



CITY OF
WALLA
WALLA

2014 STANDARD PLANS

APPROVED FOR PUBLICATION 2/11/2014,

BY: 

NEAL CHAVRE, P.E., CITY ENGINEER

EFFECTIVE FEBRUARY 06, 2014

TABLE OF CONTENTS

LIST OF UPDATED STANDARDS

GENERAL STANDARD PLANS

- 1-1 Standard Main Line Utility Locations (1 of 2)
- 1-1 Standard Main Line Utility Locations (2 of 2)
- 1-2 Monument Detail
- 1-3 Trench Details
- 1-4 Identifying Tape Detail
- 1-5 Street Sign Detail
- 1-6 Signal Mast-Arm Street Sign Detail
- 1-7 Street Sign Post Detail
- 1-8 Fire Lane Signs
- 1-9 Manhole Frame & Cover
- 1-10 Controlled Density Fill
- 1-10 Controlled Density Fill
- 1-11 Downtown Outdoor Seating
- 1-12 General Construction Requirements
- 1-13 Downtown Trees and Paver Layout (1 of 2)
- 1-13 Downtown Trees and Paver Layout (2 of 2)
- 1-14 Downtown Trees Detail

STREETS STANDARD PLANS

- 2-1 Arterial Roadway Section
- 2-2 Local Roadway Section
- 2-3 Dead-End Hammerhead for Private Lane
- 2-4 Street Surface Treatment
- 2-5 Typical Patch for Flexible Pavement (1 of 2)
- 2-5 Typical Patch for Rigid Pavement (2 of 2)
- 2-6 Standard Curb and Gutter (1 of 2)
- 2-6 Standard Curb (2 of 2)
- 2-7 Sidewalk Cross-Section
- 2-8 ADA Standards and Wheelchair Ramp
- 2-9 Not Used
- 2-10 Not Used
- 2-11 Cement Concrete Driveway and Alley Approach Alternate #1
- 2-12 Cement Concrete Driveway and Alley Approach Alternate #2
- 2-13 Not Used
- 2-14 Driveway Locations
- 2-15 Driveway Approach Cross-Section Residential/Commercial
- 2-16 Not Used
- 2-17 Utility Cut in Sidewalk & Driveway

SANITARY SEWER STANDARD PLANS

- 3-1 Standard Manhole
- 3-2 Manhole Notes
- 3-3 Manhole - High Groundwater
- 3-4 Shallow Manhole
- 3-5 Exterior Drop Manhole (1 of 2)
- 3-5 Interior Drop Manhole (2 of 2)
- 3-6 Existing Sewer Rehabilitation
- 3-7 Manhole Construction on Existing Sewer

- 3-8 Manhole Base Construction for Steep Slopes
- 3-9 Sanitary Sewer Lateral and Cleanout
- 3-10 Service Connection Option for Deep Sewer
- 3-11 Sewer Connection to Existing Manhole
- 3-12 Sanitary Sewer Main Cleanout

WATER STANDARD PLANS

- 4-1 General Water Mains and Service Notes
- 4-2 Water Main Acceptance Process
- 4-3a 3/4"-1" Water Meter & Vault (1 of 2)
- 4-3a 3/4"-1" Water Meter & Vault (2 of 2)
- 4-3b 1 1/2"-2" Water Meter & Vault (1 of 2)
- 4-3b 1 1/2"-2" Water Meter & Vault (2 of 2)
- 4-3c 3"-8" Water Meter & Vault
- 4-4 Multiple Water Meter Installation
- 4-5 Fire Hydrant
- 4-6 Hydrant Guard Posts
- 4-7 Temporary and Permanent Water Blow-Off Assembly
- 4-8 Connection to Existing Water Main
- 4-9 Thrust Blocks
- 4-10 Typical Thrust Block Locations
- 4-11 Water-Sewer Crossing
- 4-12 Water/Creek Crossing
- 4-13 Air Release Valve
- 4-14 Standard Valve Box
- 4-15 HDPE Water Service (1" and 2" only)

CROSS CONNECTION CONTROL STANDARD PLANS

- 5-1 Approved Air Gap
- 5-2 Reduced Pressure Backflow Assembly (RPBA/RPDA)
- 5-3 Double Check Valve Assembly (DCVA/DCDA)
- 5-4 Pressure Vacuum Breaker Assembly (PVBA/SVBA)
- 5-5 Atmospheric Vacuum Breaker (AVB)
- 5-6 Premises Isolation Guidelines
- 5-7 Irrigation Winterization Arrangement

STORM SEWER STANDARD PLANS

- 6-1 Curb Inlet Grate and Details
- 6-2 Curb Inlet Detail
- 6-3 Curb Inlet Detail - Round Alternative
- 6-4 Standard Drywell
- 6-5 Catch Basin-Drywell-Curb Inlet Detail

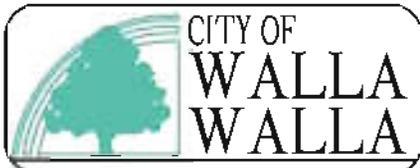
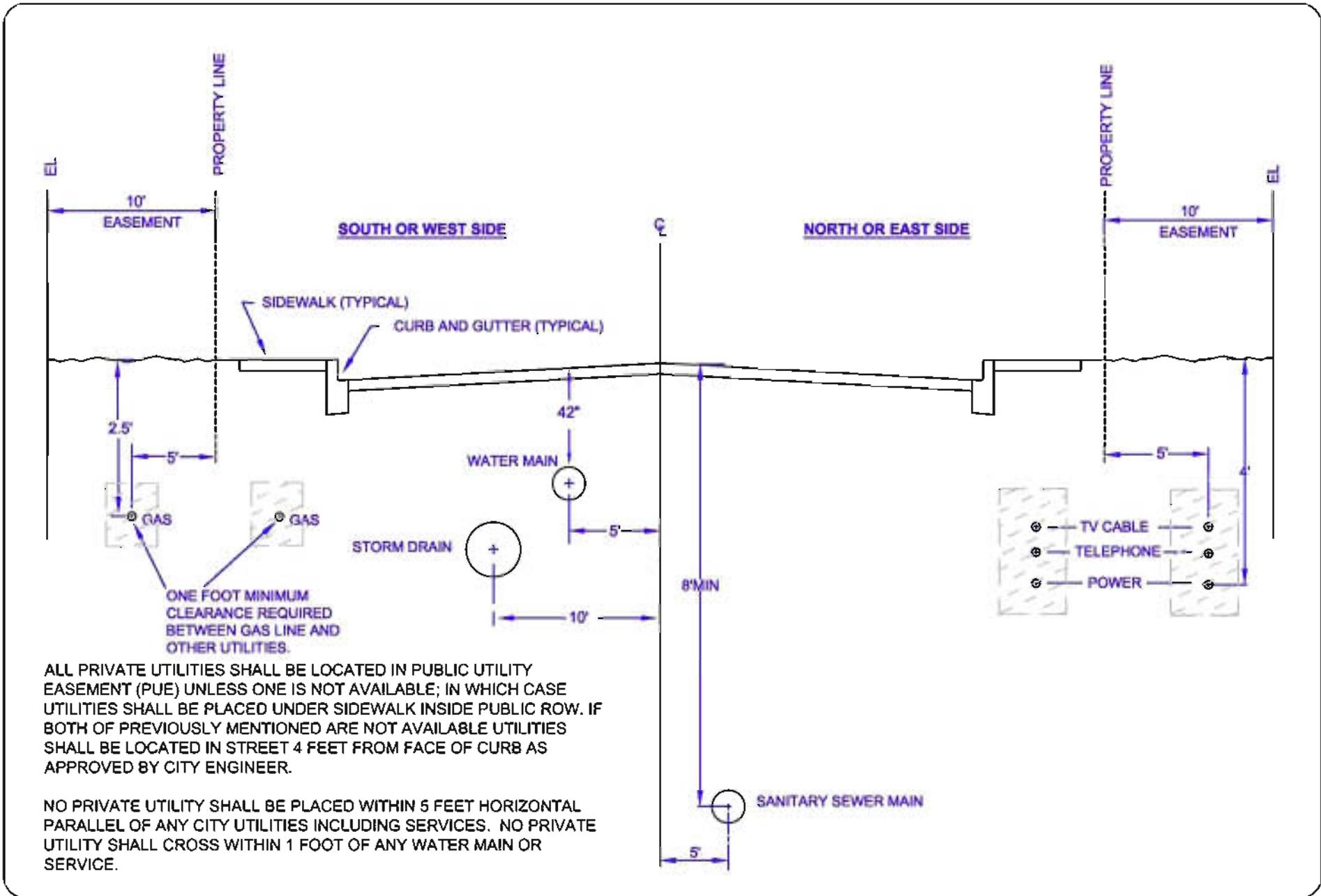
STREET LIGHTING STANDARD PLANS

- 7-1 Street Light Pole Detail
- 7-2 Street Light Foundation Plan Detail
- 7-3 Street Lighting Luminaire Detail
- 7-4 Alternative/Downtown Street light Standard

THE FOLLOWING IS A LIST OF UPDATES TO THE CITY OF WALLA WALLA STANDARD PLANS. THESE UPDATES ARE PROPOSED TO BE EFFECTIVE JANUARY 1, 2014. INCLUDED IS A BRIEF EXPLANATION OF THE EDITS TO THE CORRESPONDING STANDARD PLAN. EACH STANDARD PLAN SHOULD BE VIEWED FOR COMPLETE CHANGES AND REQUIREMENTS.

STANDARD PLAN UPDATES 2014

STANDARD PLAN	UPDATE
1-2	Requirements for monument placement
1-3	Clarification to references
1-5	Arterial Street sign height requirement increased to 9"
1-12.....	Work zone delineation requirements
3-9	Inclusion of the sacrificial wye for testing purposes
4-1.....	Requirements for water main tapping
4-3a Sheet 1 of 2 ...	Amend model numbers for meter box and setter
4-3a Sheet 2 of 2 ...	Include model numbers for ¾" and 1" IPERL meter
4-3b Sheet 1 of 2 ...	Amend model numbers for meter setter and direct tap stops
4-3b Sheet 2 of 2 ...	Amend model numbers for meter setter and direct tap stops
4-4.....	Amend tapping saddle type and tapping requirements
4-7.....	Included required casting type
4-8.....	Requirements for water main tapping
7-3.....	Luminaire type



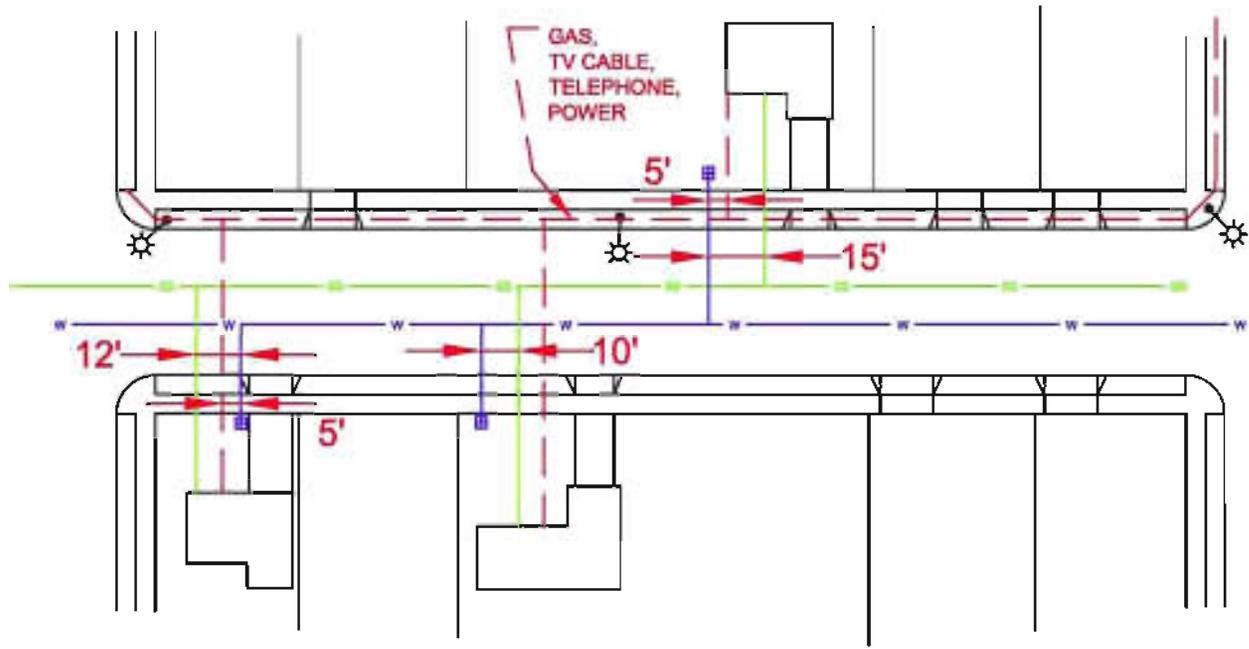
STANDARD MAIN LINE UTILITY LOCATIONS

DATE:
6/05/2006

APPROVED BY:

Shondell Beneris

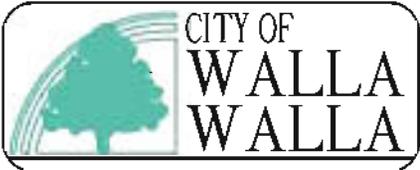
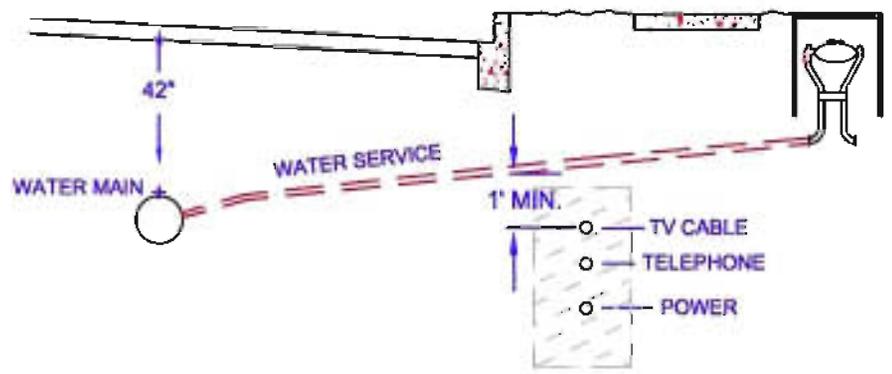
STANDARD
PLAN
1-1
SHEET 1 OF 2



WATER AND SEWER SERVICES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL CLEARANCE AND A MINIMUM 2 FOOT VERTICAL CLEARANCE FROM EACH OTHER.

WATER SERVICES SHALL HAVE A MINIMUM OF 5 FEET HORIZONTAL CLEARANCE AND 1 FOOT VERTICAL CLEARANCE FROM SERVICE UTILITIES SUCH AS GAS, TV, TELEPHONE, AND POWER.

WATER SERVICE TAPS SHALL MAINTAIN A MINIMUM SEPARATION OF 24" AT WATER MAIN.



STANDARD SERVICE UTILITY LOCATIONS

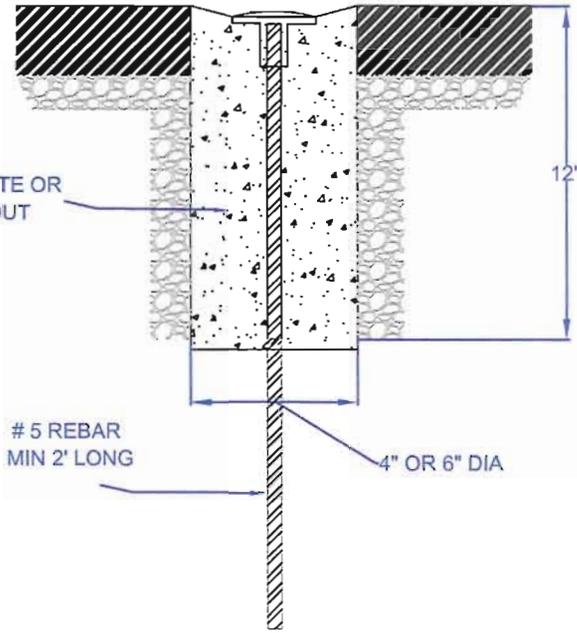
DATE: 8/05/2006

APPROVED BY:
Shondell Barnes-Price

STANDARD
PLAN
1-1
SHEET 2 OF 2

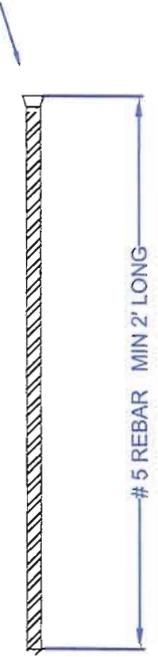
SURV-KAP INC. SKB-108-2 OR BERNTSEN FTD 5200 BR
FLAT OR DOMED BRONZE MONUMENT
RECESSED 1/8"

CL. 4000 CONCRETE OR
NON-SHRINK GROUT



MONUMENT PLACEMENT IN PAVED SURFACE

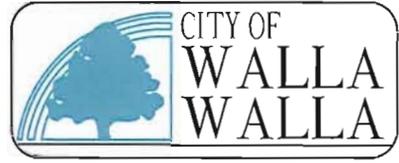
PLASTIC OR ALUMINUM CAP



MONUMENT OUTSIDE OF PAVEMENT

PURSUANT TO THE REQUIREMENTS ESTABLISHED BY RCW 58.09.120, ANY MONUMENT SET BY A LAND SURVEYOR TO MARK OR REFERENCE A POINT ON A PROPERTY OR LAND LINE SHALL BE PERMANENTLY MARKED OR TAGGED WITH THE CERTIFICATE NUMBER OF THE LAND SURVEYOR SETTING IT.

RECORDING REQUIREMENTS FOR ALL SURVEYS SHALL COMPLY WITH RCW 58.09.



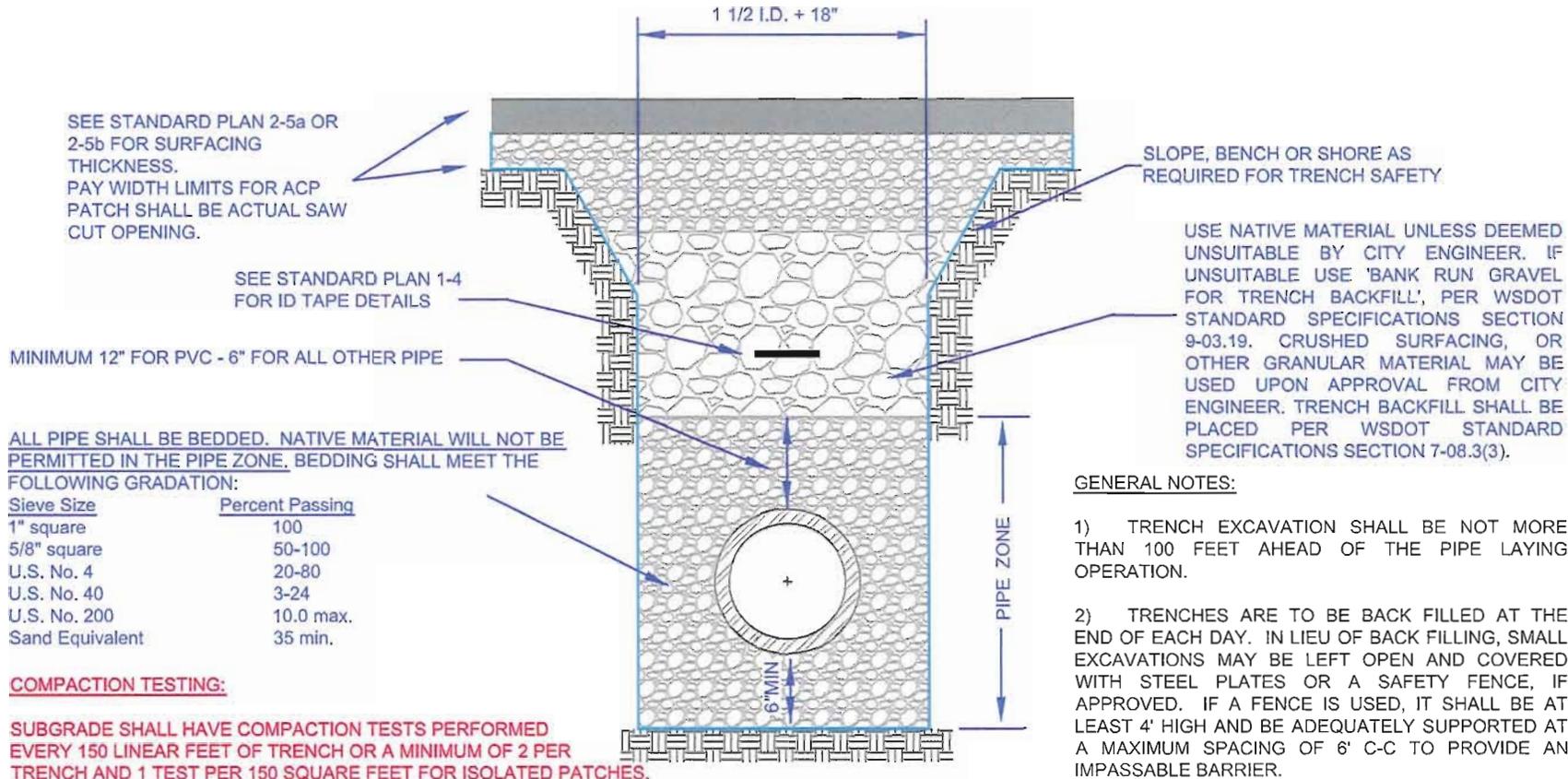
MONUMENT DETAIL

DATE: 02/06/2014

APPROVED BY: *[Signature]*

STANDARD PLAN
1-2

PAY WIDTH LIMITS FOR PIPE BEDDING, EXCAVATION, FOUNDATION BACKFILL AND BANK RUN BACKFILL, UNLESS OTHERWISE SPECIFIED.



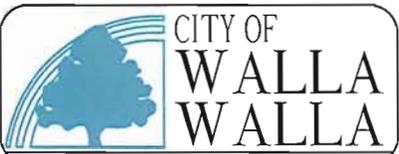
COMPACTION TESTING:

SUBGRADE SHALL HAVE COMPACTION TESTS PERFORMED EVERY 150 LINEAR FEET OF TRENCH OR A MINIMUM OF 2 PER TRENCH AND 1 TEST PER 150 SQUARE FEET FOR ISOLATED PATCHES.

TESTING SHALL BE PERFORMED BY A CERTIFIED INDEPENDENT TESTING LABORATORY OR A CERTIFIED TESTOR AS APPROVED BY THE CITY ENGINEER. THE COST OF TESTING IS THE RESPONSIBILITY OF THE PERMITTEE. TESTS SHALL BE COMPLETED AND REPORTS SUBMITTED TO THE CITY ENGINEERING OFFICE WITHIN 48 HOURS OF TESTS.

SUBGRADE SHALL BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY, AS VERIFIED BY COMPACTION TESTING, BEFORE PROCEEDING TO PLACEMENT OF BASE ROCK AND PAVING. CITY INSPECTOR MAY REQUIRE EXCAVATION AND REMOVAL OF SOIL WHERE COMPACTION IS IN QUESTION.

NATIVE BACKFILL WILL REQUIRE LABORATORY TESTING TO DETERMINE MAX. MODIFIED PROCTOR DENSITY. IMPORTED BACKFILL WILL REQUIRE SUBMITTAL OF PROCTOR TEST RESULTS FROM SUPPLIER.



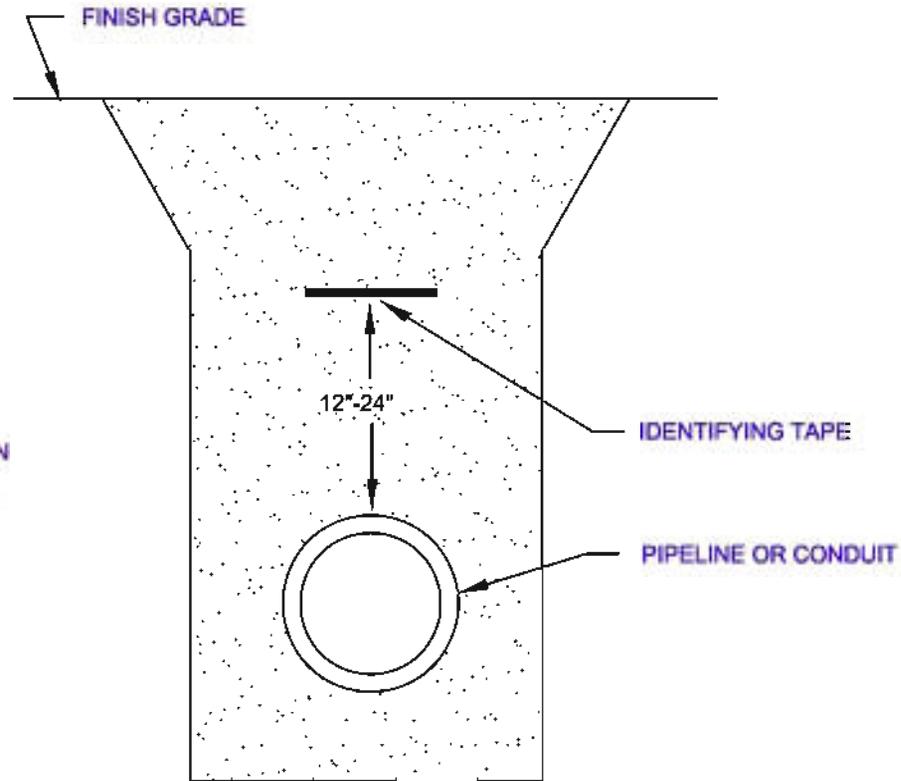
TRENCH DETAILS

DATE: 02/06/2014

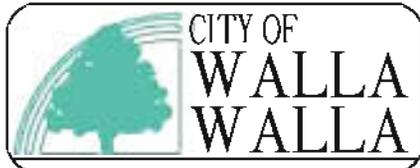
APPROVED BY: *[Signature]*

STANDARD
PLAN
1-3

NOTE:
 FOR SEWER PIPE LAID AT 6 FEET IN
 DEPTH AND DEEPER, PLACE
 IDENTIFYING TAPE 4 FEET BELOW
 FINISH GRADE.



<u>TYPE</u>	<u>COLOR</u>	<u>SIZE</u>	<u>DETECTABLE</u>	<u>IMPRINT</u>
STORM SEWER	GREEN	3"	YES	CAUTION BURIED SEWER LINE BELOW
SANITARY SEWER	GREEN	3"	YES	CAUTION BURIED SEWER LINE BELOW
WATER	BLUE	3"	YES	CAUTION BURIED WATER LINE BELOW
TRAFFIC CONDUIT ELECTRIC CONDUIT & DIRECT BURY WIRE	RED	3"	NO	CAUTION ELECTRIC LINE BELOW



IDENTIFYING TAPE DETAIL

DATE:
8/05/2008

APPROVED BY:

Whanda Barnes Price

STANDARD
PLAN

1-4

ARTERIAL STREET
(OR SPEED LIMIT ABOVE 25 MPH)

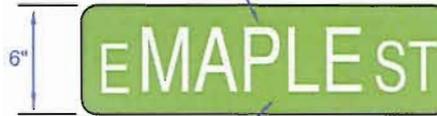
GREEN BACKGROUND - HIGH INTENSITY



HIGH INTENSITY WHITE RETRO-REFLECTIVE LETTERS AND EXTRUDED BLADE. 6" HIGH MINIMUM LETTERS FOR STREET NAME AND 4" HIGH MIN LETTERS FOR SUPPLEMENTARY LETTERING.

LOCAL STREET
(OR SPEED LIMIT 25 MPH OR LESS) EXTRUDED BLADE LOCAL STREET (GREEN BACKGROUND) - WHITE LETTER.

BACKGROUND - HIGH INTENSITY



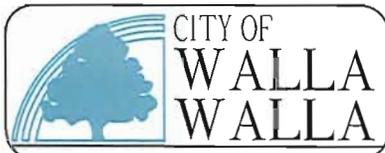
RETRO-REFLECTIVE LETTERS AND NO BORDER. 4" HIGH MIN LETTERS FOR STREET NAME AND 2" HIGH MIN LETTERS FOR SUPPLEMENTARY LETTERING.

PRIVATE STREET
(WHITE BACKGROUND) - GREEN LETTER



NOTES:

- 1) ALL SIGNS SHALL BE IN CONFORMANCE WITH, AND INSTALLED ACCORDING TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), CURRENT EDITION, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER OR HIS REPRESENTATIVE.
- 2) STREET NAME SIGNS SHALL BE REFLECTIVE COATED ALUMINUM AND SHALL BE MOUNTED ON BREAKAWAY GALVANIZED STEEL TELESPAR R POSTS MANUFACTURED BY UNI-STRUT OR APPROVED EQUAL. THE POST SHALL BE 2" SQUARE AND THE BASE SHALL BE 2-1/4" SQUARE. SEE STANDARD PLAN 1-7 FOR POST.
- 3) STREET NAME SIGNS SHALL BE EXTRUDED BLADE AND MOUNTED ABOVE STOP SIGNS, IF THEY ARE PRESENT OR REQUIRED. IF STOP SIGNS ARE NOT REQUIRED, THE STREET NAME SIGNS SHALL BE MOUNTED ON NEW POSTS ON THE SOUTHEAST AND NORTHWEST CORNERS FOR EQUALLY CLASSIFIED STREETS, OR AT THE FAR RIGHT HAND SIDE OF THE HIGHER CLASSIFIED STREET. EACH LOCATION SHALL HAVE TWO SIGNS AT 90° WITH THE FACE OF EACH SIGN PARALLEL TO THAT STREET.
- 4) FOR INTERSECTIONS THAT HAVE TRAFFIC SIGNALS, SEE STANDARD PLAN 1-6, 'SIGNAL MAST-ARM STREET SIGN DETAIL'.



STREET SIGN DETAIL

Michael Chen

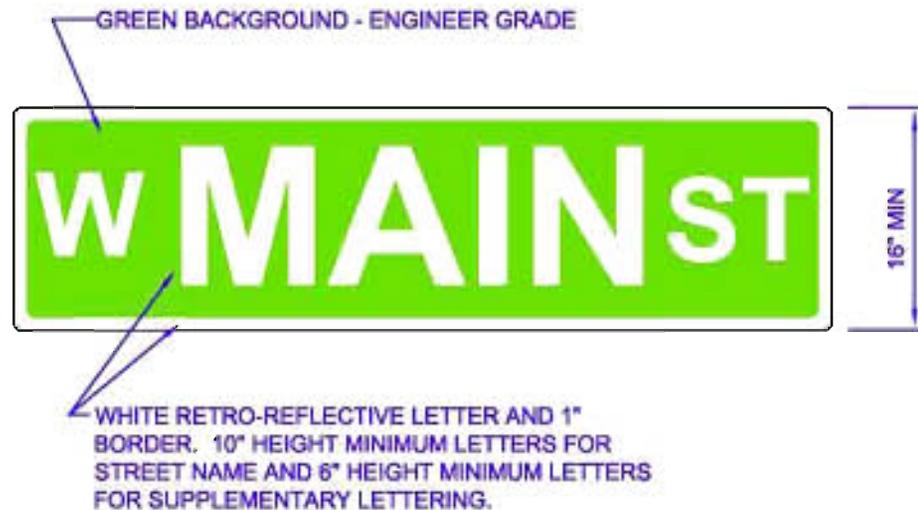
DATE:

02/06/2014

APPROVED BY:

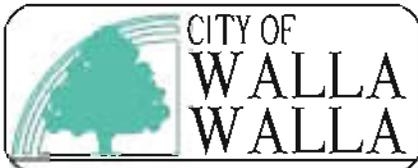
STANDARD
PLAN

1-5



NOTES:

- 1) THE STREET NAME SIGN SHALL BE MOUNTED ON THE MAST ARM IF IT IS CAPABLE OF CARRYING THE EXTRA WIND LOAD AS DETERMINED BY THE ENGINEER. IF THE MAST CANNOT CARRY THE EXTRA LOAD, THE SIGN SHALL BE MOUNTED ON THE POLE ABOVE THE MAST ARM.
- 2) SPAN WIRE MOUNTS ARE TO BE IN ACCORDANCE WITH WSDOT STANDARD PLAN J-6h.
- 3) ALL SIGN STOCK TO BE 1/8" MINIMUM THICKNESS ALUMINUM.



SIGNAL MAST-ARM STREET SIGN DETAIL

DATE:
8/05/2006

APPROVED BY:
Whandell Benes Prie

STANDARD
PLAN
1-6

NOTES:

1) THE SIGN SHALL BE LOCATED A MINIMUM OF 2 FEET FROM THE FACE OF CURB OR EDGE OF ROADWAY IF NO CURB EXISTS. WHERE NARROW SIDEWALKS EXIST, THE SIGN SHALL BE PLACED AT THE BACK EDGE OF THE SIDEWALK. THE SIGN LOCATION SHALL BE VERIFIED BY THE CITY ENGINEER PRIOR TO PLACEMENT

2) THE BASE MUST BE OF SUFFICIENT LENGTH TO BE 18" BELOW FINISH SIDEWALK GRADE.

3) TWO 3/8" DRIVE RIVETS SHALL BE INSTALLED TO CONNECT THE POST AND BASE, AND TWO TO CONNECT THE SIGN TO THE POST.

4) IF THE POST IS TO BE PLACED IN THE SIDEWALK, THE BASE SHALL BE LOCATED AT LEAST 12" FROM THE NEAREST EDGE.

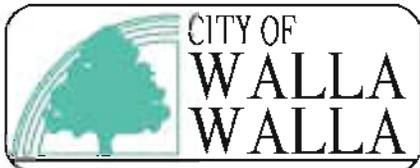
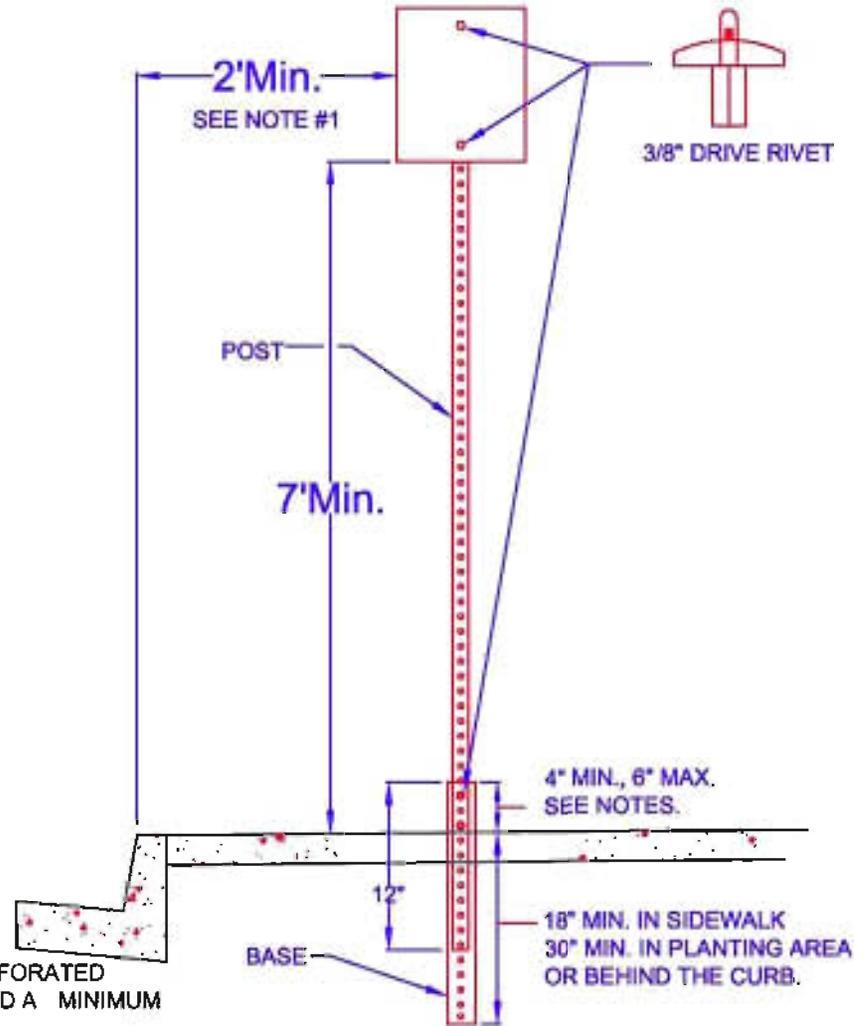
5) THE POST SHALL BE INSERTED A MINIMUM OF 12" INTO THE BASE.

6) WHEN THE SIGN IS TO BE LOCATED IN THE PLANTING STRIP, THE BASE SHALL BE 3 FEET LONG AND EXTEND A MINIMUM OF 30" BELOW THE FINISH GRADE.

7) IF THE BASE IS LOCATED IN THE SIDEWALK, THE HOLES THAT EXTEND INTO THE CONCRETE AREA SHALL BE WRAPPED WITH DUCT TAPE OR OTHER APPROVED MATERIAL TO PREVENT CONCRETE FROM FILLING THE HOLES AND LOCKING THE POST INTO THE BASE.

8) THE SIGN POST SHALL BE A MINIMUM OF 14 GAUGE, GALVANIZED PERFORATED STEEL AND SHALL BE 2" SQUARE. THE BASE SHALL BE A 2 1/4" SQUARE AND A MINIMUM OF 12 GAUGE, GALVANIZED PERFORATED STEEL.

9) IN HIGH WIND AREAS AS DETERMINED BY THE CITY ENGINEER, SIGN BRACING IS REQUIRED. BRACING SHALL MEET THE REQUIREMENTS OF WSDOT STANDARD PLAN G-50.10-00.



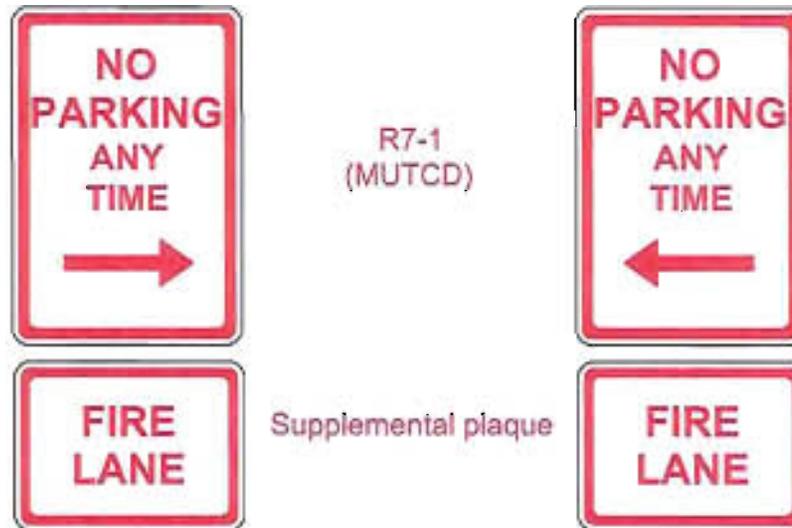
STREET SIGN POST DETAIL

DATE:
10/13/2008

APPROVED BY:

Shandell Benea-Pris

STANDARD
PLAN
1-7



NOTES

FIRE APPARATUS ACCESS ROADS SHALL BE MARKED WITH PERMANENT **NO PARKING - FIRE LANE** SIGNS COMPLYING WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). SIGNS SHALL HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND. SIGNS SHALL BE POSTED ON ONE OR BOTH SIDES OF THE FIRE APPARATUS ROAD AS REQUIRED BY THE FOLLOWING CLASSIFICATIONS:

--ROADS 20 TO 26 FEET IN WIDTH

FIRE APPARATUS ACCESS ROADS 20 TO 30 FEET WIDE SHALL BE POSTED ON BOTH SIDES AS A FIRE LANE.

--ROADS MORE THAN 30 FEET IN WIDTH

FIRE APPARATUS ACCESS ROADS MORE THAN 30 FEET WIDE TO 36 FEET WIDE SHALL BE POSTED ON ONE SIDE OF THE ROAD AS A FIRE LANE.

--PLACEMENT OF SIGNS AS DETERMINED BY THE CITY ENGINEER.



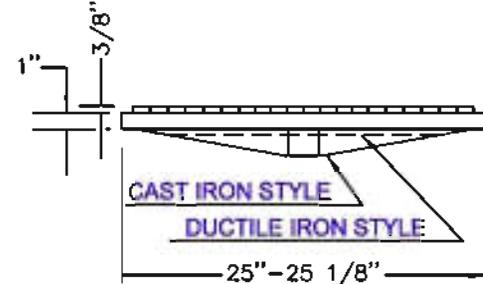
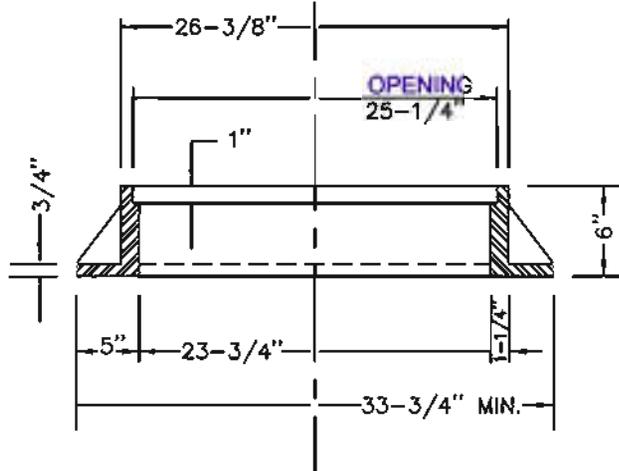
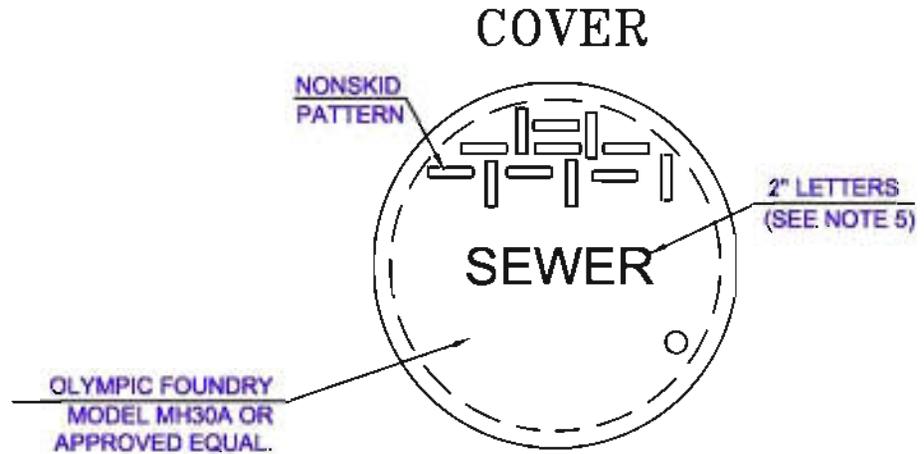
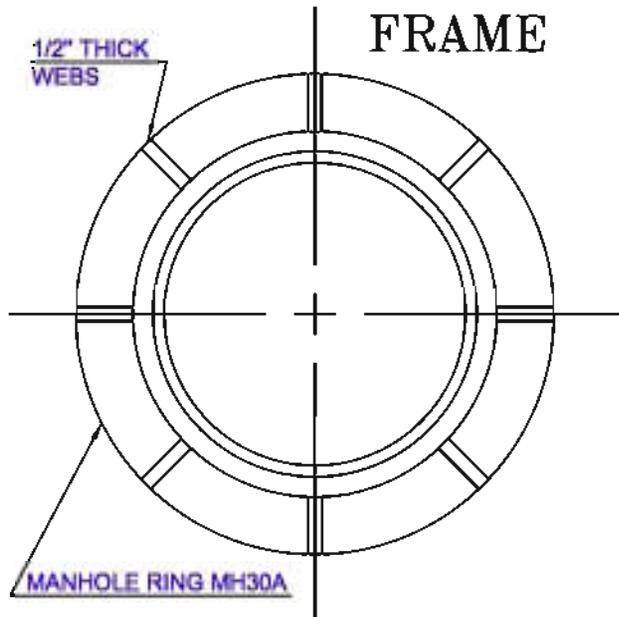
FIRE LANE SIGNS

DATE:
7/6/2012

APPROVED BY:

STANDARD
PLAN

1-8



- NOTE:**
- 1) FRAME AND COVER SHALL BE CAST OR DUCTILE IRON
 - 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.

