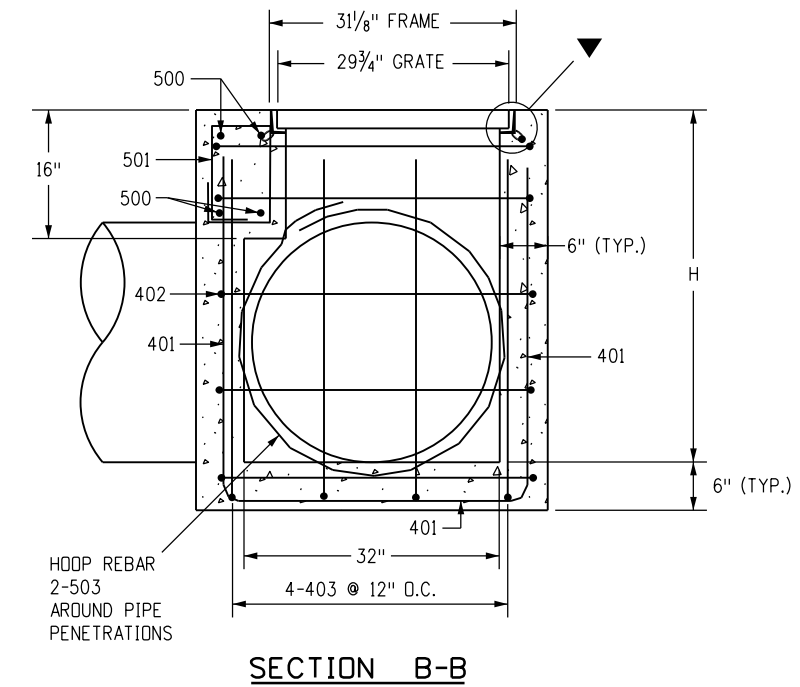
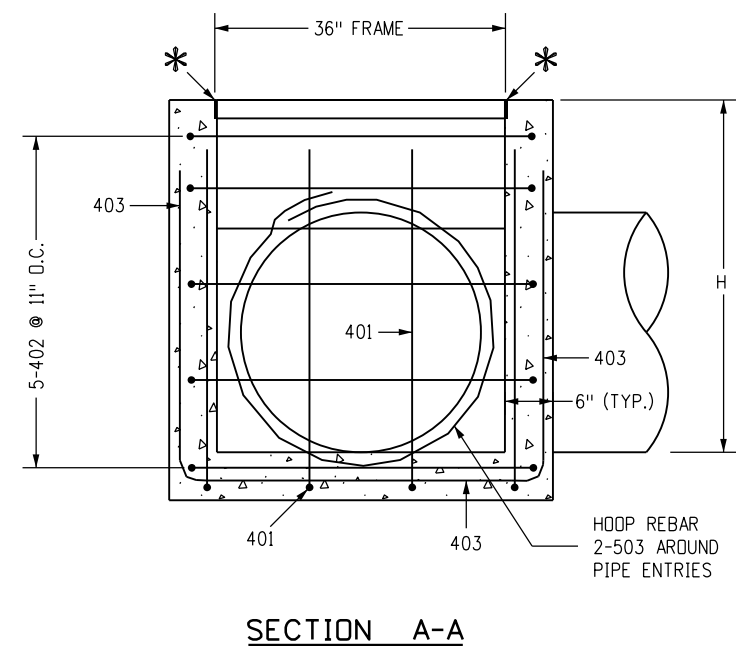


GENERAL NOTES

- FOR THE 32 INCH AND 36 INCH INSIDE INLET DIMENSIONS, THE ALLOWABLE PIPE I.D. IS 30 INCHES OR LESS. FOR THE 72 INCH INSIDE INLET DIMENSION, THE ALLOWABLE PIPE I.D. IS "H" MINUS 18 INCHES, OR LESS, UP TO A MAXIMUM OF 66 INCHES FOR "H" OF 7 FEET OR MORE.
- ALL CONCRETE SHALL BE CLASS B.
- INLET MAY BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE #4 UNLESS SHOWN OTHERWISE.
- ALL REINFORCING BARS SHALL BE GRADE 60 AND EPOXY COATED. REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 2 IN.
- ALL EDGE DISTANCES NOT MARKED "CLEAR" ARE TO THE CENTERLINE OF THE BAR.
- CUT OR BEND REINFORCING BARS AROUND PIPES AS REQUIRED.
- STEPS SHALL BE REQUIRED WHEN THE INLET DEPTH "H" IS EQUAL TO OR GREATER THAN 4 FT. AND SHALL CONFORM TO AASHTO M 199.
- THE INVERT OF THE BOX SHALL BE SLOPED TO DRAIN.
- THE CONTRACTOR SHALL STAMP FLOW ARROWS INTO THE TOP SURFACE OF THE INLET BOX SIDEWALLS TO INDICATE THE DIRECTION OF RUNOFF. THE STAMPED ARROWS SHALL BE 6 IN. LONG, 1 IN. HIGH, AND 3/8 IN. DEEP. FOR INLETS IN SUMP CONDITIONS, THE STAMPED FLOW ARROWS SHALL INDICATE THE PREDOMINATE DIRECTION OF RUNOFF FLOW.
- A 4 IN. DIA. STAINLESS STEEL MEDALLION WITH "NO DUMPING DRAINS TO STREAM" OR SIMILAR MESSAGE SHALL BE FIRMLY ATTACHED TO TOP OF THE INLET SURFACE WITH A PERMANENT FASTENER. THE MEDALLION WILL HAVE A FISH SYMBOL AND BLUE COLOR BACKGROUND. ALTERNATIVELY, THIS MESSAGE MAY BE CAST WITH 1 IN. HEIGHT LETTERS INTO THE TOP OF THE INLET'S CONCRETE SURFACE OR SURROUNDING CONCRETE APRON. THE NO DUMPING MESSAGE SHALL BE ELIMINATED FOR INLETS LOCATED WITHIN THE SHOULDER OF CONTROLLED ACCESS FREEWAYS WHEN SPECIFIED IN THE PLANS.



