

NOTES:

1. SACKS SHALL BE MADE OF WOVEN GEOTEXTILE FABRIC.
2. SACKS TO BE FILLED WITH 3/4" WASHED DRAIN ROCK OR 1/4" WASHED PEA GRAVEL.
3. CONSTRUCT IN SAG LOCATIONS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPERATE OUT OF SUSPENSION.
4. LEAVE A GAP OF ONE SACK IN THE MIDDLE OF THE TOP ROW TO SERVE AS THE SPILLWAY. SPILLWAY HEIGHT SHALL BE LOWER THAN CURB HEIGHT AND SUFFICIENT IN SIZE TO PASS FLOWS FROM SEVERE STORM EVENTS.
5. PLACE 2 LAYERS OF FILLED SACKS, OVERLAPPING BAGS AND PACK THEM TIGHTLY TOGETHER TO MINIMIZE THE SPACE BETWEEN SACKS.
6. INSPECT AND REPAIR FILTERS AFTER EACH STORM EVENT. REMOVE SEDIMENT WHEN ONE HALF OF THE FILTER DEPTH HAS BEEN FILLED.
7. SEDIMENT SHALL BE COLLECTED AND DISPOSED OF AT A TRPA SITE
8. SEDIMENT AND GRAVEL SHALL BE IMMEDIATELY REMOVED FROM TRAVELED WAY OF ROAD.
9. PROPRIETARY DI PROTECTION OR ALTERNATIVES SUCH AS WEIGHTED FIBER ROLLS ARE ACCEPTABLE.



City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 EROSION CONTROL
 INLET PROTECTION - SAG

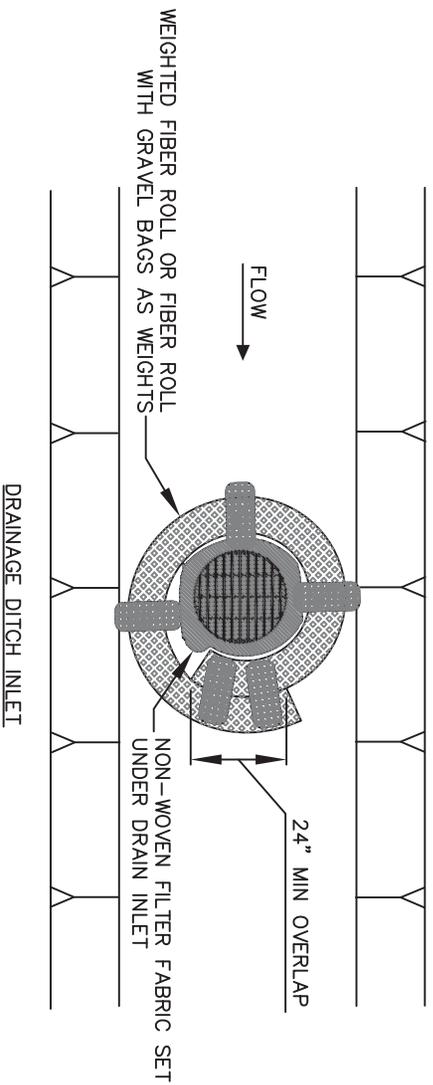
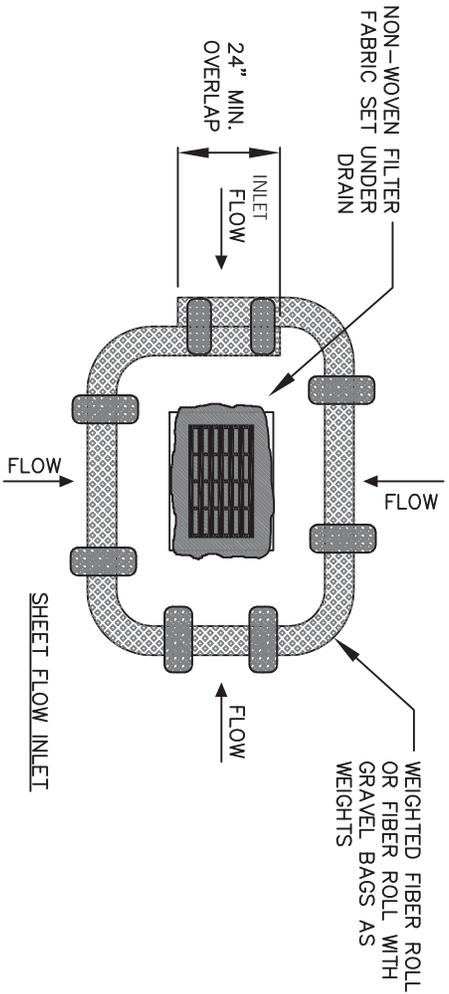
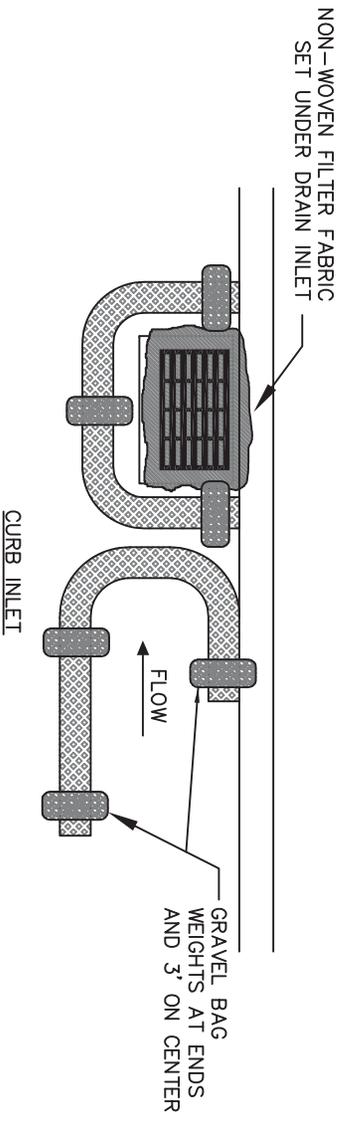
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05/01/09

CITY ENGINEER

NOT TO SCALE

STANDARD DRAWING
 SD82



- NOTES**
1. FIBER ROLL DRAIN INLET PROTECTION SHALL USE A MIN 12" DIAMETER ROLL AND BE INSTALLED BEFORE CONSTRUCTION BEGINS.
 2. GRAVEL BAGS SHALL BE WOVEN FILTER FABRIC. SAND BAGS ARE NOT AN ACCEPTABLE SUBSTITUTE.
 3. ON PAVED SURFACES, SUBSTITUTE STAKES WITH GRAVEL BAGS (USE PROPER STAKING METHODS).
 4. CONSTRUCT ON GENTLY SLOPING STREETS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE OUT OF SUSPENSION.
 5. INSPECT AND REPAIR FIBER ROLLS EACH DAY AND AFTER EACH STORM EVENT. REMOVE SEDIMENT WHEN ONE THIRD OF THE FILTER DEPTH HAS BEEN FILLED. REMOVED SEDIMENT SHALL BE DISPOSED OF PROPERLY.
 6. SEDIMENT AND GRAVEL DEPOSITED ON ROADWAYS SHALL BE IMMEDIATELY REMOVED.
 7. IN HIGH TRAFFIC AREAS, MARK DRAIN INLET PROTECTION WITH VISIBLE BARRIERS SUCH AS SAFETY CONES.
 8. REMOVE DRAIN INLET PROTECTION AFTER THE SURROUNDING AREA IS STABILIZED.

DETAIL COURTESY OF TRPA
EROSION CONTROL TEAM



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL – INLET
FIBER ROLL PROTECTION

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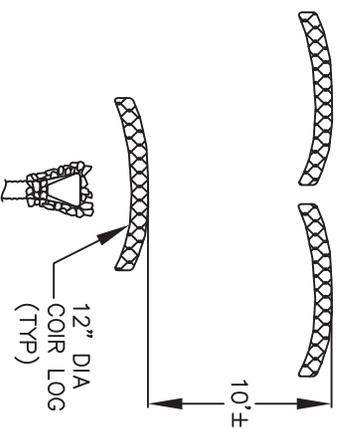
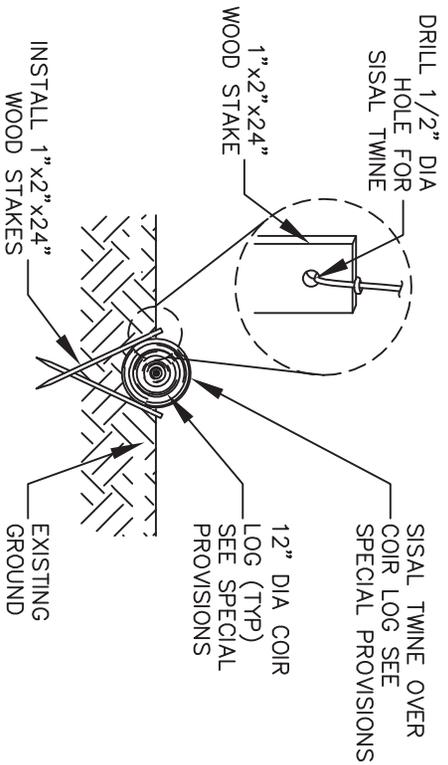
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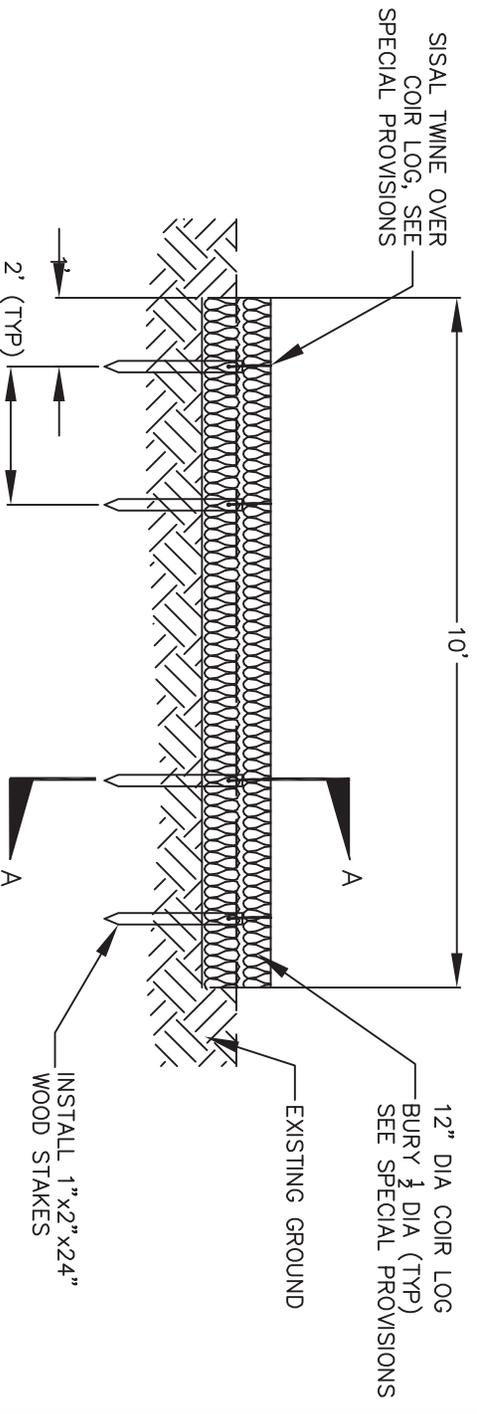
STANDARD DRAWING

SD83



SECTION A-A

COIR LOG PLAN



COIR LOG PROFILE

NOTE:
 PLACEMENT OF COIR LOGS IS SUBJECT TO EXISTING CONDITIONS. FINAL
 LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.



City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 EROSION CONTROL
 COIR LOG STAKING

APPROVED BY:

05/01/09

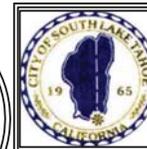
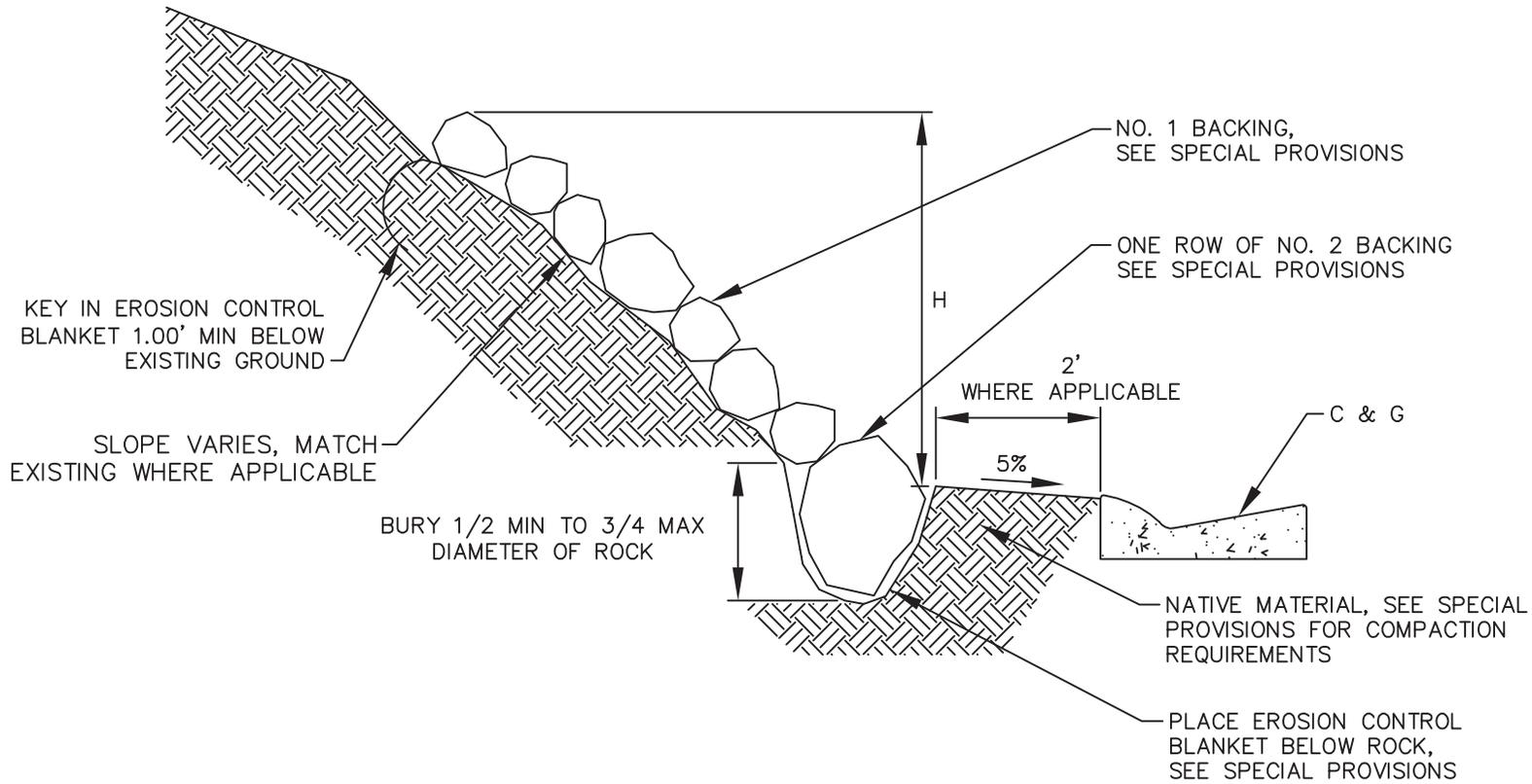
CITY ENGINEER

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STANDARD DRAWING

SD84

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City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 EROSION CONTROL
 ROCK SLOPE PROTECTION

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05/01/2009

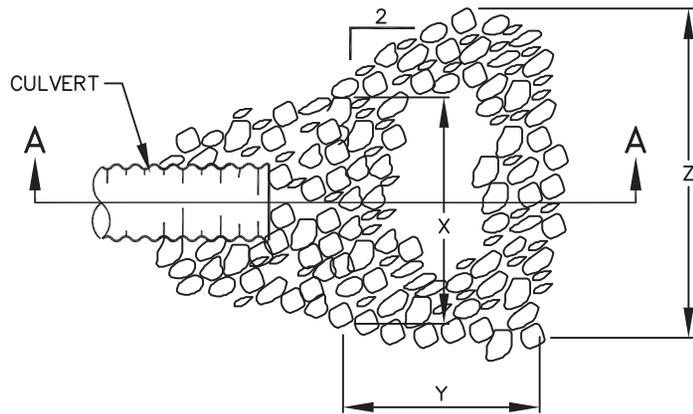
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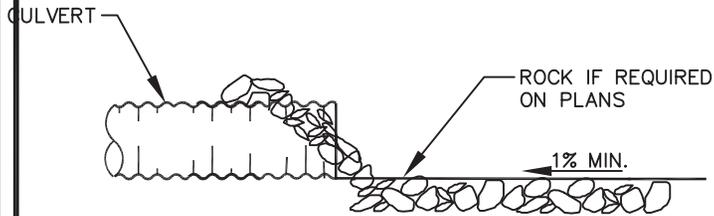
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SD85

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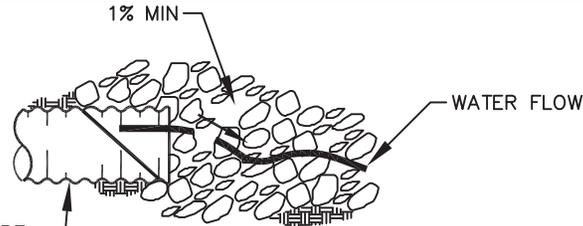


INLET PROTECTION
PLAN VIEW



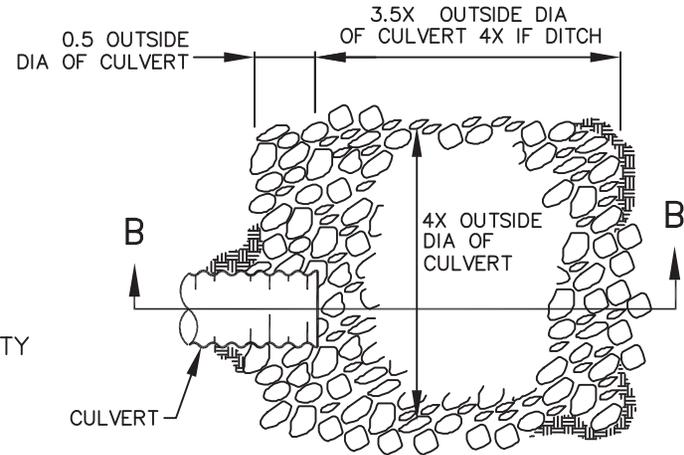
SECTION A-A

ROCK SIZE SHALL BE
0.5 OUTSIDE DIA
OF CULVERT MIN



SECTION B-B

DO NOT USE
THIS DETAIL
IF THE STORM WATER VELOCITY
IS LESS THAN 5ft./SEC



OUTLET PROTECTION
PLAN VIEW

NOTES:

1. HAND PLACE ROCKS.
2. ALL ROCKS SHALL BE ANGULAR.
3. WHERE OUTLET SLOPE EXCEEDS 5%, A SEDIMENT BOWL OR ENERGY DISSIPATOR SHALL BE REQUIRED.
4. ROCK SLOPE PROTECTION SHALL BE SLOPED AT A MIN OF 1% INTO OR OUT OF CULVERT.
5. ALL CULVERTS OF 48 INCHES OR LARGER SHALL BE INSTALLED WITH REINFORCED CONCRETE HEADWALLS AND END WALLS WITH CUTOFF WALLS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. ON OUTLET APPLICATIONS, 50% OF THE ROCKS SHALL BE LARGER THAN HALF THE DIAMETER OF THE PIPE.