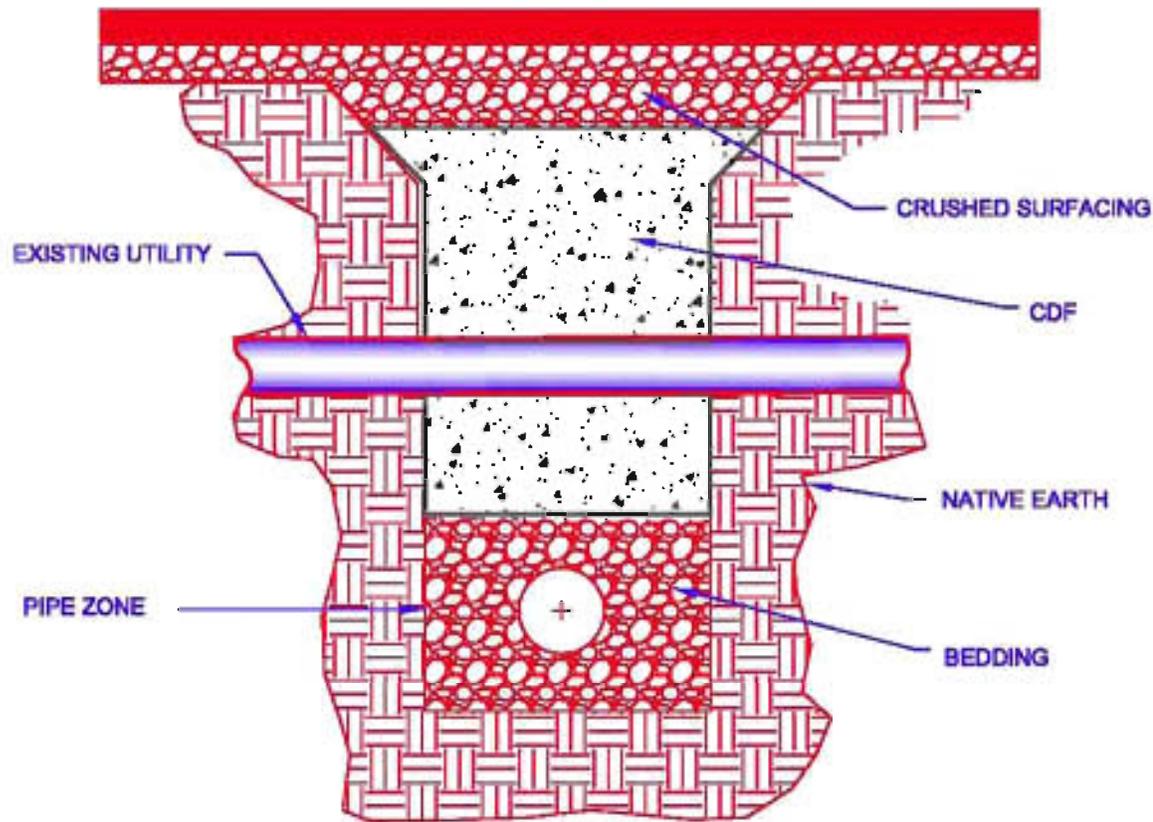


MANHOLE FRAME & COVER

DATE: 06/05/2006

APPROVED BY: *Shantell Benes Price*

STANDARD
PLAN
1-9



NOTES:

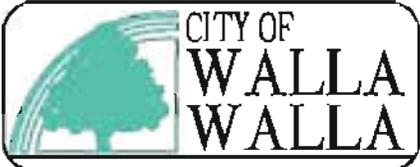
TRENCH BACKFILL ABOVE THE BEDDING ZONE AND BELOW THE SURFACING MAY BE BACK FILLED WITH CONTROLLED DENSITY FILL (SLURRY GROUT) AT THE OPTION OF THE CONTRACTOR. IF EXISTING UTILITIES CROSSING THE TRENCH CREATE A VOID AREA THAT IS NOT READILY COMPACTIBLE, THE CONTRACTOR SHALL USE CONTROLLED DENSITY FILL TO BACKFILL TO SIX INCHES ABOVE THE UTILITY. THE CONTRACTOR MAY ELECT TO BACKFILL THE REMAINING AREA WITH CDF OR USE SELECT BACKFILL.

ALL TRENCH WORK SHALL BE IN CONFORMANCE WITH STANDARD PLAN FOR TRENCH DETAILS.

ALL CDF TRENCH FILL MATERIAL SHALL BE THOROUGHLY SET TO THE SATISFACTION OF THE ENGINEER BEFORE ANY ADDITIONAL FILL MATERIALS, CRUSHED SURFACING OR PAVEMENT IS PLACED.

MIX SPECIFICATIONS:

<u>CDF</u>	
PCC	94 LBS.
SAND	3,100 LBS
AIR	3 OZ
WATER	420 LBS (51 GAL.)

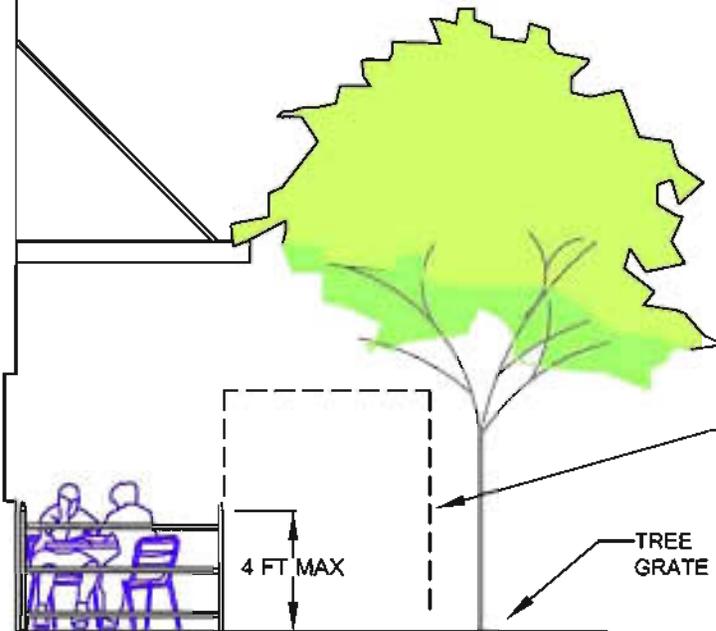
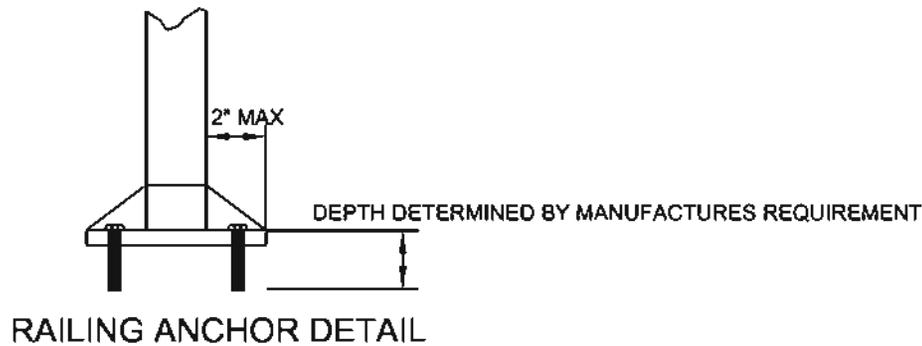


CONTROLLED DENSITY FILL

DATE: 06/05/2006

APPROVED BY:
Shanda Renee Price

STANDARD
PLAN
1-10



NOTES:

- 1) RAILING MATERIAL SHALL BE WROUGHT IRON WITH A MAXIMUM HEIGHT OF 4 FEET FROM THE SIDEWALK . PAINTED BLACK OR DOWNTOWN GREEN.
- 2) THE BASE OF THE RAILING POSTS SHALL BE ANCHORED TO THE SIDEWALK WITH NUMBER OF ANCHORS PER POST DETERMINED BY MANUFACTURER.
- 3) A MINIMUM OF 6 FEET IN WIDTH SHALL BE PROVIDED FOR AN OBSTRUCTION FREE PATHWAY BETWEEN THE RAILING AND TREE GRATE, TRASH RECEPTACLES, BICYCLE RACKS, BENCHES, ECT.



DOWNTOWN OUTDOOR SEATING

DATE:
11/02/2006

APPROVED BY:

Shantell Benes Price

STANDARD
PLAN

1-11

1) ALL WORK IN THE IN THE PUBLIC RIGHT OF WAY SHALL BE COMPLETED IN ACCORDANCE WITH THE CURRENT VERSION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION PUBLISHED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. GENERALLY, MOST WORK IN THE CITY RIGHT OF WAY IMPACTING THE LOCATION OR OPERATION OF CITY UTILITY MAINS, ROADWAY, CURB AND GUTTER, DRAINAGE, LIGHTING, OR PEDESTRIAN FACILITIES WILL REQUIRE A DESIGN STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

2) ALL WORK IN THE RIGHT OF WAY SHALL BE APPROVED BY THE CITY ENGINEER EITHER BY ISSUANCE OF A RIGHT OF WAY PERMIT, APPROVED CIVIL PLANS, OR AS A PART OF A CITY SPONSORED CONTRACT. NO CONTRACTOR OR UTILITY SHALL WORK IN THE RIGHT OF WAY WITHOUT AUTHORIZED APPROVAL.

3) ALL TEMPORARY TRAFFIC CONTROL IN THE RIGHT OF WAY SHALL COMPLY WITH THE CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND SHALL BE APPROVED BY THE CITY ENGINEER EITHER BY A RIGHT OF WAY PERMIT OR UNDER A CITY SPONSORED CONTRACT.

4) CONTRACTORS WORKING IN THE RIGHT OF WAY SHALL SCHEDULE THEIR WORK TO BE DONE IN COMPLIANCE WITH CITY CODE FOR WORK HOURS (NO WORK ALLOWED BEFORE 7 AM OR AFTER 10 PM). ANY WORK AFTER REGULAR WORKING HOURS (MONDAY-FRIDAY 7:30 AM TO 5PM) SHALL ONLY BE ALLOWED WITH PRE-APPROVAL BY THE CITY ENGINEER. FOR ANY WORK AFTER REGULAR HOURS, INCLUDING EMERGENCY ISSUES, THE CONTRACTOR SHALL REIMBURSE THE CITY FOR OVERTIME INSPECTION HOURS. WORK SCHEDULED TO BEGIN ON FRIDAY AFTERNOON IS NOT ALLOWED.

5) ALL CONTRACTORS WORKING IN THE PUBLIC RIGHT OF WAY UNDER A RIGHT OF WAY PERMIT, SHALL HAVE LIABILITY INSURANCE IN FORCE AND A COPY OF FORM CG2012 ON FILE WITH THE DEVELOPMENT SERVICES DEPARTMENT. INSURANCE REQUIREMENTS FOR CITY PROJECTS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS FOR THAT PROJECT.

6) NO TRENCHES OR EXCAVATION BACKFILL WILL BE ALLOWED WITHOUT INSPECTION. CONTRACTORS ARE RESPONSIBLE TO SCHEDULE FOR INSPECTIONS THROUGH THE INSPECTION CALL NUMBER AT 509-527-4387 24 HOURS IN ADVANCE OR BY PRE-AGREEMENT WITH THE INSPECTOR. LAST MINUTE CALLS FOR INSPECTION WILL NOT BE RESPONDED TO. ANY WORK COMPLETED WITHOUT INSPECTION IS SUBJECT TO REJECTION AND REMOVAL AT THE DISCRETION OF THE CITY ENGINEER.

7) NO TRENCHES SHALL BE LEFT UNSECURED AFTER NORMAL WORK HOURS. ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH WORK DAY. ALTERNATIVES TO BACKFILLING SUCH AS COVERING THE TRENCH WITH STEEL PLATES OR BARRICADING THE TAKE-OFF TRENCH WITH EQUIPMENT MAY BE USED ONLY UPON THE APPROVAL OF THE CITY ENGINEER.

8) ALL TRENCHES SHALL MEET THE MINIMUM REQUIREMENTS FOR SHORING AND TRENCH SAFETY IN ACCORDANCE WITH WISHA AND OSHA STANDARDS. NO WORKERS, INCLUDING OWNERS SHALL WORK IN UNSHORED TRENCHES. THE CITY ENGINEER OR HIS DESIGNATED REPRESENTATIVE WILL SHUT DOWN ANY NON-CONFORMING TRENCH EXCAVATION AND NOTIFY THE APPROPRIATE AUTHORITY OF THE VIOLATION.

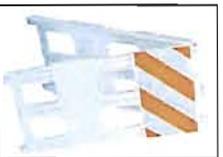
9) PUBLIC SAFETY IS PARAMOUNT IN THE PUBLIC RIGHT OF WAY. WORK ZONES SHALL BE DELINEATED WITH THE APPROPRIATE SIGNAGE AND DEVICES AT ALL TIMES. FOR WORK ZONES THAT WILL REMAIN IN PLACE AFTER DARK, DELINEATION SHALL INCLUDE BARRELS AND/OR BARRICADES (AS APPROPRIATE), EQUIPPED WITH OPERATING FLASHERS. ANY WORK SITE FOUND TO BE IMPROPERLY SIGNED AND LIGHTED WILL BE CORRECTED BY THE CITY AT THE CONTRACTORS EXPENSE. WALK WAYS SHALL BE EITHER FILLED WITH COMPACTED GRAVEL OR BRIDGED WITH A SOLID UNYIELDING MATERIAL WHICH IS ADA ACCESSIBLE.



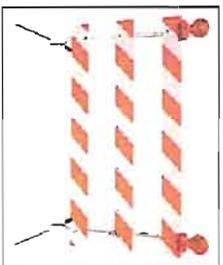
BARREL
(WITH FLASHER)



VERTICADE
(WITH FLASHER)



TYPE II BARRICADE
(WITH FLASHER)



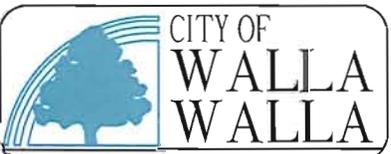
TYPE III BARRICADE
(WITH FLASHER)

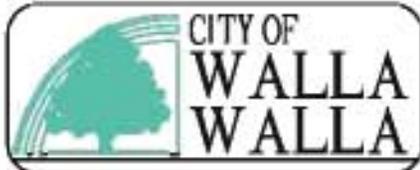
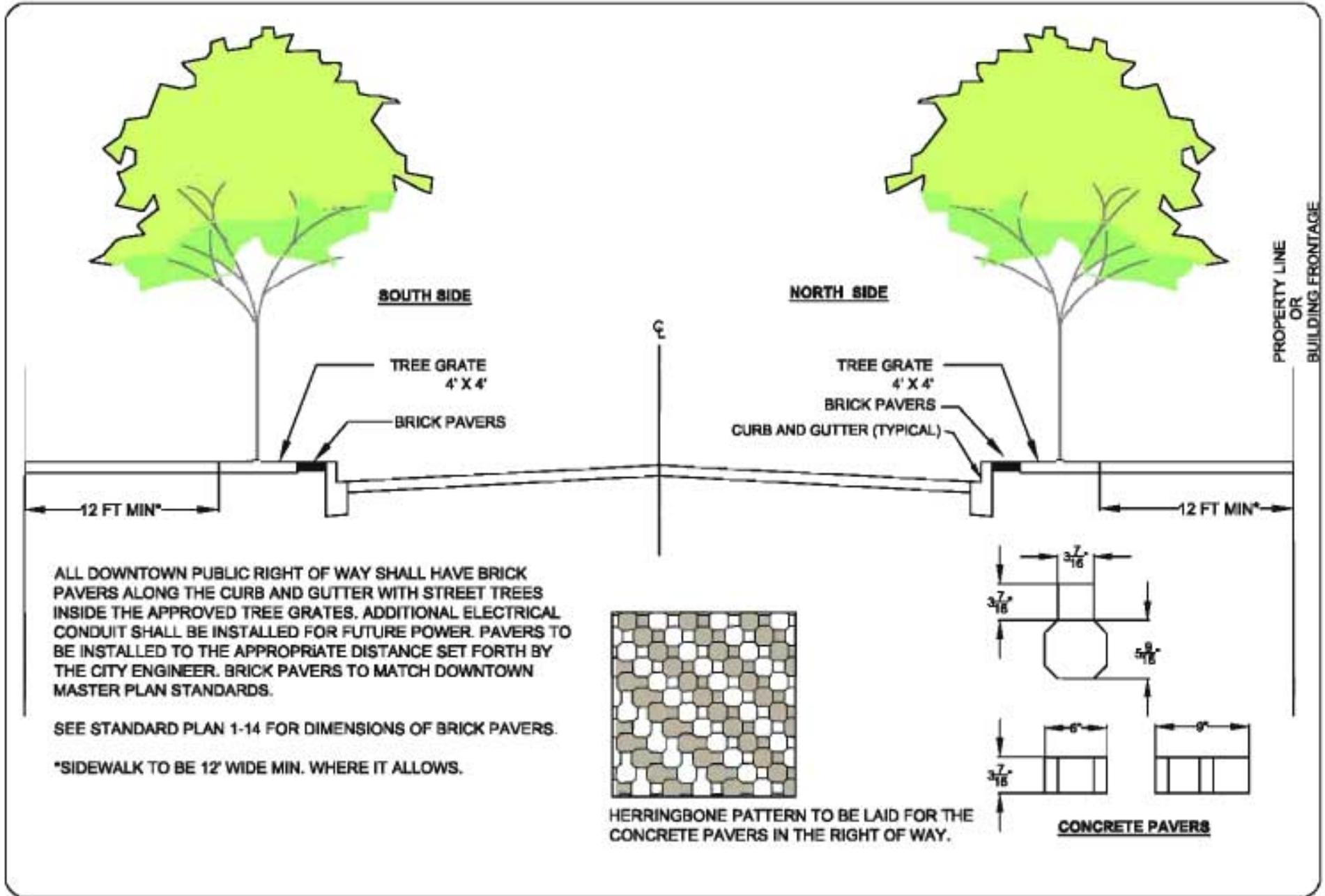
GENERAL CONSTRUCTION REQUIREMENTS

DATE:

02/06/2014

APPROVED BY:



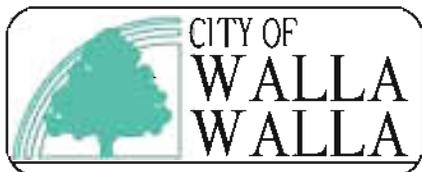
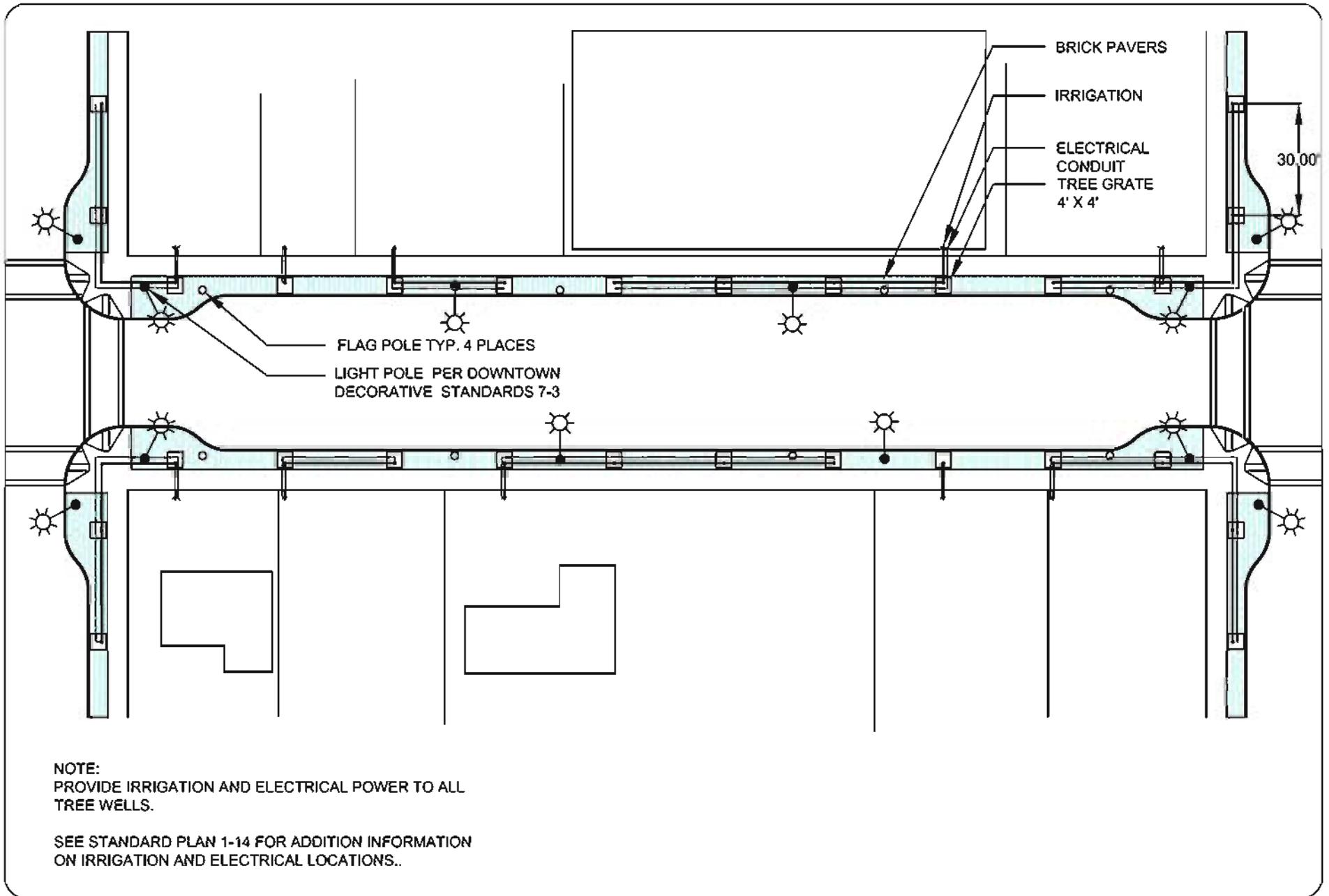


DOWNTOWN TREES & PAVER LAYOUT

DATE: 9/22/2009

APPROVED BY: *Shantell Benes Price*

STANDARD PLAN
1-13
SHEET 1 OF 2



DOWNTOWN TREES & PAVER LAYOUT

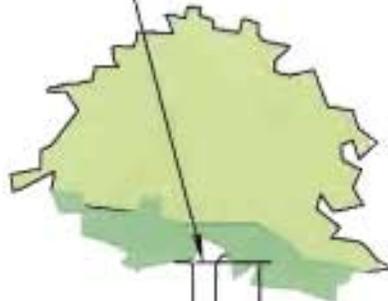
DATE:
9/22/2009

APPROVED BY:

Shandell Benes-Price

STANDARD
PLAN
1-13
SHEET 2 OF 2

WRAP TREE TRUNK TO FIRST BRANCH WITH "KRAFT" TREE WRAP AS SPECIFIED

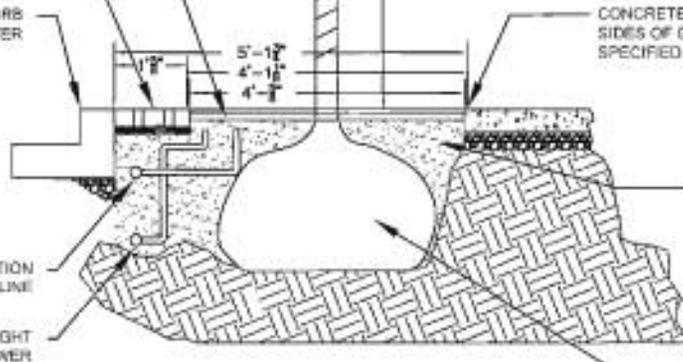


3" THICK BARK MULCH BELOW GRATE. KEEP MULCH 1 TO 2 INCHES BACK FROM TRUNK.

BRICK PAVERS ON TOP OF 2" OF SAND ON TOP OF GEOTEXTILE FABRIC

CONC. CURB AND GUTTER

IRRIGATION MAINLINE
STREET LIGHT BURIED POWER

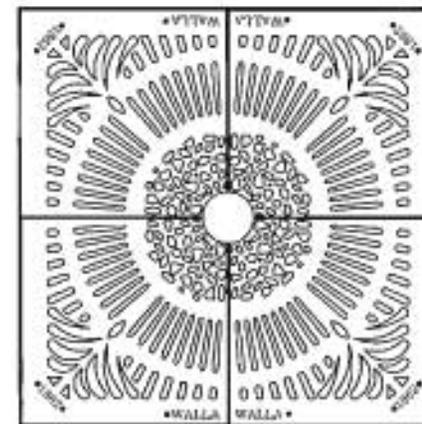
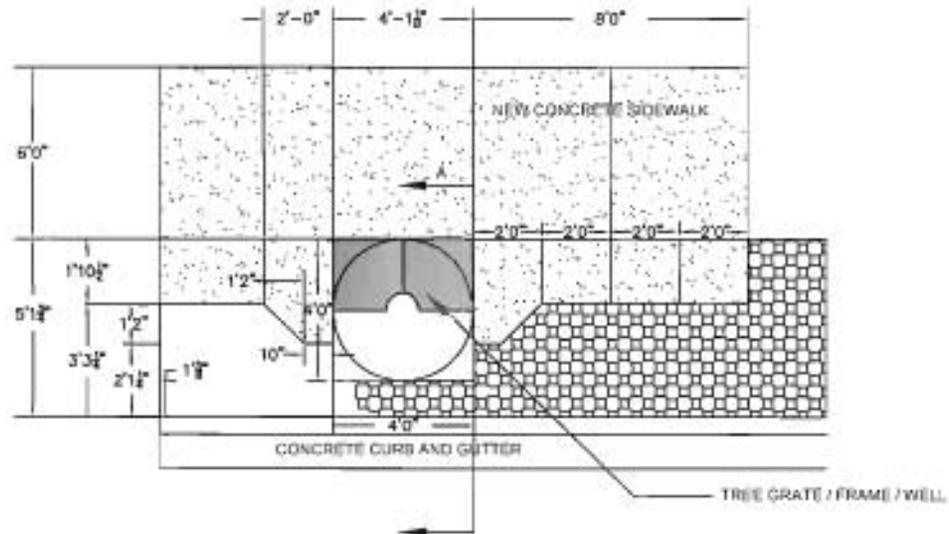


CONCRETE SIDEWALK @ BACK & SIDES OF GRATE. 4" THICK ON SPECIFIED BASE.

GENTLY PACK TOPSOIL BACKFILL USING WATER TO SETTLE SOIL AROUND ROOT BALL.

SET BALL ON FIRMLY PACKED SOIL TO PREVENT SETTLING. REMOVE CONTAINERS, WRAPPINGS, WIRES, AND TIES.

TREE PLANTING / TREE WELL DETAIL A-A'



TREE GRATE DETAIL

TWO TREE GRATE MANUFACTURERS IN THE AREA HAVE THE CASTING FOR THIS GRATE
- HERN IRON WORKS, COUER D'ALENE, ID
- OLYMPIC FOUNDRY, SPOKANE, WA

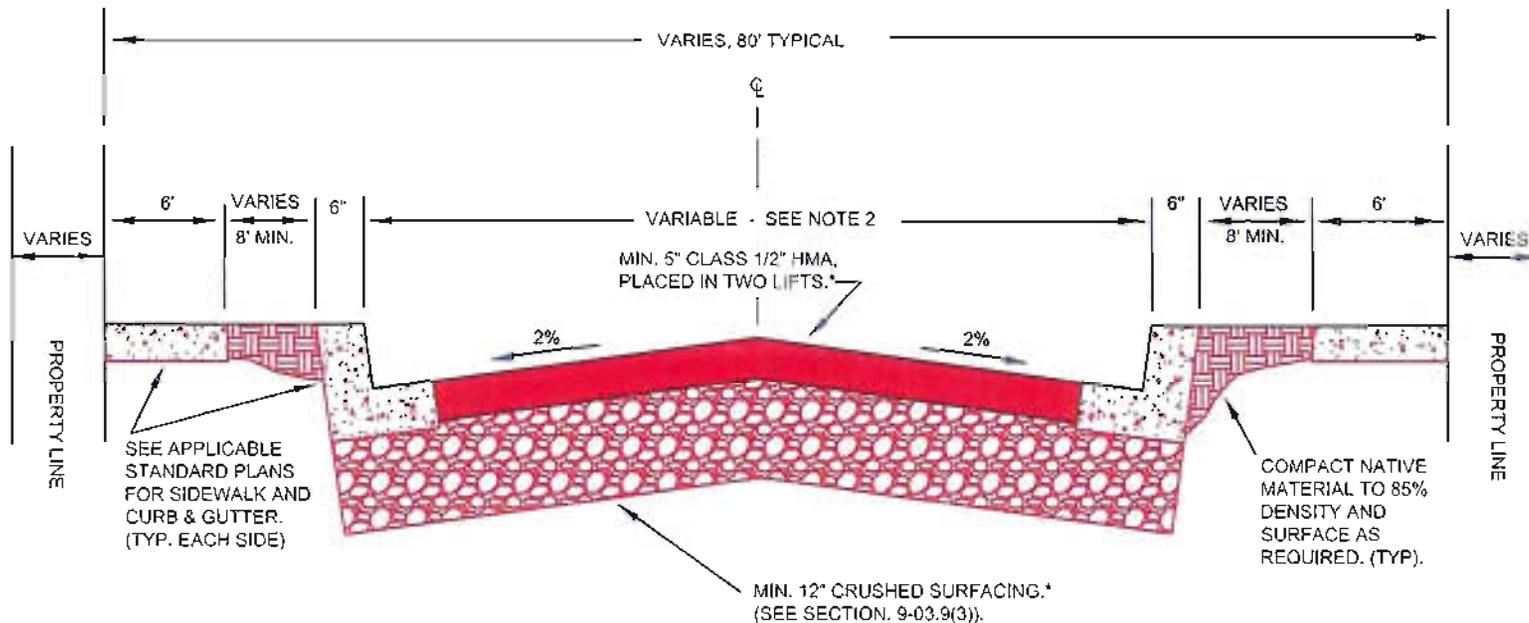


DOWNTOWN TREES DETAIL

DATE:
10/15/2012

APPROVED BY:

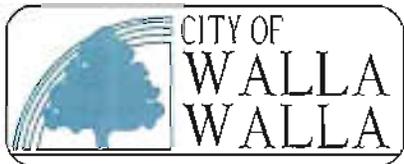
STANDARD
PLAN
1-14



NOTES:

1. FOR PLACEMENT OF CRUSHED SURFACING, REFER TO THE WSDOT SPECIFICATIONS SECTION 4-04.3(4) FOR MAXIMUM NOMINAL DEPTH OF COMPACTED MATERIAL PER LIFT.
2. DEPENDING ON LOCATION, AS APPROVED BY CITY ENGINEER. TYPICALLY 44 FEET.
3. ASPHALT TACK COAT SHALL BE APPLIED BETWEEN EACH LIFT OF H.M.A., REGARDLESS OF TIME BETWEEN LIFT PLACEMENTS.
4. DEPTH OF PAVEMENT COURSES TO BE DETERMINED BY ENGINEERING DESIGN.
5. DESIGN OF GEOTEXTILE FABRIC SHALL MEET REQUIREMENT GUIDELINES OF SECTION 630.05 OF THE WSDOT DESIGN MANUAL. MATERIAL PROPERTIES OF THE GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF THE WSDOT STANDARD SPECIFICATIONS SECTION 9-33.2 FOR WOVEN SOIL STABILIZATION FABRIC.
6. POT HOLE PATCHING OR PATCHING FOR CURB AND GUTTER WORK SHALL USE THIS CROSS SECTION.

* MINIMUM SURFACING DESIGN ALLOWED. THICKER SECTIONS MAY BE REQUIRED AS DETERMINED BY A GEOTECHNICAL REPORT.

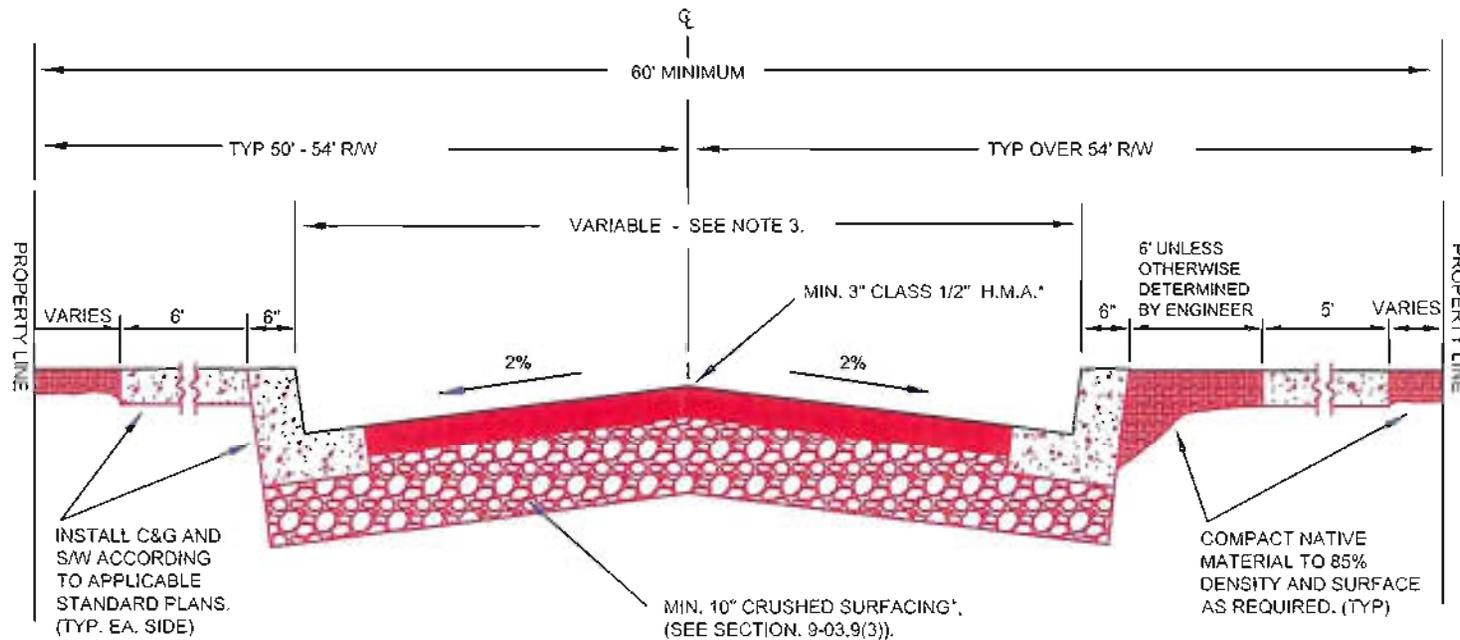


ARTERIAL ROADWAY SECTION

DATE:
10/15/2012

APPROVED BY:
Wendy [Signature]

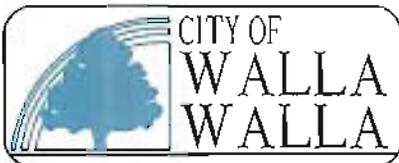
STANDARD
PLAN
2-1



NOTE:

1. FOR PLACEMENT OF CRUSHED SURFACING, REFER TO THE WSDOT SPECIFICATIONS SECTION 4-04.3(4) FOR MAXIMUM NOMINAL DEPTH OF COMPACTED MATERIAL PER LIFT.
2. POT HOLE PATCHING OR PATCHING FOR CURB AND GUTTER WORK SHALL USE THIS CROSS SECTION.
3. DEPENDING ON LOCATION, AS APPROVED BY CITY ENGINEER. TYPICALLY 36 FEET
4. DESIGN OF GEOTEXTILE FABRIC SHALL MEET REQUIREMENT GUIDELINES OF SECTION 630.05 OF THE WSDOT DESIGN MANUAL. MATERIAL PROPERTIES OF THE GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF THE WSDOT STANDARD SPECIFICATIONS SECTION 9-33.2 FOR WOVEN SOIL STABILIZATION FABRIC.

* Minimum surfacing design allowed. Thicker sections may be required as determined by a geotechnical report.

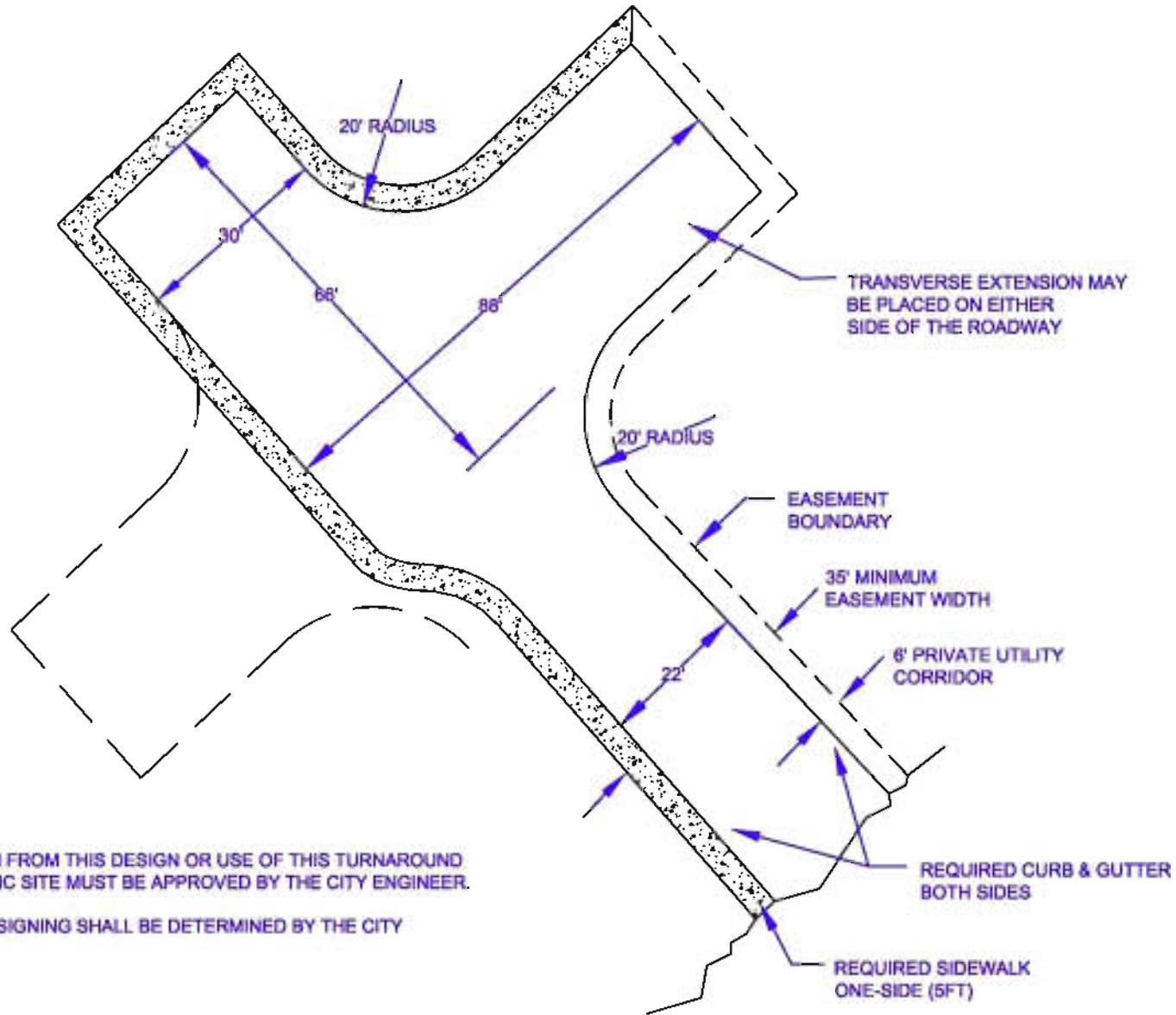


LOCAL ROADWAY SECTION

DATE:
10/15/2012

APPROVED BY:

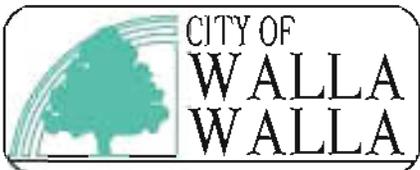
STANDARD
PLAN
2-2



NOTE:

ANY VARIATION FROM THIS DESIGN OR USE OF THIS TURNAROUND AT ANY SPECIFIC SITE MUST BE APPROVED BY THE CITY ENGINEER.

APPROPRIATE SIGNING SHALL BE DETERMINED BY THE CITY ENGINEER.



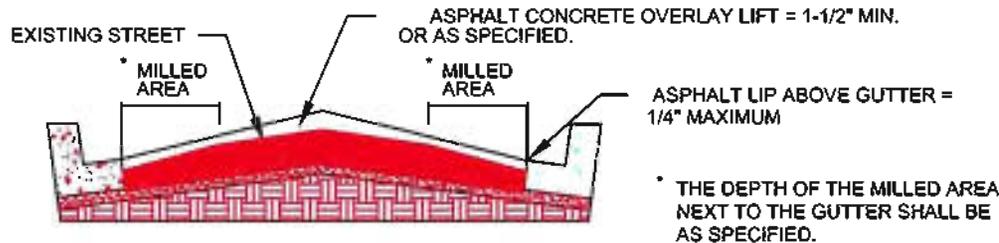
DEAD-END HAMMERHEAD FOR PRIVATE LANE

DATE:
3/01/2008

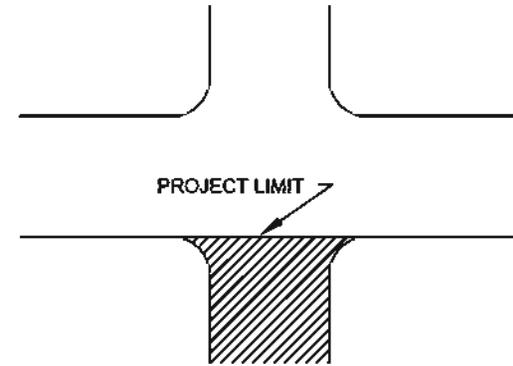
APPROVED BY:
Shondell Benerovic

STANDARD PLAN
2-3

STREET SURFACE TREATMENT CHIP SEAL AND OVERLAY



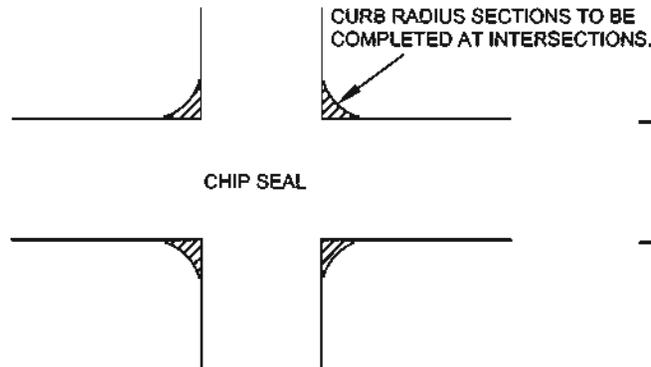
TYPICAL OVERLAY SECTION



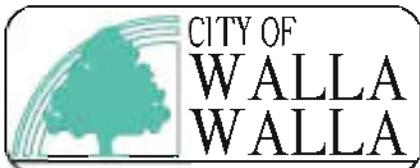
-WHEN A CHIP SEAL OR OVERLAY PROJECT TERMINATES AT AN INTERSECTION, THE PROJECT LIMIT SHALL BE THE PROJECTION OF THE CURB LINE ON THE CROSS STREET.
(SEE ABOVE)
-IF THE PROJECT EXTENDS THROUGH AN INTERSECTION, THE LIMITS SHALL BE AS SHOWN BELOW.

NOTES:

1. THE WORK SHALL BE DONE IN ACCORDANCE WITH SECTIONS 5-02 AND 5-04 OF THE STANDARD SPECIFICATIONS.
2. THE MAXIMUM TEMPERATURE LEAVING THE PLANT SHALL BE 325 F AND THE MINIMUM TEMPERATURE AT THE JOB SITE SHALL BE 250 F.
3. MAXIMUM ROLLER SPEEDS ARE:
 VIBRATORY- 3 mph
 PNEUMATIC- 5 mph
 STEEL WHEEL- 4 mph
4. THE BREAKDOWN ROLLER SHALL BE WITHIN 50 FEET OF THE PAVER.
5. TACK COAT SHALL BE APPLIED EVENLY OVER ENTIRE AREA TO BE OVERLAID AT THE RATE OF 0.08 GALLONS PER SQUARE YARD.



CURB AND GUTTERS TO BE CLEANED OF OIL AND/OR COVER STONE.