LEGEND

- ▼ GRATE TO BE INSTALLED DURING CONSTRUCTION OF THE BOX WITH THE VANE GRATE BOLTED IN PLACE TO THE FRAME.
- * TO FACILITATE REMOVAL OF THE GRATE, PLACE PLYWOOD 3 IN. x 1/4 IN. x 31-3/8 IN. ALONG EDGE OF THE GRATE AS SHOWN.
- ∅ FLOW ARROW STAMP IN DIRECTION OF FLOW (TYP.).

Computer File Information	
Creation Date: 07/31/19	
Designer Initials: JBK	(R-X)
Last Modification Date: 02/03/23	(R-X)
Detailer Initials: LTA	(R-X)
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation

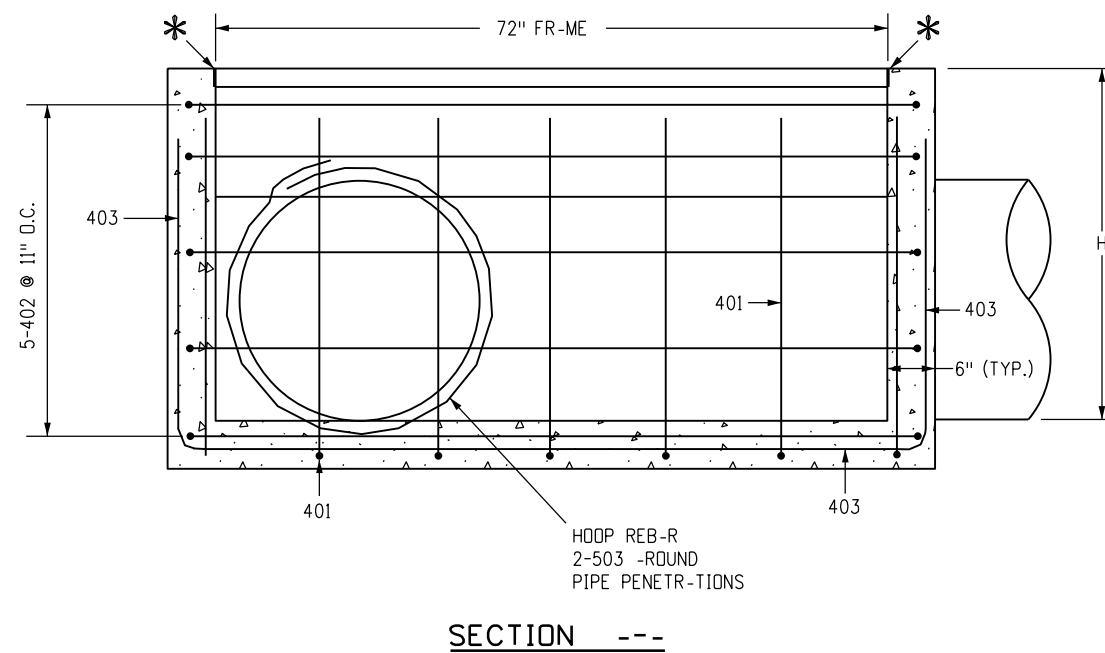
