REPLACEMENT PAVEMENT
A.C. OR P.C.C.

WHEELCUT OR SAWCUT

EXISTING PAVEMENT

0.1'

0.35' MIN. REPLACEMENT PAVEMENT

0.65' MIN. C.M.B. OR SLURRY FOR LOCAL STREETS.

1.0' MIN. C.M.B. OR SLURRY FOR HIGHER TRAFFIC DESIGN STREETS.

A' B'

SEE NOTE AND TABLE HEREON

B' A'

A' B'

BACKFILL MATERIAL SLURRY OR UNTREATED BASE. SEE NOTE 3.

UNDER 2" 0.50'

OVER 2" 1.0'

BACKFILL ZONE

PIPE ZONE

SEENOTE

EXISTING STREET TRENCH DETAIL

SEE SHEET 2 FOR NOTES

City of San Juan Capistrano

REVISIONS

EXCAVATION AND RESURFACING

STANDARD

STANDARD PLAN NO.

700

WILLIAM M. HUBER

7/20/95

APPROVED BY CITY ENGINEER, WILLIAM M. HUBER R.C.E. 31785 DATE

SHT 1 OF 6
NOTES:


2. ALL TRENCHES WHICH ARE TRANSVERSE OR DIAGONAL TO EXISTING OR FUTURE STREETS (INCLUDING ALL INTERSECTION CROSSINGS). ALL LONGITUDINAL TRENCHES IN THE STREET WITHIN 1.5 FEET OF THE EDGE OF THE GUTTER OR EDGE OF CURB IF THERE IS NO GUTTER.

3. WHERE SLURRY IS NOT REQUIRED FOR BACKFILL AND BEDDING "A", CRUSHED MISCELLANEOUS BASE PER THE STANDARD SPECIFICATIONS SECTION 200 - 2.4 CLASS 2 AGGREGATE BASE AND UNTREATED BASE PER SECTION 200 - 2 OR 400 - 2 SHALL BE USED. ALL SOIL MATERIALS FOR BACKFILL, BEDDING, AND FILL SHALL BE GRADED PER SECTION 200-2 OR 400-2 FREE OF 1) CLAY; 2) GREATER THAN 2 INCH ROCK OR GRAVEL; 3) DEBRIS; 4) WASTE; 5) VEGETABLE AND DELETERIOUS MATTER. SATISFACTORY SOIL MATERIAL THAT MAY BE APPROVED SHALL BE THOSE DEFINED BY ASTM: D 2467 AS GW, SP, GM, SM, SW, AND SP.

4. BACKFILL AND COMPACTION METHODS SHALL CONFORM TO SUBSECTION 306 - 1.3 OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (CURRENT EDITION), EXCEPT THAT 95% MINIMUM RELATIVE COMPACTION SHALL BE REQUIRED WITHIN THE STRUCTURAL SECTION AND 0.5 FEET BELOW IT AND 90% COMPACTION IN THE REMAINDER OF THE BACKFILL ZONE.

5. ALL REFERENCES TO SLURRY SHALL MEAN CLASS 100 - E - 100 SAND/CEMENT SLURRY.

6. ALL A.C. REPLACEMENT REQUIRES TACK COAT ON EXISTING EDGES AND A SEAL COAT ON THE SURFACE.

7. PRIOR TO PLACING BACKFILL, CALL CITY ENGINEERING DIVISION FOR BEDDING INSPECTION.

8. THE WHEEL OR SAWCUT OF A.C. SHALL BE A STRAIGHT, CLEAN LINE ACCEPTABLE TO THE CITY ENGINEER.

9. WHERE EXISTING A.C. EXCEEDS 0.5 FEET IN THICKNESS, ALTERNATE PAVEMENT REPLACEMENT THAN REQUIRED HEREON WILL BE SPECIFIED BY THE CITY ENGINEER.

10. PRIOR TO PERFORMING ANY WORK IN THE PUBLIC RIGHT - OF - WAY A PERMIT MUST BE OBTAINED FROM CITY ENGINEERING DIVISION.

11. ON ALL HIGHWAYS SHOWN ON THE MASTER PLAN OF HIGHWAYS THE A + B + B SHALL BE OF WIDTH SUFFICIENT ENOUGH TO ACCOMMODATE A SELF - PROPELLED STEEL ROLLER.