STREET SURFACE TREATMENT

DATE:
6/05/2006

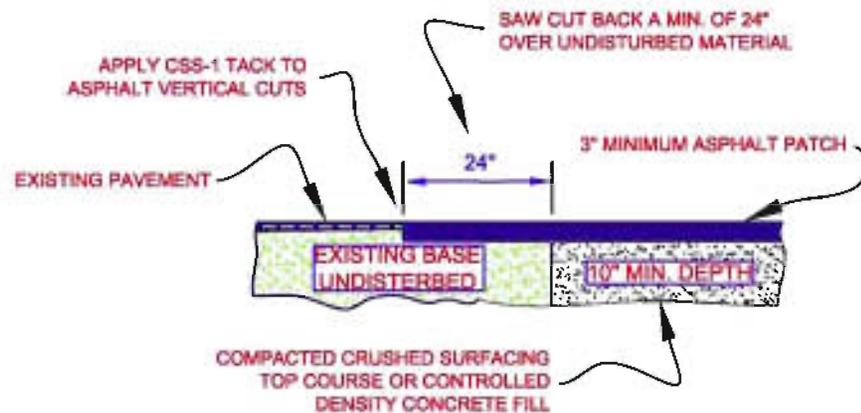
APPROVED BY:

Shondell Barnes Price

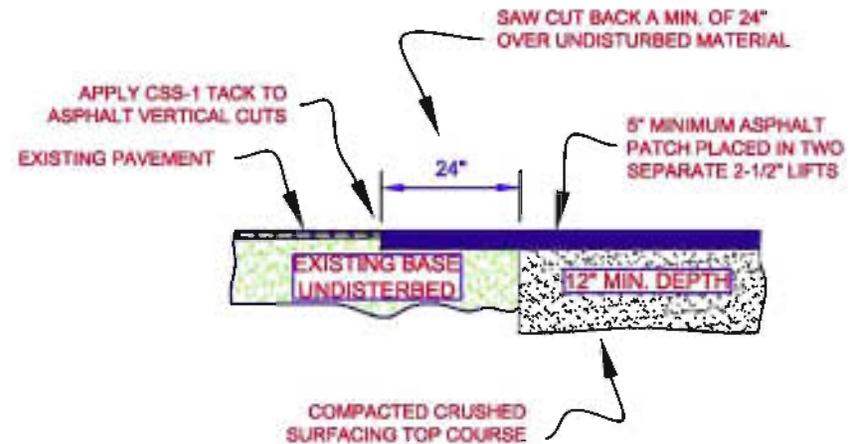
STANDARD
PLAN
2-4

PAVEMENT PATCHING DETAILS

LOCAL & COLLECTOR STREETS



ARTERIAL STREETS



NOTES

1. AFTER DITCH BACK FILL HAS BEEN COMPACTED, AN ADDITIONAL 24" WILL BE REMOVED FROM EACH EDGE OF THE ORIGINAL CUT. THE ENGINEER MAY REQUIRE MORE THAN THE 24" ADDITIONAL CUT IF THE EXISTING PAVEMENT HAS BEEN LIFTED IN THE REMOVAL PROCESS, IF THE JOINT DOES NOT OCCUR ON UNDISTURBED MATERIAL, OR IF THE JOINT FALLS WITHIN THE TRAVEL LANE.
2. LONGITUDINAL CONSTRUCTION JOINTS SHALL ONLY BE LOCATED AT THE CENTER OR EDGE OF AFFECTED LANES.

STREETS 20 FT OR LESS IN WIDTH AND ALL ALLEYS ARE CONSIDERED ONE-LANE STREETS. NON-ARTERIAL STREETS GREATER THAN 20 FT IN WIDTH WITH NO TRAFFIC CHANNELIZATION ARE CONSIDERED TWO-LANE STREETS WITH ONE-LANE EITHER SIDE OF THE CENTERLINE OF THE STREET. NON-ARTERIAL STREETS GREATER THAN 32 FT IN WIDTH WITH NO TRAFFIC CHANNELIZATION MAY BE CONSIDERED THREE LANE STREETS UPON PRIOR APPROVAL FROM THE CITY ENGINEER.

3. ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR IN SHAPE AND CONSTRUCTED PARALLEL AND PERPENDICULAR TO THE ROAD CENTERLINE.

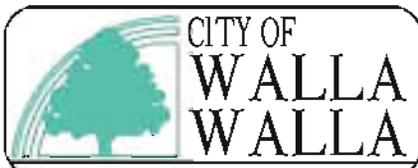
4. THE FINAL CUT EDGE OF PAVED SURFACES SHALL BE SMOOTH AND STRAIGHT, CONSISTANT WITH GRINDING OR SAW CUTTING DEVICES. NO JAGGED, BROKEN OR UNDERMINED EDGES ARE ALLOWED.
5. FOR SUBGRADE COMPACTION REQUIREMENTS SEE STD. PLAN 1-3
6. FINAL COMPACTION OF HMA SHALL BE 91% OF MAXIMUM DENSITY.

ISOLATED PATCHES: MINIMUM 1 TEST PER PATCH UP TO 150 SQUARE FEET, AND 1 TEST REQUIRED EVERY ADDITIONAL 300 SQUARE FEET THEREAFTER.

TRENCH PATCHES: 1 TEST EVERY 150 LINEAR FEET OF TRENCH WITH A MINIMUM OF 2 TESTS PER TRENCH.

TESTING SHALL BE PERFORMED BY A CERTIFIED INDEPENDENT TESTING LABORATORY OR CERTIFIED TESTOR, AS APPROVED BY THE CITY ENGINEER. TESTS SHALL BE COMPLETED AND REPORTS IDENTIFYING THE PROJECT SUBMITTED TO THE CITY ENGINEERING OFFICE WITHIN 48 HOURS OF TEST.

7. COLD MIX MAY BE USED TEMPORARILY ONLY UNTIL HOT MIX ASPHALT IS AVAILABLE.
8. FOR ATYPICAL CROSS SECTIONS CONSULT WITH THE CITY ENGINEER FOR REQUIREMENTS.



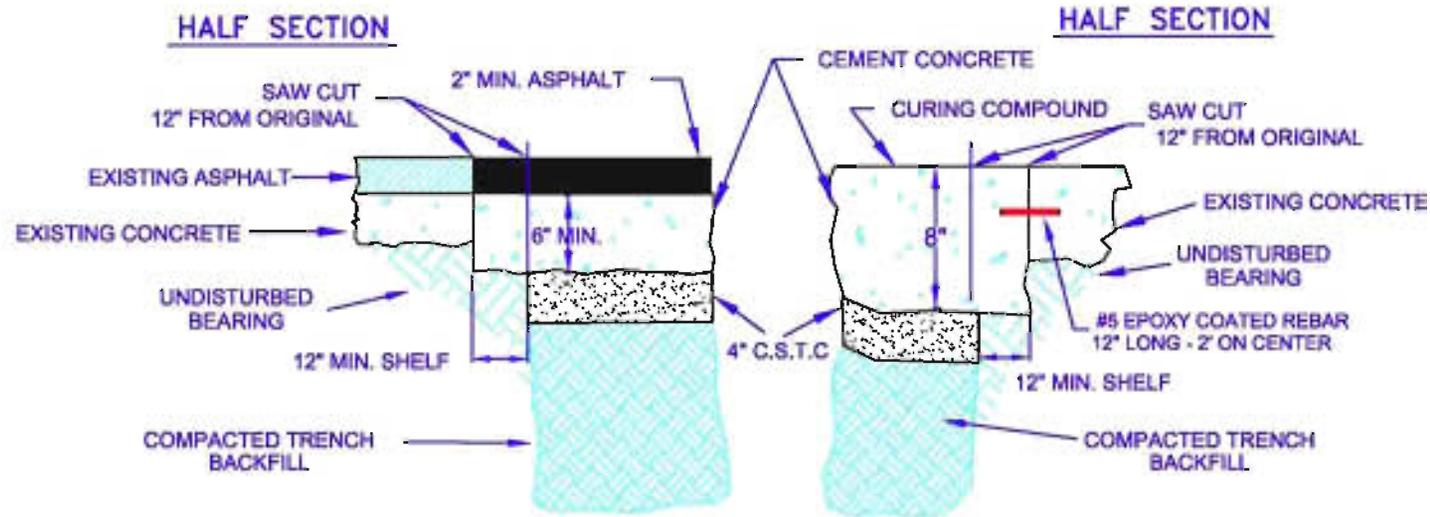
TYPICAL PATCH FOR FLEXIBLE PAVEMENT

DATE:
8/01/2010

APPROVED BY:
Shanda Bena...

STANDARD
PLAN
2-5
SHEET 1 OF 2

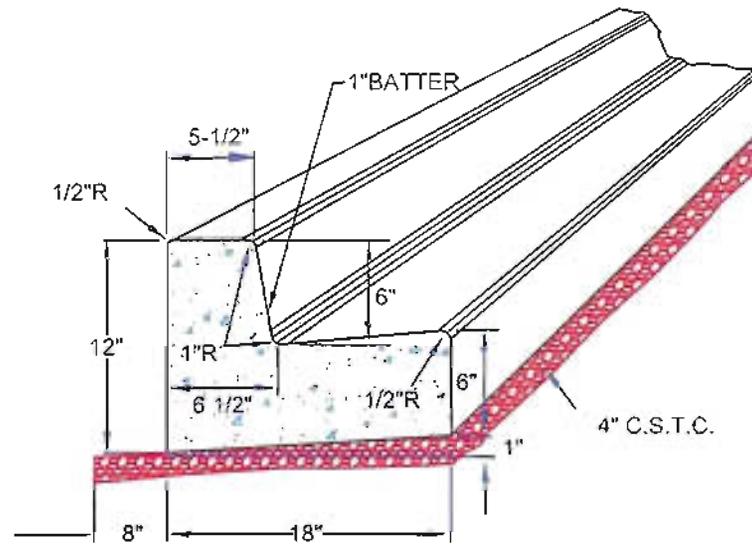
PAVEMENT PATCHING DETAILS



NOTES

1. AFTER DITCH BACK FILL HAS BEEN COMPACTED, AN ADDITIONAL 12" WILL BE REMOVED FROM EACH EDGE OF THE ORIGINAL CUT. THE ENGINEER MAY REQUIRE MORE THAN THE 12" ADDITIONAL CUT IF THE EXISTING PAVEMENT HAS BEEN LIFTED IN THE REMOVAL PROCESS, IF THE JOINT DOES NOT OCCUR ON UNDISTURBED MATERIAL, OR IF THE JOINT FALLS WITHIN THE TRAVEL LANE.

2. ALL BACK FILL SHALL BE UNIFORMLY MOISTURE CONDITIONED AND COMPACTED TO 95% MAX. DENSITY. BASE ROCK SHALL BE PLACED IN 9" OR LESS LIFTS. CRUSHED SURFACING SHALL BE PLACED IN 4" OR LESS LIFTS.

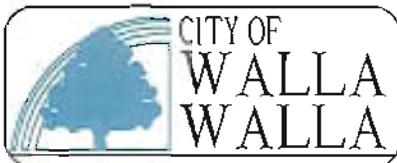


1. JOINTS:

- A) DUMMY JOINTS SHALL BE PLACED NOT TO EXCEED 15' C/C NOR LESS THAN 10' C/C. DUMMY JOINTS SHALL BE STABBED OR SAWED THROUGH THE CURB AND GUTTER TO PROVIDE A SHEAR PLANE FOR CONTRACTION CRACKS.
- B) THROUGH JOINTS SHALL BE 3/8" MASTIC, PLACED ONLY AT POINTS OF HORIZONTAL TANGENCY ON STREETS, RETURNS AND AT THE HIGH POINT OF DRIVEWAY AND ALLEY CUTS.
- C) ALL JOINTS SHALL BE CLEAN AND EDGED WITH A 1/2" RADIUS EDGER.

2. MATERIALS:

- A) CONCRETE SHALL MEET 4000 PSI SPECIFICATION WITH 4-1/2" MAXIMUM SLUMP.
- B) FORMS, PROCEDURES, AND COMPACTON SHALL MEET THE REQUIREMENTS OF THE W.S.D.O.T SPECIFICATIONS.

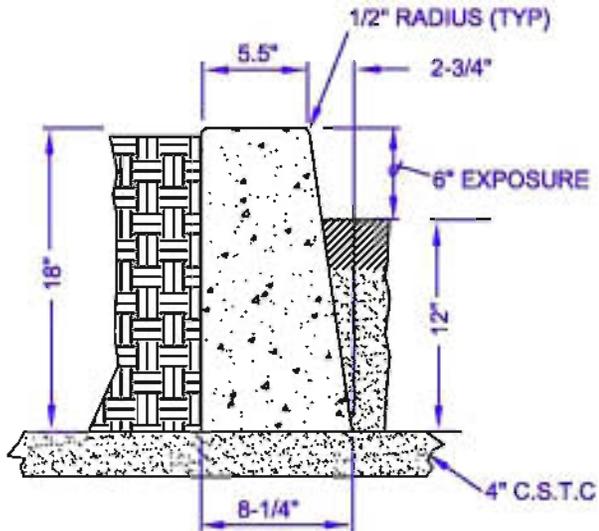


STANDARD CURB & GUTTER

DATE:
7/12/2012

APPROVED BY:

STANDARD
PLAN
2-6
SHEET 1 OF 2



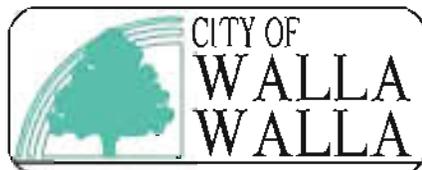
STANDARD CURB

1. JOINTS:

- A) DUMMY JOINTS SHALL BE PLACED NOT TO EXCEED 15' C/C NOR LESS THAN 10' C/C. DUMMY JOINTS SHALL BE STABBED OR SAWED THROUGH THE CURB AND GUTTER TO PROVIDE A SHEAR PLANE FOR CONTRACTION CRACKS.
- B) THROUGH JOINTS SHALL BE 3/8" MASTIC, PLACED ONLY AT POINTS OF HORIZONTAL TANGENCY ON STREETS, RETURNS AND AT THE HIGH POINT OF DRIVEWAY AND ALLEY CUTS.
- C) ALL JOINTS SHALL BE CLEAN AND EDGED WITH A 1/2" RADIUS EDGER.

2. MATERIALS:

- A) CONCRETE SHALL MEET 4000 PSI SPECIFICATION WITH 4-1/2" MAXIMUM SLUMP.
- B) FORMS, PROCEDURES, AND COMPACTION SHALL MEET THE REQUIREMENTS OF THE W.S.D.O.T SPECIFICATIONS.



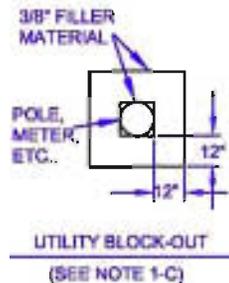
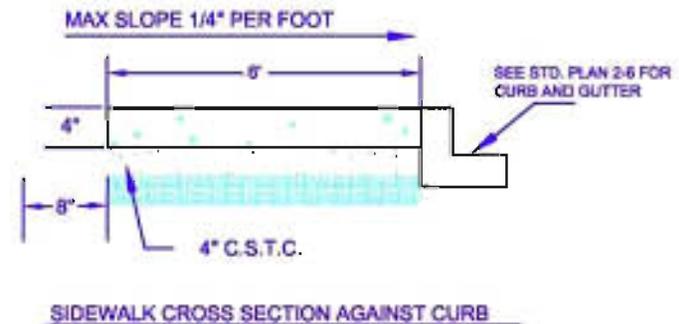
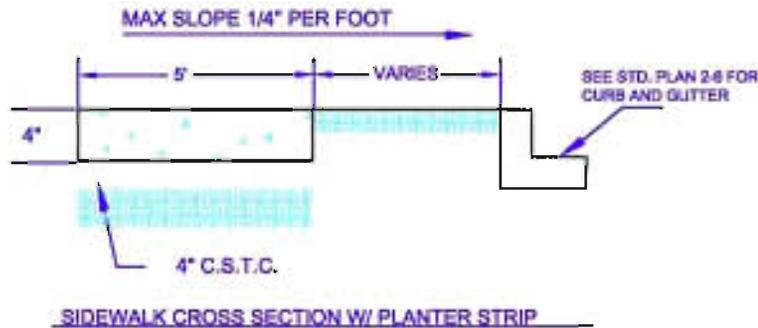
STANDARD CURB

DATE:
11/15/2009

APPROVED BY:

Shandell Barnes

STANDARD
PLAN
2-6
SHEET 2 OF 2



1) JOINTS:

- A) DUMMY JOINTS SHALL BE TRAVERSE 'V' GROOVE 1/4" TO 3/4" DEEP TO CREATE SQUARE PANELS (NOT TO EXCEED 10 FEET).
- B) MASTIC THRU JOINTS SHALL BE PLACED FULL DEPTH OF THE CONCRETE NOT TO EXCEED 30' C/C AND PLACED AT THE HIGH POINT OF DRIVEWAY AND ALLEY CUTS.
- C) JOINTS MATERIAL 3/8" THICK AND FULL DEPTH SHALL BE PLACED AROUND ALL UTILITY POLES, METER BOXES, DRIVEWAYS, ALLEYS, MANHOLES, WATER VALVES, PHONE PEDESTALS, CURB RAMPS, AND WHERE THERE IS A CHANGE IN DIRECTION.
- D) ALL JOINTS SHALL BE CLEAN AND EDGED WITH A 1/2" RADIUS EDGER.

2) MATERIALS:

- A) CONCRETE SHALL MEET 4000 PSI SPECIFICATION.
- B) FORMS, PROCEDURES AND COMPACTION SHALL MEET REQUIREMENT OF THE W.S.D.O.T. STANDARD SPECIFICATIONS.

3) FINISH SHALL BE LIGHT BROOM.

4) COMPACTION SHALL MEET REQUIREMENTS OF THE W.S.D.O.T. STANDARD SPECIFICATION.

5) PLACE JOINT MATERIAL EITHER BETWEEN THE SIDEWALK AND CURB OR BACK OF SIDEWALK AND STRUCTURE WHEN THE SIDEWALK IS RESTRICTED ON ALL SIDES.

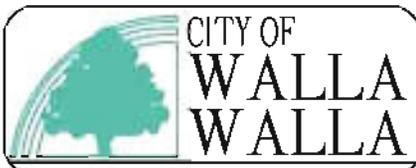
6) ALL RETRO FIT WORK SHALL BE SAW CUT SMOOTH AND EVEN AT THE CURB, SIDEWALK, AND GUTTER EDGES.

7) CURB & GUTTER, DRIVEWAY & SIDEWALK SHALL NOT BE POURED AS ONE SECTION.

8) OBSTRUCTIONS:

A) ANY OBSTRUCTION IN THE SIDEWALK SHALL PROVIDE A MINIMUM OF A 4 FOOT CLEAR SPACE.

B) A 2 FOOT CLEAR SPACE SHALL BE MAINTAINED BEHIND CURB.



SIDEWALK CROSS-SECTION

DATE:
6/05/2006

APPROVED BY:

Shanda B. Benes

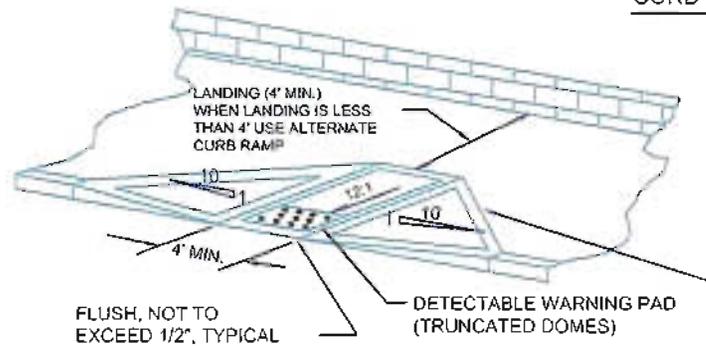
STANDARD
PLAN

2-7

GENERAL NOTES

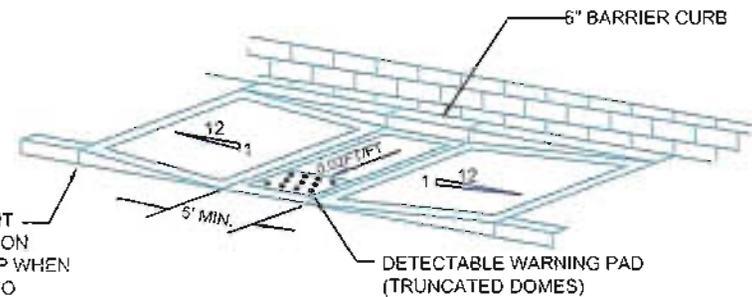
1. SEE SIDEWALK, AND CURB AND GUTTER PLANS FOR INFORMATION ON CONCRETE MATERIALS AND PLACEMENT GENERAL REQUIREMENTS.
2. PLACE A DETECTABLE WARNING PAD AT THE TOE OF THE RAMP. THE PAD SHALL COMPLY WITH ADA REQUIREMENTS. SEE WSDOT STANDARD PLAN F-45.10-00 FOR DETAILS.
3. RAMP LOCATIONS SHALL BE ADJUSTED TO AVOID CATCH BASINS.
4. THE TYPE OF RAMP AND PLACEMENT SHALL DEPEND ON THE EXISTING CONDITIONS AND SHALL BE AS DIRECTED BY THE CITY ENGINEER. SEE WSDOT STANDARD PLANS F-40.12-01, F-40.14-01, F-40.15-01, & F-40.16-01 FOR EXAMPLES.
5. THE 6" CURB AT THE BACK OF THE ALTERNATE RAMP IS ONLY REQUIRED WHEN THERE IS NO STRUCTURE AT THE BACK EDGE OF THE SIDEWALK.
5. PURSUANT TO THE REQUIREMENTS ESTABLISHED BY RCW 35.68.075, WHEN A RAMP IS CONSTRUCTED, A SUBSEQUENT RECEIVING RAMP SHALL ALSO BE CONSTRUCTED ACROSS THE STREET.

CURB RAMP DETAILS



STANDARD CURB RAMP

EXPANSION JOINT
(NOT REQUIRED ON
STANDARD RAMP WHEN
RAMP IS CUT INTO
EXISTING SIDEWALK).



ALTERNATIVE CURB RAMP

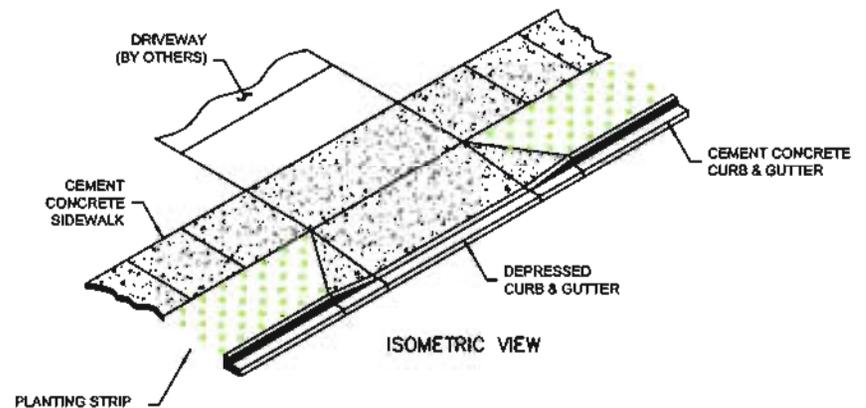
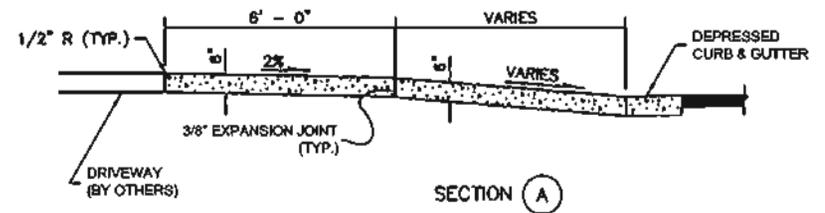
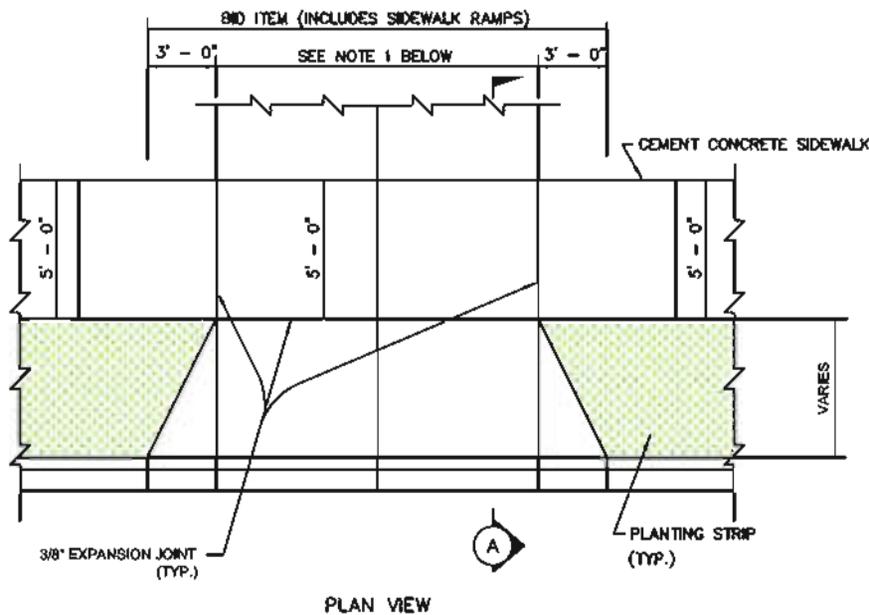


ADA STANDARDS AND WHEELCHAIR RAMP

DATE:
10/15/2012

APPROVED BY:
Wendy...

STANDARD
PLAN
2-8



1) Driveway widths shall be:

	Minimum	Maximum
Residential		
Circular drive	15 feet	20 feet
Single drive	15 feet	20 feet
Commercial/Industrial		
Circular drive	15 feet	20 feet
Single drive	30 feet	40 feet

Note: Exceptions to these measurements may be approved by the City Engineer for specific unique reasons.

- 2) The width of any driveway shall not be less than fifteen feet, exclusive of the driveway flare, measuring perpendicular to the centerline of the driveway.
- 3) There shall not be more than two driveways on one street for any one ownership. For exceptions see WVMC 12.04.140 C
- 4) For driveway approaches proposed where sidewalk does not exist, the approach must meet these standards set forth to accommodate the future construction of sidewalk.
- 5) For construction notes & cross section see standard plan 2-15



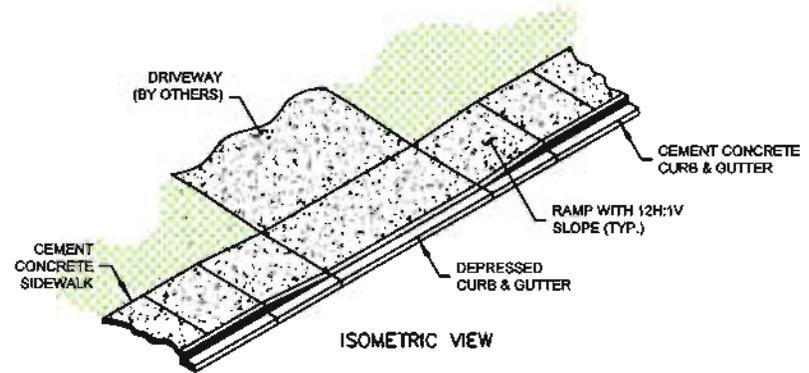
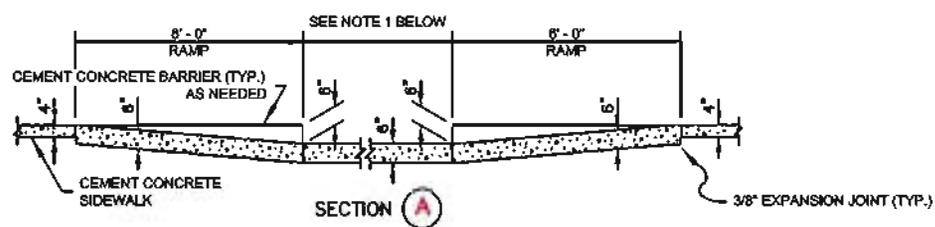
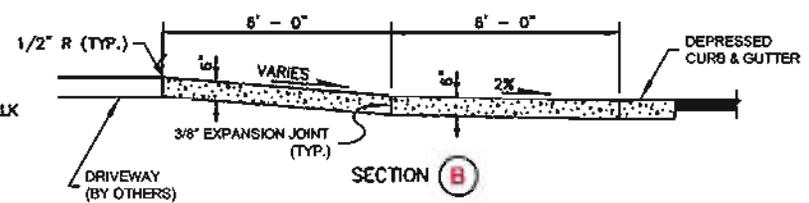
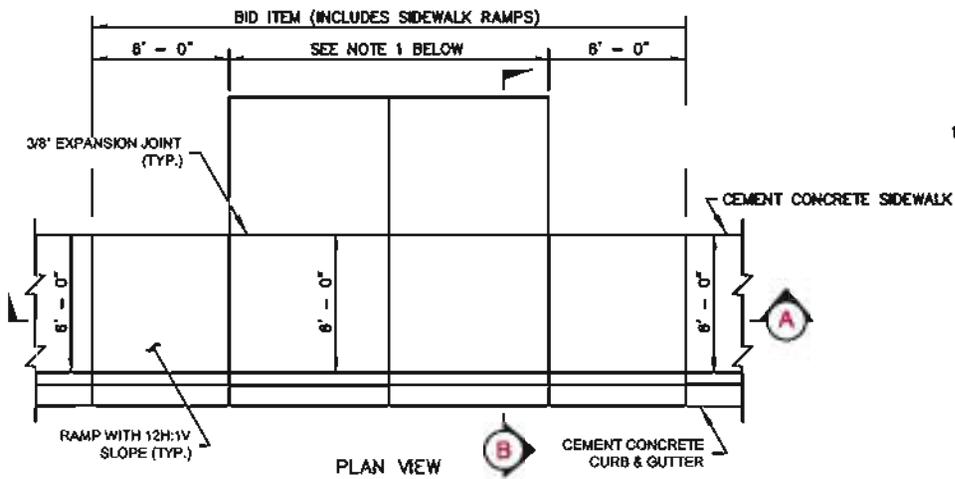
CEMENT CONCRETE DRIVEWAY AND ALLEY APPROACH
ALTERNATE #1

DATE:
3/01/2008

APPROVED BY:

Shondell Beneff

STANDARD
PLAN
2-11

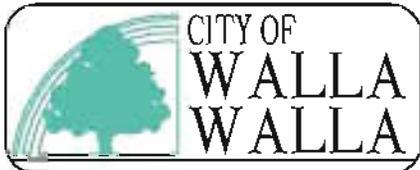


1) Driveway widths shall be:

	Minimum	Maximum
Residential		
Circular drive	15 feet	20 feet
Single drive	15 feet	20 feet
Commercial/Industrial		
Circular drive	15 feet	20 feet
Single drive	30 feet	40 feet

Note: Exceptions to these measurements may be approved by the City Engineer for specific unique reasons.

- 2) The width of any driveway shall not be less than fifteen feet, exclusive of the driveway flare, measuring perpendicular to the centerline of the driveway.
- 3) There shall not be more than two driveways on one street for any one ownership. For exceptions see WWMC 12.04.140 C
- 4) For driveway approaches proposed where sidewalk does not exist, the approach must meet these standards set forth to accommodate the future construction of sidewalk.
- 5) For construction notes & cross section see standard plan 2-15

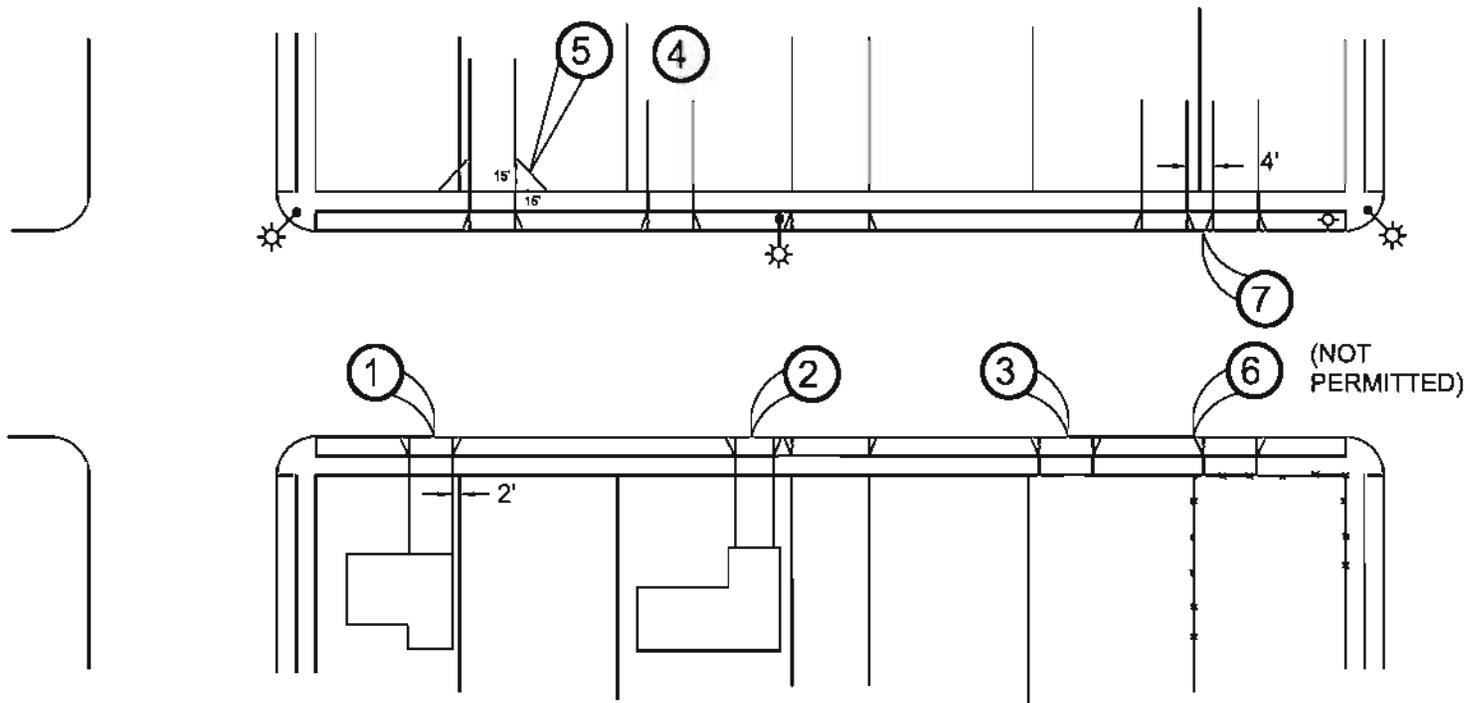


**CEMENT CONCRETE DRIVEWAY AND ALLEY APPROACH
ALTERNATE #2**

DATE: 10/08/2007

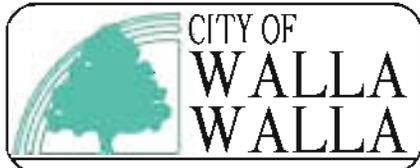
APPROVED BY:
Whondell Beneris

STANDARD
PLAN
2-12



1. ON CORNER LOTS, DRIVEWAYS MUST BE ALONG THE PROPERTY LINE FURTHEST FROM THE INTERSECTION. LEAVE A TWO FOOT SPACE BETWEEN THE DRIVEWAY AND PROPERTY LINE FOR THE WATER METER. SEE STANDARD PLANS 4-3 & 4-4 FOR DETAILS.
2. ON LOTS ADJACENT TO ALLEYS, IT IS PERMISSIBLE FOR DRIVEWAY TO BE POSITIONED WITHIN TWO FEET OF THE ALLEY.
3. ON MID-BLOCK LOTS, DRIVEWAYS SHOULD BE POSITIONED TO AVOID HAVING THE WATER METER IN THE DRIVEWAY. THE WATER METER IS TO BE LOCATED WITHIN TWO FEET OF THE PROPERTY LINE.

4. DRIVEWAYS SHOULD BE POSITIONED TO AVOID POWER POLES, FIRE HYDRANTS, STREET LIGHTS AND TRAFFIC SIGNS.
5. DRIVEWAYS MUST BE POSITIONED TO PRESERVE A CLEAR VIEW TRIANGLE OF 15 FEET ALONG THE PROPERTY LINE.
6. DRIVEWAYS MUST PROVIDE ACCESS TO A GARAGE, CARPORT PARKING APRON, OR OTHER STRUCTURE ON PRIVATE PROPERTY. DRIVEWAYS THAT PROVIDE ACCESS ONLY TO THE PLANTING STRIP OR THAT ALLOWS PARKING ON THE SIDEWALK ARE NOT PERMITTED.
7. WHERE WATER METERS ARE LOCATED ON EITHER SIDE OF A COMMON PROPERTY LINE, THE ADJACENT DRIVEWAYS MUST BE A MINIMUM OF FOUR FEET APART.



DRIVEWAY LOCATIONS

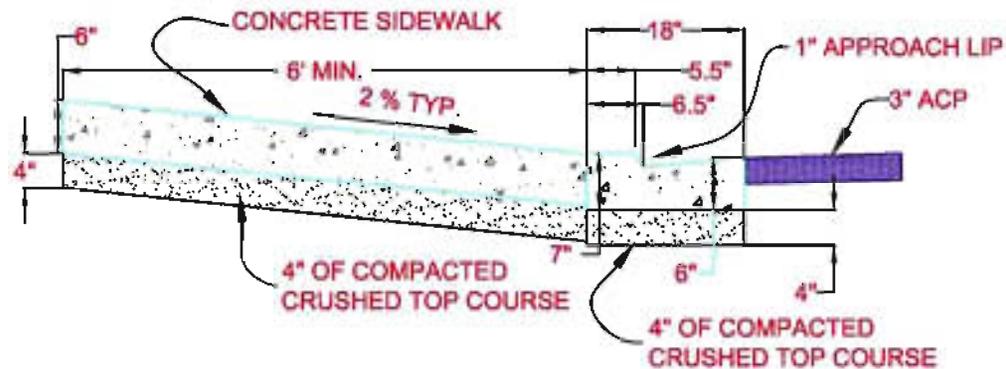
DATE:
6/05/2006

APPROVED BY:

Shondell Barnes-Prisco

STANDARD
PLAN

2-14



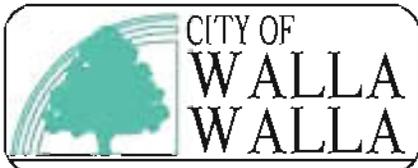
NOTES

1) JOINTS

- A. WHERE THE DRIVEWAY EXCEEDS 16' IN WIDTH, A 2" DEEP DUMMY JOINT SHALL BE PLACED LONGITUDINALLY ALONG THE CENTERLINE.
- B. WHERE THE DISTANCE FROM THE FACE OF THE CURB TO THE FRONT OF THE SIDEWALK EXCEEDS 16', A 2" DEEP TRANSVERSE DUMMY JOINT SHALL BE PLACED AT ONE HALF THE DISTANCE TO THE FACE OF SIDEWALK.
- C. A 3/4" THRU JOINT SHALL BE PLACED AT POINTS OF TANGENCY WITH STANDARD CURB AND SIDEWALK. IF THE DRIVEWAY EXCEEDS 30' IN WIDTH, AN EXPANSION JOINT SHALL BE PLACED AT THE MID POINT.
- D. JOINTS SHALL BE CLEAN AND EDGED WITH 1/2" RADIUS EDGER.

- 2) ASPHALT SHALL BE SAW CUT BACK 12" AND HAVE A SMOOTH EDGE BEFORE BEING PATCHED. SEE STREET PATCH STANDARD PLAN 2-5.
- 3) CONCRETE SHALL MEET 4000 PSI SPECIFICATION.
- 4) FORMS SHALL MEET REQUIREMENT OF THE W.S.D.O.T. STANDARD SPECIFICATIONS.

- 5) THE WHOLE CURB AND GUTTER SECTION MUST BE COMPLETELY REMOVED AND REPLACED.
- 6) NO MONOLITHIC POURS ARE ALLOWED. SIDEWALKS, CURB & GUTTER, AND DRIVEWAYS SHALL BE POURED SEPARATELY WITH EXPANSION JOINTS AS NOTED.
- 7) CROSS SLOPE SHALL NOT BE STEEPER THAN 2%, UNLESS ALTERNATIVE ACCESSIBLE ROUTE IS PROVIDED.
- 8) CRUSHED SURFACING TOP COURSE MUST BE MOISTURE CONDITIONED BEFORE PLACEMENT AND COMPACTED TO A NON-YIELDING CONDITION.
- 9) THICKNESS SHALL BE 6" FOR ALL DRIVEWAY AND ALLEY APPROACHES.
- 10) LOCATIONS OF ALL DRIVEWAYS SHALL BE APPROVED BY THE ENGINEER. ADJACENT DRIVEWAYS SHALL HAVE A MINIMUM OF 3 FEET OF HIGH CURB SEPARATING THE APPROACHES OR MATCH SIDEWALK GRADE.
- 11) FINISH SHALL BE LIGHT BROOMED.
- 12) COMPACTION OF SUBGRADE SHALL MEET REQUIREMENT OF THE W.S.D.O.T. STANDARD SPECIFICATIONS.



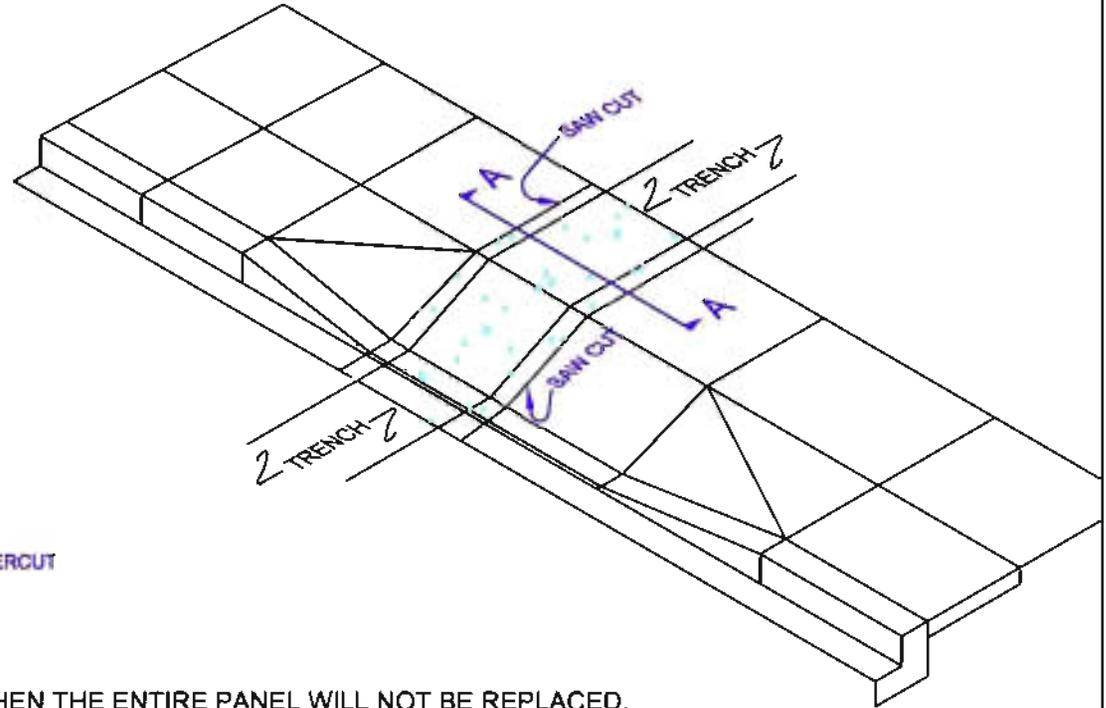
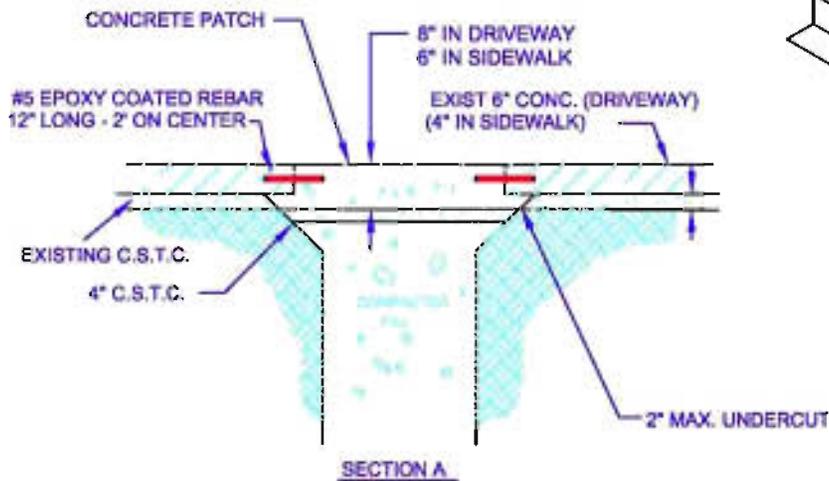
**DRIVEWAY APPROACH CROSS-SECTION
RESIDENTIAL/COMMERCIAL**

DATE:
6/05/2006

APPROVED BY:

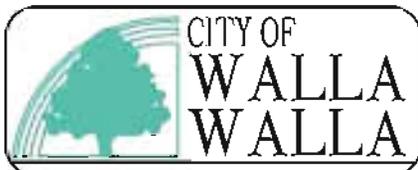
Whandell Benevise

STANDARD
PLAN
2-15



THIS DETAIL ONLY APPLIES WHEN THE ENTIRE PANEL WILL NOT BE REPLACED.

