NOTES:
1. DEVELOPER OR CONTRACTOR IS REQUIRED TO CALL 811 A MINIMUM OF 2 BUSINESS DAYS PRIOR TO DIGGING WITHIN THE LIMITS OF CITY RIGHT-OF-WAY FOR THE LOCATION MARKING OF ALL UNDERGROUND UTILITIES.

2. STREET LIGHT POLES TYPICALLY WILL BE INSTALLED ON ALTERNATING SIDES OF THE STREET AND SPACED AS INDICATED ON STANDARD DETAIL 6-2.

3. WATER METER BOXES WILL BE INSTALLED AT THE BACK OF NEW OR EXISTING SIDEWALKS.

4. POTABLE WATER LINES TYPICALLY SHALL BE INSTALLED 6 FEET FROM AND PARALLEL TO THE CENTERLINE OF THE RIGHT-OF-WAY.

5. SANITARY SEWER LINE TYPICALLY SHALL BE INSTALLED 6 FEET FROM AND PARALLEL TO THE CENTERLINE OF THE RIGHT-OF-WAY.

6. STORMWATER LINES TYPICALLY SHALL BE INSTALLED UNDER THE GUTTER PAN, OR UNDER THE CENTER OF THE ROADWAY IF APPROVED BY CITY ENGINEER.

7. FIRE HYDRANTS TYPICALLY WILL BE INSTALLED ON ALTERNATING SIDES OF THE STREET ON 300 FOOT SPACING IN INDUSTRIAL AND COMMERCIAL AREAS AND ON 400 FOOT SPACING IN RESIDENTIAL AREAS AND/OR EVERY INTERSECTION. UNLESS OTHERWISE SPECIFIED IN THE PLANS, OR CONTRACT.

8. IF CONFLICTS REQUIRE ALTERNATE WATER OR SEWER MAIN LOCATIONS, APPROVAL SHALL BE OBTAINED FROM THE CITY ENGINEER FOR THE LOCATION. A MINIMUM 3 FOOT SEPARATION FROM THE FACE OF CURB IS REQUIRED.
NOTES:

1. CONCRETE CURB AND GUTTER - STAB JOINTS EVERY 10 FEET, MASTIC AT PC/PT & CATCH BASINS.

2. CONCRETE SIDEWALK - DUMMY JOINTS EVERY 5 FEET, EXPANSION JOINT EVERY 30 FEET.

3. MINIMUM 1' FROM BACK OF WALK. AT FIRE HYDRANTS, INCREASE TO 5' FOR A DISTANCE OF 5' ON EACH SIDE OF FIRE HYDRANT WITH 2" OF CSTC.

4. SEE STD. DETAIL 1-1 FOR HYDRANT AND STREET LIGHT LOCATIONS.

5. ROADWAY SECTION ARE CONSIDERED MINIMUM DEPTHS AND MAY BE INCREASED DUE TO SOIL, TRAFFIC CONDITIONS OR GEOTECHNICAL RECOMMENDATIONS.
NOTES:

("**USE OF THIS ROADWAY SECTION MUST BE APPROVED BY THE CITY COMMUNITY DEVELOPMENT AND PUBLIC WORKS DEPARTMENTS**")
1. CONCRETE CURB AND GUTTER - STAB JOINTS EVERY 10 FEET, MASTIC AT PC/PT & CATCH BASINS.
2. CONCRETE SIDEWALK - DUMMY JOINTS EVERY 5 FEET, EXPANSION JOINT EVERY 30 FEET.
3. SEE STD. DETAIL 1-1 FOR HYDRANT AND STREET LIGHT LOCATIONS.
4. IN CONJUNCTION WITH THE STREET DESIGN, THE DESIGNER WILL INCLUDE A SIDEWALK PROFILE IF THE GRADE OF THE SIDEWALK WILL DIFFER FROM A DESIGNATED STANDARD VERTICAL OFFSET FROM THE TOP OF CURB. ADA CURB RAMPS SHALL BE SLOPED AT 12:1 OR FLATTER. THE LAND DEVELOPER WILL BE REQUIRED TO INSTALL CURB CUTS, IRRIGATION CONDUIT AND CONSTRUCT THE SIDEWALK TO THE APPROVED SIDEWALK DESIGN GRADE. THE SIDEWALK, FOR THE WIDTH ALIGNING WITH THE TOP OF DRIVEWAY CURB CUTS, SHALL BE 6 INCHES THICK PER STANDARD DETAIL 2-12. INSTALL 1 1/2" CL 160 PVC CAPPED AND MARKED IRRIGATION CONDUIT 12" UNDER SIDEWALK ON EACH SIDE OF THE DRIVEWAY. THE HOME BUILDER WILL BE REQUIRED TO CONSTRUCT THE CONCRETE DRIVEWAY FROM THE CURB TO THE SIDEWALK.
5. LANDSCAPE ELEMENTS, IRRIGATION SYSTEM, PLANT MATERIALS, AND STREET TREES SHALL BE COMPLETED BY THE HOME BUILDER AND MAINTAINED BY THE INDIVIDUAL PROPERTY OWNER.
6. ROADWAY SECTION ARE CONSIDERED MINIMUM DEPTHS AND MAY BE INCREASED DUE TO SOIL, TRAFFIC CONDITIONS OR GEOTECHNICAL RECOMMENDATIONS.

OPTIONAL TYPICAL CROSS SECTION
(LOCAL STREETS W/ SEPARATED SIDEWALK)

CATEGORY: STREETS  REVIEWED BY: AFW  ADOPTED: 02/14
FILENAME: SD 2-2.dwg  REVISED BY: BTL  REVISED: 11/14

DRAWING NO.
NOTES:
1. CONCRETE CURB AND GUTTER - STAB JOINTS EVERY 10 FEET, MASTIC AT PC/PT & CATCH BASINS.
2. CONCRETE SIDEWALK - DUMMY JOINTS EVERY 5 FEET, EXPANSION JOINT EVERY 30 FEET.
3. MINIMUM 1' FROM BACK OF WALK, AT FIRE HYDRANTS, INCREASE TO 5' FOR A DISTANCE OF 5' ON EACH SIDE OF FIRE HYDRANT WITH 2" OF CSTC.
4. SEE STD. DETAIL 1-1 FOR HYDRANT AND STREET LIGHT LOCATIONS.
5. ROADWAY SECTION ARE CONSIDERED MINIMUM DEPTHS AND MAY BE INCREASED DUE TO SOIL, TRAFFIC CONDITIONS OR GEOTECHNICAL RECOMMENDATIONS.
NOTES:

1. CONCRETE CURB AND GUTTER - STAB JOINTS EVERY 10 FEET, MASTIC AT PC/PT & CATCH BASINS.

2. CONCRETE SIDEWALK - DUMMY JOINTS EVERY 5 FEET, EXPANSION JOINT EVERY 30 FEET.

3. MINIMUM 1' FROM BACK OF WALK. AT FIRE HYDRANTS, INCREASE TO 5' FOR A DISTANCE OF 5' ON EACH SIDE OF FIRE HYDRANT WITH 2" CSTC.

4. SEE STD. DETAIL 1-1 FOR HYDRANT AND STREET LIGHT LOCATIONS.

5. ROADWAY SECTION ARE CONSIDERED MINIMUM DEPTHS AND MAY BE INCREASED DUE TO SOIL, TRAFFIC CONDITIONS OR GEOTECHNICAL RECOMMENDATIONS.
NOTES:
1. CONCRETE CURB AND GUTTER - STAB JOINTS EVERY 10 FEET, MASTIC AT PC/PT & CATCH BASINS.
2. CONCRETE SIDEWALK - DUMMY JOINTS EVERY 5 FEET, EXPANSION JOINT EVERY 30 FEET.
3. MINIMUM 1' FROM BACK OF WALK. AT FIRE HYDRANTS, INCREASE TO 5' FOR A DISTANCE OF 5' ON EACH SIDE OF FIRE HYDRANT WITH 2" CSTC.
4. SEE STD. DETAIL 1-1 FOR HYDRANT AND STREET LIGHT LOCATIONS.
5. ROADWAY SECTION ARE CONSIDERED MINIMUM DEPTHS AND MAY BE INCREASED DUE TO SOIL, TRAFFIC CONDITIONS OR GEOTECHNICAL RECOMMENDATIONS.
NOTES:
1. FIRE HYDRANT BASE FLANGE SHALL BE SET 0.5' ABOVE THE EDGE OF THE ASPHALT AND INCLUDE INSTALLATION OF GUARD POSTS PER STD. DETAIL 4-4B. AT LOCATIONS OF HYDRANTS AND WATER METER BOXES, DITCH SHALL BE FILLED.

2. ROADWAY SECTIONS ARE CONSIDERED MINIMUM DEPTHS AND MAY BE INCREASED DUE TO SOIL, TRAFFIC CONDITIONS OR GEOTECHNICAL RECOMMENDATIONS.
NOTES:
1. CONCRETE CURB AND GUTTER - STAB JOINTS EVERY 10 FEET, MASTIC AT PC/PT & CATCH BASINS.
2. CONCRETE SIDEWALK - DUMMY JOINTS EVERY 5 FEET, EXPANSION JOINT EVERY 30 FEET.
3. MINIMUM 1' FROM BACK OF WALK AT FIRE HYDRANTS, INCREASE TO 5' FOR A DISTANCE OF 5' ON EACH SIDE OF FIRE HYDRANT WITH 2" CSTC.
4. SEE STD. DETAIL 1-1 FOR HYDRANT AND STREET LIGHT LOCATION.
5. WHERE THE LENGTH FROM THE EXTENDED MAIN STREET CURB TO END OF CUL-DE-SAC BULB IS LESS THAN 150 FEET, THE CURB RADIUS MAY BE REDUCED TO 45 FEET WITH ROW RADIUS TO 52 FEET.
6. THE MAXIMUM CUL-DE-SAC LENGTH IS 400' AS SHOWN IN DRAWING.
NOTES:
(WITH THE PRIOR APPROVAL OF BOTH THE CITY ENGINEER AND FIRE MARSHALL, AN ALTERNATE TURN AROUND MAY BE USED. APPROVAL WILL BE CONSIDERED ONLY WHEN THE FOLLOWING MINIMUM CRITERIA ARE MET.)

1. MUST BE AN IN-FILL AREA BETWEEN DEVELOPED RESIDENTIAL LOTS WHERE, A FULL SIZED CUL-DE-SAC WOULD NOT BE PRACTICAL AS DETERMINED BY THE CITY ENGINEER AND FIRE MARSHALL; OR MUST BE AN IN-FILL AREA BETWEEN LOTS ZONED FOR OTHER THAN RESIDENTIAL USE, WHERE A FULL SIZED CUL-DE-SAC WOULD NOT BE PRACTICAL, AS DETERMINED BY THE CITY ENGINEER AND FIRE MARSHALL; AND THE UNDEVELOPED LOT MUST HAVE A MAXIMUM LOT WIDTH OF 180'

2. THE MAXIMUM LENGTH OF THE DEAD END STREET WILL BE 400'

3. AN ALTERNATE DESIGN, SIMILAR TO THIS DRAWING, MAY BE SUBMITTED FOR CONSIDERATION OF APPROVAL BY BOTH THE CITY ENGINEER AND FIRE MARSHALL

4. THE TURN AROUND AREA SHALL BE SIGNED FOR NO PARKING.
NOTES:

1. CONCRETE CURB AND GUTTER.

2. ALLEYWAY GRADE 0.5% - 10%.

3. ALLEYWAY CROSS SLOPE 2% INTO HILLSIDE.

4. NO PARKING ON EITHER SIDE OF ALLEYWAY. DEVELOPER RESPONSIBLE FOR INSTALLING "FIRE LANE, NO PARKING" SIGNS EVERY 400' ON BOTH SIDES OF ROADWAY.

5. STORM DRAINAGE SHALL BE DESIGNED IN ALLEYWAY FOR 25 YR. STORM EVENT, UTILIZING CATCH BASINS, PERCOLATION TRENCHES/SWALES. EMERGENCY OVERFLOW SHALL BE REQUIRED.

6. ALLEYWAY SHALL CONNECT TO CITY ROADWAYS - NO DEAD END ALLEYWAYS.

7. ALLEYWAYS ARE PRIVATELY OWNED AND MAINTAINED. CITY OF WEST RICHLAND ACCEPTS NO RESPONSIBILITIES FOR MAINTAINING ALLEYWAYS OR STORM DRAINAGE FACILITIES INSTALLED IN ALLEYWAYS.

8. ALLEYWAYS SHALL HAVE CITY STANDARD DRIVEWAY ENTRANCES WHERE THEY EXIT OFF THE PUBLIC RIGHT OF WAY. (CURB, GUTTER AND SIDEWALK)
NOTES:
1. PROVIDE 1’ SHOULDER ON CUT/FILL SLOPE EDGES.
2. FOR PATHWAYS RUNNING PARALLEL TO ROADWAY IN NON-LIMITED ACCESS AREAS, PATHWAY SHALL BE 4” THICK CONCRETE.
3. SUBGRADE SHALL BE TREATED WITH SOIL RESIDUAL HERBICIDE PRIOR TO PLACEMENT OF ROCK.
NOTES:

1. ALL ROADWAY ACCESSORIES, INCLUDING SIGNS, ARE TO REMAIN IN PLACE AND BE PROTECTED. ONE WAY TRAFFIC IS TO BE MAINTAINED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONTRACTOR SHALL INSTALL TEMPORARY LANE STRIPING AS PER STD. SPEC. 8-23 WHERE DIRECTED BY CITY ENGINEER. DISTURBED STRIPING SHALL BE REPLACED WITH PAINT, OR PLASTIC AS PREVIOUSLY EXISTED.