12. ALL WORK SHALL CONFORM TO THE "GUIDELINES FOR TRAVEL EXCAVATION;" ATTACHED HERETO.
GUIDELINES FOR TRENCH EXCAVATION

1. A TRENCH IS DEFINED AS AN EXCAVATION IN WHICH THE DEPTH IS GREATER THAN THE WIDTH OF THE BOTTOM OF THE EXCAVATION.

ALL TRENCH EXCAVATION AND RELATED WORK SHALL CONFORM TO SUBSECTION 306-1 OF THE CURRENT EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (STANDARD SPECIFICATIONS) AND AS FURTHER SPECIFIED BELOW:

A. MAXIMUM LENGTH OF OPEN TRENCH SHALL BE 200 FEET OR THE DISTANCE NECESSARY TO ACCOMMODATE THE AMOUNT OF PIPE ABLE TO BE INSTALLED IN A SINGLE DAY, WHICHEVER IS GREATER.

B. BEFORE EXCAVATING ANY TRENCH FIVE FEET OR MORE IN DEPTH, THE CONTRACTOR/PERMITTEE SHALL SUBMIT TO THE CITY A DETAILED PLAN SHOWING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROVISIONS TO BE MADE FOR THE WORKERS' PROTECTION. THIS PLAN MUST COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA CONSTRUCTION SAFETY ORDERS, ARTICLE 6, SECTION 1540. IF THIS PLAN VARIES FROM SHORING SYSTEM STANDARDS, IT SHALL BE PREPARED BY A REGISTERED CIVIL ENGINEER. THE PLAN WILL BE REVIEWED BY THE CITY PRIOR TO THE COMMENCEMENT OF EXCAVATION BY THE CONTRACTOR/PERMITTEE.

C. PRIOR TO COMMENCING WORK ON THIS PROJECT, THE CONTRACTOR/PERMITTEE SHALL SUBMIT TO THE CITY FOR APPROVAL A PLAN AND SCHEDULE OF CONSTRUCTION WHICH WILL ALLOW THE LEAST INCNVENIENCE TO THE PUBLIC AND/OR RESIDENTS. UTILITY TRENCHES MUST BE BACKFILLED AND COMPACTED OR COVERED WITH STEEL PLATES SO THAT ALL RESIDENTS WILL HAVE ACCESS TO THEIR DRIVEWAYS PRIOR TO CONTRACTOR/PERMITTEE LEAVING JOB SITE EACH DAY. ALL TRENCHES DEEPER THAN 0.15 FOOT IN ROADWAY MUST BE COVERED WITH STEEL PLATES OR FENCED, AS DETERMINED BY THE CITY, WHEN LEFT OVERNIGHT. ALL PLATES SHALL BE PLACED AND SECURED AGAINST DISPLACEMENT IN CONFORMANCE WITH THE PROVISIONS OF THE 'WORK AREA TRAFFIC CONTROL HANDBOOK PUBLISHED BY BUILDING NEWS, INC., LATEST EDITION THEREOF. ALL PLATES PLACED ON ARTERIAL HIGHWAYS SHALL BE SECURED ALSO BY SPIKES.

2. BEDDING MATERIAL WHICH SUPPORTS THE CONDUIT SHALL EXTEND A MINIMUM OF 1.0 FOOT ABOVE THE CONDUIT AFTER DENSIFICATION.

3. PRIOR TO BACKFILLING OF THE TRENCH BY THE CONTRACTOR/PERMITTEE, THE PROPOSED BACKFILL MATERIAL MUST BE APPROVED BY THE CITY. WHEN REQUESTED THE CONTRACTOR/PERMITTEE SHALL PROVIDE THE CITY WITH A CERTIFICATE OF COMPLIANCE FROM A SOILS TESTING LABORATORY APPROVED BY THE CITY.

City of San Juan Capistrano

EXCAVATION AND RESURFACING STANDARD

STANDARD PLAN NO. 700

APPROVED BY CITY ENGINEER, WILLIAM M. HUBER R.C.E. 31785 DATE 7/20/95

SHT. 3 OF 6
WHEN REQUIRED BY THE CITY, TESTS SHALL BE PERFORMED ON ALL PROPOSED BACKFILL MATERIAL TO ENSURE UNIFORM COMPLIANCE WITH CITY REQUIREMENTS. ANY MATERIAL THAT FAILS ON-SITE TESTING IS SUBJECT TO REMOVAL AND DISPOSAL AT THE EXPENSE OF THE CONTRACTOR/PERMITTEE.

