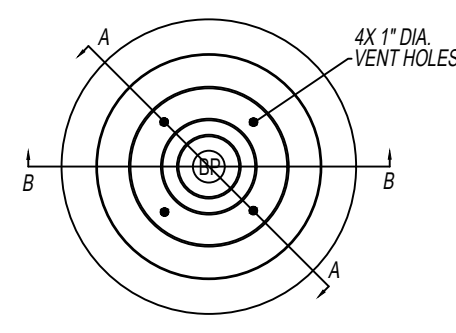


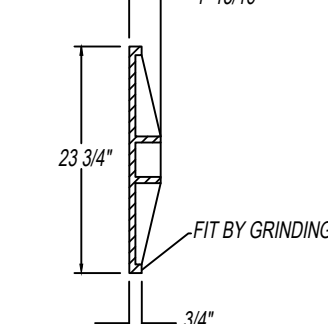
APPROVED FOR NON TRAFFIC

### CAST IRON RING AND COVER DETAIL

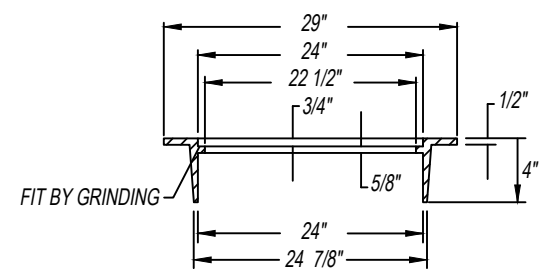
APPROVED FOR TRAFFIC



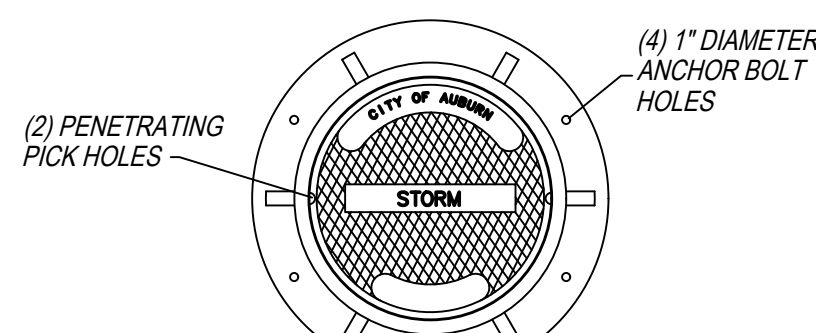
COVER FACE



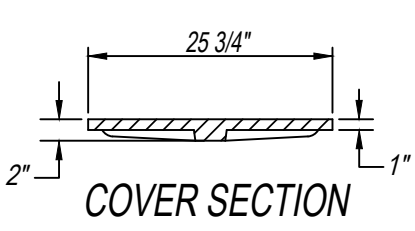
SECTION A - A



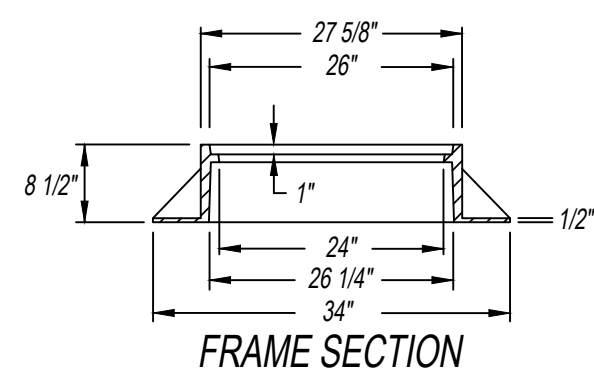
SECTION B - B



COVER FACE



COVER SECTION

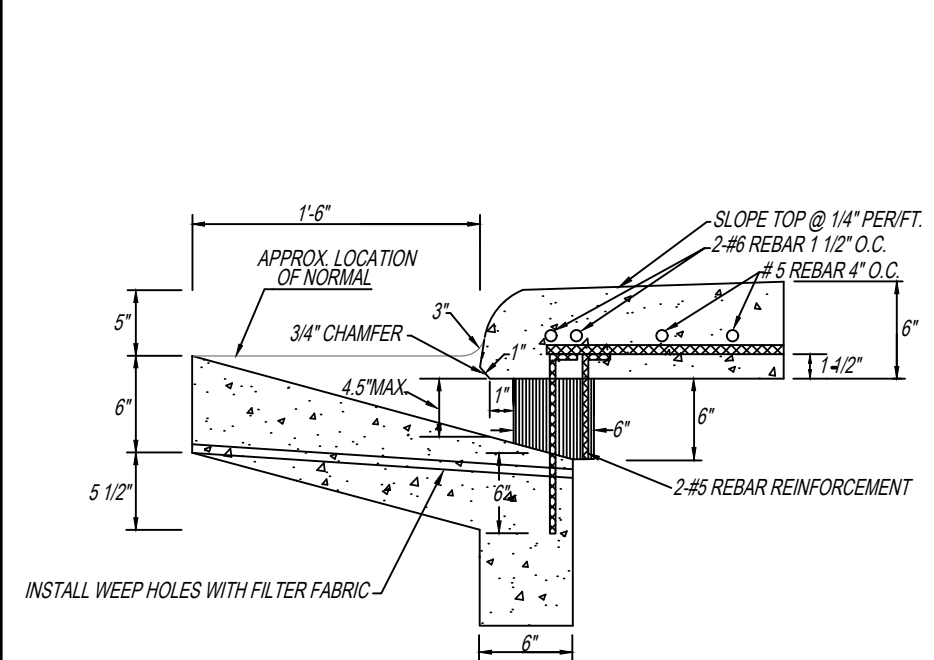


FRAME SECTION

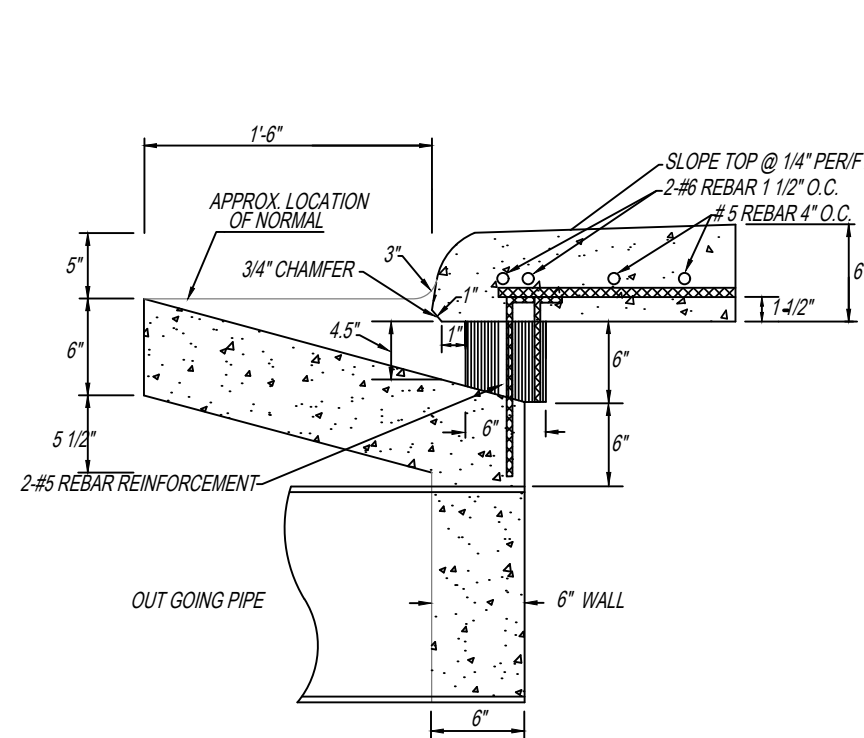
7.00

### DEPRESSED GUTTER DETAIL

DEPRESSED GUTTER DETAIL #1

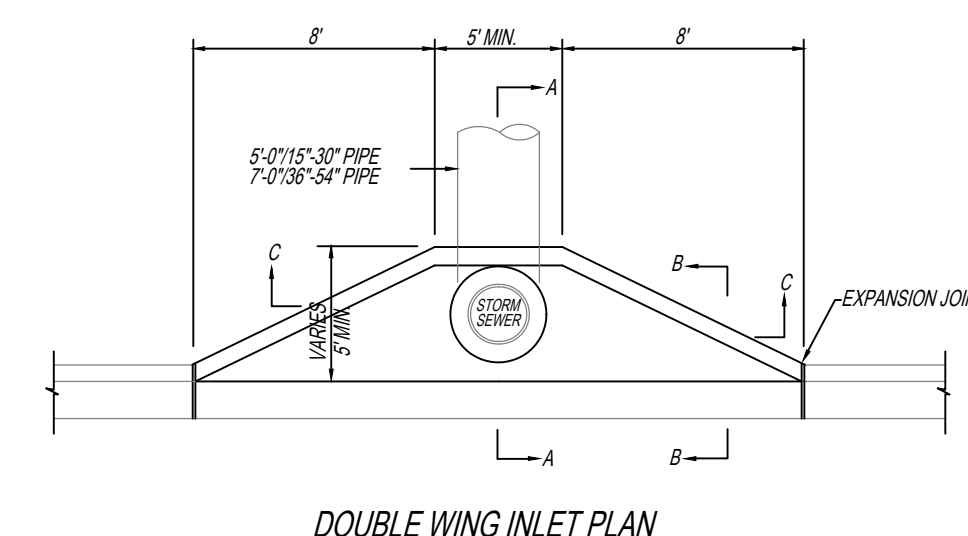


