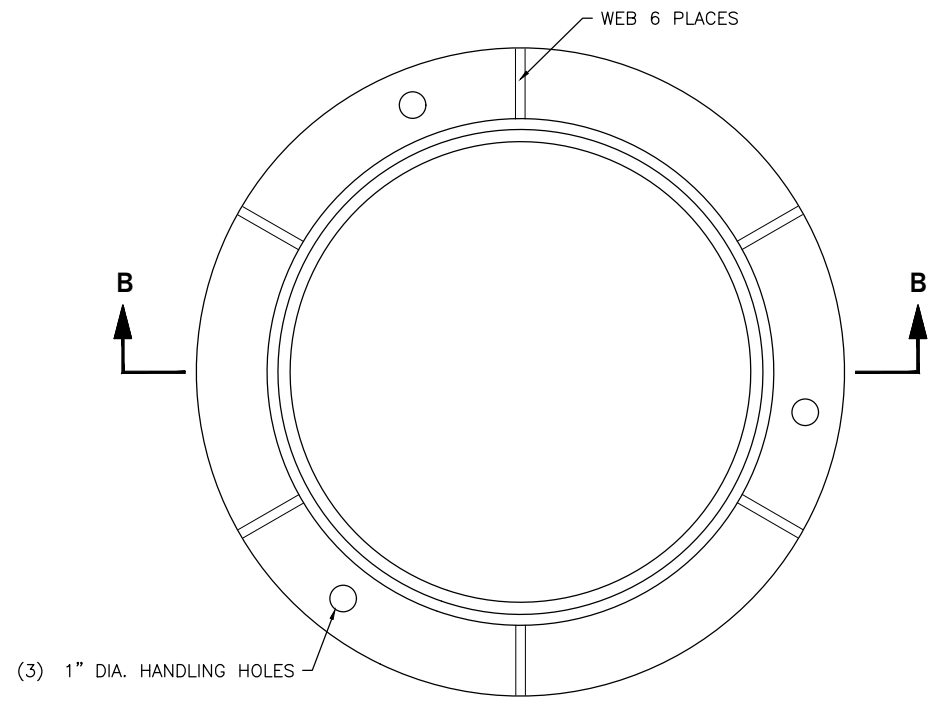


**STORM DRAIN NON LOCKING COVER**



**3715Z STACKING  
GRAY OR DUCTILE IRON FRAME**

**STANDARD DETAIL  
CIRCLE FRAME RING  
AND COVER DETAIL**

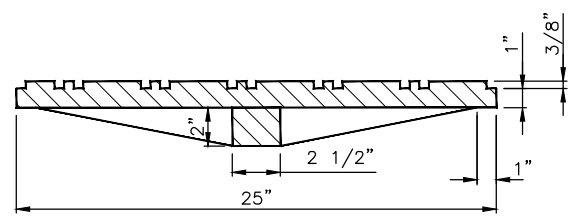


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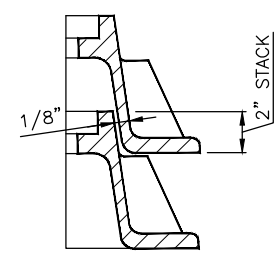
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PAGE  
**1 OF 1**

**NOTES:**

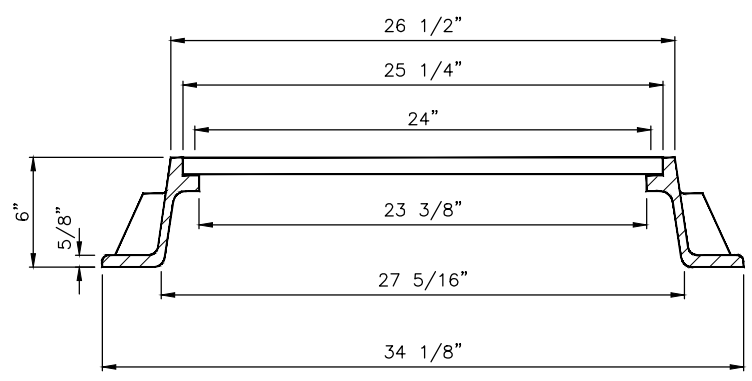
- STANDARD SPECIFICATION SECTION 9-05.15(1) AND 9-06.14
- COVER SHALL BE AT MINIMUM 100LBS
  - MINIMUM WEIGHT OF FRAME SHALL BE 134 LBS
  - PRODUCT SUPPLIES BY EAST JOURDAN IRON WORKS, OR APPROVED EQUAL
  - CITY OF WENATCHEE LOGO REQUIRED
  - FRAME AND COVER SHALL BE H-20 LOADING RATED



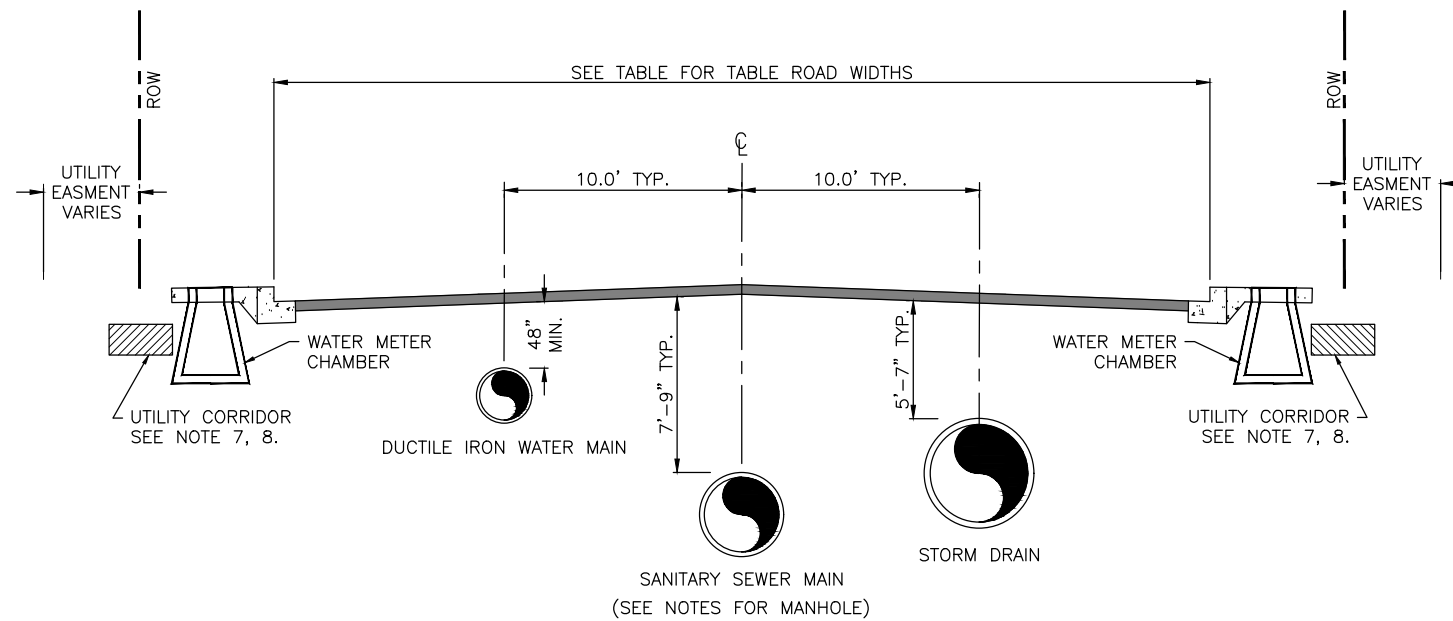
**SECTION A-A - DUCTILE IRON  
NON LOCKING COVER  
MINIMUM WEIGHT 100 LBS.**



**STACKING DETAIL**

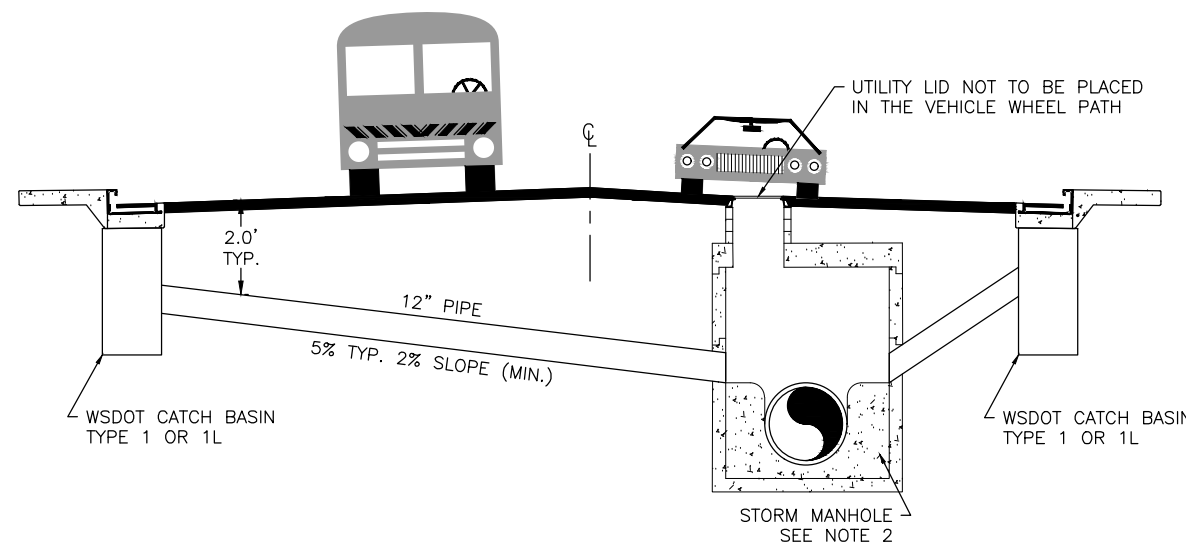


**SECTION B-B  
GRAY IRON OR DUCTILE IRON FRAME  
MINIMUM WEIGHT 135 LBS.**



**TYPICAL UTILITY PLACEMENT**  
N.T.S.

ROAD WIDTH TABLE			
	LOCAL	COLLECTOR	ARTERIAL
CURB TO CURB	34	38	44-56



**STORM SEWER CONFIGURATION**  
N.T.S.

**NOTES:**

- SANITARY SEWER MANHOLES SHALL BE WSDOT MANHOLE TYPE 1 AND BE CHANNELIZED.
- STORM SEWER MANHOLES SHALL BE WSDOT MANHOLE TYPE 3 AND BE CHANNELIZED.
- THROUGH CURB INLET SHALL BE USED WITH ALL CATCH BASINS UNLESS OTHERWISE APPROVED.
- ALL WATER & SEWER SEPARATION MUST BE DONE IN ACCORDANCE WITH DOE CRITERIA FOR SEWER WORKS DESIGN.
- ALL CATCH BASINS SHALL HAVE A MINIMUM OF A 21" SUMP.
- CATCH BASIN OUTLET PIPE TYPICAL 12" DIAMETER.
- STORM SEWER LATERALS IN ACCORDANCE WITH D-200.
- STREET LIGHT CONDUITS SHALL BE PLACED ACCORDING TO STREET LIGHTING DETAILS. ALL OTHER UNDERGROUND UTILITIES SHALL BE PLACED BEHIND THE SIDEWALK SO AS NOT TO OBSTRUCT THE PLACEMENT OF FUTURE WATER CHAMBER.
- THE UTILITY CORRIDOR SHOULD BE PLACED IN THE PLANTER STRIP RESERVING PLACEMENT FOR STREET TREES.

**STANDARD DETAIL  
UTILITY LOCATIONS  
FOR NEW ROADS**

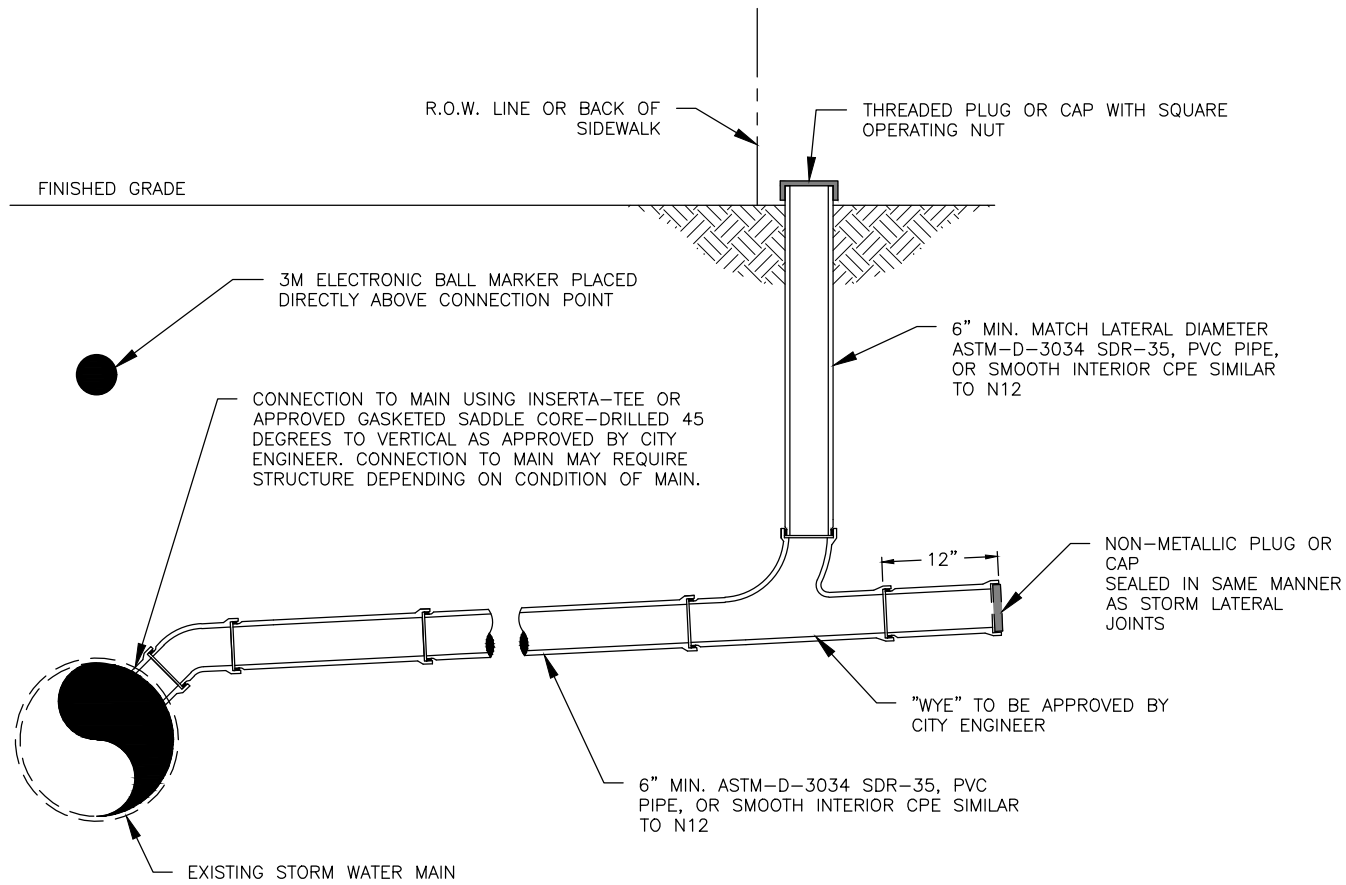


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09/09/2021	CHECKED		DATE APPROVED			

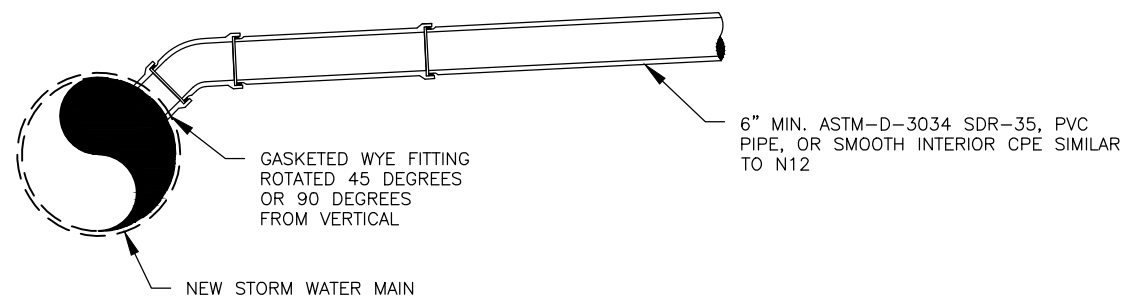
DETAIL NO.  
D-150

PAGE  
1 OF 1

**CASE 1 NEW CONNECTION TO EXISTING STORM MAIN**



**CASE 2 NEW CONNECTION TO NEW STORM MAIN**



**NOTES:**

1. ALL CONNECTIONS MUST BE APPROVED BY THE CITY OF WENATCHEE AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
2. LATERAL CONNECTIONS TO THE MAIN LINE SHALL BE A MINIMUM OF 3 FEET APART ON CENTER.
3. LATERAL CONNECTIONS TO THE PUBLIC MAIN LINE SHALL BE DESIGNED TO FLOW BY GRAVITY THROUGH THE POINT OF CONNECTION. PRESSURE SYSTEMS SHALL DISCHARGE INTO GRAVITY FLOW NO LESS THAN 10 FEET UPSTREAM OF THE POINT OF CONNECTION BETWEEN THE 6 INCH LATERAL AND THE MAIN LINE.
4. THE STORM LATERAL, INCLUDING THE TAP, SADDLE, TEE, PIPE, AND CLEANOUT IS CONSIDERED "PRIVATE" UPSTREAM OF THE MAIN LINE POINT OF CONNECTION.
5. MINIMUM 6 INCH DIAMETER CLEANOUTS SHALL BE CONSTRUCTED ON ALL STORM LATERALS. THE VERTICAL RISER SHALL BE OF EQUAL SIZE AS THE LATERAL PIPE OR LARGER.
6. CLEANOUTS MAY BE LOCATED IN THE PLANTER STRIP AT THE BACK OF WALK, IF ONE EXISTS, AND SHALL BE VISIBLE AT FINISHED GRADE. CLEANOUTS LOCATED BELOW FINISHED GRADE SHALL HAVE ACCESSIBLE COVER.
7. 3M ELECTRONIC BALL MARKER TO BE PLACED 24 TO 36 INCHES BELOW FINISHED GRADE AND SHALL BE GREEN IN PIGMENT.
8. ALL CONNECTIONS TO NEW PIPE MUST NOT BE GREATER THAN ONE PIPE SIZE SMALLER THAN EXISTING MAIN DIAMETER.
9. STORM MAIN MANHOLE STRUCTURE REQUIRED FOR CONNECTION OF ALL PIPES OF A SIMILAR SIZE AS THE MAIN OR BASED UPON CONDITION OF STORM MAIN AS DETERMINED BY THE CITY ENGINEER.
10. **CASE 1:** CONNECTIONS TO EXISTING STORM MAINS SHALL BE CUT USING A HOLE SAW. CONNECTIONS TO EXISTING MAIN LINES SHALL UTILIZE AN APPROVED TAPPING SADDLE OR TEE-WYE CONNECTION. LATERALS SHALL NOT PROTRUDE INTO THE MAIN LINE.
11. **CASE 2:** CONNECTIONS TO NEWLY CONSTRUCTED MAIN LINES SHALL UTILIZE A MANUFACTURED, GASKETED TEE-WYE INSTALLED IN-LINE WITH THE NEW STORM MAIN. CORE-DRILLING OF NEW SEWER MAIN LINES FOR STORM LATERALS SHALL NOT BE PERMITTED.

**STANDARD DETAIL**  
**6" TO 8" STORM LATERAL**  
**12" - 24" STORM MAINS**



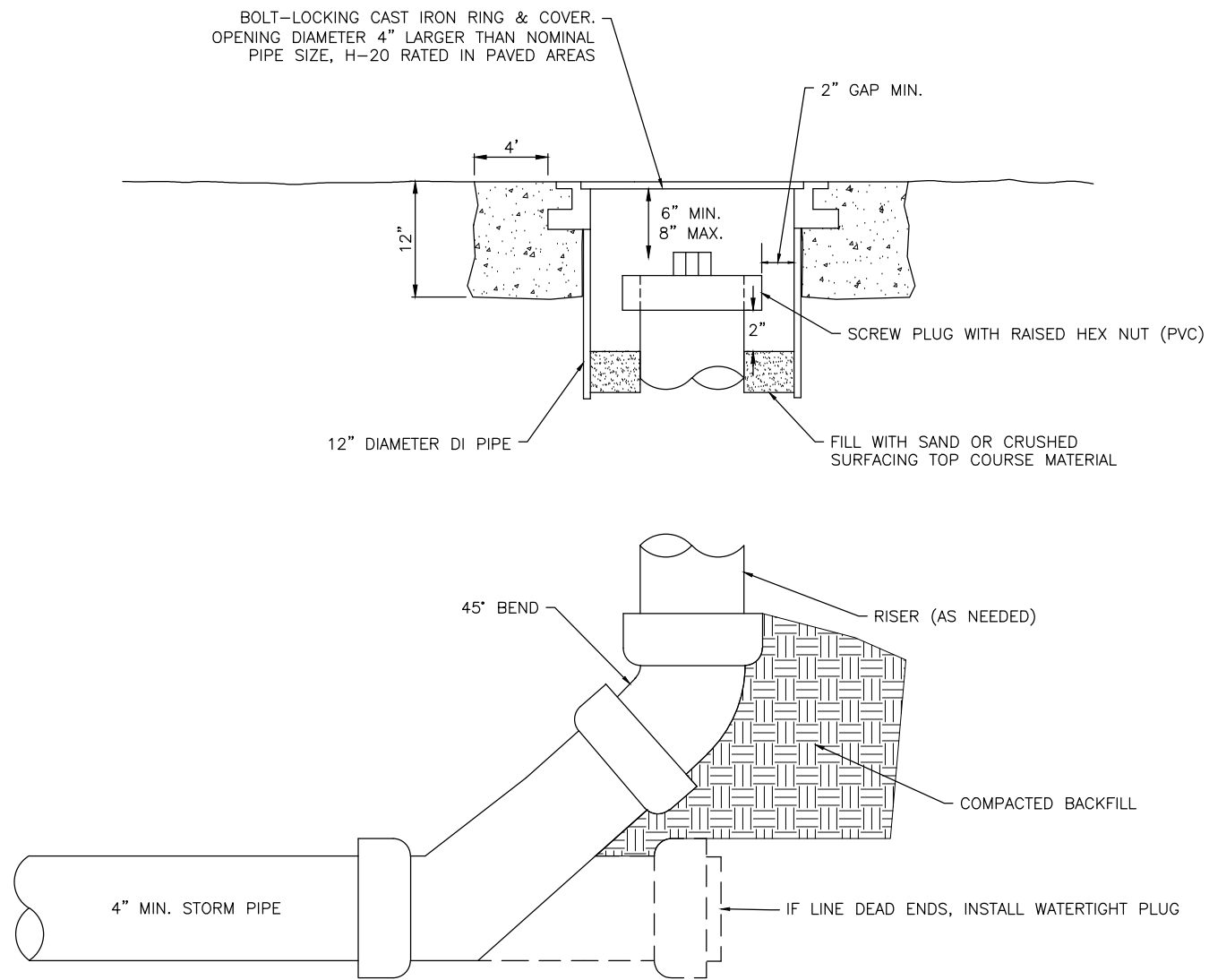
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					2/9/2016	NJH		
					09/01/2021	DMN		

DATE APPROVED  
3/23/2015

STANDARD SPECIFICATIONS  
WSDOT 7-08 PIPE INSTALL  
WSDOT 7-18 SIDE SEWERS

DETAIL NO.  
**D-200**

PAGE  
**1 OF 1**



**NOTES:**

1. CAST IRON COVER SHALL READ EITHER "STORM" OR "DRAIN".
2. FOR USE IN PAVEMENT.

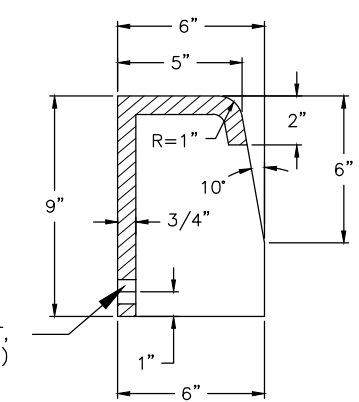
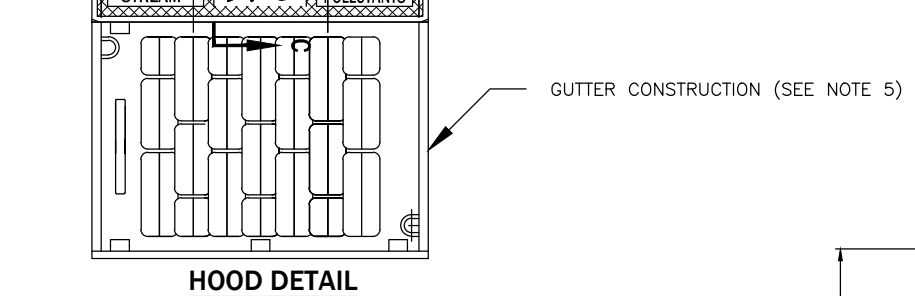
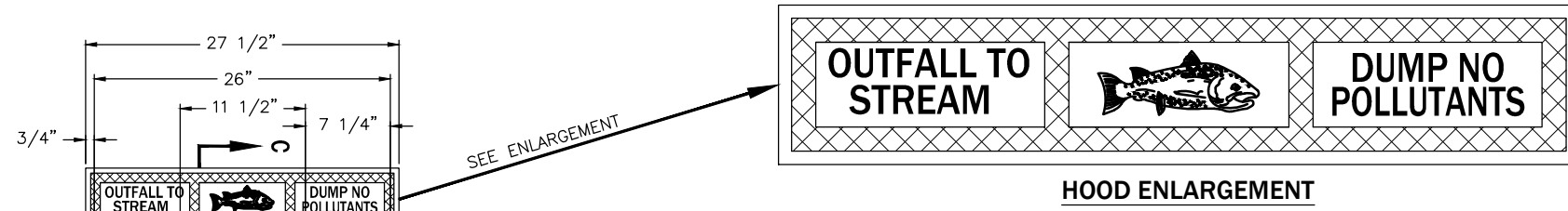
**STANDARD DETAIL  
STORM CLEANOUT FOR  
DRIVEWAY AREAS**



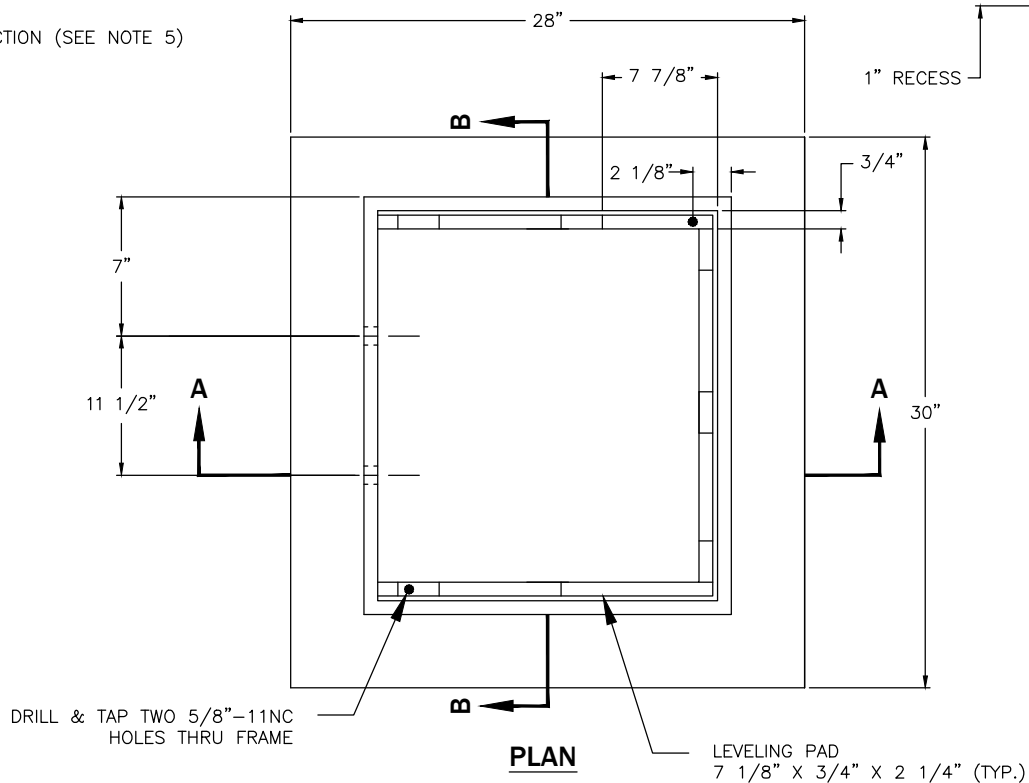
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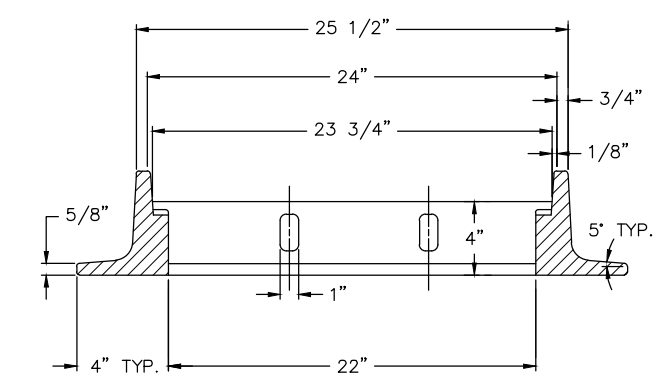
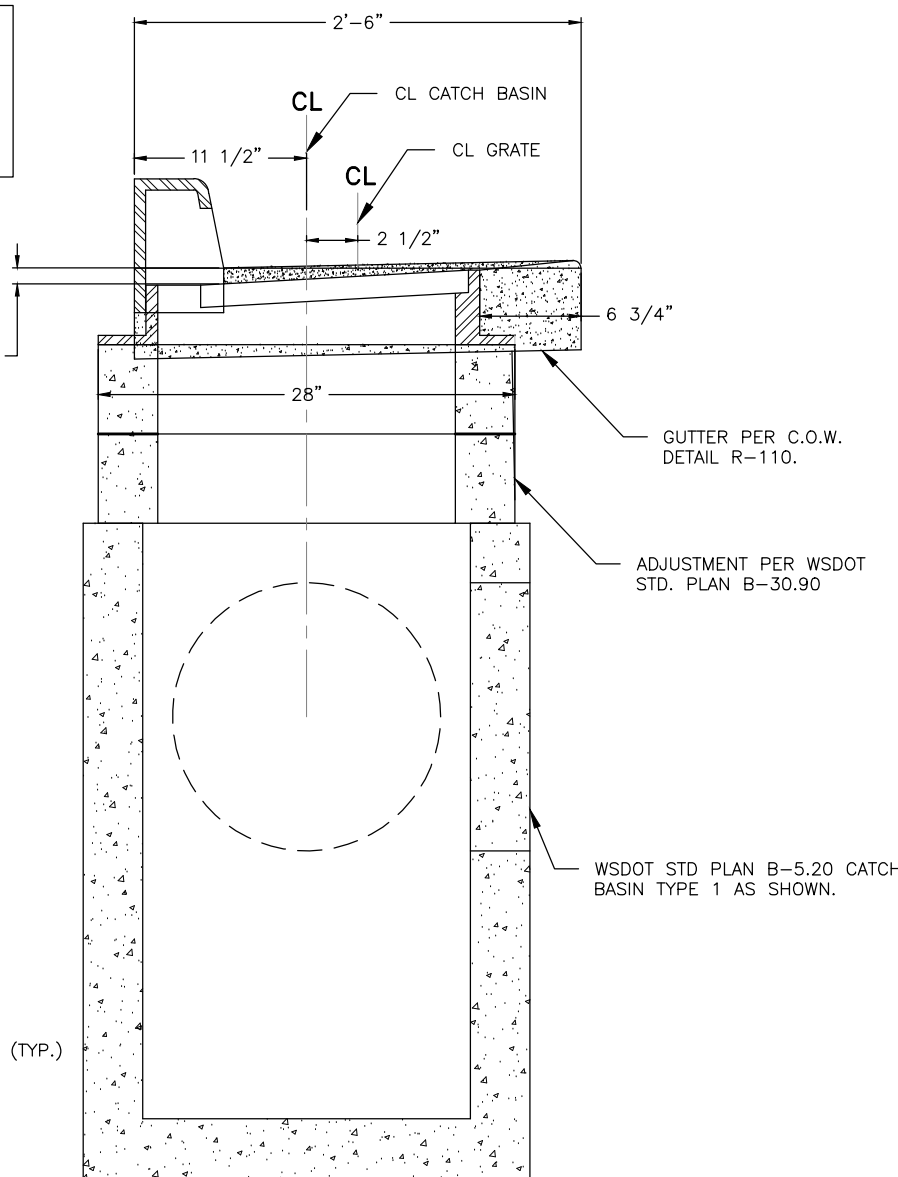
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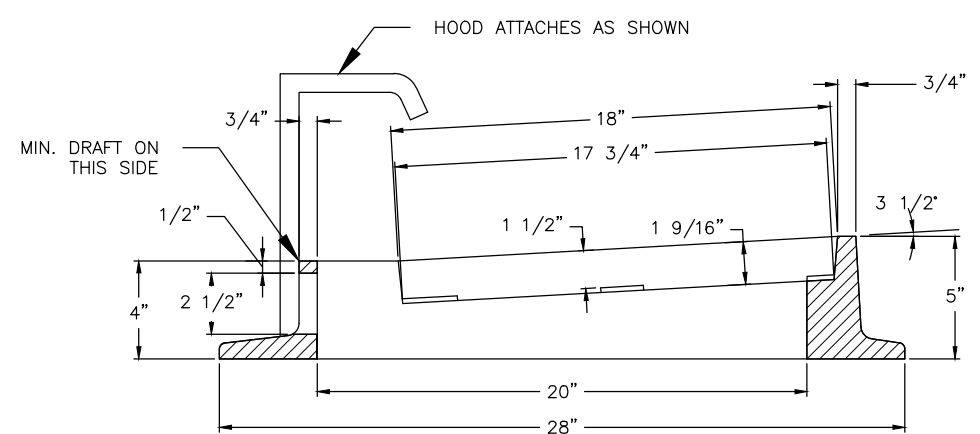
**SECTION C-C**



**PLAN**



**SECTION B-B**



**SECTION A-A**

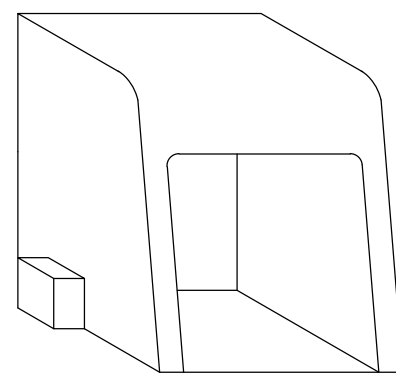
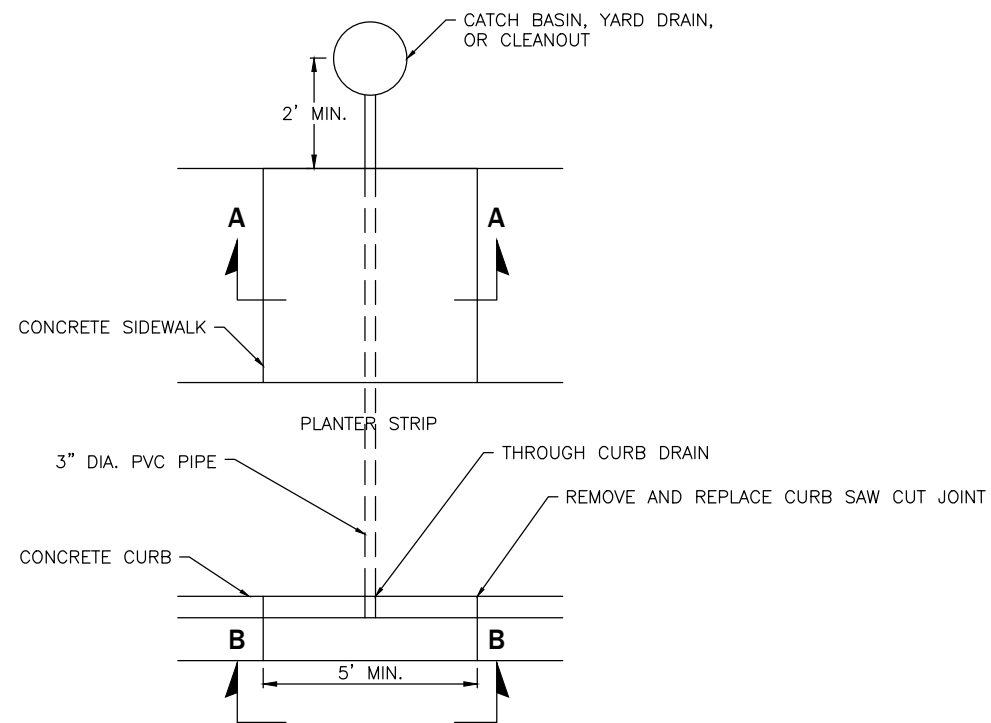
- THROUGH CURB INLET NOTES:**
1. MATERIAL IS CAST IRON ASTM A48 CLASS 30.
  2. PATTERN ON TOP SURFACE OF HOOD SHALL BE  $\frac{3}{16}$ " NON-SKID DIAMOND.
  3. BOLT, WASHER, AND NUT SHALL BE GALV. OR CORROSION RESISTANT.
  4. THROUGH CURB INLET EQUAL TO OLYMPIC SM52(05).
  5. GUTTER SHALL BE CONSTRUCTED PER CITY OF WENATCHEE DETAIL R-100.

- NOTES:**
1. THIS INLET REQUIRES THE PRECAST CATCH BASIN UNIT TO BE ROTATED 90 DEGREES SO THAT THE NARROW SIDE IS PARALLEL TO THE CURB LINE. WHEN CALCULATING OFFSETS FROM CURB TO CL OF THE PRECAST CATCH BASIN, PLEASE NOTE THAT THE CL OF THE GRATE IS NOT THE CL OF THE PRECAST CATCH BASIN. SEE SECTION A
  2. THE DIMENSIONS OF THE FRAME AND HOOD MAY VARY SLIGHTLY AMONG DIFFERENT MANUFACTURERS. THE FRAME MAY HAVE CAST FEATURES INTENDED TO SUPPORT A DEBRIS GUARD. HOOD UNITS MAY BE MOUNTED INSIDE OR OUTSIDE OF THE FRAME. THE HOOD MAY INCLUDE CASTING LUGS. THE TOP OF THE HOOD MAY BE CAST WITH A PATTERN.
  3. ATTACH THE HOOD TO THE FRAME WITH TWO  $\frac{3}{4}$ " x 2" HEX HEAD BOLTS, NUTS, AND OVERSIZE WASHERS. THE WASHERS SHALL HAVE DIAMETERS ADEQUATE TO ENSURE FULL BEARING ACROSS THE SLOTS.
  4. ONLY DUCTILE IRON VANED GRATES SHALL BE USED. SEE WSDOT STANDARD PLANS RECTANGULAR GRATE B-30.30 AND BI-DIRECTIONAL GRATE B-30.40 FOR GRATE DETAILS.
  5. THIS PLAN IS INTENDED TO SHOW THE INSTALLATION DETAILS OF A MANUFACTURED PRODUCT. THIS PLAN IS NOT INTENDED TO SHOW THE SPECIFIC DETAILS NECESSARY TO FABRICATE THE CASTINGS DEPICTED IN THIS DRAWING.

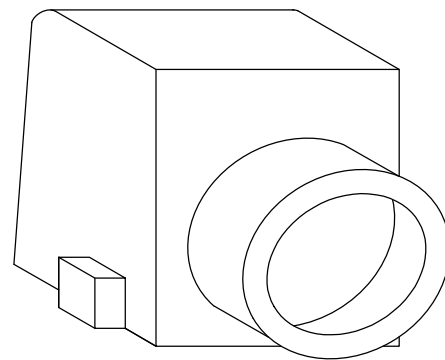
**STANDARD DETAIL  
THROUGH CURB INLET**



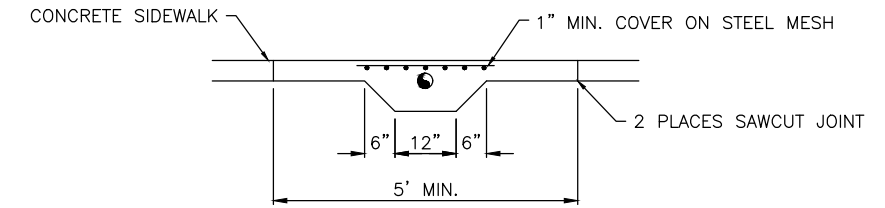
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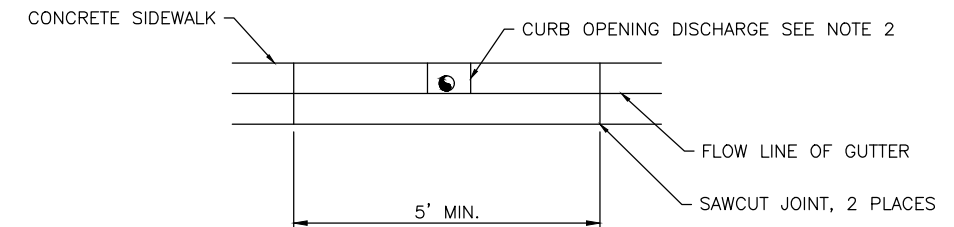
**CURB DRAIN FRONT**



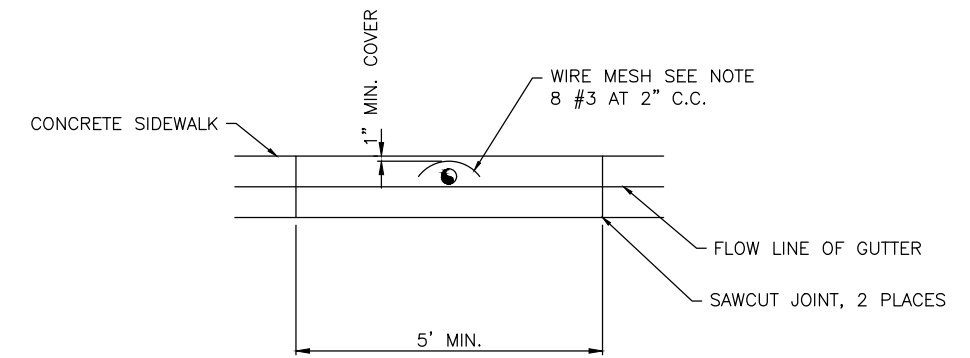
**CURB DRAIN BACK**



**SECTION A-A**  
N.T.S.



**SECTION B-B**  
N.T.S.



**SECTION B-B (ALTERNATE)**  
N.T.S.

**NOTES:**

1. PIPE SHALL BE 3" DIAMETER PVC PLASTIC PIPE (SCH 40).
2. USE NEENAH FOUNDRY PRODUCT R-3262-3 OR EQUAL AS APPROVED BY CITY.
3. CEMENT CONCRETE SHALL BE CLASS B (3/4").
4. REINFORCING BAR SHALL BE #3 (3/8" DEFORMED BAR).
5. SIDEWALK AND CURBING MUST BE SAW-CUT AT A DUMMY JOINT OR REMOVED TO A FULL EXPANSION JOINT.
6. SIDEWALK THICKNESS OF 4" MINIMUM.
7. FULL DEPTH OF CURB AND GUTTER MUST BE REMOVED AND REPLACED.
8. WIRE MESH SHALL BE 3X3 10 GAUGE.
9. ALTERNATE TO BE USED ONLY WITH APPROVAL FROM CITY.
- 10 ONLY FOR USE IN AREAS WITHOUT EXISTING STORM SYSTEMS

**STANDARD DETAIL  
RESIDENTIAL SIDEWALK  
DRAIN**



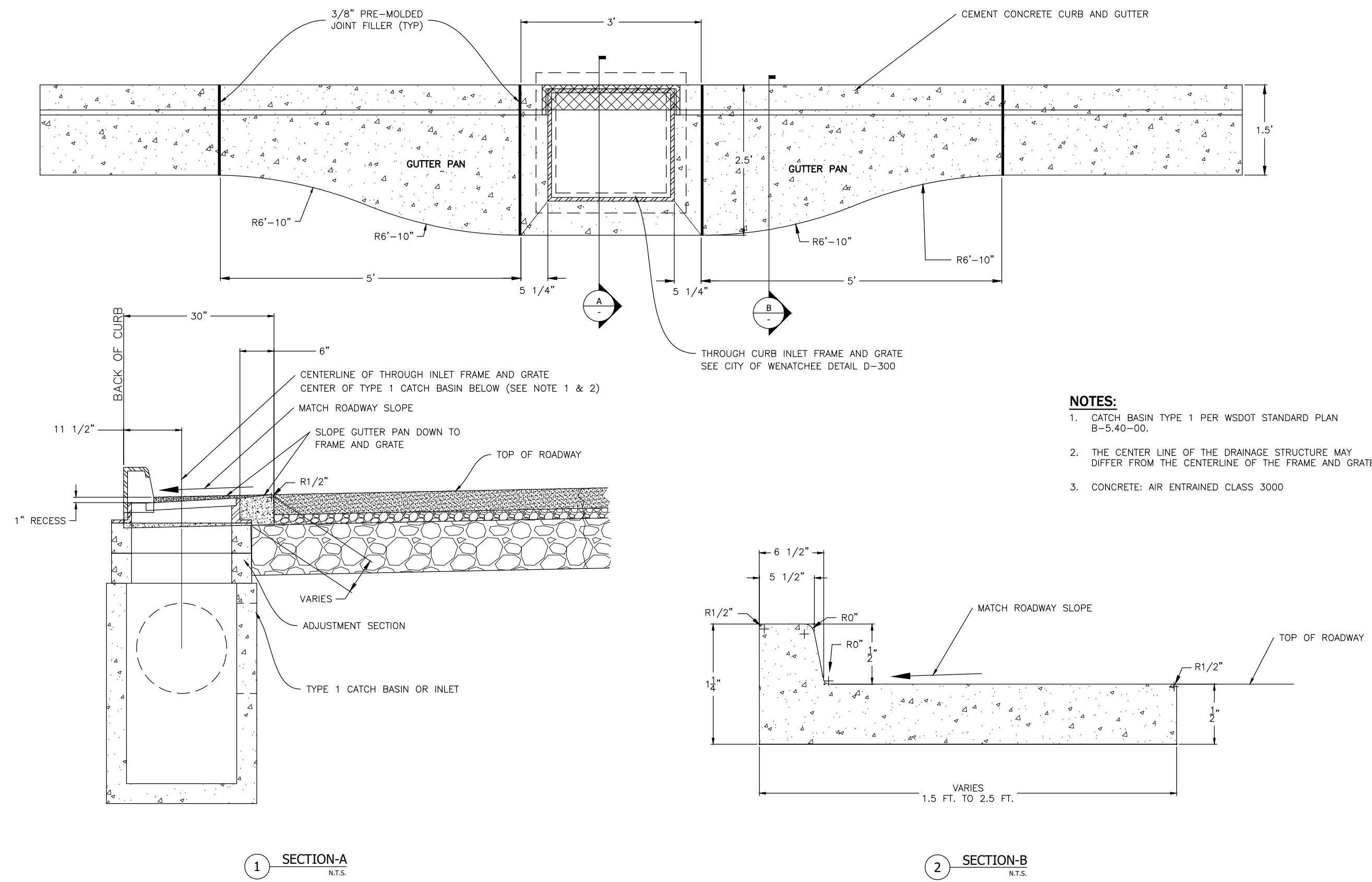
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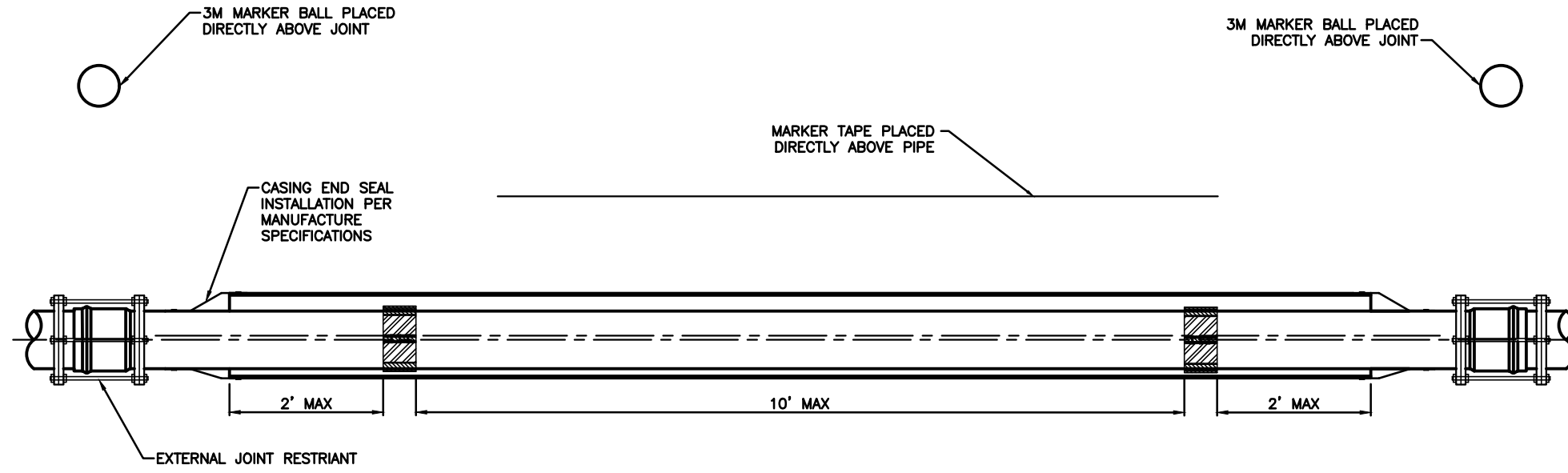
**STANDARD DETAIL  
GUTTER PAN AT  
THROUGH CURB INLET**



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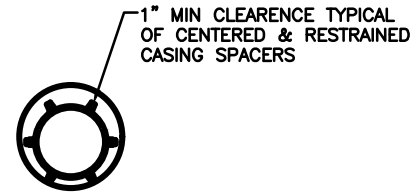
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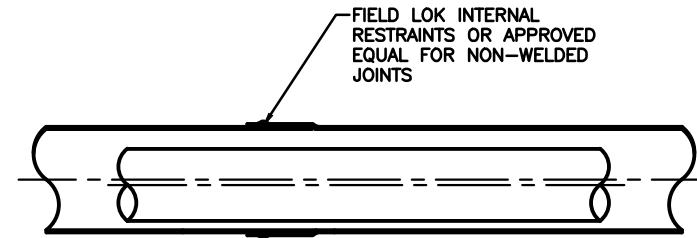


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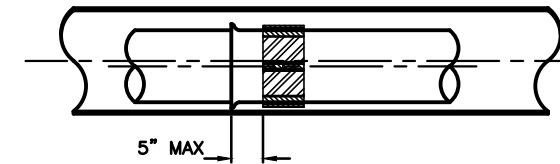
1. CARRIER PIPE SHALL BE USED AS REQUIRED WITHIN CITY RIGHT-OF-WAY.
2. ALL IRRIGATION PIPE LOCATED WITHIN CITY RIGHT-OF-WAY SHALL BE PVC C900 OR APPROVED EQUAL
3. ALL JOINTS THROUGHOUT CASING SHALL BE RESTRAINED WITH FIELD LOC INTERNAL RESTRAINTS OR APPROVED EQUAL.
4. RESTRAIN CARRIER PIPE ONE JOINT BEYOND END SEALS.
5. MANUFACTURED CASING SPACER INTERVAL PER MANUFACTURER'S SPECIFICATIONS BUT NOT MORE THAN 10- FEET. MINIMUM 3 SPACERS PER PIPE LENGTH.
6. CASING SHALL BE WELDED STEEL OR DUCTILE IRON FOR INSTALLATIONS LESS THAN 3- FEET BELOW ROAD GRADE. CPE MAY BE SUBSTITUTED FOR AREAS OUTSIDE OF PAVED ROADWAY.
7. CASING PIPE LENGTHS SHALL BE OF THE LONGEST AVAILABLE LENGTH OF PIPE FROM MANUFACTURER
8. NON- WELDED STEEL CASING SHALL BE EXTERNALLY RESTRAINED AT ALL JOINTS.
9. 3M MARKER BALL TO BE PLACED DIRECTLY ABOVE JOINT RESTRAINT AT END OF PIPE.
10. DETECTABLE MARKER TAPE TO BE INSTALLED 12- INCHES TO 14- INCHES ABOVE PIPE CASING. COLOR SHOULD BE ACCORDING TO APWA UNIFORM COLOR CODE FOR MARKING UNDERGROUND UTILITIES. DETECTABLE MARKING TAPE SHALL CONSIST OF INERT POLYETHYLENE PLASTIC THAT IS IMPERVIOUS TO ALL KNOWN ALKALIS, ACIDS, CHEMICAL REAGENTS, AND SOLVENTS LIKELY TO BE ENCOUNTERED IN THE SOIL, WITH A METALLIC FOIL CORE TO PROVIDE FOR THE MOST POSITIVE DETECTION AND PIPELINE LOCATION. DETECTABLE MARKING TAPE SHALL BE NO LESS THAN 2- INCHES WIDE, TYPE OF BURIED UTILITY SHOULD BE CLEARLY MARKED CONTINUOUSLY ALONG THE LENGTH OF THE RIBBON WITH MINIMUM 1-1/2 INCH LETTERS IN THE FOLLOWING FORMAT: "CAUTION BURIED (UTILITY TYPE) LINE"



**CASING SPACERS DETAIL**  
N.T.S.



**NON WELDED JOINT DETAIL**  
N.T.S.



**SPACER DISTANCE FROM BELL DETAIL**  
N.T.S.

**STANDARD DETAIL**  
**CARRIER PIPE**

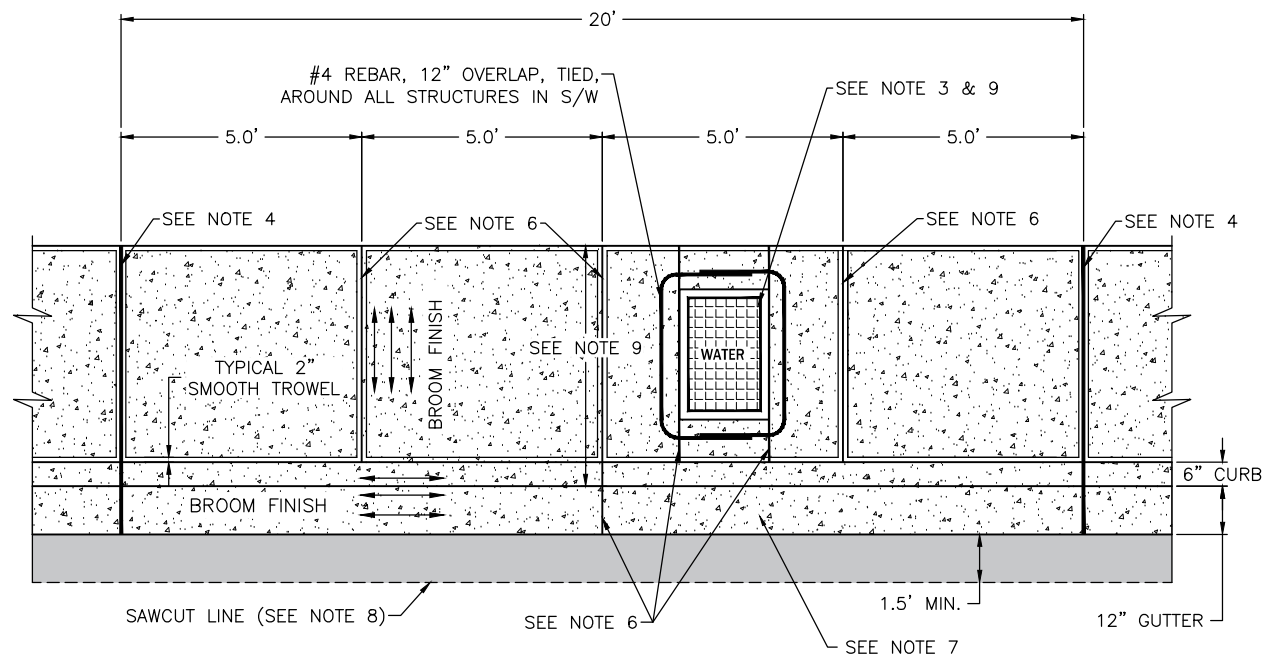


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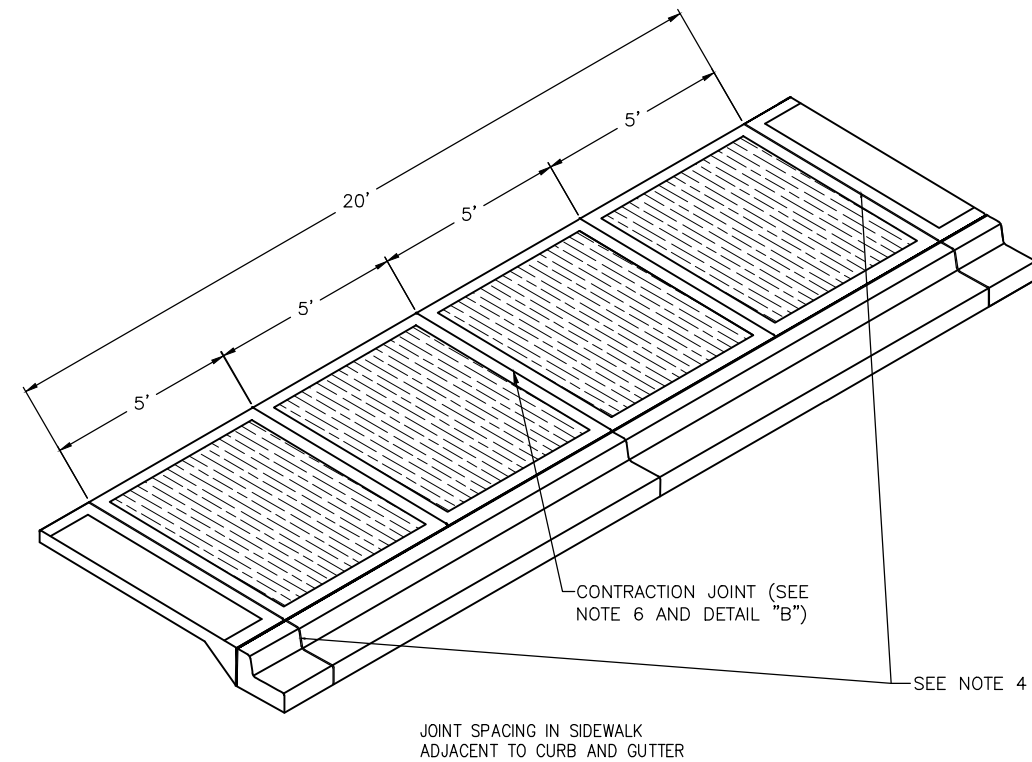
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**TYPICAL CONCRETE CURB, GUTTER & SIDEWALK**

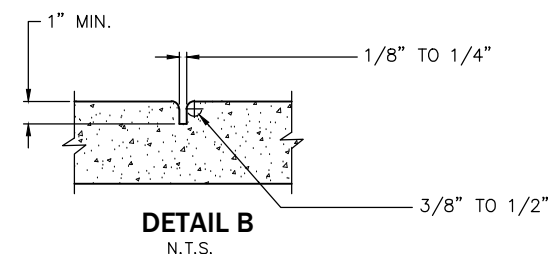
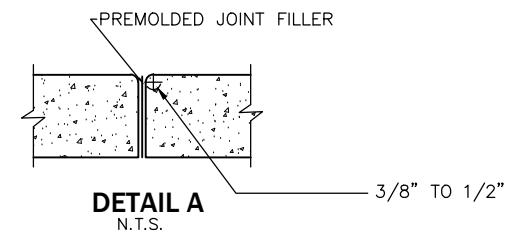


JOINT SPACING IN SIDEWALK ADJACENT TO CURB AND GUTTER

**JOINT SPACING**

**NOTES:**

1. SIDEWALK SLAB DEPTH: 4".
2. DRIVEWAY SECTION DEPTH: 6".
3. WATER METER LIDS LOCATED IN DRIVEWAY APPROACHES SHALL BE "IFCO": No. 2019, No. 2020 WITH DROP HANDLES TO BE USED IN SIDEWALK AREAS.
4. THROUGH 3/8" EXPANSION JOINT IN BOTH CURB AND SIDEWALK, FULL DEPTH (SEE DETAIL A).
5. WATER METER LID SHALL BE PLACED NO CLOSER THAN 6" FROM THE BACK OF THE SIDEWALK.
6. 1/8" TO 1/4" CONSTRUCTION JOINTS IN SIDEWALK ONLY. (SEE DETAIL B). THE CONSTRUCTION JOINT FROM NOTE 5 MAY BE MOVED TO BE ON ONE SIDE OF THE WATER METER LID WITH PRIOR APPROVAL FROM THE CITY ENGINEERS OFFICE.
7. FOR CURB & GUTTER REPLACEMENT, ASPHALT PAVEMENT REMOVAL BY SAW CUTTING FOR FORMS PLACEMENT (OR EXTRUDER MACHINE) IS REQUIRED. THE WIDTH OF 18" MINIMUM TRANSVERSE SAW CUT IS BASED ON MULTIPLE COMPACTED LIFTS OF CRUSHED ROCK AND HOT MIX ASPHALT (H.M.A.) BY ITS ASSOCIATED COMPACTION EQUIPMENT, WIDER PAVEMENT REMOVAL MAY BE NECESSARY. SUBSEQUENT STREET PATCH TO MATCH EXISTING STREET SURFACING THICKNESS OR 3" H.M.A. WHICHEVER IS GREATER.
8. TACK COAT MUST BE PLACED ALONG THE CUT FACE OF THE REMAINING ASPHALT PRIOR TO PATCHING WITH H.M.A.
9. LID ADJUSTMENTS SHALL BE DONE USING BRICK OR CONCRETE.
10. SIDEWALK WIDTH (5'-0" MIN.) AS SPECIFIED ON DRAWINGS OR IN CONTRACT.
11. SEE DETAIL R-100B FOR SECTIONS.



**STANDARD DETAIL  
CURB, GUTTER,  
AND SIDEWALK**

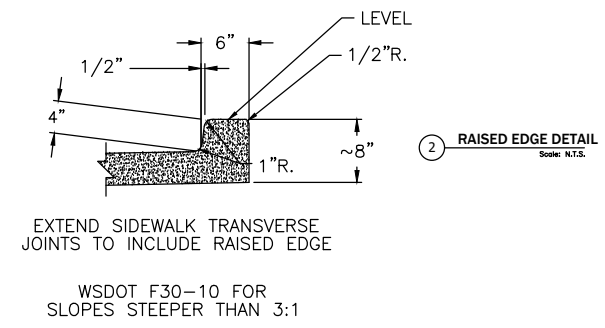
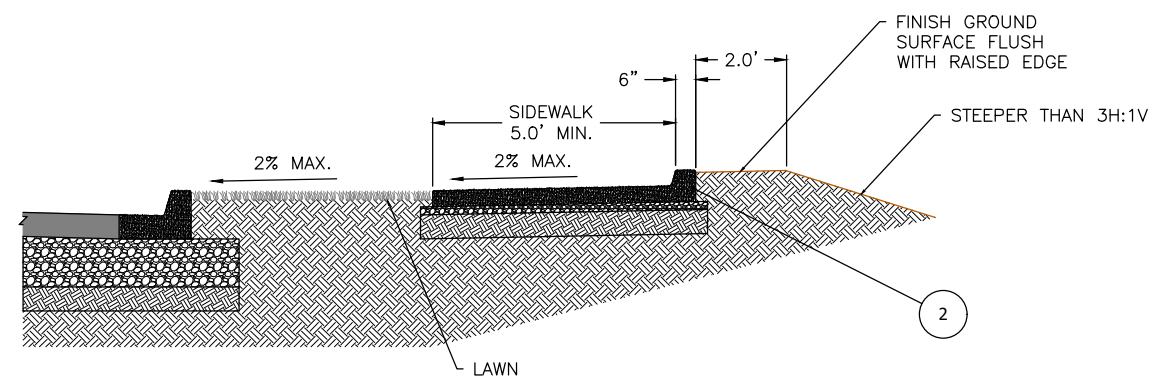
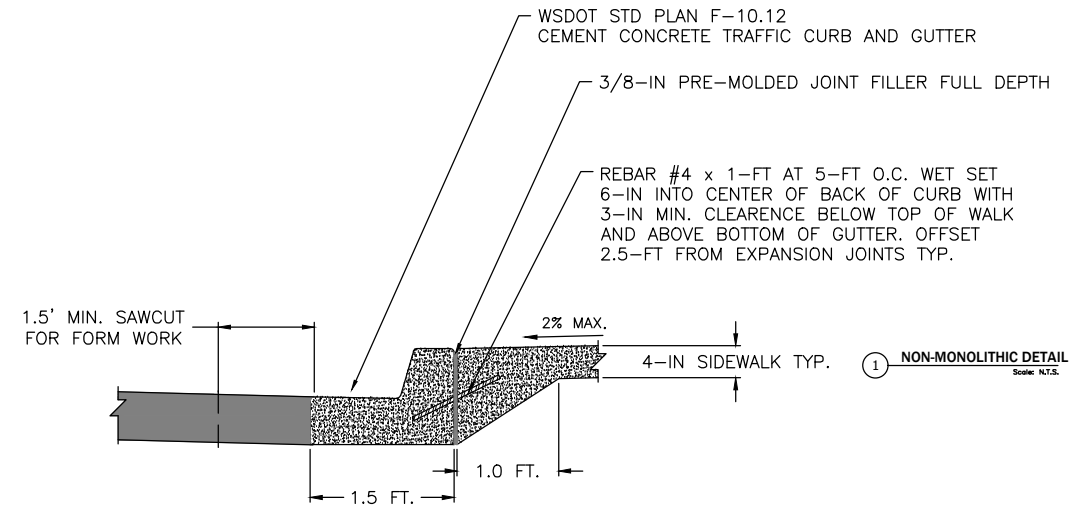
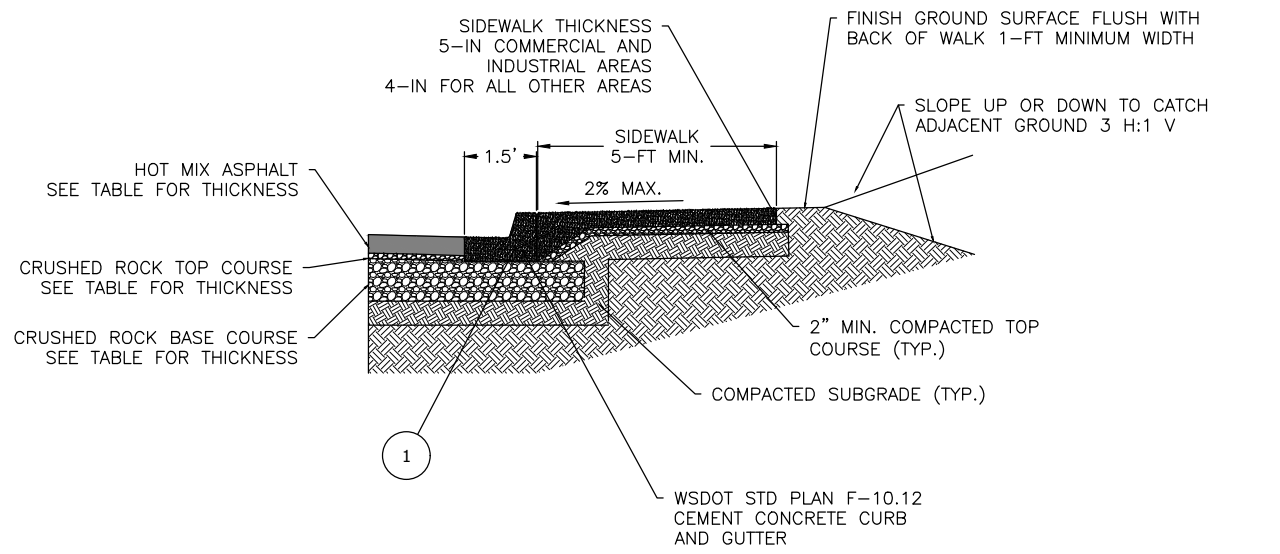


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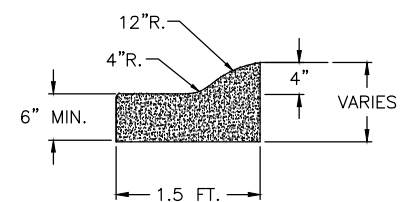
STANDARD SPECIFICATIONS  
8-04 CURBS & GUTTER  
8-06 DRIVEWAY  
8-14 SIDEWALK

DETAIL NO.  
**R-100A**

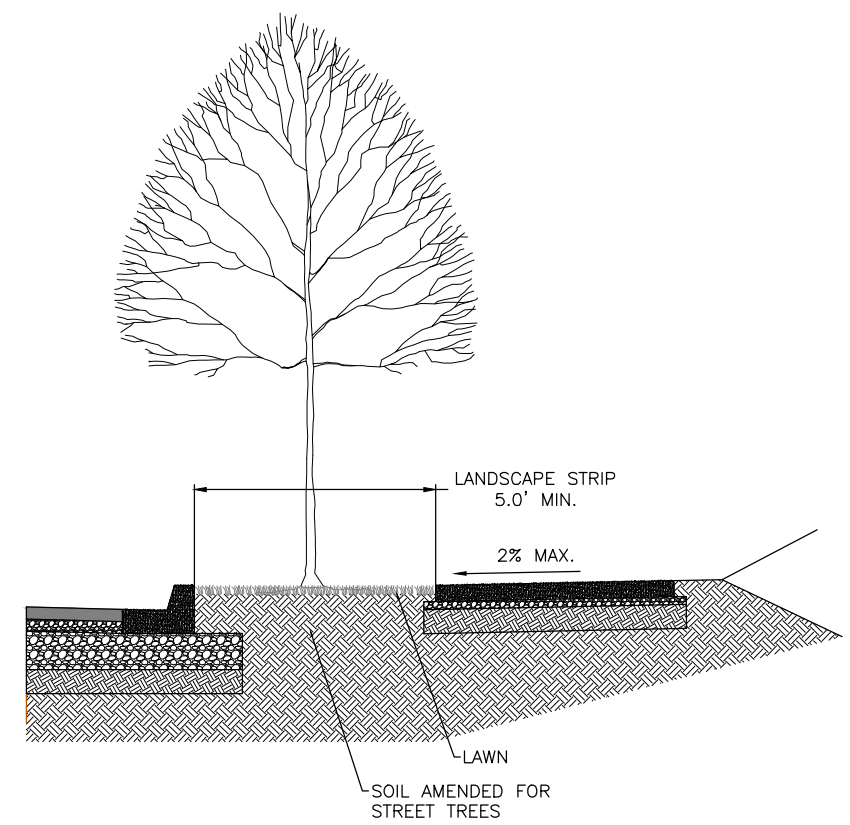
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NOTE:  
FOUR FEET OF THE SIDEWALK WIDTH SHALL BE THE MINIMUM PEDESTRIAN ACCESSIBLE ROUTE FREE OF VERTICAL AND HORIZONTAL OBSTRUCTIONS. GRATINGS, ACCESS COVERS, JUNCTION BOXES, CABLE VAULTS, PULL BOXES AND OTHER APPURTENANCES WITHIN THE SIDEWALK MUST HAVE SLIP RESISTANT SURFACES, BE FLUSH WITH SURFACE, AND MATCH GRADE OF THE SIDEWALK.