4. AS STATED IN THE TRENCHING DETAIL NOTES, BACKFILL AND BEDDING MATERIALS SHALL HAVE A SAND EQUIVALENT (S.E.) AS DETERMINED BY TEST METHOD NO. CALIF. 217 AND SHALL BE DENSIFIED TO A MINIMUM RELATIVE COMPACtion OF 90 PERCENT (95 PERCENT IN THE CASE OF SUBPARAGRAPH 4B BELOW) BY THE USE OF MECHANICAL TAMPERs, ROLLERS, OR VIBRATORS APPROVED BY THE CITY. "STAMPING" TYPE EQUIPMENT SHALL NOT BE USED FOR DENSIFYING TRENCH BACKFILL WITHOUT PRIOR CITY APPROVAL. WHEN THE CONDUIT OR PIPE IS OTHER THAN REINFORCED CONCRETE OR AS OTHERWISE SPECIFIED BY THE PUBLIC UTILITY COMPANY STANDARDS. MATERIAL FOR MECHANICALLY COMPACTED BACKFILL SHALL BE PLACED IN Lifts NOT EXCEEDING THICKNESSES AS SPECIFIED IN SUBSECTION 306-1.3.2 OF THE STANDARD SPECIFICATIONS FOR THE TYPE OF EQUIPMENT USED. CLASS 100 - E - 100 SAND-CEMENT SLURRY, MECHANICALLY MIXED (HAND MIXING IS NOT APPROVED) AND PLACED IN CONFORMANCE WITH CITY REQUIREMENTS, MAY BE USED WHEN APPROVED BY THE CITY.

A. TESTING OF BACKFILL MATERIAL SHALL BE PERFORMED BY THE CONTRACTOR/PERMITTEE, AS REQUIRED BY THE CITY TO ENSURE UNIFORM DENSIFICATION. APPROVAL OF THE TEST RESULTS FOR BACKFILL MATERIAL SHALL BE SECURED FROM THE CITY PRIOR TO PLACEMENT OF PERMANENT BASE OF PAVEMENT. ALL TESTS SHALL BE PERFORMED AT THE EXPENSE OF THE CONTRACTOR/PERMITTEE.

B. WHERE TRENCH EXCAVATION OCCURS WITHIN EXISTING PAVEMENT, THE FOLLOWING CONDITIONS SHALL APPLY:

1. THE UPPER 0.5 FEET OF SUBGRADE AND THE STRUCTURAL SECTION SHALL BE DENSIFIED TO A MINIMUM RELATIVE COMPACtion OF 95 PERCENT. THE REMAINING BACKFILL SHALL BE DENSIFIED TO A MINIMUM RELATIVE COMPACtion OF 90 PERCENT.

2. ALL TRENCHES WHICH ARE TRANSVERSE OR DIAGONAL TO EXISTING STREETS OR ARE WITHIN AN INTERSECTION SHALL BE BACKFILLED WITH CLASS 100 - E - 100 SAND-CEMENT SLURRY. WHEN LONGITUDINAL TRENCHING IS PROPOSED NEAR CURBS AND GUTTERS, THE WALLS OF THE TRENCH SHALL NOT BE WITHIN 1.5 FEET OF THE EDGE OF GUTTER (OR EDGE OF CURB IF THERE IS NO GUTTER) IF THE TRENCH IS IN THE STREET, NOR WITHIN 1.5 FEET OF THE BACK OF THE CURB IF THE TRENCH IS IN THE PARKWAY, UNLESS PRIOR APPROVAL IS OBTAINED FROM THE CITY. WHEN TRENCH WALLS 1.5 FEET OR CLOSER TO THE EDGE OF GUTTER (OR EDGE OF CURB IF THERE IS NO GUTTER) ARE APPROVED BY THE CITY, THEN THE TRENCH SHALL BE BACKFILLED WITH CLASS 100 - E - 100 SAND-CEMENT SLURRY.

3. THE EXISTING PAVEMENT SHALL BE CUT ON ALL SIDES 0.5 TO 1.0 FEET WIDER THAN THE TRENCH WIDTH. WHEN THE EDGE OF EXISTING PAVEMENT IS SO CUT, ALL EXISTING PAVEMENT BETWEEN THE EDGE OF THE CUT AND THE GUTTER SHALL BE REMOVED IF IT IS LESS THAN 2.0 FEET IN UNIFORM WIDTH. ALL EDGES OF RECONSTRUCTED PAVEMENT SHALL BE STRAIGHT AND UNIFORM. IF THE CONTRACTOR/PERMITTEE Chooses TO USE A "PAVEMENT BREAKER" FOR MARKING THE INITIAL LIMITS OF TRENCH EXCAVATION, THE AREA SO MARKED MUST BE CONTINUOUSLY BARRICADED TO PREVENT TRAFFIC FROM PASSING OVER THE INDENTATIONS IN THE PAVEMENT, AS WELL AS THE AREA IMMEDIATELY ADJACENT TO ANY EXCAVATION. SUCH BARRICADING OR TRAFFIC CLOSURE, HOWEVER, SHALL COMPLY WITH CONTRACT/PERMIT TRAFFIC REQUIREMENTS, AND NOT CONSTITUTE ADDITIONAL CLOSURE. ALL LOOSE PAVEMENT AND OTHER DEBRIS SHALL BE IMMEDIATELY REMOVED. PRIOR TO SURFACING OF THE TRENCH, THE EXISTING PAVEMENT SHALL BE CUT AS SPECIFIED ABOVE. ANY BARRICADING SHALL CONFORM TO CITY TRAFFIC REQUIREMENTS AND PROVISIONS OF THE "WORK AREA TRAFFIC CONTROL HANDBOOK".

