

*ONLY STANDARD SHEETS MARKED WITH AN "✓" ARE IN THIS PROJECT #

**REVISED OR ADDED

✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-506_01	ENDWALLS, SLOPE PAVED INLETS AND OUTLETS	1-26-12
	HW-506_02	TYPE "D-G" & "L" ENDWALLS	7-13-12
	HW-506_03	ENDWALLS FOR PIPE ARCH	9-18-09
	HW-507_01	TYPE "C", "C-L" & DROP INLET CATCH BASIN	7-24-13
	HW-507_02	TYPE "C", "C-L" & DOUBLE GRATE TYPE - I	7-24-13
	HW-507_03	TYPE "C", "C-L" & DOUBLE GRATE TYPE - II	7-24-13
	HW-507_04	TYPE "C", "C-L" & ROUND PRECAST CONCRETE CB	11-10-11
	HW-507_05	TYPE "C" & "C-L" PRECAST CONCRETE CB DOUBLE GRATE TYPE - I	11-10-11
	HW-507_06	TYPE "C" & "C-L" PRECAST CONCRETE CB DOUBLE GRATE TYPE - II	11-10-11
	HW-507_07	TYPE "C" & "C-L" CATCH BASIN TOPS AND CURBS	11-10-11
	HW-507_08	CATCH BASIN FRAMES AND GRATES	9-18-09
	HW-507_09	HEAVY DUTY LOCK DOWN TOPS	7-12-12
	HW-507_10	MANHOLE - FRAME & COVER	7-24-13
	HW-601_01	FIGURES FOR DATES ON BRIDGE PARAPETS	6-09-11
	HW-651_01	C.C.M. PIPE INSTALLATIONS IN FILL & ROCK SLOPES & PIPE TRENCH DETAIL	7-24-13
	HW-651_02	SLOTTED DRAIN PIPE 12"- 15"-18"-24"-30" (305-381-457-610-762)	7-12-12
	HW-652_01	PIPE ENDS	7-24-13
	HW-751_01	UNDERDRAINS AND UNDERDRAIN OUTLETS	7-12-12
	HW-803_01	PAVED DITCH AND PAVED APRON	7-12-12
	HW-811_01	CURBING	7-12-12
	HW-813_01	GRANITE STONE TRANSITION CURBING	7-24-13
	HW-821_01a	TRANSITION 45" (1145) F-SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 1	1-26-12
	HW-821_01b	TRANSITION 45" (1145) F-SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 2	10-18-10
	HW-821_01c	TRANSITION 45" (1145) F-SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 3	1-26-12
	HW-821_02a	45" (1145) F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 1	7-24-13
	HW-821_02b	45" (1145) F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 2	7-24-13
	HW-821_03a	TRANSITION - 32" (813) JERSEY SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 1	1-26-12
	HW-821_03b	TRANSITION - 32" (813) JERSEY SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 2	10-18-10
	HW-821_03c	TRANSITION - 32" (813) JERSEY SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 3	10-18-10
	HW-821_03d	TRANSITION - 32" (813) JERSEY SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 4	10-18-10
	HW-821_03e	TRANSITION - 32" (813) JERSEY SHAPE TO 45" (1145) F-SHAPE	7-24-13
	HW-821_04a	MERRITT PARKWAY NARROW MEDIAN BARRIER	6-09-11
	HW-821_04b	MERRITT PARKWAY - 2' (610) WIDE MEDIAN BARRIER AND ROADSIDE BARRIER	7-24-13

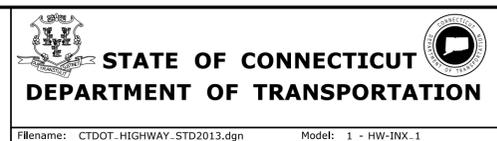
✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-821_05a	TRANSITION - 45" (1145) F-SHAPE TO 54" (1372) VERTICAL SHAPE SHEET 1	1-26-12
	HW-821_05b	TRANSITION - 45" (1145) F-SHAPE TO 54" (1372) VERTICAL SHAPE SHEET 2	1-26-12
	HW-821_06	54" (1372) VERTICAL SHAPE BARRIER	2-6-12
	HW-821_07	MISCELLANEOUS DETAILS FOR BARRIER TRANSITIONS	7-12-12
	HW-822_01	TEMPORARY PRECAST CONCRETE BARRIER CURB	7-24-13
	HW-905_01	FENCES AND BARWAYS	7-13-12
	HW-910_01	W- BEAM METAL BEAM RAIL HARDWARE	6-09-11
	HW-910_02	METAL BEAM RAIL (TYPE R-B 350) GUIDERAIL	6-09-11
	HW-910_03	METAL BEAM RAIL (TYPE MD-B 350)	6-09-11
	HW-910_04	METAL BEAM RAIL (TYPE R-B 350) SYSTEMS 5, 5A, & 6	6-09-11
	HW-910_05	METAL BEAM RAIL R-B 350 SPAN TYPE I, II, III SECTIONS	7-24-13
	HW-910_06	R-B 350 BRIDGE ATTACHMENT SAFETY SHAPE PARAPET	6-09-11
	HW-910_07	R-B 350 BRIDGE ATTACHMENT VERTICAL SHAPE PARAPET	6-09-11
	HW-910_08	R-B 350 BRIDGE ATTACHMENT TRAILING END	6-09-11
	HW-910_09a	MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 1	1-26-12
	HW-910_09b	MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 2	7-25-12
	HW-910_10	METAL BEAM RAIL 8" (203) X 6" (152) BOX BEAM	7-24-13
	HW-910_11	CURVED GUIDERAIL TREATMENT DETAIL	7-25-12
	HW-910_12a	MERRITT PARKWAY GUIDERAIL ATTACHMENT - SYSTEM 2 & 3	7-24-13
	HW-910_12b	MERRITT PARKWAY GUIDERAIL	7-24-13
	HW-910_12c	MERRITT PARKWAY GUIDERAIL TRAILING END ATTACHMENTS	7-24-13
	HW-910_12d	MERRITT PARKWAY MEDIAN GUIDERAIL AND END ANCHOR	6-09-11
	HW-910_13a	THRIE-BEAM METAL BEAM RAIL HARDWARE	7-24-13
	HW-910_13b	THRIE-BEAM TRANSITIONS	7-24-13
	HW-910_14a	THRIE-BEAM 350 BRIDGE ATTACHMENT	6-09-11
	HW-910_14b	THRIE-BEAM 350 GUIDERAIL TRANSITION TO R-B 350 GUIDERAIL	6-09-11
	HW-910_15	MD-B 350 MEDIAN BARRIER SAFETY SHAPE ATTACHMENT TYPE I	6-09-11
	HW-910_16	MD-B 350 MEDIAN BARRIER SAFETY SHAPE ATTACHMENT TYPE II	6-09-11
	HW-910_17	R-B TERMINAL SECTION	7-24-13
	HW-910_18	METAL BEAM RAIL (TYPE MD-I)	10-18-10
	HW-910_19a	METAL BEAM RAIL (MODIFIED TYPE R-I) AND END ANCHORAGE TYPE I	7-24-13
	HW-910_19b	METAL BEAM RAIL (MODIFIED TYPE R-I) AND END ANCHORAGE TYPE II	7-24-13
	HW-910_19c	METAL BEAM RAIL (MODIFIED TYPE R-I) SYSTEMS 2 AND 3	7-24-13

1	7-24-13	REVISED 23 SHEETS
REV. DATE		REVISION DESCRIPTION

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/25/2013

NOT TO SCALE

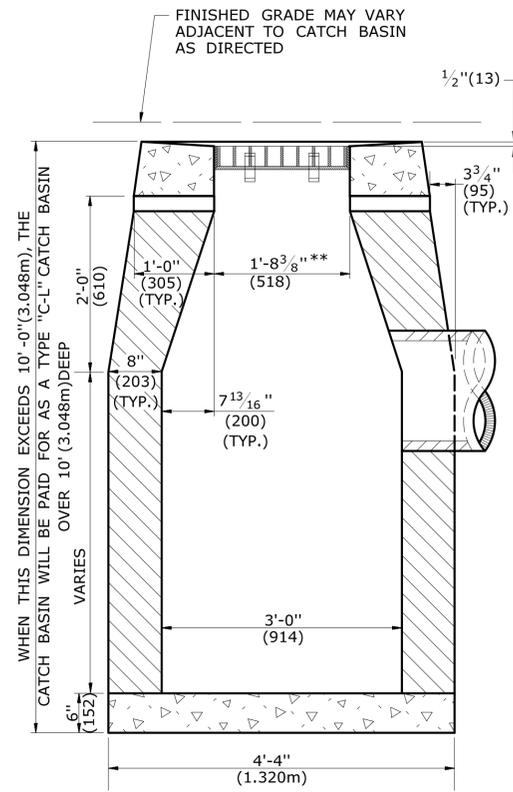


CTDOT
STANDARD SHEET

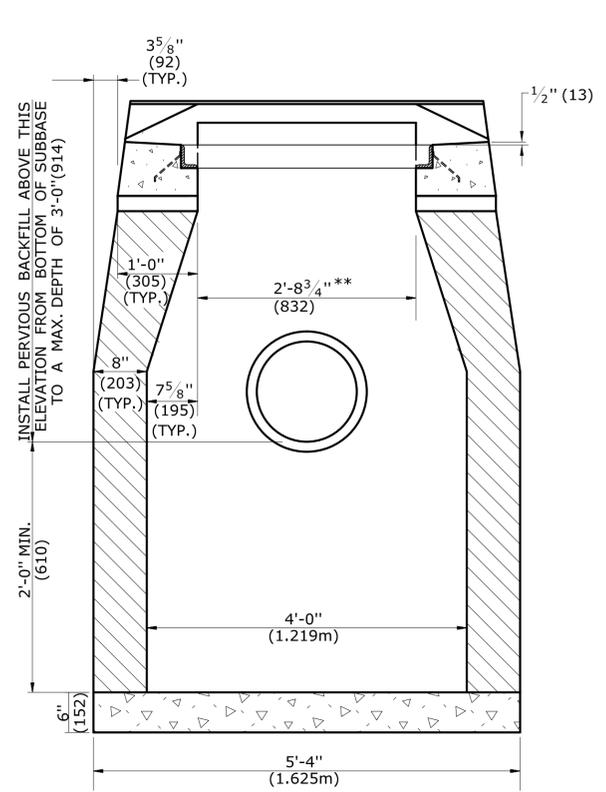
OFFICE OF ENGINEERING

STANDARD SHEET TITLE:
**HIGHWAY
STANDARD SHEET INDEX**

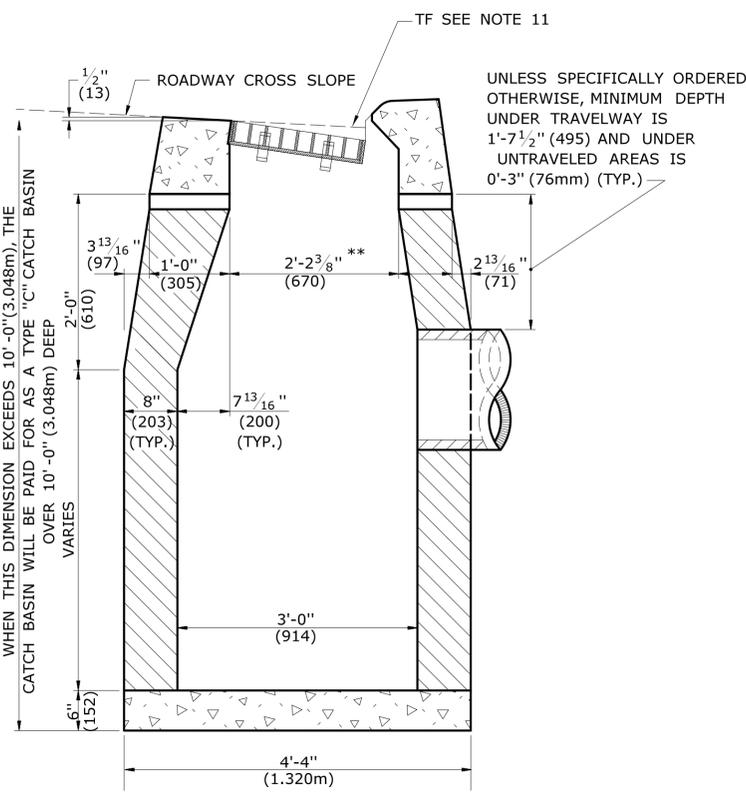
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**HW_INX
1 of 2**