**ROLLED CURB DETAIL**  
FOR USE AS ALLOWED BY CITY ENGINEER



	LOCAL/PRIVATE LN	COLLECTOR	ARTERIAL	TRUCK ROUTE
HMA	3 INCHES	4 INCHES	4 INCHES	6 INCHES
TOP COURSE	3 INCHES	2 INCHES	2 INCHES	2 INCHES
BASE COURSE	9 INCHES	10 INCHES	10 INCHES	10 INCHES

**STANDARD DETAIL  
CURB, GUTTER,  
AND SIDEWALK**



SCALE: AS SHOWN	DATE DRAWN 3/23/2015	REVISIONS				DATE APPROVED	STANDARD SPECIFICATIONS 8-04 CURBS & GUTTER 8-06 DRIVEWAY 8-14 SIDEWALK
		DATE	INITIAL	DATE	INITIAL		
DESIGNED DMN	CHECKED RDH	06/16	RDH	09/20	CAW		
APPROVED BY		09/21	CAW	01/22	AJS		

DETAIL NO.  
**R-100B**

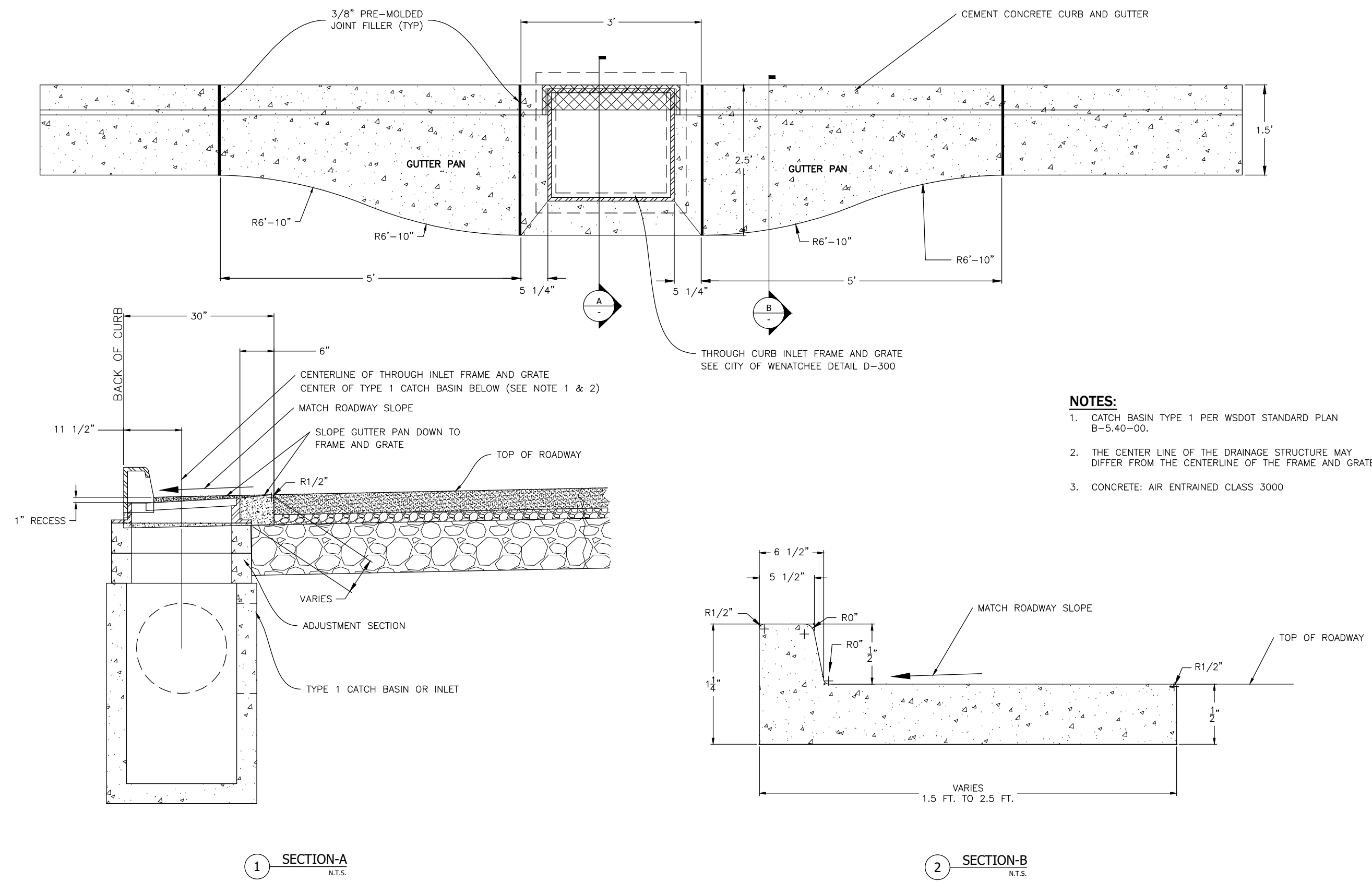
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**2 OF 2**

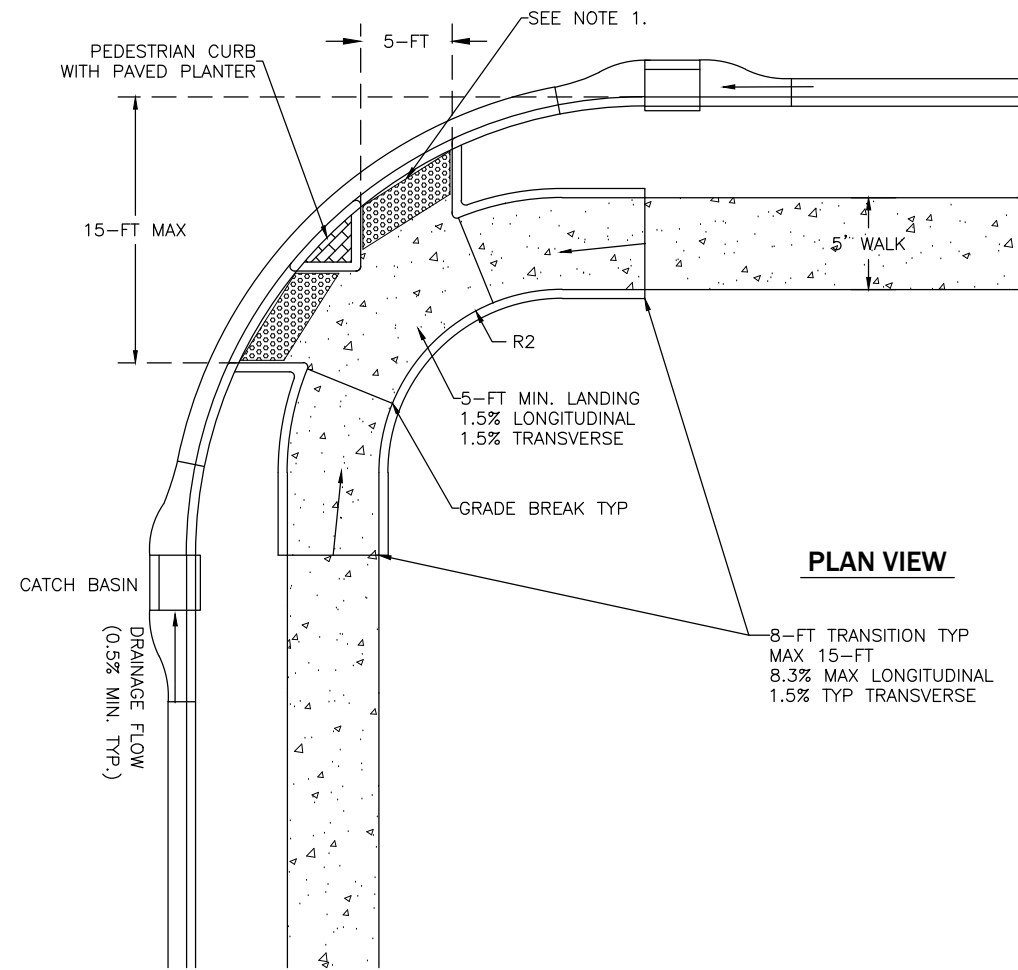
**STANDARD DETAIL  
GUTTER PAN AT  
THROUGH CURB INLET**



SCALE: AS SHOWN	DATE DRAWN	REVISIONS			
		DATE	INITIAL	BY	REASON
DESIGNED DMN	5/31/2011	10/19/2012	DMN		
DRAWN RDH	CHECKED	4/9/2015	RDH		
APPROVED BY	DATE APPROVED	12/21/2020	CAW		
		01/01/2022	AJS		

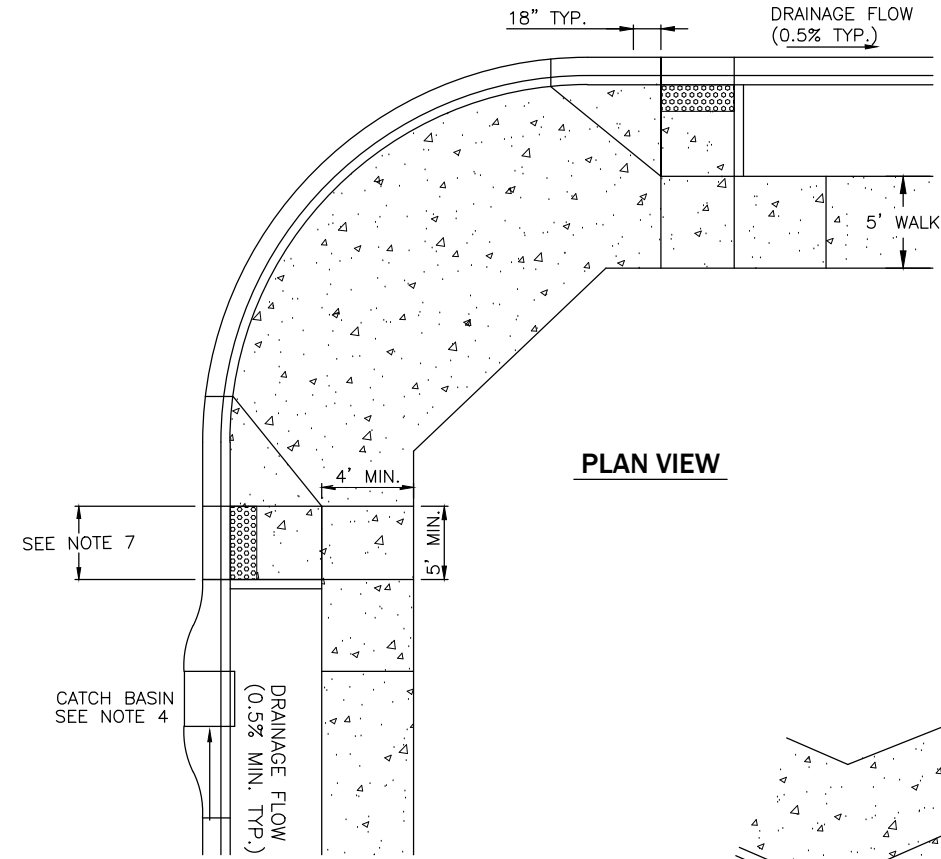
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**R-110**  
PAGE  
**1 OF 1**





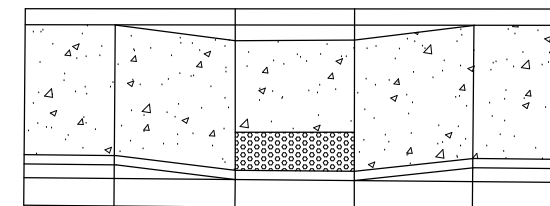
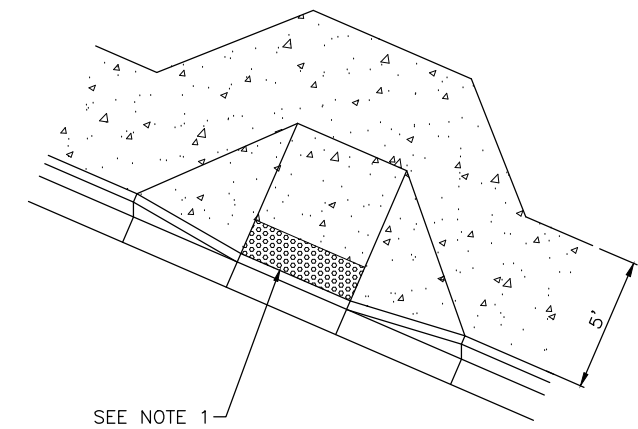
**PLAN VIEW**

**BI-DIRECTIONAL CURB RAMPS**



**PLAN VIEW**

**PERPENDICULAR CURB RAMPS**



**PARALLEL CURB RAMPS**

**NOTES:**

1. DETECTABLE WARNING SURFACE PER WSDOT STD. PLAN F-45.10
2. RAMP AND APPROACHES SHALL BE CLEAR OF OBSTACLES INCLUDING HYDRANTS, POLES, AND INLETS.
3. RAMP CENTER LINE SHALL BE PERPENDICULAR TO THE RADIAL TO CURB RETURNS UNLESS OTHERWISE APPROVED BY ENGINEER.
4. CATCH BASINS SHALL BE PLACED UPSTREAM FROM PEDESTRIAN RAMPS, AS REQUIRED BY PROJECT DRAINAGE PLANS.
5. CURB SLOPE SHOULD NOT EXCEED 2% ACROSS RAMP. MAY BE INCREASED TO 5% AT NON-STOP CONTROLLED INTERACTIONS.
6. RAMP TO BE 4' WIDE WHEN CORNER LANDING IS PAVED OR 5' WIDE WHEN CORNER LANDING IS LANDSCAPED.

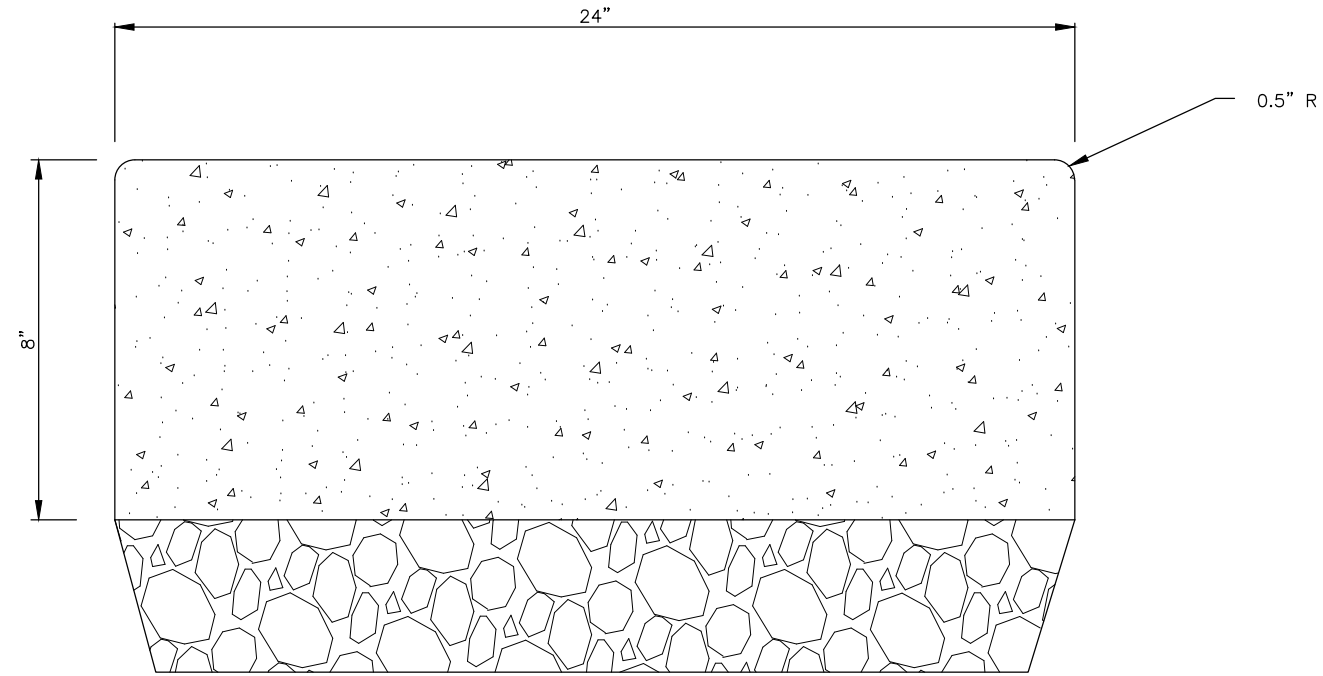
**STANDARD DETAIL  
DIRECTIONAL  
CURB RAMPS**



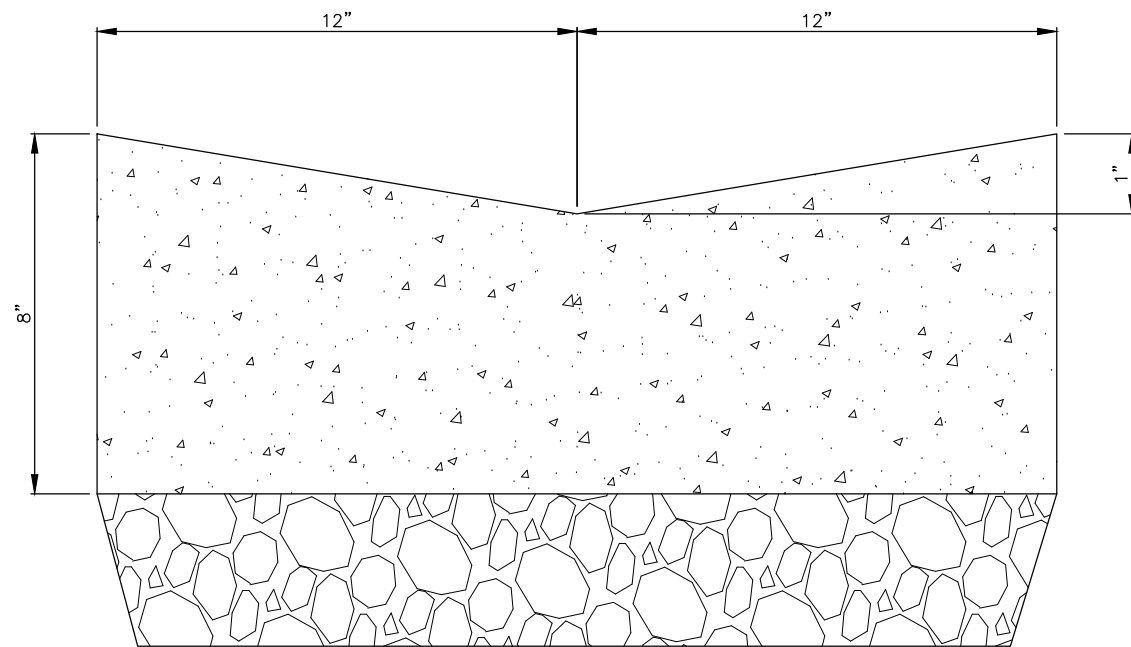
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	DRAWN CAW	01/28/21	DATE INITIAL
APPROVED BY	CHECKED	DATE APPROVED	
STANDARD SPECIFICATIONS			

DETAIL NO.  
**R-120**

PAGE  
**1 OF 1**



**FLAT CURB**



**VALLEY GUTTER**

**NOTES:**

1. THIS DETAIL IS FOR SPECIAL USE ONLY WITH APPROVAL FROM PUBLIC WORKS INSPECTOR OR ENGINEER.
2. FORMS SHALL BE STEEL AND SET TRUE TO LINE AND GRADE (INSPECTION IS REQUIRED PRIOR TO PLACEMENT OF CONCRETE).
3. BASE COURSE SHALL BE 4" COMPACTED DEPTH CRUSHED SURFACING TOP COURSE.
4. CONCRETE SHALL BE CEMENT CONCRETE CLASS 4000.
5. FOR CURB EXPANSION 10' OC TYPICAL.
6. BROOM FINISH ONLY.

**STANDARD DETAIL  
FLAT CURB AND  
VALLEY GUTTER**

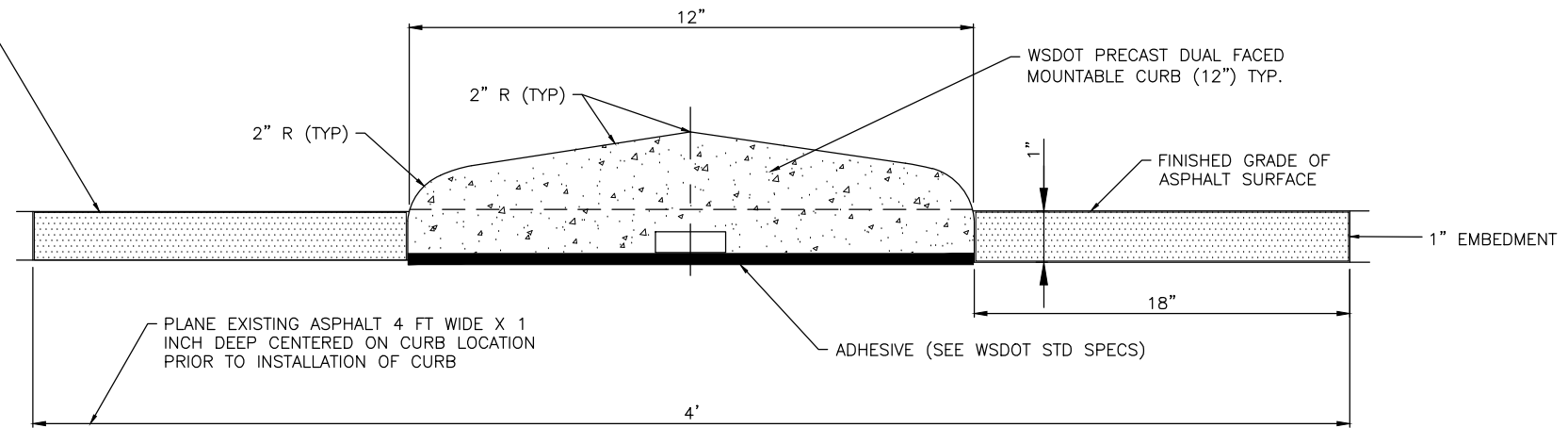


SCALE: AS SHOWN	DATE DRAWN	DESIGNED	DRAWN	APPROVED BY	REVISIONS	
					DATE	INITIAL
10/02/2020	CHECKED	CAW			01/01/2022	AJS

DETAIL NO.  
**R-130**

PAGE  
**1 OF 1**

ENSURE POSITIVE DRAINAGE AWAY FROM CURB AND PAVE HMA TO MEET ROADWAY SURFACE ELEVATION AFTER INSTALLATION OF CURB



**MOUNTABLE MEDIAN CURB**  
N.T.S.

**NOTES:**

1. ALL JOINTS BETWEEN ASPHALT PATCH AND EXISTING PAVEMENT SHALL BE SEALED.

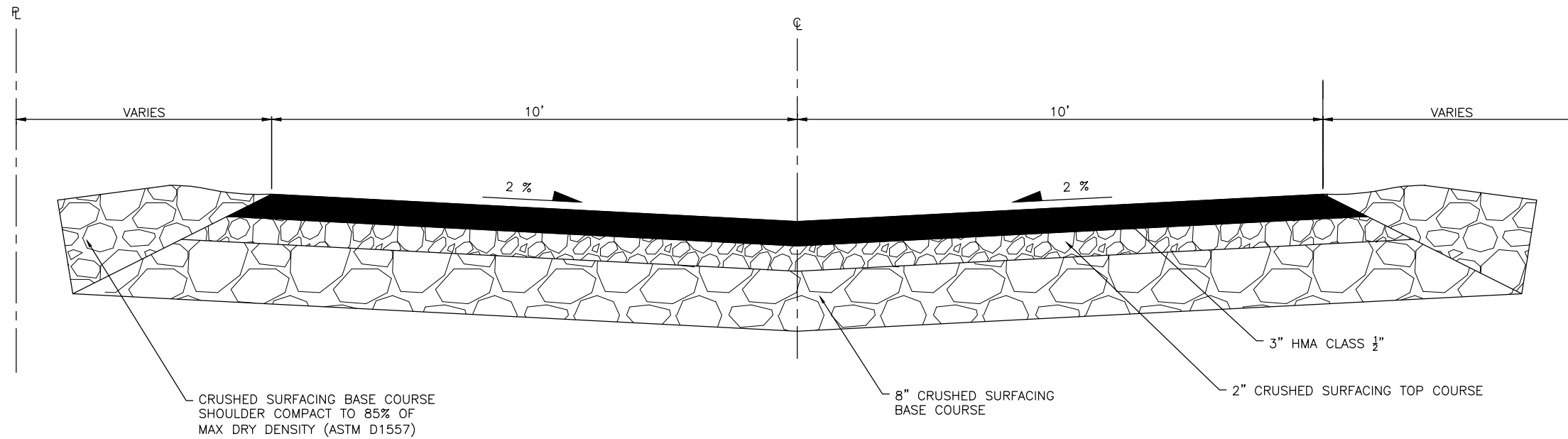
**STANDARD DETAIL**  
**MOUNTABLE**  
**MEDIAN CURB**



SCALE: AS SHOWN	DATE DRAWN	REVISIONS	
		DATE	INITIAL
DESIGNED	10/02/2020	01/01/2022	AJS
DRAWN	CHECKED		
CAW			
APPROVED BY	DATE APPROVED		
STANDARD SPECIFICATIONS 9.26.2 EPOXY ADHESIVE FOR LANE MARKERS 9.34.2 PAINT			

DETAIL NO.  
**R-140**

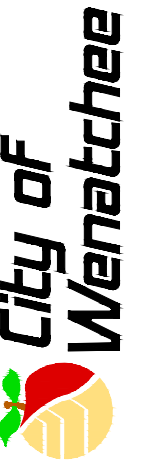
PAGE  
**1 OF 1**



**NOTES:**

1. ALL EXISTING ALLEYS SHALL HAVE A MINIMUM PAVEMENT WIDTH OF 12 FEET UNLESS APPROVED BY THE PUBLIC WORKS DEPARTMENT.
2. NEW ALLEYS SHALL HAVE A MINIMUM PAVEMENT WIDTH OF 20 FT.
3. INVERT DRAINAGE TO BE COLLECTED AT LOW END OF IMPROVED SECTION WITH CATCH BASIN INSTALLATION AND TIGHTLINED TO STORM DRAIN SYSTEM.
4. COMPACTION TESTS ON SUBGRADE AND ROCK GRADE SHALL BE REQUIRED. THE NUMBER OF TESTS SHALL BE AT THE DISCRETION OF THE CITY INSPECTOR. ALL TESTS, AS REQUIRED, SHALL BE AT THE EXPENSE OF THE CONTRACTOR OR DEVELOPER THROUGH ANY LICENSED TESTING LAB OF THEIR CHOICE. THE MINIMUM COMPACTION SHALL BE 95 % OF MAXIMUM DRY DENSITY (PER ASTM D1557) ON BOTH SUBGRADE AND ROCK SURFACES.
5. ADJUSTMENT OF CATCH BASIN LIDS OR GRATES, MANHOLE LIDS, MONUMENT CASES, VALVE BOXES, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR DEVELOPER AS REQUIRED AND SHALL BE ADJUSTED AFTER THE FINAL LIFT OF ASPHALT HAS BEEN PLACED.

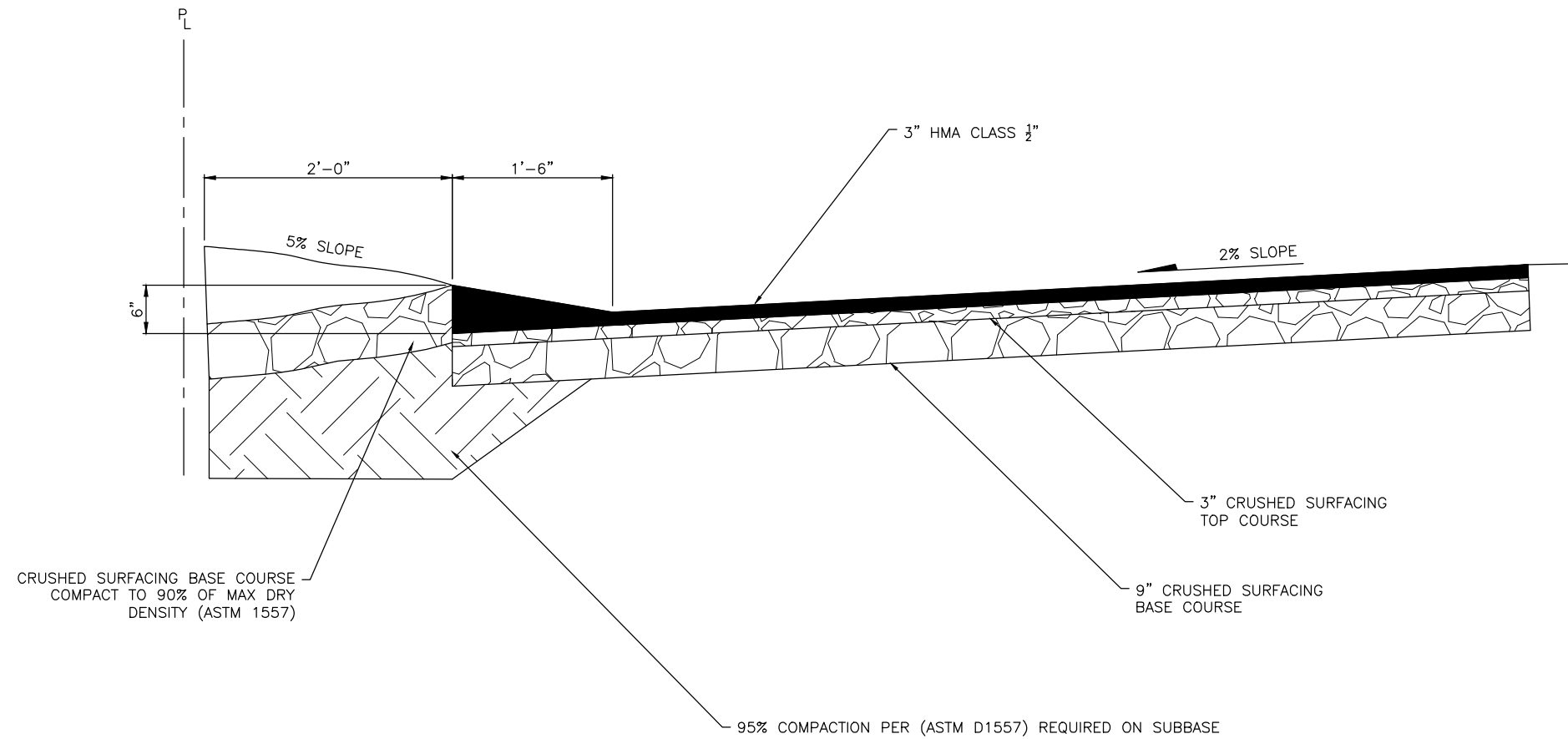
**STANDARD DETAIL  
STANDARD ALLEY  
CROSS-SECTION**



SCALE: AS SHOWN	DATE DRAWN	REVISIONS	
		DATE	INITIAL
DESIGNED	10/01/2020	9/2/2021	CAW
DRAWN	CHECKED		
APPROVED BY	DATE APPROVED		
STANDARD SPECIFICATIONS			

DETAIL NO.  
**R-150**

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**1 OF 1**



**NOTES:**

- MAY BE USED FOR SPECIAL APPLICATIONS IN ALLEYS AS DETERMINED BY THE CITY ENGINEER.

**STANDARD DETAIL  
THICKENED EDGE  
PRIVATE ROADWAY**

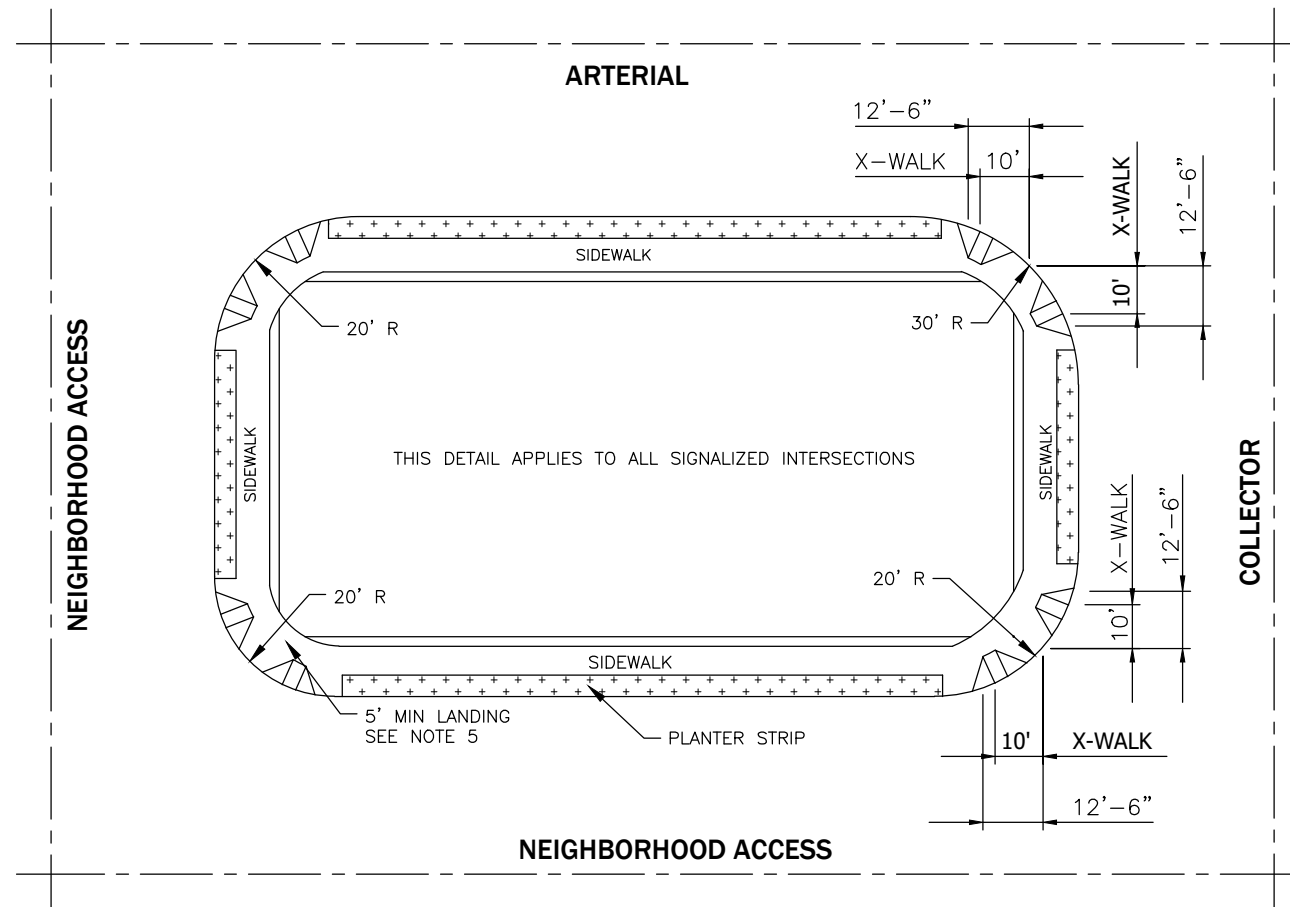


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DESIGNED CAW	CHECKED	9/2/2021	CAW
APPROVED BY	DATE APPROVED		
STANDARD SPECIFICATIONS			

DETAIL NO.  
**R-160**

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**1 OF 1**



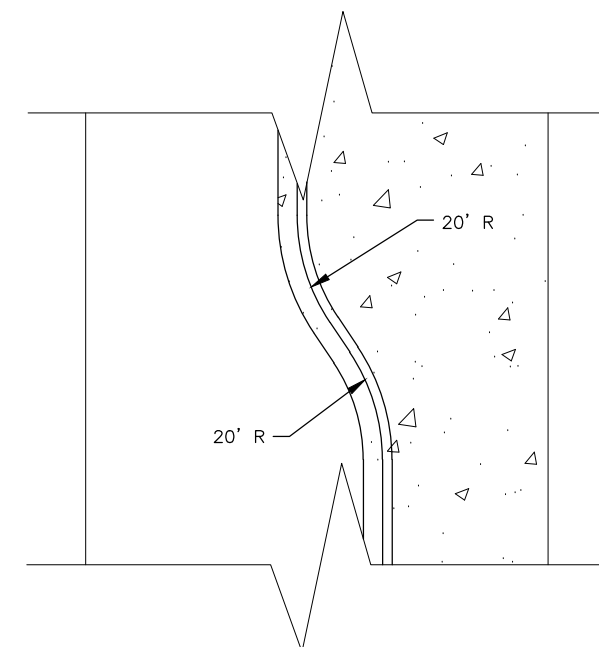


**CURB RADIUS AT INTERSECTIONS**

	ARTERIAL	COLLECTOR	NEIGHBORHOOD ACCESS
ARTERIAL	25'	25'	20'
COLLECTOR	25'	20'	20'
NEIGHBORHOOD ACCESS	20'	20'	20'

**NOTES:**

1. THE CITY OF WENATCHEE EVALUATES CURB RADII BASED ON THE TYPE AND VOLUME OF ACTIVITY AT THE INTERSECTION. IN ALL CASES, THE CITY WILL EVALUATE THE CURB RADII BASED ON A SINGLE UNIT (SU) VEHICLE WITH A 42 FOOT TURNING RADIUS. AN APPLICANT MAY PROPOSE TIGHTER CURB RADII, AND WILL NEED TO PROVIDE SUPPORTING DOCUMENTATION AND HAVE THE REQUEST APPROVED BY THE CITY ENGINEER.
2. STORM DRAINAGE INLETS SHALL BE OUTSIDE THE CURB RAMP.
3. THE CURB RAMP MAY BE MOVED AWAY FROM THE CROSSWALK TO AVOID CONFLICTS WITH HYDRANTS, POLES, INLETS, OR OTHER UTILITIES. EXCEPT WHERE THE STREET GRADE EXCEEDS 4%.
4. FOR SWEEPING EFFICIENCY, WHEN CURB BULBS (PARKING SETBACKS) ARE USED, REVERSE CURVE RADIUS SHALL NOT BE LESS THAN 20 FEET. REFER TO DETAIL A.
5. FOR STAKING PURPOSES, RAMPS MAY BE LOCATED PER QUARTER DELTA AND PUBLIC WORKS APPROVAL.
6. REFER TO WSDOT STANDARDS.

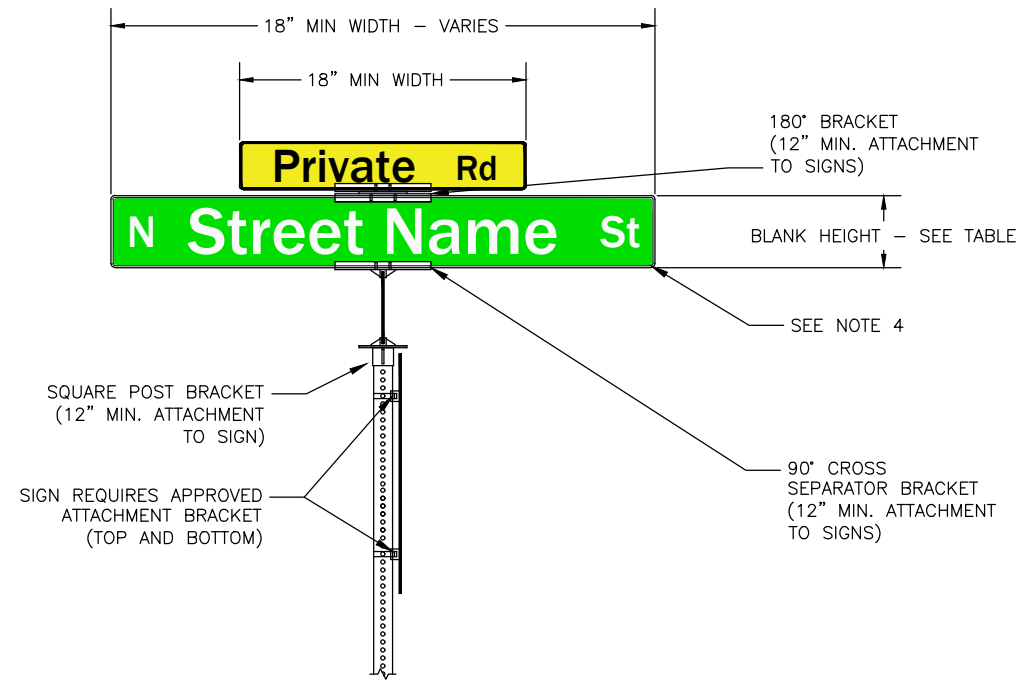
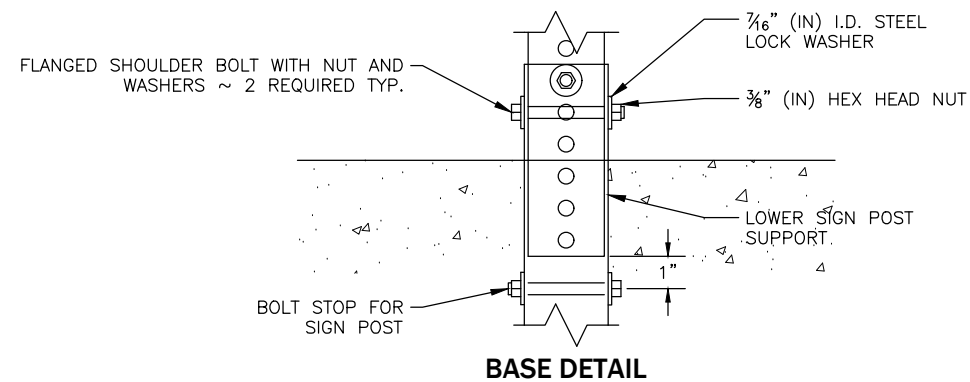
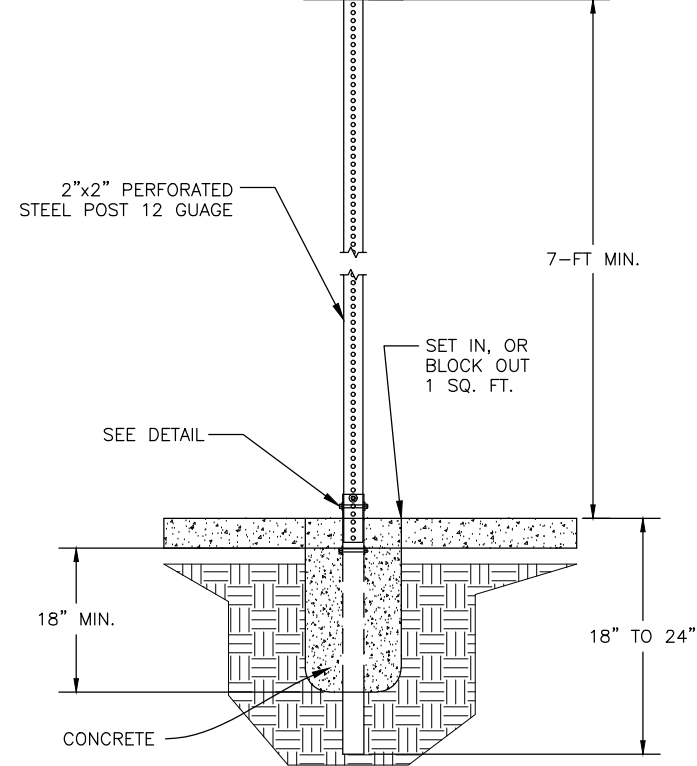
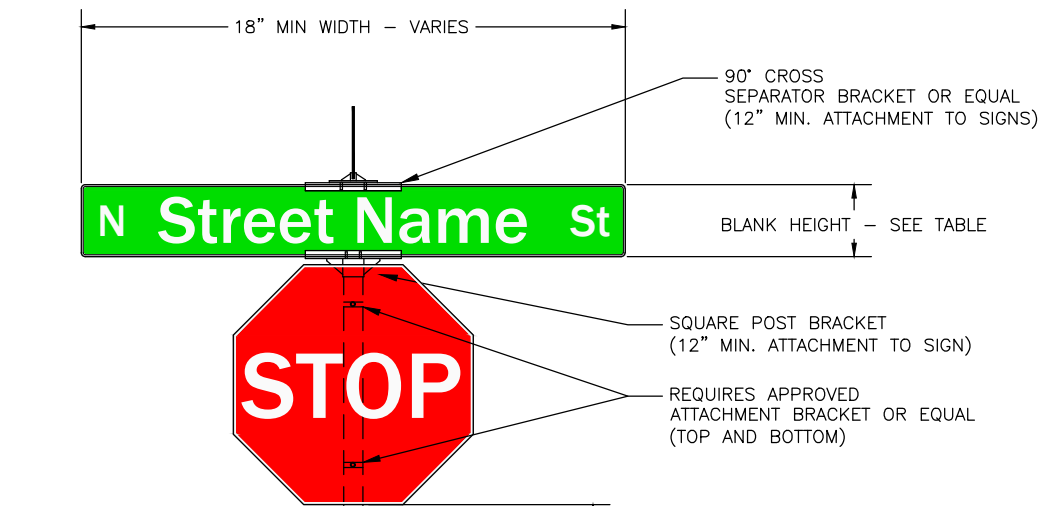


DETAIL A — MINIMUM RADIUS FOR CURB BULB/PARKING SETBACK

**STANDARD DETAIL  
STANDARDS & CURB  
RAMP LOCATIONS**



SCALE: AS SHOWN	DESIGNED	DRAWN CAW	APPROVED BY	STANDARD SPECIFICATIONS	REVISIONS	
					DATE	INITIAL
10/05/2020	CHECKED		DATE APPROVED			



**NOTES:**

1. STOP SIGNS SHALL BE MUTCD R1-1. SIZES SHALL BE 30 X 30 MIN FOR SINGLE LANE ROADS, AND 36 X 36 FOR MULTI-LANE ROADS.
2. THE LETTERING FOR NAMES OF STREETS ON STREET NAME SIGNS SHALL BE COMPOSED OF A COMBINATION OF LOWER-CASE LETTERS WITH INITIAL UPPER-CASE LETTERS; IN COMPLIANCE WITH MUTCD 2009 EDITION AS DIRECTED BY THE WASHINGTON AMENDED CODE 486-95. THE BACKGROUND SHALL BE GREEN AND THE LEGEND AND BORDER SHALL BE WHITE. SEE THE TABLE BELOW FOR MINIMUM LETTERING HEIGHTS.
3. SUPPLEMENTARY LETTERING TO INDICATE THE TYPE OF STREET (SUCH AS STREET, AVENUE, OR ROAD) OR THE SECTION OF THE CITY (SUCH AS N OR S) ON THE STREET NAME SIGN SHALL BE IN SMALLER LETTERING, COMPOSED OF INITIAL UPPER-CASE LETTERS AT LEAST 3 INCHES IN HEIGHT AND LOWER-CASE LETTERS AT LEAST 2.25 INCHES IN HEIGHT. CONVENTIONAL ABBREVIATIONS MAY BE USED EXCEPT FOR THE STREET NAME ITSELF.
4. THE ORIENTATION OF THE STREET NAME SIGN SHALL BE PARALLEL WITH THE STREET THAT IT NAMES.
5. THE MINIMUM INSTALLATION HEIGHT OF A POST-MOUNTED STREET NAME SIGN SHALL BE 9.5- FEET, IF NO STOP SIGN IS INSTALLED.
6. USE HIGHER CLASSIFICATION OF ROAD AT INTERSECTIONS
7. 0.125" SHEET ALUMINUM FOR PERMANENT SIGNS. TYPE III OR IV REFLECTIVE SHEETING FOR BACKGROUND OF SIGNS.
8. CORNER RADII OF 1 1/2 INCHES.
9. SEE CITY STANDARD R11 FOR SIGN PLACEMENT DETAILS.
10. THE PRIVATE ROAD SIGN SHALL BE SIMILAR TO MUTCD W16-8P 2009 EDITION (ADVANCE STREET NAME PLAQUE WITHOUT ARROW AND ON YELLOW BACKGROUND WITH BLACK LEGEND AND BORDER TRIM.)
11. THE LETTERING HEIGHT FOR A PRIVATE ROAD SIGN SHALL BE 4 INCHES INITIAL UPPER-CASE AND 3-INCHES LOWER-CASE. THE ABRIVIATION "RD" FOR ROAD SHALL BE USED.
12. IF ROW PERMITS SIGN POST INSTALLATION BEHIND SIDEWALK, 12"-18" FROM BACK OF WALK PREFERRED.

**MINIMUM LETTER HEIGHTS ON STREET NAME SIGNS (SEE NOTE 3)**

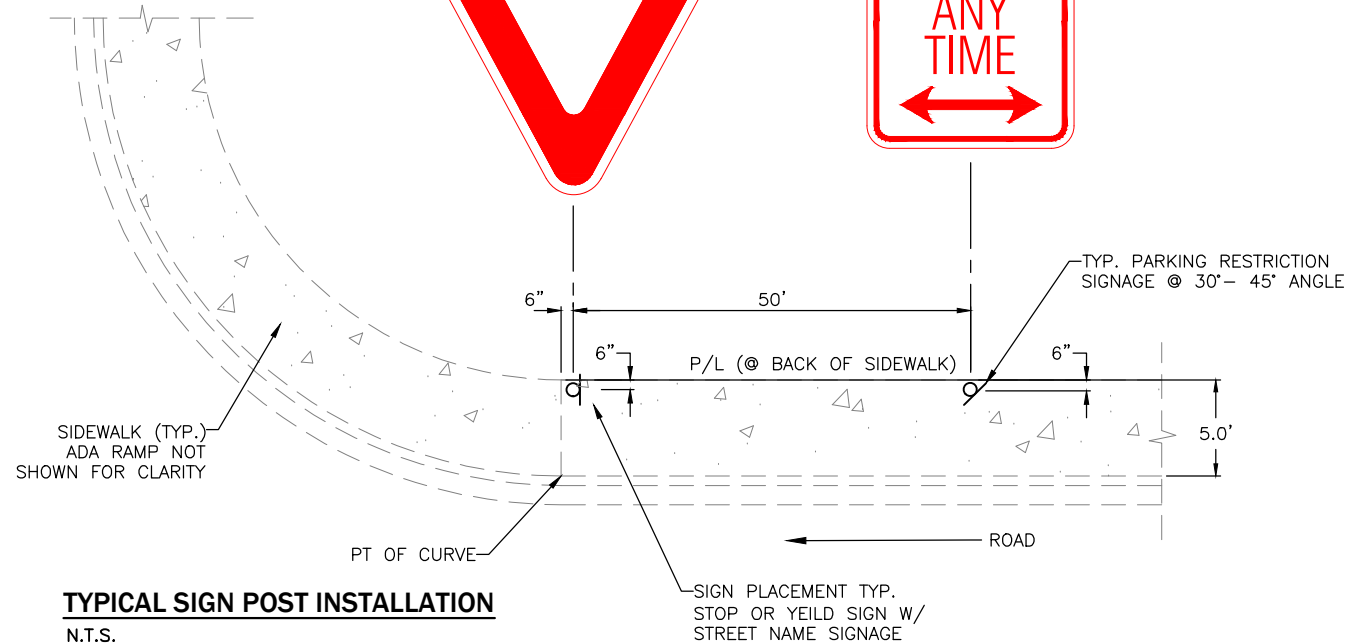
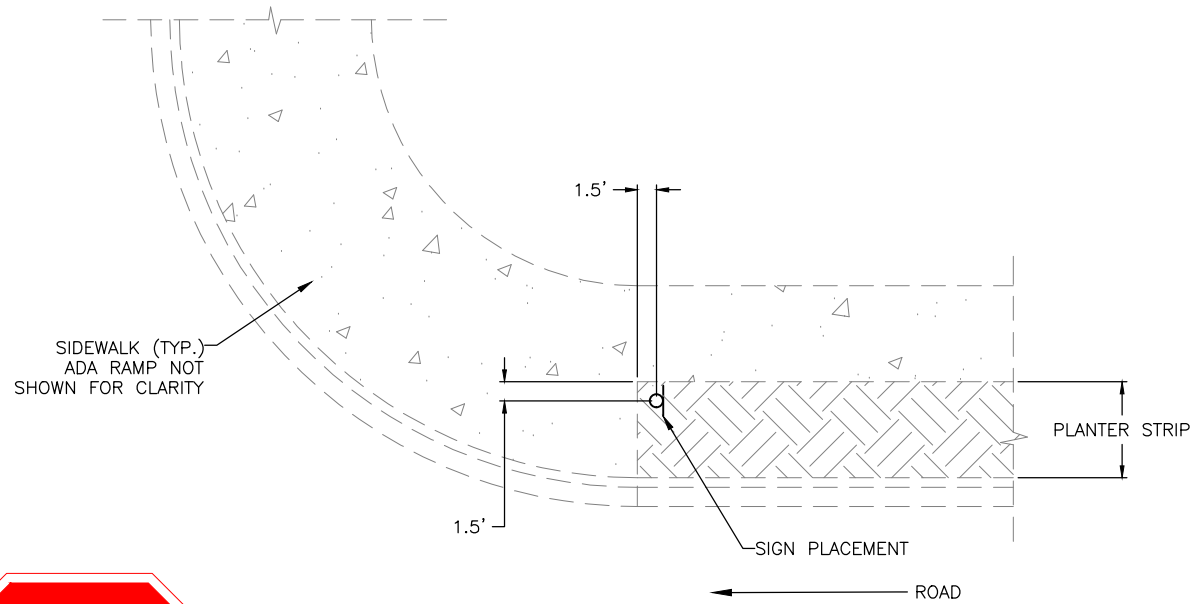
TYPE OF MOUNTING	TYPE OF STREET	SPEED LIMIT	LETTER HEIGHT		SUPPLEMENTAL	BLANK HEIGHT	BORDER
			INITIAL UPPER-CASE	LOWER-CASE			
OVERHEAD	ALL TYPES	ALL SPEED LIMITS	12 INCHES	9 INCHES	APPLE LOGO	18 INCHES	1 1/2 INCHES
POST MOUNTED	ALL TYPES	ALL SPEED LIMITS	6 INCHES	4.5 INCHES	3-2.25 INCHES	9 INCHES	1/2 INCH

**STANDARD DETAIL  
STOP AND STREET  
NAME SIGNS**

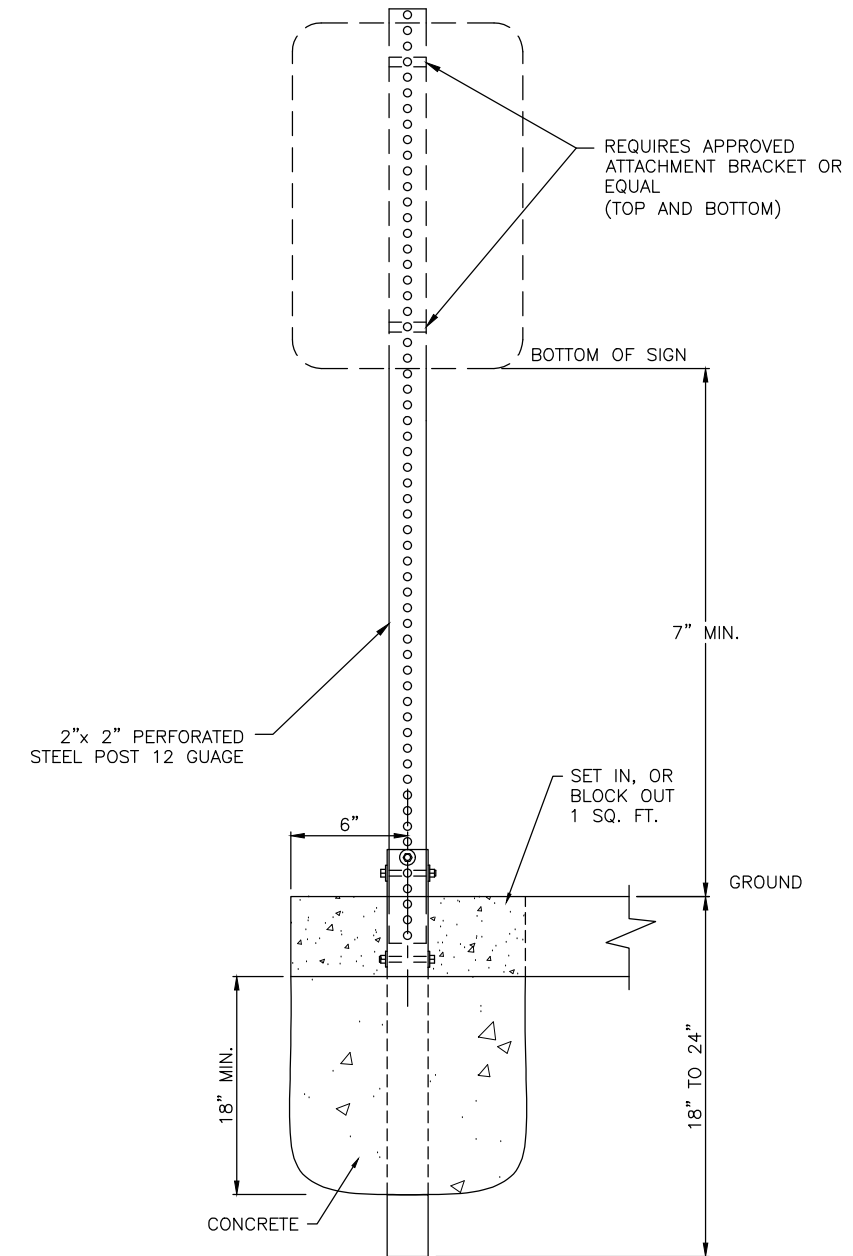


DATE DRAWN 10/18/2012	DATE CHECKED 09/21	DATE APPROVED 01/01/2022	INITIAL CAW	INITIAL AJS
SCALE: AS SHOWN	DRAWN DMN	DESIGNED DMN	APPROVED BY	STANDARD SPECIFICATIONS 9-08 PAINT AND RELATED MATERIALS 9-28 SIGNING MATERIALS AND FABRICATIONS

DETAIL NO.  
**R-200**



**TYPICAL SIGN POST INSTALLATION**  
N.T.S.

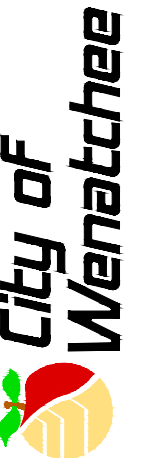


**R7 - 1**

**NOTES:**

1. SEE R-200 FOR DETAILS ON BASE.
2. IF ROW PERMITS SIGN POST INSTALLATION BEHIND SIDEWALK, 12"-18" FROM BACK OF WALK PREFERRED.
3. NO PARKING SIGN MAY USE "HERE TO CORNER" IN PLACE OF "ANY TIME" OR AS SPECIFIED BY THE CITY.

**STANDARD DETAIL  
SIGN PLACEMENT  
NEAR SIDEWALKS**



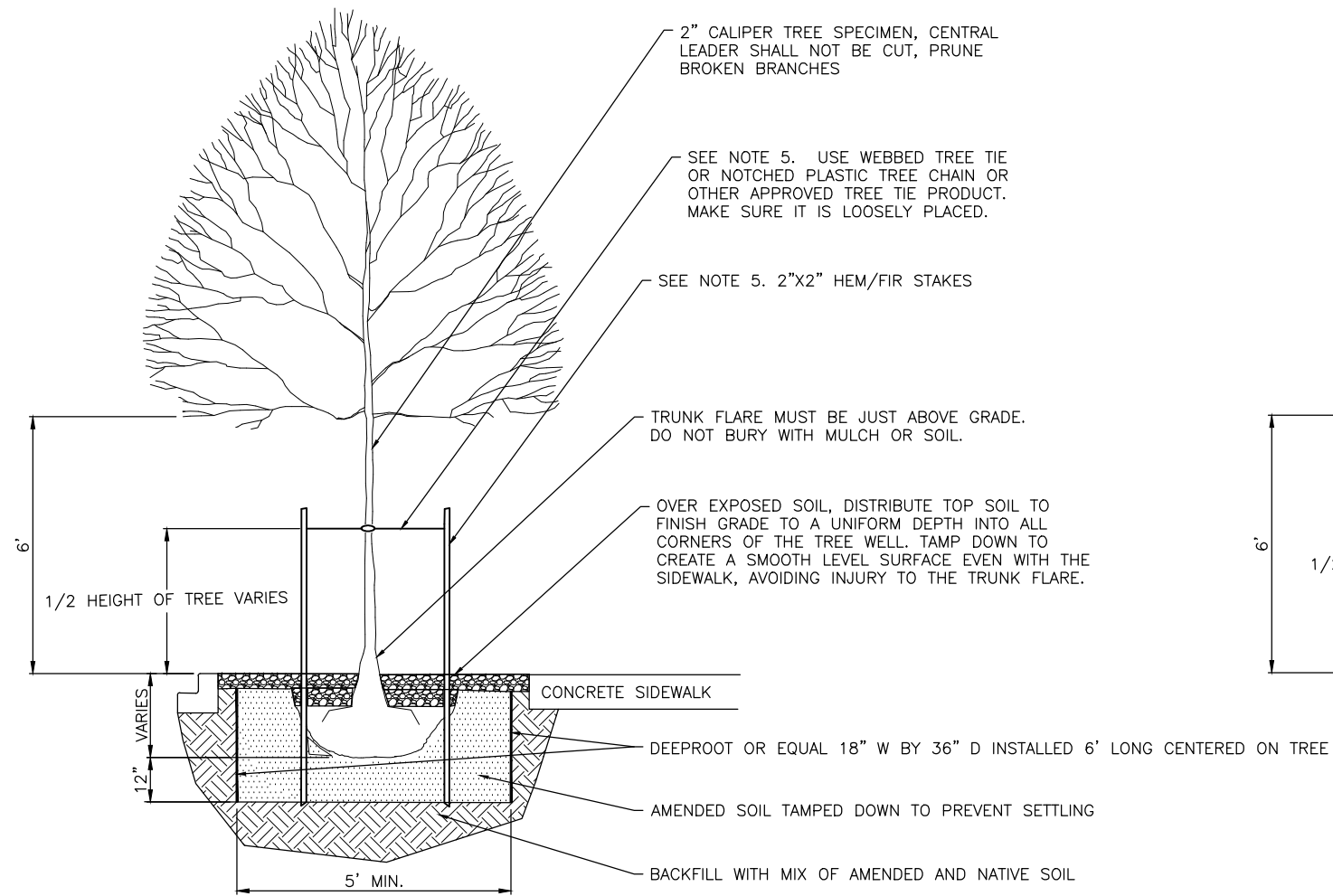
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DRAWN	DATE APPROVED	01/12/2022	AJS
APPROVED BY	STANDARD SPECIFICATIONS		

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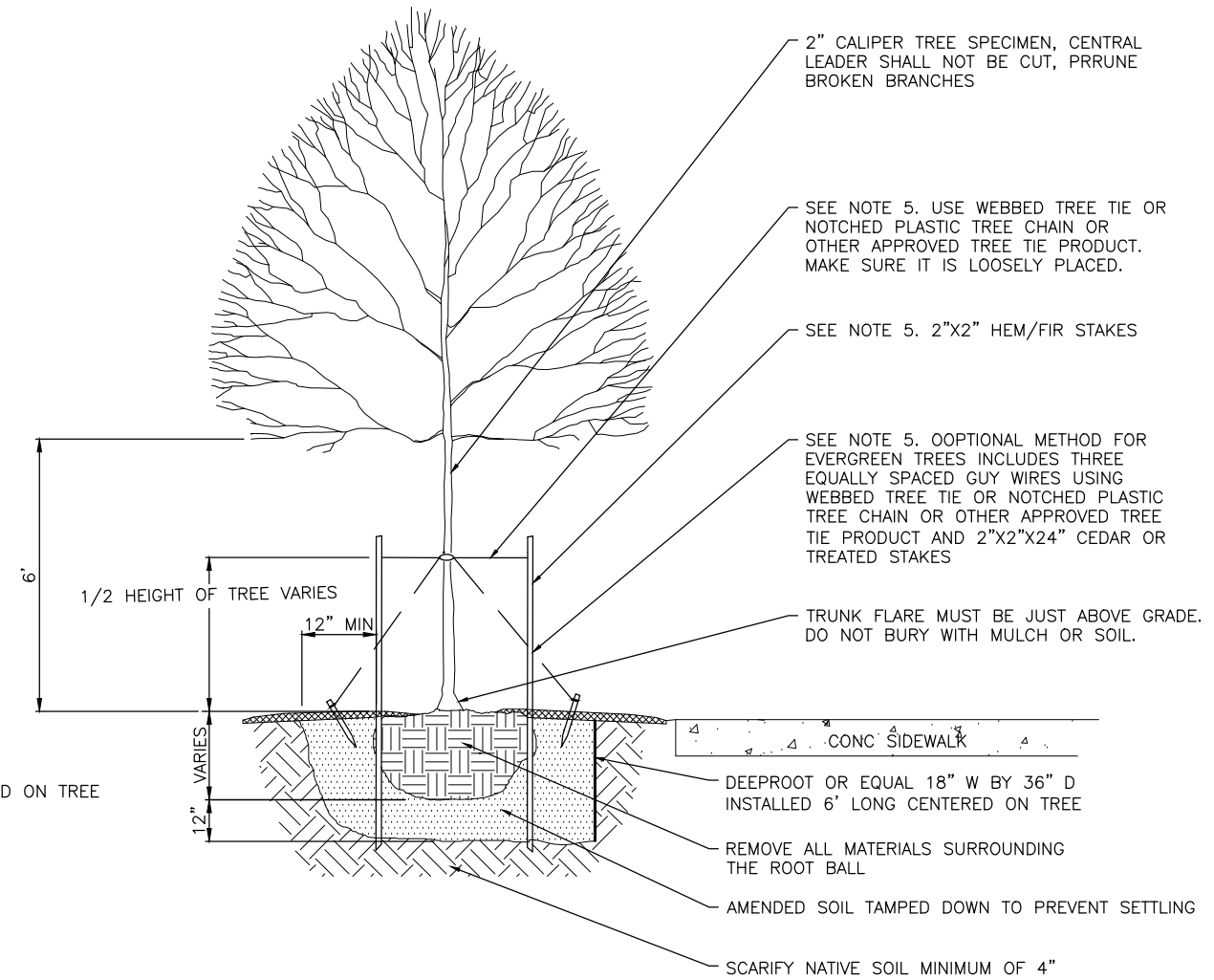
**R-210**

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**TREE WELL**



**TREE PLANTING BACK OF WALK**

**NOTES:**

1. SIZE OF PLANTING PIT SHALL BE 3 TIMES LARGER THEN ROOT BALL.
2. FOR DECIDUOUS TREES, 2" CALIPER MINIMUM AND BRANCHING STARTS 5' ABOVE GRADE (UNLESS OTHER APPROVED BY CITY).
3. FOR PLANTING DISTANCES NEAR INTERSECTIONS AND DRIVEWAYS. REFER TO SIGHT DISTANCE STANDARDS.
4. TREES SHALL NOT BE PLANTED WITHIN 10' OF ANY UG UTILITY ACCESS, WHICH MAY BE LOCATED IN THE PLANTER STRIP OR ADJACENT SIDEWALK.
5. REMOVE ALL MATERIALS SURROUNDING THE ROOT BALL.
6. STAKE IF REQUIRED BY THE CITY AND INCLUDE TIMELINE FOR REMOVAL OF STAKES AND TIES.
7. ROOT BARRIER TO BE DEEPROOT (ORE APPROVED EQUAL) 18" WIDTH BY 36" DEPTH BY 6' LONG TOTAL INSTALLED ON BOTH CURB AND SIDEWALK SIDE.
8. NO EVERGREEN TREES IN PUBLIC RIGHT OF WAY.