DEPRESSED GUTTER DETAIL #2

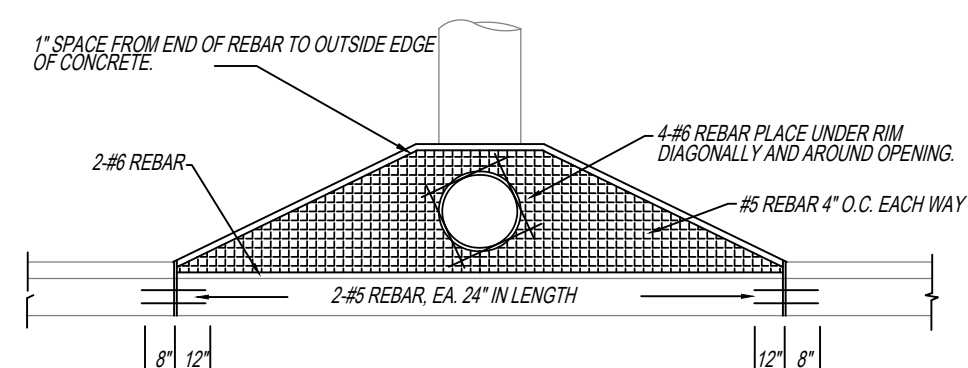


7.01

### DOUBLE WING INLET

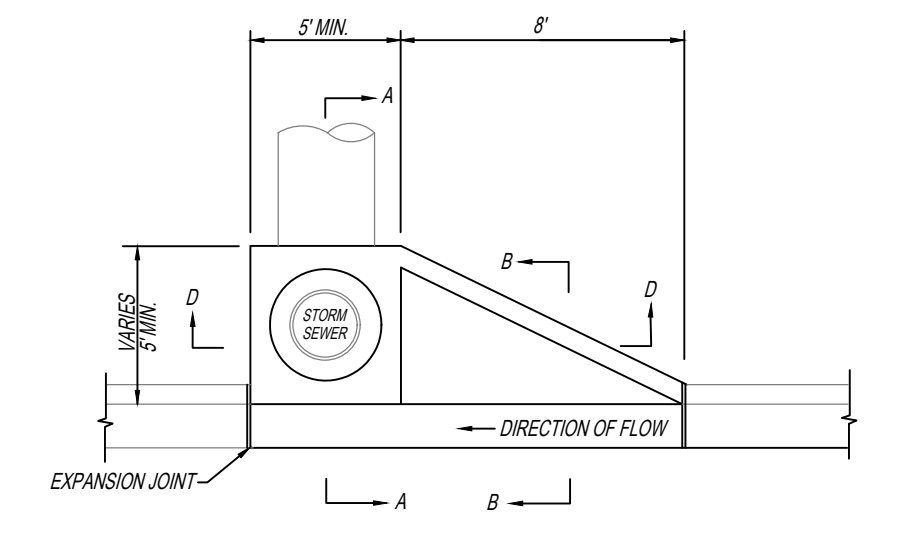


DOUBLE WING INLET PLAN

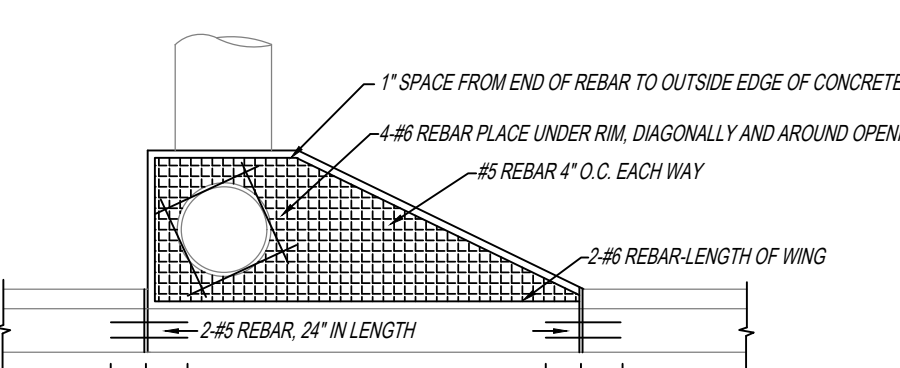


DOUBLE WING INLET TOP SECTION

### SINGLE WING INLET



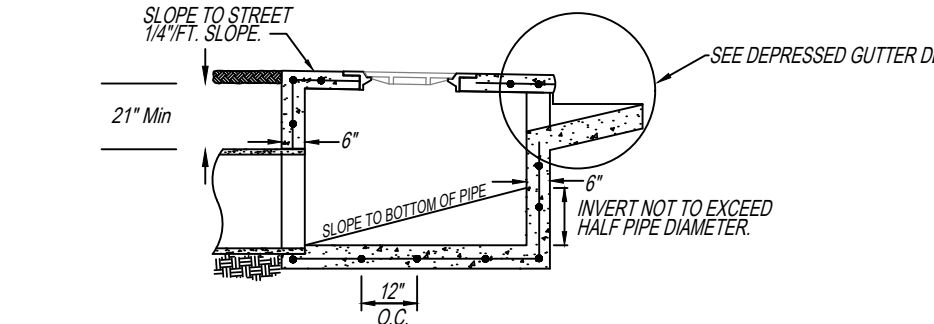
SINGLE WING INLET PLAN



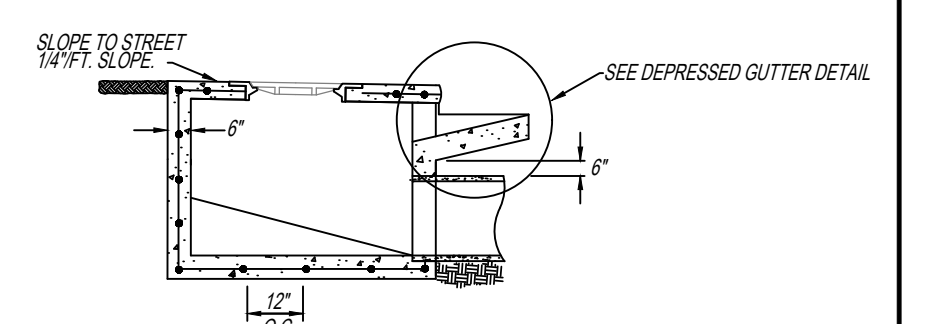
SINGLE WING TOP SECTION

7.02

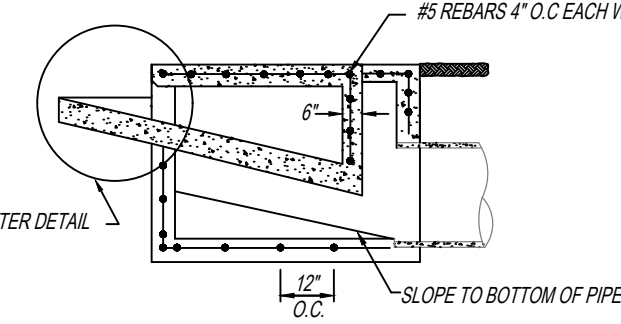
### INLET BOX DETAIL



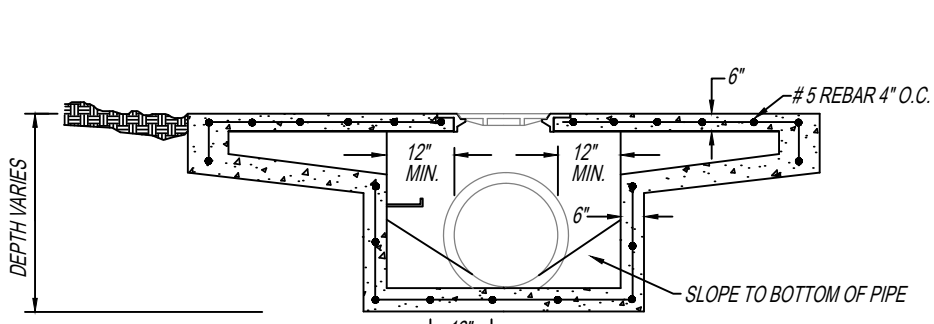
INLET BOX DETAIL AA (#1)



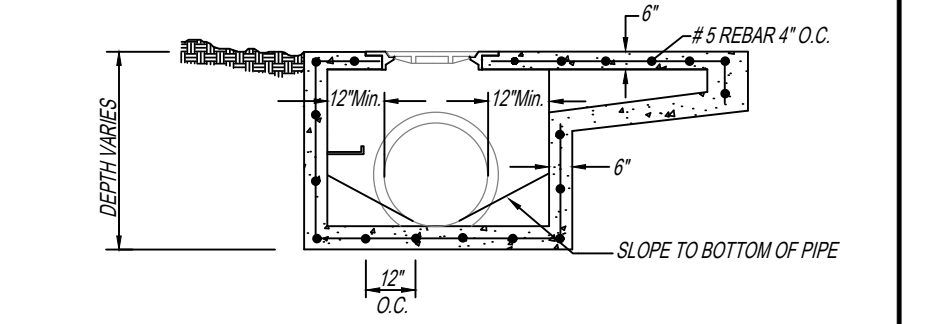
INLET BOX DETAIL AA (#2)