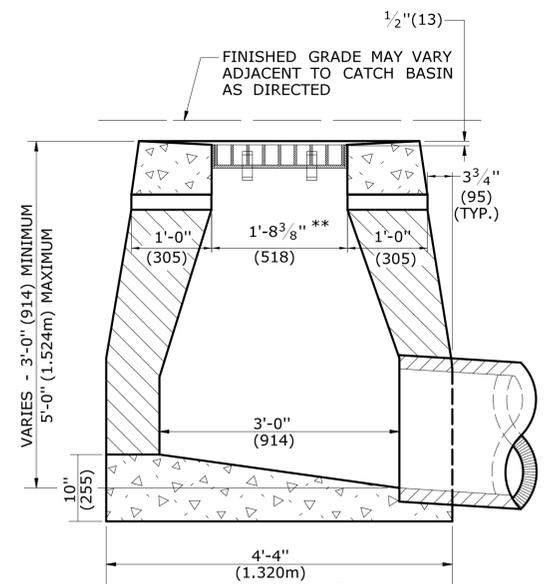
SECTION B
TYPE "C-L" CATCH BASIN



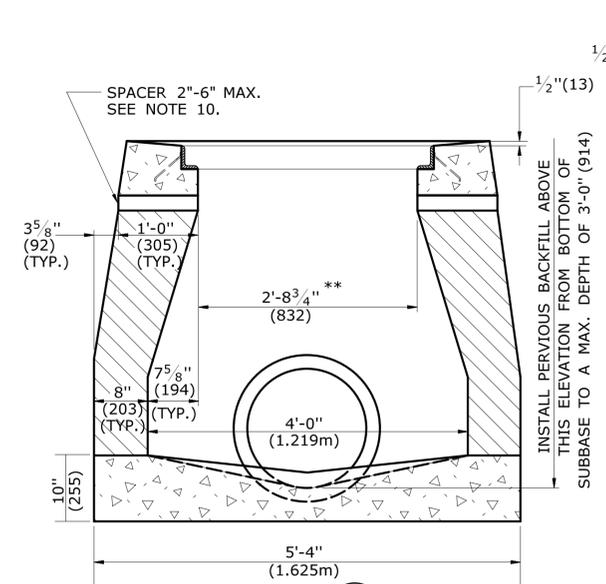
SECTION A
**TYPE "C" & "C-L" CATCH BASIN
(TYPE "C" TOP SHOWN)**



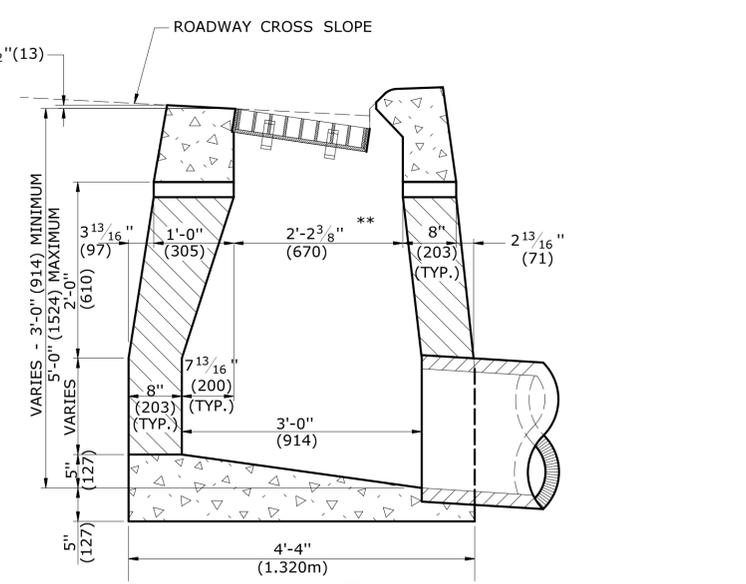
SECTION B
TYPE "C" CATCH BASIN



SECTION B
TYPE "C-L" DROP INLET



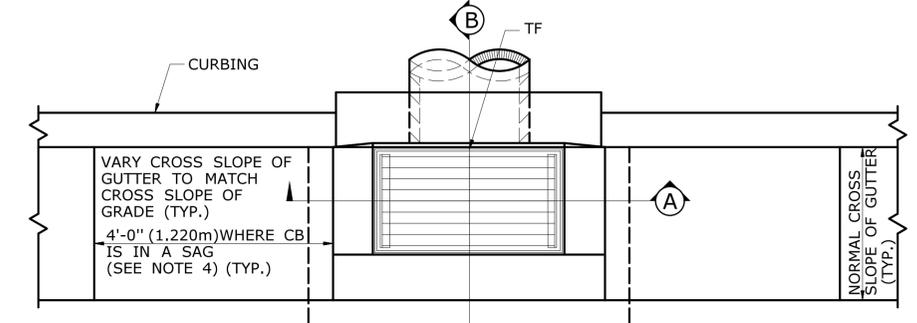
SECTION A
**TYPE "C" & "C-L" DROP INLET
(TYPE "C-L" TOP SHOWN)**



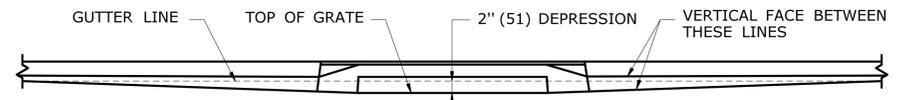
SECTION B
TYPE "C" DROP INLET

GENERAL NOTES:

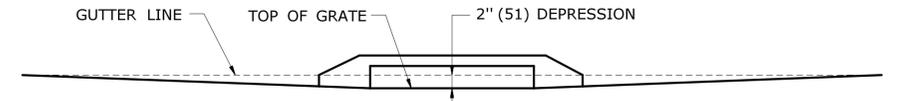
- FOR DETAILS OF FRAME AND GRATE SEE STANDARD SHEET HW-507-08.
- USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS. IF CURBING IS NOT SPECIFIED ON THE PLANS, IT SHALL BE CONSTRUCTED AS DIRECTED BY THE ENGINEER.
- ALL FACES OF STRUCTURES IN CONTACT WITH CONCRETE PAVEMENT SHALL BE COVERED WITH A LAYER OF TAR PAPER OR APPROVED EQUAL. THE COST FOR THE PAPER SHALL BE INCLUDED IN THE BID PRICE FOR THE TYPE OF CATCH BASIN INSTALLED.
- USE 6'-0" (1.830m) ON UPGRADE SIDE OF CONTINUOUS GRADE AND 1'-0" (305mm) ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED.
- IF MASONRY UNITS ARE REQUIRED, THE BASIN SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE OVER ALL DIMENSIONS SHOWN HERE AND SECTION 5.07 OF THE STATE OF CONNECTICUT'S STANDARD SPECIFICATIONS. CORBELLING SHALL BE PERMITTED TO A MAXIMUM OF 3" (75mm.) NO PROJECTION SHALL EXTEND INSIDE THE LIMITS NOTED BY **.
- WALL THICKNESS OF ALL CB'S OVER 10' (3.048m) DEEP SHALL BE INCREASED TO 12" (305mm) THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. 12" (305mm) THICKNESS WILL START AFTER THE FIRST 10' (3.048m).
- TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF THE PERVIOUS BACKFILL.
- MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F_c = 4000 PSI (27,580 kPa) SHALL BE OBTAINED PRIOR TO SHIPPING.
- LATEST STATE OF CONNECTICUT'S STANDARD SPECIFICATIONS AND SUPPLEMENTALS SHALL GOVERN.
- SPACER MAY BE CMU OR PRECAST WITH REQUIRED REINFORCING (RECOMMENDED BY THE MANUFACTURER) AS NEEDED TO PROVIDE PROPER GRADE SHOWN ON PLANS.
- TOP OF FRAME (TF) ELEVATION SHALL BE MEASURED IN THE CENTER OF GRATE @ GUTTER LINE.



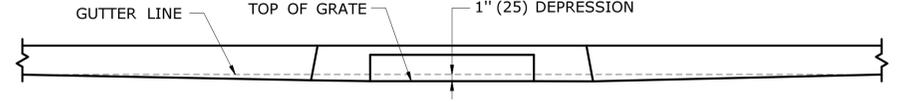
PLAN



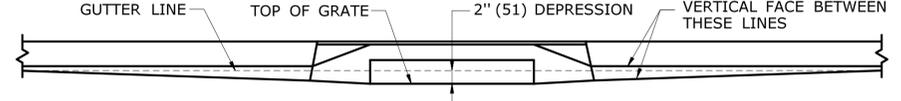
FOR CATCH BASINS IN A LINE OF 4" (102) CONCRETE PARK CURBING OR 4" (102) BITUMINOUS CONCRETE PARK CURBING



FOR CATCH BASINS WHERE NO CURBING OF ANY TYPE EXISTS OR IS PROPOSED



FOR CATCH BASINS IN A LINE OF 6" (152) CONCRETE CURBING OR 6" (152) STONE CURBING



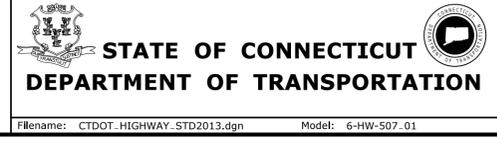
FOR CATCH BASINS IN A LINE OF 6" (152) BITUMINOUS CONCRETE LIP CURBING (MACHINE FORMED)

DETAILS OF DEPRESSED GUTTER STRIP FOR TYPE "C" CATCH BASIN

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

4	7/13	ADD NOTE 11	-
3	9/30/11	ADD SPACERS AND NOTE 10.	-
2	9/15/11	MODIFIED DETAILS TO BE CONSISTANT WITH PRECAST	-
1	7/28/11	REMOVE MIN. DROP NOTE	-
-	-	-	-
REV.	DATE	REVISION DESCRIPTION	Plotted Date: 6/10/2013

NOT TO SCALE

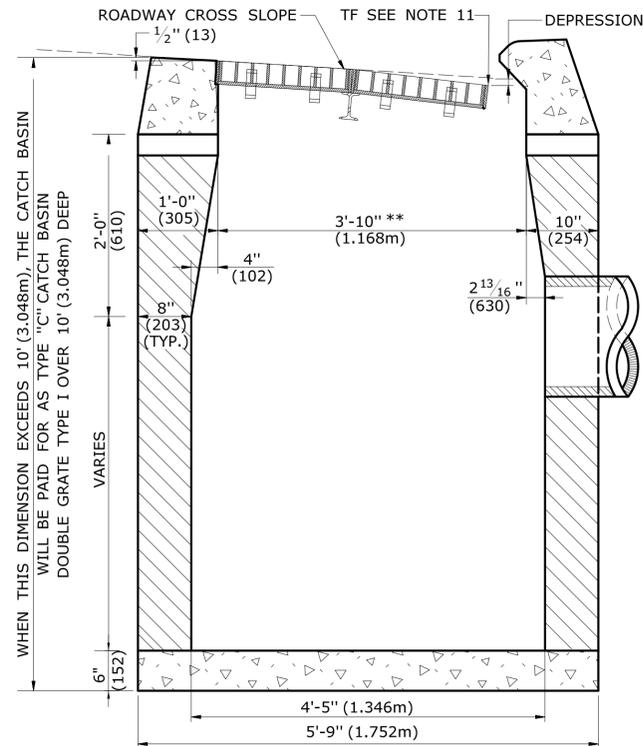


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APPROVED BY:	NAME/DATE/TIME:

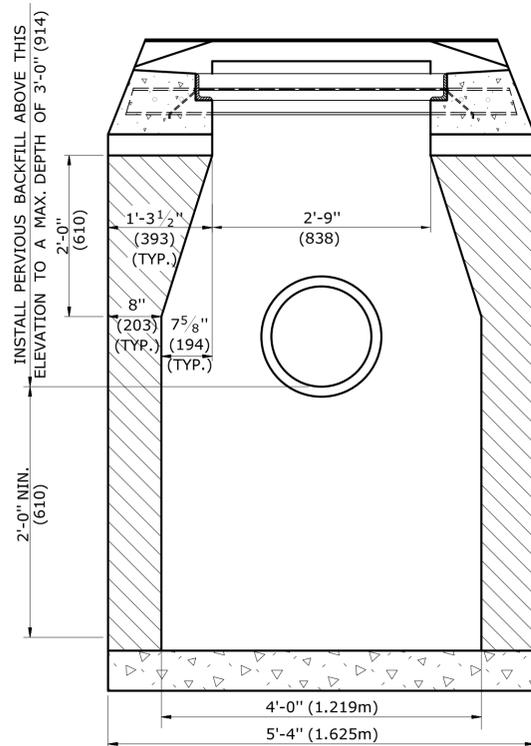
**CTDOT
STANDARD SHEET
OFFICE OF ENGINEERING**

STANDARD SHEET TITLE:
**TYPE "C", "C-L" &
DROP INLET CATCH BASIN**

STANDARD SHEET NO.:
HW-507_01



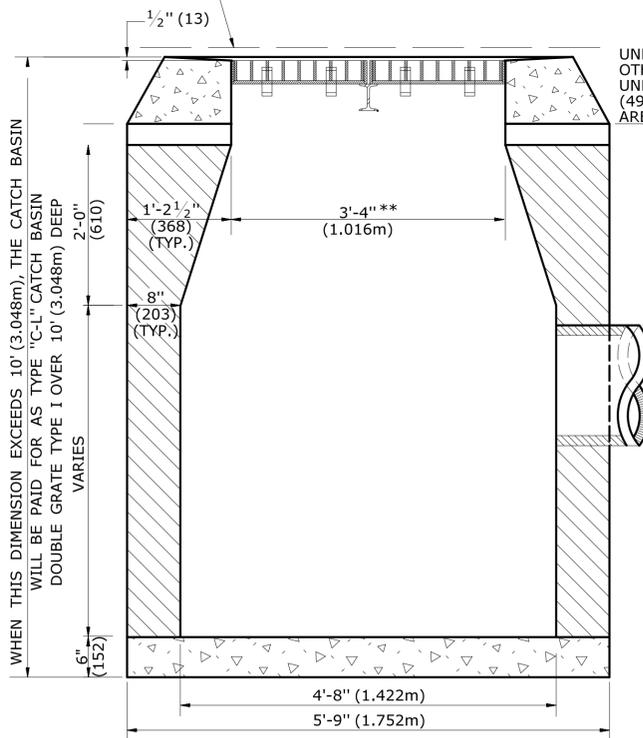
SECTION B



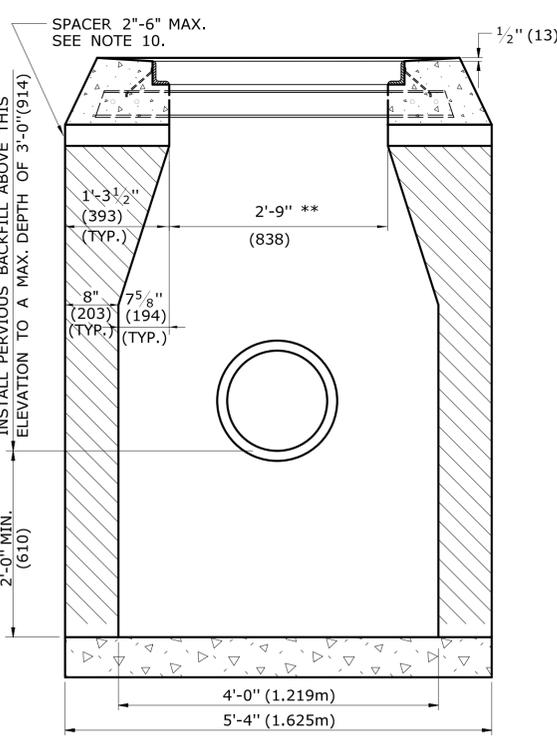
SECTION A

TYPE "C" CATCH BASIN DOUBLE GRATE - TYPE I

FINISHED GRADE MAY VARY ADJACENT TO CATCH BASIN AS DIRECTED



SECTION B

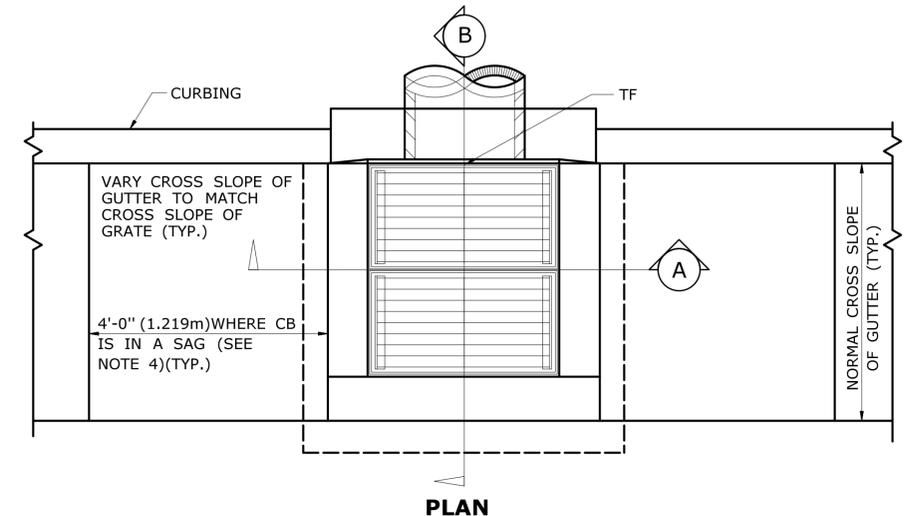


SECTION A

TYPE "C-L" CATCH BASIN DOUBLE GRATE - TYPE I

GENERAL NOTES:

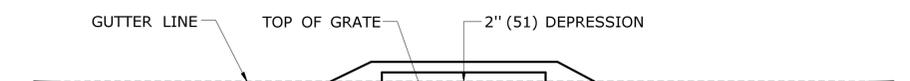
1. FOR DETAILS OF FRAME AND GRATE SEE STANDARD SHEET HW-507_08.
2. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS. IF CURBING IS NOT SPECIFIED ON THE PLANS, IT SHALL BE CONSTRUCTED AS DIRECTED BY THE ENGINEER.
3. ALL FACES OF STRUCTURES IN CONTACT WITH CONCRETE PAVEMENT SHALL BE COVERED WITH A LAYER OF TAR PAPER OR APPROVED EQUAL. THE COST FOR THE PAPER SHALL BE INCLUDED IN THE BID PRICE FOR THE TYPE OF CATCH BASIN INSTALLED.
4. USE 6'-0" (1.830m) ON UPGRADE SIDE OF CONTINUOUS GRADE AND 1'-0" (305) ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED.
5. IF MASONRY UNITS ARE REQUIRED, THE BASIN SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE OVER ALL DIMENSIONS SHOWN HERE AND SECTION 5.07 OF THE STATE OF CONNECTICUT'S STANDARD SPECIFICATIONS. CORBELLING SHALL BE PERMITTED TO A MAXIMUM OF 3" (75mm) . NO PROJECTION SHALL EXTEND INSIDE THE LIMITS NOTED BY **.
6. WALL THICKNESS OF ALL CB'S OVER 10' (3.048m) DEEP SHALL BE INCREASED TO 12" (305mm) THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" (305) THICKNESS WILL START AFTER THE FIRST 10' (3.048m)).
7. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF THE PERVIOUS BACKFILL.
8. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI (27,580 kPa) SHALL BE OBTAINED PRIOR TO SHIPPING.
9. LATEST STATE OF CONNECTICUT'S STANDARD SPECIFICATIONS AND SUPPLEMENTALS SHALL GOVERN.
10. SPACER MAY BE CMU OR PRECAST WITH REQUIRED REINFORCING (RECOMMENDED BY MANUFACTURER) AS NEEDED TO PROVIDE PROPER GRADE SHOWN ON PLANS.
11. TOP OF FRAME (FL) ELEVATION SHALL BE MEASURED IN THE CENTER OF THE GRATE @ GUTTER LINE.



PLAN



FOR CATCH BASINS IN A LINE OF 4" (102) (CONCRETE PARK CURBING OR 4" (102) BITUMINOUS CONCRETE PARK CURBING



FOR CATCH BASINS WHERE NO CURBING OF ANY TYPE EXISTS OR IS PROPOSED



FOR CATCH BASINS IN A LINE OF 6" (152) CONCRETE CURBING OR 6" (152) STONE CURBING



FOR CATCH BASINS IN A LINE OF 6" (152) BITUMINOUS CONCRETE LIP CURBING (MACHINE FORMED)

DETAILS OF DEPRESSED GUTTER STRIP FOR TYPE "C" CATCH BASIN

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
4	7/13	ADD NOTE 11
3	9/30/11	ADD SPACERS AND NOTE 10.
2	9/15/11	MODIFIED DETAILS TO BE CONSISTANT WITH PRECAST
1	7/28/11	REMOVE MIN. DROP NOTE

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Plotted Date: 3/21/2013

NOT TO SCALE

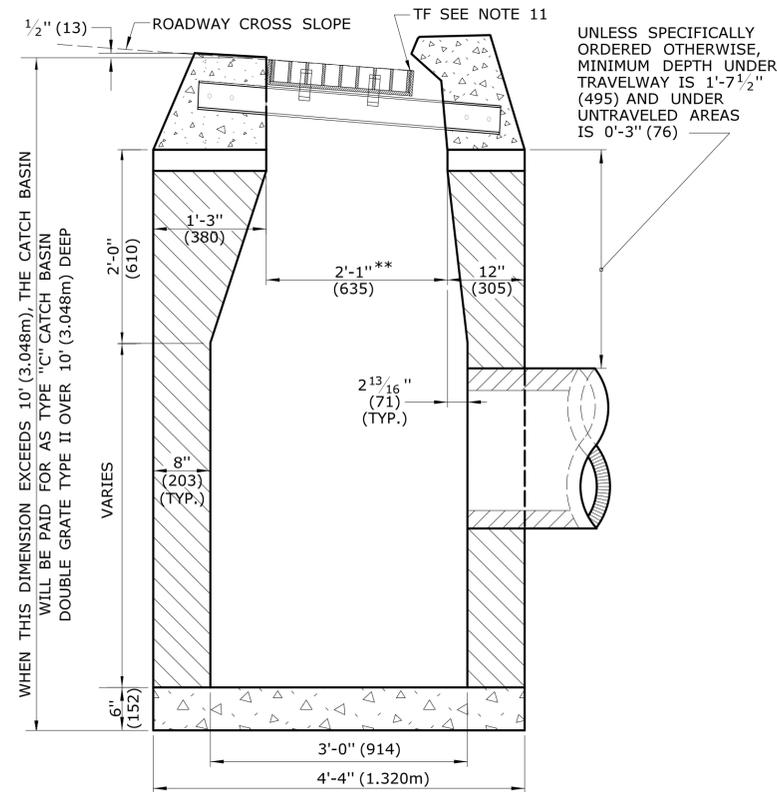


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APPROVED BY:	NAME/DATE/TIME:

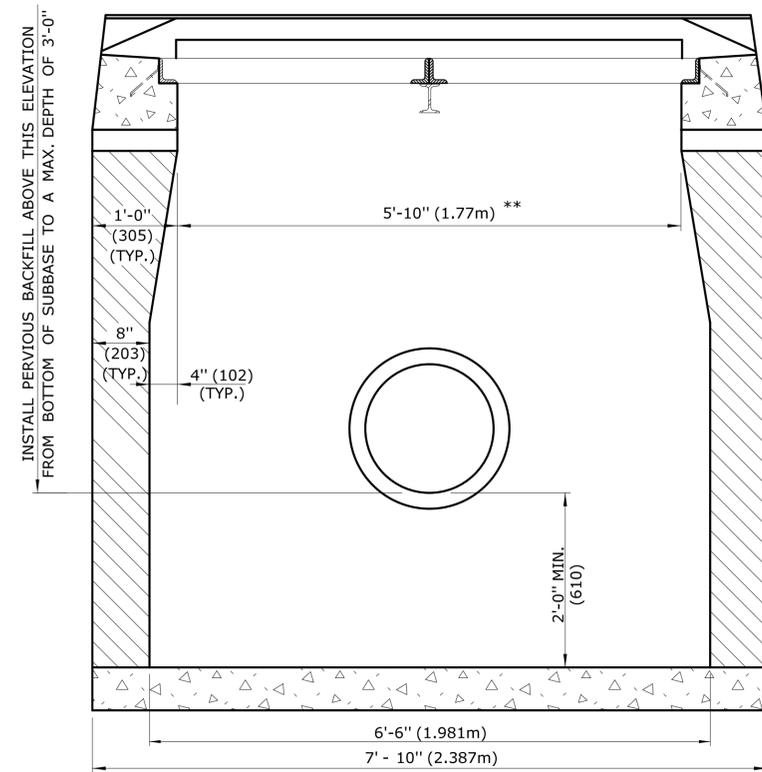
**CTDOT
STANDARD SHEET
OFFICE OF ENGINEERING**

STANDARD SHEET TITLE:
**TYPE "C" , "C-L" &
DOUBLE GRATE TYPE - I**

STANDARD SHEET NO.:
HW-507_02

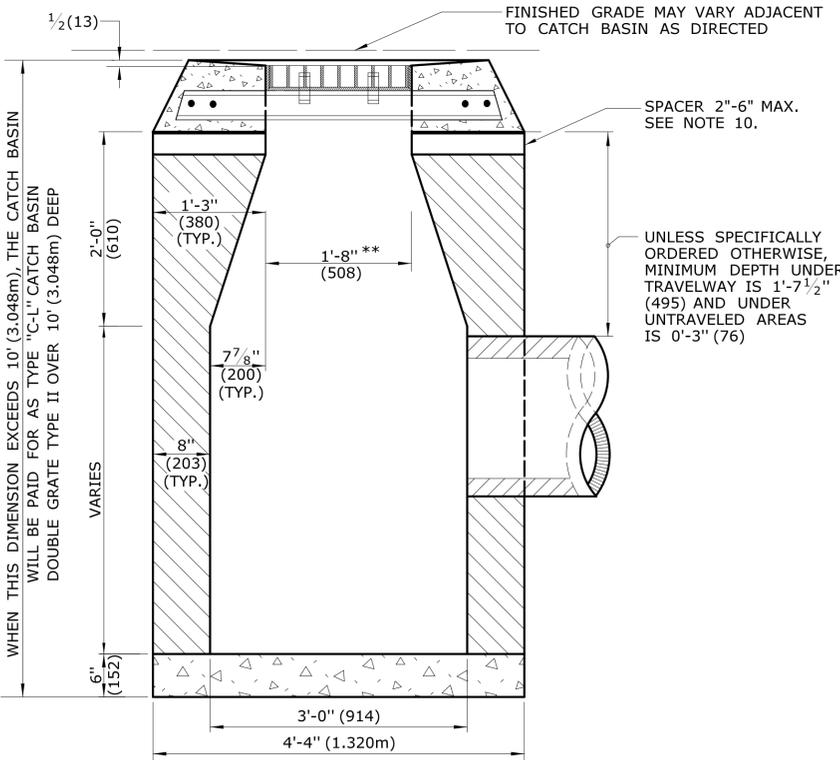


SECTION B

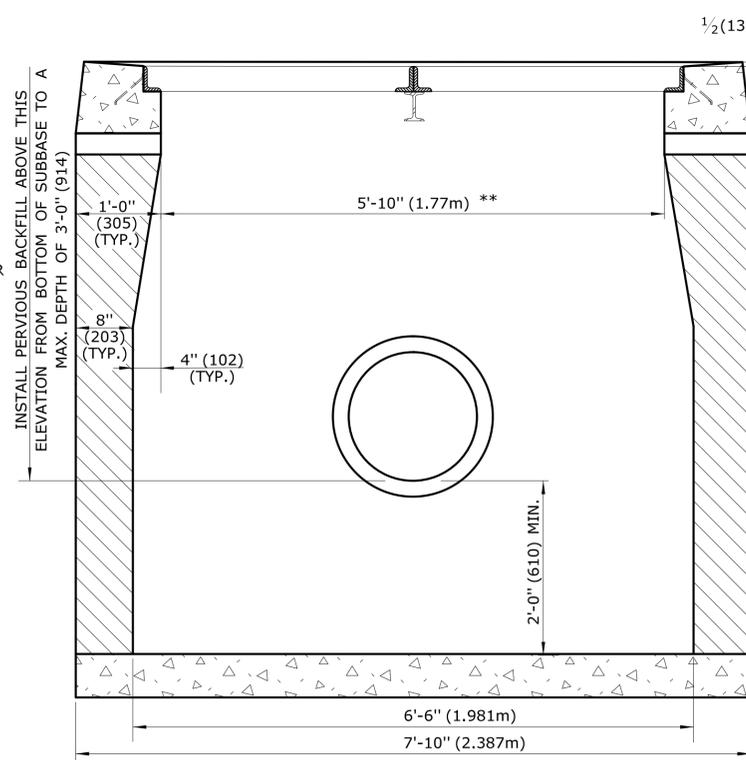


SECTION A

TYPE "C" CATCH BASIN DOUBLE GRATE - TYPE II



SECTION B

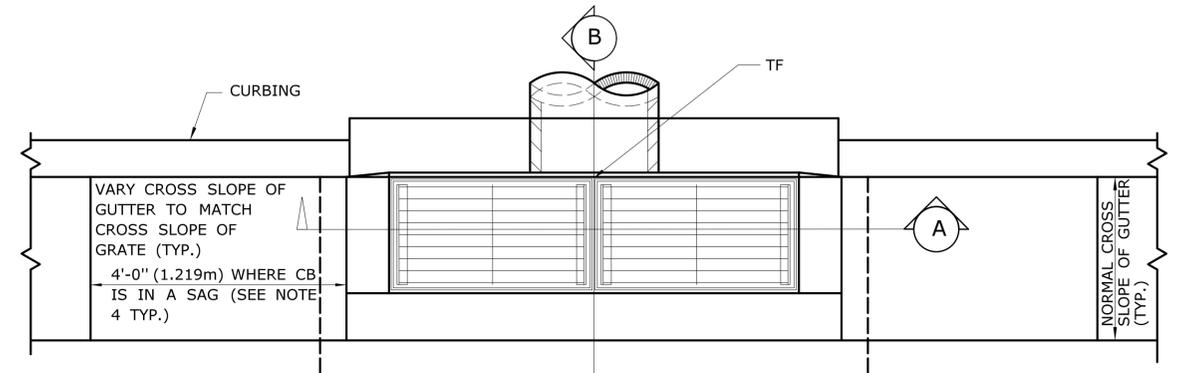


SECTION A

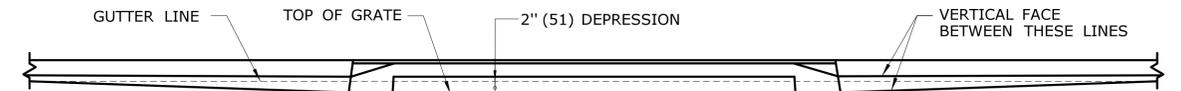
TYPE "C-L" CATCH BASIN DOUBLE GRATE - TYPE II