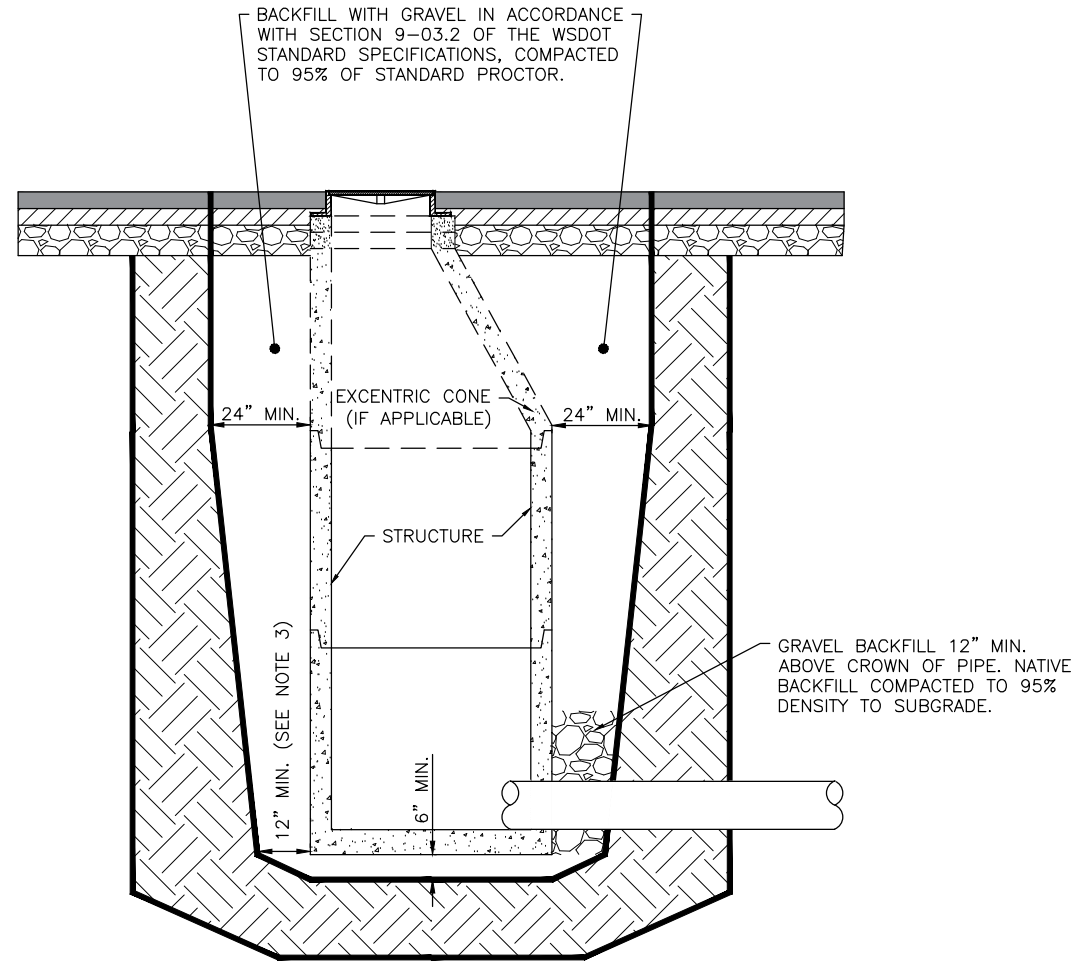
**STANDARD DETAIL  
TREE WELL**



SCALE: AS SHOWN	DESIGNED	DRAWN CAW	APPROVED BY	STANDARD SPECIFICATIONS	REVISIONS	
					DATE	INITIAL
10/20/2020	CHECKED		DATE APPROVED			

DETAIL NO.  
**R-250**

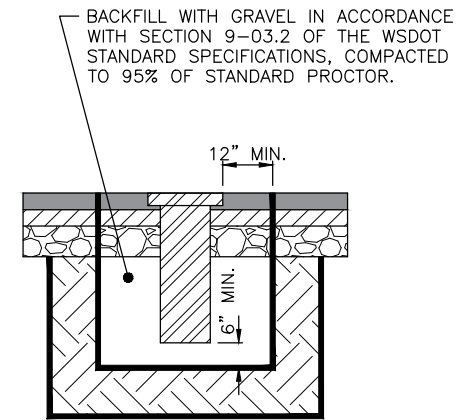
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**1 OF 1**



**COMPACTION REQUIREMENTS FOR STORM DRAIN AND SANITARY SEWER STRUCTURES**  
N.T.S.

**NOTES:**

1. STRUCTURES INCLUDE STORM DRAIN MANHOLES, CATCH BASINS, AND SANITARY SEWER MANHOLES.
2. REQUIREMENTS APPLY TO VALVE CANS AS SHOWN.
3. CLEARANCE SHALL BE LARGE ENOUGH TO USE A MECHANICAL COMPACTOR.
4. REFER TO CITY DETAIL R8 FOR UTILITY ADJUSTMENTS.
5. BACKFILL SHALL BE COMPACTED IN A MAXIMUM OF 6 INCH LIFTS.



**VALVE CAN DETAIL**  
N.T.S.

**STANDARD DETAIL  
STRUCTURE COMPACTION  
REQUIREMENTS**



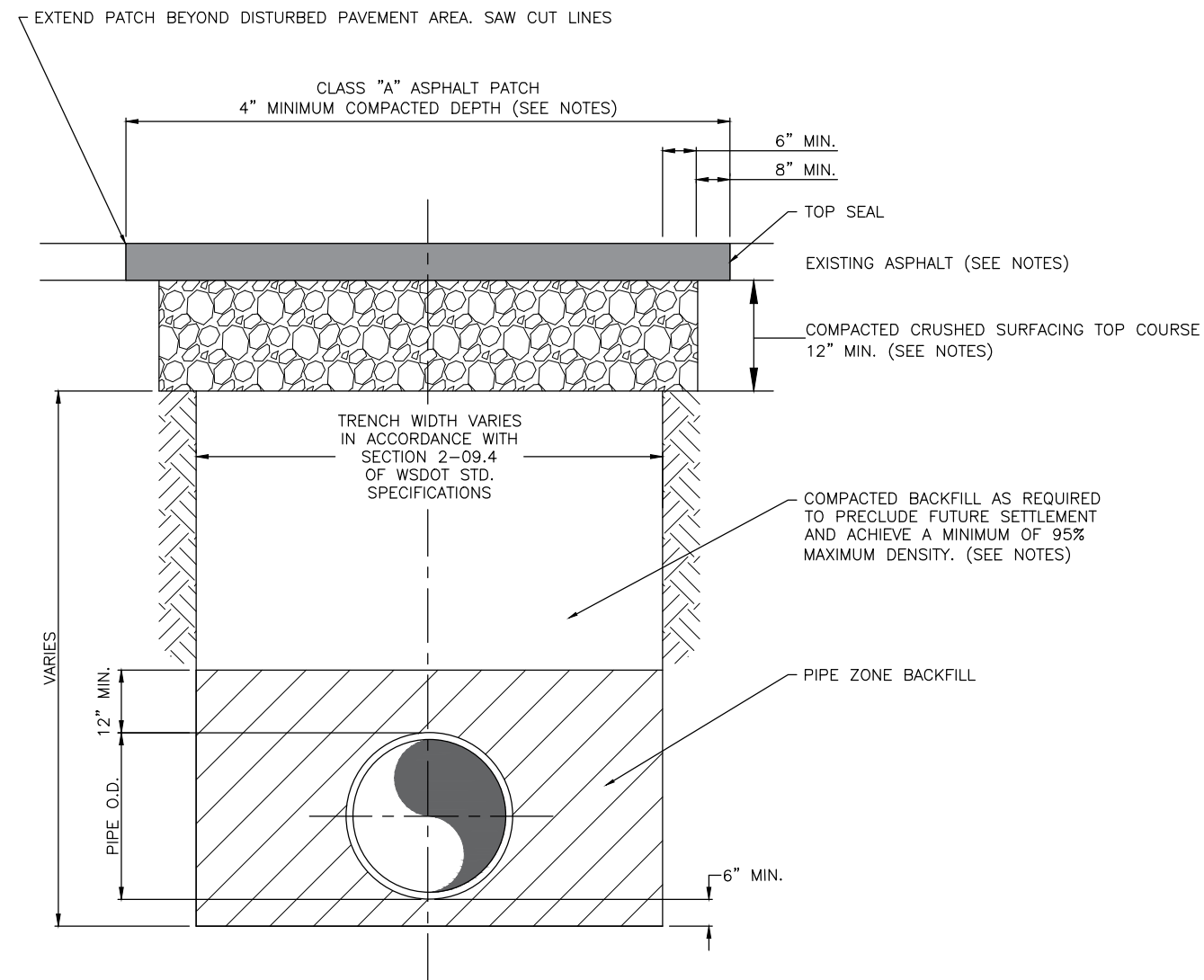
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					DATE	INITIAL
					10/26/2020	CAW
					01/01/2022	AJS

DETAIL NO.  
**R-300**

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**1 OF 1**

**TRENCH REPAIR CONSTRUCTION NOTES**

1. HOT MIX ASPHALT SHALL BE PLACED IN TWO OR MORE LIFTS TO A MINIMUM TOTAL COMPACTED DEPTH OF FOUR INCHES OR MATCH THE EXISTING ASPHALT DEPTH. PORTLAND CEMENT CONCRETE STREETS SHALL BE PLACED TO A MINIMUM DEPTH OF SIX INCHES OF CLASS 3000 COMMERCIAL GRADE CONCRETE OR MATCH EXISTING DEPTH, WHICHEVER IS GREATER.
2. IF PORTLAND CEMENT CONCRETE IS ENCOUNTERED UNDER EXISTING ASPHALT: THE CONTRACTOR SHALL REPLACE WITH SIX INCHES OF CLASS 3000 COMMERCIAL GRADE CONCRETE OR MATCH THE DEPTH OF THE EXISTING CONCRETE, WHICHEVER IS GREATER.
3. SHOULD THE NUMBER OF CROSS TRENCHES (THOSE PERPENDICULAR TO THE DIRECTION OF THE ROADWAY) REPRESENT MORE THAN ONE TRENCH PER 75 FEET OF THE STREET OF A GIVEN BLOCK AND THE TOTAL NUMBER OF TRENCHES EXCEEDS EIGHT, THE PERMITEE SHALL BE REQUIRED TO OVERLAY THE EXISTING ROADWAY SURFACE IF THE ROADWAY IS LESS THAN FIVE YEARS OLD. THE OVERLAY DEPTH SHALL BE SPECIFIED BY THE CITY ENGINEER.
4. IN THOSE CASES WHERE THE TRENCH IS GENERALLY RUNNING PARALLEL TO THE ROADWAY AND THE DISTANCE FROM THE EDGE OF THE ROADWAY IS LESS THAN FOUR FEET, THE CONTRACTOR SHALL REMOVE THE ROADWAY TO THE OUTER EDGE OF THE ROADWAY TO THE OUTER EDGE OF THE ROADWAY AND PAVE THIS AREA.
5. ALL PAVEMENT CUTS SHALL BE MADE WITH A SAW AND AFTER PLACEMENT OF TOP ROCK THE ROADWAY SHALL BE RE-CUT A DISTANCE OF EIGHT INCHES, OR GREATER AS DIRECTED BY THE CITY ENGINEER.
6. COMPACTED CRUSHED SURFACING BASE COURSE SHALL BE USED FOR BACKFILL IN ALL TRANSVERSE CROSSING TRENCHES.
7. TOP SEAL USE PG 64.22 AND PROVIDE A SAND BLANKET



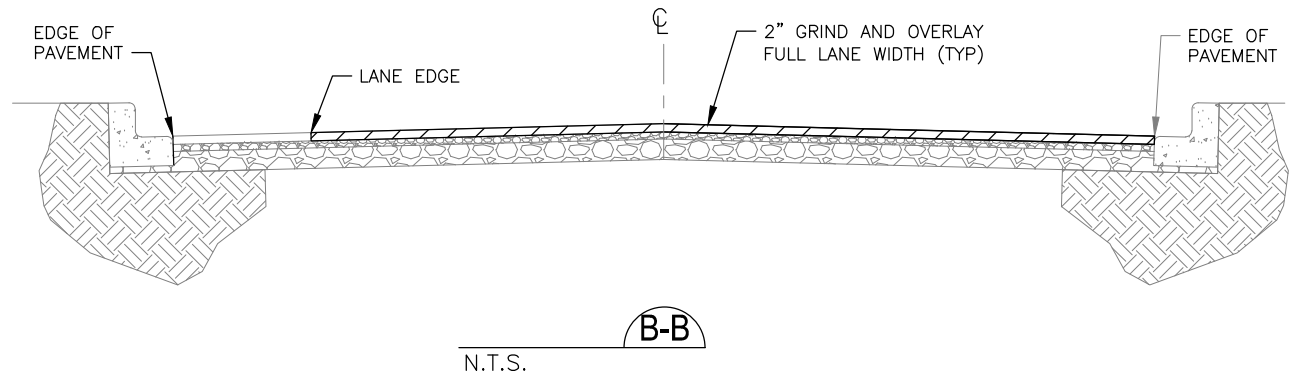
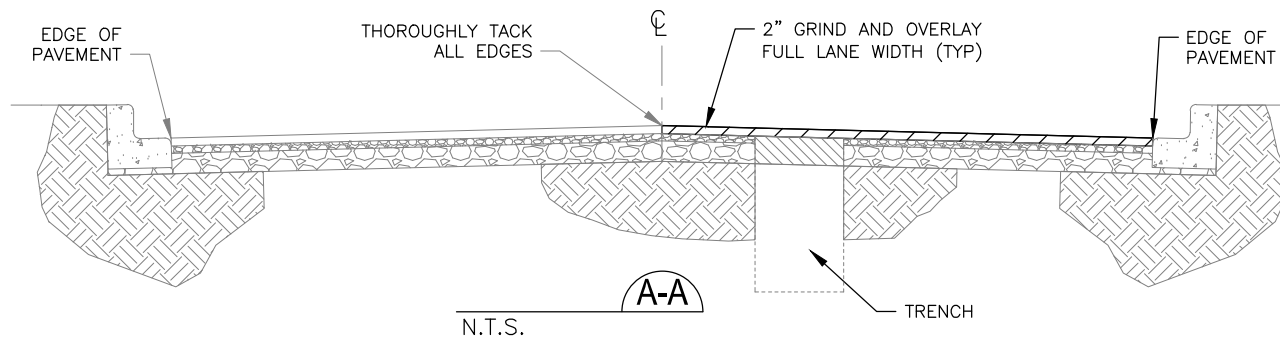
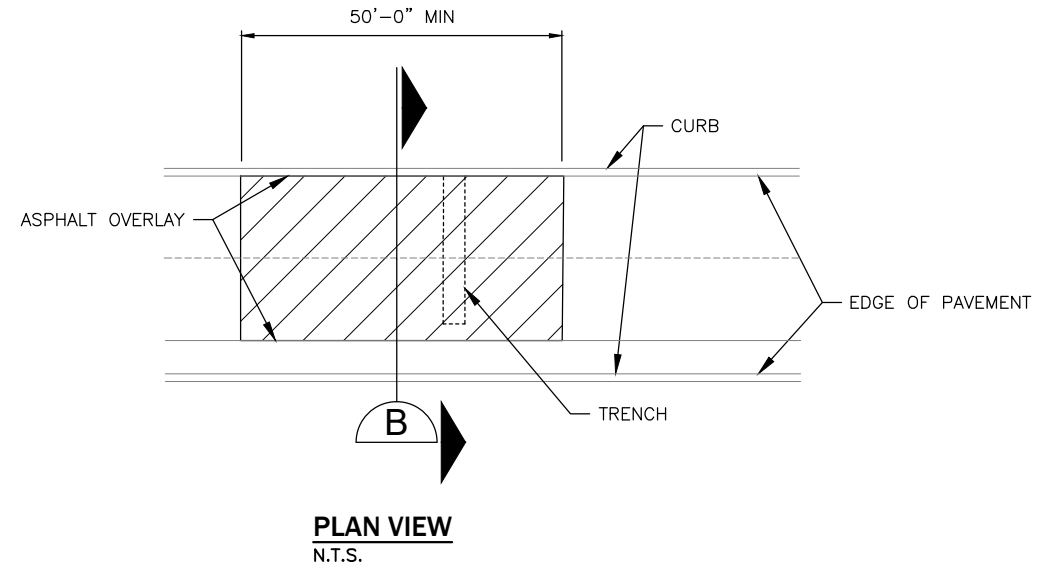
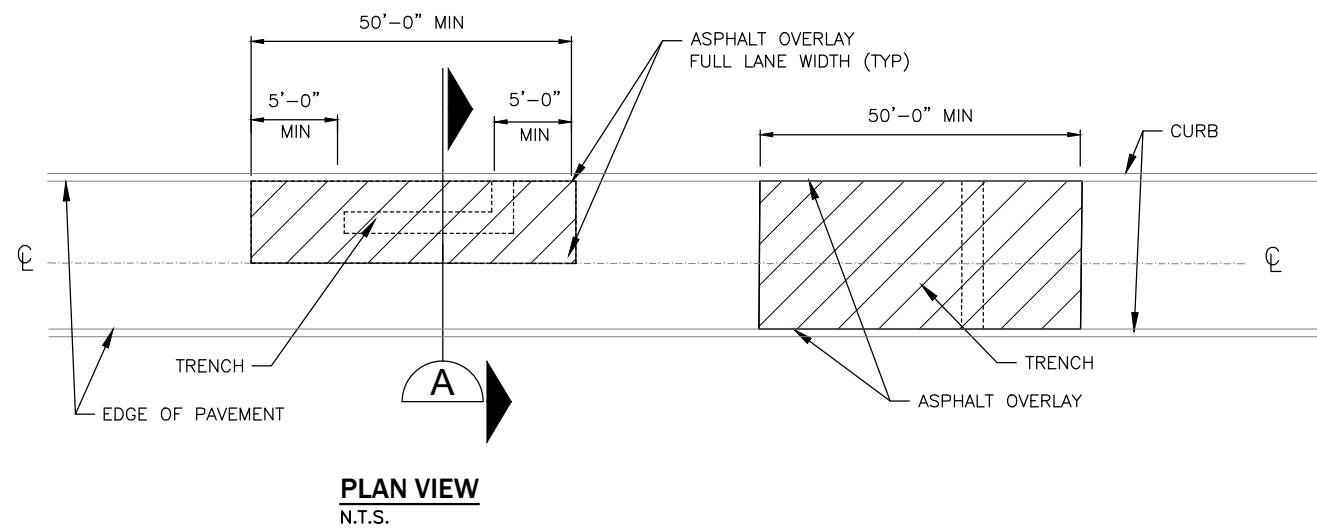
**TRENCH REPAIR  
AND COMPACTION**



SCALE: AS SHOWN	DATE DRAWN	REVISIONS			
		DATE	INITIAL	BY	DATE
DESIGNED	02/06				
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RLK	SK				
APPROVED BY	DATE APPROVED				

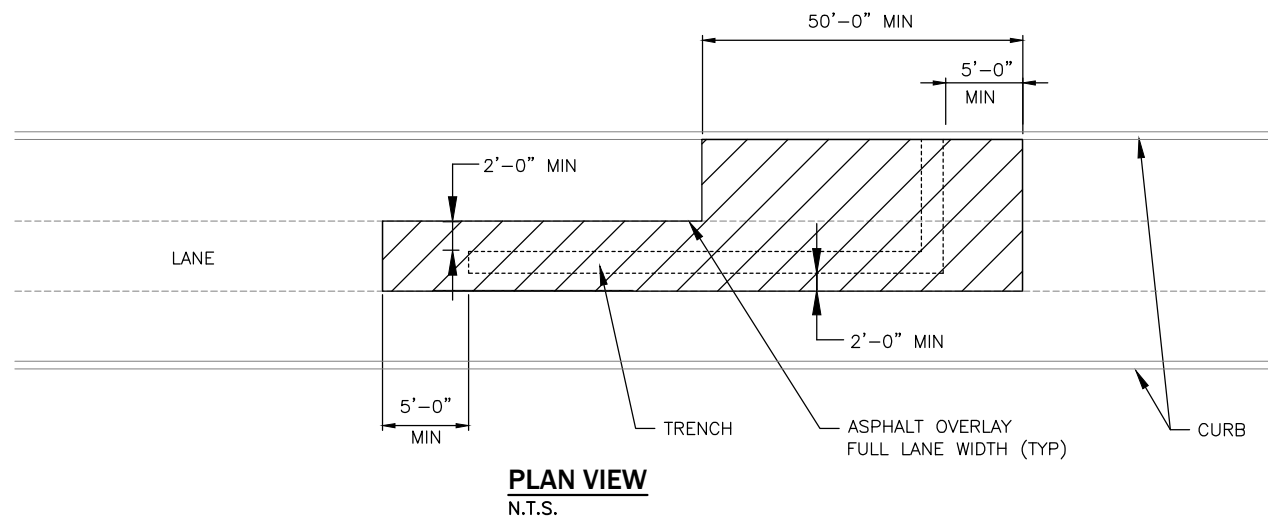
DETAIL NO.  
**R-305**

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**1 OF 1**



**NOTES:**

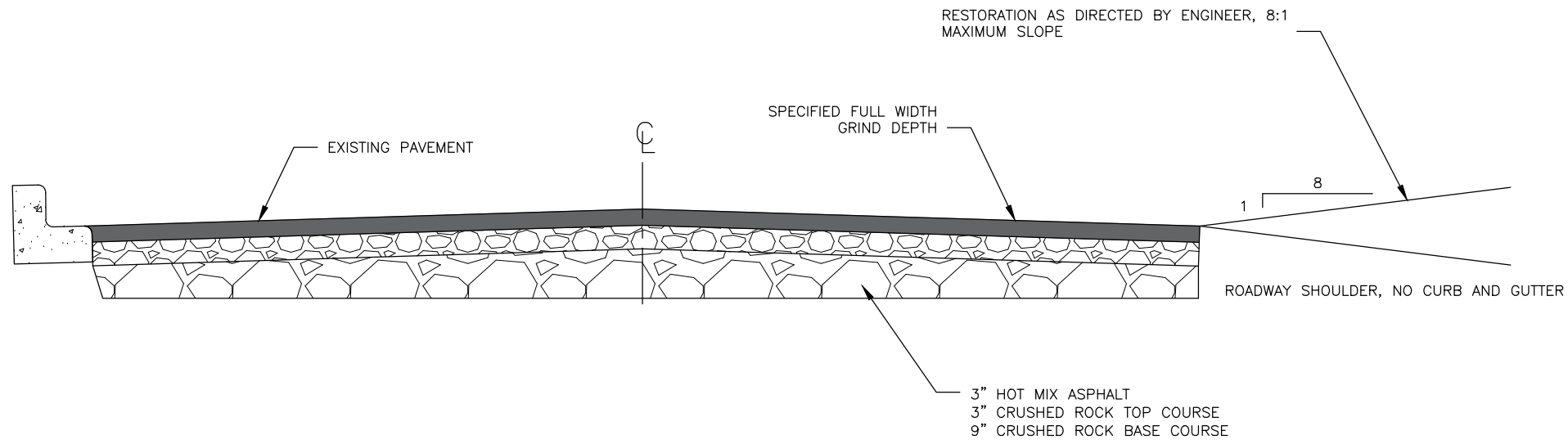
1. SEE CITY OF WENATCHEE POLICY R-2 FOR THE STREET ASPHALT OVERLAY POLICY.
2. OVERLAY AREA MAY BE MODIFIED BY CITY ON OLDER PAVEMENT DEPENDING ON CONDITIONS OR SCHEDULED CONSTRUCTION/MAINTENANCE.
3. ADJUST ALL UTILITY CASTING TO FINISH GRADE AND RESTORE CHANNELIZATION AND LOOP DETECTORS.
4. POTHOLES TO BE RESTORED WITH A 1' T-CUT. IF AFTER THE 1' T-CUT THE PATCH IS MORE THAN 4'X4', A GRIND AND OVERLAY IS REQUIRED UNLESS OTHERWISE APPROVED BY PUBLIC WORKS. IF THE PATCH IS WITHIN 2 LANES OF TRAVEL, THE GRIND AND OVERLAY WILL BE REQUIRED ON BOTH LANES. 50' MIN. LENGTH.
5. INTENDED ONLY FOR DRIVING LANE.



**STANDARD DETAIL  
ASPHALT OVERLAY  
FOR TRENCH REPAIR**



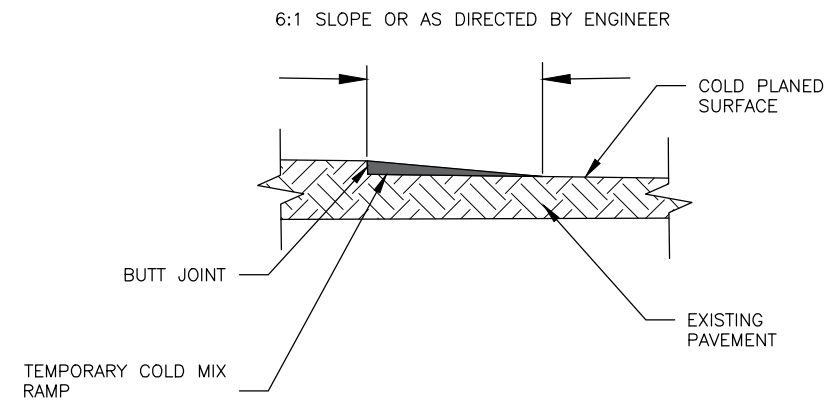
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					DATE	INITIAL
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**FULL WIDTH COLD PLANING DETAIL**

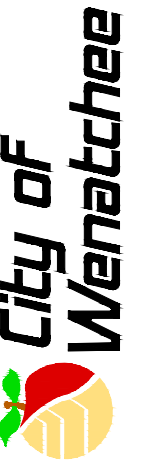
**NOTES:**

1. ALL JOINTS PLANED PERPENDICULAR TO TRAVEL LANES SHALL BE IMMEDIATELY PAPER JOINTED, COLD MIXED, AS PER THIS DETAIL, AND MAINTAINED UNTIL HMA LAYER IS INSTALLED. PAPER JOINTS WILL BE REMOVED JUST PRIOR TO PLACEMENT OF WEARING COURSES.
2. ALL COLD MIX RAMPS WILL USE A BUTT JOINT



**COLD MIX RAMP**

**STANDARD DETAIL  
FULL WIDTH COLD  
PLANING DETAIL**

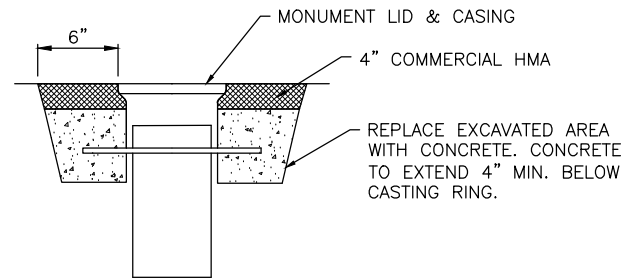


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DETAIL NO.  
**R-320**

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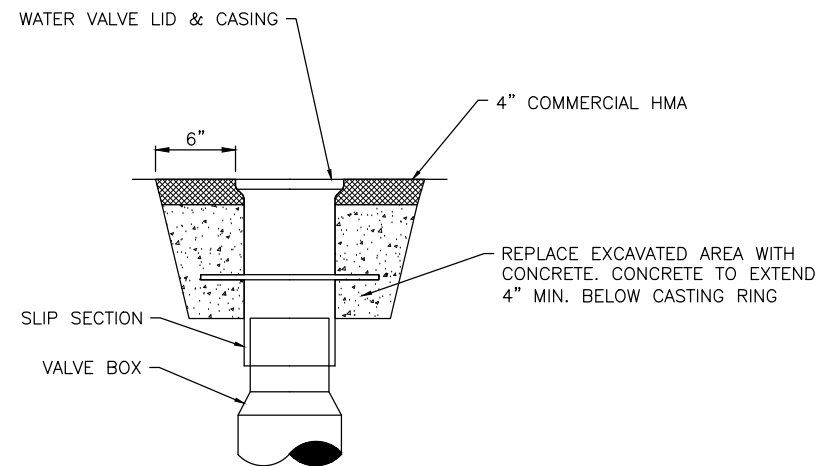


**MONUMENT ADJUSTMENT DETAIL**

N.T.S.

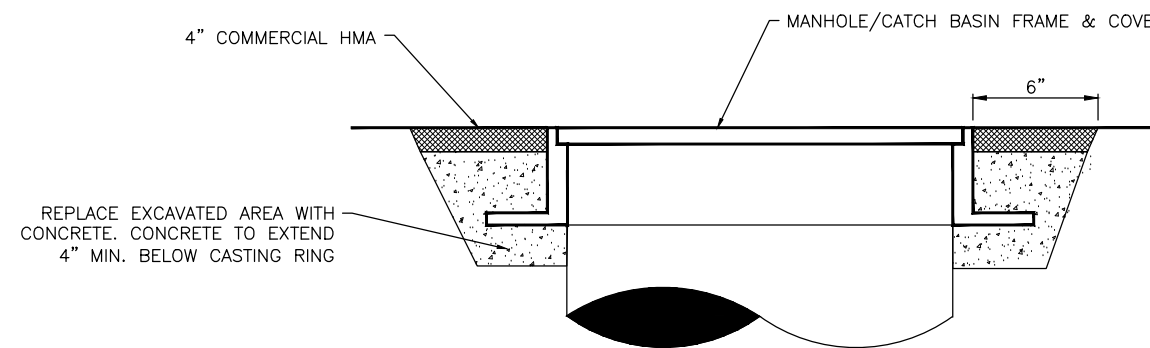
**NOTES:**

1. THE HIGHEST POINT ON THE CASING, RING, OR COVER SHALL BE NO LESS THAN FLUSH AND NO MORE THAN  $\frac{1}{8}$ " BELOW FINISHED GRADE.
2. USE PRE-CAST CONCRETE ADJUSTING RINGS TO RAISE THE FRAMES ON MANHOLES AND CATCH BASINS.
3. ADJUSTING RINGS SHALL BE GROUTED INSIDE AND OUT USING 6000 P.S.I. GROUT.
4. ASPHALT PATCH TO BE LEVEL WITH EXISTING ASPHALT SURFACE.



**WATER VALVE ADJUSTMENT DETAIL**

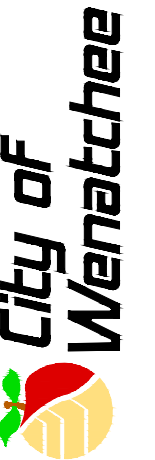
N.T.S.



**MANHOLE, CATCH BASIN ADJUSTMENT DETAIL**

N.T.S.

**STANDARD DETAIL  
UTILITY ADJUST**



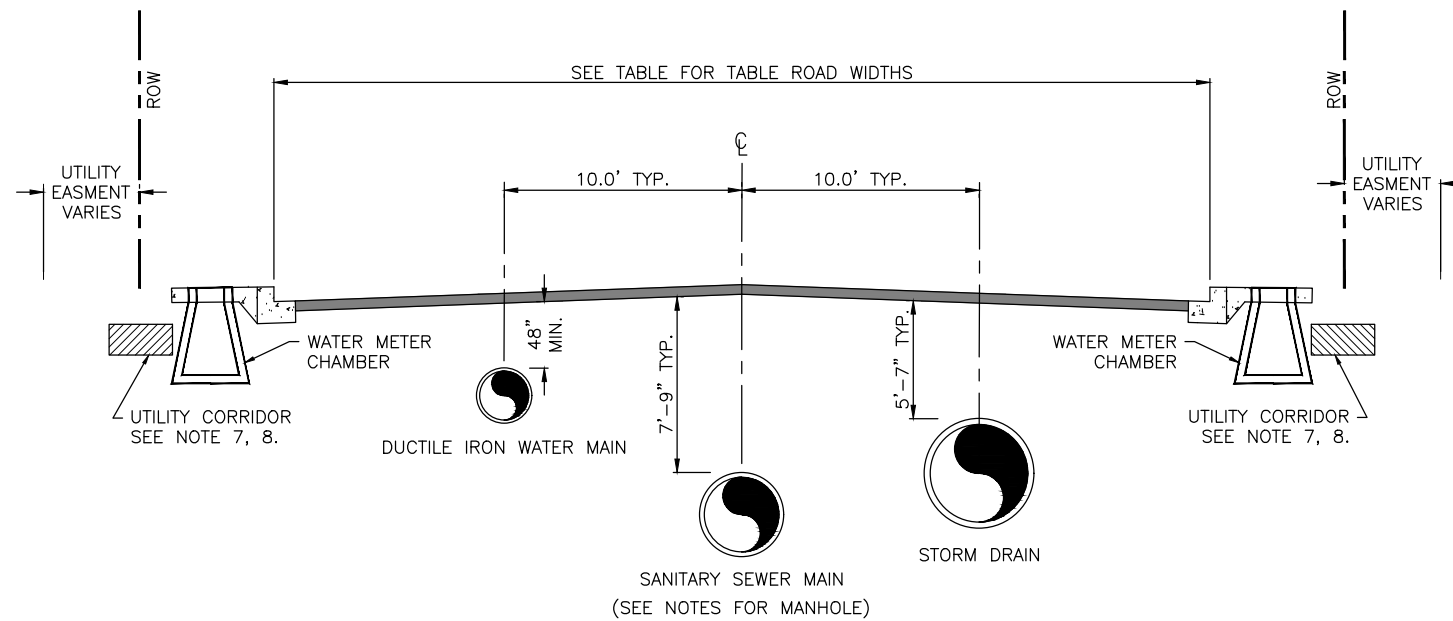
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APPROVED BY	DATE APPROVED			
STANDARD SPECIFICATIONS				

DETAIL NO.

**R-330**

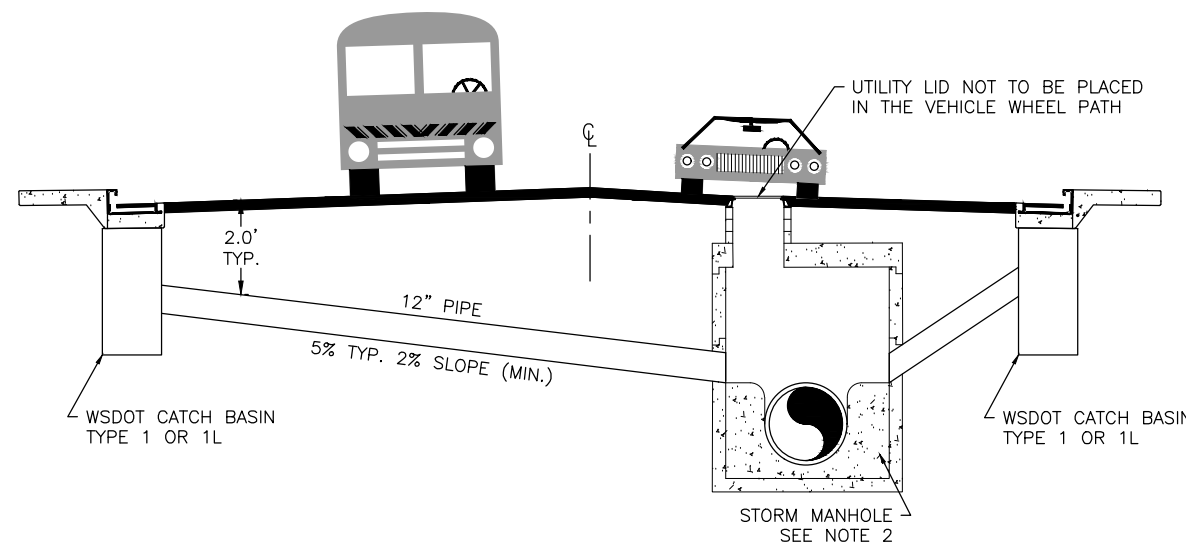
PAGE

**1 OF 1**



**TYPICAL UTILITY PLACEMENT**  
N.T.S.

ROAD WIDTH TABLE			
	LOCAL	COLLECTOR	ARTERIAL
CURB TO CURB	34	38	44-56



**STORM SEWER CONFIGURATION**  
N.T.S.

**NOTES:**

- SANITARY SEWER MANHOLES SHALL BE WSDOT MANHOLE TYPE 1 AND BE CHANNELIZED.
- STORM SEWER MANHOLES SHALL BE WSDOT MANHOLE TYPE 3 AND BE CHANNELIZED.
- THROUGH CURB INLET SHALL BE USED WITH ALL CATCH BASINS UNLESS OTHERWISE APPROVED.
- ALL WATER & SEWER SEPARATION MUST BE DONE IN ACCORDANCE WITH DOE CRITERIA FOR SEWER WORKS DESIGN.
- ALL CATCH BASINS SHALL HAVE A MINIMUM OF A 21" SUMP.
- CATCH BASIN OUTLET PIPE TYPICAL 12" DIAMETER.
- STORM SEWER LATERALS IN ACCORDANCE WITH D-200.
- STREET LIGHT CONDUITS SHALL BE PLACED ACCORDING TO STREET LIGHTING DETAILS. ALL OTHER UNDERGROUND UTILITIES SHALL BE PLACED BEHIND THE SIDEWALK SO AS NOT TO OBSTRUCT THE PLACEMENT OF FUTURE WATER CHAMBER.
- THE UTILITY CORRIDOR SHOULD BE PLACED IN THE PLANTER STRIP RESERVING PLACEMENT FOR STREET TREES.

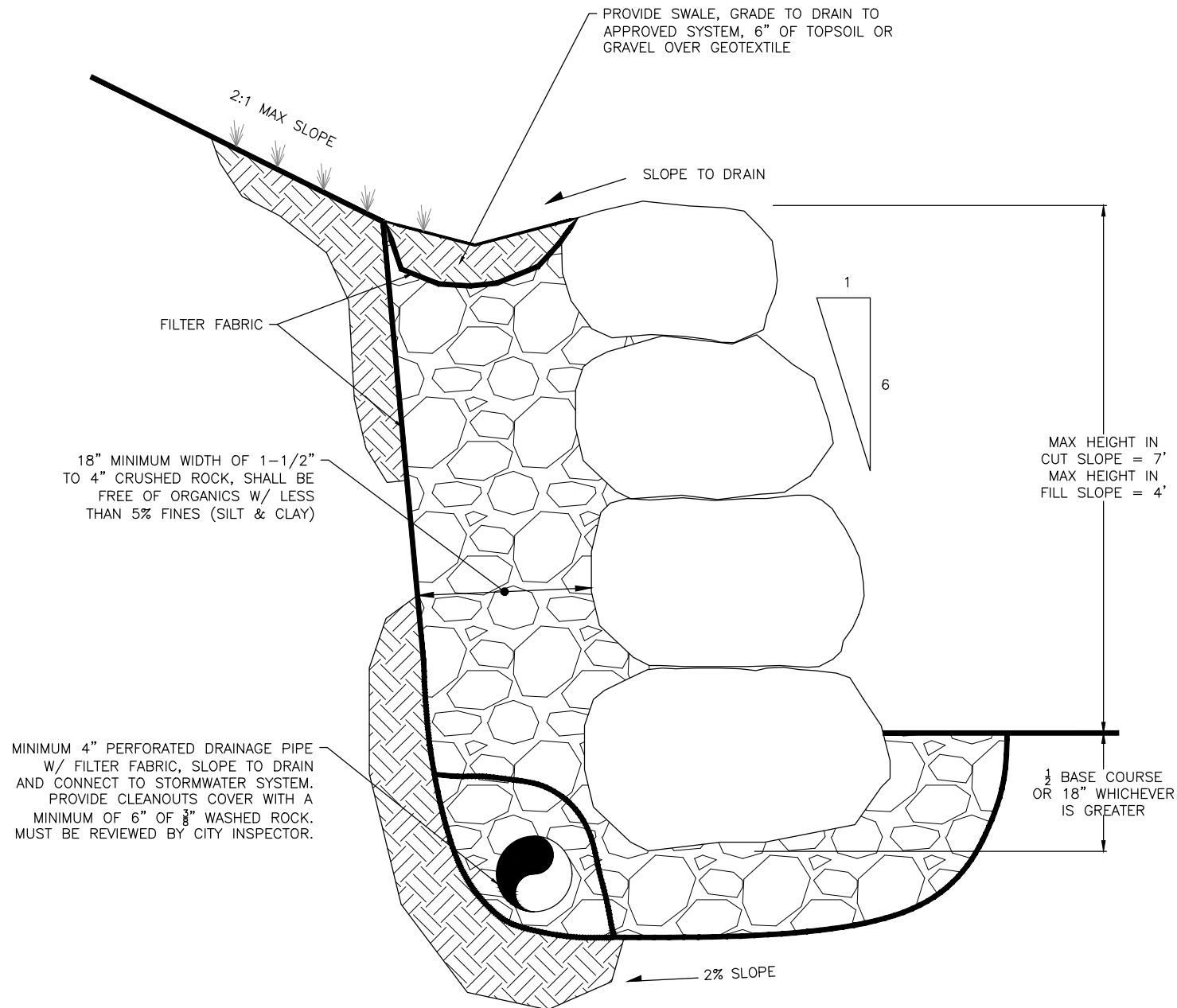
**STANDARD DETAIL  
UTILITY LOCATIONS  
FOR NEW ROADS**



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					DATE	INITIAL
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DETAIL NO.  
R-350

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**NOTES:**

1. CALL FOR CLEAR AND GRADE INSPECTION PRIOR TO BASE COURSE BEING PLACED. VERIFICATION OF ROCKERY HEIGHT, FOUNDATION MATERIAL, AND ROCK SIZE BY CITY CLEAR AND GRADE INSPECTOR IS REQUIRED.
2. 4" TO 6" QUARRY SPALLS SHOULD BE PLACED DIRECTLY FROM TRUCK OR OTHER SUITABLE CONTAINER IN ORDER TO MAINTAIN CLEAN BACKFILL.
3. SPALLS MAY NOT BE NEEDED AT BASE OF ROCKERY IF NATIVE FOUNDATION MATERIAL IS SUITABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR THE CITY CLEARING AND GRADING INSPECTOR.
4. OPENINGS CHINKED WITH QUARRY SPALLS.
5. IF ROCKERY HEIGHT EXCEEDS 4', IT MUST BE DESIGNED BY A PRACTICING GEOTECHNICAL/CIVIL ENGINEER LICENSED IN THE STATE OF WASHINGTON. NO ROCKERY SHALL BE GREATER THAN 7' IN HEIGHT UNLESS APPROVED BY CITY.
6. A ROCKERY GREATER THAN 4' IN HEIGHT AND ON PRIVATE PROPERTY SHALL REQUIRE A BUILDING PERMIT WITH A THIRD PARTY INSPECTION TO BE CONSTRUCTED.
7. FILTER FABRIC SHALL BE MIRAFI 140 N SERIES OR APPROVED EQUAL.
8. OUTLET OF PERFORATED PIPE TO BE DETERMINED BEFORE CONSTRUCTION.

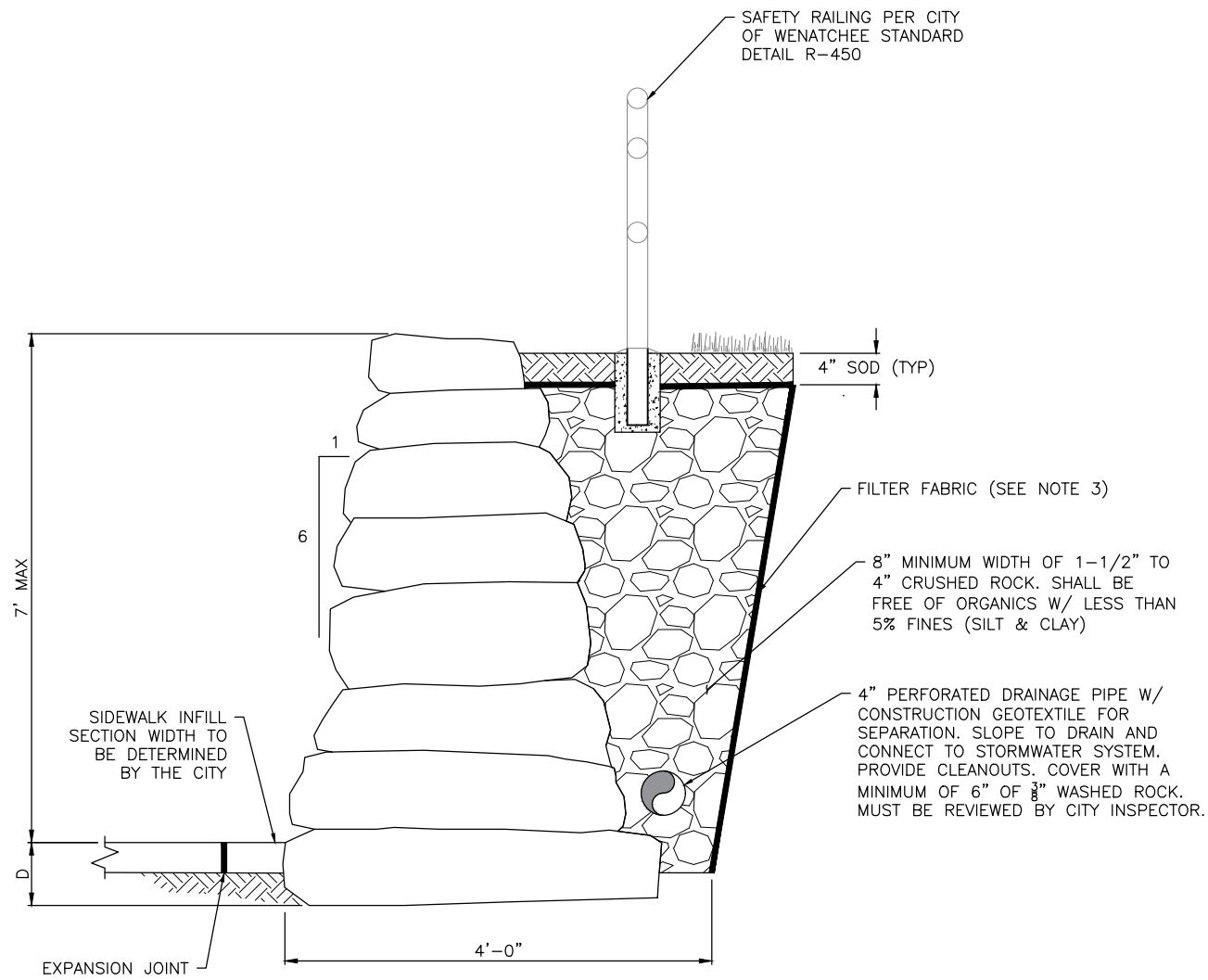
**STANDARD DETAIL  
ROCKERY WALL**



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		DATE	INITIAL
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DETAIL NO.  
**R-400**

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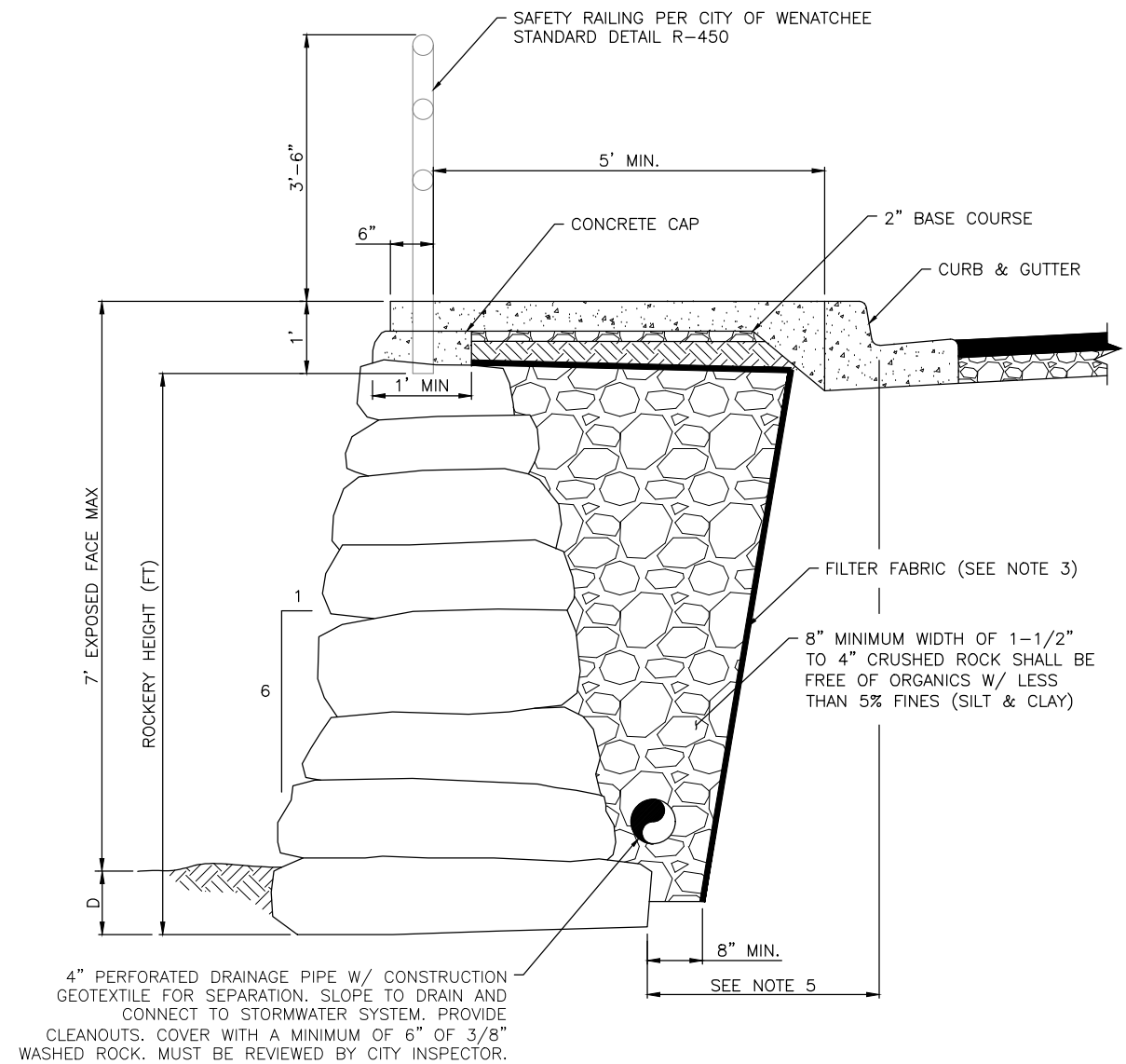


**SIDEWALK BELOW ROCKERY**

ROCKERY HEIGHT (FT)	EMBEDMENT (D)	MIN ROCK SIZE (BASE)	MIN ROCK SIZE (TOP)
2	3 INCHES	2-MAN	1-MAN
4	6 INCHES	3-MAN	2-MAN
6	9 INCHES	4-MAN	2-MAN
7	12 INCHES	5-MAN	2-MAN

**NOTES:**

1. ROCKERY MUST BE INSTALLED BY LICENSED CONTRACTOR.
2. IF ROCKERY HEIGHT EXCEEDS 4', IT MUST BE DESIGNED BY A PRACTICING GEOTECHNICAL/CIVIL ENGINEER LICENSED IN THE STATE OF WASHINGTON.
3. FILTER FABRIC SHALL BE MIRAFLI 140 N SERIES OR APPROVED EQUAL.
4. IF ROCKERY IS CLOSER THAN 1V:1H BELOW FACE OF CURB TO BACK OF BASE EMBEDMENT ROCK. IT MUST BE DESIGNED BY AN ENGINEER TO INCLUDE TRAFFIC LOADING OF 250-PSF SURCHARGE.

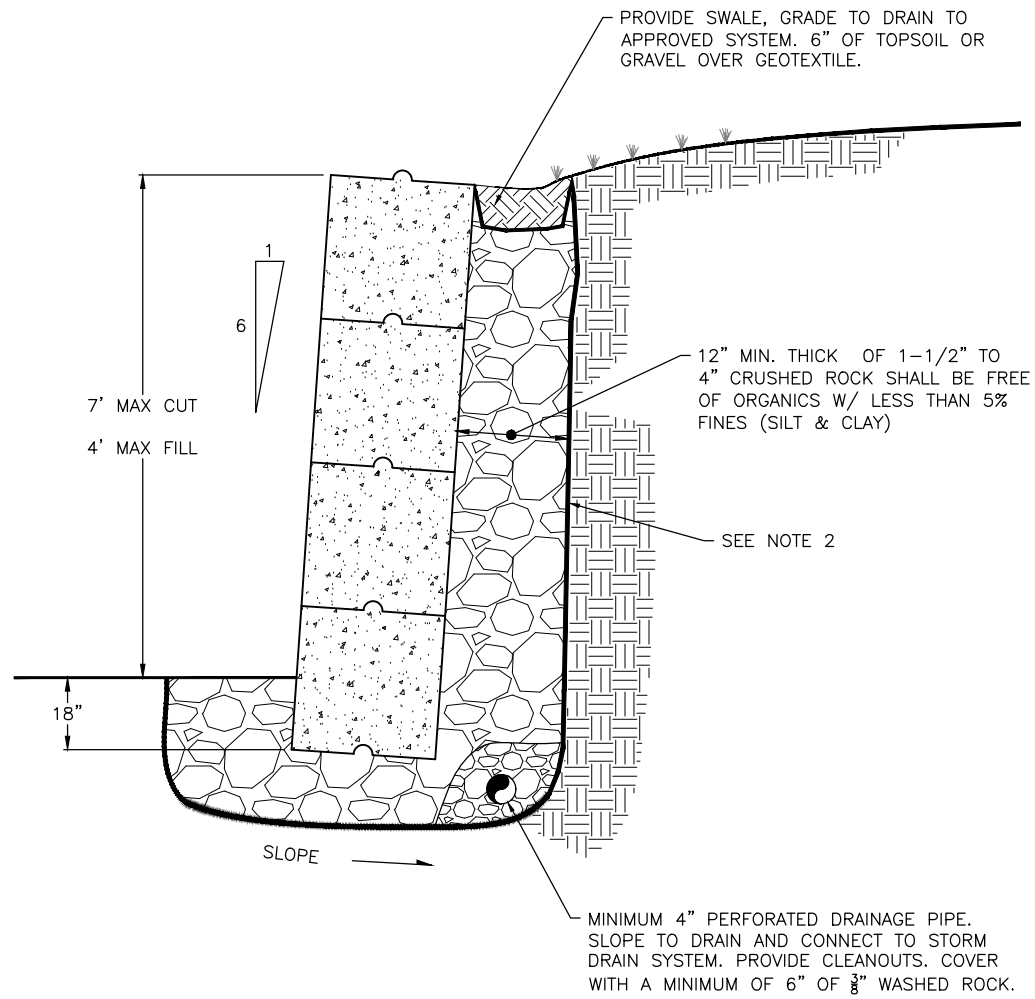


**SIDEWALK ABOVE ROCKERY**

STANDARD DETAIL  
ROCKERY DETAIL  
SIDEWALK SUPPORT

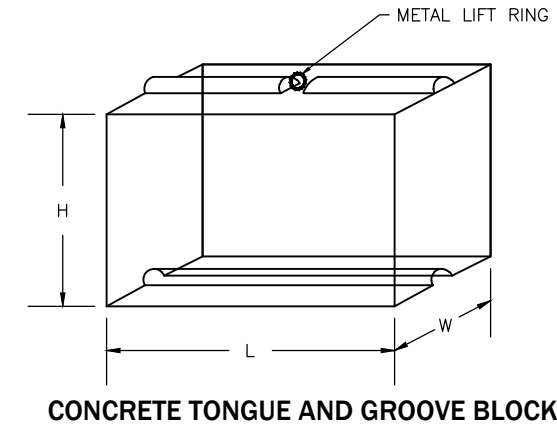


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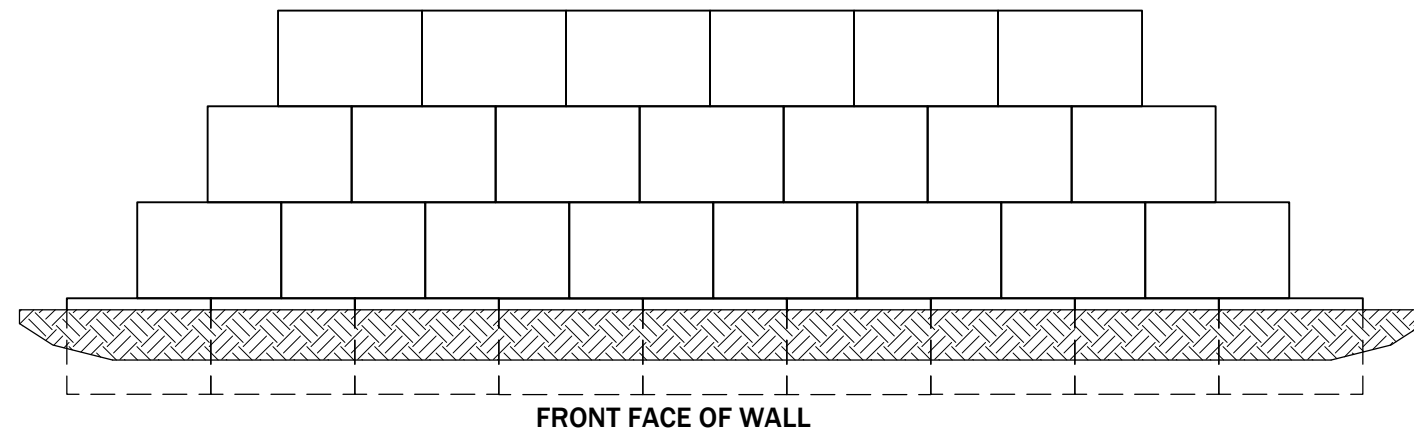
**NOTES:**

1. MAX DEPTH OF CUT SHALL BE 8 FEET, AND MAX DEPTH OF FILL SHALL BE 4 FEET OR AS APPROVED BY GEOTECHNICAL ENGINEER. IN ANY CASE, THE CITY MAY REQUIRE INSPECTION AND APPROVAL BY A GEOTECHNICAL ENGINEER.
2. FILTER FABRIC SHALL BE MIRAFI 140 N SERIES OR APPROVED EQUAL.
3. SPALLS MAY NOT BE NEEDED AT BASE OF ROCKERY IF NATIVE FOUNDATION MATERIAL IS SUITABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR THE CITY OF WENATCHEE.



**SIZES**

H	L	W
2'-0"	3'-0"	2'-0"
2'-0"	6'-0"	2'-0"



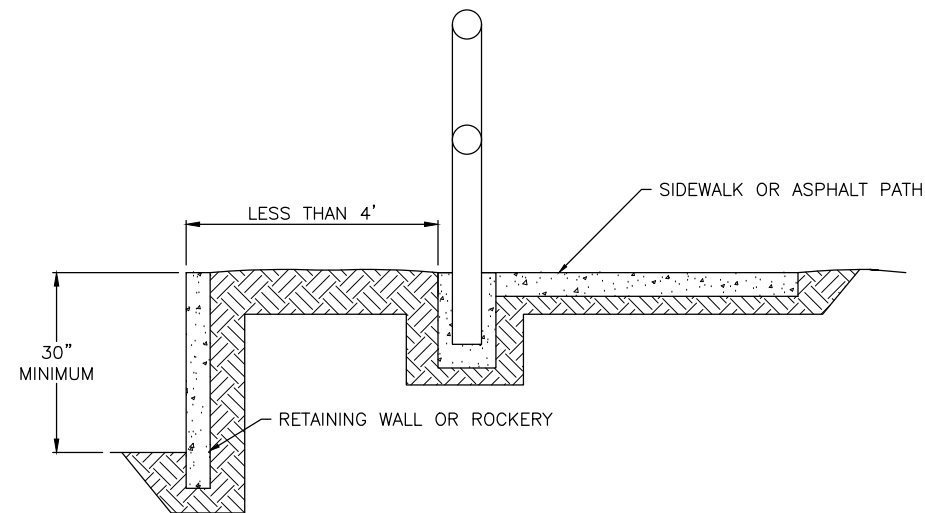
**STANDARD DETAIL  
ECOLOGY BLOCK  
WALL**



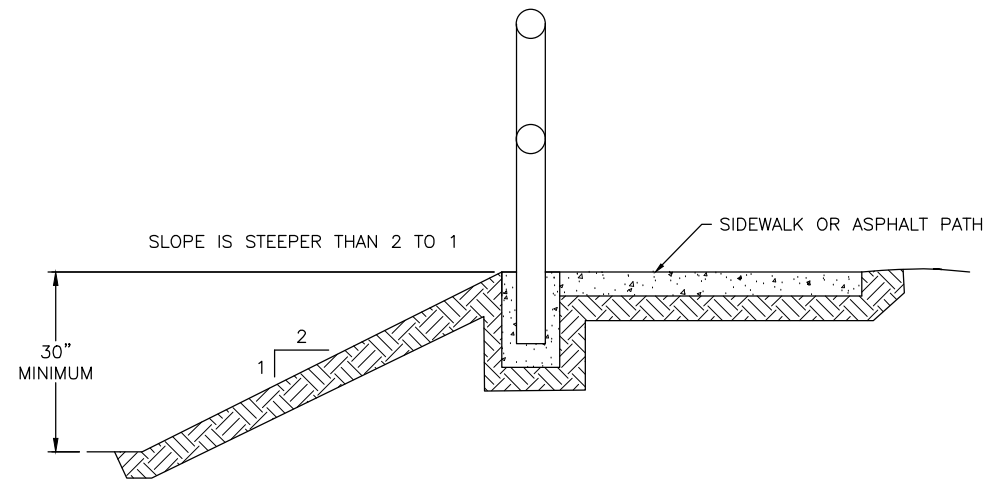
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DETAIL NO.  
**R-420**

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**CONDITION 1**

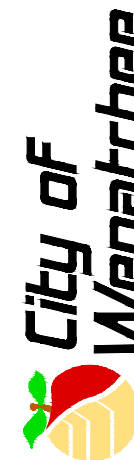


**CONDITION 2**

**NOTES:**

1. SAFETY RAIL TYPE AND INSTALLATION TO BE SPECIFIED BY THE REVIEW ENGINEER.
2. SEE R-451 AND R-452 FOR SAFETY RAILINGS.

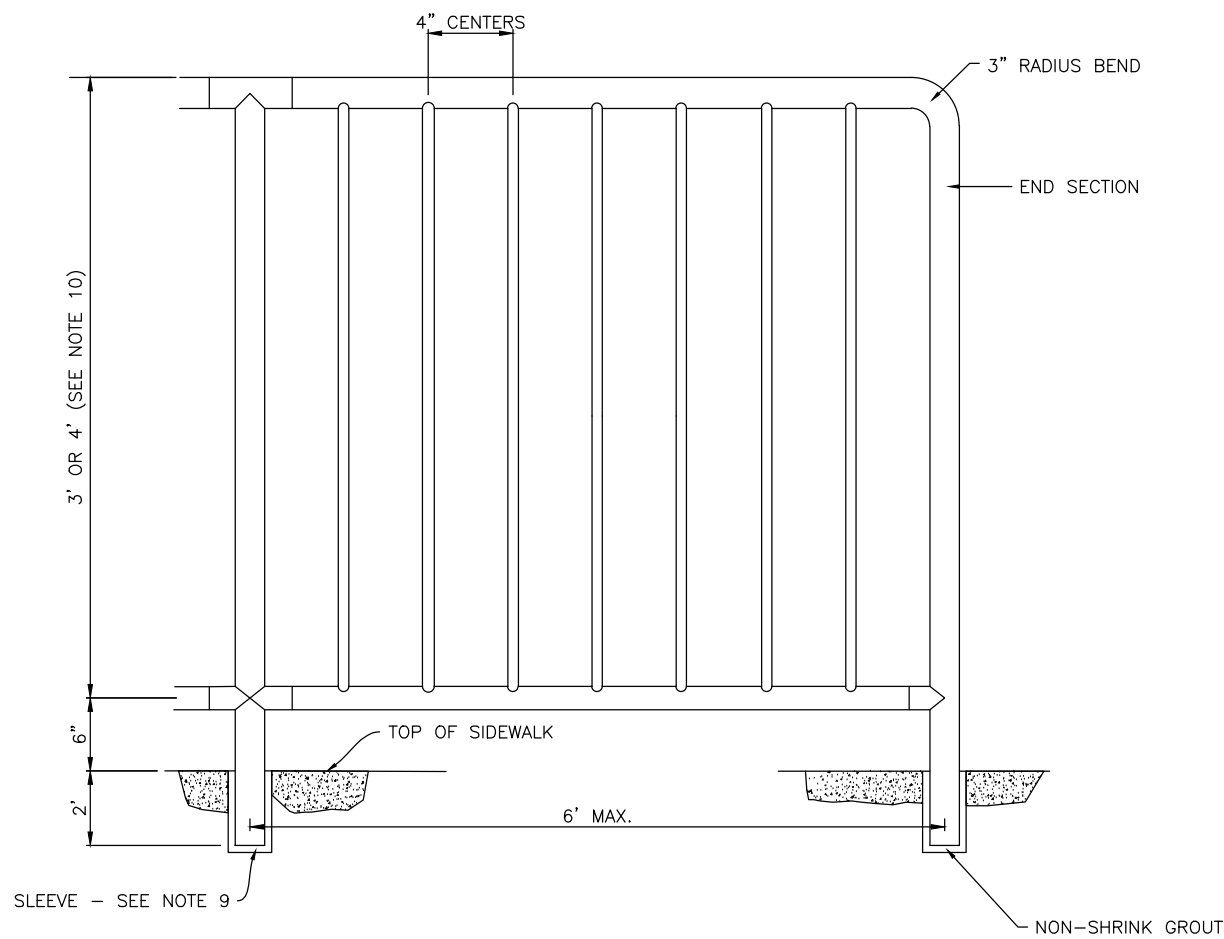
**STANDARD DETAIL  
CONDITIONS REQUIRING  
SAFETY RAILINGS**



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DETAIL NO.  
**R-450A**

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**PIPE SCHEDULE**  
(ALL DIMENSIONS O.D.)

PANEL HEIGHT	TOP RAIL/POST	BOTTOM RAIL	BALUSTER
36"	1.90"	1.90"	.840"
42"	2.875"	2.375"	.840"

**NOTES:**

1. RAILING SHALL BE ALUMINUM PIPE RAIL OR APPROVED EQUIVALENT. INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.
2. SHOP DRAWINGS OF RAILING SHALL BE SUBMITTED FOR APPROVAL SHOWING COMPLETE DIMENSIONS AND DETAILS OF FABRICATION AND INCLUDING AN ERECTION DIAGRAM. MATERIALS BEING USED SHALL BE SPECIFIED IN THE SHOP DRAWINGS.
3. ALL ALUMINUM PARTS SHALL BE GIVEN A CLEAR ANODIC COATING AT LEAST 0.0006 INCHES THICK AND BE HOT WATER SEALED AND SHALL HAVE UNIFORM FINISH.
4. PIPE RAILING AND PIPE RAILING SPLICES MAY BE HEATED TO NO MORE THAN 400°F FOR A PERIOD TO EXCEED 30 MINUTES TO FACILITATE FORMING OR BENDING.
5. CUTTING SHALL BE DONE BY SAWING OR MILLING AND ALL CUTS SHALL BE TRUE AND SMOOTH. FLAME CUTTING WILL NOT BE PERMITTED.
6. PIPE RAILING, PIPE BALUSTERS AND PIPE RAILING SPLICES SHALL BE ADEQUATELY WRAPPED TO ENSURE SURFACE PROTECTION DURING HANDLING AND TRANSPORTATION TO THE JOB SITE.
7. WELDING OF ALUMINUM SHALL BE IN ACCORDANCE WITH THE LATEST AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
8. ALLOW FOR EXPANSION AT APPROXIMATELY EVERY FOURTH POST.
9. RAILS, POSTS AND FORMED ELBOWS SHALL BE A.S.T.M. B-241 OR B-429 ALLOY, 6063-T6 SCHEDULE 40 (STD. PIPE). BRACKETS, ENDCAPS AND OTHER FITTINGS SHALL BE A.S.T.M. 6063-T5. SPLICES AND REINFORCING SLEEVES SHALL BE DRAWN ALUMINUM TUBING 6063-T832. SLEEVE I.D. SHALL BE 1" GREATER POST O.D.
10. PANEL HEIGHT: 36 INCHES FOR PEDESTRIAN USES  
42 INCHES FOR BIKE PATHS.