City of San Juan Capistrano

REVISIONS

EXCAVATION AND RESURFACING STANDARD

STANDARD PLAN NO. 700

APPROVED BY CITY ENGINEER, WILLIAM M. HUBER R.C.E. 31785 DATE 7/20/95

SHT. 4 OF 6
4. **Trench Resurfacing** shall match the existing street surface (A.C. or P.C.C.) and shall be 0.1 foot thicker than existing pavement. The minimum thicknesses of trench resurfacing materials shall conform to the following table.

<table>
<thead>
<tr>
<th>Local Streets and Alleys</th>
<th>Major, Primary, Secondary and Commuter Streets (as shown on the City Master Plan of Highways)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.35 foot A.C. or P.C.C. over 0.65 foot CI 2 AB or CMB</td>
<td>0.50 foot A.C. or P.C.C. over 1.00 foot CI 2 AB or CMB</td>
</tr>
<tr>
<td>or</td>
<td>or</td>
</tr>
<tr>
<td>0.35 foot A.C. or P.C.C. over Class 100 - E - 100 Sand Cement Slurry</td>
<td>0.35 foot A.C. or P.C.C. over Class 100 - E - 100 Sand - Cement Slurry</td>
</tr>
</tbody>
</table>

5. If temporary asphalt concrete pavement is placed in any pavement cut, it shall be maintained free of holes, ruts or other failures. This temporary pavement shall be removed and disposed of, and permanent asphalt concrete placed within a period of ten working days or as otherwise approved for public utility companies, following the placement of the temporary pavement. After removal of temporary pavement and prior to placement of permanent asphalt the surface of the subgrade, backfill or base, and edges of adjacent pavement shall be approved by the city. This surface shall be tested/inspected for compaction, elevation, surface uniformity, and it shall be firm, hard and unyielding. The edges of pavement shall be inspected for width, straightness, and proper tack coat.

6. If the contractor/permittee proposes to open a street to traffic after permanent asphalt concrete (base course) has been installed in the trench, but prior to installation of the final pavement course, the pavement shall be maintained in such a manner that holes, ruts, failures, and abrupt changes in elevation will not occur. The contractor/permittee shall obtain approval from the city prior to opening the street to traffic within the limits of their permitted work.

7. The final pavement course shall be made in such a manner that it will be flush and conform with the existing street surface. The contractor/permittee shall obtain approval from the city prior to placing the final pavement course.
8. THE CITY GUIDELINES FOR TESTING BACKFILL MATERIAL ARE AS FOLLOWS:


B. RELATIVE COMPACTION TESTS SHALL BE PERFORMED AT INTERVALS NOT EXCEEDING 200 FEET IN LENGTH AND 2.0 FEET IN DEPTH. ANY MATERIAL THAT FAILS A COMPACTION TEST SHALL BE RECOMPACTED OR REMOVED TO LIMITS DETERMINED BY THE CITY.

9. BARRICADES AND TRAFFIC CONTROL SHALL BE PERFORMED PER THE "WORK AREA TRAFFIC CONTROL HANDBOOK" PUBLISHED BY BUILDING NEWS, INC., LATEST EDITION THEREOF.

10. ANY PAVEMENT TRAFFIC STRIPING REMOVED OR OBLITERATED DUE TO CONTRACTOR/PERMITTEE OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR/PERMITTEE IMMEDIATELY FOLLOWING FINAL PAVING/PATCHING, TO THE SATISFACTION OF THE CITY. THE CONTRACTOR/PERMITTEE SHALL ALSO PROVIDE TEMPORARY PAVEMENT MARKINGS DURING CONSTRUCTION WHEN REQUIRED BY THE CITY. ON CITY CONTRACTS THE CONTRACTOR SHALL RESTRIPE AS REQUIRED BY THE SPECIFICATION.

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EXCAVATION AND RESURFACING STANDARD

REVISIONS

STANDARD PLAN NO. 700

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SHT 6 OF 6