2. DO NOT BEGIN STREET CUT UNTIL COMPACTION EQUIPMENT IS ON SITE.

3. DO NOT BEGIN STREET CUT UNTIL WATER (TRUCK OR HOSE) IS ON SITE.

4. WATER SETTLING PERMITTED ONLY WITH APPROVAL OF THE ENGINEER.

5. PERMANENT HOT MIX ASPHALT (HMA) PATCHES SHALL ONLY BE PLACED AND ACCEPTED BETWEEN THE DATES OF APRIL 1ST AND NOVEMBER 1ST. IF A PERMANENT PATCH CANNOT BE PLACED DUE TO THESE PAVING RESTRICTIONS, WEATHER, OR OTHER CONCERNS, A TEMPORARY COLD MIX OR HMA PATCH SHALL BE USED. TEMPORARY PATCHES SHALL BE PLACED IMMEDIATELY AFTER BACKFILLING AND COMPACTION OPERATIONS AND BE CONTINUALLY MAINTAINED BY THE CONTRACTOR OR UTILITY UNTIL PAVING RESTRICTIONS ALLOW A PERMANENT HMA PATCH. ANY DEVIATIONS FROM THE CITY’S STANDARD PRACTICE MUST BE APPROVED BY THE CITY ENGINEER OR STATED OTHERWISE IN THE SPECIAL PROVISIONS OF THE CONTRACT DOCUMENTS.

6. THE DEPTH OF THE ASPHALT PATCH SHALL BE TWO INCHES (2”) DEEP ON ALL STREETS UNLESS OTHERWISE NOTED BY ENGINEER.

7. COMPACTED C.S.T.C. ROCK SHALL EXTEND DOWN TO PIPE BEDDING. LIFTS SHALL BE COMPACTED IN 1 FOOT INCREMENTS AND TESTED AT THE DISCRETION OF THE ENGINEER.

ASPHALT CONCRETE PAVEMENT REQUIREMENTS

1. ARTERIAL STREETS: HOT MIX ASPHALT HMA CL 1/2” OR 3/8” PG 64-28, 91% ASTM D-2041.

2. RESIDENTIAL STREETS: HOT MIX ASPHALT HMA CL 1/2” OR 3/8” PG 64-28, 91% ASTM D-2041.

3. HOT MIX ASPHALT SHALL BE PLACED IN LIFTS NOT TO EXCEED 2” IN DEPTH.
NOTES:
1. BENTON REA SHALL BE THE FIRST UTILITY IN THE TRENCH IN ORDER TO ASSURE THE DEEPEST POSSIBLE DEPTH DUE TO THE HIGHER VOLTAGE

2. BOTH CABLE TELEVISION AND TELEPHONE ARE TO RUN CONDUIT TO THE CURB SIDE OF THE TRENCH, ROAD SIDE OF BENTON REA'S EQUIPMENT. THE CITY OF WEST RICHLAND IS TO RUN STREET LIGHT CIRCUITS USING THE SAME ORIENTATION AS THE TELEPHONE AND CABLE TELEVISION
NOTES:

1. MONUMENT TO BE SET AT ALL STREET CENTERLINE CONTROL POINTS.

2. WASHINGTON LICENSED PROFESSIONAL LAND SURVEYOR OR PARTY UNDER THE LICENSED LAND SURVEYOR’S DIRECT SUPERVISION TO REFERENCE MONUMENT LOCATION FOR INSTALLATION AND PUNCH BRASS CAP AFTER INSTALLATION. THE CAP SHALL BE SET IN SUCH A FASHION AS TO INSURE THAT THE PUNCH MARK MAY BE SET WITHIN A MAXIMUM DISTANCE OF 1/2-INCH FROM THE CENTER OF THE CAP. CAP TO BE SUPPLIED AND SET BY CONTRACTOR USING SURVEY CROSS TIES.

3. AT THE CONTRACTORS OPTION, THE CONCRETE MAY BE LEFT 1-1/2" BELOW FINISH GRADE, AND THE TOP FINISHED WITH 3/8" COMMERCIAL HMA.
NOTE:
1. 1. CLASS 5 CONCRETE SEE COWR STD. DETAIL 2-16.
NOTES:
1. REQUIRES APPROVAL OF CITY ENGINEER.
2. BASE COARSE UNDER THE HMA WILL VARY. REFER TO THE PLANS FOR ROADWAY SECTIONS.
NOTES:

1. PEDESTRIAN LANDING AND RAMP SHALL BE CONSTRUCTED PER THIS DWG IN NEW SUBDIVISIONS, SHORT PLATS AND ALL NEW STREET CONSTRUCTION, AND RECONSTRUCTION. LOCATE RAMPS AS DIRECTED BY ENGINEER, TWO EACH CORNER, OR AS DIRECTED.

2. BEVEL THE RAMP TO THE GUTTER FLOW LINE (NO LIP). 1/2" BEVEL RISE FROM FACE OF CURB TO BACK OF CURB.

3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.

4. DETECTABLE WARNING SURFACE TO BE ARMOR TILE CAST IN PLACE SYSTEM DETECTABLE WARNING TILES, OR AN APPROVED EQUAL.

5. THE SIDEWALK SLOPE FROM EITHER DIRECTION OF THE RAMP LANDING SHALL NOT EXCEED THE MAXIMUM ALLOWABLE SLOPE OF 8.3%. HOWEVER IF THE MAXIMUM ALLOWABLE SLOPE CANNOT BE ACHIEVED IN 15 FEET, THE SIDEWALK SHALL BE INSTALLED AT A CONSISTENT SLOPE FOR THE FIRST 15 FEET IN BOTH DIRECTIONS.

6. MAXIMUM RUNNING SLOPE OF THE RAMP LANDING SHALL NOT EXCEED 2% IN BOTH DIRECTIONS.
NOTES:

1. PEDESTRIAN LANDING AND RAMP SHALL BE CONSTRUCTED PER THIS DWG IN NEW SUBDIVISIONS, SHORT PLATS AND ALL NEW STREET CONSTRUCTION, AND RECONSTRUCTION. LOCATE RAMPS AS DIRECTED BY ENGINEER, TWO EACH CORNER, OR AS DIRECTED.

2. BEVEL THE RAMP TO THE GUTTER FLOW LINE (NO LIP). 1/2" BEVEL RISE FROM FACE OF CURB TO BACK OF CURB.

3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.

4. DETECTABLE WARNING SURFACE TO BE ARMOR TILE CAST IN PLACE SYSTEM DETECTABLE WARNING TILES, OR AN APPROVED EQUAL.

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6. MAXIMUM RUNNING SLOPE OF THE RAMP LANDING SHALL NOT EXCEED 2% IN BOTH DIRECTIONS.
3/8" MASTIC EXPANSION JOINTS

SIDEWALK

TYPICAL DOME AREA PER WSDOT STD. PLAN F-45.10-01

SECTION A-A

SEE NOTE 2

SECTION B-B

NOTES:

1. PEDESTRIAN LANDING AND RAMP SHALL BE CONSTRUCTED PER THIS DWG IN NEW SUBDIVISIONS, SHORT PLATS AND ALL NEW STREET CONSTRUCTION, AND RECONSTRUCTION. LOCATE RAMPS AS DIRECTED BY ENGINEER, TWO EACH CORNER, OR AS DIRECTED.

2. BEVEL THE RAMP TO THE GUTTER FLOW LINE (NO LIP). 1/2" BEVEL RISE FROM FACE OF CURB TO BACK OF CURB.

3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTEANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.

4. DETECTABLE WARNING SURFACE TO BE ARMOR TILE CAST IN PLACE SYSTEM DETECTABLE WARNING TILES, OR AN APPROVED EQUAL.

5. THE SIDEWALK SLOPE FROM EITHER DIRECTION OF THE RAMP LANDING SHALL NOT EXCEED THE MAXIMUM ALLOWABLE SLOPE OF 8.3%. HOWEVER IF THE MAXIMUM ALLOWABLE SLOPE CANNOT BE ACHIEVED IN 15 FEET, THE SIDEWALK SHALL BE INSTALLED AT A CONSISTENT SLOPE FOR THE FIRST 15 FEET IN BOTH DIRECTIONS.

6. MAXIMUM RUNNING SLOPE OF THE RAMP LANDING SHALL NOT EXCEED 2% IN BOTH DIRECTIONS.
NOTES:

1. PEDESTRIAN LANDING AND RAMP SHALL BE CONSTRUCTED PER THIS DWG IN NEW SUBDIVISIONS, SHORT PLATS AND ALL NEW STREET CONSTRUCTION, AND RECONSTRUCTION. LOCATE RAMPS AS DIRECTED BY ENGINEER, TWO EACH CORNER, OR AS DIRECTED.

2. BEVEL THE RAMP TO THE GUTTER FLOW LINE (NO LIP). 1/2" BEVEL RISE FROM FACE OF CURB TO BACK OF CURB.

3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.

4. DETECTABLE WARNING SURFACE TO BE ARMOR TILE CAST IN PLACE SYSTEM DETECTABLE WARNING TILES, OR AN APPROVED EQUAL.

5. THE SIDEWALK SLOPE FROM EITHER DIRECTION OF THE RAMP LANDING SHALL NOT EXCEED THE MAXIMUM ALLOWABLE SLOPE OF 8.3%. HOWEVER IF THE MAXIMUM ALLOWABLE SLOPE CANNOT BE ACHIEVED IN 15 FEET, THE SIDEWALK SHALL BE INSTALLED AT A CONSISTENT SLOPE FOR THE FIRST 15 FEET IN BOTH DIRECTIONS.

6. MAXIMUM RUNNING SLOPE OF THE RAMP LANDING SHALL NOT EXCEED 2% IN BOTH DIRECTIONS.
NOTES:

1. SEE STANDARD DETAIL 2-13D FOR CURB AND GUTTER NOTES.

2. DRIVEWAY THROAT WIDTHS ARE 20' - 2 CAR GARAGE, 30' - 3 CAR GARAGE. CURB CUTS FOR DRIVEWAY THROATS CAN BE EXTENDED 5' IF NECESSARY TO LINE UP THE WINGS WITH THE 5' SIDEWALK PANELS AND THE DRIVEWAY IF Poured TO THE OUTSIDE OF THE GARAGE, WITH APPROVAL OF CITY ENGINEER. SIDEWALK SHALL BE 5 SACK CONCRETE.

STANDARD DRIVEWAY

CATEGORY: STREETS REVIEWED BY: AFW ADOPTED: 02/14
FILENAME: SD 2-13A.dwg REVISED BY: BTL REVISED: 11/14
NOTES:
1. SEE STANDARD DETAIL 2-13D FOR CURB, GUTTER AND SIDEWALK NOTES.
2. DRIVEWAY THROAT WIDTHS ARE 20'-2 CAR GARAGE; 30'-3 CAR GARAGE. DRIVEWAY THROAT MAY BE EXTENDED 5' IF NECESSARY TO LINE UP WITH THE 5' SIDEWALK PANELS WITH CITY ENGINEER APPROVAL.
3. SIDEWALK SHALL BE 5 SACK CONCRETE
   5 SACK MIN. CONC SIDEWALK. SEE PLANS FOR WIDTH.
NOTES:

1. NEED FOR A CORRUGATED METAL DRAINAGE PIPE WITH BEVELED ENDS SHALL BE ASSESSED BY THE CITY ENGINEER ON A CASE-BY-CASE BASIS.

2. WHEN THERE IS A DITCH 1' OR LESS IN DEPTH ADJACENT TO THE CITY ROADWAY, DRIVEWAY SHALL MATCH PROFILE OF DITCH FOR THE PURPOSES OF ROADWAY DRAINAGE.

3. FOR CONCRETE APPROACHES AND DRIVEWAYS, EXISTING ASPHALT EDGE SHALL BE CUT TO A CLEAN STRAIGHT EDGE. NO MASTIC SHALL BE INSTALLED WHERE CONCRETE APPROACH TRANSITIONS INTO EDGE OF CITY ROADWAY. HOWEVER, A MASTIC EXPANSION JOINT SHALL BE INSTALLED IN CONCRETE 5' FROM TRANSITION TO THE ASPHALT IF CONCRETE DRIVEWAY WILL CONTINUE FROM APPROACH. ANY UNDERMINED ASPHALT SHALL BE REQUIRED TO BE SAWCUT MIN. 1' INTO EXISTING ASPHALT, AND REPLACED WITH CLASS 3/8" HOT MIX ASPHALT.

4. ALL ROADWAY APPROACHES REQUIRE A STREET CUT PERMIT ISSUED BY THE CITY ENGINEER.

5. ADDITIONAL DRIVEWAY WIDTH MAY BE APPROVED BY CITY ENGINEER ON A CASE BY CASE BASIS.

6. WHEN DEEMED NECESSARY, THE DRIVEWAY APPROACH MAY BE WIDENED WITH CITY ENGINEER APPROVAL.
TYPICAL SECTION FOR DRIVEWAY
DEPRESSED CURB AND GUTTER

NOTES:
1. FULL STAB JOINTS ON 10' CENTERS.
2. 1/2" MASTIC MATERIAL AT POINTS OF TANGENCY ON ALL CURB RETURNS AND AT ALL POINTS OF TERMINUS.
3. 5 SACK CONCRETE. SEE STD. DETAIL 2-16.

EXTRUDED CONCRETE CURB

TYPICAL SECTION FOR CURB & GUTTER

SEE DETAILS 2-13 A,B AND C FOR DRIVEWAY SECTIONS AND DETAILS

TYPICAL SECTION FOR SIDEWALKS

MIN. 2" DEPTH OF COMPACTED C.S.T.C.
CONSTRUCTION - CONCRETE MIXES

CLASSIFICATION AND USE
1. THE CLASS OF CONCRETE REFERS TO THE NOMINAL NUMBER OF SACKS OF CEMENT PER CUBIC YARD, ALTHOUGH THIS DESIGNATION DOES NOT CONSTITUTE A GUARANTEE OF YIELD.

2. H.E.S. INDICATES HIGH EARLY-STRENGTH CEMENT AND MAY BE REQUIRED AT THE OPTION OF THE ENGINEER FOR ANY OF THE CLASSES OF MIX. WHenever IT IS CALLED FOR, IT WILL BE MEASURED AND PAYMENT WILL BE MADE AS PROVIDED.

3. THE CONTRACTOR MAY, WITH APPROVAL OF THE ENGINEER, ELECT TO USE HIGH EARLY-STRENGTH CEMENT IN ANY OF THE MIXES, BUT NO EXTRA COMPENSATION WILL BE MADE FOR THE HIGH EARLY-STRENGTH CEMENT.