INLET BOX DETAIL BB



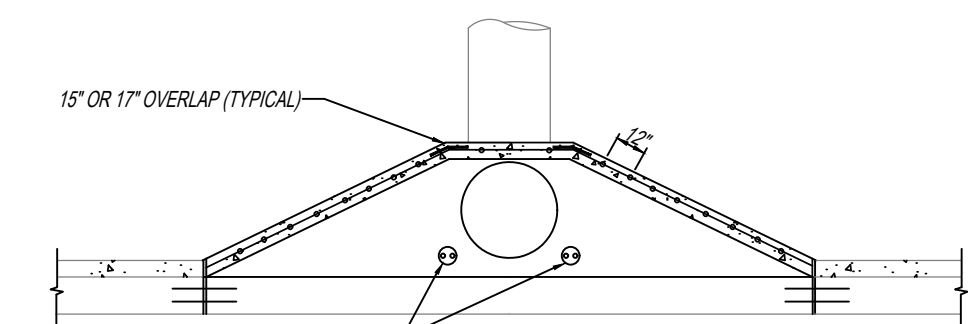
DOUBLE WING INLET DETAIL CC



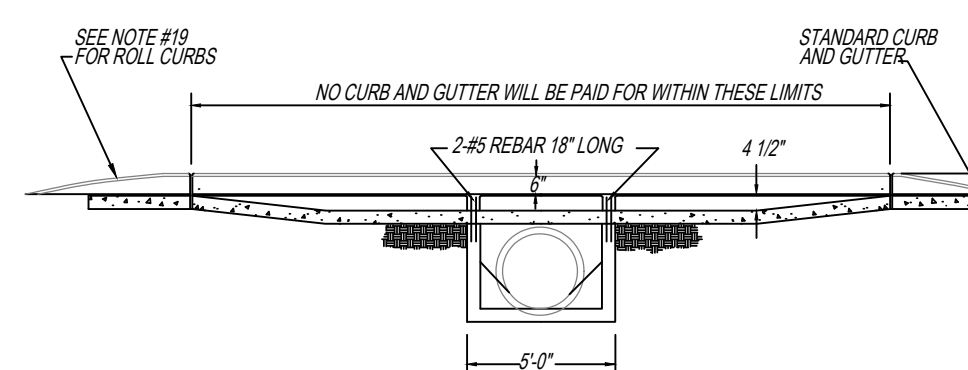
SINGLE WING INLET DETAIL DD

7.03

### DOUBLE WING INLET DETAIL



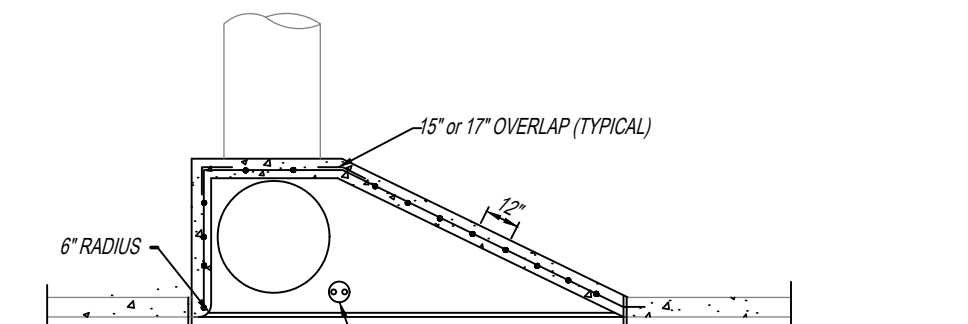
DOUBLE WING INLET SLAB SECTION



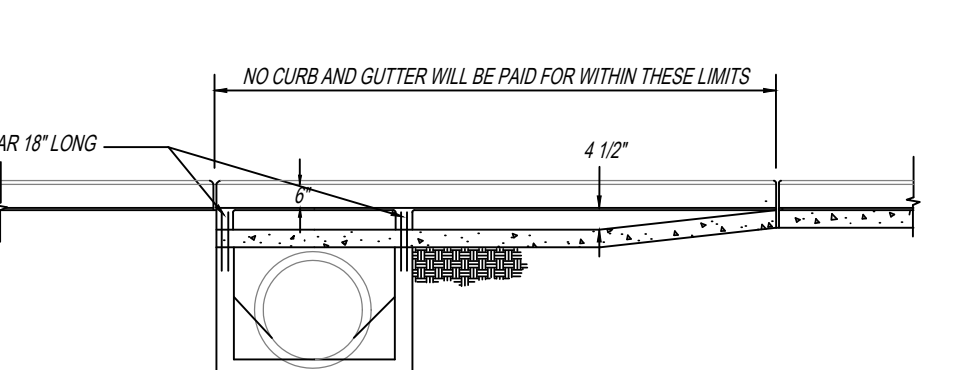
DOUBLE WING INLET ELEVATION

7.04

### SINGLE WING INLET DETAIL



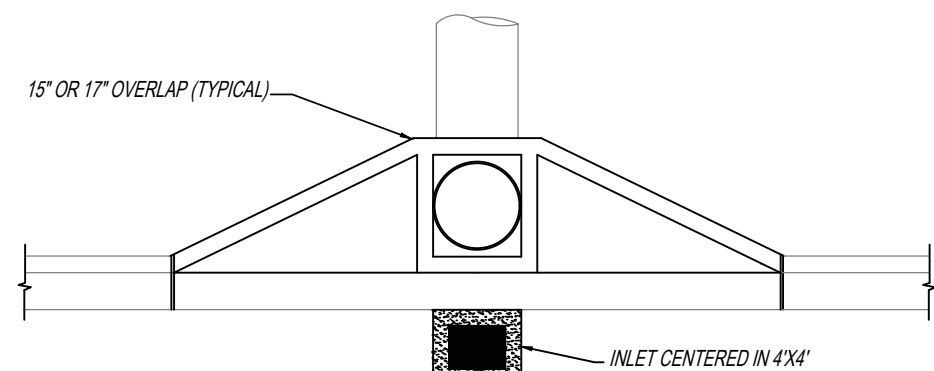
SINGLE WING INLET SLAB SECTION



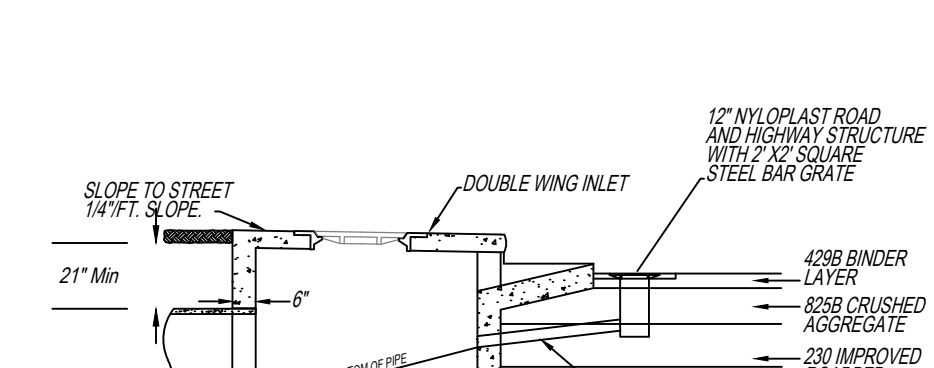
SINGLE WING INLET ELEVATION

7.05