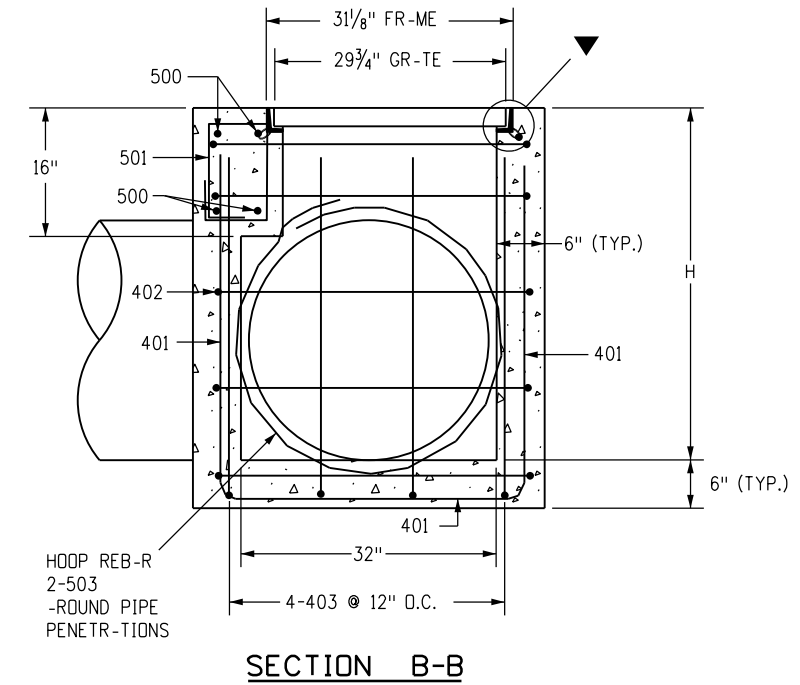
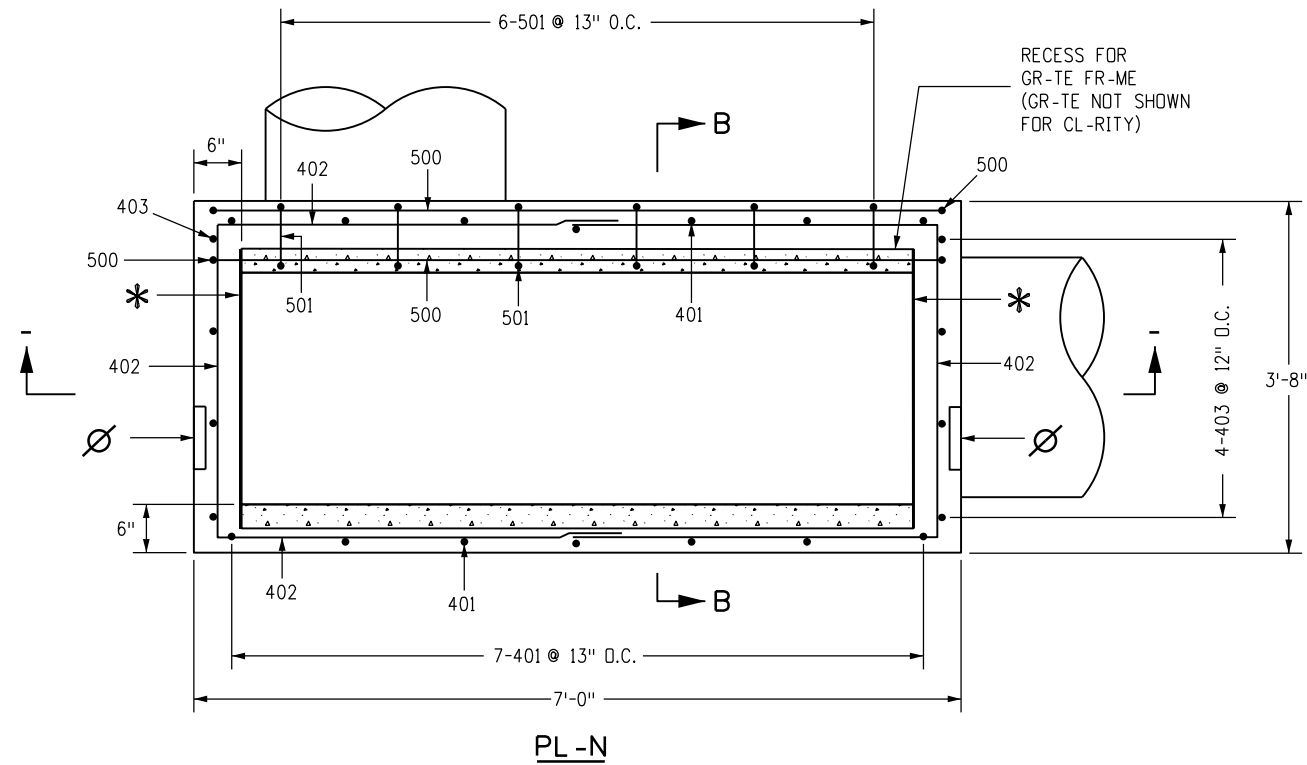
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VANE GRATE INLET

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-604-25
Standard Sheet No. 1 of 5
Project Sheet Number:



- LEGEND**
- ▼ GR-TE TO BE INST-LLED DURING CONSTRUCTION OF THE BOX WITH THE V-NE GR-TE BOLTED IN PL-CE TO THE FR-ME.
 - * TO F-CILIT-TE REMOV-L OF THE GR-TE, PL-CE PLYWOOD 3 IN. x 1/4 IN. x 31-3/8 IN. -LONG EDGE OF THE GR-TE -S SHOWN.
 - ∅ FLOW -RROW ST-MP IN DIRECTION OF FLOW (TYP.). FLOW →