4. MINIMUM 28-DAYS COMPRESSIVE STRENGTH SHALL BE 3,000 PSI AIR-ENTRAINMENT ADMIXTURE SHALL NOT BE LESS THAN 4% OR MORE THAN 6% BY VOLUME.

5. HOT OR COLD WEATHER, PROTECTION WILL BE REQUIRED FOR A MINIMUM OF 7 DAYS PER THE REQUIREMENTS OF SWSS 5-05.3(13), 5-05.3(14), AND 6-02.3(6)A.

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<th>CLASS OF CONCRETE</th>
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<tr>
<td>SACKS PER CU. YARD</td>
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END CURB, GUTTER, AND SIDEWALK

1" MIN. DEPTH HMA
CL"G" PG 64-28 RAMP
W/12:1 MAX. SLOPE

TOP VIEW

TOP OF CURB

CURB BULLNOSE
CHECK PLANS FOR LENGTH OF BULLNOSE.
(MAY HAVE TO EXTEND UP TO 5' IN LENGTH.

SIDE VIEW

2" MIN. COMP. C.S.T.C.
NOTE:

1. ON CITY ADMINISTERED CONTRACTS, DROP BACK SIDEWALK LOCATIONS WILL BE STAKED IN THE FIELD BY THE ENGINEER IN AREAS WHERE A SLOPED YARD TRANSITION IS DETERMINED TO BE UNDESIRABLE.

WHERE CALLED OUT, INSTALL 2" SCH. 40 GALV. POST. POST TO BE POURED IN PLACE. A SEPARATE PAYMENT WILL BE MADE ON CITY ADMINISTERED CONTRACTS.

6"X6"XW1.4XW1.4 WELDED WIRE FABRIC. LEGS OF MESH TO BE EQUAL AND EXTENDED TO TYPE. 4" FROM BOTTOM OF WALL.

2" COMPACTED C.S.T.C.

GROUND LINE VARIES

12" MIN. 30" MAX.

12" MIN. BELOW FINISH GRADE AT WALL.

POST CAP

8" MIN.
NOTE:
1. ON CITY ADMINISTERED CONTRACTS, MODIFIED RETAINING WALL LOCATIONS WILL BE STAKED IN THE FIELD BY THE ENGINEER IN AREAS WHERE A SLOPED YARD TRANSITION IS DETERMINED TO BE UNDESIRABLE.
NOTES:
1. CONTRACTOR HAS THE OPTION TO USE (2) 45'S THE SAME SIZE OF THE MAIN LINE INSTEAD OF (4) 22 1/2'S.
2. CLEANOUT PIPE TO BE SAME SIZE AS MAIN LINE

CAST IRON RING & COVER
- INLAND FOUNDRY CO. RING & COVER NO. 247 OR APPROVED EQUAL
- UNIT WEIGHT 64 POUNDS MINIMUM
- DOMESTIC STEEL ONLY

22 1/2° BEND (TYP) 4 REQUIRED.

24" MINIMUM (TYP)

NATIVE MATERIAL OR IMPORTED BEDDING AS REQUIRED BY CITY ENGINEER

UNDISTURBED EARTH

NEW HMA

INSTALL AND ADJUST CONCRETE COLLAR PER STD. DETAIL 3-4

FIBER JOINT PACKING

STD. CONC. TILE STD. DETAIL 3-4

LID SHALL SAY "C.O.", "CLEANOUT" OR "SEWER" AND STAMPED "USA"

1/8" RAISE-1/2" WIDE BORDER

3/4" SQUARES SPACED 3/4" RAISED 1/8"

SEWER CLEANOUT

DRAWING NO.

CATEGORY: SEWER  REVIEWED BY: AFW  ADOPTED: 02/14
FILENAME: SD 3-1.dwg  REVISED BY: BTL  REVISED: 11/14
NOTES:
1. A RUBBER RING ENTRY COUPLING SHALL BE USED WITH P.V.C. PIPE.
2. ALL MANHOLE JOINTS SHALL BE MADE USING A CONTINUOUS FLEXIBLE RUBBER MANHOLE GASKET.
3. ADJUSTMENTS OVER 2" UTILIZE PRECAST CONCRETE RINGS. GROUT BETWEEN EACH RING AND FRAME AND FINISH GROUT INSIDE. REMOVE ALL WOOD SHIMS.
4. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE COVERED BY A RIGID MATERIAL DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM PER SPECIFICATIONS.
5. PRIOR TO INSTALLING NEW SEWER MAIN, THE DOWNHILL STREAM SIDE OF THE NEXT EXISTING MANHOLE SHALL BE PLUGGED TO PREVENT ANY WATER AND/OR DEBRIS FROM ENTERING THE CITY'S SEWER SYSTEM.
6. WHEN CONSTRUCTING MANHOLE OVER AN EXISTING MAIN, SUPPORT PIPE(S) WITH CONCRETE. BLOCK AND POUR BASE AS SHOWN. REMOVE TOP 1/2 OF MAIN PIPE AND FORM SIDE CHANNEL(S) AS REQUIRED.
7. PROVIDE A MINIMUM 0.1 FOOT IN-OUT DROP FOR STRAIGHT RUNS AND 0.2 FOOT IN-OUT DROP FOR ANGLE RUNS.
8. WHEN CONNECTING TO AN EXISTING MANHOLE, PIPE HOLE TO BE CORE-DRILLED.
9. ALL INLETS AND OUTLETS SHALL BE GROUTED SMOOTH TO INSIDE WALLS.
10. ROTATE MANHOLE SO THAT THE LADDER RUNGS ARE DIRECTLY OVER THE MAIN LINE INLET PIPE.
NOTES:

1. A RUBBER RING ENTRY COUPLING SHALL BE USED WITH P.V.C. PIPE.
2. PRE CAST MANHOLE SECTION AND FLAT SLAB COVER SHALL CONFORM TO WSDOT STD DWG B-15.40-01 and B-15.60-01.
3. ALL MANHOLE JOINTS SHALL BE GROUTED TO INSURE A WATER TIGHT SEAL AND INTERIOR SHALL BE TRAWLED TO A SMOOTH FINISH.
4. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE COVERED BY A RIGID MATERIAL, SUCH AS PLYWOOD OR HEAVY GAUGE METAL SHEETING, DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM PER SECTION 2-27 OF THESE SPECIFICATIONS.
5. PRIOR TO INSTALLING NEW SEWER MAIN, THE DOWNHILL STREAM SIDE OF THE NEXT EXISTING MANHOLE SHALL BE PLUGGED TO PREVENT ANY WATER AND/OR DEBRIS FROM ENTERING THE CITY’S SEWER SYSTEM.
6. WHEN CONSTRUCTING MANHOLE OVER AN EXISTING MAIN, SUPPORT PIPE(S) WITH CONCRETE BLOCK AND POUR BASE WITH 6 SACK CONCRETE AS SHOWN. REMOVE TOP 1/2 OF MAIN PIPE AND FORM SIDE CHANNEL(S) AS REQUIRED.
7. ALL INLETS AND OUTLETS SHALL BE GROUTED SMOOTH TO INSIDE WALLS.
8. WHEN CONNECTING TO AN EXISTING MANHOLE, PIPE HOLE TO BE CORE DRILLED.
9. ROTATE MANHOLE SO THAT THE LADDER RUNGS ARE DIRECTLY OVER THE MAIN LINE INLET PIPE.
NOTES:
1. FRAME AND COVER SHALL BE CAST OR DUCTILE IRON AND SHALL BE STAMPED "USA"
2. COVER WEIGHT-MIN 147 LBS. / FRAME WEIGHT-MIN 210 LBS.
3. MACHINE COVER SEAT & COVER FACE
4. LOADING- 40,000 LBS. HEAVY TRAFFIC LOADING
5. MANHOLE COVERS TO BE LETTERED AS "WATER," "SEWER," OR "STORM" AS REQUIRED BY TYPE OF APPLICATION.
6. ALL FRAME AND COVERS SHALL BE ADJUSTED TO FINISH GRADE. SEE STD. DETAIL 3-4.
NOTES:

1. A CONCRETE COLLAR IS REQUIRED ON ALL INSTALLATIONS. IN UNIMPROVED OR UNPAVED AREAS INSTALL AN 8" THICK COLLAR AS FOLLOWS: 24" DIAM, 8" DEEP FOR VALVE AND CLEANOUT COVERS AND A MIN. 42"X42"X8" DEEP, OR 1" BELOW DEPTH OF ADJUSTMENT RINGS (WHICHEVER IS GREATER) FOR MANHOLE COVERS. HAND MIXING OF CONCRETE IS NOT PERMITTED.

2. DOMESTIC IRON ONLY
NOTES:
1. SELECT NATIVE BACKFILL MATERIAL OR IMPORTED BACKFILL MATERIAL COMPACTED PER SPECIFICATIONS.
2. STAINLESS BANDS WITH CONCRETE SPACER TO MANHOLE (5' MAX. SPACING, 1' MIN).
3. SEE STD DETAIL 3-1 FOR CLEANOUT DETAILS.
4. DROP CONNECTION PIPE DIAMETER AND FITTINGS SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE SEWER MAIN.
NOTES:
1. INSIDE DROP CONNECTION WILL TYPICALLY NOT BE ALLOWED. WHEN EXTENUATING CIRCUMSTANCES OR UNUSUALLY DEEP SEWER MAINS ARE ENCOUNTERED, THE CITY ENGINEER MAY APPROVE. IF APPROVED, ALL CONSTRUCTION MUST BE COMPLETED PER THIS DETAIL AND AS DIRECTED BY THE ENGINEER.
2. DROP CONNECTION PIPE DIAMETER AND FITTINGS SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE SEWER SERVICE. PIPE MATERIALS AND FITTINGS SHALL MEET THE REQUIREMENTS OF THE CITY STANDARD SPECIFICATION 3-4 FOR SEWER SERVICE LINES.
3. WHEN CONNECTING TO AN EXISTING MANHOLE PIPE HOLE TO BE CORE-DRILLED. WHEN DETERMINING SIZE OF HOLE TO CORE-DRILL TAKE INTO ACCOUNT THE OUTSIDE DIAMETER OF THE BELL OF THE CROSS YOU WILL BE USING. ONE END OF THE CROSS WILL NEED TO BE INSERTED IN THE CORE-DRILLED HOLE FROM INSIDE THE EXISTING MANHOLE.
4. INSTALL A CAP/PLUG CUT 1/2 DIAM. ENSURE ADEQUATE SPACE IS MAINTAINED BETWEEN THE CROSS CAP/PLUG AND THE LADDER RUNGS FOR MANHOLE ACCESSIBILITY.

INSIDE DROP TO ENTER BELOW CONE SECTION.
SEE NOTE 3

INSTALL CAP/PLUG 1/2 DIAM. CAP.
MAINTAIN CLEARANCE FROM THE LADDER FOR ACCESSIBILITY.

STAINLESS STEEL STRAPS AND STAINLESS STEEL ANCHOR BOLTS EVENLY SPACED @ A MAX. 5' AND AT THE TOP AND BOTTOM.

CHANNEL MANHOLE BASE TO INVERT OF MANHOLE.

5'-0" MINIMUM HEIGHT FOR MANHOLES LESS THAN 5'-0" USE FLAT TOP MANHOLE TRAFFIC BEARING LOAD RATED

4" MIN. 12" MAX. ADJUSTMENT

LADDER RUNGS SHALL BE ROTATATED OVER THE INLET SIDE OF THE MAIN LINE.

CENTER CASTING AND LID OVER LADDER RUNGS

INSIDE DROPS TO COME INTO THE SHADED AREA ONLY UNLESS OTHERWISE APPROVED BY THE ENGINEER.

SEE NOTE 4

4" OR 6" PIPE

CROSS. LEAVE TOP PORTION OPEN.

SEE NOTE 4
NOTES:

1. WHEN MINIMUM HORIZONTAL & VERTICAL SEPARATIONS CANNOT BE MAINTAINED DUE TO SHALLOW SEWER SERVICE LINES AT PROPERTY LINE, THE WATER AND SEWER SERVICE LINES SHALL HAVE A MIN. HORIZONTAL SEPARATION OF AT LEAST 5' AND MAY REQUIRE TWO SEPARATE TRENCHES, OR THEY SHALL BE SEPARATED AS DIRECTED BY THE CITY ENGINEER.

2. DISTANCES FROM PROPERTY LINES TO EXIST. WATER OR SEWER SERVICE LINES MAY VARY DUE TO FIELD CONDITIONS. WHENEVER A NEW WATER/SEWER SERVICE LINE IS INSTALLED IT SHALL NOT BE PLACED ANY CLOSER TO AN EXISTING WATER/SEWER SERVICE LINE THAN AS INDICATED BY THE TRENCH DETAIL WITHOUT WRITTEN PREMISSION BY THE CITY ENGINEER.

3. WATER SERVICES SHALL NOT SHARE A COMMON PROP. CORNER AS A POWER TRANSFORMER.

4. SEWER SERVICE MINIMUM DEPTH WHERE THE SEWER MAIN DEPTH ALLOWS, SEWER SERVICE TO EXISTING BUILDING SHALL BE A MINIMUM 6 FEET BURY WITHIN THE STREET RIGHT-OF-WAY OR 4' BELOW THE LOWEST FLOOR ELEVATION, WHICHEVER IS DEEPER. WHERE THE DEPTH OF THE SEWER MAIN ALLOWS, SEWER SERVICES TO VACANT LOTS SHALL BE AS DEEP AS POSSIBLE OR PRACTICAL TO PROVIDE FULL BASEMENT SERVICE TO THE PROPERTY, TYPICALLY THE INVERT SHALL BE 12 FEET BELOW THE PROPERTY GROUND ELEVATION AT A 25' FRONT SETBACK, PROVIDING HOWEVER, THAT THE MINIMUM DEPTH IN THE RIGHT-OF-WAY EVEN FOR UPHILL LOTS, SHALL BE 6' BURY.

5. THE REQUIREMENTS OF THIS STANDARD DRAWING SHALL BE BINDING UPON ALL PUBLIC OR PRIVATE WATER/SEWER SERVICE LINES THAT CONNECT INTO A CITY WATER OR SEWER MAIN AND IS INTENDED FOR THE SOLE PURPOSE OF PROVIDING PROTECTION FROM CONTAMINATION TO THE POTABLE WATER DISTRIBUTION SYSTEM.
NOTES:
1. INSTALL ALL SEWER SERVICES BENEATH WATER MAIN WHERE POSSIBLE. IF THE SEWER SERVICE MUST CROSS ABOVE THE WATER MAIN, ALL JOINTS IN THE SEWER SERVICE SHALL BE A MIN DISTANCE OF 10 FEET FROM THE WATER. THE ENGINEER WILL HAVE TO APPROVE ALL THE CROSSINGS ABOVE THE WATER MAIN.

2. WHEN CONNECTING TO AN EXISTING SEWER MAIN, PIPE HOLE TO BE CORE-DRILLED.

3. WYE SADDLE SHALL BE CONNECTED TO MAIN WITH A RUBBER GASKET AND BOLTS OR STAINLESS STEEL STRAP. WHEN PIPE IS PVC, A PVC WYE SADDLE MAY BE USED, AND SHALL BE EPOXIED INTO PLACE.

4. TAPPED HOLE IN MAIN SHALL BE THE SAME SIZE AS THE SIDE SEWER. THE HOLE SHALL BE CUT OR DRILLED NOT BROKEN OUT.

5. STRAIGHT SADDLE CAN BE USED ON 12" OR LARGER PIPE ONLY.

6. 2" MINIMUM WIDTH GREEN PLASTIC COATED ALUMINUM PIPE LOCATOR RIBBON OVER THE TOP OF THE SEWER SERVICE MARKED "CAUTION BURIED SEWER LINE" CONTINUOUSLY ALONG THE LENGTH OF THE SERVICE SHALL BE PLACED APPROX. 24" BELOW FINISH GRADE.

SEWER SERVICE AND MARKER POST DETAIL

CATEGORY: SEWER  REVIEWED BY: AFW  ADOPTED: 02/14
FILENAME: SD 3-6B.dwg  REVISED BY: BTL  REVISED: 11/14

DRAWING NO. 3-6B
IF TOTAL DEPTH IS LESS THAN 30", A METER BOX OR MIN. 18" DIA. ACCESS W/18" LID MAY BE USED. IF DEPTH IS OVER 30", MIN. DIA. IS TO BE 42" WITH MIN. DIA. 24" ACCESS COVER. MANHOLE TO BE CONCRETE BLOCK CULVERT PIPE OR PRE-CAST CONCRETE.

TYPICAL LOCATION FOR BACKFLOW DEVICE (IF REQ'D) IF LOCATED IN BASEMENT FLOOR PROVIDE MINIMUM 10' X 15' ACCESS.

CLEANOUT REQ'D (MAY BE INSTALLED WITHIN ACCESS)

* IF TOTAL DEPTH IS LESS THAN 30", A METER BOX OR MIN. 18" DIA. ACCESS W/18" LID MAY BE USED. IF DEPTH IS OVER 30", MIN. DIA. IS TO BE 42" WITH MIN. DIA. 24" ACCESS COVER. MANHOLE TO BE CONCRETE BLOCK CULVERT PIPE OR PRE-CAST CONCRETE.

DRAIN ROCK
TAP AND SADDLE SHALL BE PER COWR STANDARD 3-6B. 10' SECTION OF 4" SEWER SERVICE PIPE SHALL BE LAID AT A MIN. 1/4"/FT AT WHICH POINT THE PRESSURE SEWER IS TO BE CONNECTED TO SEWER SERVICE LINE WITH A REDUCER. A SERVICE CLEAN-OUT SHALL BE INSTALLED IN 4" SERVICE LINE JUST DOWNSTREAM OF THE REDUCER.
Call 811 two business days before you dig

**Bearing Area Against the Trench Wall**

Water Line Size | Thrust Block Size |
--- | --- |
6" | 1.9 S.F. |
8" | 3.3 S.F. |
10" | 5.4 S.F. |
12" | 7.7 S.F. |

* Bearing Area Against the Trench Wall

**Notes:**

1. On lateral stubs, the valve box & cover shall be per section 4-6 of these specifications.

2. For laterals, provide a concrete thrust block. All valves shall be in accordance with City of West Richland Std. Watermain Specifications.

3. The thrust block shall be sized to provide thrust for the lateral water line. All notes shown on Std. Detail 4-6a shall apply.
1. FOR USE ON 10" WATERLINES AT THE REQUEST OF THE CITY ENGINEER.
2. FOR LATERALS, THE BLOW OFF MUST BE LOCATED OUT OF THE PAVEMENT. ON LATERAL STUBS, THE VALVE BOX & COVER SHALL BE PER SECTION 4-6 OF THESE SPECIFICATIONS.
3. FOR LATERALS PROVIDE A CONCRETE THRUST BLOCK. ALL VALVES SHALL BE IN ACCORDANCE WITH CITY OF WEST RICHLAND STD. WATERMAIN SPECIFICATIONS.
4. THE THRUST BLOCK SHALL BE SIZED TO PROVIDE THRUST FOR THE LATERAL WATER LINE. ALL NOTES SHOWN ON STD. DETAIL 4-6A SHALL APPLY.

CALL 811 TWO BUSINESS DAYS BEFORE YOU DIG

TEMPORARY 4" BLOW-OFF
(10" AND LARGER WATER MAIN)

<table>
<thead>
<tr>
<th>WATER LINE SIZE</th>
<th>THRUST* S.F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>1.9 S.F.</td>
</tr>
<tr>
<td>8&quot;</td>
<td>3.3 S.F.</td>
</tr>
<tr>
<td>10&quot;</td>
<td>7.4 S.F.</td>
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</tbody>
</table>

*BEARING AREA AGAINST THE TRENCH WALL

UNDISTURBED EARTH
PIPE BEDDING
WATER LINE
4" GALV. STEEL NIPPLE (TYP)
1/4" DRAIN HOLE
4" THREADED CAP W/ 1/8" WELDED NUT ON TOP (TIGHT)
2" DRAIN ROCK

NOTES:
- INSTALL SEWER CLEAN OUT, GRIND OFF "SEWER" ON LID.
- 4" RESILIENT SEATED GATE VALVE WITH 2" SQUARE OPERATING NUT (COUNTERCLOCKWISE OPENING) SEE NOTE 3
- STANDARD PIPE THREADS
- 5 SACK CONCRETE THRUST BLOCK (SEE NOTE 4)
- SEE STD. DETAIL 3-4 FOR ADJUSTMENTS
- 4" COMPANION FLANGE (10" AND LARGER)
- CAP WITH 4" I.P. THREADED TAP
- 42" MIN COVER
- SEE STD. DETAIL 4-1B.dwg

REVISED: 11/14 ADOPTED: 2/14 REVIEWED BY: AFW REVISED BY: BTL

DRAWING NO. 4-1B

FILENAME: SD 4-1B.dwg
NOTES:

1. IMPORTED BEDDING MATERIAL ABOVE THE BOTTOM OF PIPE FOR STORM DRAINAGE PIPE, SANITARY SEWER AND WATER MAINS SHALL BE WELL GRADED SELECT EXCAVATED OR IMPORTED MATERIAL FREE FROM CLAY, FROZEN LUMPS, ROOTS, OR MOISTURE IN EXCESS OF THAT PERMITTING REQUIRED COMPACTION. ROCKS OR LUMPS GREATER THAN 1-INCH MAXIMUM SHALL NOT BE USED FOR PIPE ZONE BACKFILL.

2. BEDDING MATERIAL BELOW THE PIPE (ZONE A) SHALL BE 5/8" MINUS CRUSHED ROCK FOR SANITARY SEWER PIPES. BEDDING MATERIAL IN ZONE A FOR STORM DRAINAGE PIPE AND WATER MAINS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NOTE 1.

3. TRENCH WIDTH "W" SHALL BE 40 INCHES MAXIMUM FOR PIPE 15 INCHES I.D. OR SMALLER AND 1-1/2 TIMES I.D. PLUS 18 INCHES FOR PIPE 18 INCHES OR LARGER.

4. HAND TAMPER UNDER PIPE HAUNCHES.

5. PROVIDE UNIFORM SUPPORT UNDER PIPE BARREL.

6. COMPACT BEDDING MATERIAL TO 95% MAXIMUM DENSITY EXCEPT DIRECTLY OVER THE PIPE, WHERE BEDDING MATERIAL SHALL BE HAND TAMPERED ONLY.

7. PAVEMENT WIDTH FOR EXCAVATION AND PAVEMENT REPAIR SHALL BE A MIN. OF 4’ WIDE. SEE CITY STANDARD DETAIL 2-8.
FINISHED ASPHALT GRADE

1.5' MIN-3' MAX

STEM GUIDE AND DEBRIS PLATE

DETECTABLE WARNING TAPE CENTERED OVER PIPE AND EQUIDISTANT BETWEEN FINISH GRADE AND TOP OF PIPE.

VALVE NUT EXTENSION SHALL BE PLACED OVER VALVE NUT AND SHALL NOT BE ATTACHED TOGETHER

2" SQ. STANDARD OPERATING NUT

DUCT TAPE TRACER WIRE TO C.L. OF PIPE IN 3 LOCATIONS PER STICK OF PIPE APPROX 6' APART. DUCT TAPE SHALL EXTEND FROM SPRING LINE TO SPRING LINE ACROSS THE TOP HALF OF THE PIPE.

INSTALL 14 GAUGE SOLID COPPER WIRE 600V WITH BLUE UF INSULATOR NOMINAL THICKNESS 0.060". TRACER WIRE SHALL RUN OUTSIDE BOTTOM BOX AND INSIDE TOP BOX WITH 2' OF EXCESS WIRE AT TOP FOR LOCATING

SPlice AND JOIN ENDS OF WIRE TOGETHER WITH GEL-PACKS.

TIGHTLY WRAP THE TRACER WIRE UNDER THE VALVE NUT FLANGE AS SHOWN (SAME FOR BUTTERFLY VALVES). DO NOT STRIP INSULATION FROM TRACER WIRE
NOTES:

1. Hydrants shall have 3 ports.
2. Hydrants shall be per Section 4-5 of the Standard Specifications
3. Hydrants shall be fully restrained from mainline to hydrant with megalugs.
4. Wrap Storz adapter with blue Uline reflective tape (model #S-12905)
5. Hydrants shall be hooded until operational.
6. See std. detail 4-4b for guard post requirements.
7. All hydrant caps and operating nuts shall be 1 1/2".

VALVE BOX AND COVER SHALL BE INSTALLED PER DETAIL 4.3 AND SHALL BE STAMPED U.S.A.

HYDRANTS SHALL HAVE 3 PORTS.

HYDRANTS SHALL BE PER SECTION 4-5 OF THE STANDARD SPECIFICATIONS

SHALL BE FULLY RESTRAINED FROM MAINLINE TO HYDRANT WITH MEGALUGS.

WRAP STORZ ADAPTER WITH BLUE ULINE REFLECTIVE TAPE (MODEL#S-12905)

HYDRANTS SHALL BE HOODED UNTIL OPERATIONAL

SEE STD. DETAIL 4-4B FOR GUARD POST REQUIREMENTS.

ALL HYDRANT CAPS AND OPERATING NUTS SHALL BE 1 1/2".

CALL 811 TWO BUSINESS DAYS BEFORE YOU DIG

TYPICAL FIRE HYDRANT INSTALLATION

CATEGORY: WATER REVIEWED BY: AFW ADOPTED: 02/14
FILENAME: SD 4-4A.dwg REVISED BY: AFW REVISED: 8/15
DRAWING NO. 4-4A
NOTES:
1. WHERE CONCRETE CURBING IS NOT INSTALLED, GUARD POSTS (2 EA. MIN) SHALL BE INSTALLED ON SIDE FACING PAVED SURFACE.
2. GUARD POSTS TO BE PAINTED OSHA SAFETY YELLOW.
WHEN EXISTING WATERLINE REQUIRES THE IN-LINE INSTALLATION OF A VALVE, REDUCER OR FLANGE ADAPTER, THEN ALL CONNECTIONS TO THE TEE OR VALVE SHALL BE FLANGED.

FLXFL REDUCER MAY BE REQUIRED. SEE PLANS

INSTALL THRUST BLOCK. SEE NOTE 4

EXISTING WATER MAIN. SEE NOTE 6.

NEW WATER MAIN

D.I. FLXFL TEE

FLXMJ GATE VALVE

F.C.A. DRESSLER 127, SMITH-BLAIR 922 OR APPROVED EQUAL.

EXISTING WATER MAIN. SEE NOTE 6.

CUT-IN TEE

INSTALL TAP SADDLE SO TEST PORT FACES UP

EXISTING WATER MAIN

TAPPING SLEEVE JCM 412, SMITH-BLAIR 622, ROMAC SST, FTS 419, FTS 420 OR APPROVED EQUAL, BOLT KIT TO BE CORROSION RESISTANT, HIGH STRENGTH LOW ALLOY PER AWWA 111.

FLXMJ GATE VALVE

TAPPING CROSS M&H 2074-09 OR APPROVED EQUAL

RESILANT SEATED FLXMJ GATE VALVE

NOTES:
1. CONTRACTOR TO DIG & VERIFY MAIN SIZE AND PIPE PRIOR TO ORDERING MATERIALS.
2. CHLORINATE AND TAG VALVE & FITTINGS PER SECTION 4-13 OF COWR SPECIFICATIONS.
3. MATERIALS TO BE ON THE JOB PRIOR TO SCHEDULING SHUTDOWNS OR TAPS.
4. INSTALL THRUST BLOCKS PER COWR STD. DETAIL 4-6A. TEMPORARY THRUST BLOCKING MAY BE REQUIRED.
5. CONTRACTOR WILL COMPLETE TAP PER SECTION 4-8.02 OF COWR STANDARD SPECIFICATIONS.
6. ENSURE TAPPING SADDLE IS MIN. 3' FROM EXISTING BELL AND A MIN. 1' FROM SPIGOT END INSERTION POINT AT NEXT BELL.
7. VERIFY SADDLE TEST PORT IS FACING UP. TEST SADDLE AND VALVE WITH 15 PSI AIR OR 150 PSI HYDROSTATIC FOR 5 MINUTES.
VERTICAL THRUST BLOCKS

NOTES:
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. ABOVE BEARING AREAS AND VOLUMES ARE CALCULATED AT A SOIL BEARING CAPACITY OF 2000 PSF AND A TEST PRESSURE OF 150 PSI.
4. THRUST BLOCKS FOR VERTICAL UPWARD BENDS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.
5. WHEN CALLED FOR ON THE CONSTRUCTION DRAWINGS OR CONTRACT SPECIAL PROVISIONS, VALVES SHALL HAVE CONCRETE RESTRAINT BLOCKS AS SPECIFIED ABOVE UNLESS THE VALVE IS FLANGED TO A TEE, CROSS OR SIMILAR FITTING OR ANOTHER METHOD OF RESTRAINT ACCEPTABLE TO THE ENGINEER IS PROVIDED.

<table>
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<th>Pipe Size in Inches</th>
<th>Tees, Wyes &amp; Dead Ends</th>
<th>90° Bend</th>
<th>45° Bend</th>
<th>11 1/4° Bend</th>
<th>22 1/2° Bend</th>
<th>45° Vertical Bend</th>
<th>11-1/4° Vertical Bend</th>
<th>Restrained Valve (see note 5)</th>
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<tr>
<td>4 &amp; Smaller</td>
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</table>
**NOTES:**

1. **THE LENGTH OF RODS "L" SHALL BE 10 FEET MINIMUM OR AS DIRECTED BY THE ENGINEER.**

2. **CONCRETE SHALL BE 5-SACK (3000 PSI) CONCRETE.**

---

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>RODS REQUIRED</th>
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<td></td>
<td>A/2</td>
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**MINIMUM BEARING AREA OF THRUST BLOCK IN SQ. FEET (BASED ON 2,000 P.S.F. SOIL BEARING CAP)**
NOTES:

1. FOR DESIGN FORMULAS, CALCULATIONS AND ADDITIONAL INFORMATION, THE TABLE IS BASED ON THE RESTRAINT CALCULATIONS FOUND AT WWW.ROMAC.COM/RESTRAINT/INDEX.HTM FOR ADDITIONAL RESTRAINT REQUIREMENTS AND SPECIFICATIONS, SEE CITY STANDARD SPECIFICATION SECTION 4-8.02 G. THE RESTRAINED PIPE LENGTH APPLIES TO CONDITIONS WHERE A CONCRETE THRUST BLOCK IS NOT USED.

2. IF POLYETHYLENE WRAPPED D.I.P. IS SPECIFIED, INDEPENDENT CALCULATIONS ARE REQUIRED. DO NOT USE THE ABOVE TABLE, WHICH IS FOR STANDARD D.I.P. ONLY.

3. EVERY JOINT WITHIN THE DESIGNATED RESTRAINT LENGTH MUST BE RESTRAINED. IF THE REQUIRED RESTRAINT LENGTH IS SHORTER THAN A SINGLE STICK OF PIPE BEING USED, ONLY THE FITTING CONNECTION REQUIRES RESTRAINT. THE RESTRAINT LENGTH GIVEN IN THE TABLE, IS THE REQUIRED LENGTH ON EACH SIDE OF THE BEND, OR ON THE TEE BRANCH AS APPLICABLE.

4. THRUST BLOCKS ARE REQUIRED FOR ALL CONNECTIONS TO AC PIPE AND WHEN AN AC PIPE CONNECTION IS LOCATED ANYWHERE WITHIN THE DESIGNATED RESTRAINT LENGTH.

5. THRUST BLOCKS ARE REQUIRED IF THE DESIGNATED RESTRAINT LENGTH CANNOT BE OBTAINED. SPECIAL ATTENTION NEEDS TO BE GIVEN TO DEAD END STUBS AND FIRE HYDRANT INSTALLATIONS. IF THE LENGTH OF THE FEEDER PIPE, FROM THE MAIN LINE TEE TO THE END CAP, OR HYDRANT, IS LESS THAN THE DESIGNATED DEAD END RESTRAINT LENGTH, THRUST BLOCKS ARE REQUIRED AT BOTH THE TEE AND AT THE END CAP, OR HYDRANT, WHEN THE SPECIFIED CONDITIONS ALLOW THE USE OF MECHANICAL RESTRAINTS, THE RESTRAINT LENGTH REQUIREMENTS FOR BOTH THE TEE AND THE END CAP, OR HYDRANTS MUST BE MET.

6. APPROVED METHODS OF RESTRAINED PIPE SHALL BE:
   A) FOR PVC PIPE, SERIES 2000PV MEGALUG RESTRAINTS AND FOR SLIP JOINTS, SERIES 1500TD BELL RESTRAINT HARNESS, OR APPROVED EQUAL.
   B) FOR DUCTILE IRON PIPE, SERIES 1100 MEGALUG RESTRAINTS AND FOR SLIP JOINTS, SERIES 1500 RESTRAINT HARNESS THROUGH 12 INCH, OR SERIES 1700 RESTRAINT HARNESS FOR LARGER PIPE, OR APPROVED EQUAL.

---

### RESTRAINED PIPE LENGTH (FEET)

**TEE BRANCH AND LENGTH EACH SIDE OF BEND**

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>TEE BRANCH</th>
<th>90° BEND</th>
<th>45° BEND</th>
<th>22 1/2° BEND</th>
<th>11-1/4° BEND</th>
<th>DEAD END VALVE OR PLUG, AND FIRE HYD.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STATIC PSI</td>
<td>150</td>
<td>200</td>
<td>150</td>
<td>200</td>
<td>150</td>
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<tr>
<td>6&quot; P.V.C.</td>
<td>60</td>
<td>84</td>
<td>27</td>
<td>36</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>6&quot; D.I.P.</td>
<td>46</td>
<td>63</td>
<td>23</td>
<td>31</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>8&quot; P.V.C.</td>
<td>81</td>
<td>110</td>
<td>34</td>
<td>46</td>
<td>14</td>
<td>19</td>
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<tr>
<td>8&quot; D.I.P.</td>
<td>61</td>
<td>82</td>
<td>30</td>
<td>40</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>12&quot; P.V.C.</td>
<td>118</td>
<td>158</td>
<td>48</td>
<td>64</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>12&quot; D.I.P.</td>
<td>88</td>
<td>118</td>
<td>42</td>
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<td>16&quot; D.I.P.</td>
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<td>152</td>
<td>152</td>
<td>71</td>
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<tr>
<td>20&quot; D.I.P.</td>
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<td>24&quot; D.I.P.</td>
<td>161</td>
<td>216</td>
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<tr>
<td>30&quot; D.I.P.</td>
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<td>260</td>
<td>116</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>36&quot; D.I.P.</td>
<td>223</td>
<td>300</td>
<td>100</td>
<td>132</td>
<td>41</td>
<td>55</td>
</tr>
</tbody>
</table>

*T.B.* DENOTES: THRUST BLOCK.
NOTES:

1. VALVE SIZE AND TYPE TO BE SPECIFIED BY THE DESIGN ENGINEER AND APPROVED BY THE CITY ENGINEER.
2. RISER SHALL BE PROTECTED FROM VEHICULAR OR PEDESTRIAN TRAFFIC AS APPROVED BY THE CITY ENGINEER.
3. PAINT GUARD POST(S) SAFETY YELLOW.
4. EXACT LOCATION OF GUARD POST(S) TO BE DETERMINED IN FIELD BY THE CITY ENGINEER.
NOTES:
1. MUST BE ON THE LATEST DEPARTMENT OF HEALTH APPROVED LIST OF BACKFLOW PREVENTION ASSEMBLIES.
2. MAY BE INSTALLED BELOW GROUND IN AN APPROVED VAULT.
3. A CITY OF WEST RICHLAND CROSS CONNECTION SPECIALIST MUST BE PRESENT DURING INSTALLATION.
4. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
5. RISERS AND ALL PIPE IN BOX TO BE GALVANIZED.
6. A LADDER IS REQUIRED IF ACCESS OPENING TO FLOOR EXCEEDS 36".

DOUBLE CHECK VALVE ASSEMBLY
INSTALLATION FOR ASSEMBLIES 3/4" TO 1"

CATEGORY: WATER
FILENAME: SD 4-13.dwg

DRAWN BY: BTW
CHECKED BY: AFW
DATE: 07/14
REVISED: 11/14
NOTES:

1. ENGINEERING INSPECTOR WILL INSPECT TO THE BACK FLOW DEVICE OUTSIDE OF THE BUILDING, OR TO THE FLANGE ABOVE THE BUILDING FLOOR.

2. CITY STANDARD VALVE AND VALVE BOX REQUIRED AT CONNECTION TO CITY MAIN LINE. CITY ENGINEER MAY DELETE MAINLINE VALVE WHEN DISTANCE TO THE BUILDING IS LESS THAN 15 FEET.

3. SINGLE SOFT SEAT CHECK VALVE REQUIRED WHEN THE DISTANCE (LENGTH) FROM THE MAIN TO THE FLANGE ABOVE THE FLOOR IS GREATER THAN 15 FT.

4. FIRE DEPT. APPROVED POST INDICATOR (P.I.) VALVE REQUIRED A MINIMUM OF 10 FEET FROM THE CITY MAIN LINE ISOLATION VALVE.

5. INSTALL APPROVED CROSS CONNECTION DETECTION ASSEMBLY PER CITY CROSS CONNECTION SPECIALIST. (LOCATION VARIES). METER SHALL BE COMPATIBLE WITH NEPTUNE RADIO SYSTEM.

6. FITTINGS AND PIPE WITHIN THE BUILDING LIMITS, AND TO A MINIMUM 5 FEET OUTSIDE OF THE BUILDING, SHALL BE AWWA CAST OR DUCTILE IRON.

7. JOINT TO BE FLANGED, OR FLANGE ADAPTER, EXCEPT MJ JOINT MAY BE USED WHEN BEND IS SHACKLED TO A RETAINER GLAND LOCATED A MINIMUM OF 5 FEET OUTSIDE OF THE BUILDING.

8. ALL FIRE LINE PIPING SHALL BE INSTALLED BY A "U" LISTED CONTRACTOR.

9. CONDUIT FOR FIRE ALARM SYSTEM SHALL BE RUN FROM POST INDICATOR VALVE TO BUILDING. SIZING SHALL BE DETERMINED BUILDING FIRE ENGINEER.

10. REMOTE FIRE DEPARTMENT CONNECTION (FDC) LOCATION WILL BE DETERMINED BY FIRE ENGINEER AND APPROVED BY THE CITY FIRE MARSHAL. FDC'S ATTACHED TO BUILDING IS NOT ALLOWED. FDC MUST BE LOCATED WITHIN 50 FEET OF AN FIRE HYDRANT.

11. ALTERNATE MJ FITTING MAY BE USED PROVIDED THAT 250 PSI RATED STEEL TIE RODS ARE UTILIZED TO BELOW FLOOR FITTING. USE 2 RODS FOR 4"-6" PIPE, 3 RODS FOR 8", AND 4 RODS FOR 10"+. FOLLOWING ASSEMBLY, COAT ALL ROD ASSEMBLIES WITH BITUMASTIC SEALANT.

12. FLANGE ADAPTER TO BE 250 PSI RATED DUCTILE "UNION FLANGE" AS MFG. BY UNION FOUNDRY CO., UNIFLANGE OR EQUAL.

13. CONSTRUCT A THRUST BLOCK ON THE 90° BEND UNDER THE FLOOR SIZED FOR THE SIZE OF PIPE AND TYPE OF FILL. SIZE TO BE 1.34 TIMES THAT CALLED FOR IN STD. DETAIL 4-6A.

14. AFTER SATISFACTORY HEALTH SAMPLES, ALL FIRE LINE INSTALLATIONS SHALL BE TESTED AT 200 PSI FOR 2 HOURS, WITH NO LOSS.

15. CONTRACTOR TO PROVIDE PITOT TUBE FOR MEASURING FLOW DURING FLUSHING, IF A REDUCED SIZE FLUSH PIPE IS USED. THE CONTRACTOR IS RESPONSIBLE TO CONTROL ALL FLUSH WATER.

16. FIRE ENGINEER MAY SUBMIT A FIRE DESIGN FOR REVIEW AND APPROVAL THAT VARIES FROM THESE REQUIREMENTS.
NOTES:

1. COPPER MAY BE SUBSTITUTED WITH POLYETHYLENE PRESSURE PIPE P.R.200 PSI-SDR 9, MEETING REQ.S OF ASTM D 2737 AND AWWA C901 WITH COPPER TUBE SIZE OD. INSULATED #12 GAUGE TRACER WIRE IS REQUIRED WITH ALL POLY PIPE INSTALLATION.

2. ALL BENDS TO BE A MINIMUM OF ONE FOOT FROM ALL SERVICE LINE FITTINGS.

3. ALL SETTERS SHALL BE BROUGHT TO THE CITY MAINTENANCE SHOP FOR ADJUSTMENTS.

4. METER BOX INSTALLED ELEVATION SAME AS BACK OF SIDEWALK.

5. METER BOXES INSTALLED IN TRAFFIC AREAS WHERE NOT PROTECTED BY CURB AND GUTTER, SHALL REQUIRE AN APPROVED CAST IRON TRAFFIC RATED LID WITH NO CIRCULAR CUT OUT FOR METER READING DEVICE.

NOTE:

1. SEE STD. DETAIL 4-26B FOR SERVICE FROM D.I., STEEL OR AC MAINS.
NOTES:
1. MINIMUM SERVICE PIPE IS 1".
2. SEE SWSS AND CITY SPECIAL PROVISIONS 7-15 AND STD DETAIL 4-26A FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
3. ALL BENDS TO BE A MINIMUM OF ONE FOOT FROM ALL SERVICE LINE FITTINGS.

NOTE:
1. TAP AT 1:00 OR 11:00 FOR D.I. STEEL OR A.C. MAINS SEE STD. DETAIL 4-26A FOR SERVICE FROM PVC MAINS.

VERTICAL EXPANSION LOOP

BEDDING: 2" MIN. UNDER PIPE, 4" MIN. OVER PIPE.
NOTES:
1. METER BOX SHALL BE A RAVEN MODEL OR MID STATES 17X30-18 OR 17X30-12 W/ WHITE INTERIOR. LID SHALL BE CAST IRON WITH READING ACCESS LID MARKED "WATER". NO CIRCULAR HOLE FOR METER READING DEVICE SHALL BE IN LID.
2. METER BOX INSTALLED ELEVATION SHALL BE SAME AS BACK OF SIDEWALK.
3. FORD 70 SERIES COPPERSETTER WITH NO BYPASS FOR A 1 1/2-INCH OR 2-INCH FLANGED METER. (BALL VALVE INLET AND ANGLE CHECK VALVE OUTLET) 1 1/2": VBH 76-24-11-66 2": VBH 77-24-44-77.
4. 2" POLYETHYLENE PIPE WITH TRACER WIRE (2" PIPE IS REQUIRED FOR BOTH 1.5" AND 2" SERVICES).
5. CONTRACTOR TO INSTALL GROUND CONTACT PRESSURE TREATED 2"x4"x6' MARKER POST. SET TOP 3' ABOVE FINISH GRADE, PAINTED BLUE, USING EXTERIOR GRADE PAINT.
6. 2" TAPPING SADDLE STYLE FORD FC202 EPOXY COATED SINGLE STAINLESS STEEL STRAP WITH IP THREAD WITH 2-INCH BALLCORP STOP.
7. LOCATE WIRE-CONNECT TO METALLIC MAIN LINE OR MAIN LINE LOCATE WIRE AND TERMINATE AT METER LOCATION. WIRE SHALL BE INSULATED #12 GAGE.
8. SEPARATE METER BOXES A MINIMUM OF 3'-0" APART WHEN STRADDLING A PROPERTY LINE.
9. ADDITIONAL FEE WILL APPLY AT TIME OF SERVICE IF 1.5" METER IS REQUESTED IN 2" WATER SETTER DUE TO ADDITIONAL FITTING COSTS.
NOTES:

1. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR ASSIGNED TO THE PROJECT TO SET UP A MEETING WITH A REPRESENTATIVE OF THE CITY OF WEST RICHLAND PUBLIC WORKS DEPT., CONTRACTOR AND CITY INSPECTOR PRIOR TO BEGINNING EXCAVATION OF THE VAULT HOLE AND TO SCHEDULE THE METER AND METER VAULT INSTALLATION.

2. EXCAVATION AREA FOR VAULT SHALL BE 10 FT. WIDE X 10 FT. LONG. WHERE LARGER VAULTS ARE REQUIRED, THE EXCAVATION SHALL BE PROPORTIONATELY EXTENDED.

3. THE VAULT SHALL HAVE A TYPICAL 1 1/2 TO 2 FT. OF COVER IN PAVED AND LANDSCAPED AREAS. ADDITIONAL EXCAVATION DEPTH MAY BE REQUIRED, IF THE BOTTOM OF THE EXCAVATION WOULD BE LESS THAN 2 FT. BELOW THE BOTTOM OF THE EXISTING WATER MAIN THAT THE SERVICE LINE IS CONNECTED TO.

4. PLACE 6 INCHES OF COMPACTED 5/8" MINUS CRUSHED ROCK BELOW THE VAULT.

5. THE CITY PROVIDES AND INSTALLS THE WATER SERVICE FROM THE VALVE TO THE METER VAULT, METER, VAULT, MANHOLE CASTING & LID, AND STUBS PIPES OUT OF THE METER VAULT.

6. THE CONTRACTOR IS RESPONSIBLE FOR TRENCH EXCAVATION AND BACKFILL, FINAL EXTENSIONS AND ADJUSTMENT OF MANHOLE CASTING AND LID. WHERE THE METER VAULT IS IN A GRASS OR LANDSCAPED AREA, THE CONTRACTOR SHALL EXTEND THE AIR VENT ON THE METER VAULT, TO ONE FOOT ABOVE THE FINISHED GRADE AND PROVIDE A STAINLESS OR GALVANIZED SCREEN AND CAP. ALL CLEANUP AND LANDSCAPE RESTORATION SHALL BE COMPLETED BY THE CONTRACTOR.
NOTES:
1. REDUCED PRESSURE BACKFLOW ASSEMBLIES (RPBA) SHALL COMPLY WITH CURRENT STANDARDS AND SPECIFICATIONS FROM THE DEPARTMENT OF HEALTH (DOH) AND BE ON THE APPROVED LIST OF BACKFLOW PREVENTION ASSEMBLIES.

2. THE RPBA SHALL BE INSTALLED A MINIMUM OF 12" ABOVE GROUND.

3. PROPERTY OWNERS ARE RESPONSIBLE FOR PROTECTING RPBA’s AND DOUBLE CHECK VALVE ASSEMBLIES (DCVA’s), SUSCEPTIBLE TO FREEZING AND FOR ANNUAL MAINTENANCE AND TESTING OF THESE ASSEMBLIES FOR PROPER FUNCTION BY A CERTIFIED TESTER.

4. ENCLOSURES USED TO PROTECT ASSEMBLIES FROM FREEZING, OR DAMAGE, MUST PROVIDE ADEQUATE CLEARANCE FOR TESTING AND MAINTENANCE. 12" MINIMUM FOR NON TEST SIDES AND 24" MINIMUM FOR TEST SIDES.

5. ADEQUATE DRAINAGE FROM THE ASSEMBLY MUST BE PROVIDED. IDEALLY DRAINS SHALL RUN TO EXTERIOR OF BUILDING AS SHOWN. IF CONNECTING DRAINS TO CITY SEWER, GARAGE FLOOR DRAINS REQUIRE OIL / SAND SEPARATORS WITH DRAINS CONFORMING TO CURRENT GOVERNING PLUMBING CODES.

6. IRRIGATION SYSTEMS CONNECTED TO POTABLE WATER SOURCES SHALL COMPLY WITH THE CITY’S CURRENT CROSS CONNECTION CONTROL PROGRAM AND THE DOH STANDARDS AND SPECIFICATIONS. THE CITY CROSS CONNECTION SPECIALIST MUST APPROVE ALL CONNECTIONS AND BACKFLOW ASSEMBLIES, PRIOR TO USE.

7. INSTALLATION OF IRRIGATION SYSTEMS REQUIRES AN UNDERGROUND SPRINKLER INSTALLATION PERMIT FROM THE CITY TO BE FILED WITH THE CITY CROSS CONNECTION SPECIALIST PRIOR TO INSTALLATION.

8. ELECTRICAL CONNECTION TO BOOSTER PUMP SHALL MEET CURRENT GOVERNING ELECTRICAL CODES.

9. PIPE MATERIAL SHALL CONFORM TO THE CURRENT GOVERNING EDITION OF THE UNIFORM PLUMBING CODE (UPC) FOR ALL WATER LINES AND DRAIN LINES COMPRISING THE BOOSTER PUMP SYSTEM.

10. DETAIL IS TO BE USED AS A GENERAL DEPICTION OF A BOOSTER PUMP SETUP. VARIATIONS MAY BE ACCEPTED WITH APPROVAL FROM PUBLIC WORKS AND BUILDING DEPARTMENTS.
NOTES:

1. MIN. PIPE BURY TO BE 18", SEE PIPE SPECIFICATIONS FOR ADDED REQUIREMENTS. MAXIMUM NUMBER AND SIZE OF PIPE CONNECTING INTO CATCH BASIN SHALL NOT EXCEED 3-10" PIPES.

2. FILTER FABRIC BAG TO BE INSTALLED UNDER GRATE. REMOVE ONLY WHEN DIRECTED BY ENGINEER.

3. PRECAST CATCH BASIN SHALL CONFORM TO CITY OF WEST RICHLAND CONCRETE SPECIFICATIONS SEE STANDARD DETAIL 2-16.

4. 1:2 GROUT BETWEEN CATCH BASIN RING AND CONCRETE TILE, BOTH INSIDE AND OUTSIDE. ADJUSTMENTS 2" AND GREATER TO BE MADE WITH PRECAST CONCRETE RINGS.

5. WIRE REINFORCED PRECAST CATCH BASIN SHALL BE REQUIRED WHEN 3-12" PIPES ARE TO BE CONNECTED.

6. INSTALL ADS 90° BEND WITH TAPERED END FOR OIL/WATER SEPARATION IN LAST CATCH BASIN BEFORE DISCHARGE TO DRYWELL STRUCTURE OR POND OR INSTALLED PER CITY ENGINEER DIRECTION. STORM PIPE SHALL BE STUBBED INTO CATCH BASIN 2 INCHES AND A STAINLESS STEEL 3/8" HEX HEAD LAG SCREW 1-1/2" LONG WITH A 1/2" SOCKET FIT HEX HEAD SHALL BE USED TO ANCHOR ADS 90 TO STORM PIPE.

TYPE 1 CATCH BASIN

CATEGORY: STORM
REVIEWED BY: AFW
ADOPTED: 02/14
FILENAME: SD 5-1.dwg
REVISED BY: BTL
REVISED: 11/14
DRAWING NO.
NOTES:
1. RECTANGULAR VANED STYLE GRATE. USE AT CONTINUOUS GRADE LOCATIONS
2. RECTANGULAR BI-DIRECTIONAL VANED STYLE GRATE. USE AT CURB LOW POINTS
3. FRAME AND GRATES SHALL BE DOMESTIC

DOMESTIC FRAME ABLE TO ACCOMODATE A 20"X24" GRATE AND DESIGNED TO BE USED IN CONJUNCTION WITH A 24" DIAM CATCH BASIN.
NOTES:
1. ALL MANHOLE JOINTS SHALL BE MADE USING A CONTINUOUS FLEXIBLE RUBBER MANHOLE GASKET, OR FULL BED GROUT JOINT.
2. ADJUSTMENTS OVER 2" UTILIZE PRECAST CONCRETE RINGS. GROUT BETWEEN EACH RING AND FRAME AND FINISH GROUT INSIDE. REMOVE ALL WOOD SHIMS.
3. ALL INLETS AND OUTLETS SHALL BE GROUTED SMOOTH TO INSIDE WALLS.
4. INSTALL LADDER TO AVOID CONFLICT WITH INLET AND OUTLET PIPES AND ROTATE CONE SECTION ACCORDINGLY.

STANDARD FRAME AND COVER, STAMPED "STORM" OR "DRAIN". SEE STD DETAIL 3-4 FOR ADJUSTMENT REQUIREMENTS

ASSEMBLY

48" PRECAST SECTION PER WSDOT STD DWG. B-23A. USE A 54" M.H. FOR PIPES 24" AND OVER

INLET PIPE SEE NOTE 4 (TYP)

ELEVATED INLET PIPE SEE NOTE 4 (TYP)

OUTLET PIPE SEE NOTE 4

PRECAST BASE

6" MIN. C.S.T.C.

4" MIN. 16" MAX. ADJUST.

12" (TYP)

2' MIN. SUMP

24"

SIDE VIEW

FRONT VIEW

STANDARD 48" STORM DRAIN MANHOLE

5-3A

DRAWING NO.
NOTES:
1. CONTRACTOR TO FIELD VERIFY CATCH BASIN INLET INV ELEVATIONS DUE TO POSSIBLE EXISTING UTILITY CONFLICTS.
2. CATCH BASINS SHALL BE IN ACCORDANCE WITH STD. DETAIL 5-1.
3. INSTALL REMOVEABLE 12" ADS 90° W/ TAPERED END SECTION. SECURE W/ LAG SCREW. (SEE NOTE 3)
4. ADJUSTMENTS 2" AND GREATER TO BE MADE WITH PRECAST CONCRETE RINGS.
5. SEE CONSTRUCTION PLANS FOR EXACT LOCATION AND PIPE SIZES.
6. PLACE 1:2 GROUT BETWEEN C.B. RINGS AND CONCRETE TILE, BOTH INSIDE AND OUTSIDE.
DRAINFIELD ENVELOPE

CATCH BASIN AS PER CITY OF WEST RICHLAND STD. DETAIL 5-1 TO BE PAID FOR AS SEPARATE BID ITEM.

FRAME & GRATE CITY OF WEST RICHLAND STD. DETAIL 5-2

CONCRETE CURB AND GUTTER.

NOTES:

1. PRECAST CONCRETE ADJ. RINGS. 4" MIN. 16" MAX TO WITHIN 2" OF CASTING. GROUT BETWEEN EACH RING AND FINISH INSIDE.

2. WHEN UNDER A.C.P., ALL BACKFILL ABOVE THE CONCRETE CAP TO BE 5/8" MINUS CRUSHED ROCK 98% MIN. DENSITY. ROCK BACKFILL NOT REQUIRED IF DRYWELL IS INSTALLED IN CONJUNCTION WITH NEW STREET CONSTRUCTION AND IS IN THE ROADWAY.

3. RINGS, CASTING, LIFTHOLES AND PIPE INLETS INTO CATCH BASIN AND DRYWELL SHALL BE GROUTED INSIDE & OUT.

4" CONCRETE CAP. CAP TO BE BELOW OUTLET PIPE AND NO PERFORATIONS TO BE ABOVE CONCRETE CAP.

REINFORCED CONCRETE TRAFFIC BEARING H-20 LOAD RATED FLAT SLAB PER WSDOT STD. DETAIL B-24.

24" MIN., 36" MAX. WIDTH UNDER ACP

1-1/2" - 3" WASHED ROUND RIVER ROCK

SOIL FILTRATION FABRIC

REINFORCED PRECAST BASE

PERVIOUS STRATA

UNDISTURBED SOIL

18"

PROFILE VIEW

PRECAST CONCRETE DRYWELL, 9 FEET DEPTH

PREVIEW DRAMAGAGE

REVIEWED BY: AFW

ADOPTED: 02/14

FILENAME: SD 5-4A.dwg

REVISED: 2/15

DRAWING NO.
CATCH BASIN AS PER CITY OF WEST RICHLAND STD. DETAIL 5-1 TO BE PAID FOR AS SEPERATE BID ITEM

FRAME & GRATE CITY OF WEST RICHLAND STD. DETAIL 5-2

NOTES:

1. PRECAST CONCRETE ADJ. RINGS. 4" MIN. 16" MAX TO WITHIN 2" OF CASTING. GROUT BETWEEN EACH RING AND FINISH INSIDE.

2. WHEN UNDER A.C.P., ALL BACKFILL ABOVE THE CONCRETE CAP TO BE 5/8" MINUS CRUSHED ROCK 98% MIN. DENSITY. ROCK BACKFILL NOT REQUIRED IF DRYWELL IS INSTALLED IN CONJUNCTION WITH NEW STREET CONSTRUCTION AND IS IN THE ROADWAY.

3. RINGS, CASTING, LIFTHOLES AND PIPE INLETS INTO CATCH BASIN AND DRYWELL SHALL BE GROUTED INSIDE & OUT.
1. POLE SHAFT - HOT ROLLED COMMERCIAL QUALITY CARBON STEEL WITH 55,000 P.S.I. MINIMUM YIELD STRENGTH. LINEAR TAPER - 0.14\%/FT.

2. ARM CONNECTION - ARM SIMPLEX IS FORMED HOT ROLLED COMMERCIAL QUALITY CARBON STEEL AND POLE SIMPLEX IS ASTM DESIGNATION: A27 GRADE 65-35

3. CAST IRON POLE TOP CAP - ASTM DESIGNATION: A48 CLASS 30 - SECURED IN PLATE WITH 3 SET SCREWS (PLATED SCREWS).

4. ARM SHAFTS - 2-3/8" O.D. X 0.121" WALL MINIMUM STEEL TUBING - 36,000 P.S.I. MINIMUM YIELD STRENGTH (UNLESS OTHERWISE NOTED).

5. POLE AND ARM GALVANIZED TO ASTM DESIGNATION: A123.

6. ACCESSORIES GALVANIZED TO ASTM DESIGNATION: A153.

7. ALL THREADED FASTENERS TO BE GALVANIZED UNLESS OTHERWISE NOTED.

8. "J"-BOX SHOWN FOR CLARITY, LOCATE AT 90 DEGREES FROM SHOWN POSITION.

9. INSTALL WIRE BETWEEN "J"-BOX AND POLE IN CARFLEX OR EQUAL LIQUID TIGHT FLEXIBLE NON-METALIC CONDUIT.

10. POLE TO BE INSTALLED OFFSET PARALLEL TO CURB/STREET FROM PROPERTY PINS (WHEN PRESENT)
**LUMINAIRE REQUIREMENTS:**

<table>
<thead>
<tr>
<th>STREET WIDTH</th>
<th>STREET LIGHT STANDARD</th>
<th>GENERAL STREET CLASSIFICATION</th>
<th>LAMP WATTAGE (NOT TO EXCEED)</th>
<th>LIGHT DISTRIBUTION</th>
<th>CONTROLS (SEE NOTE B)</th>
<th>DELIVERED LUMENS (MINIMUM)</th>
<th>MAXIMUM POLE SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>70'</td>
<td>TYPE I 35.0’</td>
<td>5-LANE ARTERIAL HIGH DENSITY COMMERCIAL</td>
<td>220</td>
<td>TYPE III</td>
<td>VE²</td>
<td>18,600</td>
<td>125’</td>
</tr>
<tr>
<td>70'</td>
<td>TYPE I 35.0’</td>
<td>5-LANE ARTERIAL</td>
<td>110</td>
<td>220 (XING)</td>
<td>TYPE III</td>
<td>9300</td>
<td>150’</td>
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<tr>
<td>56’</td>
<td>TYPE I 35.0’</td>
<td>4-LANE ARTERIAL</td>
<td>110</td>
<td>220 (XING)</td>
<td>TYPE III</td>
<td>9300</td>
<td>200’</td>
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<tr>
<td>46’</td>
<td>TYPE II 30-6’</td>
<td>3-LANE COLLECTOR/ARTERIAL</td>
<td>110</td>
<td></td>
<td>TYPE II</td>
<td>9300</td>
<td>200’</td>
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<tr>
<td>32'-36'</td>
<td>TYPE II 30-6’</td>
<td>RESIDENTIAL</td>
<td>50</td>
<td>110 (XING)</td>
<td>TYPE II</td>
<td>4200</td>
<td>300’</td>
</tr>
</tbody>
</table>

* MEASURED FROM FACE OF CURB TO FACE OF CURB OR EDGE OF PAVEMENT TO EDGE OF PAVEMENT.

**NOTES:**

1. LUMINAIRE SHALL BE LED (LIGHT-EMITTING-DIOYE) AND MANUFACTURED BY AEL (AMERICAN ELECTRIC LIGHTING)

<table>
<thead>
<tr>
<th>WATTS (NTE)</th>
<th>MANUFACTURE</th>
<th>MODEL/SERIES</th>
<th>PERFORMANCE PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 W</td>
<td>AEL</td>
<td>ATBO</td>
<td>208LEDE70, 20B CHIPS, 700 mA DRIVER</td>
</tr>
<tr>
<td>110 W</td>
<td>AEL</td>
<td>ATBO</td>
<td>308LEDE10, 30B CHIPS, 1000 mA DRIVER</td>
</tr>
<tr>
<td>220 W</td>
<td>AEL</td>
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<td>608LEDE10, 60B CHIPS, 1000 mA DRIVER</td>
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2. LUMINAIRE SHALL HAVE THE FOLLOWING CHARACTERISTICS:
   - CAPABLE OF USING MULTI-VOLT 120-277V, 60 Hz POWER SOURCE
   - ROADWAY DISTRIBUTION AS STATED ABOVE, IP66 RATED LIGHT ENGINES WITH 0% UPLIGHTING.
   - PROVIDE CORRELATED COLOR TEMPERATURE (CCT) OF 4000K, 70 CRI MINIMUM.
   - EXPECTED LIFE: LED LIGHT ENGINE RATED > 100,000 HOURS AT 25°C, L70
   - EXPECTED LIFE (DRIVER): 100,000 HOURS AT 25°C AMBIENT
   - EQUIPPED WITH DIMMABLE DRIVER COMPATIBLE WITH ROAM SMART CONTROLS SYSTEM.
   - HOUSING SHALL BE DIE CAST ALUMINUM, POLYESTER POWDER COATED, AND GRAY IN COLOR.
   - NEMA 5 OR 7 PIN PHOTOCONTROL RECEPTACLE
   - NEMA LABEL PER ANSI C136.15-2011
   - SHALL HAVE TOOL-LESS ENTRY, TOOL-LESS NEMA PHOTOCONTROL RECEPTACLE, TERMINAL BLOCK, QUICK DISCONNECTS, AND BUBBLE LEVEL INSIDE ELECTRICAL COMPARTMENT FOR EASY LEVELING AT INSTALLATION.

3. PHOTO ELECTRIC CONTROL PER EACH LUMINAIRE SHALL BE PLUG IN TYPE AND MUST BE ACUITY BRANDS ROAM REN 127 DV1, WITH 0-10V DIMMING AND COMPATIBLE WITH ROAMVIEW DIMMING CONTROLS. PROGRAMING OF PHOTOCELL SHALL BE PERFORMED BY THE CITY AFTER INSTALLATION.

4. LUMINAIRE SHALL BE PACKAGED IN CONTAINERS WHICH WILL PREVENT SHIPPING AND HANDLING DAMAGE. EACH CONTAINER SHALL BE MARKED WITH THE MANUFACTURER'S NAME, NAME OF ITEM, WATTAGE AND CATALOG NUMBER.

5. LUMINAIRE SHALL HAVE A MINIMUM OF A 10 YEAR WARRANTY. LUMINAIRE IN SERVICE FOR LESS THAN ONE YEAR ARE UNDER THE WARRANTY OF THE CONTRACTOR AND SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

6. SEE CITY OF WEST RICHLAND STANDARD DETAIL 6-1 FOR POLE AND MAST ARM REQUIREMENTS.

7. SPACING TO BE STAGGERED OPPOSITE SIDES OF THE STREETS. ALL INTERSECTION SHALL HAVE MINIMUM (1) LIGHT. ADDITIONAL LIGHTING MAY BE REQUIRED BY THE CITY ENGINEER AT INTERSECTIONS AS WELL OTHER LOCATIONS ALONG ANY GIVEN ROADWAY.
TRANSFORMER

DISCONNECT MAX 5' BACK OF WALK. SEE COWR STD. DETAIL 6-4 FOR RESIDENTIAL DISCONNECT LOCATION.

ALTERNATE COMMERCIAL DISCONNECT LOCATION WHEN PAVED ACCESS IS PROVIDED.

WIRING CONDUIT

CONDUCTOR CIRCUIT

PLAN VIEW

R.E.A. TO MAKE ALL CONDUCTOR CONNECTIONS TO POWER SUPPLY

CRIMP LUGS BOLTED & TAPED TOGETHER

INSTALL IN R/W OR IN EASEMENT MAX. 5' BACK OF WALK. SEE COWR STD. DETAIL 6-4 FOR RESIDENTIAL DISCONNECT LOCATION.

ALL BACKFILL TO BE COMPACTED TO MIN. 95% AT OPT. MOISTURE BY METHOD APPROVED BY THE ENGINEER. SEE COWR STD. DETAIL 6-5.

CONTRACTOR TO INSTALL 2" CONDUIT (POWER SOURCE TO DISCONNECT) & WIRE IN ACCORDANCE WITH COWR STD. DETAIL 6-5

NOTES:
1. ALL MATERIALS AND CONSTRUCTION TO CONFORM TO SECTION 8-20 OF THE SWSS AND CITY SPECIAL PROVISIONS.
2. AN IN-LINE, FUSED, WATERTIGHT ELECTRICAL DISCONNECT KIT SHALL BE INSTALLED IN THE JUNCTION BOX FOR EVERY CONDUCTOR ABOVE GROUND POTENTIAL.
3. PROVIDE ADDITIONAL CONDUCTOR LENGTH IN ALL JUNCTION BOXES EQUAL TO A LOOP HAVING A DIAMETER OF 1 FOOT.
4. CONTRACTOR SHALL PLACE 4" OF 5/8" MINUS CRUSHED ROCK IN BOTTOM OF JUNCTION BOX AFTER INSTALLING CONDUIT AND WIRING.
5. THE CONTRACTOR SHALL BE REQUIRED TO SECURE, AT HIS OWN EXPENSE, FROM THE CITY AND FROM THE STATE OF WASHINGTON ELECTRICAL INSPECTION DEPT., ALL INSPECTION PERMITS REQUIRED TO CONSTRUCT THE LIGHTING SYSTEM.

TYPICAL STREET LIGHT CIRCUIT

CATEGORY: LIGHTING
REVIEWED BY: AFW
ADOPTED: 06/14
FILENAME: SD 6-3.dwg
REVISED BY: AFW
REVISED: 10/15
NOTES:

1. THE CONTRACTOR SHALL BE REQUIRED TO SECURE, AT HIS OWN EXPENSE, FROM THE CITY OF WEST RICHLAND AND THE STATE OF WASHINGTON ELECTRICAL INSPECTION DEPT. ALL INSPECTION PERMITS REQUIRED TO CONSTRUCT THE LIGHTING SYSTEM. CONTACT BENTON R.E.A. TO VERIFY POWER SOURCE.

2. SEE SECTION 8-20 IN CITY SPECIAL PROVISIONS FOR WIRE SIZE AND CIRCUIT REQUIREMENTS.

3. SEE STANDARD DETAIL 6-3 FOR COMMERCIAL DISCONNECT LOCATION.

4. DISCONNECTS IN RESIDENTIAL SUBDIVISIONS SHALL BE LOCATED WITHIN 3 FT. OF PHONE AND CABLE TV PEDISTALS BUT NOT CONFLICT WITH ACCESS TO THE BENTON R.E.A. TRANSFORMER.

5. CONTRACTOR TO DRILL OUT "ON" POSITION ON LOCKING PLATE.

2 - EACH 5/8" X 8'-0" GALVANIZED STEEL GROUNDING RODS MINIMUM 6'-0" APART.
NOTES:
1. TRENCH DEPTH SHALL PROVIDE A MINIMUM COVER OF 24" OVER TOP OF CONDUIT. TELEPHONE AND POWER TO BE MIN. 30" AT NON CURBED STREET CROSSINGS OR AS REQUIRED BY THE PERMIT.
2. MINIMUM ONE-WAY TRAFFIC TO BE MAINTAINED.
3. ALL ROADWAY APPURTEANCES TO BE PROTECTED AND ROAD SIGNS LEFT AS FOUND.
4. PAVEMENT REPAIR TO BE MADE WITHIN 24 HOURS OF TRENCH BACKFILL.
5. PATCH TO BE HMA 3/8" PG 64-28. A.C.P. SHALL BE PLACED IN LIFTS NOT TO EXCEED 2" IN DEPTH.
6. PERMIT REQUIRED ON ALL PROJECTS NOT CONTRACT ADMINISTERED BY THE CITY PUBLIC WORKS DEPARTMENT.
CONDUIT SWEEP SHALL BE USED. BENDING PIPE WILL NOT BE ALLOWED. MAINTAIN DEPTH FROM TRUNK LINE TO J-BOX.

NOTE:
1. A TOTAL OF FOUR 90° BENDS, OR AN EQUIVALENT OF 360° MAXIMUM IS PERMITTED IN A CONDUIT RUN PER NEC SECTION 347-14. SINCE EACH "J" BOX Requires ONE 90° BEND TO ENTER THE BOTTOM OF THE BOX, A MAXIMUM OF TWO ADDITIONAL 90° BENDS CAN BE INSTALLED BETWEEN BOXES OR NO MORE THAN 180°.
2. EXACT CONDUIT LOCATION IN THE UTILITY EASEMENT SHALL BE COORDINATED WITH THE CITY FRANCHISED UTILITIES TO ENSURE NO CONFLICTS ARE CREATED.
3. DEPTH OF CONDUIT SHALL SATISFY N.E.C. REQUIREMENTS.
FUSED, WATERTIGHT, QUICK DISCONNECT GROUND WIRE TO BE COLOR-CODED GREEN CONDUCTOR LOOP MIN. 12".

MINIMUM OF 4 INCHES OF 5/8" GRAVEL TO BE PLACED IN BOTTOM OF J-BOX AFTER INSTALLING THE CONDUIT AND WIRING.

CUT CONDUITS 4" TO 6" MAXIMUM ABOVE 5/8" MINUS ROCK

J-BOX SHALL BE INSTALLED FLUSH WITH SIDEWALK OR LANDSCAPING, BUT SHALL NOT BE PLACED WHERE DRAINAGE WILL COLLECT IN OR NEAR.

J-BOX SHALL BE INSTALLED 1.5'-2.5' FROM LIGHT STANDARD. SEE C.O.W.R. STANDARD DETAIL 6-1.

NOTES:
1. ALL MATERIALS AND CONSTRUCTION TO CONFORM TO CITY OF KENNEWICK STANDARD SPECIFICATIONS SECTION 6.
2. ALL BACKFILL TO BE COMPACTED TO MINIMUM OF 95% OF MAXIMUM DENSITY OR AS REQUIRED TO PRECLUDE FUTURE SETTLEMENT.
NOTES:

1. POSTS SHALL BE TELESPAR BRAND SQUARE TUBING OR APPROVED EQUAL. SIGN POST MUST BE BREAK AWAY AND ACCEPTABLE PER NCHRP 350.

2. POSTS SHALL BE COLD ROLLED STEEL WITH PERFORATIONS OF .4375 INCH DIAMETER ON ONE INCH CENTERS ON ALL FOUR SIDES.

3. POSTS SHALL EMPLOY A YIELDING BREAKAWAY SYSTEM CONSISTING OF A BASE POST AND SIGN POST.

4. ALL FASTENINGS OF TUBING JOINTS AND CONNECTIONS SHALL UTILIZE A MINIMUM OF TWO DRIVE RIVETS UNLESS OTHERWISE SPECIFIED.

5. GALVANIZED COATING SHALL CONFORM TO A.S.T.M. SPECIFICATION A-525, DES. G-90.

6. BASE POST MUST BE DRIVEN WITH A MECHANICAL DRIVER ORPOURED IN CONCRETE.

7. IF CONCRETE IS USED WRAP SLEEVE WITH DUCT TAPE TO ALLOW FOR REINSTALLATION.
NOTES:
1. REFLECTORIZED WHITE LETTERS AND NUMBERS ON REFLECTIVE GREEN BACKGROUND. LETTERS ARE TO BE HIGHWAY GOTHIC, SERIES "C". LETTERS AND SPACING TO BE PER THE STATE OF WASHINGTON SIGN FABRICATION MANUAL.
2. LETTERS, NUMBERS, AND BACKGROUND ARE TO BE 3M SCOTCHLITE REFLECTIVE DIAMOND GRADE VIP SERIES 981.
3. EXTRUDED ALUMINUM PLATE 6061-P61 WITH ALODINE FINISH.
4. STREET NAME SIGNS SHALL BE INSTALLED ON THE SIGN POST OR STREET LIGHT STANDARD BY MEANS APPROVED BY THE CITY ENGINEER.
NOTES:

1. EDGE OF SIGN TO BE EVEN WITH BACK OF SIDEWALK.
2. SIGNS TO BE INSTALLED BACK OF SIDEWALK UNLESS OTHERWISE NOTED ON PLANS.
3. SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE THE STANDARD SIZE AND LETTERING APPROPRIATE FOR URBAN AREAS UNLESS OTHERWISE NOTED.
4. ALL SIGN PLAQUES SHALL BE MADE OF ALUMINUM HAVING A MINIMUM THICKNESS OF 0.10 INCHES.
5. BOLTS, NUTS AND METAL WASHERS SHALL BE GALVANIZED OR CADMIUM PLATE STEEL.
6. POSTS SHALL CONFORM TO CITY OF WEST RICHLAND STD. DETAIL 7-1.
7. REFLECTIVE SHEETING SHALL BE AS A MINIMUM 3-M HIGH INTENSITY GRADE UNLESS A HIGHER GRADE IS SPECIFIED OR DIRECTED BY THE TRAFFIC ENGINEER.
8. ALL SIGNS AND PLACEMENT MUST HAVE APPROVAL OF THE CITY ENGINEER.
9. ALL MOUNTING HARDWARE FOR STREET LIGHT POLES MUST BE BAND-IT OR APPROVED EQUAL. THE HARDWARE REQUIRED IS 3/4" X 0.030 STAINLESS STEEL BANDS, 3/4" STAINLESS STEEL EAR LOCK, BUCKLES, STAINLESS STEEL FLARED LEG BRACKETS WITH ONE BOLT AND METAL FENDERS WASHER.

MID-BLOCK INSTALLATION

SIGN ASSEMBLY
NOTES:

1. REFLECTORIZED 3M HIGH INTENSITY OR DIAMOND GRADE RED SHEETING OR CITY ENGINEER APPROVED EQUAL.
2. ONE-TENTH GAUGE ALUMINUM PLATE.
3. POST SHALL BE AS PER CITY OF WEST RICHLAND STANDARD DETAIL 7-1 EXCEPT 6 FT. SIGN POSTS MAY BE USED.
4. THE NUMBER OF SIGNS REQUIRED FOR ANY STREET SHALL BE DETERMINED BY THE CITY ENGINEER.
5. SIGNS ARE TO BE INSTALLED IN THE CENTER OF TRAVEL AND/OR PARKING LANE.
All changes must be approved by city engineer.

**T** = Taper Length  **S** = Sign Spacing

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* Spacing may need to be adjusted slightly per field conditions

= CONES

Max. cone spacing = Speed limit in feet

**SHOULDER WORK FOR ANY ROADWAY**

Category: CATEGORY
Reviewed by: AFW
A adopted: 02/14
Filename: SD 7-5.dwg
Revised by: BTL
Revised: 11/14
ROAD CONSTRUCTION AHEAD

BE PREPARED TO STOP

FLAGGER AHEAD

VARIES FROM 50'-200'

T = TAPER LENGTH  S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS

= CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY CITY ENGINEER

FILE: SD 7-6.dwg

REVISED BY: BTL

REVISED: 11/14

CITY OF WEST RICHLAND

TYPICAL LANE CLOSURE 2 LANE ROADWAY

CATEGORY: CATEGORY

REVIEWED BY: AFW

ADOPTED: 02/14
ROAD CONSTRUCTION AHEAD

S

TAPER LENGTH S = SIGN SPACING

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= CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

(With or without 2-way turn lane)

ALL CHANGES MUST BE APPROVED BY CITY ENGINEER

TYPICAL 1-LANE CLOSURE ON A 3-LANE ROADWAY

CATEGORY: CATEGORY
REVIEWED BY: AFW
ADOPTED: 02/14
FILENAME: SD 7-7.dwg
REVISED BY: BTL
REVISED: 11/14

DRAWING NO.

7-7
ROAD CONSTRUCTION AHEAD

S

ARROW BOARD (OPTIONAL)

BUFFER

T = TAPER LENGTH  S = SIGN SPACING

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• = CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

WORK ZONE

ARROW BOARD (OPTIONAL)

BUFFER

TYPICAL RIGHT LANE CLOSURE
FOR A 4-LANE ROADWAY

ALL CHANGES MUST BE APPROVED BY CITY ENGINEER
**TYPICAL LEFT LANE CLOSURE ON A 4-LANE ROADWAY**

T = TAPER LENGTH  S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS

- = CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

**ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER**
TYPICAL DOUBLE LANE CLOSURE
INSIDE A 4-LANE ROADWAY

T = TAPER LENGTH S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS

= CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

* ARROW BOARD (REQUIRED)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

TYPICAL DOUBLE LANE CLOSURE
INSIDE A 4-LANE ROADWAY

CATEGORY: CATEGORY
REVIEWED BY: AFW
ADOPTED: 02/14
FILENAME: SD 7-10.dwg
REVISED BY: BTL
REVISED: 11/14
DRAWING NO. 7-10
ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

MAX. CONE SPACING = SPEED LIMIT IN FEET

T = TAPER LENGTH  S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS
• = CONES
MAX. CONE SPACING = SPEED LIMIT IN FEET

TYPICAL 2-LANE CLOSURE ON A 4-LANE ROADWAY

CATEGORY: SD 7-11.dwg
REVIEWED BY: BTL
REVISED BY: BTL
REvised: 11/14

DRAWING NO.
T = TAPER LENGTH
S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS

= CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER
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T = TAPER LENGTH  S = SIGN SPACING

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MAX. CONE SPACING = SPEED LIMIT IN FEET

TYPICAL 2-LANE CLOSURE
OUTSIDE 5-LANE ROADWAY

CATEGORY: CATEGORY
REVIEWED BY: AFW
ADOPTED: 02/14
FILENAME: SD 7-13.dwg
REVISED BY: BTL
REVISED: 11/14
DRAWING NO. 7-13
ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

T = TAPER LENGTH S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS
  • = CONES
  MAX. CONE SPACING = SPEED LIMIT IN FEET

TYPICAL 3-LANE CLOSURE
OUTSIDE 5-LANE ROADWAY

CATEGORY: CATEGORY  REVIEWED BY: AFW  ADOPTED: 02/14
FILENAME: SD 7-14.dwg  REVISED BY: BTL  REVISED: 11/14
ALL CHANGES MUST BE APPROVED BY THE CITY ENGINEER

WORK ZONE

ROAD CONSTRUCTION AHEAD

ROAD CONSTRUCTION AHEAD

ARROW BOARD (OPTIONAL)

T = TAPER LENGTH S = SIGN SPACING

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* SPACING MAY NEED TO BE ADJUSTED SLIGHTLY PER FIELD CONDITIONS

= CONES

MAX. CONE SPACING = SPEED LIMIT IN FEET

INSIDE LANE CLOSURE NEAR SIDE OF INTERSECTION

7-15
ALL CHANGES MUST BE APPROVED BY THE CITY ENGINEER

ROAD CONSTRUCTION AHEAD

**Buffer**

WORK ZONE

**Buffer**

**Arrow Board (optional)**

**T** = Taper Length

**S** = Sign Spacing

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* Spacing may need to be adjusted slightly per field conditions

= cones

Max. cone spacing = speed limit in feet

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INSIDE LANE CLOSURE

FAR SIDE OF INTERSECTION

7-16

**Category:**

**Reviewed by:** AFW

**Aired:** 02/14

**Filename:** SD 7-16.dwg

**Revised by:** BTL

**Revised:** 11/14

**Drawing No.:**
NOTES:

1. NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING AT FLAGGING STATIONS, REFER TO WSDOT STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.

2. BUFFER VEHICLE, STRATEGICALLY LOCATED MAY SHIELD THE WORK ZONE IF NECESSARY FOR SAFETY.

3. EACH ROUNDABOUT LOCATION IS UNIQUE AND THE TRAFFIC CONTROL MUST BE DEVELOPED TO MEET THE SPECIFIC CONDITIONS OF THE LOCATION AND OPERATION.

4. IF THE WORK AND ALL WORK VEHICLES ARE OFF OF THE TRAVEL Lanes AND ISLAND APRON, A SINGLE ROAD WORK AHEAD SIGN IS ALL THAT IS REQUIRED.

5. ADDITIONAL SIGNING IN CENTER ISLAND MAY BE NECESSARY TO ASSIST TRAFFIC MOVEMENT.
NOTES:
1. TOP OF VALVE BOX TO BE SET FLUSH WITH FINISH GRADE.
2. ELECTRIC VALVE TO BE CENTERED IN VALVE BOX FOR EASY MAINTENANCE ACCESS.
NOTES:

1. USE TEFLOM TAPE ON ALL THREADED JOINTS.

2. SIZE AS REQUIRED TO MEET SPRINKLER REQUIREMENTS FOR FLOW AND HEIGHT ADJUSTMENT.

3. AS AN ALTERNATE INSTALLATION, POLYETHYLENE TUBING (FUNNY PIPE) MAY BE USED FOR ALL SPRINKLER HEADS WITH A DESIGN FLOW OF 6 GPM OR LESS. A MINIMUM LENGTH OF 18" SHALL BE USED FOR EACH SPRINKLER.
NOTES:
1. TRENCH DEPTH SHALL PROVIDE A MINIMUM COVER OF 30" OVER TOP OF IRRIGATION PIPE.
2. MINIMUM ONE-WAY TRAFFIC TO BE MAINTAINED.
3. PAVEMENT REPAIR TO BE MADE WITHIN 24 HOURS OF TRENCH BACKFILL.
4. PATCH SHALL BE H.M.A. 3/8". H.M.A. SHALL BE PLACED IN LIFTS NOT TO EXCEED 2" IN DEPTH.
5. IRRIGATION PIPE WITHIN CITY RIGHT OF WAY SHALL BE C-900 P.V.C. GASKETED 4" AND LARGER. PIPE 3" AND SMALLER SHALL BE SCHEDULE 40 P.V.C. UNLESS NOTED OTHERWISE ON THE PLANS. ALL IRRIGATION PIPING SHALL BE PRESSURE TESTED AT 150 P.S.I. FOR AN HOUR WITH NO LOSS.
6. PERMIT REQUIRED ON ALL PROJECTS NOT CONTRACT ADMINISTERED BY THE C.O.W.R. PUBLIC WORKS DEPT.
NOTES:
1. ROOT BALL OF TREE TO BE BURIED TO SAME DEPTH AS IN PREVIOUS NURSERY SETTING.
2. REMOVE ALL BURLAP OR POTTING MATERIAL.
NOTES:

1. REMOVE ALL BURLAP AND WRAPPINGS. LOOSEN ROOT BALL TO EXPOSE OUTSIDE ROOTS.

2. ROOT BALL OF TREE TO BE BURIED TO THE SAME DEPTH OR SLIGHTLY HIGHER AS IN PREVIOUS NURSERY SETTING TO ALLOW FOR SETTLEMENT.

3. STAKING TO BE REMOVED WITHIN 12 MONTHS OF PLANTING.

PROVIDE RUBBER HOSE FOR TREE PROTECTION FROM GUY WIRE

6" DIA X 6" PROTECTIVE P.V.C. COLLAR (ALTERNATIVE TO MULCH CIRCLE).

2" WOOD MULCH

MIXED NATIVE SOIL

UNDISTURBED NATIVE SOIL OR MOUND AND COMPACT SOIL PRIOR TO SETTING TREE

MIN. DIAMETER EQUAL TO TWICE THE DIAMETER OF ROOT BALL (3' DIAM MIN.)

2" X 2" DOUG FIR STAKES

HEIGHT VARIES

VARI E

6"

6"