### INLET BOX DETAIL (temporary drain)

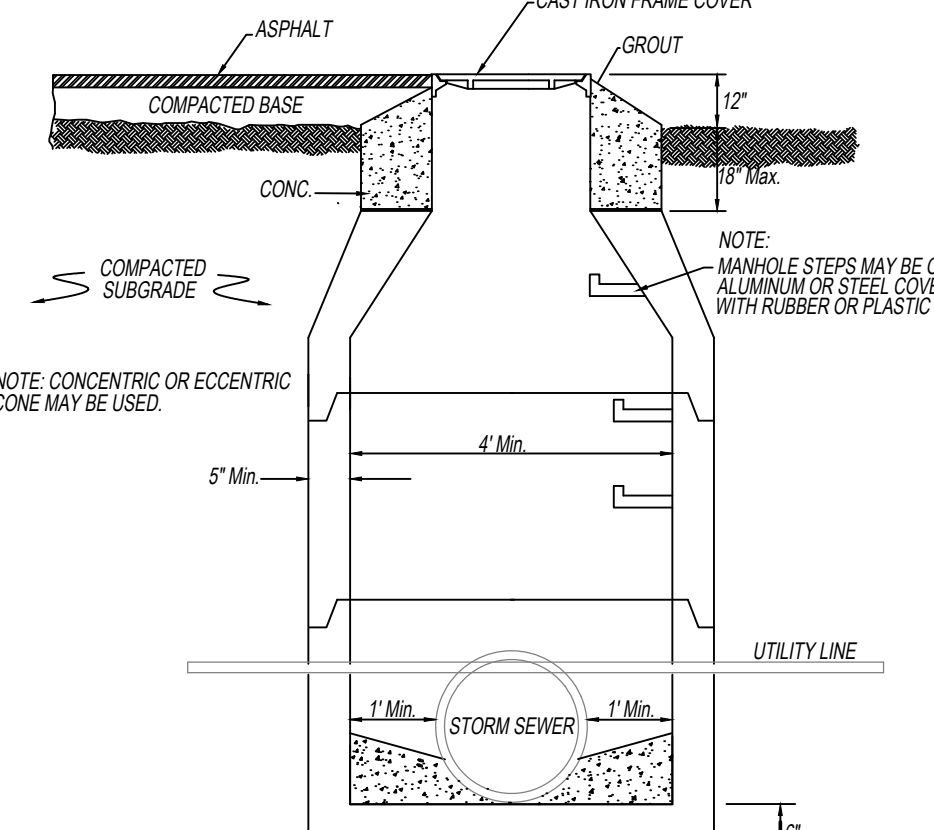


PLAN VIEW



PROFILE VIEW

### UTILITY CONFLICT JUNCTION BOX

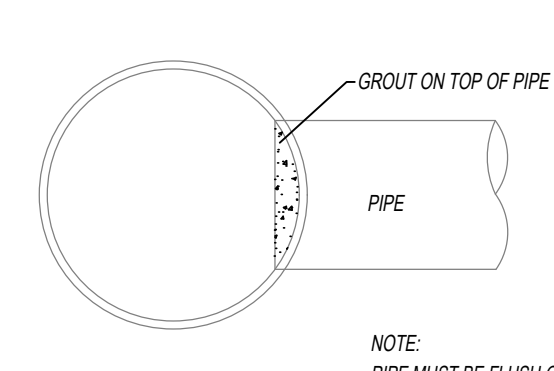


SECTIONAL ELEVATION

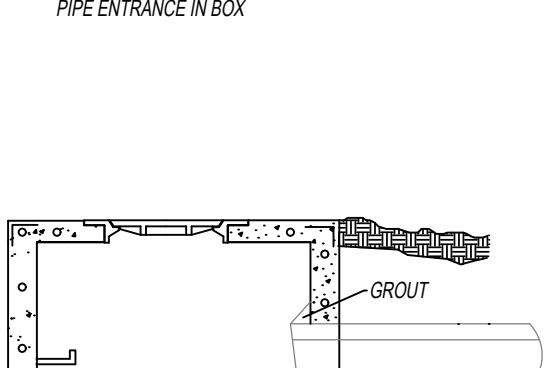
NOTES:  
1. INSTALL JUNCTION BOX WHEN THERE IS A CONFLICT BETWEEN STORM SEWER AND OTHER UTILITY LINES.  
2. IF THE EXISTING UTILITY LINES IS A SANITARY SEWER LINE, REPLACE THE V.C. OR PVC PIPE WITH DUCTILE IRON PIPE.  
3. IF POSSIBLE, INSTALL THE CONNECTING UTILITY IN THE UPPER 1/3 OF THE STORM SEWER.