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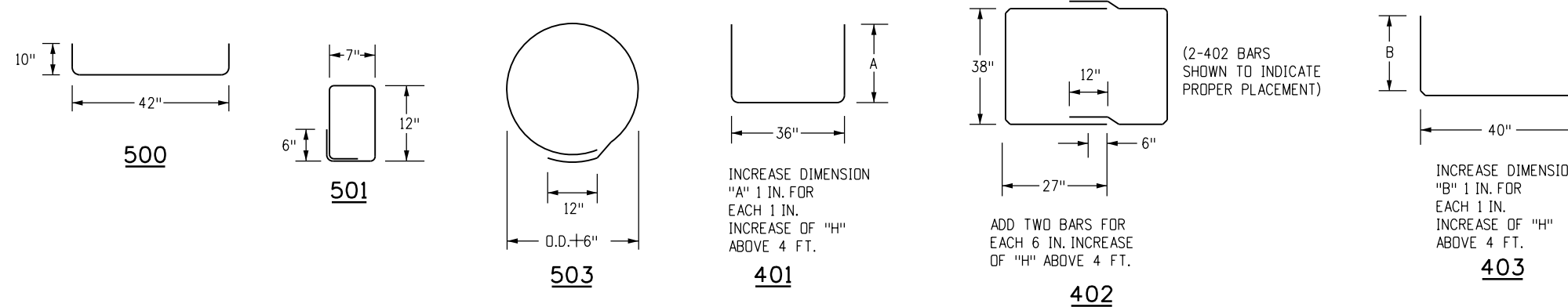
VANE GRATE INLET

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO. M-604-25
Standard Sheet No. 2 of 5
Project Sheet Number:

NOTES

1. CONCRETE QUANTITY INCLUDES VOLUME OCCUPIED BY PIPES.
2. REINFORCING STEEL QUANTITY ASSUMES TWO 503 HOOPS FOR EACH 24 INCH PIPE AND A 4 INCH PIPE WALL. ADJUST THE LENGTH AND QUANTITIES FOR 503 USED WITH DIFFERENT PIPE DIAMETERS AND INCLUDE IN THE COST OF THE INLET.
3. BARS NUMBERED IN 400 SERIES INDICATES #4 SIZE BAR. BARS NUMBERED IN 500 SERIES INDICATES #5 SIZE BAR.
4. ALL REINFORCING BARS SHALL BE GRADE 60 AND EPOXY COATED.



36 IN. INLET BOX BENDING DIAGRAM

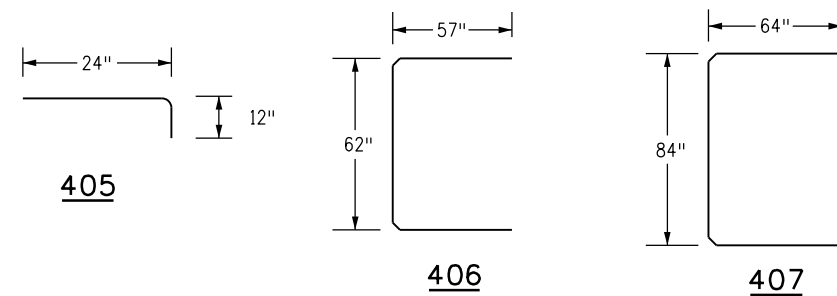
MARK	NO. REQ'D	LENGTH (EACH)
405	9	3'-0"
406	1	14'-8"
407	1	17'-8"

BAR LIST FOR CONCRETE APRON

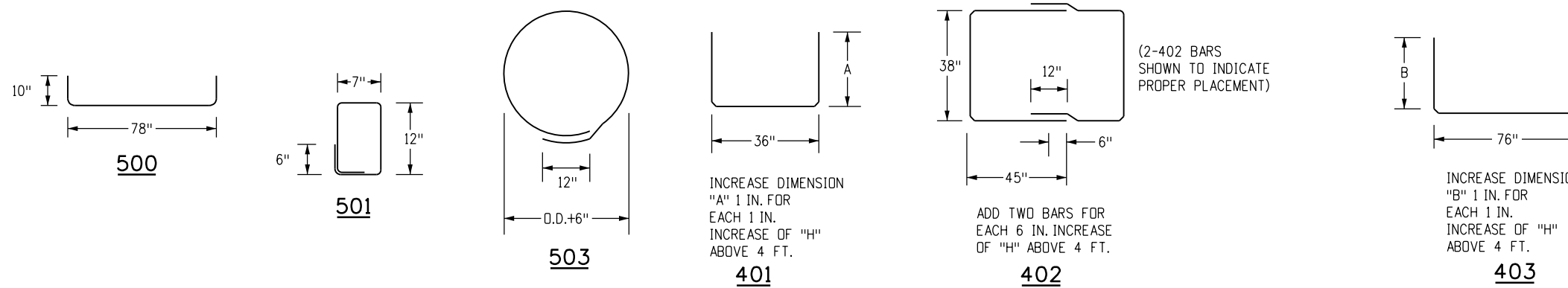
(FOR INFORMATION ONLY)

MARK	NO. REQ'D	HEIGHT "A"	HEIGHT "B"	LENGTH (EACH)
500	4			5'-2"
501	3			4'-2"
503	4			10'-5"
401	4	3'-10"		10'-8"
402	10			7'-8"
403	4		4'-0"	11'-4"