GENERAL NOTES:

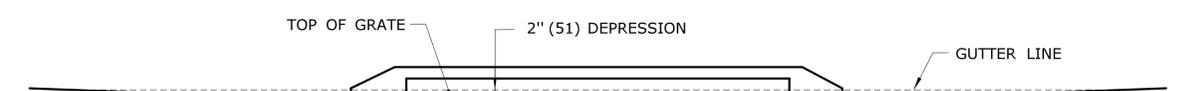
- FOR DETAILS OF FRAME AND GRATE SEE STANDARD SHEET HW-507_08.
- USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS. IF CURBING IS NOT SPECIFIED ON THE PLANS, IT SHALL BE CONSTRUCTED AS DIRECTED BY THE ENGINEER.
- ALL FACES OF STRUCTURES IN CONTACT WITH CONCRETE PAVEMENT SHALL BE COVERED WITH A LAYER OF TAR PAPER OR APPROVED EQUAL. THE COST FOR THE PAPER SHALL BE INCLUDED IN THE BID PRICE FOR THE TYPE OF CATCH BASIN INSTALLED.
- USE 6'-0" (1.830m) ON UPGRADE SIDE OF CONTINUOUS GRADE AND 1'-0" (305) ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED.
- IF MASONRY UNITS ARE REQUIRED, THE BASIN SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE OVER ALL DIMENSIONS SHOWN HERE AND SECTION 5.07 OF THE STATE OF CONNECTICUT'S STANDARD SPECIFICATIONS. CORBELLING SHALL BE PERMITTED TO A MAXIMUM OF 3" (75). NO PROJECTION SHALL EXTEND INSIDE THE LIMITS NOTED BY **.
- WALL THICKNESS OF ALL CB'S OVER 10' (3.048m) DEEP SHALL BE INCREASED TO 12" (305) THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" (305) THICKNESS WILL START AFTER THE FIRST 10' (3.048m)).
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- TOP OF FRAME (TF) ELEVATION SHALL BE MEASURED IN BETWEEN BOTH GRATES @ THE GUTTER.



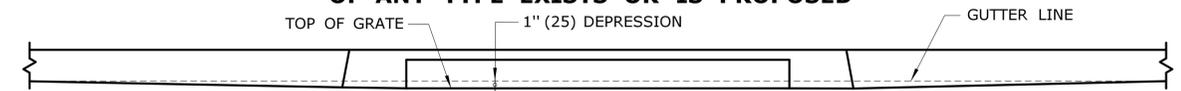
PLAN



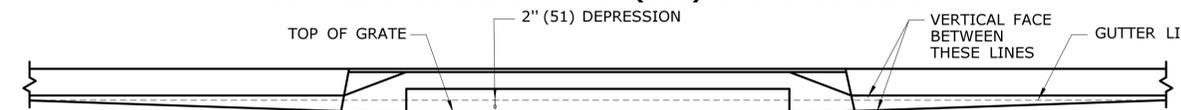
FOR CATCH BASINS IN A LINE OF 4" (102) CONCRETE PARK CURBING OR 4" (102) BITUMINOUS CONCRETE PARK CURBING



FOR CATCH BASINS WHERE NO CURBING OF ANY TYPE EXISTS OR IS PROPOSED



FOR CATCH BASINS IN A LINE OF 6" (152) CONCRETE CURBING OR 6" (152) STONE CURBING



FOR CATCH BASINS IN A LINE OF 6" (152) BITUMINOUS CONCRETE LIP CURBING (MACHINE FORMED)

DETAILS OF DEPRESSED GUTTER STRIP FOR TYPE "C" CATCH BASIN DOUBLE GRATE TYPE II

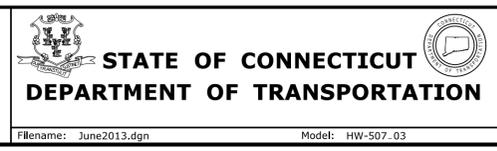
ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
4	7/13	ADD NOTE 11
3	10/3/11	ADD SPACERS AND NOTE 10.
2	9/15/11	MODIFIED DETAILS TO BE CONSISTANT WITH PRECAST
1	7/28/11	REMOVE MIN. DROP NOTE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/21/2013

NOT TO SCALE



SUBMITTED BY: _____ NAME/DATE/TIME: _____

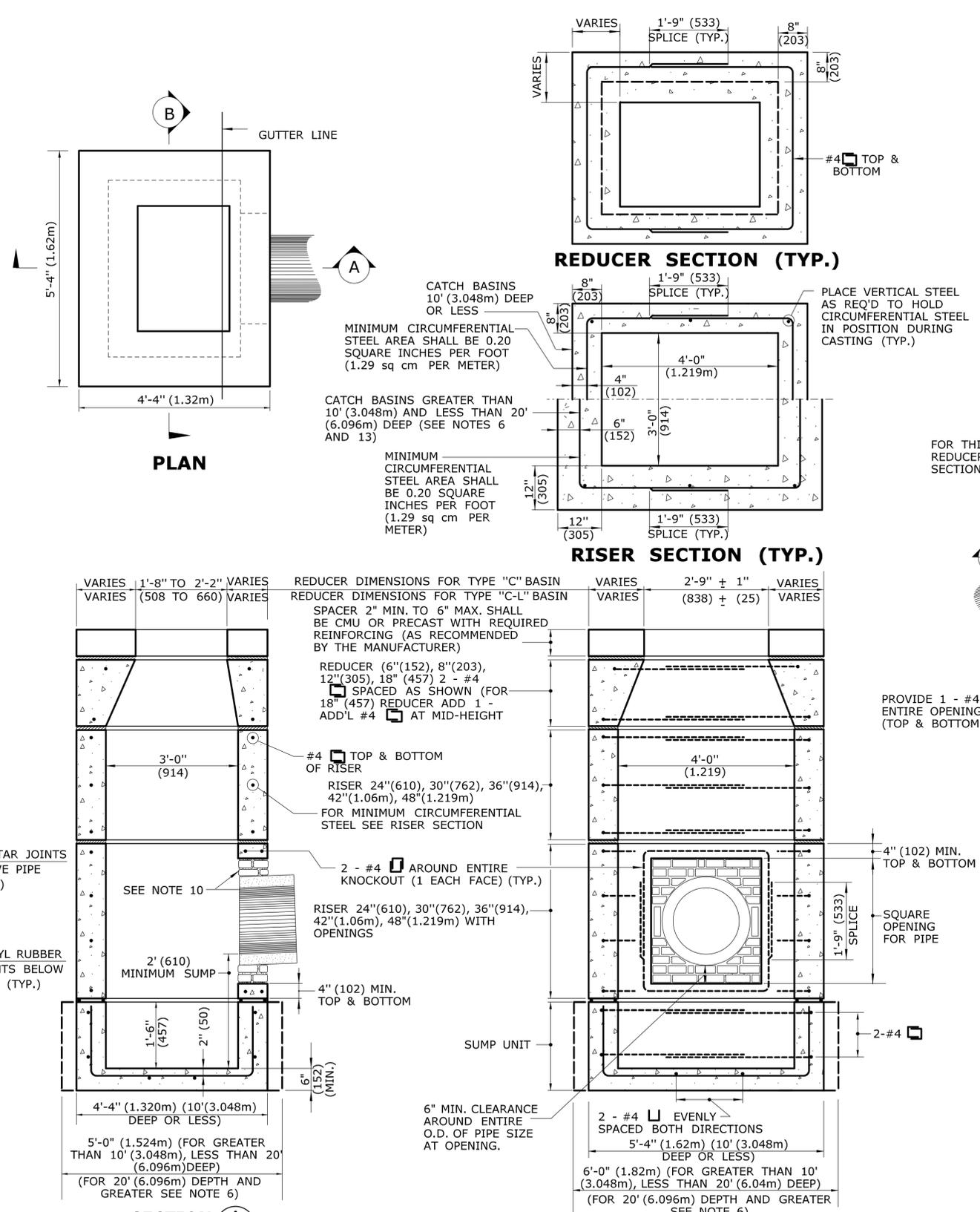
APPROVED BY: _____ NAME/DATE/TIME: _____

CTDOT STANDARD SHEET

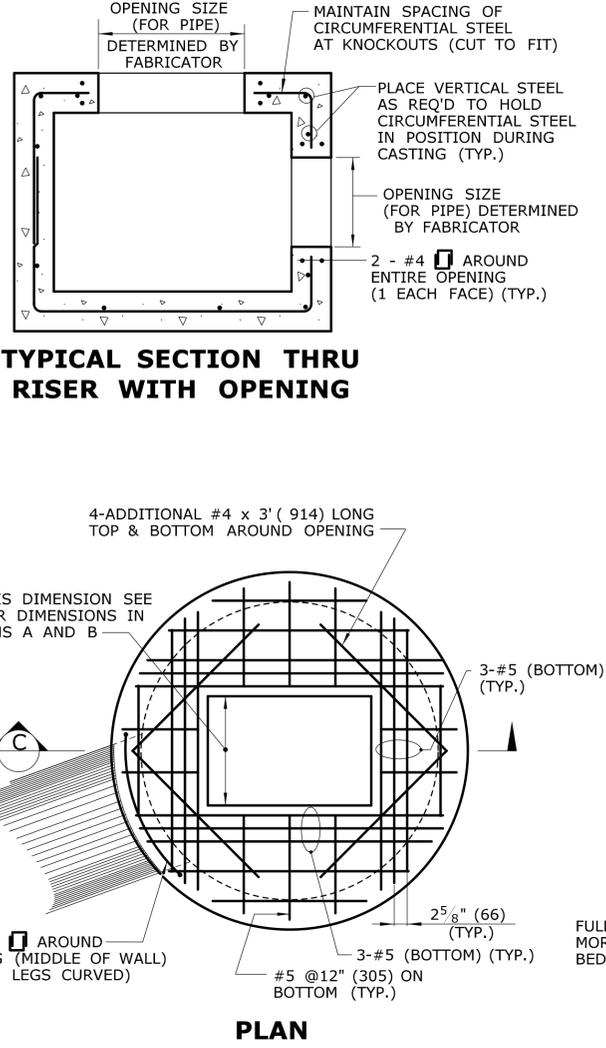
OFFICE OF ENGINEERING

STANDARD SHEET TITLE: **TYPE "C" , "C-L" & DOUBLE GRATE TYPE - II**

STANDARD SHEET NO.: **HW-507_03**



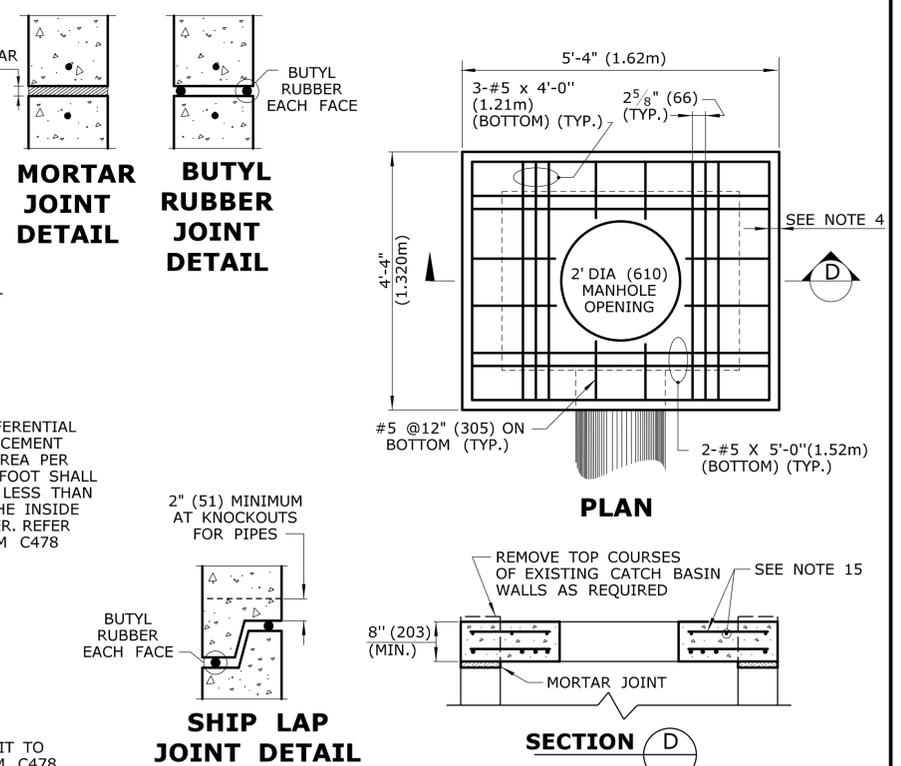
SECTION A
SECTION B
PRECAST CONCRETE TYPE "C" & "C-L" CATCH BASIN
(UNDER 10' (3.04m) DEEP SHOWN)



SECTION C
PRECAST CONCRETE TYPE "C" & "C-L" ROUND STRUCTURE
(SEE NOTE 9)