7.06

### PIPE BEVELL



PLAN VIEW



ELEVATION

7.07

### NOTES

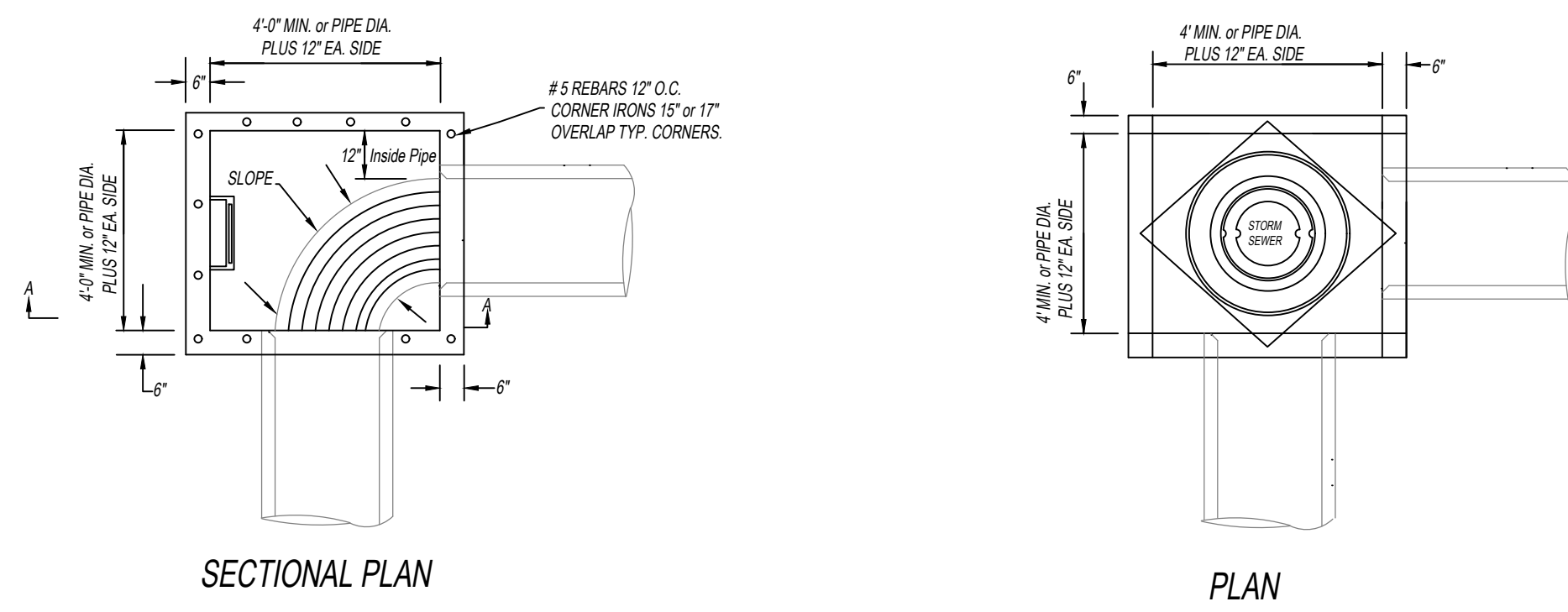
- HEADWALL AND WINGWALLS SHALL HAVE A RUBBED SMOOTH FINISH. PIPE SHALL BE CUT FLUSH WITH THE INSIDE FACE OF THE HEADWALL.
- JUNCTION BOX INVERTS SHALL BE SMOOTH AND APPROXIMATE THE CROSS SECTION OF THE PIPE USED. AT LEAST 0.25 OF ALL IS REQUIRED ACROSS ALL JUNCTION BOXES AND/OR INLETS. THE FLOOR SHALL BE SLOPED TO DRAIN ALL WATER TO THE INVERT. ALL PIPE SHALL BE CUT FLUSH WITH THE FACE OF THE JUNCTION BOX AND INLET JUNCTION BOX.
- CAST IRON FRAME AND COVER SHALL WEIGH 375 POUNDS IN TRAFFIC AND 325 POUNDS OFF TRAFFIC.
- ALL PIPES SHALL BE LAID WITH ENDS ABUTTING AND TRUE TO LINE AND GRADE. PIPE SHALL BE FITTED AND MATCHED TO FORM A LINE WITH A SMOOTH, UNIFORM INVERT. GROUT SHALL THEN BE APPLIED SMOOTHLY TO THE OUTSIDE TOP TWO THIRDS AND THE INSIDE BOTTOM ONE HALF TO WATER PROOF ALL PIPE.
- PRECAST MANHOLES MAY BE USED FOR PIPE UP TO 36". LARGER SIZES MUST BE APPROVED PRIOR TO USE.
- FOR PIPE SIZES LARGER THAN 42", HEADWALLS SHALL BE AS SPECIFIED BY THE CITY ENGINEER.
- INLETS SHALL NOT BE PLACED IN A RADIUS OF INTERSECTING STREETS OR DRIVES.
- PRECAST ITEMS MUST BE APPROVED PRIOR TO USE.
- CHAMFER STRIPS ARE REQUIRED ON ALL HEADWALL EDGES.
- RIPRAP IS REQUIRED AT ALL PIPE OUTLETS WITH GEOFABRIC. THE SIZE OF THE PAD SHALL BE AS DESIGNED BY THE ENGINEER BUT SHALL BE CONSTRUCTED PER THE DETAIL.
- DISTANCE FROM RADIUS POINT TO EXISTING EXPANSION OR CONSTRUCTION JOINT SHALL BE AT LEAST 3.0' IF LESS THAN 3.0', CURB AND GUTTER SHALL BE REPLACED TO EXISTING JOINT.
- MINIMUM INSIDE DIMENSION OF JUNCTION BOXES AND INLETS SHALL BE 4 FEET.
- TOP OF INLET SHALL BE THE SAME ELEVATION AS ADJOINING CURB AND GUTTER.
- 2" MINIMUM WEEP HOLES SHALL BE CONSTRUCTED IN INLETS TO FACILITATE SUBGRADE DRAINAGE.
- IF INLETS ALSO SERVES AS A JUNCTION BOX, CONTOUR BOTTOM AS PER JUNCTION BOX REQUIREMENTS.
- MORTAR: A CONCRETE MIX EQUIVALENT TO AT LEAST A 3000 PSI STABILITY.
- NUMBER 5 REBAR SHALL BE INSTALLED INTO ALL CURB AND GUTTER JOINTS. THE INLS AT ALL INLETS & JUNCTION BOXES, OR TO BE DETERMINED BY THE PROJECT ENGINEER/PROJECT INSPECTOR.
- INSTALL STEPS IN JUNCTION BOXES OR INLET EVERY 18" ON CENTER ACCESSIBLE TO MANHOLE COVER. AT LEAST ONE STEP IS REQUIRED PER BOX. MINIMUM FOUR FOOT (4') MINIMUM TRANSITIONS FROM ROLL CURB TO STANDARD CURB AND GUTTER TO ALLOW STANDARD INLET TO BE CONSTRUCTION.
- INVERTS SHALL BE POURED CONCRETE. NO BRICK OR ROCKS SHALL BE USED AS FILLER MATERIAL.
- 16 BARS REQUIRED IN GUTTER.
- INVERTS SHALL NOT EXCEED HALF THE DIAMETER OF THE PIPE. NO FLAT AREAS ARE PERMITTED.
- INLET TOPS SHALL BE SLOPED AT 1/4" INCH TOWARD THE STREET (SEE DETAIL).
- CONCRETE USED FOR STORM STRUCTURES MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
- MODIFIED INLETS MUST HAVE SAME CARRYING CAPACITY AS STANDARD INLETS. DIMENSIONS/DETAILS MUST BE APPROVED BY CITY OF AUBURN ENGINEER PRIOR TO INSTALLATION.
- HOPE CAN BE USED FROM RIGHT OF WAY OUT WITH CITY OF AUBURN APPROVAL.
- AN EXPANSION JOINT MUST BE PROVIDED AT THE INLET / CURB FACE.
- MECHANICAL TAMPING IS REQUIRED AROUND AND BEHIND INLETS.