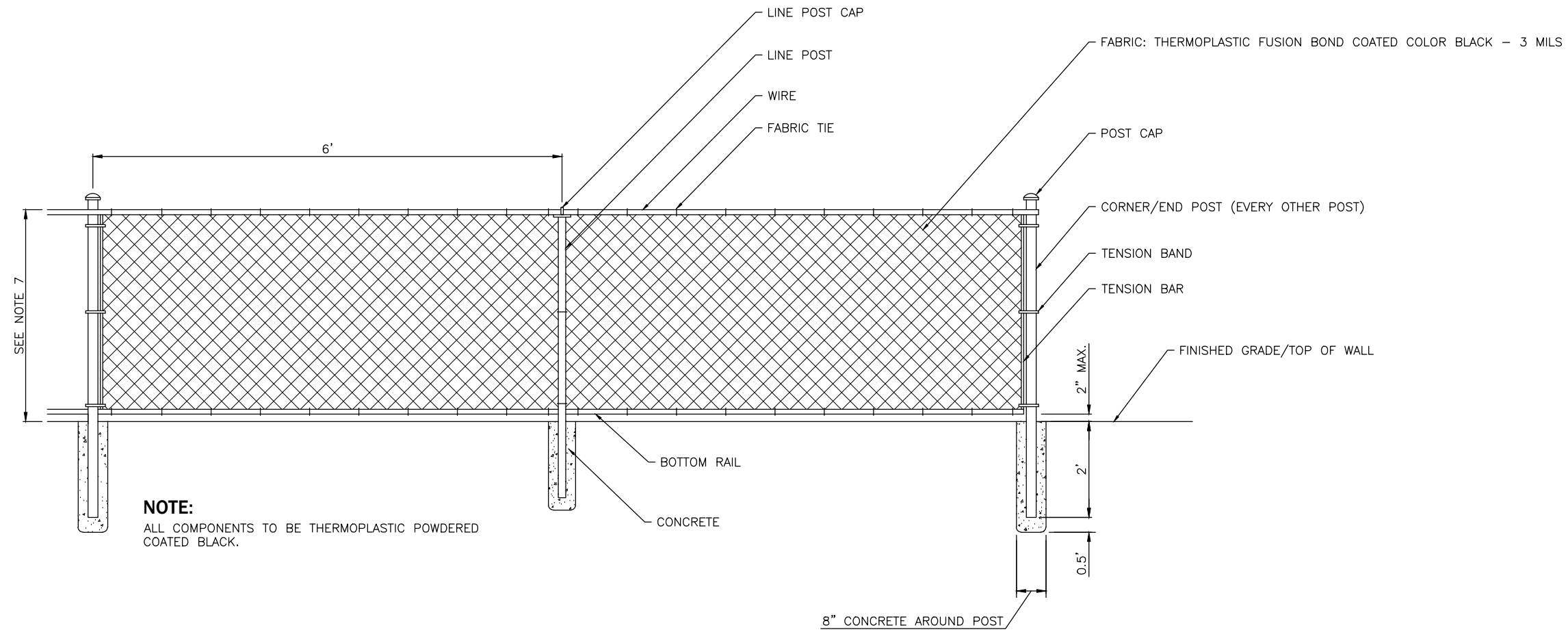
**STANDARD DETAIL  
SAFETY RAILING  
IN SIDEWALK**



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					DATE	INITIAL

DETAIL NO.  
**R-450B**

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**NOTE:**  
ALL COMPONENTS TO BE THERMOPLASTIC POWDERED COATED BLACK.

**PIPE SCHEDULE**  
(ALL DIMENSIONS I.D.)

BOTTOM RAIL	CORNER/END POST	LINE POST
1.25"	2.5"	2"

**NOTES:**

1. ALL FENCING MATERIALS SHALL COMPLY WITH THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 9-16 CLASS 1 MATERIAL. INSTALLATIONS PER MANUFACTURER'S RECOMMENDATIONS.
2. SHOP DRAWINGS OF RAILING SHALL BE SUBMITTED FOR APPROVAL SHOWING COMPLETE DIMENSIONS AND DETAILS OF FABRICATION AND INCLUDING AN ERECTION DIAGRAM. MATERIALS BEING USED SHALL BE SPECIFIED IN THE SHOP DRAWINGS.
3. ALL STEEL PARTS SHALL BE GIVEN A BLACK ULTRAVIOLET-INSENSITIVE THERMOPLASTIC POWDER COATING AT LEAST 3 MILS THICK AND SHALL HAVE A UNIFORM FINISH.
4. CUTTING SHALL BE DONE BY SAWING OR MILLING AND ALL CUTS SHALL BE TRUE AND SMOOTH. FLAME CUTTING WILL NOT BE PERMITTED.
5. ALL MATERIALS SHALL BE ADEQUATELY WRAPPED TO ENSURE SURFACE PROTECTION DURING HANDLING AND TRANSPORTATION TO THE JOB SITE.
6. ANY WELDING OF STEEL SHALL BE IN ACCORDANCE WITH THE LATEST AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS.
7. PANEL HEIGHT: 36 INCHES FOR ALL PEDESTRIAN USES  
42 INCHES FOR BIKE PATHS

**STANDARD DETAIL  
CHAIN LINK SIDEWALK  
SAFETY RAIL**

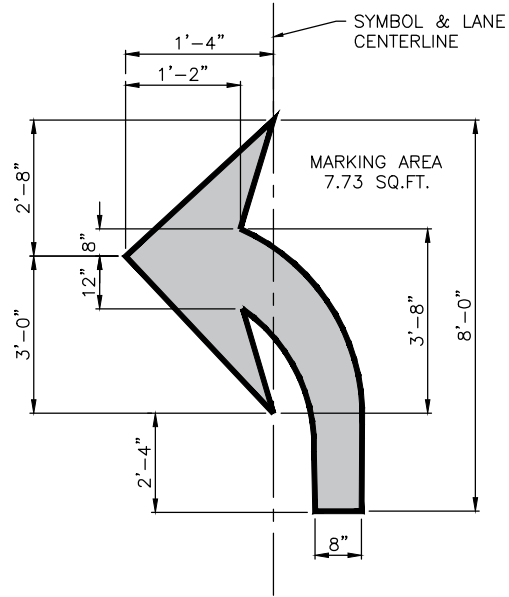


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STANDARD SPECIFICATIONS				DATE APPROVED		

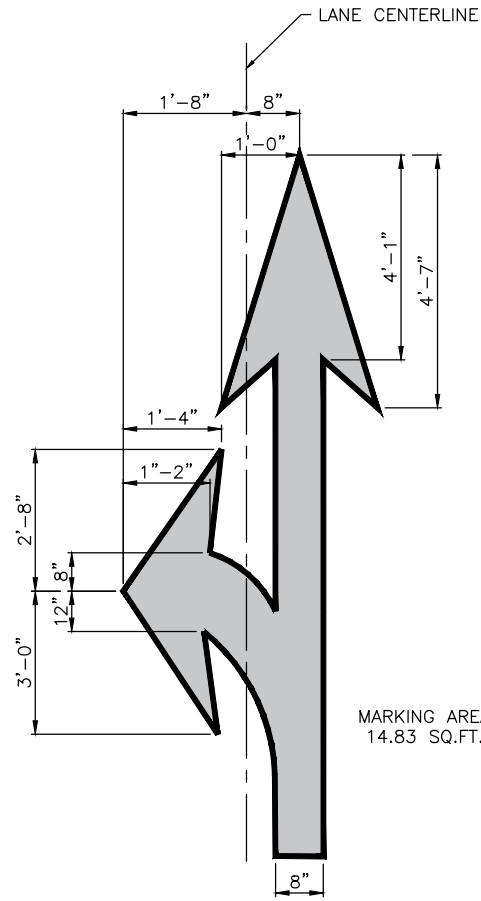
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**R-450C**

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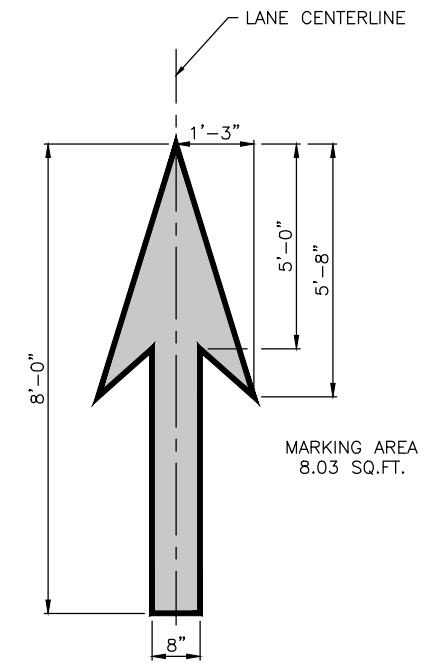




WSDOT STANDARD PLAN M-24.40-02  
**TURN ARROW**  
 N.T.S.



WSDOT STANDARD PLAN M-24.40-02  
**COMBINATION ARROW**  
 N.T.S.



WSDOT STANDARD PLAN M-24.40-02  
**STRAIGHT ARROW**  
 N.T.S.

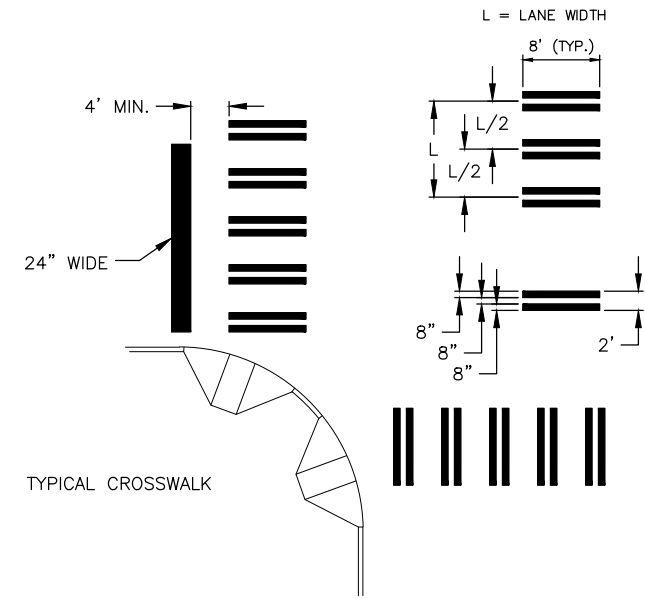
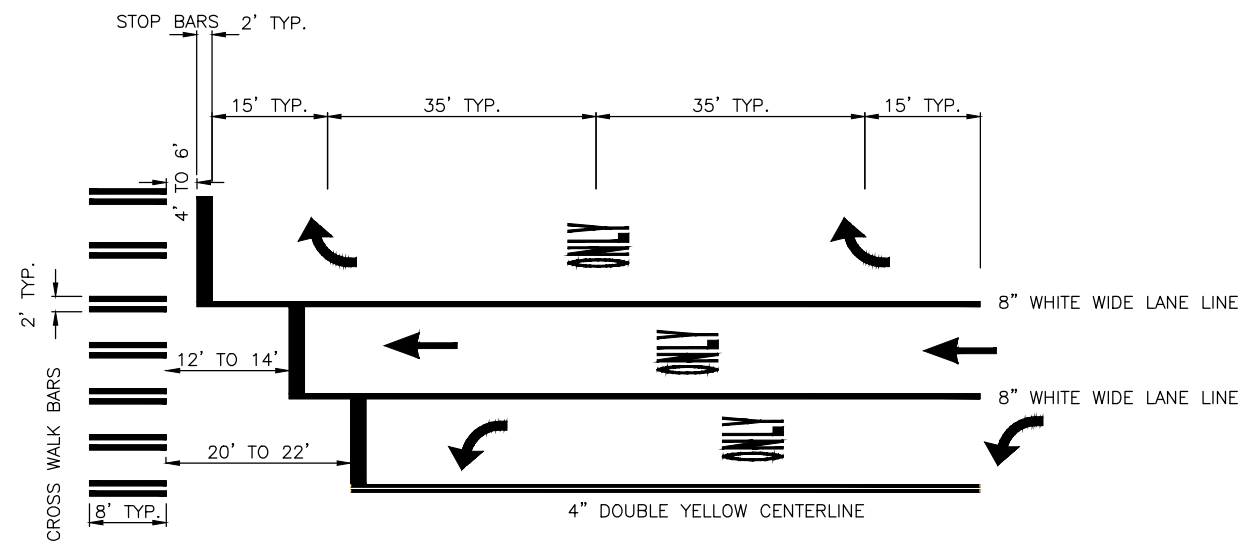
**STANDARD DETAIL  
 PAVEMENT MARKINGS  
 ARROW**



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**R-500A**

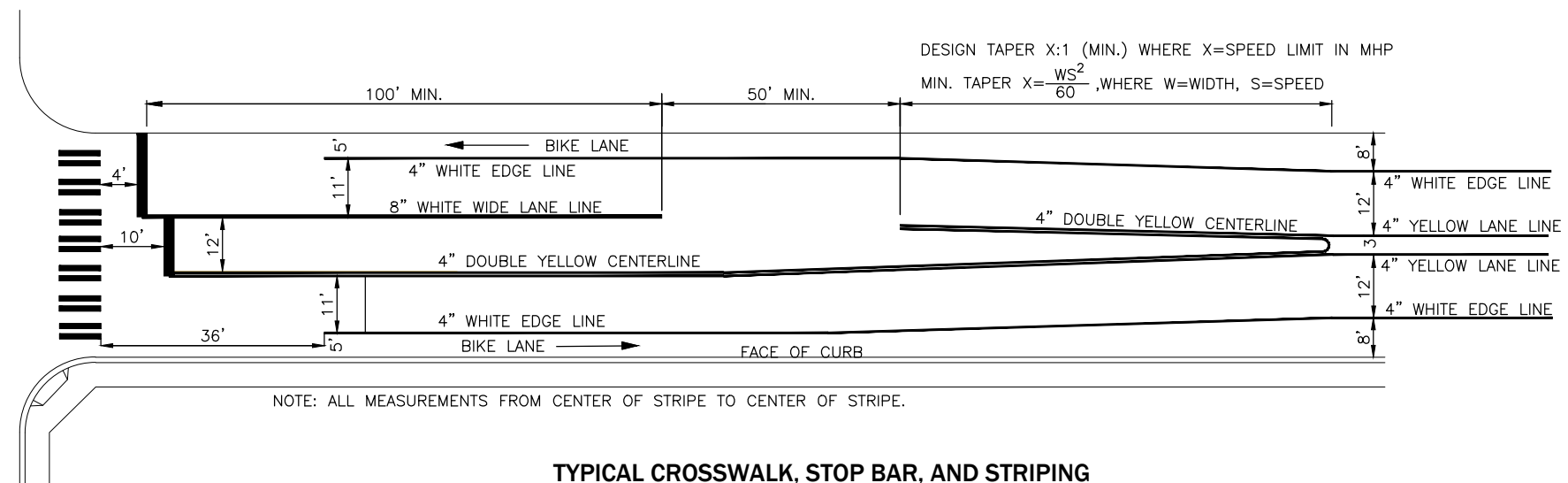




**NOTES:**

1. LOWER LANDING OF CURB RAMP SHALL FALL WHOLLY WITHIN CROSSWALK LINES.
2. EXACT LOCATION OF CROSSWALK SHALL BE APPROVED BY THE CITY OF WENATCHEE.
3. EXISTING CROSSWALK MARKINGS THAT CONFLICT WITH NEW CROSSWALK MARKINGS SHALL BE REMOVED BY GRINDING.

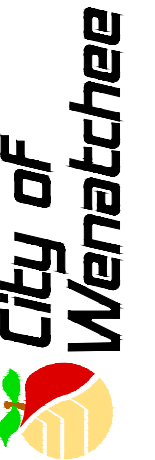
**STANDARD CROSSWALK AND STOP BAR DETAIL**  
N.T.S.



NOTE: ALL MEASUREMENTS FROM CENTER OF STRIPE TO CENTER OF STRIPE.

**TYPICAL CROSSWALK, STOP BAR, AND STRIPING FOR ARTERIAL STREETS**

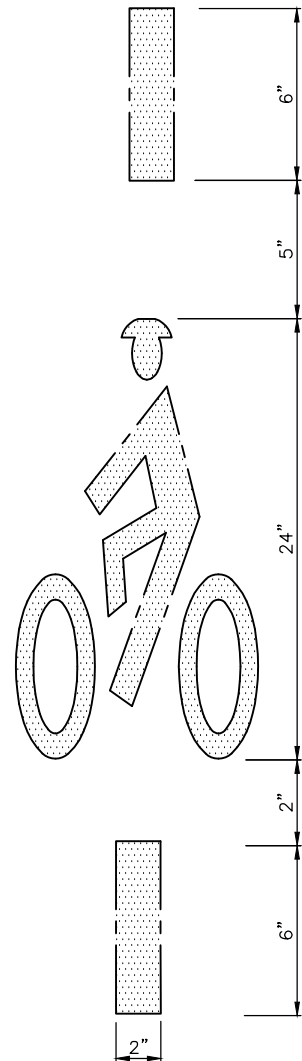
**STANDARD DETAIL  
PAVEMENT MARKING  
LAYOUT**



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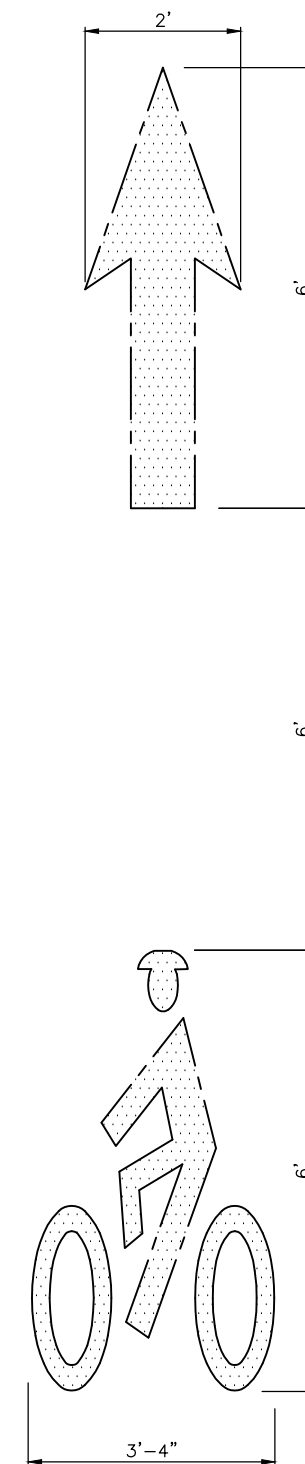


**BICYCLE DETECTION MARKING DETAIL**

NOT TO SCALE

**NOTES:**

1. INSTALL MARKING AT SIGNALIZED INTERSECTIONS TO INDICATE WHERE BICYCLES SHOULD STOP IN ORDER TO ACHIEVE REGULAR AND RELIABLE DETECTION BY SIGNAL EQUIPMENT.
2. USE MARKING ON ANY APPROACH TO A SIGNALIZED INTERSECTION WHERE LOOP DETECTORS SPECIFICALLY FOR BICYCLES ARE NOT PRESENT AND ANY APPROACH WHICH IS SHOWN A GREEN INDICATION ONLY WHEN VEHICLE LOOPS ARE ACTUATED, I.E. THE APPROACH IS NOT ON "RECALL" OPERATION.
3. PLACE MARKING SUCH THAT BICYCLES WHICH STOP OVER THE MARKINGS WILL ACTIVATE THE SIGNAL.
4. PLACE THE MARKING TO ALLOW BICYCLES GOING THROUGH TURNING RIGHT, OR TURNING LEFT TO ACTIVATE THE SIGNAL.
5. MARKINGS ARE NOT NECESSARY IN EXCLUSIVE LEFT TURN LANES OF APPROACHES THAT ARE OPERATED BOTH (1) ON RECALL AND (2) IN PERMISSIVE ONLY MODE.
6. IF AN APPROACH AS MULTIPLE LANES SERVING THROUGH MOVEMENTS AND/OR MULTIPLE LANES SERVING THE SAME TURNING MOVEMENT, ONLY THE RIGHTMOST OF SUCH MULTIPLE LANE GROUPS SHALL BE MARKED.
7. WHERE MULTIPLE LOOPS ARE PRESENT IN A SINGLE LANE, MARKINGS SHALL BE PLACED AS CLOSE TO THE STOP BAR AS POSSIBLE.
8. IN GENERAL, MARKING SHALL BE PLACED OVER THE RIGHT EDGES OF SQUARE LOOPS OR CONGRUENT WITH A LINE TANGENT TO THE RIGHTMOST POINT ON THE EDGE OF A CIRCULAR LOOP.
9. IN GENERAL, BICYCLE MARKINGS ARE NOT NEEDED ON APPROACHES WHERE VIDEO DETECTION IS IN PLACE, AS LONG AS BICYCLES CAN STOP BE DETECTED REGULARLLY AS RELIABLY BY STOPPING AT THE STOP BAR IN THE MIDDLE OF THE LANE.
- 10 MATERIAL SHALL BE PAINT OR OTHER APPROVED MATERIAL.
- 11 SEE ALSO 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES SECTION 9C.05: RCW 46.61.710; 2004 STANDARD HIGHWAY SIGNS PAGE 10-17.



**NOTES:**

1. BIKE LANE SYMBOLS MATERIAL SHALL BE 90 MILL, PREFORMED, SKID RESISTANT THERMOPLASTIC.
2. BICYCLE SYMBOLS FACES ROADWAY CENTERLINE.

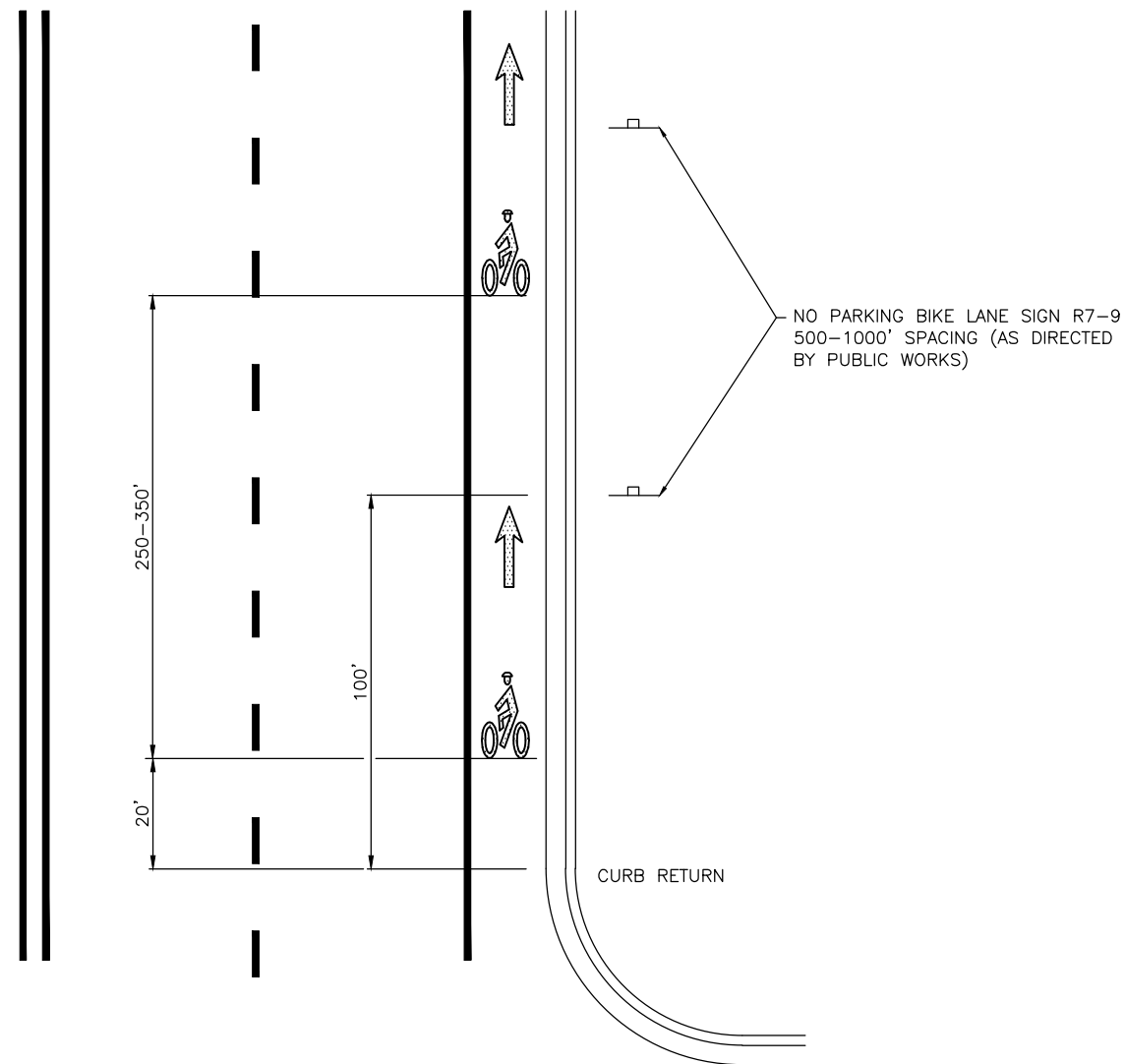
**STANDARD DETAIL  
BICYCLE LANE  
MARKINGS**



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					DATE	INITIAL
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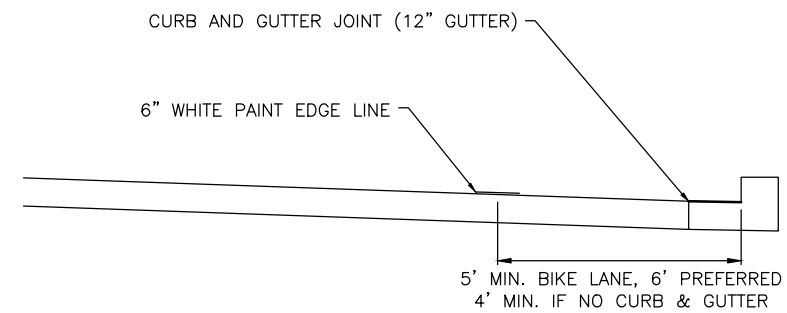
DETAIL NO.  
**R-550A**

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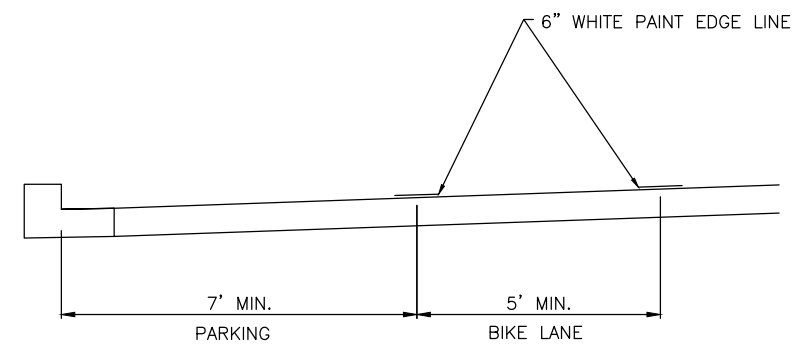


**NOTES:**

1. SEE MUTCD FOR MORE INFORMATION AND SPECIFICATIONS.
2. PER SEC. 9B.04 2009 MUTCD, DO NOT USE R3-17 SIGNS.
3. BICYCLIST SYMBOLS PER R-550.



(MEASURED TO FACE OF CURB OR CENTER OF PAINT STRIPE)  
BICYCLE LANE WITHOUT PARKING



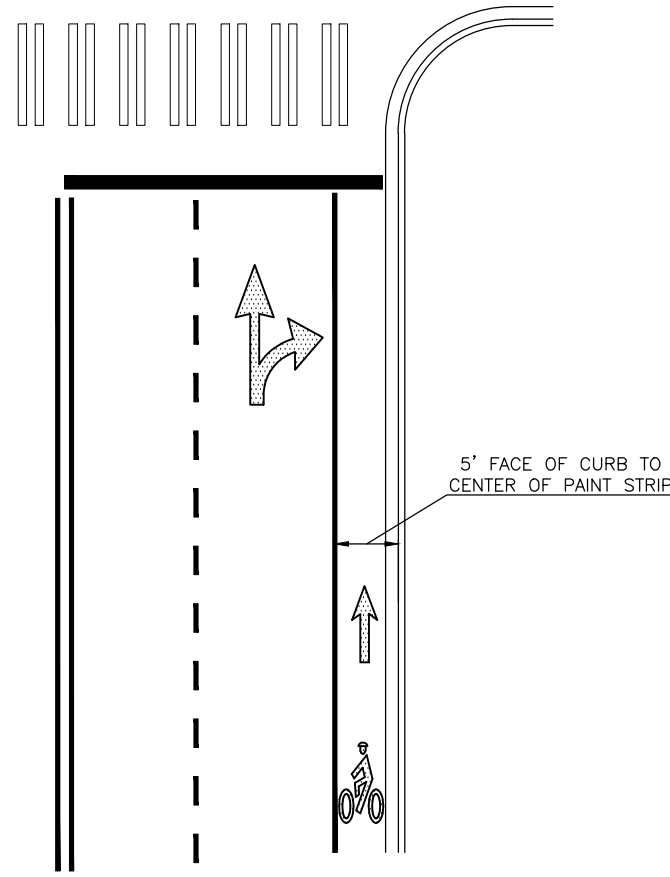
(MEASURED TO FACE OF CURB OR CENTER OF PAINT STRIPE)  
BICYCLE LANE WITH PARKING

**STANDARD DETAIL  
TYPICAL BICYCLE LANE**

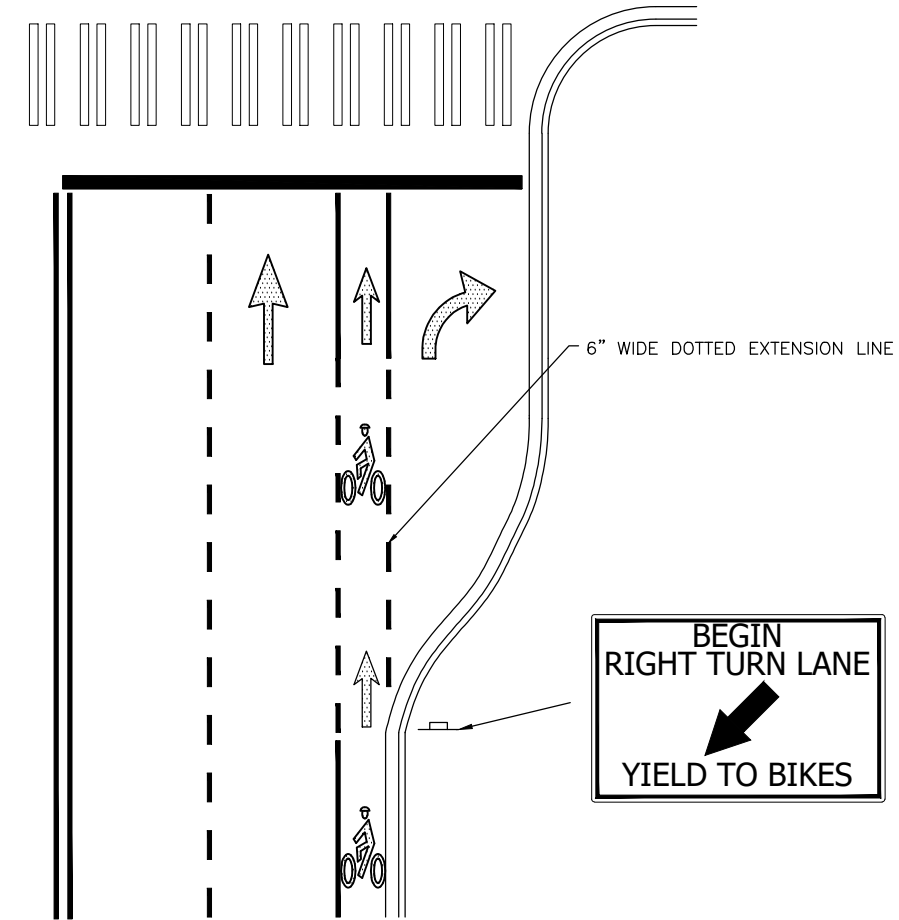


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					DATE	INITIAL
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**TYPICAL RIGHT-THROUGH LANE**  
(BICYCLE LANE CONTINUES THROUGH INTERSECTION)



**TYPICAL RIGHT TURN POCKET**  
(BICYCLE LANE CONTINUES THROUGH INTERSECTION)

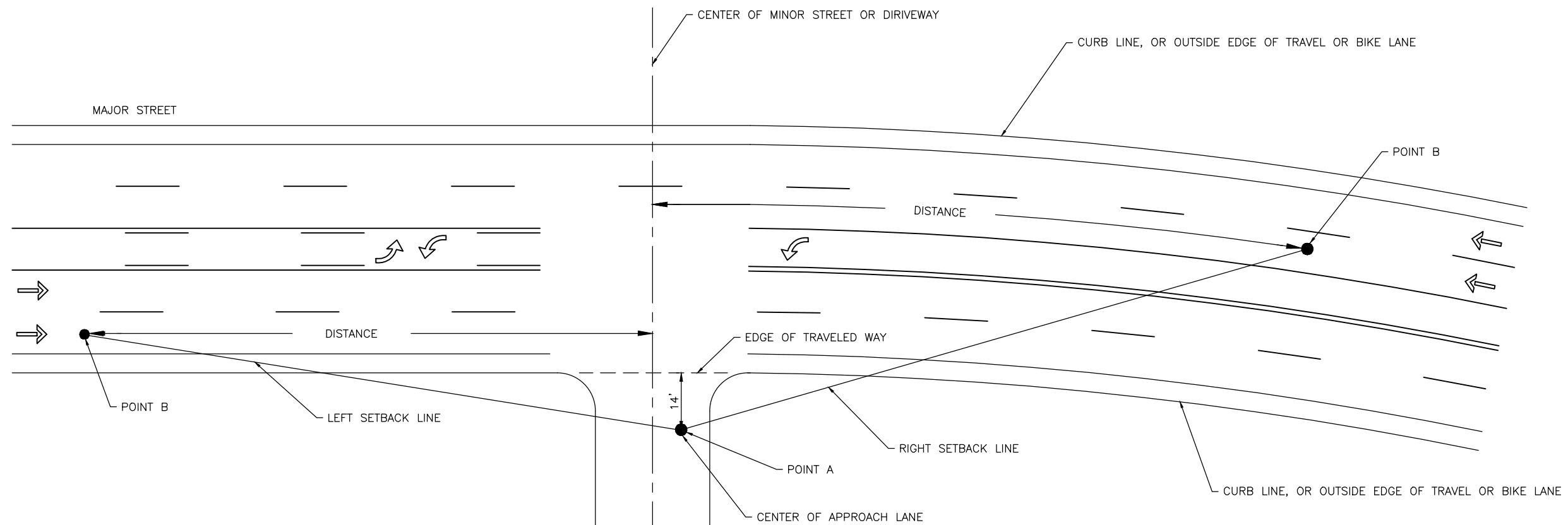
PLACE SIGN AT BEGENNING OF TURN POCKET

**NOTES:**  
SEE MUTCD FOR MORE INFORMATION AND SPECIFICATIONS.

**STANDARD DETAIL  
TYPICAL BICYCLE LANE  
AT INTERSECTION**



SCALE: AS SHOWN	DATE DRAWN 10/05/2020	DESIGNED	DRAWN CAW	APPROVED BY	DATE APPROVED	REVISIONS	
						DATE	INITIAL
						01/01/2022	AJS



**SIGNALIZED INTERSECTION  
WITH RIGHT ON RED PERMITTED**

SPEED LIMIT	DISTANCE (LEFT APPROACH ONLY)
40 MPH	385 FEET
35 MPH	335 FEET
30 MPH	290 FEET
25 MPH	240 FEET

**MINOR STREET,  
PRIVATE ROAD,  
COMMERCIAL AND RESIDENTIAL  
DRIVEWAYS**

MINOR STREETS, PRIVATE ROADS, AND COMMERCIAL DRIVEWAYS		
SPEED LIMIT (MPH)	DISTANCE LEFT TURN FROM STOP (FT)	DISTANCE RIGHT TURN FROM STOP (FT)
40	445	385
35	390	335
30	335	290
25	280	240

**RESIDENTIAL DRIVEWAYS**

SPEED LIMIT	DISTANCE
40 MPH	325 FEET
35 MPH	250 FEET
30 MPH	200 FEET
25 MPH	150 FEET

**NOTES:**

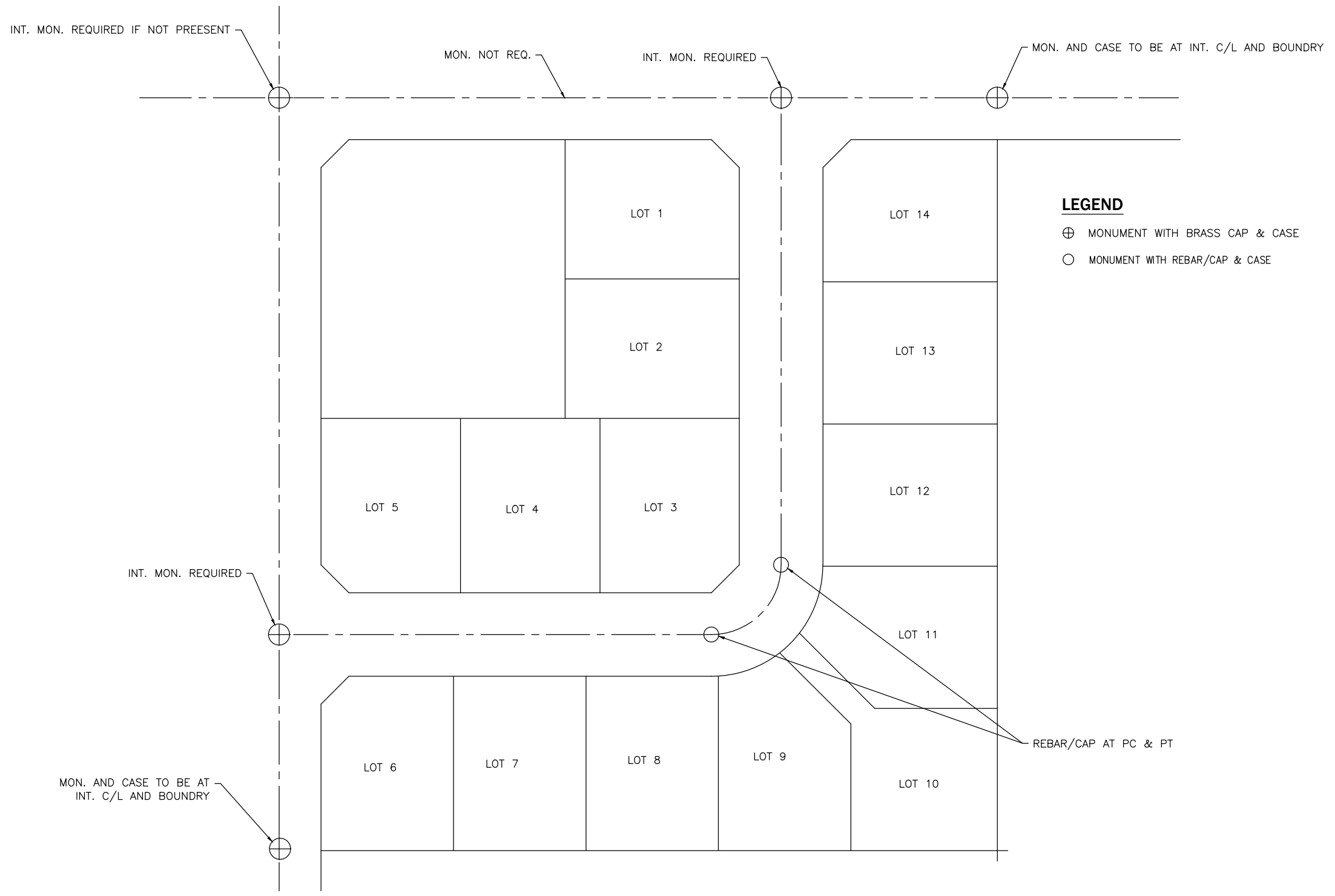
- FOR RESIDENTIAL DRIVEWAYS, DISTANCE OF POINT A FROM EDGE OF TRAVEL LANE IS 10'.

**STANDARD DETAIL  
SIGHT DISTANCE  
SETBACK**



SCALE: AS SHOWN	DESIGNED DRAWN CAW	APPROVED BY	DATE DRAWN 01/28/21	CHECKED	DATE APPROVED	REVISIONS	
						DATE	INITIAL
						01/01/2022	AJS



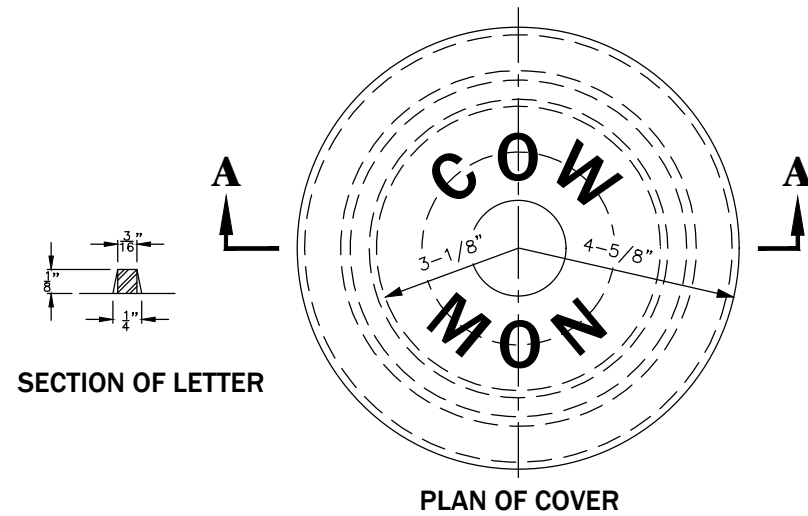


**MONUMENT PLACEMENT**  
N.T.S.

**STANDARD DETAIL  
MONUMENT  
PLACEMENT**

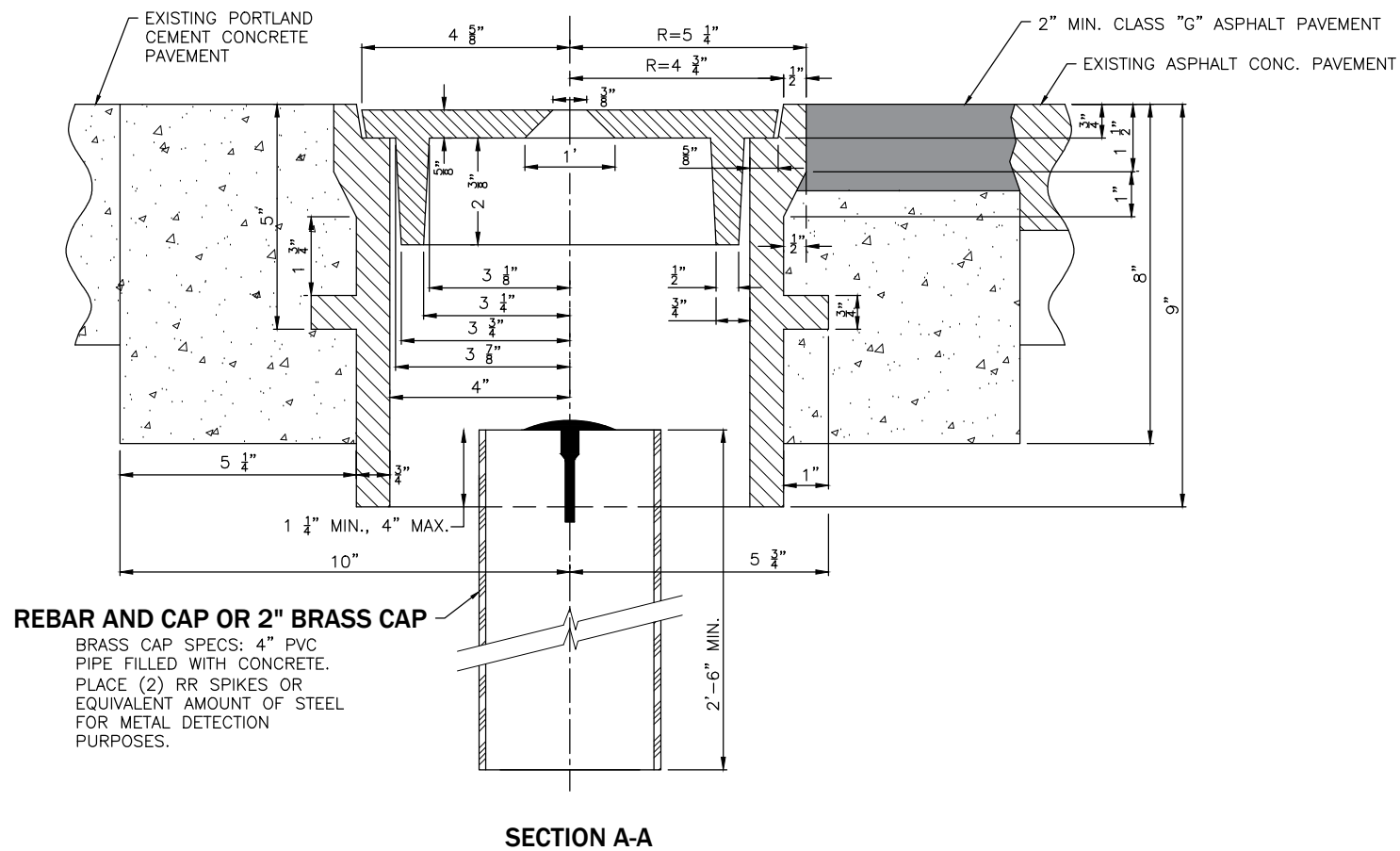


SCALE: AS SHOWN	DATE DRAWN	02/21/2006	DATE	10/26/2020	INITIAL	CAW
	CHECKED	SK	01/01/2022	DATE	AJS	
DESIGNED						
DRAWN	RLK					
APPROVED BY						
	STANDARD SPECIFICATIONS					



**NOTES:**

1. WHEN PLACING MONUMENTS IN PAVED SURFACES, HEIGHT OF CASE OR COVER SHALL BE NO LESS THAN ZERO AND NO MORE THAN  $\frac{1}{8}$ " BELOW FINISHED GRADE.
2. MEETS CITY OF WENATCHEE AND WASHINGTON STANDARD SPECIFICATIONS FOR MONUMENT CASE AND COVER. SUITABLE FOR HEAVY TRAFFIC LOADING. UNIT WEIGHT 39LBS.
3. MONUMENTS SHALL BE PROTECTED FROM DAMAGE ACCORDING TO R.C.W 58.24.040, AND R.C.W. 58.09.130. IF MONUMENTS ARE TO BE DISTURBED, THEN W.A.C. 332-120 APPLIES.
4. CASTING SHALL BE GRAY IRON ASATM A48, AASHTO M 105, CLASS 30.
5. COVER AND SEAT SHALL BE MACHINED FOR PERFECT CONTACT AROUND CIRCUMFRENCE AND FULL WIDTH OF BEARING SURFACE.
6. APPROXIMATE WEIGHTS, STANDARD.  
CASE - 60 LBS  
COVER - 19 LBS  
TOTAL - 79 LBS
7. CONCRETE SHALL BE CLASS 3000.
8. PIPE MUST BE INSTALLED PRIOR TO ROAD SURFACING.



**REBAR AND CAP OR 2" BRASS CAP**  
 BRASS CAP SPECS: 4" PVC PIPE FILLED WITH CONCRETE. PLACE (2) RR SPIKES OR EQUIVALENT AMOUNT OF STEEL FOR METAL DETECTION PURPOSES.

**STANDARD DETAIL  
MONUMENT CASE**



SCALE: AS SHOWN	DATE DRAWN 02/21/2006	REVISIONS		
		DATE	INITIAL	
DESIGNED	CHECKED	12/21/2020	CAW	
DRAWN	SK	01/01/2022	AJS	
APPROVED BY	DATE APPROVED			
STANDARD SPECIFICATIONS				

DETAIL NO.  
**R-710**

PAGE  
**1 OF 1**

**LUMINAIRE POLE DETAIL:**

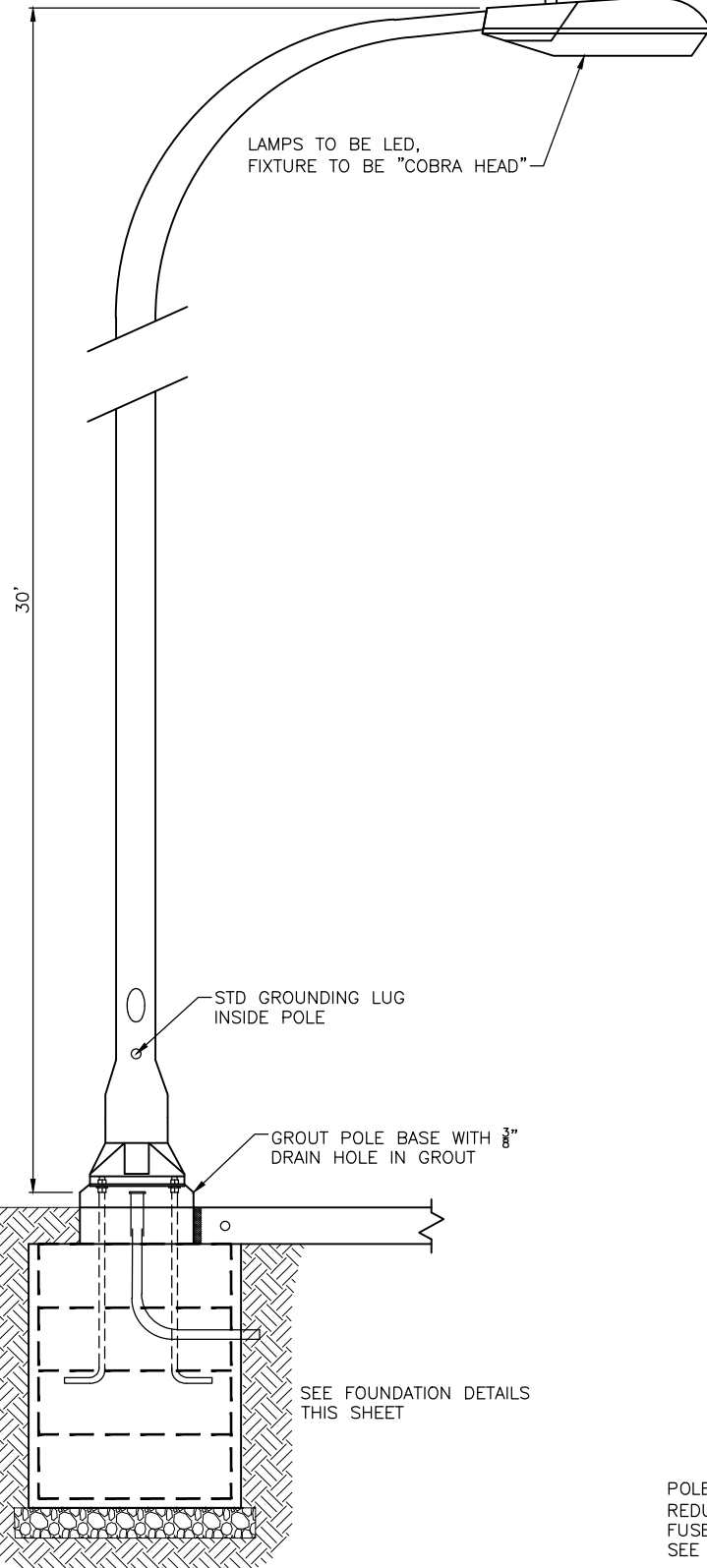
POLE MUST BE UL LISTED AND BE LABELED AS SUCH

- HAPCO # RTA30D8B4D1601 (6' ARM)
- OR
- HAPCO # RTA30D8B4D1801 (8' ARM)
- OR
- HAPCO # RTA30D8B4D1A01 (10' ARM)

DAVIT STYLE (OR MATCH EXISTING STYLE POLES WITH APPROVAL OF CITY ENGINEER)

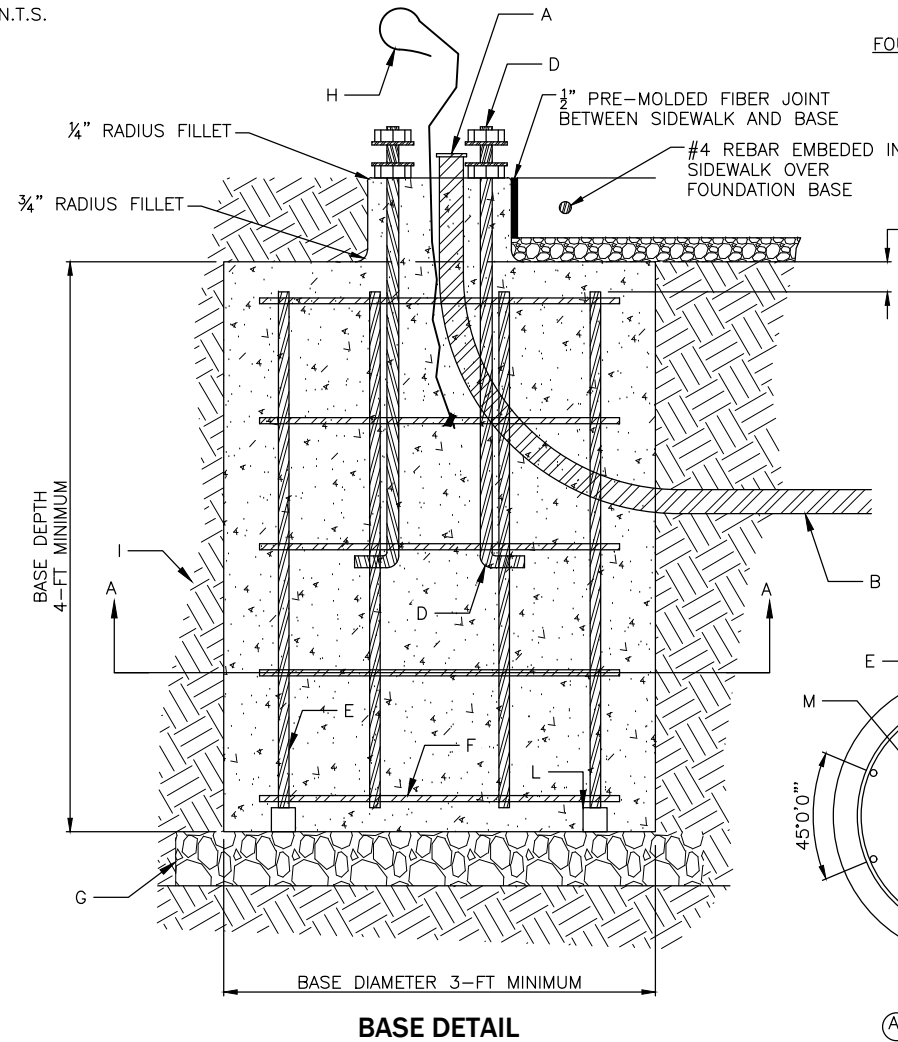
PHOTO CELL RATED FOR LED,  
OR SHORTING CAP,  
AS SPECIFIED BY PLANS

LAMPS TO BE LED,  
FIXTURE TO BE "COBRA HEAD"



SEE FOUNDATION DETAILS  
THIS SHEET

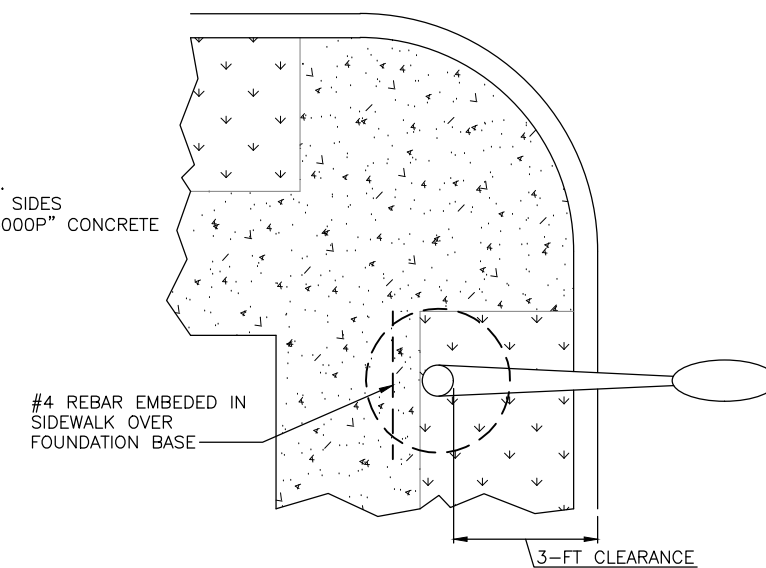
N.T.S. N.T.S.



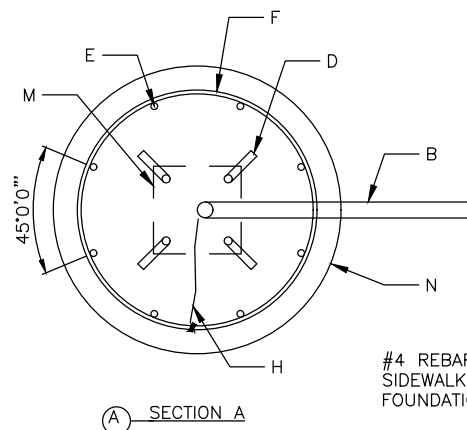
**BASE DETAIL**

**FOUNDATION DETAIL:**

FOR INSTALLATION IN PLANTER STRIP



FOR INSTALLATION BEHIND SIDEWALK



**SECTION A-A**

NOTE:  
FOUNDATION SHALL BE CONSTRUCTED USING METHOD 1 OR METHOD 2  
ACCORDING TO WSDOT STANDARD PLAN J-28.30 SHEET 2

**FOUNDATION**

- A EXTEND 1 1/4" CONDUIT 2-IN MAX. ABOVE BASE WITH END BELL OR BUSHING AND OTHER END 2-FT-6-IN BELOW FINISH GRADE EXTENDED TO HAND HOLE. PROVIDE ADDITIONAL CONDUIT FOR COMMUNICATION OR SIGNAL CABLE WHERE SHOWN ON APPROVED DRAWINGS OR IDENTIFIED IN CONTRACT.
- B 1 1/4" DIAM. SCHEDULE 80 PVC CONDUIT EMBEDDED IN BASE EXTENDED TO HAND HOLE.
- C USE 1/2" PREMOLDED JOINT FILLER TO PREVENT BOND BETWEEN SIDEWALK AND BASE, AS SHOWN IN BASE DETAIL.
- D (4) ANCHOR "J" BOLTS HOT DIPPED GALVANIZED (PER ASTM A-307) 1-IN DIAM X 3-FT-8-IN W/ 4-IN HOOK AT BOTTOM, 3-FT EMBEDDED IN BASE, AND 2 3/4-IN PROJECTING ABOVE GROUT PAD, W/ (2) HVY DUTY GALV. 1-IN N.C. HEX NUTS & (2) FLAT WASHERS EACH, BOLT PATTERN IS 11-IN DIAGONAL.
- E (8) #7 X 3-FT-6-IN @ 45 DEGREE INTERVALS FROM CENTER
- F (5) #4 X 2-FT-6-IN DIAM HOOPS @ 10 1/2-IN O.C. W/ 1-FT-9-IN LAPS
- G WHEN USING METHOD 2 WSDOT STANDARD PLAN J-28.30 SHEET 2: COMPACTED LEVELING COURSE 2-IN COMPACTED DEPTH EXTENDED 6-IN BEYOND BASE ON COMPACTED SUBGRADE 95% STANDARD PROCTOR MINIMUM 6-IN MINIMUM COMPACTED DEPTH BELOW BASE
- H ADD A GROUNDING CONDUCTOR CONNECTED TO FOUNDATION REBAR WITH NON-INSULATED #4 AWG STRANDED COPPER; PROVIDE 3-FT MIN. SLACK ABOVE BASE. ROUTE CONDUCTOR TO LUMINAIRE GROUNDING STUD. CLAMP CONDUCTOR TO STEEL REINFORCING BAR AT LEAST 12-IN BELOW TOP OF CONCRETE WITH LISTED CONNECTOR SUITABLE FOR USE EMBEDDED IN CONCRETE - THE FOUNDATION SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD SPECIFICATION 8-20.
- I COMPACTED BACKFILL AROUND BASE TO 95% STANDARD PROCTOR MINIMUM, USING 8-IN LIFT THICKNESS MAXIMUM.
- J STRIP ALL FORMS FROM AROUND BASE BEFORE BACKFILL. IF USING GALVANIZED CORRUGATED METAL PIPE IT SHALL REMAIN A MINIMUM OF 6" BELOW FINISHED GRADE AND DEEPER.
- K WIRING DETAILS PER WSDOT STANDARD PLAN J-28.70 AND STANDARD SPECIFICATION 8-20.
- L PRE-CAST CONCRETE BLOCK SPACERS ATTACHED TO REBAR (3 MIN) TO PROVIDE 3-IN CLEAR FROM VERTICAL BARS TO SOIL
- M MONOLITHIC 12" SQUARE
- N OUTER DIAMETER CONCRETE BASE

LED Streetlight Luminaire Ordering Information			
Manufacturer	Product/Series	Distribution Type	Ordering Information
Eaton Streetworks (use 7030 for 3K, 7040 for 4K)	Navion	II	NVN-AF-01-D-V-T2-10K-7030-1200-4N7-IP66-AP-K-QA/RA1013
		III	NVN-AF-02-D-V-T3-10K-7030-1A-4N7-IP66-AP-K-QA/RA1013
		IV	NVN-AF-01-D-V-T4-10K-7030-1200-4N7-IP66-AP-K-QA/RA1013
Philips Lumec (use 3K for 3K, 4K for 4K)	Roadfocus Medium	II	RFM-55W32LED3K-G2-R2M-UNV-DMG-FAWS-RCD7-PH9-GY3
		III	RFM-108W48LED3K-G2-R3M-UNV-DMG-FAWS-RCD7-PH9-GY3
		IV	RFM-55W32LED3K-G2-4-UNV-DMG-FAWS-RCD7-PH9-GY3
Leotek (use WW for 3K, NW for 4K)	Green Cobra Jr.	II (Collector)	G CJ2-20H-MV-WW-2R-GY-900-FFA-PCR7-WL-RWG-SC
	Green Cobra Jr.	II (Local Roads)	G CJ0-15H-MV-WW-2R-GY-700-FFA-PCR7-WL-RWG-SC
	Green Cobra M.	III	G CM2-30H-MV-WW-3R-GY-1A-FFA-PCR7-WL-RWG-SC
	Green Cobra Jr.	IV	G CJ0-15H-MV-WW-4-GY-700-FFA-PCR7-WL-RWG-SC

**Notes:**  
 3000K in color for all roads (except SR285 corridor)  
 4000K in color for SR285 corridor  
 Only one brand/type shall be used for entire project.  
 Type 2 Distribution for collectors & local roads  
 Type 3 Distribution for arterials  
 Type 4 Distribution for cul-de-sacs, mast arm to extend luminaire beyond curb by 5 FT min., align with center of radius, install cut-off screen for back lighting  
 New developments shall meet minimum illuminance values as set by AASHTO design standards in the "Roadway Lighting Design Guide", 2005

POLE AND BRACKET CABLE FOR LUMINAIRE WIRING #10 AWG AND # 10 'USE' GROUND WIRE  
 REDUCE WASHER W/ SE CONNECTOR FOR SECURING POLE AND BRACKET AT LUMINAIRE  
 FUSED QUICK DISCONNECTS AT TOP OF BASE ACCESSED VIA HANDHOLE IN POLE.  
 SEE WSDOT STANDARD PLAN J-28.70 FOR STEEL LIGHT STANDARD WIRING DETAILS

**STANDARD DETAIL**  
**LUMINAIRE**  
**BASE, LIGHT, & POLE**

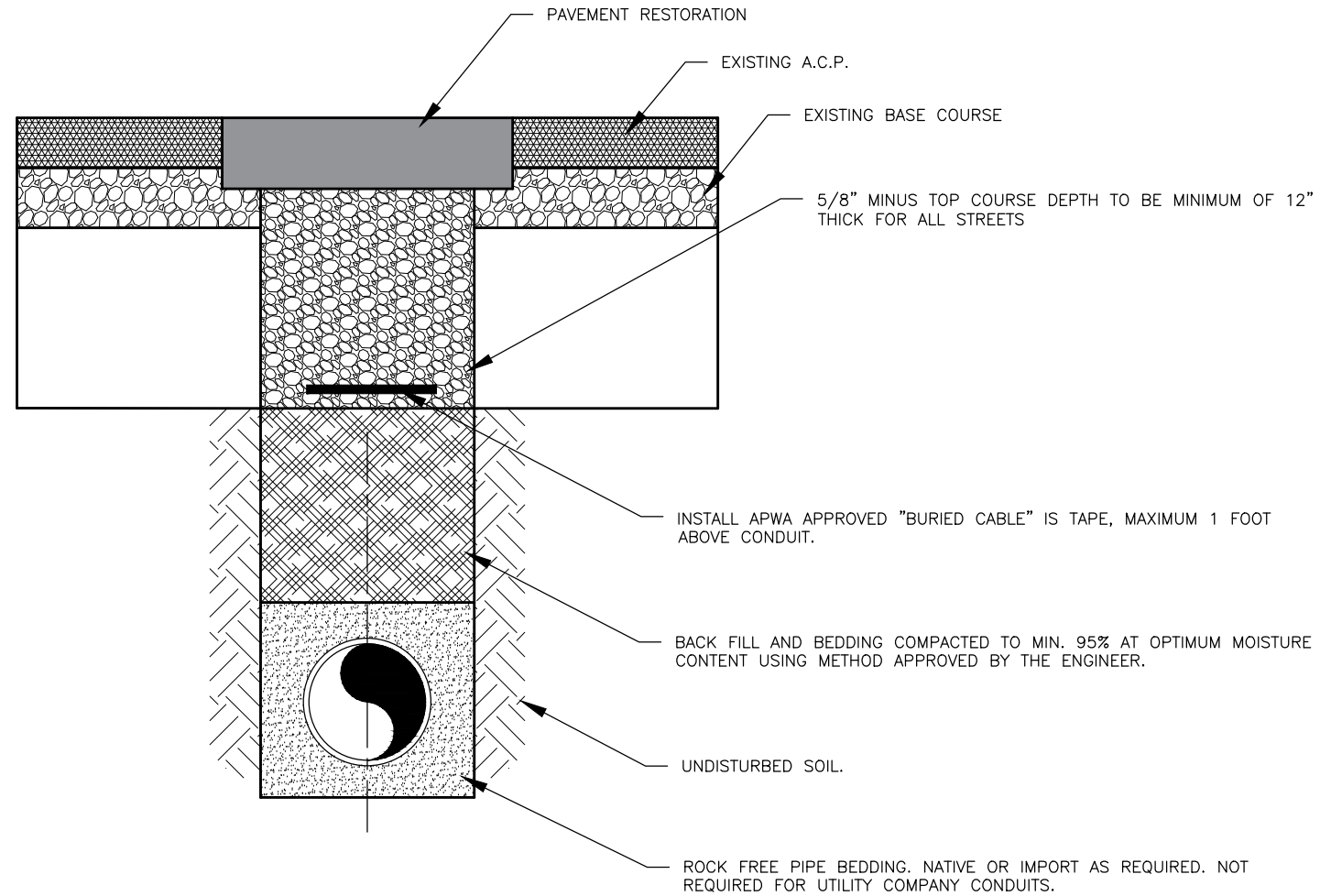


SCALE: AS SHOWN	DESIGNED DMN	DRAWN JBY	CHECKED DMN	DATE APPROVED	REVISIONS					
					DATE	INITIAL	BY	DATE	BY	
				3/23/2015				5/11/2015	RDH	
								11/2/2017	JBY	
								1/28/2018	JBY	
								4/24/2018	JBY	
								01/01/2022	AJS	

STANDARD SPECIFICATIONS  
 2-09 STRUCTURE EXCAVATION  
 6-02 CONCRETE STRUCTURES  
 8-20 ILLUMINATION, TRAFFIC SIGNAL SYS.  
 9-29 ILLUMINATION, SIGNAL, ELECTRICAL

DETAIL NO.  
**R-800**

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**1 OF 1**



**NOTES:**

1. TRENCH DEPTH SHALL PROVIDE A MINIMUM COVER OF 24" OVER TOP OF CONDUIT.  
1.) G.T.E. AND P.U.D. TO BE MIN. 30" AT NON CURBED STREET CROSSINGS OR AS REQUIRED BY THE PERMIT.
2. MINIMUM ONE-WAY TRAFFIC TO BE MAINTAINED ACCORDING TO APPROVED TRAFFIC CONTROL PLAN.
3. ALL ROADWAY APPURTENANCES TO BE PROTECTED AND ROAD SIGNS LEFT AS FOUND.
4. PAVEMENT REPAIR TO BE MADE WITHIN 24 HOURS OF TRENCH BACKFILL.
5. PERMIT REQUIRED ON ALL PROJECTS, EXCEPT CONTRACT ADMINISTERED BY THE CITY ENGINEER DEPT. AND EXCEPT AS SPECIFIED BY SOME FRANCHISES.