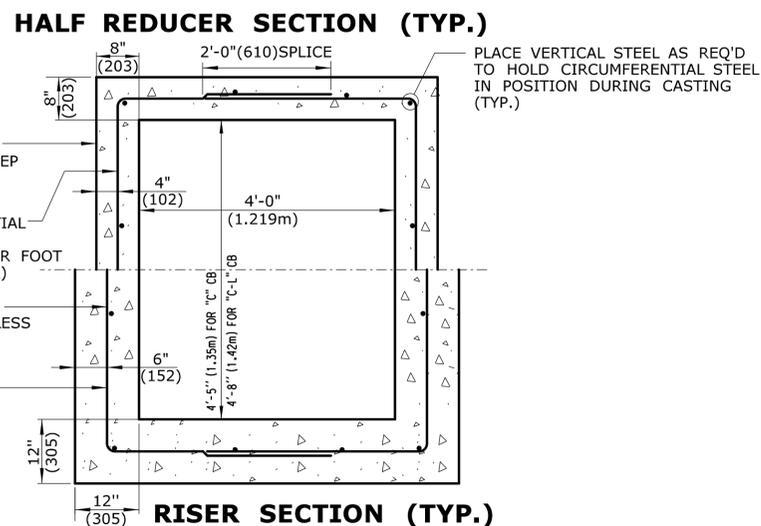
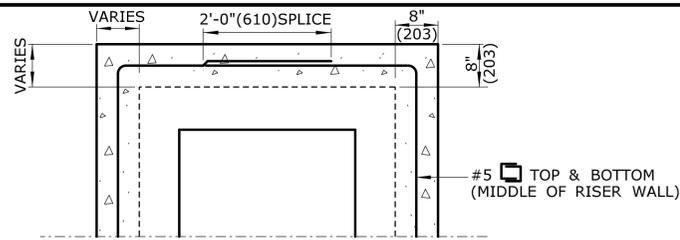
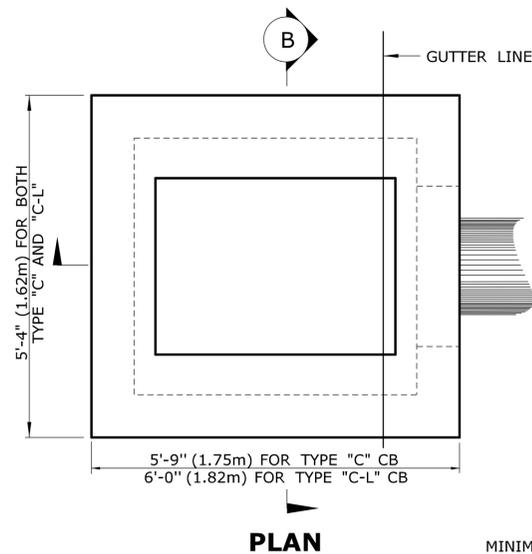
GENERAL NOTES:

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2"(51) , EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE 1 1/2"(38).
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH $F_c' = 4000$ PSI (27,580 kPa) SHALL BE OBTAINED PRIOR TO SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20' (6.096) AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. SEE STANDARD SHEET HW-507.08 FOR CATCH BASIN FRAMES AND GRATES.
8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE, MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
9. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. WHERE THE ALIGNMENT OF THE PIPE WITH RESPECT TO THE CORNER OF THE CATCH BASIN CANNOT BE CHANGED, A ROUND STRUCTURE CONFORMING TO ASTM C478 SHALL BE USED. REINFORCING FOR THE ROUND TOP SLAB WITH A RECTANGULAR OPENING SHALL CONFORM TO DETAILS SHOWN HERE.
10. ALL PIPE OPENINGS SHALL BE CLOSED USING MATERIALS WHICH CONFORM TO STATE OF CONNECTICUT STANDARD SPECIFICATIONS SECTION M.08.02. IF THE ENGINEER DETERMINES THAT THE CLOSURE OF ANY PIPE OPENING IS UNSATISFACTORY, THE CONTRACTOR SHALL RECLOSE SAID OPENING AT NO ADDITIONAL COST TO THE STATE. OPENING FOR PIPE SHALL NOT RESULT IN A REDUCED WALL THICKNESS.
11. THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS AND SUPPLEMENTALS SHALL GOVERN.
12. FOR ADDITIONAL DETAILS, SEE OTHER CATCH BASIN SHEETS.
13. WALL THICKNESS OF ALL CB'S OVER 10' (3.048m) DEEP SHALL BE INCREASED TO 12" (305) THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (THE 12" (305) THICKNESS WILL START AFTER THE FIRST 10' (3.048m).)
14. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.
15. SHRINKAGE AND TEMPERATURE REINFORCEMENT SHALL BE PROVIDED IN THE TOPS OF SLABS. THE TOTAL AREA OF REINFORCEMENT PROVIDED SHALL BE AT LEAST 0.125 SQUARE INCHES PER FOOT (0.8 sq cm PER METER) IN EACH DIRECTION. THE MAXIMUM SPACING OF THIS REINFORCEMENT SHALL NOT EXCEED 18 INCHES (457).
16. THE DETAILS SHOWN IN THE PLAN VIEW FOR PRECAST CONCRETE ROUND STRUCTURES SHALL ALSO BE USED FOR CONVERTING MANHOLES TO CATCH BASINS.



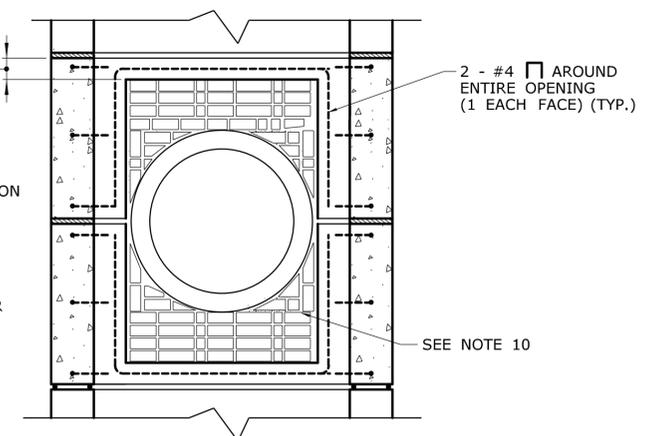
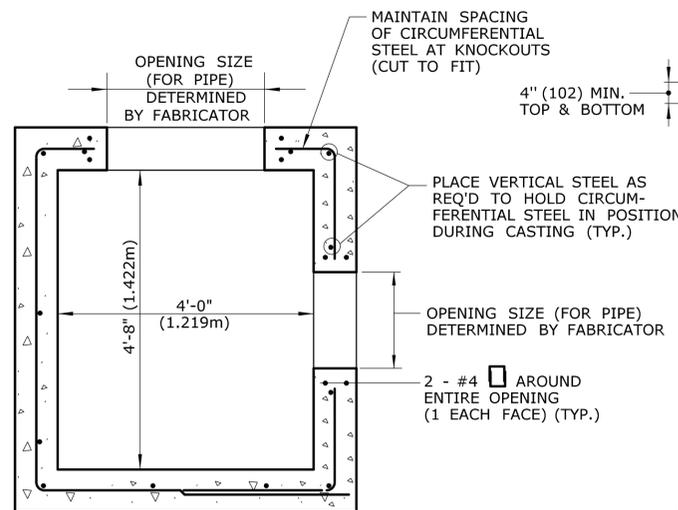
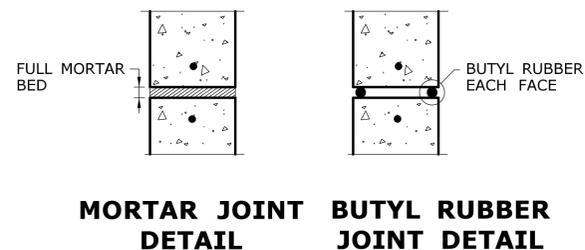
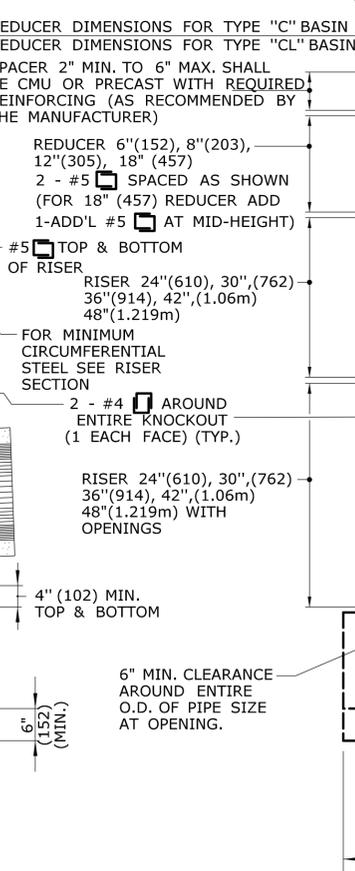
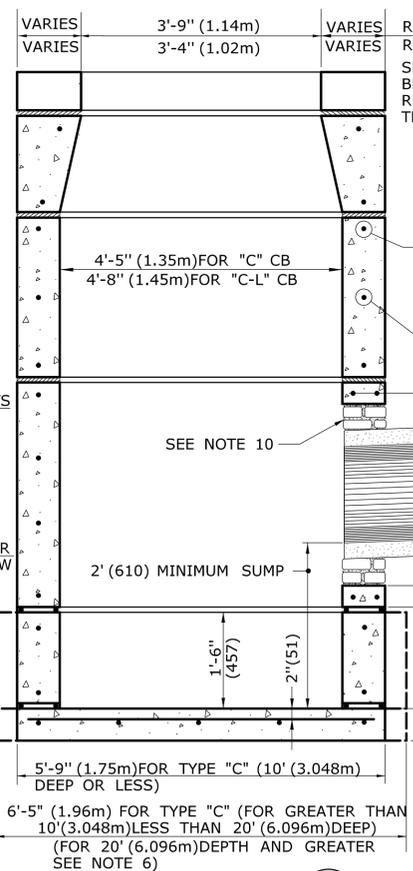
SECTION D
TOP SLAB TO CONVERT CATCH BASIN TO MANHOLE
ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

<table border="1"> <tr> <td>2</td> <td>10/24/11</td> <td>CHANGE WORD KNOCKOUT TO OPENING & ADD SPACER NOTE</td> </tr> <tr> <td>1</td> <td>6/01/10</td> <td>CHANGE NOTE 7 TO REFERENCE HW-507_08</td> </tr> </table>	2	10/24/11	CHANGE WORD KNOCKOUT TO OPENING & ADD SPACER NOTE	1	6/01/10	CHANGE NOTE 7 TO REFERENCE HW-507_08	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 10/22/2011	NOT TO SCALE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: working_revisions.dgn Model: 9-HW-507_04	SUBMITTED BY: _____ NAME/DATE/TIME: _____ APPROVED BY: _____ NAME/DATE/TIME: _____	CTDOT STANDARD SHEET OFFICE OF ENGINEERING	STANDARD SHEET TITLE: TYPE "C", "C-L" & ROUND PRECAST CONCRETE CB	STANDARD SHEET NO.: HW-507_04
2	10/24/11	CHANGE WORD KNOCKOUT TO OPENING & ADD SPACER NOTE										
1	6/01/10	CHANGE NOTE 7 TO REFERENCE HW-507_08										



GENERAL NOTES:

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2" (51), EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE 1 1/2" (38).
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH $F_c' = 4000$ PSI (27,580 kPa) SHALL BE OBTAINED PRIOR TO SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20' (6.096m) AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. SEE STANDARD SHEET HW-507_08 FOR CATCH BASIN FRAMES AND GRATES.
8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE, MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
9. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. WHERE THE ALIGNMENT OF THE PIPE WITH RESPECT TO THE CORNER OF THE CATCH BASIN CANNOT BE CHANGED, A ROUND STRUCTURE CONFORMING TO ASTM C478 SHALL BE USED. REINFORCING FOR THE ROUND TOP SLAB WITH A RECTANGULAR OPENING SHALL CONFORM TO DETAILS SHOWN HERE.
10. ALL PIPE OPENINGS SHALL BE CLOSED USING MATERIALS WHICH CONFORM TO STATE OF CONNECTICUT STANDARD SPECIFICATIONS SECTION M.08.02. IF THE ENGINEER DETERMINES THAT THE CLOSURE OF ANY PIPE OPENING IS UNSATISFACTORY, THE CONTRACTOR SHALL RECLOSE SAID OPENING AT NO ADDITIONAL COST TO THE STATE. OPENING FOR PIPE SHALL NOT RESULT IN A REDUCED WALL THICKNESS.
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14. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.



NOTE: REINFORCEMENT IN FAR FACE WALL NOT SHOWN FOR CLARITY

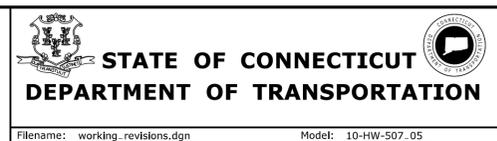
PRECAST CONCRETE TYPE "C" & "C-L" DOUBLE GRATE TYPE I CATCH BASIN
(UNDER 10' (3.048m) DEEP SHOWN)

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
2	10/24/11	CHANGE WORD KNOCKOUT TO OPENING & ADD SPACER NOTE
1	6/01/10	CHANGE NOTE 7 TO REFERENCE HW-507_08

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NOT TO SCALE



SUBMITTED BY: _____ NAME/DATE/TIME: _____

APPROVED BY: _____ NAME/DATE/TIME: _____

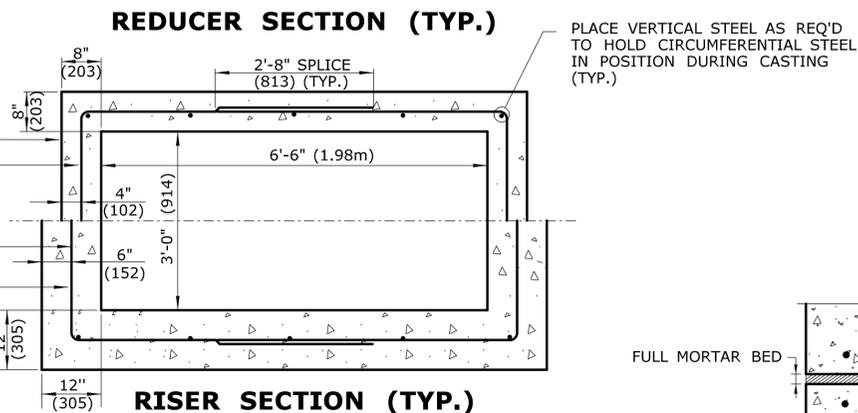
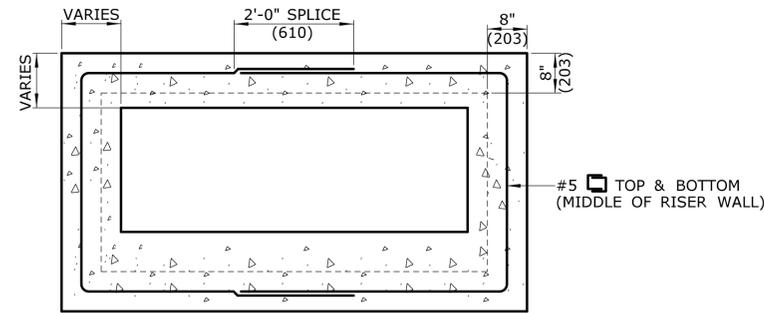
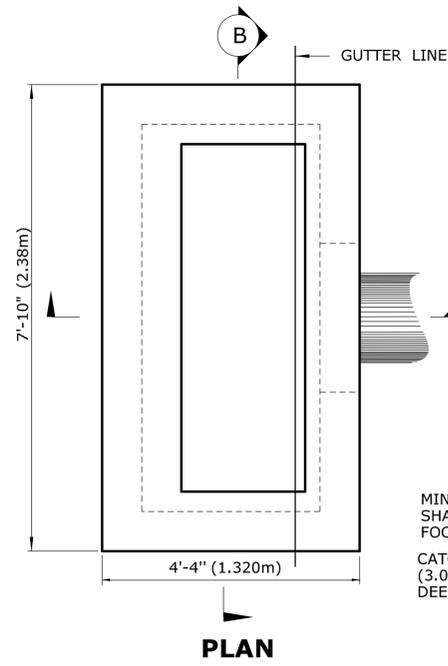
CTDOT STANDARD SHEET
OFFICE OF ENGINEERING

STANDARD SHEET TITLE:
TYPE "C" & "C-L" PRECAST CONCRETE CB DOUBLE GRATE TYPE-I

STANDARD SHEET NO.:
HW-507_05

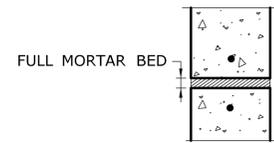
GENERAL NOTES:

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2"(51), EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE 1 1/2"(38).
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH $F_c' = 4000$ PSI (27,580 kPa) SHALL BE OBTAINED PRIOR TO SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20'(6.096m) AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
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8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE, MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
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14. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.