**INLET PROTECTION
MINIMUM DIMENSIONS**

ROCK CLASS	PIPE Ø IN.	X FEET	Y FEET	Z FEET
NO. 1 BACKING	12	3	4	5
NO. 1 BACKING	18	4.5	6	7.5
NO. 1 BACKING	24	6	8	10
NO. 1 BACKING	30	7.5	10	12.5
NO. 1 BACKING	36	9	12	15
NO. 1 BACKING	42	10.5	14	17.5
NO. 1 BACKING	48	12	16	20

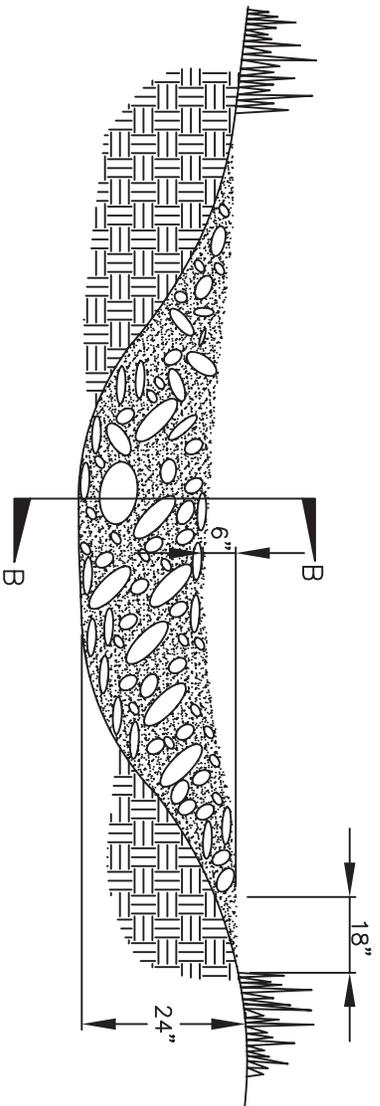


City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL – OUTLET
ROCK PROTECTION

APPROVED BY:
05/01/2009 CITY ENGINEER

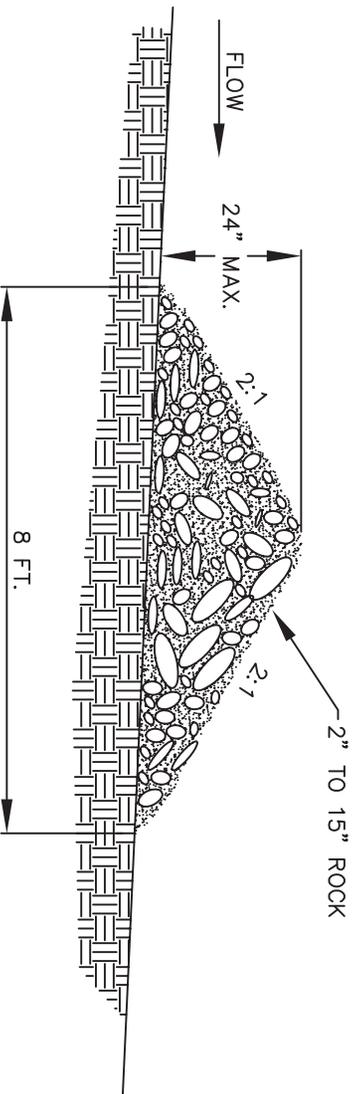
NOT TO SCALE

STANDARD DRAWING
SD86



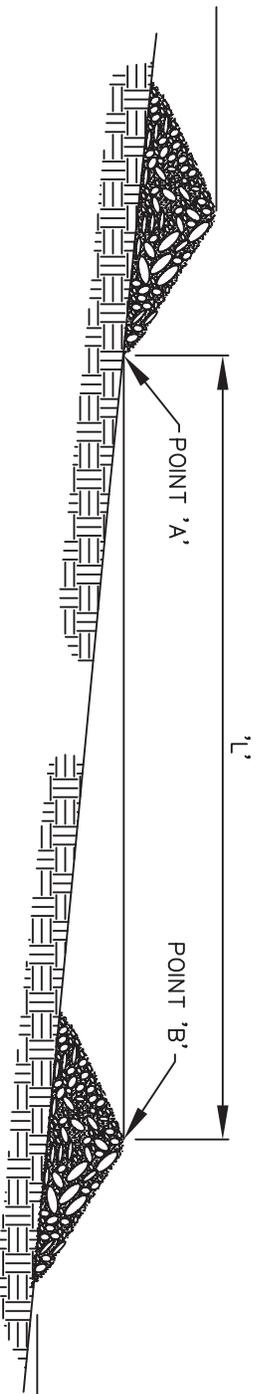
VIEW LOOKING UP STREAM

NOTES:
KEY STONE INTO THE DITCH
BANKS AND EXTEND IT BEYOND
THE ABUTMENTS A MINIMUM OF
18" TO PREVENT OVER FLOW
AROUND DAM.



SECTION B-B

'L' = THE DISTANCE SUCH THAT POINTS 'A' AND 'B'
ARE OF EQUAL ELEVATION



SPACING CHECK DAMS



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL
ROCK CHECK DAM

APPROVED BY:

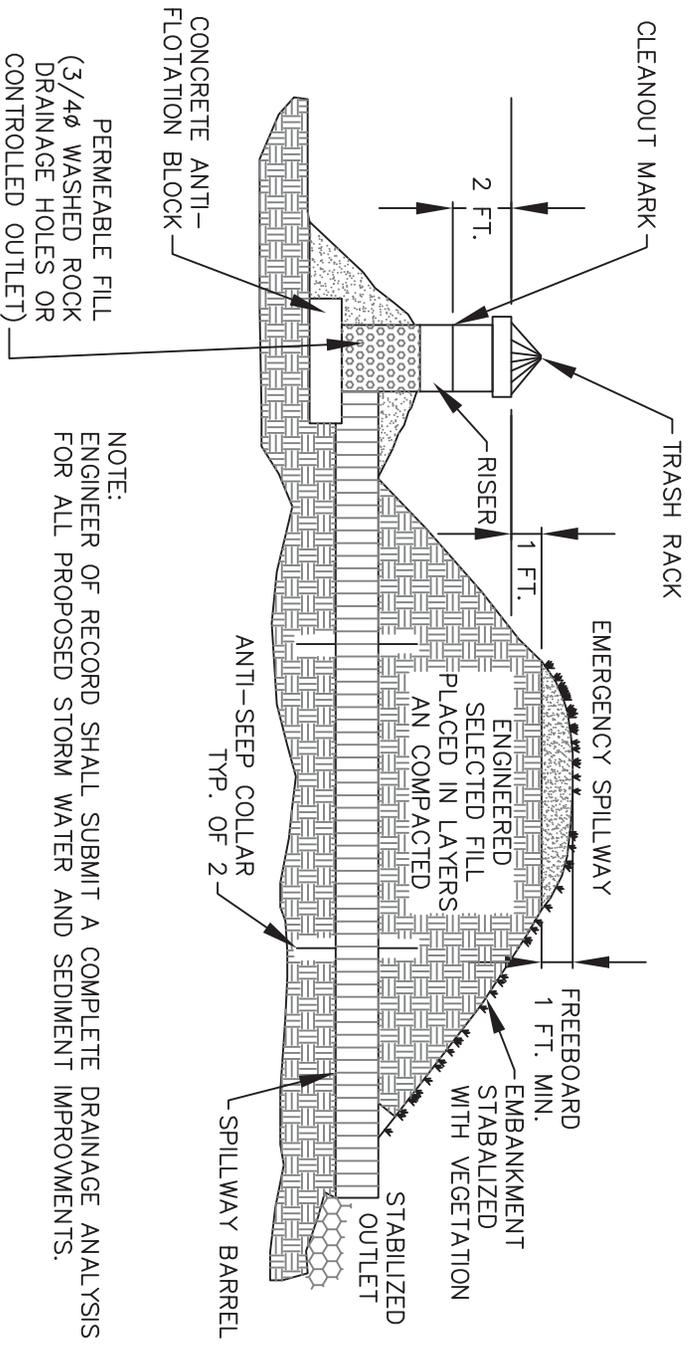
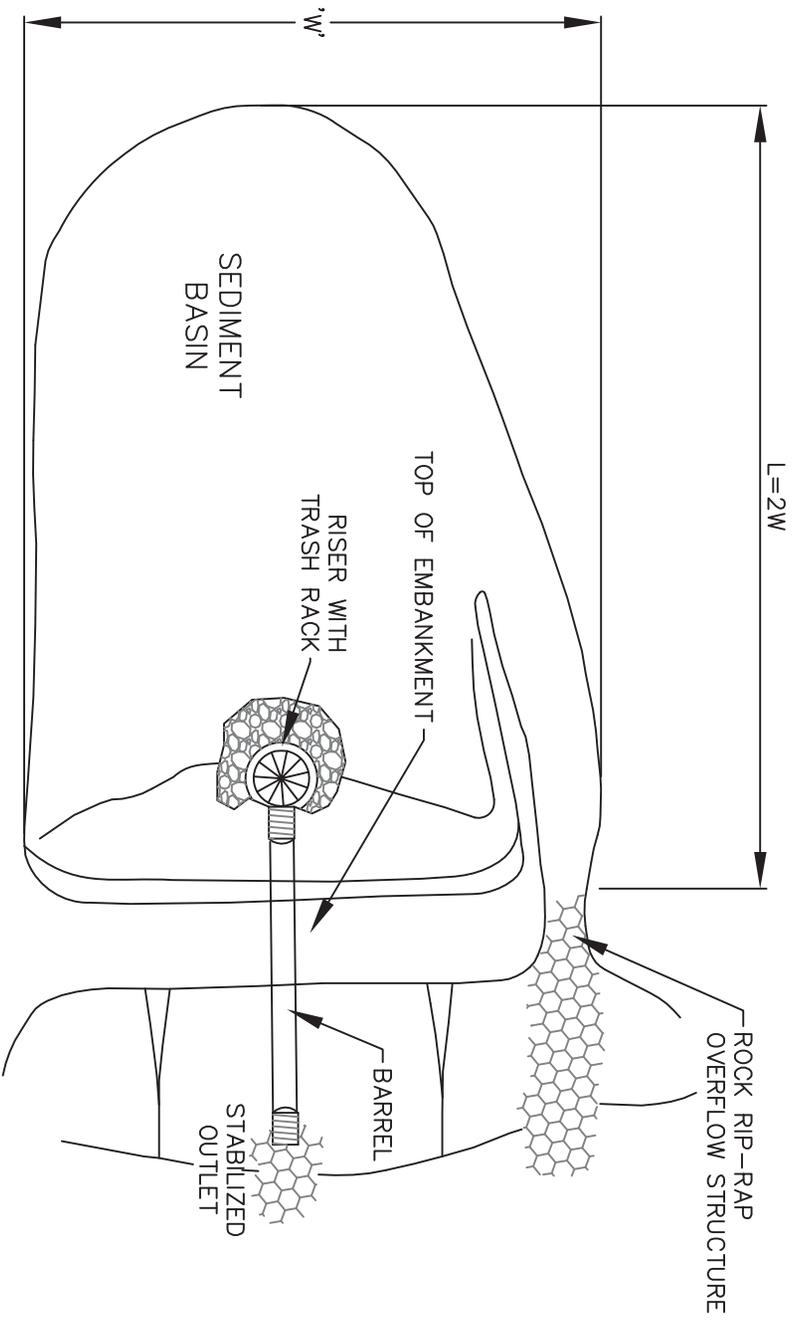
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CITY ENGINEER

NOT
TO
SCALE

STANDARD DRAWING

SD87



NOTE:
ENGINEER OF RECORD SHALL SUBMIT A COMPLETE DRAINAGE ANALYSIS FOR ALL PROPOSED STORM WATER AND SEDIMENT IMPROVEMENTS.



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL
SEDIMENT BASIN

APPROVED BY:
12/28/07

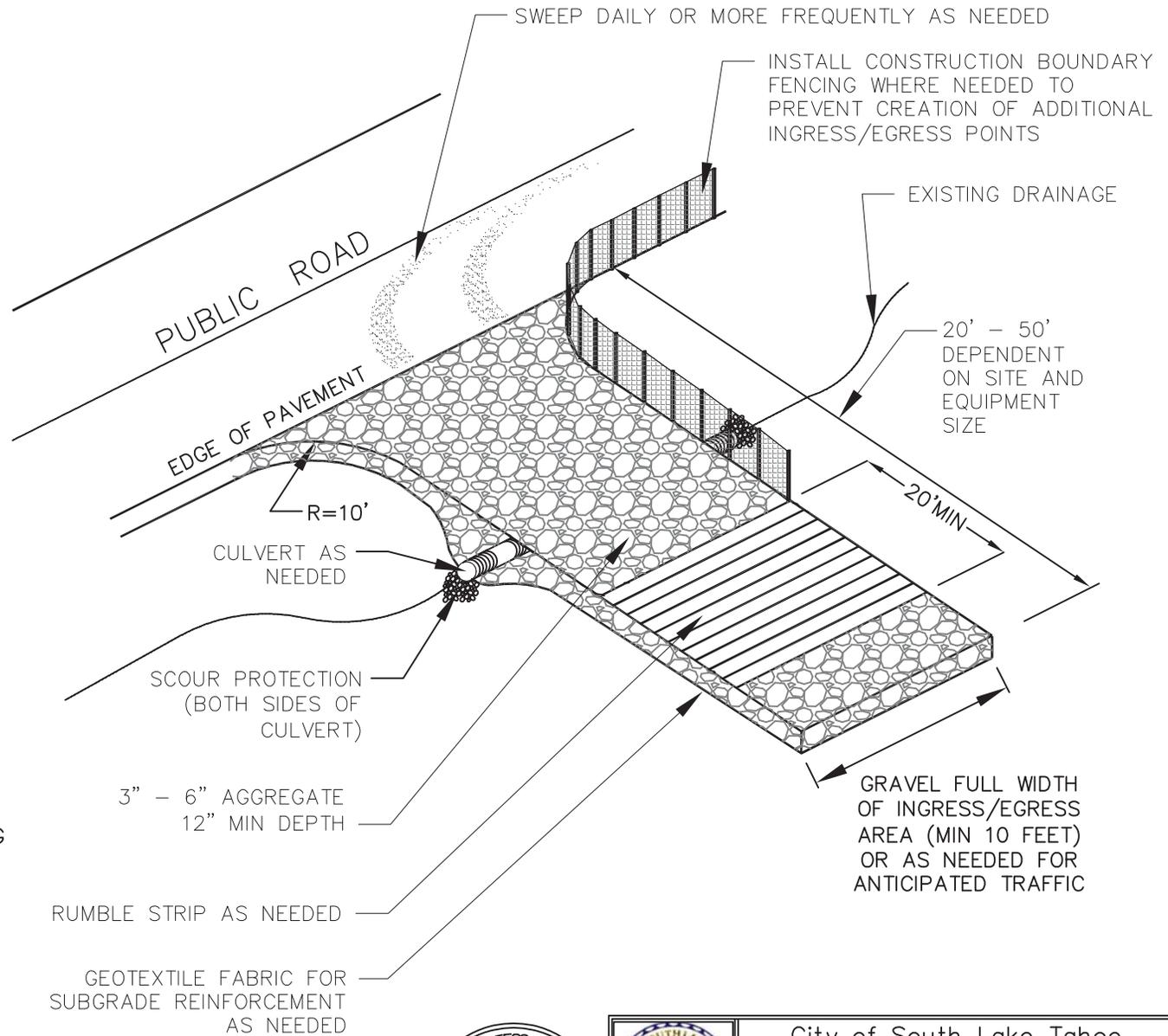
CITY ENGINEER

NOT TO SCALE

STANDARD DRAWING
SD88

NOTES:

1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE USED AT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS.
2. THE AGGREGATE SHALL BE 3" - 6" CRUSHED ROCK.
3. THE ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
4. THE ENTRANCE SHALL BE CONSTRUCTED ON LEVEL GROUND, WHERE FEASIBLE, AND LOCATED WHERE PERMANENT DRIVEWAY OR PARKING AREAS ARE PLANNED.
5. TOP DRESSING WITH ADDITIONAL STONE SHALL BE PROVIDED WHEN SURFACE VOIDS ARE NO LONGER VISIBLE OR WHEN THERE IS FREQUENT OFF-SITE TRACKING. FREQUENT OFF-SITE TRACKING MAY INDICATE THE NEED FOR GRAVEL REPLACEMENT.
6. CONTRACTOR TO MAINTAIN CONSTRUCTION ENTRANCE AT ALL TIMES.
7. ALL SEDIMENT DEPOSITS ON PAVED ROADWAYS SHALL BE SWEEPED AND REMOVED DAILY OR MORE FREQUENTLY AS NEEDED.
8. LIMIT CONSTRUCTION TRAFFIC DURING WET WEATHER OR WHEN THE SITE IS SATURATED, MUDDY OR COVERED IN SNOW.
9. LIMIT SPEEDS OF INGRESS/EGRESS VEHICLES TO 5 MPH OR LESS.
10. GEOTEXTILE & ROCK SHALL BE REMOVED AT COMPLETION OF CONSTRUCTION.
11. ALL AREAS DISTURBED BY THE CONTRACTOR AND NOT OTHERWISE STABILIZE SHALL BE RESTORED WITH VEGETATION TO THE SATISFACTION OF THE ENGINEER.



DETAIL COURTESY OF TRPA
EROSION CONTROL TEAM



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL
CONSTRUCTION ENTRANCE

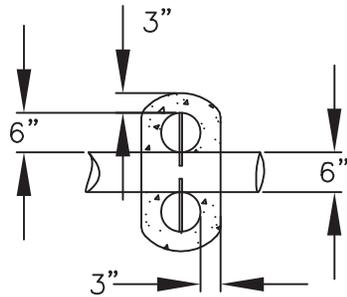
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05/01/2009 CITY ENGINEER

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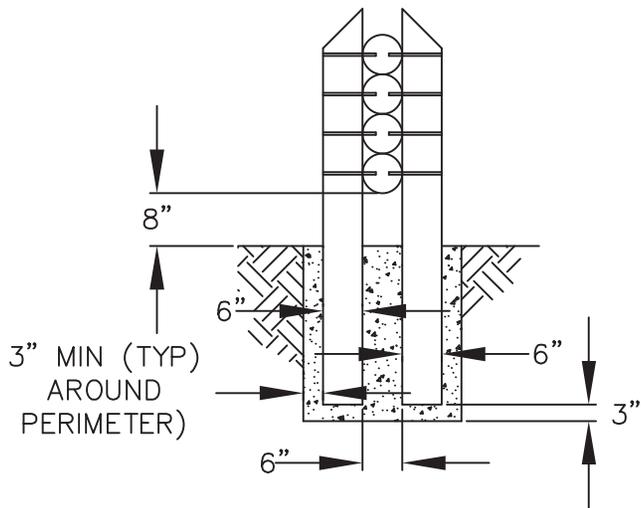
STANDARD DRAWING
SD89

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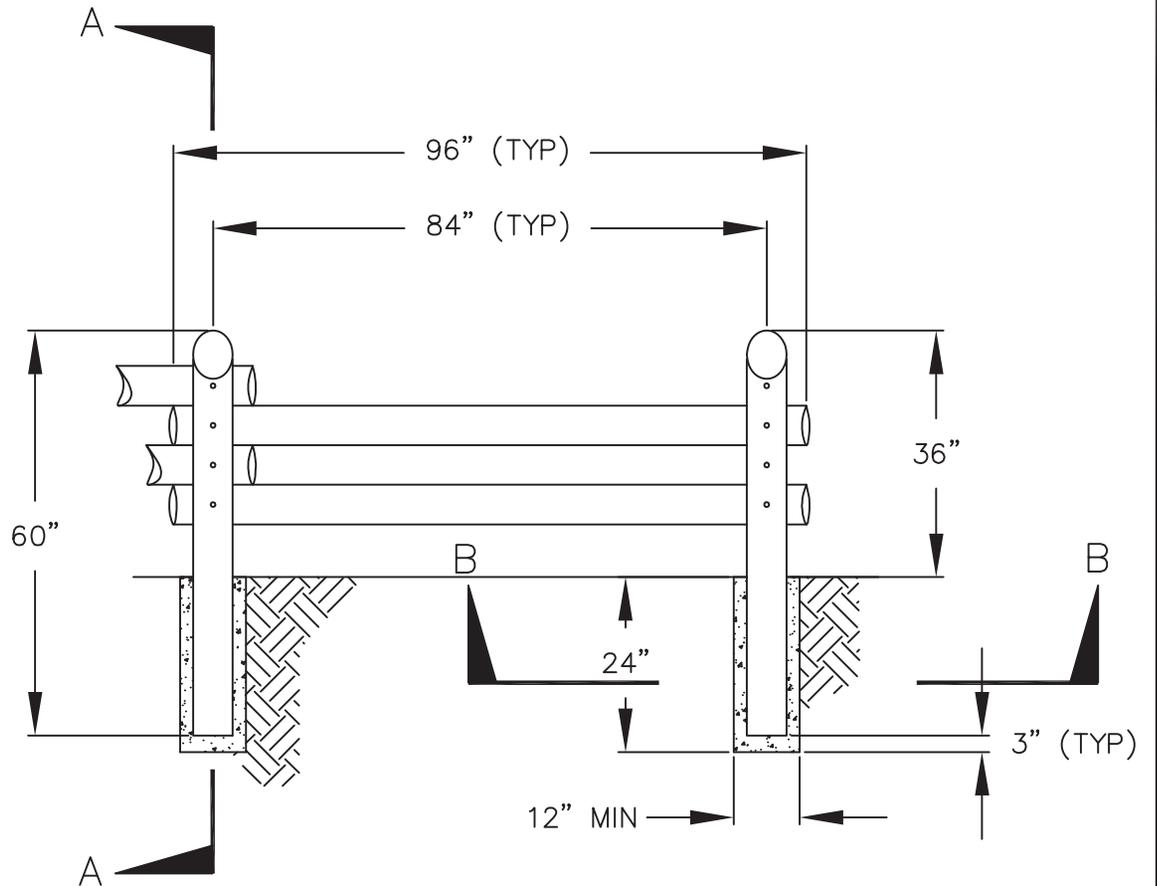
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SECTION B-B



SECTION A-A



NOTE:
COUNTERSINK 3/8" X 8" LONG LAG SCREW
& WASHER 1" DEEP WITH 1" BIT.

