspection report on the traffic controls conformance with the approved TCP and contract requirements. If the TCS determines that the traffic controls are not in conformance with the approved TCP, contract requirements, or determines that the traffic controls are not functioning as intended, the report shall address such deficiencies and make recommendations for changes. The County may require the Contractor's PTOE/TCS to revise the TCP accordingly.

If at any time it is determined that traffic controls have been modified or are not functioning as intended, the County may request the Contractor's PTOE/TCS to evaluate the traffic controls installed by the Contractor. Additionally, if during construction, revisions to the accepted plans are necessary for safety or accommodation to traffic, the County may require such revisions.

Any request by the Contractor to change the TCP shall be submitted in writing and accompanied with drawings, prepared and signed by the PTOE/TCS, showing the appropriate aspects of the TCP at least five (5) work days prior to implementation. Such requests must be approved in writing by the County prior to implementation.

355.02 Notification. Upon approval of the TCP, and at least two (2) working days prior to beginning construction, the Contractor shall notify and submit a copy of the approved TCP to the County, refuse collection agencies, and appropriate sheriff and fire departments, ambulance service, and any other emergency service as directed by the County.

At least two (2) mobile four-foot by eight-foot (4' x 8') changeable message boards shall be utilized to alert the public of construction and lane closures within the project a minimum of seven (7) calendar days prior

to start of any construction. The location of the message boards shall be finalized at the Preconstruction meeting. The location of the message boards may be moved at the direction of the County. The mobile changeable message boards shall operate twenty-four (24) hours a day for the entire duration of the Contract. The wording of the changeable messages shall be in accordance with the direction received from the County.

It shall be the Contractor's responsibility to notify, in writing, all residents adjacent to the project of the construction working hours and duration, a minimum of seven (7) working days prior to beginning of work. Subsequent additional notification shall be provided to directly affected properties (i.e. properties which driveways will be affected) no less than 24 hours and no more than 48 hours before the properties will be affected. The notice shall provide a brief description of the work to be performed and shall be personally delivered to each homeowner. If personal service of the notice cannot be provided to the homeowner, a notice shall be left at the front door and adjacent to the garage. The notification shall include the name and phone number of the Contractor for any homeowner questions or concerns. Driveway closures will be limited to one (1) hour.

355.03 General Requirements. The Contractor shall designate a Construction Traffic Control Supervisor (TCS) who shall be responsible for initiating, installing and maintaining all traffic control devices as shown on the TCP, as specified in the MUTCD, the NDOT Standard Plans for Road and Bridge Construction, specifically, Plans T-35.1.1 through T-35.1.7 and these Special Provisions. The Construction Traffic Control Supervisor shall be under the direct supervision of the Superintendent. The designated Construction Traffic Control Supervisor shall be available to be contacted by the County twenty-four (24) hours a day, seven (7) days a week for the life of this contract. The designated Traffic Control Supervisor shall be available to be on the work site within sixty (60) minutes after notification by the County. The Contractor shall submit the designated Construction Traffic Control Supervisor's name, ATSSA certification number, and qualifications for County approval at the preconstruction conference. The Construction TCS shall:

- Have at least one (1) year of field experience directly related to work site traffic control set up in a supervisory or responsible capacity and be certified by ATSSA as a worksite Traffic Control Supervisor
- Understand the Contract requirements
- Understand the MUTCD requirements
- During a workday, make at least three (3) inspections of the condition and position of all traffic control devices in use each day before beginning work, at mid-shift, and one half (1/2) hour after the end of the shift
- During a non-workday, make at least one (1) inspection of the condition and position of all traffic control devices
- Correct all traffic control deficiencies
- Coordinate maintenance of traffic operations with the PTOE/TCS who prepared the TCP if a different person
- Report all corrective actions to maintain and protect traffic through the project
- Review work areas, equipment operation and storage, and material and handling and storage relative to traffic safety; and
- Furnish weekly written certification to the County that inspections and reviews were conducted and that traffic control devices met or exceeded the contract requirements. Weekly certification shall include daily records of traffic control activities and reviews.

The Contractor shall not proceed with any construction until TCP and the Construction TCS have been approved and the proper traffic control has been provided to the satisfaction of the County. Any days lost

due to improper traffic control or lack of a Construction TCS, will be charged against the Contractor's allowable working days.

The Contractor shall maintain public traffic throughout the project duration in accordance with the approved TCP and perform work in a manner that assures the safety and convenience of the public and protects the residents and property adjacent to the project. During construction, the Contractor shall be prepared to provide access through the construction zone for police, fire or emergency vehicles as necessary to reach their destination with a minimum delay. If existing traffic control signs are removed, the Contractor shall install temporary signs of the same designation as close as possible to the original location.