**STREET CUT AND PATCH DETAIL FOR TYPICAL  
TRAFFIC SIGNAL, STREET LIGHTING AND UTILITY  
COMPANY CONDUITS**

**STANDARD DETAIL  
STREET LIGHT  
CONDUIT CROSSING**



SCALE: AS SHOWN	DATE DRAWN	REVISIONS	
		DATE	INITIAL
N.A.	3/23/2015	01/01/2022	AJS
DESIGNED DMN	CHECKED DMN		
DRAWN RDH	DATE APPROVED		
APPROVED BY			

STANDARD SPECIFICATIONS  
2-09 STRUCTURE EXCAV.  
9-29 ILLUMINATION MTL.

DETAIL NO.  
**R-810**

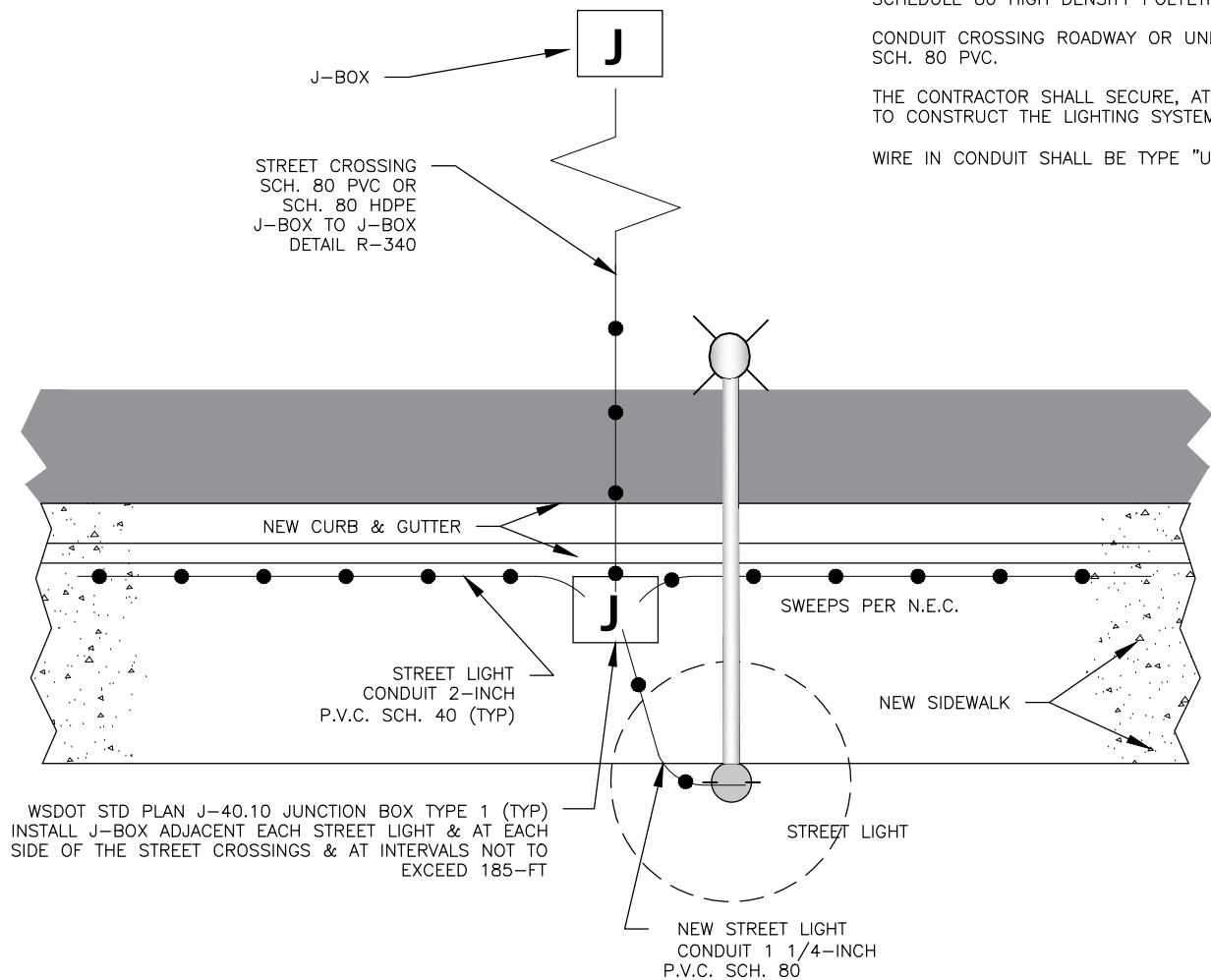
PAGE  
**1 OF 1**

CONDUIT IN PLANTER STRIP OR BACK OF CURB (NOT IN ROADWAY) SHALL BE SCHEDULE 40 PVC OR SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE).

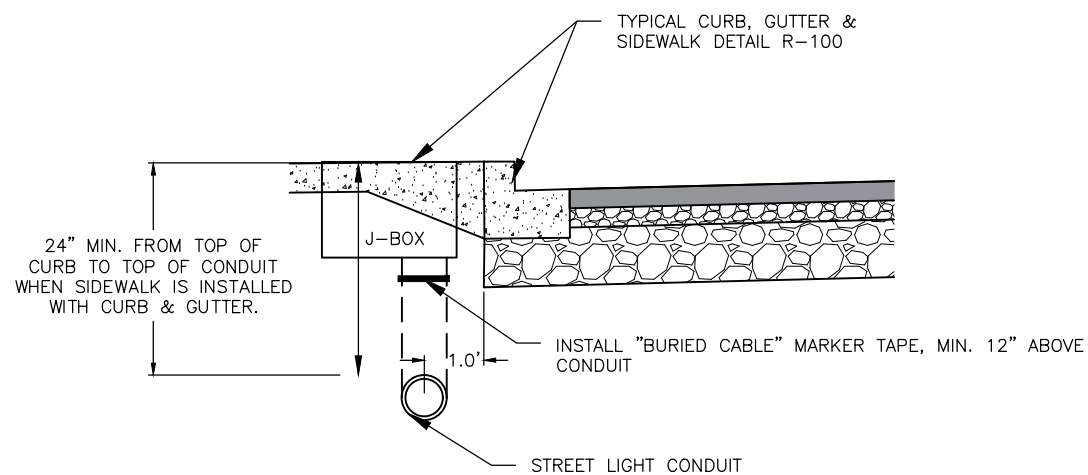
CONDUIT CROSSING ROADWAY OR UNDER ROADWAY SHALL BE SCH. 80 HDPE OR SCH. 80 PVC.

THE CONTRACTOR SHALL SECURE, AT HIS OWN EXPENSE, ALL ELECTRICAL PERMITS TO CONSTRUCT THE LIGHTING SYSTEM.

WIRE IN CONDUIT SHALL BE TYPE "USE".

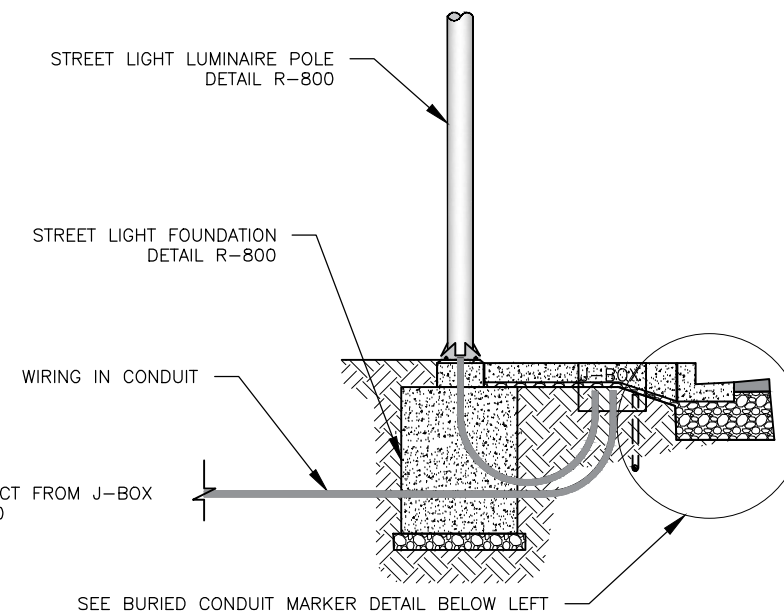


**STREET LIGHT CONDUIT LOCATION**

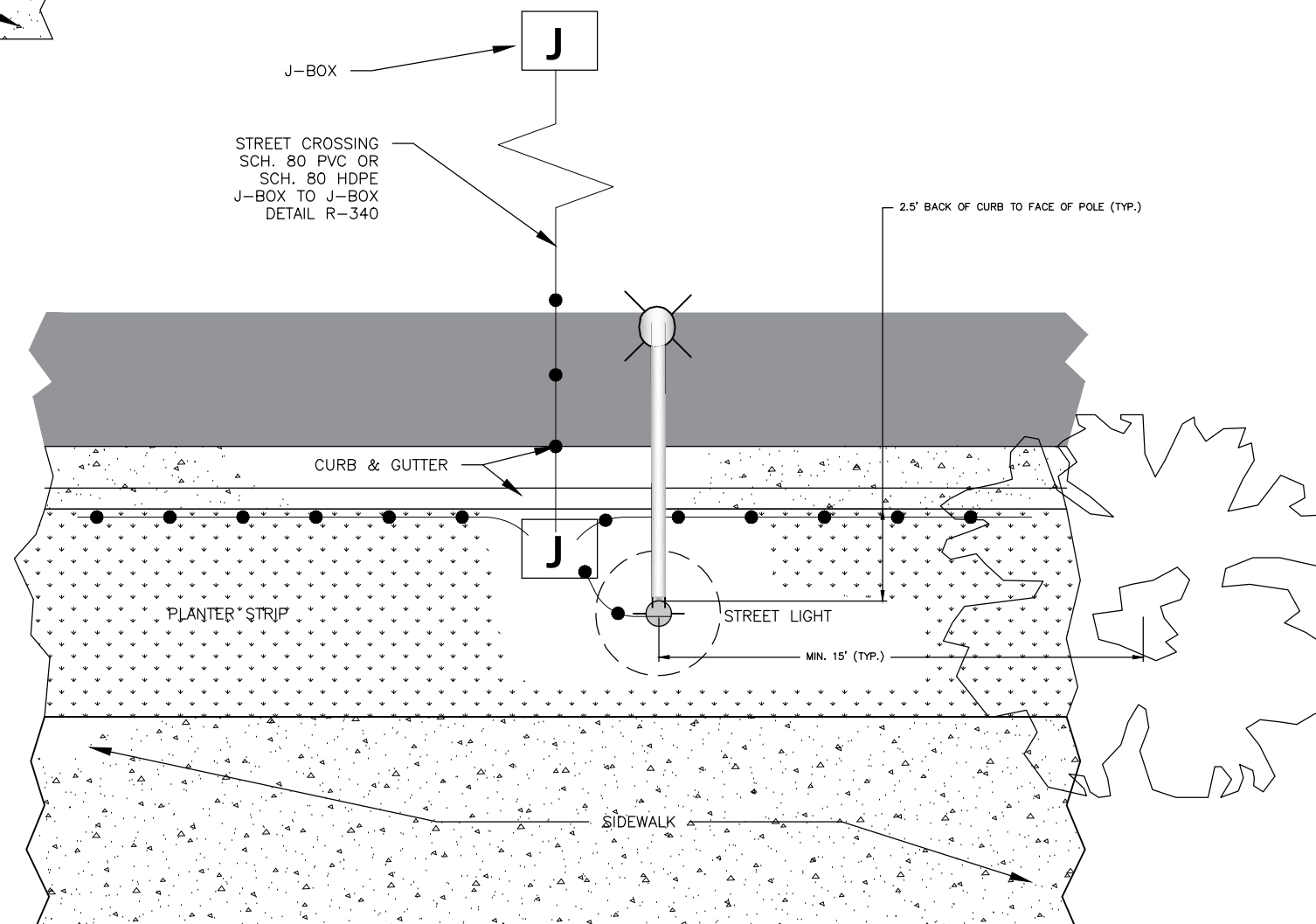


**BURIED CONDUIT MARKER**

JUNCTION BOX TYPE 1 PER WSDOT STD PLAN J-40.10  
STREET LIGHT WIRING DETAILS PER WSDOT STD PLAN J-28.70  
TYPICAL GROUNDING DETAILS PER WSDOT STD PLAN J-60.05

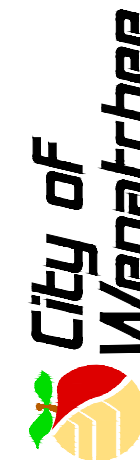


**SECTION VIEW**



**STREET LIGHT CONDUIT & J-BOX LOCATION IN PLANTER STRIP**

**STANDARD DETAIL  
CONDUIT LOCATION  
STREET LIGHTING**

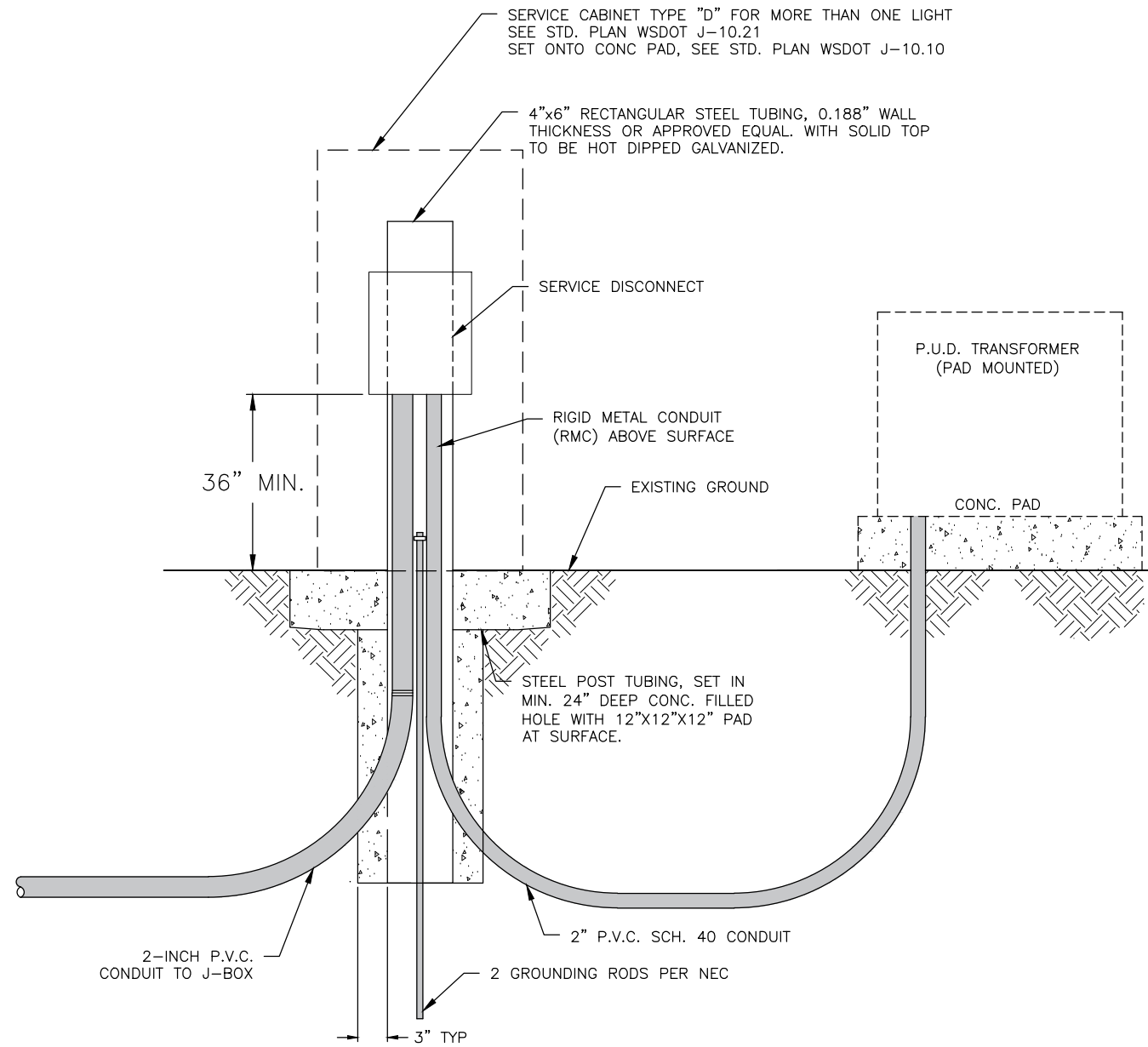


SCALE: AS SHOWN	DATE DRAWN	CHECKED	DATE	REVISIONS		
				INITIAL	DATE	BY
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DESIGNED		RDH	01/01/2022	AIS		
APPROVED BY						

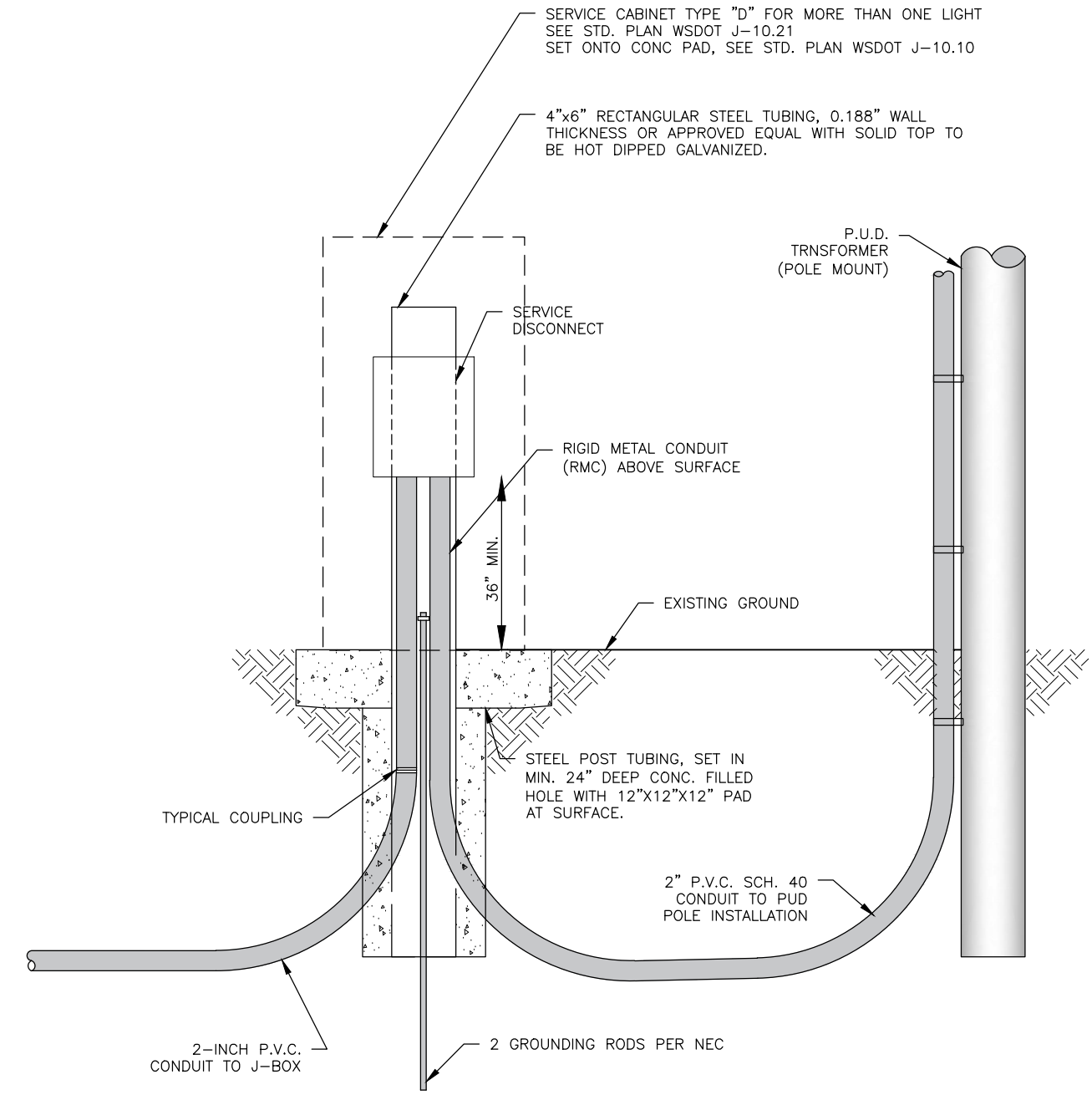
STANDARD SPECIFICATIONS  
8-20 ILLUMINATION  
9-29 ILLUMINATION MTL.

DETAIL NO.  
**R-815**

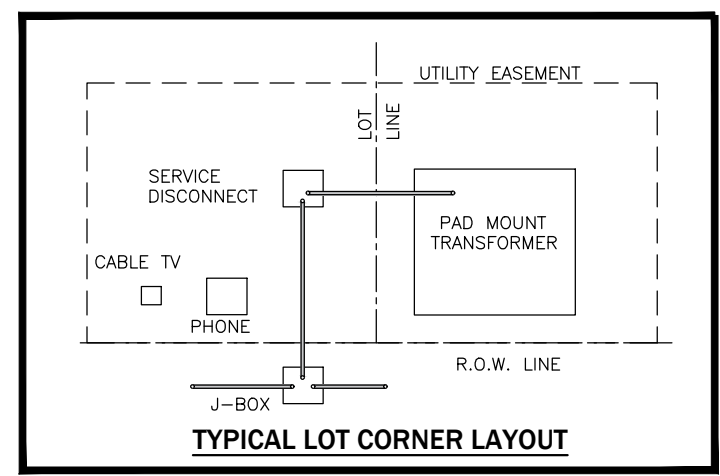
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**1 OF 1**



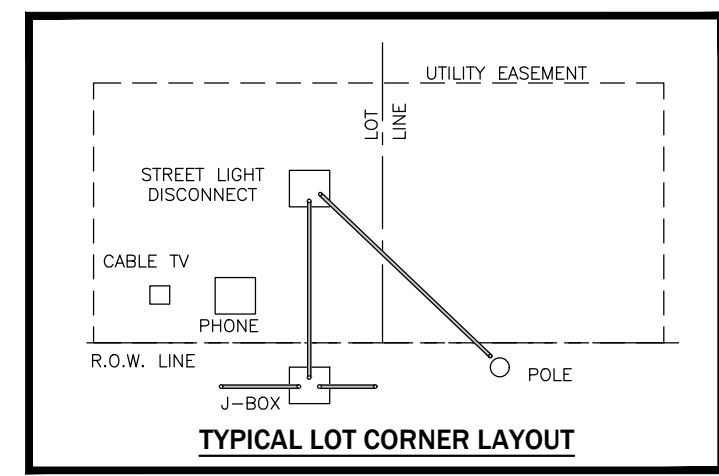
**TYPICAL LIGHTING CONTROL PANEL FOR PUD TRANSFORMER PAD MOUNT**



**TYPICAL LIGHTING CONTROL PANEL FOR PUD TRANSFORMER POLE MOUNT**



**TYPICAL LOT CORNER LAYOUT**

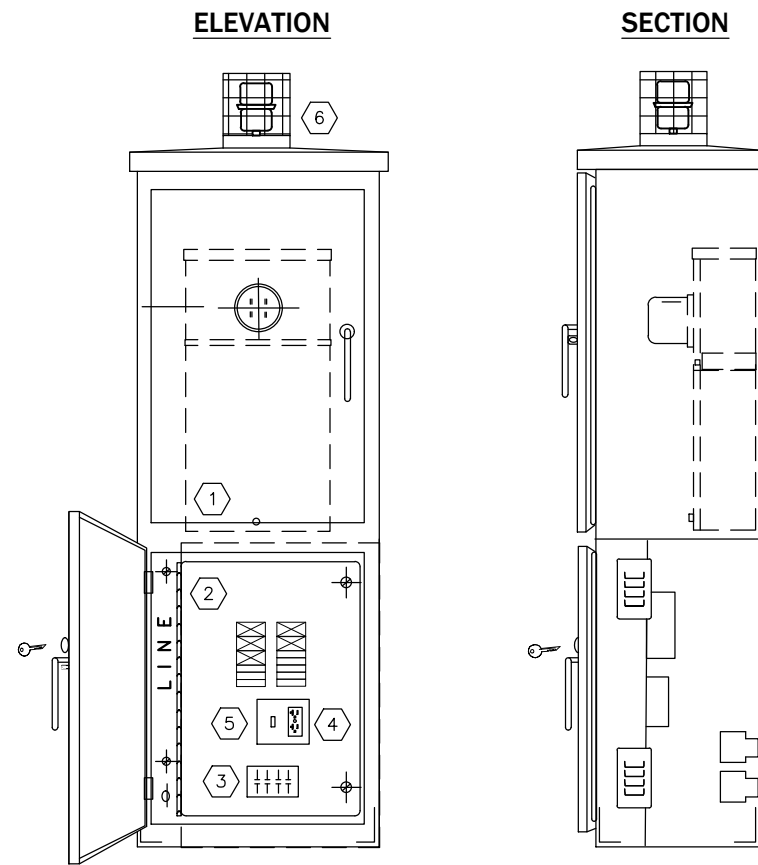


**TYPICAL LOT CORNER LAYOUT**

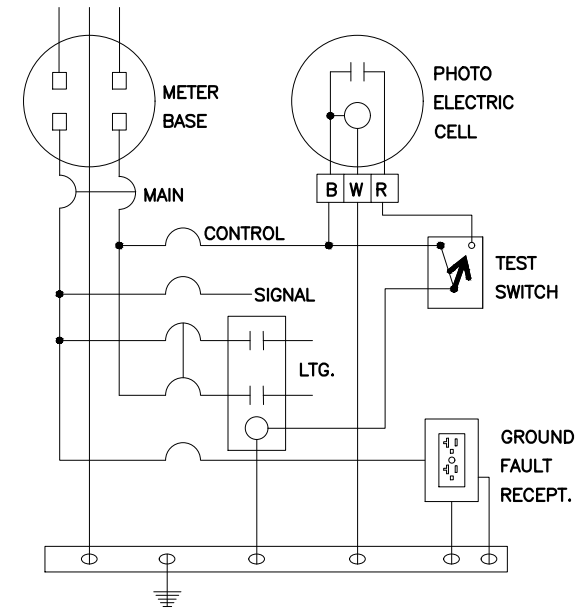
**STANDARD DETAIL  
SERVICE & CONTROL PANEL  
STREET LIGHTING**



SCALE: AS SHOWN	DATE DRAWN	CHECKED	REVISIONS		
			DATE	INITIAL	
N.A.	3/23/2015	DMN	03/26/2021	DMN	
DESIGNED: DMN		RDH	01/01/2022	AJS	
APPROVED BY:					



120/240VAC, 1 PHASE, 3 WIRE



WIRING SCHEMATIC

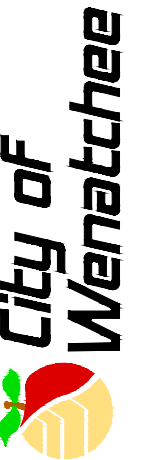
**COMPONENT SCHEDULE**

- ① METERBASE: 100 AMP, 4 JAW, B-LINE #114TB, SAFETY SOCKET TYPE, 5TH JAW KIT
- ② PANELBOARD: 120/240 VAC, 100 AMP BUS, 1 PHASE, 3 WIRE, COPPER BUS, 18 CKT EATON 100A 2 POLE MAIN BREAKER, BAB2100 (BACK-FED)  
EATON BAB BOLT-ON BREAKERS:  
  - 2 - 20 ILLUMINATION BRANCH A, B
  - 1 - 20 SIGNAL BRANCH
  - 1 - 20 BRANCH, GFR
  - 1 - 15 BRANCH, CONTROL BRANCH
  - 11 - 1 POLE SPACE ONLY
- ③ CONTRACTOR: LIGHTING RATED, 30 AMP, 4 POLE, 120 VAC COIL:1 REQUIRED
- ④ DUPLEX RECEPTACLE, 120 VAC, GFI
- ⑤ PHOTO-CELL BYPASS SWITCH, SPST, 15 AMP, 277 VAC
- ⑥ PHOTO ELECTRIC CELL: 1800 WATT, 120 VAC, TWIST LOCK, ALR #SST-IES WITH 6"x6"x6" WIRE MESH GUARD.

**NOTES:**

- 1. SEE WSDOT STANDARD J.10.10 FOR BASE DETAILS.
- 2. SEE WSDOT STANDARD J.60.05 FOR GROUNDING DETAILS.

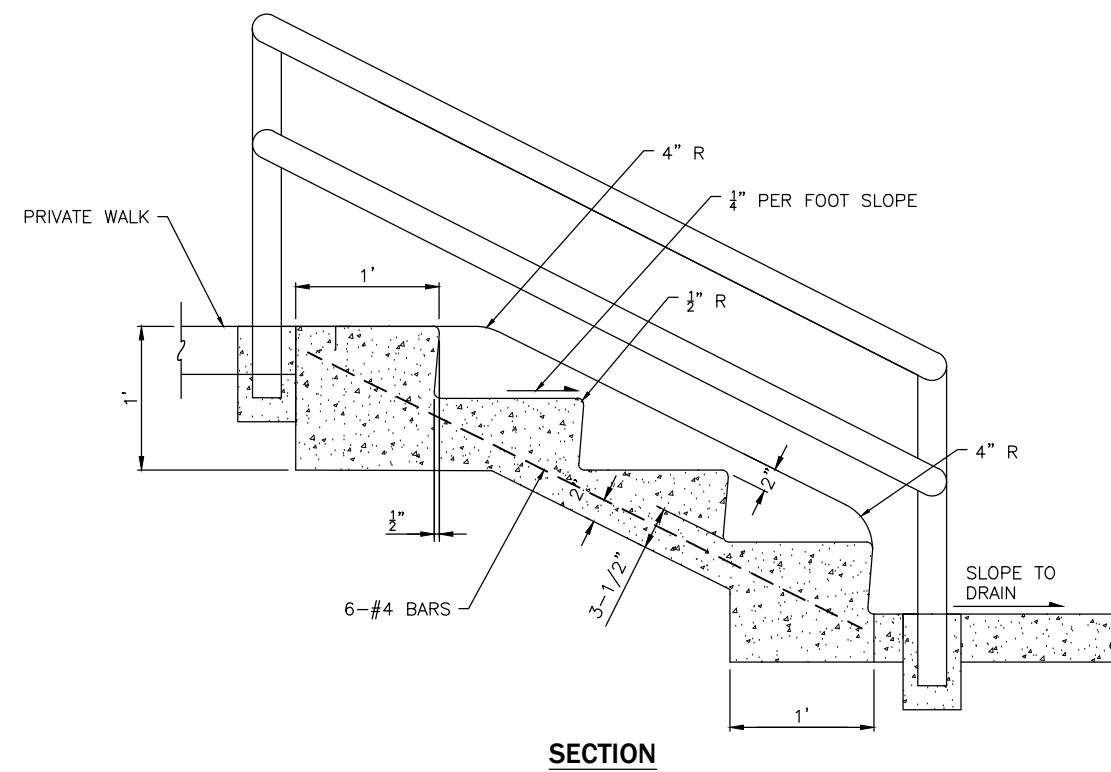
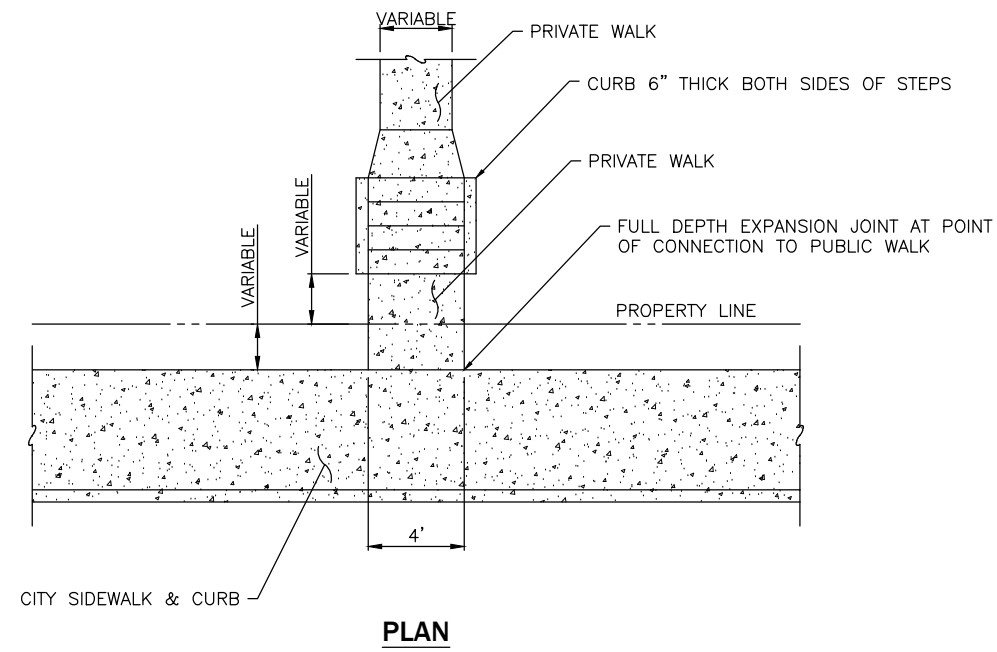
STANDARD DETAIL  
SERVICE CABINET FOR  
STREET LIGHTING



SCALE: AS SHOWN	DESIGNED	APPROVED BY	STANDARD SPECIFICATIONS
	DRAWN CAW		
DATE DRAWN 4/01/2020	CHECKED	DATE APPROVED	
REVISIONS		DATE	INITIAL
		09/07/2021	CAW

DETAIL NO.  
R-830

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1 OF 1



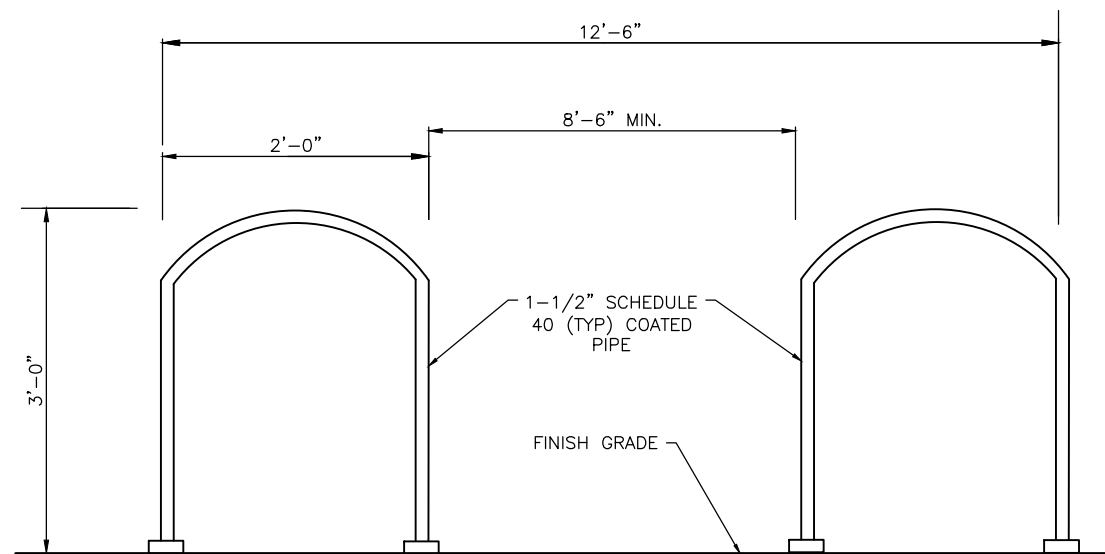
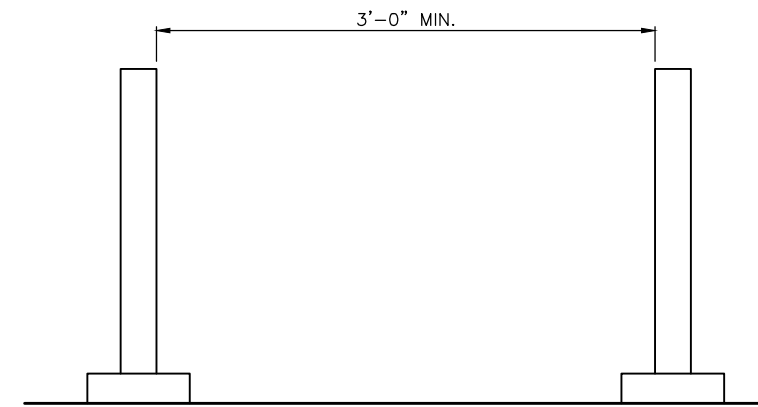
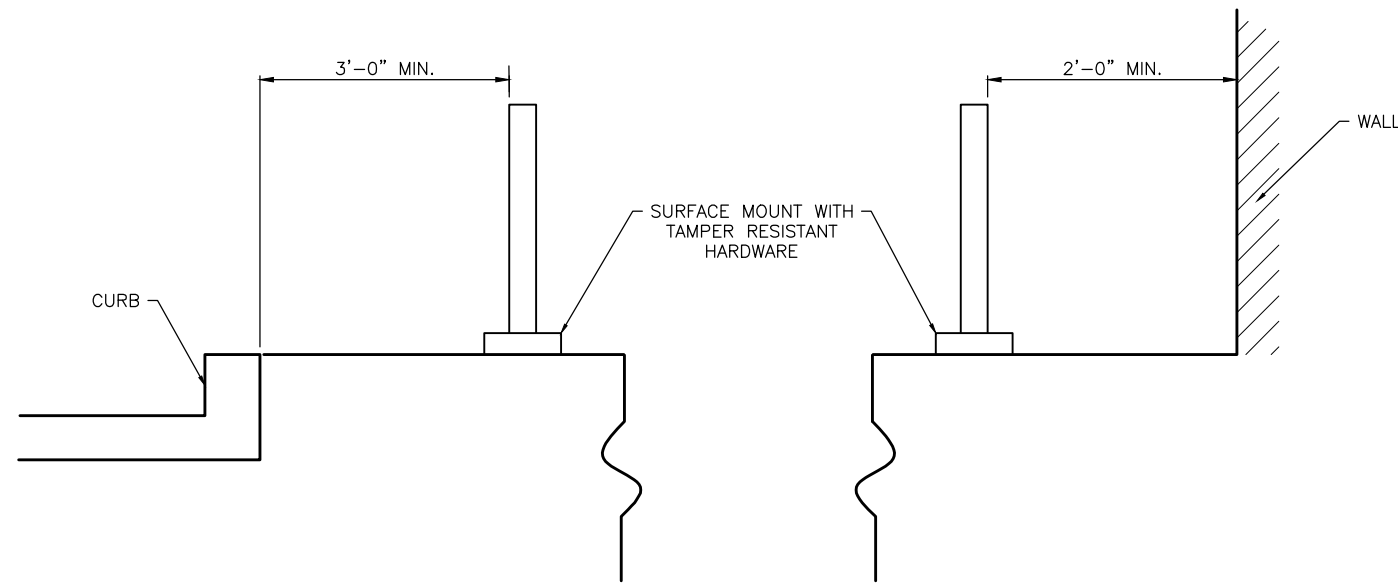
- NOTES:**
1. STEPS SHALL BE 4'-0" WIDE, CURB TO CURB, PLUS 6" CURBS ON EACH SIDE.
  2. CEMENT CONCRETE SHALL BE CLASS 4000 TROWEL FINISH.
  3. NUMBER OF STEPS SHALL SUIT INDIVIDUAL CONDITIONS, WITH TREAD AND RISER DIMENSIONS TO SUIT THE GRADE.
  4. RISERS SHALL BE 5" MINIMUM, 7" MAXIMUM: TREAD SHALL BE 11" MINIMUM, 12" MAXIMUM.
  5. HANDRAIL REQUIRED ON BOTH SIDES PER BUILDING CODE STANDARDS.
  6. HANDRAIL MAY NOT ENCROACH INTO PUBLIC SIDEWALK

**STANDARD DETAIL  
CEMENT CONCRETE  
STEPS**



SCALE: AS SHOWN	DATE DRAWN	REVISIONS	
		DATE	INITIAL
DESIGNED	0/23/2020	01/01/2022	AJS
DRAWN	CHECKED		
APPROVED BY	DATE APPROVED		
STANDARD SPECIFICATIONS			





**NOTES:**

- UNLESS OTHERWISE APPROVED, BICYCLE PARKING RACKS SHALL BE "INVERTED U TYPE" CYCLE-SAFE U/2 BLACK PLASTISOL COATED BY MANUFACTURER OR APPROVED EQUIVALENT. OTHER RACKS MAY BE ALLOWED BUT MUST MEET THE FOLLOWING FUNCTIONAL REQUIREMENTS:
  - SUPPORT THE FRAME OF A BICYCLE IN TWO PLACES AND PREVENT THE BICYCLE FROM TIPPING OVER.
  - ALLOW THE FRAME AND ONE WHEEL TO BE LOCKED TO THE RACK WHEN BOTH WHEELS ARE LEFT ON THE BIKE.
  - ALLOW THE FRAME AND BOTH WHEELS TO BE LOCKED TO THE RACK IF THE FRONT WHEEL IS REMOVED.
  - ALLOW THE USE OF EITHER A CABLE OR U-SHAPED LOCK.
  - BE SECURELY ANCHORED BY SURFACE MOUNT.
  - BE USABLE BY BIKES WITH NO KICKSTAND.
  - BE USABLE BY BIKES WITH WATER BOTTLE CAGES.
  - BE USABLE BY A WIDE VARIETY OF SIZES AND TYPES OF BICYCLES.
  - BE COATED BY MANUFACTURER
- INSTALL PER MANUFACTURER'S RECOMENDATION.

**STANDARD DETAIL  
BICYCLE PARKING RACK**

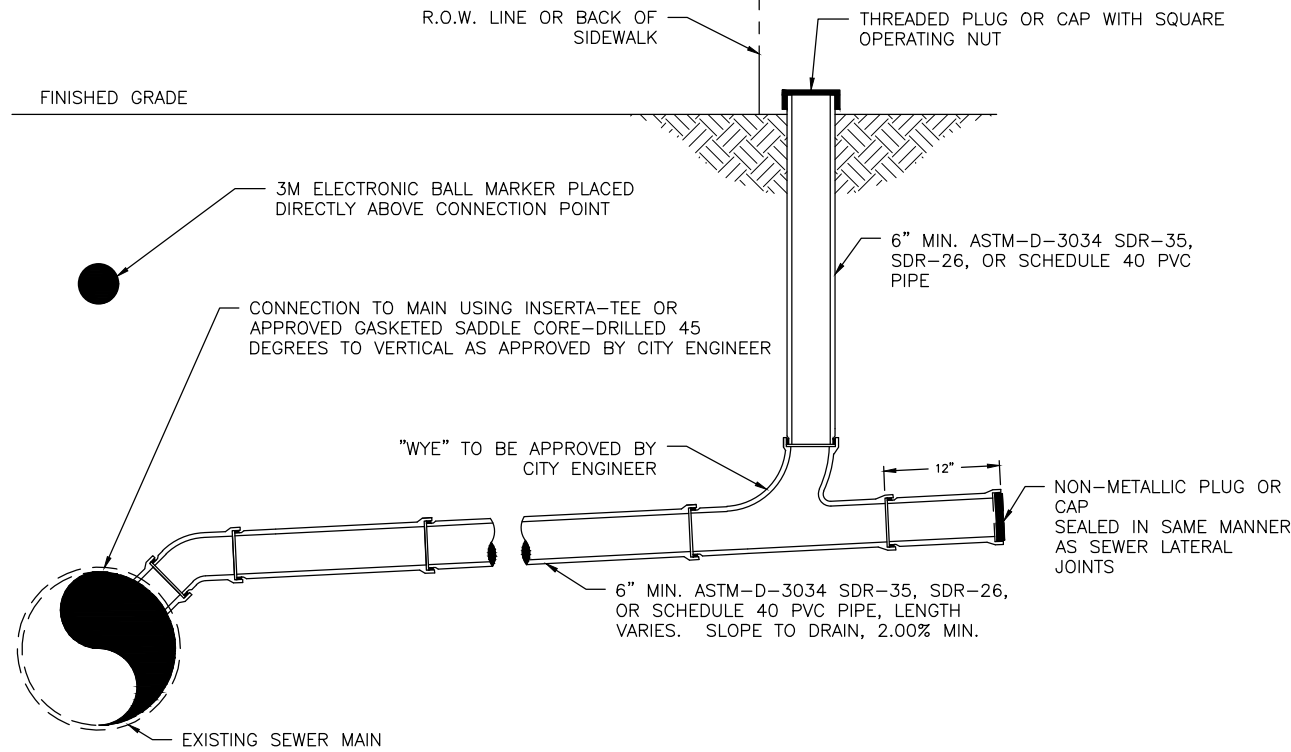


SCALE: AS SHOWN	DESIGNED	DRAWN CAW	APPROVED BY	STANDARD SPECIFICATIONS	REVISIONS	
					DATE	INITIAL
10/09/2020	CHECKED		DATE APPROVED			

DETAIL NO.  
**R-950**

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**1 OF 1**

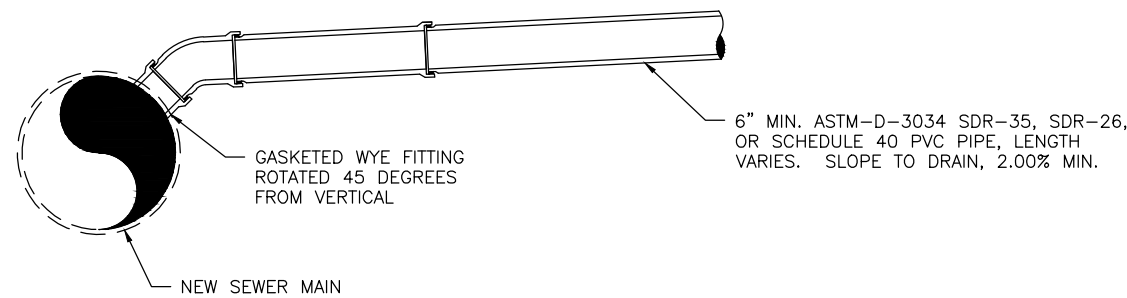
**CASE 1 NEW CONNECTION TO EXISTING SEWER MAIN**



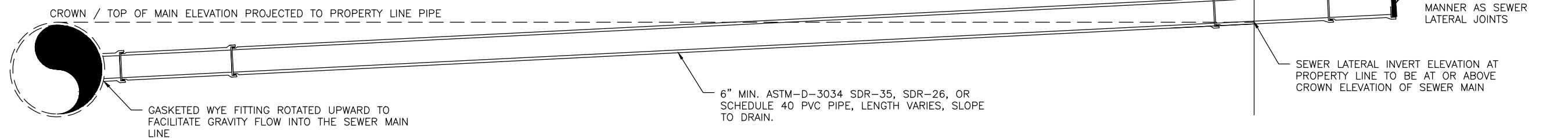
**GENERAL NOTES:**

1. ALL CONNECTIONS MUST BE APPROVED BY THE CITY OF WENATCHEE AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
2. LATERAL CONNECTIONS TO THE MAIN LINE SHALL BE A MINIMUM OF 2 FEET APART.
3. LATERAL CONNECTIONS TO THE PUBLIC MAIN LINE SHALL BE DESIGNED TO FLOW BY GRAVITY THROUGH THE POINT OF CONNECTION. PRESSURE SYSTEMS SHALL DISCHARGE INTO GRAVITY FLOW NO LESS THAN 10 FEET UPSTREAM OF THE POINT OF CONNECTION BETWEEN THE 6 INCH LATERAL AND THE MAIN LINE.
4. THE SANITARY SEWER LATERAL, INCLUDING THE TAP, SADDLE, TEE, PIPE, AND CLEANOUT IS CONSIDERED "PRIVATE" UPSTREAM OF THE MAIN LINE POINT OF CONNECTION.
5. MINIMUM 6 INCH DIAMETER CLEANOUTS SHALL BE CONSTRUCTED ON ALL SEWER LATERALS. THE VERTICAL RISER SHALL BE OF EQUAL SIZE AS THE LATERAL PIPE OR LARGER.
6. CLEANOUTS MAY BE LOCATED IN THE PLANTER STRIP AT THE BACK OF WALK, IF ONE EXISTS, AND SHALL BE VISIBLE AT FINISHED GRADE. CLEANOUTS LOCATED BELOW FINISHED GRADE SHALL HAVE ACCESSIBLE COVER.
7. 3M ELECTRONIC BALL MARKER TO BE PLACED 24 TO 36 INCHES BELOW FINISHED GRADE AND SHALL BE GREEN IN PIGMENT.
8. CASE 1: CONNECTIONS TO EXISTING SEWER MAINS SHALL BE CUT USING A HOLE SAW. CONNECTIONS TO EXISTING MAIN LINES SHALL UTILIZE AN APPROVED TAPPING SADDLE OR TEE-WYE CONNECTION. LATERALS SHALL NOT PROTRUDE INTO THE MAIN LINE.
9. CASE 2: CONNECTIONS TO NEWLY CONSTRUCTED MAIN LINES SHALL UTILIZE A MANUFACTURED, GASKETED TEE-WYE INSTALLED IN-LINE WITH THE NEW SEWER MAIN. CORE-DRILLING OF NEW SEWER MAIN LINES FOR SEWER LATERALS SHALL NOT BE PERMITTED.
10. CASE 3: WHERE INSUFFICIENT GRADE EXISTS TO ALLOW SEWERS TO BE INSTALLED IN ACCORDANCE WITH CASE 1 OR 2, FLATTER SEWERS ARE PERMISSIBLE ON A CASE-BY-CASE BASIS AS DETERMINED BY THE CITY ENGINEER. CONNECTIONS SHALL UTILIZE A MANUFACTURED, GASKETED TEE-WYE FITTING INSERTED INTO THE MAIN LINE. CUTTING OR DRILLING BELOW SPRINGLINE IS PROHIBITED. THE INVERT ELEVATION OF THE PRIVATE SEWER LATERAL AT THE PROPERTY LINE IN SUCH INSTANCES SHALL BE AT OR ABOVE THE ELEVATION OF THE CROWN OF THE PUBLIC SEWER MAIN. PRIOR TO SUCH APPROVAL, A SITE-SPECIFIC CONSTRUCTION PLAN AND DETAIL MUST BE PROVIDED TO AND APPROVED BY THE CITY ENGINEER. ANY COSTS ASSOCIATED WITH BYPASS PUMPING WILL BE AT THE CONTRACTOR'S EXPENSE.

**CASE 2 NEW CONNECTION TO NEW SEWER MAIN**



**CASE 3 NEW SHALLOW SEWER CONNECTION**



**STANDARD DETAIL  
SANITARY SIDE SEWER  
12 INCH AND SMALLER MAINS**



SCALE: AS SHOWN	DESIGNED BY DMN	DRAWN BY RDH	DATE DRAWN 3/23/2015	REVISIONS							
				DATE	INITIAL	DATE	INITIAL	DATE	INITIAL		
				6/19/2015	DMN	2/9/2016	NJH				
				01/01/2022	AJS						
				3/23/2015							

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STANDARD SPECIFICATIONS  
WSDOT 7-08 PIPE INSTALL  
WSDOT 7-18 SIDE SEWERS  
SPECIAL PROVISION 7-18.3(5)

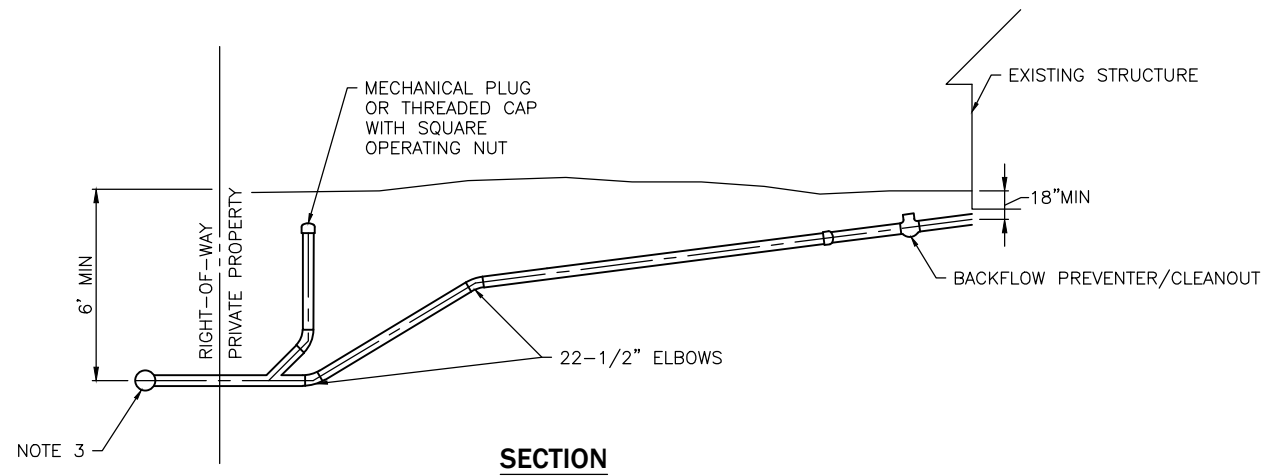
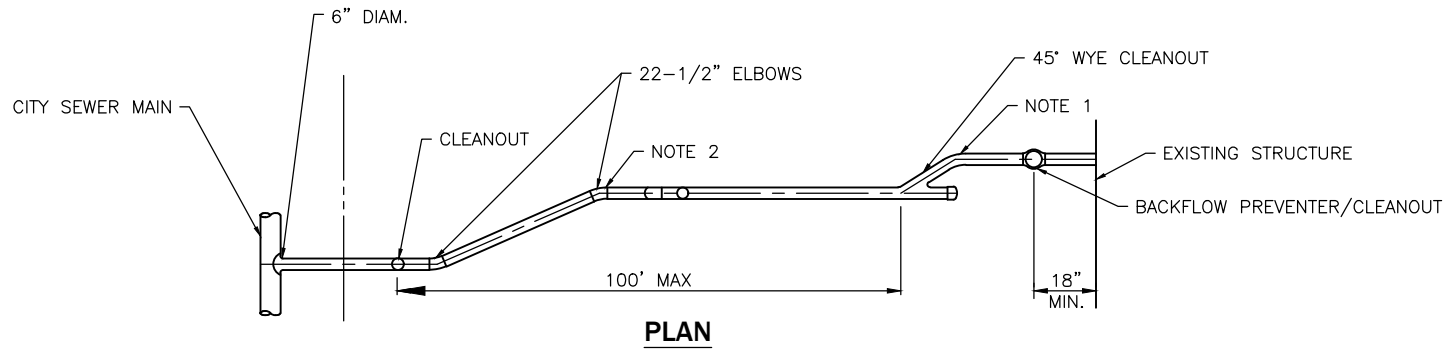
**STANDARD DETAIL  
RESIDENTIAL SIDE  
SEWER INSTALLATION**



SCALE: AS SHOWN	DATE DRAWN 12/04/2020	REVISIONS	
		DATE	INITIAL
DESIGNED	CHECKED	01/01/2022	AJS
DRAWN CAW	DATE APPROVED		
APPROVED BY	STANDARD SPECIFICATIONS		

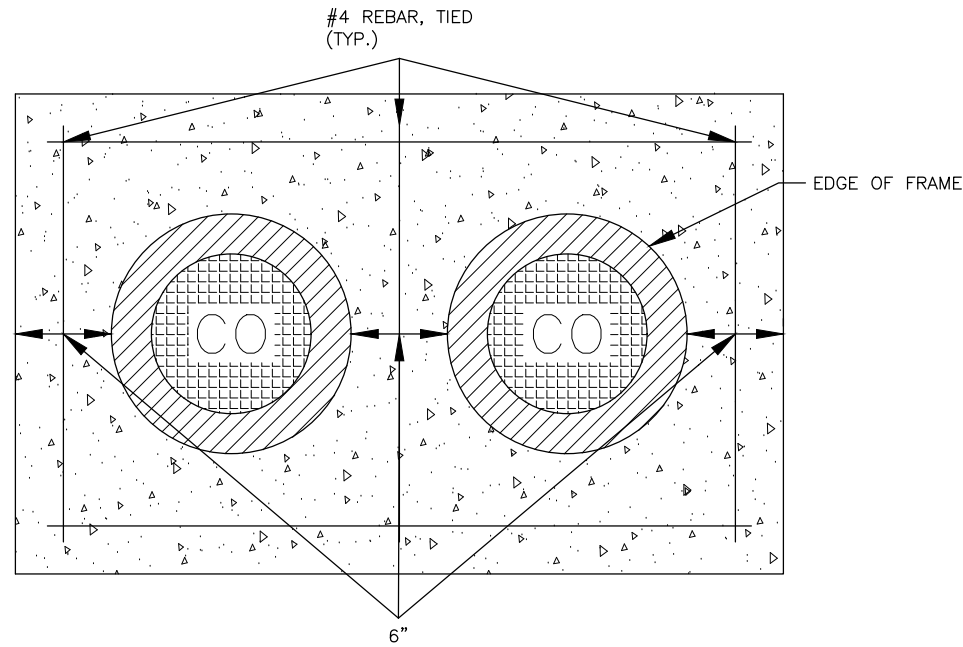
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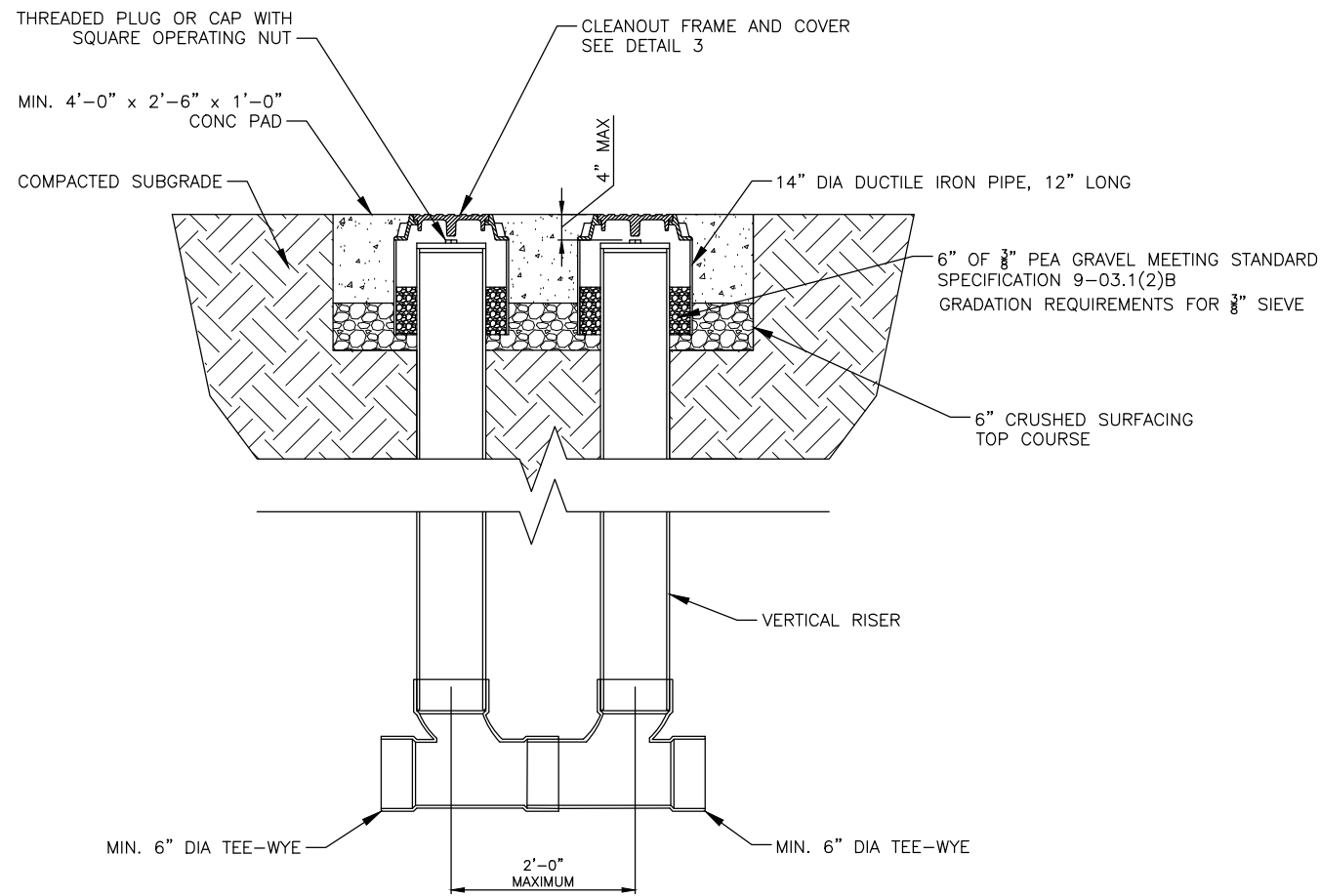


**NOTES:**

1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90 DEGREES ACCUMULATED ELBOW PER 100'
3. RIGHT-OF-WAY RESTORATION SHALL MATCH OR EXCEED THE ORIGINAL CONDITION AND BE IN ACCORDANCE WITH THE CITY STANDARD.
4. FOR PIPE PLACED UNDER PAVED AREAS, THE ABOVE BACKFILL ABOVE PIPE ZONE BEDDING SHALL BE PLACED IN HORIZONTAL LAYERS NO MORE THAN 6-INCHES THICK AND COMPACTED TO 95% MAXIMUM DRY DENSITY.
5. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER. NO DOWNSPOUTS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER SYSTEM.
6. 6' MINIMUM COVERAGE AT PROPERTY LINE.
7. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH A 1/8 BEND OR WYE. 90 DEGREE CHANGE WITH 1/8 BEND AND WYE.
8. 6" SEWER PIPE MINIMUM SIZE IN STREET, AND ELSEWHERE AS DIRECTED BY ENGINEER. 2% MINIMUM GRADE (UNLESS DIRECTED BY ENGINEER) 50% MAXIMUM.
9. 4" SEWER PIPE MINIMUM SIZE ON PROPERTY. 2% MINIMUM GRADE, 100% (45 DEGREE) MAXIMUM.
10. CONSTRUCTION IN STREET MUST BE DONE BY A LICENSED CONTRACTOR.
11. ALL CONSTRUCTION REQUIRES A PERMIT AND PAYMENT OF FEE, COMPLETE LEGAL DESCRIPTION OF PROPERTY AND DIMENSIONS.
12. BACKFLOW PREVENTER (CHECK VALVE) IS REQUIRED:
  - A. IF CONNECTED TO A COMBINED SIDE SEWER.
  - B. IF CONNECTION AT HOUSE IS LOWER THAN UPSTREAM MANHOLE LID.
13. AS-BUILT DRAWING SHOWING LOCATION OF SIDE SEWER IN RELATION TO THE HOUSE IS REQUIRED AFTER INSTALLATION.
14. CLANOUTS SHALL BE VISIBLE AT FINISH GRADE. IF INSTALLED BELOW FINISH GRADE, AN ACCESSIBLE COVER IS REQUIRED.



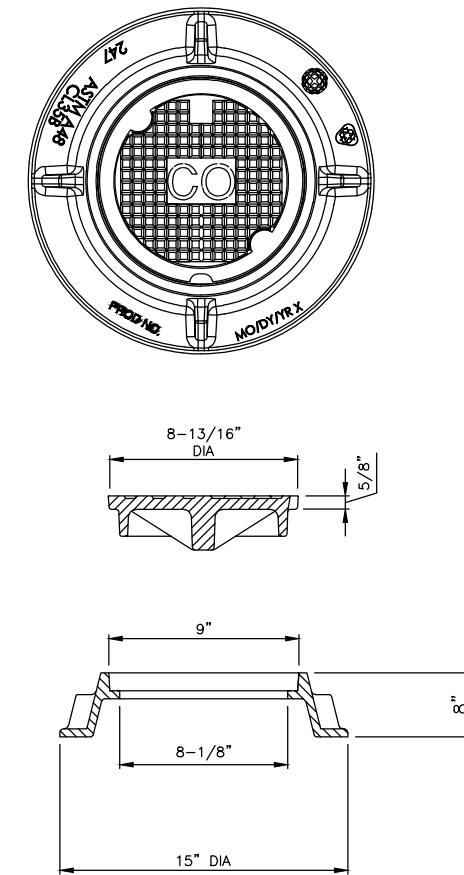
**1 CLEANOUT PLAN VIEW**  
Scale: N.T.S.



**2 CLEANOUT DETAIL**  
Scale: N.T.S.

**NOTES:**

1. ALL CONNECTIONS MUST BE APPROVED BY THE CITY OF WENATCHEE AND INSTALLED PER MANUFACTURER RECOMMENDATIONS.
2. THE SANITARY SEWER LATERAL, INCLUDING THE TAP, SADDLE, TEE, PIPE, AND CLEANOUT IS CONSIDERED "PRIVATE" UPSTREAM OF THE MAIN LINE POINT OF CONNECTION.
3. MINIMUM 6" DIAMETER CLEANOUTS SHALL BE CONSTRUCTED ON ALL SEWER LATERALS. THE VERTICAL RISER SHALL BE OF EQUAL SIZE AS THE LATERAL PIPE OR LARGER.
4. CLEANOUTS MAY BE LOCATED IN THE PLANTER STRIP AT THE BACK OF WALK, IF ONE EXISTS, AND SHALL BE VISIBLE AT FINISHED GRADE. CLEANOUTS LOCATED BELOW FINISHED GRADE SHALL HAVE ACCESSIBLE COVERS.
5. CLEANOUT FRAME AND COVER SHALL BE HEAVY DUTY, BOLT DOWN EAST JORDAN MODEL 3675 OR APPROVED EQUAL AND LABELED "SEWER" OR "CLEANOUT".
6. MAXIMUM CENTER-TO-CENTER SPACING BETWEEN CLEANOUTS SHALL BE 2'-0". MODIFICATIONS TO THIS SPACING REQUIRE THE APPROVAL OF THE ENGINEER.
7. CONCRETE PAD FC' SHALL BE 3,000 PSI OR GREATER.
8. ALL #4 REBAR SHALL HAVE 2" MINIMUM COVER.



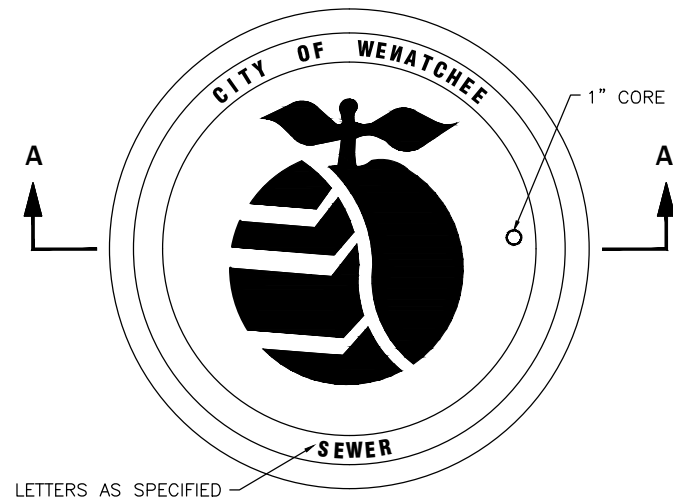
**3 CLEANOUT FRAME AND COVER**  
Scale: N.T.S.

