

**REFERENCES**

NATIONAL DOCUMENTS

SCDOT DOCUMENTS  
QPL14

RELATED DRAWINGS & KEYWORDS  
OCEW = ON CENTER EACH WAY

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**SOUTH CAROLINA**  
REGISTERED PROFESSIONAL ENGINEER  
NO. 21242  
**JAMES W. KENDALL, JR.**

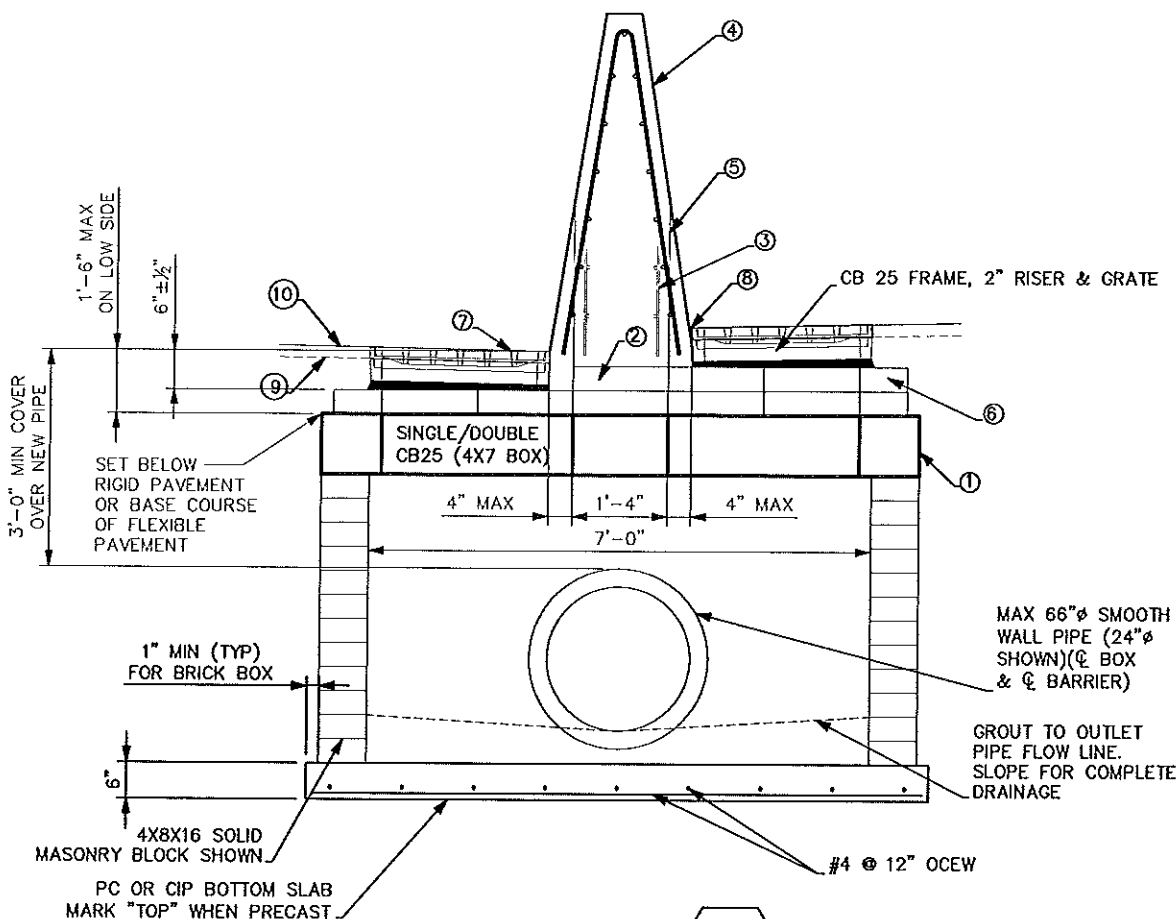
*James W. Kendall, Jr.*  
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7-31-2015  
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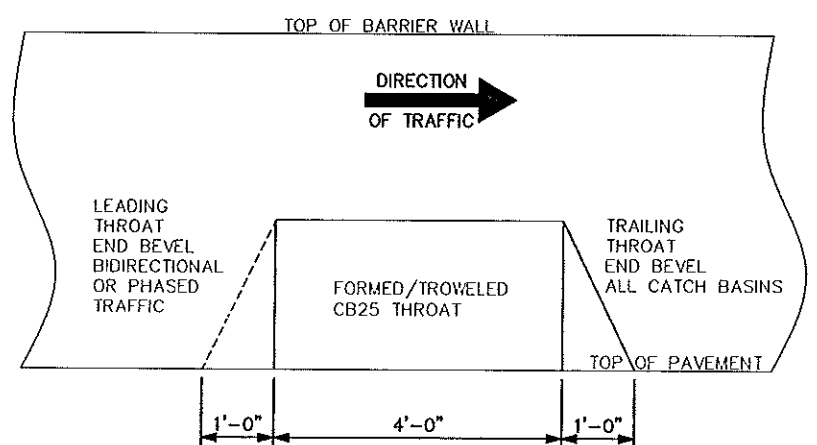
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION			
DESIGN STANDARDS OFFICE			
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ROOM 405			
COLUMBIA, SC 29201			

STANDARD DRAWING  
CATCH BASIN  
TYPE 25  
SINGLE & DOUBLE

719-025-01  
EFFECTIVE LETTING DATE | JAN., 2016



**DETAIL 1**  
SCALE: 3/8" = 1'-0"  
CB25 DOUBLE W/ 4X7 BOX  
OMIT ONE HOLE AND CASTING  
FOR CB25 SINGLE W/ 4X7 BOX



**DETAIL 3**  
SCALE: 3/8" = 1'-0"  
FRONT & SIDE  
VIEW OF CB25 THROAT &  
END BEVELS

**NOTES**  
1.1 SEE SHEET 719-000-XX FOR GENERAL NOTES.  
1.2 WORK ALL APPROPRIATE SHEETS TOGETHER.  
1.3 SEE QUALIFIED PRODUCT LIST 14 FOR PRECAST COMPONENTS  
1.4 CONSTRUCT 4X7 BOX USING BRICK MASONRY WALLS UNTIL STANDARD PRECAST BOX IS AVAILABLE.

**PAY ITEMS:**  
71902527 CATCH BASIN TYPE 25 DOUBLE 4'X7' BOX \_\_\_\_\_EA  
71902517 CATCH BASIN TYPE 25 SINGLE 4'X7' BOX \_\_\_\_\_EA  
71902515 CATCH BASIN TYPE 25 SINGLE 4'X5' BOX \_\_\_\_\_EA  
GRAVITY WALL PAY ITEM (WHEN ADJACENT TO GRADE SEPARATION BETWEEN 20" AND 72"):  
719025W5 CATCH BASIN TYPE 25 GRAVITY WALL SINGLE 4'X5' BOX \_\_\_\_\_EA

**ASSEMBLY NOTES (INSTALL FLEXIBLE PAVEMENT BEFORE BARRIER):**  
(SEE WEBSITE FOR VIDEO GUIDE)

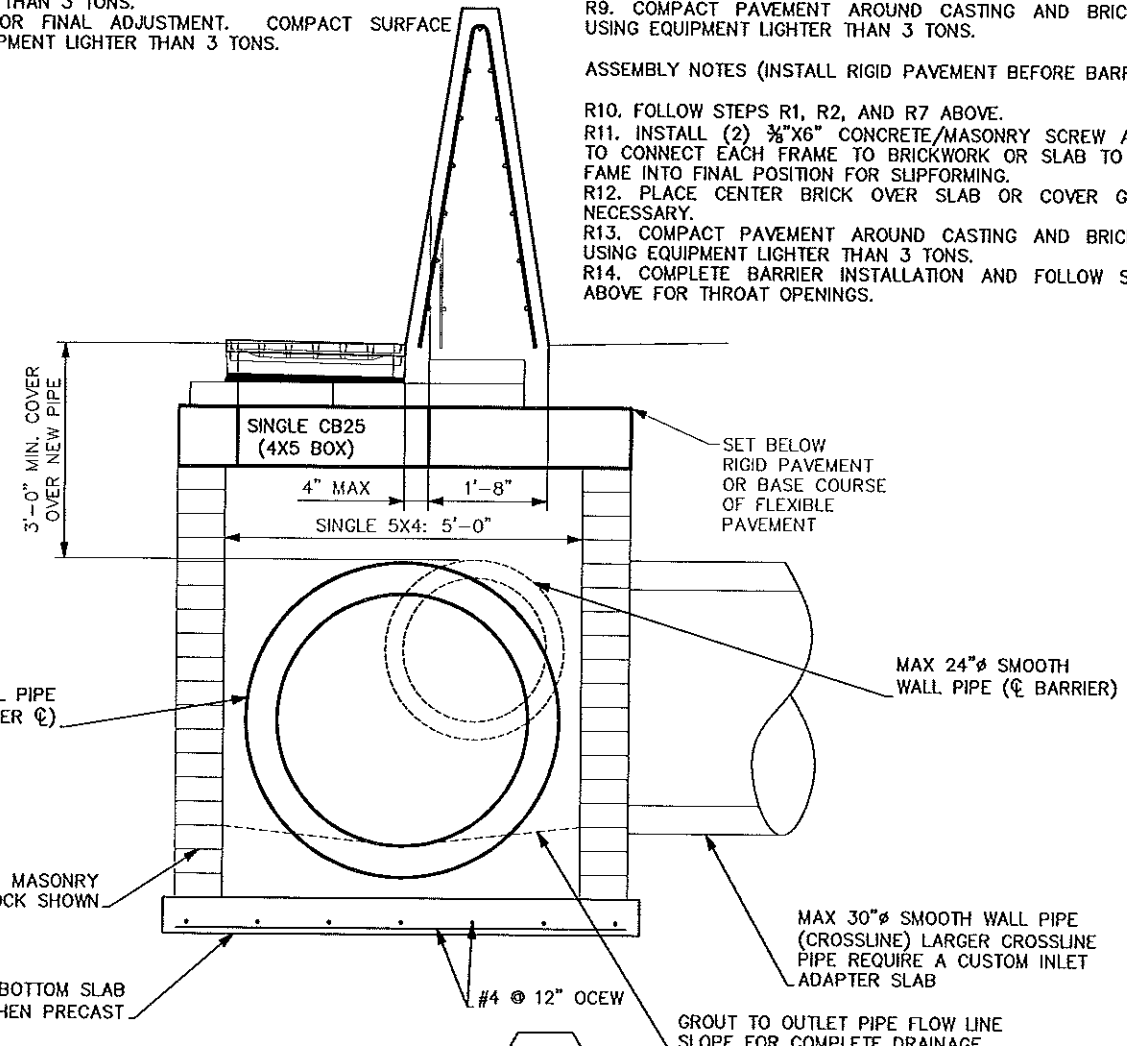
- F1. INSTALL BOX AND INLET ADAPTER SLAB (SET TOP OF SLAB BELOW BASE COURSE).
- F2. SET THROAT ALIGNMENT BRICKS IN LINE WITH EDGE OF HOLE.
- F3. BEND BARRIER REBAR CAGE AT CB25 THROAT OPENINGS PRIOR TO SLIPFORMING.
- F4. SLIP FORM BARRIER WALL ACROSS CATCH BASIN.
- F5. FORM OR HAND TROWEL THROAT OPENINGS AT CATCH BASINS PRIOR TO CONCRETE CURING.
- F6. WHERE REQUIRED, CONSTRUCT GRADE SEPERATION ADJUSTMENTS (MAX 20") WITH BRICK. FOR GRADE SEPARATIONS MORE THAN 20" CONSTRUCT SINGLE CATCH BASIN 25 AND PIPE SYSTEM ON ALTERNATE SIDES OF THE BARRIER.
- F7. SET CATCH BASIN FRAME & GRATE AT TOP OF INTERMEDIATE COURSE. GROUT OR SHIM AS NEEDED TO MATCH FINISH GRADE. REMOVE ALL AIR POCKETS IN GROUT TO PROVIDE FULL SUPPORT UNDER FOOT OF CASTING. SEAL ALL EDGES.
- F8. FILL GAPS BETWEEN BRICKWORK/ BARRIER AND CASTING/BARRIER WITH NON-SHRINK GROUT TO SEAL ALL EDGES.
- F9. COMPACT PAVEMENT AROUND CASTING AND BRICK WORK USING EQUIPMENT LIGHTER THAN 3 TONS.
- F10. ADD RISER FOR FINAL ADJUSTMENT. COMPACT SURFACE COURSE USING EQUIPMENT LIGHTER THAN 3 TONS.

**ASSEMBLY NOTES (INSTALL BARRIER BEFORE RIGID PAVEMENT):**  
(SEE WEBSITE FOR VIDEO GUIDE)

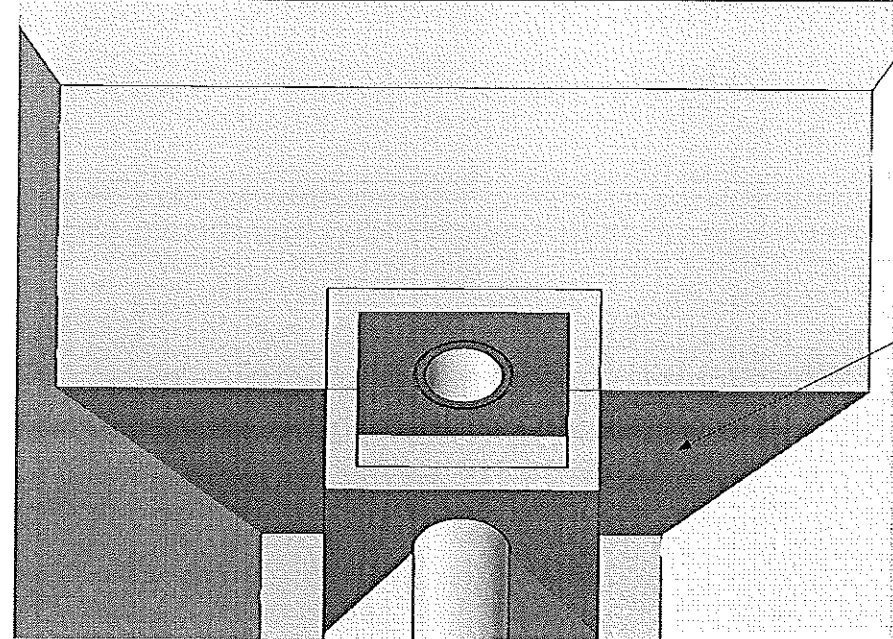
- R1. INSTALL BOX AND INLET ADAPTER SLAB (SET TOP OF SLAB BELOW RIGID PAVEMENT AND WRAP WITH BOND BREAKER).
- R2. SET THROAT ALIGNMENT BRICKS IN LINE WITH EDGE OF HOLE.
- R3. IF INSTALLING BARRIER BEFORE PAVEMENT, BEND BARRIER REBAR CAGE AT CB25 THROAT OPENINGS PRIOR TO SLIPFORMING.
- R4. SLIP FORM BARRIER WALL ACROSS CATCH BASIN.
- R5. FORM OR HAND TROWEL THROAT OPENINGS AT CATCH BASINS PRIOR TO CONCRETE CURING.
- R6. WHERE REQUIRED, CONSTRUCT GRADE SEPERATION ADJUSTMENTS (MAX 20") WITH BRICK. FOR GRADE SEPARATIONS MORE THAN 20" CONSTRUCT SINGLE CATCH BASIN 25 AND PIPE SYSTEM ON ALTERNATE SIDES OF THE BARRIER.
- R7. SET CATCH BASIN FRAME, GRATE, & 2" RISER AT TOP OF TOP OF RIGID PAVEMENT. GROUT OR SHIM AS NEEDED TO MATCH FINISH GRADE. REMOVE ALL AIR POCKETS IN GROUT TO PROVIDE FULL SUPPORT UNDER FOOT OF CASTING. SEAL ALL EDGES.
- R8. FILL GAPS BETWEEN BRICKWORK/ BARRIER AND CASTING/BARRIER WITH NON-SHRINK GROUT TO SEAL ALL EDGES.
- R9. COMPACT PAVEMENT AROUND CASTING AND BRICK WORK USING EQUIPMENT LIGHTER THAN 3 TONS.

**ASSEMBLY NOTES (INSTALL RIGID PAVEMENT BEFORE BARRIER):**

- R10. FOLLOW STEPS R1, R2, AND R7 ABOVE.
- R11. INSTALL (2) 3/8"x6" CONCRETE/MASONRY SCREW ANCHORS TO CONNECT EACH FRAME TO BRICKWORK OR SLAB TO SECURE FRAME INTO FINAL POSITION FOR SLIPFORMING.
- R12. PLACE CENTER BRICK OVER SLAB OR COVER GAPS AS NECESSARY.
- R13. COMPACT PAVEMENT AROUND CASTING AND BRICK WORK USING EQUIPMENT LIGHTER THAN 3 TONS.
- R14. COMPLETE BARRIER INSTALLATION AND FOLLOW STEP R5 ABOVE FOR THROAT OPENINGS.



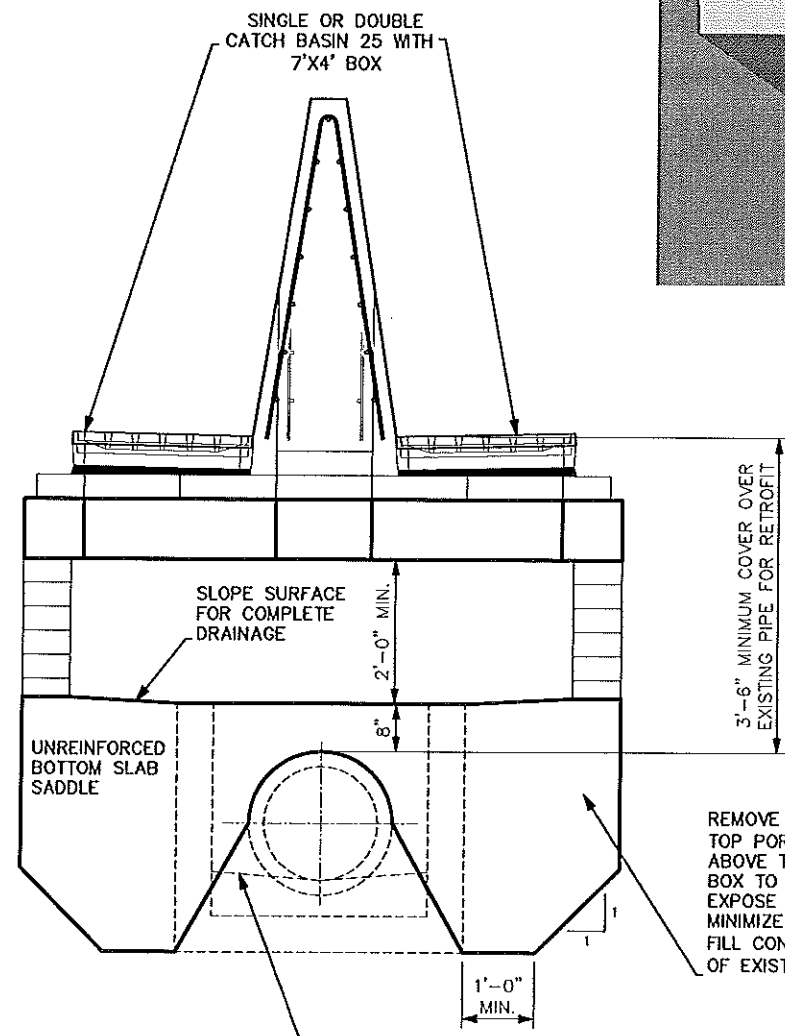
**DETAIL 2**  
SCALE: 3/8" = 1'-0"  
CB25 SINGLE W/ 4X5 BOX  
(NOTE LARGER PIPE ARE  
NO LONGER CENTERED ON BARRIER -  
USE DETAIL 1 IF CENTERING IS REQUIRED)



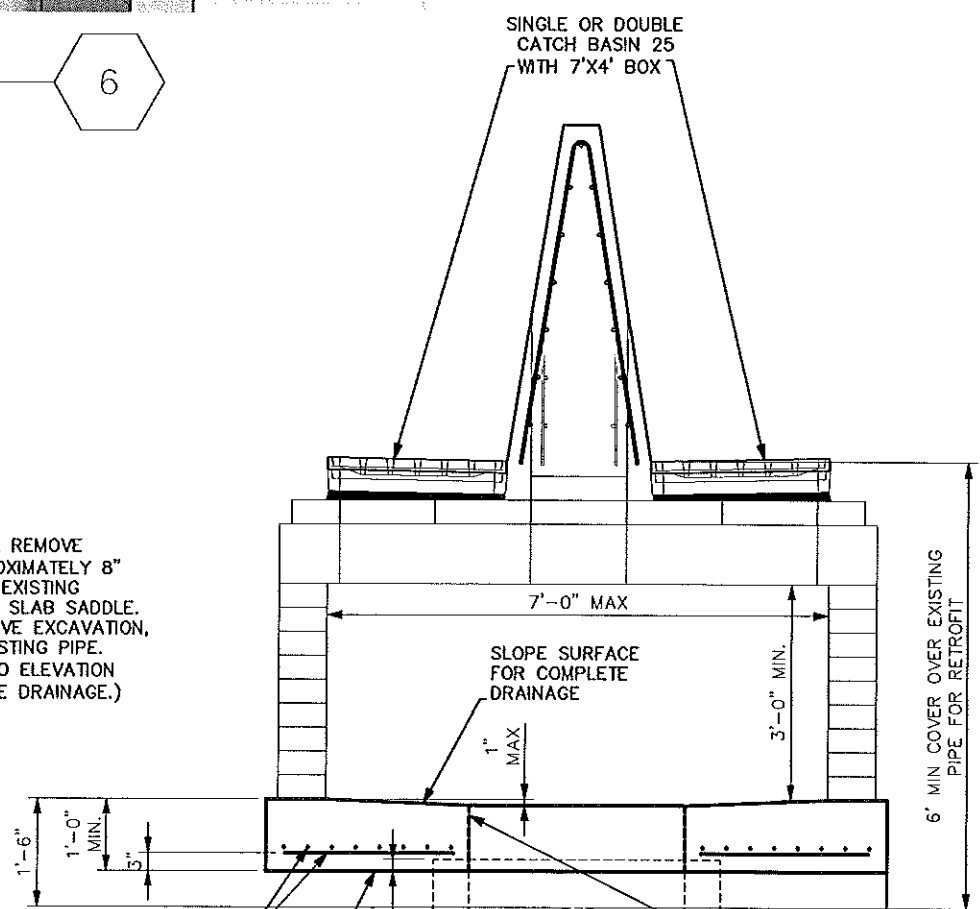
NOTES:  
 1. SEE 719-000-01 FOR GENERAL NOTES.  
 2. SEE 805-BXX-XX FOR MEDIAN BARRIER WALL NOTES.

PAY ITEMS:  
 7190251R CATCH BASIN TYPE 25 SINGLE RETROFIT \_\_\_\_\_ EA  
 7190252R CATCH BASIN TYPE 25 DOUBLE RETROFIT \_\_\_\_\_ EA

BOTTOM SLAB SADDLE  
 DETAIL 4  
 1/2 OF SADDLE SHOWN FOR CLARITY  
 (SEE WEBSITE FOR VIDEO GUIDE)



DETAIL 6  
 NO SCALE  
 ISOMETRIC OF  
 SLAB SADDLE



REMOVE EXISTING INLET. WHERE PRACTICAL REMOVE TOP PORTIONS OF EXISTING BOX TO APPROXIMATELY 8" ABOVE TOP OF PIPE. EXCAVATE AROUND EXISTING BOX TO ALLOW CONSTRUCTION OF BOTTOM SLAB SADDLE. EXPOSE PIPE WHERE NECESSARY TO ACHIEVE EXCAVATION. MINIMIZE DISTURBANCE TO SOIL BELOW EXISTING PIPE. FILL CONCRETE (CLASS 2000 OR HIGHER) TO ELEVATION OF EXISTING BOX (TO FACILITATE COMPLETE DRAINAGE.)

INSPECT EXISTING BOX & PIPE, REPAIR OR REPLACE DAMAGE AS DIRECTED BY THE RESIDENT. GROUT INSIDE EXISTING BOX TO OUTLET PIPE FLOW LINE ELEVATION FOR COMPLETE DRAINAGE, AND TO UPGRADE PIPE CONNECTIONS AND DEBRIS SNAG ISSUES.

(DETAIL 3) BOTTOM SLAB SADDLE, MAY ALSO BE USED IN DEEPER INSTALLATIONS—INCREASE UPPER BOX HEIGHT WHERE PRACTICAL

CONSTRUCT BOTTOM SLAB TRANSITION ONLY WITH CAST IN PLACE CONCRETE TO ENSURE FULL SUPPORT ON ADJACENT SOIL AND TO SEAL TOP OF EXISTING BOX.

INSPECT EXISTING BOX & PIPE, REPAIR OR REPLACE DAMAGE AS DIRECTED BY THE RESIDENT. GROUT INSIDE TO OUTLET PIPE FLOW LINE ELEVATION SLOPE FOR COMPLETE DRAINAGE, AND TO UPGRADE PIPE CONNECTIONS AND DEBRIS SNAG ISSUES.

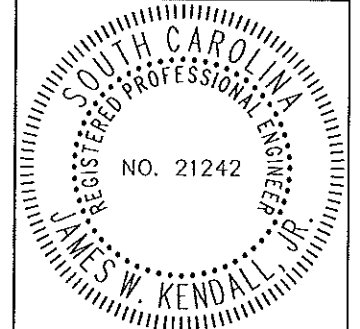
DETAIL 4  
 SCALE: 3/8" = 1'-0"  
 CB25S7R/CB25D7R  
 RETROFIT BOTTOM  
 SLAB SADDLE

DETAIL 5  
 SCALE: 3/8" = 1'-0"  
 CB25S7R/CB25D7R  
 RETROFIT ALTERNATE  
 BOTTOM SLAB TRANSITION

REFERENCES

NATIONAL DOCUMENTS
SCDOT DOCUMENTS
RELATED DRAWINGS & KEYWORDS

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 SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION  
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 955 PARK STREET  
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 COLUMBIA, SC 29201

STANDARD DRAWING

CATCH BASIN  
 TYPE 25  
 SINGLE OR DOUBLE  
 RETROFIT

719-025-02  
 EFFECTIVE LETTING DATE | JAN., 2016

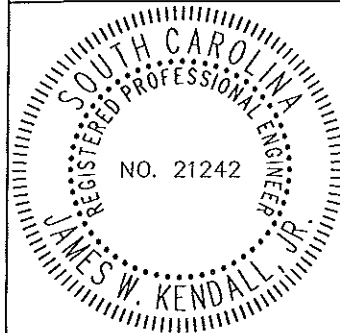
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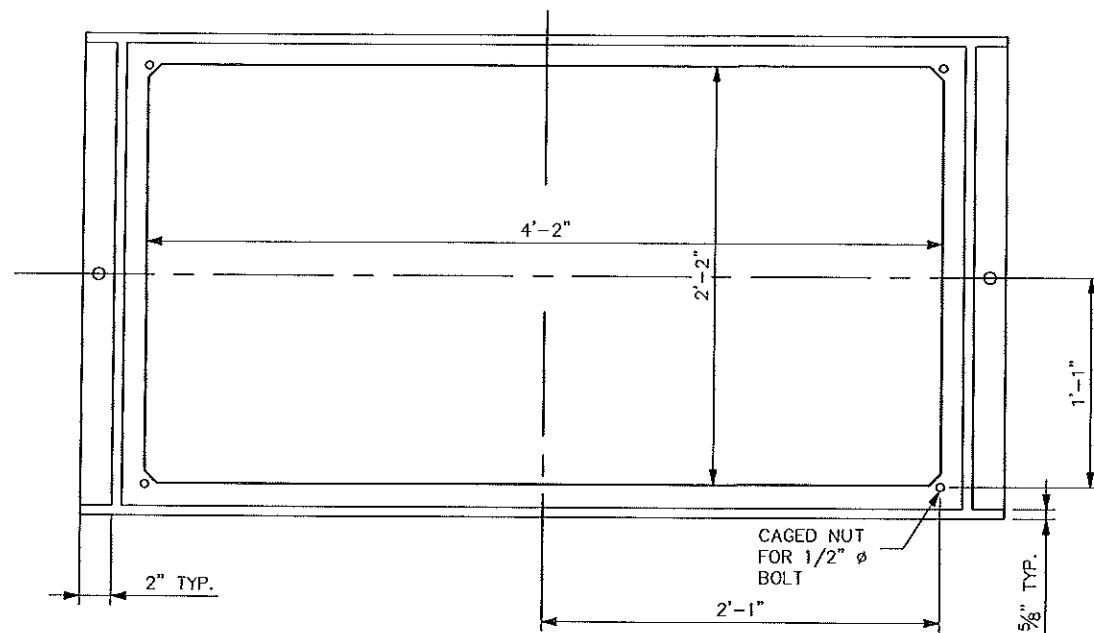
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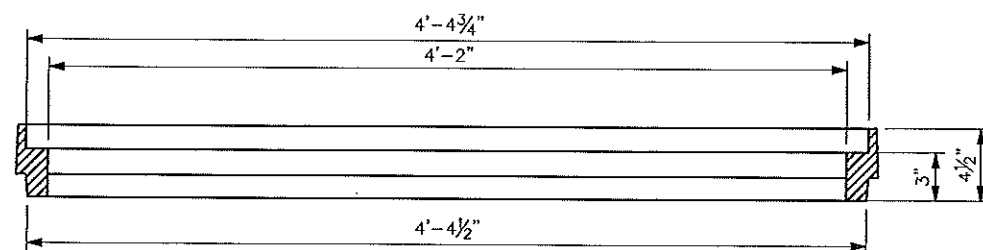
CATCH BASIN  
TYPE 25  
FRAME  
&  
RISERS

719-025-03

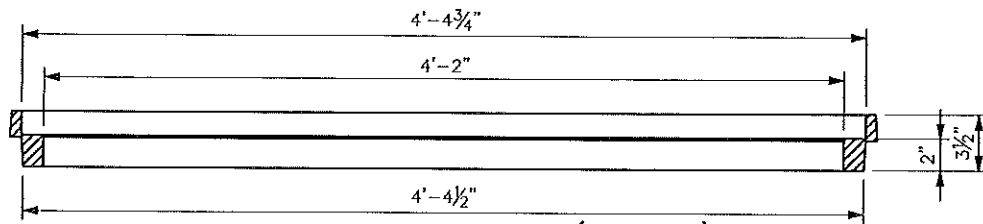
EFFECTIVE LETTING DATE | JAN, 2016



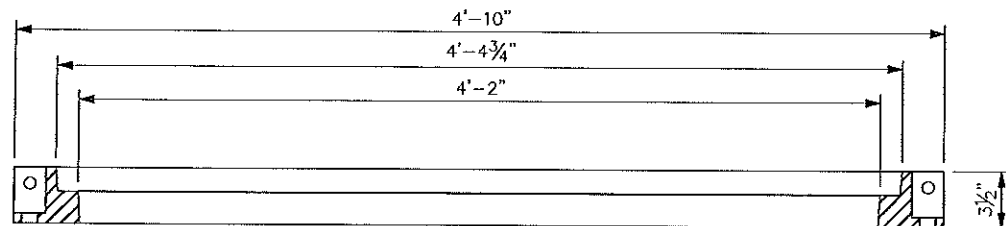
**DETAIL 7**  
1" = 1'-0"  
PLAN VIEW OF  
CB TYPE 25 FRAME



**3 INCH RISER (25R3)**

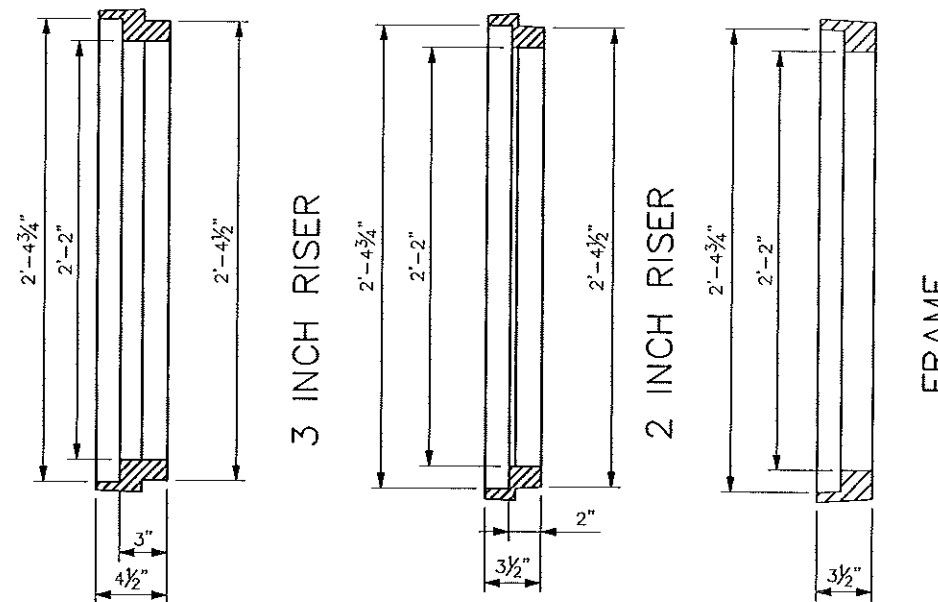


**2 INCH RISER (25R2)**



**FRAME (25F)**

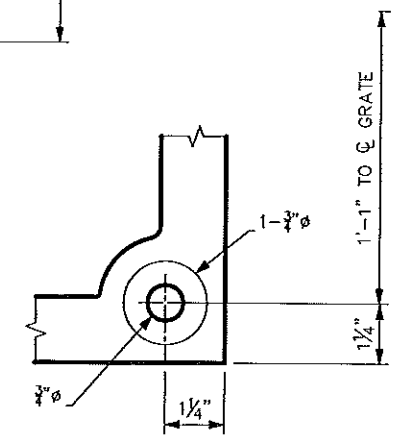
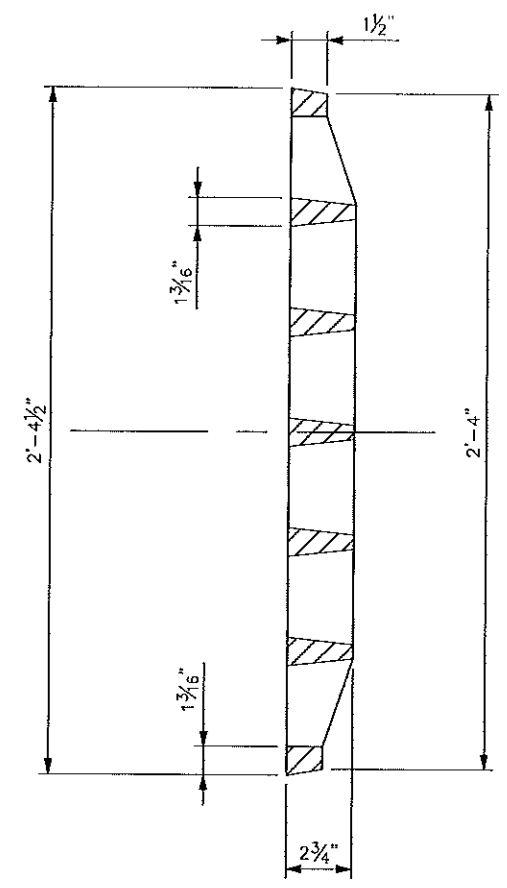
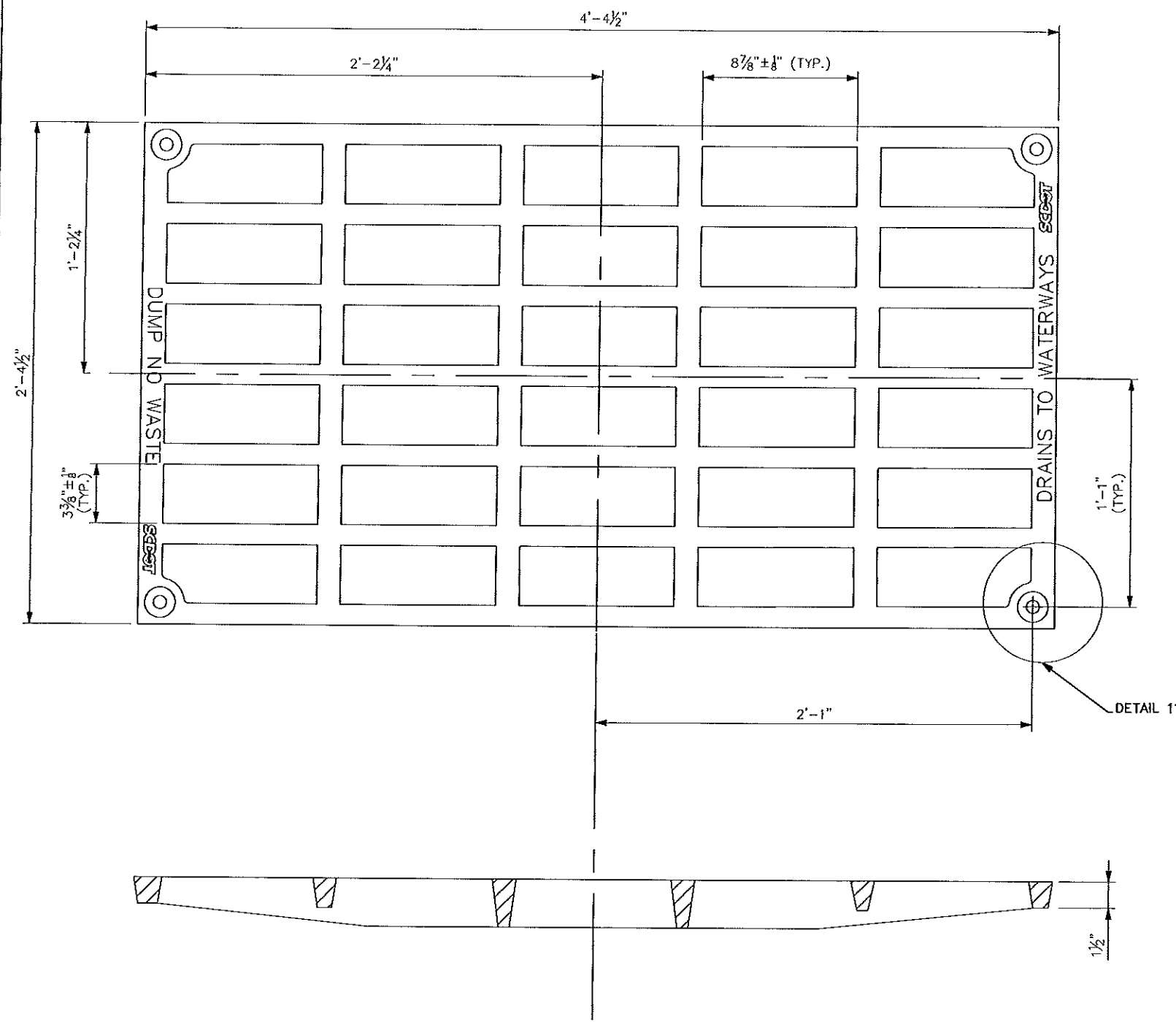
**DETAIL 9**  
1" = 1'-0"  
ELEVATION VIEW OF  
3 INCH, 2 INCH RISER  
AND FRAME



**DETAIL 8**  
1" = 1'-0"  
SIDE VIEW OF 2 INCH,  
3 INCH RISER  
AND FRAME

**NOTES:**

- FABRICATE FRAME (25F) AND SHORT RISERS (25R2 & 25R3) WITH GRAY CAST IRON(AASHTO M105 CLASS 35B).
- ADJUSTMENT HEIGHTS OF 4" (2 X 25R2), 5" (25R2 + 25R3), AND 6" (2 X 25R3) MAY BE USED ONLY WHEN LONGER LOCKING BOLT IS INSTALLED.
- CUSTOM ORDER AND FABRICATE STEEL RISERS WHERE ADJUSTMENTS GREATER THAN 6" BUT LESS THAN 15" ARE REQUIRED. STEEL RISERS MAY USE CAGED NUT OR AN ALTERNATIVE LOCK DOWN METHOD FOR RISER & GRATE.
- REMOVE FRAME AND BUILD UP BOX WHEN ADJUSTMENTS GREATER THAN 15" ARE REQUIRED. IN THIS CASE, CONSTRUCT BOX TO ACCOMMODATE FRAME, 2 INCH RISER, AND GRATE SHOWN NEW INSTALLATIONS.



DETAIL 11  
SCALE: 3" = 1'-0"  
BOLT HOLE IN  
GRATE PLAN VIEW

GRATE (25G1)

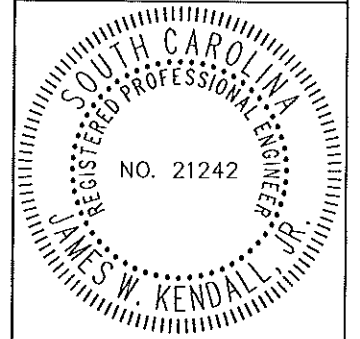
DETAIL 10  
SCALE: 1.5" = 1'-0"  
GRATE 25G1 PLAN, SIDE, &  
ELEVATION VIEW

- NOTES:
1. FABRICATE DUCTILE(ASTM A 536) OR GRAY(AASHTO M 105 CLASS 35B) IRON GRATE.
  2. HOLES ARE MINIMUM 3/4"Ø UNLESS SHOWN.
  3. HEAVY DUTY LOADING, EXCEED 40,000 LB PROOF LOAD AASHTO M306.

REFERENCES

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STANDARD DRAWING  
CATCH BASIN  
TYPE 25  
GRATE

719-025-04  
EFFECTIVE LETTING DATE | JAN, 2016

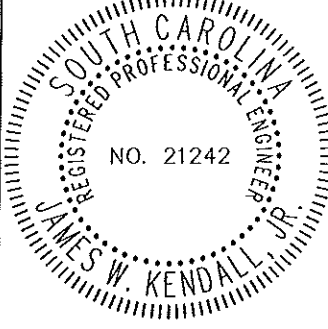
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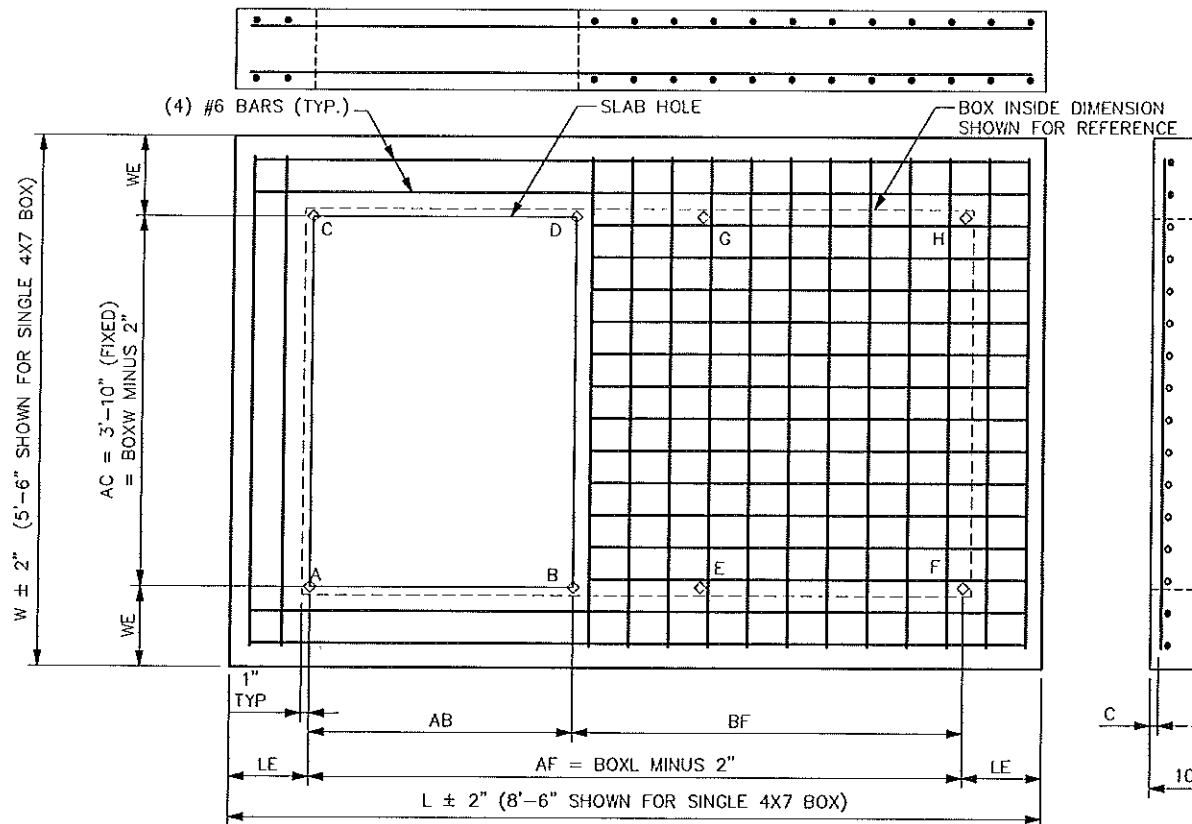
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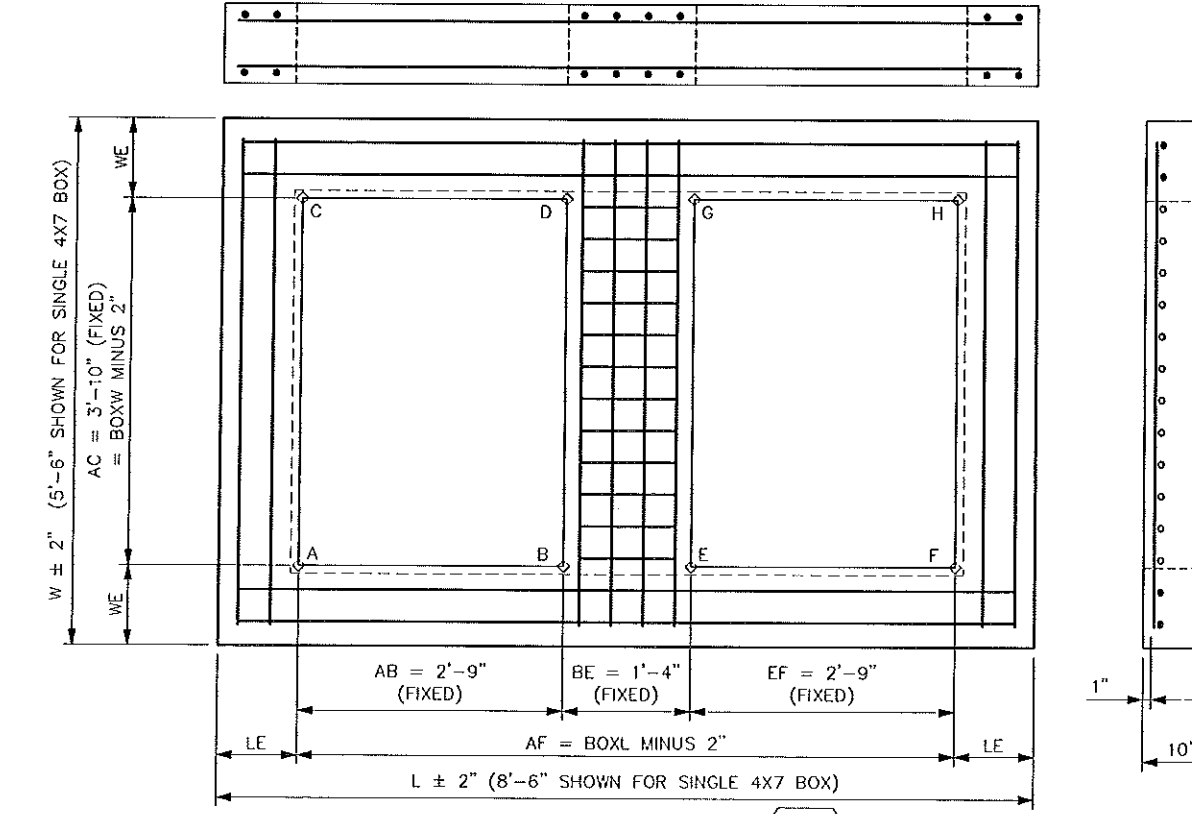


**STANDARD DRAWING**  
CATCH BASIN TYPE 25  
DOUBLE AND SINGLE  
&  
DROP INLET TYPE 125  
INLET ADAPTER SLABS

719-025-05  
EFFECTIVE LETTING DATE: JANUARY 2016



**DETAIL 12**  
1/2" = 1'-0"  
SINGLE CB25  
TOP SLAB  
(4X7 BOX SHOWN)



**DETAIL 13**  
1/2" = 1'-0"  
DOUBLE CB 25  
TOP SLAB

- NOTES:**
- 1.1 SEE SHEET 719-000-XX FOR GENERAL NOTES.
  - 1.2 WORK SHEETS 719-025-XX TOGETHER FOR CATCH BASIN 25.
  - 1.3 WORK SHEETS 719-125-XX TOGETHER FOR DROP INLET 125.
- 5 FABRICATION:**
- 5.1 USE CONCRETE CLASS 6000
  - 5.2 USE ASTM A 706 REINFORCEMENT
  - 5.3 PLACE #6 REINFORCEMENT BARS AT 6" OR LESS SPACING EACH WAY
  - 5.4 VARY BAR SPACING AND EDGE DISTANCE AS NEEDED TO FIT REINFORCEMENT AROUND HOLES.
  - 5.5 CLEAR COVER TO FACE OF SLAB: MINIMUM = 1", MAXIMUM = 1.25"
  - 5.6 EDGE DISTANCE (END OF BAR TO EDGE OF SLAB): MINIMUM = 1.75", MAXIMUM = 2.75"
  - 5.7 FABRICATE SLAB TO DIMENSIONS SHOWN IN TABLE 719-025A. FABRICATION TOLERANCE ON DIMENSIONS IS ± 1/8" UNLESS NOTED OTHERWISE IN TABLE.
  - 5.7 NOTE THAT HOLE AB AND EDGE LE ARE NARROWER FOR GRAVITY WALL CATCH BASIN AND DROP INLET SLAB.

**TABLE 719-025A INLET ADAPTER SLABS FOR CATCH BASIN 25 AND DROP INLET 125 VARIATIONS**

PAY ITEM	DESCRIPTION	AB	BF	BE	EF	LE +/- 1"	BOXL	L +/- 2"	WE +/- 1"	BOXW	W +/- 2"	C +/- 1/8"	WT
		IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
<b>STANDARD TRAFFIC BARRIER STYLE BOX (4" SLOT)</b>													
71902517	SINGLE CB25 4X7	33	49	NA	NA	9	84	100	9	48	66	1.125	4750
71902515	SINGLE CB25 4X5	33	25	NA	NA	9	60	76	9	48	66	1.125	3000
71902527	DOUBLE CB25 4X7	33	NA	16	33	9	84	100	9	48	66	1.125	3500
<b>GRAVITY RETAINING WALL STYLE BOX (3" SLOT, 4'X5' PRECAST SOLID WALL BOX (719-305-00) ONLY)</b>													
719025W5	WALL SINGLE CB25 4X5	32	28	NA	NA	6 +/- 1/4"	60	72	9	48	66	1.125	3000
<b>DROP INLET STYLE BOX (NO SLOT)</b>													
71912517	SINGLE DI125 4X7	28	54	NA	NA	9	84	100	9	48	66	1.125	4750
71912515	SINGLE DI125 4X5	28	30	NA	NA	9	60	76	9	48	66	1.125	3000