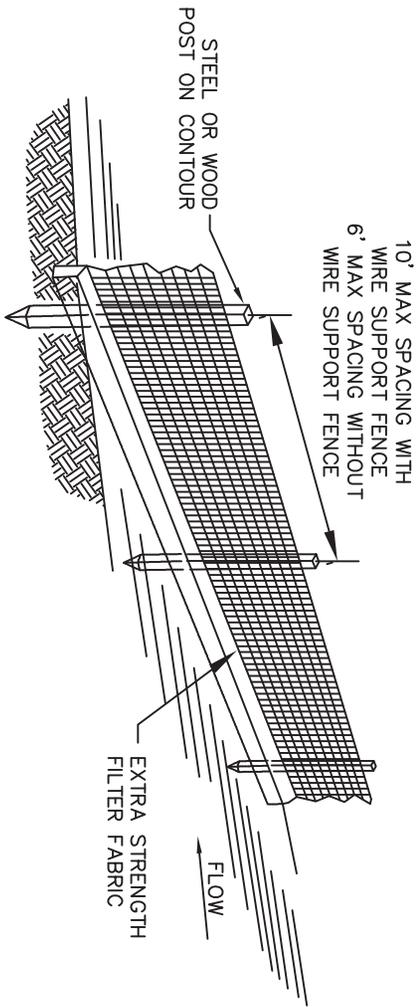


City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL - FENCES
PEELECORE FENCE

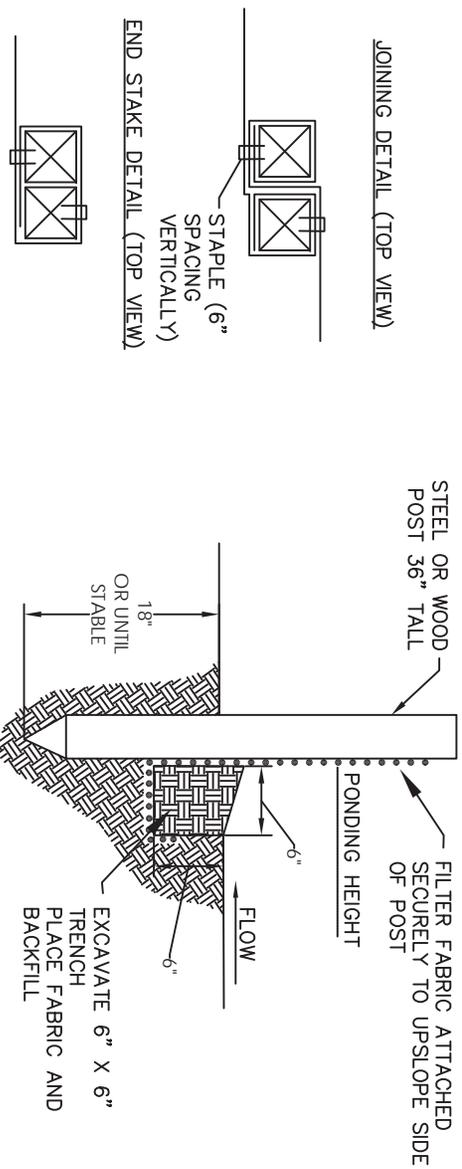
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05/01/2009 CITY ENGINEER

NOT TO SCALE

STANDARD DRAWING
SD90



SECTION



- NOTES:**
1. USE PRINCIPALLY IN AREAS WHERE SHEET FLOW OCCURS.
 2. DO NOT USE IN STREAMS, CHANNELS, OR ANYWHERE FLOW IS CONCENTRATED. DO NOT USE SILT FENCES TO DIVERT FLOW.
 3. DO NOT USE BELOW SLOPES SUBJECT TO CREEP, SLUMPING, OR LANDSLIDES.
 4. SILT FENCE SHOULD BE WOVEN POLYPROPYLENE WITH A MINIMUM WIDTH OF 36 INCHES AND A MINIMUM TENSILE STRENGTH OF 100 LB FORCE.
 5. INSTALL ALONG A LEVEL CONTOUR, SO WATER DOES NOT POND MORE THAT 1.5 FT AT ANY POINT ALONG THE SILT FENCE.
 6. THE MAXIMUM LENGTH OF SLOPE DRAINING TO ANY POINT ALONG THE SILT FENCE SHOULD BE 100 FT OR LESS.
 7. THE MAXIMUM SLOPE PERPENDICULAR TO THE FENCE LINE SHOULD BE 1:1.
 8. PROVIDE SUFFICIENT ROOM FOR RUNOFF TO POND BEHIND THE FENCE AND TO ALLOW SEDIMENT REMOVAL EQUIPMENT TO PASS BETWEEN THE SILT FENCE AND TOES OF SLOPES OR OTHER OBSTRUCTIONS.
 9. TURN THE ENDS OF THE FILTER FENCE UPHILL TO CREATE A "J" SHAPE, TO PREVENT STORM WATER FROM FLOWING AROUND THE FENCE.
 10. LEAVE AN UNDISTURBED OR STABILIZED AREA IMMEDIATELY DOWN SLOPE FROM THE FENCE WHERE FEASIBLE.
 11. SILT FENCES SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.
 12. REMOVE SEDIMENT WHEN DEPOSITS REACH APPROXIMATELY 1/3 HEIGHT OF BARRIER.

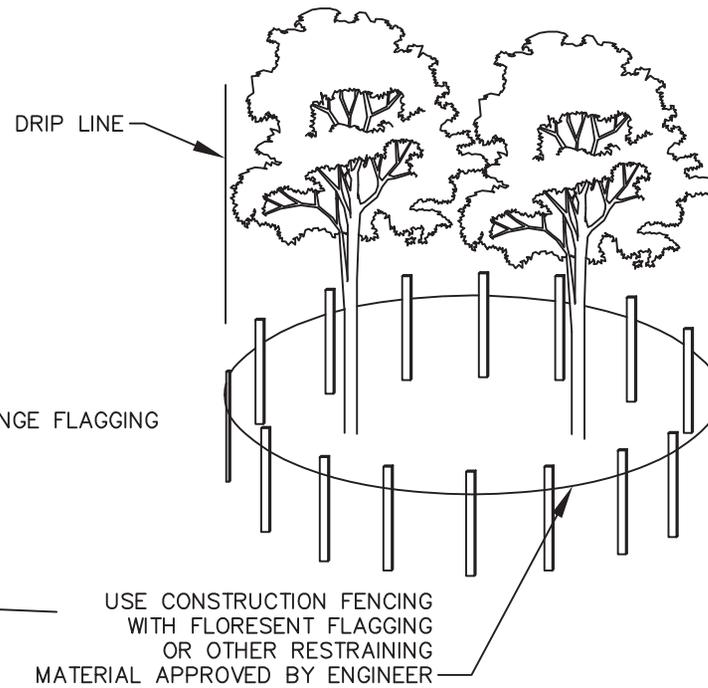
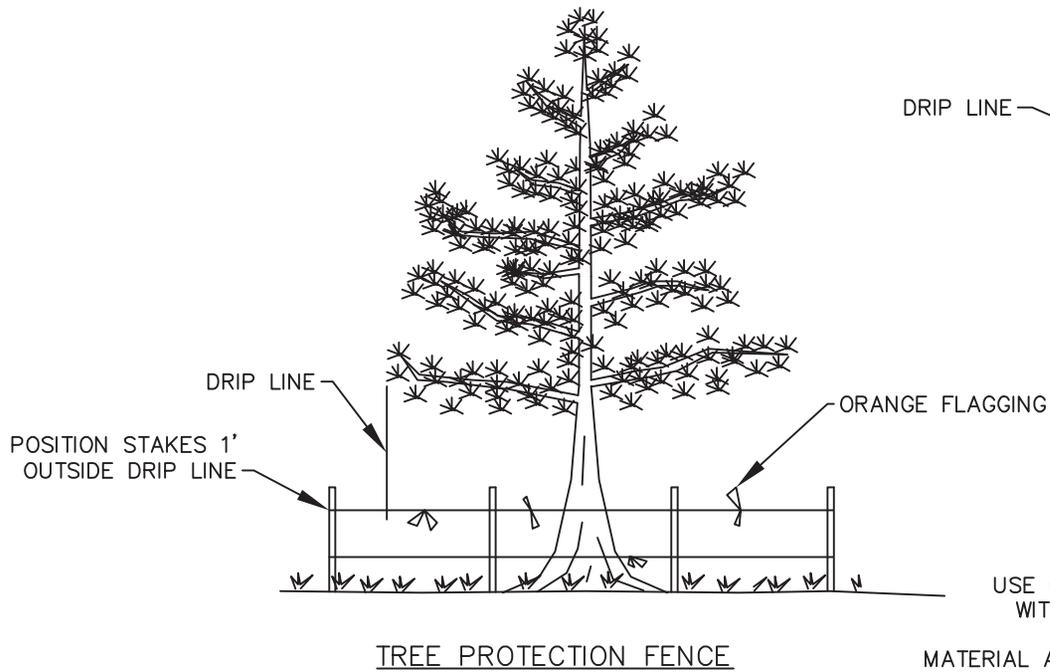
DETAIL COURTESY OF TRPA
EROSION CONTROL TEAM



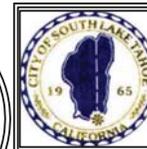
City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL – FENCES
SILT FENCE

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STANDARD DRAWING SD91

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TEMPORARY VEGETATION PROTECTION FENCING

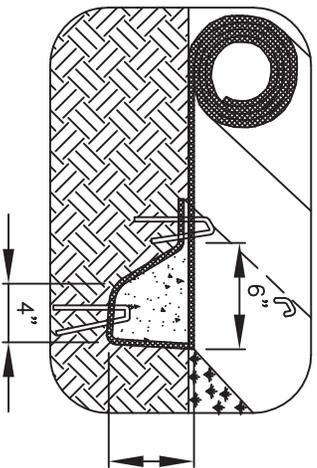


City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 EROSION CONTROL – FENCES
 TREE PROTECTION

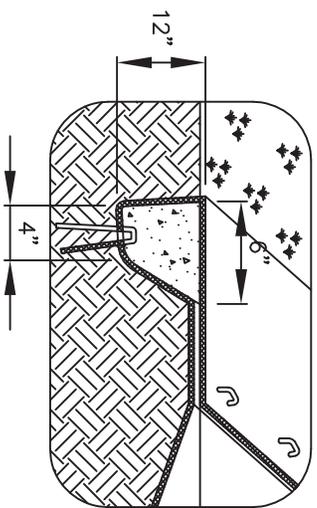
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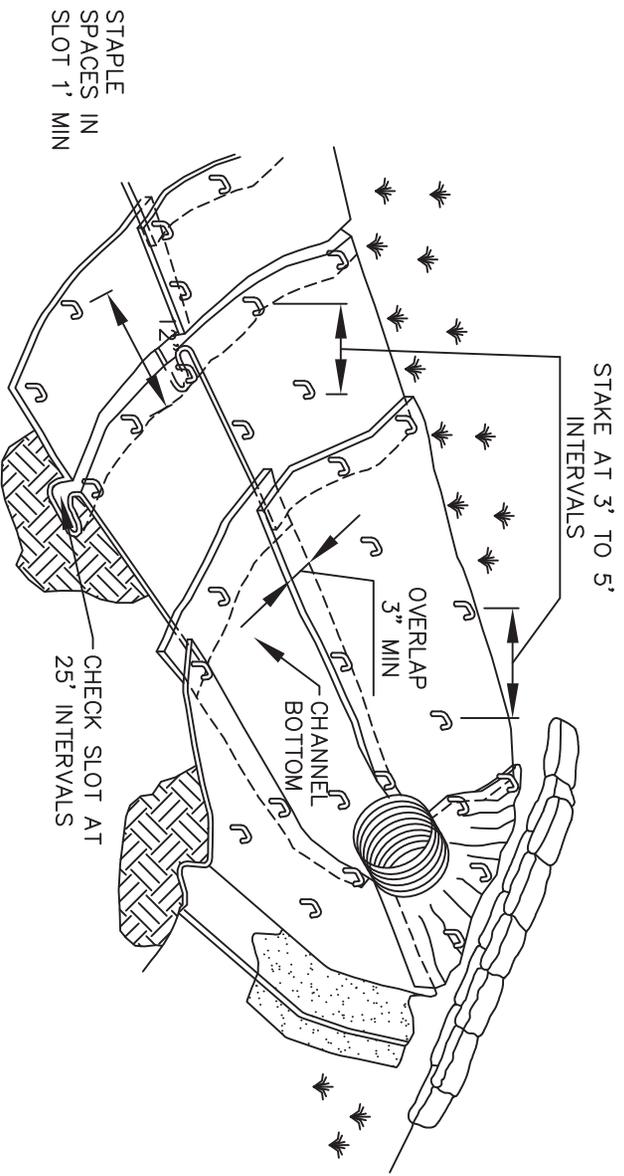
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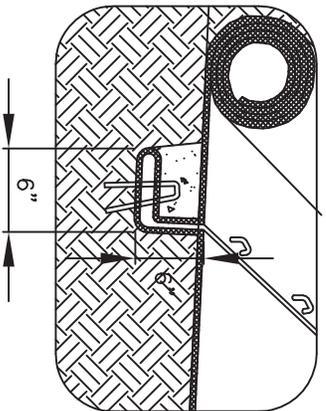
INITIAL CHANNEL ANCHOR TRENCH



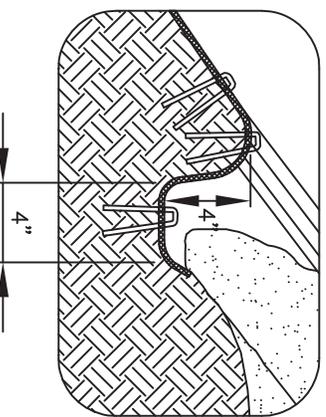
TERMINAL SLOPE & CHANNEL ANCHOR TRENCH



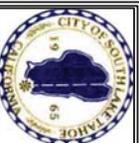
TYPICAL CHANNEL DETAIL — ISOMETRIC VIEW



INTERMITTENT CHECK SLOT



LONGITUDINAL ANCHOR TRENCH



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL — CHANNELS
FILTER FABRIC, MATS & BLANKETS

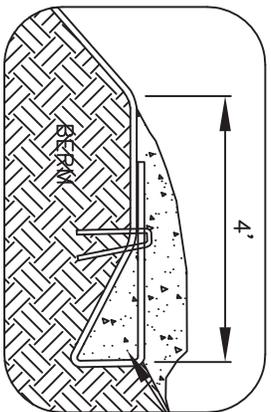
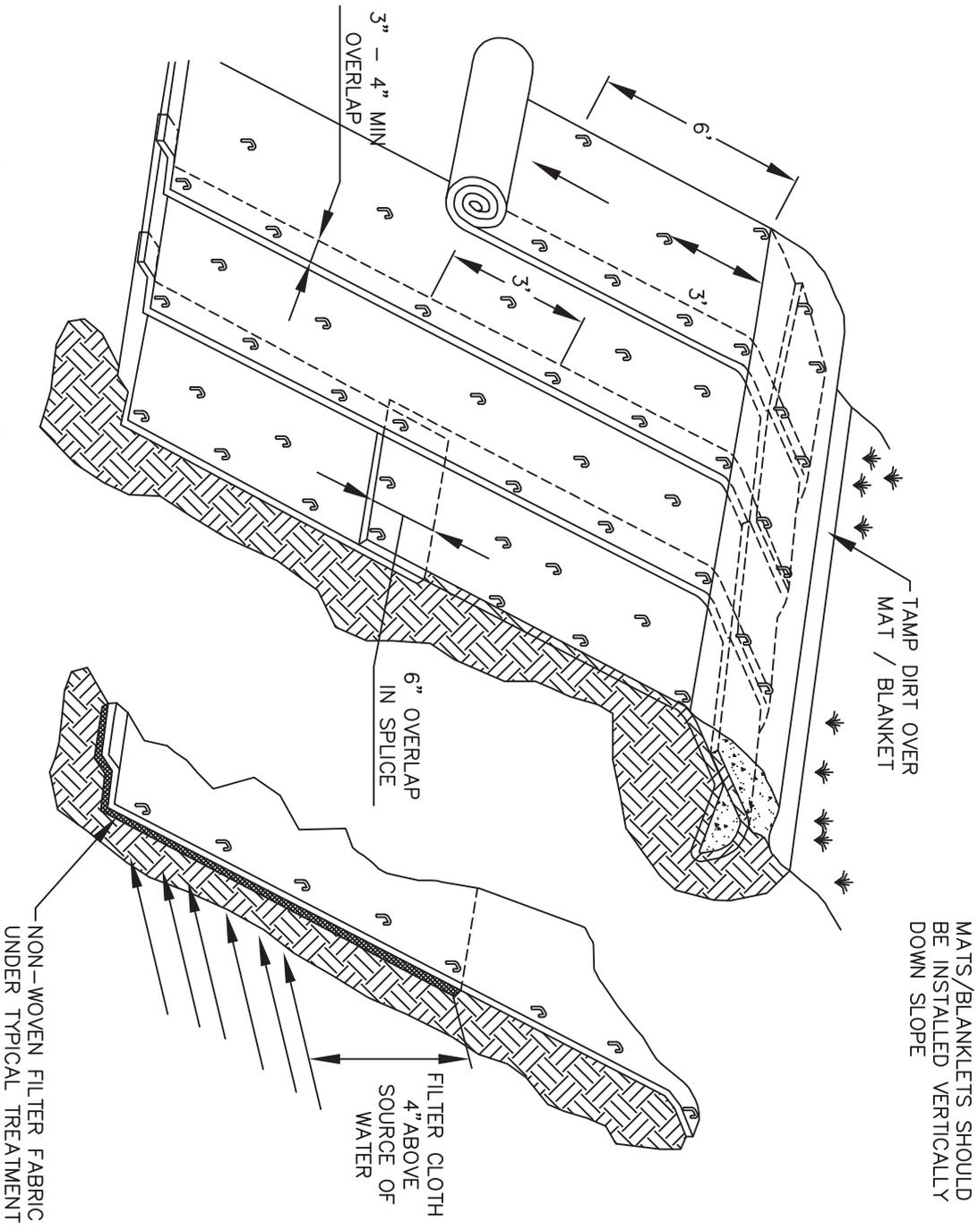
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STANDARD DRAWING
SD93



6" X 6" ANCHOR
TRENCH

NOTE:

FILTER CLOTH BELOW FABRIC IN ALL APPLICATIONS NEAR OR BELOW FILTER WATER TABLE.

MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWN SLOPE



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL - SLOPES
FILTER FABRIC, MATS & BLANKETS

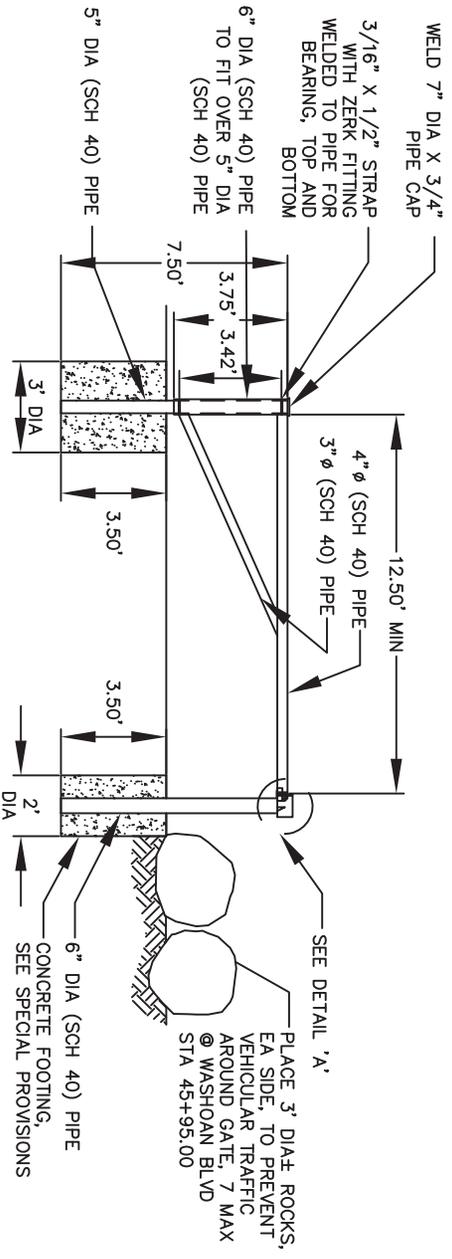
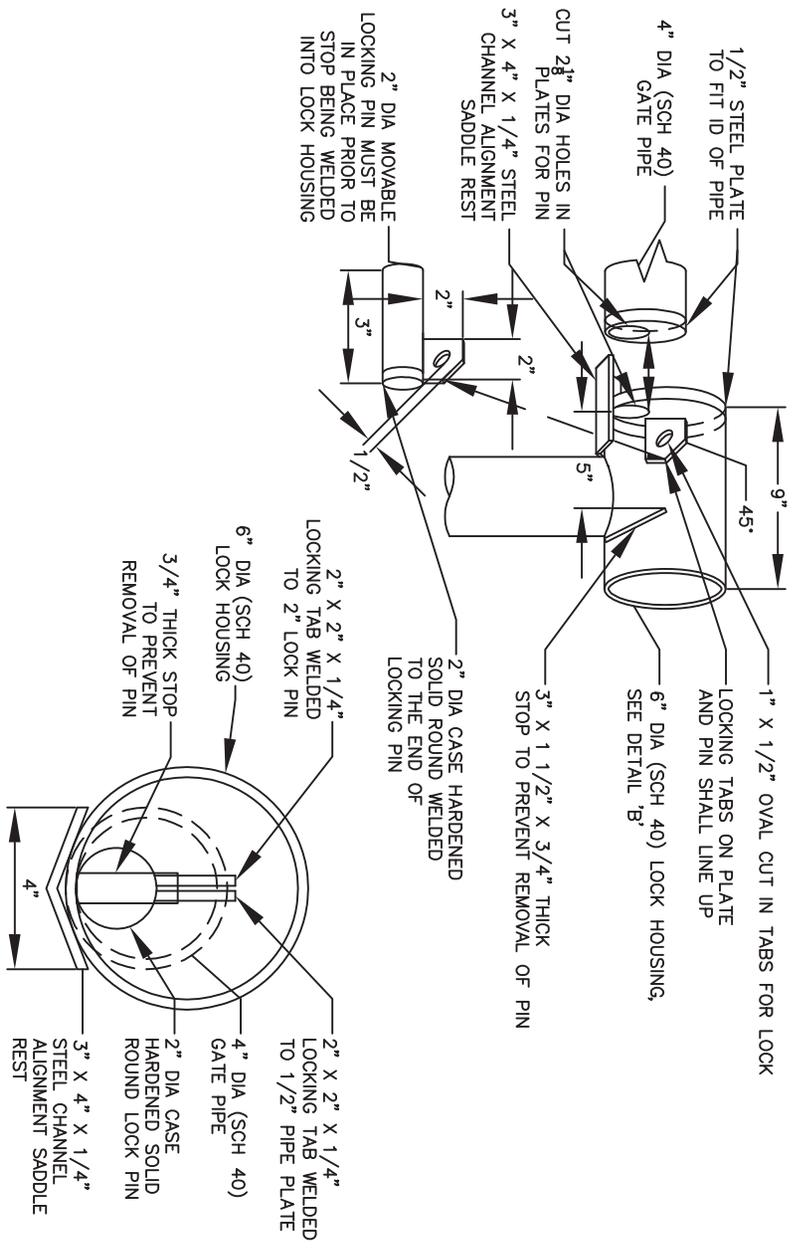
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STANDARD DRAWING
SD94



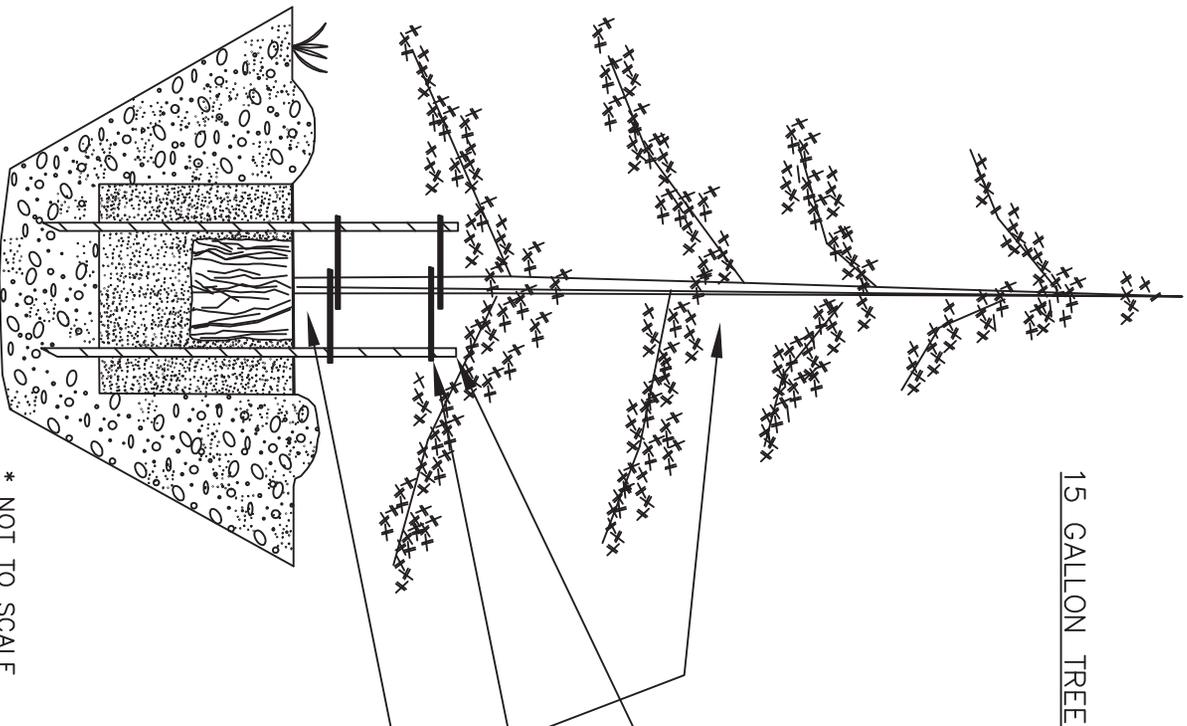
NOTE: ALL PIPES SHALL BE POWDER COATED DARK GREEN AT SHOP PRIOR TO INSTALLATION.



City of South Lake Tahoe
ENGINEERING DEPARTMENT
EROSION CONTROL - GATES
ACCESS GATE

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CITY ENGINEER

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STANDARD DRAWING
SD95

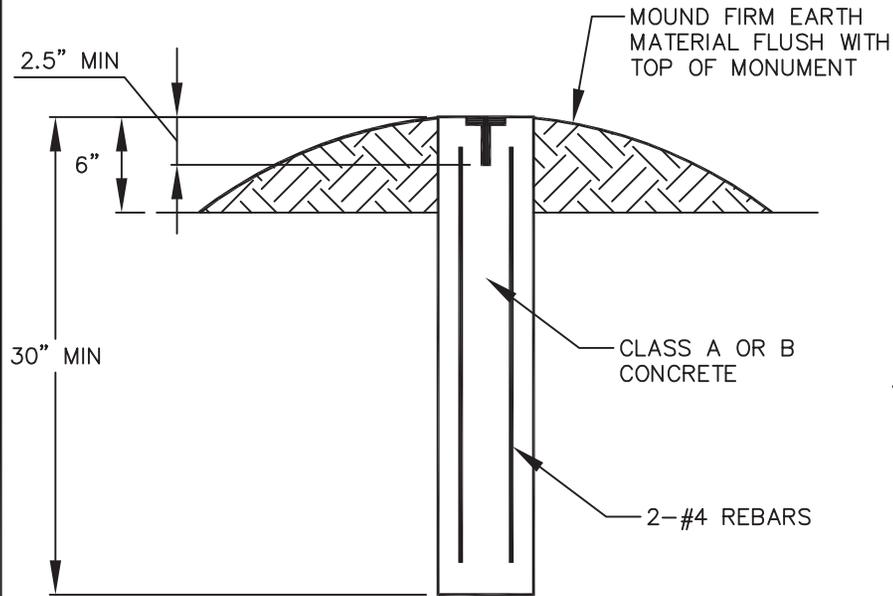
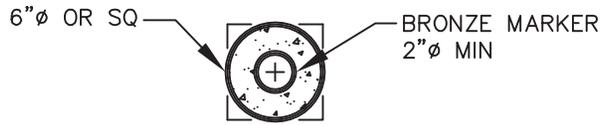


- NOTES:**
1. STAKING SHALL BE COMPLETED THE SAME DAY AS THE TREE PLANTING.
 2. SPACE STAKES EVENLY AND VERTICALLY ON THE OUTSIDE OF THE TREE ROOT BALL AND DRIVE FIRMLY INTO UNDISTURBED SOIL. STAKE SHALL BE DRIVEN AT AN ANGLE AND DRAWN TO VERTICAL. DO NOT DRIVE STAKE THROUGH ROOT BALL.
 3. REMOVE NURSERY STAKE AT TIME OF INSTALLATION.
 4. TREES SHALL BE DOUBLE STAKED AND SUPPORTED WITH FOUR "CINCH-TIES". WRAP "CINCH-TIE" AROUND THE TREE TRUNK AND THE STAKE TWISTING TO FORM A FIGURE EIGHT. SECURE WITH A GALVANIZED NAIL DRIVEN THROUGH THE "CINCH-TIE" AND INTO THE STAKE TO PREVENT SLIPPAGE.



City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 EROSION CONTROL
 TREE STAKING

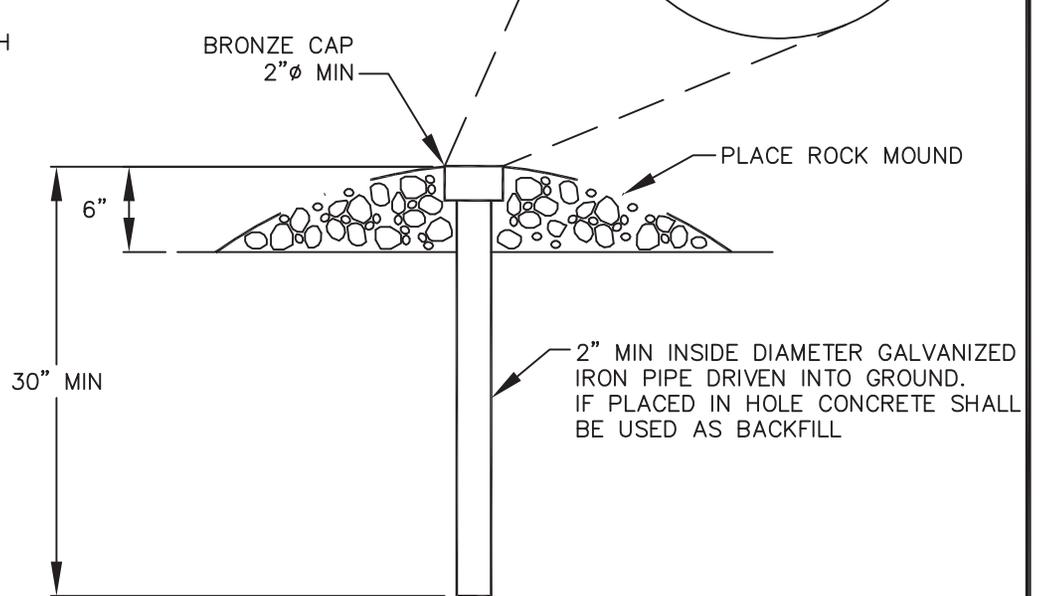
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 STANDARD DRAWING
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DETAIL A

BRONZE MARKER OR CAP
2" ϕ MIN
(W/ SAMPLE MARKINGS)

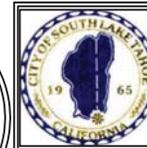
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DETAIL B

NOTES:

1. SET ACCORDING TO DETAIL A, IF ACCESSIBLE.
2. SET ACCORDING TO DETAIL B, IF NOT READILY ACCESSIBLE.
3. SET ACCORDING TO STD. DRAWING #41 IF CORNER FALLS ON ROAD.



City of South Lake Tahoe
ENGINEERING DEPARTMENT
MONUMENTS

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05/01/2009 CITY ENGINEER

NOT TO SCALE

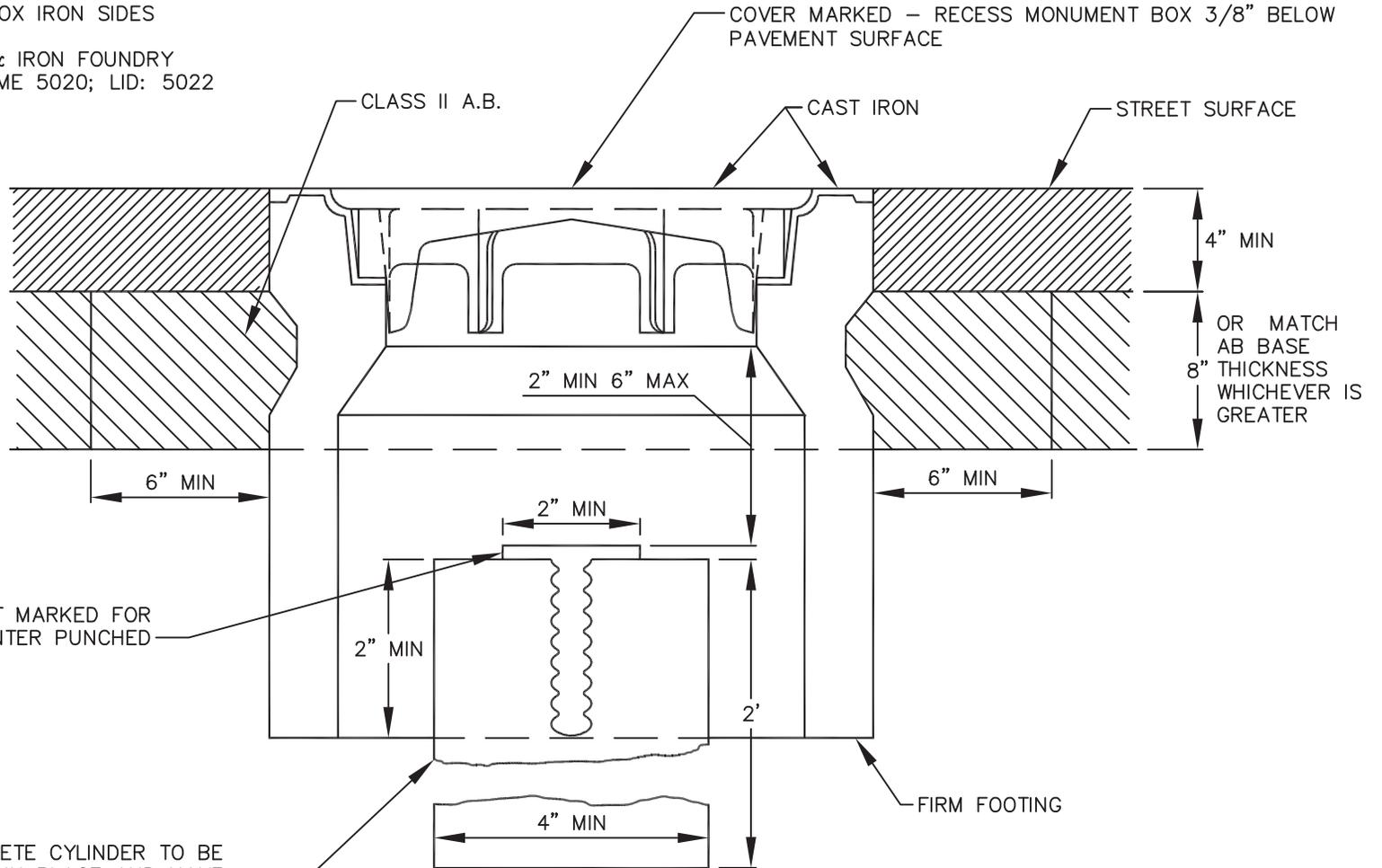
STANDARD DRAWING
SD100

MONUMENT BOX

BROOKS #3-RT TRAFFIC GATE VALVE BOX

FORNI TRAFFIC VALVE BOX IRON SIDES

THE AMERICAN BRASS & IRON FOUNDRY
 MONUMENT COVER: FRAME 5020; LID: 5022
 OR EQUAL.



BRONZE MONUMENT MARKED FOR
 L.S. OR C.E. & CENTER PUNCHED

CONCRETE CYLINDER TO BE
 POURED IN PLACE AND HAVE
 A MINIMUM CLEARANCE OF 1"
 FROM INSIDE WALL OF BOX



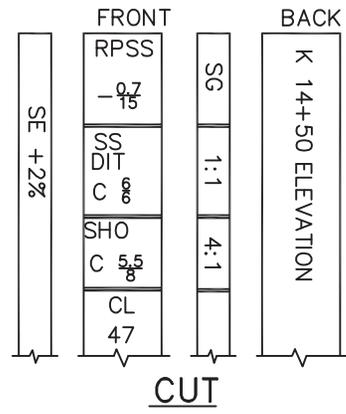
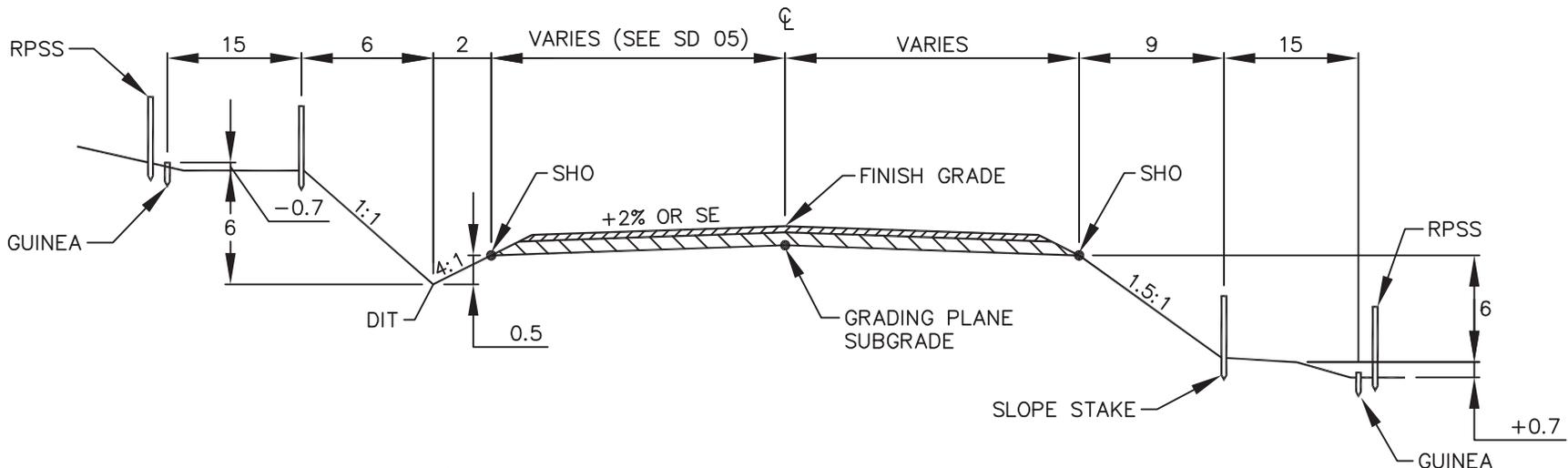
City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 SURVEY MONUMENT
 IN PAVEMENT

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 05/01/2009 CITY ENGINEER

NOT
 TO
 SCALE

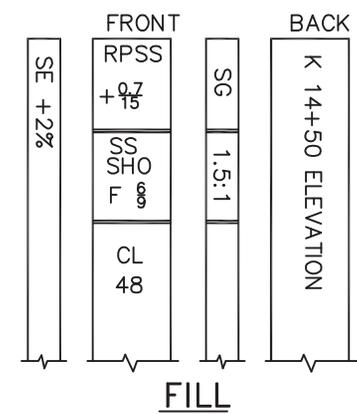
STANDARD DRAWING
 SD101

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LEGEND

RPSS - REFERENCE POINT SLOPE STAKE
 SS - SLOPE STAKE
 SHO - SHOULDER
 DIT - DITCH
 SE - SUPERELEVATION-CROWN SLOPE
 SG - SUBGRADE



NOTES:

- SUBGRADE AND AGGREGATE BASE GRADING NOTES SHALL BE SUPPLIED WITH ELEVATIONS AND CROSS SLOPE AT EACH STATION FOR CENTERLINE AND BOTH SHOULDER POINTS. A GUINEA WITH WHISKERS SHALL BE PLACED TO THE CORRECT ELEVATION AND GRADED TO CENTERLINE ON BOTH SHOULDERS AT EACH STATION FOR SUBGRADE AND AGGREGATE BASE GRADE.
- ALTERNATIVE STAKING METHODS MAY BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
- STAKING NOTES SHALL BE GIVEN TO THE CITY ENGINEER UIPON REQUEST.