**STANDARD DETAIL**  
**SANITARY SEWER**  
**DOUBLE CLEANOUT**

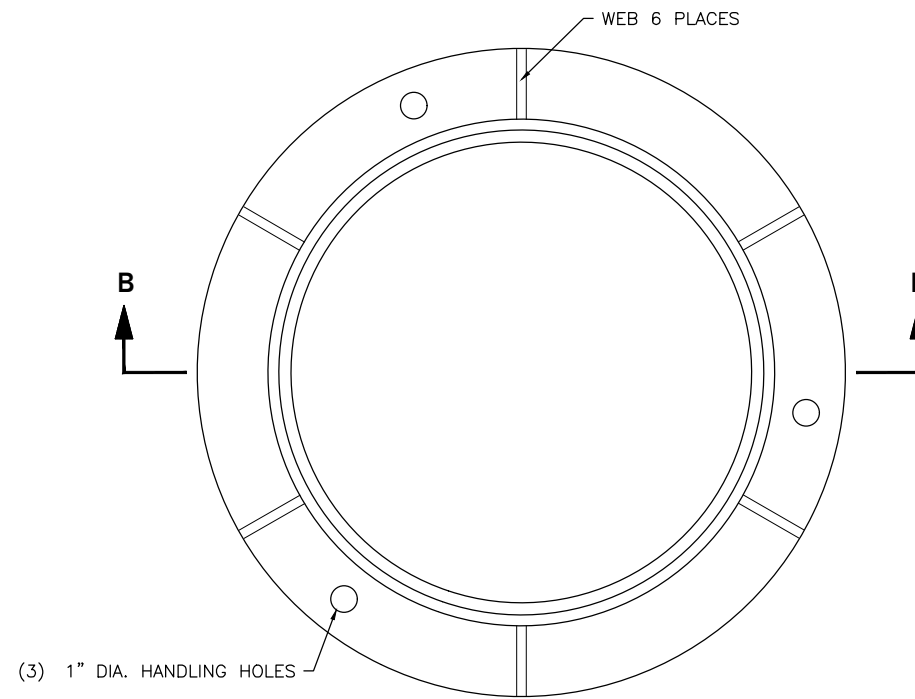


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APPROVED BY	DATE APPROVED		

STANDARD SPECIFICATIONS  
 WSDOT 7-08 GENERAL PIPE INSTALLATION  
 WSDOT 7-18 SIDE SEWERS  
 WSDOT 7-19 SEWER CLEANOUTS



**SANITARY SEWER  
NON LOCKING COVER**

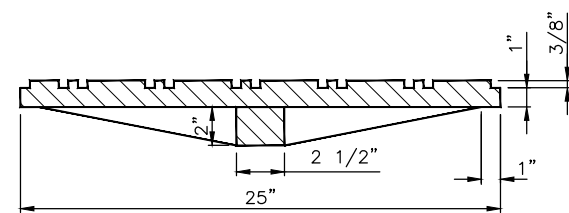


**3715Z STACKING  
GRAY OR DUCTILE IRON FRAME**

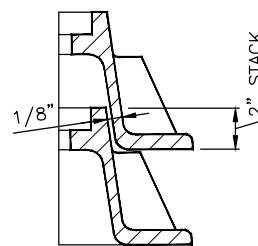
**NOTES:**

STANDARD SPECIFICATION SECTION 9-05.15(1) AND 9-06.14

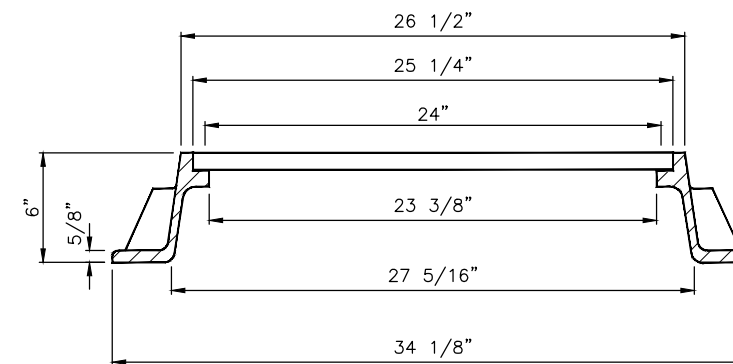
1. COVER SHALL BE AT MINIMUM 100LBS
2. MINIMUM WEIGHT OF FRAME SHALL BE 134 LBS
3. PRODUCT SUPPLIES BY EAST JOURDAN IRON WORKS, OR APPROVED EQUAL
4. CITY OF WENATCHEE LOGO REQUIRED
5. FRAME AND COVER SHALL BE H-20 LOADING RATED



**SECTION A-A - DUCTILE IRON  
NON LOCKING COVER  
MINIMUM WEIGHT 100 LBS.**



**STACKING DETAIL**



**SECTION B-B  
GRAY IRON OR DUCTILE IRON FRAME  
MINIMUM WEIGHT 135 LBS.**

**STANDARD DETAIL  
CIRCLE FRAME RING  
AND COVER DETAIL**

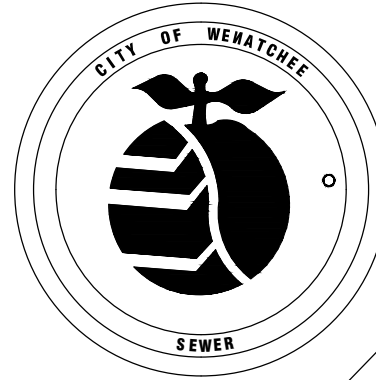


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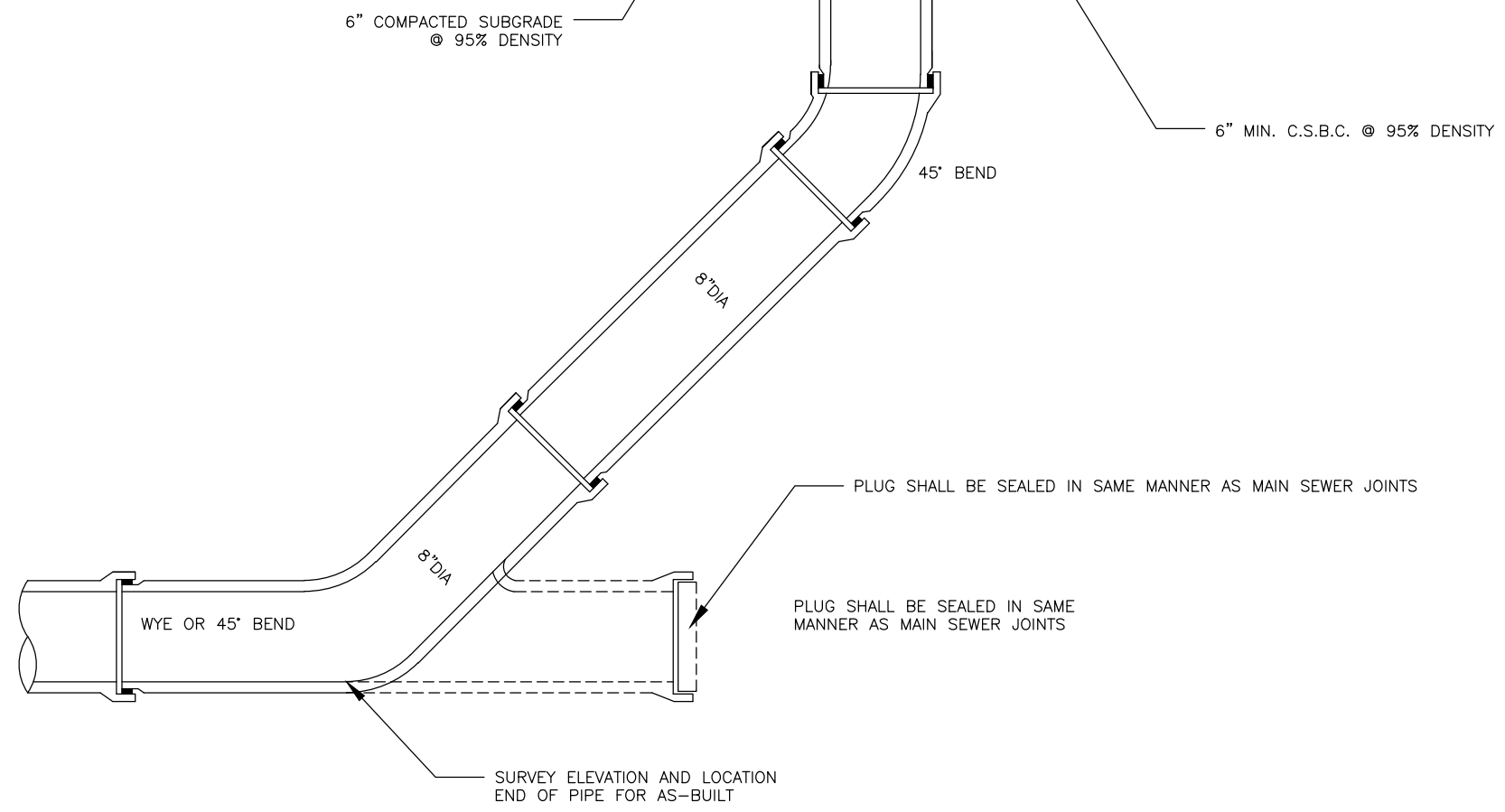
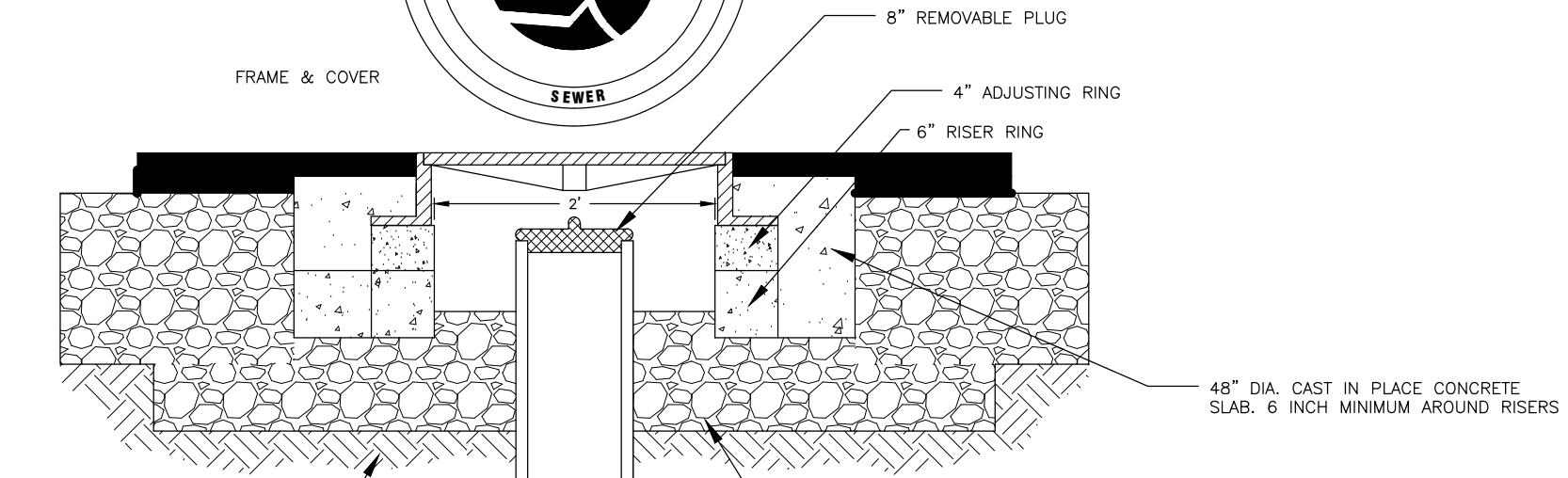
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CONCRETE: AIR ENTRAINED CLASS 3000  
 MAXIMUM SEWER PIPE 10"Ø



CITY OF WENATCHEE STANDARD COVER



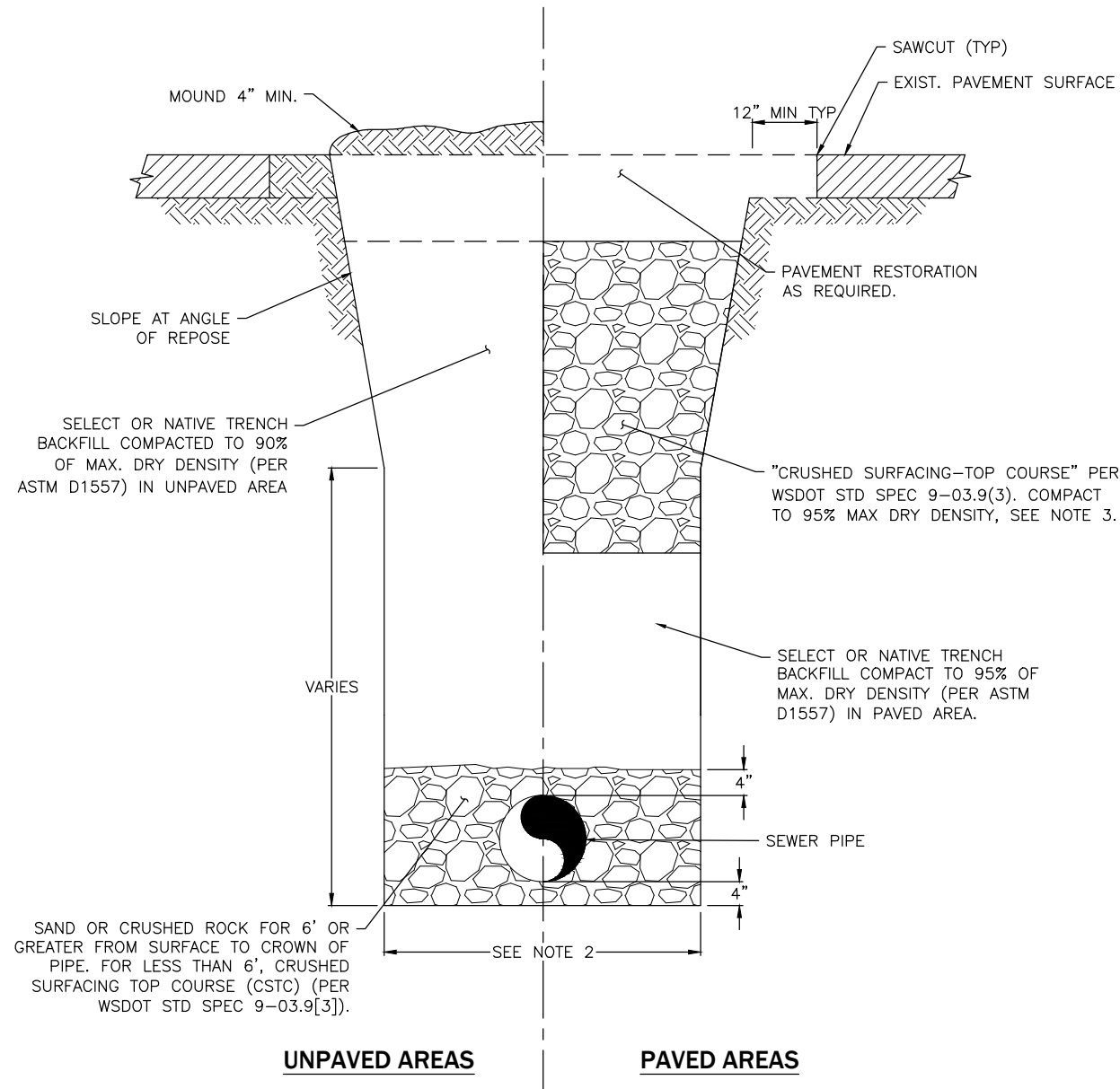
**MAIN LINE CLEANOUT**  
 N.T.S.

- NOTES:**
1. CONSTRUCTION PER WSDOT STANDARD SPECIFICATIONS.
  2. PAVEMENT REPAIR TO BE MADE WITHIN 24 HOURS OF TRENCH BACKFILL OR AS AUTHORIZED BY CITY ENGINEER.
  3. PERMIT REQUIRED ON ALL PROJECTS, NOT CONTRACT ADMINISTERED BY CITY ENGINEERING DEPARTMENT.

**STANDARD DETAIL**  
**SANITARY SEWER MAIN**  
**CLEANOUT**



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APPROVED BY	DATE APPROVED		
	3/23/2015		



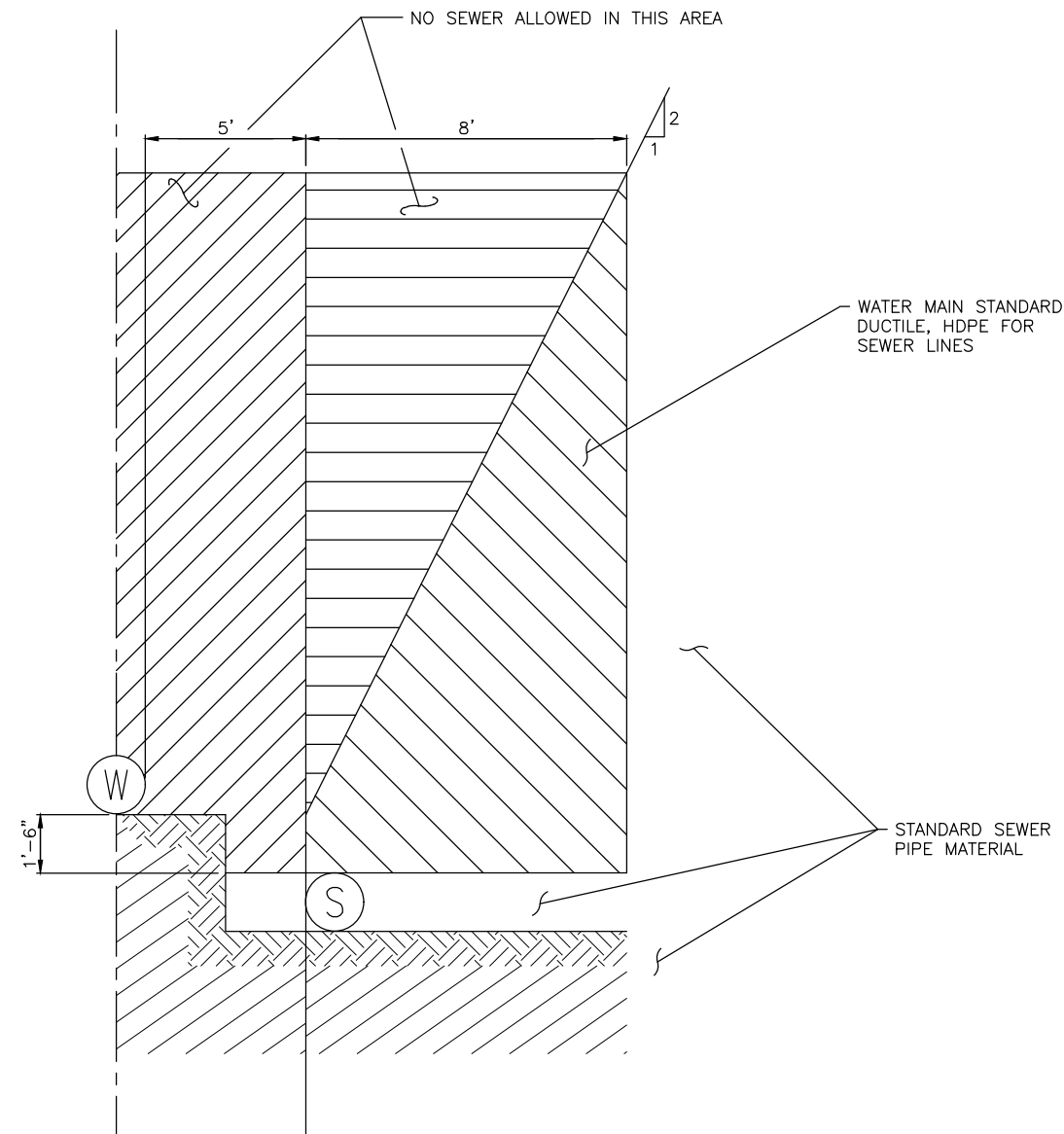
**NOTES:**

1. TRENCH BACKFILL BELOW TOP 4 FEET MAY BE NATIVE MATERIALS OR AS REQUIRED BY THE SPECIFICATIONS, OR AS DIRECTED BY THE PUBLIC WORKS INSPECTOR.
2. MINIMUM TRENCH WIDTH SHALL BE PIPE ID +24". MAX WIDTH NOT TO EXCEED 6'.
3. IN PAVED AREAS USE CRUSHED ROCK BACKFILL.
  - \* FULL DEPTH OF TRENCH WHERE SEWER MAIN CROSSES PERPENDICULAR TO THE TRAVELED LANE OR DRIVEWAY.
  - \* TOP FOUR FEET WHERE SEWER MAIN RUNS PARALLEL TO THE TRAVELED LANE, UNLESS EXISTING MATERIAL IS DETERMINED BY THE ENGINEER TO BE SUITABLE FOR BACKFILL.
4. SEE CITY OF WENATCHEE POLICY R-2, AND STANDARD DETAIL R-310 FOR OVERLAY REQUIREMENTS.

**STANDARD DETAIL  
SANITARY SEWER  
TRENCH**



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STANDARD SPECIFICATIONS				



**PARALLEL CONSTRUCTION**

**WATER MAIN STANDARD PIPE MATERIAL**

AWWA STANDARD			
TYPE OF PIPE	PIPE	JOINT	FITTINGS
DUCTILE IRON	C 1.52	C 111	C 110
CONCRETE CYLINDER	C 303		

**NOTES:**

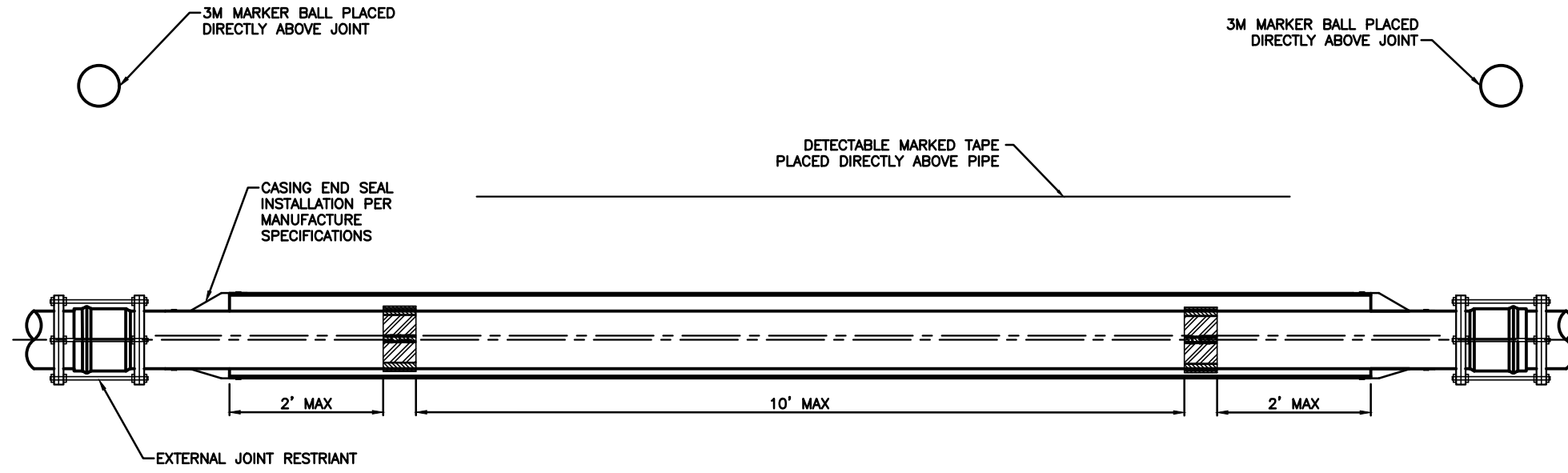
- HORIZONTAL SEPARATION (PARALLEL) – A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET BETWEEN GRAVITY SANITARY SEWERS AND ANY POTABLE WATER LINES SHALL BE MAINTAINED, WHENEVER POSSIBLE. THE DISTANCE SHALL BE MEASURED FROM EDGE TO EDGE.
- UNUSUAL CONDITIONS (PARALLEL) – WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION AS DESCRIBED ABOVE, A GRAVITY SEWER LINE MAY BE LAID CLOSER THAN TEN (10) FEET TO A WATER LINE PROVIDED:
  - A) IT IS LAID IN A SEPARATE TRENCH; OR IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE THAT IS LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH; AND
  - B) IN EITHER CASE, THE ELEVATION OF THE CROWN OF THE GRAVITY SEWER MUST BE AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER LINE. WHEN THIS VERTICAL SEPARATION CANNOT BE OBTAINED, THE GRAVITY SEWER SHALL BE CONSTRUCTED OF MATERIALS AND JOINTS THAT ARE 8 EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.
- VERTICAL SEPARATION (PERPENDICULAR) – SEWER LINES CROSSING WATER LINES SHALL BE LAID BELOW THE WATER LINES TO PROVIDE A SEPARATION OF AT LEAST 18 INCHES BETWEEN THE INVERT OF THE WATER LINE AND THE CROWN OF THE SEWER LINE, WHENEVER POSSIBLE.
- UNUSUAL CONDITIONS (PERPENDICULAR) – WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION AS DESCRIBED ABOVE, THE FOLLOWING CONSTRUCTION SHALL BE USED:
  - A) GRAVITY SEWERS PASSING OVER OR UNDER WATER LINES SHALL BE:
    - I. CONSTRUCTED OF MATERIAL DESCRIBED ON THIS PAGE. THE ONE SEGMENT OF THE MAXIMUM STANDARD LENGTH OF PIPE (BUT NO LESS THAN 18 FEET LONG) SHALL BE USED WITH THE PIPES CENTERED TO MAXIMIZE JOINT SEPARATION; OR
    - II. CONSTRUCTED OF STANDARD GRAVITY SEWER MATERIAL ENCASED IN CONCRETE OR IN A 1/4" THICK CONTINUOUS STEEL CASING WITH ALL VOIDS PRESSURE-GROUTED WITH SAND-CEMENT GROUT.
    - III. THE LENGTH OF THE SEWER PIPE, IN BOTH I. AND II. ABOVE, SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE. THE SEWER PIPE SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.
  - B) WATER LINES PASSING UNDER GRAVITY SEWERS, IN ADDITION, SHALL BE PROTECTED BY PROVIDING:
    - I. A VERTICAL SEPARATION OF AT LEAST 18 INCHES BETWEEN THE INVERT OF THE SEWER AND THE CROWN OF THE WATER LINE;
    - II. ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING ON AND BREAKING OF THE WATER LINES; AND
    - III. THE LENGTH OF THE SEWER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE. THE SEWER PIPE SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.
  - C) PRESSURE SEWERS SHALL ONLY BE CONSTRUCTED UNDER WATER LINES WITH DUCTILE IRON PIPE OR STANDARD SEWER PIPE IN A STEEL CASING FOR A DISTANCE OF AT LEAST TEN (10) FEET ON EACH SIDE OF THE CROSSING.

**STANDARD DETAIL  
WATER AND SEWER  
SPACING & CLEARANCE**



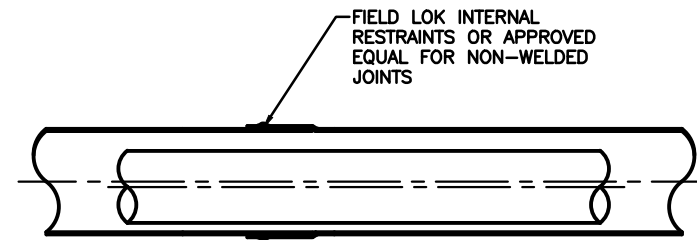
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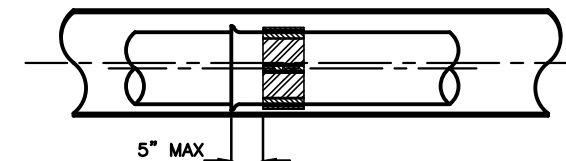


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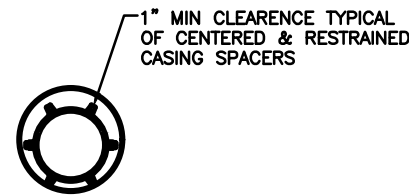
- CARRIER PIPE SHALL BE USED AS REQUIRED WITHIN CITY RIGHT-OF-WAY.
- ALL IRRIGATION PIPE LOCATED WITHIN CITY RIGHT-OF-WAY SHALL BE PVC C900 OR APPROVED EQUAL
- ALL JOINTS THROUGHOUT CASING SHALL BE RESTRAINED WITH FIELD LOC INTERNAL RESTRAINTS OR APPROVED EQUAL.
- RESTRAIN CARRIER PIPE ONE JOINT BEYOND END SEALS.
- MANUFACTURED CASING SPACER INTERVAL PER MANUFACTURER'S SPECIFICATIONS BUT NOT MORE THAN 10- FEET. MINIMUM 3 SPACERS PER PIPE LENGTH.
- CASING SHALL BE WELDED STEEL OR DUCTILE IRON FOR INSTALLATIONS LESS THAN 3- FEET BELOW ROAD GRADE. CPE MAY BE SUBSTITUTED FOR AREAS OUTSIDE OF PAVED ROADWAY.
- CASING PIPE LENGTHS SHALL BE OF THE LONGEST AVAILABLE LENGTH OF PIPE FROM MANUFACTURER
- NON- WELDED STEEL CASING SHALL BE EXTERNALLY RESTRAINED AT ALL JOINTS.
- 3M MARKER BALL TO BE PLACED DIRECTLY ABOVE JOINT RESTRAINT AT END OF PIPE.
- DETECTABLE MARKER TAPE TO BE INSTALLED 12- INCHES TO 14- INCHES ABOVE PIPE CASING. COLOR SHOULD BE ACCORDING TO APWA UNIFORM COLOR CODE FOR MARKING UNDERGROUND UTILITIES. DETECTABLE MARKING TAPE SHALL CONSIST OF INERT POLYETHYLENE PLASTIC THAT IS IMPERVIOUS TO ALL KNOWN ALKALIS, ACIDS, CHEMICAL REAGENTS, AND SOLVENTS LIKELY TO BE ENCOUNTERED IN THE SOIL, WITH A METALLIC FOIL CORE TO PROVIDE FOR THE MOST POSITIVE DETECTION AND PIPELINE LOCATION. DETECTABLE MARKING TAPE SHALL BE NO LESS THAN 2- INCHES WIDE, TYPE OF BURIED UTILITY SHOULD BE CLEARLY MARKED CONTINUOUSLY ALONG THE LENGTH OF THE RIBBON WITH MINIMUM 1-1/2 INCH LETTERS IN THE FOLLOWING FORMAT: "CAUTION BURIED (UTILITY TYPE) LINE"



**NON WELDED JOINT DETAIL**  
N.T.S.



**SPACER DISTANCE FROM BELL DETAIL**  
N.T.S.



**CASING SPACERS DETAIL**  
N.T.S.

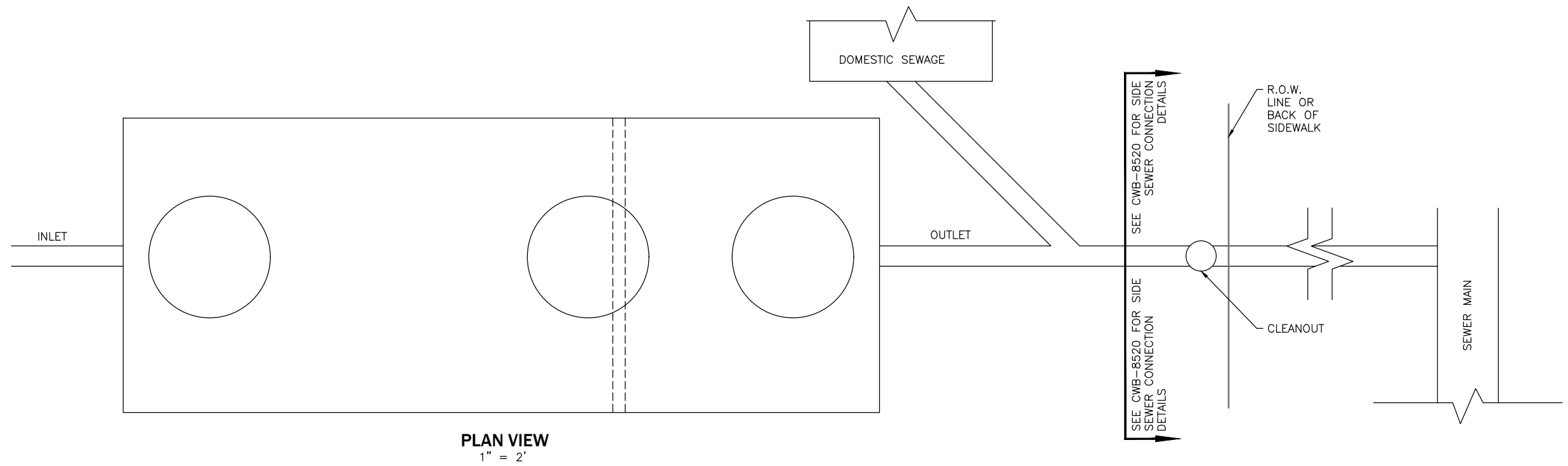
**STANDARD DETAIL**  
**CARRIER PIPE**



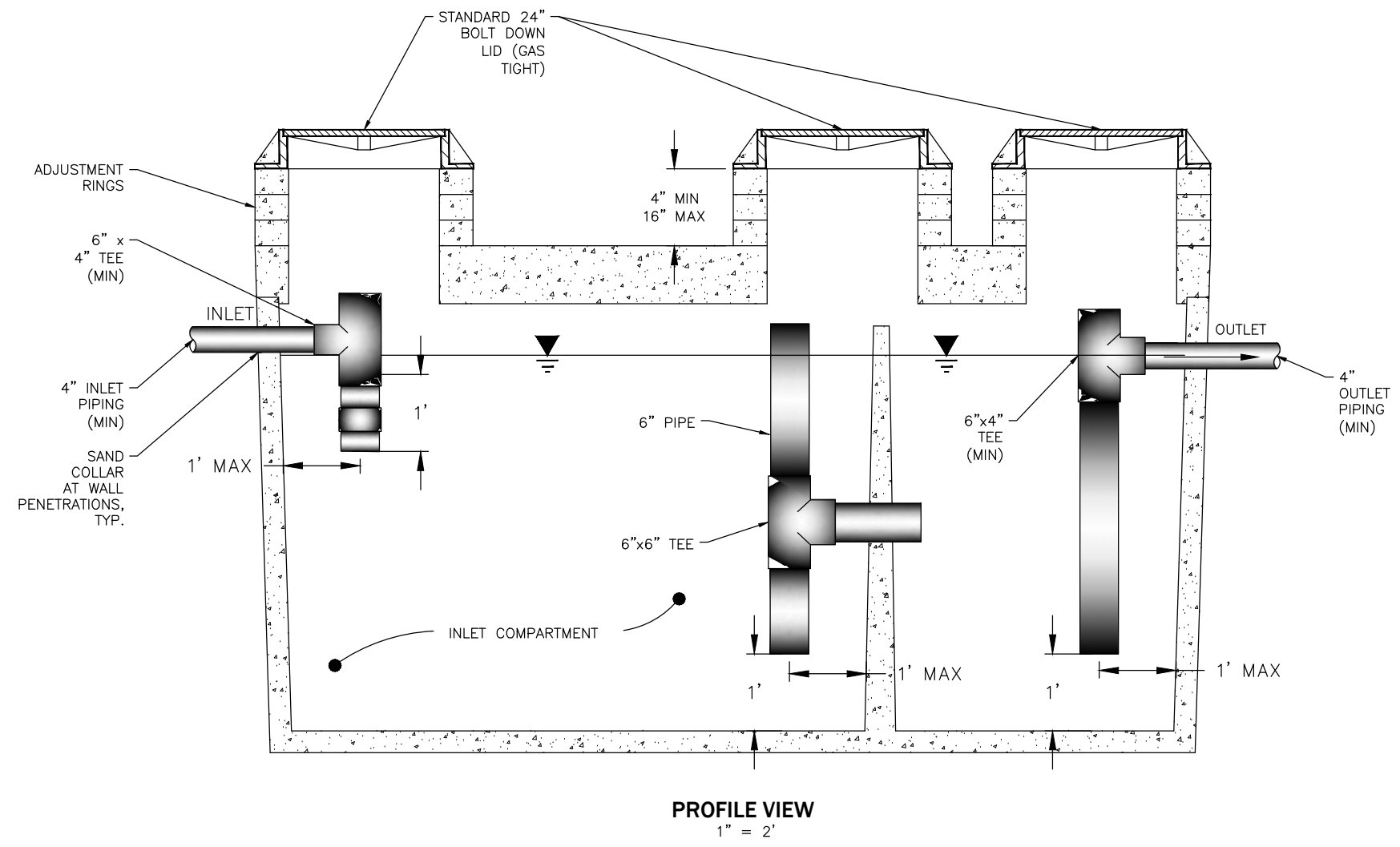
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				10/27/2020	CAW		
APPROVED BY:				01/01/2022	AJS		
STANDARD SPECIFICATIONS							

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**PLAN VIEW**  
1" = 2'



**PROFILE VIEW**  
1" = 2'

**NOTES:**

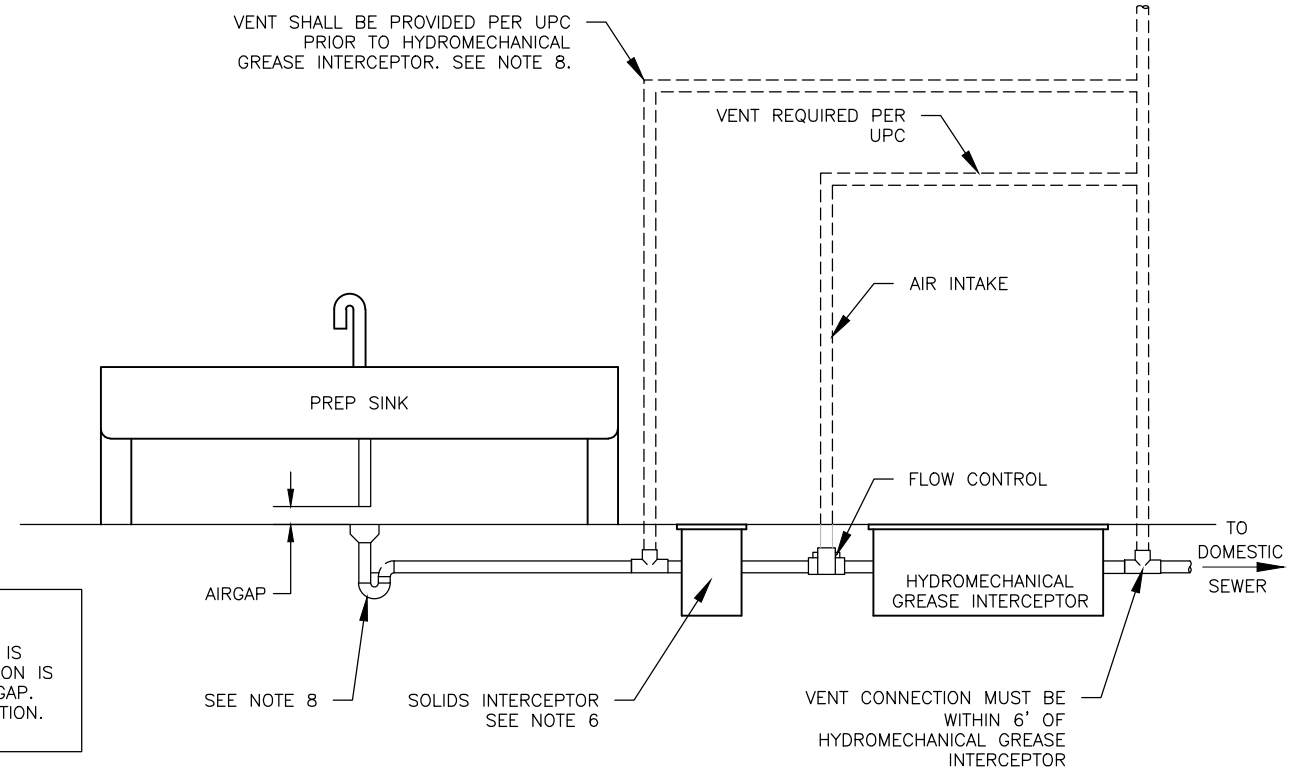
1. ALL INTERCEPTORS SHALL BE SIZED ACCORDING TO THE MOST RECENT VERSION OF THE UNIFORM PLUMBING CODE, 1014.3, OR OTHER ACCEPTABLE SIZING METHOD.
2. COMMERCIAL FOOD WASTE DISPOSALS AND DISHWASHERS MUST BE CONNECTED TO THE INTERCEPTOR, THE SIZING SHALL ACCOUNT FOR THESE FIXTURES.
3. INTERCEPTOR SHALL BE A MINIMUM SIZE OF 500 GALLONS OF LIQUID CAPACITY. THE INLET COMPARTMENT SHALL HAVE 2/3 THE TOTAL CAPACITY OF THE INTERCEPTOR.
4. SANITARY SEWER SHALL BE CONVEYED BY A SEPARATE LINE DOWNSTREAM OF THE INTERCEPTOR. ONLY GREY-WATER SHALL BE ROUTED THROUGH THE INTERCEPTOR.
5. PLACE INTERCEPTOR IN LOCATION THAT ALLOWS FOR PUMP TRUCK MAINTENANCE ACCESS.
6. INTERCEPTOR UNIT SHALL BE RATED FOR H20-44 AASHTO LOADING. (CERTIFIED)
7. A CENTER MANHOLE IS REQUIRED AND SHALL HAVE STANDARD 24" BOLT DOWN LID.
8. POSITION ADJUSTMENT RINGS TO ALLOW ACCESS AND ENTRY.
9. INTERCEPTOR SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
10. CENTER MANHOLE MUST BE CENTERED OVER THE CROSSOVER TEE AND BAFFLE, THE CROSSOVER TEE CAN BE OFFSET FROM CENTER.
11. GROUT INLET, OUTLET AND CROSSOVER TEES.
12. ALTERNATE STYLES OR BRANDS MAY BE ALLOWED WITH DIRECTOR'S WRITTEN APPROVAL.

**STANDARD DETAIL**  
**GRAVITY GREASE**  
**INTERCEPTOR**



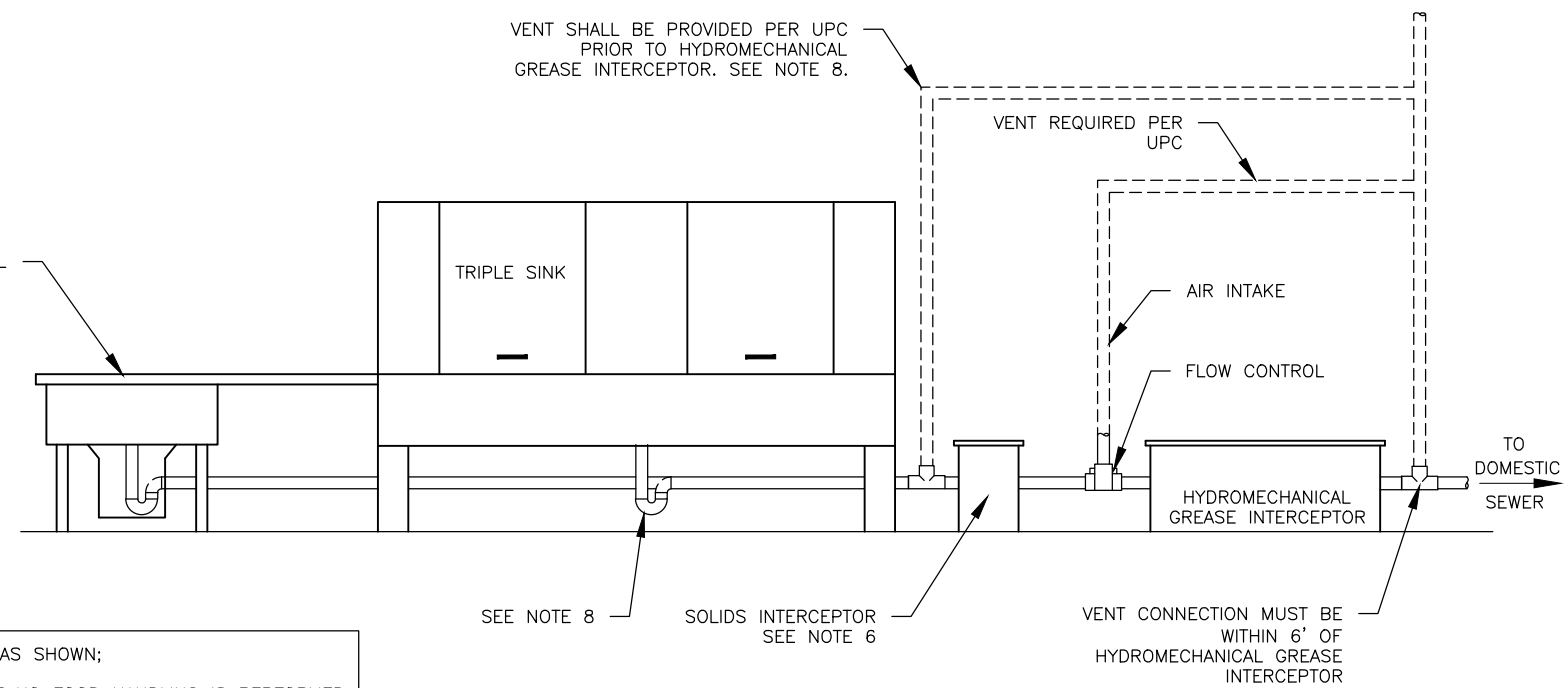
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STANDARD SPECIFICATIONS				

**STANDARD DETAIL  
HYDROMECHANICAL  
GREASE INTERCEPTOR**



**INDIRECT CONNECTION**

**INDIRECT CONNECTIONS AS SHOWN:**  
IF ANY FOOD HANDLING OR BEVERAGE ICE SERVICE IS PROVIDED AT THE FIXTURES, AN INDIRECT CONNECTION IS REQUIRED. INDIRECT CONNECTIONS REQUIRE AN AIRGAP. SEE UPC CHAPTER 8 FOR MORE DETAILED INFORMATION.



**DIRECT CONNECTION**

**DIRECT CONNECTIONS AS SHOWN;**  
SHALL ONLY OCCUR IF NO FOOD HANDLING IS PERFORMED IN THESE AREAS. SEE UPC 801.

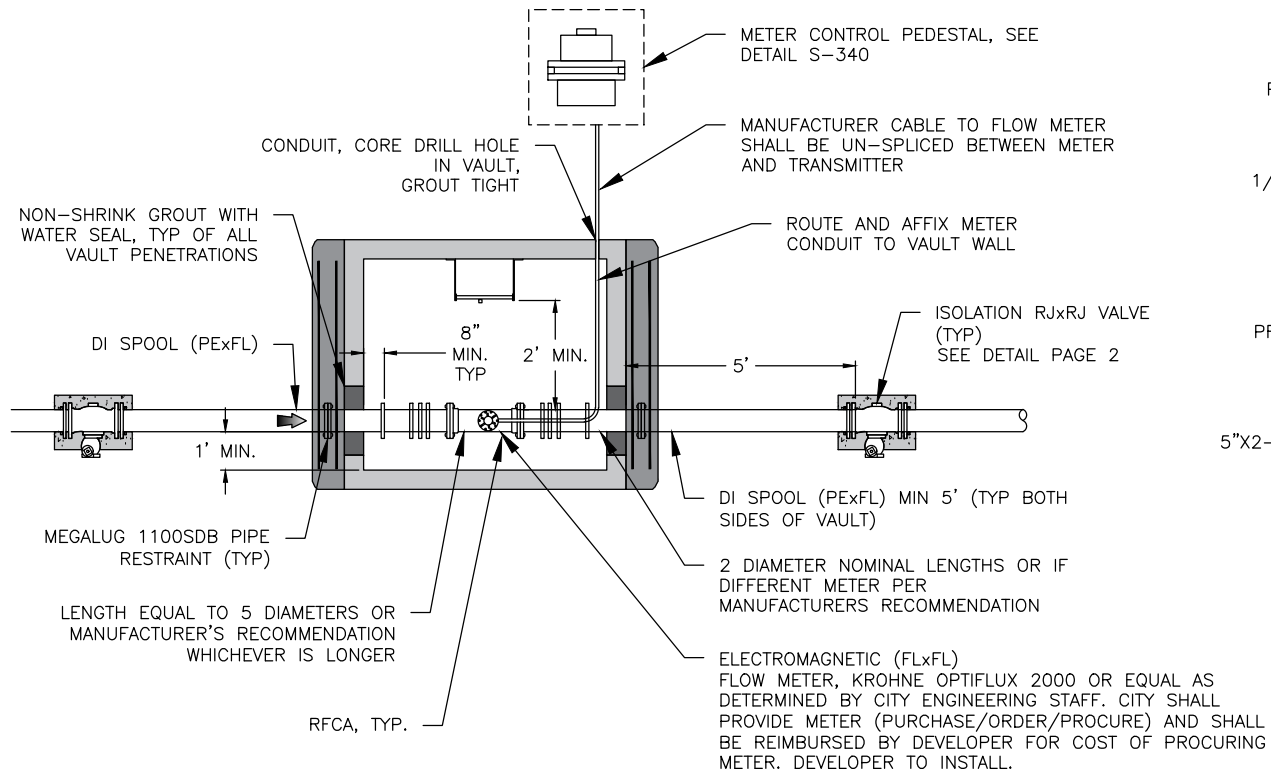
**NOTES:**

1. HYDROMECHANICAL GREASE INTERCEPTORS INSTALLED IN LIEU OF EXTERNAL GRAVITY GREASE INTERCEPTORS ARE ONLY ALLOWED WITH THE WRITTEN PERMISSION OF THE PUBLIC WORKS DIRECTOR.
2. MINIMUM REQUIRED FLOW RATE OF 20 GALLONS PER MINUTE AND GREASE RETENTION CAPACITY OF 40 POUNDS.
3. ALL INTERCEPTORS WILL BE APPROPRIATELY SIZED TO THE UNIFORM PLUMBING CODE OR OTHER ACCEPTABLE SIZING METHOD.
4. INSTALL THE INTERCEPTOR IN AN ACCESSIBLE LOCATION FOR EASE OF BOTH MAINTENANCE AND INSPECTIONS. THE TOP CLEARANCE SHALL PROVIDE TWO TIMES THE PHYSICAL DEPTH.
5. FOOD WASTE DISPOSALS MUST BE CONNECTED TO THE INTERCEPTOR.
6. IF A FOOD WASTE DISPOSAL IS CONNECTED, THEN THE INTERCEPTOR MUST HAVE A SOLIDS INTERCEPTOR INSTALLED PRIOR TO THE FLOW CONTROL DEVICE.
7. IF A SOLIDS INTERCEPTOR IS NOT REQUIRED, THEN A WATER SEAL MUST BE PROVIDED BETWEEN THE FIXTURES AND INTERCEPTOR.
8. EACH PLUMBING FIXTURE CONNECTED TO THE INTERCEPTOR SHALL BE INDIVIDUALLY TRAPPED AND VENTED IN AN APPROVED MANNER. VENTING AND FLOW CONTROL DEVICES ARE TO BE LOCATED IN A READILY ACCESSIBLE AND VISIBLE PLACE.
9. ALL WASTE SHALL ENTER THE INTERCEPTOR THROUGH AN INLET PIPE ONLY.
10. "GRAY WATER ONLY", DOMESTIC (SANITARY) SEWER SHALL BE CONVEYED BY A SEPARATE LINE DOWNSTREAM OF THE INTERCEPTOR.
11. DISHWASHER WASTE MUST NOT PASS THROUGH THE INTERCEPTOR.
12. NOT MORE THAN FOUR (4) SEPARATE FIXTURES SHALL BE CONNECTED TO OR DISCHARGE INTO ANY ONE INTERCEPTOR.

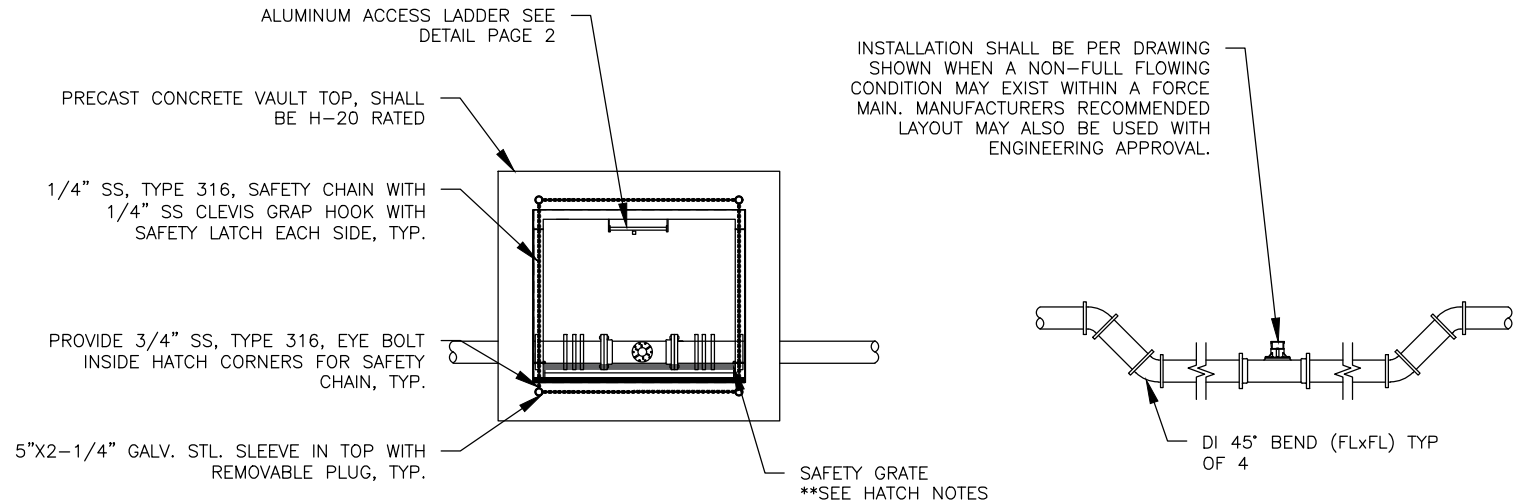
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					DATE	INITIAL	CAW	AJS
NA					12/21/2020			
					01/01/2022			

ELECTROMAGNETIC METER NOTES	
MATERIAL – PIPELINE	PIPING SHALL BE DUCTILE IRON
COATINGS – PIPELINE	EXTERNAL PIPE COATINGS – PIPE SHALL BE COATED WITH: PRIMER, SERIES 1 OMNITHANE (2.5 TO 3.5 MIL DFT); INTERMEDIATE COAT, SERIES N69 HI-BUILD EPOXOLINE II (6 TO 8 MILS DFT); FINISH COAT, SERIES 73 ENDURA-SHIELD (3 TO 5 MILS DFT). PIPE OUTSIDE VAULT SHALL BE ASPHALTIC COATED FOR BURY. INTERNAL PIPE COATINGS – CEMENT MORTAR LINED FROM ISOLATION VALVE TO ISOLATION VALVE.

METER VAULT SIZING			
METER SIZE	INTERIOR VAULT (MIN) (WIDTH x LENGTH)	HATCH (MIN)	LEAF
3"	5'-6" x 6'-4"	36"x48"	1
4"	5'-6" x 6'-4"	36"x48"	1
6"	6'-4" x 6'-4"	48"x60"	2
8"	6'-4" x 6'-4"	48"x60"	2



**ELECTROMAGNETIC METER PLAN**

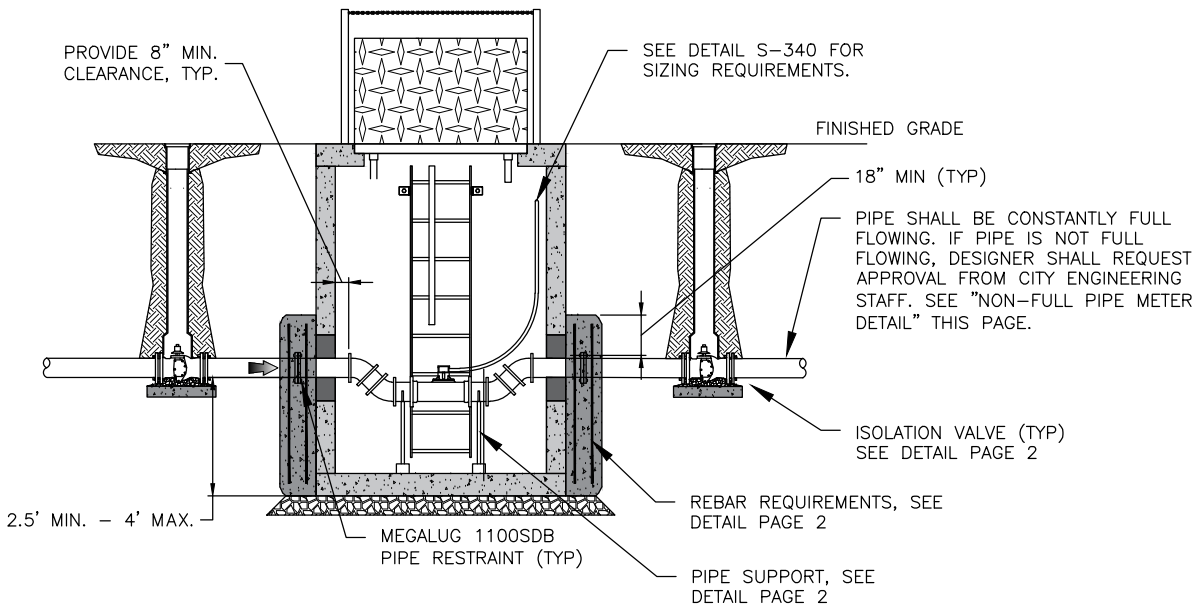


**METER VAULT STRUCTURAL PLAN**

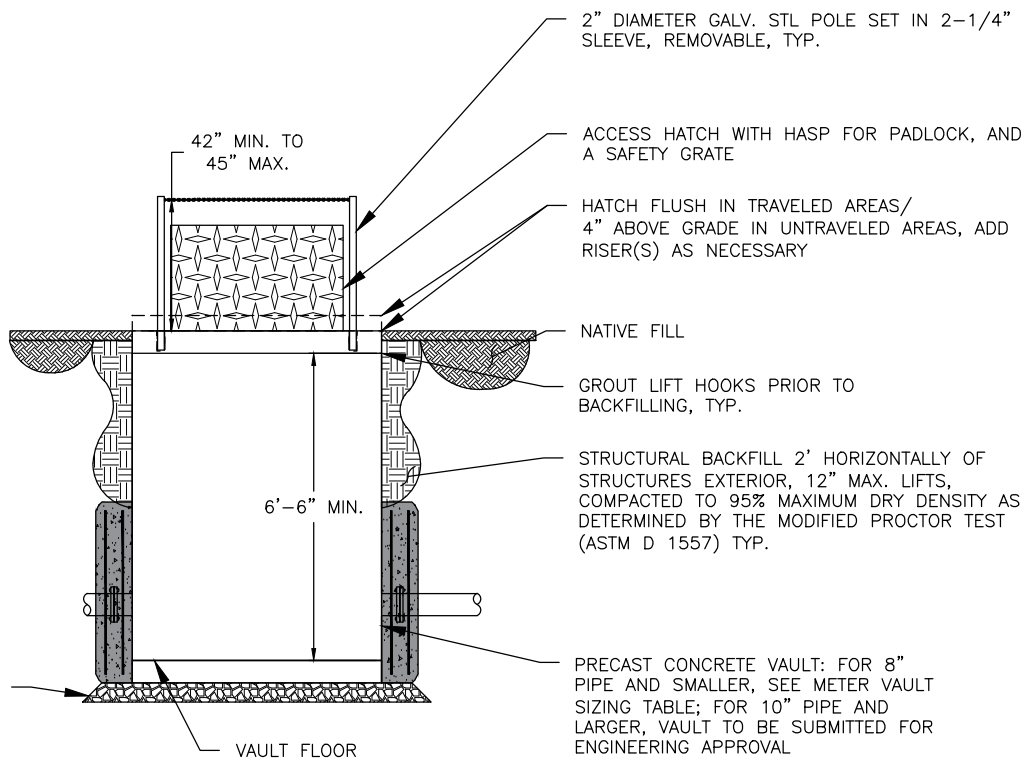
**NON-FULL PIPE METER DETAIL**

METER VAULT ACCESS HATCH	
CLEAR OPENING	SEE TABLE
NO. OF LEAVES	SEE TABLE
RATING	H-20
MOUNTING*	ANCHOR
SAFETY GRATING**	YES
SAFETY CHAIN***	YES
GASKET	ODOR TIGHT
DRAIN	NO
SPRING ASSIST	YES

**ACCESS HATCH NOTES:**  
 \* ACCESS HATCH OVER METER VAULT SHALL BE MOUNTED USING STAINLESS STEEL BOLTS AS SHOWN ON THIS PLAN.  
 \*\*ACCESS HATCH SHALL HAVE REMOVABLE SAFETY GRATING COVER BELOW ACCESS HATCH LID.  
 \*\*\* SAFETY CHAINS SHALL BE PROVIDED ON ACCESS HATCHES AS DETAILED FOR EACH HATCH ON THIS SHEET.  
 \*\*\*\*ACCESS HATCH TO HAVE HASP FOR PADLOCK



**ELECTROMAGNETIC METER ELEVATION**

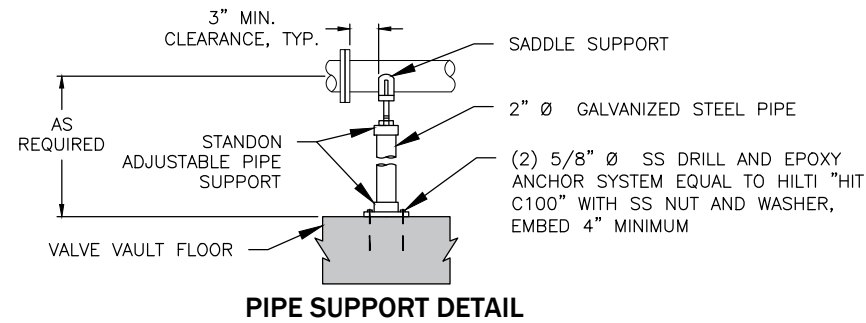


**METER VAULT STRUCTURAL ELEVATION**

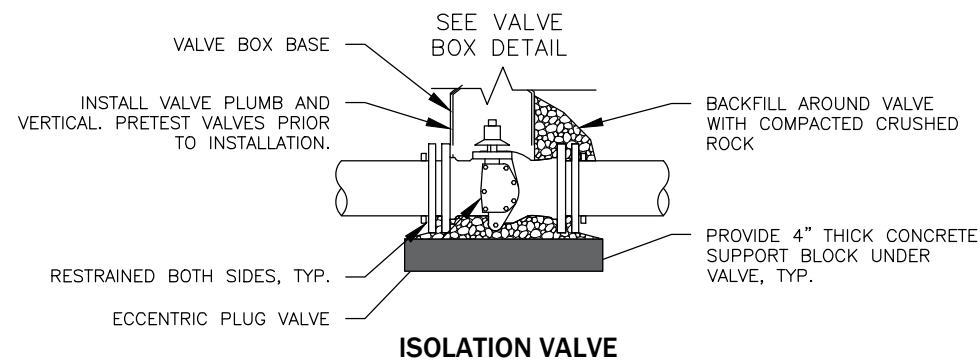
**STANDARD DETAIL  
ELECTROMAGNETIC  
SEWAGE FLOW METER**



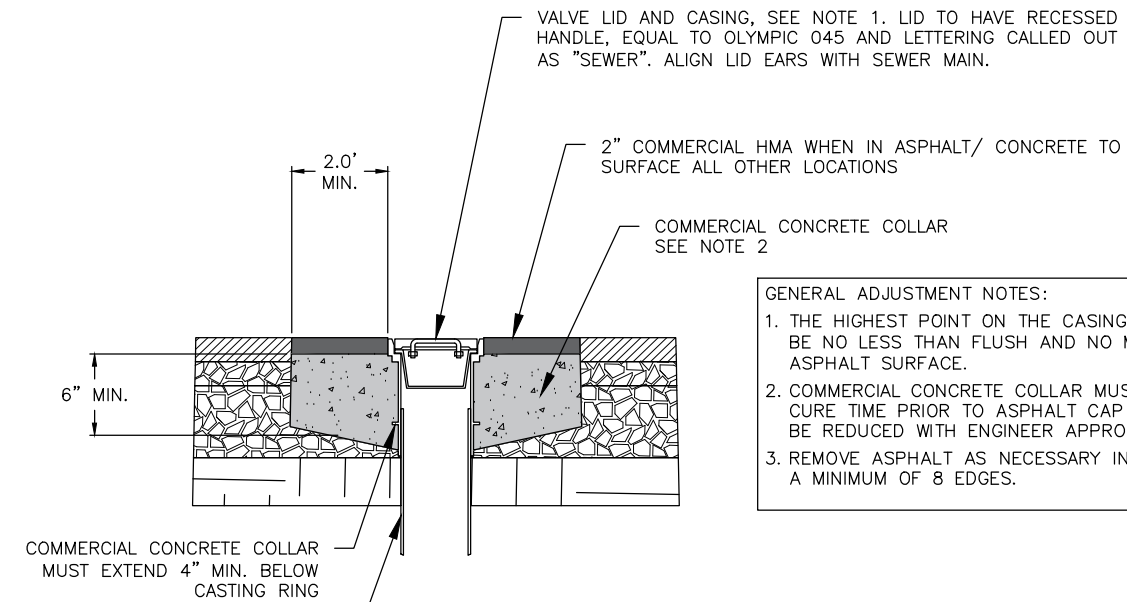
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**PIPE SUPPORT DETAIL**



**ISOLATION VALVE**



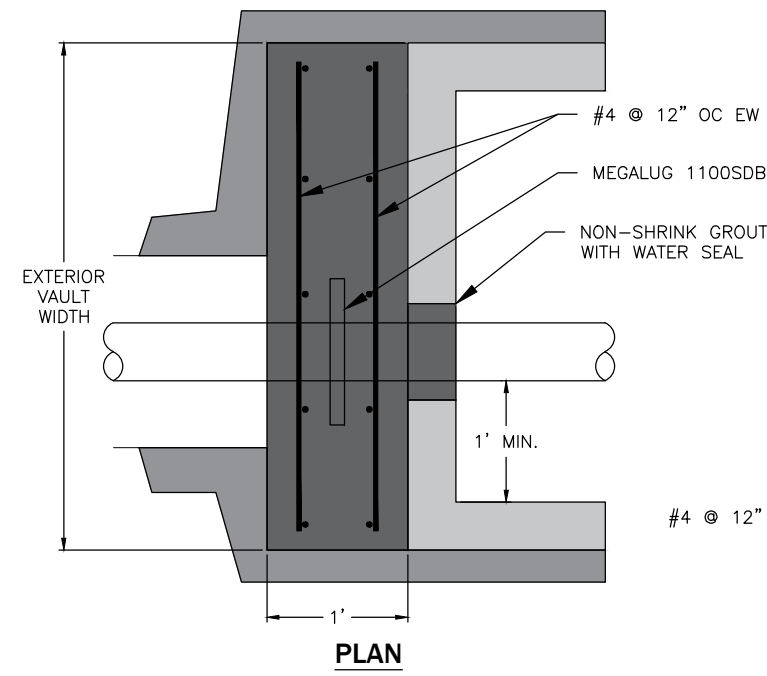
**ROADWAY UTILITY ADJUSTMENT**

GENERAL ADJUSTMENT NOTES:

1. THE HIGHEST POINT ON THE CASING, RING, OR COVER SHALL BE NO LESS THAN FLUSH AND NO MORE THAN 1/8" BELOW ASPHALT SURFACE.
2. COMMERCIAL CONCRETE COLLAR MUST BE GIVEN 3 DAYS CURE TIME PRIOR TO ASPHALT CAP PLACEMENT. TIME MAY BE REDUCED WITH ENGINEER APPROVAL.
3. REMOVE ASPHALT AS NECESSARY IN CIRCULAR PATTERN WITH A MINIMUM OF 8 EDGES.