7.08

### STANDARD DETAILS: STORM - SHEET 1 OF 2

	DEPARTMENT:	ENGINEERING SERVICES	REVISIONS:
	SCALE:	N.T.S.	
	DRAWN BY:	GINA MCCRECKARD	
	CITY ENGINEER:	ALISON FRAZIER	
APPROVED BY:	ALISON FRAZIER	EFFECTIVE DATE:	2022
IMPLEMENTED:	01-01-2022		

**JUNCTION BOX DETAIL**

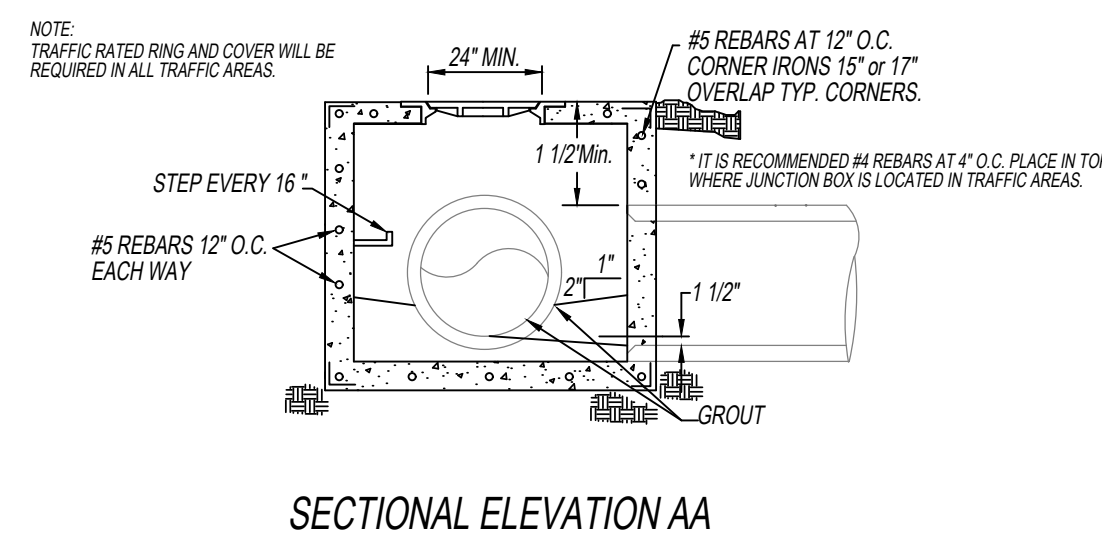


SECTIONAL PLAN

PLAN

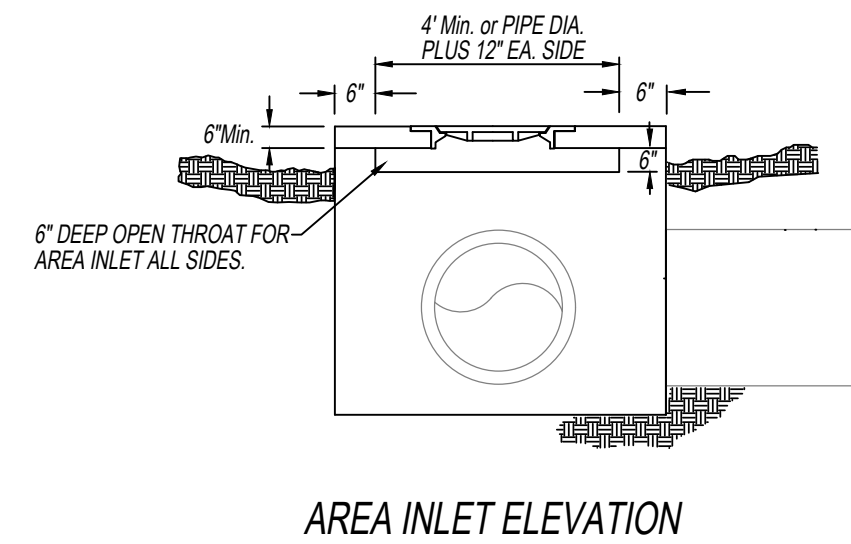
7.09

**AREA INLET/JUNCTION BOX ELEVATION**



SECTIONAL ELEVATION AA

NOTE:  
NOT TO BE USED ON ALDOTT RIGHT OF WAY  
UNLESS APPROVED BY ALDOTT IN WRITING.