BAR LIST FOR H = 4'-0" 36 IN. INLET



INLET APRON BENDING DIAGRAM FOR 36 IN. INLET



72 IN. INLET BOX BENDING DIAGRAM

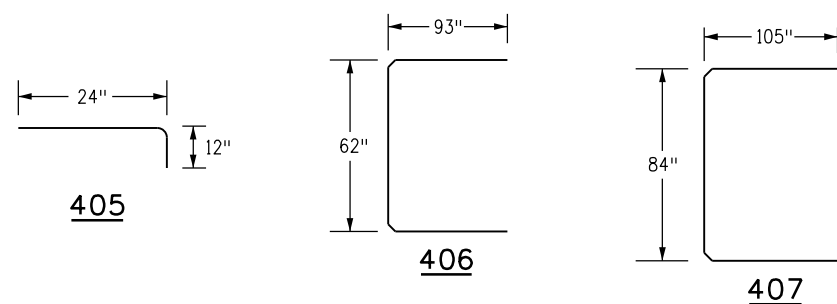
MARK	NO. REQ'D	LENGTH (EACH)
405	13	3'-0"
406	1	20'-8"
407	1	24'-6"

BAR LIST FOR CONCRETE APRON

(FOR INFORMATION ONLY)

MARK	NO. REQ'D	HEIGHT "A"	HEIGHT "B"	LENGTH (EACH)
500	4			8'-2"
501	6			4'-2"
503	4			10'-5"
401	7	3'-10"		10'-8"
402	10			10'-8"
403	4		4'-0"	14'-4"

BAR LIST FOR H = 4'-0" 72 IN. INLET



INLET APRON BENDING DIAGRAM FOR 72 IN. INLET

QUANTITIES FOR ONE 36 IN. INLET

H	NUMBER OF STEPS REQUIRED	CONC. CU. YD.	STEEL LBS.
4'-0"	1	1.3	180
4'-6"	2	1.5	186
5'-0"	2	1.6	201
5'-6"	2	1.7	207
6'-0"	3	1.8	222
6'-6"	3	1.9	227
7'-0"	3	2.1	243
7'-6"	4	2.2	248
8'-0"	4	2.3	263
8'-6"	4	2.4	269
9'-0"	5	2.5	285
9'-6"	5	2.7	289
10'-0"	5	2.8	306
10'-6"	6	2.9	310
11'-0"	6	3.0	326
11'-6"	6	3.1	331

QUANTITIES FOR ONE 72 IN. INLET

H	NUMBER OF STEPS REQUIRED	CONC. CU. YD.	STEEL LBS.
4'-0"	1	2.1	253
4'-6"	2	2.3	260
5'-0"	2	2.4	282
5'-6"	2	2.6	289
6'-0"	3	2.8	310
6'-6"	3	3.0	318
7'-0"	3	3.2	339
7'-6"	4	3.3	346
8'-0"	4	3.5	369
8'-6"	4	3.7	376
9'-0"	5	3.9	397
9'-6"	5	4.1	405
10'-0"	5	4.2	426
10'-6"	6	4.4	433
11'-0"	6	4.6	455
11'-6"	6	4.8	462

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02/03/23	Revised Note 2.

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VANE GRATE INLET

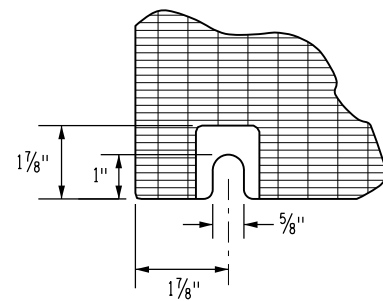
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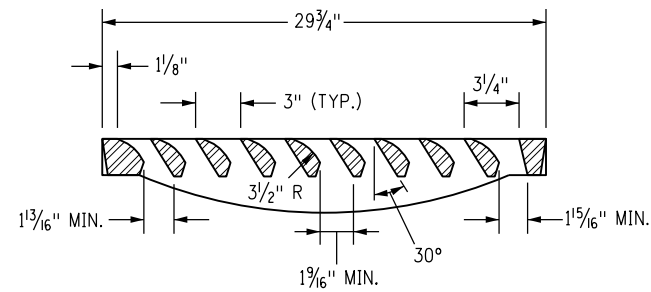
M-604-25

Standard Sheet No. 3 of 5

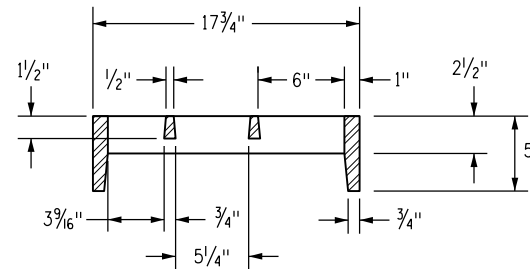
Project Sheet Number:



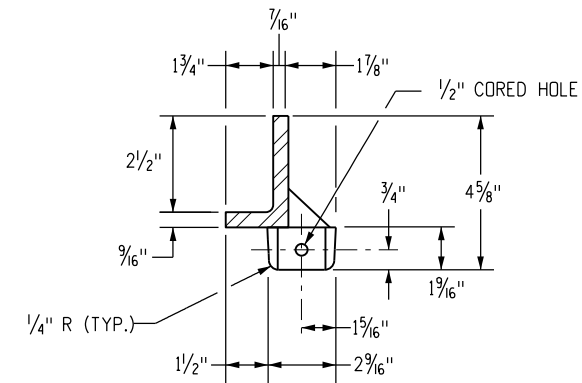
DET-IL -
BOLT SLOT - T CORNER (TYP.)