- 1) MATERIALS SHALL MEET REQUIREMENTS OF THE WSDOT STANDARD SPECIFICATIONS.
- 2) CONCRETE SHALL BE AIR ENTRAINED, CL 4000. MAXIMUM ALLOWABLE SLUMP IS 4.5 INCHES.
- 3) FORMS SHALL BE WOOD OR METAL, STAKED SECURELY IN PLACE, AND TRUE TO LINE AND GRADE.
- 4) BASE SHALL BE 2" C.S.T.C. SEE SEC 9-03.9(3) COMPACTED T-99 95%.
- 5) PATCH THICKNESS SHALL BE 8" FOR ALL DRIVEWAYS AND ALLEY APPROACHES, 6" FOR ALL OTHER.
- 6) SAW CUT SIDEWALK AND DRIVEWAY FULL DEPTH BEFORE REMOVAL. ONE SIDE OF THE CUT MUST BE ALONG AN EXISTING JOINT.
- 7) IF THE TRENCH WIDTH IS GREATER THAN 1/2 OF A PANEL WIDTH, THEN REMOVE TO THE NEXT JOINT.
- 8) WHEN PANELS ARE OFFSET OR IRREGULAR IN ANY MANNER, THE CITY ENGINEER SHALL DETERMINE THE PATTERN OF REPLACEMENT.
- 9) IF UTILITY CUTS MUST BE CLOSER THAN 2 FT., THEN REMOVE CONCRETE TO THE NEAREST JOINT.
- 10) RECONNECT ALL CROSSING CONTROL JOINTS BY TOOLING WHILE THE CONCRETE IS PLASTIC OR BY SAW CUTTING DEPTH TO BE 1/4".
- 11) IF EXISTING CONCRETE IS UNDERMINED BY MORE THAN 12", THEN SAW CUT FULL DEPTH AND REMOVE BACK TO UNOISTURBED SUBGRADE.



UTILITY CUT IN SIDEWALK & DRIVEWAY

DATE:
6/05/2006

APPROVED BY:

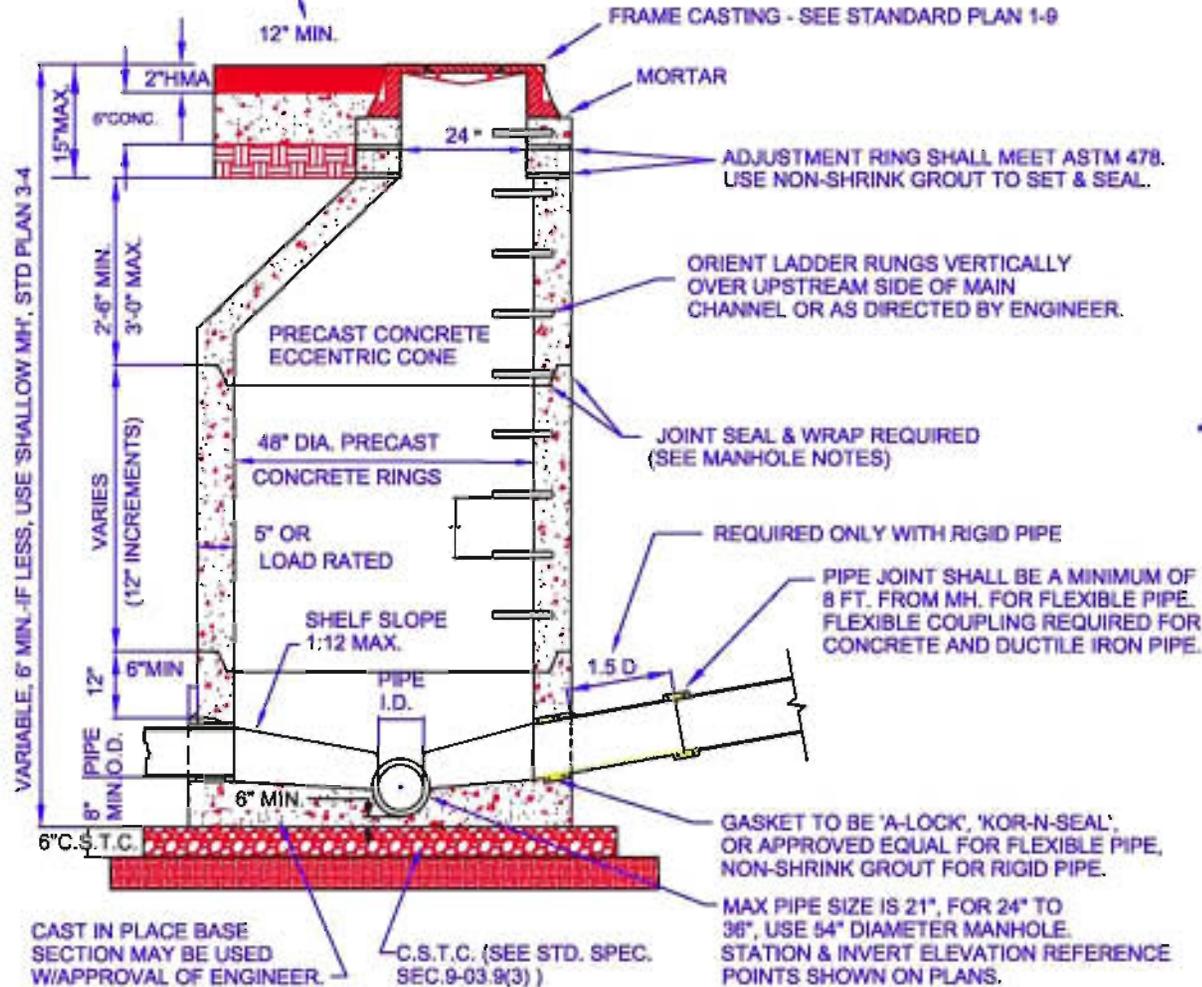
Whandell Beneris

STANDARD
PLAN

2-17

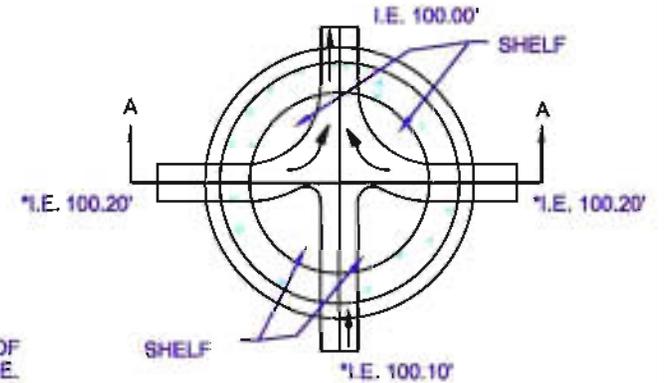
C.L. 3000 CONCRETE COLLAR
PLACED CIRCULARLY
AROUND CASTING.
(TACK BEFORE PAVING)

SECTION A-A



PLAN VIEW

*TYPICAL INVERT ELEVATIONS FOR
8" TO 10" PIPE, (MATCH CROWNS
ON LARGER PIPES).



ALSO SEE 'MANHOLE
NOTES' ON
STANDARD PLAN 3-2.



STANDARD MANHOLE

DATE:
6/05/2006

APPROVED BY:

Abundance Barnes

STANDARD
PLAN
3-1

MANHOLE NOTES

1. STATIONS SHOWN ON PLANS ARE REFERENCED TO MANHOLE CENTERLINES. PIPELINE DIRECTIONAL NOTATION (I.E. N.S.E.W.) AT MANHOLE ARE SHOWN FOR ORIENTATION PURPOSES ONLY.
2. SEWER LINE PAY LIMIT SHALL BE MEASURED HORIZONTALLY FROM CENTER TO CENTER OF MANHOLE.
3. PLACE 20 SQUARE FEET OF VISQUEEN BEFORE POURING BASE WHEN GROUNDWATER EXISTS.
4. PRE CAST BASES SHALL BE USED WHENEVER POSSIBLE. IF NECESSARY TO CAST IN PLACE AND WITH ENGINEERS APPROVAL, USE CLASS 4000 CONCRETE.
5. LOWER PRE CAST CONCRETE RING INTO BASE AND LEVEL BEFORE CONCRETE IS SET.
6. ALLOW A MINIMUM OF 24 HOURS TO ELAPSE BEFORE PLACING REMAINING RINGS AND CONE.
7. JOINT SEAL MATERIAL SHALL BE TYLOX 'SUPER SEAL' OR APPROVED EQUAL. JOINTS SHALL BE FURTHER SEALED WITH 12" WIDE 'BESTSEAL WRAP' JOINT SEALANT FROM BESTFIT GASKET CO.
8. WHERE CONCRETE OR DUCTILE IRON PIPE IS USED, STANDARD COUPLINGS SHALL BE PROVIDED FOR FLEXIBLE CONNECTIONS TO MANHOLES.
9. ALL 'U' SHAPED CHANNEL SHALL BE CONSTRUCTED IN THE MANHOLE BASE BY USE OF A PROPERLY SHAPED FORM.
10. BRANCH LINE INVERTS SHALL NORMALLY BE D/2 ABOVE THE INVERT OF THE MAIN CHANNEL AT THE JUNCTION UNLESS OTHERWISE SPECIFIED ON THE PLANS.
11. MANHOLES SHALL HAVE STEPS OF 1/2 INCH DIAMETER DEFORMED BARS WHICH SHALL BE EMBEDDED IN A RESILIENT, CORROSION RESISTANT RUBBER WHICH MEETS OR EXCEEDS ALL REQUIREMENTS OF ASTM C478 AND OSHA. THEY SHALL BE WEDGLOK TYPE WL-11 OR APPROVED EQUAL.
12. CONSTRUCT MANHOLE LID 18" ABOVE EXISTING GROUND IN AREAS OUTSIDE R.O.W. WHEN SHOWN ON PLANS OR REQUIRED BY ENGINEER.
13. NO PICK HOLES IN PRE FORMED MANHOLES. USE PICK BALLS THAT ARE FORMED INTO THE BARRELS.
14. FOR A 48" DIAM. MANHOLE THE MAXIMUM PIPE SIZE ALLOWABLE IS 21". PIPE DIAMETERS LARGER THAN 21" MUST BE APPROVED BY THE CITY ENGINEER.
15. MANHOLES SHALL BE INSTALLED VERTICAL AND PLUMB IN ALL DIRECTIONS WITH AN OVERALL TOLERANCE OF 1" VERTICAL FOR THE OVERALL MANHOLE SECTIONS.

MANHOLE NOTES

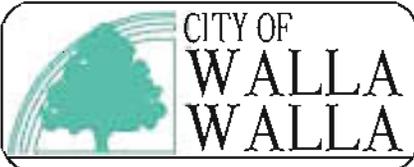
DATE:
3/03/2008

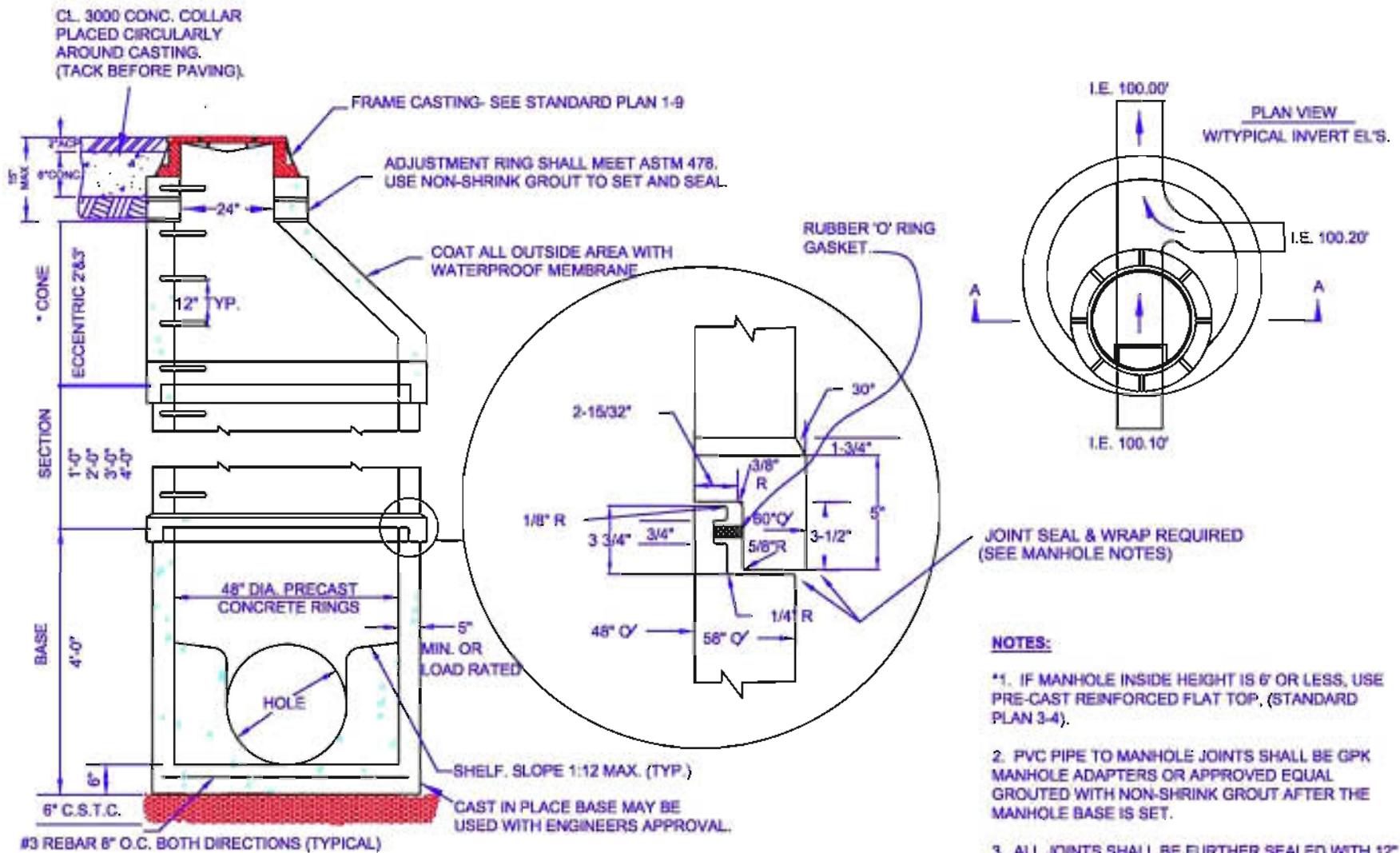
APPROVED BY:

Shandell Beneff

STANDARD
PLAN

3-2





(ALSO SEE 'MANHOLE NOTES' ON STANDARD PLAN 3-2)



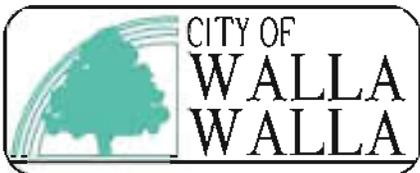
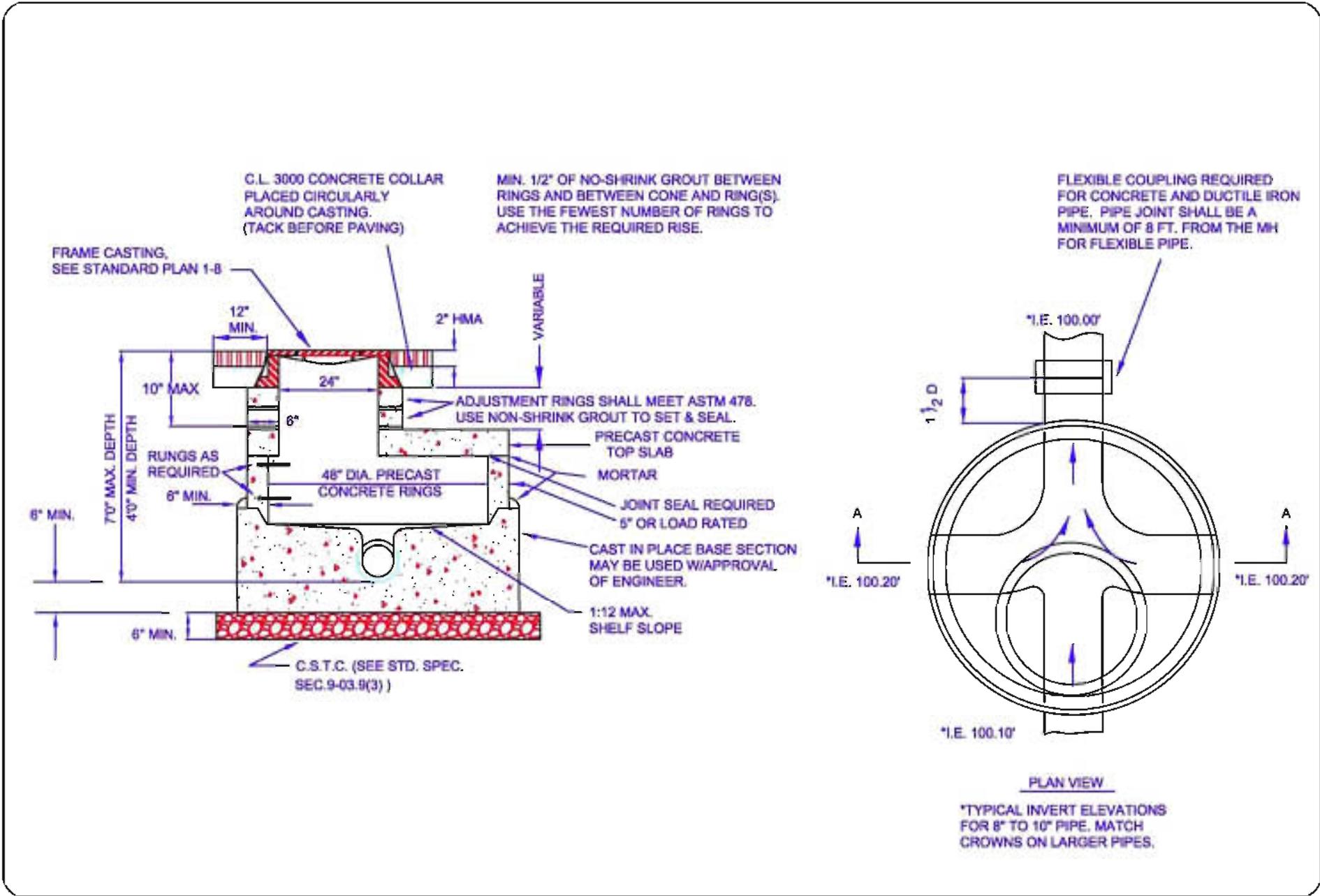
MANHOLE - HIGH GROUNDWATER

DATE:
6/05/2006

APPROVED BY:

Shanda B. Benes

STANDARD
PLAN
3-3



SHALLOW MANHOLE

DATE: 3/03/2008

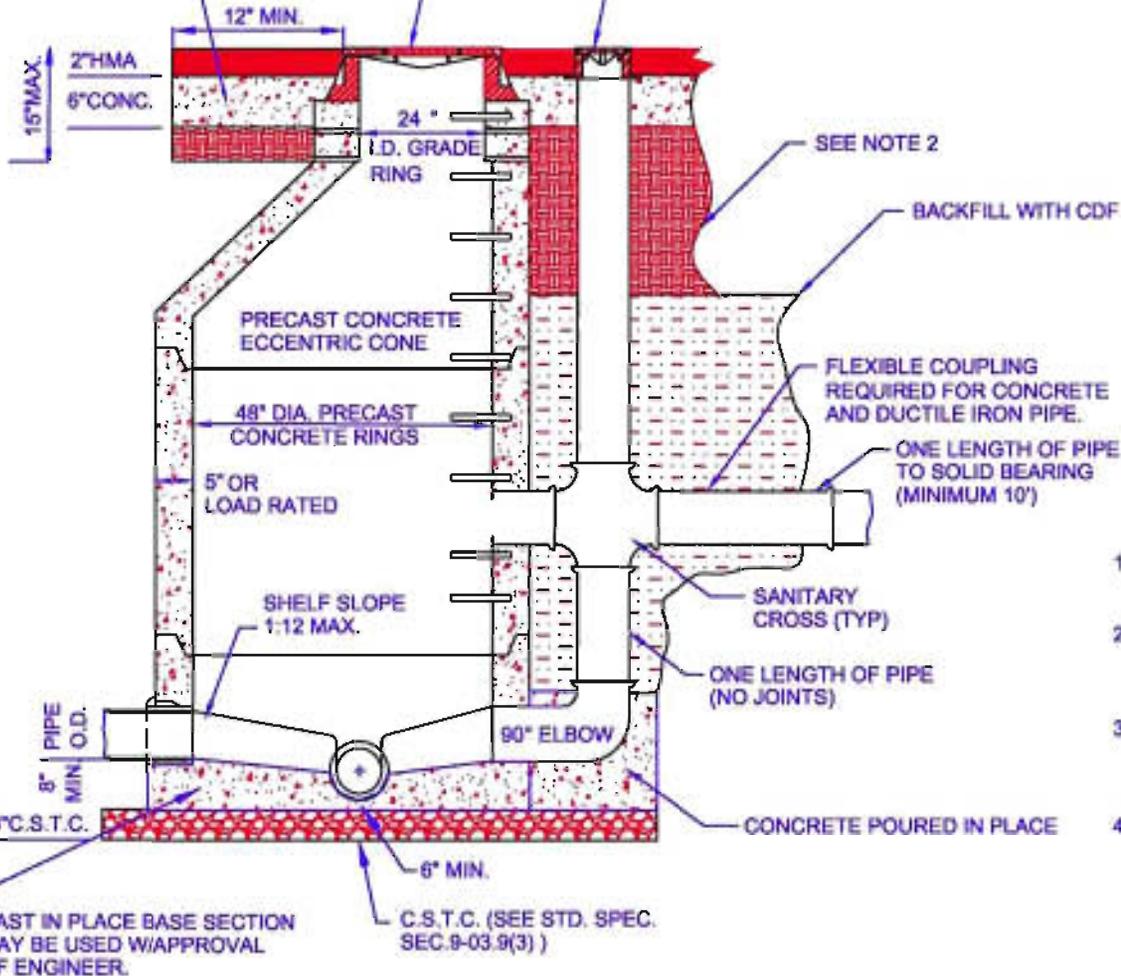
APPROVED BY:
Abundell Barnes

STANDARD
PLAN
3-4

CL. 3000 CONCRETE COLLAR
 PLACED CIRCULARLY
 AROUND CASTING.
 (TACK BEFORE PAVING).

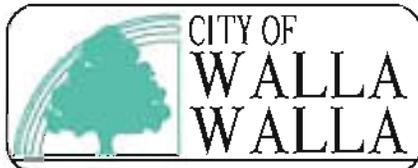
FRAME CASTING - SEE STD PLAN 1-8

SEWER CLEANOUT - SEE STD PLAN 3-12



NOTES:

1. DROP PIPING TO BE SAME DIAMETER AS SEWER LINE SERVED UNLESS OTHERWISE NOTED.
2. IMPORTED GRANULAR BACKFILL MATERIAL COMPACTED TO 95% OF MAX DENSITY ASTM D898.
3. DROP CONNECTION PIPE DIAMETER AND FITTINGS SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE SEWER MAIN.
4. SEE 'MANHOLE NOTES' ON STD PLAN 3-1 & 3-2.



EXTERIOR DROP MANHOLE

DATE:
 10/07/2009

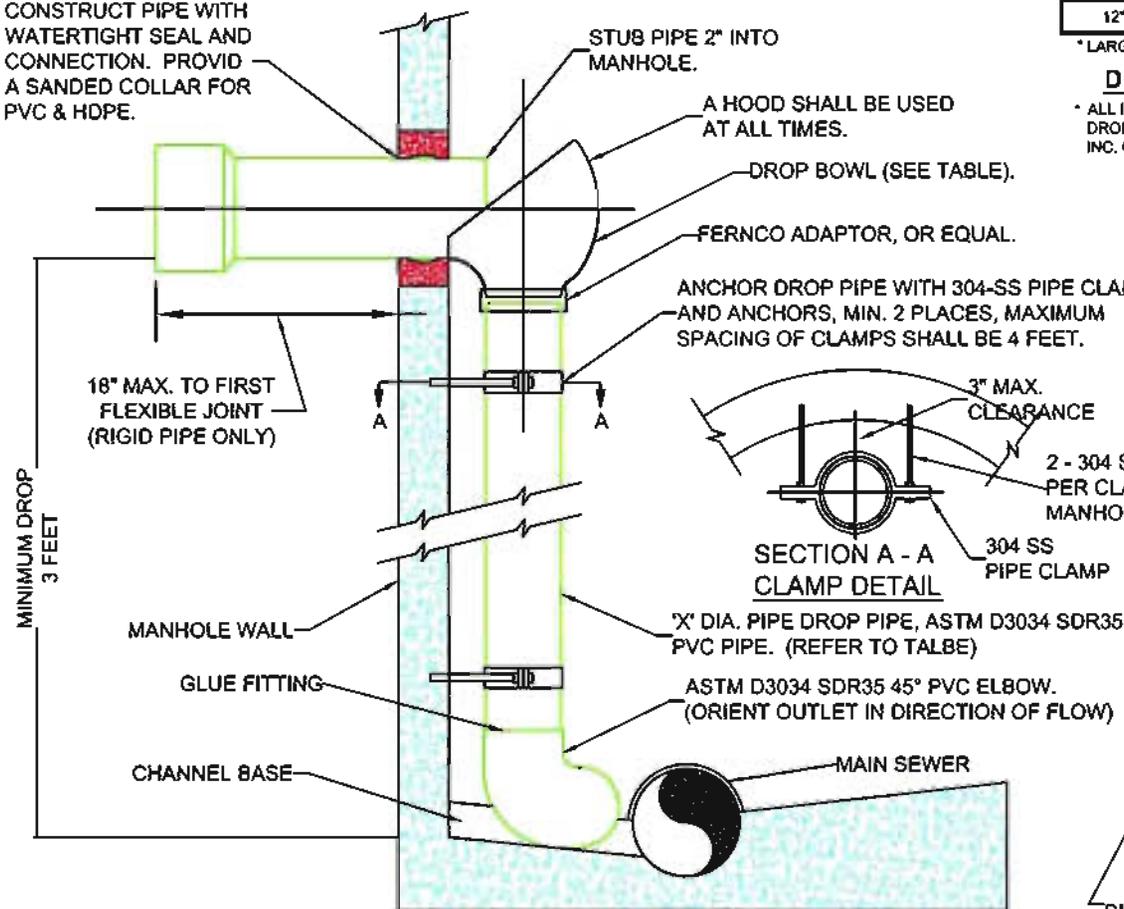
APPROVED BY:

Shanda Renee Price

STANDARD
 PLAN

3-5
 SHEET 1 OF 2

CONSTRUCT PIPE WITH WATERTIGHT SEAL AND CONNECTION. PROVIDE A SANDED COLLAR FOR PVC & HDPE.



18" MAX. TO FIRST FLEXIBLE JOINT (RIGID PIPE ONLY)

MINIMUM DROP 3 FEET

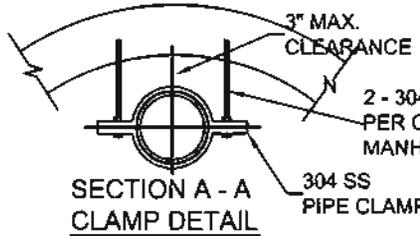
STUB PIPE 2" INTO MANHOLE.

A HOOD SHALL BE USED AT ALL TIMES.

DROP BOWL (SEE TABLE).

FERNCO ADAPTOR, OR EQUAL.

ANCHOR DROP PIPE WITH 304-SS PIPE CLAMP AND ANCHORS, MIN. 2 PLACES, MAXIMUM SPACING OF CLAMPS SHALL BE 4 FEET.



3" MAX. CLEARANCE

2 - 304 SS 1/2" ANCHOR BOLTS PER CLAMP EMBEDDED 1-1/2" INTO MANHOLE WALL, BOLT LENGTH VARIES.

304 SS PIPE CLAMP

SECTION A - A CLAMP DETAIL

'X' DIA. PIPE DROP PIPE, ASTM D3034 SDR35 PVC PIPE. (REFER TO TABLE)

ASTM D3034 SDR35 45° PVC ELBOW. (ORIENT OUTLET IN DIRECTION OF FLOW)

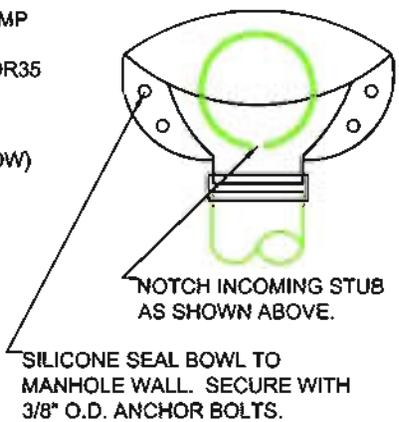
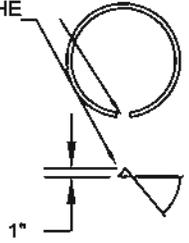
INCOMING SEWER SIZE	DROP PIPE SIZE "X"	DROP BOWL MODEL
8" DIA.	8" DIA.	A-6
10" DIA.	8" DIA.	A-8
12" DIA.	10" DIA.	A-10

* LARGER SIZE AS APPROVED BY CITY ENGINEER.

DROP BOWL MODEL TABLE

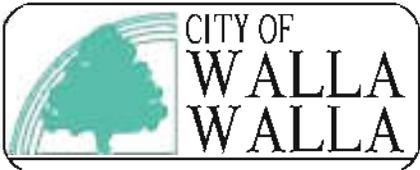
* ALL INSIDE DROP CONNECTIONS SHALL USE THE DROP BOWL AS PRODUCED BY: RELINER-DRUAN, INC. OR EQUAL.

CUT A "V" NOTCH 2" (W) X 1" (D) AT THE INVERT OF THE INCOMING PIPE.



NOTCH INCOMING STUB AS SHOWN ABOVE.

SILICONE SEAL BOWL TO MANHOLE WALL. SECURE WITH 3/8" O.D. ANCHOR BOLTS.



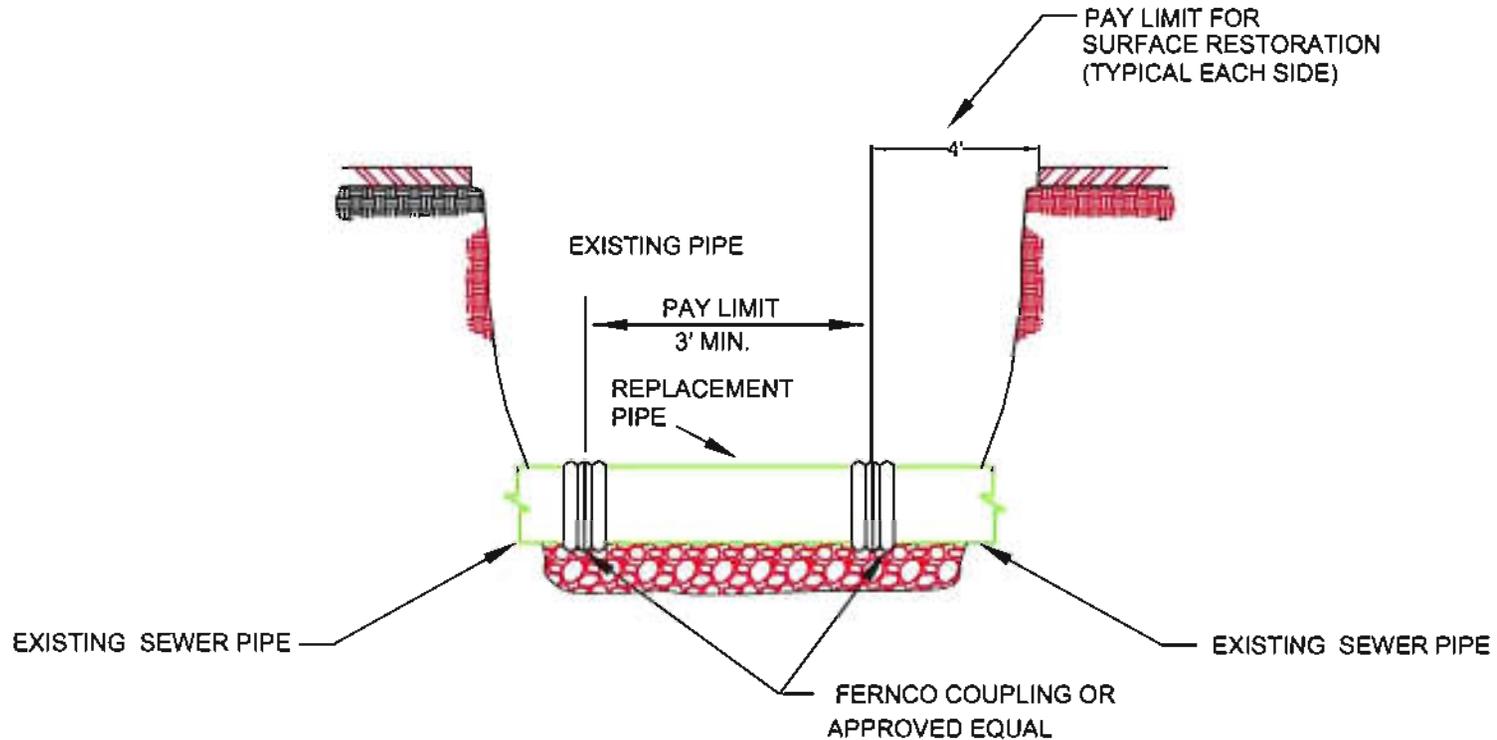
INTERIOR DROP MANHOLE

DATE: 3/01/2008

APPROVED BY: *Shanda Renee Price*

STANDARD PLAN
3-5
SHEET 2 OF 2

REHABILITATION ON EXISTING SEWER MAIN



(SEE STANDARD PLAN 1-9 FOR TRENCH AND PAY LIMIT DETAILS)



EXISTING SEWER REHABILITATION

DATE:
6/05/2006

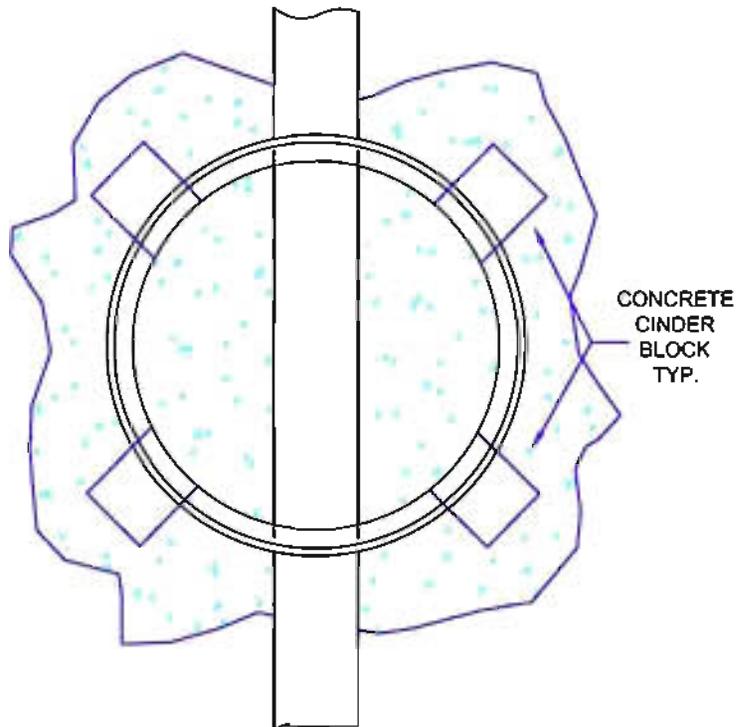
APPROVED BY:

Rhonda L. Bener-Lewis

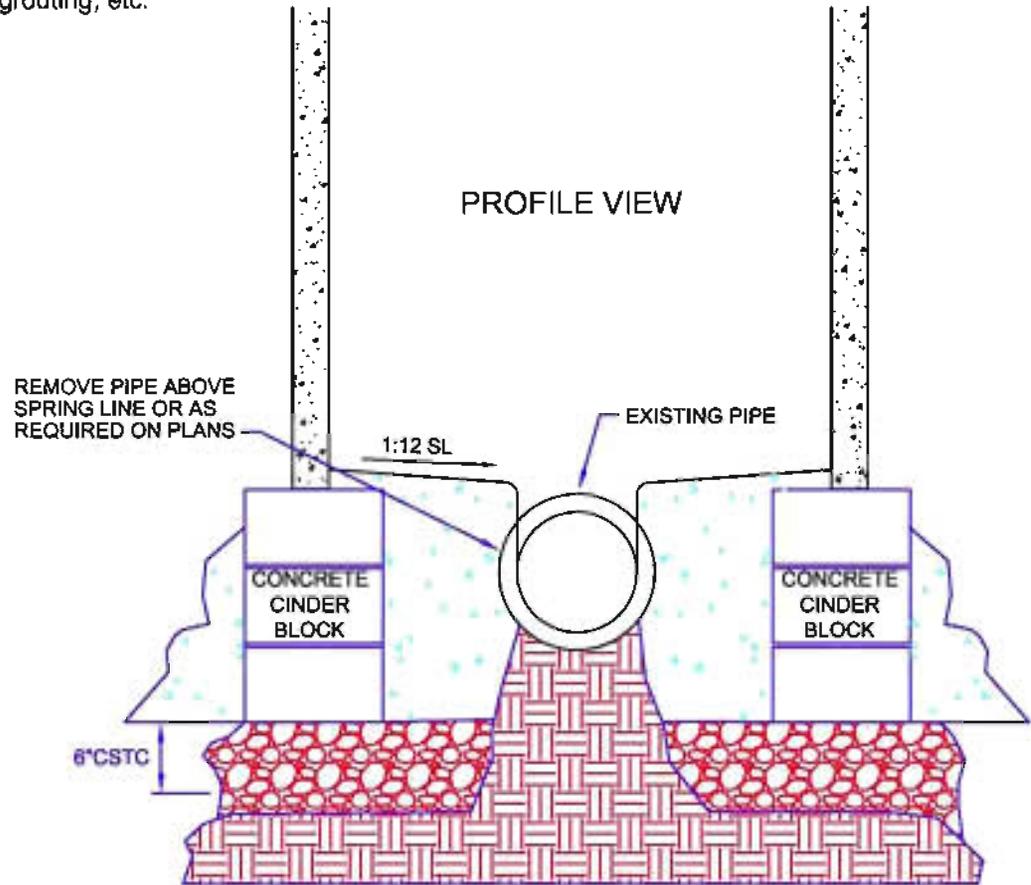
STANDARD
PLAN
3-6

Also see 'Manhole Notes' on standard plan 3-2, and standard plan 3-1 for concrete, connections, channeling, pipe grouting, etc.

PLAN VIEW



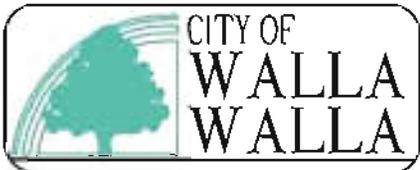
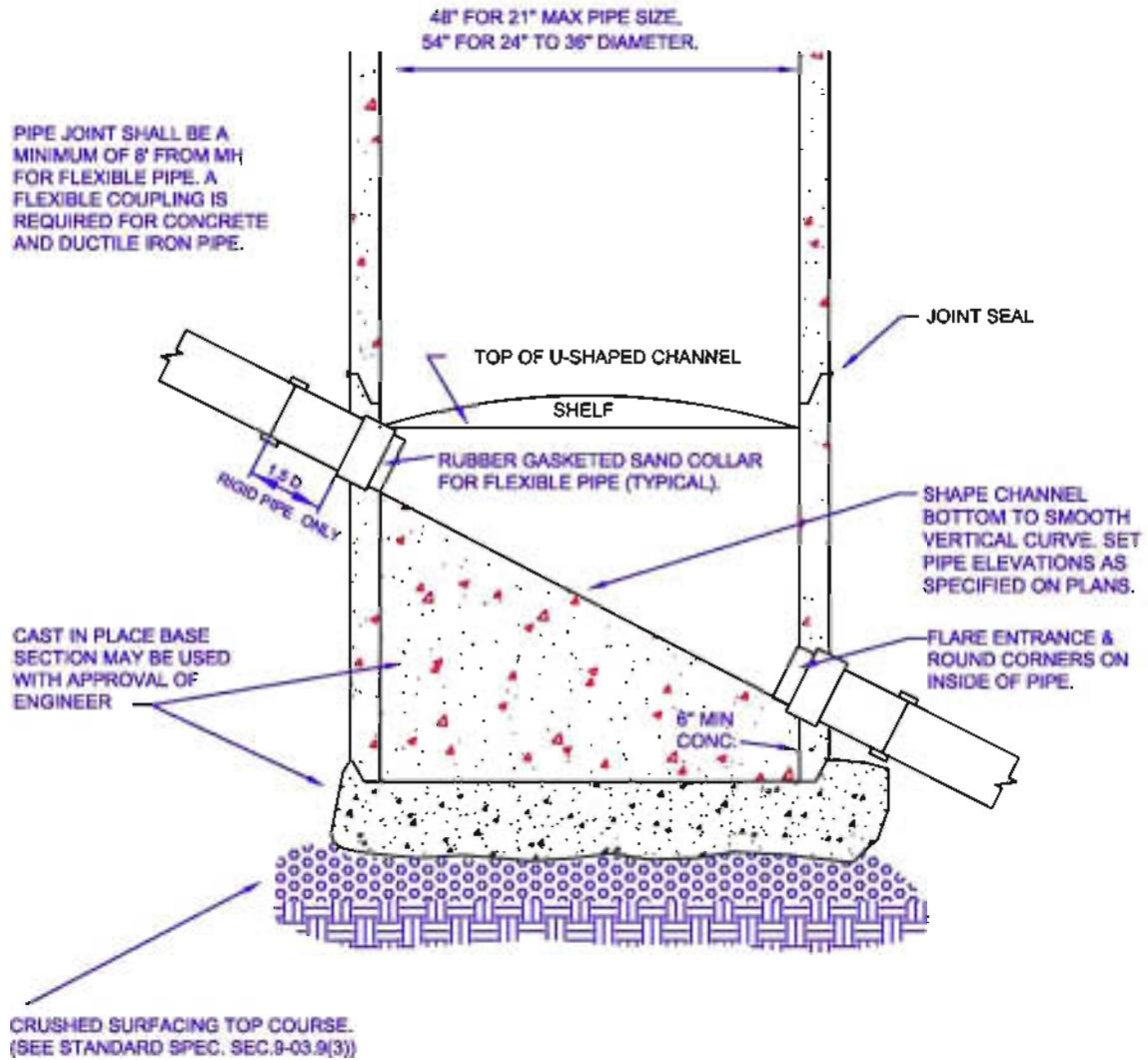
PROFILE VIEW



CLEAN EXISTING PIPE WITH WIRE BRUSH & APPLY A COAT OF "BONDCRETE" ON ALL PIPE SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED.

EARTH BRIDGE ONLY AVAILABLE WHEN EXISTING PIPE IS UNSTABLE. OTHERWISE SUPPORT PIPE WITH 6" CSTC.

Also see 'Manhole Notes' on standard plan 3-2, and standard plan 3-1 for concrete, connections, channeling, etc.