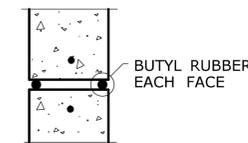


CATCH BASINS 10' (3.048m) DEEP OR LESS
 MINIMUM CIRCUMFERENTIAL STEEL AREA SHALL BE 0.44 SQUARE INCHES PER FOOT (2.84 sq cm per Meters)
 CATCH BASINS GREATER THAN 10' (3.048m) AND LESS THAN 20' (6.096m) DEEP (SEE NOTES 6 AND 13)
 MINIMUM CIRCUMFERENTIAL STEEL AREA SHALL BE 0.44 SQUARE INCHES PER FOOT (2.84sq cm per Meter)

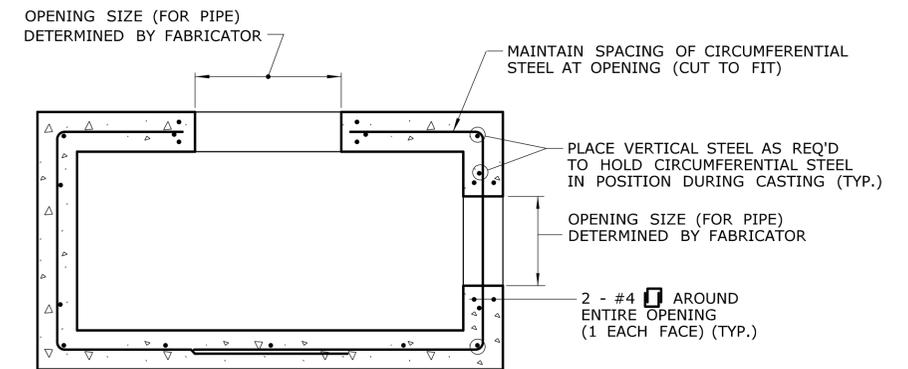
PLACE VERTICAL STEEL AS REQ'D TO HOLD CIRCUMFERENTIAL STEEL IN POSITION DURING CASTING (TYP.)



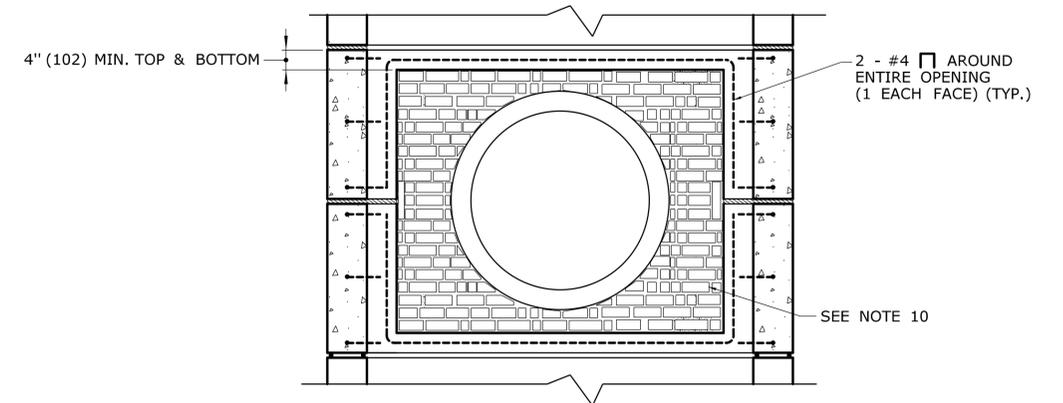
MORTAR JOINT DETAIL



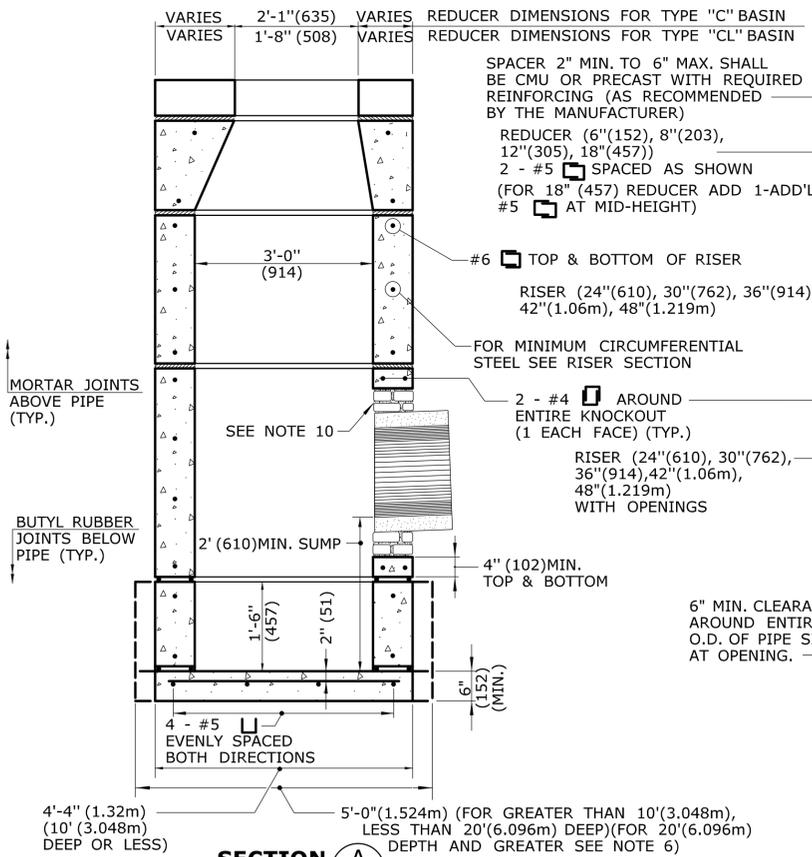
BUTYL RUBBER JOINT DETAIL



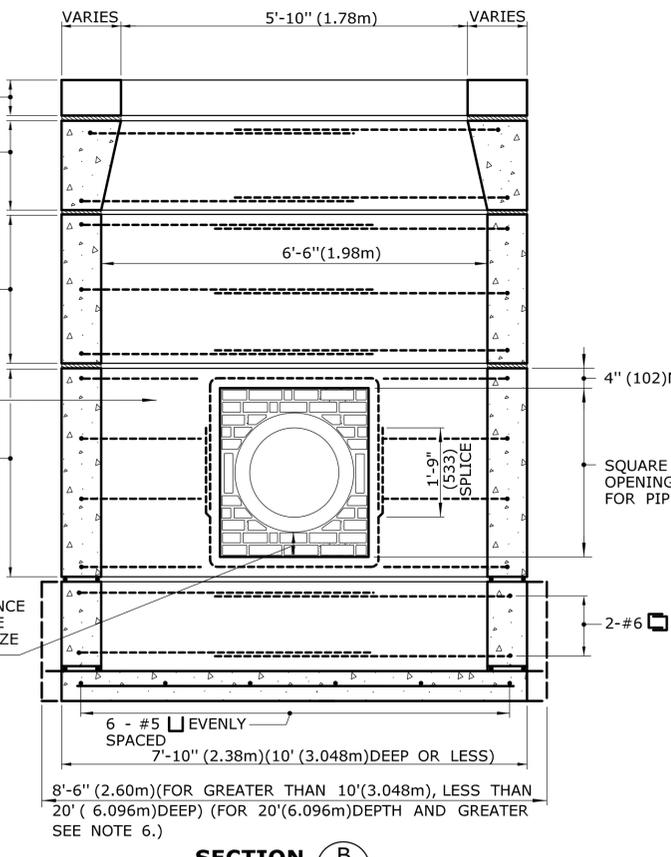
TYPICAL SECTION THRU SINGLE RISER WITH OPENINGS



DOUBLE RISER OPENING (TYP.) PIPES GREATER THAN 24" (610) O.D.



SECTION A



SECTION B

NOTE: REINFORCEMENT IN FAR FACE WALL NOT SHOWN FOR CLARITY

PRECAST CONCRETE TYPE "C" & "C-L" DOUBLE GRATE TYPE II CATCH BASIN
 (UNDER 10' (3.048m) DEEP SHOWN)

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
2	10/24/11	CHANGE WORD KNOCKOUT TO OPENING & ADD SPACER NOTE
1	6/01/10	CHANGE NOTE 7 TO REFERENCE HW-507_08

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NOT TO SCALE

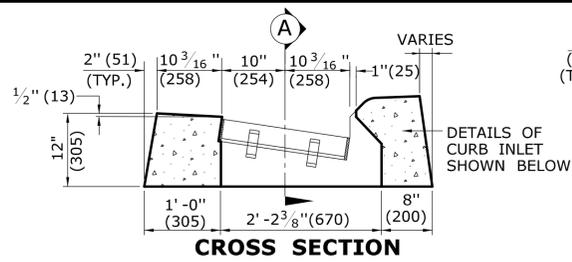
STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

SUBMITTED BY: NAME/DATE/TIME:
 APPROVED BY: NAME/DATE/TIME:

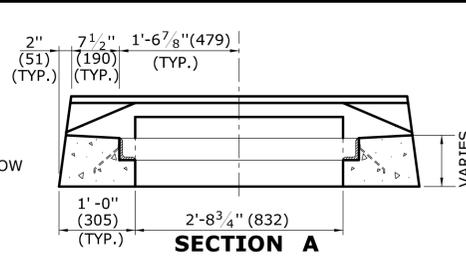
CTDOT
 STANDARD SHEET
 OFFICE OF ENGINEERING

TYPE "C" & "C-L" PRECAST CONCRETE
 CB DOUBLE GRATE TYPE-II

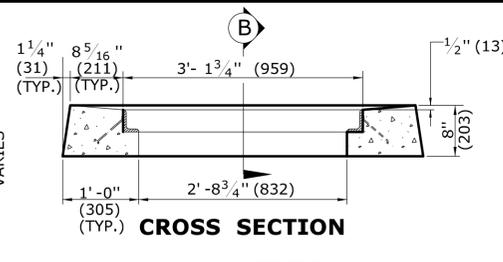
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CROSS SECTION
TYPE "C" CATCH BASIN TOP

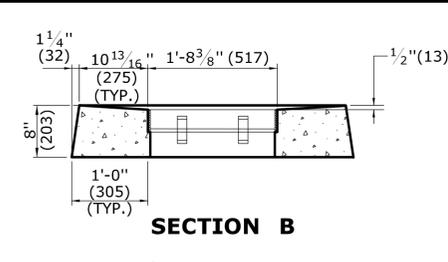


SECTION A



CROSS SECTION

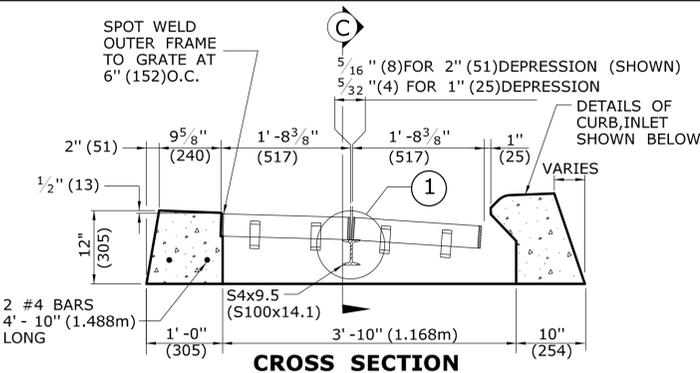
TYPE "C-L" CATCH BASIN TOP



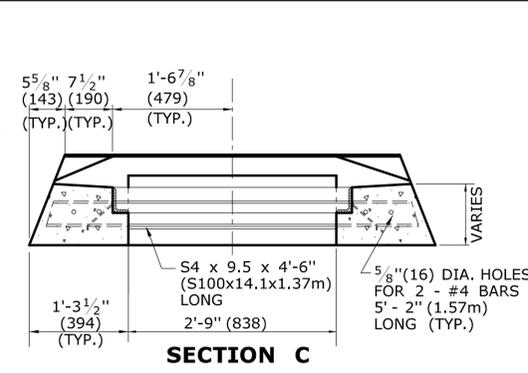
SECTION B

GENERAL NOTES:

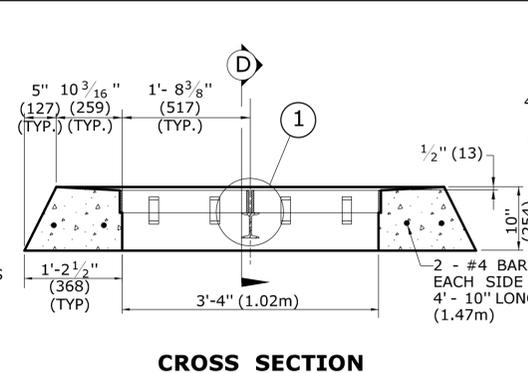
- FOR DETAILS OF FRAME AND GRATE SEE STANDARD SHEET HW-507-08.
- ALL STEEL, EXCEPT REINFORCING BARS, SHALL BE GALVANIZED IN CONFORMANCE WITH SECTION M06.03 OF CONNECTICUT'S STANDARD SPECIFICATIONS.
- ALL BARS SHALL HAVE A MINIMUM 2" (51) COVER.