SECTION ---



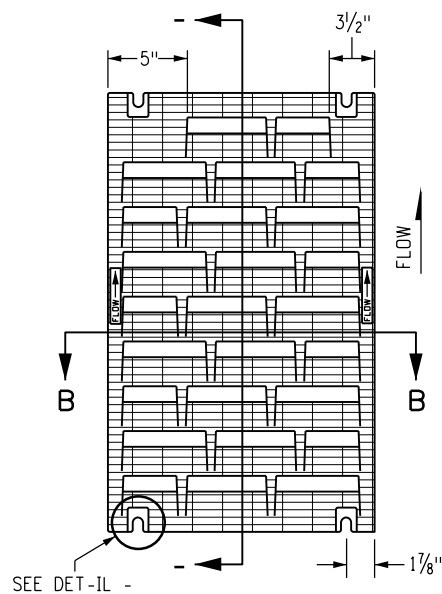
SECTION B-B



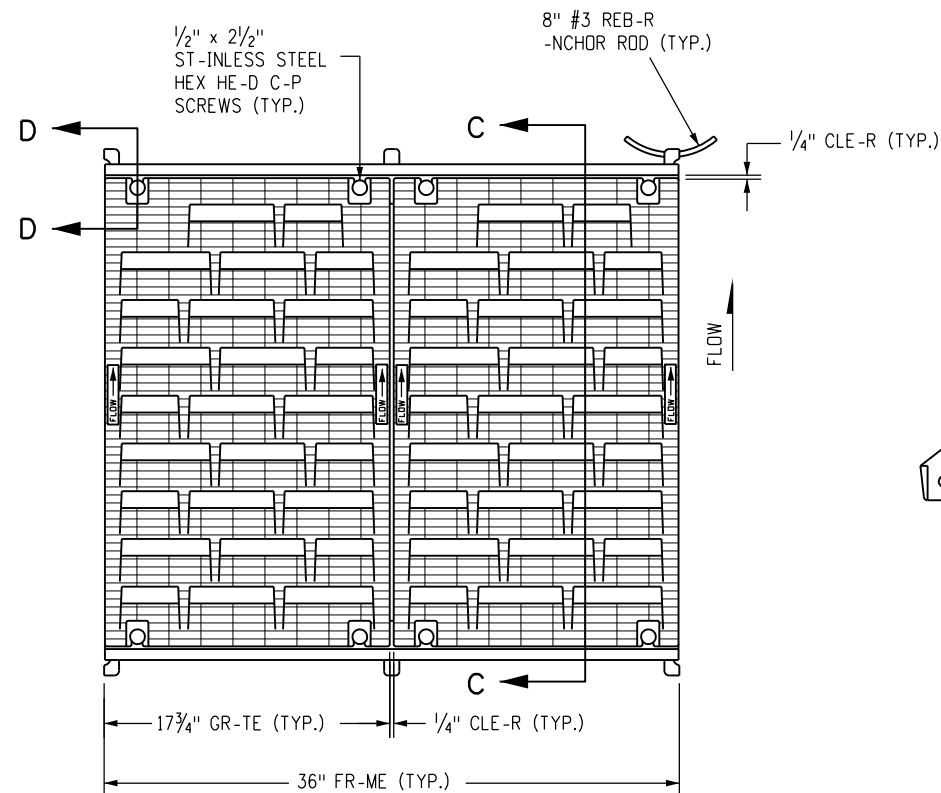
DET-IL B

NOTES

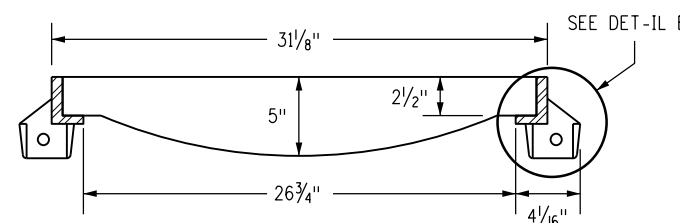
1. FREE OPEN -RE-: 190 SQ. IN./GR-TE.
2. M-TERI-L: C-ST GR-Y IRON -STM --48 CL-SS 35B.
3. FINISH: NO P-INT.
4. WEIGHT: GR-TE 170 LBS. E-CH; FR-ME 29 LBS. E-CH.
5. -LL REINFORCING B-RS SH-LL BE EPOXY CO-TED.