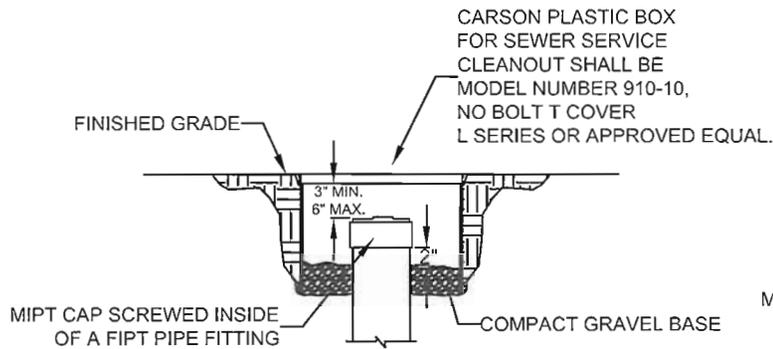


MANHOLE BASE CONST. FOR STEEP SLOPES

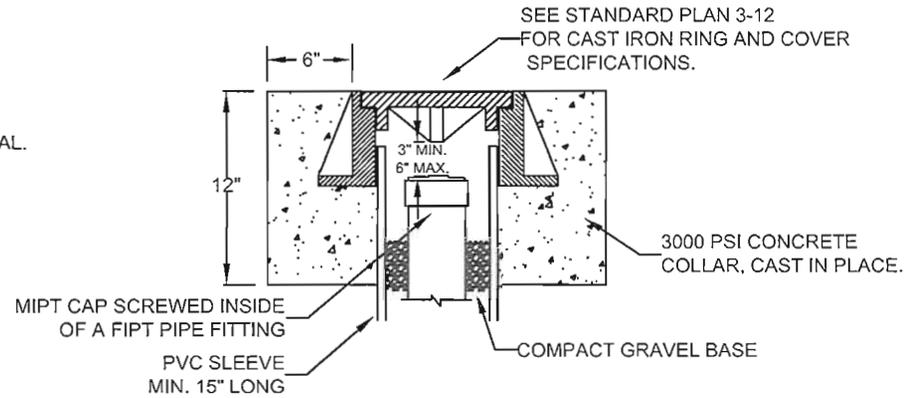
DATE: 6/05/2006

APPROVED BY:
Abundell Barnes Price

STANDARD
PLAN
3-8



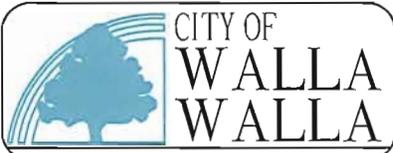
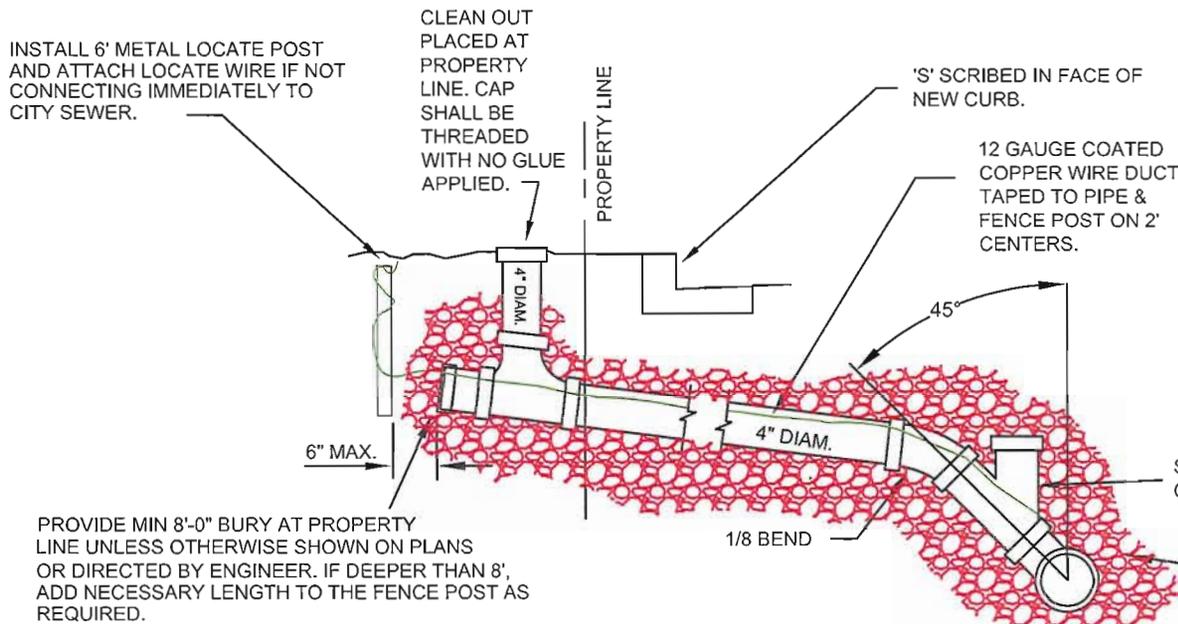
CLEANOUT DETAIL FOR LANDSCAPE AREAS



CLEANOUT DETAIL FOR HARDSCAPE AREAS

NOTES:

1. LATERALS CONNECTING TO NEW MAINS SHALL BE CONNECTED WITH WYE.
2. LATERALS CONNECTING TO EXISTING MAINS SHALL BE CONNECTED WITH "ROMAC CB", "INSERTA TEE", OR APPROVED EQUAL.
3. MAINS, LATERALS & FITTINGS IN THE ROW SHALL BE PVC 3034 SDR 35.
4. SERVICES AT A DEPTH OF 12 FEET OR GREATER SHALL USE SDR 26 FITTINGS. FITTINGS SHALL BE FIELD INSPECTED BY THE CITY PRIOR TO INSTALLATION.
5. HDPE MAY BE SUBSTITUTED FOR PVC FOR SEWER SERVICE REPAIRS USING PIPE BURSTING OR LONGITUDINAL BORE, UPON APPROVAL BY THE CITY ENGINEER.

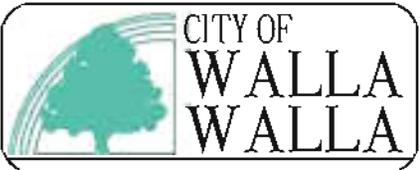
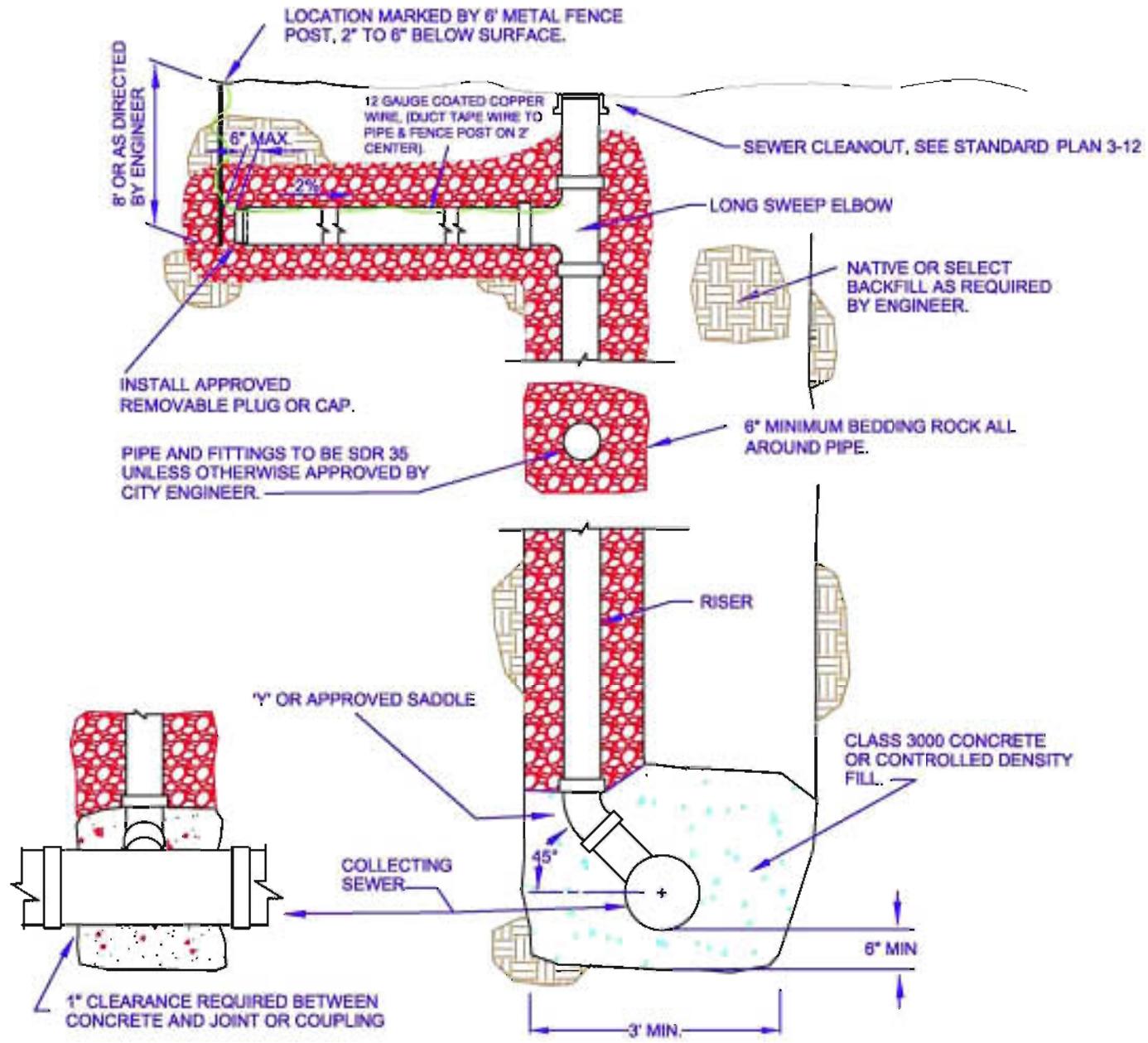


SANITARY SEWER LATERAL AND CLEANOUT

DATE:
02/06/2014

APPROVED BY:

STANDARD
PLAN
3-9

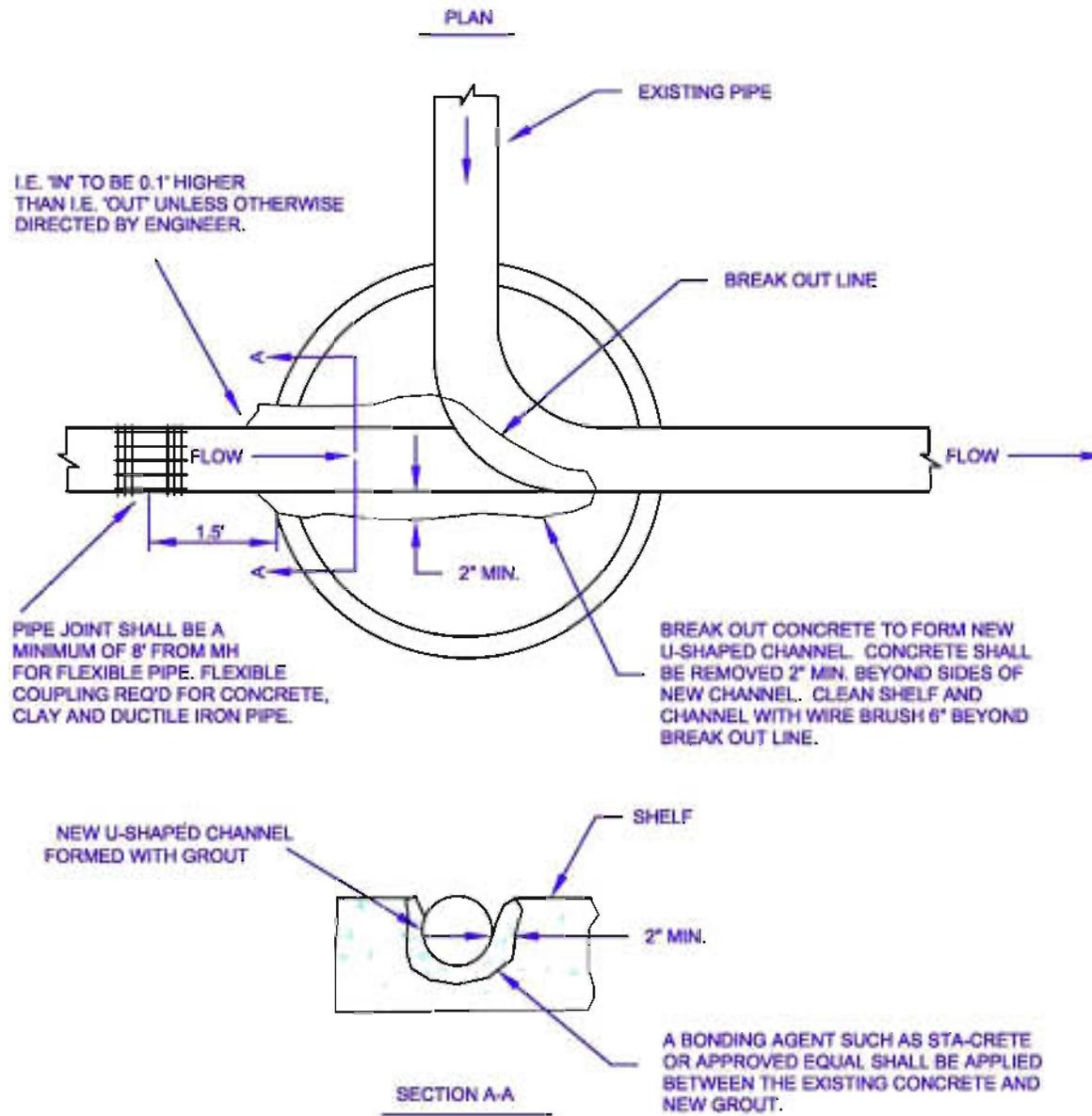


SERVICE CONNECTION OPTION FOR DEEP SEWER

DATE: 6/05/2006

APPROVED BY: *Shandell Bena...*

STANDARD PLAN
3-10

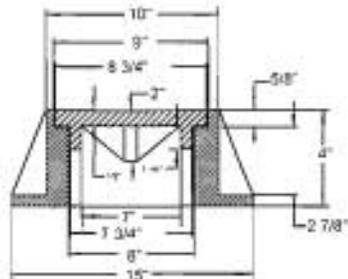
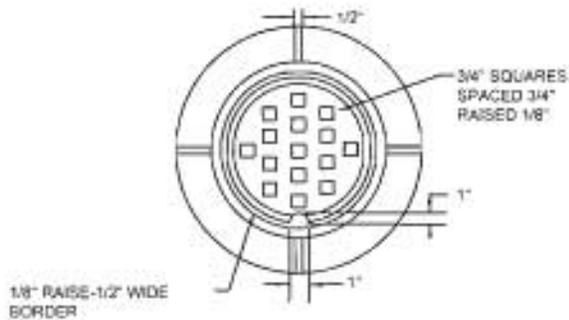


SEWER CONNECTION TO EXISTING MANHOLE

DATE: 6/05/2006

APPROVED BY: *Shandell Benes-Price*

STANDARD
PLAN
3-11



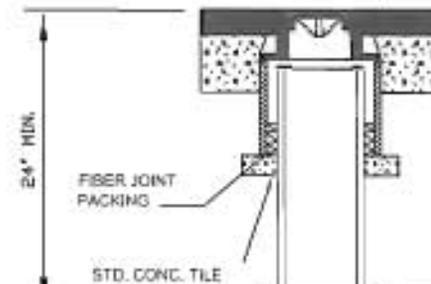
CAST IRON RING & COVER

INLAND FOUNDRY CO. RING & COVER
NO. 247 OR APPROVED EQUAL

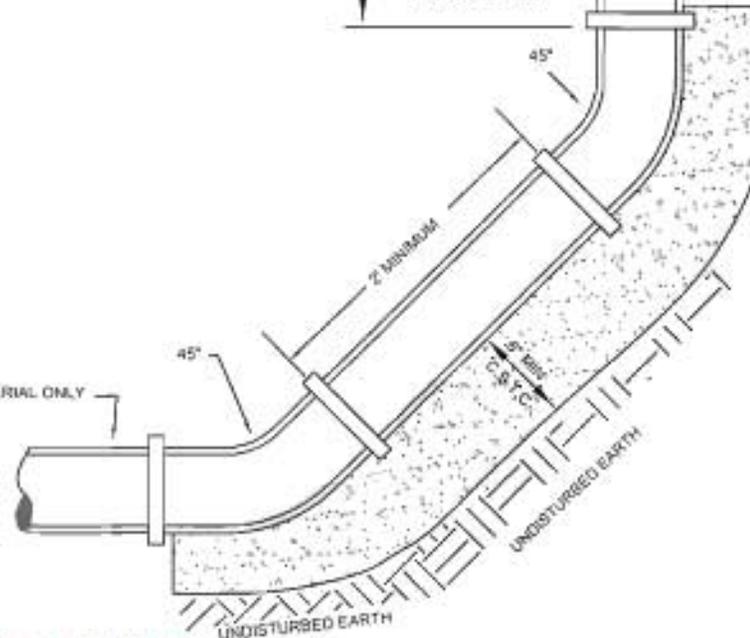
RING AND COVER TO MEET REQUIREMENT OF
APWA/ASDOT STANDARD SPECIFICATIONS
FOR PLAN No. S-195

UNIT WEIGHT 64 POUNDS MINIMUM

SURFACING REQUIREMENTS SHOWN
ON STANDARD PLAN 2-3.



6" OR 8" PIPE MATERIAL ONLY



CLEANOUTS ON MAINS ONLY ALLOWED WHEN APPROVED BY CITY ENGINEER



SANITARY SEWER MAIN CLEANOUT

DATE:

7/12/2012

APPROVED BY:

Walt Elmer

STANDARD
PLAN

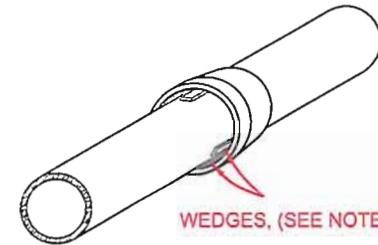
3-12

1. PIPE:

ALL PIPE FOR WATER MAINS SHALL BE DUCTILE IRON. PIPE 6" AND SMALLER SHALL BE CLASS 52 AND PIPE 8" AND LARGER SHALL BE CLASS 50. ALL PIPES, FITTINGS AND RELATED PRODUCTS INSTALLED, WHICH CONTACT CITY WATER, MUST CONFORM TO NSF/ANSI STANDARD 61

2. WEDGES:

SERRATED SILICONE BRONZE WEDGES SHALL BE USED IN ALL PUSH-ON DUCTILE IRON PIPE JOINTS. FOR 3" TO 12" PIPE, TWO WEDGES PER JOINT SHALL BE USED. THE WEDGES SHALL BE ON OPPOSITE SIDES OF THE PIPE. FOR PIPES LARGER THAN 12 INCHES, TWO PAIRS OF WEDGES SHALL BE USED WITH THE PAIRS ON OPPOSITE SIDES OF THE PIPE. THE WEDGES SHALL BE SPECIFICALLY MANUFACTURED FOR THE SPECIFIED APPLICATION AND SHALL HAVE APPROXIMATELY 5 PERCENT SILICON, 1 PERCENT TIN, 5 PERCENT ZINC, AND 89 PERCENT COPPER.



3. IDENTIFYING TAPE:

IDENTIFYING TAPE SHALL BE USED WITH ALL WATER MAINS AS PER STANDARD PLAN 1-4.

4. RESTRAINED JOINTS:

THRUST BLOCKS SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY WATER DISTRIBUTION SUPERVISOR OR CITY ENGINEER. RESTRAINED JOINTS SHALL BE "MEGALUG" OR "FIELD-LOK". A MINIMUM OF THREE JOINTS SHALL BE RESTRAINED FROM EACH FITTING, EACH WAY.

5. WATER SYSTEM SHUTDOWNS:

THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE WATER DIVISION 5 FULL WORKING DAYS IN ADVANCE OF A REQUESTED SHUTDOWN FOR RESIDENTIAL SERVICES. SEVEN FULL WORKING DAYS OF ADVANCE NOTICE ARE REQUIRED WHERE COMMERCIAL SERVICES ARE AFFECTED. A WORKING DAY SHALL BEGIN AT 8AM. A MINIMUM OF 24 HOURS IN ADVANCE OF THE SHUTDOWN (72 HOURS FOR RESTAURANTS, HOTELS, ETC.), THE CONTRACTOR SHALL DISTRIBUTE NOTICES (SUPPLIED BY WATER DIVISION) TO THE EFFECTED WATER USERS. THE WATER DIVISION WILL DETERMINE THE REQUIRED SHUTDOWN AREA AND SHALL TURN ALL MAIN DISTRIBUTION VALVES. SERVICE VALVES SHALL BE TURNED BY THE CONTRACTOR.

6. POLYETHYLENE SLEEVING:

IN AREAS OF CLAY SOILS, OR CORROSIVE SOILS, THE WATER MAIN SHALL BE PROTECTED BY POLYETHYLENE SLEEVING IN ACCORDANCE WITH ANSI/AWWA C105/A21.5.

7. WATER MAIN TAPPING:

ALL TAPS ON EXISTING AND/OR CHARGED WATER MAINS MUST BE PERFORMED BY THE CITY OF WALLA WALLA WATER DEPARTMENT. THE OWNER / CONTRACTOR / OR AUTHORIZED AGENT IS REQUIRED TO REIMBURSE THE WATER DEPARTMENT FOR EXPENSES AT COST OF THE UTILITY. WHEN A TAP MUST BE PERFORMED ON A WATER MAIN 3" IN DIAMETER AND LARGER, A ROMAC SST STAINLESS STEEL TAPPING SLEEVE WITH DUCTILE IRON OR STAINLESS STEEL FLANGE MUST BE USED.

8. WATER VALVES:

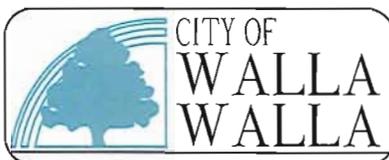
RESILIENT SEAT GATE VALVES TO BE INSTALLED ON ALL BRANCHES AND AT ALL INTERSECTIONS FOR 4"-10" DIAMETER PIPING. BUTTERFLY VALVES TO BE USED FOR 12" AND LARGER DIAMETER VALVES. DEPTH TO TOP OF NUT ON VALVE SHALL BE FOUR FEET OR LESS. IF DEPTH EXCEEDS FOUR FEET A NUT EXTENSION SHALL BE USED. EXTENSION SHALL HAVE A SET SCREW TO ATTACH TO NUT AND CENTERING RING ON THE TOP OF THE EXTENSION. THIS SHALL BE STANDARD UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

9. DISINFECTION AND TESTING REQUIREMENTS:

FOR ALL NEW INSTALLATIONS OF WATER MAIN CONTRACTOR SHALL BE RESPONSIBLE TO MEET ALL DISINFECTION AND TESTING REQUIREMENTS (SEE STANDARD PLAN 4-2). A MAXIMUM LENGTH OF 750 FEET PER TEST SECTION SHALL BE ALLOWED WHEN PRESSURE TESTING UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. AN ENGINEERING REPRESENTATIVE SHALL BE PRESENT FOR ALL TESTING.

10. WORK DAYS:

NO MAIN WATER LINE WILL BE INSTALLED DURING THE WEEKEND OR ANY HOLIDAY UNLESS APPROVED BY THE CITY ENGINEER



GENERAL WATER MAINS AND SERVICE NOTES

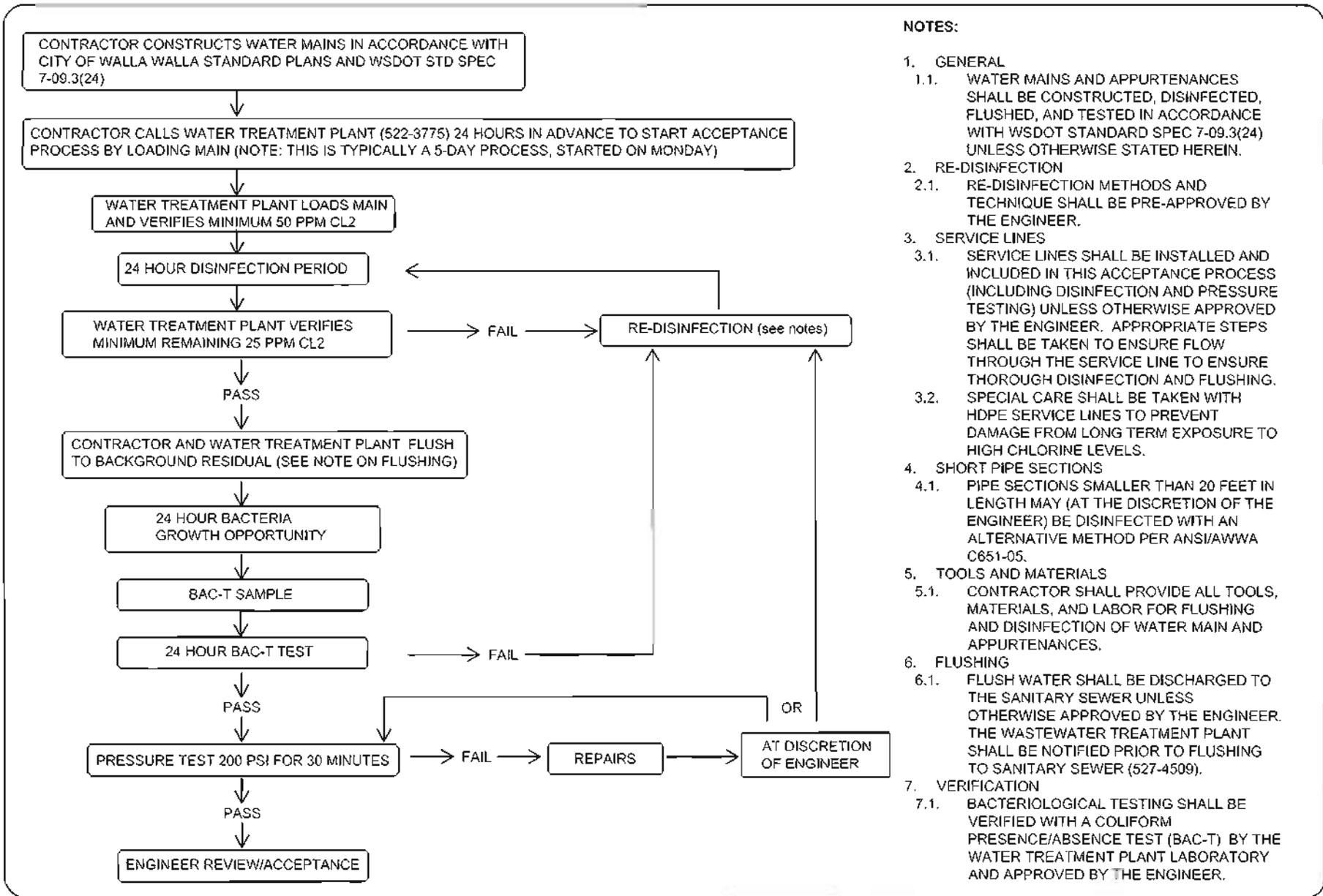
DATE:

02/06/2014

APPROVED BY:

A handwritten signature in black ink, likely of the City Engineer, written over the 'APPROVED BY:' text.

STANDARD
PLAN
4-1



NOTES:

1. GENERAL
 - 1.1. WATER MAINS AND APPURTENANCES SHALL BE CONSTRUCTED, DISINFECTED, FLUSHED, AND TESTED IN ACCORDANCE WITH WSDOT STANDARD SPEC 7-09.3(24) UNLESS OTHERWISE STATED HEREIN.
2. RE-DISINFECTION
 - 2.1. RE-DISINFECTION METHODS AND TECHNIQUE SHALL BE PRE-APPROVED BY THE ENGINEER.
3. SERVICE LINES
 - 3.1. SERVICE LINES SHALL BE INSTALLED AND INCLUDED IN THIS ACCEPTANCE PROCESS (INCLUDING DISINFECTION AND PRESSURE TESTING) UNLESS OTHERWISE APPROVED BY THE ENGINEER. APPROPRIATE STEPS SHALL BE TAKEN TO ENSURE FLOW THROUGH THE SERVICE LINE TO ENSURE THOROUGH DISINFECTION AND FLUSHING.
 - 3.2. SPECIAL CARE SHALL BE TAKEN WITH HDPE SERVICE LINES TO PREVENT DAMAGE FROM LONG TERM EXPOSURE TO HIGH CHLORINE LEVELS.
4. SHORT PIPE SECTIONS
 - 4.1. PIPE SECTIONS SMALLER THAN 20 FEET IN LENGTH MAY (AT THE DISCRETION OF THE ENGINEER) BE DISINFECTED WITH AN ALTERNATIVE METHOD PER ANSI/AWWA C651-05.
5. TOOLS AND MATERIALS
 - 5.1. CONTRACTOR SHALL PROVIDE ALL TOOLS, MATERIALS, AND LABOR FOR FLUSHING AND DISINFECTION OF WATER MAIN AND APPURTENANCES.
6. FLUSHING
 - 6.1. FLUSH WATER SHALL BE DISCHARGED TO THE SANITARY SEWER UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE WASTEWATER TREATMENT PLANT SHALL BE NOTIFIED PRIOR TO FLUSHING TO SANITARY SEWER (527-4509).
7. VERIFICATION
 - 7.1. BACTERIOLOGICAL TESTING SHALL BE VERIFIED WITH A COLIFORM PRESENCE/ABSENCE TEST (BAC-T) BY THE WATER TREATMENT PLANT LABORATORY AND APPROVED BY THE ENGINEER.

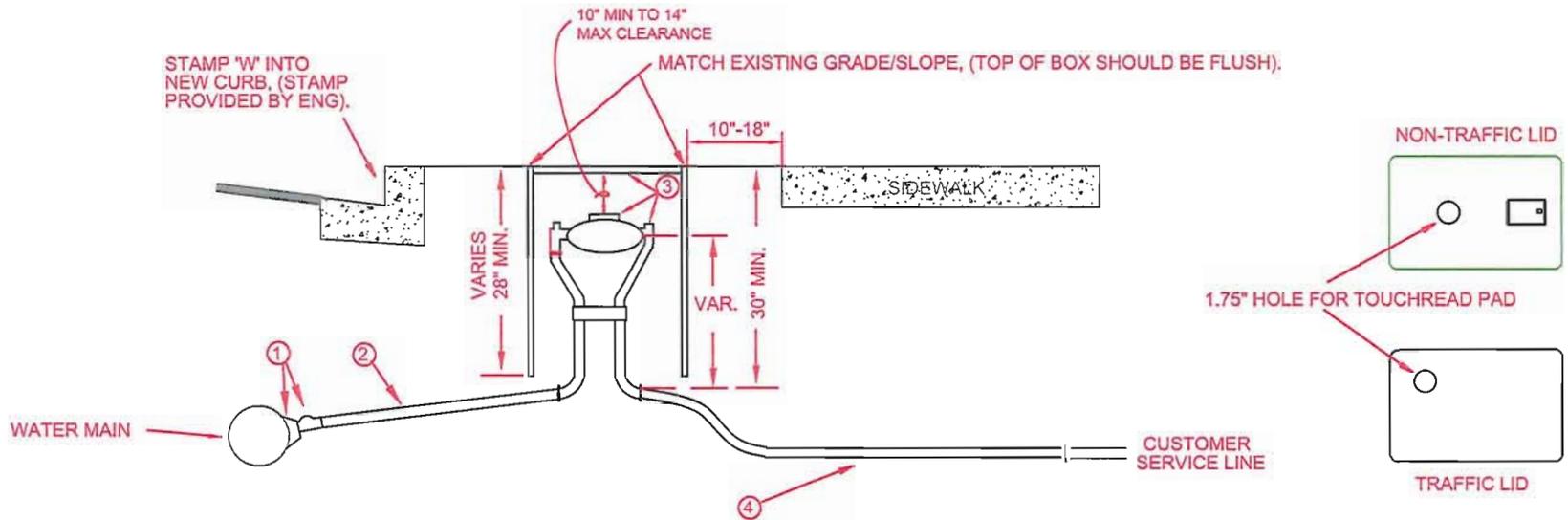


WATER MAIN ACCEPTANCE PROCESS

DATE: 10/10/2012

APPROVED BY: *Wendy Chen*





NOTES:

1. CONNECTION TO MAIN SHALL BE AS FOLLOWS:

OPTION 1: 1" DIRECT TAP FORD BALLCORP STOP (CTS) FB1000-4-Q-NL 1" INLET AWWA/CC THREAD (IN DUCTILE IRON PIPE ONLY).

OPTION 2: SERVICE SADDLE USING A SMITH-BLAIR 317x1" AWWA CC THREAD TAP OR ROMAC 202Nx1" AWWA CC THREAD TAP.

(BOTH OPTIONS SHALL UTILIZE A MUELLER 110 OR FORD 'GRIP OR QUICK JOINT' COMPRESSION CONNECTORS TO CONNECT THE STOP TO THE SERVICE PIPE)

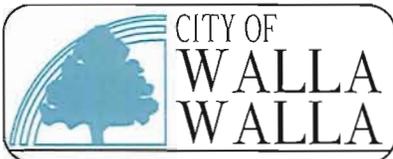
2. CITY SERVICE LINE SHALL BE EITHER 1" TYPE K COPPER SERVICE PIPE, 1" TYPE K TUBING, 1" TYPE K SOFT 20' JOINTS, OR 1" HDPE (SEE STANDARD PLAN 4-15). PIPE SHALL HAVE A MINIMUM OF 4" CSTC BEDDING ON ALL SIDES.

3. METER SETTER SHALL BE 1" FORD VB74-18W-44-44-Q-NL, OR EQUIVALENT MUELLER METER SETTER, SIZED TO MATCH THE DEPTH OF THE SERVICE LINE.

METER LOCATION (NEW OR REPLACEMENT) SHALL BE IN FRONT OF SIDEWALK AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER. IF THE ENGINEER APPROVES PLACING METER BEHIND SIDEWALK, METER SHALL BE LOCATED 10"-18" FROM THE BACK OF SIDEWALK.

METER BOXES FOR NON-TRAFFIC AREAS FOR 3/4" & 1" METERS SHALL BE CARSON SERIES METER BOX HW1324-18 BCF (BLACK) WITH A CARSON HD 1324 LID (BLACK FLUSH COVER WITH 1.75" AMR RECESS FOR TOUCH READ PAD).

(NOTES ARE CONTINUED ON SHEET 2 OF 2.)



$\frac{3}{4}$ " - 1" WATER METER & VAULT

DATE:
02/06/2014

APPROVED BY:

STANDARD
PLAN
4-3a
SHEET 1 OF 2

(CONTINUED FROM SHEET 1 OF 2)

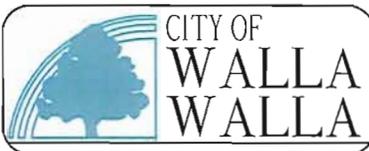
METER BOXES IN TRAFFIC AREAS FOR 3/4" & 1" METERS SHALL BE 1730 OLDCASTLE SYNERTECH UTILITY BOXES, WITH LIDS TRAFFIC-RATED FOR 20K LBS OR HIGHER. ALL METER BOX LIDS SHALL BE PRE-DRILLED WITH 1.75-INCH HOLES FOR TOUCH READ PADS. HOLES SHALL BE AT ANY CORNER CENTERED AT 5-INCHES FROM THE EDGES OF THE LID.

METERS SHALL BE MANUFACTURED BY SENSUS. 3/4" METERS SHALL BE IPERL MODEL I2X8FLXX AND 1" METERS SHALL BE IPERL MODEL I4X8FLXX. ALL METERS SHALL BE EQUIPPED WITH TOUCHREAD REMOTE READING PAD CONNECTED TO THE IPERL METER WITH A 6' TRPL (3 WIRE). THE CITY WATER DIVISION WILL PROVIDE & INSTALL IPERL METERS FOR ALL PROJECTS EXCEPT C.I.P. PROJECTS. ON C.I.P. PROJECTS THE CONTRACTOR SHALL SUPPLY TWO (2) FORD A-24 METER ADAPTERS WHEN INSTALLING 3/4" WATER METERS.

4. CUSTOMER CONNECTIONS TO THE SETTER ON SERVICES WITHOUT AN EXISTING CUSTOMER SERVICE LINE SHALL BE NEW, EITHER 1" TYPE K COPPER OR HDPE PIPE, EXTENDING A MINIMUM OF 24" BEYOND EDGE OF METER BOX OR VAULT. NOTE - CONNECTION TO THE METER SETTER MUST BE EITHER 1" TYPE K COPPER OR HDPE PIPE. ANY OTHER TYPE OF PIPE (I.E. GALVANIZED, PEX) MUST BE CONNECTED OUTSIDE OF BOX TO EXISTING COPPER OR HDPE STUB. NO EXCEPTIONS WILL BE ALLOWED.

CUSTOMER CONNECTIONS TO THE SETTER ON SERVICES WITH AN EXISTING CUSTOMER SERVICE LINE SHALL CONNECT TO EXISTING WATER SERVICE AT THE SERVICE LINE DEPTH USING 1" MINIMUM TYPE K COPPER OR HDPE PIPE. THE CONTRACTOR MAY USE "GRIP OR QUICK CONNECT" COMPRESSION FITTINGS, AND SHALL SUPPLY ALL FITTINGS AND GASKETS TO MAKE THE CONNECTIONS. COMPRESSION FITTINGS MUST CONFORM TO SECTION 9-30.6(4) OF STANDARD SPECIFICATIONS. THE CONTRACTOR IS ALERTED THAT THE EXISTING SERVICE LINE WILL MOST PROBABLY BE RUSTY GALVANIZED STEEL. IF THERE ARE NOT EXISTING SERVICEABLE THREADS WITH WHICH TO CONNECT A FITTING, THE ONLY METHOD THAT WILL BE ACCEPTABLE IS: 1" TYPE K COPPER TUBING WITH TWO 1" COPPER TO EXISTING", OR 1" GALVANIZED PIPE CONNECTORS (FORD C45-43-Q-NL OR FORD C45-44-Q-NL).

5. EXISTING METER, METER BOX, METER STOP, AND OTHER APPURTENANCES ASSOCIATED WITH EXISTING METER SHALL BE REMOVED AND RETURNED TO CITY WATER SHOP. IF A STOP FALLS IN AN EXISTING CONCRETE SIDEWALK OR DRIVEWAY, LID SHALL BE REMOVED AND RETURNED TO CITY AND RISER SHALL BE FILLED WITH CONCRETE OR GROUT.



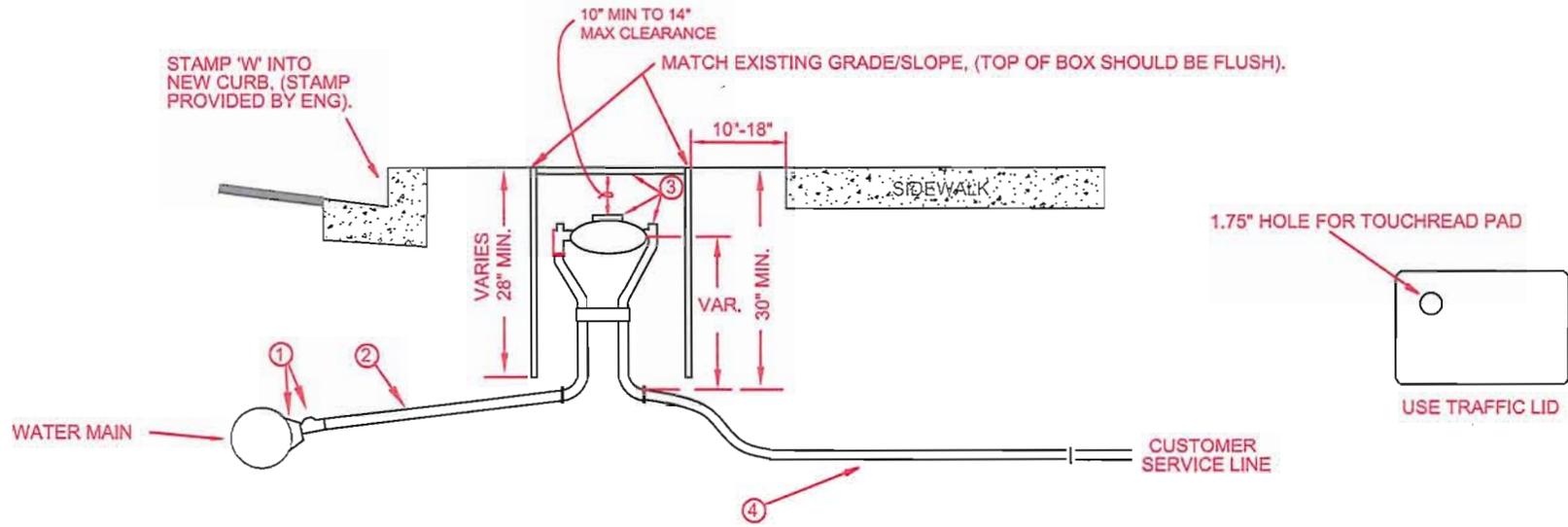
3/4" - 1" WATER METER & VAULT (CONTINUED)

DATE:
02/06/2014

APPROVED BY:

A handwritten signature in blue ink, likely of the project engineer or inspector.

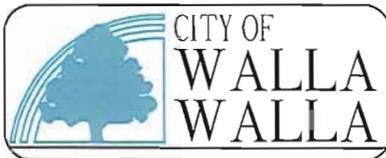
STANDARD
PLAN
4-3a
SHEET 2 OF 2



NOTES:

1. CONNECTION TO MAIN SHALL BE AS FOLLOWS:
 OPTION 1: 2" FORD BALLCORP STOP (CTS) FB1100-7-Q-NL 2" MIP X QUICK JOINT (CTS).
 OPTION 2: SERVICE SADDLE USING A ROMAC 202NS X 2" FIP THREAD TAP OR SMITH BLAIR EQUIVALENT.
 (BOTH OPTIONS SHALL UTILIZE A MUELLER 110 OR FORD 'GRIP OR QUICK JOINT COMPRESSION CONNECTORS TO CONNECT THE STOP TO THE SERVICE PIPE)
2. CITY SERVICE LINE SHALL BE EITHER 2" TYPE K COPPER SERVICE PIPE, 2" TYPE K TUBING, 2" TYPE K SOFT 20' JOINTS, OR 2" HDPE (SEE STANDARD PLAN 4-15). PIPE SHALL HAVE A MINIMUM OF 4" CSTC BEDDING ON ALL SIDES.
3. METER SETTER SHALL BE 2" FORD VBB77-18B-44-77-PK-NL, OR EQUIVALENT MUELLER METER SETTER, SIZED TO MATCH THE DEPTH OF THE SERVICE LINE.
 METER LOCATION (NEW OR REPLACEMENT) SHALL BE IN FRONT OF SIDEWALK AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER. IF THE ENGINEER APPROVES PLACING METER BEHIND SIDEWALK, METER SHALL BE LOCATED 10"-18" FROM THE BACK OF SIDEWALK.

(NOTES ARE CONTINUED ON SHEET 2 OF 2,)



1-1/2" - 2" WATER METER & VAULT

DATE:
02/06/2014

APPROVED BY:
[Signature]

STANDARD
PLAN
4-3b
SHEET 1 OF 2

(CONTINUED FROM SHEET 1 OF 2)

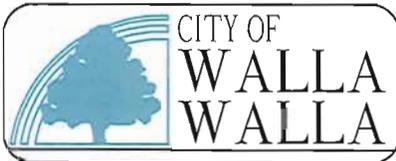
ALL METER BOXES FOR 1-1/2" & 2" METERS SHALL BE 2436 OLDCASTLE SYNERTECH UTILITY BOXES, WITH LIDS TRAFFIC-RATED FOR 20K LBS OR HIGHER. ALL METER BOX LIDS SHALL BE PRE-DRILLED WITH 1.75-INCH HOLES FOR TOUCH READ PADS. HOLES SHALL BE AT ANY CORNER CENTERED AT 5-INCHES FROM THE EDGES OF THE LID.

METER TYPE TO BE SPECIFIED BY THE CITY WATER DIVISION. METER TO BE SUPPLIED AND INSTALLED BY CITY WATER DIVISION. TOP OF METER DEPTH FROM FINISH GRADE SHALL BE 10" MINIMUM AND 14" MAXIMUM.

4. CUSTOMER CONNECTIONS TO THE SETTER ON SERVICES WITHOUT AN EXISTING CUSTOMER SERVICE LINE SHALL BE NEW, EITHER 2" TYPE K COPPER OR HDPE PIPE, EXTENDING A MINIMUM OF 24" BEYOND EDGE OF METER BOX OR VAULT. NOTE - CONNECTION TO THE METER SETTER MUST BE EITHER 2" TYPE K COPPER OR HDPE PIPE. ANY OTHER TYPE OF PIPE (I.E. GALVANIZED, PEX) MUST BE CONNECTED OUTSIDE OF BOX TO EXISTING COPPER OR HDPE STUB. NO EXCEPTIONS WILL BE ALLOWED.