CROSS SECTION
TYPE "C" CATCH BASIN DOUBLE GRATE - TYPE I TOP

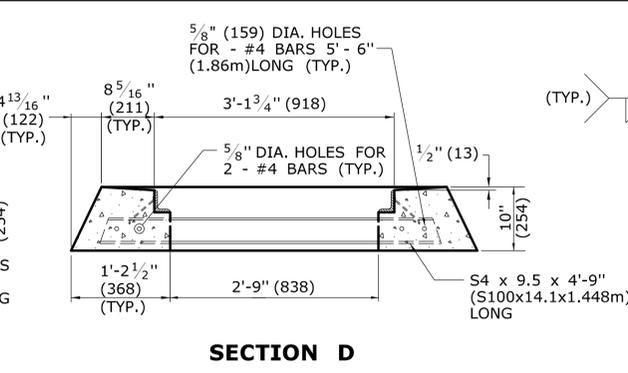


SECTION C

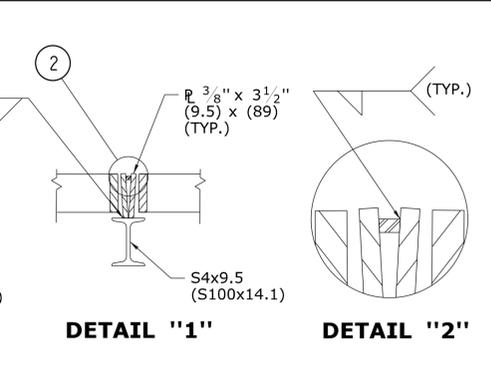


CROSS SECTION

TYPE "C-L" CATCH BASIN DOUBLE GRATE - TYPE I TOP

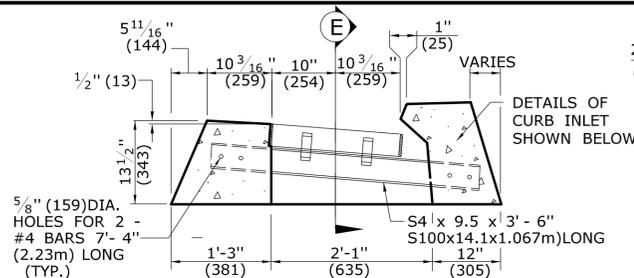


SECTION D

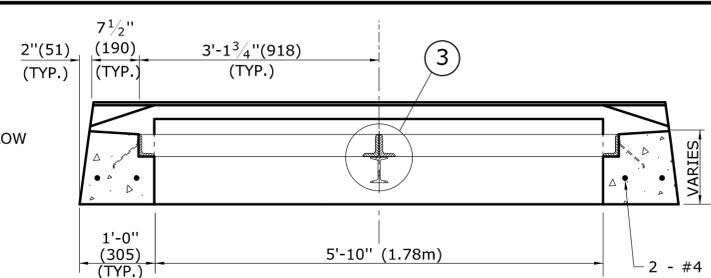


DETAIL "1"

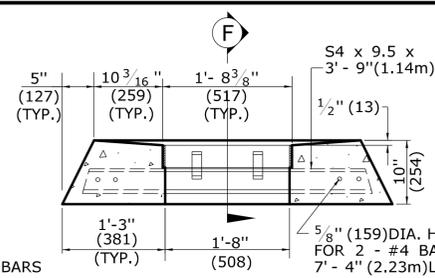
DETAIL "2"



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TYPE "C" CATCH BASIN DOUBLE GRATE - TYPE II TOP

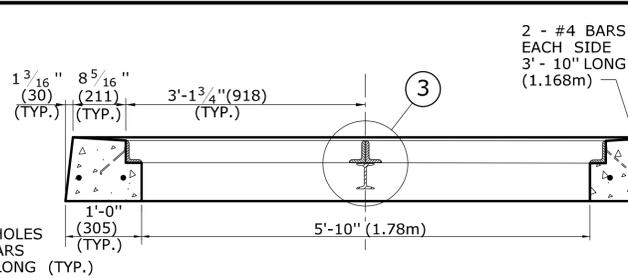


SECTION E

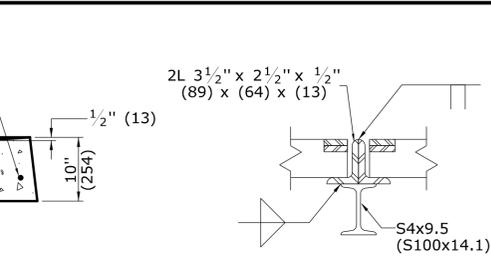


CROSS SECTION

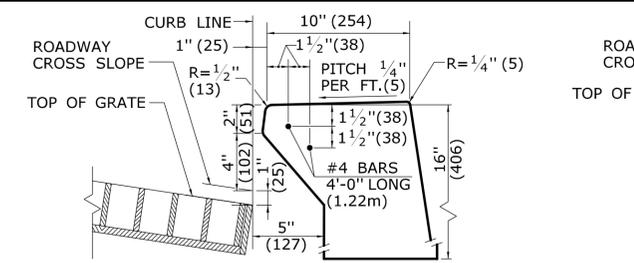
TYPE "C-L" CATCH BASIN DOUBLE GRATE - TYPE II TOP



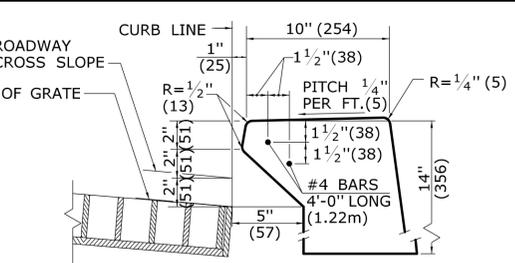
SECTION F



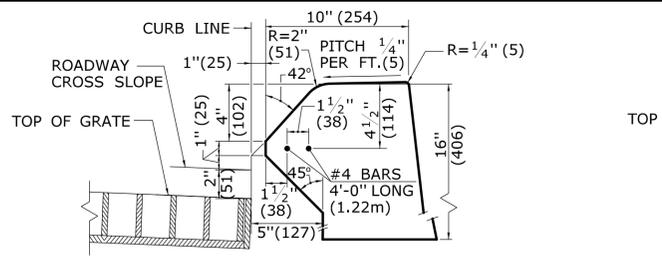
DETAIL "3"



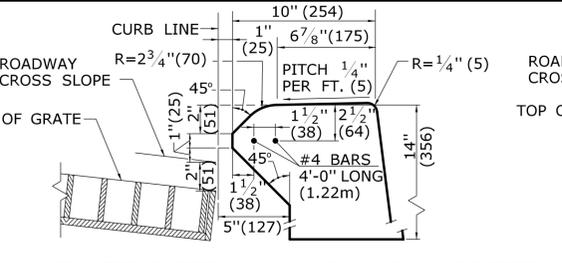
INLET WITH 6" (152) CONCRETE OR STONE CURBING FOR TYPE "C" CB



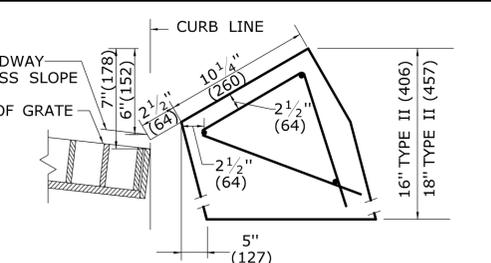
INLET WITH NO CURBING (PLAIN TYPE) FOR TYPE "C" CB



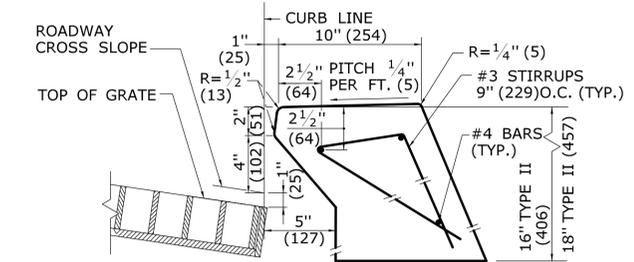
INLET WITH 6" (152) BITUMINIOUS CONCRETE LIP CURBING FOR TYPE "C" CB



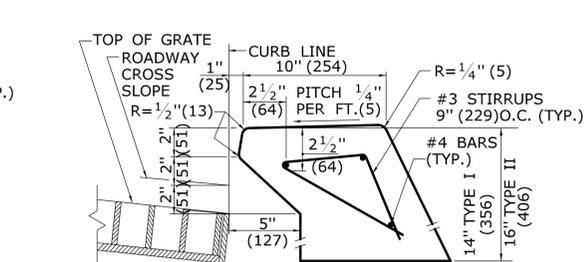
INLET WITH 4" (102) CONCRETE PARK CURBING FOR TYPE "C" CB



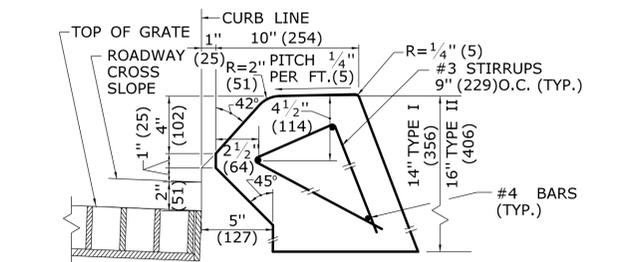
INLET WITH GRANITE SLOPE CURB FOR TYPE "C" CB



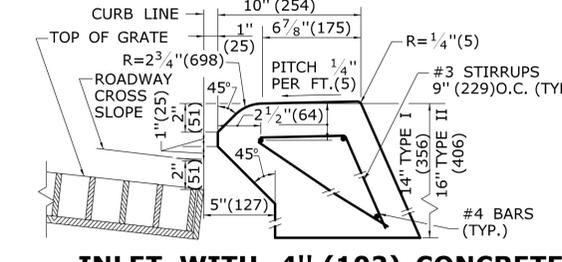
INLET WITH 6" (152) CONCRETE OR STONE CURBING FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



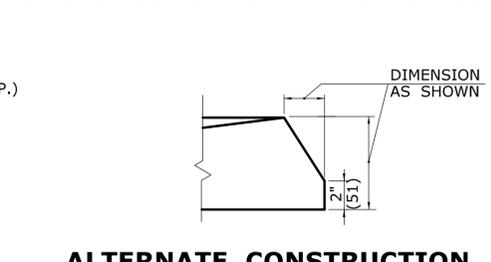
INLET WITH NO CURBING (PLAIN TYPE) FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



INLET WITH 6" (152) BITUMINIOUS CONCRETE LIP CURBING FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



INLET WITH 4" (102) CONCRETE PARK CURBING FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



ALTERNATE CONSTRUCTION OF TYPE II TOP

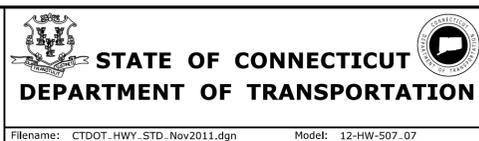
ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
2	7/28/11	REMOVE MIN. DROP NOTE
1	6/01/10	REVISE CALL-OUT

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/10/2011

NOT TO SCALE

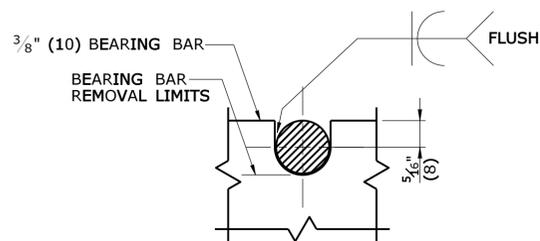


SUBMITTED BY:	NAME/DATE/TIME:
APPROVED BY:	NAME/DATE/TIME:

CTDOT
STANDARD SHEET
OFFICE OF ENGINEERING

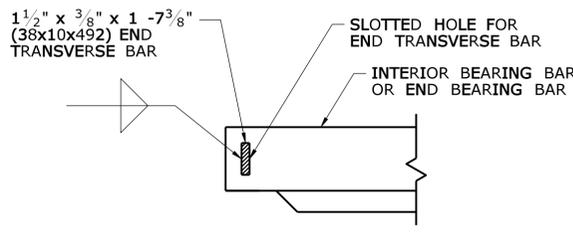
STANDARD SHEET TITLE:
TYPE "C" & "C-L" CATCH BASIN TOPS AND CURBS

STANDARD SHEET NO.:
HW-507_07

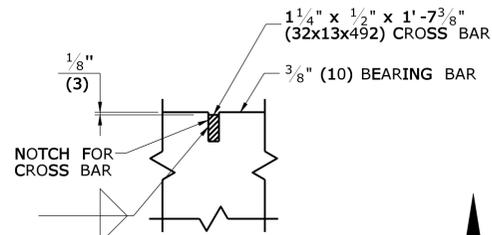


NOTE:
5/8" (16) DIA. ROUND BAR SHALL CONTACT BEARING BAR AT BOTTOM AND BE FLUSH AT TOP.