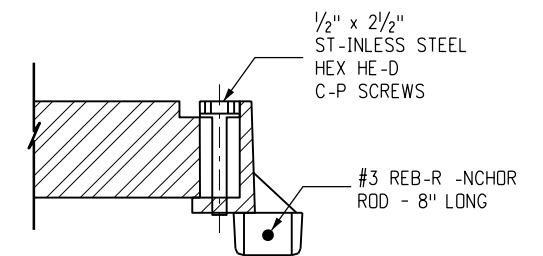
GR-TE PL-N



MULTIPLE GR-TE WITH FR-ME PL-N



SECTION C-C



SECTION D-D

Computer File Information

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Sheet Revisions

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**VANE GRATE
 INLET**

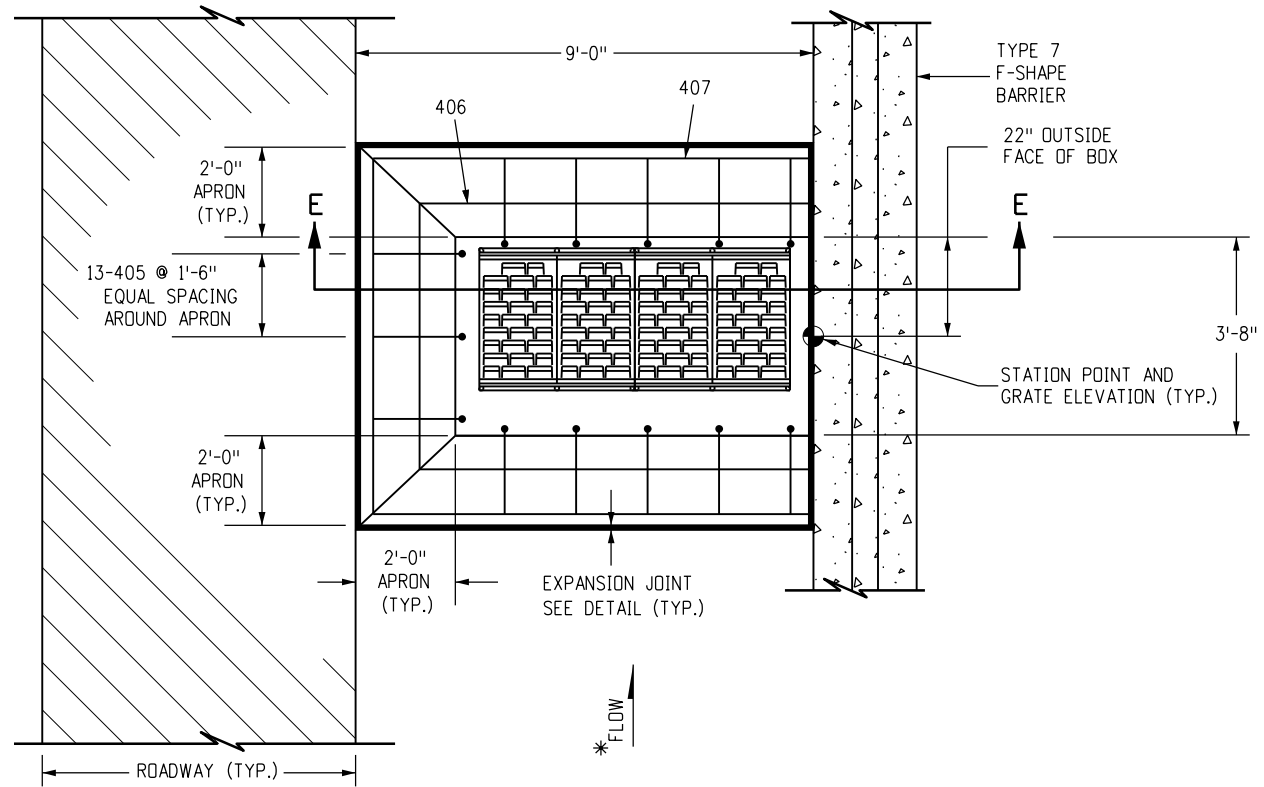
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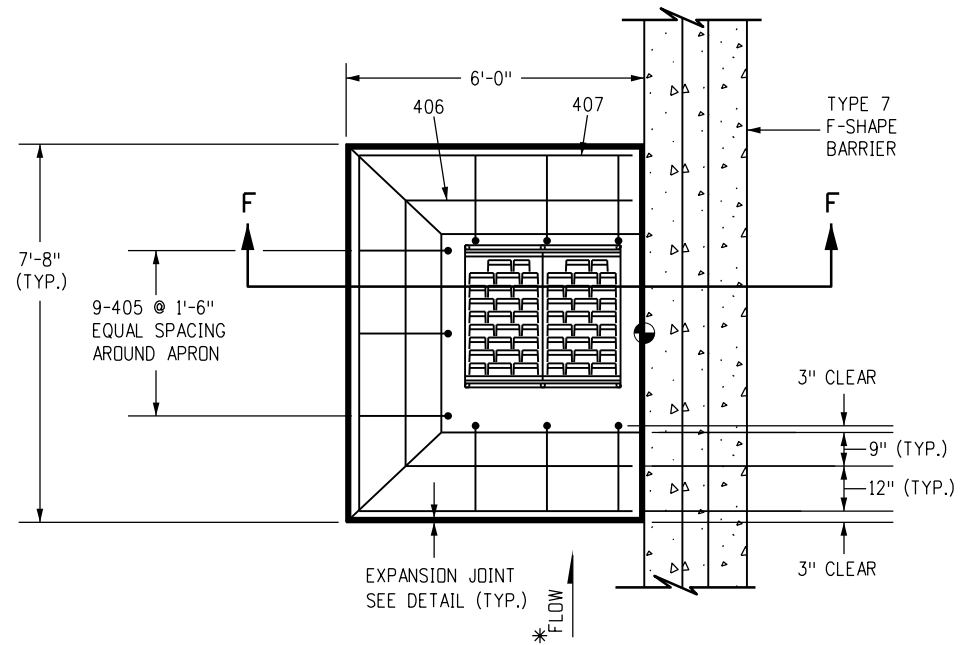
M-604-25