City of South Lake Tahoe
 ENGINEERING DEPARTMENT
 CONSTRUCTION STAKING

APPROVED BY:
 05/01/2009 CITY ENGINEER

NOT TO SCALE

STANDARD DRAWING
 SD102

SECTION 11
CITY OF SOUTH LAKE TAHOE STANDARD
ENGINEERING SPECIFICATIONS

PLEASE NOTE: Section 11 is in reference to the State of California, Department Of Transportation, Standard Specifications (Caltrans Standard Specifications) (Sections 11-1 – 11-95 are equivalent to Caltrans Sections 1-95, In Parentheses)

Scope and Precedence

This document shall be known and referred to as "City of South Lake Tahoe Standard Engineering Specifications." These Specifications were adopted by resolution of the City Planning Commission on April 30, 2009. Unless modified by these Specifications, the design, construction, maintenance, and repair of roads shall be performed in accordance with the most current edition of the *State of California Department of Transportation Standard Specifications*. Should subjective issues arise that are not specifically addressed within the Standard Specifications, or other reference specifications, and guidelines, such as the *Standard Specifications for Public Works Construction* ("GREENBOOK") the Engineer shall be notified for clarification.

The Engineering Division may continuously develop or amend and include within these Standards as warranted, what shall be known and referred to as, the "City of South Lake Tahoe Standard Drawings" or "Standard Drawings," and the City of South Lake Tahoe Public Improvement and Engineering Standards, for the purpose of delineating what constitutes accepted practices for those minor details of road construction not specifically set forth in this document, but necessary for the complete design of improvements.

All construction, trenching, excavation, and improvement work shall conform to these Standards, Specifications, Standard Drawings, or Engineer's directives, which are on file in the Engineer's Office of the City of South Lake Tahoe, California and/or in effect at the time of the actual start of work. Deviations or departures from such standards, specifications, and/or drawings require written approval/variance from the City Engineer. Any details of road construction not specifically included in these Standards shall be designed in accordance with currently accepted engineering practices, subject to approval by the Engineer. Within the scope of this document, the Engineer or designee has the authority to enforce compliance with these Standards.

All documents referenced in these Standards are intended to be complimentary and to describe and provide for a complete work. In descending order of precedence, the following documents shall be applicable to the improvement designs and engineering standards:

- A. Project Specifications
- B. Project Plans
- C. Special Provisions of Encroachment Permits or Contracts

- D. City of South Lake Tahoe Public Improvement and Engineering Standards
- E. City of South Lake Tahoe Standard Specifications
- F. City of South Lake Tahoe Standard Drawings
- G. Permits from agencies as may be required by law
- H. Reference Guidelines or Specifications
- I. State Standard Plans
- J. Other Specifications
- K. Engineer's Directives, Change Orders, supplemental agreements, and approved revisions to any Standards or Drawings shall have precedence over B through J above.

If the proposed work, or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Engineer for such further explanations as may be necessary and shall conform to them as part of the contract. In the event of any doubt or questions arising respecting the true meaning of the Contract Documents, reference shall be made to the Engineer, whose decision thereon shall be final.

In the event of any discrepancy between drawing and the figures written thereon, the figures shall be taken as correct. Detail drawings shall prevail over general drawings.

Section 11-1-1 Standard Specifications

The current edition of the State of California Department of Transportation (Caltrans) Standard Specifications. Reference to, or use of the term "Standard Specifications" are to the Caltrans Standard Specifications unless noted otherwise. All section numbers and titles herein are identical or added consecutively to the Standard Specifications. When the statement, "The Standard Specifications are incorporated herein," is used, it means the section(s) is adopted from the Standard Specifications without change. When the statement, "The Standard Specifications are incorporated herein except as noted" is used, it means that the section(s) is adopted from the Standard Specifications except for additions or exceptions incorporated. When the statement, "NOT ADOPTED" is used, it means that the section(s) from the Standard Specifications has not been adopted.

SECTION 1 DEFINITIONS AND TERMS

The Standard Specifications are incorporated herein except as noted:

Section 11-1-1.03 Acceptance

The formal written acceptance by the City of South Lake Tahoe of an entire contract which has been completed in all respects in accordance with the plans and specifications and any modifications thereof previously approved.

Contractor

The individual, partnership, corporation, joint venture, or other legal entity having a Contract with the Agency to perform the Work. In the case of work being done under permit issued by the Agency, the permittee shall be construed to be the Contractor. The term "prime contractor" shall mean Contractor.

Department of Public Works or Department

The City Department that oversees/heads the Engineering Division (City Engineer), Street Maintenance Division, Building Facilities Division, and Motor Pool. The Director of Public Works advises the Agency and Council concerning street maintenance, snow removal, City owned buildings maintenance, motor pool, and engineering.

Engineer

The Registered Civil Engineer and City Engineering Manager for the City of South Lake Tahoe or his/her designee.

Plans

The drawings, profiles, cross sections, working drawings, and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions, or details of the Work.

Specifications

Refer to the City of South Lake Tahoe Standard Specifications unless otherwise referenced.

Subgrade

For roadways, that portion of the roadbed on which pavement, surfacing, base, sub-base, or a layer of other material is placed. For structures, the soil prepared to support a structure.

SECTION 11-2 PROPOSAL REQUIREMENTS AND CONDITIONS
(NOT ADOPTED)

SECTION 11-3 AWARD AND EXECUTION OF CONTRACT
(NOT ADOPTED)

SECTION 11-4 SCOPE OF WORK

The Standard Specifications are incorporated herein except as noted:

Section 11-4(1.03) Changes

The Engineer reserves the right to make such alterations, deviations, additions to or deletions from the plans and specifications, including the right to increase or decrease the quantity of any item or portion of the work or to delete any item or portion of the work, as may be deemed by the Engineer to be necessary or advisable and to require such extra work as may be determined by the Engineer to be required for the proper completion or construction of the whole work contemplated.

- 4-1.03A Procedure and Protest (Not Adopted)
- 4-1.03B Increased and Decreased Quantities (Not Adopted)
- 4-1.03B(1) Increases of More than 25% (Not Adopted)
- 4-1.03B(2) Decreases of More than 25% (Not Adopted)
- 4-1.03B(3) Eliminated Items (Not Adopted)
- 4-1.03C Changes in Character of Work (Not Adopted)
- 4-1.03D Extra Work (Not Adopted)

SECTION 11-5 CONTROL OF WORK

The Standard Specifications are incorporated herein except as noted:

Section 11-5 (1.04) Coordination and Interpretation of Plans, Standard Specifications, and Special Provisions

Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Engineer for such further explanations as may be necessary and shall conform to them as part of the contract. (Also see Scope and Precedence.)

Section 11-5 (1.07) Lines and Grades

- 5-1.07A Staking - The following lines and grades will normally be furnished by the Private Engineer for construction:
 - 5-1.07A(1) Clearing stakes - One set of stakes at 50-foot intervals, or as required.
 - 5-1.07A(2) Slope stakes - One set of offset stakes at 50 foot intervals, or as required.
 - 5-1.07A(3) Subgrade, Subbase and Base Stakes - The Contractor shall place blue tops at 50ft intervals, or as required by the City Engineer for subgrade, subbase and base grade as directed by the Engineer. See Standard Drawings. Alternate staking methods may be submitted to the City Engineer for approval. Two copies

of the approved staking notes shall be submitted to the City Engineer prior to construction.

The Contractor shall furnish two men to assist the Engineer in checking blue top elevations at any time.

5-1.07A(4) Utility Stakes - When required by the Engineer, grade stakes shall be used for utility line control. Separate staking shall be required at street intersections.

5-1.07A(5) All necessary line, location and elevations stakes for pipes, drainage structures, curb and gutter, and other miscellaneous facilities.

5-1.07B When errors in staking are found by the Contractor, he shall notify the Engineer. The Private Engineer shall immediately correct the erroneous stakes.

SECTION 11-6 CONTROL OF MATERIALS

The Standard Specifications are incorporated herein except as noted:

Section 11-6 (1.02) State-Furnished Materials (not adopted)

Section 11-6 (2.0) Local Materials (not adopted)

Section 11-6 (2.02) Possible Local Material Sources (not adopted)

Section 11-6 (2.03) Mandatory Local Material Sources (not adopted)

SECTION 11-7 LEGAL RELATIONS AND RESPONSIBILITY

The Standard Specifications are incorporated herein except as noted:

- 7-1.01A Labor Code Requirements (not adopted)
- 7-1.01A(1) Hours of Labor (not adopted)
- 7-1.01A(2) Prevailing Wage (not adopted)
- 7-1.01A(2)(a) Travel and Subsistence Payments (not adopted)
- 7-1.01A(3) Payroll Records (not adopted)
- 7-1.01A(4) Labor Nondiscrimination (not adopted)
- 7-1.01A(5) Apprentices (not adopted)
- 7-1.01A(6) Worker's Compensation (not adopted)
- 7-1.01A(7) Suits to Recover Penalties and Forfeitures (not adopted)
- 7-1.01B Fair Labor Standards Act (not adopted)
- 7-1.01J Assignment of Antitrust Actions (not adopted)
- 7-1.03 Payment of Taxes (not adopted)

Section 11-7 (1.10) Preservation of Property

Attention is directed to Section 7-1.12, "Responsibility for Damage," and to Section 8-1.10, "Utility and Non-Highway Facilities." Roadside trees, shrubs, and other plants that are not to be removed, and pole lines, fences, signs, markers and monuments, buildings and structures, conduits, pipelines under or above ground, sewer and water lines, all highway facilities, and any other improvements or facilities within or adjacent to the highway shall be protected from injury or damage, and if ordered by the Engineer, the Contractor shall provide and install suitable safeguards, approved by the Engineer, to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored at the Contractor's expense. The facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the work, or as good as required by the specifications accompanying the contract, if any such objects are part of the work being performed under the contract. The Engineer may make or cause to be made such temporary repairs as are necessary to restore to service any damaged highway facility. The cost of such repairs shall be borne by the Contractor and may be deducted from any monies due or to become due to the Contractor under the contract.

The location of existing utilities such as gas mains, water and sewer mains, drainage lines, underground electric and telephone installations where indicated on the plans are in accordance with such information as may be available to the City. However, the exact positions of such facilities must be ascertained by the Contractor by means of potholing. Likewise it shall be the duty of the Contractor to ascertain if additional facilities other than those shown on the plans may exist. The information concerning utilities as shown on the plans is offered for such use as the Contractor may wish to make of it but the City does not guarantee its correctness or completeness.

The limits of work shall be flagged in the field by the Private Engineer. The contractor shall confine all construction activities to these limits. Upon completion of the work, denuded areas within the limits shall be cleaned up and seeded or planted as specified in Section 20.

Section 11-7 (1.12A) Protection of the Public and Private Property

Unusual conditions may arise on the work which will require that immediate and unusual provisions be made to protect the public from danger or loss or damage to life or property, due directly or indirectly to the prosecution of the work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

Whenever, in the opinion of the City, an emergency exists, against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured by process of construction on account of such neglect; and whenever, in the opinion of the City, immediate action shall be considered necessary in order to protect public or private property interest, or prevent likely loss of human life or damage on account of the operations under the contract, then, and in that event the City

may provide suitable protection to said interests by causing such work to be done and material to be furnished as, in the opinion of the City, may seem reasonable and necessary.

The cost and expense of said labor and material, together with the cost and expense of such repairs as may be deemed necessary, shall be borne by the Contractor. Failure of the City however, to take such precautionary measures, shall not relieve the Contractor of his full responsibility for public safety.

7-1.125 Legal Action Against the Department (not adopted)

7-1.165 Damage by Storm, Flood, Tidal Wave or Earthquake (not adopted)

Section 11-7 (1.17) Acceptance of Contract

When the Engineer has made the final inspection as provided in Section 5-1.13 "Final Inspection," the developer shall furnish the Engineer with letters of acceptance from all agencies having utilities or facilities within the project, one set of reproducible "Record Drawings" plans - originals or a mylar copy - and a copy of the recorded "Notice of Completion." If at this time the Engineer determines that the contract has been completed in all respects in accordance with the plans and specifications, he will recommend that the City formally accept the project.

7-1.21 Repair of Equipment (not adopted)

7-1.22 Material Plants (not adopted)

SECTION 11-8 PROSECUTION AND PROGRESS (NOT ADOPTED)

SECTION 11-9 MEASUREMENT AND PAYMENT (NOT ADOPTED)

SECTION 11-10 DUST CONTROL

The Standard Specifications are incorporated herein.

SECTION 11-11 MOBILIZATION

The Standard Specifications are incorporated herein.

SECTION 11-12 CONSTRUCTION AREA TRAFFIC CONTROL DEVICES

The Standard Specifications are incorporated herein.

Section 11-12 (2.02) Flagging Costs (not adopted)

Whenever the contractor's operations create a condition hazardous to traffic or the public, it shall at its expense and without cost to the City, furnish, erect and maintain such fences, barricades lights, sign, and other devices and take such other protective measures as are necessary to prevent accidents, damage or injury to the public. The permittee shall also furnish such flaggers as are necessary to give adequate warning to traffic or to the public of any dangerous condition to be encountered. Signs, lights, flags, flaggers, and other warning and safety devices shall conform to the requirements set forth in the current editions of the Work Area Traffic Control Handbook (WATCH) or Part VI of the Manual on Uniform Traffic Control Devices (MUTCD). Two-way traffic will be maintained at all times during hours of darkness and where practical, during daylight hours. Road Closures cannot occur without the written permission of the Engineer.

SECTION 11-13 (BLANK)

SECTION 11-14 (BLANK)

SECTION 11-15 EXISTING HIGHWAY FACILITIES

The Standard Specifications are incorporated herein.

SECTION 11-16 CLEARING AND GRUBBING

The Standard Specifications are incorporated herein by this reference except as noted:

Roadway clearing, grubbing, excavation, removals, and grading

This item includes the removal of all unacceptable material from within the right-of-way lines or project limit lines and disposal of said material off the job site, in accordance with applicable Local, State, and Federal requirements. This includes but is not limited to any earthen material containing vegetative matter or organic silt, topsoil, frozen material, trees, stumps, man-made deposits, industrial waste, sludge or landfill. Existing structures, to be preserved, shall be lowered and protected and restored upon completion of the work. Also included is all removal, excavation, embankment and grading to finished subgrade within catch points of slopes outside of right-of-way lines as shown on typical sections. Import of approved subgrade material is also included if required to meet original subgrade. Stumps and root systems of trees, clay and other organic material shall be removed to a depth of twenty-four inches (24") below the subgrade. Existing aggregate and asphalt roadway materials may be reused for embankments after being reduced in size to particles of three inches (3") maximum diameter. Pulverizing and replacement of this material is part of this work. All embankment and fill, and areas over excavated shall be compacted to a relative density of ninety five percent (95%) within the roadway and shoulder prism, and ninety (90%) in ditch and slope areas.

(95%) as measured by California Test Method No. 216 or by calibrated nuclear density instrument.

Imported Sub Base

Subsequent to removal of defective material, an equal quantity of approved material shall be imported. The imported select material will be specifically designated or approved by the City. The materials, method of application, and compaction shall comply with the Standards.

Section 11-19.3 Structure Excavation and Backfill

The Standard Specifications are incorporated herein except as noted:

Section 11-19 (3.01A) Trench Excavation

Unless boring is required, trench excavation shall be in accordance with Standard Plans and Drawings. When the trench is in an existing paved area, the pavement shall be sawed or scored and broken ahead of the trenching operations. The proper tools and equipment shall be used in marking and breaking so that the pavement will be cut accurately on neat and parallel lines. When water is encountered, the trench shall be kept dry in a manner approved by the Engineer until the placing of the bedding material, laying and jointing of the pipe, and placing of the shading material has been completed and approved. Ground water pumped from the trench shall be disposed of in such manner as will not cause injury to public or private property or constitutes nuisance or menace to the public. The manner employed to dispose of water pumped from an excavation shall be subject to the approval of the Engineer and shall conform to Section 7-1.01G, "Water Pollution." Whenever the bottom of the trench is soft, yielding, or in the opinion of the Engineer otherwise unsuitable as a foundation for the pipe, the unsuitable material shall be removed to a depth such that when replaced with suitable material as specified in Section 19-3.06A(I) of these Standard Specifications, it will provide a stable and satisfactory foundation. Compaction of the imported material shall be 90 percent relative compaction or as shown on the plans or detailed in the project specifications.

Trenches shall not be left open farther than 200 feet in advance of pipe laying operations or 200 feet to the rear thereof, unless otherwise permitted by the Engineer. When left unattended by the contractor, no more than 100 feet of trench shall be left open.

NOTE:

Attention is directed to Section 5-1.02A, "Trench Excavation Safety Plans" of these Standard Specifications.

Unless otherwise specified the period of time set forth in the following table after which the Contractor may place fill or backfill against or over the top of any cast in place structures are predicated on the use of concrete to which no admixture for the purpose of obtaining a high early strength.

Operation

Location

	Against sides of structures <u>(days)</u>	Over top of structures <u>(days)</u>
Placement of Loose backfill	5	21
Densification of Backfill	7	28

Section 11-19 (3.062) Slurry Cement Backfill

At the option of the contractor slurry backfill maybe used as structural backfill for pipe culverts, except for aluminum pipes. Slurry backfill may be used as a substitute for aggregate base with the approval of the Engineer. When slurry backfill is used as structural backfill, the width of the excavation may be reduced so that the clear distance between the outside of the pipe and the side of the excavation of the pipe is a minimum of six inches.

Section 11-19 (3.062A-1)Trench Bedding and Initial Backfill

Bedding and initial backfill shall consist of material placed from the bottom of the trench to 1.0 foot above the top of pipe or as required by the Utility owner. This material shall have a minimum sand equivalent of 30 and all material shall pass the 3/4 inch screen. All exceptions shall be approved by the Engineer.

When determined by the Engineer that the foundation material is wet or rocky, bedding material shall be placed to a depth of at least 6.0 inches below the pipe or one-fourth the outside diameter of the pipe barrel, whichever is greater. This material shall be washed rock 100% passing the 3/4 inch screen.