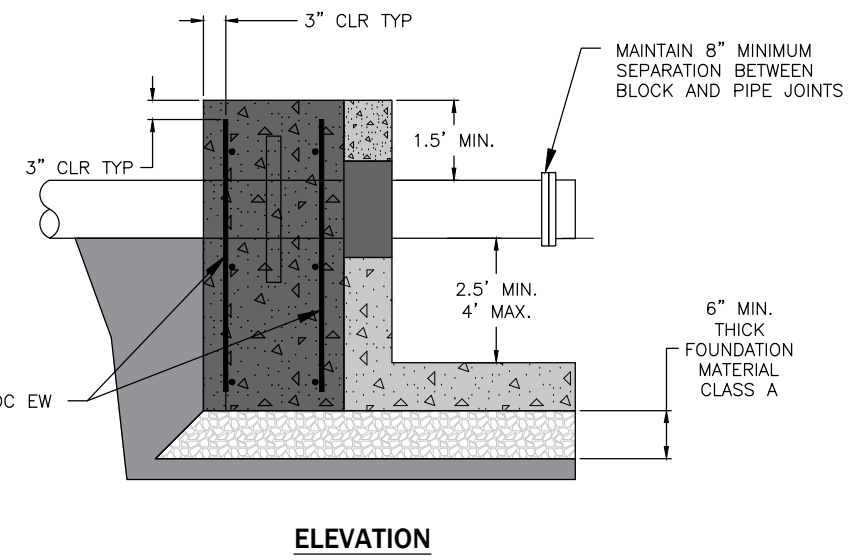
NOTES:

1. LADDERS SHALL BE ALUMINUM.
2. LADDER MUST MEET CONSTRUCTION REQUIREMENTS OF ANSI A14.3

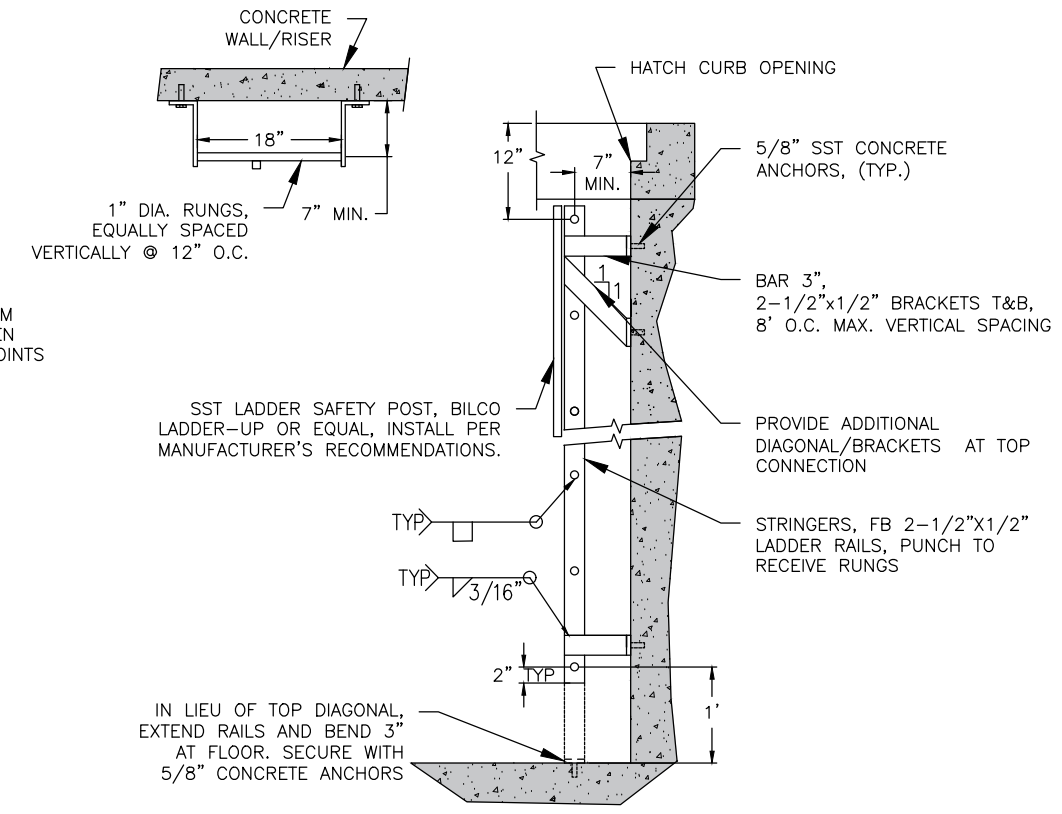


**PLAN**

**PIPE RESTRAINT**



**ELEVATION**



**LADDER DETAIL FOR ELECTROMAGNETIC METER**

**STANDARD DETAIL  
ELECTROMAGNETIC SEWAGE  
FLOW METER DETAILS**



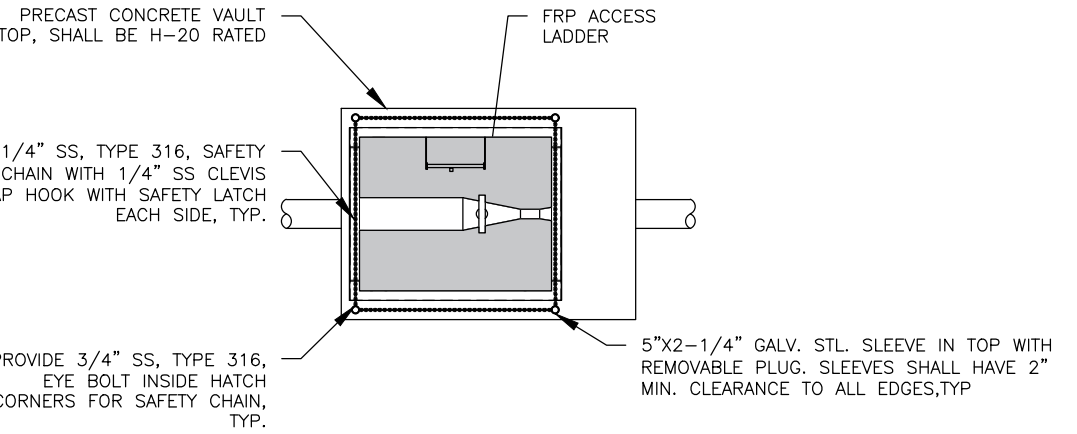
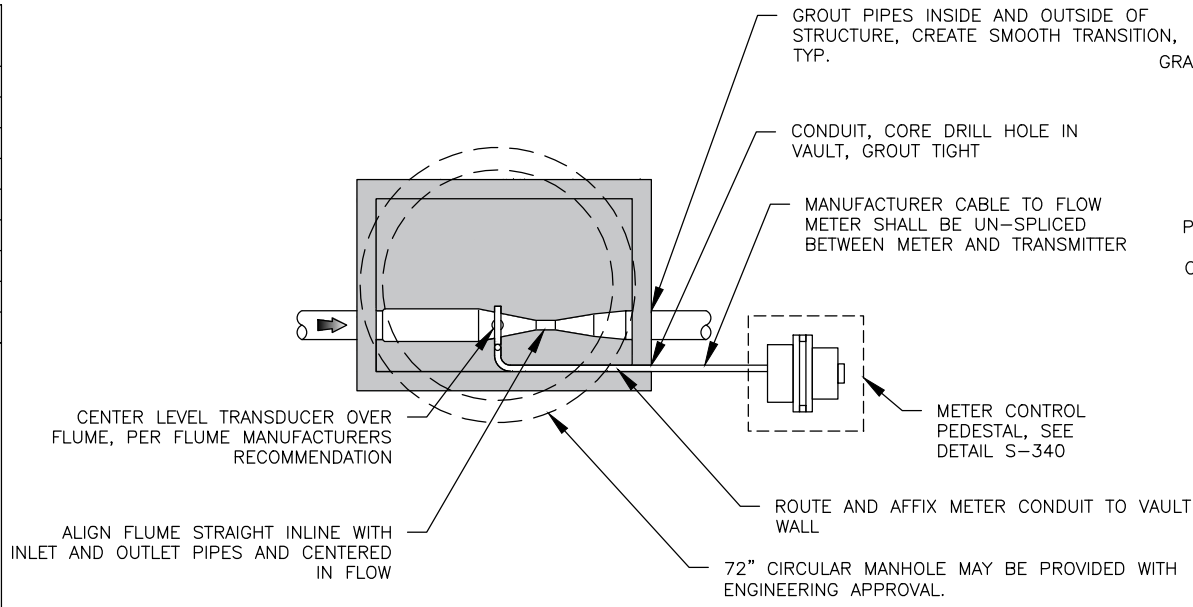
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FLUME SIZING				
GPM	PARSHALL FLUME SIZE	VAULT SIZE	HATCH (MIN)	LEAF
3-73	2" - NOT TO BE USED WITH DOMESTIC SEWAGE	H2 PRE-CAST #577 OR EQUAL	48"x60"	2
13-250	3"	H2 PRE-CAST #577 OR EQUAL	48"x60"	2
>250	CONSULT WITH CITY OF WENATCHEE ENGINEERING STAFF	-		

PARSHALL FLUME METER NOTES	
1	CONTRACTOR SHALL TEST FLUME TO VERIFY CORRECT FLOW READING TO THE SATISFACTION OF CITY.

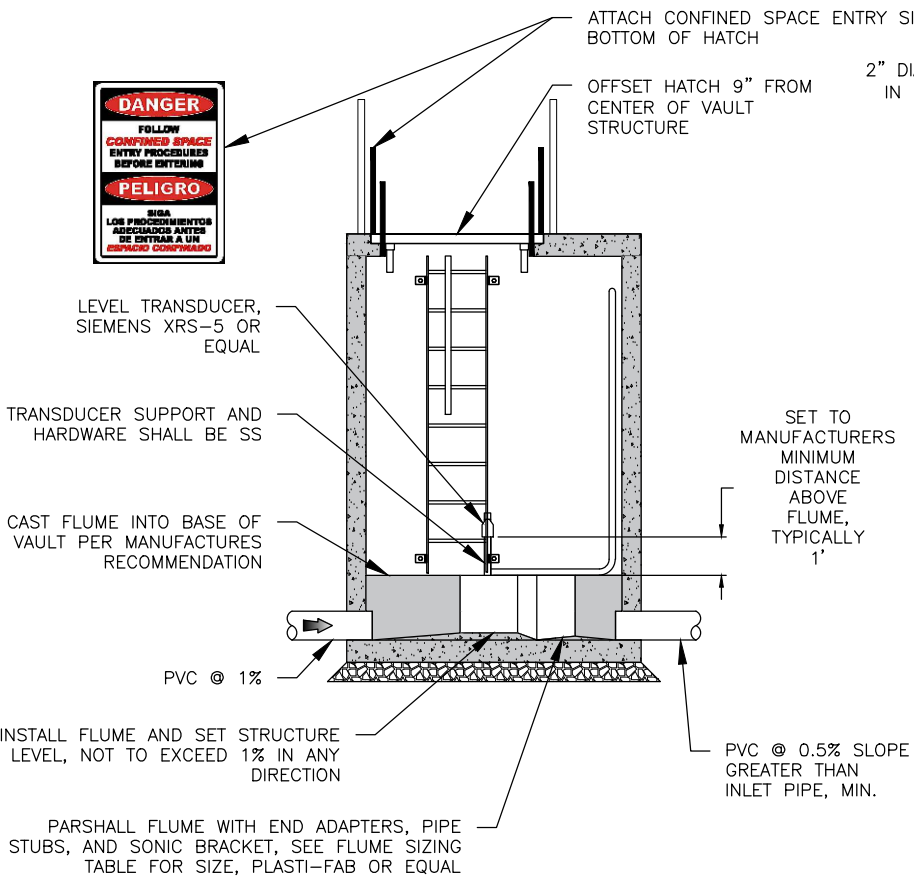
METER VAULT ACCESS HATCH	
CLEAR OPENING	SEE TABLE
NO. OF LEAVES	SEE TABLE
RATING	H-20
MOUNTING*	ANCHOR
SAFETY GRATING**	YES
SAFETY CHAIN***	YES
GASKET	ODOR TIGHT
DRAIN	NO
SPRING ASSIST	YES

**ACCESS HATCH NOTES:**  
 \* ACCESS HATCH OVER METER VAULT SHALL BE MOUNTED USING STAINLESS STEEL BOLTS AS SHOWN ON THIS PLAN.  
 \*\*ACCESS HATCH SHALL HAVE REMOVABLE SAFETY GRATING COVER BELOW ACCESS HATCH LID.  
 \*\*\* SAFETY CHAINS SHALL BE PROVIDED ON ACCESS HATCHES AS DETAILED FOR EACH HATCH ON THIS SHEET.  
 \*\*\*\*ACCESS HATCH TO HAVE HASP FOR PADLOCK

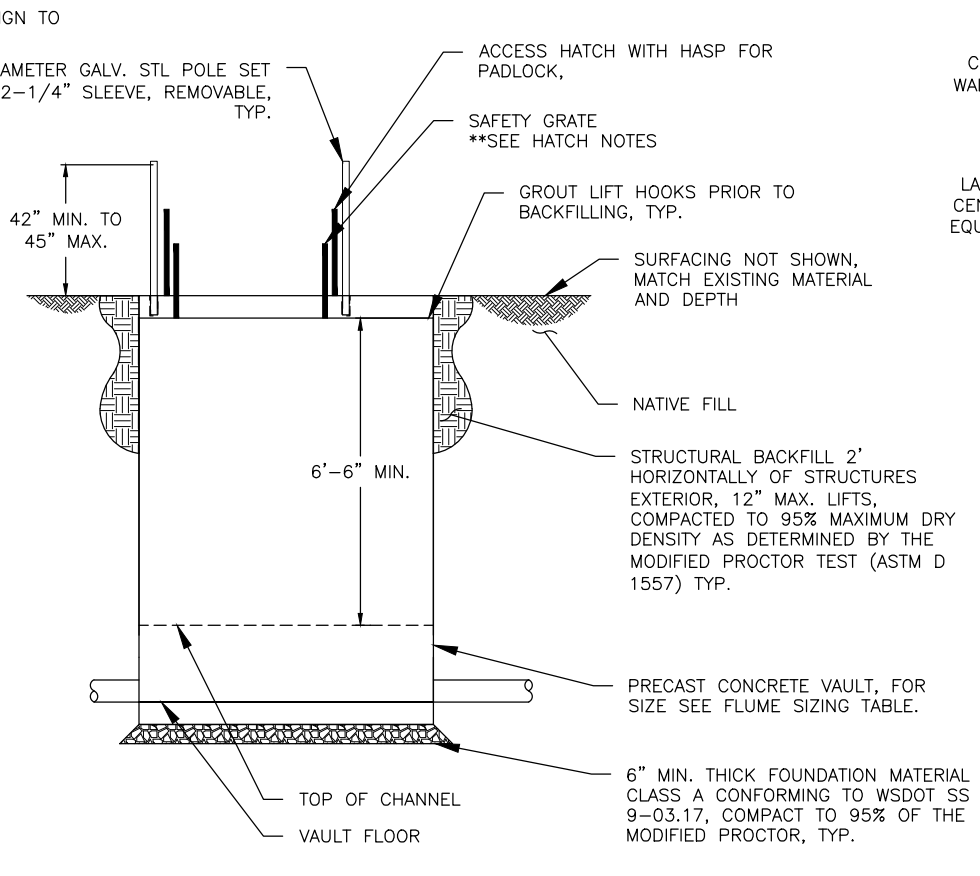


- LADDER NOTES:**
- LADDERS SHALL BE FIBER REINFORCED PLASTIC (FRP).
  - LADDER MUST MEET CONSTRUCTION REQUIREMENTS OF ANSI A14.3
  - LADDER BRACKET SHALL BE SERIES 625 VINYL-ESTER.
  - ALL BOLT ASSEMBLIES AND GRATING HOLD DOWNS SHALL BE SERIES 316 STAINLESS STEEL.
  - CONTRACTOR TO FIELD VERIFY ALL DIMENSION PRIOR TO FABRICATION.

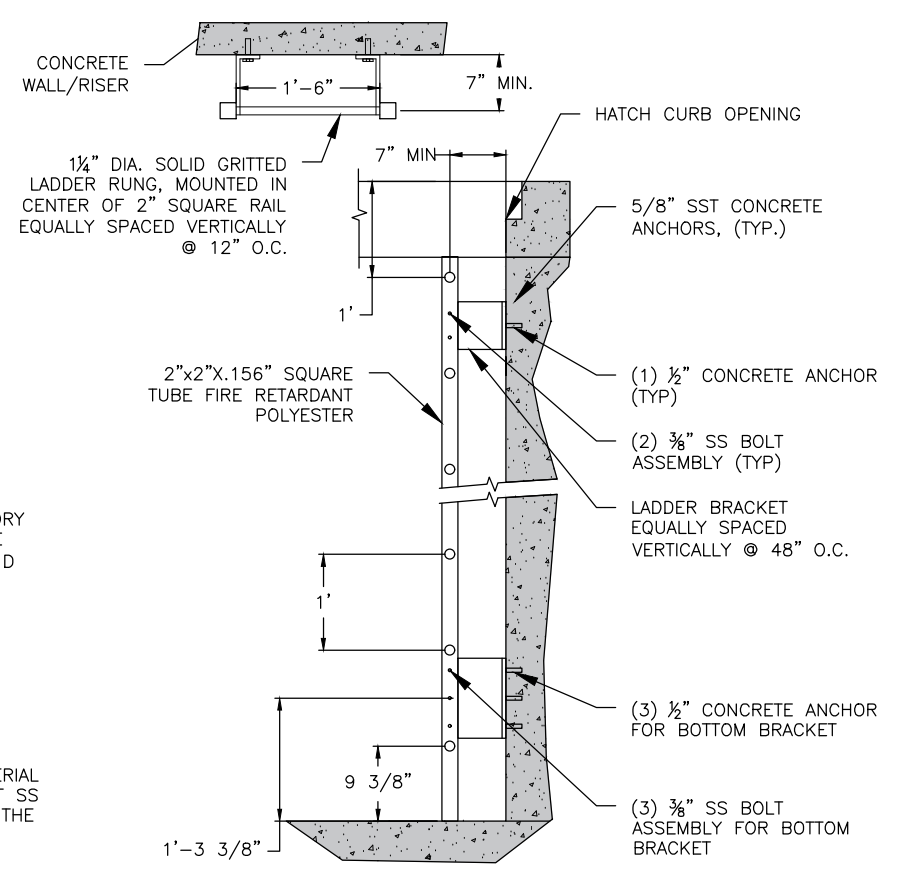
**PARSHALL FLUME METER PLAN**



**PARSHALL FLUME METER ELEVATION**



**METER VAULT STRUCTURAL ELEVATION**



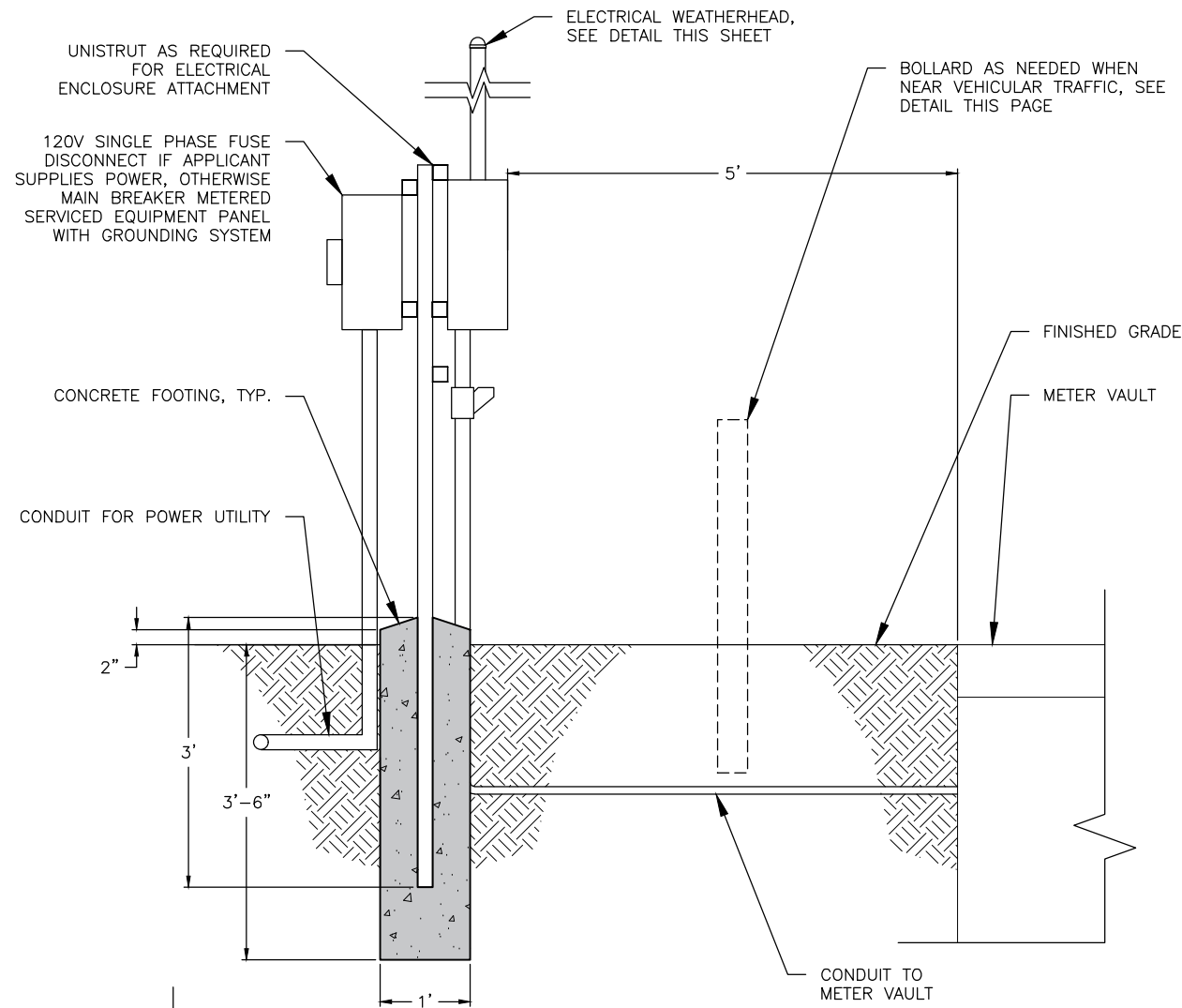
**LADDER DETAIL FOR PARSHALL FLUME METER**

**STANDARD DETAIL  
PARSHALL FLUME**

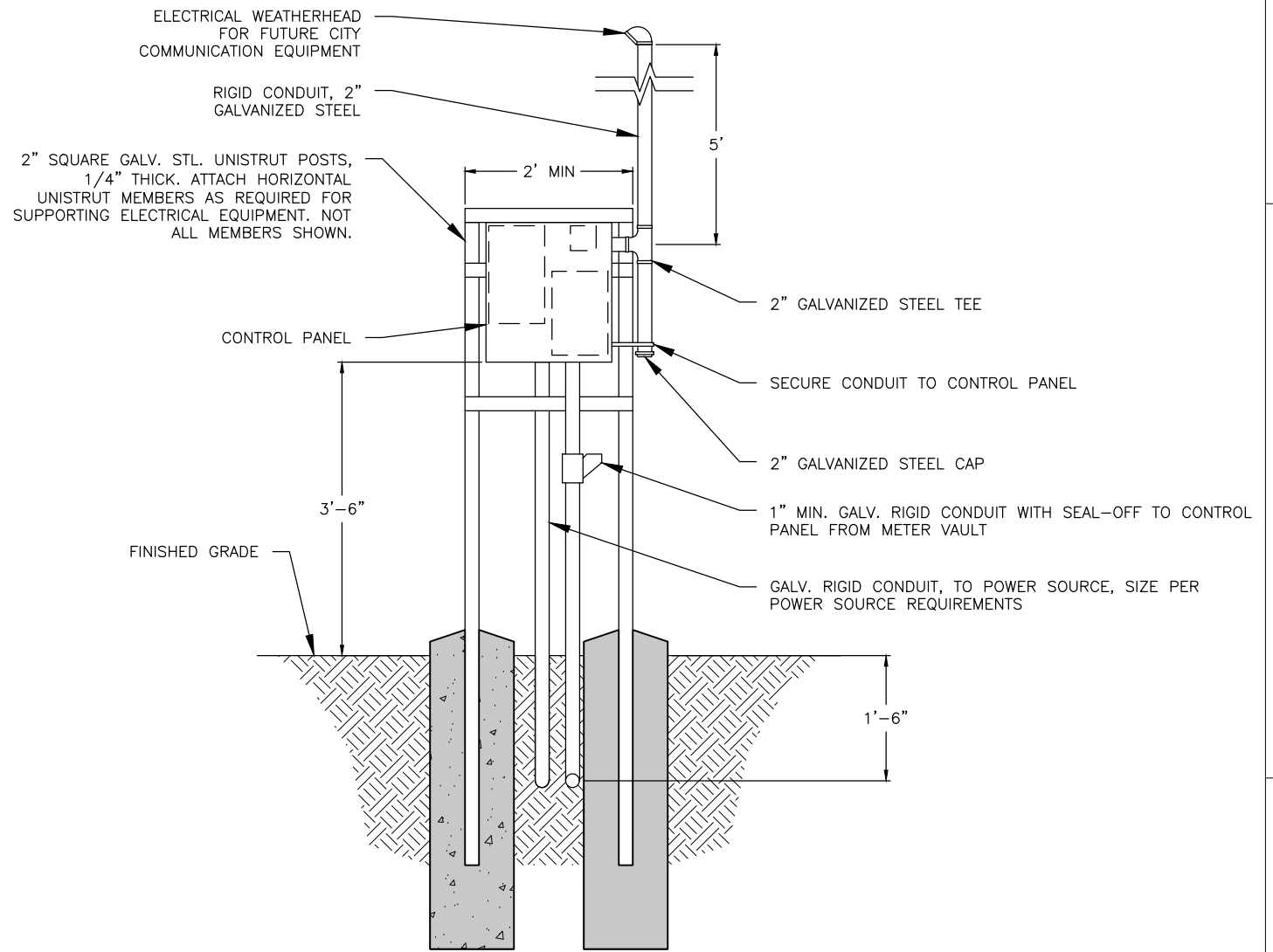


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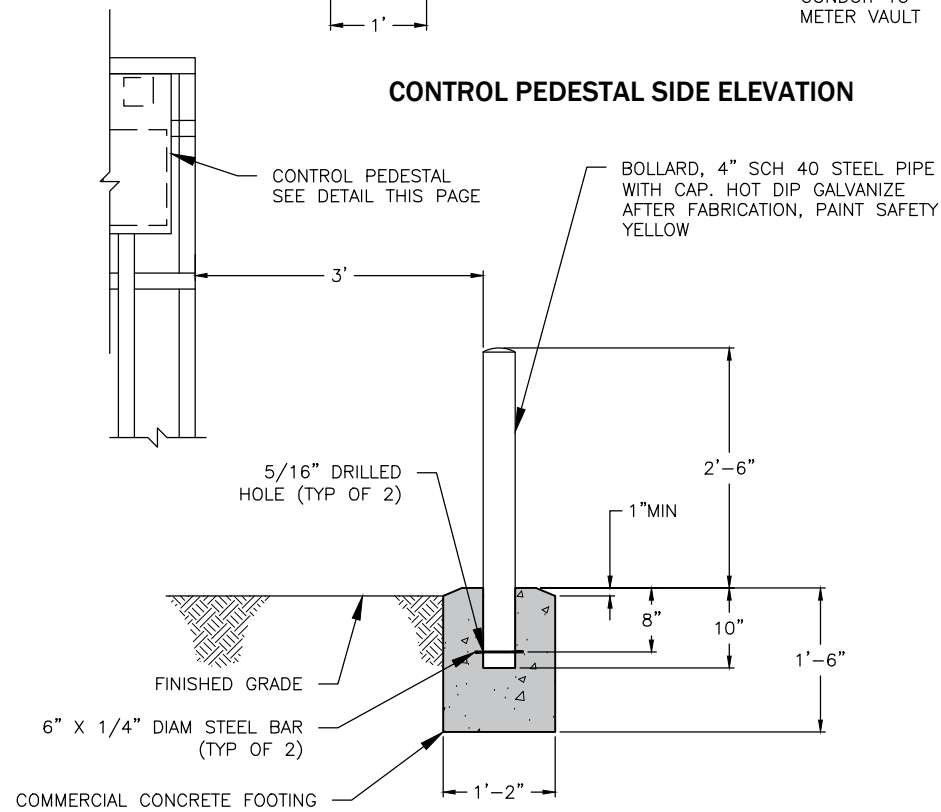
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**S-330**  
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**1 OF 1**



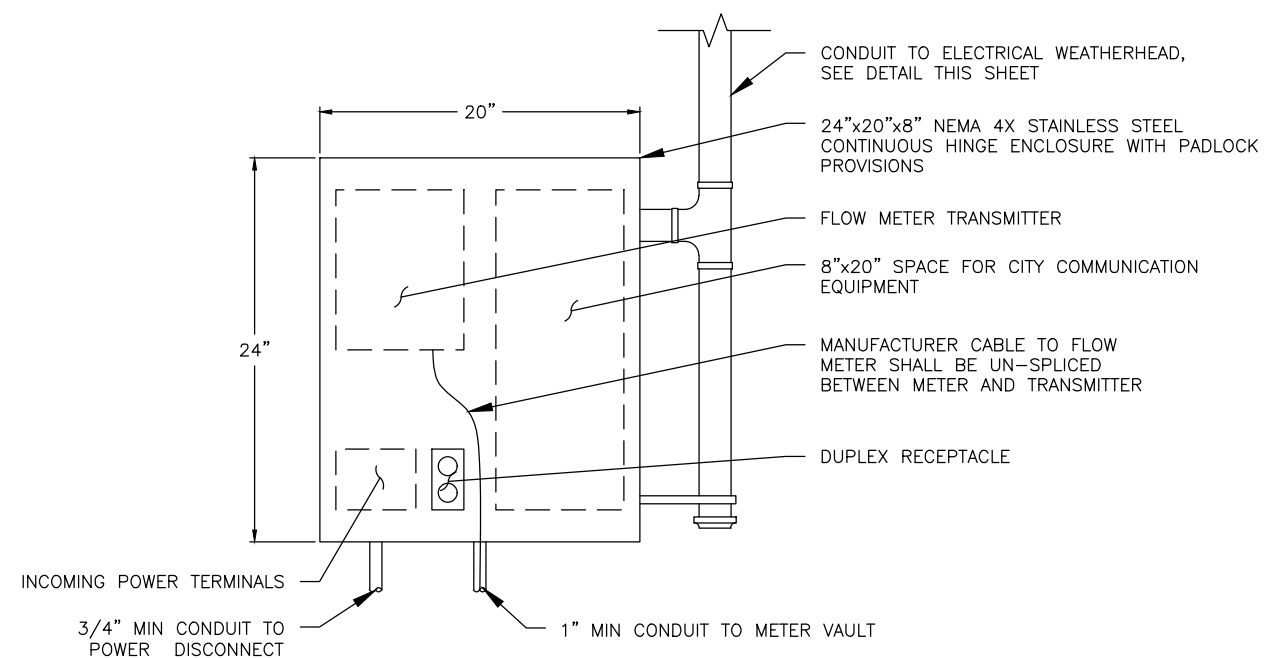
**CONTROL PEDESTAL SIDE ELEVATION**



**CONTROL PEDESTAL FRONT ELEVATION**



**CONTROL PANEL BOLLARD**



**CONTROL PANEL LAYOUT**

**STANDARD DETAIL  
SEWER CONTROL PEDESTAL**



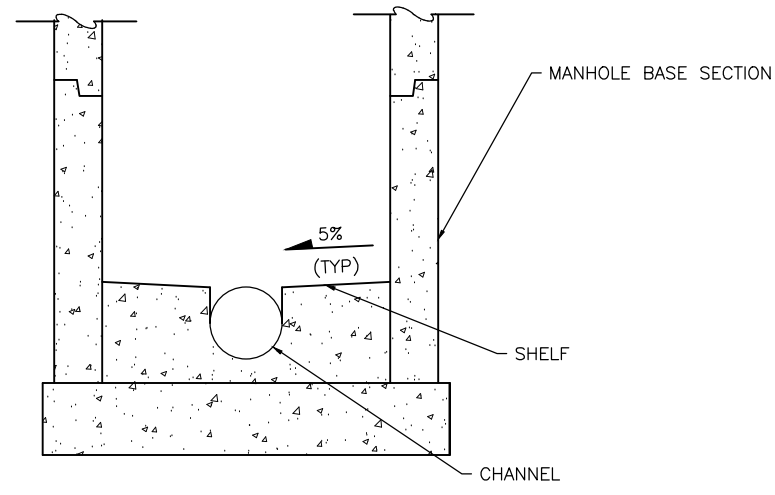
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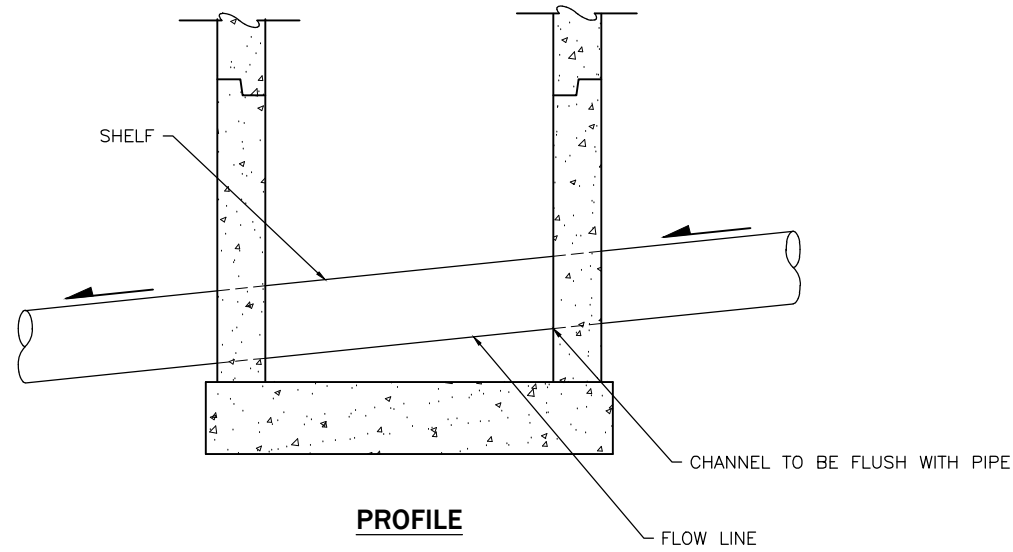
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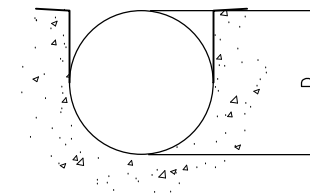
**1 OF 1**



**CROSS SECTION**



**PROFILE**



**CHANNEL SECTION**

**NOTES:**

1. DEPTH OF CHANNEL MUST BE SAME AS PIPE DIAMETER.
2. MINIMUM 0.1' DROP ACROSS CHANNEL;  
MAXIMUM 1.0' DROP ACROSS CHANNEL.

**STANDARD DETAIL  
SEWER MANHOLE MAIN  
CHANNEL & SHELF**

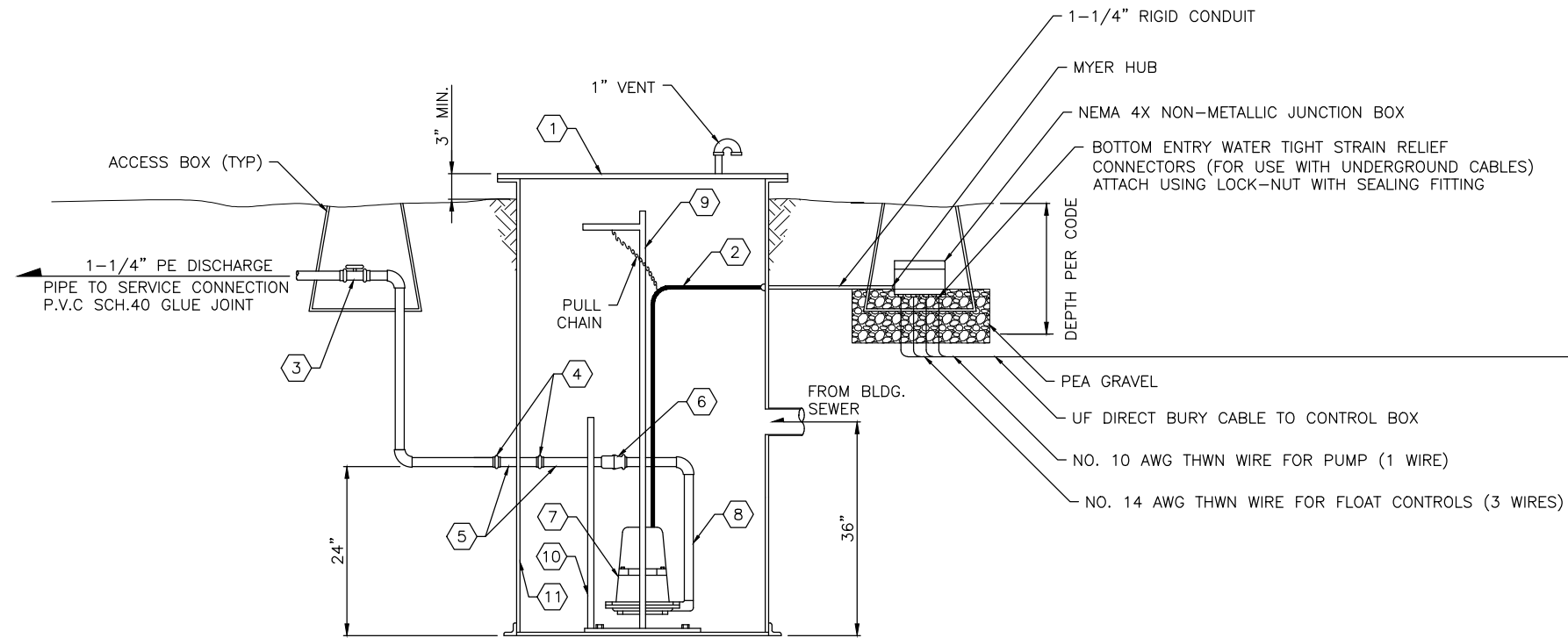


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STANDARD SPECIFICATIONS			

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**S-400**

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**1 OF 1**





**GRINDER LIFT STATION DETAIL**  
N.T.S.

**MATERIALS LIST**

- ① 24" DIAMETER GALVANIZED COVER
- ② POWER CONDUIT
- ③ 1-1/4" PVC TRUE UNION VALVE (SS) HAYWARD OR EQUAL
- ④ 1-1/4" PVC, COPPER, OR APPROVED EQUAL UNION
- ⑤ 1-1/4" PVC, COPPER, OR APPROVED EQUAL NIPPLES
- ⑥ CHECK VALVE AND PUMP DISCONNECT HYDROMATIC, GOULD, OR APPROVED EQUAL.
- ⑦ 2 HP GRINDER PUMP – SEE NOTES
- ⑧ 1-1/4" GALVANIZED PIPING, APPROXIMATELY 1.2' LONG
- ⑨ HOT DIPPED GALVANIZED STEEL RAIL GUIDE SYSTEM
- ⑩ HOT DIPPED GALVANIZED PUMP TECH SORT RAIL
- ⑪ 24" X 60" FIBERGLASS TANK

**NOTES:**

1. TOP OF TANK CAN BE SET FLUSH WITH GROUND, IF A CONCRETE PAD IS POURED AROUND THE LIFT STATION AND SLOPED AWAY FROM THE STATION. KEEP ROCKS AND DEBRIS OUT OF STATION.
2. ACCESS BOX:  
TRAFFIC AREAS – EQUAL TO CARSON MODEL 1419-14B WITH 1419-2B COVER  
TRAFFIC AREAS- H-20 RATED CONCRETE BOX EQUAL TO FOGTITE B9-1/2 METER BOX  
LIDS SHALL BE MARKED ELECTRICAL OR SEWER RESPECTIVELY OR HAVE NO MARKINGS AT ALL.
3. CONTROL FLOATS NOT SHOWN FOR CLARITY.

**STANDARD DETAIL**  
**SINGLE FAMILY**  
**LIFT STATION**

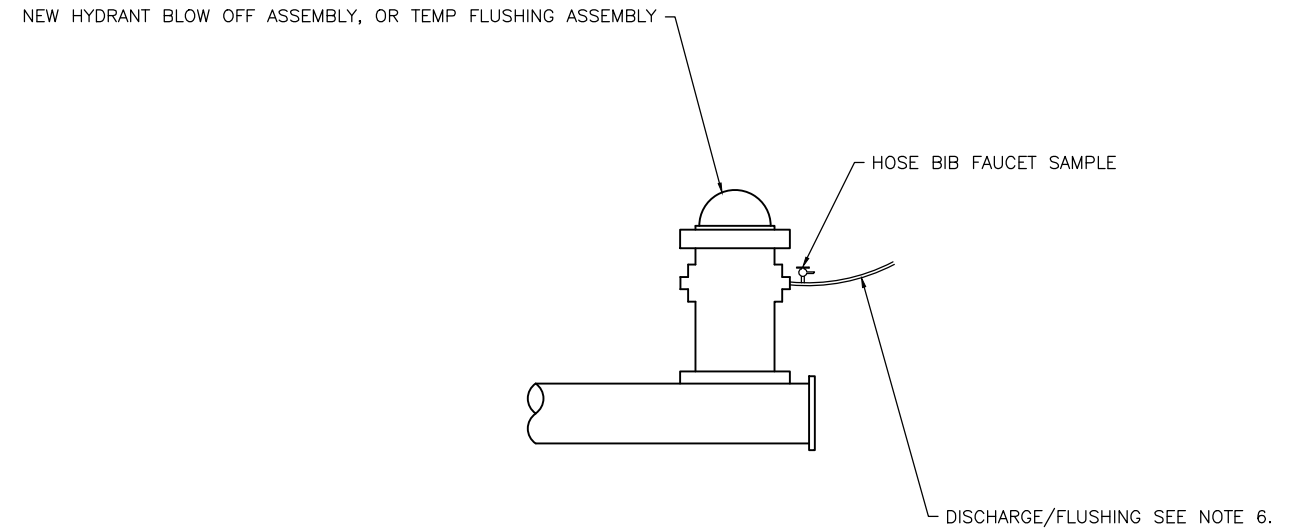
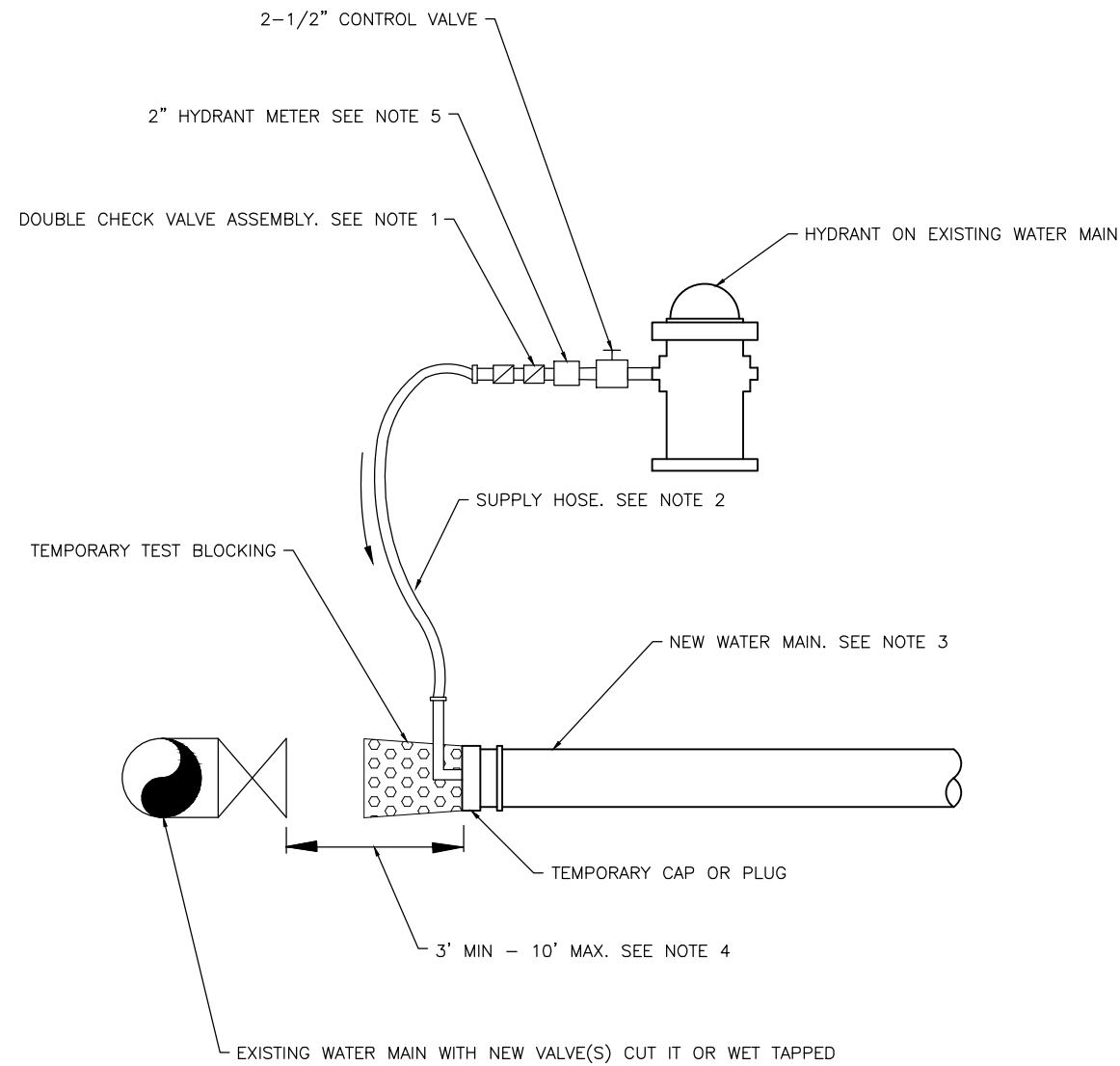


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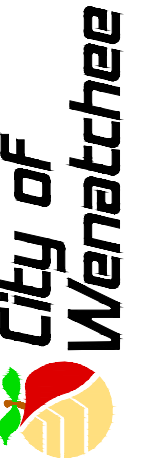




**NOTES:**

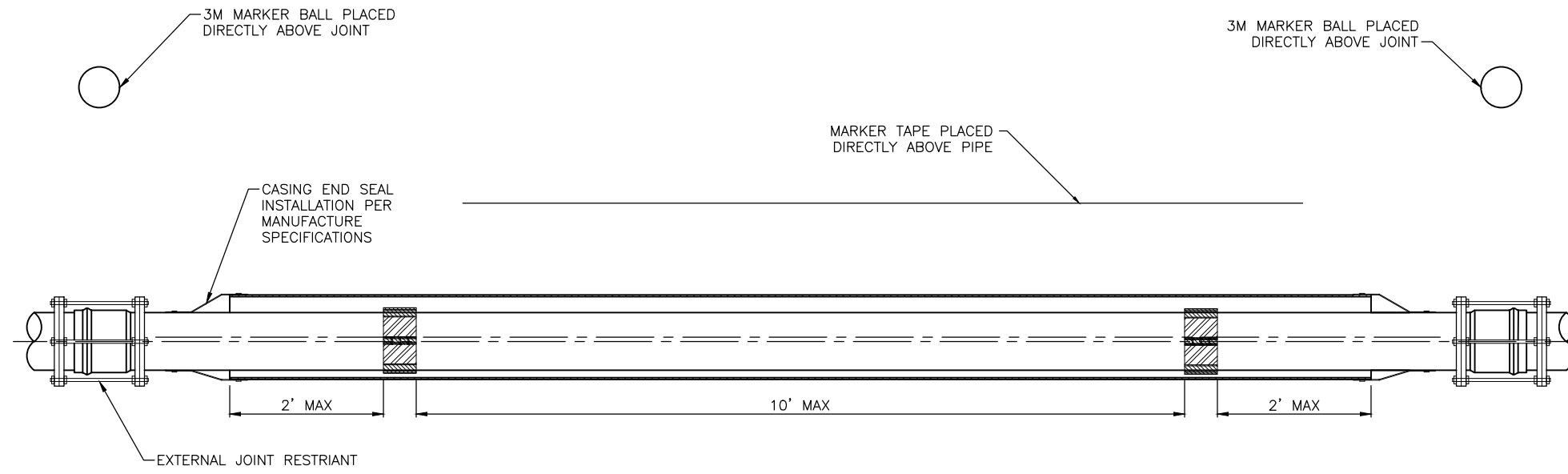
1. AN APPROVED BACK FLOW ASSEMBLY SHALL BE INSTALLED BETWEEN THE NEW AND EXISTING WATERLINES DURING DISINFECTION AND FLUSHING OF NEW WATER MAIN.
2. THE BACK FLOW PREVENTION ASSEMBLY AND SUPPLY HOSE MUST BE DISCONNECTED DURING HYDROSTATIC PRESSURE TESTING OF THE NEW MAIN.
3. THE NEW WATER MAIN SHALL BE CONNECTED TO THE EXISTING SYSTEM ONLY AFTER THE NEW MAIN IS FLUSHED, DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLE RESULTS ARE OBTAINED.
4. THE INTERIORS OF ALL PIPES AND FITTINGS TO BE USED IN FINAL CONNECTION MUST BE SWABBED OR SPRAYED WITH A 1% AVAILABLE CHLORINE SOLUTION.
5. 2" HYDRANT METER SHALL BE OBTAINED FROM THE CITY OF WENATCHEE PUBLIC WORKS DEPARTMENT OR CHELAN COUNTY PUD HYDRANT VALVE MAY BE USED UNDER SOME CIRCUMSTANCES.
6. DECHLORINATOR REQUIRED, CONTRACTOR MAY FLUSH TO SEWER OR STORM AFTER USING DECHLORINATOR. NOTIFY WENATCHEE WASTE WATER TREATMENT PLANT PRIOR TO FLUSH AIR GAP AT DISCHARGE.

**STANDARD DETAIL  
FILLING NEW  
WATER MAINS**



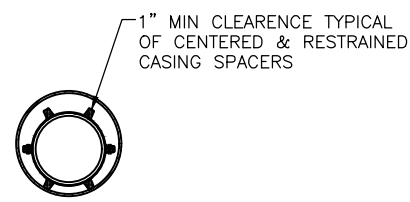
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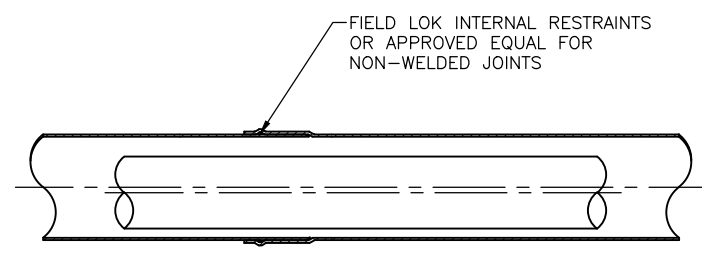


**KEY NOTES:**

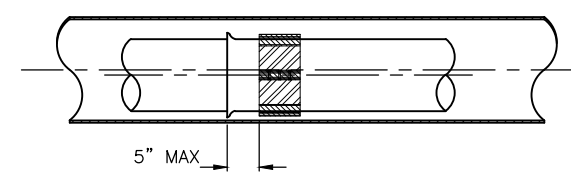
- CARRIER PIPE SHALL BE USED AS REQUIRED WITHIN CITY RIGHT-OF-WAY.
- ALL IRRIGATION PIPE LOCATED WITHIN CITY RIGHT-OF-WAY SHALL BE PVC C900 OR APPROVED EQUAL
- ALL JOINTS THROUGHOUT CASING SHALL BE RESTRAINED WITH FIELD LOC INTERNAL RESTRAINTS OR APPROVED EQUAL.
- RESTRAIN CARRIER PIPE ONE JOINT BEYOND END SEALS.
- MANUFACTURED CASING SPACER INTERVAL PER MANUFACTURER'S SPECIFICATIONS BUT NOT MORE THAN 10- FEET. MINIMUM 3 SPACERS PER PIPE LENGTH.
- CASING SHALL BE WELDED STEEL OR DUCTILE IRON FOR INSTALLATIONS LESS THAN 3- FEET BELOW ROAD GRADE. CPE MAY BE SUBSTITUTED FOR AREAS OUTSIDE OF PAVED ROADWAY.
- CASING PIPE LENGTHS SHALL BE OF THE LONGEST AVAILABLE LENGTH OF PIPE FROM MANUFACTURER
- NON-WELDED STEEL CASING SHALL BE EXTERNALLY RESTRAINED AT ALL JOINTS.
- 3M MARKER BALL TO BE PLACED DIRECTLY ABOVE JOINT RESTRAINT AT END OF PIPE.
- DETECTABLE MARKER TAPE TO BE INSTALLED 12-INCHES TO 14-INCHES ABOVE PIPE CASING. COLOR SHOULD BE ACCORDING TO APWA UNIFORM COLOR CODE FOR MARKING UNDERGROUND UTILITIES. DETECTABLE MARKING TAPE SHALL CONSIST OF INERT POLYETHYLENE PLASTIC THAT IS IMPERVIOUS TO ALL KNOWN ALKALIS, ACIDS, CHEMICAL REAGENTS, AND SOLVENTS LIKELY TO BE ENCOUNTERED IN THE SOIL, WITH A METALLIC FOIL CORE TO PROVIDE FOR THE MOST POSITIVE DETECTION AND PIPELINE LOCATION. DETECTABLE MARKING TAPE SHALL BE NO LESS THAN 2-INCHES WIDE, TYPE OF BURIED UTILITY SHOULD BE CLEARLY MARKED CONTINUOUSLY ALONG THE LENGTH OF THE RIBBON WITH MINIMUM 1-1/2 INCH LETTERS IN THE FOLLOWING FORMAT: "CAUTION BURIED (UTILITY TYPE) LINE"



**CASING SPACERS DETAIL**  
NTS



**NON WELDED JOINT DETAIL**  
NTS



**SPACER DISTANCE FROM BELL DETAIL**  
NTS

**STANDARD DETAIL**  
**CARRIER PIPE**

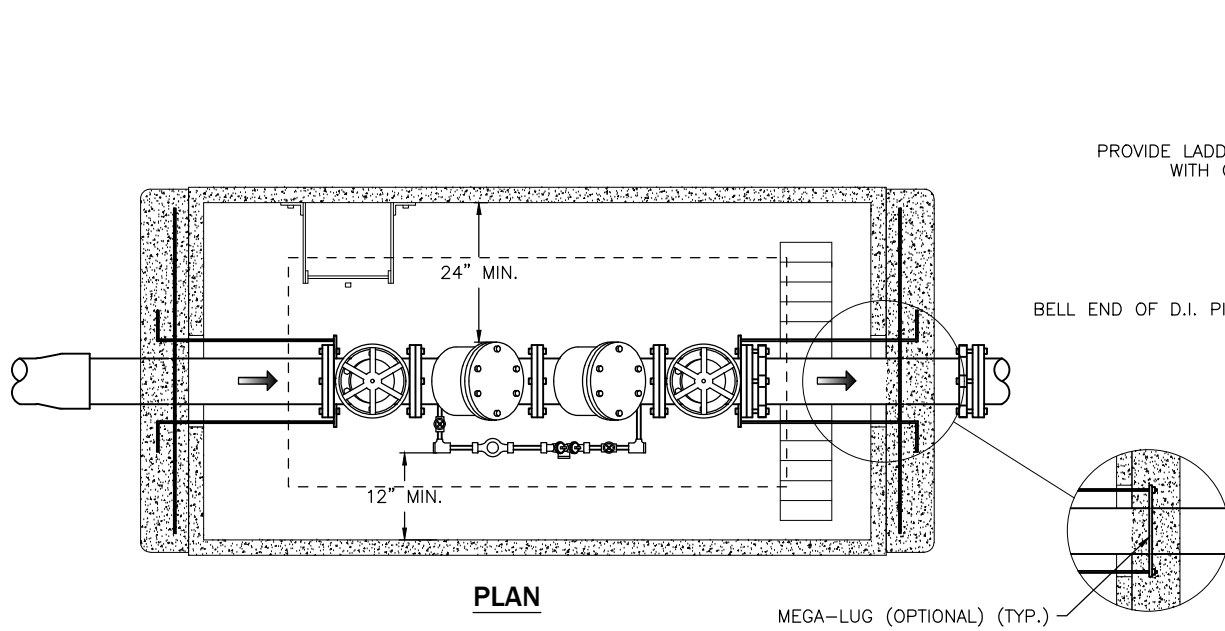


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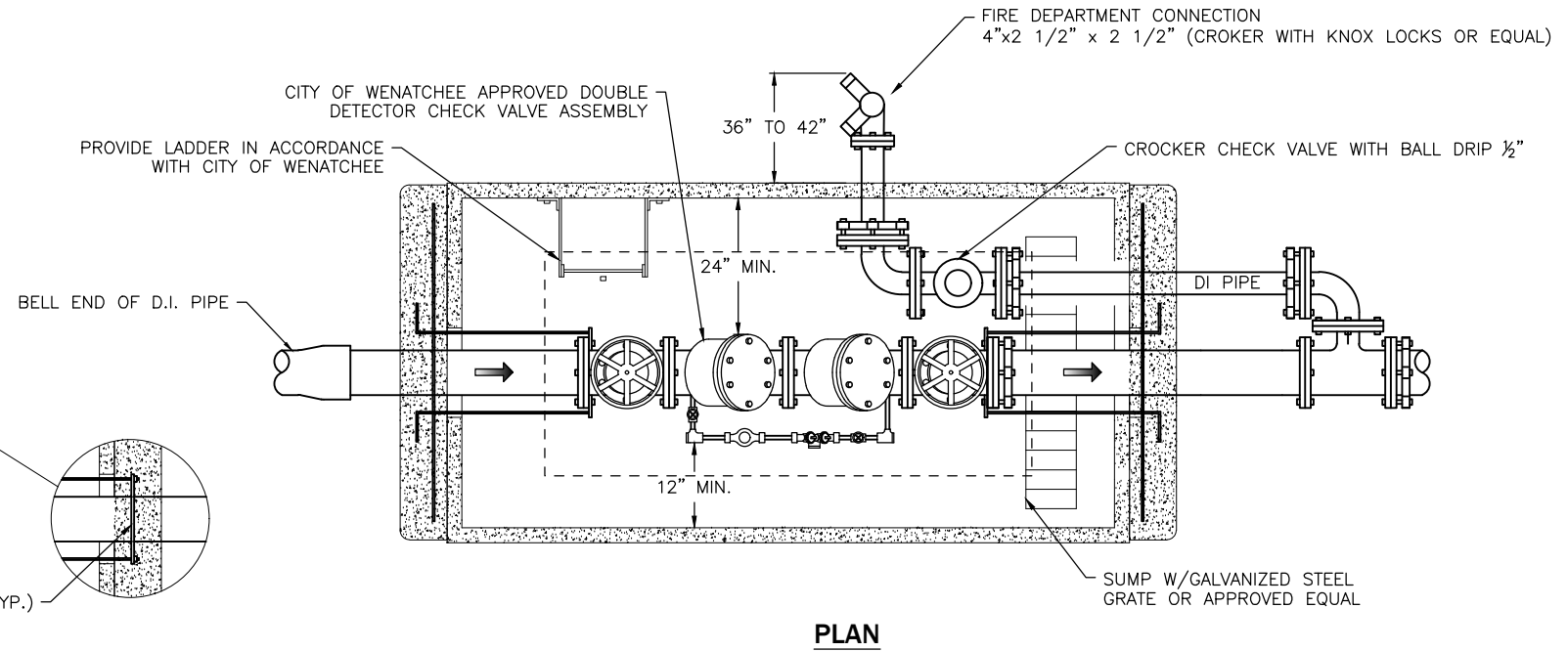
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**NOTES:**

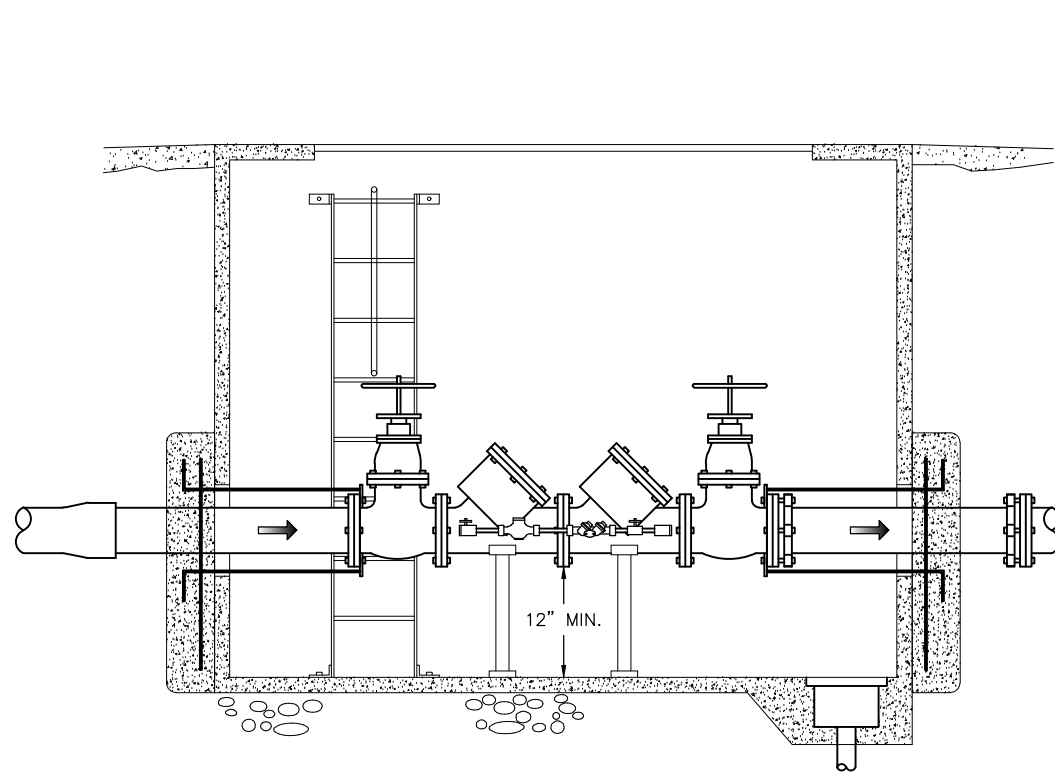
- COVER SHALL NOT EXTEND MORE THAN 2" ABOVE GRADE WHEN VAULT IS NOT IN TRAFFIC AREA.
- SLOPE PAVEMENT AWAY FROM COVER.
- VAULT LID SHALL BE OF ADEQUATE HEIGHT TO PROVIDE MIN. 6" CLEARANCE TO O, S & Y VALVE WHEN VALVE IS FULLY OPEN.
- 5/8" BY-PASS METER SHALL BE SENSUS SR II OR NEPTUNE T-10.
- VAULTS SHALL BE AS MANUFACTURED BY UTILITY VAULT OR APPROVED EQUAL AND SHALL BE STRUCTURALLY DESIGNED FOR THE PROPOSED INSTALLATION.
- BACK-FLOW VALVE AND ASSEMBLY MUST APPEAR ON CURRENT DEPT. OF HEALTH'S APPROVED VALVE LISTING.
- ASSEMBLY SHALL BE MAINTAINED BY OWNER WITH A TEST DONE UPON INSTALLATION AND ANNUALLY THEREAFTER BY A CERTIFIED BACK-FLOW ASSEMBLY TESTER (BAT.) A COPY OF EACH ANNUAL TEST REPORT MUST BE SENT TO THE CITY OF WENATCHEE.
- WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL AFTER DOUBLE CHECK DETECTOR ASSEMBLY IS INSPECTED, TESTED AND APPROVED BY CITY REPRESENTATIVE.
- RESTRAIN CHECK DETECTOR WITH MEGA-LUGS, RESTRAINED JOINT PIPE, OR SHACKLE RODS BACK TO WATER MAIN AS REQUIRED.



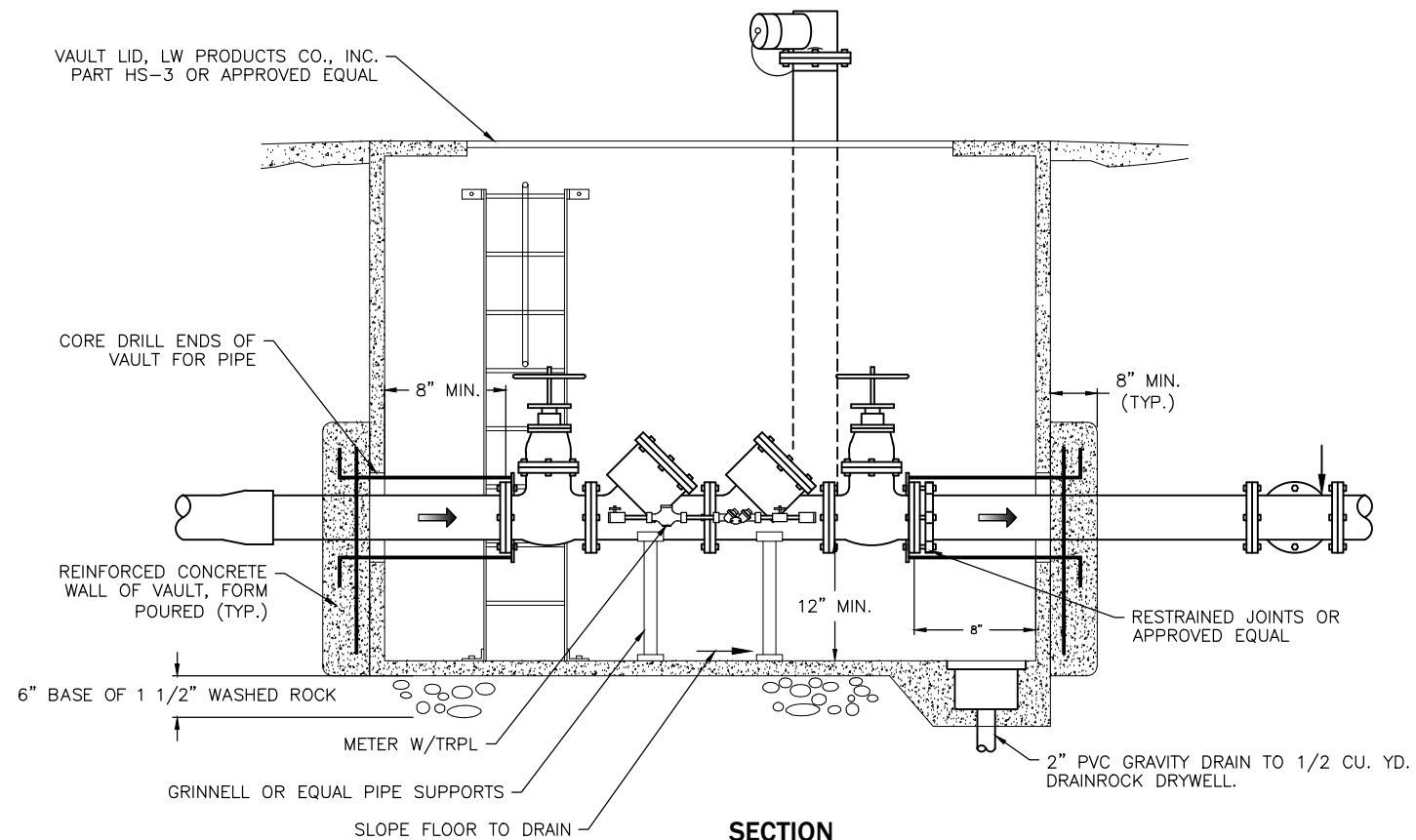
SHOWN WITHOUT FIRE DEPARTMENT CONNECTION.  
WHEN FDC IS AT ANOTHER LOCATION



THIS DCDA VAULT SERVES A SINGLE BUILDING AND  
THE VAULT IS LOCATED ADJACENT TO THE RIGHT  
OF WAY WHERE A FIRE HYDRANT IS NEARBY.