Standard Sheet No. 4 of 5

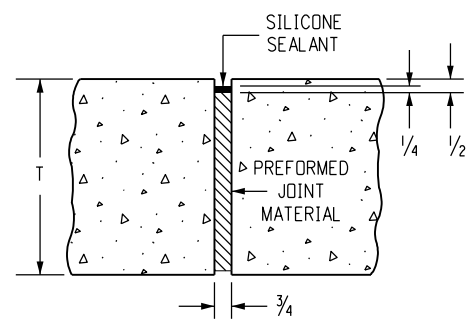
Project Sheet Number:



CONCRETE APRON FOR 72 IN. INLET



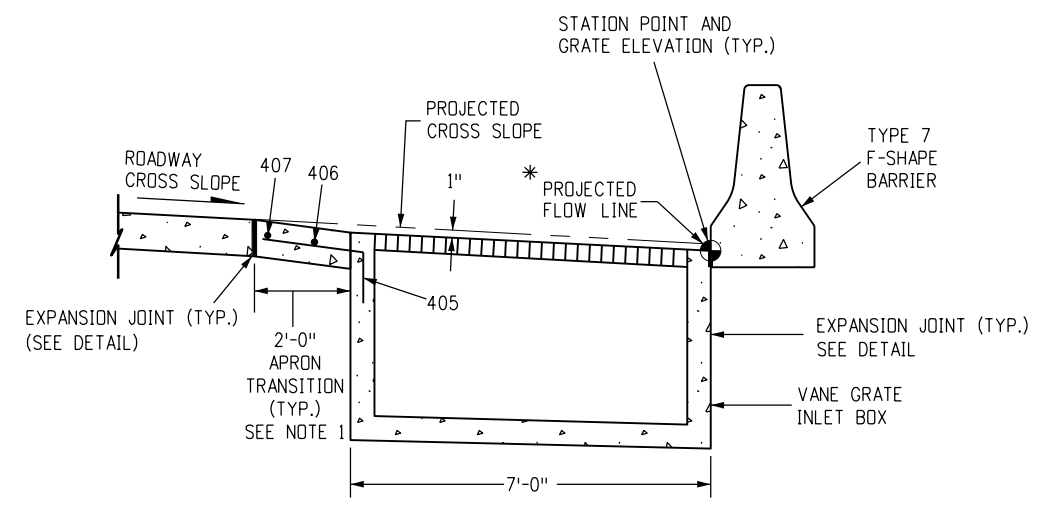
CONCRETE APRON FOR 36 IN. INLET



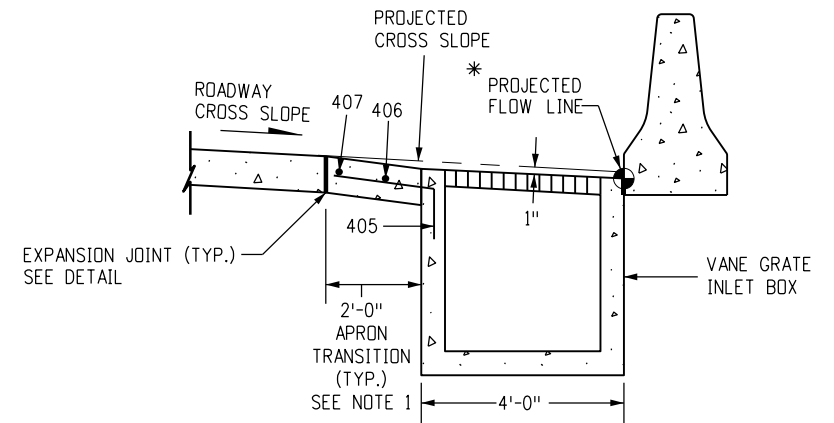
EXPANSION JOINT (TYP.)

NOTES

1. A 2 FT. CONCRETE TRANSITION APRON SHALL BE CONSTRUCTED AS SHOWN AND SHALL BE KEYED INTO THE INLET.
 2. CONCRETE APRON SHALL BE THE SAME THICKNESS AND TYPE AS THE SURROUNDING CONCRETE.
 3. THE COST OF THE CONCRETE APRON SHALL BE INCLUDED THE COST OF THE INLET.
- * IF THE INLET IS OFFSET FROM THE BARRIER, SLOPE THE APRON ADJACENT TO THE BARRIER TO DIRECT FLOW TOWARD THE GRATE.



SECTION E-E



SECTION F-F

Computer File Information	
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Sheet Revisions	
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VANE GRATE INLET
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STANDARD PLAN NO. M-604-25
Standard Sheet No. 5 of 5
 Project Sheet Number: