

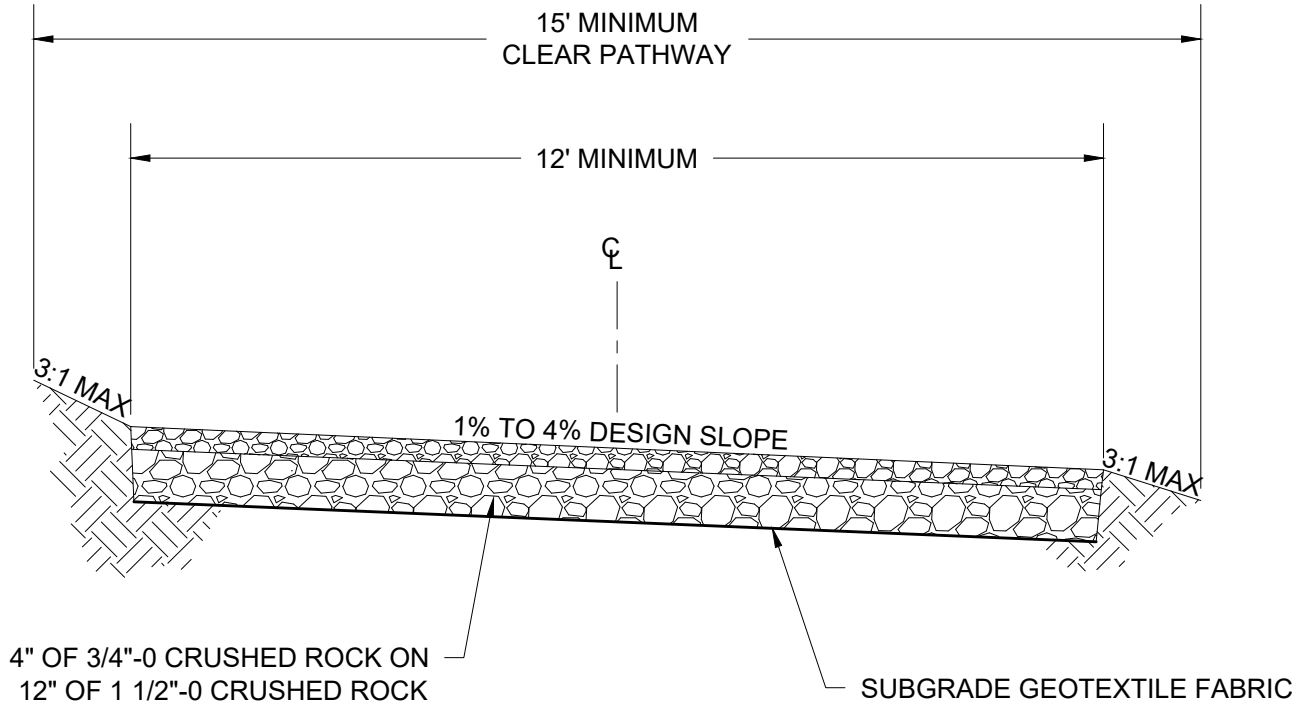
- NOTES:**
- IF EIGHT FOOT GENERAL UTILITY EASEMENT IS PRESENT ALONG PROPERTY FRONTAGE, PLACEMENT SHALL BE AT BACK OF SIDEWALK WITHIN UTILITY EASEMENT.
  - ON STREETS LESS THAN 30' IN WIDTH, WATERLINE LOCATION SHALL MAINTAIN 5' SPACING FROM FACE OF CURB. THERE SHALL BE 5' MINIMUM SPACING CENTER TO CENTER BETWEEN THE WATERLINE AND STORMWATER LINE AND THE STORMWATER LINE SHALL BE 3' FROM THE CENTERLINE.
  - WHERE NO PLANTER STRIP EXISTS, FIRE HYDRANTS ARE TO BE LOCATED IN LINE WITH STREETLIGHTS & STREET TREES, OR AT BACK OF WALK. IF OUTSIDE THE R.O.W., LOCATE IN A 6' X 6' EASEMENT.
  - 3" DIA. CONDUIT REQUIRED ON ALL ARTERIAL STREETS TO SERVE SIGNAL SYSTEM.
  - OVERHEAD UTILITIES SHALL PROVIDE FOR A MINIMUM OF 17.5' CLEARANCE FROM GROUND SURFACE FOR ALL OVER-DIMENSIONAL VEHICLE ROUTES AND A MINIMUM OF 16' CLEARANCE IN ALL OTHER AREAS WITHIN THE RIGHT-OF-WAY.

JOINT TRENCH DETAIL

NTS

DRAWN	CM
REV. DATE	JAN 2024
APPR.	<i>[Signature]</i>
DETAIL NO.	601

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\600\_transportation\trans cad\602a.dwg, Plotted 10/3/2023 10:52 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

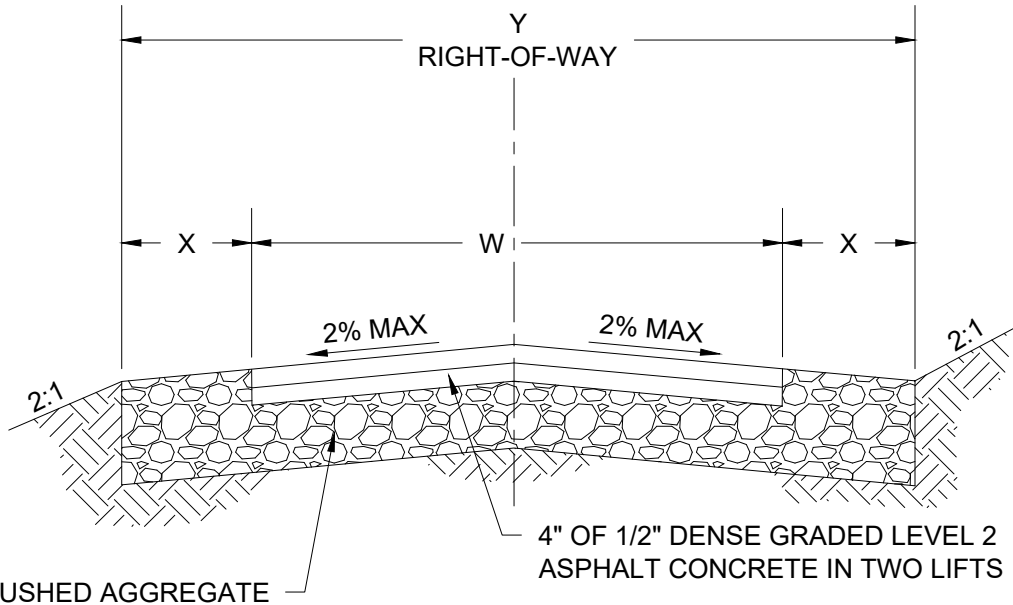


**NOTES:**

1. PRIMARILY USED FOR UTILITY ACCESS.
2. A BRANCH TURNAROUND, PER DETAIL 616, SHALL BE PROVIDED ON ALL DEAD-END ACCESS ROADS. THE BRANCH TURNAROUND SHALL HAVE A MINIMUM TURNING RADIUS OF 50 FEET.
3. SUBGRADE AND AGGREGATE SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
4. ACCESS ROAD GRADES ARE NOT TO EXCEED 10%.
5. BOLLARDS, PER DETAIL 627, ARE REQUIRED AT ALL ENTRANCES TO ACCESS ROADS.

	<p><b>GRAVEL PUBLIC ACCESS ROAD</b></p> <p>PWS VERSION: JAN 2024</p>	<p>DRAWN <b>KRB</b></p>
		<p>REV. DATE <b>JAN 2022</b></p>
		<p>APPR. </p>
		<p>DETAIL NO. <b>602A</b></p>

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\602\trans cad\602.dwg, Plotted: 10/3/2023 10:53 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



8" OF 1"-0 CRUSHED AGGREGATE

4" OF 1/2" DENSE GRADED LEVEL 2 ASPHALT CONCRETE IN TWO LIFTS

ACCESS DESCRIPTION	W	X	Y
ONE ACCESS POINT GREATER THAN 150 FEET IN LENGTH	20'	2.5'	25'
DRIVE THROUGH ACCESS OR ONE ACCESS POINT WITH A MAXIMUM OF 150 FEET IN LENGTH	12'	1.5'	15'

**NOTES:**

1. PRIMARILY USED FOR ACCESS TO PARKS AND OPEN SPACES.
2. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
3. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
4. A SIDEWALK AND PLANTER STRIP ARE NOT REQUIRED.
5. ENGINEER OF RECORD IS RESPONSIBLE FOR PROVIDING ADEQUATE DRAINAGE/CONVEYANCE IN LIEU OF PROVIDING CURBS.
6. ACCESS ROAD GRADES ARE NOT TO EXCEED 10%.
7. BOLLARDS ARE REQUIRED AT ALL ENTRANCES TO ACCESS ROADS. SEE DETAIL 627.

**CITY OF GRESHAM**

**PAVED PUBLIC ACCESS ROAD**

PWS VERSION: JAN 2024

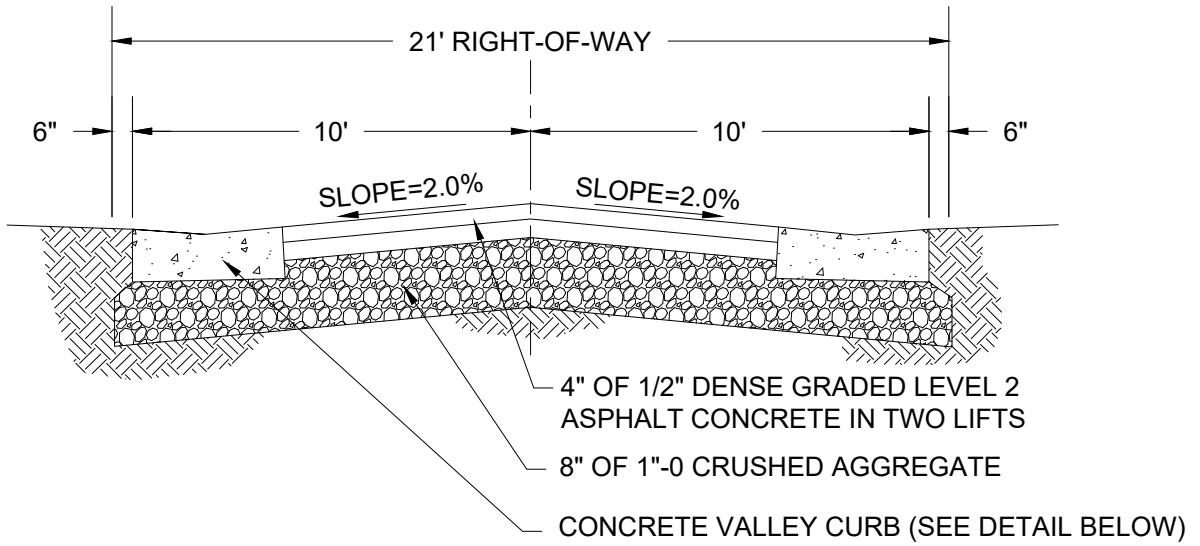
DRAWN **KRB**

REV. DATE **JAN 2024**

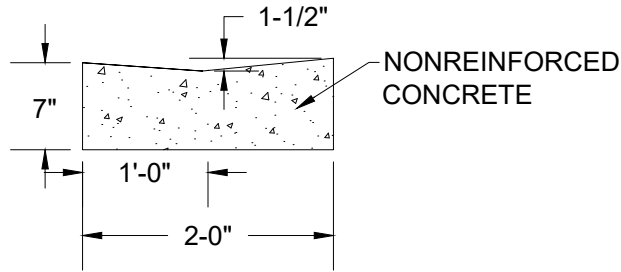
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DETAIL NO. **602B**

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\603.dwg, Plotted 10/3/2023 10:53 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



### VALLEY CURB DETAIL



**NOTES:**

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. PCC CURB SHALL BE 4,000 PSI AT 28 DAYS.
4. "NO PARKING" SHALL BE POSTED THE ENTIRE LENGTH OF ALLEY IN RESIDENTIAL AND COMMERCIAL/INDUSTRIAL DISTRICTS.
5. FIRE HYDRANTS, WHEN REQUIRED, ARE TO BE LOCATED OUTSIDE THE ROW IN A 6' BY 6' EASEMENT.

NTS

**CITY OF GRESHAM**

## ALLEY STREET SECTION

PWS VERSION: JAN 2024

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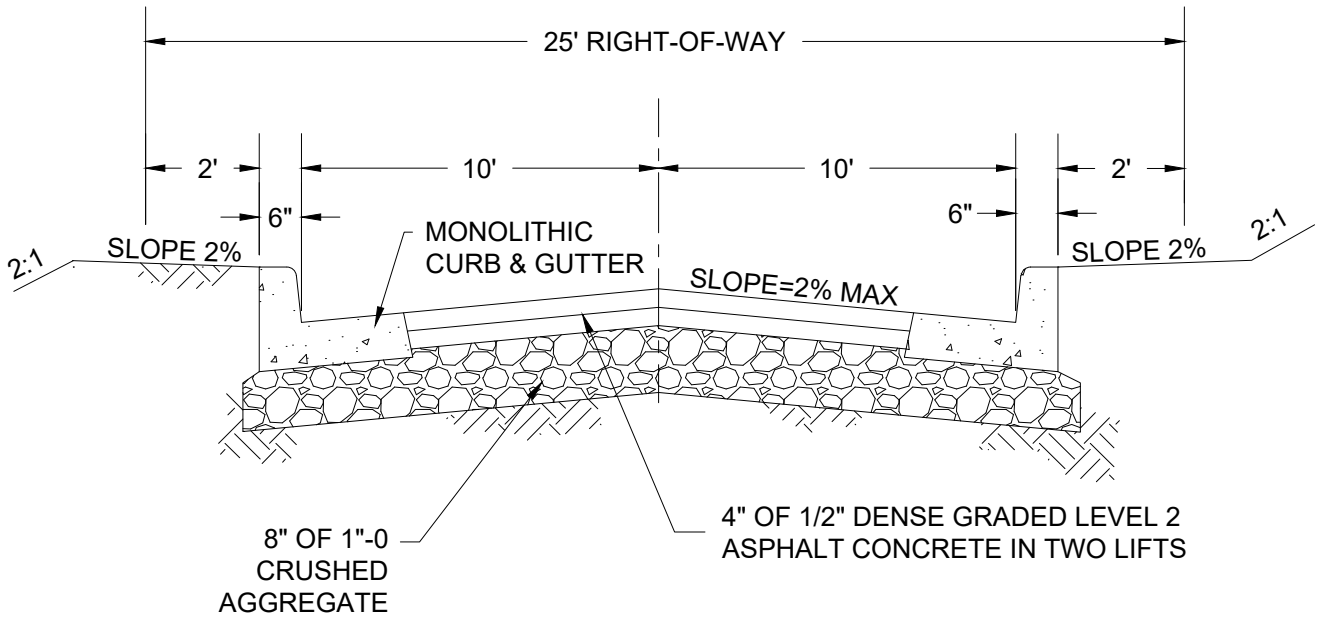
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APPR. *[Signature]*

DETAIL NO. 603



FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\604.dwg, Plotted 10/3/2023 10:54 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. NO FIRE HYDRANTS ARE TO BE LOCATED ON A MINOR ACCESS STREET.
4. PUBLIC PARKING FOR VISITORS (MIN. 3 SPACES) AND A BRANCH TURNAROUND SHALL BE PROVIDED AT THE END OF THE MINOR ACCESS STREET. SEE STANDARD DETAIL 616. ADDITIONAL RIGHT-OF-WAY SHALL BE DEDICATED TO ACCOMMODATE ADDITIONAL PARKING.
5. A "DEAD END" SIGN SHALL BE POSTED AT THE ENTRANCE TO THE MINOR ACCESS STREET.
6. "NO PARKING" SHALL BE POSTED FOR THE ENTIRE LENGTH OF THE MINOR ACCESS STREET.
7. ONE ADDITIONAL OFF-STREET PARKING SPACE IS REQUIRED FOR EACH RESIDENTIAL UNIT THAT ACCESSES A MINOR ACCESS STREET.

NTS

CITY OF GRESHAM

MINOR ACCESS STREET SECTION

PWS VERSION: JAN 2024

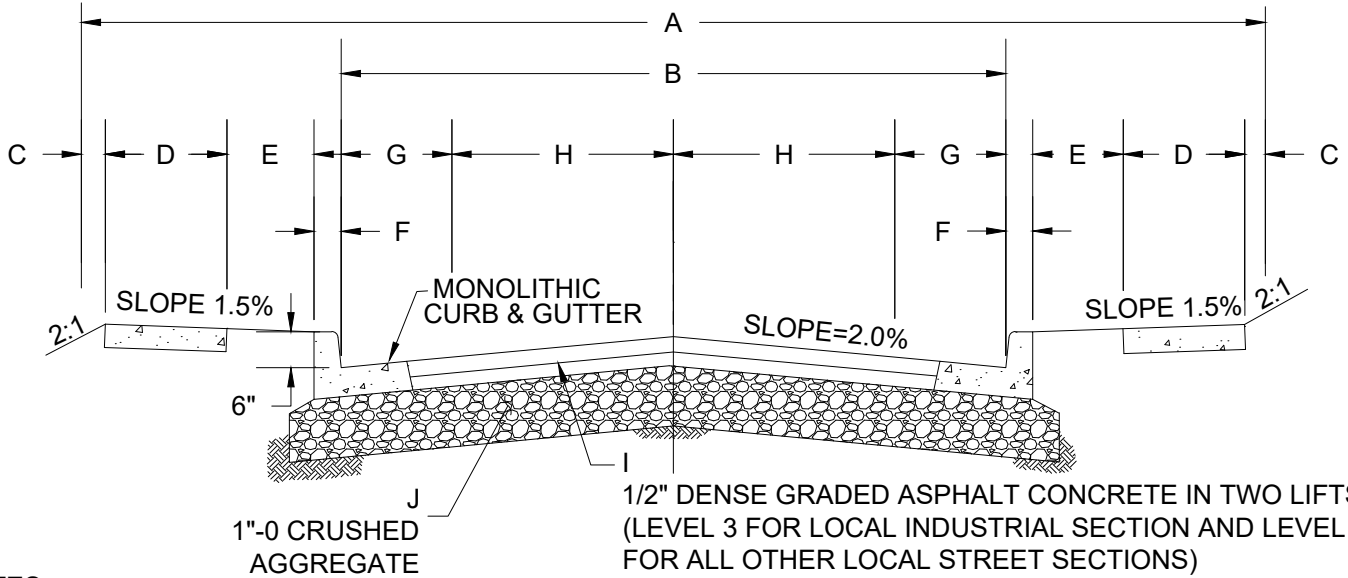
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REV. DATE JAN 2024

APPR. *[Signature]*

DETAIL NO. 604

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**NOTES:**

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RELATIVE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. IN HILLSIDE AND GEOLOGIC RISK OVERLAY DISTRICTS, RIGHT-OF-WAY WIDTH MAY BE 40' WITH A PAVEMENT WIDTH OF 28' AND 5' SIDEWALKS ON BOTH SIDES. CROSS SECTION WILL STILL BE REQUIRED TO PROVIDE ONE PARKING LANE TO ASSURE THAT ON-STREET PARKING IS ADEQUATE FOR ADJACENT USES, A REDUCED STREET DESIGN MAY CONSIDER CLUSTERED PARKING BAYS ADJACENT TO THE STREET, IF NEEDED.
4. THE SIDEWALK SHALL HAVE A MINIMUM 5' AREA CLEAR OF ALL OBSTACLES UNLESS APPROVED BY THE ENGINEER.
5. WHEN A HYDRANT IS LOCATED BEHIND THE SIDEWALK A 6' X 6' EASEMENT IS REQUIRED AROUND THE HYDRANT.
6. "NO PARKING" SHALL BE POSTED WITHIN 30 FEET OF THE CURB RETURN ON LOCAL STREETS.
7. MAXIMUM BLOCK LENGTH FOR A QUEUING STREET IS 400 FEET.

**STREET CROSS SECTION DIMENSIONS**

FUNCTIONAL CLASSIFICATION	RIGHT-OF-WAY*	CURB TO CURB	MONUMENTATION STRIP	SIDEWALK	LANDSCAPE		CURB	PARKING	TRAVEL LANE	ASPHALT CONCRETE	CRUSHED AGGREGATE
					IN PLEASANT VALLEY, SPRINGWATER AND KELLEY CREEK HEADWATERS SPECIAL DISTRICTS	IN REMAINING CITY					
					A	B					
LOCAL INDUSTRIAL	60'	40'	6"	5'	6'	4'	6"	8'	12'	8"	16"
LOCAL COMMERCIAL	56'	36'	6"	5'	6'	4'	6"	7'	11'	5"	16"
LOCAL TRANSITIONAL	52'	32'	6"	5'	6'	4'	6"	7'	9'	4"	8"
LOCAL QUEUING	46'	26'	6"	5'	6'	4'	6"	7'	6'	4"	8"

\* RIGHT-OF-WAY WIDTH INCREASES BY 4 FEET WHEN IN PLEASANT VALLEY, SPRINGWATER, AND KELLEY CREEK HEADWATERS SPECIAL DISTRICTS.

NTS

**CITY OF GRESHAM**

**LOCAL STREET SECTIONS**

PWS VERSION: JAN 2024

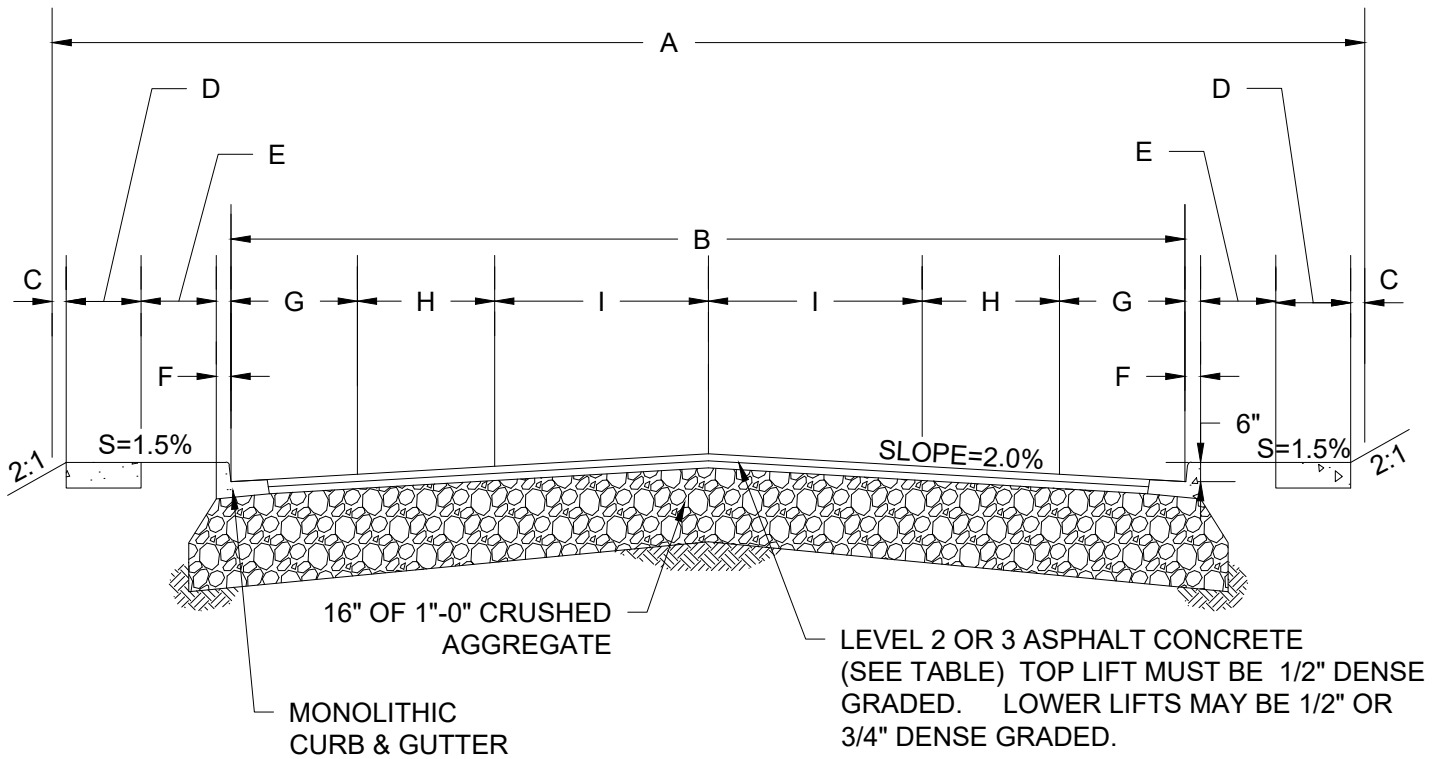
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REV. DATE **JAN 2024**

APPR.

DETAIL NO. **605**

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\606.dwg, Plotted 10/3/2023 10:55 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



STREET CROSS SECTION DIMENSIONS				
CLASSIFICATION DESIGNATION		MAJOR COLLECTOR	STANDARD COLLECTOR	MINOR COLLECTOR
RIGHT-OF-WAY	A	74'	60'	60'
CURB TO CURB	B	48'	36'	36'
MONUMENTATION STRIP	C	6"	6"	6"
SIDEWALK	D	6'	5'	5'
LANDSCAPE	E	6'	6'	6'
CURB	F	6"	6"	6"
PARKING	G	7'	N/A	7'
BIKE LANE	H	6'	6'	N/A
TRAVEL LANE	I	11'	12'	11'
ASPHALT DEPTH		8"	5"	5"
ASPHALT LEVEL		LEVEL 3	LEVEL 2*	LEVEL 2

NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES UNLESS APPROVED BY THE ENGINEER.
4. "NO PARKING" SHALL BE POSTED WITHIN 45 FEET OF THE CURB RETURN ON COLLECTOR STREETS.

\* THE CITY MAY REQUIRE LEVEL 3 FOR STANDARD COLLECTORS

NTS

CITY OF GRESHAM

COLLECTOR STREET SECTIONS

PWS VERSION: JAN 2024

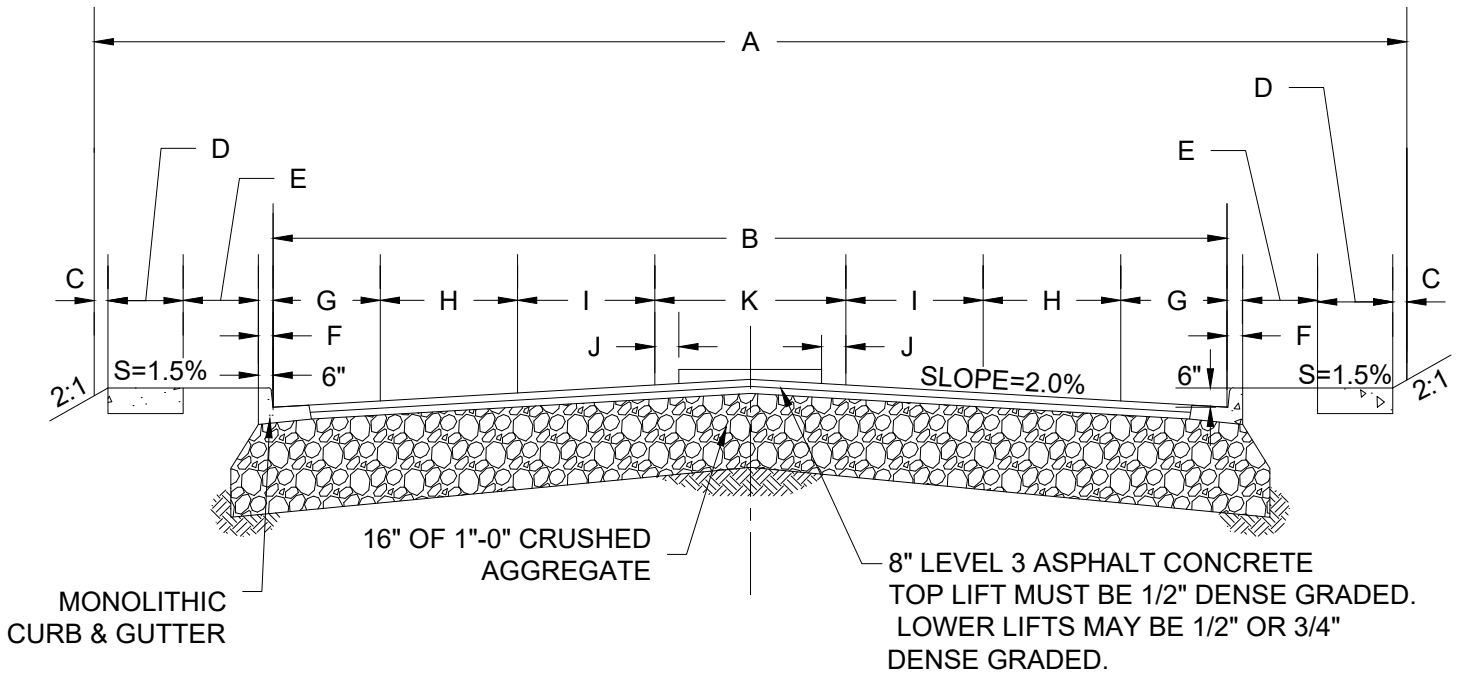
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REV. DATE JAN 2024

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DETAIL NO. 606

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STREET CROSS SECTION DIMENSIONS

CLASSIFICATION DESIGNATION	MAJOR ARTERIAL	STANDARD ARTERIAL	MINOR ARTERIAL
RIGHT-OF-WAY	A 104'	96'	74'
CURB TO CURB	B 74'	66'	48'
MONUMENTATION STRIP	C 6"	6"	6"
SIDEWALK	D 6'	6'	6'
LANDSCAPE	E 8'	8'	6'
CURB	F 6"	6"	6"
BIKE LANE	G 6'	6'	6'
TRAVEL LANE 1	H 12'	11'	11'
TRAVEL LANE 2	I 12'	10'	N/A
SHY DISTANCE	J 1'	1'	3'
CENTER	K 14'	12'	14'

NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES UNLESS APPROVED BY THE ENGINEER.
4. A RAISED MEDIAN OR TWO-WAY LEFT TURN LANE SHALL SEPARATE OPPOSING LANES.