CUSTOMER CONNECTIONS TO THE SETTER ON SERVICES WITH AN EXISTING CUSTOMER SERVICE LINE SHALL CONNECT TO EXISTING WATER SERVICE AT THE SERVICE LINE DEPTH USING 2" MINIMUM TYPE K COPPER OR HDPE PIPE. THE CONTRACTOR MAY USE "GRIP OR QUICK CONNECT" COMPRESSION FITTINGS, AND SHALL SUPPLY ALL FITTINGS AND GASKETS TO MAKE THE CONNECTIONS. COMPRESSION FITTINGS MUST CONFORM TO SECTION 9-30.6(4) OF STANDARD SPECIFICATIONS. THE CONTRACTOR IS ALERTED THAT THE EXISTING SERVICE LINE WILL MOST PROBABLY BE RUSTY GALVANIZED STEEL. IF THERE ARE NOT EXISTING SERVICEABLE THREADS WITH WHICH TO CONNECT A FITTING, THE ONLY METHOD THAT WILL BE ACCEPTABLE IS: 2" TYPE K COPPER TUBING WITH TWO 2" COPPER TO EXISTING", OR 2" GALVANIZED PIPE CONNECTORS (FORD C45-77-Q OR EQUIVALENT MUELLER FITTING).

5. EXISTING METER, METER BOX, METER STOP, AND OTHER APPURTENANCES ASSOCIATED WITH EXISTING METER SHALL BE REMOVED AND RETURNED TO CITY WATER SHOP. IF A STOP FALLS IN AN EXISTING CONCRETE SIDEWALK OR DRIVEWAY, LID SHALL BE REMOVED AND RETURNED TO CITY AND RISER SHALL BE FILLED WITH CONCRETE OR GROUT.



1-1/2" - 2" WATER METER & VAULT (CONTINUED)

DATE:

02/06/2014

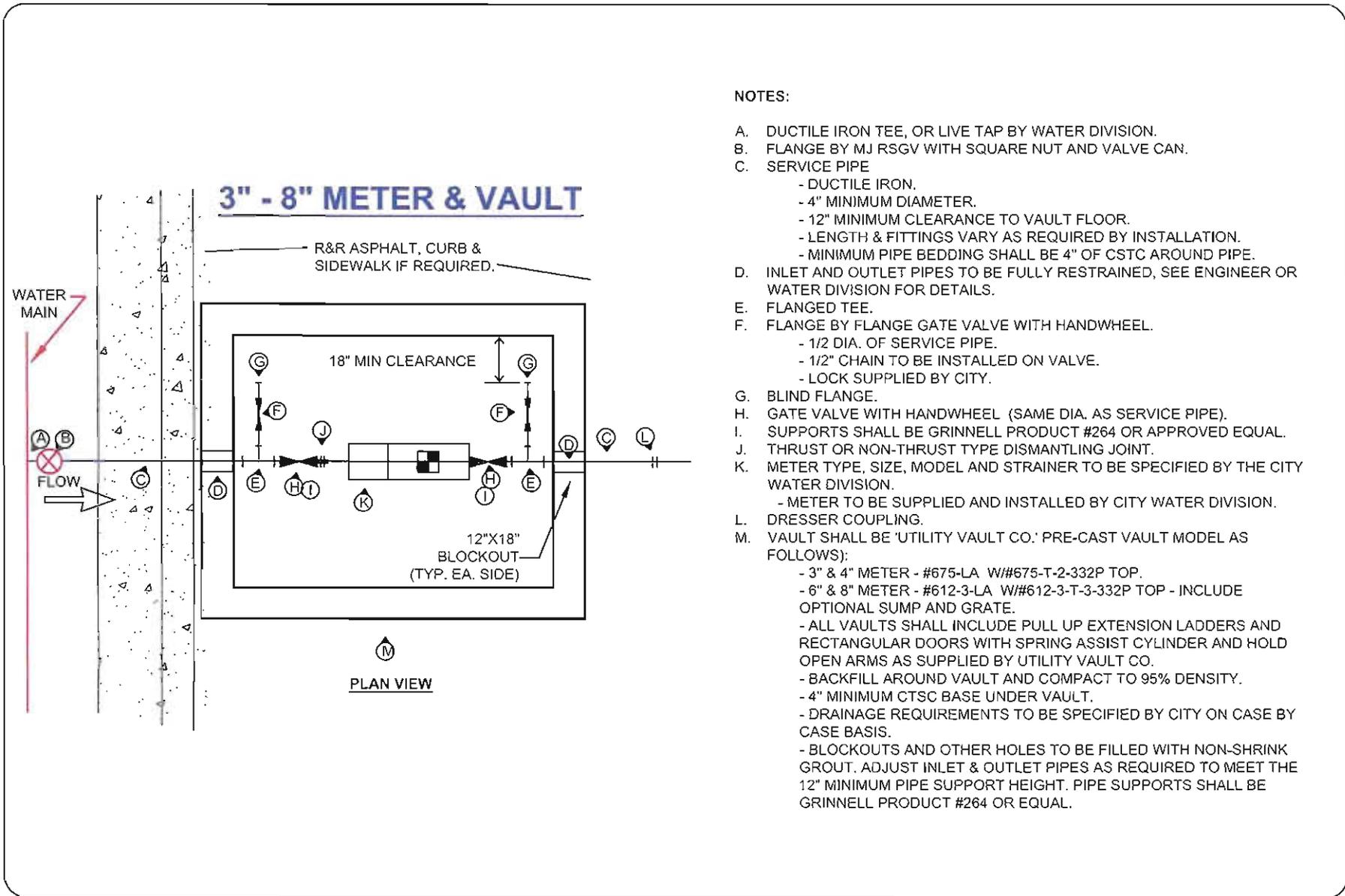
APPROVED BY:

A handwritten signature in black ink, appearing to read "Neal Blum".

STANDARD
PLAN

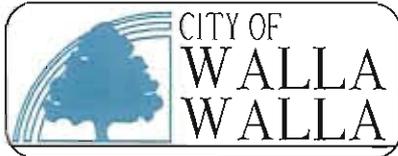
4-3b

SHEET 2 OF 2



NOTES:

- A. DUCTILE IRON TEE, OR LIVE TAP BY WATER DIVISION.
- B. FLANGE BY MJ RSGV WITH SQUARE NUT AND VALVE CAN.
- C. SERVICE PIPE
 - DUCTILE IRON.
 - 4" MINIMUM DIAMETER.
 - 12" MINIMUM CLEARANCE TO VAULT FLOOR.
 - LENGTH & FITTINGS VARY AS REQUIRED BY INSTALLATION.
 - MINIMUM PIPE BEDDING SHALL BE 4" OF CSTC AROUND PIPE.
- D. INLET AND OUTLET PIPES TO BE FULLY RESTRAINED, SEE ENGINEER OR WATER DIVISION FOR DETAILS.
- E. FLANGED TEE.
- F. FLANGE BY FLANGE GATE VALVE WITH HANDWHEEL.
 - 1/2 DIA. OF SERVICE PIPE.
 - 1/2" CHAIN TO BE INSTALLED ON VALVE.
 - LOCK SUPPLIED BY CITY.
- G. BLIND FLANGE.
- H. GATE VALVE WITH HANDWHEEL (SAME DIA. AS SERVICE PIPE).
- I. SUPPORTS SHALL BE GRINNELL PRODUCT #264 OR APPROVED EQUAL.
- J. THRUST OR NON-THRUST TYPE DISMANTLING JOINT.
- K. METER TYPE, SIZE, MODEL AND STRAINER TO BE SPECIFIED BY THE CITY WATER DIVISION.
 - METER TO BE SUPPLIED AND INSTALLED BY CITY WATER DIVISION.
- L. DRESSER COUPLING.
- M. VAULT SHALL BE 'UTILITY VAULT CO.' PRE-CAST VAULT MODEL AS FOLLOWS):
 - 3" & 4" METER - #675-LA W/#675-T-2-332P TOP.
 - 6" & 8" METER - #612-3-LA W/#612-3-T-3-332P TOP - INCLUDE OPTIONAL SUMP AND GRATE.
 - ALL VAULTS SHALL INCLUDE PULL UP EXTENSION LADDERS AND RECTANGULAR DOORS WITH SPRING ASSIST CYLINDER AND HOLD OPEN ARMS AS SUPPLIED BY UTILITY VAULT CO.
 - BACKFILL AROUND VAULT AND COMPACT TO 95% DENSITY.
 - 4" MINIMUM CTSC BASE UNDER VAULT.
 - DRAINAGE REQUIREMENTS TO BE SPECIFIED BY CITY ON CASE BY CASE BASIS.
 - BLOCKOUTS AND OTHER HOLES TO BE FILLED WITH NON-SHRINK GROUT. ADJUST INLET & OUTLET PIPES AS REQUIRED TO MEET THE 12" MINIMUM PIPE SUPPORT HEIGHT. PIPE SUPPORTS SHALL BE GRINNELL PRODUCT #264 OR EQUAL.

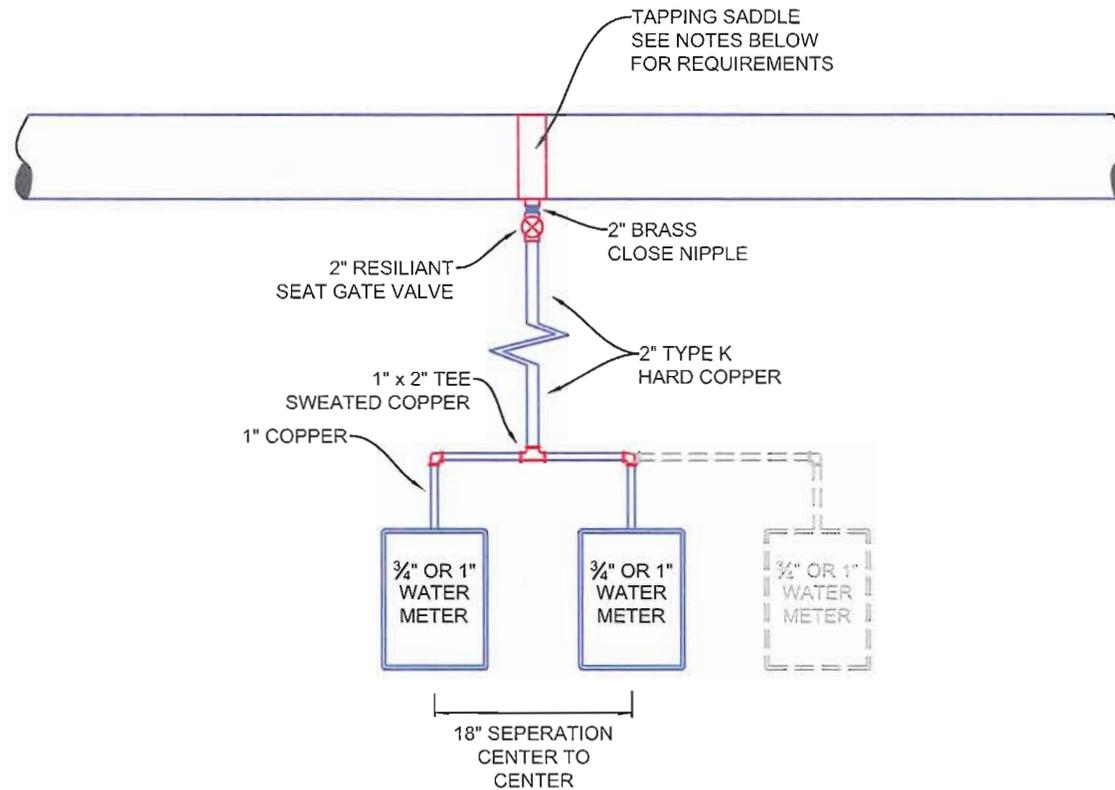


3" - 8" METER & VAULT

DATE: 10/12/2012

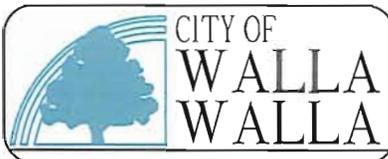
APPROVED BY: *Mark Allen*

STANDARD
PLAN
4-3c



NOTES:

1. TAPS ON EXISTING AND/OR CHARGED WATER MAINS SHALL BE PERFORMED BY THE CITY OF WALLA WALLA WATER DEPARTMENT PER STANDARD PLAN 4-1.
2. TAPPING SADDLE SHALL BE ROMAC 202NS x 2" CC TAP.
3. ALL TEE'S AND BENDS SHALL BE BRASS COMPRESSION FITTINGS.
4. MAXIMUM OF THREE WATER SERVICES ARE ALLOWED ON A SINGLE SERVICE LINE.
5. NO METERS SHALL BE PLACED IN DRIVEWAYS OR SIDEWALKS WITHOUT PRE-APPROVAL BY THE CITY ENGINEER.



MULTIPLE WATER METER INSTALLATION

DATE:
02/06/2014

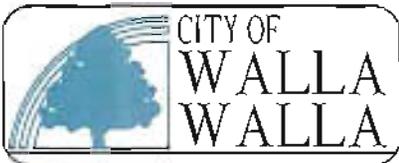
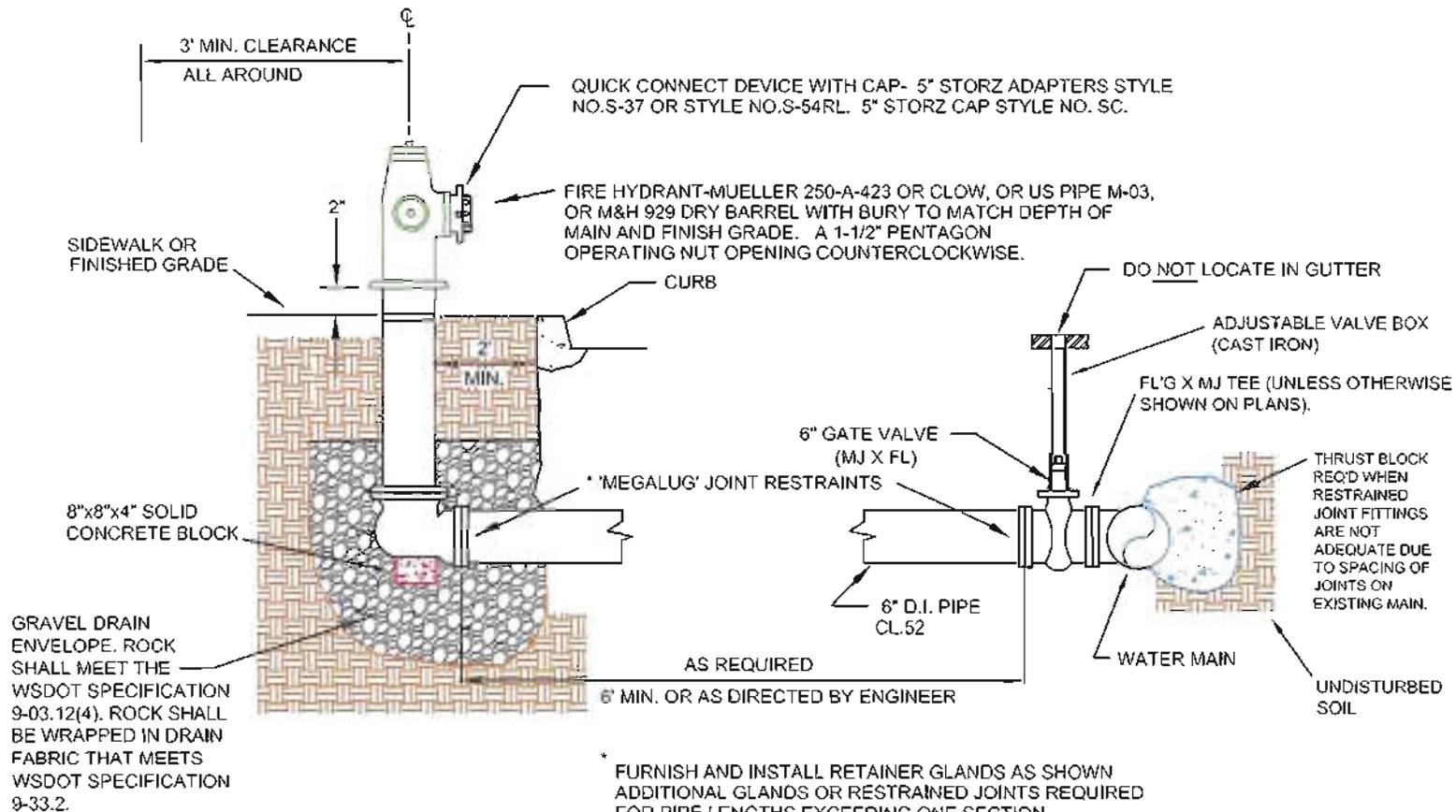
APPROVED BY:

STANDARD
PLAN

4-4

NOTES:

1. HYDRANT SHALL BE PAINTED OSHA SAFETY YELLOW. HYDRANTS IN THE DOWNTOWN AREA SHALL BE PAINTED 'DOWNTOWN GREEN'.
2. TRAFFIC MODEL REQUIRED.
3. HYDRANTS SHALL BE FURNISHED WITH 5-1/4" MAIN VALVE OPENING.
4. HYDRANTS SHALL BE HOODED UNTIL OPERATIONAL.
5. HYDRANTS TO BE MUELLER SUPER CENTURION 250-A-423, CLOW MEDALLION OR US PIPE METROFLOW M-03.
6. HYDRANTS TO BE DRY BARREL WITH BURY TO MATCH DEPTH OF MAIN AND FINISH GRADE. A 1 1/2" PENTAGON OPERATING NUT OPENING COUNTERCLOCKWISE.
7. HYDRANT SHALL BE INSTALLED WITH STEAMER PORT FACING PERPENDICULAR TO NEAREST STREET CENTERLINE.

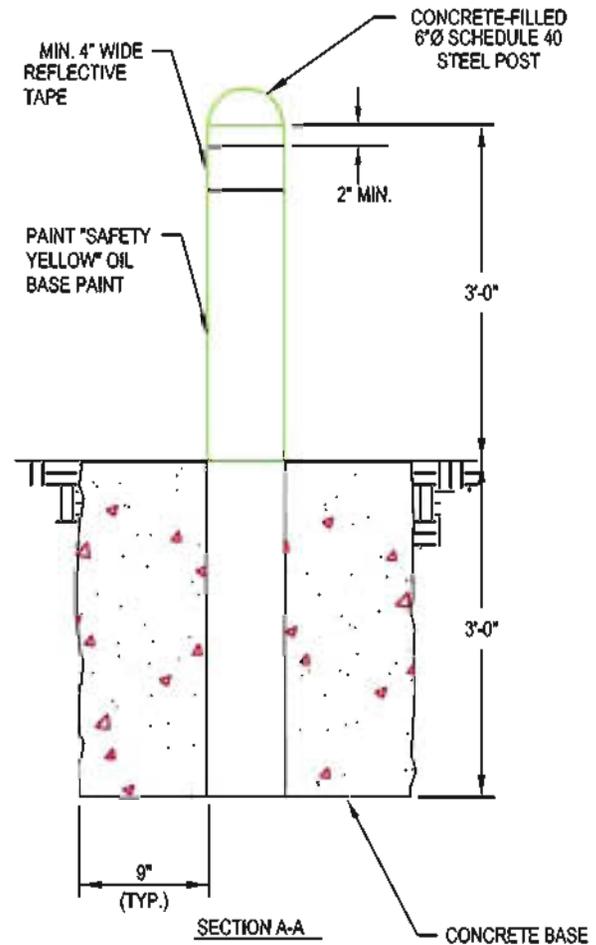
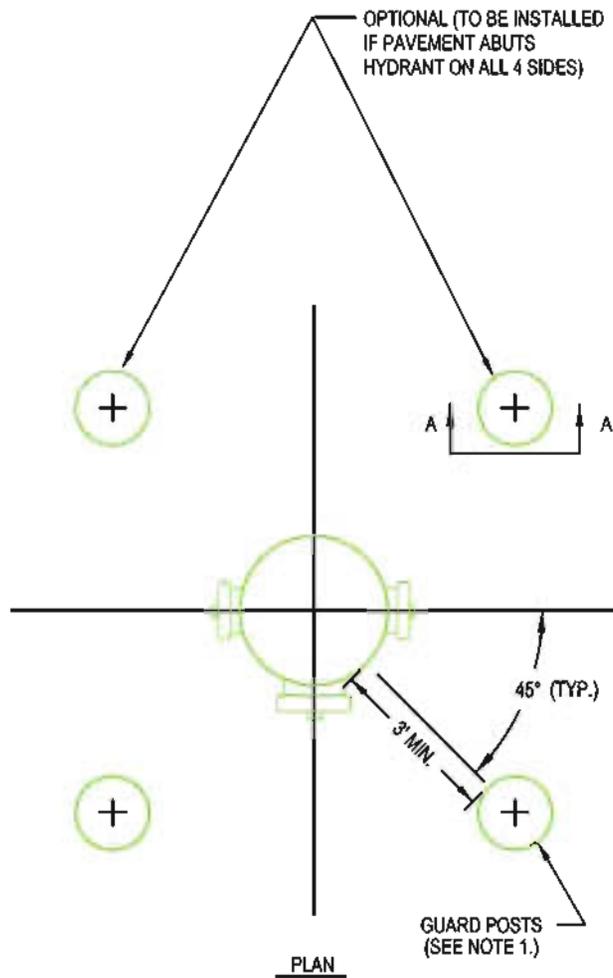


FIRE HYDRANT

DATE: 10/15/2012

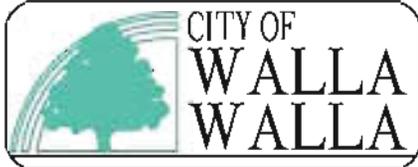
APPROVED BY: *W. Walla*

STANDARD
PLAN
4-5



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 SAME AS HYDRANT.



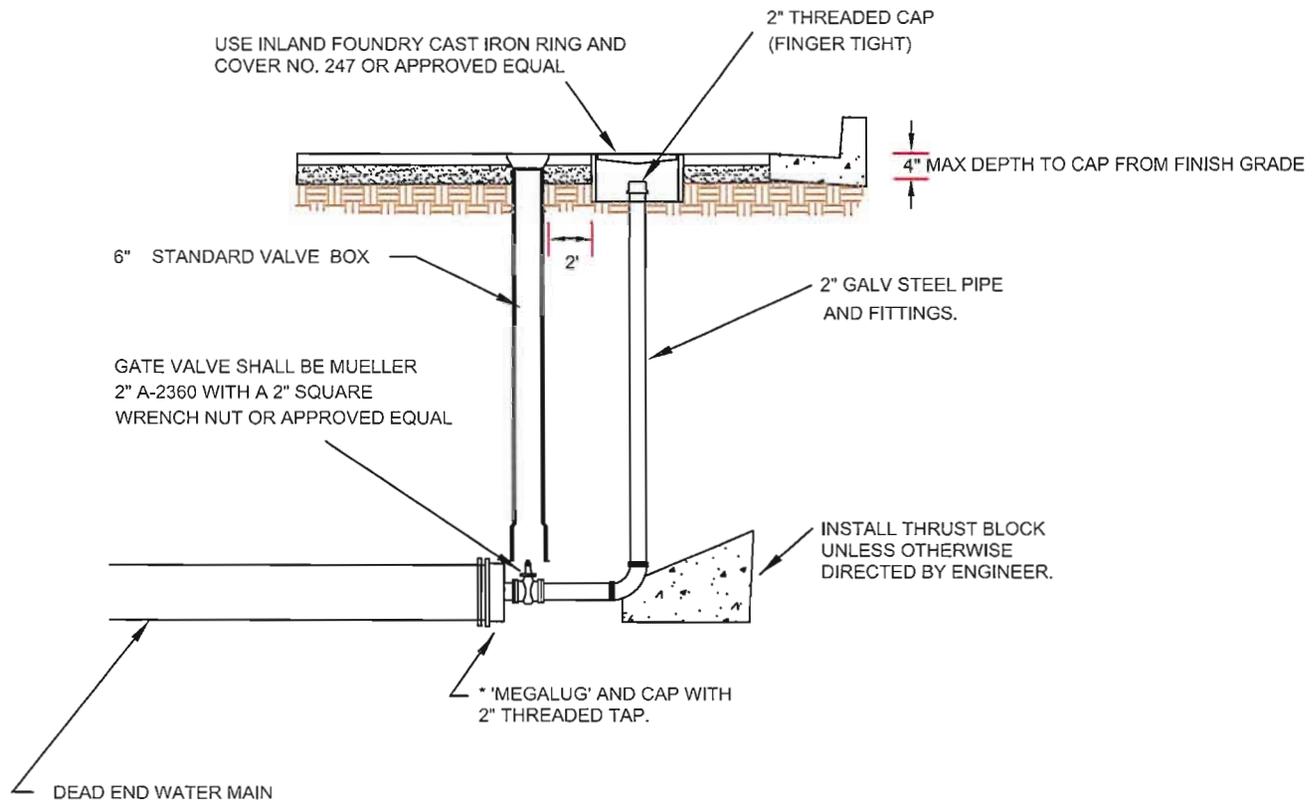
HYDRANT GUARD POSTS

DATE:
6/05/2006

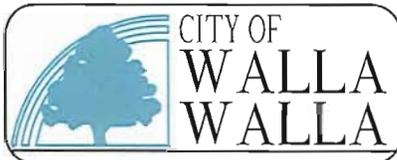
APPROVED BY:

Shandel Benea-Prin

STANDARD
PLAN
4-6



* THE NUMBER OF RESTRAINED JOINTS SHALL BE DETERMINED BY THE CITY ENGINEER.



TEMPORARY AND PERMANENT WATER BLOW-OFF ASSEMBLY

DATE:
02/06/2014

APPROVED BY:

STANDARD
PLAN

4-7

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.

WHERE REQUIRED, REDUCER TO BE ALL FLANGE.

C.I. TEE OR C.I. CROSS FLANGE X FLANGE

FLANGE X MJ VALVE

SEE NOTE 6.

EXISTING WATER MAIN

RESTRAINED FLANGED COUPLING ADAPTER ROMAC RFCA ONLY

NEW WATER MAIN

CUT-IN TEE

EXISTING WATER MAIN

TAPPING SLEEVE JCM 412, SMITH-BLAIR #662, ROMAC SST, FTS 419, FTS 420 OR APPROVED EQUAL. BOLTS AND NUTS TO BE CORROSION RESISTANT, HIGH STRENGTH LOW ALLOY, PER AWWAC111.

RESILIENT SEATED GATE VALVE PER SECTION 9.30.3(1) OF THE WSDOT SPECIFICATIONS. 3" TO 12" DIA. FLANGE X MECHANICAL JOINT.

VALVE OR COUPLING ADAPTER AS REQUIRED BY PIPE SIZE AND TYPE.

TAPPING SLEEVE AND VALVE

NOTES:

2. TAPS ON EXISTING AND/OR CHARGED WATER MAINS SHALL BE PERFORMED BY THE CITY OF WALLA WALLA WATER DEPARTMENT PER STANDARD PLAN 4-1. FIVE WORKING DAYS NOTICE SHALL BE REQUIRED TO SCHEDULE CITY CREWS FOR TAP.
3. CONTRACTOR TO DIG & VERIFY WATER MAIN SIZE, TYPE AND LOCATION TWO WEEKS PRIOR TO SCHEDULING CITY CREWS FOR TAP.
4. PRIOR TO CITY CREWS CONDUCTING TAP THE CONTRACTOR SHALL EXCAVATE A MINIMUM, 10 FEET X 3 FEET TRENCH AND ENSURE 3 FEET OF THE MAIN IS CLEANED AND PREPARED WITH 6 INCHES OF CLEARANCE ON ALL SIDES OF THE MAIN. CONTRACTOR SHALL PROVIDE AND ESTABLISH SHORING FOR ALL TRENCHES OVER 4 FEET IN DEPTH.
5. CHLORINATE VALVE & FITTINGS PER SECTION 7-09.3 OF SPECIFICATIONS.
6. MAXIMUM TAP TO EXISTING LINE NOT TO EXCEED 75% OF MAIN DIAMETER ON STEEL. DUCTILE IRON SHALL BE SIZE ON SIZE. MAXIMUM TAP FOR CROSS NOT TO EXCEED 50% OF MAIN.
7. INSTALL THRUST BLOCKS PER STANDARD PLAN 4-9 AND 4-10.
8. ON STEEL PIPE, CONTRACTOR TO RESTORE ALL DISTURBED COAL TAR AND WRAPPING.



CONNECTION TO EXISTING WATER MAIN

DATE:
02/06/2014

APPROVED BY:

STANDARD
PLAN

4-8

THRUST BLOCK NOTES

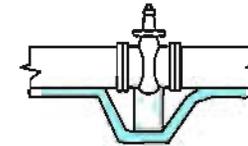
1. THRUST BLOCKS SHALL ONLY BE USED WHEN PRE APPROVED BY THE CITY ENGINEER AND WHEN 'MEGALUG' RESTRAINED JOINTS CAN NOT BE UTILIZED.
2. THRUST BLOCKS SHALL BE SIZED AS REQUIRED BY SOIL CONDITIONS AND OPERATING PRESSURE.
3. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
4. CONCRETE SHALL BE CLASS 3000.
5. ALL CONCRETE SHALL BE PLACED SO PIPE AND FITTING JOINTS WILL BE ACCESSIBLE FOR REPAIRS.
6. ANCHOR RODS SHALL BE 3/4" DIAMETER GALVANIZED STEEL RODS, EMBEDDED 18" MINIMUM IN CONCRETE.
7. WRAP FITTING WITH 6 MIL PLASTIC BEFORE PLACING CONCRETE TO PROTECT ALL BOLT THREADS.

DETERMINATION OF THRUST BLOCK AREA

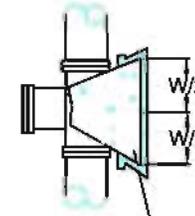
NOTE:

WHEN THRUST BLOCK BEARING IS NOT SPECIFIED ON THE PLANS OR BY THE ENGINEER, THE FOLLOWING PROCEDURE SHALL BE USED.

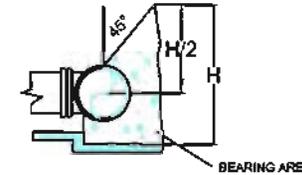
1. DETERMINE THRUST (T) AT FITTING AS REQUIRED FOR TYPE OF FITTING, SIZE OF PIPE, AND WORKING PRESSURE FROM TABLE NO. 1.
2. DETERMINE BEARING CAPACITY (B) OF SOIL FROM TABLE NO. 2.
3. DETERMINE REQUIRED BEARING AREA (A) USING FORMULA $A = T/B$.



FOR 12" VALVES & LARGER OR AS SPECIFIED BY THE ENGINEER.



BEARING AREA



BEARING AREA

TABLE NO.1

PIPE SIZE	TEES AND DEAD ENDS	90 DEGREE BEND	45 DEGREE BEND	22-1/2 DEGREE BEND
4"	1850	2610	1420	720
6"	3800	5370	2910	1470
8"	6580	9300	5040	2550
10"	10750	15200	8240	4170
12"	15310	21640	11720	5940
14"	20770	29380	15910	8080
16"	26880	38010	20590	10430

TABLE NO.2

SOIL	SAFE BEARING LOAD LB. PER SQ. FT.
SOFT CLAY	500
SAND	2000
SAND & GRAVEL	3000
SAND & GRAVEL	3000
CEMENTED W/CLAY	4000
HARD CLAY	4000

NOTE: FOR WATER PRESSURES DIFFERENT THAN 100 P.S.I., MULTIPLY THRUST FOUND IN TABLE NO. 1 BY REQUIRED PROPORTION.

EXAMPLE: IF PRESSURE IS 175 PSI, MULTIPLY VALUE IN TABLE BY 1.75.



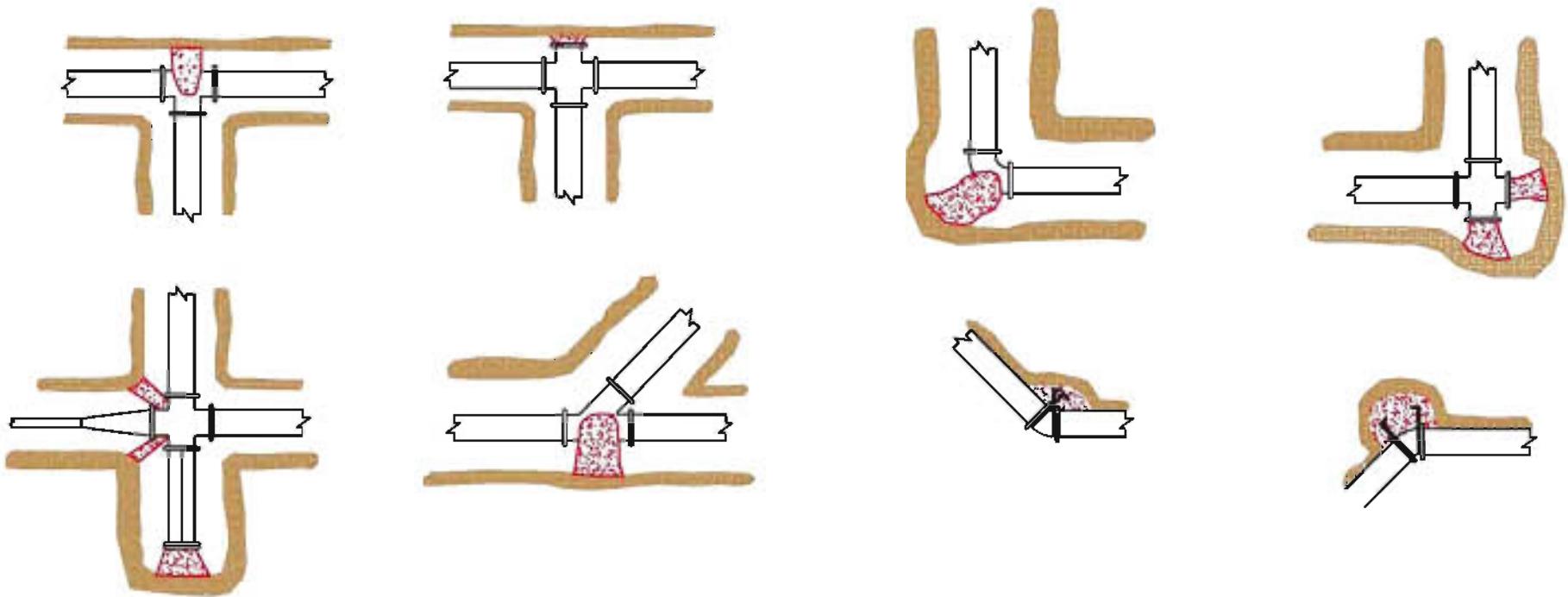
THRUST BLOCKS

DATE:
6/05/2006

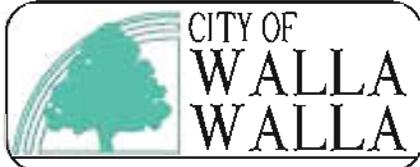
APPROVED BY:

Shandee Renee Price

STANDARD
PLAN
4-9



(WHEN THRUST BLOCKS ARE REQUIRED - SEE NOTE #1 ON STD PLAN FOR THRUST BLOCKS)



TYPICAL THRUST BLOCK LOCATIONS

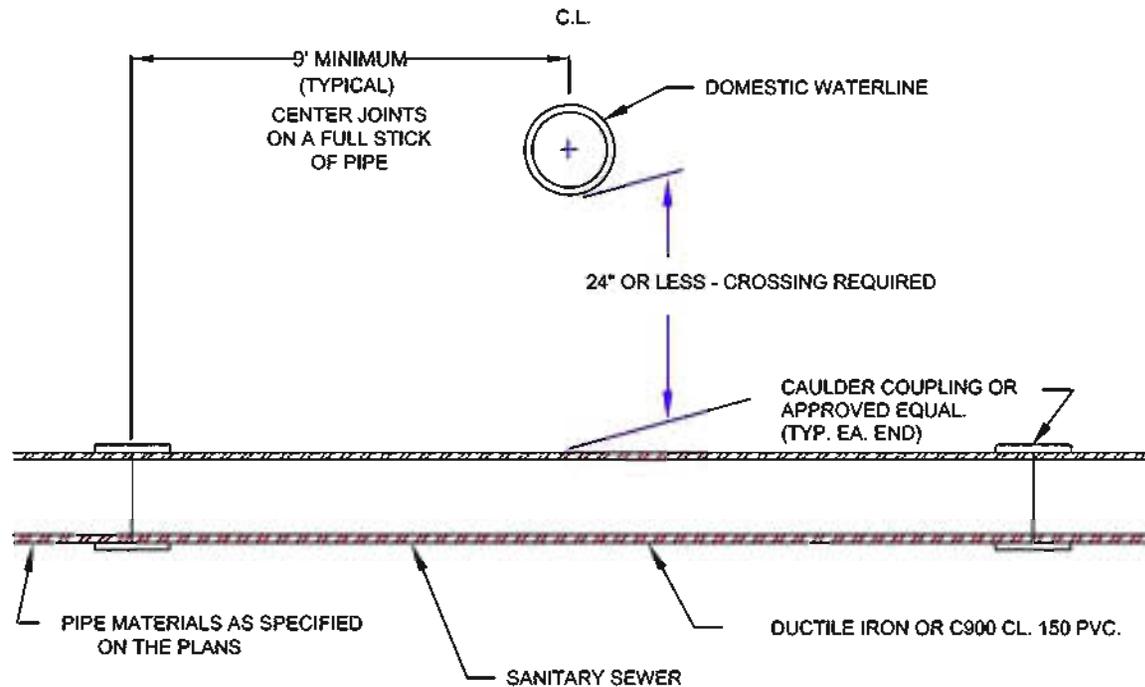
DATE:
6/05/2006

APPROVED BY:

Shanda Renee Price

STANDARD
PLAN

4-10



TYPE A WATER-SEWER LINE CROSSING REQUIRED WHENEVER SEWER COLLECTOR CROSSES ABOVE WATERLINE OR WHENEVER THERE IS LESS THAN 24" OF VERTICAL SEPARATION WHEN SEWER CROSSES UNDER WATERLINE.



WATER-SEWER CROSSING

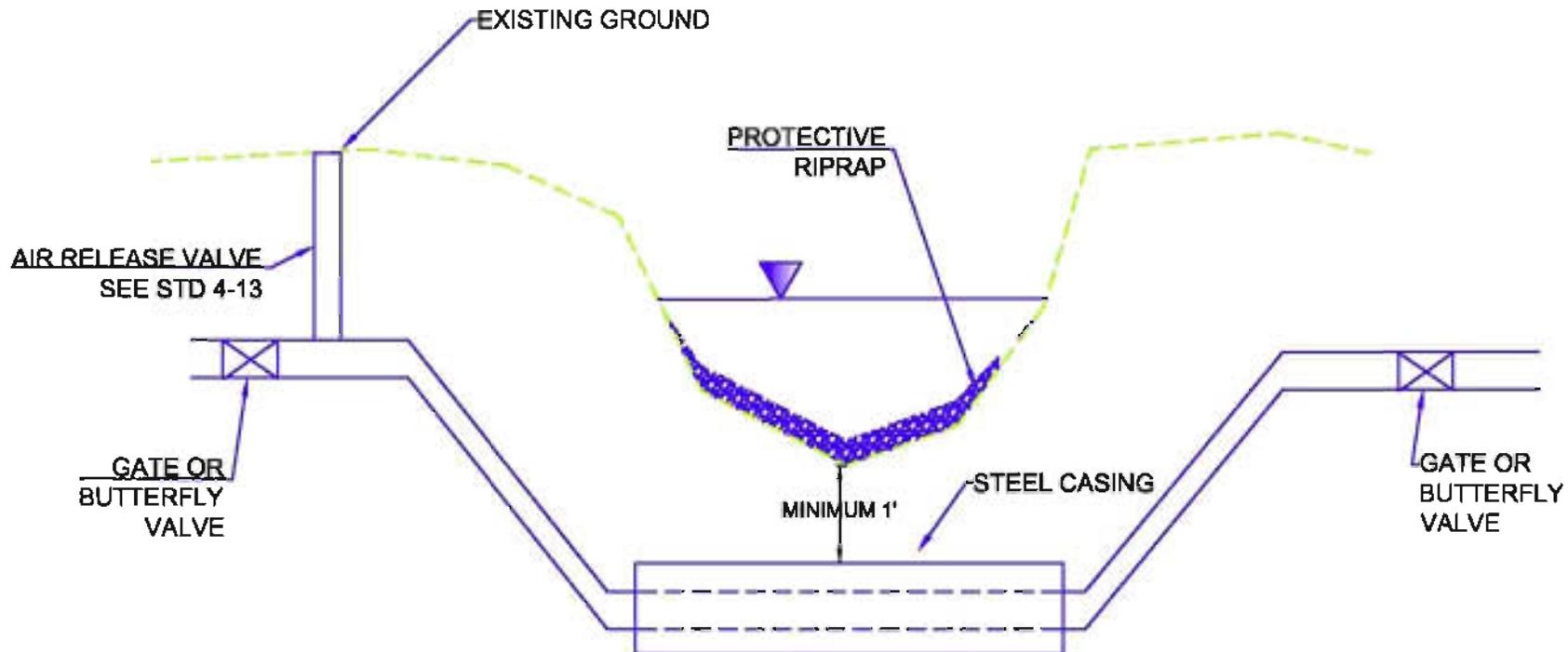
DATE:
6/05/2006

APPROVED BY:

Shantell Barnes

STANDARD
PLAN

4-11



GENERAL NOTES

1. THE LENGTH OF THE STEEL CASING SHALL BE DETERMINED BY THE CITY ENGINEER ON A CASE BY CASE BASIS. AT A MINIMUM THE CASING SHALL EXTEND FIVE FEET HORIZONTALLY BEYOND THE HIGH WATER MARK ON EACH SIDE OF THE CHANNEL OR TO THE TOP OF THE CHANNEL BANK.
2. STEEL CASING SHALL MET THE REQUIREMENTS OF SECTION 9-30.1(4)A OF THE WSDOT STANDARD SPECIFICATIONS.
3. CASING SPACERS SHALL HAVE A MINIMUM OF FOUR RUNNERS MANUFACTURED FROM GLASS REINFORCED POLYESTER WITH THE FOLLOWING PROPERTIES:
 - A. TENSILE STRENGTH (ASTM D638): 17,800 PSI
 - B. FLEXURAL STRENGTH (ASTM D790): 25,300 PSI
 - C. COMPRESSION STRENGTH (10% DEFORMATION) (ASTM D685): 18,000 PSI
 - D. DEFLECTION TEMP. @ 264 PSI. (ASTM D648): 405°F. (205°C.)
 - E. DEFORMATION UNDER LOAD (@ 122°F (50°C) 2,000 lb. LOAD) (ASTM D621): 1.2%
 - F. ALL RUNNERS ARE PROJECTION WELDED TO BAND PER AWS SPECIFICATIONS OR ATTACHED TO PROJECTIONS WELDED STUDS.

BANDS SHALL BE TWO PIECES AND SHALL BE MANUFACTURED FROM 14 GAUGE 304 SS. ALL BAND CONNECTION NUTS, WASHERS, AND BOLTS SHALL BE STAINLESS STEEL.

4. END SEALS SHALL BE ONE PIECE NEOPRENE RUBBER WITH A MINIMUM THICKNESS OF 1/4 INCH. BAND CLAMS SHALL BE STAINLESS STEEL.
5. PRIOR TO BEGINNING CONSTRUCTION PERMIT REQUIREMENTS SHALL BE MET THROUGH THE DEPARTMENT OF ECOLOGY.