In excessively wet areas a special foundation design shall be required by the Engineer.

In fill areas and sag points in the profile, cross trenches for services and additional cross drain trenches may be required by the Engineer. The trenches shall be daylighted to the fill slope at a minimum slope of 0.5 percent and the lower one foot backfilled with bedding and initial backfill material.

Section 11-19 (3.062A-2) Trench Intermediate Backfill

Intermediate backfill shall consist of material placed from 1.0 foot above the pipe to subgrade. All intermediate backfill shall be free of debris and organic matter and shall be free of any rocks over 3.0 inches in diameter. Utilities and culverts placed with less than 2.0 feet of intermediate backfill shall be encased in 2-sack cement slurry or other method approved by the Engineer.

Trench intermediate backfill shall be compacted to 90% relative density. Utilities or culverts placed with less than one (1) foot of intermediate backfill cover shall be encased in concrete,

provided with a concrete cover, cemented with slurry, or protected by any other method approved by the City Engineer (CALTRANS 19-3.06).

Section 11-19 (3.062A-3) Trench Compaction

The required compaction for utility trenches within the roadway shall be a minimum of 90 percent from the bottom of the trench to 0.50 foot below subgrade, and a minimum of 95 percent from 0.50 foot below subgrade to finished grade or as shown on the plans or in the project specifications. Compaction shall be obtained by mechanical means in layers not to exceed 8 inches in thickness. Trench jetting will not be allowed within the roadway prism.

Section 11-19 (3.062A, 3-a) Trench Restoration

Final resurfacing shall be performed in conjunction with the other operations of the contractor so that no more than 1000 lineal feet (in aggregate) of trench has not been resurfaced and accepted by the City at any time. This limit may be reduced to 500 feet or increased to 2000 feet by written direction of the Engineer, if warranted in the Engineer's sole judgment.

The trench surface shall be cold patched if the trench has not been paved within 48 hours of the excavation unless otherwise approved by the City Engineer in writing. Contractor shall maintain the cold patch until final paving has been completed.

Also see section 11-19 (3.23) for additional trench restoration requirements.

Section 11-19 (3.10) Completion of Work

ALL PERMANENT PAVING WORK SHALL BE COMPLETED WITHIN TWENTY (20) WORKING DAYS OF THE BACKFILL OF THE EXCAVATION OR REPAIR, BETWEEN MAY 1 AND OCTOBER 15, AND WITHIN THREE (3) WORKING DAYS OUTSIDE OF THOSE CALENDAR DATES. This time may be reduced by the City Engineer due to inclement weather, seasonal weather unsuitable for paving operations, or the provisional calendar restraints by agencies superior to the City of South Lake Tahoe. Failure of the contractor to comply with schedules shall be cause for suspension of encroachment permits upon written notice by the City Engineer. In that instance, except for emergency repairs, NO further work whatsoever shall be performed in City rights-of-way until the City Engineer is satisfied that proper closure activities are complete. If, after notification, the contractor still fails to complete work in a timely manner, the City of South Lake Tahoe reserves the right to have the work completed at the direct expense of the contractor or its successor in interest, plus 15% administrative fee.

Section 11-19 (3.11) Noncompliance

Failure to comply with ANY of the provisions of these standards, instructions from the City Engineer or designee, or to perform timely repairs may result in revocation of permits. Additionally, non-compliance may subject the contractor to established fines imposed for violations of [Ordinance 95-11 \(13.01.360\)](#).

Section 11-19 (3.12) Maintenance of Excavations

Contractor shall perform continuing maintenance to all excavations during the course of construction to ensure a safe environment for the public.

Section 11-19 (3.13) Safety

All work shall be done in accordance with the State of California Safety Orders, CAL OSHA, and/or the requirements of Federal OSHA Rule 29 CFR 1926, Subpart P, Trenching and Excavation Safety, Solid Analysis and Classification, Protective Systems, and “Competent Person” Responsibilities. Contractor must provide a certified “Competent Person” to comply with these aforementioned regulations regarding trenching and excavation.

Section 11-19 (3.14) Snow Removal

The City will remove snow on all roads that are safe for the operation of snow removal equipment. If the conditions are such as to endanger equipment (sunken trenches, irregular paving, or other hazards), the City will cease snow removal. Permittee and/or its contractor shall then be responsible for removal of snow and ice on the surface of the road for a minimum width of 20 feet.

Section 11-19 (3.15) Relocation

It is further required that if any part of an installation interferes with the use of roads by the general public, or needs adjusting to match the grade of the roadway, or is in conflict with future City road improvement projects, it must be removed or relocated, as designated by the City Engineer, at the expense of the contractor or it's successor in interest.

Section 11-19 (3.16) Pavement Cut

Existing pavement shall be cut full depth to a neat straight line or grinded out if the pavement surface condition allows. Cracked pavement caused by the construction adjacent to the excavation shall be removed. Streets with extreme fatigue cracking (alligator) are exempt from this standard. Asphalt removal limits will be agreed upon by the developer and Engineer prior to removal. Any sunken or damaged area due to a utility break shall also be repaired as part of leak repair. This damaged area includes the length and width of the water traveling either upon or under the roadway and is subject to inspection by the City. Curb, gutter, and sidewalks shall be restored to pre-construction condition if damaged or removed. The Engineer may make arrangements for optional alternatives if situation warrants. Utility cuts/trenching through paved driveways shall be repaired the same as paved roadways. Unpaved driveways shall be restored to a pre-construction condition. Misaligned or vacated sawcuts or grooves shall be repaired as any other damaged pavement caused by the construction. Point/pothole repair excavations shall be over cut by one foot wider and deeper than the point in question.

Section 11-19 (3.17) Material Storage

No material shall be stored within five (5) feet of a road surface during the summer season or within the right-of-way from October 15 to May 1. Excess earth materials from trenching or other operations shall be removed from the pavement, traveled way, or shoulder as the excavation is back-filled or other work carried forward, unless otherwise approved by the Engineer.

Section 11-19 (3.19) Test Reports

Compaction tests shall be taken by a licensed engineer or testing laboratory and test reports submitted to the Engineer on a weekly basis. Compaction shall be determined by using the California Test Method No. 216 or calibrated nuclear density instrument. Compaction tests shall be taken at 250 foot intervals on centerline and 20% of the laterals, and shall be taken at varying depths for trenches over thirty (30) inches deep. Point repairs shall be tested randomly to show evidence of compliance (at least one test per 10 repairs). When using the Nuclear Method, backfill shall be placed in lifts no greater than the length of the probe used in testing. All right-of-way work shall be guaranteed by the contractor for a five (5) year period regardless of compaction tests.

Section 11-19 (3.20) Compaction

Tests will be waived if contractor uses two (2) sack PCC Slurry as backfill material.

Section 11-19 (3.22) Tack Coat

Edges of existing pavement being joined and surface being overlaid shall receive a tack coat of bituminous. Application by a spray method to insure complete coverage of the surfaces is preferred.

Section 11-19 (3.23) Temporary Paving

Where pavement has been removed, a minimum of two (2) inch thickness of temporary asphalt concrete paving shall be placed and maintained within the excavation area. BACKFILL OF EXCAVATIONS AND PLACEMENT OF TEMPORARY PAVEMENT BY THE END OF EACH WORK DAY IS PREFERRED. Without exception, all excavations SHALL be backfilled and temporary paving SHALL be in place prior to Saturdays, Sundays, and City recognized holidays. Until temporary paving is in place, safety signing advising the public must be in place.

Section 11-19 (3.24) Manhole Adjustments

Manholes, valve cans, clean-outs, lids, hand holes, utility vaults, etc., shall not be constructed to final grade until final paving has been completed. When adjusted to pavement grade, they shall be no less than one-eighth (1/8) inch and no greater than one-quarter (1/4) inch below adjacent pavement surface.

In earth shoulder areas, asphalt concrete shall be placed to a minimum of two (2) feet around the manhole and paved out at 45 degrees to the edge of existing pavement if the structure is within two (2) feet of the existing pavement.

Section 11-19 (3.25) Traffic Control Fee

Should the contractor fail to provide adequate traffic control or safety barricades, and in the event a responsible individual cannot be located or refuses to perform, the City will, at its option, place needed devices or engage a private firm to place and maintain said barricades, which will be charged to the contractor. If a private firm is engaged, all charges will be directly billed to the contractor, plus fifteen percent (15%).

If the City must place the necessary devices during regular work hours (7:00 AM to 3:30 PM), \$250.00 will be assessed per occurrence for delivery and pickup of barricades, plus \$20.00 per day per barricade.

After City work hours (Saturday, Sunday, and City recognized holidays), \$300.00 will be assessed per occurrence for delivery and pickup of barricades, plus \$20.00 per day per barricade.

SECTION 11-20 EROSION CONTROL AND HIGHWAY PLANTING

Additional requirements by the Tahoe Regional Planning Agency and the California Regional Water Quality Control Board, Lahontan Region, are incorporated herein by this reference, but may be omitted by the City Engineer in writing on a case by case basis.

SECTION 11-21 BLANK

SECTION 11-22 FINISHING ROADWAY

The Standard Specifications are incorporated herein except as noted. See Section 11-19 Earthwork, for additional information.

SECTION 11-23 BLANK

SECTION 11-24 LIME STABILIZATION

The Standard Specifications are incorporated herein.

SECTION 11-36 **BLANK**

SECTION 11-37 **BITUMINOUS SEALS**

The Standard Specifications are incorporated herein.

SECTION 11-38 **BLANK**

SECTION 11-39 **ASPHALT CONCRETE**

See section 19 for additional information.

The Standard Specifications are incorporated herein except as noted.

Section 11-39 (1.0) General

Asphalt concrete shall be Type B and shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these Special Provisions.

The grade of asphalt binder to be mixed with aggregate for Type B asphalt concrete shall be PG 64-28 Polymer Modified conforming to the provisions in Section 92, "Asphalts," of the Standard Specifications. At the option of the Contractor, the grade of asphalt binder used for patching may be PG 70-10 or PG 64-22 provided at least one layer of asphalt concrete mixed with PG 64-28, and conforming to these Special Provisions is placed over the patch. Unless otherwise approved by the Engineer, leveling and miscellaneous areas will not be considered as patching.

Slurry Seal

The City Engineering standard for slurry is to be Type II emulsion aggregate slurry applied at a minimum rate of 11-15 pounds per square yard min, and in accordance with sections 302-4.1 through 302-4.3.3 of the SSPWC.

Maintenance and Patch/Point Repairs

Normal maintenance surface repairs in paved road surfaces shall be made by over-cutting the area to be repaired horizontally by one foot wider than the repair hole, and excavating vertically by one (1) inch deeper than the bottom of the point in question. Trenching or larger-scale excavations and encroachments, and their respective maintenance and repairs, are addressed in the excavation/trenching standards sections, encroachment permits, and/or the associated contracts and documents.

Shoulders/Shoulder Backing

Shoulders on roadways, where called for, shall be constructed/re-constructed during road base/shoulder grading, from imported Class II, $\frac{3}{4}$ inch maximum aggregate base, or equivalent, to the same cross-section/slope as the road base. The Engineer shall approve minimum width and compaction. Shoulder backing, where called for in roadway paving/repaving and normal maintenance operations, shall be imported Class II, $\frac{3}{4}$ inch maximum aggregate base, or equivalent, with minimum width and compaction approved by the Engineer.

Raise and Lower Frames and Covers

The Contractor shall be responsible for raising or lowering all existing frames for valve box covers, monument covers, manhole covers, environmental test well covers, vault boxes, hand holes, etc., to the final paving grade, where applicable, and expenses incurred shall be borne by the Contractor. Any other arrangements are to be made in the advanced planning stages of the project and approved by the Engineer.

Aggregate Quality

Aggregates shall be clean and free from decomposed or organic materials and other deleterious substances. Visual evidence of organic materials in the aggregate shall be sufficient cause for rejection of the aggregate. Coarse aggregate is material retained on the No. 4 sieve, fine aggregate is material passing the No. 4 sieve, and supplemental fine aggregate is added fine material passing the No. 30 sieve, including, but not limited to, lime, cement and stored fines from dust collectors.

The gradation of the aggregate blend used in the proposed asphalt concrete mix design, including supplemental fine aggregate, shall meet the requirements of Subsection 39-2.02, "Aggregate," of the Standard Specifications for the 12.5-mm {1/2 inch} Maximum, Medium gradation. The symbol "X" shown in the Standard Specification table is the gradation which the Contractor proposes to furnish for the specific sieve. The proposed gradation shall meet the gradation shown in the table under "Limits of Proposed Gradation." Changes from one mix design to another shall not be made during the progress of the work unless permitted by the Engineer. However, changes in proportions to conform to the approved mix design shall not be considered changes in mix design.

During asphalt concrete production, aggregate gradation shall be within the limits specified herein. Conformance with the grading requirements shall be determined by California Test 202, modified by California Test 105 when there is a difference in specific gravity of 0.2 or more between the coarse and fine portions of the aggregate or between the blends of the different aggregates. The percent passing the No. 200 sieve shall be reported to the first decimal place (tenths).

The combined aggregate shall conform to the following quality requirements before the addition of the asphalt binder:

Table 10-1.01.1 AGGREGATE QUALITY REQUIREMENTS

Quality	California	Asphalt Concrete	
	Test	Type A	Type B
Percent of Crushed Particles			
Coarse Aggregate (Min.)	205	90%	25%
Fine Aggregate (Passing No. 4, Retained on No. 8) (Min.)		70%	20%
Los Angeles Rattler	211		
Loss at 100 Rev. (Max.)		10%	
Loss at 500 Rev. (Max.)		45%	50%
Sand Equivalent (Min.) ¹	217	47	42
Kc Factor (Max.)	303	1.7	1.7
Kf Factor (Max.)	303	1.7	1.7

Note:

- 1 Reported value shall be the average of 3 tests split from a single sample.

Aggregate for asphalt concrete dikes, gutters, gutter flares, overside drains and aprons at the ends of drainage structures shall conform to the 3/8-inch maximum grading specified in Section 39-2.02, "Aggregate," of the Standard Specifications.

11-39 (1.01) Asphalt Concrete Mixture

The asphalt concrete mixture, composed of the proposed aggregate blend, antistripping additives, and the proposed asphalt binder content as determined by California Test 367, shall conform to the following requirements:

Table 10-1.01.2 ASPHALT CONCRETE MIXTURE REQUIREMENTS

Design Parameters	California	Asphalt Concrete Type	
	Test	Type A	Type B
Hveem Stabliometer Value (Min)	366 ^{1,2}	37	35
Percent air voids (Mix Design)	367 ¹	4 ³	3 ³
(3 briquettes at Mix Design) ⁴		3 - 5	2-4
(Start-Up Production Evaluation) ⁵		Design Value ±2.0	
Swell ⁴ (mm) (Max)	305	0.76	0.76
Tensile Strength Ratio (TSR) ⁶	371	report	report

Notes:

1. Reported value shall be the average of 3 tests from a single split sample.
2. A set of 3 briquettes shall be prepared and tested separately. If the range of stability for the 3 briquettes is more than 12 points, the briquettes shall be discarded and new samples shall be fabricated and tested.
3. California Test 367, Paragraph C5, is modified to "4%" for Type A and "3%" for Type B. California Test 309 shall be used to determine the theoretical maximum specific gravity of each asphalt content in conformance with the requirements in "Determination of Theoretical Maximum Specific Gravity of Mixtures with Different Asphalt Contents" (LP-1) located at: <http://www.dot.ca.gov/hq/esc/Translab/fjmlab.htm>
4. Mix design submittal shall include test results for percent air voids for 3 briquettes constructed using the submitted aggregate and asphalt blended at the proposed target values. Result shall be average for the 3 briquettes.
5. For production evaluation of air voids, California Test 309 shall be used to measure theoretical maximum specific gravity instead of calculating maximum specific gravity in California Test 367. Determine the theoretical maximum specific gravity once for a single split sample. For bulk specific gravity, the reported value shall be the average of 3 tests from a single split sample.
6. The tensile strength ratio of the mixture both with and without the use of a liquid antistripping shall be determined and reported as part of the mix design submittal. These results are for information only, and the use of liquid antistripping will be required regardless of the results of this testing.

The use of a liquid antistripping agent will be required for all asphalt concrete except that used for asphalt concrete dikes, gutters, gutter flares, overside drains and aprons at the ends of drainage structures.

During production and placement, the asphalt concrete mixture shall conform to the requirements of this Section. Changes in cold feed or hot bin proportions to conform to the aggregate grading requirements shall not be considered changes in the mix design.

Changes from one mix design to another shall not be made during the progress of the work, unless approved by the Engineer. Changes in target asphalt content of placed asphalt concrete, in aggregate grading target values, or in aggregate sources shall be considered to be a change in the asphalt concrete mixture and shall require a new mix design proposal.

Changes in the asphalt content or aggregate grading target values approved by the Engineer will not be applied retroactively for acceptance or payment. Adjustment to the control setting at the plant to achieve target asphalt concrete properties in the field is allowed and shall not be considered as a change in the asphalt concrete mixture.

The amount of asphalt binder used in asphalt concrete placed in dikes, gutters, gutter flares, overside drains and aprons at the ends of drainage structures shall be increased one percent by weight of the aggregate over the amount of asphalt binder determined for use in asphalt concrete placed on the traveled way. This additional asphalt binder shall be considered as included in the prices paid for the material and work associated with paving of miscellaneous areas and dikes and no additional compensation will be allowed therefore.

Contractor Mix Design Proposal

The Contractor shall submit for the Engineer's review a proposed asphalt concrete mix design for each asphalt concrete mixture to be used at least 7 days before production of that asphalt concrete mixture. The asphalt concrete mix design shall be prepared by a laboratory (or laboratories) whose proficiency has been reviewed and qualified in conformance with the California Department of Transportation's Independent Assurance Program, has been AASHTO accredited, or is otherwise approved by the Engineer. Aggregate quality and asphalt concrete mix design test results shall be no more than one year old when production of the asphalt concrete mixture starts.

The Contractor shall submit a mix design letter that indicates the target values proposed for gradation, asphalt content, and percent air voids. This submittal shall include test results and raw test data for aggregate quality and asphalt concrete mixture requirements; plots of the combined gradings; plots of unit weight, stability, theoretical maximum specific gravity, and percent air voids versus asphalt content for the asphalt contents considered in the design process. In addition, this submittal shall include test results for stability, percent air voids, and swell for 3 briquettes constructed using the submitted aggregate and asphalt blended at the proposed target values for each asphalt concrete mixture to be used.

The Contractor shall provide the following in the asphalt concrete mixture submittal:

1. Aggregate and supplemental fine aggregate;

Subgrade, prime coat, paint binder (tack coat), and pavement reinforcing fabric shall conform to the requirements of Subsection 39-4, "Subgrade, Prime Coat, Paint Binder (Tack Coat), and Pavement Reinforcing Fabric," of the Standard Specifications except as modified herein.

Paint Binder (Tack Coat)

Paint binder (tack coat) shall be applied to existing surfaces to be surfaced and between layers of asphalt concrete, except when eliminated by the Engineer. Paint binder (tack coat) shall be, at the option of the Contractor, either slow-setting asphaltic emulsion, rapid-setting asphaltic emulsion, or paving asphalt. Slow-setting asphaltic emulsion and rapid-setting asphaltic emulsion shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 94, "Asphaltic Emulsions," of the Standard Specifications. When paving asphalt is used for paint binder, the grade will be determined by the Engineer. Paving asphalt shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 92, "Asphalts," of the Standard Specifications.

Paint binder (tack coat) shall be applied at a rate that provides for adequate adhesion between the asphalt concrete being placed and the surface to which the paint binder (tack coat) has been applied. The rate of application shall be as approved by the Engineer.

Prime coat or paint binder (tack coat) shall be applied in advance of placing the surfacing only as far as shall be approved by the Engineer. When asphaltic emulsion is used as paint binder (tack coat), asphalt concrete shall not be placed until the applied asphaltic emulsion has cured (completely changed color from brown to black).

The area to which paint binder has been applied shall be closed to public traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction.

Immediately in advance of placing asphalt concrete, additional prime coat or paint binder (tack coat) shall be applied as directed by the Engineer to areas where the prime coat or paint binder (tack coat) has been damaged. Loose or extraneous material shall be removed and no additional compensation will be allowed therefore.