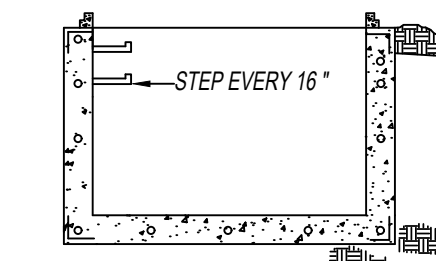
AREA INLET ELEVATION

7.10

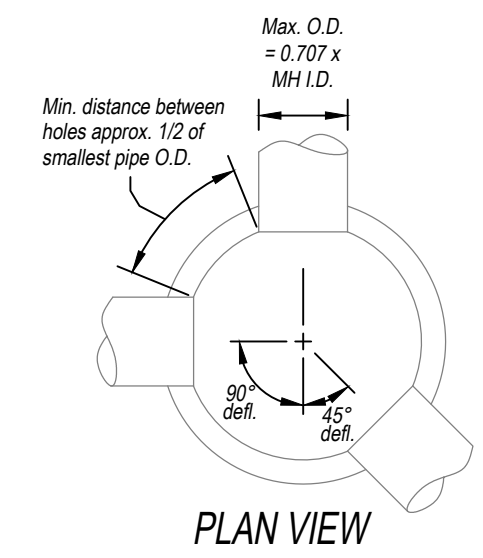
**BASE AND RISER DETAIL**



RISER DETAIL



SECTIONAL ELEVATION



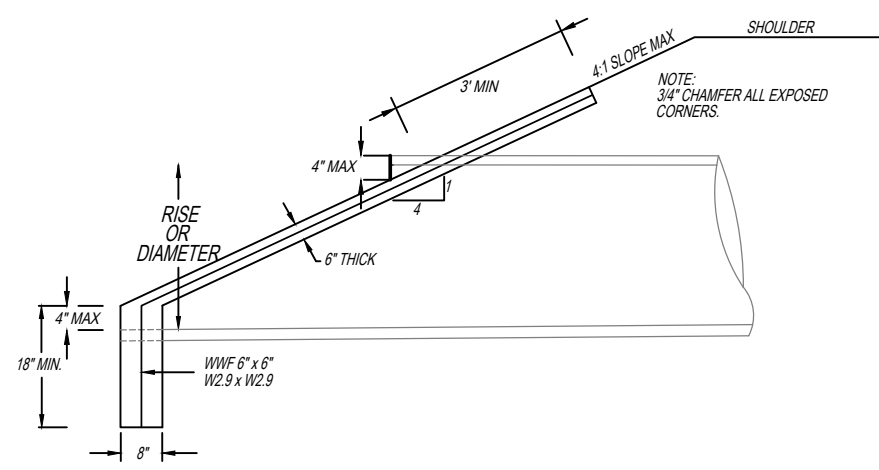
PLAN VIEW

Pipe Dia.	Req'd* Opening	MANHOLE DIA. (IN.)				
		48	60	72	84	96
15"	23"	85	>90	>90	>90	>90
18"	27"	83	>90	>90	>90	>90
21"	30"	72	>90	>90	>90	>90
24"	36"	55	85	>90	>90	>90
30"	42"	—	65	90	>90	>90
36"	48"	—	45	75	90	>90
42"	56"	—	—	50	70	90
48"	63"	—	—	15	45	70
54"	70"	—	—	—	30	56

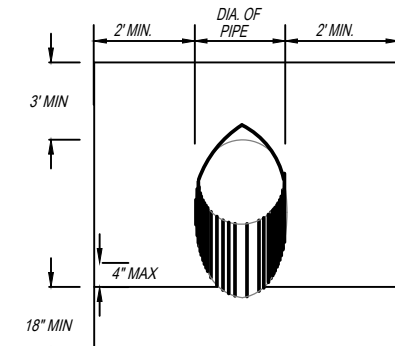
\*Opening = Pipe Dia. + (wall thickness x 2) + 3.5" free space

7.11

**SLOPED PAVED HEADWALL**



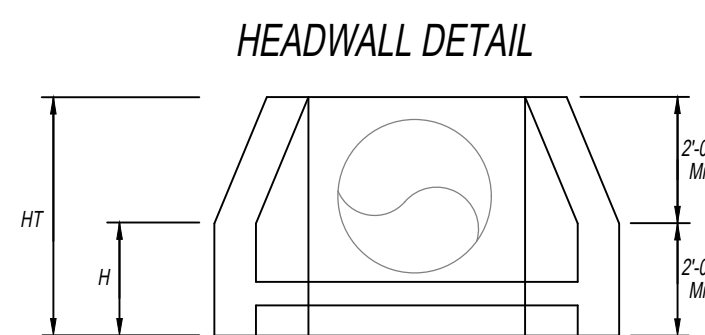
SLOPED HEADWALL ELEVATION



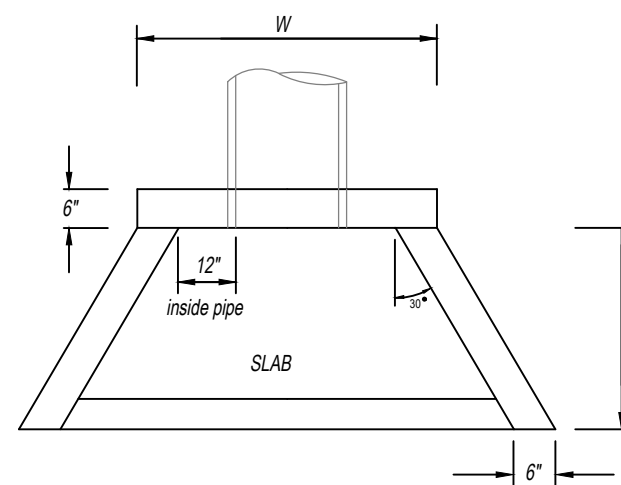
END VIEW

7.12

**WINGED HEADWALL**



WINGED HEADWALL ELEVATION

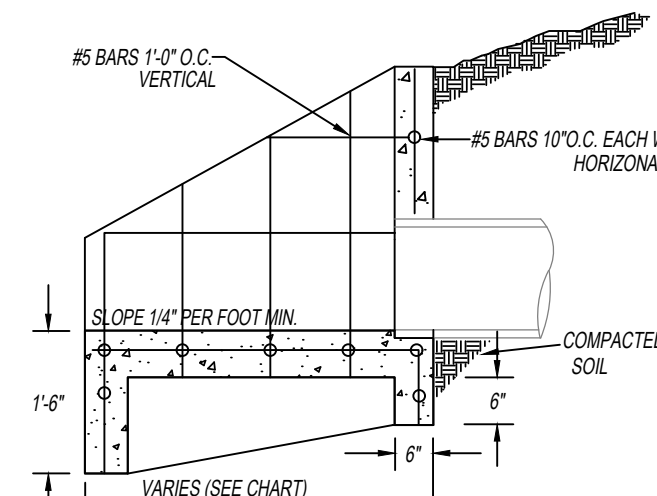


WINGED HEADWALL PLAN

PIPE SIZE CHART

PIPE SIZE	A	W	H	HT
15 IN	4 FT	DA+3 FT	2 FT	4 FT
18 IN	4 FT	DA+3 FT	2 FT	4 FT
24 IN	4 FT	DA+3 FT	2 FT	4 FT
30 IN	4.5 FT	DA+3 FT	2 FT	4 FT
36 IN	5 FT	DA+3 FT	3 FT	5 FT
42 IN	5 FT	DA+3 FT	3 FT	6 FT
48 IN	5.5 FT	DA+3 FT	3 FT	6 FT
54 IN	6 FT	DA+3 FT	3 FT	7 FT
60 IN	6.5 FT	DA+3 FT	3 FT	7 FT
72 IN	7 FT	DA+3 FT	4 FT	8 FT

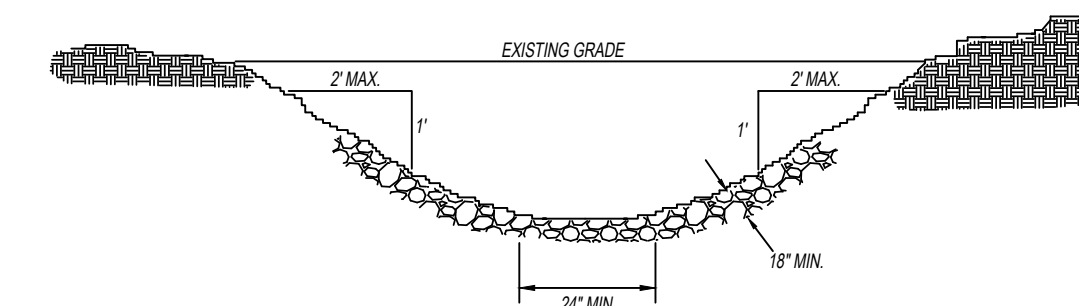
NOTE: HEADWALL HEIGHT MAY VARY FROM THE CHART WITH APPROVAL OR RECOMMENDATION OF THE CITY ENGINEER.