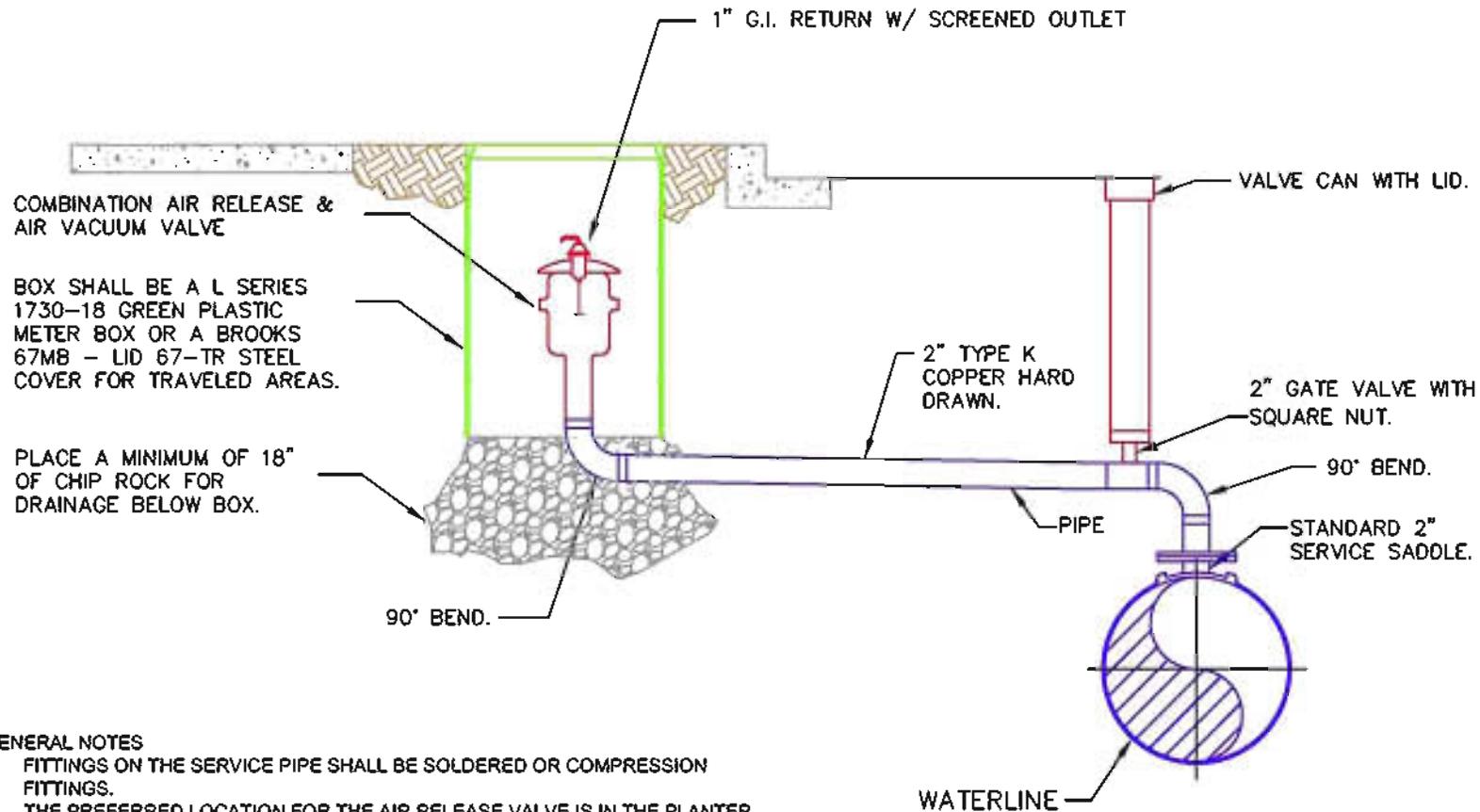


WATER/CREEK CROSSING

DATE:
10/13/2009

APPROVED BY:
Shane B. Benes

STANDARD
PLAN
4-12



COMBINATION AIR RELEASE & AIR VACUUM VALVE

BOX SHALL BE A L SERIES 1730-18 GREEN PLASTIC METER BOX OR A BROOKS 67MB - LID 67-TR STEEL COVER FOR TRAVELED AREAS.

PLACE A MINIMUM OF 18" OF CHIP ROCK FOR DRAINAGE BELOW BOX.

90° BEND.

1" G.I. RETURN W/ SCREENED OUTLET

VALVE CAN WITH LID.

2" TYPE K COPPER HARD DRAWN.

2" GATE VALVE WITH SQUARE NUT.

90° BEND.

PIPE

STANDARD 2" SERVICE SADDLE.

WATERLINE

GENERAL NOTES

1. FITTINGS ON THE SERVICE PIPE SHALL BE SOLDERED OR COMPRESSION FITTINGS.
2. THE PREFERRED LOCATION FOR THE AIR RELEASE VALVE IS IN THE PLANTER STRIP. IF ONE IS NOT AVAILABLE PLACE BEHIND CURB IN THE RIGHT OF WAY. IF LOCATION IS IN A UNIMPROVED AREA SET THE BOX 3" ABOVE GRADE.

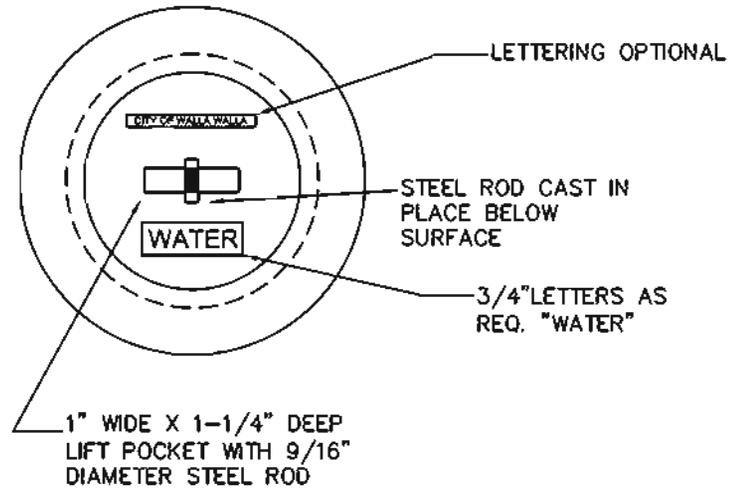
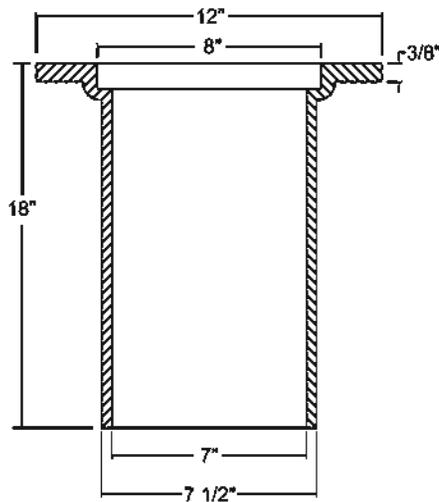
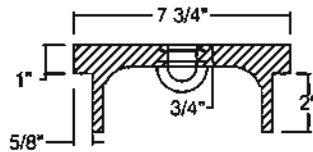


AIR RELEASE VALVE

DATE: 10/13/2009

APPROVED BY: *Shandi B...*

STANDARD
PLAN
4-13



NOTES

1. CAST IRON ADJUSTABLE VALVE BOX SHALL BE A OLYMPIC FOUNDRY MODEL NUMBER VB 910 OR APPROVED EQUAL.
2. MATERIAL: CAST IRON ASTM A-48, CL 30.
3. INTERMEDIATE RISER SECTION FROM VALVE TO VALVE BOX SHALL BE 6 INCH PVC, ASTM 3034 SDR 35.
4. THE ADJUSTABLE VALVE BOX, INTERMEDIATE RISER SECTION, AND BASE SE SECTION SHALL BE INSTALLED PLUMB AND CENTERED OVER THE OPERATING NUT ON THE VALVE.



STANDARD VALVE BOX

DATE:
10/13/2009

APPROVED BY:

Shamir B...

STANDARD
PLAN

4-14

HDPE WATER SERVICE LINES

ALL HDPE PIPE AND TUBING SHALL COMPLY WITH THE FOLLOWING STANDARDS AND SPECIFICATIONS:

ANSI/AWWA C901.
NSF 61/14.
PPI PE 4710.

PRESSURE RATING:
200 PSI OR HIGHER.

SIZE:
HDPE MAY BE ACCEPTED FOR WATER SERVICE LINES 1-INCH OR 2-INCH IN DIAMETER ONLY.
HDPE SHALL BE CTS, OUTSIDE CONTROL DIAMETER PER ASTM D 3035.

COLOR:
ALL HDPE PIPING AND TUBING SHALL BE SOLID BLUE FOR POTABLE WATER SYSTEMS.

MARKINGS:
MARKINGS SHALL BE APPLIED AT AN INTERVAL OF NOT MORE THAN 5 FEET, TO INCLUDE: AWWA C901, NOMINAL PIPE SIZE, CTS, MANUFACTURERS NAME, MATERIAL DESIGNATION CODE PE 4710, AWWA PRESSURE CLASS (PC 200 PSI) MINIMUM.

FITTINGS:
USE FORD PACK JOINT COUPLINGS WITH STAINLESS STEEL CLAMP SCREW AND FORD 50 SERIES INSERT STIFFENERS FOR POLYETHYLENE TUBING OR APPROVED EQUAL.

TRACER WIRE:
TRACER WIRE SHALL BE DOUBLE INSULATED NO. 12 AWG COPPER TRACER WIRE, TAPED EVERY FIVE FEET, AND CONNECTED TO COUPLING CLAMP, WITH COPPER ENDS SEALED WITH 3M SCOTCHKOTE OR APPROVED EQUAL.

INSTALLATION:
SNAKE PIPE IN OPEN TRENCHES TO ALLOW FOR PIPE EXPANSION AND CONTRACTION.
PULL PIPE BEYOND TARGET POINT AND PROVIDE SLACK PRIOR TO CONNECTION.
LET PIPE COOL TO SOIL TEMPERATURE PRIOR TO CONNECTING ENDS.
DO NOT INSTALL IN PETROLEUM OR SOLVENT CONTAMINATED SOILS.

BEDDING:
BEDDING SHALL BE 3/4-INCH MINUS WSDOT 9-03.9(3), CRUSHED SURFACING TOP COURSE.

DISINFECTION:
DISINFECTION OF NEW PIPE SHALL BE CARRIED OUT IN ACCORDANCE WITH ANSI/AWWA C651.



HDPE WATER SERVICE (1" AND 2" ONLY)

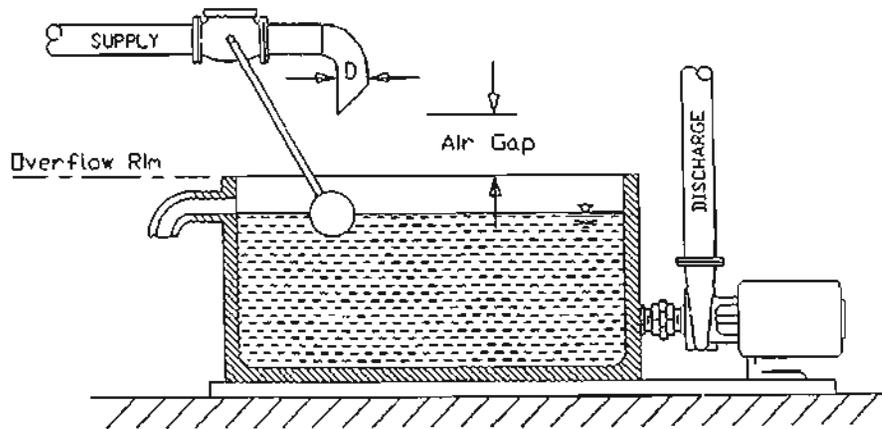
DATE:
6/18/2012

APPROVED BY:

A handwritten signature in black ink, appearing to read "Michael [unclear]".

STANDARD
PLAN

4-15



MINIMUM AIR GAP DIMENSIONS			
EFFECTIVE DIAMETER OF SUPPLY PIPE OPENING "D"	MINIMUM AIR GAP SEPARATION	IF WALLS, RIBS, OR OBSTRUCTIONS ARE WITHIN 3 TIMES D FROM THE AIR GAP CENTERLINE	IF INTERSECTING WALLS ARE WITHIN 4 TIMES D FROM THE AIR GAP CENTERLINE
NOT GREATER THAN 0.5 INCH	1 INCH	1.5 INCHES	2 INCHES
NOT GREATER THAN 0.75 INCH	1.5 INCHES	2.25 INCHES	3 INCHES
NOT GREATER THAN 1 INCH	2 INCHES	3 INCHES	4 INCHES
1 INCH AND GREATER	2 TIMES D	3 TIMES D	4 TIMES D

NOTES

MANUFACTURED AIR GAP FITTINGS MUST MEET THE DIMENSION CRITERIA OF AN APPROVED AIR GAP AS SHOWN IN THIS DOCUMENT.

FLEXIBLE HOSES OR TUBING WHICH MAY BE BENT OR EASILY ALTERED TO REDUCE THE AIR GAP ARE NOT ALLOWED.

AIR GAPS MUST BE INSTALLED ABOVE GRADE UNLESS OTHERWISE APPROVED BY THE CROSS CONNECTION CONTROL SPECIALIST.

ADEQUATE ACCESS AND CLEARANCES FOR INSPECTION, TESTING, AND REPAIRS MUST BE PROVIDED.

ALL INSTALLATIONS ARE SUBJECT TO APPROVAL BY THE CROSS CONNECTION CONTROL SPECIALIST.

A CITY OF WALLA WALLA CROSS CONNECTION CONTROL SPECIALIST MUST INSPECT EVERY INSTALLATION BEFORE RESTORATION OF WATER SERVICE.

SOME MATERIAL REPRODUCED COURTESY OF THE NORTHWEST SECTION OF THE AMERICAN WATER WORKS ASSOCIATION.

OCCASIONAL DEVIATION FROM THIS STANDARD MAY BE NECESSARY TO ENSURE THE OPERABILITY AND SERVICEABILITY OF BACKFLOW PREVENTION EQUIPMENT AS REQUIRED BY WASHINGTON STATE ADMINISTRATIVE CODE 246-290-490 AND WALLA WALLA MUNICIPAL CODE 13.05. IN ACCORDANCE WITH THESE LAWS, ALL INSTALLATIONS ARE SUBJECT TO APPROVAL BY THE CITY'S DESIGNATED, LICENSED CROSS CONNECTION CONTROL SPECIALIST.

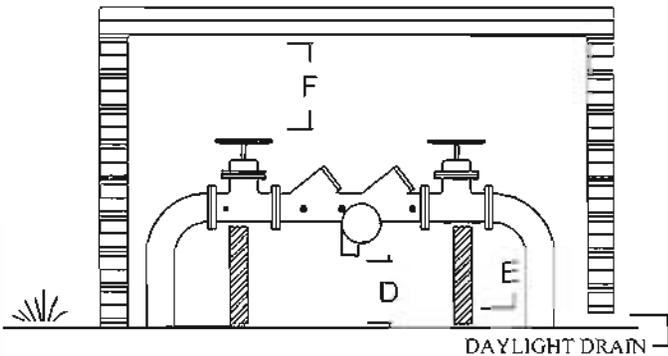
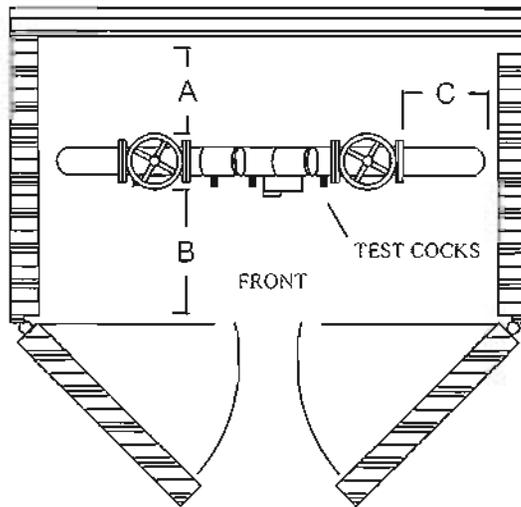


APPROVED AIR GAP

DATE:
7/6/2012

APPROVED BY:
Wendy...

STANDARD
PLAN
5-1



REQUIREMENTS

1. ORIENTATION:
 - 1.1. INSTALL IN HORIZONTAL ORIENTATION WITH ID PLATE FACING UP AND TEST COCKS FACING UP OR TOWARD SERVICE PERSONNEL UNLESS OTHERWISE APPROVED BY THE CITY'S CROSS CONNECTION CONTROL SPECIALIST.
2. COLD WEATHER:
 - 2.1. IF OPERATED IN FREEZING TEMPERATURE, PROVIDE FREEZE PROTECTION (E.G. HEAT SOURCE AND INSULATION OR ENCLOSURE).
3. DRAINAGE:
 - 3.1. ADEQUATE DAYLIGHT DRAIN MUST BE PROVIDED TO PREVENT FLOODING OF ASSEMBLY OR WORK AREA. DRAIN SIZES APPROXIMATELY TWICE THE DIAMETER OF THE ASSEMBLY PIPE SIZE ARE USUALLY SUFFICIENT.
 - 3.2. ANY DRAIN LINE ATTACHED DIRECTLY TO RELIEF VALVE OUTLET MUST INCLUDE AN AIR GAP FITTING APPROVED BY THE CROSS CONNECTION CONTROL SPECIALIST.
 - 3.3. UNDERGROUND INSTALLATION OF RPBA/RPDA PROHIBITED WITHOUT WRITTEN PRE-APPROVAL OF CROSS CONNECTION CONTROL SPECIALIST.
4. SMALL ASSEMBLIES (SMALLER THAN 2.5 INCHES):
 - A - 8 INCH MINIMUM CLEARANCE TO BACK WALL.
 - B - 8 INCH MINIMUM CLEARANCE TO FRONT WALL, 18 INCH MAXIMUM IF ASSEMBLY IS SERVICED FROM FRONT THROUGH DOOR(S).
 - C - 6 INCH MINIMUM DISTANCE FROM SIDE WALL TO FITTINGS.
 - D - 12 INCH MINIMUM, 48 INCH MAXIMUM CLEARANCE FROM BOTTOM OF ASSEMBLY TO STANDING SURFACE.
 - E - N/A.
 - F - 3 INCH MINIMUM CLEARANCE ABOVE HIGHEST POINT ON BACKFLOW PREVENTER. 18 INCH MAXIMUM IF ASSEMBLY IS SERVICED TOP THROUGH DOOR(S).
5. LARGE ASSEMBLIES (2.5 INCHES AND LARGER):
 - A - 12 INCH MINIMUM CLEARANCE TO BACK WALL.
 - B - 12 INCH MINIMUM CLEARANCE TO FRONT WALL, 18 INCH MAXIMUM IF ASSEMBLY IS SERVICED FROM FRONT THROUGH DOOR(S).
 - C - 12 INCH MINIMUM DISTANCE FROM SIDE WALL TO FITTINGS.
 - D - 12 INCH MINIMUM, 48 INCH MAXIMUM CLEARANCE FROM BOTTOM OF ASSEMBLY TO STANDING SURFACE OR BOTTOM OF ENCLOSURE.
 - E - STABLE, PERMANENT SUPPORTS REQUIRED.
 - F - 12 INCH MINIMUM CLEARANCE REQUIRED ABOVE HIGHEST POINT ON BACKFLOW PREVENTER, (MEASURE WHEN VALVE FULLY OPENED FOR OS&Y VALVES). 18 INCH MAXIMUM IF ASSEMBLY IS SERVICED TOP THROUGH DOOR(S).
 - G - TOP ENTRY VAULTS MUST HAVE RECTANGULAR DOORS WITH SPRING ASSIST CYLINDER AND HOLD OPEN ARMS. ACCESS OPENING MUST BE LARGE ENOUGH TO ACCOMMODATE THE COMPLETE REMOVAL AND REPLACEMENT OF THE BACKFLOW PREVENTER AND ASSOCIATED EQUIPMENT.
6. DETECTOR TYPE ASSEMBLIES:
 - 6.1. METER OR DETECTOR CHECK BYPASS SHALL BE EITHER SENSUS SRJ OR NEPTUNE T-10 MODELS EQUIPPED WITH TOUCHREAD REMOTE READING PAD.
 - 6.2. INSTALLER SHALL COORDINATE WITH WATER DIVISION FOR PROPER LOCATION AND INSTALLATION OF TOUCHREAD REMOTE READING PAD.

OCCASIONAL DEVIATION FROM THIS STANDARD MAY BE NECESSARY TO ENSURE THE OPERABILITY AND SERVICEABILITY OF BACKFLOW PREVENTION EQUIPMENT AS REQUIRED BY WASHINGTON STATE ADMINISTRATIVE CODE 246-290-490 AND WALLA WALLA MUNICIPAL CODE 13.05. IN ACCORDANCE WITH THESE LAWS, ALL INSTALLATIONS ARE SUBJECT TO APPROVAL BY THE CITY'S DESIGNATED, LICENSED CROSS CONNECTION CONTROL SPECIALIST.



REDUCED PRESSURE BACK FLOW ASSEMBLY (RPBA/RPDA)

DATE:
10/25/2012

APPROVED BY:

STANDARD
PLAN
5-2

REQUIREMENTS

1. ORIENTATION:

- 1.1. INSTALL IN HORIZONTAL ORIENTATION WITH ID PLATE FACING UP AND TEST COCKS FACING UP OR TOWARD SERVICE PERSONNEL UNLESS OTHERWISE APPROVED BY THE CITY'S CROSS CONNECTION CONTROL SPECIALIST.

2. COLD WEATHER:

- 2.1. IF OPERATED IN FREEZING TEMPERATURE, PROVIDE FREEZE PROTECTION (E.G. HEAT SOURCE AND INSULATION OR ENCLOSURE).
- 2.2. UPON APPROVAL BY THE CITY'S CROSS CONNECTION CONTROL SPECIALIST, A WINTERIZATION ARRANGEMENT (SEE STANDARD PLAN 5-7) MAY BE ALLOWED UPSTREAM OF ASSEMBLY FOR THE PURPOSE OF WINTERIZING WITH COMPRESSED AIR.
- 2.3. QUICK CONNECT FITTINGS ARE PROHIBITED UPSTREAM OF ASSEMBLY.

3. DRAINAGE:

- 3.1. ADEQUATE DRAINAGE MUST BE PROVIDED TO PREVENT FLOODING OF ASSEMBLY OR WORK AREA.

4. SMALL ASSEMBLIES (SMALLER THAN 2.5 INCHES):

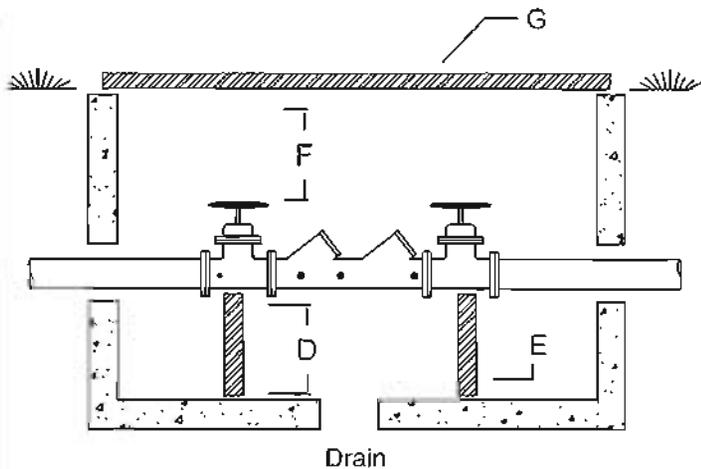
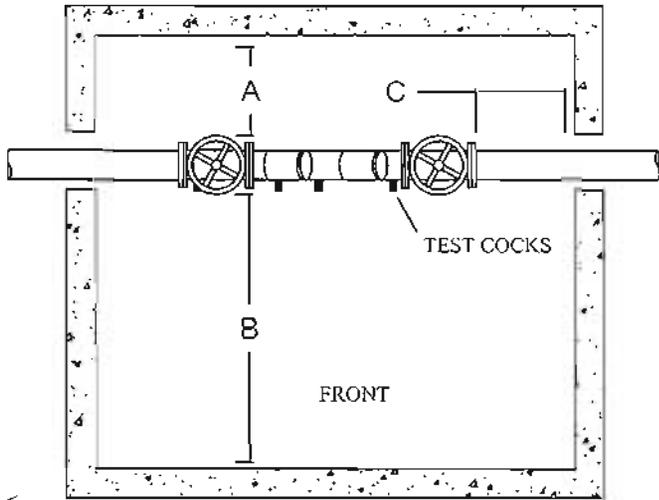
- A - 6 INCH MINIMUM CLEARANCE TO BACK WALL.
- B - 6 INCH MINIMUM CLEARANCE TO FRONT WALL.
- C - 3 INCH MINIMUM DISTANCE FROM SIDE WALL TO FITTINGS.
- D - 12 INCH MINIMUM, 48 INCH MAXIMUM CLEARANCE FROM BOTTOM OF ASSEMBLY TO STANDING SURFACE OR BOTTOM OF VAULT.
- E - N/A.
- F - 3 INCH MINIMUM CLEARANCE ABOVE HIGHEST POINT ON BACKFLOW PREVENTER.

5. LARGE ASSEMBLIES (2.5 INCHES AND LARGER):

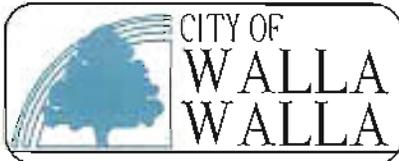
- A - 12 INCH MINIMUM CLEARANCE TO BACK WALL.
- B - 36 INCH MINIMUM CLEARANCE TO FRONT WALL.
- C - 12 INCH MINIMUM DISTANCE FROM SIDE WALL TO FITTINGS.
- D - 12 INCH MINIMUM, 48 INCH MAXIMUM CLEARANCE FROM BOTTOM OF ASSEMBLY TO STANDING SURFACE OR BOTTOM OF VAULT.
- E - STABLE, PERMANENT SUPPORTS REQUIRED.
- F - 12 INCH MINIMUM CLEARANCE REQUIRED ABOVE HIGHEST POINT ON BACKFLOW PREVENTER. (MEASURE WHEN VALVE FULLY OPENED FOR OS&Y VALVES).
- G - TOP ENTRY VAULTS MUST HAVE RECTANGULAR DOORS WITH SPRING ASSIST CYLINDER AND HOLD OPEN ARMS. ACCESS OPENING MUST BE LARGE ENOUGH TO ACCOMMODATE THE COMPLETE REMOVAL AND REPLACEMENT OF THE BACKFLOW PREVENTER AND ASSOCIATED EQUIPMENT.

6. DETECTOR TYPE ASSEMBLIES:

- 6.1. METER OR DETECTOR CHECK BYPASS SHALL BE EITHER SENSUS SR11 OR NEPTUNE T-10 MODELS EQUIPPED WITH TOUCHREAD REMOTE READING PAD.
- 6.2. INSTALLER SHALL COORDINATE WITH WATER DIVISION FOR PROPER LOCATION AND INSTALLATION OF TOUCHREAD REMOTE READING PAD.



OCCASIONAL DEVIATION FROM THIS STANDARD MAY BE NECESSARY TO ENSURE THE OPERABILITY AND SERVICEABILITY OF BACKFLOW PREVENTION EQUIPMENT AS REQUIRED BY WASHINGTON STATE ADMINISTRATIVE CODE 246-290-490 AND WALLA WALLA MUNICIPAL CODE 13.05. IN ACCORDANCE WITH THESE LAWS, ALL INSTALLATIONS ARE SUBJECT TO APPROVAL BY THE CITY'S DESIGNATED, LICENSED CROSS CONNECTION CONTROL SPECIALIST.



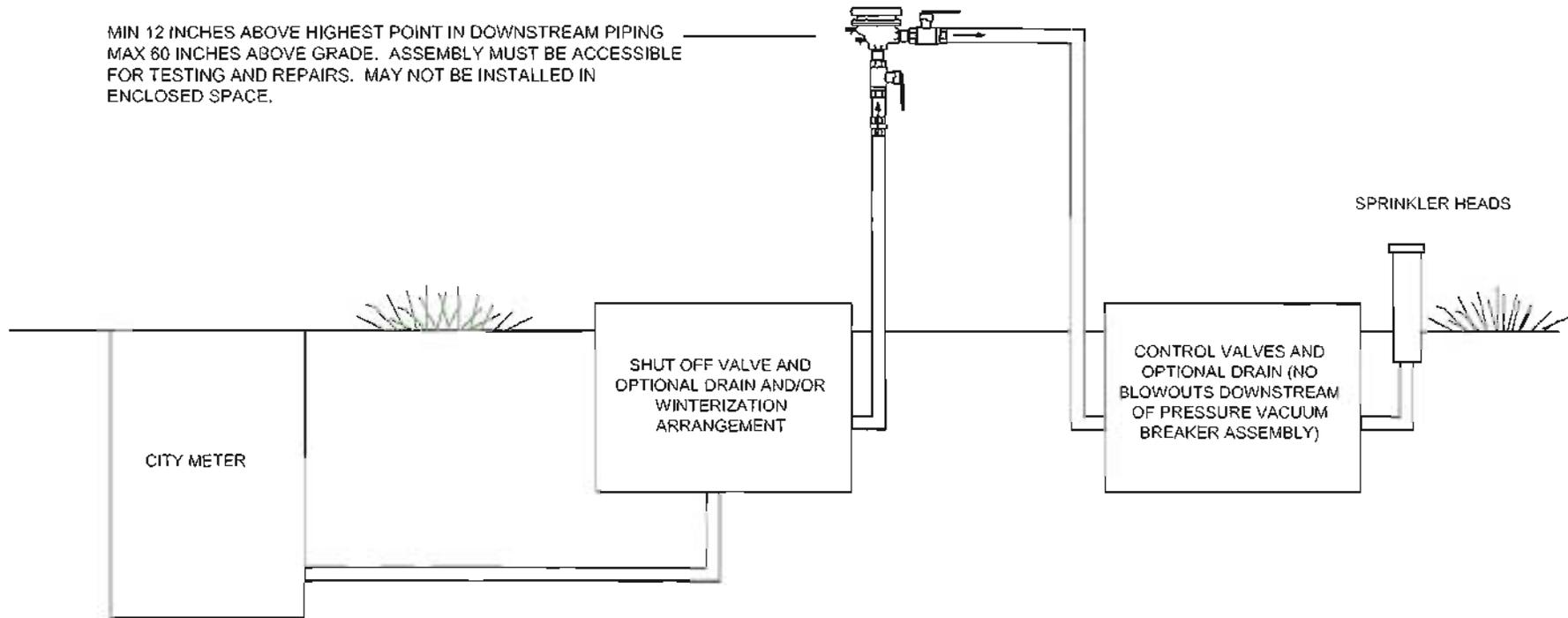
DOUBLE CHECK VALVE ASSEMBLY (DCVA/DCDA)

DATE: 10/25/2012

APPROVED BY: *[Signature]*

STANDARD
PLAN
5-3

MIN 12 INCHES ABOVE HIGHEST POINT IN DOWNSTREAM PIPING
 MAX 60 INCHES ABOVE GRADE. ASSEMBLY MUST BE ACCESSIBLE
 FOR TESTING AND REPAIRS. MAY NOT BE INSTALLED IN
 ENCLOSED SPACE.



REQUIREMENTS

1. ORIENTATION:
 - 1.1. INSTALL IN ORIENTATION SHOWN.
2. COLD WEATHER:
 - 2.1. UPON APPROVAL BY THE CITY'S CROSS CONNECTION CONTROL SPECIALIST, A WINTERIZATION ARRANGEMENT (SEE STANDARD PLAN 5-7) MAY BE ALLOWED UPSTREAM OF ASSEMBLY FOR THE PURPOSE OF WINTERIZING WITH COMPRESSED AIR.
 - 2.2. QUICK CONNECT FITTINGS ARE PROHIBITED.

OCCASIONAL DEVIATION FROM THIS STANDARD MAY BE NECESSARY TO ENSURE THE OPERABILITY AND SERVICEABILITY OF BACKFLOW PREVENTION EQUIPMENT AS REQUIRED BY WASHINGTON STATE ADMINISTRATIVE CODE 246-290-490 AND WALLA WALLA MUNICIPAL CODE 13.05. IN ACCORDANCE WITH THESE LAWS, ALL INSTALLATIONS ARE SUBJECT TO APPROVAL BY THE CITY'S DESIGNATED, LICENSED CROSS CONNECTION CONTROL SPECIALIST



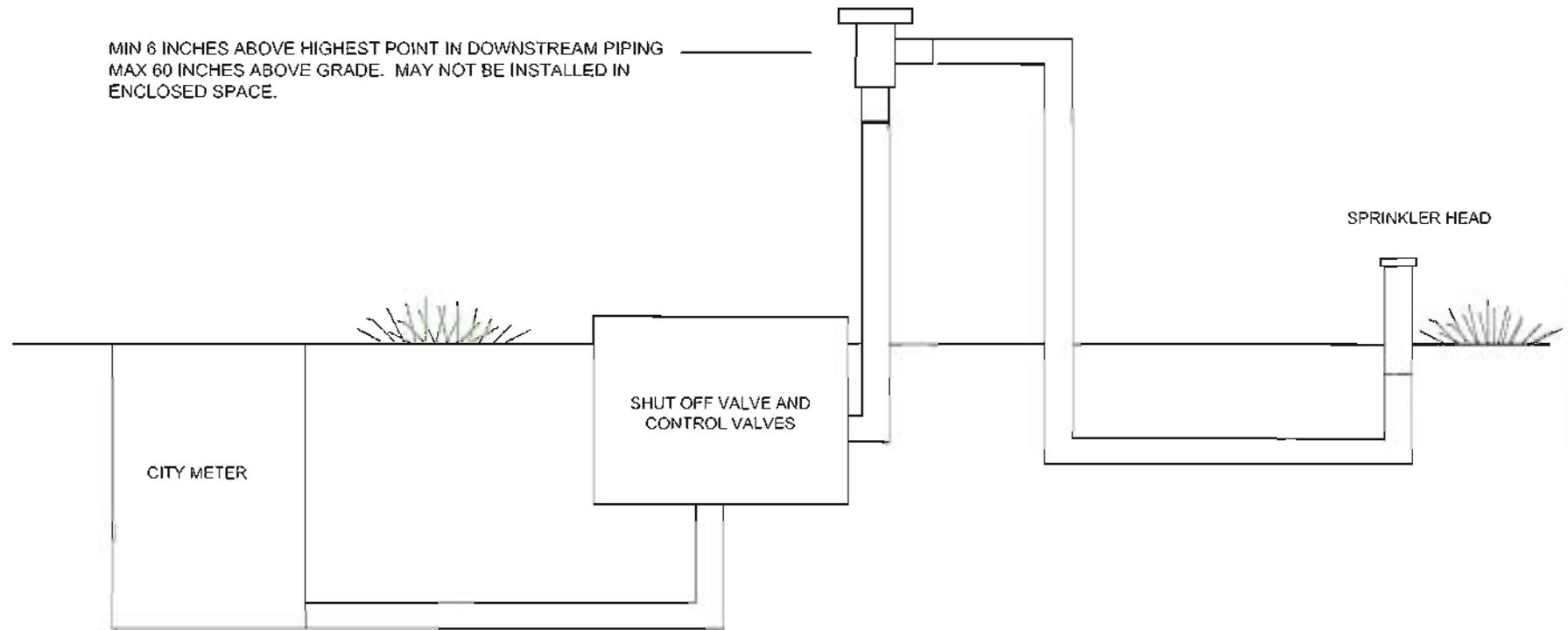
PRESSURE VACUUM BREAKER ASSEMBLY (PVBA/SVBA)

DATE:
7/6/2012

APPROVED BY:
Neal Shuman

STANDARD
PLAN
5-4

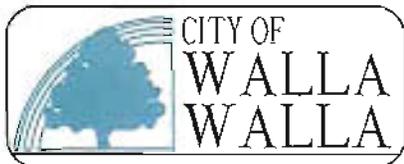
MIN 6 INCHES ABOVE HIGHEST POINT IN DOWNSTREAM PIPING
MAX 60 INCHES ABOVE GRADE. MAY NOT BE INSTALLED IN
ENCLOSED SPACE.



REQUIREMENTS

1. ATMOSPHERIC VACUUM BREAKER MUST BE INSTALLED DOWNSTREAM OF CONTROL VALVE. (NO VALVES ARE ALLOWED DOWNSTREAM OF ATMOSPHERIC VACUUM BREAKER).
2. ORIENTATION:
 - 2.1. INSTALL IN ORIENTATION SHOWN.
3. COLD WEATHER:
 - 3.1. UPON APPROVAL BY THE CITY'S CROSS CONNECTION CONTROL SPECIALIST, A WINTERIZATION ARRANGEMENT (SEE STANDARD PLAN 5-7) MAY BE ALLOWED UPSTREAM OF ASSEMBLY FOR THE PURPOSE OF WINTERIZING WITH COMPRESSED AIR.
 - 3.2. QUICK CONNECT FITTINGS ARE PROHIBITED.

OCCASIONAL DEVIATION FROM THIS STANDARD MAY BE NECESSARY TO ENSURE THE OPERABILITY AND SERVICEABILITY OF BACKFLOW PREVENTION EQUIPMENT AS REQUIRED BY WASHINGTON STATE ADMINISTRATIVE CODE 246-290-480 AND WALLA WALLA MUNICIPAL CODE 13.05. IN ACCORDANCE WITH THESE LAWS, ALL INSTALLATIONS ARE SUBJECT TO APPROVAL BY THE CITY'S DESIGNATED, LICENSED CROSS CONNECTION CONTROL SPECIALIST.



ATMOSPHERIC VACUUM BREAKER (AVB)

DATE:
7/6/2012

APPROVED BY:

STANDARD
PLAN
5-5

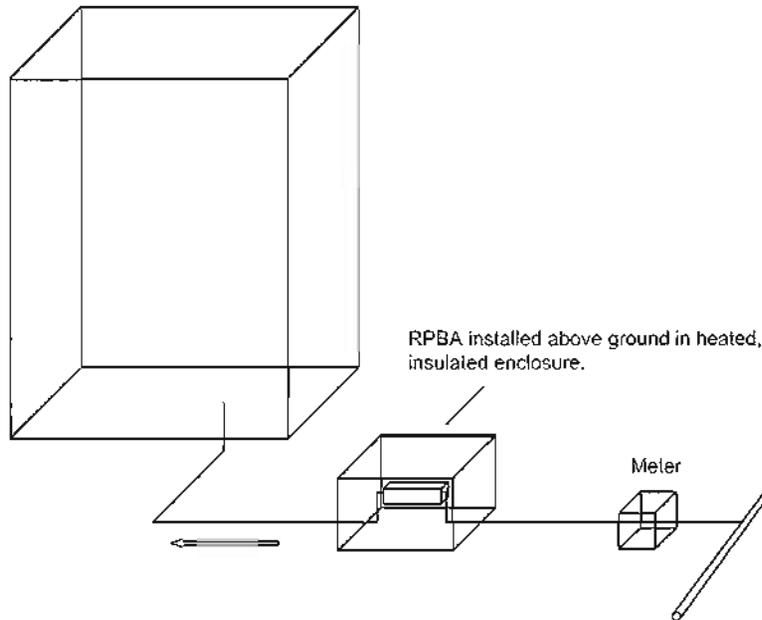
City of Walla Walla Cross Connection Control Program Location of Backflow Prevention Equipment for Premises Isolation

To reduce the risk of contamination of the public water supply, the City of Walla Walla requires premises isolation on certain water services. The purpose of premises isolation is to isolate the city mains from potentially contaminated water in a customer's building. This is done by installing a backflow prevention assembly between the city's main and the customer's plumbing system. This hand-out explains basic locations for premises isolation equipment. Premises isolation systems are installed according to City of Walla Walla Municipal Code 13.05 and the Washington State Administrative Code 246-290-490.

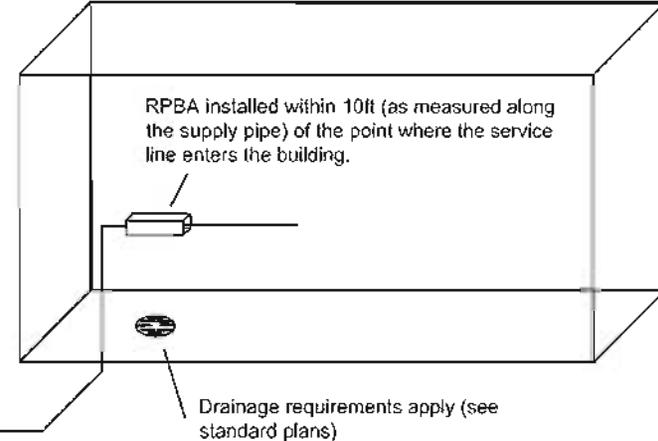
There are two basic locations where backflow assemblies may be installed. The City's Water Cross Connection Control Specialist determines which location is used in a particular building based on the length of the line to the building, possible future modifications, the degree of hazard presented by the use of the building, and other factors.

The following diagrams show the two locations where backflow assemblies may be installed. Final approval of the location by the City's designated, licensed Cross Connection Control Specialist is required prior to water service being provided.

LOCATION OF PREMISES ISOLATION BACKFLOW PREVENTER OUTSIDE OF BUILDING



LOCATION OF PREMISES ISOLATION BACKFLOW PREVENTER INSIDE BUILDING



Notes:

- No branch lines or points of use are allowed upstream of assemblies installed for premises isolation, with one exception; upon prior approval by the Cross Connection Control Specialist, a single irrigation line isolated with a backflow preventer may be allowed.
- Plan approval from the Cross Connection Control Specialist is required prior to installation of backflow prevention equipment.
- Premises isolation backflow preventers must be accessible for inspection at all times by the City.



PREMISES ISOLATION GUIDELINES

DATE:
7/6/2012

APPROVED BY:

STANDARD
PLAN

5-6

Irrigation Winterization Arrangement (CITY OF WALLA WALLA GUIDELINES FOR INSTALLATION)

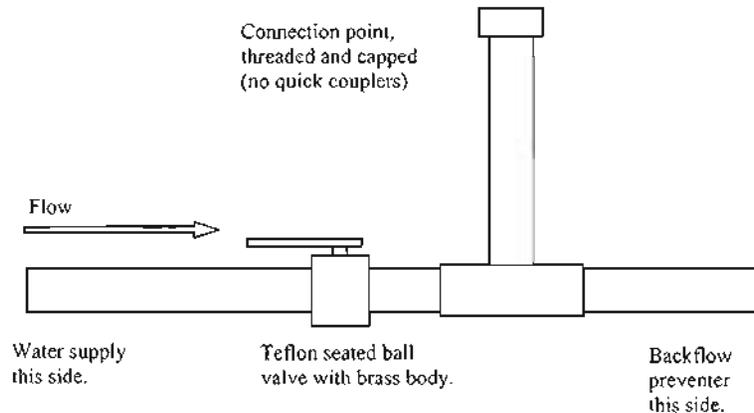
Many water system customers choose to winterize their underground sprinkler systems with compressed air. When this is done properly, an entire irrigation system from backflow preventer to sprinkler head may be winterized without harming the quality of the potable water supply. When this is not done properly, compressed air may enter the customer's plumbing system or the City's public water system, creating a host of water quality problems. To prevent such problems, customers are generally required to have a double check valve assembly as a minimum upstream of any fixtures used for inserting compressed air into the piping. This requirement necessitates drainage or removal of the backflow preventer for winterization purposes for many customers as the backflow preventer does not pass air through it in the reverse direction.

In response to this problem, the following arrangement has been approved for use on irrigation systems connected to the City of Walla Walla water system. If you choose to winterize with compressed air, and would like to be able to remove the water in your backflow preventer with compressed air, please read these directions carefully and follow them exactly as stated. When you are finished with your installation, call the Cross Connection Control Specialist at the Water Division (527-4380) for an inspection and approval.

The winterization arrangement is to be installed in the supply line to the backflow preventer, as close as possible to the backflow preventer. This arrangement consists of a resilient seated ball valve with brass body, followed downstream by a tee fitting, from which a capped, threaded section of pipe is extended as a tie-in for connecting the compressed air.

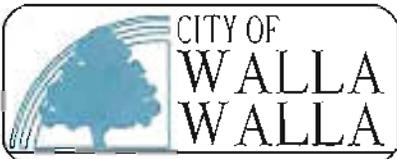
The valve must have a Teflon or other resilient seat, and must be a ball valve in a brass body. Any other type of valve may result in air being passed through the valve and causing water quality problems for you and for your neighbors.

The tie-in for the compressed air must not have a quick connect fitting of any kind on it. It must be threaded and capped. This is so that the compressed air cannot be connected until the valve has been shut off.



Winterization Steps:

1. Turn off water at ball valve.
2. Remove the cap and connect air hose at connection point.
3. Apply air pressure to remove water from your system (be careful not to exceed the pressure rating of your plumbing). A good rule of thumb is not to exceed your normal water pressure.
4. Remove air hose connection.
5. Replace cap.
6. Leave valve off until sprinkler system is recharged for the next season.



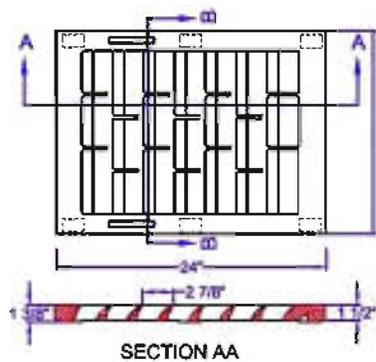
IRRIGATION WINTERIZATION ARRANGEMENT

DATE:
7/6/2012

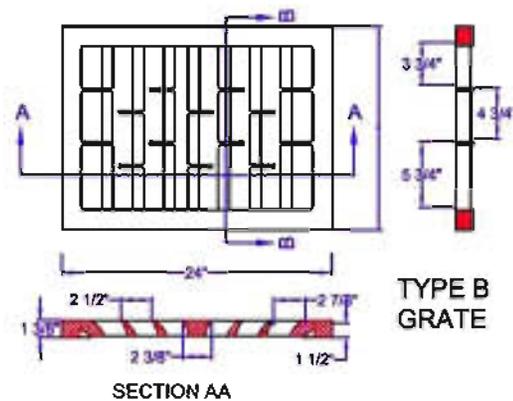
APPROVED BY:

STANDARD
PLAN

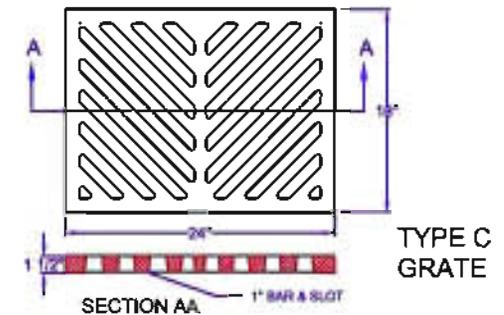
5-7



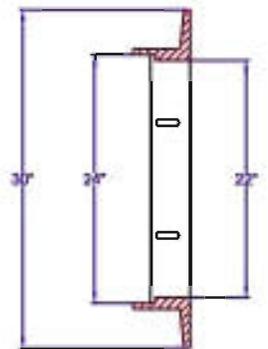
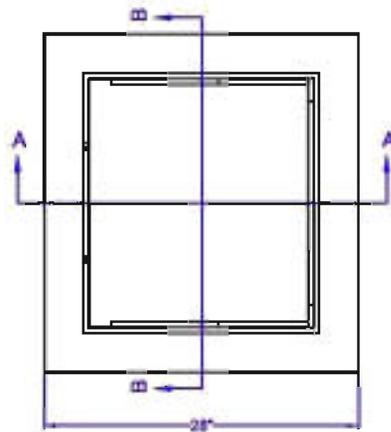
TYPE A
GRATE



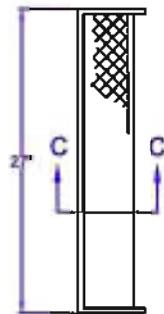
TYPE B
GRATE



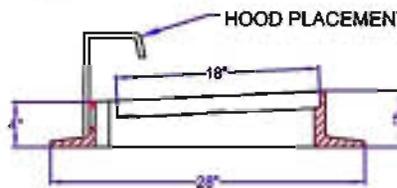
TYPE C
GRATE



SECTION BB



SECTION CC



SECTION AA

1. THE TYPE "A" GRATE SHALL BE USED WHERE THE GUTTER GRADE FLOWS THROUGH THE INLET UNLESS OTHERWISE NOTED IN THE PLANS.
2. THE TYPE "B" GRATE SHALL BE USED AT LOW POINT LOCATIONS WHERE THE GUTTER GRADE FLOWS FROM BOTH DIRECTIONS TO THE INLET UNLESS OTHERWISE NOTED IN THE PLANS.
3. THE TYPE "C" GRATE SHALL ONLY BE USED IN PARKING LOTS OR AS APPROVED BY THE CITY ENGINEER.
4. THE NAME OF THE MANUFACTURER AND DIRECTION OF THE FLOW SHALL BE EMBOSSED ON THE TOP SURFACE OF EACH GRATE. LETTERING TO BE RECESSED 1/16".
5. THE MATERIAL USED FOR THE GRATE SHALL BE EMBOSSED EITHER D (FOR DUCTILE IRON) OR C (FOR CAST IRON) NEAR THE NAME OF THE MANUFACTURER.
6. THE EDGES SHALL HAVE A 1/8" RADIUS, 1/8" CHAMFER, OR COMPLETE DEBURRING.
7. WELDING IS NOT PERMITTED.



CURB INLET GRATE AND DETAILS

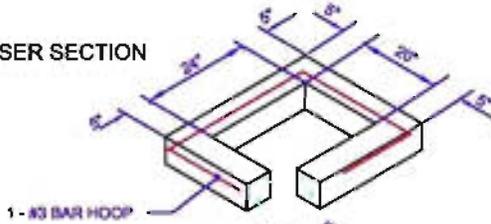
DATE:
10/08/2007

APPROVED BY:

Shantel Benevise

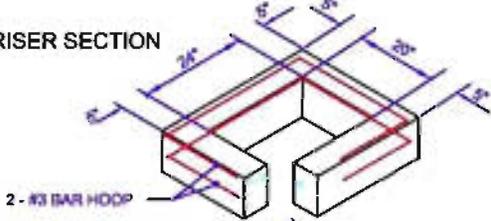
STANDARD
PLAN
6-1

6" RISER SECTION

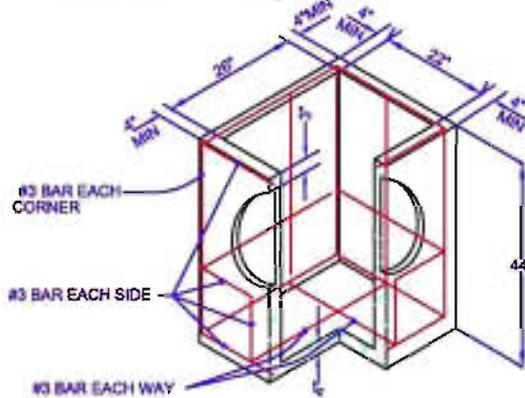


1 - #3 BAR HOOP

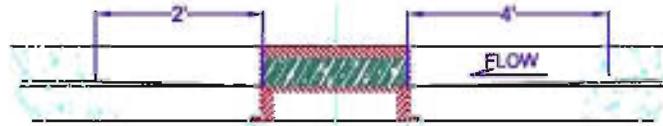
12" RISER SECTION



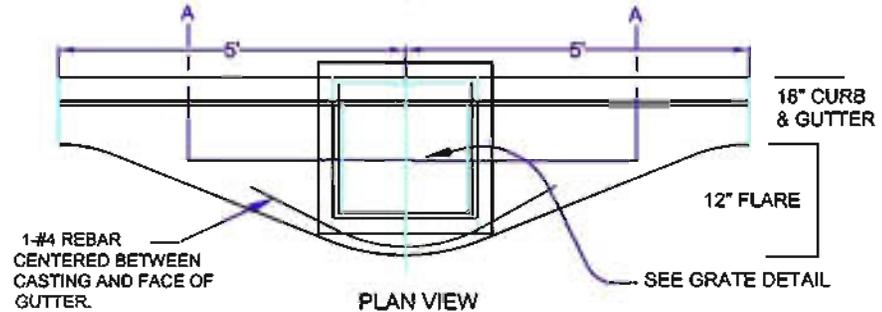
2 - #3 BAR HOOP



PRECAST BASE SECTION



SECTION A-A



1-#4 REBAR
CENTERED BETWEEN
CASTING AND FACE OF
GUTTER.

PLAN VIEW

1. THE INLET FRAME & GRATE SHALL BE PLACED 1" BELOW THE NORMAL FLOW LINE OF THE GUTTER.
2. THE GUTTER SECTION SHALL BE FORMED AND SLOPED 4" ON THE UPSTREAM SIDE AND 2" ON THE DOWNSTREAM SIDE.
3. SEE STANDARD PLAN FOR CURB INLET FRAME AND GRATE.
4. USE A MINIMUM 1/2" OF NO-SHRINK GROUT BETWEEN THE CASTING AND TOP OF THE BARREL AND BETWEEN ANY GRADE RINGS BEING USED.
5. INLET IS TO BE PLACED WITHIN A TOLERANCE 1/2" HORIZONTAL FROM THE CURB LINE.
6. CONCRETE SHALL BE CL. 4000.
7. INLET TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM C 890 UNLESS OTHERWISE SHOWN IN THE PLANS OR NOTED IN THE SPECIFICATIONS.
8. AS AN ACCEPTABLE ALTERNATE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQ. INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A 497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN THE KNOCKOUTS.
9. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. KNOCKOUTS MAY BE ON ALL 4 SIDES, EITHER ROUND OR "D" SHAPED. FLEXIBLE PIPE SHALL BE INSTALLED USING A SAND COLLAR AND NON-SHRINK GROUT. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS INLET WALL THICKNESS. 20" MINIMUM.
10. THE BOTTOM OF THE PRECAST BASE SECTION MAY BE ROUNDED.
11. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERTED IS 6'-0". THE MINIMUM DEPTH FROM FINISHED GRADE TO THE TOP OF PIPE IS 1'-0".



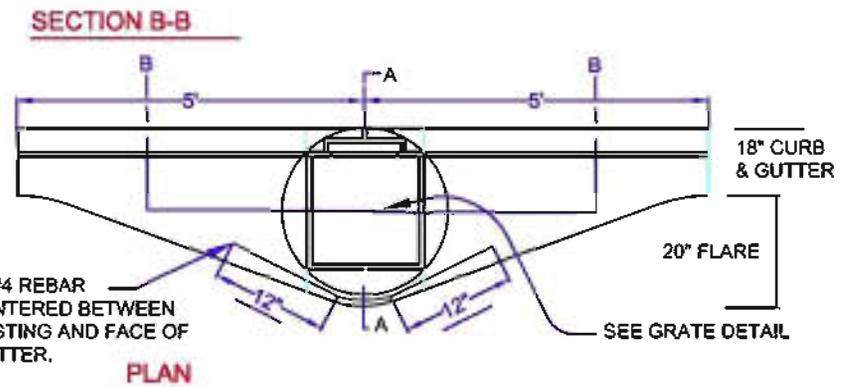
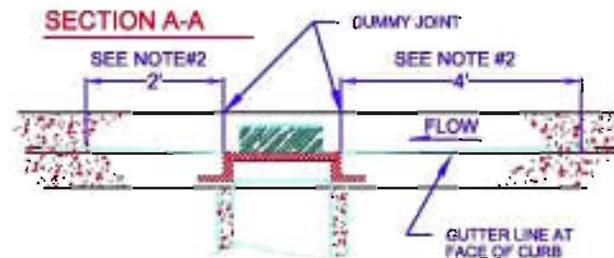
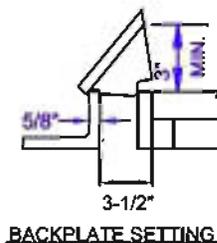
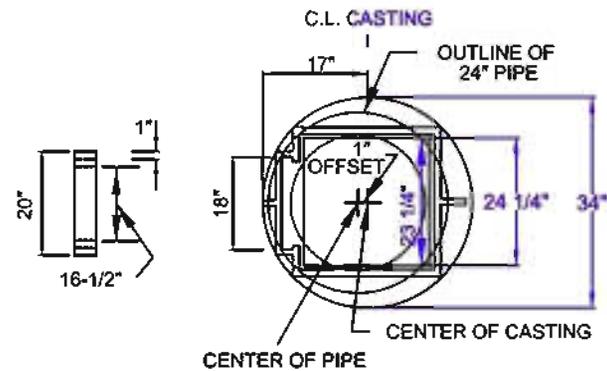
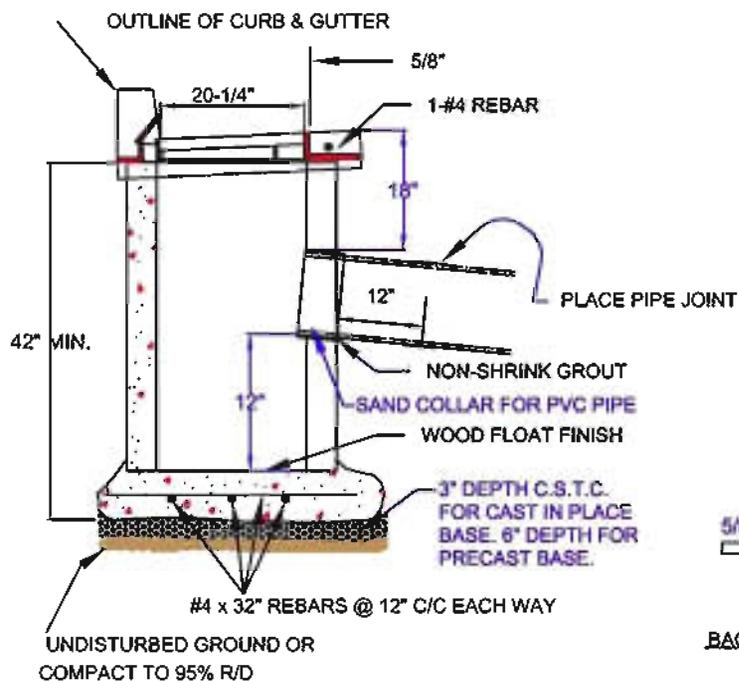
CURB INLET DETAIL

DATE:
10/13/2009

APPROVED BY:

Shantell Benes-Price

STANDARD
PLAN
6-2



1. THE INLET FRAME & GRATE SHALL BE PLACED 1" BELOW NORMAL FLOW LINE OF THE GUTTER.
2. THE GUTTER SECTION SHALL BE FORMED AND SLOPED 4' ON UPSTREAM SIDE AND 2' ON DOWNSTREAM SIDE.
3. SEE STANDARD PLAN FOR CURB INLET GRATE STYLE.
4. THE ROUND INLET ALTERNATIVE MAY ONLY BE USED WITH THE APPROVAL OF THE CITY ENGINEER.

5. USE A MINIMUM 1/2" OF NO-SHRINK GROUT BETWEEN CASTING AND TOP OF BARREL AND BETWEEN ANY GRADE RINGS BEING USED.
6. INLET IS TO BE PLACED WITHIN A TOLERANCE OF 1" HORIZONTAL FROM CURB LINE.
7. CONCRETE SHALL BE CL. 4000.

(USED ONLY WITH CITY ENGINEER APPROVAL)



CURB INLET DETAIL - ROUND ALTERNATIVE

DATE:
5/05/2006

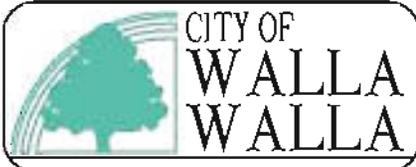
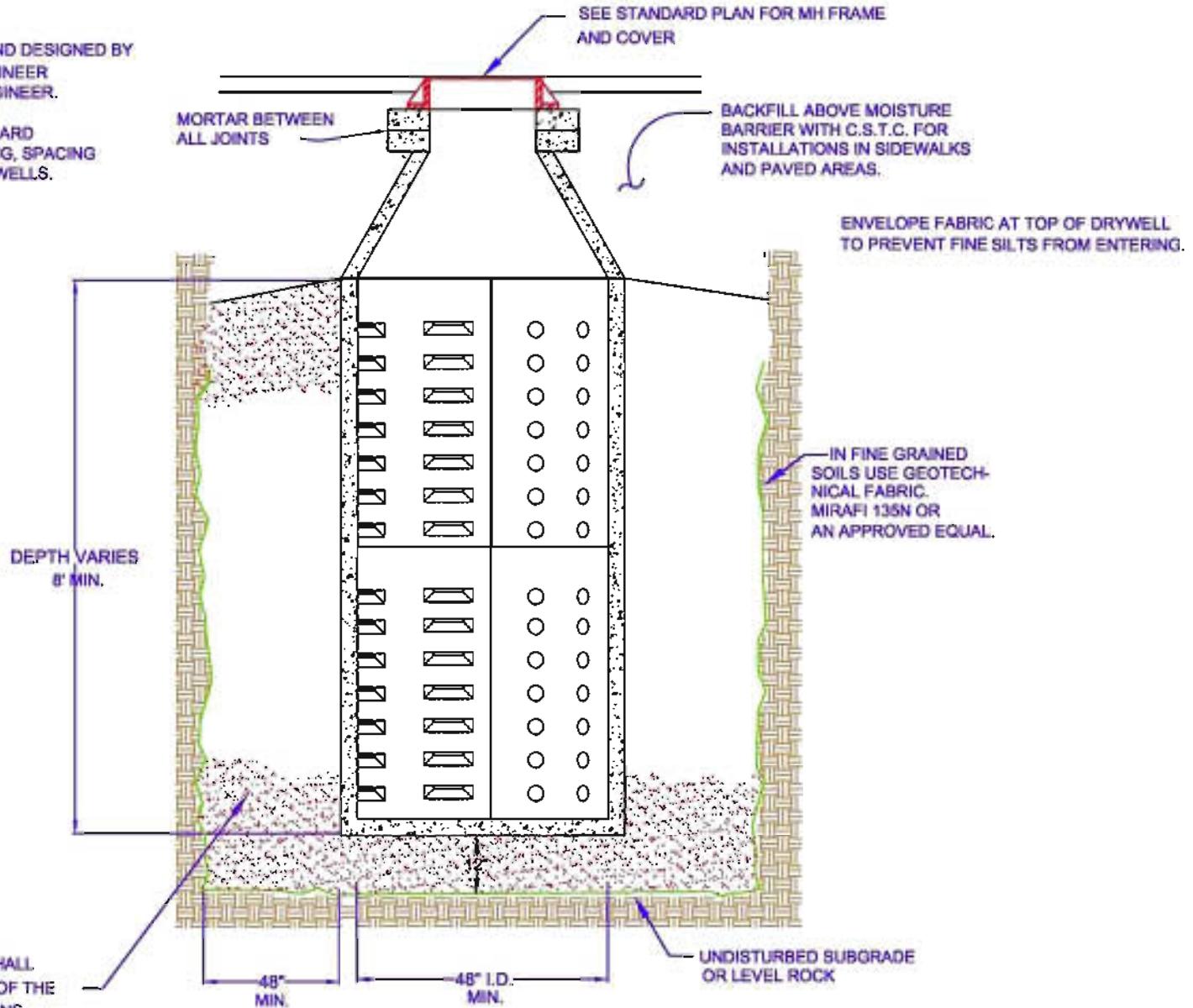
APPROVED BY:

Shantell Beneris

STANDARD
PLAN
6-3

1. DRYWELLS SHALL BE SIZED AND DESIGNED BY A LICENSED PROFESSIONAL ENGINEER AND APPROVED BY THE CITY ENGINEER.

2. REFER TO WSDOT 2008 STANDARD SPECIFICATIONS 9-12.7 FOR SIZING, SPACING AND NUMBER OF HOLES ON DRYWELLS.



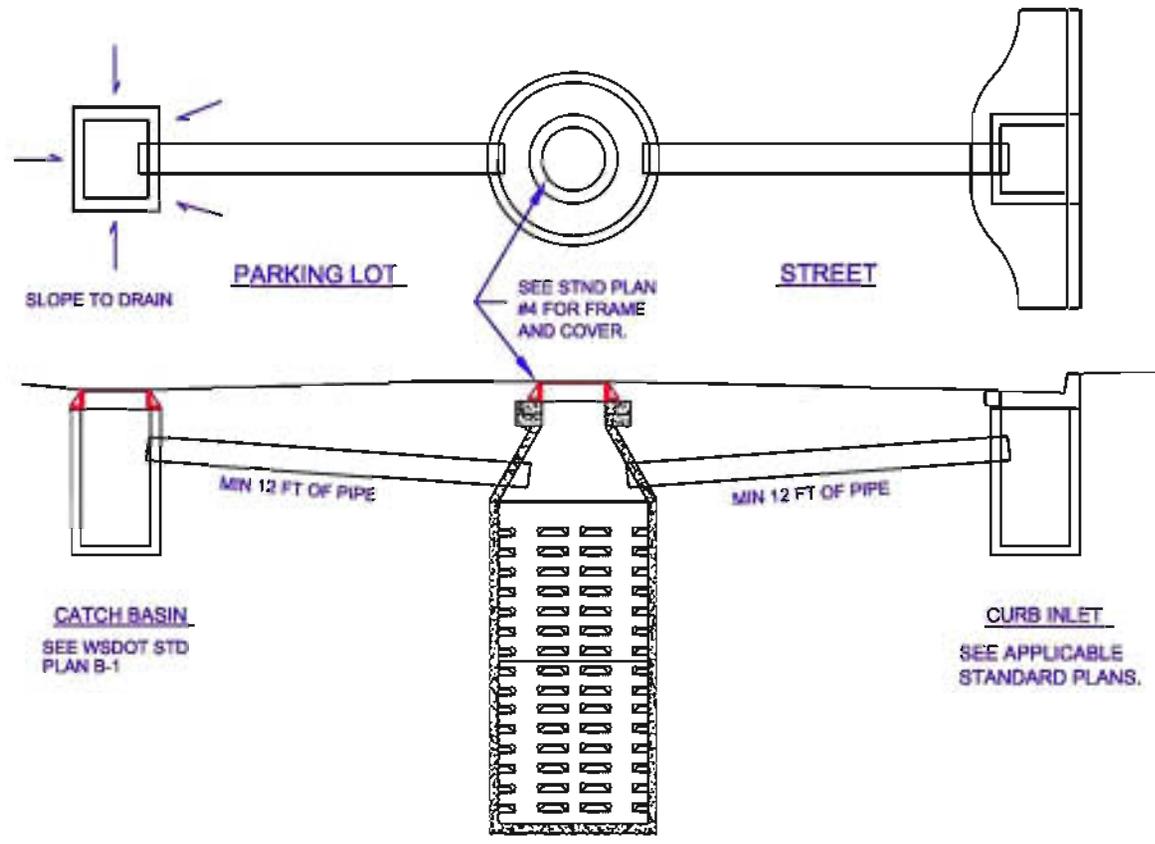
STANDARD DRYWELL

DATE:
11/15/2009

APPROVED BY:

STANDARD
PLAN

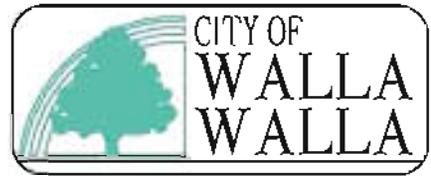
6-4



NOTES

1. LOCATION OF THE DRY WELL, CATCH BASIN AND CURB INLET ARE SHOWN SCHEMATICALLY FOR CLARITY. THE ACTUAL LOCATION OF THE DRY WELL WILL DEPEND ON EXISTING UTILITIES. THE PREFERRED LOCATION IS OUTSIDE THE PAVED AREA OR IN GREEN AREAS WHEN RIGHT OF WAY OR LOT LAYOUT PERMITS
2. CATCH BASIN OR CURB INLET TO DRY WELL PIPE RUNS SHALL BE 10 INCH P.V.C PIPE MEETING THE REQUIREMENTS OF 3034 SDR 35 WITH A MINIMUM COVER OF 18" AT THE CURB INLET OR CATCH BASIN AND A MINIMUM OF 32 INCHES AT THE DRYWELL. IF THE MINIMUM COVER CAN NOT BE MET, DUCTILE IRON PIPE SHALL BE SUBSTITUTED. THE ANGLE OF THE PIPE FROM THE PERPENDICULAR SHALL NOT EXCEED 30°. ALL PIPE CONNECTIONS TO DRY WELLS, CATCH BASINS, OR INLETS SHALL BE MADE AT KNOCKOUTS UNLESS OTHERWISE AUTHORIZED BY THE CITY ENGINEER. SAND COLLARS SHALL BE USED WITH P.V.C. PIPE.
3. OPEN GRATES FOR DIRECT FLOW INTO THE DRY WELL WILL NOT BE PERMITTED UNLESS AUTHORIZED BY THE CITY ENGINEER. DRY WELL FRAME AND COVER SHALL BE SOLID, AND SHALL BE LABELED "DRY WELL" or "DRAIN".

PLACEMENT FOR PARKING LOTS AND STREETS

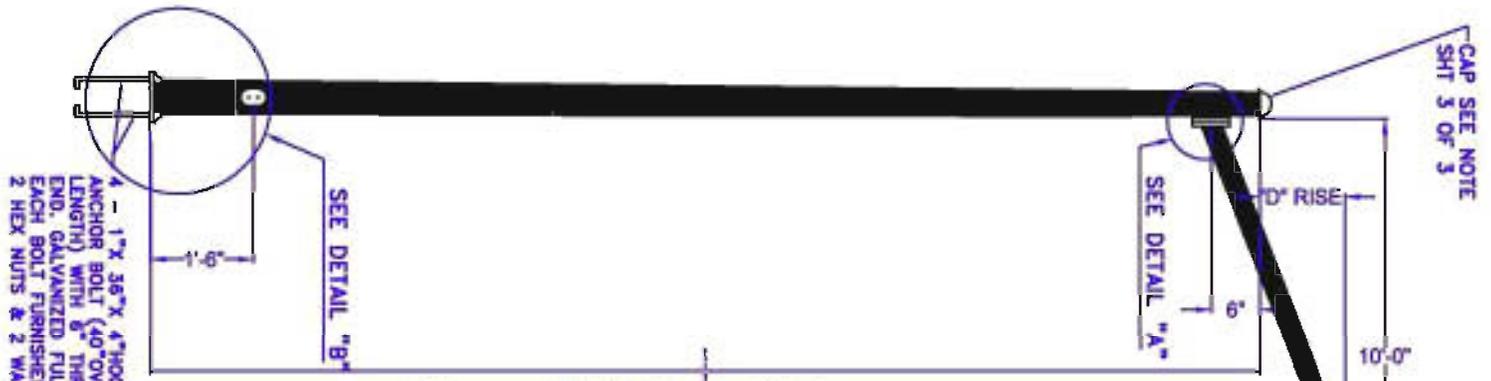


CATCH BASIN-DRYWELL-CURB INLET DETAIL

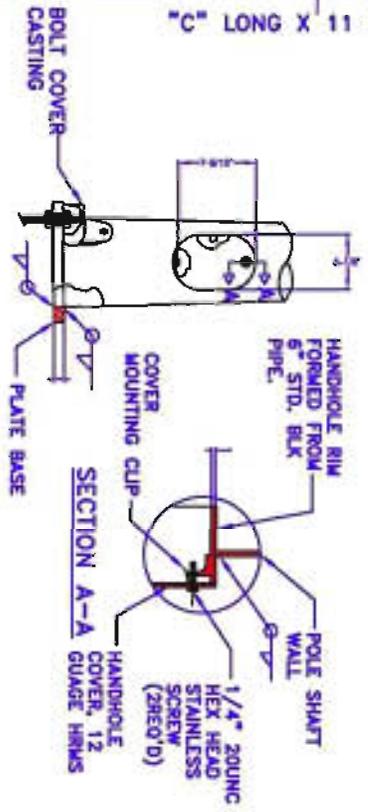
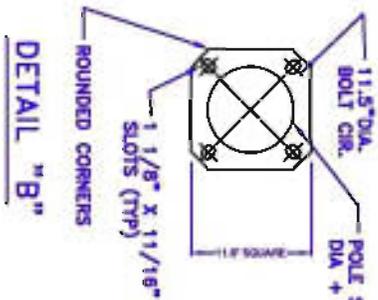
DATE: 6/05/2006

APPROVED BY: *Shantell Beneris*

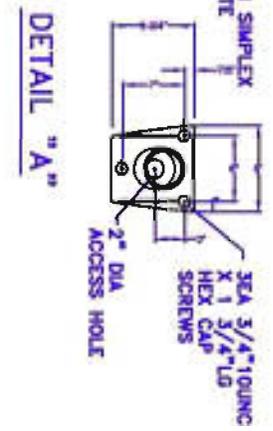
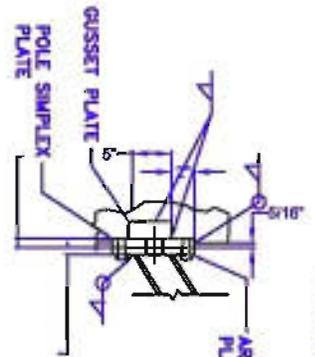
STANDARD PLAN
6-5



4 - 1" X .36" X 4" HOOK, ANCHOR BOLT (40" OVERALL LENGTH) WITH 8" THREADED END, GALVANIZED FULL LENGTH, EACH BOLT FURNISHED WITH 2 HEX NUTS & 2 WASHERS.



	"A"	"B"	"C"	"D"	"E"
RESIDENTIAL	7.5"	4.0"	25'0"	5'0"	30'
ARTERIAL	8.0"	3.8"	30'0"	5'0"	35'



NOTE: ALL POLES SHALL BE VALMONT DRWG #MTB-04 FOR THE CITY OF WALLA WALLA. SEE STD PLANS 7-2 & 7-3 FOR ADDITIONAL NOTES.

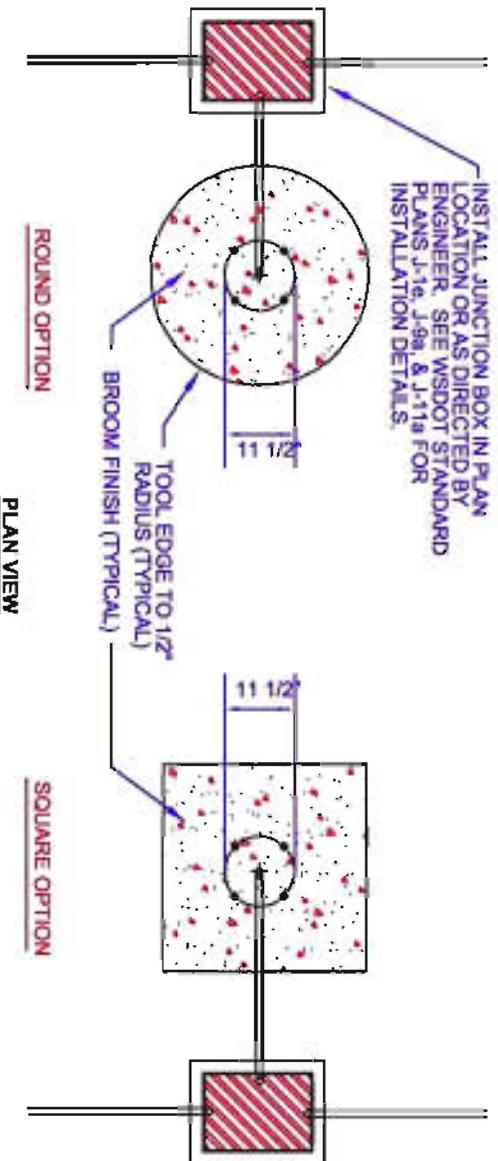
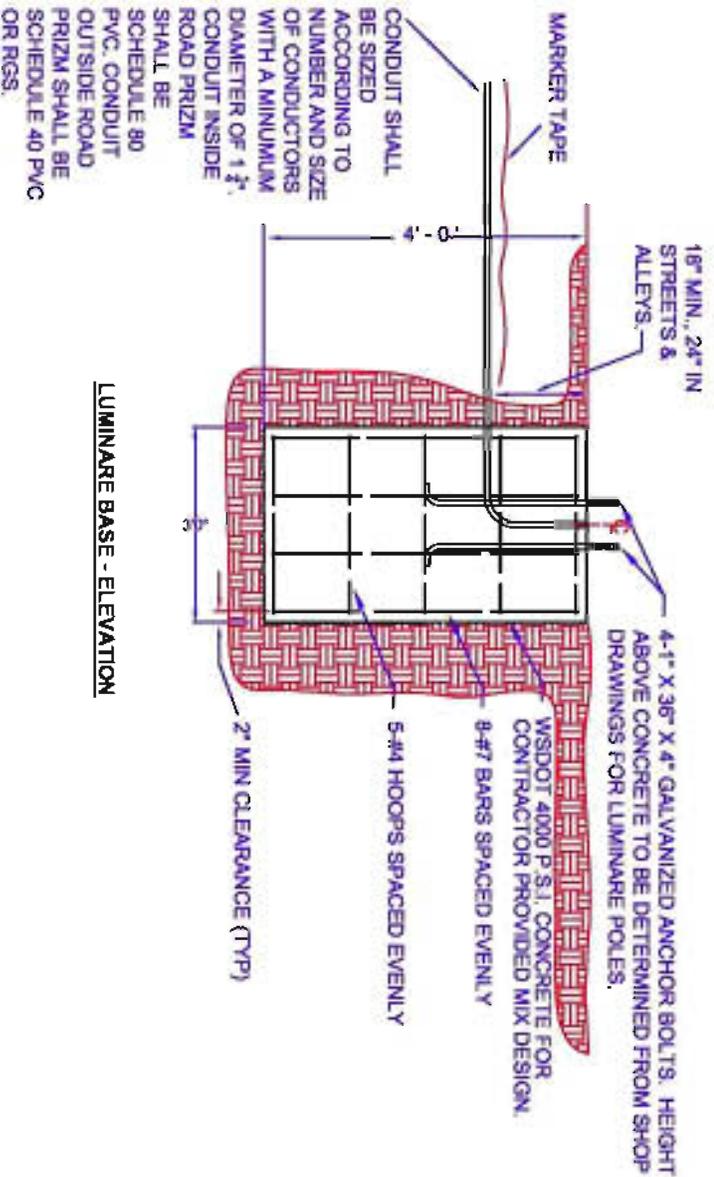


STREET LIGHT POLE DETIAL

DATE: 10/08/2007

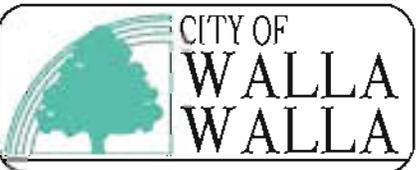
APPROVED BY: *Shondell Beneris*

STANDARD PLAN
7-1



NOTES:

1. WHERE THE POLE BASE FALLS OUT SIDE OF THE SIDEWALK AREA, THE TOP OF BASE ELEVATION SHALL BE SET 1" ABOVE EXISTING GROUND SURFACE.
2. WHERE THE POLE BASE FALLS PARTIALLY OR WHOLLY INSIDE THE SIDEWALK, THAT PORTION BORDERED BY THE SIDEWALK SHALL BE SEPARATED WITH 3/8" TO 1/2" JOINT MATERIAL PROVIDING A VERTICAL PLANE SEPARATION BETWEEN THE SIDEWALK AND THE BASE.
3. WHEN APPROVED BY THE ENGINEER, THE BASE MAY BE SET BELOW SIDEWALK ELEVATION, A THRU JOINT WILL BE REQUIRED ON EITHER SIDE OF THE VERTICAL PROJECTION OF THE BASE TO CONTROL CRACKING DUE TO MOVEMENT. THE SIDEWALK CONCRETE SHALL MAKE CONTACT WITH THE TOP OF THE BASE AND SHALL COMPLETELY SEAL THE BOLTS.
4. CONDUIT RUNS SHALL TERMINATE IN JUNCTION BOXES. CONDUCTOR WIRE SHALL BE CONTINUOUS FROM BOX TO BOX AND BOX TO POLE. NO SPLICES WILL BE ALLOWED IN CONDUIT RUNS. SPLICES IN JUNCTION BOXES SHALL BE 3M-1m SPLICE KIT. EACH POLE SHALL HAVE A QUICK DISCONNECT FUSE IN THE POLE.



STREET LIGHT FOUNDATION PLAN DETAIL

DATE:
8/01/2010

APPROVED BY:

Shandell Bener Jones

STANDARD
PLAN
7-2

LUMINAIRE NOTES

ALL LUMINAIRES SHALL BE LED COBRA HEAD STYLE FIXTURES. GE EVOLVE LED ROADWAY LIGHTING OR LEOTEK LED GREEN COBRA STREET LIGHT MODELS SHALL BE USED UNLESS AN EQUAL PRODUCT IS APPROVED BY THE CITY ENGINEER

LUMINAIRES SHALL MEET THE FOLLOWING SPECIFICATIONS:

- 1) LUMINAIRE SHALL BE SIZED ACCORDING TO THE ILLUMINATION REQUIREMENTS OF THE ROADWAY.
- 2) TYPE III MEDIUM DISTRIBUTION WITH CUTOFF OPTICS.
- 3) LED LIGHT SOURCES SHALL PRODUCE A LIGHT COLOR TEMPERATURE BETWEEN 4,000 TO 5,200 K.
- 4) ENERGIZED BY 240 VOLTS.
- 5) LUMINAIRE SHALL INCLUDE "PER" RECEPTACLE AND PHOTOCELL.
- 6) FINISH SHALL BE BATTLESHIP GRAY.
- 7) LIGHT SOURCES WILL MEET OR EXCEED THE FOLLOWING EFFICIENCY AND LONGEVITY BENCHMARKS:
 - * LUMINOUS EFFICACY: 65 LUMENS/WATT
 - * AVERAGE LAMP LIFE: >50,000 HOURS.
 - * MAINTENANCE FACTOR @ 50,000 HOURS: 0.80

PLACEMENT OF STREET LIGHTS SHALL BE DETERMINED BY THE CITY ENGINEER.

POLE NOTES

(SEE STD. PLAN 7-1 FOR PLAN DETAILS)

- 1) POLE SHAFT-HOT ROLLED COMMERCIAL QUALITY CARBON STEEL CONFORMING TO ASTM DESIGNATION: A 595 GRADE A - 55,000 PSI MINIMUM YIELD STRENGTH. LINEAR TAPER - 0.14"/FT.
- 2) LUMINAIRE ARM SHAFT - 11GA. HOT ROLLED COMMERCIAL QUALITY CARBON STEEL WITH 55,000 PSI MINIMUM YIELD STRENGTH. LINEAR TAPER 0.14"/FT WITH 2-3/8" O.D. x 8" STRAIGHT SECTION LUMINAIRE END.
- 3) ARM CONNECTION SIMPLEX PLATES 36,000 PSI MINIMUM YIELD STRENGTH. GUSSET PLATES 36,000 PSI MINIMUM YIELD STRENGTH.
- 4) BASE PLATE - 36,000 PSI MINIMUM YIELD STRENGTH.
- 5) FOUR CAST ANCHOR BOLT COVERS SECURED IN PLACE WITH STAINLESS STEEL SELF-TAPPING SCREWS
- 6) CAST POLE TOP CAP SECURED IN PLACE WITH 3 PLATED SET SCREWS.
- 7) ALL THREADED FASTENERS TO BE GALVANIZED UNLESS OTHERWISE NOTED.
- 8) ANCHOR BOLTS CONFORM TO ASTM DESIGNATION: A449.
- 9) EACH LUMINAIRE SHALL HAVE AN INLINE FUSEHOLDER, SEC. MODEL 1791-SF, WITH A FRM-5 FUSE ON EACH PHASE CONDUCTOR AT THE BASE OF THE POLE. ACCESS TO THESE FUSEHOLDERS SHALL BE THROUGH THE HAND HOLE ON THE POLE. ADDITIONAL CONDUCTOR LENGTH SHALL BE LEFT INSIDE THE POLE TO EQUAL A LOOP HAVING A DIAMETER OF ONE (1) FOOT.

FINISH NOTES:

- 1) ACCESSORIES TO BE HOT DIP GALVANIZED TO ASTM DESIGNATION: A 153.
- 2) POLE TO BE HOT DIP GALVANIZED TO ASTM DESIGNATION: A 123.
- 3) ARM TO BE HOT DIP GALVANIZED TO ASTM DESIGNATION: A 123.

STANDARD
PLAN

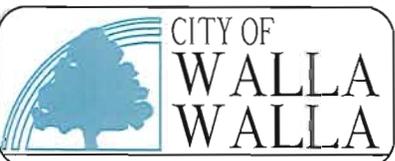
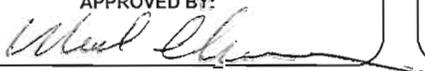
7-3

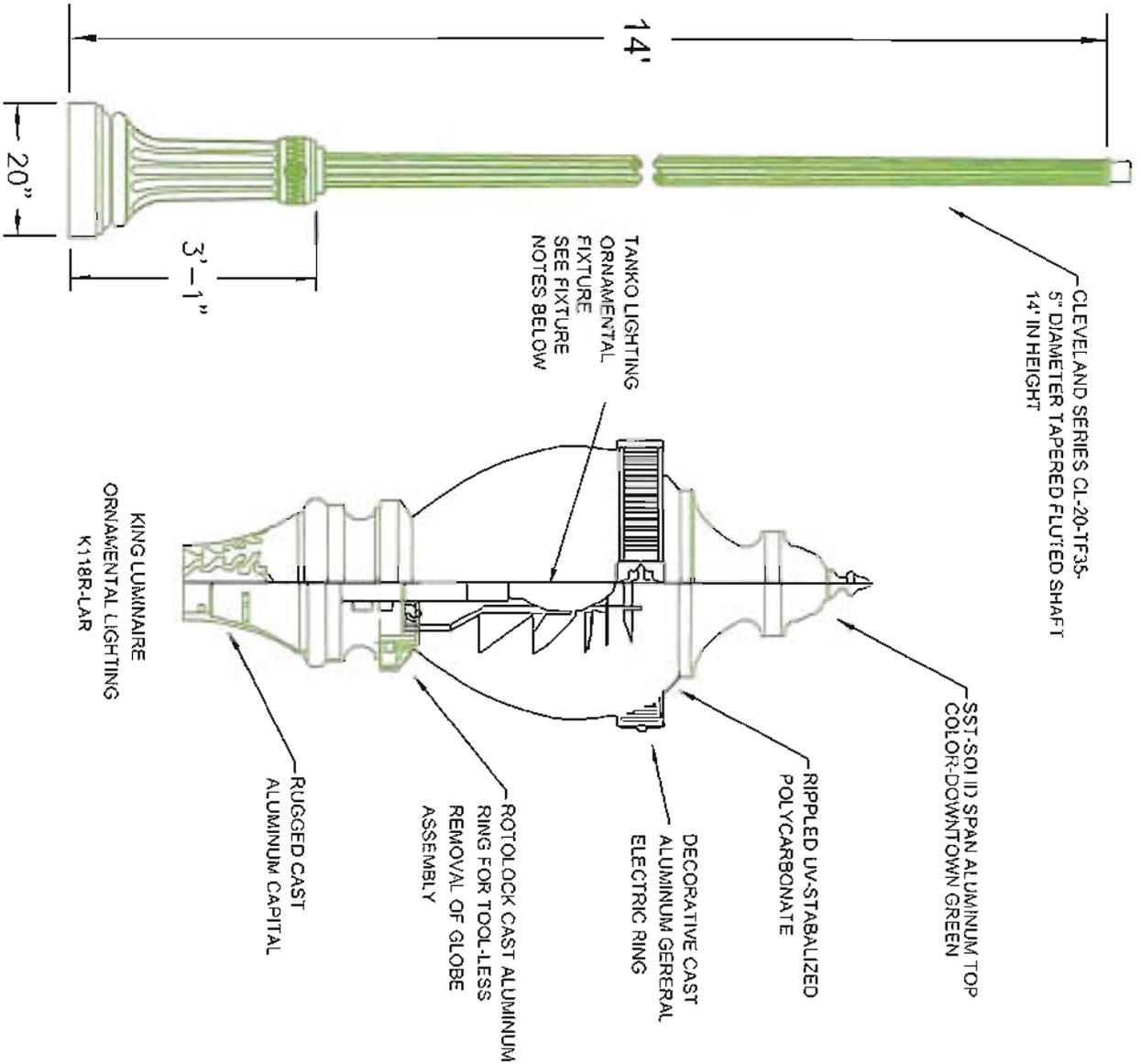
STREET LIGHTING LUMINAIRE DETAIL

DATE:

02/06/2014

APPROVED BY:





FIXTURE NOTES

FIXTURE SHALL BE TANKO LIGHTING ORNAMENTAL INDUCTION OR APPROVED EQUAL UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

FIXTURE SHALL MEET THE FOLLOWING SPECIFICATIONS:

- SERIES PTGL (POST TOP GLOBE)
- WATTAGE AS INDICATED BELOW.
- 40 WATT UNITS SHALL BE USED ON RESIDENTIAL STREETS.
- 85 WATT UNITS SHALL BE USED ON ARTERIAL STREETS.
- 240 VOLTAGE
- LES TYPE V OPTICS.
- LENS EXCLLIM D.
- COLOR TEMPERATURE 5,000K - 5,500K

PLACEMENT OF STREET LIGHTS SHALL BE DETERMINED BY THE CITY ENGINEER.

POLE NOTES

- 1) PAINT FOR POLE, BASE, AND SOLID SPUN ALUMINUM TOP SHALL BE DOWNTOWN GREEN IN COLOR. COLOR CODE D7Y24, 12Y40, Y28, W1Y
- PAINT SHALL BE PITT TECH DTM (DIRECT TO METAL) GLOSS 100% ACRYLIC 90-377 PAINT. THE DTM PAINT SHALL BE TINTED WITH 896 COLORANTS INSTEAD OF THE NORMAL GLYCOL COLORANTS.



ALTERNATIVE/DOWNTOWN STREET LIGHT STANDARD

DATE: 10/29/2012

APPROVED BY: *Mark Chen*

STANDARD PLAN
7-4