NTS

CITY OF GRESHAM

ARTERIAL STREET SECTIONS

PWS VERSION: JAN 2024

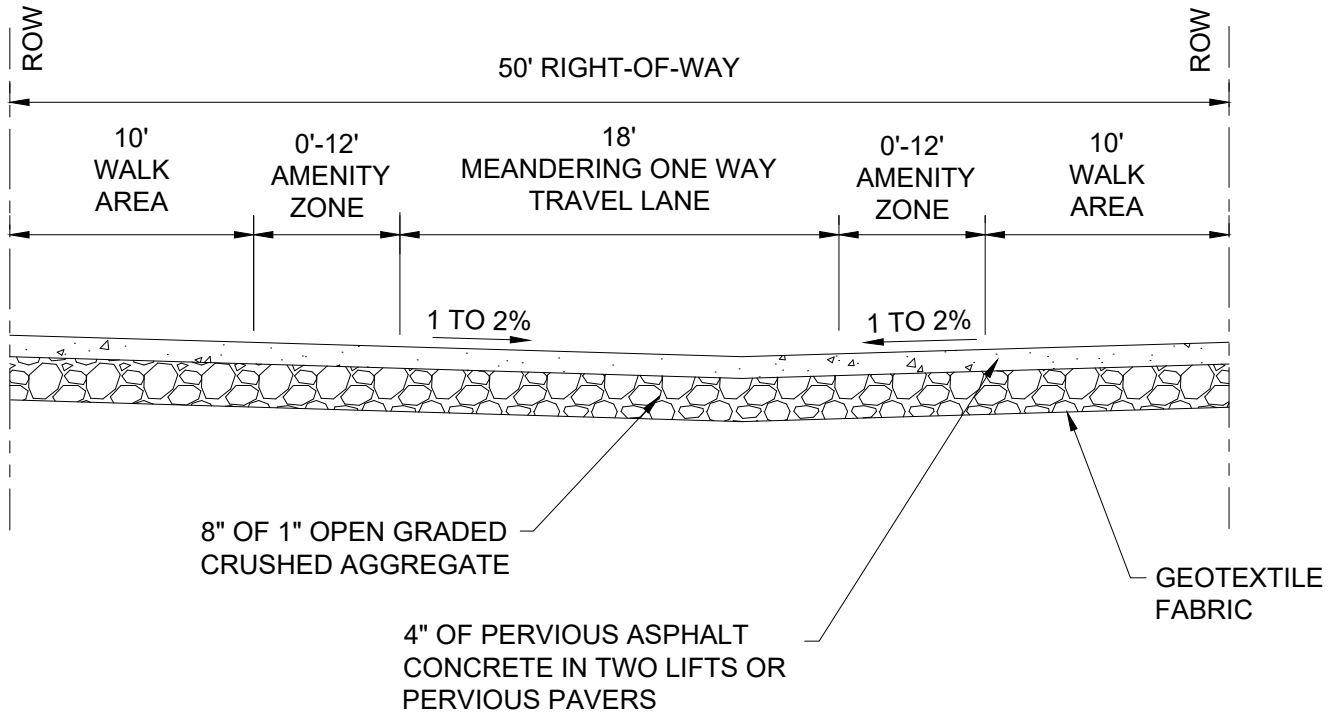
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REV. DATE JAN 2024

APPR. *[Signature]*

DETAIL NO. 607

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\608.dwg, Plotted 10/3/2023 10:56 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



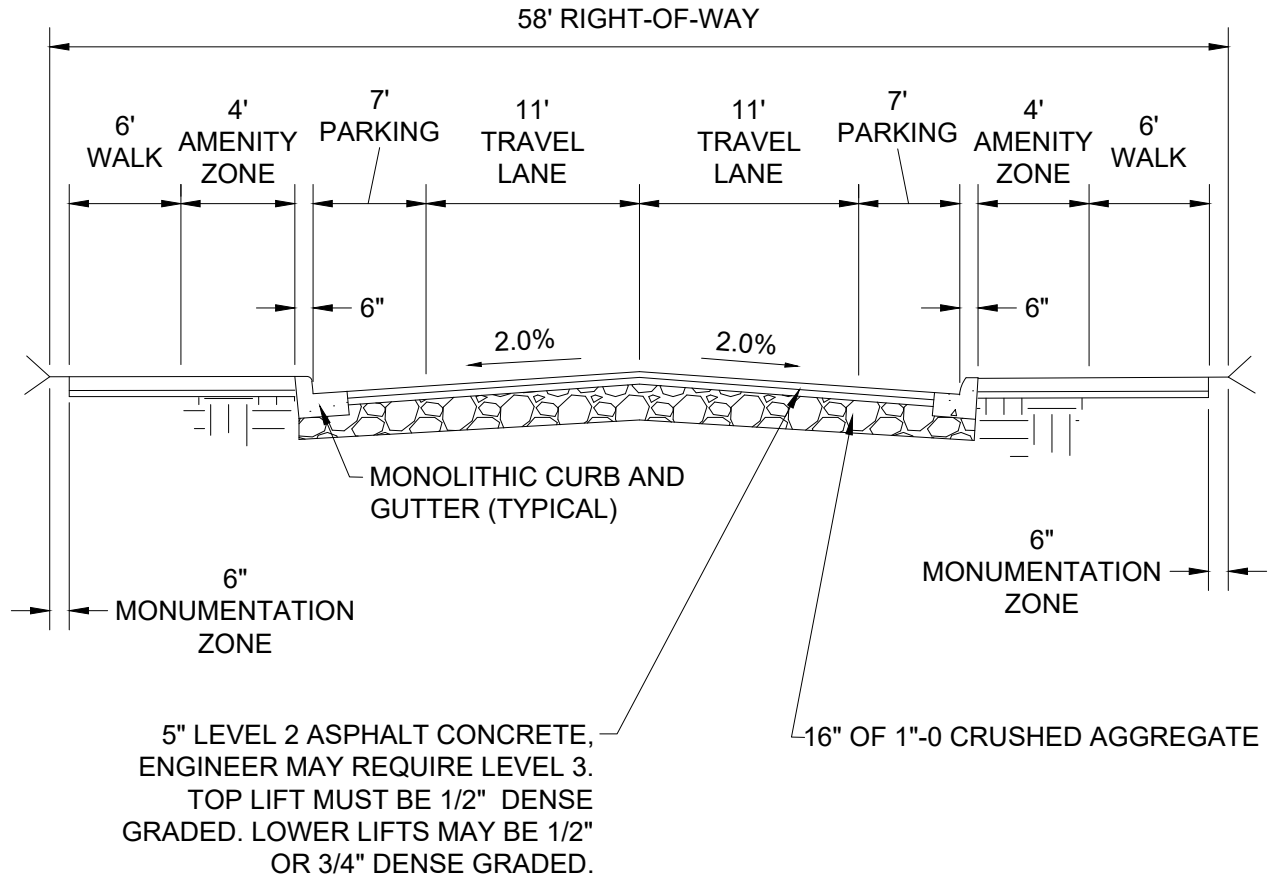
NOTES:

1. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
2. WIDTH OF AMENITY ZONE IS BASED ON THE MEANDERING TRAVEL LANE.

NTS

<p><b>CITY OF GRESHAM</b></p>	<p><b>SHARED STREET SECTION</b></p>	<p>DRAWN <b>KRB</b></p>
		<p>REV. DATE <b>JAN 2024</b></p>
		<p>APPR. <i>[Signature]</i></p>
		<p>DETAIL NO. <b>608</b></p>
<p>PWS VERSION: JAN 2024</p>		

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NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. AT ROW LINE MAXIMUM SLOPE CUT 2:1, FILL 3:1.

NTS

CITY OF GRESHAM

DOWNTOWN/CIVIC LOCAL STREET SECTION

PWS VERSION: JAN 2024

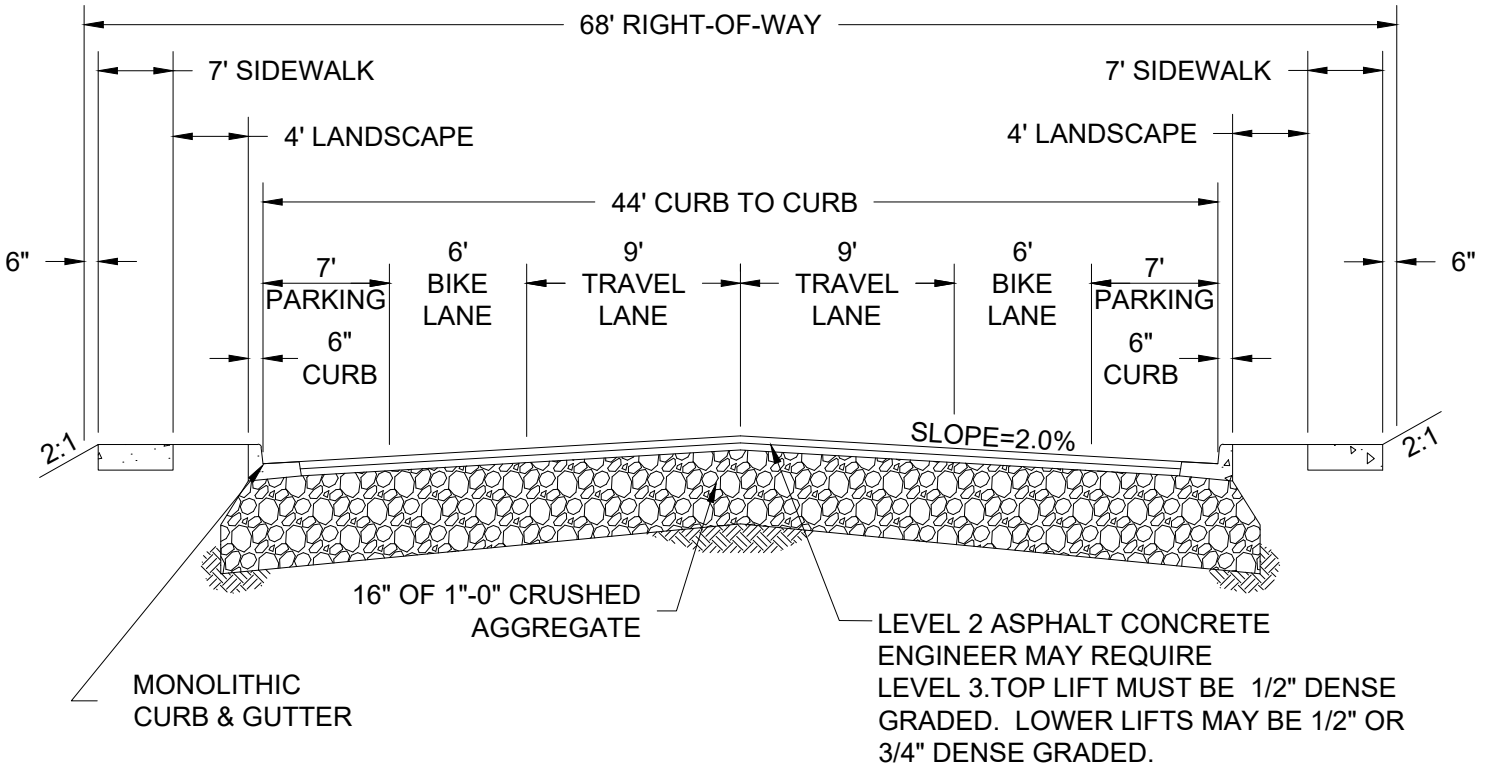
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REV. DATE JAN 2024

APPR. *[Signature]*

DETAIL NO. 609

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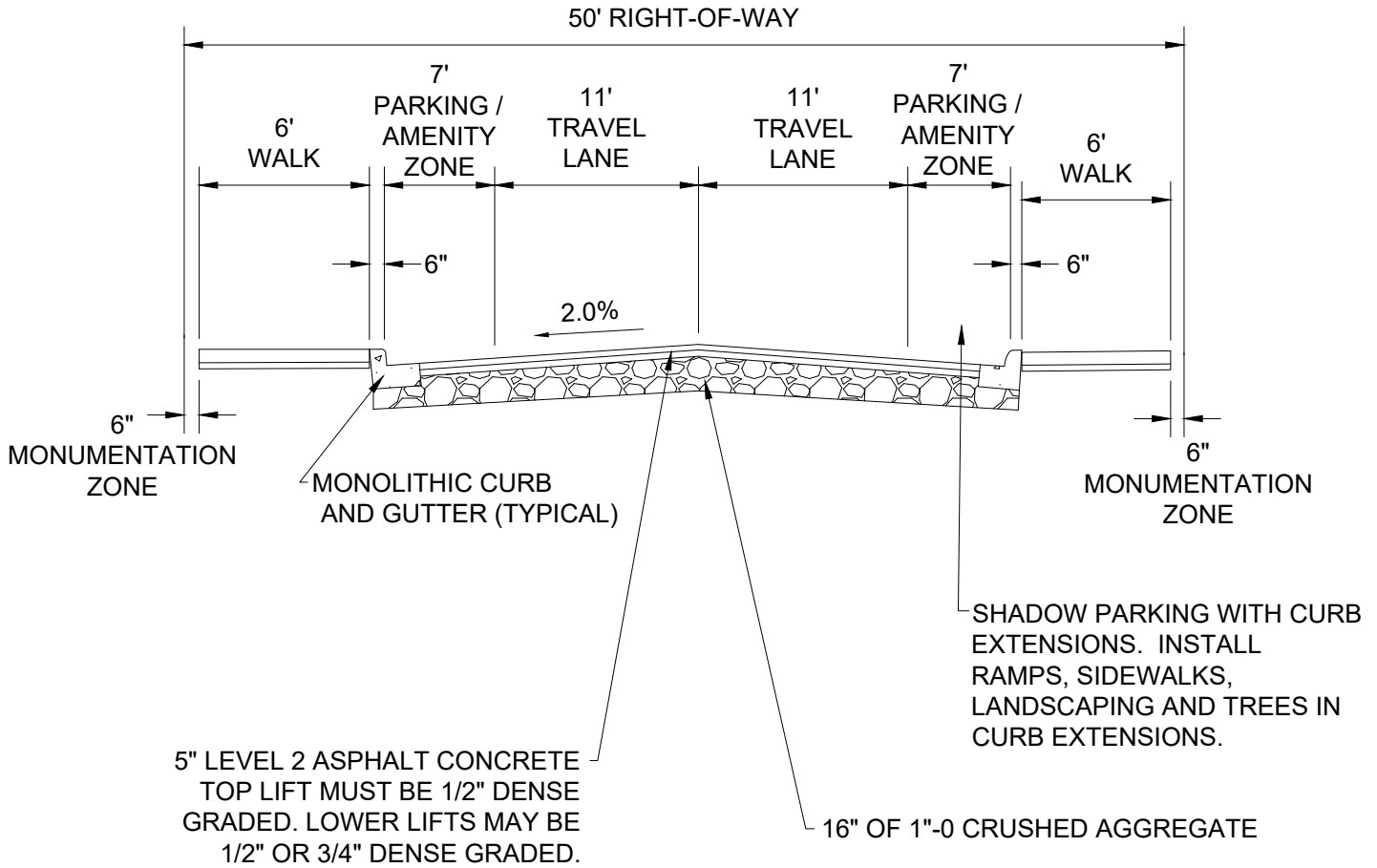
NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES UNLESS APPROVED BY THE ENGINEER.

NTS

<p><b>CITY OF GRESHAM</b></p>	<p><b>CIVIC CONNECTOR STREET SECTION</b></p>	<p>DRAWN <b>KRB</b></p>
		<p>REV. DATE <b>JAN 2024</b></p>
		<p>APPR. <i>[Signature]</i></p>
		<p>DETAIL NO. <b>610</b></p>
<p>PWS VERSION: JAN 2024</p>		

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**NOTES:**

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. STREET TREES SHALL BE PLANTED IN CURB EXTENSIONS.
4. AT ROW LINE MAXIMUM SLOPE CUT 2:1, FILL 3:1.
5. SIDEWALK SHALL MAINTAIN A 4' CLEAR ADA CONTINUOUS PATHWAY.

NTS

**CITY OF  
GRESHAM**

**DOWNTOWN MAIN (POWELL TO 4TH)  
STREET SECTION**

PWS VERSION: JAN 2024

DRAWN KRB

REV. DATE JAN 2024

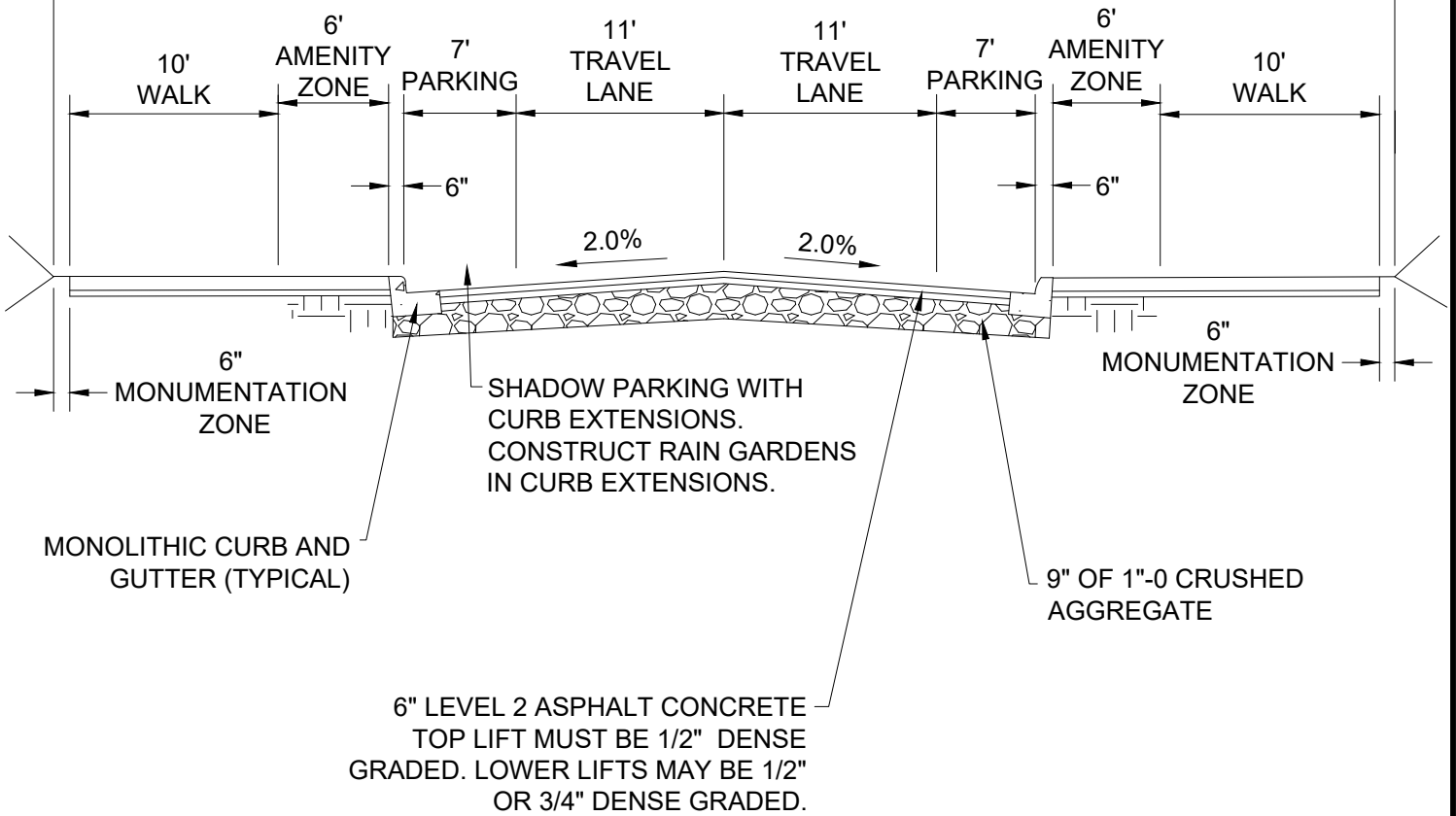
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DETAIL NO. 611



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70' RIGHT-OF-WAY



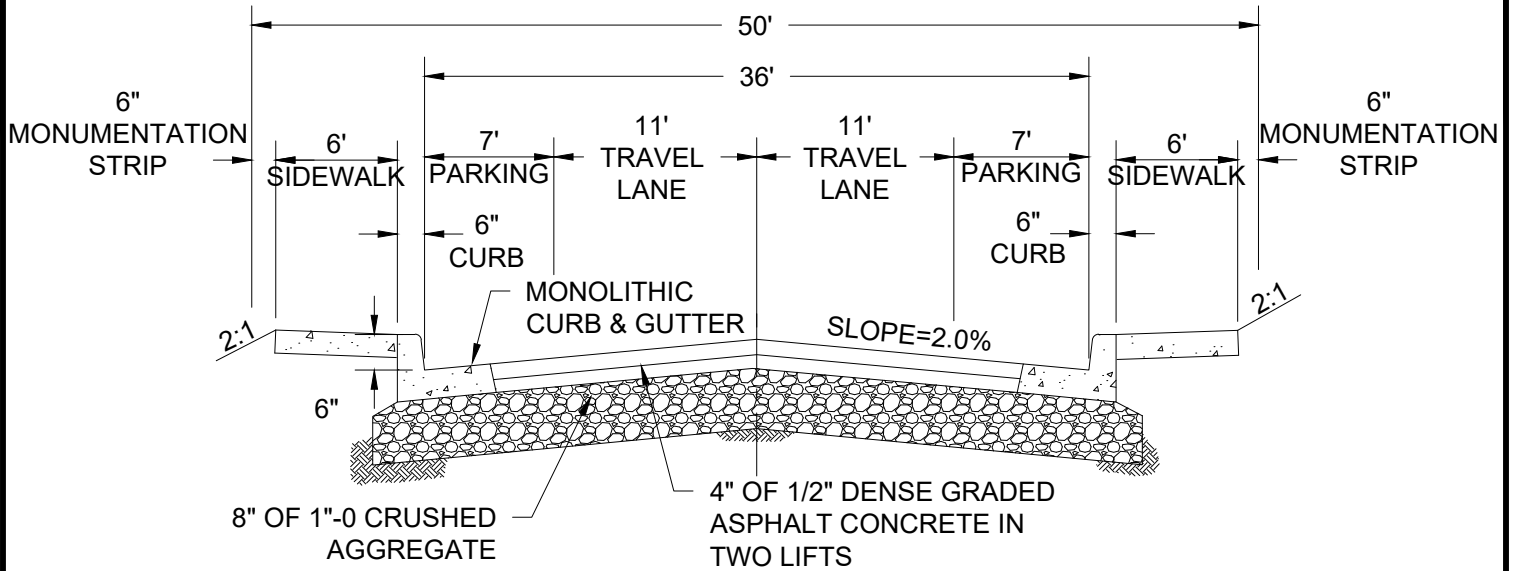
NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RICE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. AT ROW LINE MAXIMUM SLOPE CUT 2:1, FILL 3:1.

NTS

<p><b>CITY OF GRESHAM</b></p>	<p><b>DOWNTOWN STANLEY STREET SECTION</b></p>	<p>DRAWN <b>KRB</b></p>
		<p>REV. DATE <b>JAN 2024</b></p>
		<p>APPR. <i>[Signature]</i></p>
		<p>DETAIL NO. <b>612</b></p>
<p>PWS VERSION: JAN 2024</p>		

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NOTES:

1. ASPHALT CONCRETE SHALL BE COMPACTED TO 91% OF RELATIVE DENSITY.
2. SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
3. THE SIDEWALK SHALL HAVE A MINIMUM 5' AREA CLEAR OF ALL OBSTACLES UNLESS APPROVED BY THE ENGINEER.
4. WHEN A HYDRANT IS LOCATED BEHIND THE SIDEWALK A 6' X 6' EASEMENT IS REQUIRED AROUND THE HYDRANT.

NTS

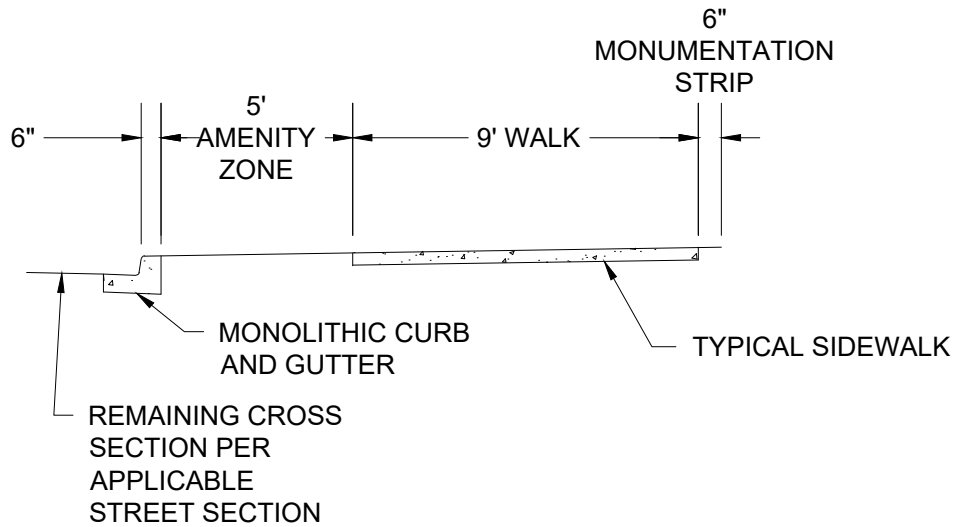
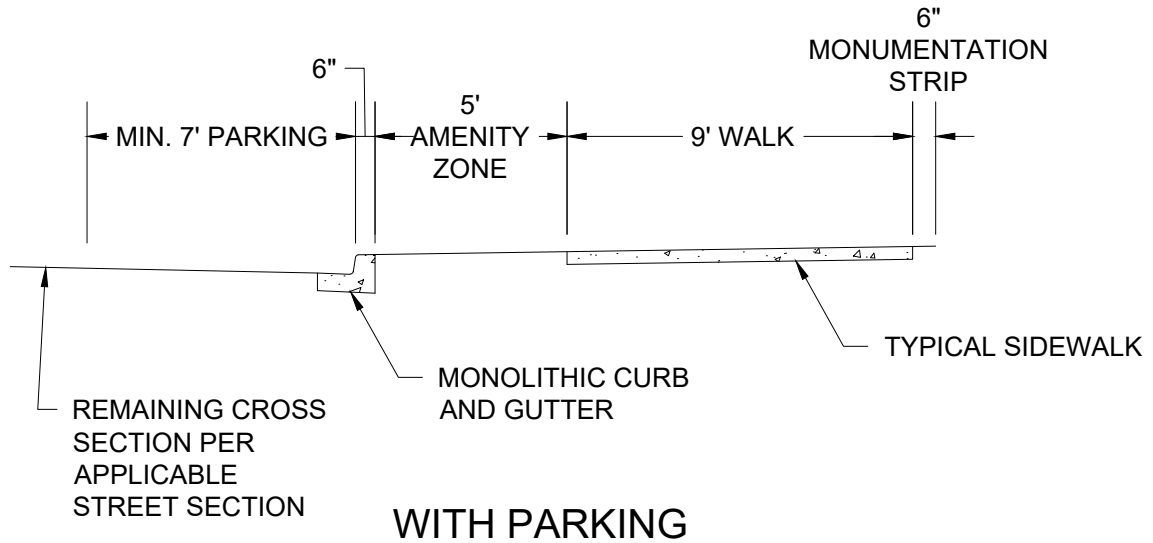
CITY OF GRESHAM

ROBERTS (POWELL TO REGNER) STREET SECTION

PWS VERSION: JAN 2024

DRAWN	KRB
REV. DATE	MAR 2021
APPR.	<i>[Signature]</i>
DETAIL NO.	613

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\600\_transportation\trans cad\614.dwg, Plotted 10/3/2023 11:00 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



**NOTE:**

1. AMENITY ZONES SHALL INCLUDE 5' X 5' TREE WELLS.
2. ADDITIONAL RIGHT-OF-WAY DEDICATION IS REQUIRED ON COLLECTORS AND MINOR ARTERIALS.
3. BOULEVARDS IN THE SPRINGWATER PLAN DISTRICT AND ALONG E/W POWELL BLVD ARE REQUIRED TO INCLUDE PARKING.

NTS

**CITY OF  
GRESHAM**

**BOULEVARD**

PWS VERSION: JAN 2024

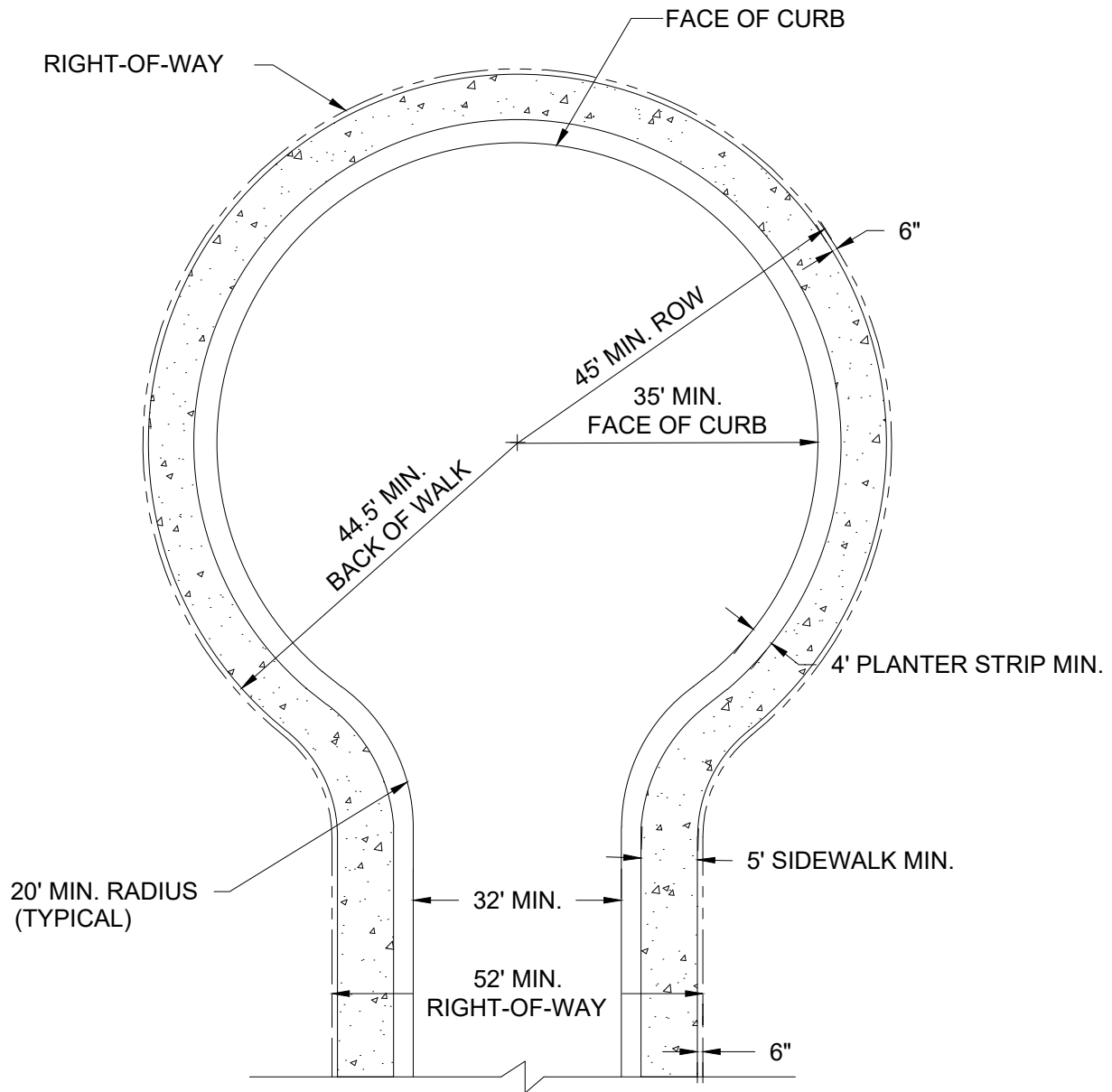
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REV. DATE **JAN 2024**

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DETAIL NO. **614**

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**NOTES:**

1. A 28' WIDTH MAY BE ALLOWED WITHIN THE HILLSIDE AND GEOLOGIC RISK OVERLAY DISTRICTS WITH ENGINEER'S APPROVAL.
2. THE SIDEWALK IS TO BE LOCATED NEXT TO THE CURB ON THE ENTIRE LENGTH OF THE CUL-DE-SAC IN HILLSIDE AND GEOLOGIC RISK DISTRICTS.
3. A "DEAD-END" SIGN MAY BE REQUIRED AT ENTRANCE TO THE STREET ENDING IN A CUL-DE-SAC.
4. "NO PARKING" SHALL BE POSTED FOR THE ENTIRE CUL-DE-SAC BULB.
5. THE SIDEWALK SHALL HAVE A MINIMUM 5' CLEAR OF ALL OBSTACLES, UNLESS APPROVED BY THE ENGINEER.
6. NO FIRE HYDRANTS ARE TO BE LOCATED IN THE CUL-DE-SAC BULB.

NTS

**CITY OF  
GRESHAM**

**STANDARD CUL-DE-SAC**

PWS VERSION: JAN 2024

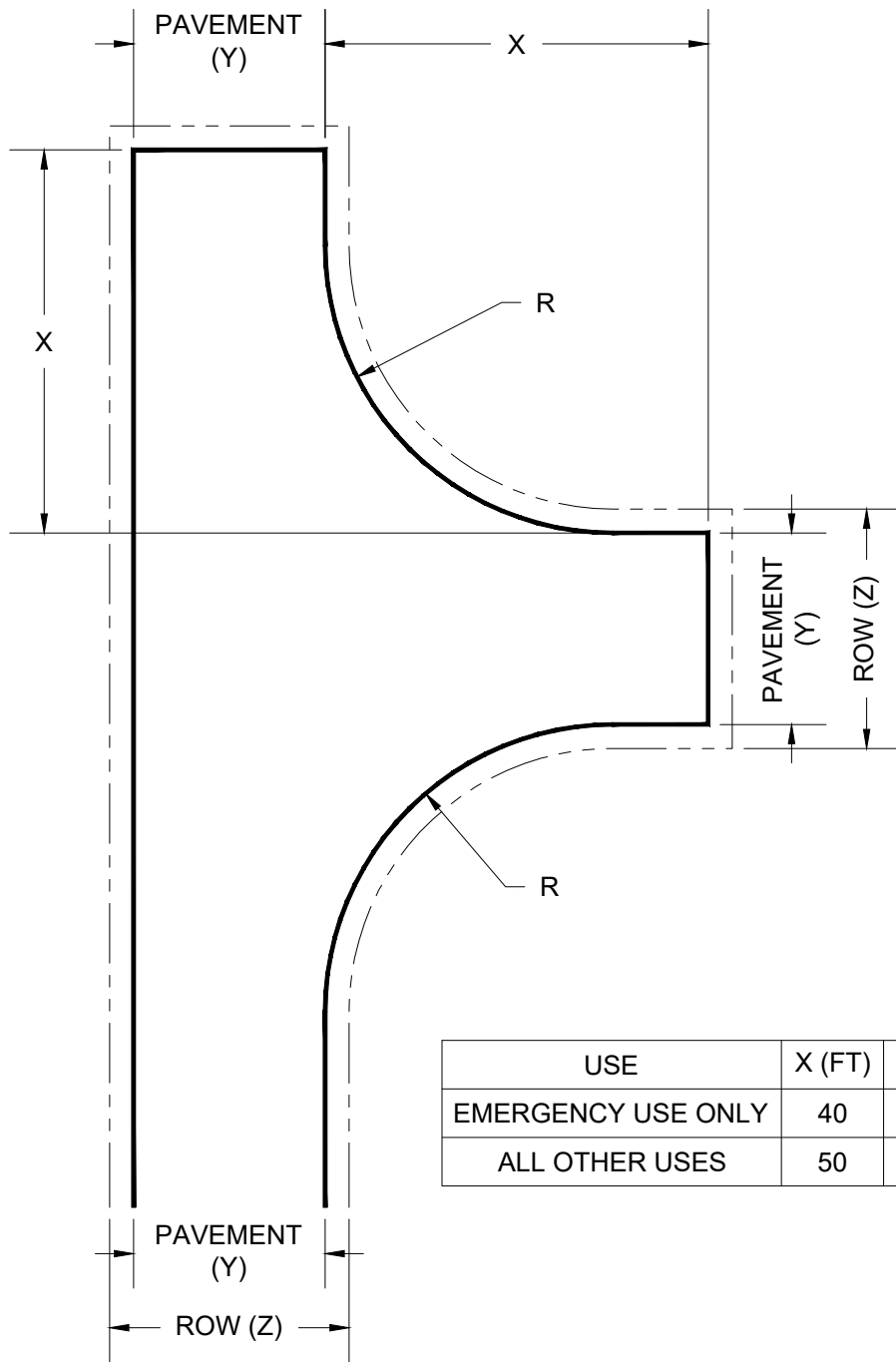
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DATE

APPR. *[Signature]*

DETAIL NO. **615**

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USE	X (FT)	R (FT)	Y (FT)	Z (FT)
EMERGENCY USE ONLY	40	30	20	25
ALL OTHER USES	50	30	20	25

**NOTES:**

1. BRANCH TURNAROUND TO BE USED FOR EMERGENCY, MAINTENANCE, RECYCLING AND SOLID WASTE SERVICE ACCESS ON TEMPORARY DEAD-END STREETS (EXCEPT THOSE THAT ARE LESS THAN 150 FEET IN LENGTH AND DO NOT SERVE ANY PROPERTY ACCESS), AT THE END OF ALL MINOR ACCESS STREETS, AND WHEN DETERMINED BY THE CITY.
2. PAVEMENT SECTION SHALL MATCH STREET CLASSIFICATION REQUIREMENTS.
3. THE PAVEMENT AREA AND RIGHT-OF-WAY LIMITS ON A DEAD END STREET SHALL BE ABLE TO ACCOMMODATE THE BRANCH TURNAROUND FOOTPRINT REQUIREMENTS SHOWN ABOVE.

NTS

**CITY OF  
GRESHAM**

**BRANCH TURNAROUND**

PWS VERSION: JAN 2024

DRAWN **KRB**

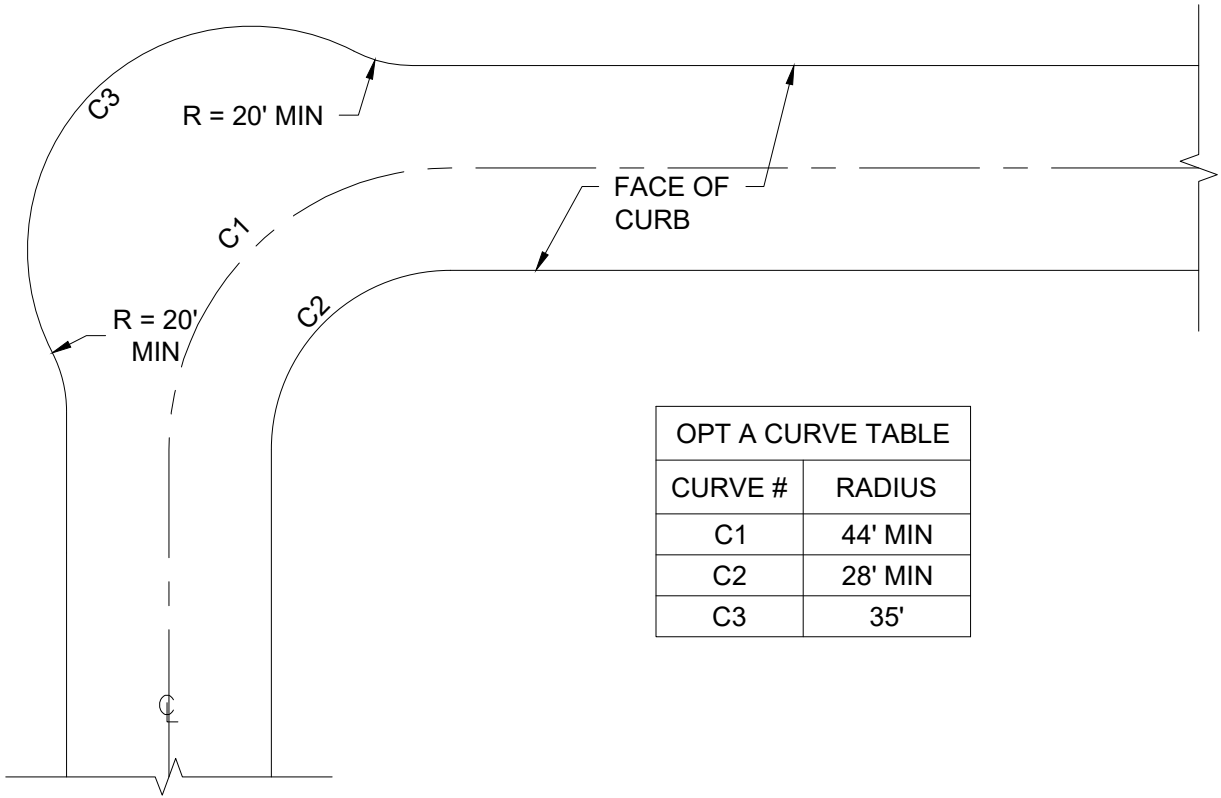
REV. DATE **MAR 2021**

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DETAIL NO. **616**

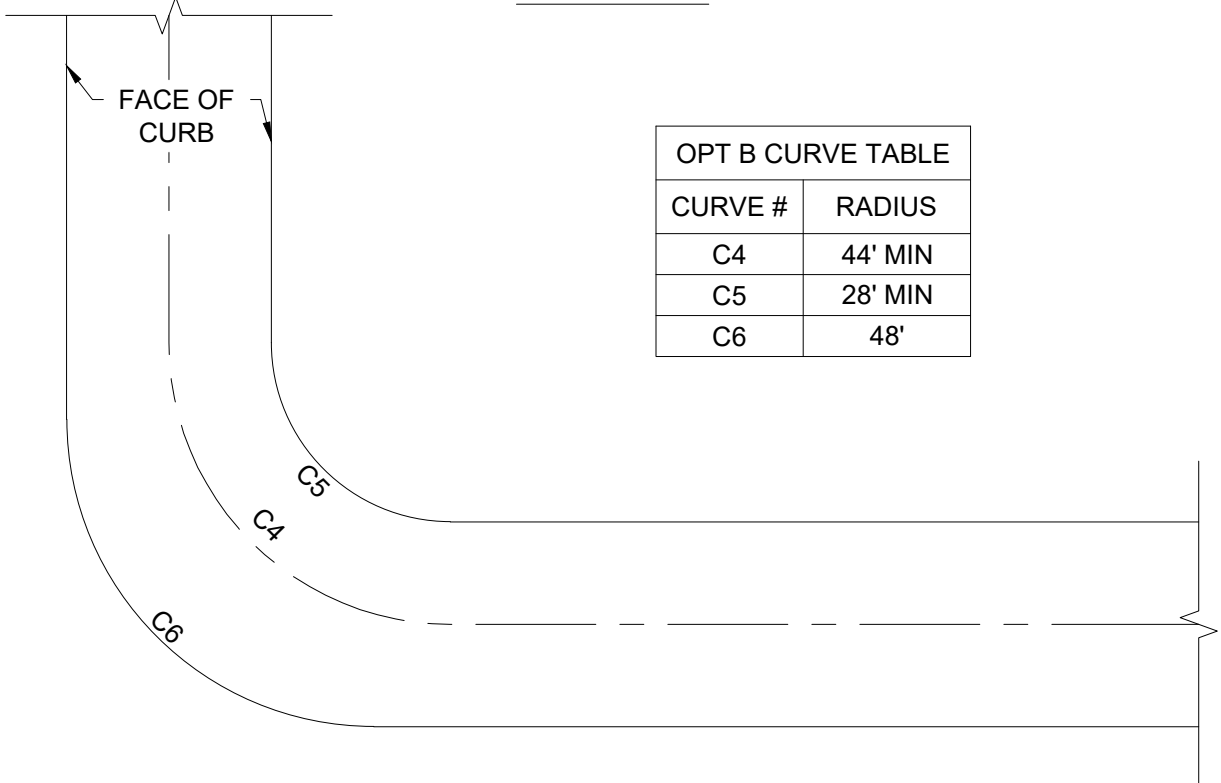
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### OPTION A



OPT A CURVE TABLE	
CURVE #	RADIUS
C1	44' MIN
C2	28' MIN
C3	35'

### OPTION B



OPT B CURVE TABLE	
CURVE #	RADIUS
C4	44' MIN
C5	28' MIN
C6	48'

NTS

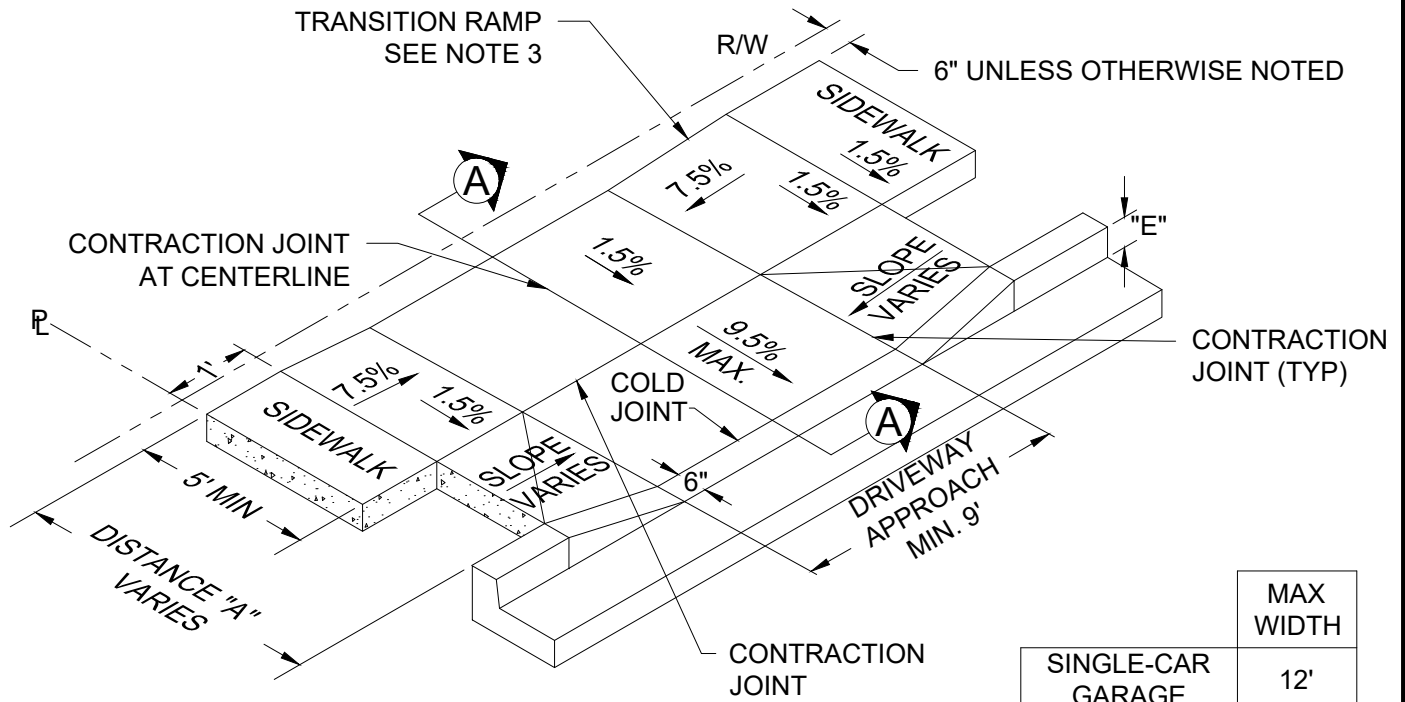
CITY OF  
GRESHAM

EYEBROW CORNER

PWS VERSION: JAN 2024

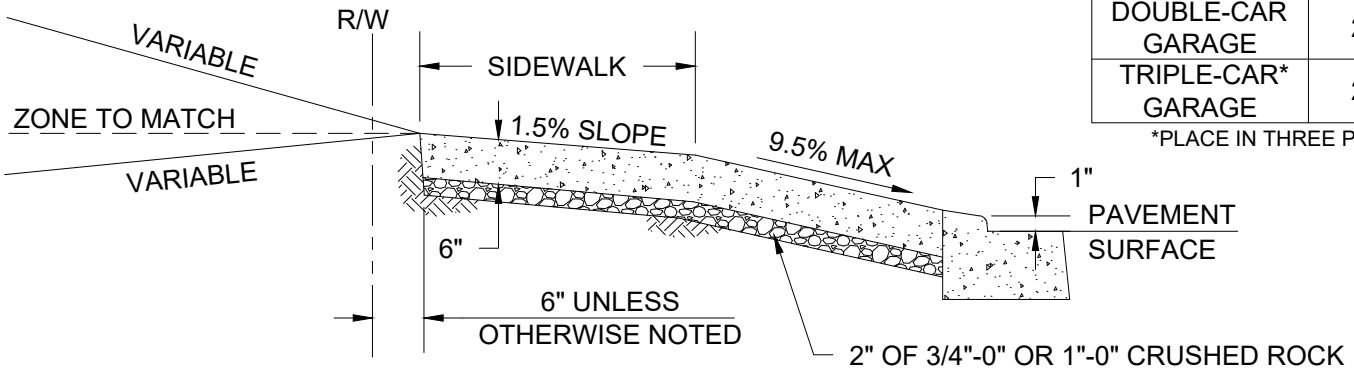
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REV. DATE	JAN 2020
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DETAIL NO.	617

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	MAX WIDTH
SINGLE-CAR GARAGE	12'
DOUBLE-CAR GARAGE	24'
TRIPLE-CAR* GARAGE	28'

\*PLACE IN THREE PANELS



### SECTION A - A

#### NOTES:

- DISTANCE "A" VARIES WITH STREET CLASSIFICATION. SEE STREET CROSS SECTION DETAILS.
- SEE STANDARD DETAILS 620 AND 621 FOR CURB EXPOSURE DIMENSION "E".
- SLOPES SHOWN ARE RELATIVE TO HORIZONTAL. TRANSITION RAMP SHALL BE 7.5% MAX SLOPE OR 15' MAX IN LENGTH. SIDE FLARES IN PLANTER STRIP MAY BE ANY SLOPE.
- ALL SURFACES SHALL BE LIGHTLY BROOMED AND EDGED IN A WORKMANLIKE MANNER.
- SAW CUT EXISTING CURBS WHERE THEY ARE TO BE REMOVED - IF LESS THAN 3' TO EXISTING JOINT, REMOVE TO JOINT. EXISTING ASPHALT IN FRONT OF THE APPROACH SHALL BE SAW CUT MINIMUM 24" FROM CURB FACE AND REPLACED WITH COMPACTED HOT MIX.
- PCC FOR RESIDENTIAL APPROACHES SHALL BE 4,000 PSI AT 28 DAYS.
- IN LDR DISTRICTS, THE MAXIMUM DRIVEWAY WIDTH IS 16 FEET FOR LOTS WITH LESS THAN 45 FEET OF STREET FRONTAGE AND 12 FEET FOR CORNER LOTS WITH LESS THAN 36 FEET OF STREET FRONTAGE AS MEASURED FROM THE CURB RETURN TO PROPERTY LINE.

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## RESIDENTIAL DRIVEWAY APPROACH

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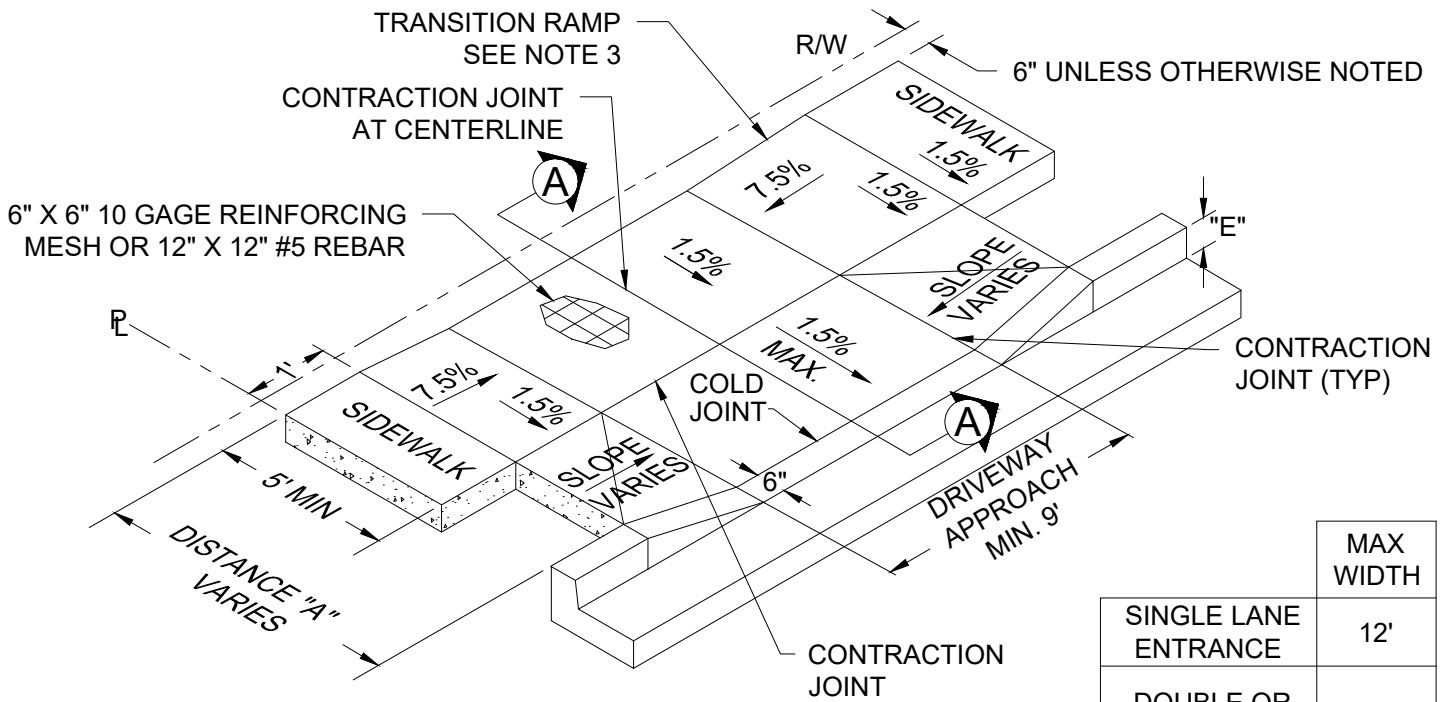
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REV. DATE JAN 2024

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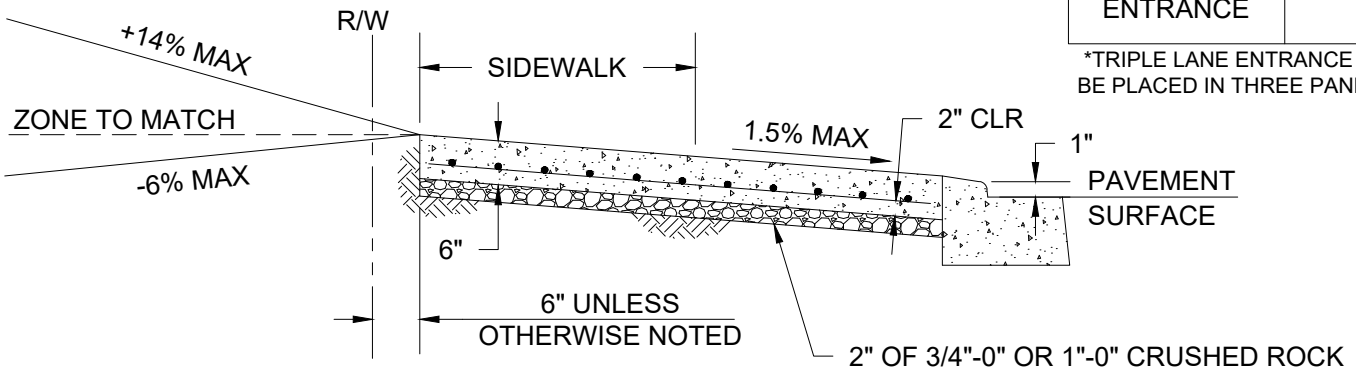
DETAIL NO. 618A

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	MAX WIDTH
SINGLE LANE ENTRANCE	12'
DOUBLE OR TRIPLE* LANE ENTRANCE	36'

\*TRIPLE LANE ENTRANCE TO BE PLACED IN THREE PANELS



**SECTION A - A**

**NOTES:**

1. DISTANCE "A" VARIES WITH STREET CLASSIFICATION. SEE STREET CROSS SECTION DETAILS.
2. SEE STANDARD DETAILS 620 AND 621 FOR CURB EXPOSURE DIMENSION "E".
3. SLOPES SHOWN ARE RELATIVE TO HORIZONTAL. TRANSITION RAMP SHALL BE 7.5% MAX SLOPE OR 15' MAX IN LENGTH. SIDE FLARES IN PLANTER STRIP MAY BE ANY SLOPE.
4. ALL SURFACES SHALL BE LIGHTLY BROOMED AND EDGED IN A WORKMANLIKE MANNER.
5. SAW CUT EXISTING CURBS WHERE THEY ARE TO BE REMOVED - IF LESS THAN 3' TO EXISTING JOINT, REMOVE TO JOINT. EXISTING ASPHALT IN FRONT OF THE APPROACH SHALL BE SAW CUT MINIMUM 24" FROM CURB FACE AND REPLACED WITH COMPACTED HOT MIX.
6. PCC FOR COMMERCIAL, INDUSTRIAL, AND MULTIFAMILY APPROACHES SHALL BE 4,000 PSI AT 28 DAYS AND REINFORCED.
7. FOR SITES WITH HIGH VOLUME TRIP GENERATION, SEE DETAIL 619.

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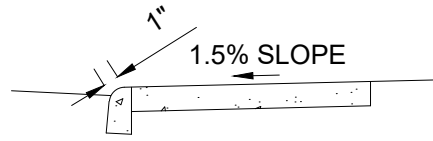
**COMMERCIAL, INDUSTRIAL, MULTIFAMILY DRIVEWAY APPROACH**

PWS VERSION: JAN 2024

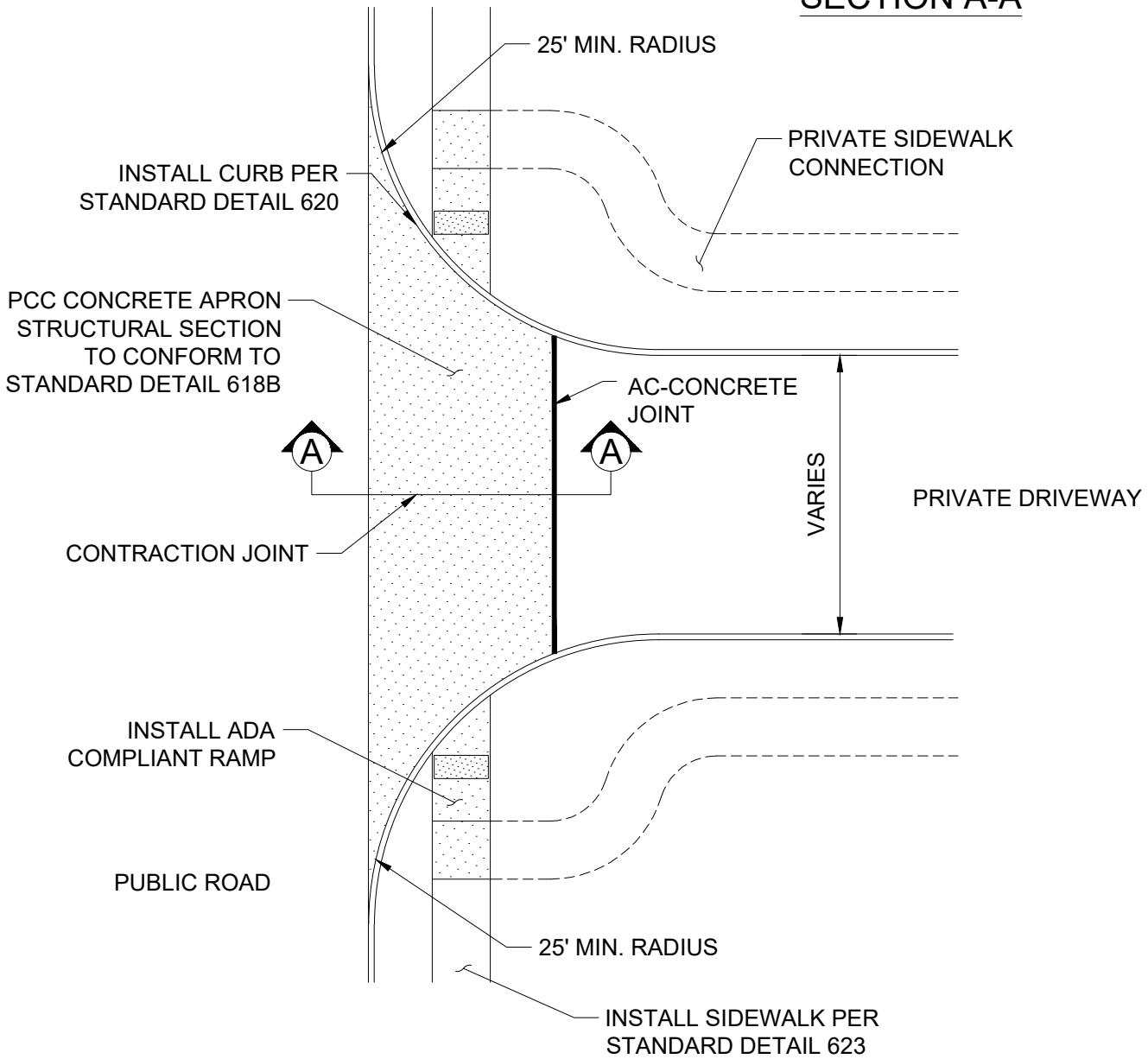
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REV. DATE	JAN 2024
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DETAIL NO.	618B



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**SECTION A-A**



**NOTES:**

- 1. THIS TYPE OF APPROACH TO BE USED FOR HIGH VOLUME (500 ADT OR HIGHER) TRAFFIC GENERATORS WITH APPROVAL OF ENGINEER.

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**CITY OF GRESHAM**

**CURB RETURN DRIVEWAY APPROACH**

PWS VERSION: JAN 2024

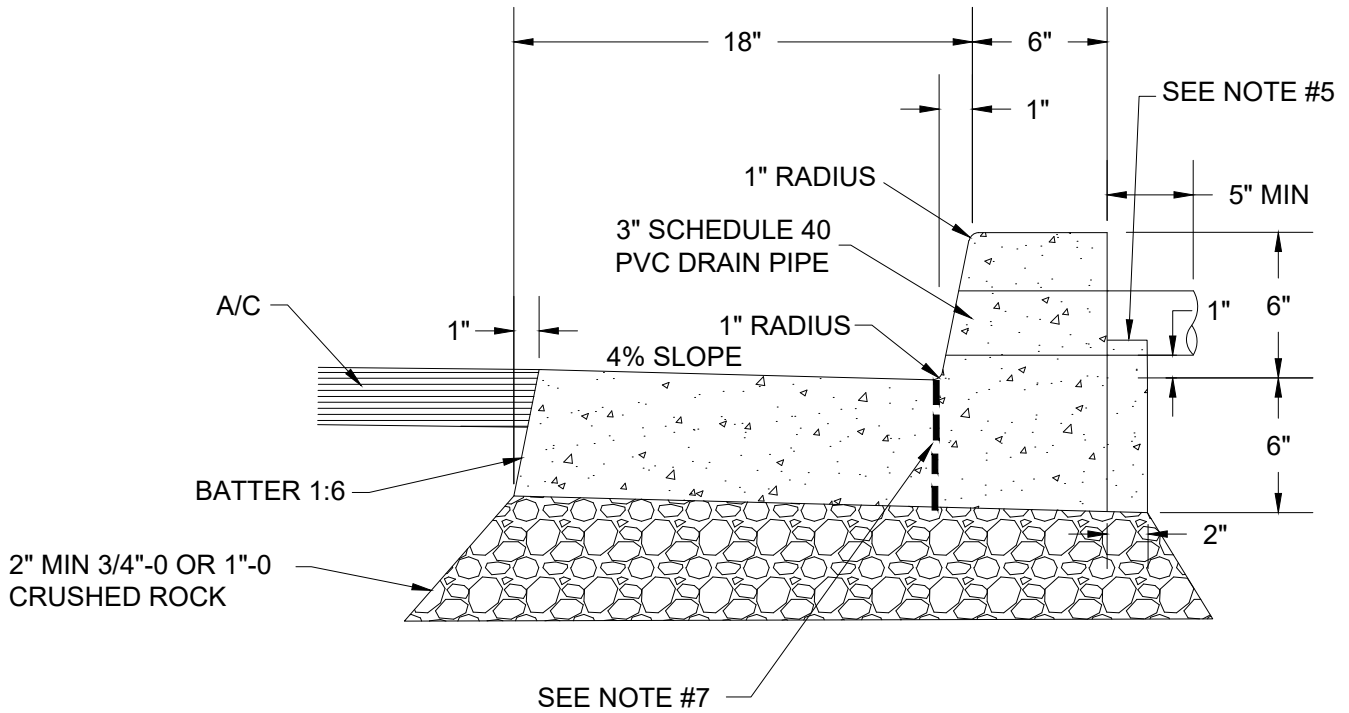
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REV. DATE **JAN 2024**

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DETAIL NO. **619**

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\620.dwg, Plotted 10/3/2023 1:32 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



**NOTES:**

1. PCC SHALL BE 4,000 PSI STRENGTH AT 28 DAYS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
3. CURB EXPOSURE SHALL BE 8" AT ALL STORMWATER INLETS.
4. DRAIN PIPE SHALL BE PLACED 1 PER LOT. DRAIN PIPE SHALL BE EXTENDED TO 1' BEHIND BACK OF SIDEWALK WHEN SIDEWALK IS INSTALLED BEFORE THE LOT IS CONNECTED TO THE DRAIN PIPE.
5. ADD 2" WIDE SHELF, 4" BELOW TOP OF CURB WHEN CURB IS PLACED ADJACENT TO SIDEWALK.
6. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
7. WHEN A DRIVEWAY IS PLACED WHERE THERE IS AN EXISTING MONOLITHIC CURB MAKE A VERTICAL SAWCUT AT THE FACE OF CURB. REPLACE BACK PART OF CURB AND ADD DRIVEWAY WITH ONE CONTIGUOUS POUR.