**SECTION**



**STANDARD DETAIL**  
**FIRE SERVICE**  
**DCDA CONNECTION**



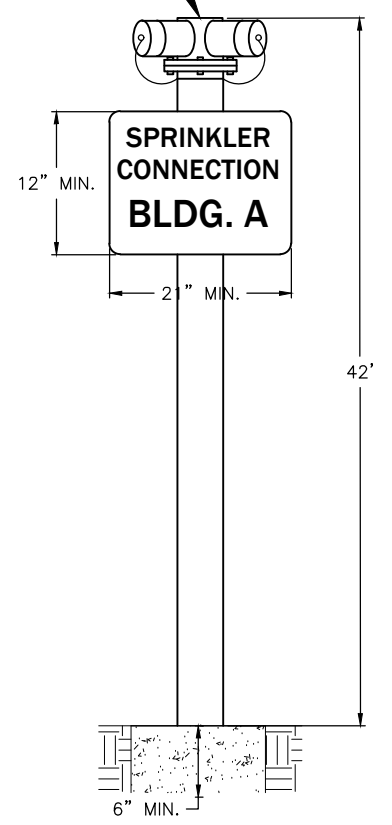
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STANDARD SPECIFICATIONS  
6-02 CONCRETE STRUCTURES  
7-08 WATER MAINS  
7-12 VALVES FOR WATER MAINS  
7-15 SERVICE CONNECTIONS

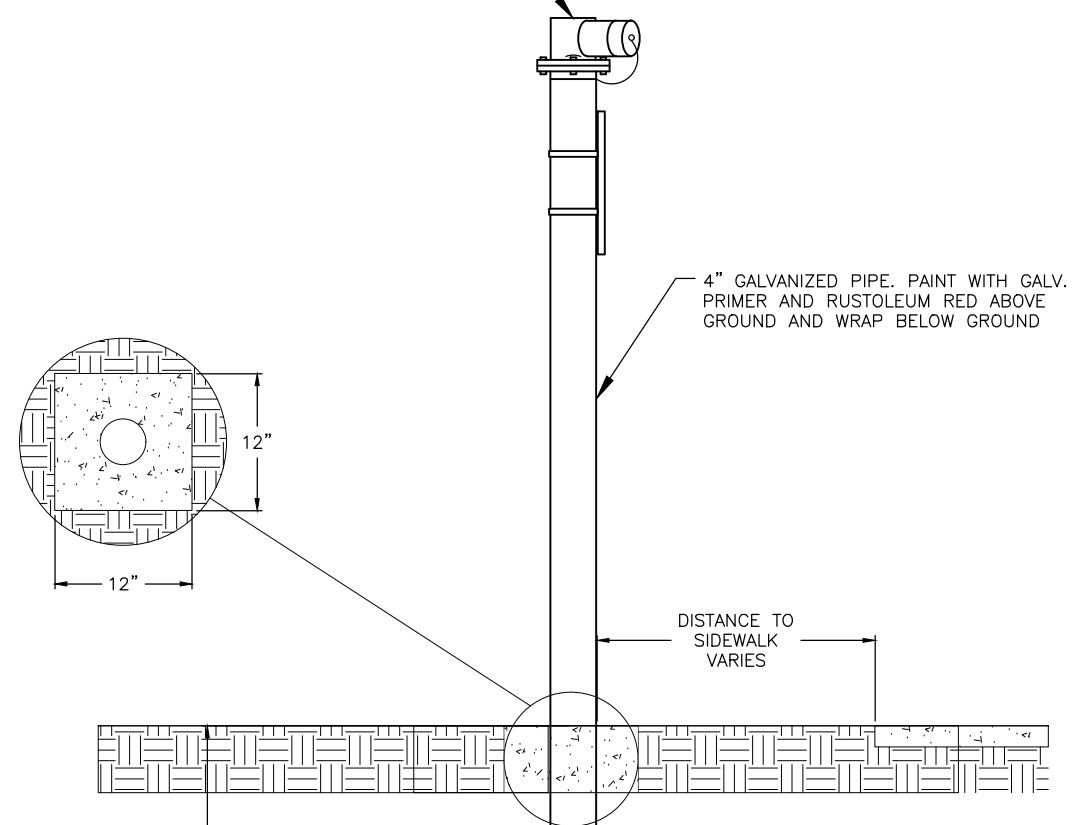
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LOCATION TO BE APPROVED BY FIRE INSPECTOR



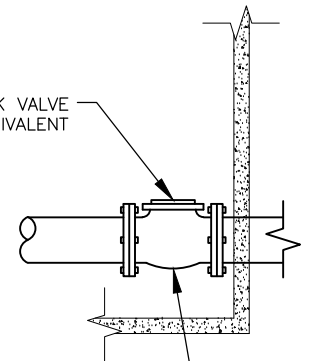
CROCKER 6420, 4"x 2.5"x 2.5" DOUBLE CLAPPER WITH KNOX FDC LOCKS



4" GALVANIZED PIPE. PAINT WITH GALV. PRIMER AND RUSTOLEUM RED ABOVE GROUND AND WRAP BELOW GROUND

DISTANCE TO SIDEWALK VARIES

NIBCO #F-908W SINGLE CHECK VALVE OR EQUIVALENT



VALVE TO BE LOCATED IN UTILITY ROOM FOR MAINTENANCE

40" MIN. OR DEPTH OF MAINLINE WHICHEVER IS GREATER

MEGA LUG GLANDS

MJ x STEEL GASKET

4" ELBOW

THRUST BLOCK AROUND VERTICAL BEND (PER NFPA STD. 24)

1/2" BALL DRIP VALVE NIBCO #RG 2200 OR EQUIVALENT

4 CUBIC FOOT DRAIN SUMP FILLED WITH DRAIN ROCK UNDER DRIP VALVE. LINE SUMP WITH GEOTEXTILE FABRIC; OVERLAP 6" ON TOP.

**NOTES:**

- SIGN TO SAY "SPRINKLER CONNECTION" AND "BLDG. A" (OR WHICHEVER BUILDING IS IDENTIFIED).
- FIRE DEPARTMENT CONNECTION (FDC) PIPE TO BE PAINTED RUSTOLEUM RED.
- SIZE OF SIGN TO FIT REQUIRED INFORMATION 3.00" BLOCK LETTERS WHITE ON RED BACKGROUND ON 0.080" RUST FREE ALUMINUM BASE OR BETTER.

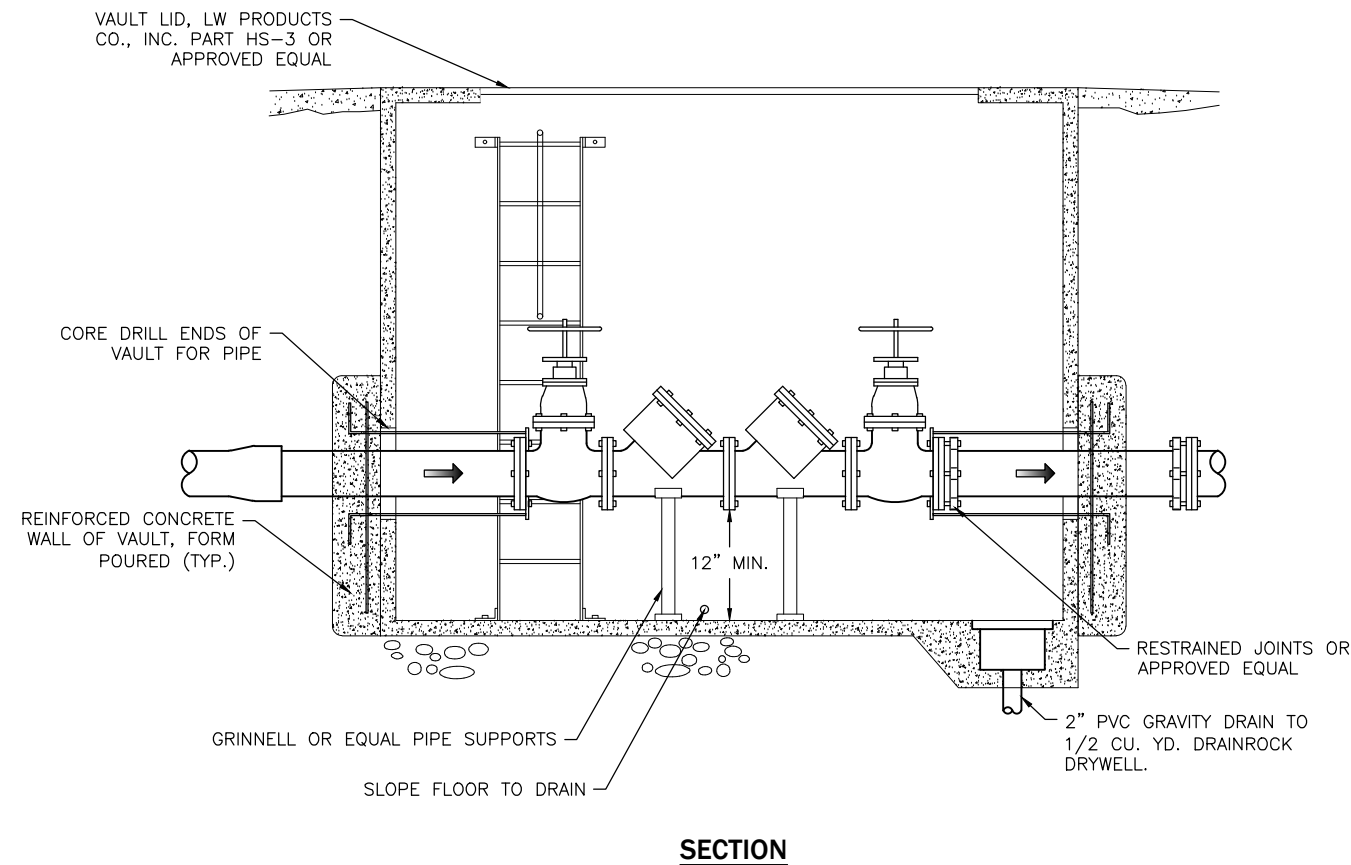
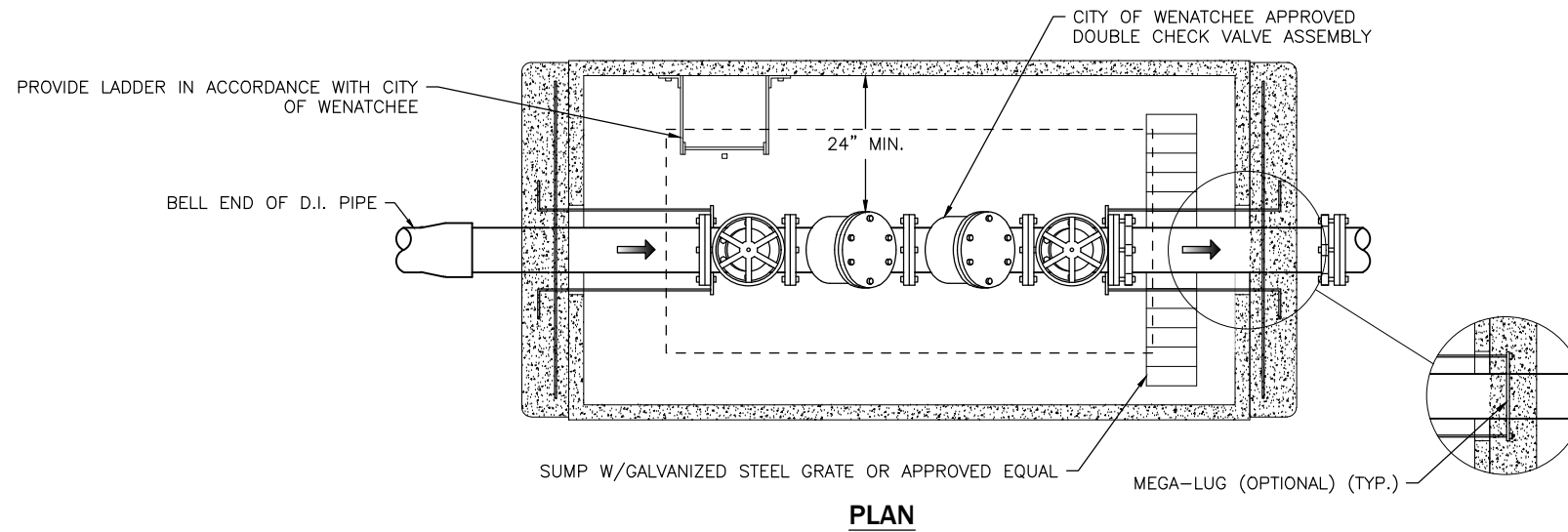
**STANDARD DETAIL  
FIRE SERVICE  
STANDALONE FDC**



DATE DRAWN	DESIGNED	DRAWN	CHECKED	DATE APPROVED	REVISIONS
2/24/2020	DMN	CAW	DMN		DATE
					INITIAL
					AJS
					01/22

**NOTES:**

1. TYPICAL LOCATION IS AT OR NEAR THE PROPERTY LINE, AT BACK OF WATER METER CHAMBER.
2. COVER SHALL NOT EXTEND MORE THAN 2" ABOVE GRADE WHEN VAULT IS NOT IN TRAFFIC AREA.
3. SLOPE PAVEMENT AWAY FROM COVER.
4. VAULT LID SHALL BE OF ADEQUATE HEIGHT TO PROVIDE MIN. 6" CLEARANCE TO O, S & Y VALUE WHEN VALVE IS FULLY OPEN.
5. VAULTS SHALL BE AS MANUFACTURED BY UTILITY VAULT OR APPROVED EQUAL AND SHALL BE STRUCTURALLY DESIGNED FOR THE PROPOSED INSTALLATION.
6. BACK-FLOW VALVE AND ASSEMBLY MUST APPEAR ON CURRENT DEPT. OF HEALTH'S APPROVED VALVE LISTING.
7. RESTRAIN CHECK DETECTOR WITH MEGA-LUGS. RESTRAINED JOINT PIPE, OR SHACKLE RODS BACK TO WATER MAIN AS REQUIRED.
8. BOTTOMLESS VAULTS MUST PROVIDE CONCRETE SUPPORT FOUNDATIONS FOR PIPE SUPPORTS.
9. ASSEMBLY SHALL BE MAINTAINED BY OWNER WITH A TEST DONE UPON INSTALLATION AND ANNUALLY THEREAFTER BY A CERTIFIED BACK-FLOW ASSEMBLY TESTER (BAT.) A COPY OF EACH ANNUAL TEST REPORT MUST BE SENT TO THE CITY OF WENATCHEE.
10. WATER SERVICE SHALL NOT BE PLACED IN SERVICE UNTIL AFTER DOUBLE CHECK DETECTOR ASSEMBLY IS INSPECTED, TESTED AND APPROVED BY CITY REPRESENTATIVE.
11. ACCOUNT FOR THERMAL EXPANSION WITHIN THE PREMISES.
12. AN ALTERNATE LOCATION MAY BE ALLOWED BY THE WATER PURVEYOR.



**STANDARD DETAIL  
DOUBLE CHECK VALVE  
PREMISES ISOLATION**



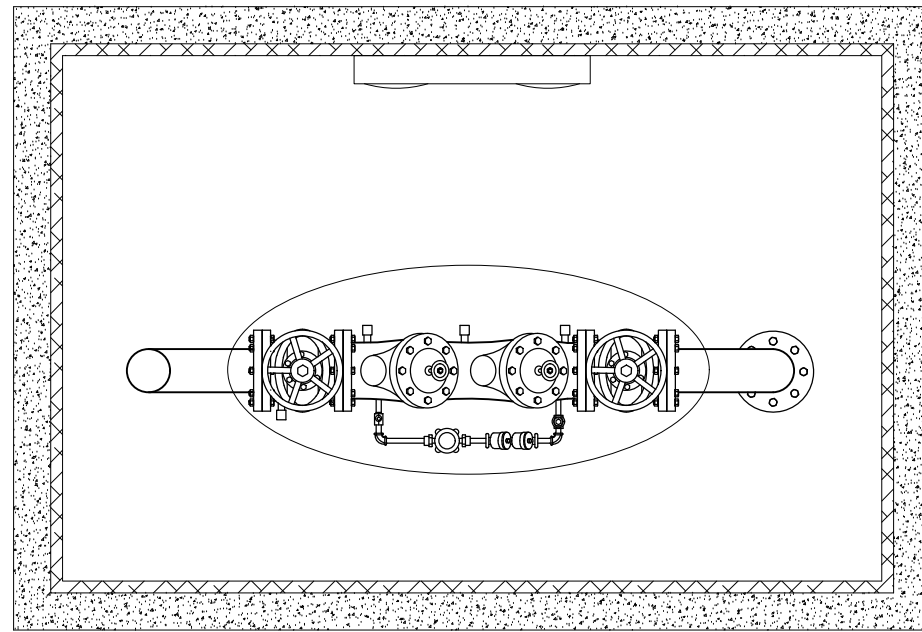
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		DATE	INITIAL
DESIGNED DMN	3/23/2015	8/4/2020	DMN
DRAWN RDH	CHECKED DMN	01/01/2022	AJS
APPROVED BY	DATE APPROVED		

STANDARD SPECIFICATIONS  
6-02 CONCRETE STRUCTURES  
7-09 WATER MAINS  
7-12 VALVES FOR WATER MAINS  
7-15 SERVICE CONNECTIONS

DETAIL NO.  
**W-210**

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**1 OF 1**



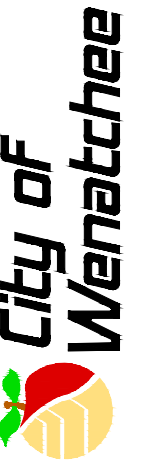


**PLAN**

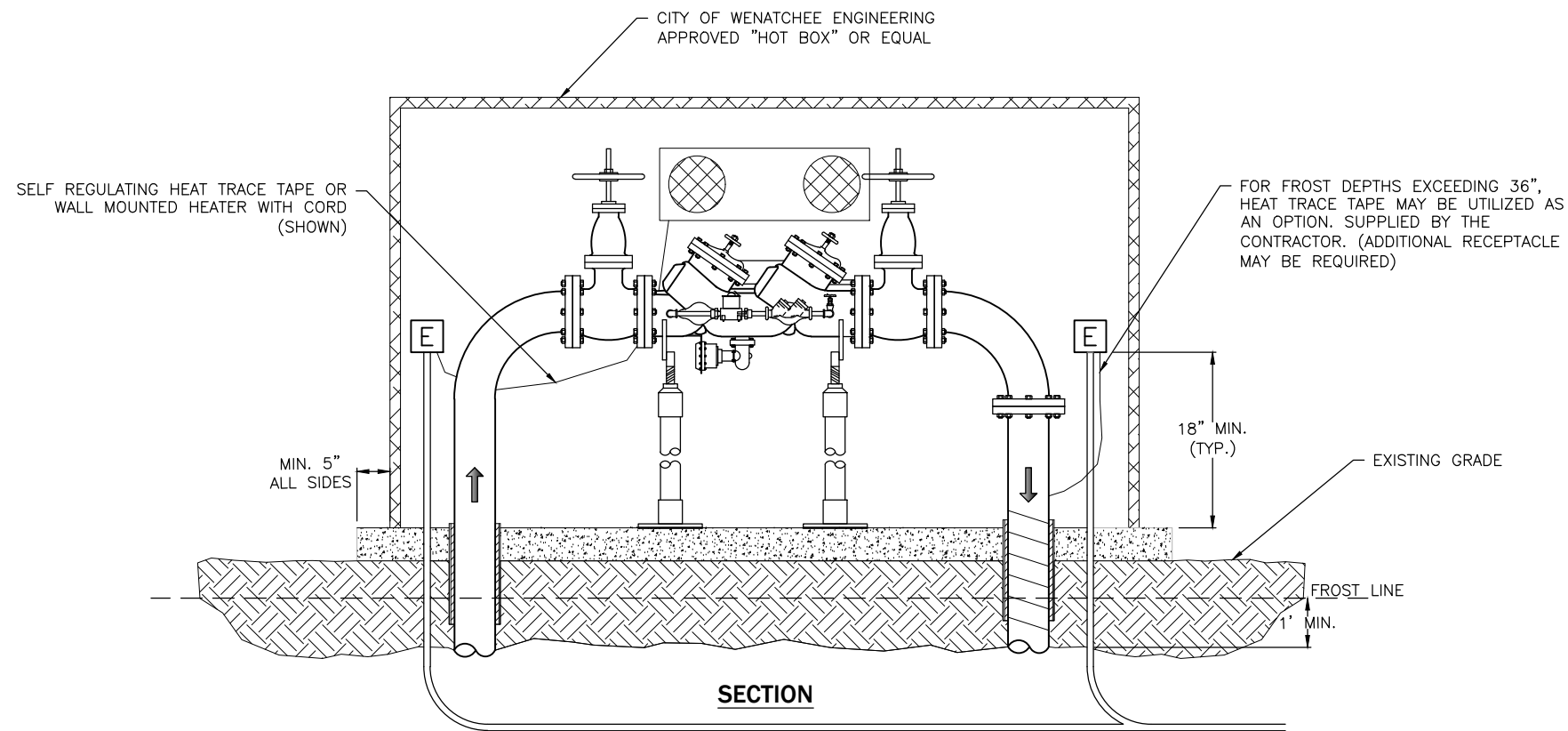
**NOTES:**

1. ASSEMBLY SHALL BE MAINTAINED BY OWNER, TESTING IS REQUIRED BY A CERTIFIED BACKFLOW ASSEMBLY TESTER (BAT) AFTER INSTALLATION, THEN ANNUALLY THEREAFTER. A COPY OF THE TEST REPORT SHALL BE SENT TO THE CITY OF WENATCHEE.
2. WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL AFTER REDUCED PRESSURE BACKFLOW ASSEMBLY IS INSPECTED AND APPROVED BY THE CITY OF WENATCHEE.
3. RESTRAIN ASSEMBLY WITH, MEGA-LUGS, RESTRAINED JOINT PIPE OR SHACKLE RODS BACK TO WATER MAIN AS REQUIRED.
4. SEE CURRENT ADDTION OF AWWA CROSS CONNECTION CONTROL MANUAL FOR ADDITIONAL DETAILS.

**STANDARD DETAIL  
HOT BOX ENCLOSURE  
BACK FLOW ASSEMBLY**



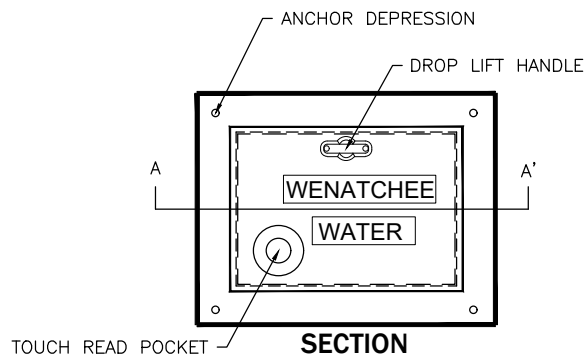
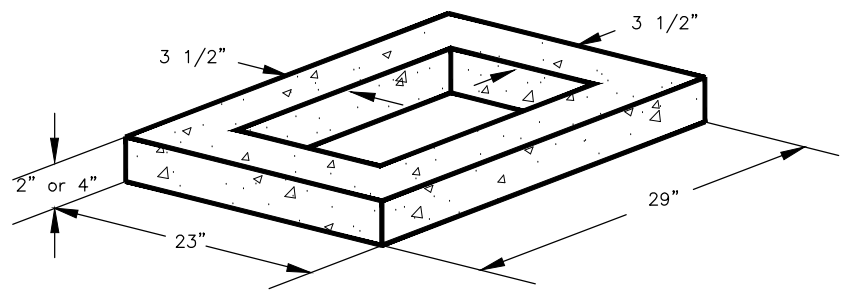
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				DATE	INITIAL
				01/22	AJS



**REDUCED PRESSURE  
BACKFLOW ASSEMBLIES  
RPBA's & RDDA's**

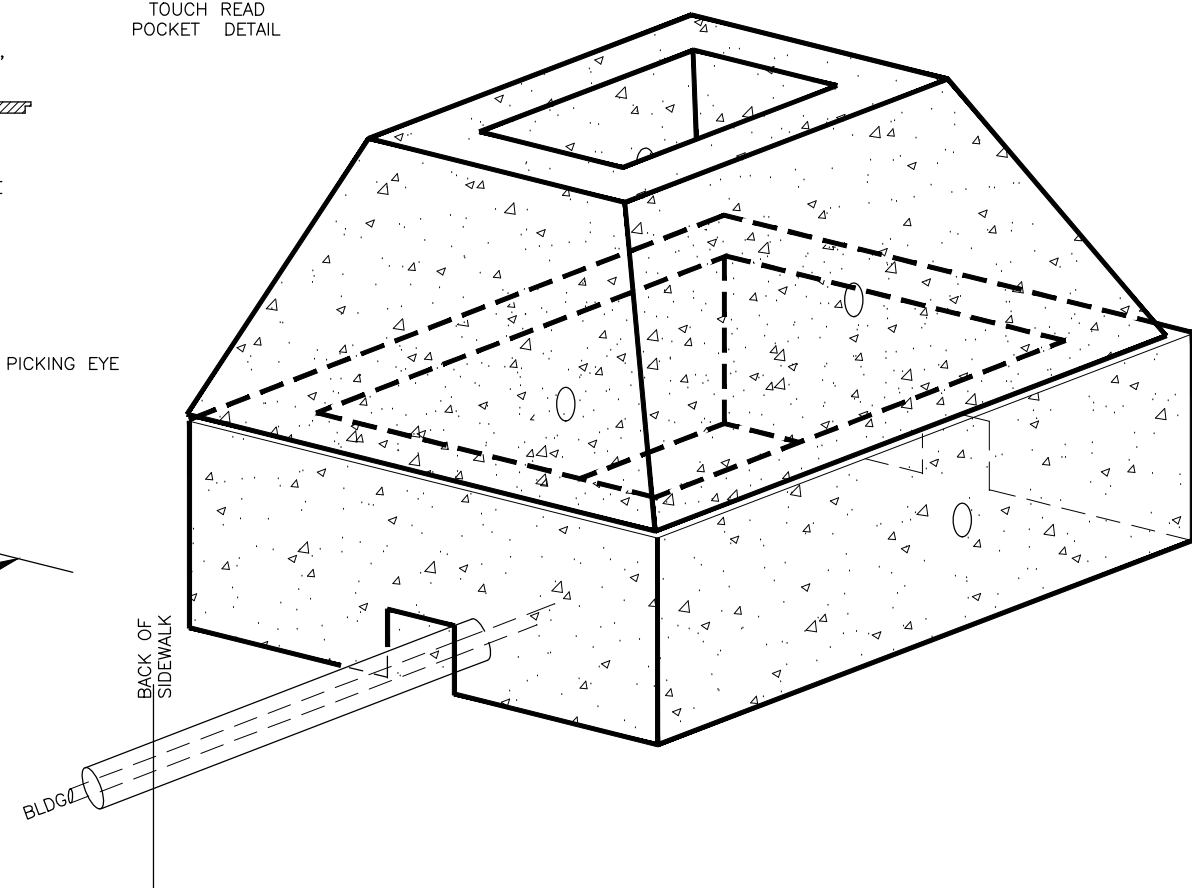
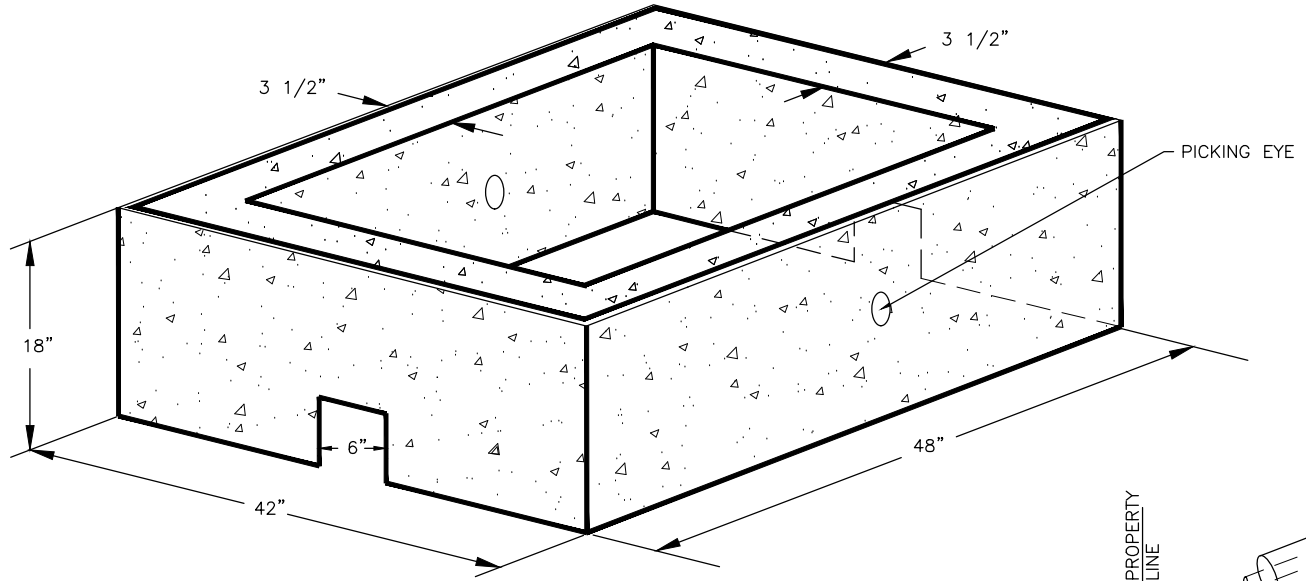
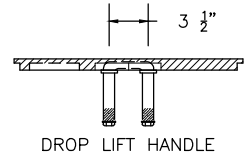
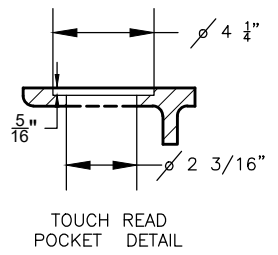
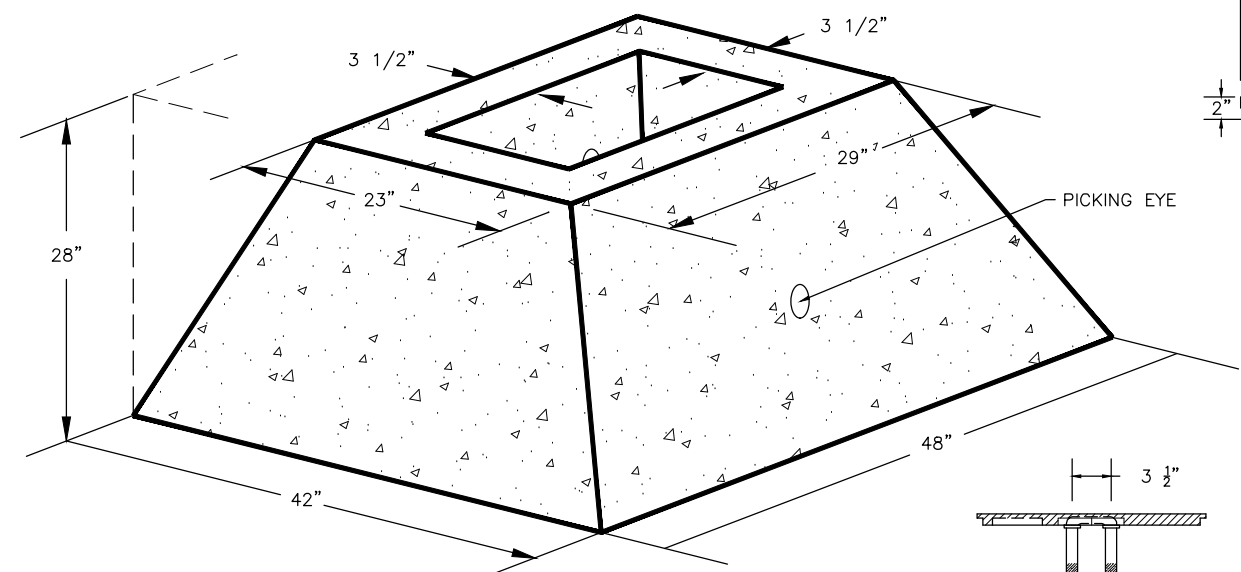
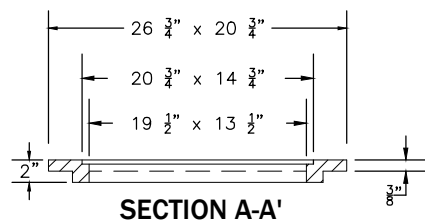
DETAIL NO.  
**W-230**

PAGE  
**1 OF 1**



**NOTES:**

1. MATERIALS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.
2. USE CITY SIDEWALK DETAIL FOR SIDEWALK SURFACING OVER WATER METER CHAMBERS.
3. LOCATE WATER METER CHAMBER UNDER SIDEWALK, SET WATER METER CHAMBER LID FLUSH WITH FINAL SIDEWALK GRADE. WATER METER CHAMBER SHALL BE SET AT A DEPTH TO INCLUDE AT LEAST ONE RISER AND A MAXIMUM DEPTH OF 4 INCH RISER.
4. WATER CHAMBER CAST IRON FRAME SHALL HAVE A DEPRESSION FOR PRE-APPROVED "FASTENAL 1/4" X 2 1/2" DRIVE ANCHORS PART NUMBER 50608" OR AS APPROVED BY THE CITY ENGINEER.
5. SERVICE TO PROPERTY SHALL BE IN A CASING. THE CASING SHALL BE A MINIMUM DIAMETER OF 2 INCH PVC PIPE, OR 50% GREATER THAN THE SERVICE PIPE WHICHEVER IS LARGER. THE CASING PIPE SHALL BE GROUTED FLUSH WITH INSIDE EDGE OF CHAMBER AND EXTENDED TO WITHIN 1 FOOT OF THE PROPERTY LINE OR UTILITY EASEMENT LINE.



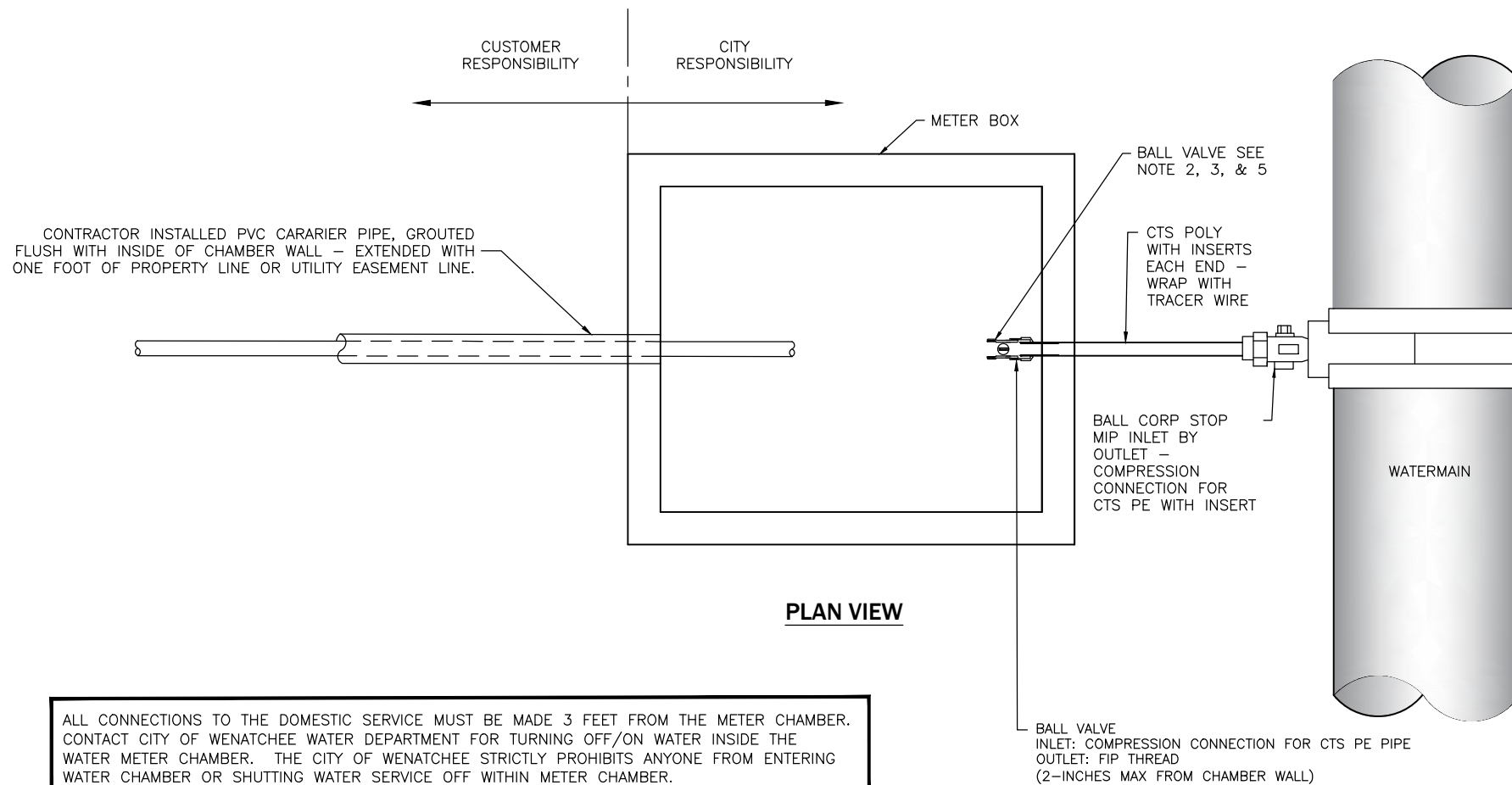
**STANDARD DETAIL  
WATER BOX CHAMBER  
WATER METER SERVICES**



SCALE: AS SHOWN	DATE DRAWN 3/06/2017	REVISIONS	
		DATE	INITIAL
DESIGNED		04/26/2017	DMN
DRAWN		05/16/2017	DMN
APPROVED BY		01/01/2022	AJS

STANDARD SPECIFICATIONS  
7-09 WATER MAINS  
9-30.6 WATER SERVICE CONNECTIONS

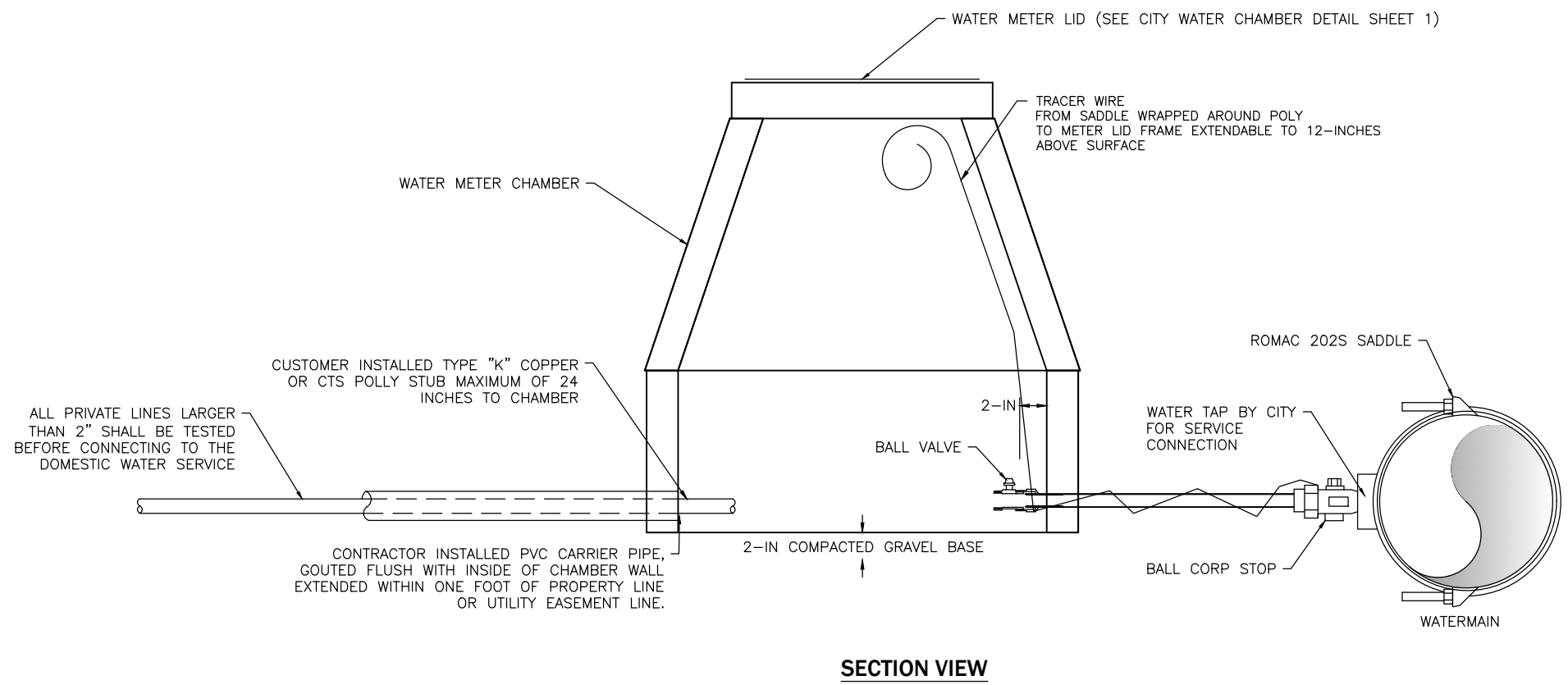
DETAIL NO.  
**W-250A**



ALL CONNECTIONS TO THE DOMESTIC SERVICE MUST BE MADE 3 FEET FROM THE METER CHAMBER. CONTACT CITY OF WENATCHEE WATER DEPARTMENT FOR TURNING OFF/ON WATER INSIDE THE WATER METER CHAMBER. THE CITY OF WENATCHEE STRICTLY PROHIBITS ANYONE FROM ENTERING WATER CHAMBER OR SHUTTING WATER SERVICE OFF WITHIN METER CHAMBER.

**NOTES:**

1. MATERIALS SHALL BE SUBMITTED FOR CITY APPROVAL PRIOR TO INSTALLATION.
2. MATERIAL SHALL BE NON-LEAD, SUPPLIERS ARE TYPICALLY: FORD, MEULLER, AND AY MCDONALD.
3. WATCH BALL VALVE SIZE TO CTS POLY, MINIMUM PIPE DIAMETER IS 1 1/2 INCH FOR ALL SINGLE SERVICES FROM WATER MAIN.
4. DOWNSTREAM WATER SERVICE PIPE DIAMETER SHALL BE THE SAME AS THE WATER METER FOR TEN (10) FEET.
5. BALL VALVE'S COMPRESSION COUPLING TO THE CTS PE WATER SERVICE PIPE SHALL HAVE INSERT AND BE A MAXIMUM OF 2-INCHES FROM INSIDE OF CHAMBER.
6. ALL TAPS SHALL BE BY CITY CREWS

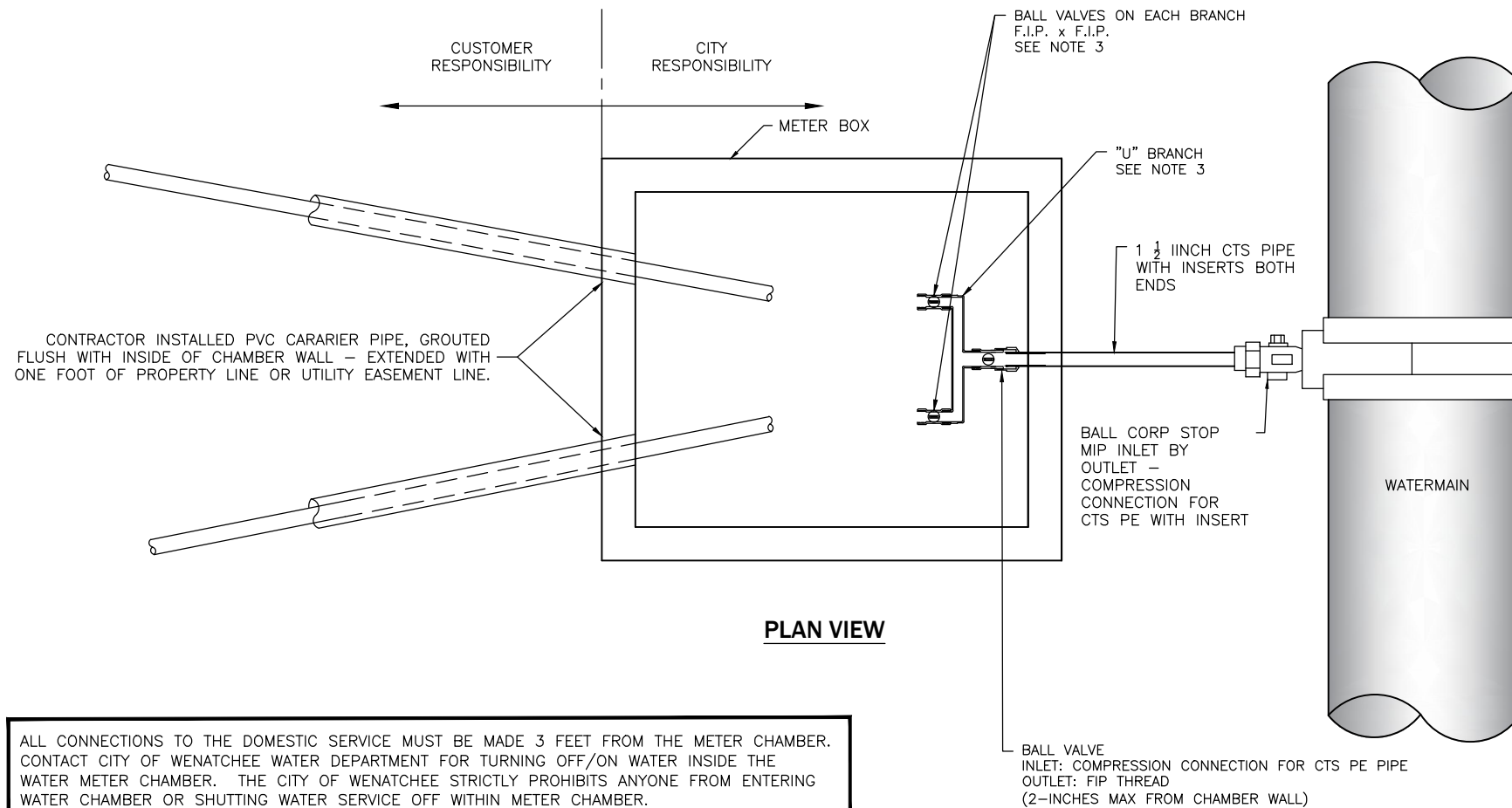


WATER SERVICES		
SINGLE METER SIZE IN CHAMBER (INCHES)	SERVICE TO CHAMBER (INCHES)	SERVICE FROM CHAMBER (INCHES)
3/4 OR 1/2	1 1/2 *	3/4
1	1 1/2 *	1
1 1/2	1 1/2	1 1/2
2	2	2
* 1-INCH MINIMUM AS DETERMINED BY CITY		

**STANDARD DETAIL**  
**1 1/2" OR 2" SINGLE METER SERVICE**  
**WATER METER SERVICES**



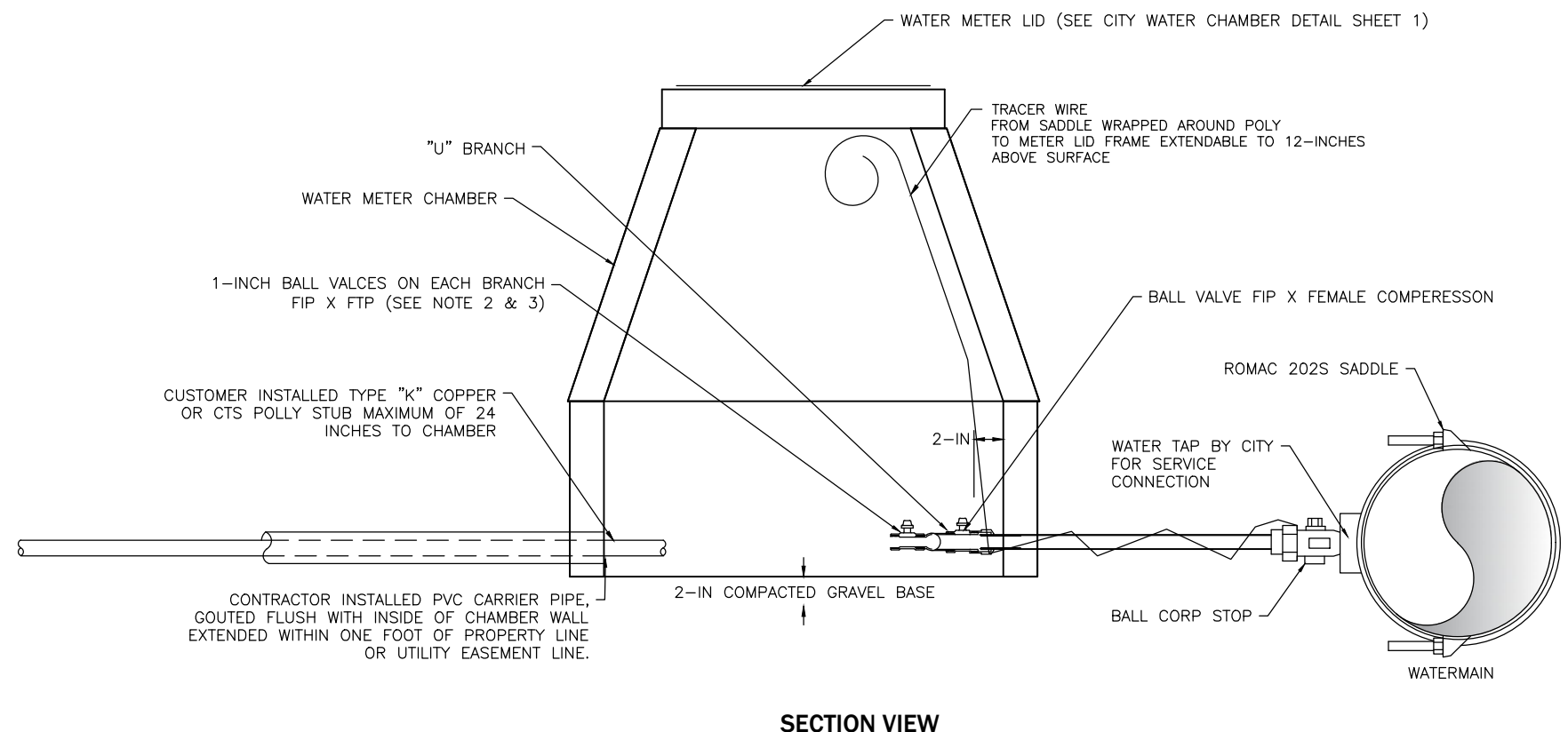
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			DATE	INITIAL	DATE	INITIAL
3/06/2017			04/26/2017	DMN	01/01/2022	AIS



ALL CONNECTIONS TO THE DOMESTIC SERVICE MUST BE MADE 3 FEET FROM THE METER CHAMBER. CONTACT CITY OF WENATCHEE WATER DEPARTMENT FOR TURNING OFF/ON WATER INSIDE THE WATER METER CHAMBER. THE CITY OF WENATCHEE STRICTLY PROHIBITS ANYONE FROM ENTERING WATER CHAMBER OR SHUTTING WATER SERVICE OFF WITHIN METER CHAMBER.

**NOTES:**

1. MATERIALS SHALL BE SUBMITTED FOR CITY APPROVAL PRIOR TO INSTALLATION.
2. MATERIAL SHALL BE NON-LEAD, SUPPLIERS ARE TYPICALLY: FORD, MEULLER, AND AY MCDONALD.
3. MATCH BALL VALVE SIZE TO CTS POLY, 1-1/2 INCH BY 1-INCH U-BRANCH SET 12-INCH ON CENTER CONNECTED TO 1 1/2 INCH BALL VALVE NEAR CHAMBER WALL AND WITH 1-INCH BALL VALVES ON EACH BRANCH.
4. DOWNSTREAM WATER SERVICE PIPE DIAMETER SHALL BE THE SAME AS THE WATER METER FOR TEN (10) FEET.
5. 1 1/2 INCH BALL VALVE COMPRESSION COUPLING TO THE CTS PE SERVICE PIPE SHALL BE A MAXIMUM OF 2-INCHES FROM SIDE OF CHAMBER WALL.
6. ALL TAPS SHALL BE BY CITY CREWS

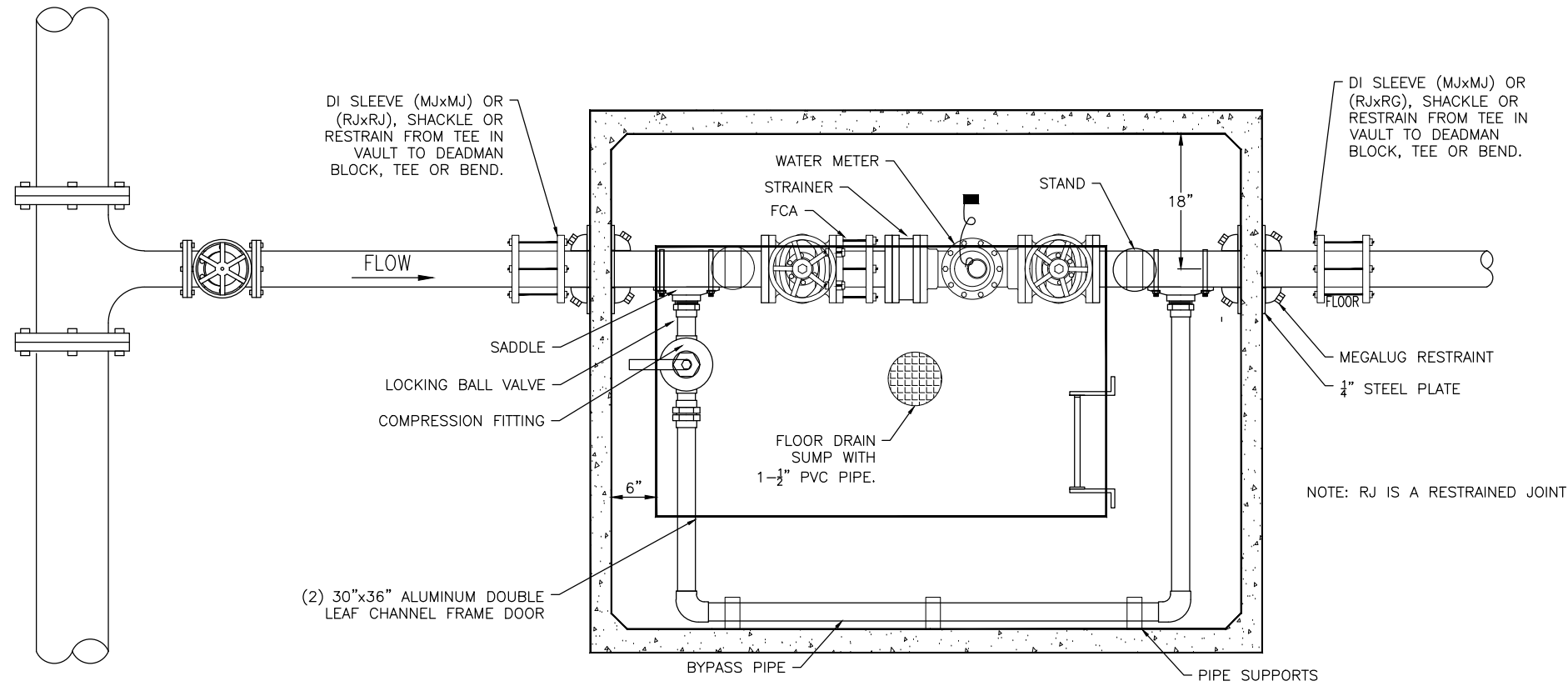


**SECTION VIEW**

**STANDARD DETAIL**  
**2 1" SPLIT FROM 1 1/2" DOUBLE METER SERVICE**  
**WATER METER SERVICES**

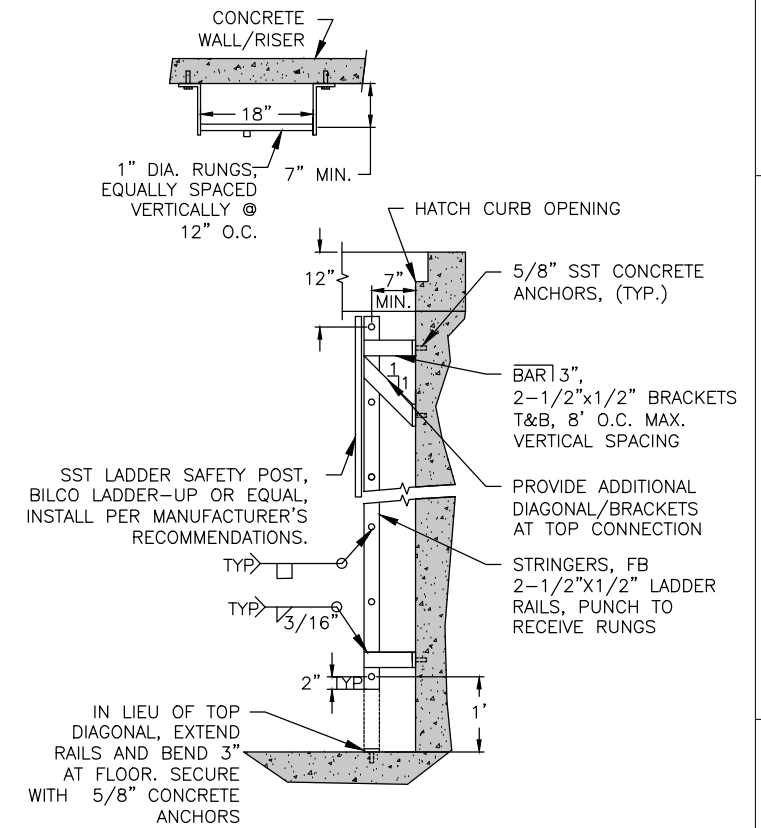


SCALE: AS SHOWN	DATE DRAWN	REVISIONS			
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DRAWN	MYW				
APPROVED BY					

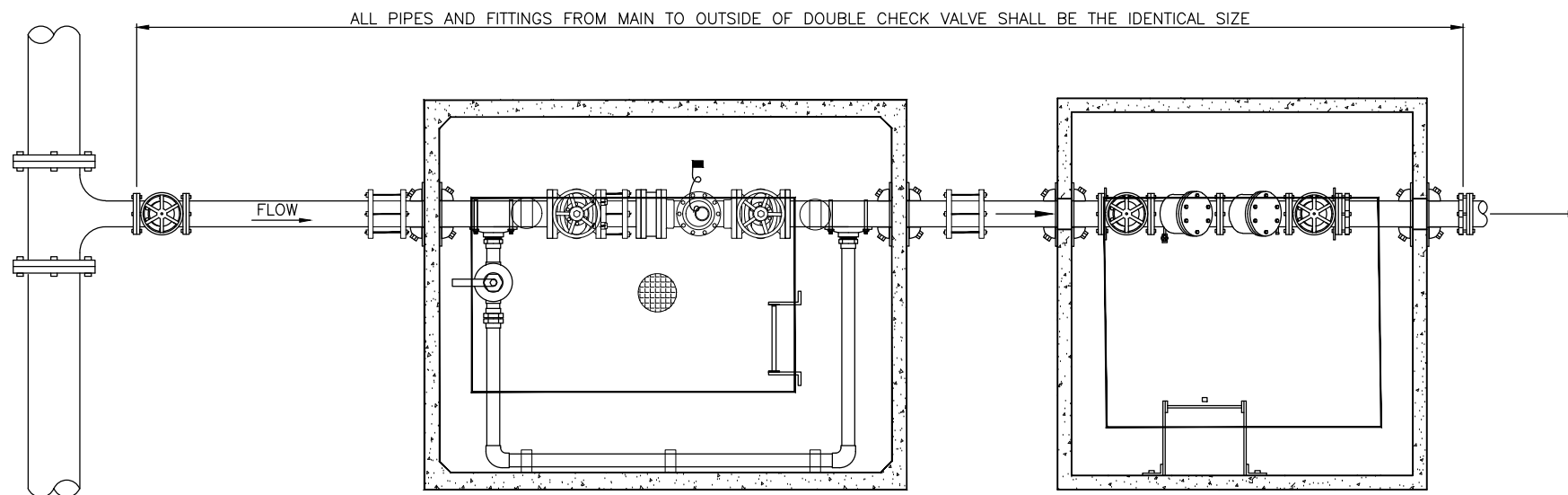


**WATER PIPING AND VAULT**  
N.T.S.

- NOTES:**
- LADDERS SHALL BE ALUMINUM.
  - LADDER MUST MEET CONSTRUCTION REQUIREMENTS OF ANSI A14.3



**LADDER DETAIL**  
N.T.S.



**WATER PIPING AND VAULT**  
N.T.S.

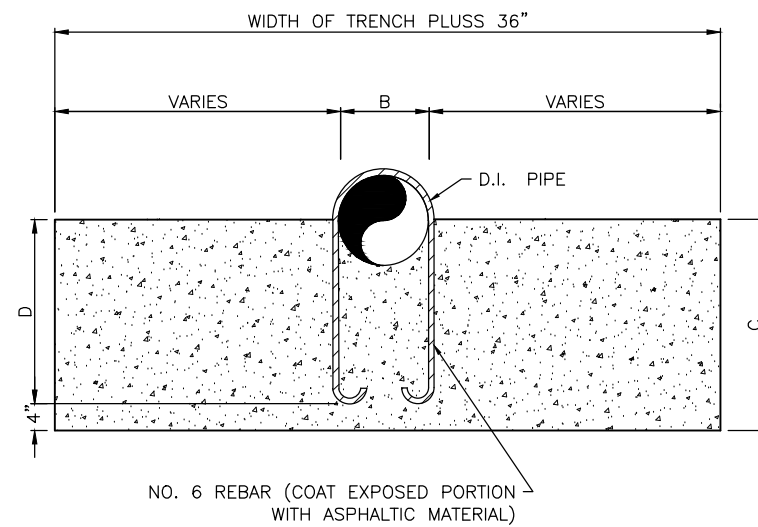
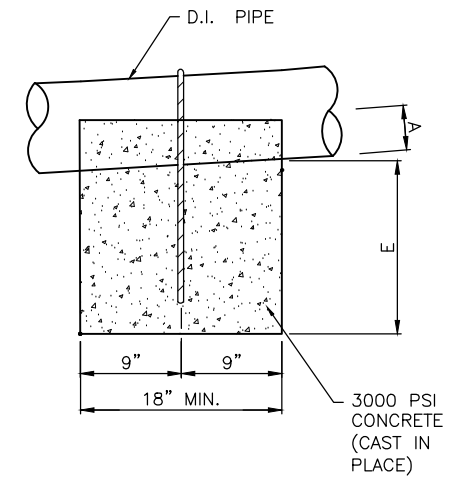
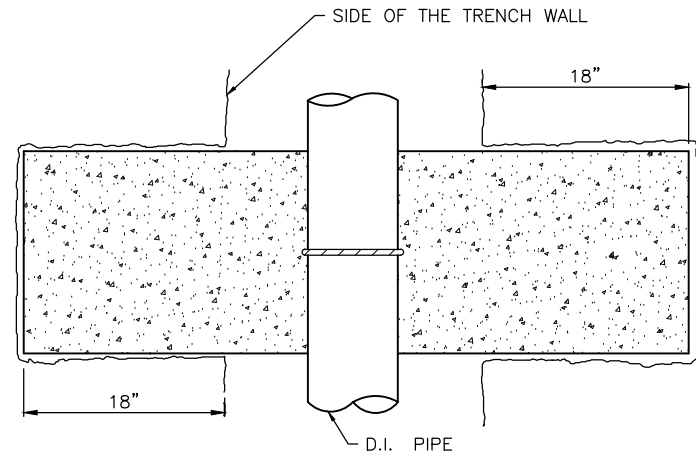
**DOUBLE CHECK VAULT**  
N.T.S.

- NOTES:**
- MATERIALS SHALL BE SUBMITTED FOR CITY APPROVAL PRIOR TO INSTALLATION.
  - MATERIALS SHALL BE NON-LEAD.
  - MATCH BALL VALVE SIZE TO CTS POLY.
  - BALL VALVE COMPRESSION COUPLING TO THE CTS PE WATER SERVICE PIPE SHALL HAVE INSERT AND BE A MAXIMUM OF 2 INCHES FROM INSIDE CHAMBER WALL.
  - DOWNSTREAM WATER SERVICE PIPE DIAMETER SHALL BE THE SAME AS THE WATER METER FOR 3 FEET.
  - ALL TAPS SHALL BE BY CITY CREWS.
  - WATER METER TO BE LOCATED AT BACK OF WALK. SET WATER METER CHAMBER LID FLUSH WITH FINAL SIDEWALK GRADE.
  - EASEMENTS REQUIRED WHEN OUTSIDE RIGHT-OF-WAY.

**STANDARD DETAIL**  
**3", 4", AND 6" WATER**  
**METER CHAMBER**



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		CAW		01/01/2022	AJS



PIPE SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
4"	2.4	4.8	17	13	14.6
6"	3.5	6.9	18	14	14.5
8"	4.5	9.1	19	15	14.5
10"	5.6	11.1	20	16	14.4
12"	6.6	13.2	21	17	14.4
14"	7.7	15.3	22	18	14.3
16"	8.7	17.4	23	19	14.3
18"	9.8	19.5	24	20	14.2

SLOPES > 20% – PROVIDE CONCRETE SLOPE ANCHORS (20' TO 25' ON CENTER.)

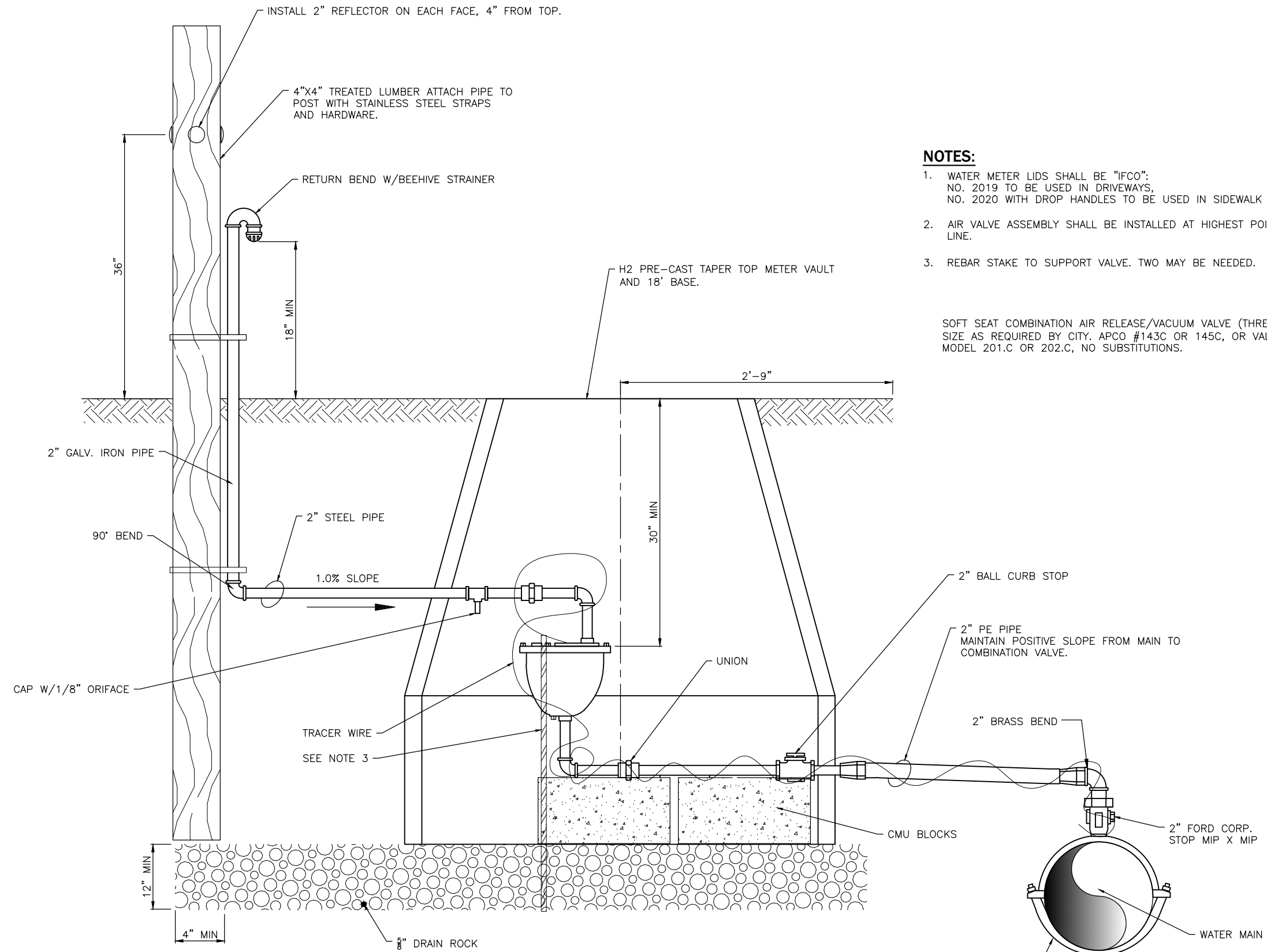
**STANDARD DETAIL  
CONCRETE SLOPE  
ANCHOR**



SCALE: AS SHOWN	DATE DRAWN 11/04/2020	REVISIONS	
		DATE	INITIAL
DESIGNED BY CAW	CHECKED	01/01/2022	AJS
APPROVED BY	DATE APPROVED		
STANDARD SPECIFICATIONS			

DETAIL NO.  
**W-310**

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**1 OF 1**



ALL PIPE AND FITTINGS SHOWN TO BE GALVANIZED STEEL (WRAPPED), UNLESS OTHERWISE NOTED.

DOUBLE STRAP SERVICE CLAMP W/2" IPS TAP TO FIT, EQUAL TO FORD CO.

**NOTES:**

1. WATER METER LIDS SHALL BE "IFCO": NO. 2019 TO BE USED IN DRIVEWAYS, NO. 2020 WITH DROP HANDLES TO BE USED IN SIDEWALK AREAS
2. AIR VALVE ASSEMBLY SHALL BE INSTALLED AT HIGHEST POINT OF LINE.
3. REBAR STAKE TO SUPPORT VALVE. TWO MAY BE NEEDED.

SOFT SEAT COMBINATION AIR RELEASE/VACUUM VALVE (THREADED), SIZE AS REQUIRED BY CITY, APCO #143C OR 145C, OR VAL-MATIC MODEL 201.C OR 202.C, NO SUBSTITUTIONS.

**COMBINATION AIR VALVE**  
N.T.S.

**STANDARD DETAIL**  
**COMBINATION**  
**AIR VALVE**



SCALE: AS SHOWN	DESIGNED	DRAWN	CHECKED	DATE DRAWN	REVISIONS			
					DATE	INITIAL	CAW	AS
				08/03/2006				
					12/21/2020	CAW		
					01/01/2022		AS	