Section 11-39 (2.2.1) Spreading and Compacting Equipment

Spreading

Asphalt concrete shall be handled, spread, and compacted in a manner which is in conformance with the provisions in this Section.

Asphalt concrete shall be placed in such a manner that cracking, shoving, and displacement will be avoided.

Plant mix bituminous base course or surface course shall not be placed unless the following criteria are met during suitable weather:

Air Temperature

50F

Ground Temperature

40F

Asphalt concrete shall not be placed when the underlying layer or surface is frozen or not dry or when weather conditions will prevent proper handling, finishing or compaction of the mixture.

Unless otherwise designated on the plans or allowed by the Engineer asphalt concrete shall be spread and compacted in the layers and thicknesses indicated in the following table:

Table 10-1.01.3 Asphalt Concrete Layers and Thickness

Total Thickness Shown on the Plans*	Minimum Number of Layers	Top Layer Thickness (Inches)		Next Lower Layer Thickness (Inches)		Other Lower Layers Thickness (Inches)	
		Min.	Max.	Min.	Max.	Min.	Max.
3" or less	1	----	----	----	----	----	----
3.1" through 3.5"	2	1.5	2	1.5	2	----	----
3.51" through 5.3"	2	2	2.5	2	3	----	----
5.31" or more	**	2	2.5	2	3	2	5

Notes:

* When pavement reinforcing fabric is shown to be placed between layers of asphalt concrete, the thickness of asphalt concrete above the pavement reinforcing fabric shall be considered to be the "Total Thickness Shown on the Plans" for the purpose of spreading and compacting the asphalt concrete above the pavement reinforcing fabric.

* At least 3 layers if total thickness is more than 5.5 inches and less than 10 inches. At least 4 layers if total thickness is 10 inches or more.

Layers shall be spread with an asphalt paver, unless otherwise specified or approved by the Engineer. Asphalt pavers shall be operated in such a manner as to ensure continuous and uniform movement of the paver.

A layer shall not be placed over a layer that exceeds 3 inches in compacted thickness until the temperature of the layer being covered is less than 160° F at mid-depth unless approved by the Engineer.

Asphalt concrete to be placed on shoulders, and on other areas off the traveled way having a width of 5 feet or more, shall be spread in the same manner as specified above.

Asphalt concrete surfacing shall be placed on existing surfacing, including curve widening, chain control lanes, turnouts, left turn pockets, and public and private road connections shown on the plans, unless otherwise directed by the Engineer.

Unless otherwise shown in the plans or directed by the Engineer, additional asphalt concrete surfacing material shall be placed along the edge of the surfacing at road connections and private drives, hand raked, if necessary, and compacted to form smooth tapered conforms. Full compensation for furnishing all labor and tools and doing all the work necessary to hand rake said conforms shall be considered as included in the contract prices paid per ton for the various contract items of asphalt concrete surfacing involved and no additional compensation will be allowed therefore.

The completed mixture shall be deposited on the roadbed at a uniform quantity per linear yard, as necessary to provide the required compacted thickness without resorting to spotting, picking-up or otherwise shifting the mixture. During transporting, spreading and compacting, petroleum products such as diesel fuel and kerosene shall not be used as a release agent on trucks, spreaders or compactors in contact with the asphalt concrete.

Mechanical and thermal segregation shall be avoided. Surfacing shall be free from pockets of coarse or fine material. Asphalt concrete containing hardened lumps shall not be used.

Unless otherwise provided herein or approved by the Engineer, the top layer of asphalt concrete for shoulders, tapers, transitions, road connections, private drives, curve widenings, chain control lanes, turnouts, left-turn pockets, and other areas shall not be spread before the top layer of asphalt concrete for the adjoining through lane has been spread and compacted. At locations where the number of lanes is changed, the top layer for the through lanes shall be paved first. When existing pavement is to be surfaced and the specified thickness of asphalt concrete to be spread and compacted on the existing pavement is 3 inches or less, the shoulders or other adjoining areas may be spread simultaneously with the through lane provided the completed surfacing conforms to the provisions of this Section. Tracks or wheels of spreading equipment shall not be operated on the top layer of asphalt concrete until final compaction has been completed.

At those locations shown on the plans, as specified in these Special Provisions, or as directed by the Engineer, the asphalt concrete shall be tapered or feathered to conform to existing surfacing or to other highway and non-highway facilities.

At locations where the asphalt concrete is to be placed over areas inaccessible to spreading and rolling equipment, the asphalt concrete shall be spread by practical means to obtain the specified results and shall be compacted thoroughly to the required lines, grades, and cross sections by means of pneumatic tampers or by other methods that will produce the same degree of compaction as pneumatic tampers. Care shall be taken to insure that adequate temperature for compaction of the asphalt concrete is maintained until compaction is complete.

In advance of spreading asphalt concrete over an existing base, surfacing or bridge deck, if there is a contract item for asphalt concrete (leveling) or if ordered by the

Engineer, asphalt concrete shall be spread by mechanical means that will produce a uniform smoothness and texture. Asphalt concrete (leveling) shall include, but not be limited to, the filling and leveling of irregularities and ruts and changing the cross slope or profile of an existing surface.

Paint binder (tack coat) shall be applied to each layer in advance of spreading the next layer.

Unless otherwise allowed by the Engineer, asphalt paving equipment shall be equipped with automatic screed controls and a sensing device or devices.

When placing asphalt concrete to lines and grades established by the Engineer, the automatic controls shall control the longitudinal grade and transverse slope of the screed. Grade and slope references shall be furnished, installed, and maintained by the Contractor. Should the Contractor elect to use a ski device, the minimum length of the ski device shall be 30 feet. The ski device shall be a rigid one piece unit and the entire length shall be utilized in activating the sensor.

When placing the initial mat of asphalt concrete on existing pavement, the end of the screed nearest the centerline shall be controlled by a sensor activated by a ski device not less than 30 feet long. The end of the screed farthest from centerline shall be controlled manually when this edge of the mat must conform with existing features. Otherwise, the end of the screed farthest from centerline shall be controlled by an automatic transverse slope device set to reproduce the cross slope designated by the Engineer.

When paving contiguously with previously placed mats, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.01-foot tolerance. The end of the screed farthest from the previously placed mat shall be controlled in the same manner the screed was controlled when placing the initial mat.

If the methods and equipment furnished by the Contractor fail to produce a layer of asphalt concrete conforming to the provisions, including straightedge tolerance, of these special provisions, the paving operations shall be discontinued and the Contractor shall modify the equipment or methods, or furnish substitute equipment.

If the automatic screed controls fail to operate properly during a day's work, the Contractor may use manual control of the spreading equipment for the remainder of that day. However, the equipment shall be corrected or replaced with alternative automatically controlled equipment conforming to the requirements in this section before starting another day's work.

Longitudinal Joints

Longitudinal joints in the top layer of asphalt concrete shall correspond with the edges of planned traffic lanes. Longitudinal joints in other layers shall be offset not less than 6 inches nor more than 12 inches alternately each side of the edges of traffic lanes.

Longitudinal joints may be constructed in any manner that provides for a minimum relative compaction of not less than 89.0 percent of the theoretical maximum density AND to not less than 92.0 percent of laboratory test maximum density (LTMD), provided the method(s) employed provide for the geometric, conveyance of public traffic, and safety requirements of the project.

The Engineer may, at their discretion, test the density of the longitudinal joint with a calibrated nuclear density gauge or through the use of 6-inch diameter cores obtained directly on the longitudinal joint.

If approved by the Engineer in writing, the Contractor may use rubberized asphalt crack sealer, Cratco Pavement Joint Adhesive or a similar approved product in accordance with the manufacturer's recommendations and the longitudinal joint density requirements will be waived.

Compaction Equipment

A sufficient number of rollers shall be provided to obtain the specified compaction and surface finish required by this Section. Rollers shall be sized to achieve the required results.

Rollers shall be equipped with pads and water systems that prevent sticking of the asphalt concrete mixtures to the pneumatic or steel-tired wheels. A parting agent that will not damage the asphalt concrete mixture may be used to aid in preventing the asphalt concrete mixture from sticking to the wheels. Pneumatic-tired rollers shall be skitted to retain heat in the pneumatic tires.

Asphalt concrete shall be compacted to not less than 92.0 percent or more than 97.0 percent of theoretical maximum density AND to not less than 95.0 percent of laboratory test maximum density (LTMD) and shall be finished to the lines, grades, and cross sections shown on the plans. The asphalt concrete shall be produced and compacted within the temperature ranges recommended by the asphalt binder supplier. No rolling will be permitted after the asphalt concrete temperature is below 160° F.

Percent of theoretical maximum density and LTMD shall be determined in conformance with the requirements in California Test 375 except the test maximum density requirements in Part 5, "Determining Test Maximum Density," shall include California Test 309 requirements for theoretical maximum density in addition to LTMD, and the selection of testing locations will be as determined by the Engineer. At the option of the Engineer, acceptance testing for compaction may be performed using cores only in accordance with California Test 308.

Asphalt concrete placed in dig outs, as a leveling course, for slope correction, for detours not included in the finished roadway prism, in areas where in the judgment of the Engineer compaction or compaction measurement by conventional methods is impeded or on the uppermost lift of shoulders with rumble strips shall be compacted by a method approved by the Engineer.

The completed surfacing shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, or irregularities. Ridges, indentations or other objectionable marks left in the surface of the asphalt concrete by blading or other equipment shall be eliminated by rolling or other suitable means. The use of equipment that leaves ridges, indentations or other objectionable marks in the asphalt concrete shall be discontinued. Inasmuch as maintaining the quality of longitudinal riding surfaces incidental increases in asphalt tonnage and depth during overlay of deteriorated/rounded-off edges of streets, paving contractors are required to re-dress edge drop-offs greater than three (3) inches with approved shoulder backing material. The respective contractor or agency performing this work, prior to project termination, MUST mitigate paved and unpaved driveway aprons in rights-of-way that are abnormally and unreasonably impacted during the street paving operations. City of South Lake Tahoe Engineer has final authority in these matters.

When a straightedge 12 feet ± 0.2 -foot long is laid on the finished surface and parallel with the centerline, the surface shall not vary more than 0.1-inch from the lower edge of the straightedge. The transverse slope of the finished surface shall be uniform to a degree such that no depressions greater than 0.20-inch are present when tested with a straightedge 12 feet ± 0.2 -foot long in a direction transverse to the centerline and extending from edge to edge of a 12-foot wide traffic lane.

When abrasive grinding is used to bring the top surface of the uppermost layer of asphalt concrete surfacing within the specified surface tolerances, additional abrasive grinding shall be performed as necessary to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel with, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement centerline, within a ground area. Ground areas shall be neat rectangular areas of uniform surface appearance and shall be sealed with an asphaltic emulsion at a rate approved by the Engineer.

Acceptance of Work

General

Work determined to be in conformance with the provisions of this Section will be accepted and paid for at the contract price per ton for asphalt concrete.

The Engineer may reject a quantity of material that is determined to be defective based on visual inspection.

If the test results for a quantity of asphalt concrete indicate that the requirements of this Section have not been met, the asphalt concrete represented by that failure may be rejected.

Plant mix asphalt pavement shall be accepted on the basis of surface tolerance, density, thickness, conformance with the tolerances of the job mix formula, and the Marshal properties required in this section.

Asphaltic concrete paving will be accepted for density on a 'lot' basis. A lot will consist of 500 tons of asphaltic concrete or portion thereof exceeding 500 tons for each day's placement, with each day's placement consisting of at least one lot. Each lot will be tested for field density and mix property compliance.

Special attention is made to section 39-3.05, CALTRANS Standard Specifications- When asphalt concrete is stored, and it shall only be stored in appropriate silos. Asphalt concrete shall NOT be stockpiled prior to delivery to the jobsite and shall be cause for rejection. (CALTRANS Section 6-1.04 relates authorization to reject defective materials.)

Each lot of compacted pavement will be accepted, with respect to relative compaction, when the average relative compaction is equal to or greater than 92 percent, using the Theoretical Maximum Rice Specific Gravity in the determination of relative compaction.

If the average relative compaction is less than 92 percent, the completed pavement will be accepted or rejected based on the sliding scale Pay Factor, Table 1, Section 39-9.09 - 'Payment' - unless mitigated in accordance with Section 39-9.06 - 'Mitigation of Unacceptable Asphalt Concrete Pavement.' If allowed by the governing Agency, asphalt concrete pavement may be accepted for density by lot on the basis of relative compaction as compared to Marshall density as determined by ASTM D 1559 (50 blows each face for local residential streets, collector streets, and parking lots; 75 blows each face for arterial or any street with greater than 5 percent truck and/or bus traffic). Relative compaction shall not be less than 95 percent.

Mitigation of Unacceptable Asphalt Concrete Pavement

Unacceptable Surface Tolerance

Unacceptable surface tolerance shall be corrected by either overlaying or grinding with an application of a Type III slurry seal as directed by the City Engineer. In areas to be corrected with an overlay, grinding may be necessary to provide for a minimum 1.5 inch overlay and butt joints where matching existing pavements.

Unacceptable Density

Unacceptable density, low asphalt cement content, or high air voids of the in-place pavement shall be corrected as follows:

Rice Theoretical Maximum

Relative Compaction

Mitigation

Less than 92% but greater than 89.5%
Less than 89.5%

Type II slurry seal and sliding pay factor
Remove and Replace

Unacceptable Air Voids

Air Voids – In Place Pavements

Mitigation

Air void greater than 8 percent but less than
11 percent

Type II slurry seal

Air void greater than 11 percent

Remove and replace or 1 1/2 inch
overlay

Acceptance Testing

The City Engineer or designee may assure conformance to contract specifications by review of the Contractor's mix design proposal, by inspection of the Contractor's procedures, by oversight of the Contractor's quality control inspection and records, and by independent verification sampling and testing of the asphalt binder, aggregates, and asphalt concrete during asphalt concrete production and placement and after compaction. Acceptance tests will be performed using the same test methods used for quality control testing.

Cut samples taken shall be used to determine conformance with thickness specifications. The average thickness of cores shall be at least equal to the specified minimum thickness of the asphalt concrete pavement with no single core less than 1/2 inch thinner than the specified minimum thickness.

The City Engineer or designee may test the asphalt, aggregates or asphalt concrete mixture to determine conformance with the provisions in this Section at their discretion, including whenever an asphalt concrete mixture or ingredient appears defective or inconsistent or whenever a test result indicates a change in the characteristics of the asphalt concrete mixture or an ingredient.

If the City Engineer or designee performs acceptance testing, the minimum frequency of testing will be one sample and test for each day's or partial day's production.

Asphalt, aggregates or asphalt concrete that does not conform to the requirements of this Section for aggregate quality or gradation, mixture volumetric properties, and/or density, including density of longitudinal joints, may be rejected.

The City Engineer may reject asphalt concrete that has stability test results less than or equal to 26 for Type A or 24 for Type B.

The Contractor may witness assurance sampling and testing. However, the Engineer will not be required to notify the Contractor of anticipated sampling schedules or locations and will not delay sampling or testing if the Contractor is unable to attend. The Contractor shall not use samples taken for assurance testing for testing and submittal as a quality control test result. Asphalt concrete shall conform to the requirements of Section 39.

Asphalt will be tested for density on a lot basis. A "lot" for density determination will consist of 500 tons of bituminous concrete or portions thereof exceeding 500 tons for each day's placement with each day's placement consisting of at least one "lot."

The Theoretical Maximum Specific Gravity of the asphalt concrete shall be used in the determination of relative compaction and shall be performed in accordance with ASTM D 2041.

At least one Theoretical Maximum specific gravity determination shall be made for each "lot" to be tested. Additional Maximum Specific Gravity tests may be performed at the discretion of the City Engineer and at the request of the Contractor and at the Contractor's expense. If more than one determination is made the average for the lot shall be used.

Contractor Quality Control

Quality control, sampling, testing, and inspection shall be provided during asphalt concrete work. Sampling, testing, and inspection shall be performed at a rate sufficient to ensure that the asphalt concrete product conforms to the requirements in this Section.

The Contractor shall obtain a one-quart sample of the asphalt binder in conformance with the provisions in this Section for each day of asphalt concrete production. Modified binders shall be canned in one-quart cylindrical cans with open top, friction lids. The Contractor shall clearly identify the samples with project name, Contractor, Supplier, grade of asphalt, and date(s) sampled; and make the sample(s) available to the City Engineer. Each sample will represent the asphalt concrete produced during the day of sampling, and shall be delivered to the Engineer no later than the next working day unless otherwise approved by the Engineer.

The Contractor shall provide certified test results for theoretical maximum density and LTM D using the methods specified herein as often as necessary to represent the material being produced and placed. The City Engineer retains the option to core, remove the cut aggregate from the core(s), reheat, and determine theoretical maximum density and LTM D values for acceptance testing.

Providing quality control, sampling the asphalt binder, and providing theoretical maximum specific gravity and LTM D values shall be considered as included in the prices paid for asphalt concrete and no additional compensation will be allowed therefore.

Measurement and Payment

The quantity asphalt concrete of the type(s) designated in the Engineer's Estimate to be paid for shall be the combined weight of the mixture determined in conformance with the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications.

Insufficient thickness shall be corrected by either removal and replacement, or by placement of a minimum thickness 1 1/2 inch overlay. Grinding may be necessary to eliminate the problems associated with raising of finish grade as determined by the City Engineer, but in all cases, the outside perimeter of the corrective overlay shall be placed as a flush butt-joint formed by grinding of existing pavement.

Quantities of paving asphalt, liquid asphalt, and asphaltic emulsion to be paid for as contract items of work will be determined in conformance with the provisions in Section 92, "Asphalts," Section 93, "Liquid Asphalts," or Section 94, "Asphaltic Emulsions," of the Standard Specifications.

When recorded batch weights are printed automatically, these weights may be used for determining pay quantities if the printed batch weights conform to the following:

1. Total aggregate and supplemental fine aggregate weight per batch shall be printed. When supplemental fine aggregate is weighed cumulatively with the aggregate, the total batch weight of aggregate shall include the supplemental fine aggregate.
2. The total bitumen weight per batch shall be printed. Zero-tolerance weight shall be printed before weighing the first batch and after weighing the last batch of each truckload.
3. A copy of the recorded batch weights shall be certified by a licensed weighmaster and submitted to the Engineer.
4. Pavement reinforcing fabric (when specified) will be measured by the square yard for the actual pavement area covered.

Payment

Asphalt concrete placed in the work, unless otherwise specified, will be paid for at the contract price per ton for asphalt concrete of the type(s) designated in the Engineer's Estimate.

Unacceptable asphalt concrete pavement that exhibits high air voids from low density and/or low asphalt cement content shall be penalized unless mitigated in accordance with Section 39-9. The City will withhold the penalty portion of asphalt pavement payment with monies or bond deposited with the Agency.

TABLE 1

SLIDING SCALE PAY FACTORS

<u>Average Percent Rice</u>	<u>Percent Payment</u>
<u>Relative Compaction per Lot</u>	
92 and higher	100
91%	95
89.5%	90
Less than 89.5%	0

When there is a contract item for asphalt concrete (leveling), quantities of asphalt concrete placed for leveling will be paid for at the contract price per ton for asphalt concrete (leveling). When there is no contract item for asphalt concrete (leveling), and leveling is ordered by the Engineer, asphalt concrete so used will be paid for at the contract price per ton for asphalt concrete and no additional compensation will be allowed therefore.

The miscellaneous areas to be paid for at the contract price ton for place asphalt concrete (miscellaneous area) in addition to the prices paid for the materials involved shall be limited to ditches, overside drains, aprons at the ends of drainage structures.

When there is a contract item for paint binder (tack coat), the quantity of asphaltic emulsion or paving asphalt used as paint binder (tack coat) will be paid for at the contract price per ton for paint binder (tack coat). When there is no contract item for paint binder (tack coat), full compensation for furnishing and applying paint binder (tack coat) shall be considered as included in the contract price paid per ton for asphalt concrete of the type(s) designated in the Engineer's Estimate and no separate payment will be made therefore.

When there is a contract item for fog seal coat, the quantity will be paid for by the ton as provided in Section 37-1, "Seal Coats," of the Standard Specifications.

No adjustment of compensation will be made for an increase or decrease in the quantities of paint binder (tack coat) or fog seal coat required, regardless of the reason for such increase or decrease. The provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications shall not apply to the items of paint binder or fog seal coat.

The above contract prices and payments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in producing, hauling, and placing asphalt concrete, including preparation of the mix design, treatment with hydrated lime or liquid antistripping if necessary, and all necessary quality control, complete in place, as shown on the plans, as specified in this Section of these Special Provisions, and as directed by the Engineer.

SECTION 11-40

PORTLAND CEMENT CONCRETE PAVEMENT

The Standard Specifications are incorporated herein except as noted.

Portland Cement Concrete

The standard Portland Cement Concrete (PCC) mix design for paving in the City of South Lake Tahoe shall be as follows: PCC shall be fiber reinforced with a 4 inch maximum slump, minimum 5.5% and maximum 8% air content (air entrainment) and a minimum compressive strength as specified. Place contraction joints at 6-foot intervals and expansion joints at 18-foot intervals. If curb and sidewalk is adjacent to the roadway install 2" PVC snow pole sleeves through the sidewalk at the interface of the sidewalk and curb at expansion joint locations. Sidewalk shall be a minimum depth of 4 inches. Aggregate base minimum depth below curb shall be 8 inches and below sidewalk shall be 6 inches.

Section 11-40 (2.0) General Requirements

The work herein provided for is to be done in accordance with the plans, profiles, cross-sections and general and special provisions on file with the City of South Lake Tahoe Engineering Department and with these specifications, which are intended to cover all items necessary for the complete construction of concrete curbs, gutters, sidewalks, driveways, alley approaches and other concrete structures. No plans may be used unless approved by the Engineering Department.

Section 11-40 (2.1) Material Requirements

A. Portland Cement Concrete-Transit Ready-Mixed

1. Portland Cement Concrete shall be Transit-Ready-Mixed conforming to Standard Specifications ASTM Designation: C-94.
2. The allowable twenty-eight day (28) compressive strength for concrete shall not be less than:
 - a. Class A=4000 psi (7 sack minimum) for areas exposed to freeze thaw environments;
 - b. Class B=2500 psi (5 sack minimum) for non-exposed areas.
3. The maximum size concrete aggregate shall be 1 inch.
4. The Portland Cement, water, coarse and fine aggregate, shall comply with the applicable ASTM Designations for Portland Cement Concrete.
5. Proportioning of Portland cement, water and coarse and fine aggregate shall be certified by the manufacturer to comply with ASTM Standards for each class specified.

6. Concrete mixers and other equipment determined by the Engineer not to be adequate or suitable for the work shall be removed and suitable equipment provided by the Contractor at their own expense. Pick-up and throw-over blades in the drum of the mixer, which are worn down three-quarter inch (3/4") or more in New blades shall replace depth. The size of batch in truck mixers shall not exceed the rated capacity as determined by the Standard requirements of the Truck Mixer Manufacturers' Bureau. Truck mixers shall be equipped with means by which the number of revolutions of the drum or blades may be readily verified, and there shall be at least fifty (50) revolutions at mixing speed before any part of the batch is released.
7. The total elapsed time between the introduction of mixing water to the batch depositing the complete mix shall not exceed 90 minutes.
8. Admixtures to prevent segregation, to improve workability, or to accelerate the gain in strength of the concrete may be permitted, provided the admixture material proposed and the proportions of admixture to be used have been approved and fixed by the Engineer. Admixtures shall not be used without written permission from the Engineer or unless elsewhere provided for in these specifications or in the special provisions. Admixtures shall not be used to replace cement. If the use of calcium chloride is permitted, it shall comply with the Standard Specifications for Calcium Chloride ASTM Designation: D98. Unless otherwise specified or directed by the Engineer, calcium chloride shall be added at the rate of two percent (2%) by weight of the cement. Calcium chloride shall be dissolved in water and then be introduced with the mixing water.
9. Should the Contractor be permitted to use admixtures with the concrete for any purpose for his own benefit, he shall furnish such admixtures and incorporate them in the concrete mix at his own expense and no additional allowance will be made therefore.
9. Air entraining agents may be used, subject to addition of cement, in accordance with the Standard Specifications. The amount of water required for the proper consistency of concrete shall be determined by the method as described as ASTM Designation: C143. The amount of the slump shall be twelve inches (12") minus the height after subsidence. The allowance for slump shall be not more than four inches (4"). The amount of water added at the mixer shall be regulated in accordance with the free water in the aggregates and the requirements for workability within the limits of the slump set forth above. The amount of water, including the free water in the aggregates, shall not exceed six and one-half (6-1/2) gallons per sack of cement in Class A concrete, seven (7) gallons per sack of cement in Class B concrete, or seven and one-half (7-1/2) gallons per sack of cement in Class C concrete.
10. Test Specimens may be taken by the Engineer or Inspector at any time deemed advisable from the transportation unit at the point of discharge and tested in conformance with the Standard Method of Test for Compressive Strength of Molded Concrete cylinders, ASTM Designation: C39, and Test Method No. California-521.

B. Expansion Joint Material

Prefabricated asphalt impregnated expansion joints, or equal, of three-eighth inch (3/8") thickness shall be used as shown on the plans and approved by the Engineer and complying with ASTM Designation: D1751.

C. Curing Compound

Use approved curing compound conforming to the Standard Specification ASTM Designation: C309, and approved by the Engineer.

Section 11-40 (2.2) Construction Methods

A. Subgrades for Concrete Structures

The subgrade shall be constructed true to grade and cross-section, as shown on plans, or as specified by the Engineer or his authorized representative. The subgrade shall be thoroughly watered, rolled or hand tamped until hard and solid, before placing concrete. All adobe or soft and spongy material shall be removed to a depth as specified and the resulting void shall be filled with earth, sand or gravel, free of any vegetation or other deleterious material and of a quality that will pack when moistened. The material shall be thoroughly watered and rolled or tamped in layers not to exceed eight inches (8"), until a firm and solid foundation is secured. The entire subgrade shall be tested for grade and cross-section by means of a template extending the full depth and width of the curb, gutter or sidewalk and supported between side forms. The subgrade and forms shall be thoroughly watered in advance of placing concrete and allowed to dry to a damp condition. Compaction shall have a relative density of ninety-five percent (95%) under curbs, sidewalks, gutters and driveways, and other structures. The work shall comply with all the requirements of the Standard Specification for Subgrade.

B. Concrete Forms

1. The width of the forms for the combined curb, gutter and sidewalk shall be not less than the full thickness of the sidewalk on the outside edge of the sidewalk, not less than the full height of the curb face on the outside of the curb, and not less than the full thickness of the gutter on the outside edge of the gutter.
2. Timber forms, if used, shall not be less than one and one-half inches (1-1/2") thick after being surfaced. Warped forms and forms not having a smooth, straight upper edge shall not be used.
3. Rigid forms shall be provided for all curb returns except that benders or thin plank forms, rigidly placed may be used for curbs and curb returns where there are grade changes in the returns or where the central angle is such that a rigid form with a central angle-of ninety degrees (90) cannot be used.
4. Curb, gutter and sidewalk forms shall be carefully set to alignment and grade and to conform to the dimensions on the plan. Forms shall be held rigidly in place by the use of

iron stakes at intervals not to exceed four feet (4'). Clamps, spreaders, and braces shall be used where required to insure rigidity in the forms.

5. The form on the front of the curbs shall not be removed in less than two (2) hours after the concrete has been placed. In no event shall the form be removed while concrete is sufficiently plastic to slump upon removal of form.
6. All forms shall be cleaned thoroughly each time they are used and coated with light oil as often as necessary to prevent the concrete from adhering to them.
7. Forms for the structures shall comply with all provisions of the Standard Specifications.

C. Expansion Joints

Pre-cast asphalt impregnated expansion joints, or equal, of three-eighth inch (3/8") thickness and of the same size and shape as those specified for the individual construction of curbs, gutters and sidewalks shall be fastened with staples or other approved type fastenings, into one unit to conform to the shape of the cross-section of the combination curb, gutter and sidewalk. The expansion joint shall be set flush with the face and to the full depth of the curb, gutter and sidewalk. They shall be placed at right angles and perpendicular to the forms at intervals of not more than eighteen feet (18'). Expansion joints shall also be required at each end of a curb return, utility box, and at each end of constructed combination.

D. Concrete Placement

1. All concrete shall be of the class specified.
2. Any concrete that has had water added to the batch for more than 90 minutes shall be rejected and not placed in any structure. An interval of more than 45 minutes between any two consecutive batches or loads, or a delivery and placing rate of less than eight (8) cubic yards of concrete per hour shall constitute cause for shutting down work for the remainder of the day and, if so ordered by the Engineer or Inspector, the Contractor shall make, at his own expense, a construction joint at the location and of the type directed by the Engineer in the concrete already placed.
3. Concrete shall be placed in the forms for curbs, gutters, sidewalks, driveways, alley approaches, and other structures, directly from the truck mixer, or as approved by the Inspector in a manner which will not permit segregation of the concrete aggregates. Concrete shall be placed in the forms in layers not to exceed six inches (6") in depth until the forms are filled to the top. Each layer shall be thoroughly graded to remove all rock pockets, or concrete may be compacted by means of a mechanical vibrator approved by the Engineer. After tamping and floating, the proper section and grade shall be line and straightedge checked to assure the designed finished line; grade and elevation will result in adequate drainage.

4. Test specimens may be taken by the Engineer or Inspector at any time deemed advisable from the transportation unit at the point of discharge and tested in conformance with the Standard Method of Test for Compressive Strength of Molded Concrete Cylinders, ASTM Designation: C39, and Test Method No. California 521.
5. Concrete placement for structures shall also comply with the Standard Specifications.
6. All concrete shall be protected from damages at the Contractor's expense.

E. Concrete Finish

1. Sidewalks

The surface of the sidewalk shall be finished with a fine hair push broom drawn over the surface transverse to the line of traffic. Water, if necessary, may be applied lightly to the surface immediately in advance of brooming. Before brooming, the surface of the sidewalk shall be marked at right angles to the curb line and at a maximum of six-foot (6') intervals. The mark shall be cut two inches (2") deep with a pointed trowel and then use a double edged tool which will make a groove one-quarter inch (1/4") in depth with one-eighth inch (1/8") rounded edges and insure a free movement weakened plane at the joint. Markings shall coincide and line up with adjoining curb markings, if any. The sidewalk shall also be edged with a suitable tool. The marking and grooving pattern shall be varied in such a way to include marks off the corners of any tree walls or other items constructed within the sidewalk. Uncontrolled cracking will not be acceptable. When sidewalk to be constructed adjoins an existing sidewalk with a toweled smooth finish, the finish of the sidewalk to be constructed shall conform to the finish of the existing sidewalk unless otherwise specified by the Engineer. All blemishes caused by the marking tool, edging tool, or any other blemish shall be removed by smooth toveling the surface prior to finishing with a broom. The finished sidewalk shall be true to grade so that when a straight edge ten feet (10') in length is laid upon the surface of any point except at grade changes, the surface shall at no point vary more than one-eighth inch (1/8") and the finished surface shall be free from blemishes.

2. Curbs

Prior to the removal of the forms, the surface shall be edged with an approved edging tool giving a corner radius of one-half inch (1/2").

The curb shall be given a smooth finish with a steel trowel, free from humps, sags, blemishes or other irregularities. When a straight edge ten feet (10') in length is laid on the top, low line or face of the curb. The surface shall not vary more than one-eighth inch (1/8") from the straight edge except at grade changes or curves.

The top and front of the curb shall be marked at right angles to the curb line and at a maximum of six-foot (6') intervals. The mark shall be cut two inches (2") deep with a

pointed trowel and then use a double edged tool which will make groove one-quarter inch (1/4") radii to the surface of the curb and insure a weakened plane at the mark. Markings shall coincide and line up with adjoining sidewalk markings, if any. Uncontrolled cracking will not be acceptable. After steel troweling and marking the front and top of the curb, it shall be given a final fine brush finish with the brush strokes parallel to the top of curb line.

When the top and face of the curb are finished and the specified time lapsed, the back form of the curb shall be removed and the back of the curb shall be finished the same as the top and face, to a depth of not less than two inches (2") below the curb top.

3. Gutters

After tamping, the gutter shall be finished with a float to true grade from humps, sags, blemishes and other irregularities. When a straight edge ten feet (10') in length is placed upon the surface at any point, except at grade changes, the surface shall at no point vary more than one-eighth inch (1/8"). The surface of the gutter shall be marked the same as, and conform to, the markings on the curb. The gutter shall be edged on the outside edge with an approved edging tool having a corner radius of one-half inch (1/2").

4. Driveways and Alley Approaches

The finish surface of the sidewalk portion of the driveway shall be as per (1) above. The approach or apron portion shall have a fiber broom finish transverse to the line of traffic. The curbs and gutter portions shall be finished as per (2) and (3) above.

5. Concrete structure finishes shall comply with the Standard specifications.

F. Curing Concrete

Use pigmented curing compound in accordance with the Standard Specifications. The curing period shall be for eight (8) days. Care shall be exercised to avoid damage to the seal during the curing period. Should the seal be broken or damaged before expiration of the curing period, the Contractor shall immediately apply liquid membranes over the damaged portions at his own expense.

Traffic shall not be permitted to pass over concrete structures or any loads imposed thereon in less than ten (10) days after the concrete has been placed.

G. Contractor's Name Stamping

The Contractor shall stamp his name and the date (year) on all work done by him once on each job. The letters shall not be less than three-quarters of an inch (3/4") in

height and of a proportional width. They must be set into the work to a depth of not less than one-quarter inch (1/4").

H. Responsibility for Work

The Contractor shall repair at his own expense any damage to curbs, gutters, walks or other structures, caused by him in the performance of the work. Any construction or work performed not conforming to these specifications shall be removed and replaced at the Contractor's expense, and any damage caused by failure on the part of the Contractor for not properly protecting said construction, shall also be the Contractor's responsibility.

I. Thickness Deficiency

Payment for concrete which is deficient in thickness of not more than 0.05 feet will be adjusted in compliance with the Standard Specification. Concrete which is deficient in thickness of more than 0.05 feet will be removed in compliance with the Standard Specification.

J. Ramping Curbs and Sidewalks

All curbs and sidewalks must be accessible to and usable by the physically handicapped. The laws requiring this are in Section 4450, Chapter 7, Division 5 of Title 1 of the California Government Code and Section 19956.5 of the California State Health and Safety Code.

The following criteria shall be used as a guideline:

	<u>Minimum Acceptable</u>
Slope of Ramps	1:12
Width of Ramps at Top	42"
Width of Ramp at Gutter Line	42"
Transition Slope at Curb Face (X-Slope)	1:12
Lip at Gutter	1/2" (maximum)

Ramps should be constructed with a heavy broom finish transverse to the axis of the ramp in order to indicate a change of texture for blind persons and to make them as non-slip as possible. Ramps should have no abrupt changes in elevation or angle of slope. The number of ramps at each corner ideally should be two (2); one adjacent to each beginning of curb return.

SECTION 11-41

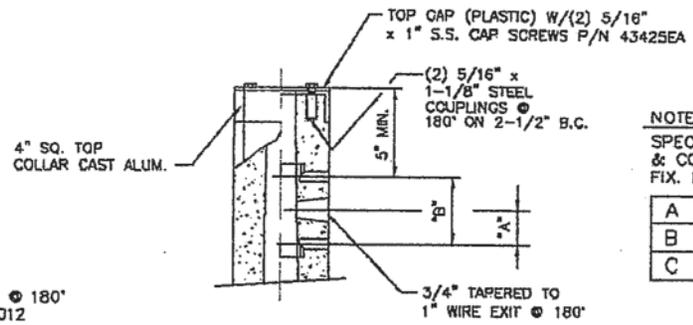
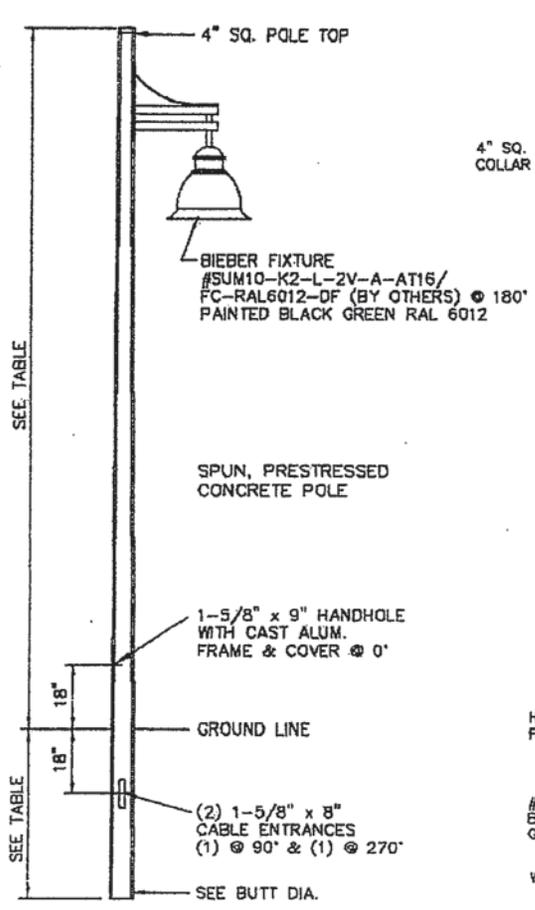
PAVEMENT SUBSEALING AND JACKING

The Standard Specifications are incorporated herein.

APPENDIX L **STREET LIGHTING**

APPENDIX I
STREET LIGHTS

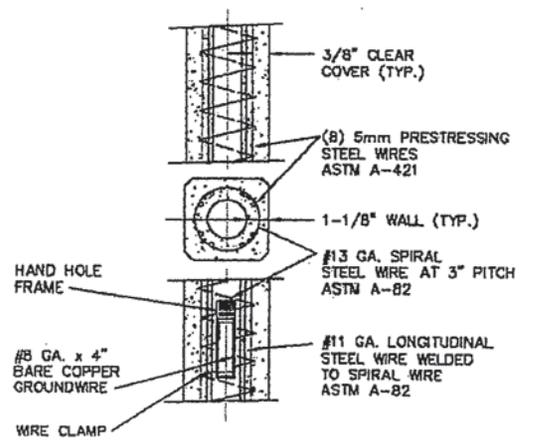
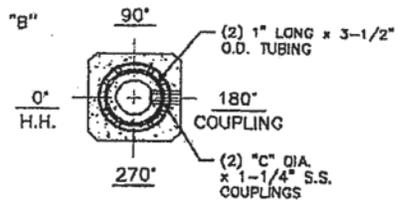
REV.	DATE	DESCRIPTION	DRN.	APPR.
A	3/03	ADDED MIX & PAINT COLORS	G.C.	



SIDE MOUNT DETAIL

NOTE:
SPECIFY HOLE SPACING "A", "B"
& COUPLING SIZE "C" FOR
FIX. MOUNTING BOLTS

A	
B	
C	



POLE SECTION

SEQ SMALL-EMBEDDED-SQUARE

POLE DESIG- NATION	POLE HEIGHT ABOVE GROUND	EM- BEDDED DEPTH	OVER- ALL LENGTH	BUTT DIA.	ULTIMATE O.L. MOMENT (ft. lbs.)	WEIGHT (lbs.)
SEQ-5.2	17'-0"	4'-3"	21'-3"	6-1/2"	12,980	540

() POLE REQ'D. WITH SINGLE SIDE INSERTS @ 180°.

NOTES:

- (1) FINISH: #5131, BROWN, NATURAL, EXPOSED FINISH WITH AMERSHIELD ANTI-GRAFFITI COATING.
- (2) ASTM C-150 TYPE III GRAY CEMENT.
- (3) f'c @ 28 DAYS=7,000 PSI, USING SPUN CYLINDER TEST.
- (4) f'c @ 28 DAYS=5,000 PSI, USING ASTM C-31 CYLINDER TEST.
- (5) POLES MANUFACTURED TO ASTM C-1089-97 SPECIFICATIONS.
- (6) ALL EXPOSED METAL PAINTED BLACK GREEN RAL 6012 (PH).

APPROVED BY _____ DATE _____

Amperon POLE PRODUCTS & SYSTEMS

**CITY OF SOUTH LAKE TAHOE, CA.
SEQ-5.2 (5131) W/SINGLE SIDE INSERTS**

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DRAWN: G.C.	2/03	SCALE	DWG. NO.	REV
CHK'D:		NONE	SK023003	A

CITY LIGHTING AREA MAP