Should the Contractor choose to accomplish work methods or phasing which require modification to any part of the traffic control zone in the approved TCP, the Contractor shall submit for approval a modified traffic control plan at least five (5) working days prior to implementation of such work or phasing.

The Contractor shall make special considerations for local access to and from properties adjacent to the construction zone. All efforts shall be made to minimize the inconvenience to the local residents and business owners. All driveways shall be opened and accessible at the end of shift.

Type I or Type II barricades will not be permitted for use to prevent vehicle traffic from entering a closed portion of roadway. Only Type III barricades will be used in all such instances. Type III-B barricades used for this purpose shall be placed a maximum four (4) feet apart. Yellow warning lights may be necessary for some barricade or drum applications.

Traffic control devices shall be removed as soon as they no longer apply to the current construction activities.

355.04 Truck Route/Storage Area Requirements. The construction limits of this project are adjacent to residential areas. Truck route and storage area locations shall be identified, and a plan shall be submitted seven (7) calendar days prior to the preconstruction meeting, for review and approval by the County and TRPA. Storage areas must be approved prior to the TRPA pre-grade inspection.

The Contractor's truck route plan shall include, but not be limited to, the following:

- Proposed construction zone
- Proposed storage areas
- Location of flaggers (to control truck access, where applicable)
- Construction phasing (including phasing of intersection construction and detours, if any); and
- Proposed truck route (including the location of other construction projects which impact, or may be impacted by, the proposed haul route).

Storage of construction materials, supplies, and equipment within the public streets and alleys during night and weekend periods is prohibited, except where approved by the County and TRPA. At no time shall materials, supplies, or equipment be stored or stockpiled within 30 feet of a travel lane unless separated by guardrail or concrete barrier rail. All storage areas shall comply with the TRPA and SWPPP requirements for BMPs while storing or stockpiling material.

The Contractor shall not proceed with any construction until the truck haul plans have been approved to the satisfaction of the County and TRPA. Any days lost due to the lack of an approved truck haul plan will be charged against the Contractor's allowable workdays.

355.05 Phasing and Access Requirements. Work shall be performed in a manner that will minimize inconvenience to the public.

During construction, lane closures or detours will be allowed within the project area. For lane closures, the Contractor shall provide and maintain a minimum of one (1) paved travel lane at least twelve (12) feet wide at all times and a minimum of (2) two flaggers must be provided. Additional flaggers may be required by the County. The maximum length of a lane closure shall be approximately 1,500 feet. Pilot cars may be required for lane closures. Otherwise the contractor shall maintain one paved travel lane in each direction at least twelve (12) feet wide at all times. Lane closures shall only be allowed during construction hours while work is being performed unless otherwise approved. Traffic delays shall be no more than ten (10) minutes.

The Contractor shall provide and maintain a minimum of one (1) access to each private property adjacent to construction at all times, with the following exceptions: 1) Driveway closures during construction shall be limited to a maximum time of one (1) hour during time-consuming construction activities. In all cases, driveway access shall be restored quickly, as soon as the conditions allow, rather than combined with daily site clean-up at the end of the work shift. In all instances, however, driveway access shall be restored prior to the end of the work shift.

During any temporary suspension of work due to weather or other conditions, the Contractor shall open roadways, as agreed by the Contractor and the County to accommodate traffic during the delay. In the event of substantial delays or temporary cessation of work for a period of more than one (1) calendar day after original notice, the Contractor shall re-notify affected businesses and tenants of the delay and revised work schedule.

355.06 Measurement and Payment. Payment for CONSTRUCTION TRAFFIC CONTROL will be made at the contract LUMP SUM price bid on a percentage-completed basis in direct proportion to the percentage contract value of project work completed and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete and maintain the work. Increases in the total contract price for any reason does not justify an increase in the lump sum bid price for CONSTRUCTION TRAFFIC CONTROL. The County reserves the right to adjust the partial payment amounts of CONSTRUCTION TRAFFIC CONTROL based on any adjustments made to other pay items on the Payment Request. In addition, the County reserves the right to adjust the partial payment amounts of CONSTRUCTION TRAFFIC CONTROL based on unsatisfactory implementation and maintenance of construction traffic control.