SECTIONAL ELEVATION

7.13

**RIP RAP SWALE**

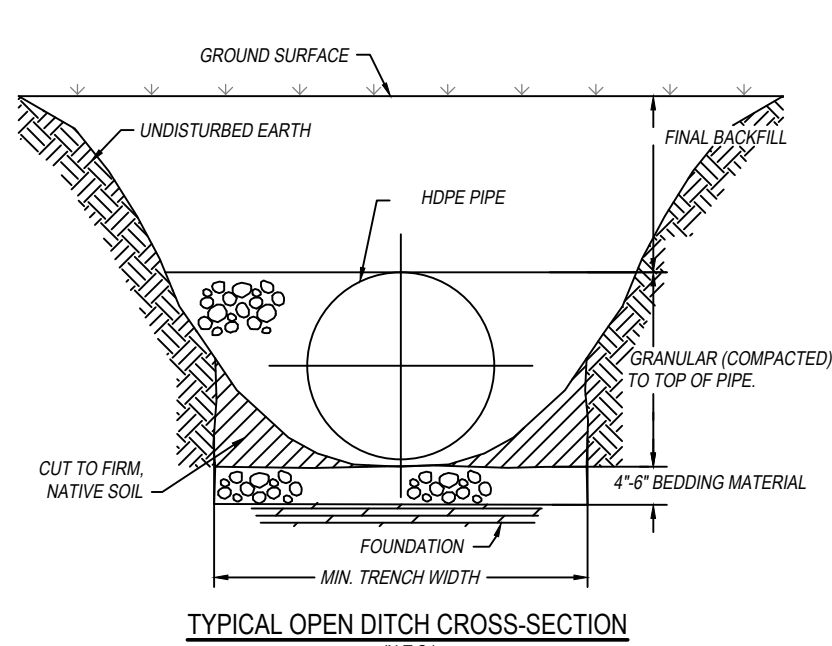


NOTE:  
1. BOTTOM WIDTH IS DETERMINED BY ENGINEER.  
2. A 3:1 SIDE SLOPE IS PREFERRED, BUT NO SLOPE CAN EXCEED 2:1.

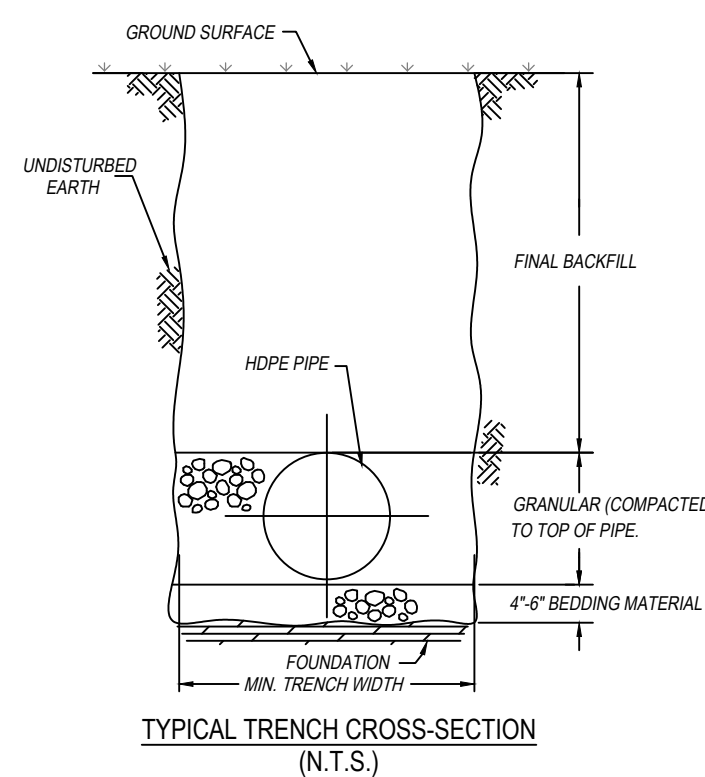
PIPE SIZE	BOTTOM WIDTH MINIMUM
15 IN	2 FT
18 IN	2 FT
24 IN	3 FT
30 IN	3 FT
36 IN	4 FT
42 IN	4 FT
48 IN	5 FT
54 IN	5 FT
60 IN	6 FT
72 IN	7 FT

7.14

**HDPE PIPE INSTALLATION**



TYPICAL OPEN DITCH CROSS-SECTION (N.T.S.)



TYPICAL TRENCH CROSS-SECTION (N.T.S.)

7.15

**HDPE PIPE INSTALLATION**

NOTES:  
1. BEDDING AND BACKFILL MATERIAL SHALL BE CLASS 1 MEETING ASTM D 2321. SEE DEFINITIONS BELOW.  
2. TO PREVENT MIGRATION OF FINES AND LOSS OF PIPE SUPPORT FOR INSTALLATIONS WHERE SIGNIFICANT GROUND-WATER FLOW IS ANTICIPATED, CLASS 1 BEDDING AND BACKFILL MUST BE USED AND THE ENTIRE PERIMETER OF THE ENCASEMENT SHALL BE WRAPPED WITH AN APPROVED GEOTEXTILE FABRIC.  
3. FOR INSTALLATIONS WHERE THE TRENCH BOTTOM IS UNSTABLE, UNDERCUT TO A DEPTH AS REQUIRED BY THE ENGINEER AND REPLACE WITH A SUITABLE BEDDING MATERIAL, PLACED IN 6-INCH LIFTS.  
4. ALL HIGH DENSITY POLYETHYLENE (HDPE) PIPE USED FOR CULVERT AND STORMDRAIN APPLICATIONS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M254, TYPE S, CURRENT EDITION AND VERIFIED THROUGH THE PLASTIC PIPE INSTITUTE (PPI) THIRD PARTY CERTIFICATION PROGRAM. ALL HDPE PIPE DELIVERED AND USED SHALL BEAR THE THIRD PARTY ADMINISTERED PPI SEAL.  
5. INSTALLATIONS WHICH MEASURE OVER 15 FEET OF FILL FROM TOP OF PIPE TO FINISHED GRADE LEVEL ARE TO BE APPROVED BY CITY ENGINEER.  
ASTM D 2321 MATERIAL DEFINITIONS:  
CLASS 1 - ANGULAR CRUSHED STONE OR ROCK DENSE OR OPEN GRADED WITH LITTLE TO NO FINES. (1/4" TO 1.5" IN SIZE). INCLUDED NOT LIMITED TO SIZES 5, 57, 67, 8, 9, 10, & 610.

UNLESS SPECIFIED BY THE ENGINEER, MINIMUM RECOMMENDED TRENCH WIDTH SHALL BE AS FOLLOWS:

NOMINAL DIAMETER (IN.)	MIN. TRENCH WIDTH (IN.)
15	34
18	39
24	48
30	56
36	64
42	72
48	80
60	96

7.16

**STANDARD DETAILS: STORM - SHEET 2 OF 2**



DEPARTMENT:	ENGINEERING SERVICES	REVISIONS:
SCALE:	N.T.S.	
DRAWN BY:	GINA MCCRICKARD	
CITY ENGINEER:	ALISON FRAZIER	
APPROVED BY:	ALISON FRAZIER	
IMPLEMENTED:	01-01-2022	

EFFECTIVE DATE  
**2022**