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**MONOLITHIC CURB AND GUTTER**

PWS VERSION: JAN 2024

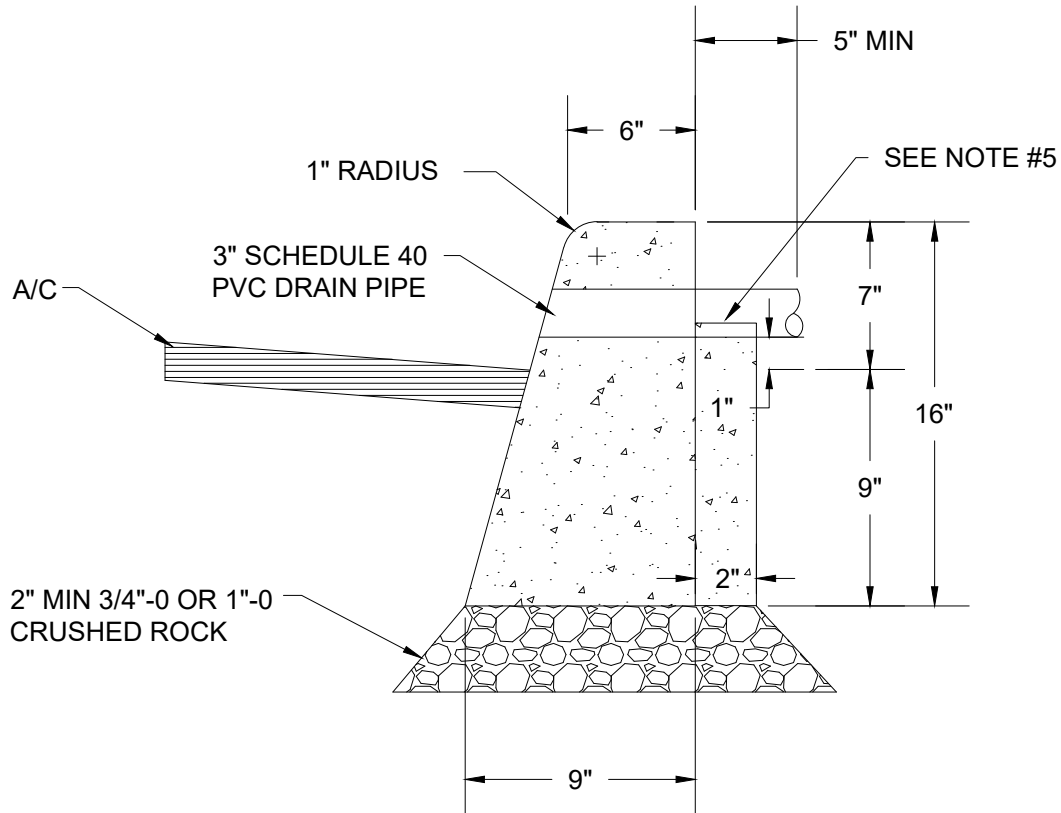
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REV. DATE **JAN 2024**

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DETAIL NO. **620**

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NOTES:

1. PCC SHALL BE 4,000 PSI STRENGTH AT 28 DAYS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
3. CURB EXPOSURE SHALL BE 9" AT ALL STORMWATER INLETS.
4. DRAIN PIPE SHALL BE PLACED 1 PER LOT. DRAIN PIPE SHALL BE EXTENDED TO 1' BEHIND BACK OF WALK WHERE SIDEWALK IS INSTALLED BEFORE THE LOT IS CONNECTED TO THE DRAIN PIPE.
5. ADD 2" WIDE SHELF, 4" FROM TOP OF CURB, WHEN CURB IS PLACED ADJACENT TO SIDEWALK.
6. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
7. TYPE 'C' CURB SHALL ONLY BE INSTALLED WHERE REQUIRED TO MATCH EXISTING CURB TYPE.

NTS

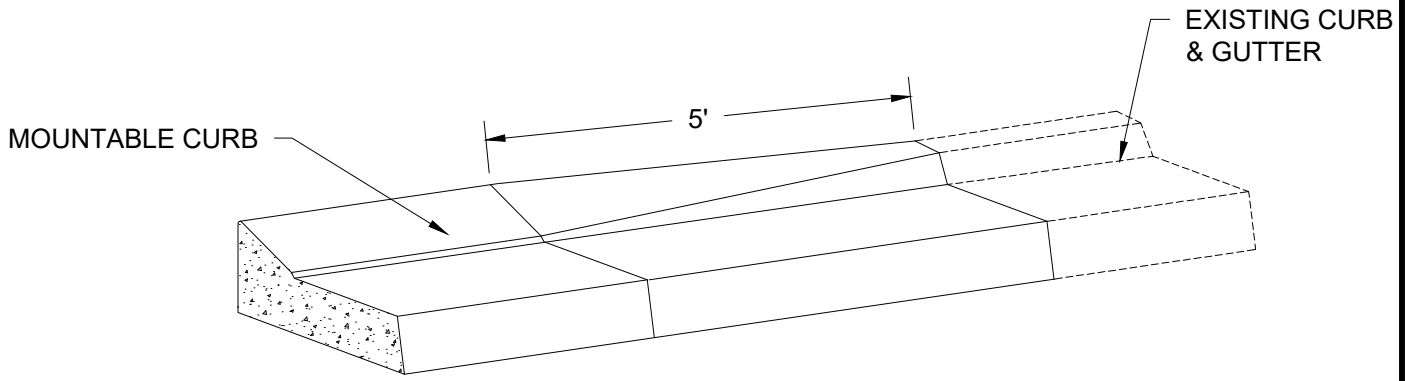
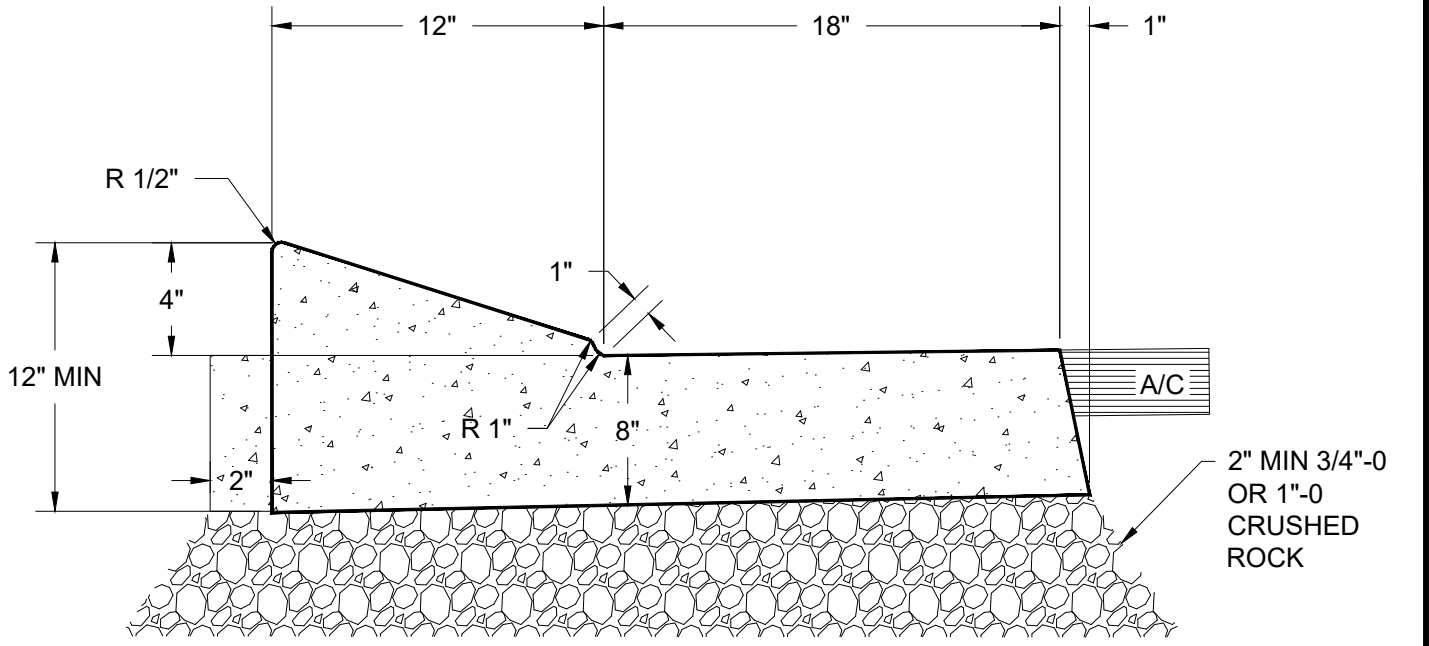
CITY OF GRESHAM

TYPE 'C' CURB

PWS VERSION: JAN 2024

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DETAIL NO.	621

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**TRANSITION DETAIL**

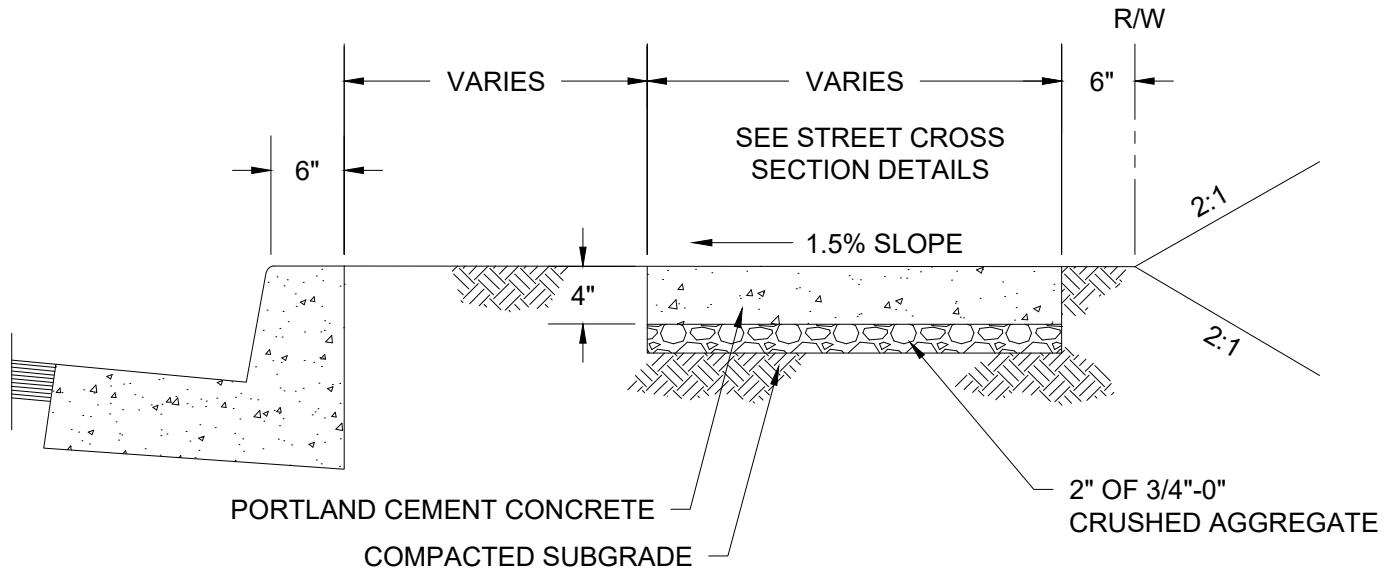
**NOTES:**

1. TO BE USED FOR HIGH DENSITY RESIDENTIAL DEVELOPMENT WITH CITY APPROVAL.
2. PCC SHALL BE 4,000 PSI STRENGTH AT 28 DAYS.
3. CONTRACTION JOINTS SHALL BE PLACED AT 15' MAX. SPACING.
4. ADD 2" WIDE SHELF, 4" BELOW TOP OF CURB WHEN CURB IS PLACED ADJACENT TO SIDEWALK.
5. CRUSHED BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
6. ROOF DRAINS SHALL DRAIN DIRECTLY TO DRAINAGE CATCH BASINS.

NTS

<p><b>CITY OF GRESHAM</b></p>	<p><b>MOUNTABLE CURB</b></p>	<p>DRAWN CM</p>
		<p>REV. DATE MAR 2021</p>
		<p>APPR. <i>[Signature]</i></p>
		<p>DETAIL NO. 622</p>
<p>PWS VERSION: JAN 2024</p>		

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NOTES:

1. LOCATION AND WIDTH OF SIDEWALK WILL VARY DEPENDING UPON FUNCTIONAL CLASSIFICATION OF THE STREET. SEE TYPICAL STREET SECTION DETAILS.
2. PCC SHALL BE 4,000 PSI STRENGTH AT 28 DAYS.
3. CONTRACTION JOINTS SHALL BE PLACED AT ALL CHANGES OF DIRECTION, POINTS OF CURVATURE, ALIGNED WITH CURB CONTRACTION AND EXPANSION JOINTS WHEN SIDEWALK IS ADJACENT TO CURB, AND AT 15' (MAX) INTERVALS. JOINTS SHALL BE 1/8" TO 1/4" WIDE AND A MINIMUM DEPTH OF 1/3 THE THICKNESS OF THE CONCRETE.
4. ALL EDGES AND JOINTS SHALL BE TOOLED TO 1/2-INCH RADIUS PRIOR TO APPLYING A BROOM FINISH.
5. USE THIS DETAIL FOR MULTI USE PATH SECTIONS ADJACENT TO ROADWAYS.


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TYPICAL SIDEWALK

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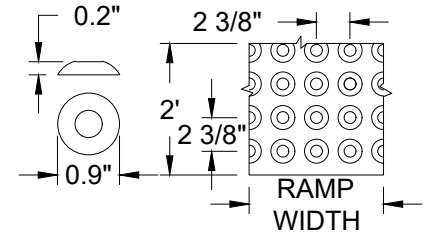
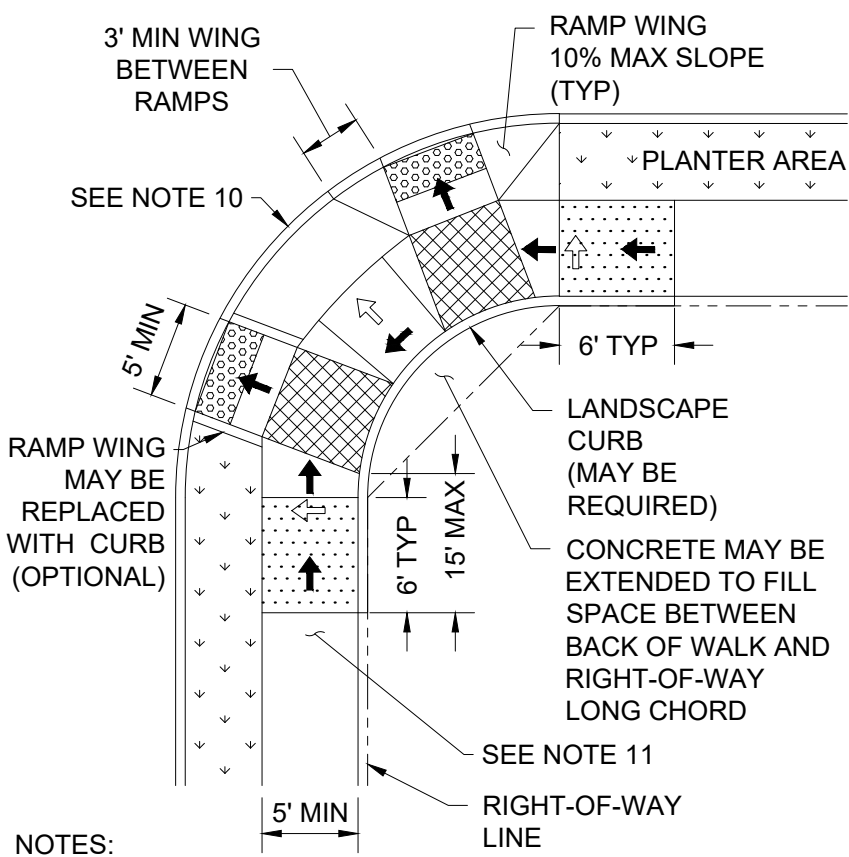
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REV. DATE JAN 2024






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DETAIL NO. 623

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**DETECTABLE WARNING SURFACE**

-  **GRADE TRANSITION RAMP**  
1.5% DESIGN GRADE MAXIMUM FOR CONSTRUCTION TOLERANCE, 2.0% MAX SLOPE FINISH GRADE.
- 
-  7.5% DESIGN GRADE MAXIMUM FOR CONSTRUCTION TOLERANCE, 8.33% MAX SLOPE FINISH GRADE.
-  **TRUNCATED DOME DETECTABLE WARNING SURFACE. SEE DETAIL THIS SHEET.**
-  **MINIMUM 60" x 48" LEVEL LANDING AREA. USE 1.5% DESIGN GRADE MAX. IN ALL DIRECTIONS FOR CONSTRUCTION TOLERANCE, 2% MAX. SLOPE FINISH GRADE.**

**NOTES:**

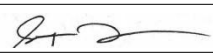
1. SIDEWALK RAMP DETAILS ARE BASED ON U.S. DOT REQUIREMENTS. RAMPS MUST BE ADA COMPLIANT.
2. SIDEWALK RAMP SLOPES SHOWN ARE RELATIVE TO THE TRUE LEVEL HORIZON (ZERO BUBBLE). SIDE FLARE SLOPES SHALL BE 10% MAXIMUM.
3. TWO SIDEWALK RAMPS PER CORNER ARE REQUIRED AT ALL NEW INTERSECTIONS. RAMPS SHALL BE LOCATED WITHIN THE CROSSWALK AND AS NEAR THE CONTINUOUS PEDESTRIAN ACCESS ROUTE AS PRACTICAL.
4. PLACE TRUNCATED DOME DETECTABLE WARNING TEXTURE IN THE LOWER 2 FEET OF THROAT OF RAMP ONLY. ARRANGE DOMES USING IN-LINE-PATTERN ONLY. COLOR OF TEXTURE TO BE BRICK RED.
5. SIDEWALK RAMPS SHALL BE FORMED AND POURED SEPARATE FROM SIDEWALK AND LANDINGS. COLD JOINTS SHALL BE KEYED OR DOWELED. EDGES OF THE ACCESSIBLE ROUTE SHALL BE POURED AGAINST RIGID FORMS OR CURED CONCRETE TO ENSURE COMPLIANCE WITH ORS 447.310 AND AMERICANS WITH DISABILITIES ACT.
6. PLACE AND COMPACT MIN. 2" OF 3/4"-0 CRUSHED ROCK BENEATH ALL CONCRETE SURFACES.
7. PROVIDE MINIMUM 1 FOOT CLEAR OF VERTICAL OBSTRUCTIONS INCLUDING CURBS ADJACENT TO 60" x 48" LEVEL LANDINGS.
8. INSTALL LANDSCAPE CURB AND/OR PLANTER AREA CURBS AS NEEDED.
9. THE RUNNING SLOPE OF A TRANSITION PANEL SHALL BE 7.5% MAXIMUM, BUT IS NOT REQUIRED TO EXCEED 15' IN LENGTH MEASURED FROM THE LEVEL LANDING AREA. LENGTH SHALL BE MEASURED ALONG THE BACK OF THE SIDEWALK.
10. THERE SHALL BE 1' MINIMUM WIDTH OF 3" MINIMUM CURB EXPOSURE BETWEEN RAMP WINGS.
11. INSTALL TRANSITION PANEL (5' MIN) FOR CROSS SLOPE TO TRANSITION BACK TO EXISTING SIDEWALK, IF NECESSARY.

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**CITY OF GRESHAM**

**SIDEWALK RAMP**

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DETAIL NO.	624

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CONSTRUCT SIDEWALK RAMPS PER STANDARD DETAIL 624. MATCH RAMPS TO GRADES. (LAYOUT SHOWN IS CONCEPTUAL)

STREET

STREET

R13'

R13'

SIDEWALK

SIDEWALK

R13'

PLAN VIEW

**NOTES:**

1. PROVIDE STATIONS AND ELEVATIONS AT EVERY INLET, OUTLET, CHECK DAM, PLANTER WALL CORNER, AND ADJACENT SIDEWALK.
2. CHECK DAMS REQUIRED FOR STORMWATER FACILITIES PER STANDARD DETAIL GS-105.
3. FOR REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS AT STORMWATER FACILITIES. SEE STANDARD DETAIL GS-109.
4. CURB AND GUTTER FOR STORMWATER FACILITIES, SEE STANDARD DETAIL GS-103.
5. FOR STORMWATER FACILITIES, OVERFLOW AT DOWNSTREAM END TO HAVE BEEHIVE OVERFLOW OR CATCH BASIN IN GUTTER. DESIGN SHALL NOT ALLOW OVERFLOW PAST SIDEWALK RAMPS WITHOUT APPROVAL. DESIGN SHALL ACCOMMODATE CATCH BASINS AT LOW POINTS AND AS OTHERWISE REQUIRED.
6. INLETS AND OUTLETS SHOWN ARE CONCEPTUAL AND MUST BE PLACED BASED ON SURROUNDING GRADES AND SITE CONDITIONS. SEE STANDARD DETAIL GS-104 FOR INLET AND OUTLET OPTIONS.
7. HARD SURFACED AREA MAY BE REQUIRED FOR BUS STOPS OR MAILBOXES, RESTRICTING AVAILABLE AREA FOR PLANTER.
8. CORNER RADIUS, SIDEWALK WIDTH, AND THROAT WIDTH AT INTERSECTION ARE DETERMINED BY STREET CLASSIFICATION AND ACCESS REQUIREMENTS. 24' MIN. THROAT WIDTH.
9. ADA RAMPS AND SIDEWALK LEADING TO ADA RAMPS THAT, DUE TO STREET GRADE, CANNOT DRAIN TO A STORMWATER FACILITY SHALL DRAIN TO THE STREET.
10. CORNER CURB EXTENSIONS ARE REQUIRED WHERE ON-STREET PARKING IS ALLOWED IN THE DOWNTOWN PLAN DISTRICT.

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CORNER CURB EXTENSION

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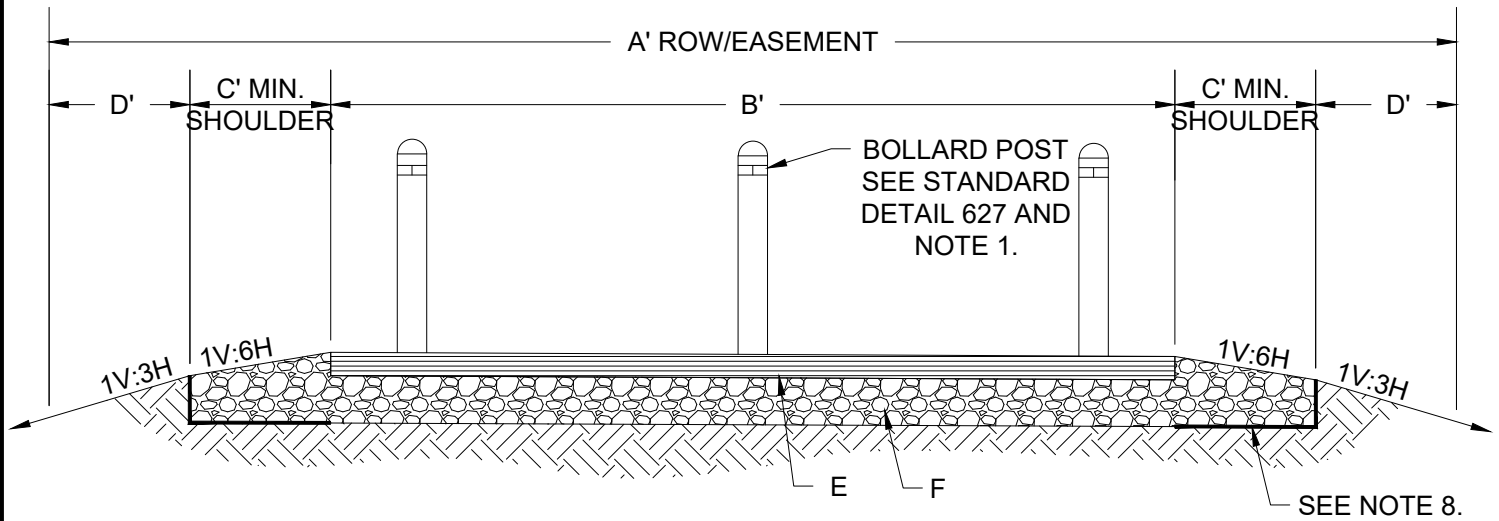
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DETAIL NO. 625

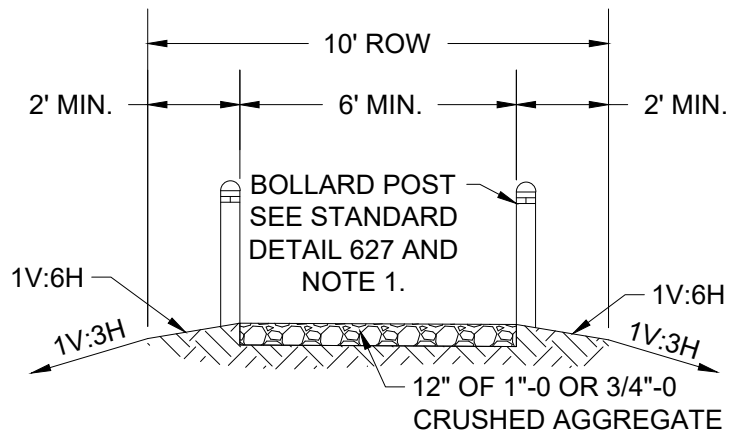
# MULTI-USE PATH AND CONNECTOR PATH



	MULTI-USE PATH	CONNECTOR PATH
A	20'	15'
B	14'	10'
C	2'	1.5'
D	1'	1'
E	4" OF 1/2" DENSE GRADED, LEVEL 2 AC IN TWO LIFTS*	4" PORTLAND CEMENT CONCRETE
F	8" OF 1"-0 CRUSHED AGGREGATE	2" OF 3/4"-0 CRUSHED AGGREGATE

\* IF PATH RUNS ALONG A ROADWAY, USE PCC AND REFER TO STANDARD DETAIL 623 FOR SECTION.

## MULTI-USE TRAIL



### NOTES:

- BOLLARDS SHALL BE PLACED WHERE PATHS/TRAILS INTERSECT ROADWAYS, AND HAVE A MINIMUM 20' SETBACK FROM FACE OF CURB. THERE SHALL BE A MINIMUM OF 6 FEET CLEARANCE BETWEEN BOLLARDS, MAINTAINING EQUAL SPACING FROM EACH SIDE OF THE ROW/EASEMENT. NUMBER OF BOLLARDS VARIES BASED ON WIDTH OF PATHWAY, MINIMUM 2 BOLLARDS.
- WHERE PATHS AND TRAILS CONTINUE ACROSS STREETS, ADA RAMPS SHALL BE REQUIRED.
- MINIMUM VERTICAL CLEARANCE SHALL BE 10'.
- MAXIMUM CROSS SLOPE SHALL BE 1.5%.
- MAXIMUM PATH GRADE IS 5%, UNLESS ADJACENT TO A ROADWAY. IF PATH IS ADJACENT TO A ROADWAY IT SHALL MATCH ROAD GRADE. MAXIMUM TRAIL GRADE IS 10%.
- SUBGRADE AND BASEROCK SHALL BE COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557. ASPHALT SURFACES SHALL BE COMPACTED TO 91% OF RICE DENSITY.
- PATHS MUST MEET THE DESIGN REQUIREMENTS OF AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES AND THE GRESHAM COMMUNITY DEVELOPMENT CODE.
- SHOULDERS SHALL HAVE SUBGRADE GEOTEXTILE PLACED ON THE SUBGRADE PRIOR TO ROCK PLACEMENT.

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## PATHS AND TRAILS

PWS VERSION: JAN 2024

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REV. DATE JAN 2024

APPR.

DETAIL NO. 626

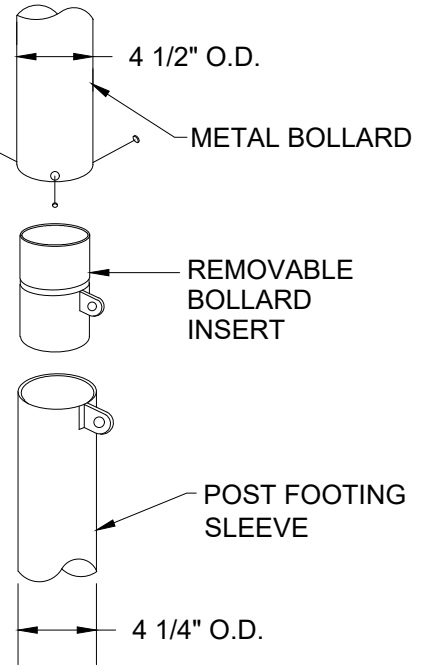


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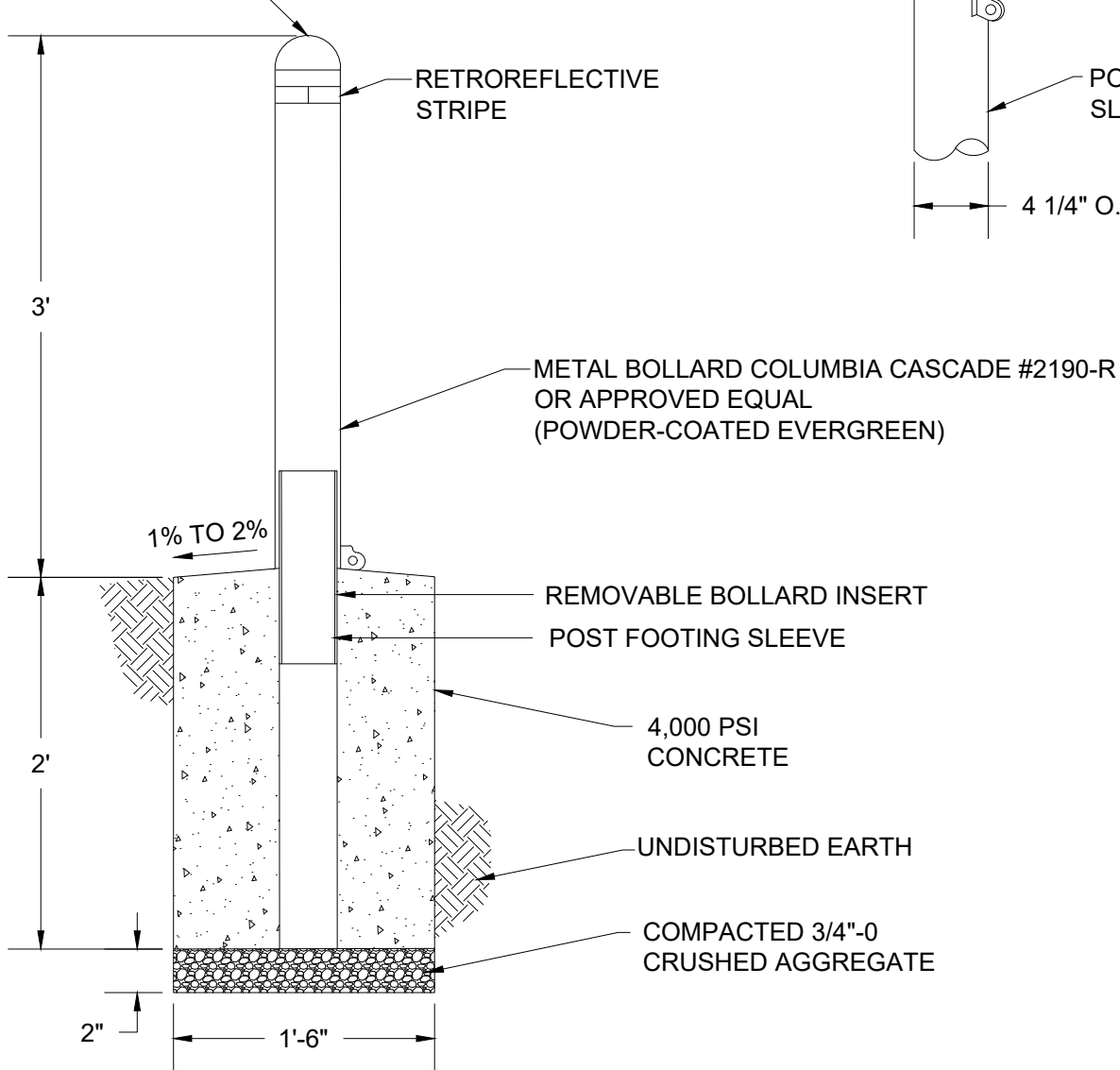
3/8"-16x3/8" HEX SOCKET SET SCREW (TYP.)

INSTALLATION SEQUENCE

1. DIG FOOTING HOLE AND SET "POST FOOTING SLEEVE" PLUM AND SQUARE IN CONCRETE
2. INSERT "REMOVABLE BOLLARD INSERT" INTO METAL BOLLARD
3. TIGHTEN HEX SOCKET SET SCREWS.
4. SET THE "REMOVABLE BOLLARD INSERT" INTO THE "POST FOOTING SLEEVE"



POST W/ DOME TOP



NOTES:

1. LOCK TAB TO BE ORIENTED OPPOSITE THE DIRECTION OF VEHICULAR ACCESS.

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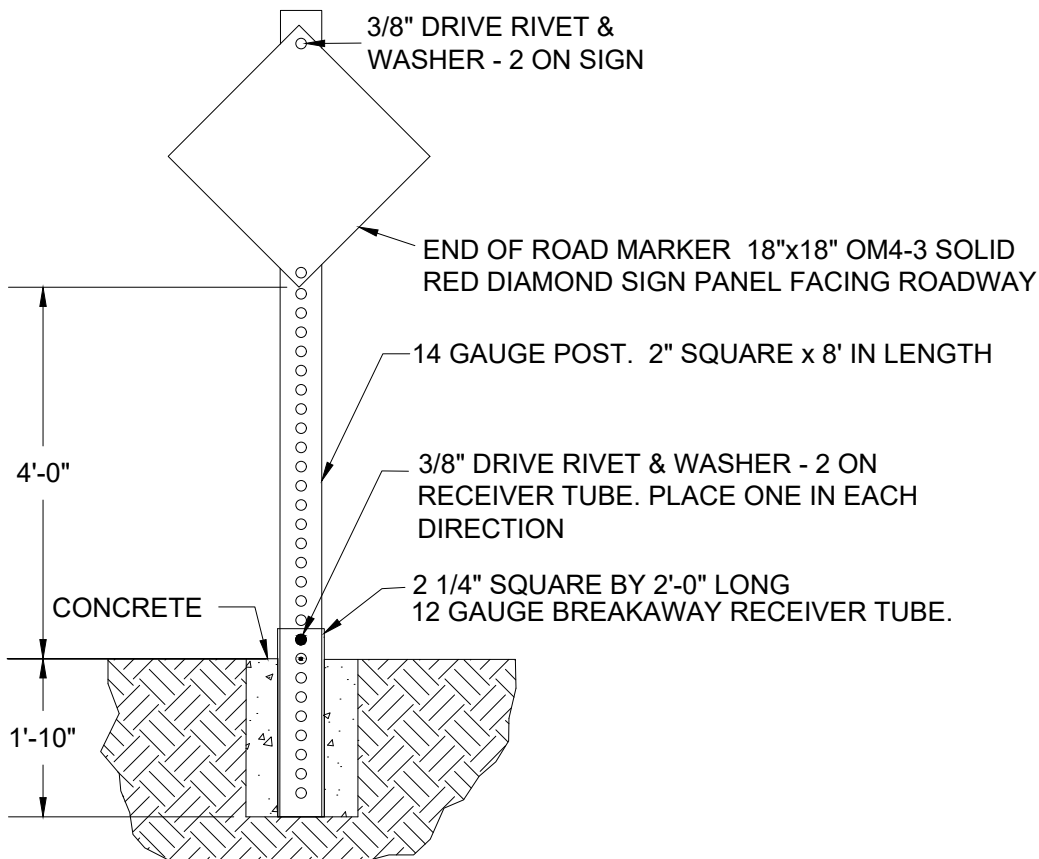
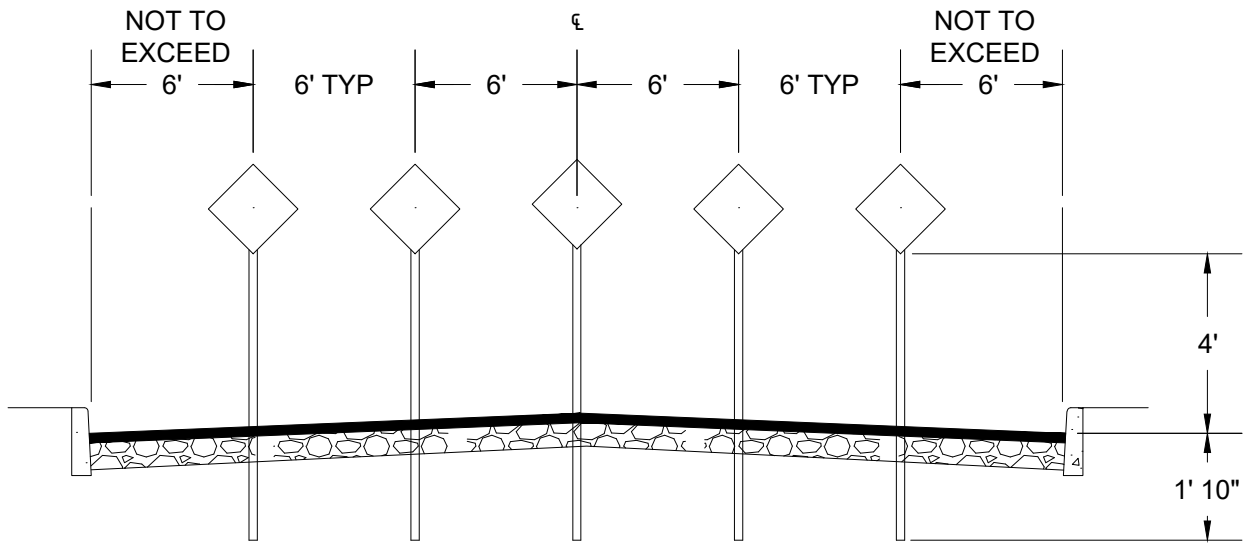
CITY OF GRESHAM

BOLLARD

PWS VERSION: JAN 2024

DRAWN	CM
REV. DATE	MAR 2021
APPR.	
DETAIL NO.	627

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\600\_transportation\trans cad\628.dwg, Plotted 10/3/2023 1:52 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



NOTES:

1. END OF ROAD MARKERS SHALL BE USED IN LIEU OF STREET BARRICADE WHERE NO DROP OFF HAZARD (SLOPES GREATER THAN 3:1 OR 18" OR GREATER VERTICALLY) EXISTS.
2. RECEIVER TUBE SHALL BE COVERED BY DUCT TAPE ON ALL SIDES.
3. POST SHALL BE COATED WITH ANTI-SEIZE ON THE BOTTOM 2'.

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END OF ROAD MARKERS

PWS VERSION: JAN 2024

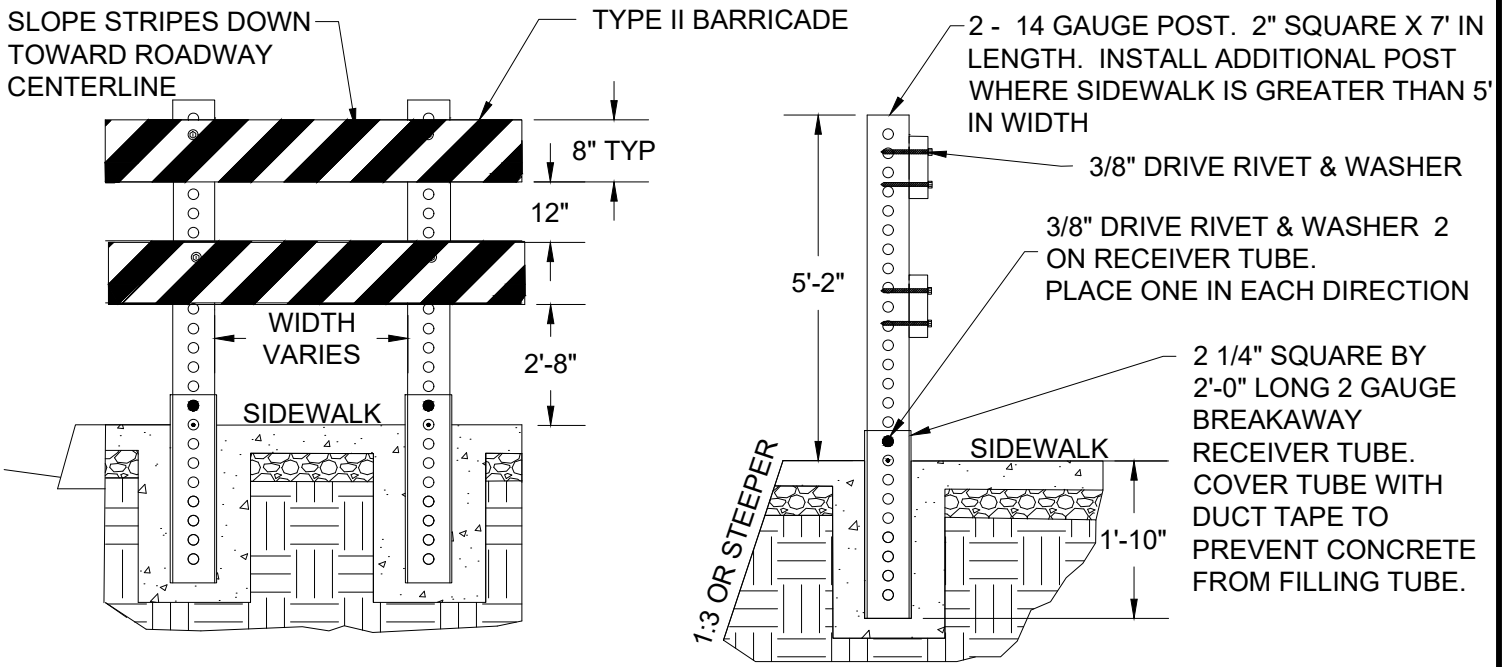
DRAWN CM

REV. DATE JAN 2019

APPR.

DETAIL NO. 628

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\629.dwg, Plotted 10/3/2023 1:52 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

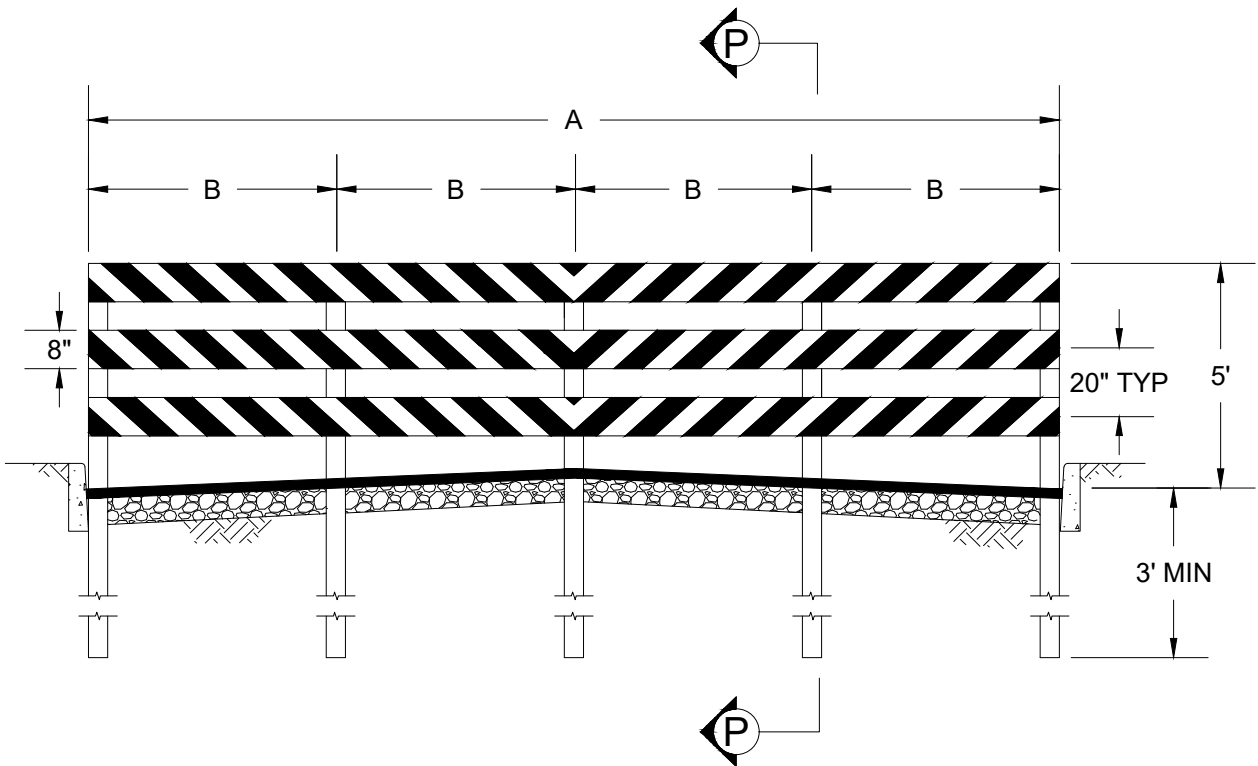


**NOTES:**

1. ASPHALT TRANSITION ADA RAMP MAY BE USED INSTEAD OF BARRICADES OR SIGNAGE.
2. TYPE II BARRICADE TO BE USED WHERE SIDEWALK DROP-OFF EXCEEDS 18" VERTICAL WITH A SLOPE OF 1:3 OR GREATER.
3. STRIPING FOR TYPE II BARRICADE: TYPE IV RETRO-REFLECTIVE SHEET WITH ALTERNATING 6" RED AND WHITE STRIPES PLACED AT A 45 DEGREE ANGLE SHALL BE PLACED ON A 7 1/4" X 48" MIN. .080 GAGE ALUMINUM PANEL. PANEL TO BE ATTACHED TO 2 X 8 PRESSURE TREATED BOARD WITH 6 #12 X 1-1/4" SELF-TAPPING VANDAL RESISTANT SCREWS.
4. CENTER BARRICADE ON SIDEWALK 6" BEYOND END OF SIDEWALK. WHEN POSTS MUST BE SET IN THE SIDEWALK, THE SIDEWALK MUST HAVE A TOOLED CONTRACTION JOINT INSTALLED 12" IN FRONT OF POSTS.

	<h2 style="margin: 0;">END OF SIDEWALK MARKER</h2>	DRAWN <b>CM</b>
		REV. DATE <b>JAN 2019</b>
		APPR.
		DETAIL NO. <b>629</b>
PWS VERSION: JAN 2024		

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\630.dwg, Plotted 10/3/2023 1:52 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

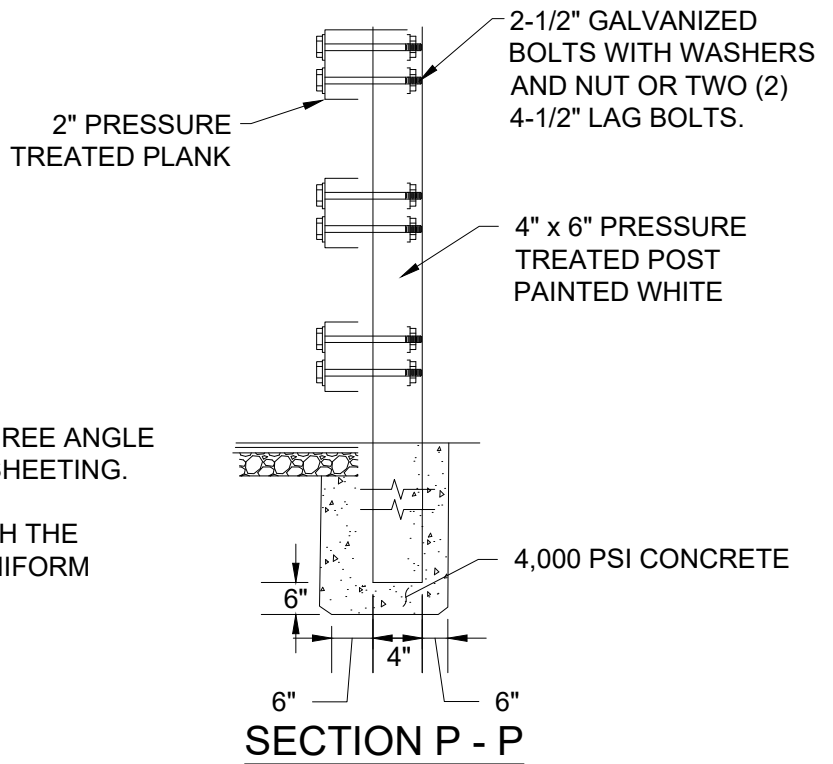


A*	B
40'	10'
36'	9'
32'	8'

\* FOR STREETS WITH NONSTANDARD PAVEMENT WIDTHS, EQUAL SPACING BETWEEN POSTS SHALL BE MAINTAINED, NOT TO EXCEED 10', AND SHALL BE CENTERED ON STREET CENTERLINE.

**NOTES:**

1. 6" RED AND WHITE STRIPES AT A 45 DEGREE ANGLE SHALL BE RETRO-REFLECTIVE TYPE IV SHEETING.
2. PLACEMENT SHALL BE CONSISTENT WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



NTS

**CITY OF GRESHAM**

**STREET BARRICADE**

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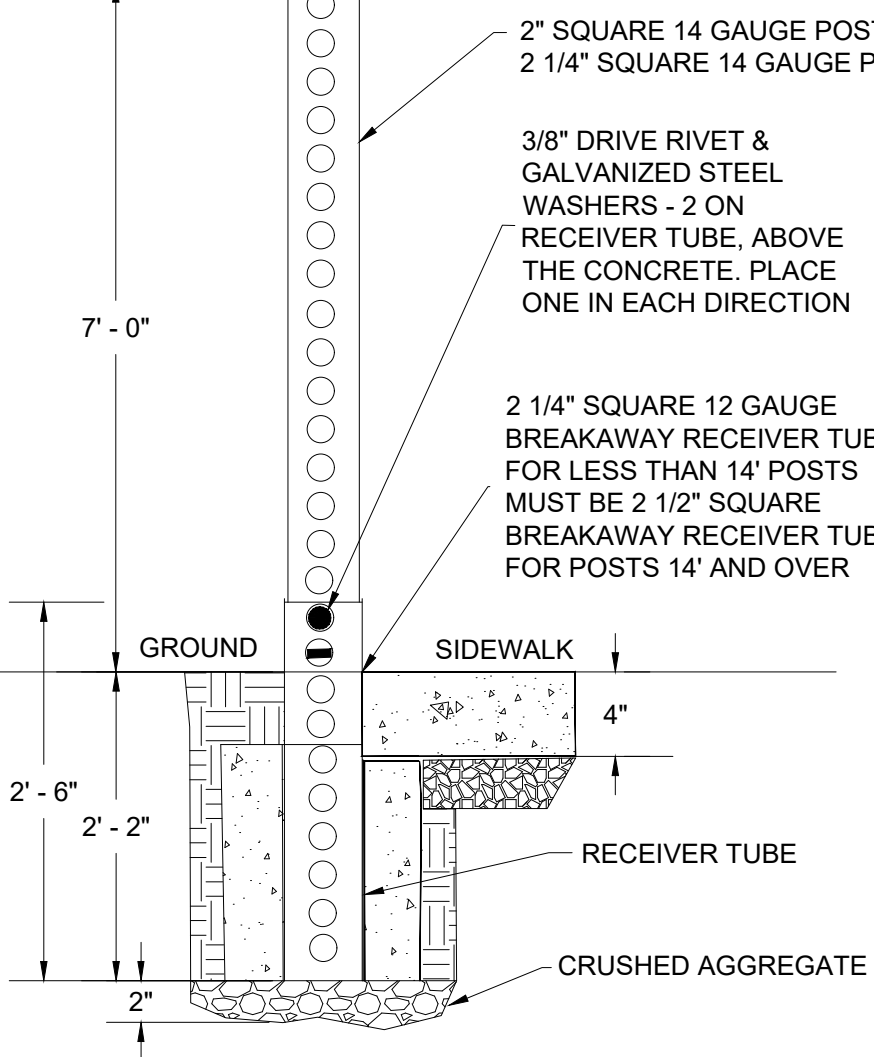
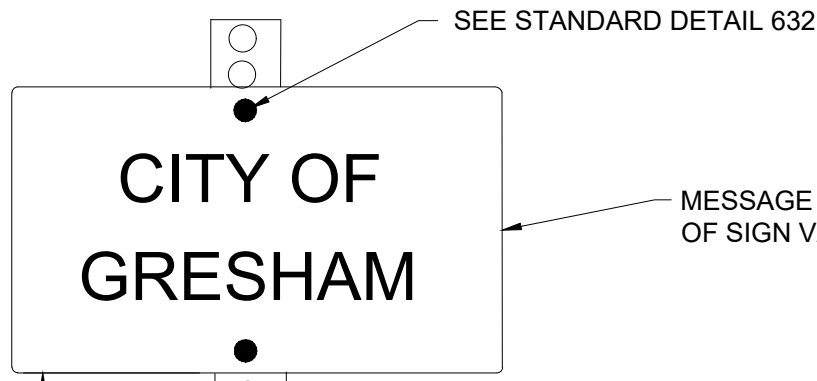
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REV. DATE MAR 2021

APPR. *[Signature]*

DETAIL NO. 630

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\631.dwg, Plotted 10/3/2023 1:53 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



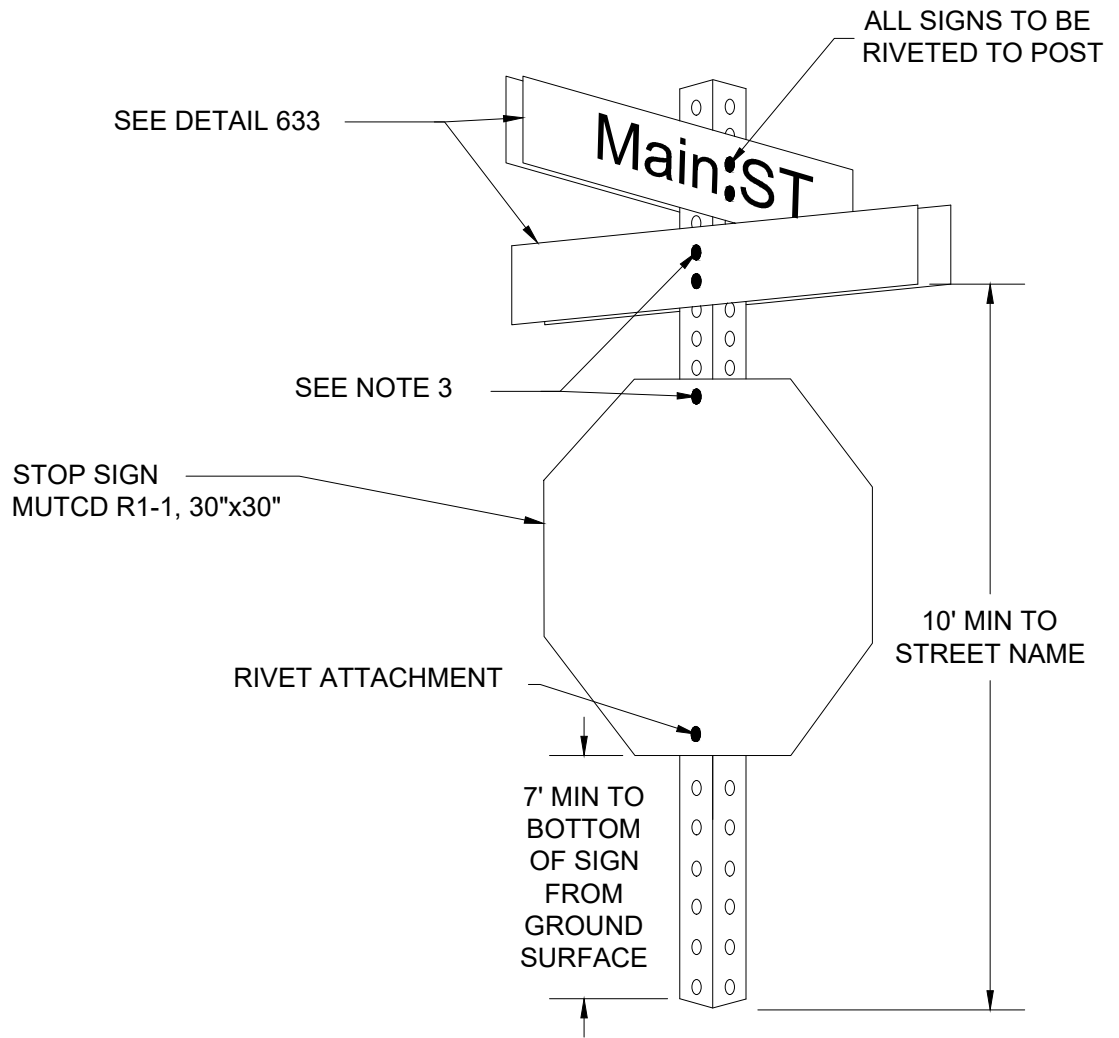
- NOTES:
1. RECEIVER TUBE SHALL BE COVERED BY DUCT TAPE ON ALL SIDES.
  2. RECEIVER TUBE SHALL BE SET IN 22" OF CONCRETE UNLESS IN SIDEWALK.
  3. RECEIVER TUBES SET IN SIDEWALK SHALL HAVE 2 HOLES COMPLETELY ABOVE FINISHED SURFACE.
  4. IF RECEIVER TUBE IS SET IN SIDEWALK IT SHALL BE 2'-2" DEEP & BACKFILLED WITH COMPACTED FILL, THEN CONCRETE FROM BOTTOM TO TOP OF WALK.
  5. SIGN PLACEMENT IN SIDEWALK SHALL ALLOW FOR 5' CLEAR PASSAGE & EDGE OF SIGN SHALL BE 24" FROM FACE OF CURB.
  6. POST SHALL BE COATED WITH ANTI-SEIZE ON THE SECTION FITTED INSIDE THE RECEIVER TUBE.

RECEIVER TUBES			
POST SIZE	GAUGE	ANCHOR SIZE	CONCRETE SET DEPTH
≤10'	12 GA	2 1/4" X 24"	22"
12'	12 GA	2 1/4" X 30"	28"
14'	12 GA	2 1/2" X 36"	34"
16'-18'	7 GA	2 1/2" X 36"	34"

NTS

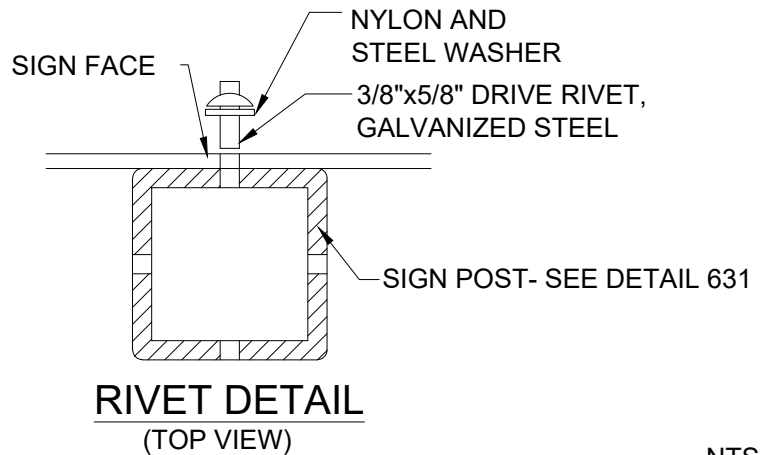
	<h2>STANDARD SIGNPOST</h2>	DRAWN <b>CM</b>
		REV. DATE <b>JAN 2019</b>
		APPR.
		DETAIL NO. <b>631</b>
PWS VERSION: JAN 2024		

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\600\_transportation\trans cad\632.dwg, Plotted 10/3/2023 1:54 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



**NOTES:**

1. SEE DETAIL 631 FOR POST SIZING AND INSTALLATION GUIDELINES.
2. DIMENSIONS DEPICT TYPICAL STOP SIGN/STREET NAME SIGN INSTALLATION ON LOCAL STREETS. SIGNAGE ON HIGHER CLASSIFICATION ROAD, OR MORE COMPLEX CONFIGURATION, WILL BE AS DETERMINED BY ENGINEER.
3. INSTALL NYLON SPACERS WHERE REQUIRED TO PREVENT CONTACT BETWEEN STEEL AND ALUMINUM SURFACES.
4. PANELS SHALL BE RIVETED TO POST.



NTS

**CITY OF GRESHAM**

**SIGN ATTACHMENT**

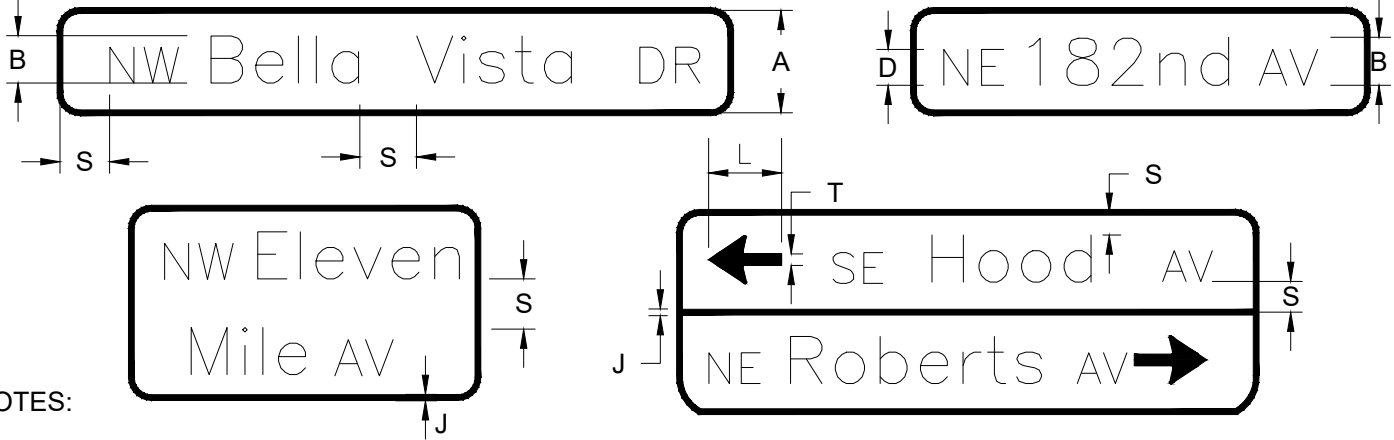
PWS VERSION: JAN 2024

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REV. DATE	JAN 2019
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DETAIL NO.	632

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DIMENSIONS FOR STREET NAME SIGNS

MOUNTING TYPE	STREET TYPE OR SPEED LIMIT	PANEL HEIGHT A	LETTER HEIGHT UPPERCASE B	PREFIX SUFFIX HEIGHT D	SPACE S	BORDER THICKNESS J	ARROW TAIL THICKNESS T	ARROW LENGTH L
POST	≤ 25 MPH	8"	4"	3"	2" MIN	NONE	-	5"
	PRIVATE (ALL)							
POST	>25 MPH ≤40 PH	12"	6"	4"	3"	3/8"	-	-
POST	>40 MPH	15"	8"	6"	4"	1/2"	-	-
OVERHEAD	ALL	21"	12"	9"	6"	1"	-	-
OVERHEAD STACKED LEGEND	ALL	30"	8"	5"	4"	1"	3"	12"



NOTES:

- SIGN PANELS SHALL BE 0.08" ALUMINUM FLAT BLADE WITH 1.5" RADIUS CORNERS. SIGNS OVER 36" IN WIDTH OR HEIGHT SHALL BE THICKNESS OF 0.100".
- SIGN FACE SHALL BE COVERED WITH 3M HIP REFLECTIVE SHEETING OR EQUIVALENT, GREEN BACKGROUND WITH WHITE LEGEND AND BORDER OVER 6" IN HEIGHT.
- AT INTERSECTIONS OF TWO-LANE ROADS, INSTALL MINIMUM OF ONE STREET NAME SIGN. ON INTERSECTIONS OF MULTI-LANE ROADS, INSTALL MINIMUM OF 2 SIGNS ON DIAGONAL CORNERS OF INTERSECTION.
- LEGENDS SHALL BE STANDARD ALPHABET SERIES C, UPPER AND LOWER CASE, PER STANDARD HIGHWAY SIGNS AND MARKINGS (SHS) CURRENT EDITION. LEGEND HEIGHT TO BE DICTATED BY HIGHEST CLASSIFICATION STREET AT INTERSECTION.
- IF PANEL WIDTH WOULD EXCEED 5' (OR 12' FOR OVERHEAD MAST ARM INSTALLATION) USE 2-LINE LEGEND.
- LEGEND SHALL BE APPROVED BY ENGINEER PRIOR TO FABRICATION. MINOR VARIATIONS IN SPACING DIMENSIONS MAY BE PERMITTED, PROVIDED LEGIBILITY IS MAINTAINED AND APPROVED.
- REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CURRENT EDITION FOR OTHER SIGNAGE REQUIREMENTS NOT COVERED IN THIS DETAIL

NTS

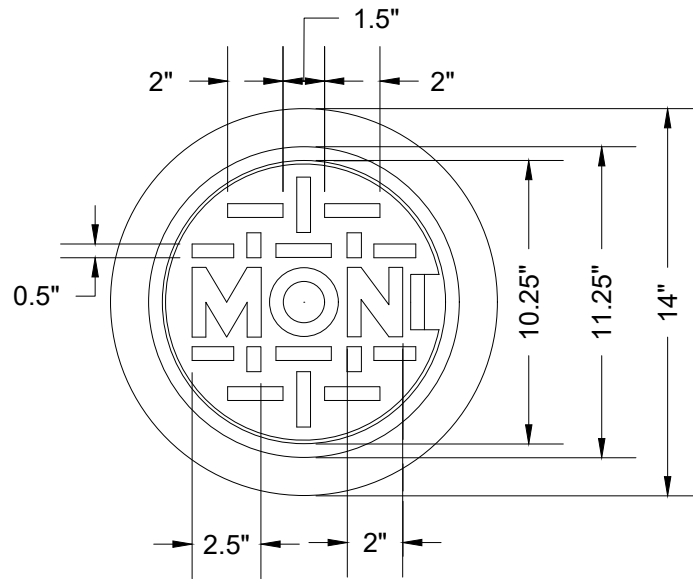
CITY OF GRESHAM

STREET NAME SIGNS

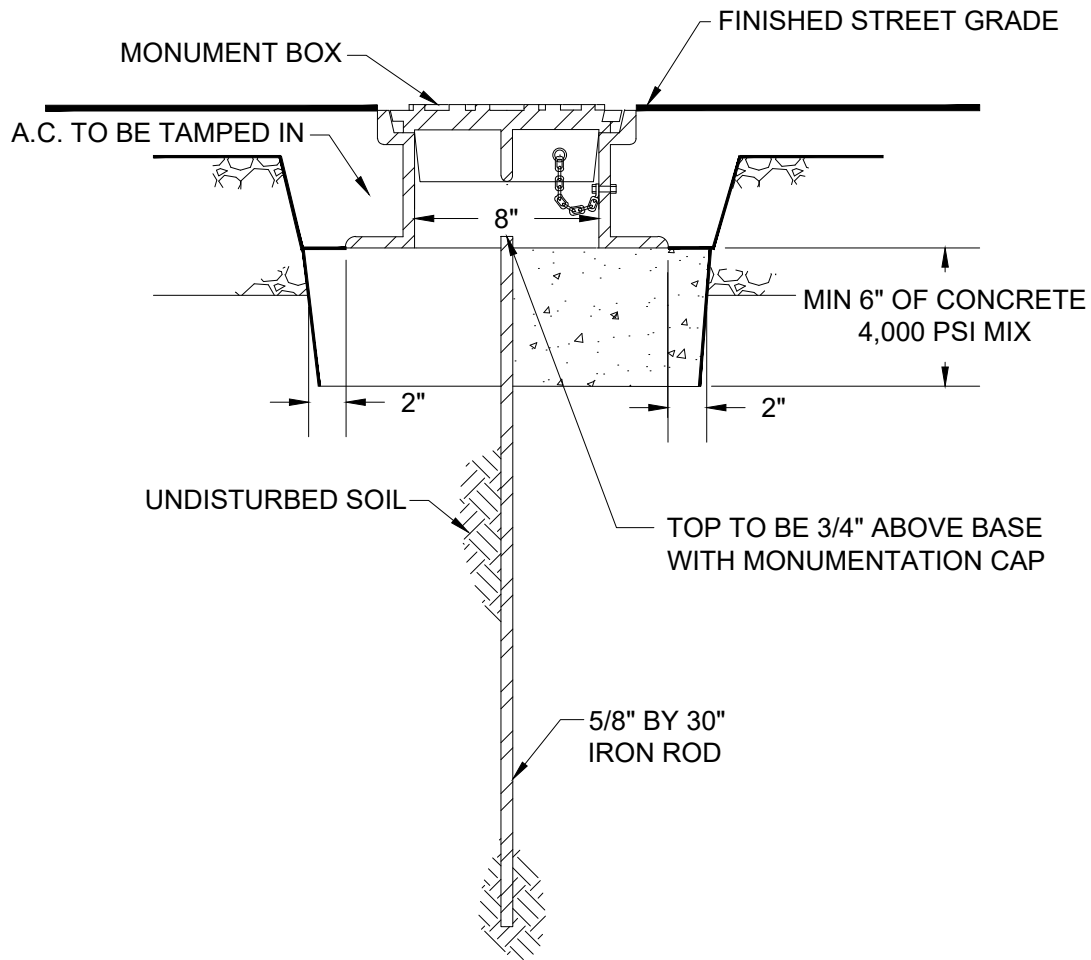
PWS VERSION: JAN 2024

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REV. DATE	JAN 2019
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DETAIL NO.	633

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**LID**



1. MONUMENT BOXES ARE ONLY REQUIRED FOR MONUMENTS SET IN ROADWAYS WHICH ARE COLLECTORS OR ARTERIALS.
2. MONUMENT BOXES SHALL BE 8" MINIMUM.

NTS

**CITY OF  
GRESHAM**

**STANDARD 8" MONUMENT BOX**

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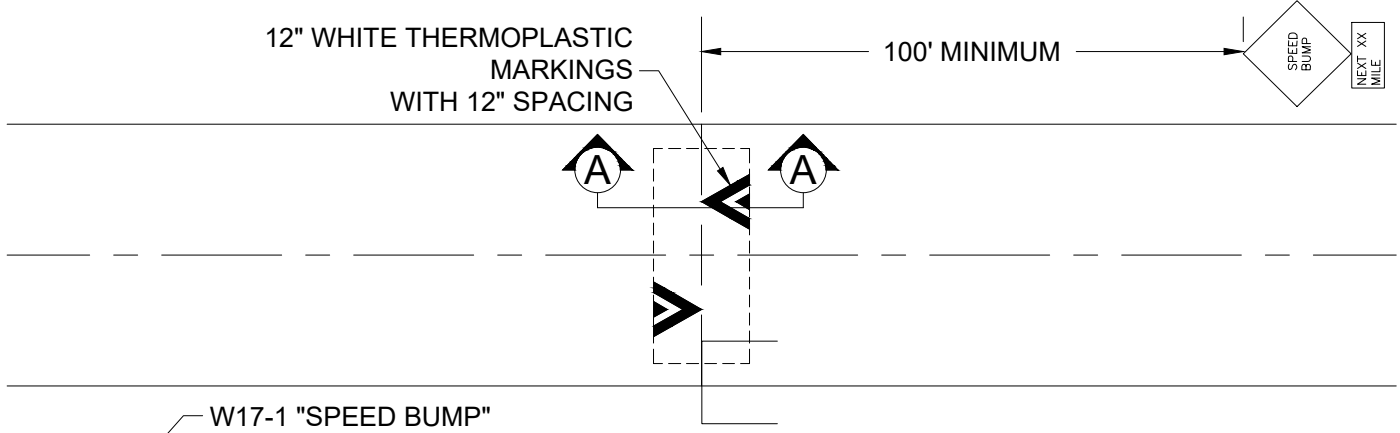
REV. DATE JAN 2024

APPR. *[Signature]*

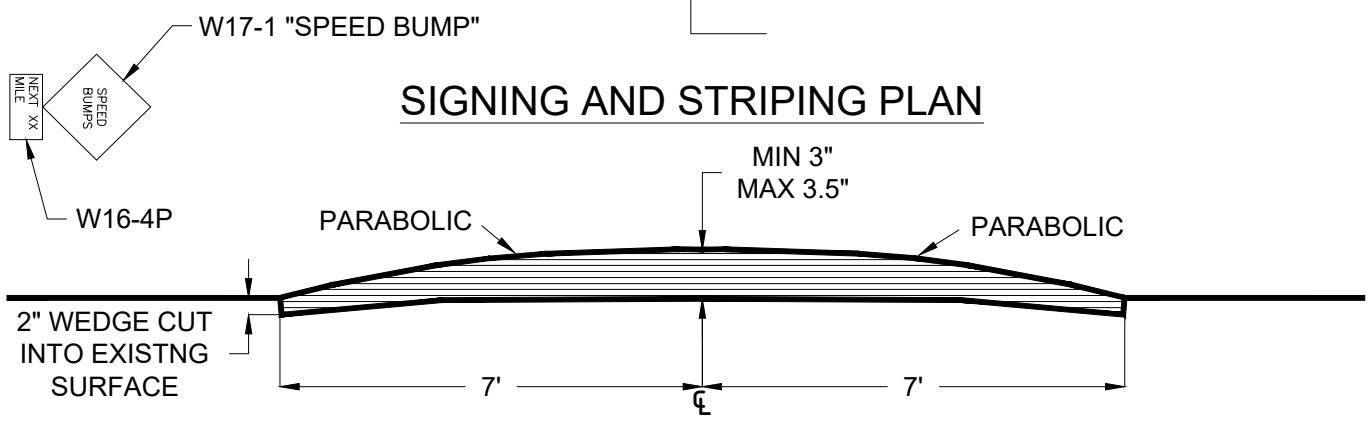
DETAIL NO. 634



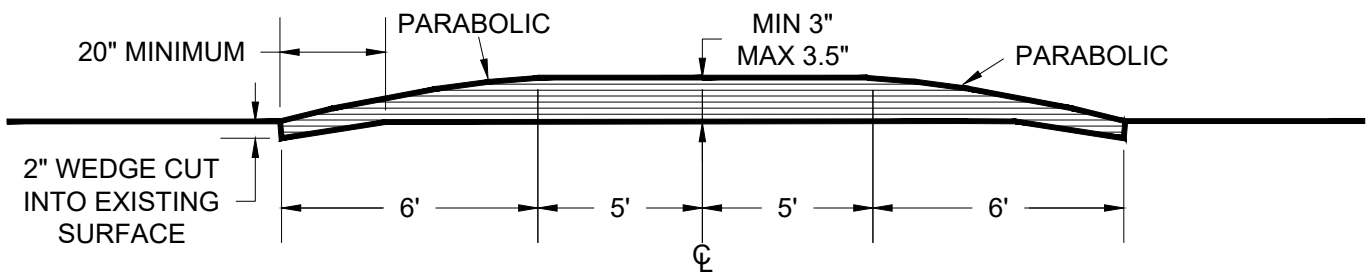
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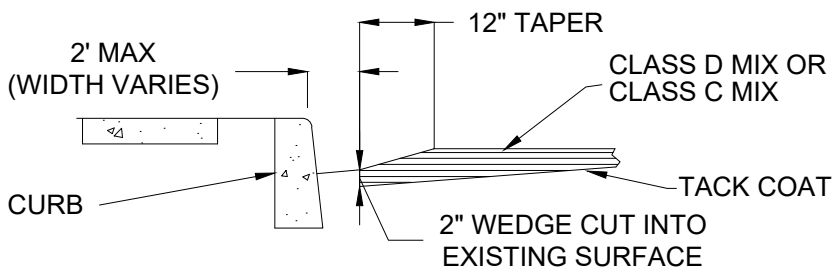
**SIGNING AND STRIPING PLAN**



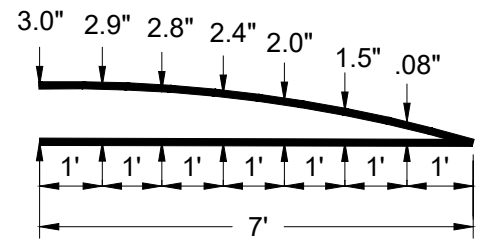
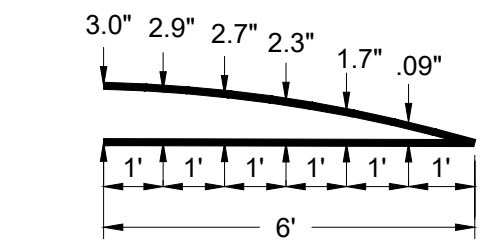
**SECTION A-A 14' WIDE OPTION**



**SECTION A-A 22' WIDE OPTION**



**SECTION B-B**



PARABOLIC GRADING DIAGRAMS NTS

**NOTES:**

1. SPACING BETWEEN BUMPS SHALL BE BETWEEN 300 AND 600 FEET AS APPROVED BY THE CITY.
2. ASPHALT GRADING TOLERANCE FOR BUMPS SHOULDN'T VARY BY MORE THAN 0.5" HIGH OR .25" LOW FROM DIMENSIONS SHOWN.

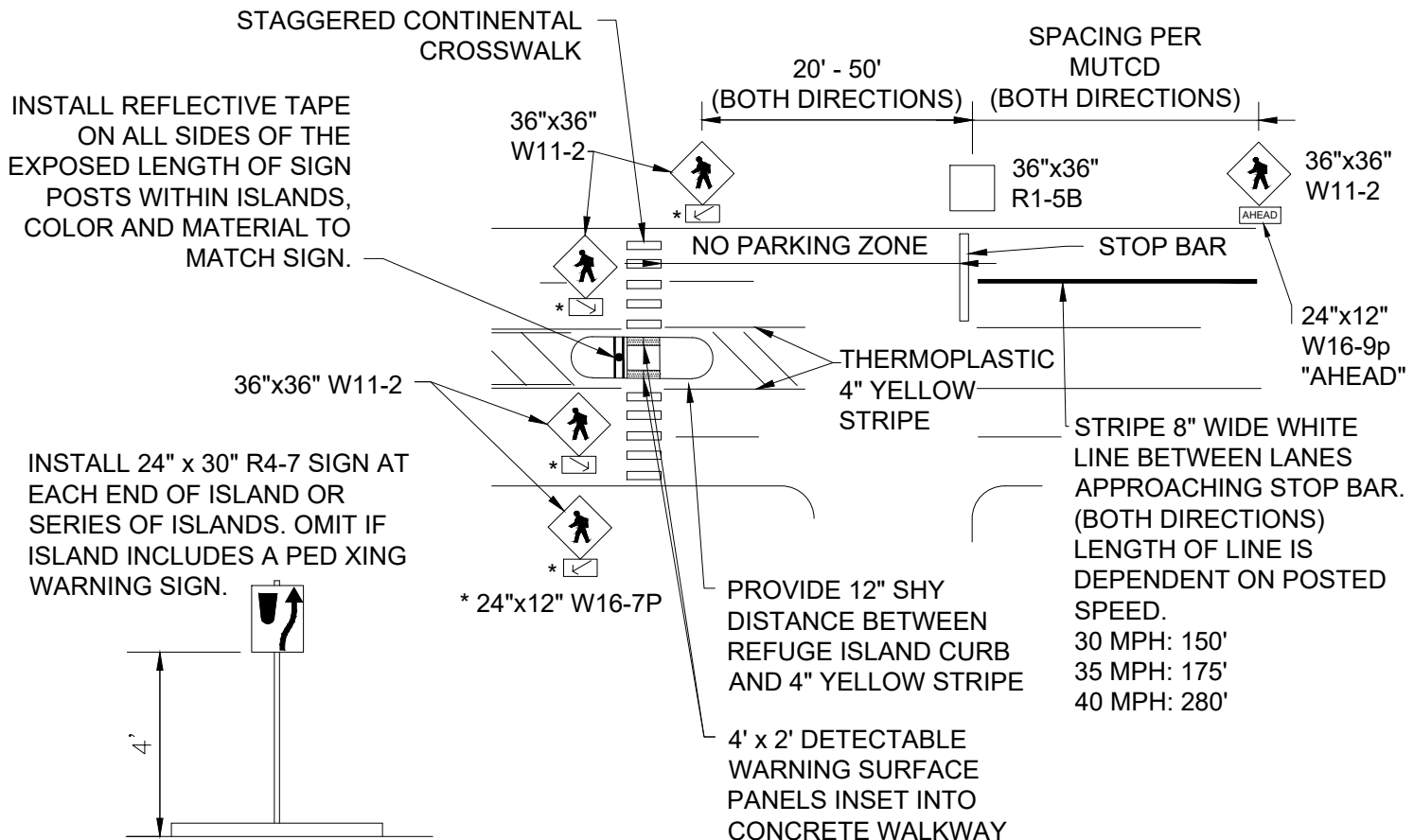
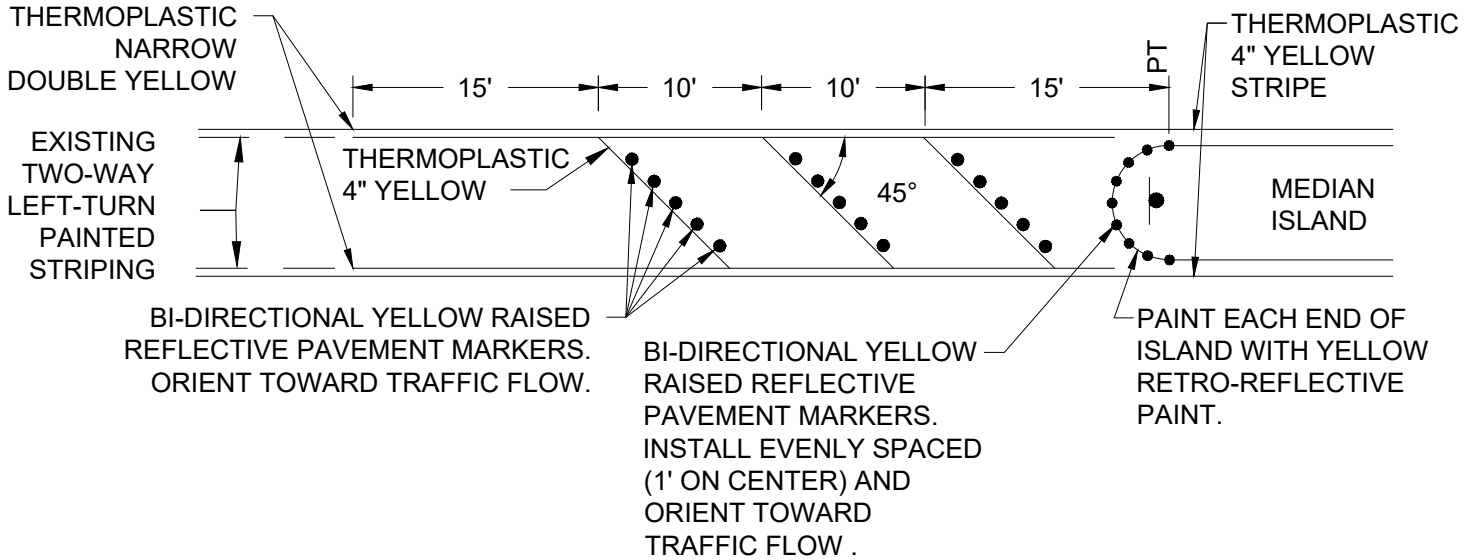
**CITY OF GRESHAM**

**SPEED BUMP**

PWS VERSION: JAN 2024

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DETAIL NO.	635

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**NOTES:**

- MIDBLOCK/SCHOOL CROSSWALK SHEETING SHALL BE 3M DIAMOND GRADE VIP FLUORESCENT YELLOW GREEN #3893 OR APPROVED EQUAL. ALL OTHER CROSSINGS SHALL USE YELLOW 3M HIGH INTENSITY PRISMATIC SHEETING #3931 OR APPROVED EQUAL.
- ALL SIGNS SHALL BE COVERED WITH 3M PREMIUM PROTECTIVE OVERLAY FILM #1160 OR APPROVED EQUAL.
- MINIMUM 50 FOOT ISLAND LENGTH UNLESS APPROVED BY THE CITY.

NTS

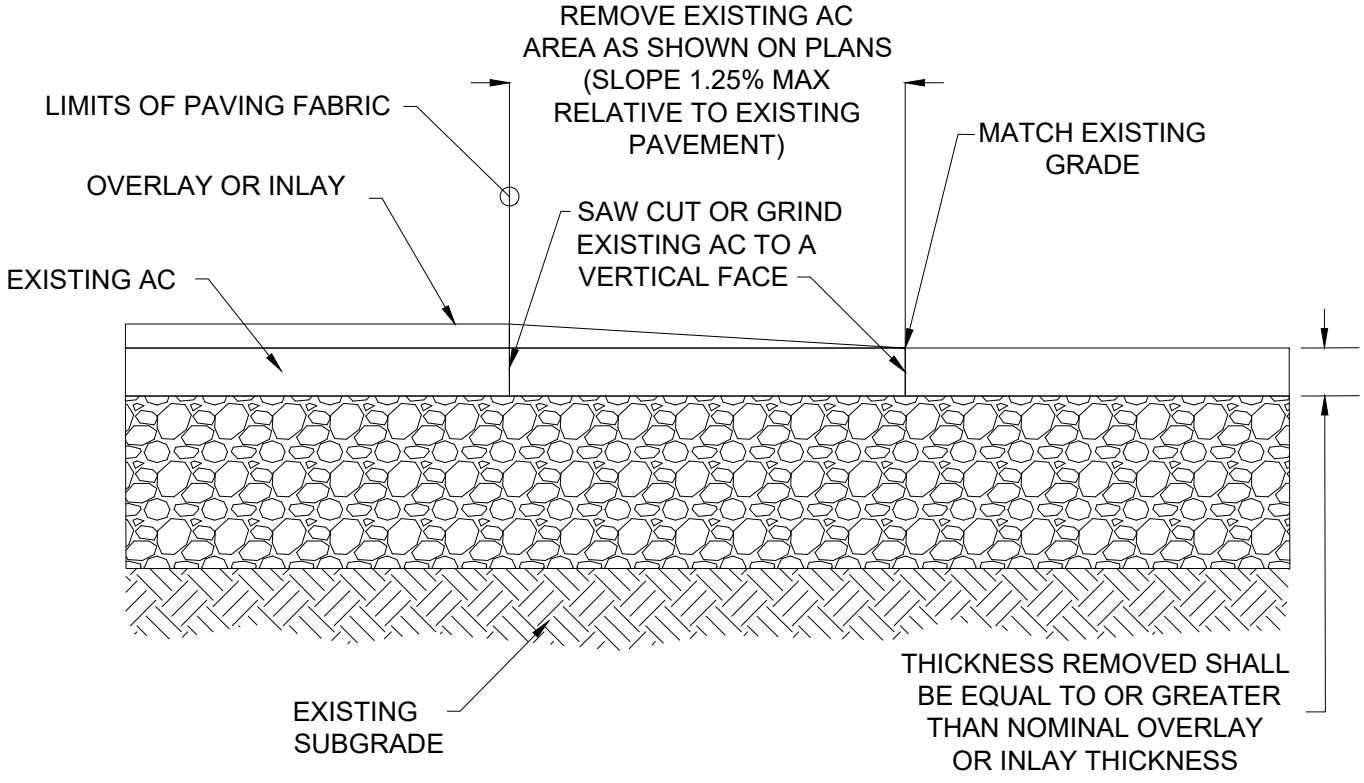
**CITY OF GRESHAM**

**MEDIAN ISLAND SIGNING, STRIPING AND MARKING**

PWS VERSION: JAN 2024

DRAWN	CM
REV. DATE	JAN 2019
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DETAIL NO.	636

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\600\_transportation\trans cad\637.dwg, Plotted 10/3/2023 1:56 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)




NOTES:

1. ALL SURFACES SHALL BE PROPERLY PREPARED AND TACKED PRIOR TO PLACEMENT OF ASPHALT.
2. ASPHALTIC CONCRETE SHALL BE COMPACTED TO 91% RICE DENSITY.

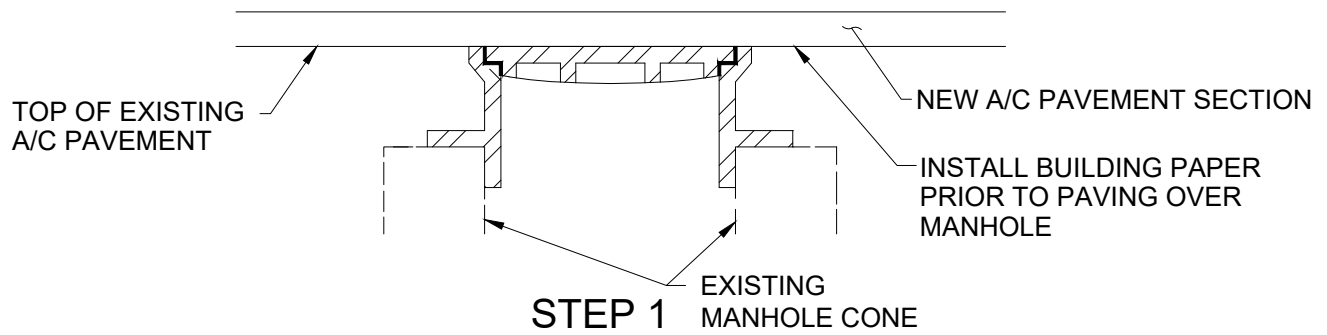
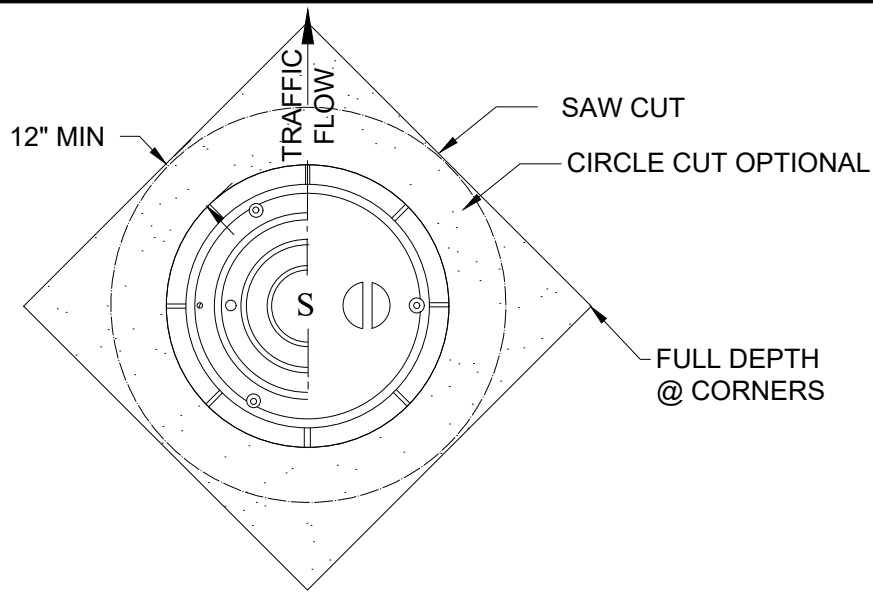
CITY OF  
GRESHAM

OVERLAY NOTCHING

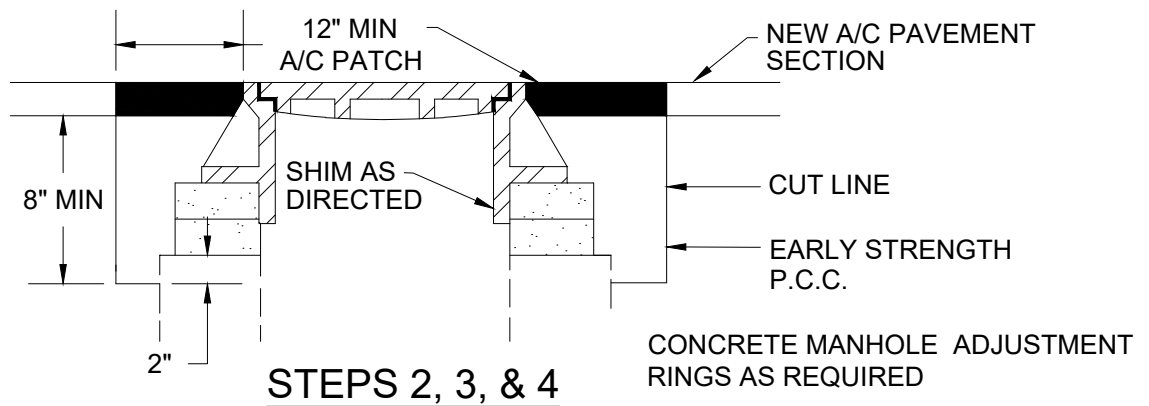
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REV. DATE	JAN 2019
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DETAIL NO.	637

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**PLAN VIEW**



1. COVER EXISTING MANHOLE WITH BUILDING PAPER AND CONSTRUCT A/C PAVEMENT OVER TOP OF MANHOLE.
2. SAW CUT AND REMOVE PAVEMENT AROUND MANHOLE 12" MIN. FROM MANHOLE FRAME.
3. RAISE OR LOWER MANHOLE FRAME AND IF NECESSARY INSTALL CONCRETE RINGS TO FINISH PAVEMENT PROFILE AND CROSS SLOPE.
4. WHERE APPLICABLE, BACKFILL WITH 5000 PSI EARLY STRENGTH P.C.C. AND A/C TO DEPTHS AS DIRECTED.

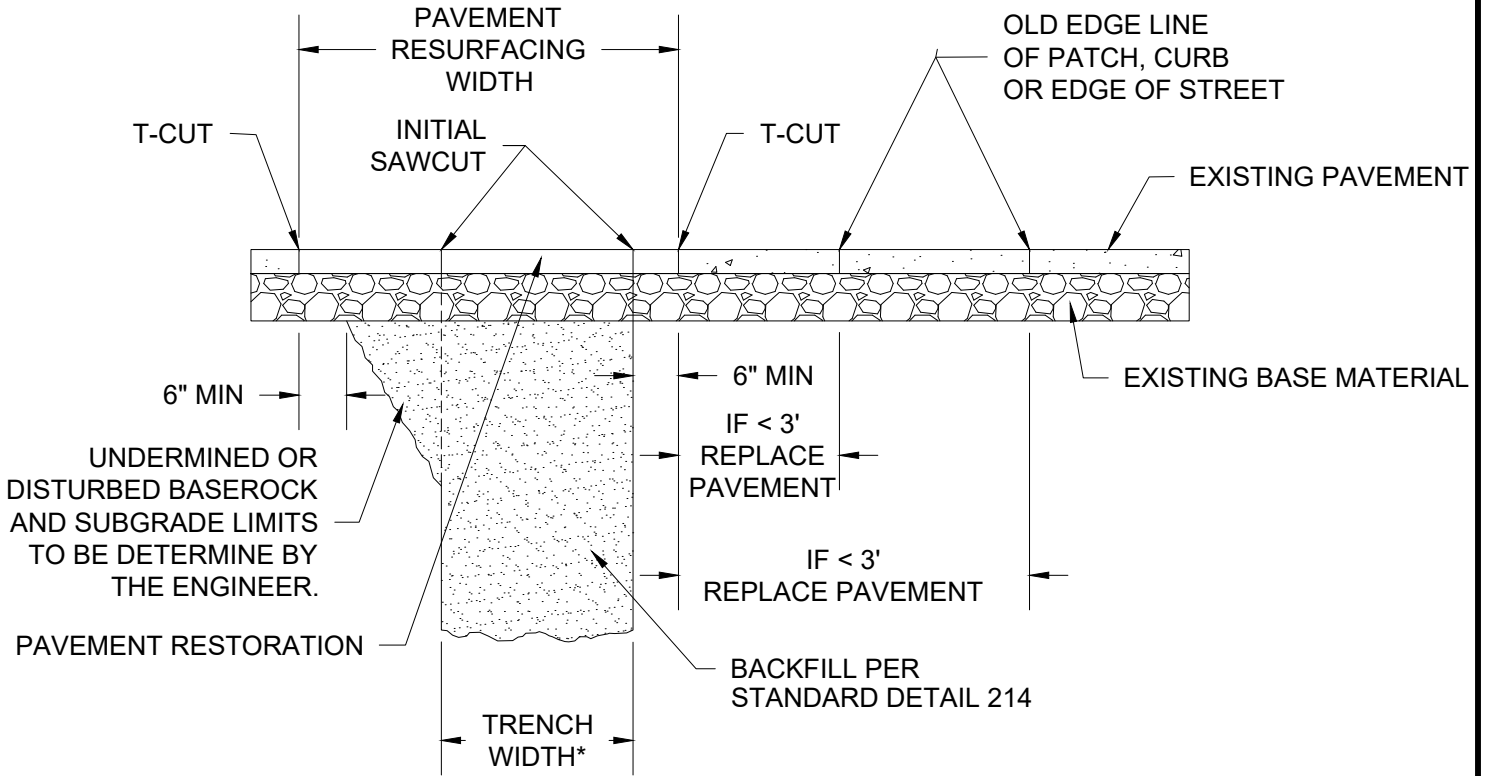
**CITY OF GRESHAM**

**MANHOLE FRAME ADJUSTMENT**

PWS VERSION: JAN 2024

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REV. DATE	JAN 2019
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DETAIL NO.	638

FILENAME: y:\inter-departmental\development\engineering\projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\639.dwg, Plotted 10/23/2023 10:25 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



\*IF TRENCH WIDTH IS LESS THAN THE WIDTH THAT CAN ACCOMMODATE MECHANICAL COMPACTION USE CONTROLLED LOW-STRENGTH MATERIAL FOR BACKFILL.

NOTES:

1. USE A MINIMUM 6" OVERLAP T-CUT DOWN TO THE BASE MATERIAL UNLESS OTHERWISE SPECIFIED. T-CUT TO BE MEASURED FROM THE INITIAL SAWCUT OR EDGE OF UNDERMINED BASEROCK, WHICHEVER RESULTS IN A WIDER REPLACEMENT SECTION.
2. IF NEW EDGE OF PAVEMENT IS LESS THAN 3' FROM ANOTHER PATCH, CURB OR EDGE OF STREET, REPLACE THE PAVEMENT IN BETWEEN.
3. IF MORE THAN ONE EXISTING PATCH EDGE IS WITHIN THE 3' ZONE, REMOVE PAVEMENT TO THE FAR EDGE OF THE PREEXISTING PATCH.
4. T-CUT SHALL NOT BE MADE UNTIL TRENCH IS FULLY BACKFILLED AND COMPACTED.
5. PAVEMENT SECTION (INCLUDING BASE ROCK) SHALL MATCH EXISTING FUNCTIONAL CLASSIFICATION SECTIONS AS SHOWN IN THE CURRENT VERSION OF THE CITY OF GRESHAM PUBLIC WORKS STANDARD DETAILS OR EXISTING PAVEMENT SECTION, WHICHEVER IS GREATER.
6. ALL TRENCH BACKFILL SHALL BE COMPACTED PER STANDARD DETAIL 214.
7. T-CUT SECTION SHALL BE MADE IN SOUND PAVEMENT ONLY AS DETERMINED BY THE ENGINEER. PAVEMENT CONDITION MAY REQUIRE THE 6" MIN TO BE EXCEEDED.
8. A/C SAW CUT SHALL BE SEALED WITH HOT POURED JOINT FILLER.

NTS

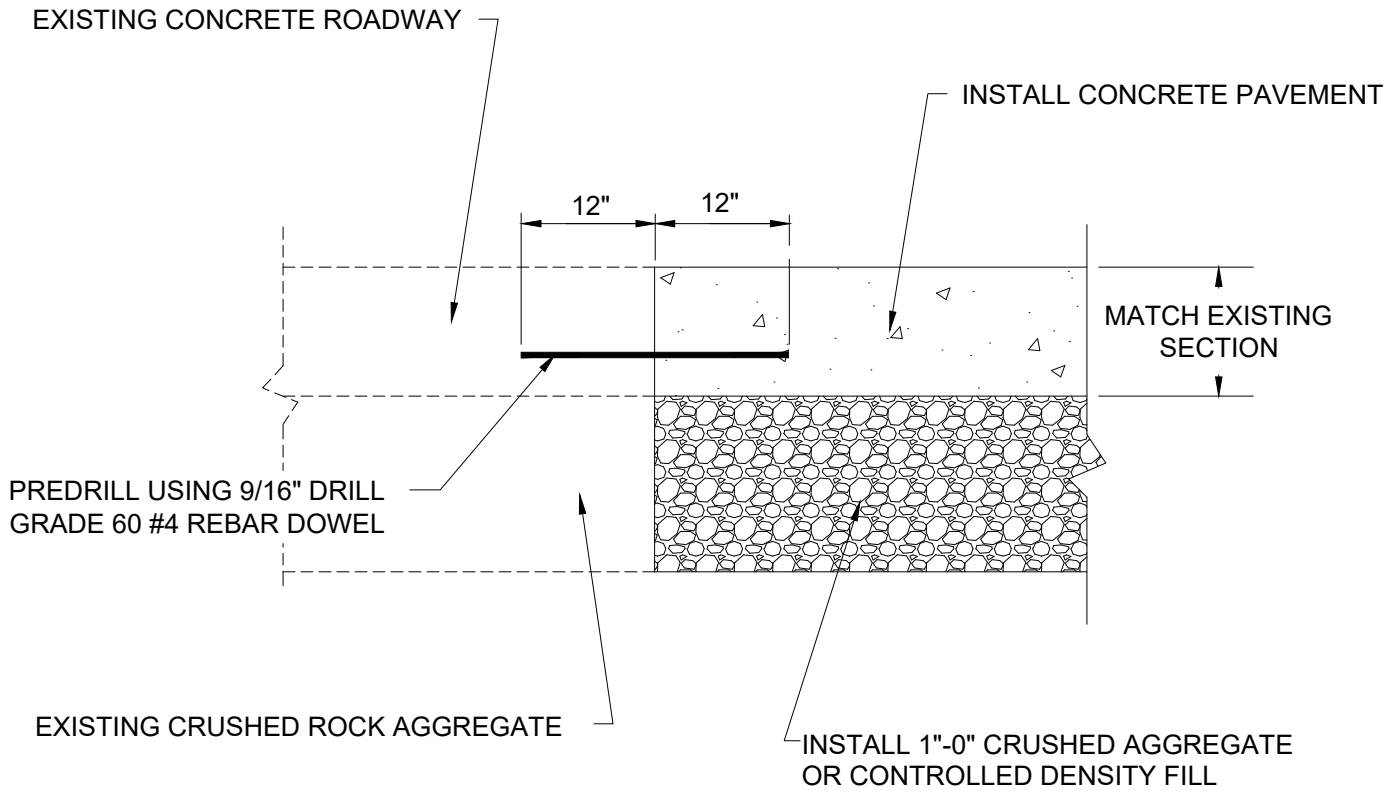
CITY OF GRESHAM

TRENCH PAVEMENT RESTORATION

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REV. DATE	JAN 2019
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DETAIL NO.	639

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NOTES:

1. EXISTING SLAB SHALL BE DRILLED USING APPROPRIATE MASONRY DRILL BIT.
2. DOWELS SHALL BE PLACED AT 24" O.C.

NTS

CITY OF  
GRESHAM

PCC PAVEMENT RESTORATION

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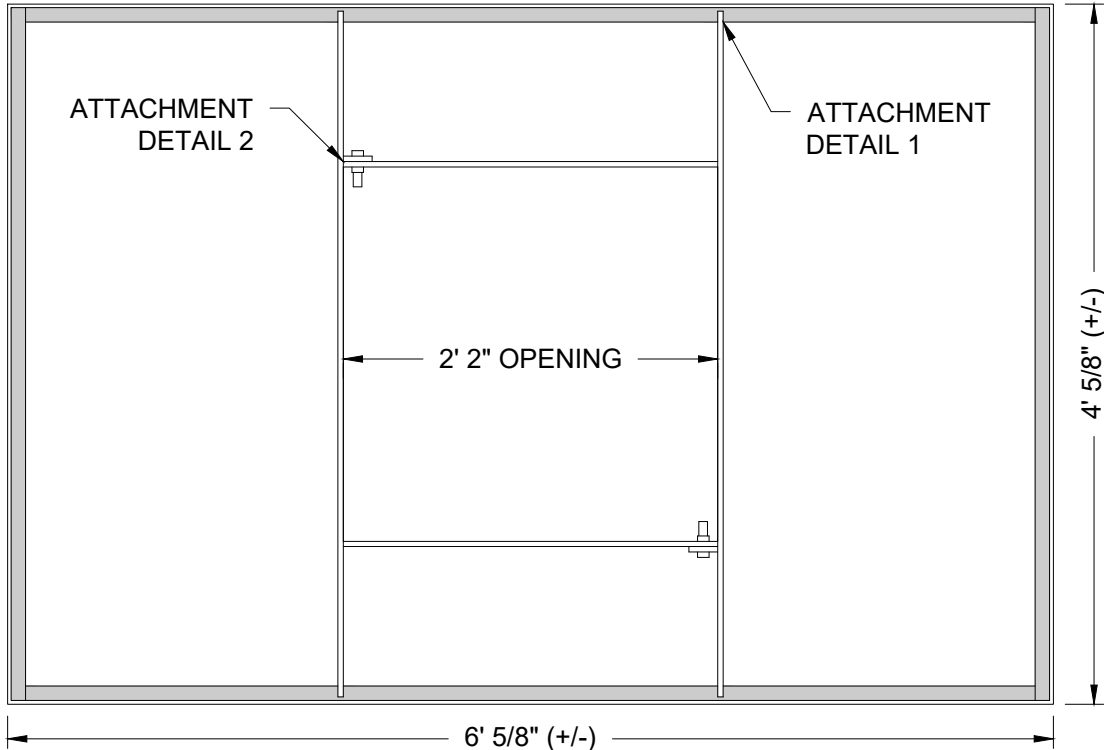
REV. DATE JAN 2019

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DETAIL NO. 640

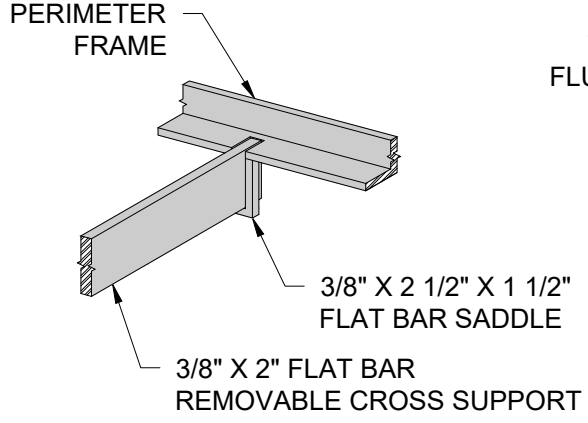


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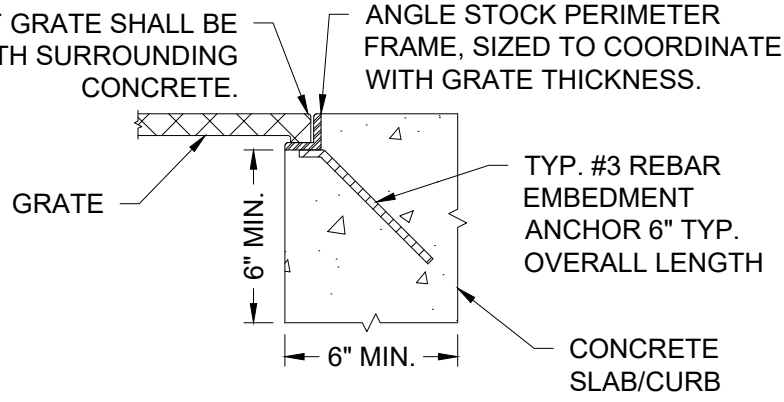


**NOTES:**  
 1. TREE GRATE FRAME SHALL BE URBAN ACCESSORIES RAW STEEL (ASTM A36) TYPE "S" PEDESTRIAN DUTY, OR APPROVED EQUAL.

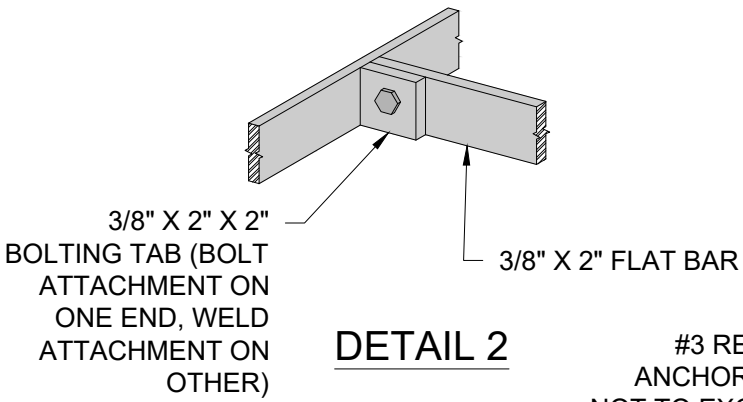
**PLAN**



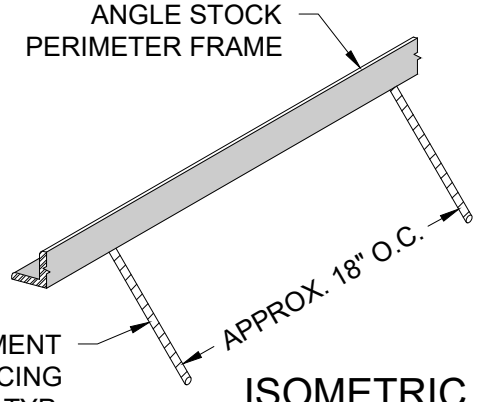
**DETAIL 1**



**ELEVATION**



**DETAIL 2**



**ISOMETRIC**

#3 REBAR EMBEDMENT ANCHOR, EQUAL SPACING NOT TO EXCEED 18" O.C. TYP.

**CITY OF GRESHAM**

**TOWN CENTER STREET TREE FRAME**

PWS VERSION: JAN 2024

DRAWN	KRB
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DETAIL NO.	641B



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GUY ATTACHMENTS:  
REMOVE HOSE COVERED  
TREE ATTACHMENTS AFTER  
2 YRS: HOSE LOOP IS  
DOUBLE THE TRUNK  
DIAMETER. GUYS NOT TAUT.

2" X 2" HARDWOOD STAKES  
MAY BE LEFT TO PROVIDE  
PHYSICAL PROTECTION TO  
THE TREE TRUNK AND BARK

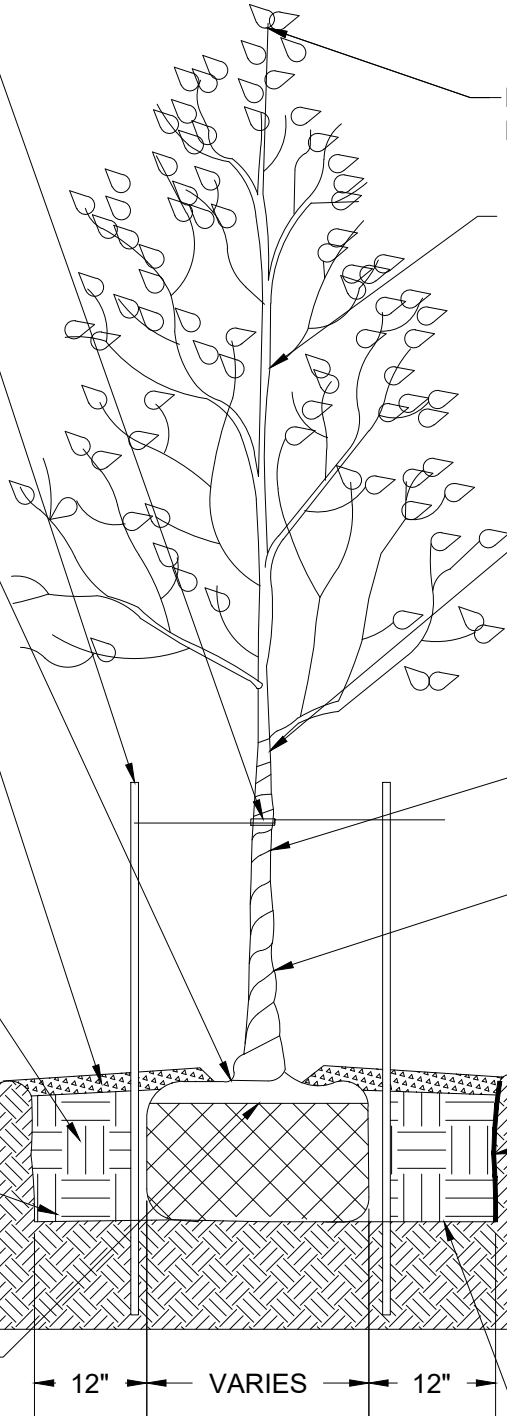
THE TOP OF THE TREE BALL  
SHALL BE 3" HIGHER THAN  
THE FINISHED SOIL GRADE

2-3" LAYER OF WOODY  
MULCH, AGED WOOD CHIPS,  
SHREDDED BARK, OR  
SIMILAR MULCH. NEVER  
MULCH AT TREE TRUNK

WATER THOROUGHLY  
TO ELIMINATE AIR  
POCKETS, SETTLING  
AND TO SOAK BALL AND  
SURROUNDING SOIL

SOIL MIXTURE SHALL  
CONTAIN 4 PARTS NATIVE  
SOIL TO 1 PART ORGANIC  
MATERIAL.

REMOVE BURLAP, WIRE,  
TWINE FROM THE TOP HALF  
OF BALL ONLY.



PRUNE LEADER ONLY TO REMOVE  
DAMAGED OR BROKEN BRANCHES.

SINGLE STRAIGHT MAIN TRUNK TO  
10' HEIGHT. BRANCHES BELOW  
MAY EVENTUALLY REQUIRE  
REMOVAL FOR HEIGHT CLEARANCE.

MINIMUM HEAD HEIGHT OF 6'.  
REMOVE LOWER BRANCHES IN  
SUCCESSIVE YEARS TO  
PROVIDE A 14' CLEARANCE  
OVER ARTERIALS AND  
COLLECTORS, A 12' CLEARANCE  
OVER ALL OTHER STREET  
FUNCTIONAL CLASSIFICATIONS,  
AND 8' CLEARANCE OVER  
SIDEWALK.

IMMEDIATELY REMOVE  
TRANSIT TRUNK GUARDS  
AFTER PLANTING

CALIPER: USE 1 3/4" OR GREATER  
DIAMETER MEASURE 6" ABOVE  
GROUND. USE 2" IN CLEAR VISION  
AREAS

SIDEWALK

INSTALL DEEPROOT ROOT  
BARRIER SYSTEM, OR  
APPROVED EQUAL,  
ADJACENT TO SIDEWALKS  
AND ADA FACILITIES. ROOT  
BARRIER SHALL BE 18"  
DEEP AND EXTEND 3 FEET  
ON BOTH SIDES OF THE  
TREE TRUNK.

DO NOT FERTILIZE UNTIL FALL  
FOLLOWING SPRING PLANTING

NOTES:

1. NO SOIL SHALL BE ADDED TO THE TOP OF THE BALL NEAR THE TRUNK.
2. ROOT BALL SHALL REST DIRECTLY ON UNDISTURBED NATIVE SOIL AT THE BOTTOM OF THE HOLE.

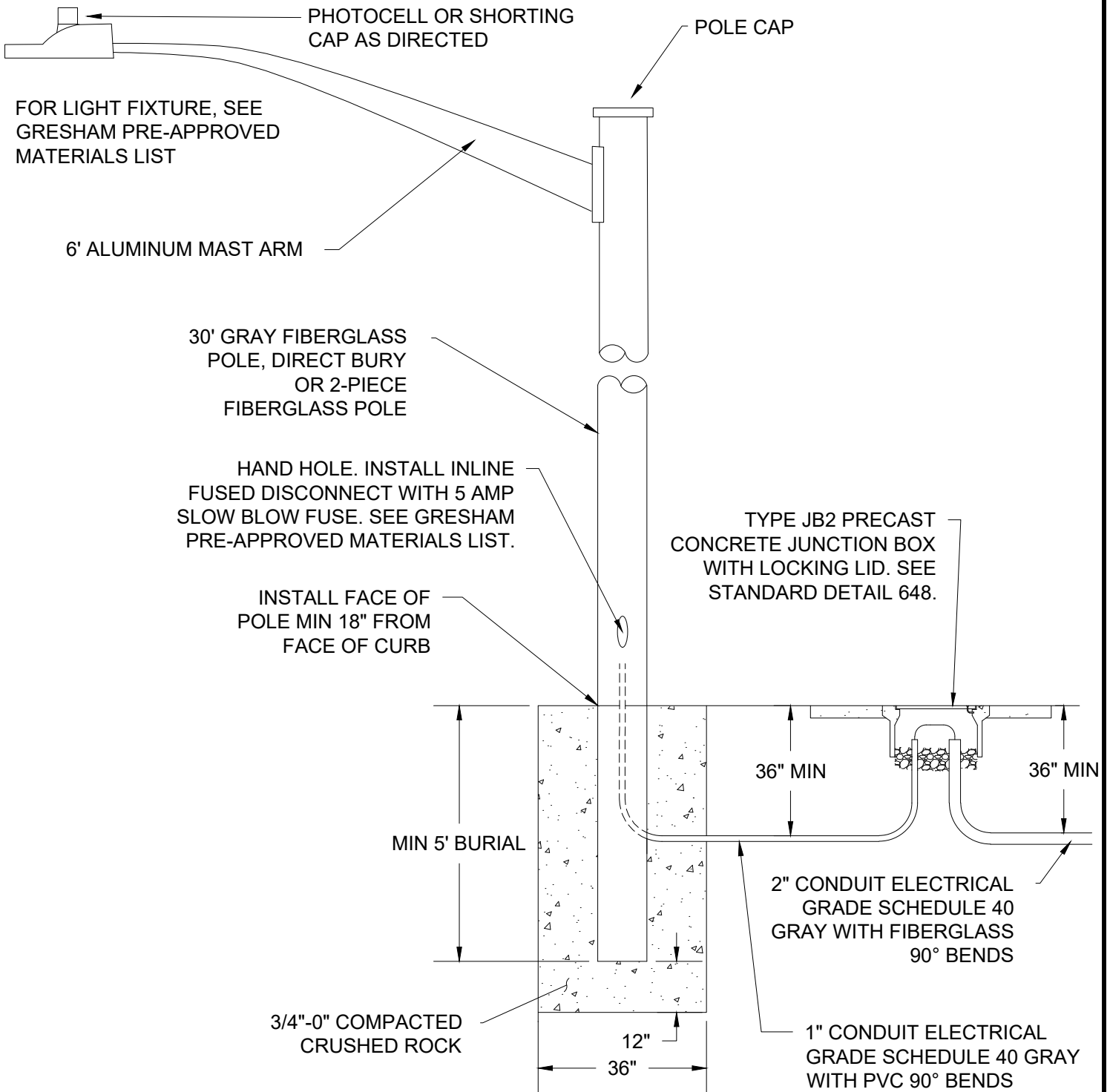
CITY OF  
GRESHAM

STREET TREE PLANTING

PWS VERSION: JAN 2024

DRAWN	CM
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	642

FILENAME: y:\inter-departmental\development\_engineering\_projects\public\_works\_standards\2.0\_pws\_revision\_copy\details\600\_transportation\trans\_cad\643.dwg, Plotted 10/23/2023 10:32 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



**NOTES:**

1. LUMINAIRE MOUNTING HEIGHT IS 25' ABOVE GROUND.
2. USE #10 AWG COPPER TC-ER 3-CONDUCTOR CABLE FROM FUSED DISCONNECT TO LIGHT FIXTURE. SEE PGE APPROVED PRODUCTS LIST. COLOR CODE: BLACK/RED/GREEN (240V), BLACK/WHITE/GREEN (120V).
3. INSTALL SHORTING CAP ON NEW STREETLIGHTS INSTALLED ON AN UNMETERED CITY ELECTRICAL SERVICE WITH CENTRAL PHOTO CONTROL.

NTS

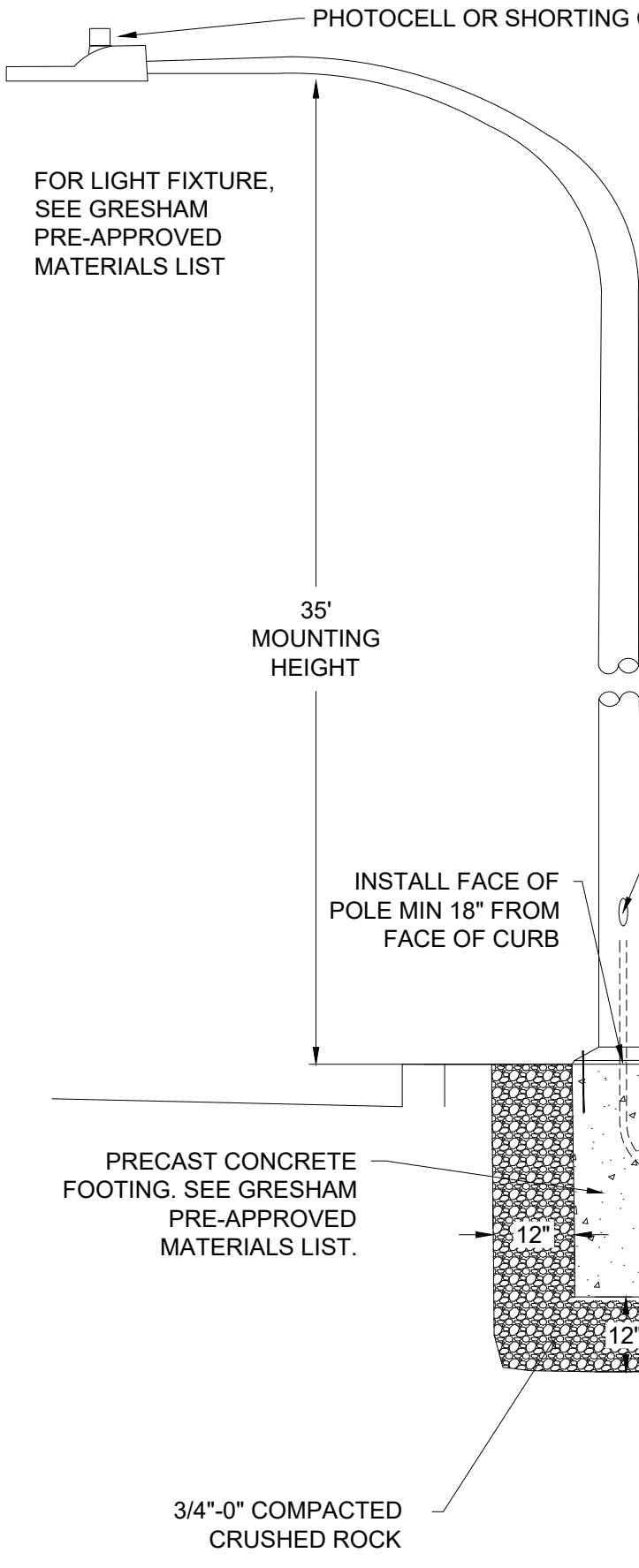
**CITY OF GRESHAM**

**FIBERGLASS STREETLIGHT**

PWS VERSION: JAN 2024

DRAWN	JG
REV. DATE	JAN 2024
APPR.	<i>[Signature]</i>
DETAIL NO.	643

FILENAME: y:\inter-departmental\development\_engineering\_projects\public\_works\_standards\2.0\_pws\_revision\_copy\details\600\_transportation\trans\_cad\644.dwg, Plotted 10/23/2023 10:37 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



NOTES:

1. LUMINAIRE MOUNTING HEIGHT IS 35' ABOVE GROUND.
2. ARM LENGTH 6' OR AS DIRECTED.
3. USE #10 AWG COPPER TC-ER 3-CONDUCTOR CABLE FROM FUSED DISCONNECT TO LIGHT FIXTURE. SEE PGE APPROVED PRODUCTS LIST. COLOR CODE: BLACK/RED/GREEN (240V), BLACK/WHITE/GREEN (120V).
4. INSTALL SHORTING CAP ON NEW STREETLIGHTS INSTALLED ON AN UNMETERED ELECTRICAL SERVICE WITH CENTRAL PHOTO CONTROL.

HAND HOLE. BOND EQUIPMENT GROUND TO POLE. INSTALL INLINE FUSED DISCONNECT WITH 5 AMP SLOW BLOW FUSE. SEE GRESHAM PRE-APPROVED MATERIALS LIST.

NTS

CITY OF GRESHAM

ALUMINUM DAVIT STREETLIGHT

PWS VERSION: JAN 2024

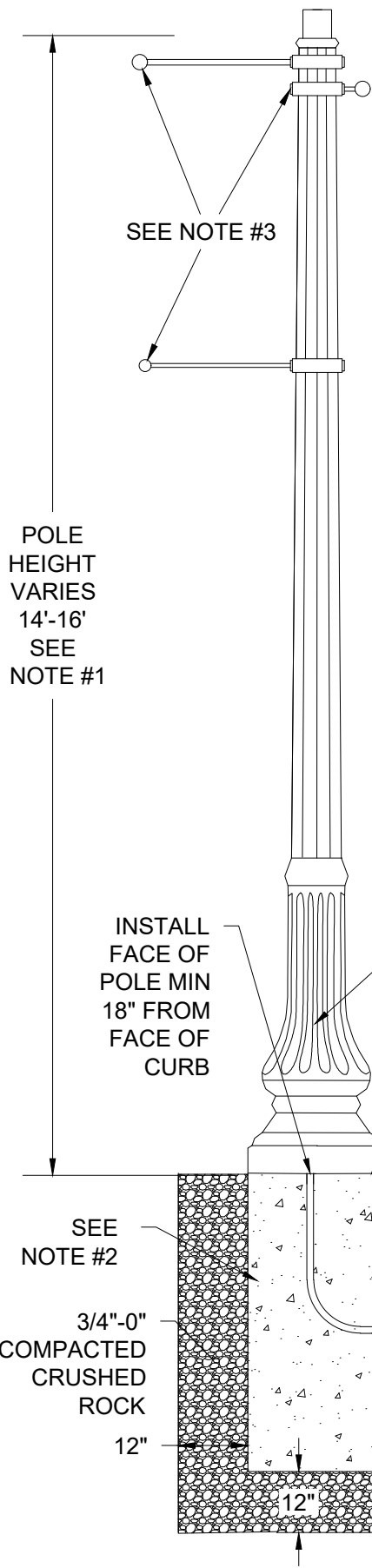
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REV. DATE JAN 2024

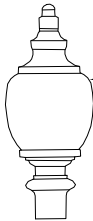
APPR. *[Signature]*

DETAIL NO. 644

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\645.dwg, Plotted 10/23/2023 10:55 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



ACORN STYLE FIXTURE



FOR LIGHT FIXTURE AND PHOTOCELL, SEE GRESHAM PRE-APPROVED MATERIALS LIST. INSTALL SHORTING CAP IN PLACE OF PHOTOCELL AS DIRECTED.

**NOTES:**

1. ALUMINUM FLUTED TAPERED POLE, COLOR BLACK. USE 14' POLE ON LOCAL STREETS AND 16' POLE ON COLLECTOR OR ARTERIAL STREETS. SEE GRESHAM PRE-APPROVED MATERIALS LIST.
2. USE PRECAST CONCRETE FOOTING WITH AN 11" BOLT CIRCLE. SEE GRESHAM PRE-APPROVED MATERIALS LIST.
3. BANNER ARM AND PLANT HANGER REQUIRED IN DOWNTOWN PLAN DISTRICT.
4. USE #10 AWG COPPER TC-ER 3-CONDUCTOR CABLE FROM FUSED DISCONNECT TO LIGHT FIXTURE. SEE PGE APPROVED PRODUCTS LIST. COLOR CODE: BLACK/RED/GREEN (240V), BLACK/WHITE/GREEN (120V).
5. INSTALL SHORTING CAP ON NEW STREETLIGHTS INSTALLED ON AN UNMETERED CITY ELECTRICAL SERVICE WITH CENTRAL PHOTO CONTROL.

POLE ACCESS DOOR. BOND EQUIPMENT GROUND TO POLE. INSTALL INLINE FUSED DISCONNECT WITH 5 AMP SLOW BLOW FUSE. SEE GRESHAM PRE-APPROVED MATERIALS LIST.

INSTALL FACE OF POLE MIN 18" FROM FACE OF CURB

GROUT TO FILL GAP BETWEEN POLE BASEPLATE AND FOUNDATION

TYPE JB2 PRECAST CONCRETE JUNCTION BOX WITH LOCKING LID. SEE STANDARD DETAIL 648.

2" CONDUIT ELECTRICAL GRADE SCHEDULE 40 GRAY WITH FIBERGLASS 90° BENDS

36" MIN

36" MIN

SEE NOTE #2

3/4"-0" COMPACTED CRUSHED ROCK  
12"

1" CONDUIT ELECTRICAL GRADE SCHEDULE 40 GRAY WITH PVC 90° BENDS


8' GALVANIZED STEEL GROUND ROD. BOND TO POLE WITH #6 AWG COPPER GROUND WIRE AND ACORN CLAMP.

NTS

**CITY OF GRESHAM**

**DECORATIVE ACORN STREETLIGHT**

PWS VERSION: JAN 2024

DRAWN	JG
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	645

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\600\_transportation\trans cad\646.dwg, Plotted 10/23/2023 10:59 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

DECORATIVE POLE AND ARM. SEE GRESHAM PRE-APPROVED MATERIALS LIST.

TWIST-LOCK PHOTOCELL RECEPTACLE WITH PHOTOCELL OR SHORTING CAP AS DIRECTED

**NOTES:**

1. USE PRECAST CONCRETE FOOTING WITH AN 11" BOLT CIRCLE. SEE GRESHAM PRE-APPROVED MATERIALS LIST.
2. USE #10 AWG COPPER TC-ER 3-CONDUCTOR CABLE FROM FUSED DISCONNECT TO LIGHT FIXTURE. SEE PGE APPROVED PRODUCTS LIST. COLOR CODE: BLACK/RED/GREEN (240V), BLACK/WHITE/GREEN (120V).
3. INSTALL SHORTING CAP ON NEW STREETLIGHTS INSTALLED ON AN UNMETERED CITY ELECTRICAL SERVICE WITH CENTRAL PHOTO CONTROL.

FOR PENDANT LIGHT FIXTURE, SEE GRESHAM PRE-APPROVED MATERIALS LIST

18'

POLE ACCESS DOOR. BOND EQUIPMENT GROUND TO POLE. INSTALL INLINE FUSED DISCONNECT WITH 5 AMP SLOW BLOW FUSE. SEE GRESHAM PRE-APPROVED MATERIALS LIST.

TYPE JB2 PRECAST CONCRETE JUNCTION BOX WITH LOCKING LID. SEE STANDARD DETAIL 648.

INSTALL FACE OF POLE MIN 18" FROM FACE OF CURB

GROUT TO FILL GAP BETWEEN POLE BASEPLATE AND FOUNDATION

36" MIN

36" MIN

3/4"-0" COMPACTED CRUSHED ROCK

12"

1" CONDUIT ELECTRICAL GRADE SCHEDULE 40 GRAY WITH PVC 90° BENDS

2" CONDUIT ELECTRICAL GRADE SCHEDULE 40 GRAY WITH FIBERGLASS 90° BENDS

PRECAST CONCRETE FOOTING. SEE GRESHAM PRE-APPROVED MATERIALS LIST.

8" GALVANIZED STEEL GROUND ROD. BOND TO POLE WITH #6 AWG COPPER GROUND WIRE AND ACORN CLAMP.

NTS

**CITY OF GRESHAM**

# DECORATIVE PENDANT STREETLIGHT

PWS VERSION: JAN 2024

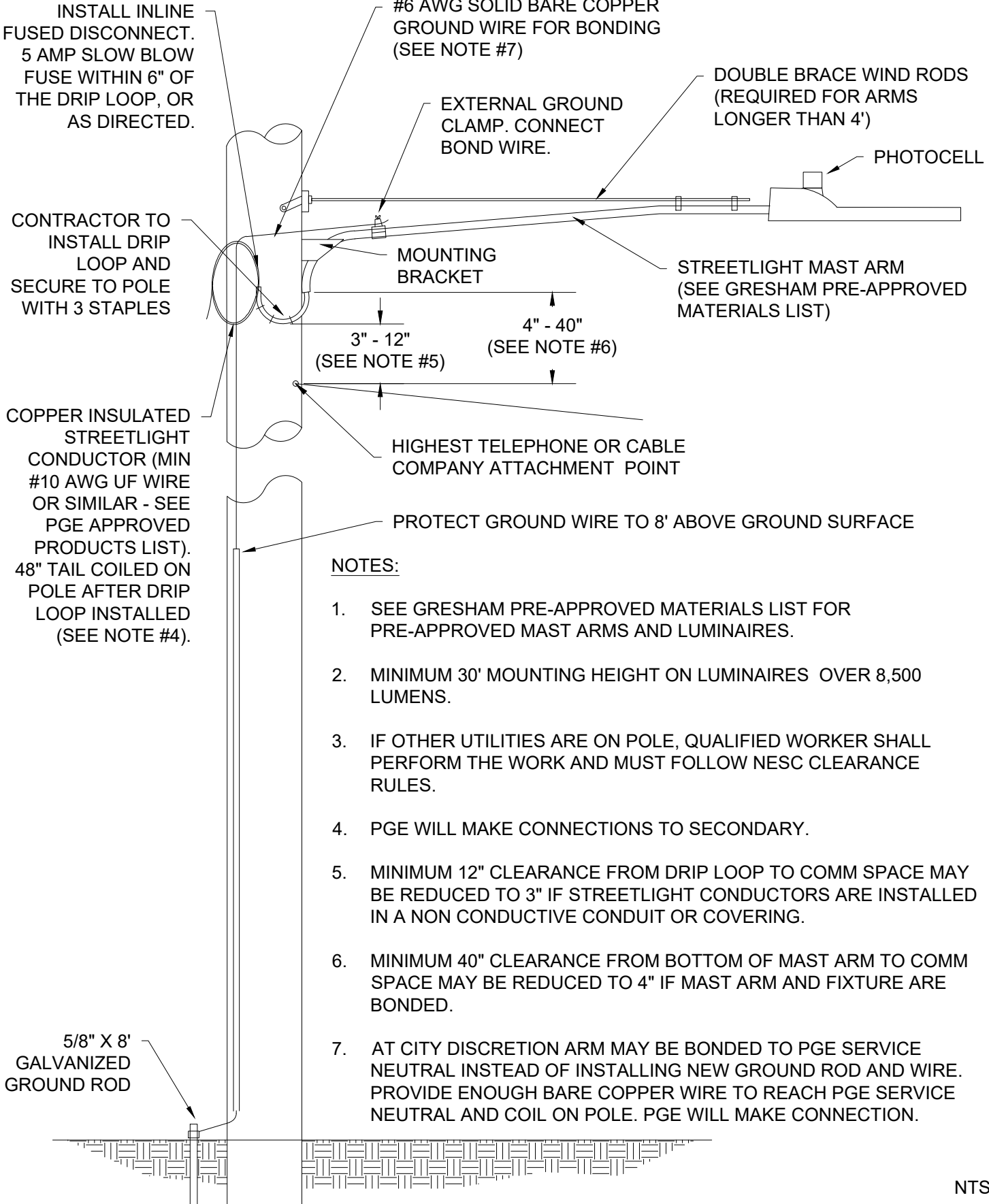
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REV. DATE JAN 2024

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DETAIL NO. 646

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**NOTES:**

1. SEE GRESHAM PRE-APPROVED MATERIALS LIST FOR PRE-APPROVED MAST ARMS AND LUMINAIRES.
2. MINIMUM 30' MOUNTING HEIGHT ON LUMINAIRES OVER 8,500 LUMENS.
3. IF OTHER UTILITIES ARE ON POLE, QUALIFIED WORKER SHALL PERFORM THE WORK AND MUST FOLLOW NESC CLEARANCE RULES.
4. PGE WILL MAKE CONNECTIONS TO SECONDARY.
5. MINIMUM 12" CLEARANCE FROM DRIP LOOP TO COMM SPACE MAY BE REDUCED TO 3" IF STREETLIGHT CONDUCTORS ARE INSTALLED IN A NON CONDUCTIVE CONDUIT OR COVERING.
6. MINIMUM 40" CLEARANCE FROM BOTTOM OF MAST ARM TO COMM SPACE MAY BE REDUCED TO 4" IF MAST ARM AND FIXTURE ARE BONDED.
7. AT CITY DISCRETION ARM MAY BE BONDED TO PGE SERVICE NEUTRAL INSTEAD OF INSTALLING NEW GROUND ROD AND WIRE. PROVIDE ENOUGH BARE COPPER WIRE TO REACH PGE SERVICE NEUTRAL AND COIL ON POLE. PGE WILL MAKE CONNECTION.

NTS

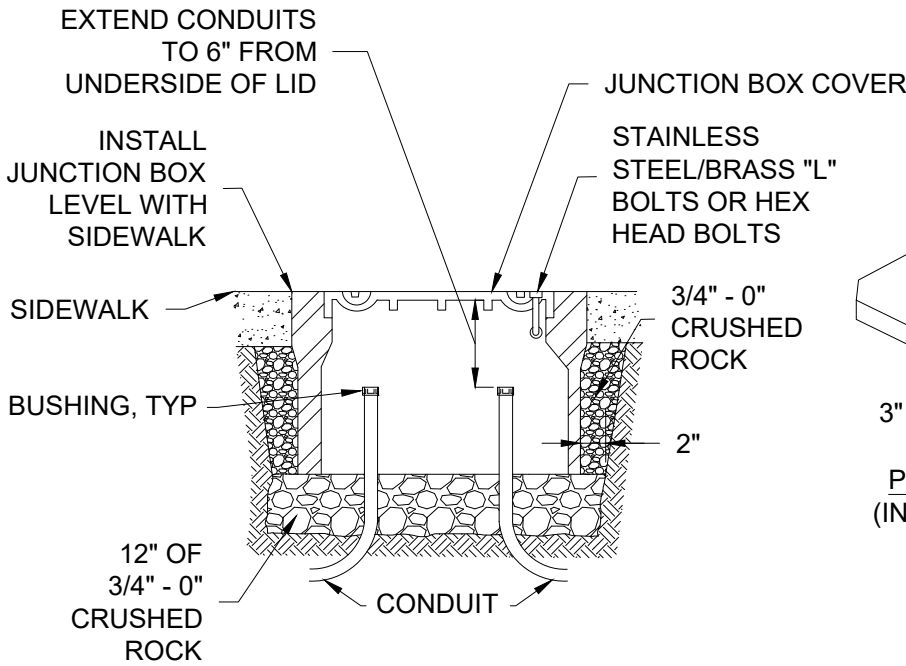
**CITY OF GRESHAM**

**LUMINAIRE MOUNTED ON WOOD POLE**

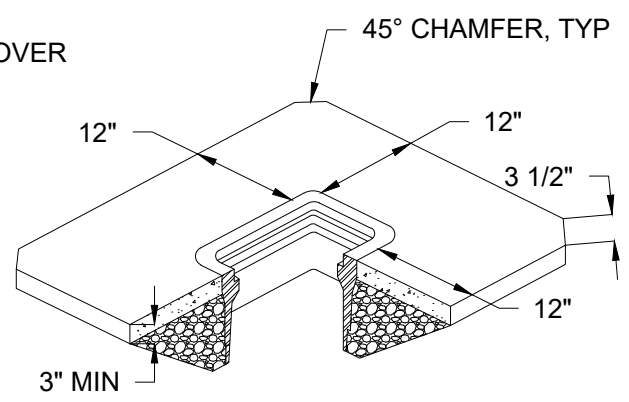
PWS VERSION: JAN 2024

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REV. DATE	JAN 2019
APPR.	
DETAIL NO.	647

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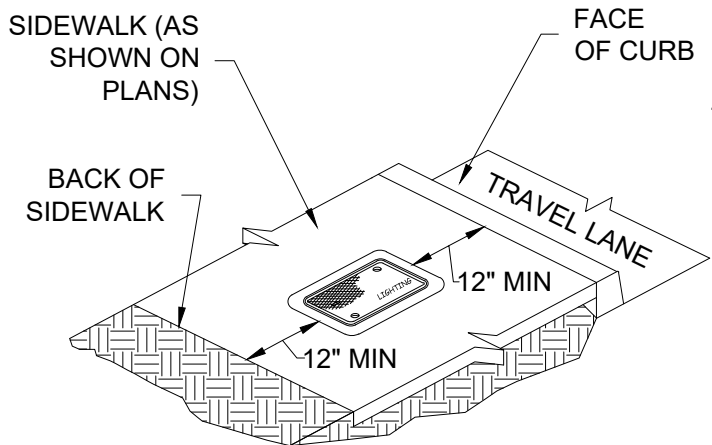
INSTALLATION IN SIDEWALK OR AT BACK OF CURB



PORTLAND CEMENT CONCRETE PAD  
(INSTALLATION OUTSIDE OF SIDEWALK ONLY WITH MANAGER APPROVAL)

TYPE	L	W	D
JB1	17"	10"	12"
JB2	22"	12"	12"
JB3	30"	17"	12"

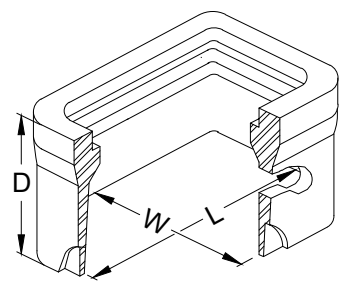
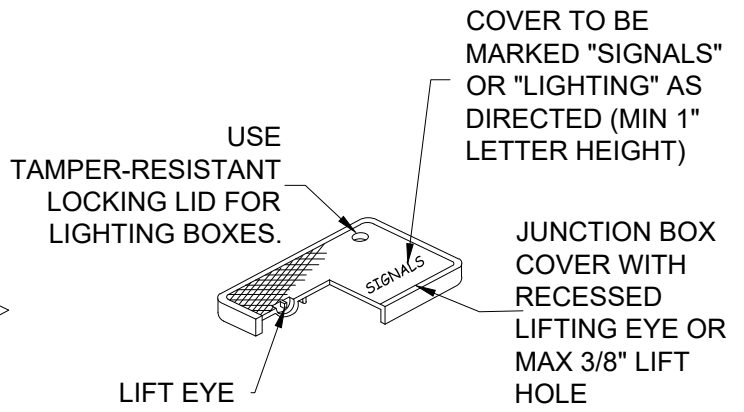
JUNCTION BOX DIMENSION TABLE



JUNCTION BOX PLACEMENT WITHIN SIDEWALKS

JUNCTION BOXES TO BE LOCATED ONLY IN FLAT AREAS OF SIDEWALKS. CONCRETE JUNCTION BOXES ARE NOT TO BE INSTALLED IN SLOPES OF RAMPS OR IN DRIVEWAYS.

NEW JUNCTION BOXES INSTALLED IN EXISTING SIDEWALKS SHALL INCLUDE A FULL PANEL REMOVAL AND REINSTALLATION.



JUNCTION BOX

NOT TO BE USED IN TRAVEL LANES, SHOULDERS OR AREAS EXPOSED TO TRAFFIC. SEE GRESHAM PRE-APPROVED MATERIALS LIST.

NTS

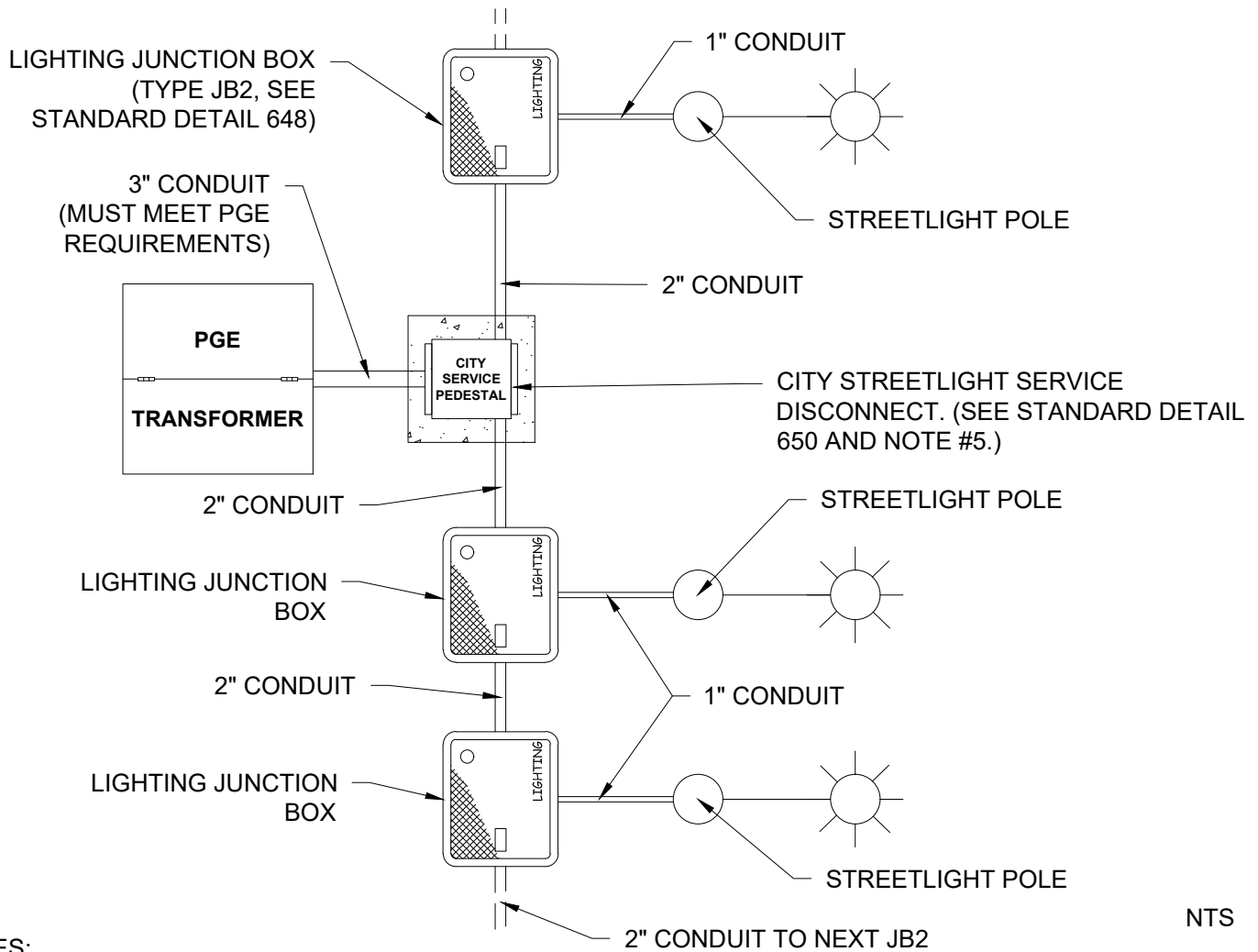
**CITY OF GRESHAM**

**ELECTRICAL JUNCTION BOXES**

PWS VERSION: JAN 2024

DRAWN	CM
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	648

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**NOTES:**

1. MINIMUM WIRE SIZE #8 AWG. WIRES SHALL BE UPSIZED AS REQUIRED TO KEEP VOLTAGE DROP TO LESS THAN 3%. XHHW-2. COLOR CODE: BLACK/RED/GREEN (240V), BLACK/WHITE/GREEN (120V). LINE VOLTAGE WIRES MUST BE CONTINUOUS BETWEEN POLE HAND HOLES.
2. ALL CONDUITS BETWEEN JUNCTION BOXES MUST HAVE A #14 AWG LOCATE WIRE, COLOR ORANGE WITH EITHER BLUE STRIPE OR BLUE MARKINGS. TIE LOCATE WIRES TOGETHER IN EACH JUNCTION BOX AND LOOP A SPARE 18" IN EACH BOX. EMPTY CONDUITS MUST HAVE A POLY PULL LINE, 500 POUND RATED, WITH 6' OF LINE EXTENDING FROM EACH END.
3. INSTALL ELECTRICAL GRADE SCHEDULE 40 GRAY PVC CONDUIT. FIBERGLASS BENDS ARE REQUIRED FOR ALL CONDUIT RUNS LONGER THAN 20'. ALL PVC JOINTS SHALL BE GLUED. ALL FACTORY OR FIELD-CUT CONDUITS SHALL BE CHAMFERED TO PREVENT DAMAGE TO CABLES. CONDUITS SHALL BE TESTED AFTER INSTALLATION FOR OBSTRUCTIONS AND OUT-OF-ROUND INSTALLATION.
4. CITY OF GRESHAM ELECTRICAL BUILDING PERMIT REQUIRED.
5. A NEW LIGHTING SYSTEM WITH FEWER THAN 4 NEW STREET LIGHTS MAY OMIT THE SERVICE CABINET AND INSTALL FUSED DISCONNECTS IN A JB2. REQUIRES INSTALLATION OF A SEPARATE PGE TYPE 1730 JUNCTION BOX BETWEEN THE TRANSFORMER AND JB2 WITH FUSED DISCONNECTS. 1730 BOX MUST BE MIN 15', MAX 50' FROM TRANSFORMER.
6. TO SUPPORT FUTURE DEVELOPMENT, CITY MAY REQUIRE CONDUIT EXTENDED TO PROPERTY LINE.

NTS

**CITY OF GRESHAM**

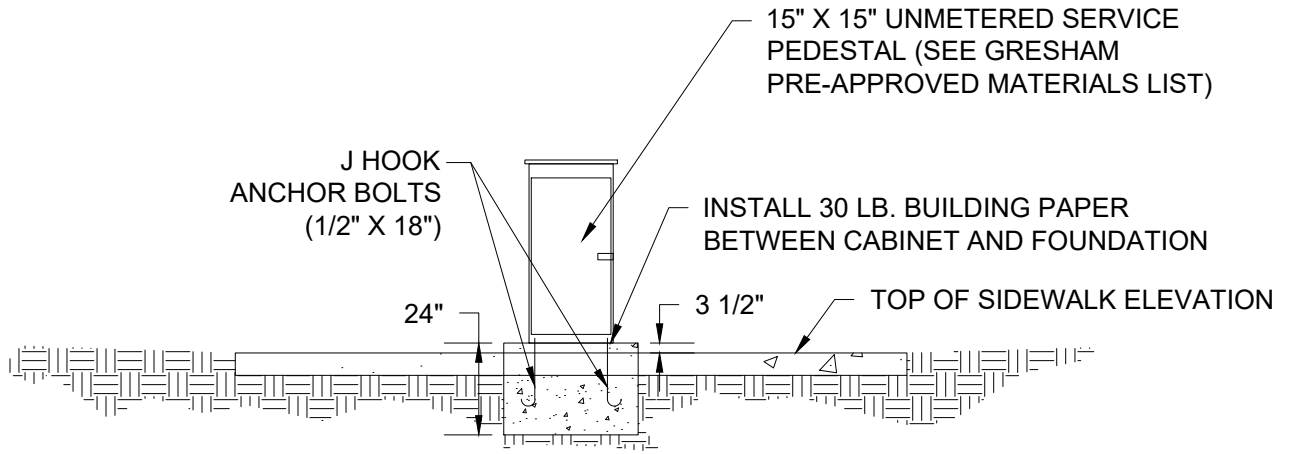
**STREETLIGHT SERVICE DISCONNECT AND CONDUIT SYSTEM**

PWS VERSION: JAN 2024

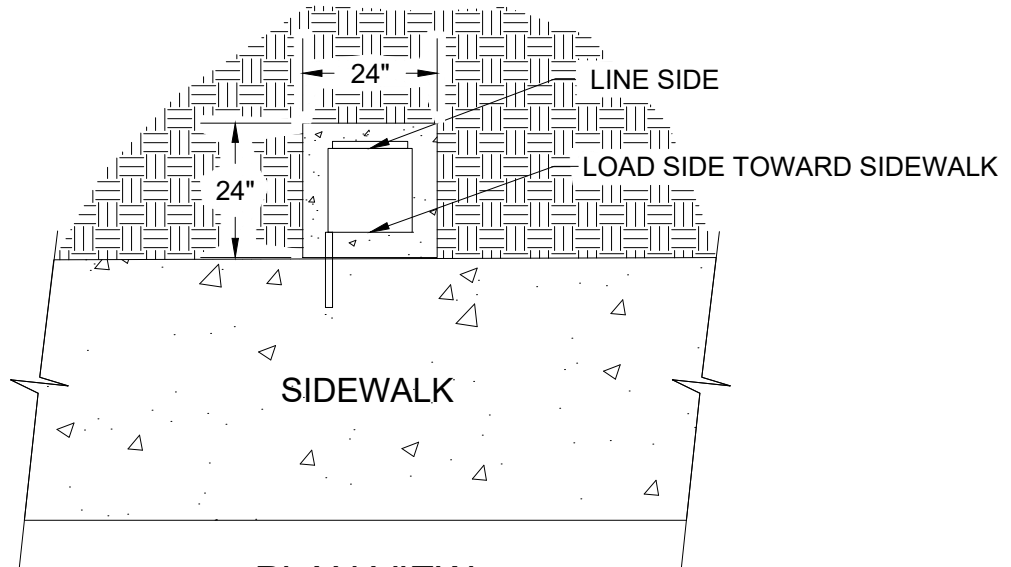
DRAWN	JG
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	649



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**PROFILE VIEW**



**PLAN VIEW**

**NOTES:**

1. A SERVICE INSTALLATION REQUIRES TWO GROUND RODS SPACED A MINIMUM OF 6 FEET APART. ONE GROUND ROD MAY BE INSTALLED THROUGH THE CABINET FOUNDATION.
2. EXTEND CONDUIT ENDS MINIMUM 2" AND MAXIMUM 3" ABOVE TOP OF CABINET FOUNDATION.
3. FOUNDATIONS AND GROUND ROD JUNCTION BOXES MUST BE INSTALLED WITHIN CITY RIGHT-OF-WAY OR WITHIN A GENERAL UTILITY EASEMENT.

NTS

**CITY OF  
GRESHAM**

**STREETLIGHT ELECTRICAL  
SERVICE PEDESTAL**

PWS VERSION: JAN 2024

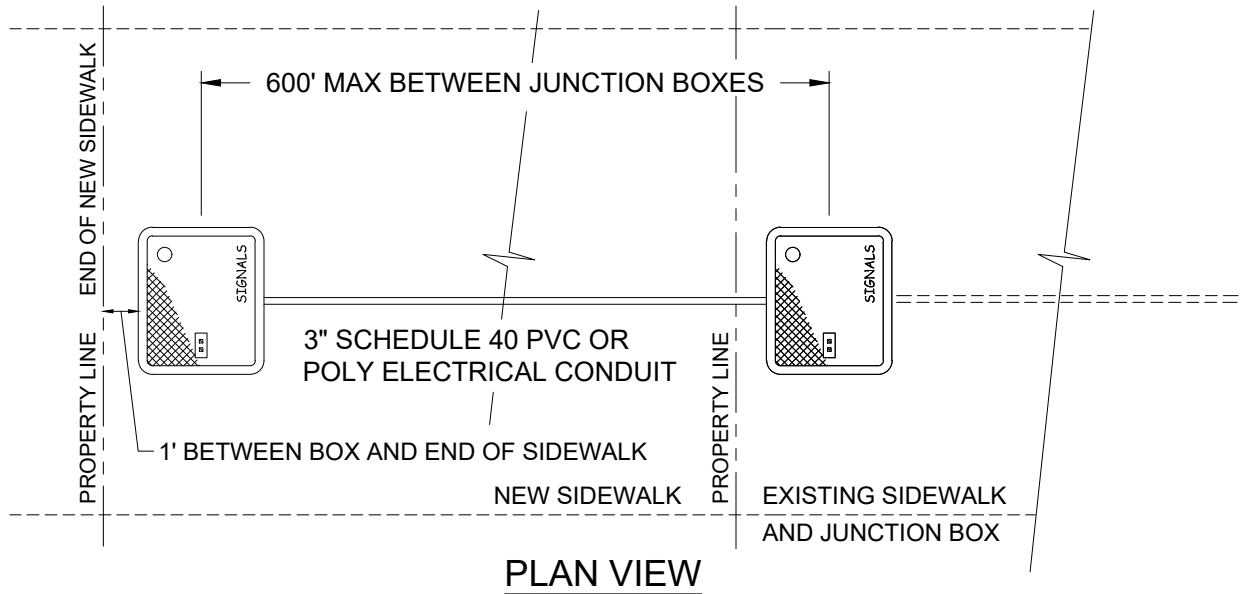
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REV. DATE JAN 2024

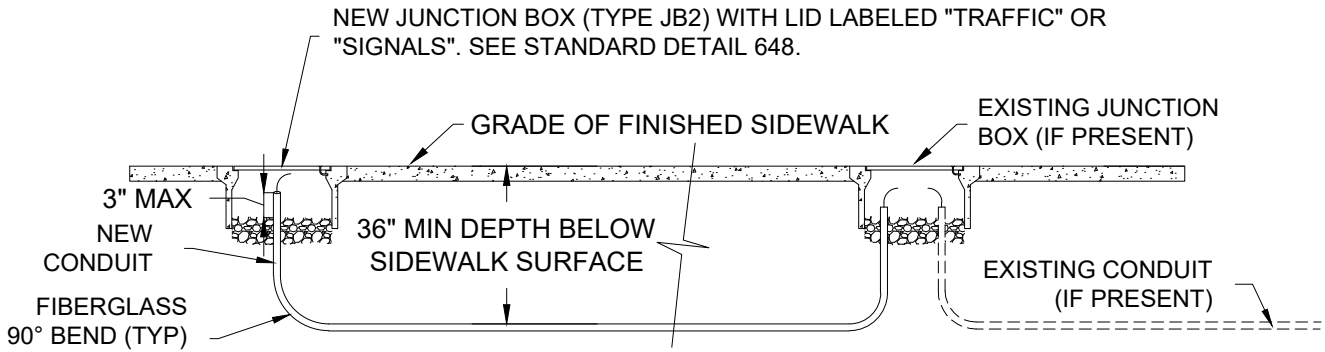
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DETAIL NO. 650

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**PLAN VIEW**



**PROFILE VIEW**

NTS

**NOTES:**

1. INSTALL PULL LINE (MIN STRENGTH 500 LB) AND CONTINUOUS #14 AWG XHHW LOCATE WIRE IN CONDUIT.
2. INSTALLATION REQUIRES SUPERVISION BY LICENSED ELECTRICIAN.
3. CONDUIT MATERIALS SHALL MEET REQUIREMENTS OF SECTION 02920 OF ODOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNLESS OTHERWISE DIRECTED.
4. JUNCTION BOX COVERS TO HAVE LEGEND "SIGNALS" STAMPED OR EMBOSSED AND SHALL MEET ALL REQUIREMENTS OF SECTION 02920.14 OF ODOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
5. PLACE ALL CONDUIT UNDER SIDEWALK OR AS DIRECTED.
6. ALL CONDUITS MUST BE TERMINATED IN TYPE 2 JUNCTION BOXES AND ARE TO BE INSTALLED PER REQUIREMENTS OF SECTION 00960 OF ODOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
7. IF SIDEWALK FRONTING ADJACENT PROPERTY HAS A SIGNAL JUNCTION BOX IN NEAREST SIDEWALK PANEL, EXCAVATE UNDER OLD SIDEWALK AND END NEW CONDUIT RUN IN EXISTING JUNCTION BOX. OTHERWISE TERMINATE NEW CONDUIT RUN IN NEW JUNCTION BOX IN LAST PANEL OF NEW SIDEWALK.

**CITY OF GRESHAM**

**SIGNAL COMMUNICATIONS CONDUIT**

PWS VERSION: JAN 2024

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REV. DATE	JAN 2019
APPR.	<i>[Signature]</i>
DETAIL NO.	651