SECTION 360 – TEMPORARY EROSION CONTROL MEASURES

360.01 Description. This work shall consist of temporary pollution control and erosion control measures that may be shown on the plans, specified in the Special Provisions, or directed by the County during the life of the Contract. Temporary Best Management Practices (BMPs) shown on the plan do not fulfill all requirements of the SWPPP. It is the Contractor's responsibility to ensure temporary BMPs are installed in all areas necessary to comply with, NDEP and TRPA requirements. Temporary erosion control measures will also be required at staging areas utilized during project construction. Said work is intended to provide prevention, control, and abatement of water and air pollution within the limits of the project and to minimize damage to the work and to adjacent property and Lake Tahoe, streams, or other bodies of water.

360.02 Storm Water Pollution Prevention Plan Compliance

360.02.01 Description. The Contractor shall, within 10 (ten) days after the effective date of the executed

Contract, submit a Storm Water Pollution Prevention Plan to the County for acceptance. Said submittal shall include proposed plans and schedules, in duplicate, for accomplishing the prevention of erosion and pollution that may occur due to Contractor's operations. No work shall be started until the plan, schedules and methods of operation are accepted by the County. The Contractor is reminded that the project is located within the Lake Tahoe Basin and all pollution control measures and clean-up measures must satisfy the requirements of TRPA and the permit(s) issued for the Project. During Project construction, the Contractor shall cooperate with the County, NDEP, TRPA, and other regulatory officials and take immediate action as directed to provide erosion or other pollution control.

It shall be the Contractor's responsibility to provide day-to-day operational control of activities that are necessary to ensure compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit for erosion control due to storm water and construction related runoff from construction sites. Work shall include, but is not limited to: filing a Notice of Intent (NOI) and Notice of Termination (NOT); developing and implementing a Storm Water Pollution Prevention Plan (SWPPP); furnishing all materials; and constructing and maintaining all temporary and/or permanent sediment control measures for the duration of the construction activities.

The contractor shall implement the requirements for erosion control due to storm water and construction related runoff from construction sites as established under NRS Chapter 445A. The contractor shall file a NOI with the Nevada Division of Environmental Protection (NDEP). The NOI must include the appropriate filing fees. NOI forms must be completed on-line at the NDEP website: <https://ndep.nv.gov/water/water-pollution-control/permitting/stormwater-discharge-permits/construction-sites-greater-than-1-acre>. After completing the NOI and filing it electronically with NDEP, the applicant must perform the following steps within thirty (30) days to complete the NOI application:

1. Print out a copy of the NDEP confirmation page and sign below the certification statement. The certification statement and the person responsible for signing the NOI is discussed in section 7.23 of the general permit.
2. Write a check made payable to "NDEP" for the required permit fees, and
3. Mail the check and confirmation page with the original signature to:

Stormwater Coordinator
Bureau of Water Pollution Control
Nevada Division of Environmental Protection
901 S Stewart Street, Suite 4001
Carson City, Nevada 89701
Phone (775) 687-9418

Any additional fees, including yearly renewal fees, are also the responsibility of the Contractor.

360.02.02 - Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include, but is not limited to, descriptions of Best Management Practices (BMPs) to be implemented; site-specific diagrams indicating proposed locations of erosion control devices; and provisions for installing, maintaining, removing, and disposing of erosion control devices.

Subcontractors shall sign the SWPPP and shall comply with the requirements of the permit under the supervision of the Contractor.

The SWPPP shall describe and ensure the implementation of practices that will assure compliance with the terms and conditions of the Construction Stormwater General Permit in accordance with good engineering practices and cost-effective approaches as outlined in the Regional BMP Manual.

A copy of the Contractor's NOI, SWPPP, inspection and maintenance records shall be provided to the County at least seven (7) calendar days prior to construction and shall be posted at the construction site with other project records and be available for public inspection.

SWPPP IMPLEMENTATION AND MAINTENANCE

The Contractor shall be responsible through the duration of the project for installing, constructing, inspecting and maintaining the control measures included in the SWPPP and any amendments thereto and for removing and disposing of temporary control measures. The Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work. To ensure the proper implementation and functioning of control measures, the Contractor shall regularly inspect and maintain the construction site for the control measures identified in the SWPPP. Construction Stormwater General Permit requirements a routine site inspection be completed once every 7 days and with 24 hours of the end of 0.5 inch or greater storm event. The Contractor shall identify corrective actions and time frames to address any damaged measures or reinstate any measures that have been discontinued. The findings of each inspection shall be documented in a report and kept onsite with the SWPPP. If the County identifies a deficiency in the deployment or functioning of an identified control measure, the deficiency shall be corrected by the Contractor immediately, or by a later date and time if requested by the Contractor and accepted by the County in writing, but not later than the onset of subsequent precipitation events.

360.03 – Tree Protection. Tree protection shall be installed as indicated on the plans.

360.04 Measurement and Payment. Payment for TEMPORARY EROSION CONTROL MEASURES will be made at the contract LUMP SUM price on a percentage-completed basis in direct proportion to the percentage contract value of project work completed, or as determined by the County based upon satisfactory implementation and maintenance and shall be full compensation for furnishing all materials, labor, equipment, tools, and appurtenances necessary to complete, maintain, and remove, after construction is complete, the temporary control measures and tree protection. Increases in the total Contract Price for any reason do not justify an increase in the lump sum bid price for TEMPORARY EROSION CONTROL MEASURES. The County reserves the right to adjust the partial payment amounts of Erosion Control Measures based on any adjustments made to other pay items on the Payment Request. The County reserves the right to adjust the partial payment amounts of Erosion Control Measures based on unsatisfactory implementation and maintenance of erosion control measures.

SECTION 370 – PROJECT SIGN

370.01 Description. This item shall include all labor, materials, and equipment required to install two project signs for the project, as specified herein. The project signs shall be constructed in accordance with details provided within the Plans and located as directed by the County. The project signs shall be installed within 10 working days after commencement of construction. Maintenance of the project signs is the Contractor's responsibility until the signs are removed by the Contractor at the end of the construction contract. The project signs shall be delivered to the County after they are removed.

370.02 Measurement and Payment. PROJECT SIGN will be measured and paid per EACH, as indicated in the Bid Schedule. This unit price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in PROJECT SIGN, as shown on the plans, as specified in the Special Provisions, and as directed by the County.

Exhibit C - Asphalt Deficiency Mitigation Matrix for Washoe County Streets

% Marshall	In Place Air Voids % (Rice)	Target	Surface Seal				Increased Thickness (Note 4)		Reduced Payment		Remove Replace
		100% Pay	Sand Seal	Slurry Seal	Chip Seal	Sand Blotter	+1"	+1½"	90%	50%	
WEARING	≥ 96.	<2					X(A)			X(A)	
		2-7	X								
		>7 - 10		X	X					X	
	< 96. and ≥ 93.	>10		X(A)	X(B)				X		X (A), (B)
		4 - 7							X		
		>7 - 10							X		X
< 93.	>10							X(A)		X(A)	
										X	
NON-WEARING	≥ 96.	<2								X	
		2-7	X								
		>7 - 10								X	
	< 96. and ≥ 93.	>10						X			X
		4 - 7								X	
		<7 - 10						X			X
< 93.	<10							X			
										X	

A. Combination Notes:

1. Each 'X' represents a recommended mitigation remedy. Several X's for a single deficiency indicate alternate methods of remediation unless noted otherwise. Individual judgment must be exercised by the County on each specific project.
2. Where Rice comparison is within 1% of Marshall compaction on County streets in the surface course, mitigation may be necessary.
3. Increase total pavement thickness by the indicated amount using approved mix.
4. Each X labeled (A) or (B) represents a combination of mitigation remedies listed as group (A) (B).

The mitigation table is an attempt to provide uniformity and fairness to the evaluation process of substandard pavements. Most paving projects affected will exhibit a variety in the type and magnitude of deficiencies that will result in a variety of mitigation approaches. The appropriate mitigation requires sound engineering analysis and judgment. The agency will decide the appropriate mitigation measures with input from the County, testing laboratory, and Contractor.

Appendix A

**“ASBESTOS CEMENT PIPE (AKA TRANSITE) AND/OR PIPE CONTAINING
ASBESTOS LOG”**

DRAFT

**ASBESTOS CEMENT PIPE (AKA TRANSITE) AND/OR PIPE WITH
COATINGS CONTAINING ASBESTOS LOG**

DATE OF REMOVAL: _____

LOCATION OF REMOVAL: _____

PIPE DIAMETER AND LENGTH: _____

BROKEN PIECES APPROXIMATE VOLUME (CUBIC FEET): _____

MISC INFORMATION: _____

PIPE BAGGED/WRAPPED: _____

PIPE STORED PRIOR TO LANDFILL (SPECIFY LOCATION BELOW):

YES _____ **NO** _____ **DATE** _____

ON-SITE DISPOSAL LOCATION PRIOR TO LANDFILL: _____

PRINT ASBESTOS TRAINED/CERTIFIED EMPLOYEE (NAME/NUMBER): _____

_____ **DATE** _____

EMPLOYEE SIGNATURE (ASBESTOS TRAINED/CERTIFIED)