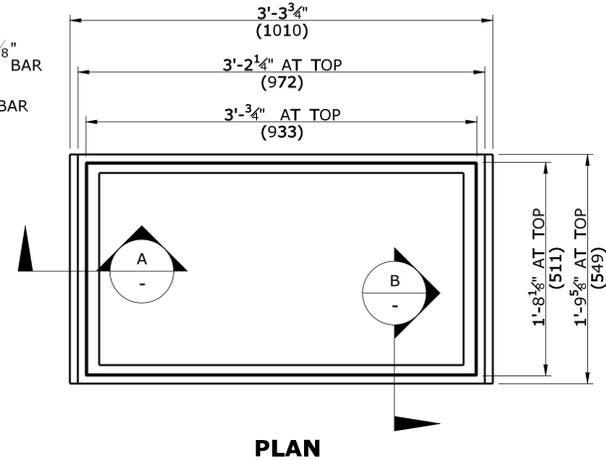
**ROUND BAR ATTACHMENT
CATCH BASIN GRATE TYPE A**



**END TRANSVERSE BAR ATTACHMENT
CATCH BASIN GRATE TYPE A & B**



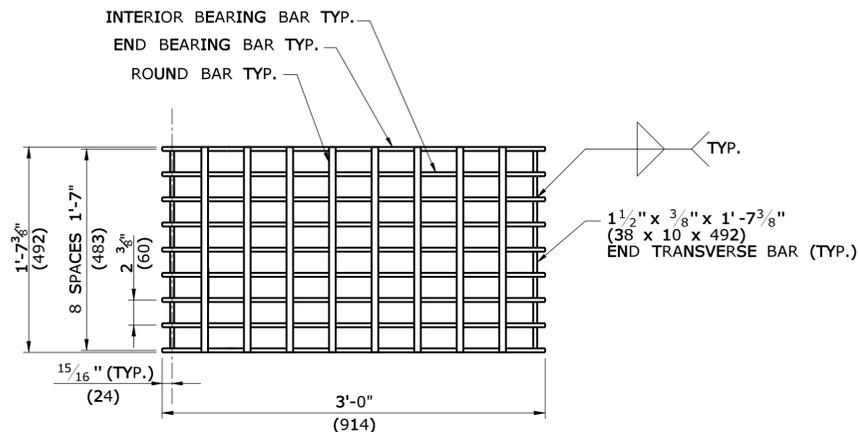
**CROSS BAR ATTACHMENT
CATCH BASIN GRATE TYPE B**



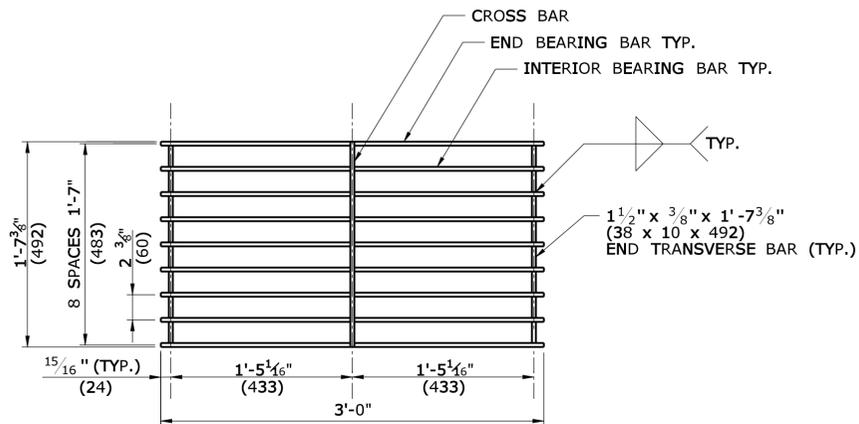
PLAN

GENERAL NOTES:

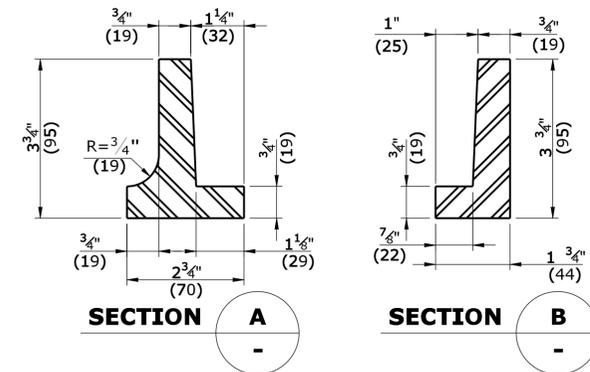
1. STEEL OR CAST IRON SHALL BE USED FOR FRAMES. STEEL SHALL BE USED FOR TYPE "A" & "B" GRATES.
2. TYPE "A" GRATES SHALL BE USED ON ALL ROADWAYS WHERE BICYCLE TRAFFIC IS ALLOWED OR AS DIRECTED BY THE ENGINEER.
3. TYPE "B" GRATES SHALL BE USED ON ALL LIMITED ACCESS HIGHWAYS, RAMPS AND WHERE BICYCLE TRAFFIC IS NOT ALLOWED OR AS DIRECTED BY THE ENGINEER.
4. STEEL FRAMES AND GRATES SHALL BE GALVANIZED IN ACCORDANCE WITH ARTICLE M.06.03.
5. DO NOT GALVANIZE CAST IRON FRAMES.
6. DIMENSIONAL TOLERANCES SHALL BE $\pm 1/16"$ (1.6)
7. ALL STEEL BARS SHALL BE WELDED AT ALL INTERSECTIONS.
8. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS STRUCTURAL WELDING CODE, D1.1.



PLAN



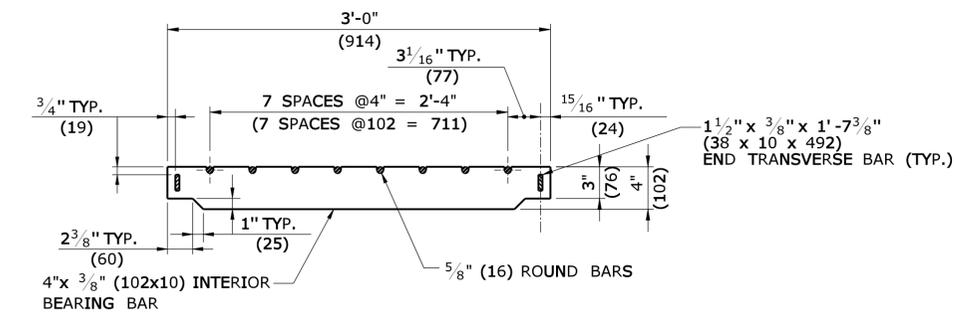
PLAN



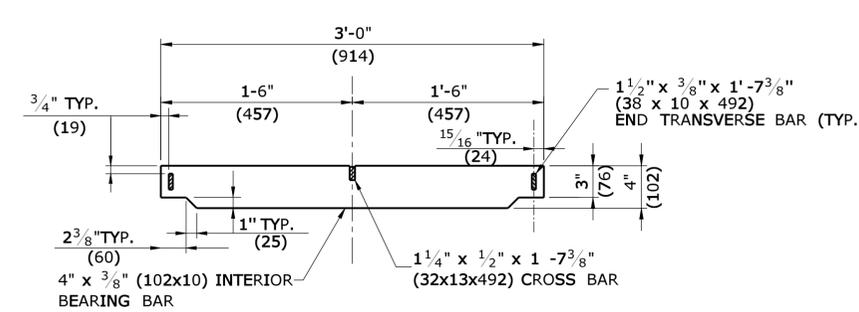
SECTION A

SECTION B

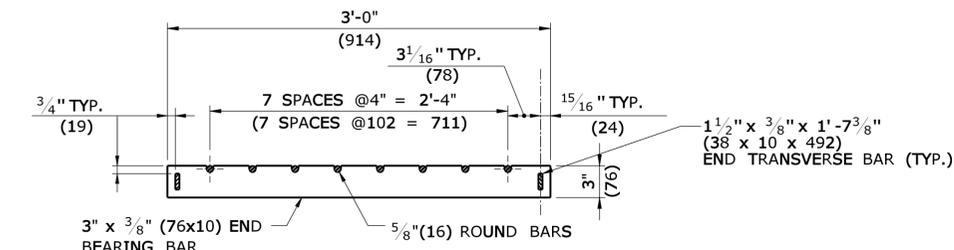
CAST IRON FRAME ALTERNATE



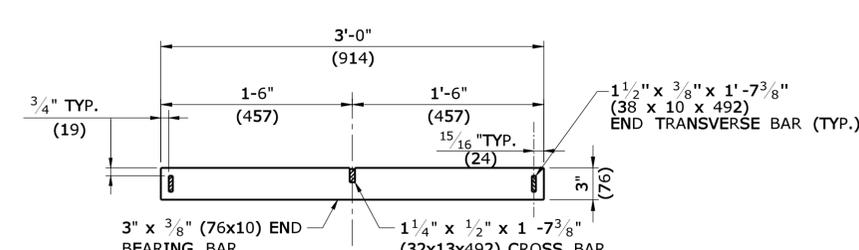
ELEVATION- INTERIOR BEARING BAR



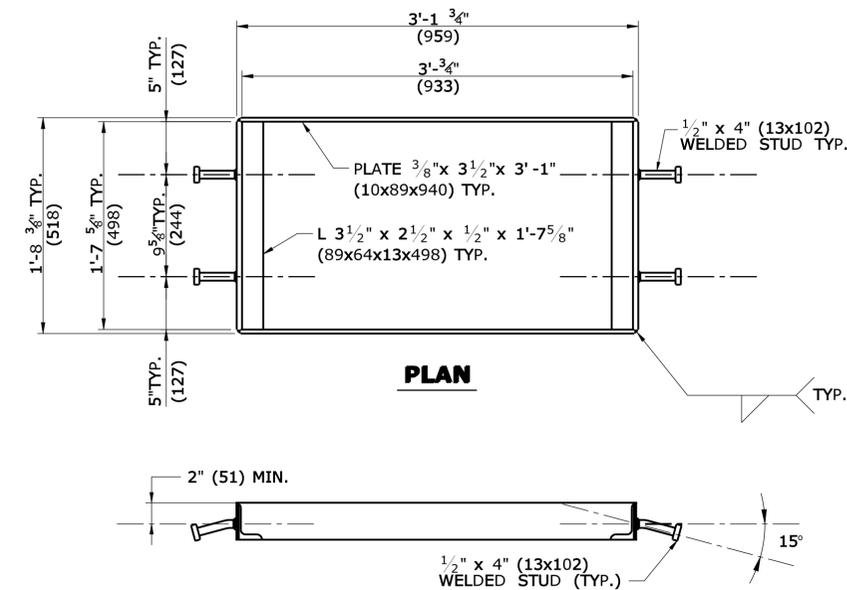
ELEVATION- INTERIOR BEARING BAR



**ELEVATION- END BEARING BAR
CATCH BASIN GRATE TYPE A**



**ELEVATION- END BEARING BAR
CATCH BASIN GRATE TYPE B**



**WELDED STUD ANCHOR DETAILS
STEEL FRAME**

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NOT TO SCALE

Plotted Date: 9/11/2009

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

File Name: CTDOT_HIGHWAY_STD.dgn Model: HW-507_08

SUBMITTED BY:	NAME/DATE/TIME:
APPROVED BY:	NAME/DATE/TIME:

CTDOT
STANDARD SHEET
OFFICE OF ENGINEERING

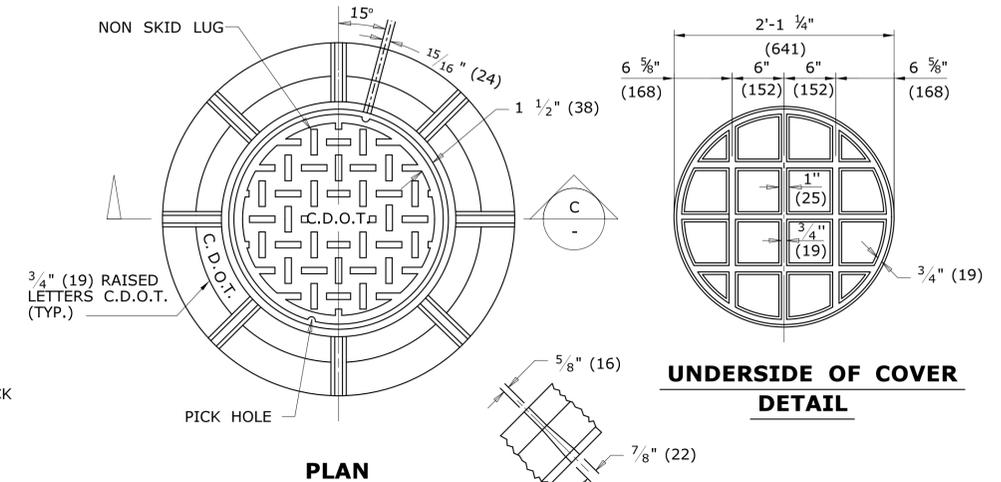
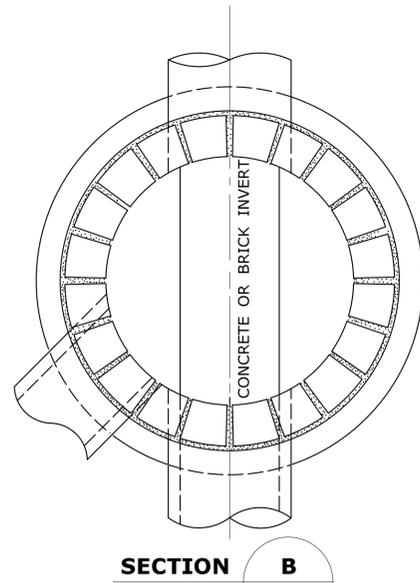
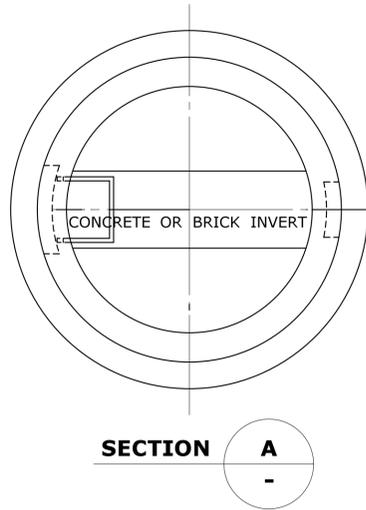
STANDARD SHEET TITLE:
CATCH BASIN FRAMES AND GRATES

STANDARD SHEET NO.:
HW-507_08

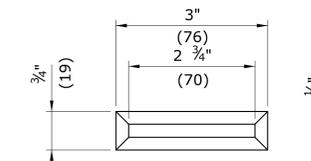
GENERAL NOTES:

- CHANNELS MAY BE SHAPED IN CONCRETE BASE OF MANHOLE OR FORMED USING BRICK OR MASONRY.
- A FRAME DIAMETER OF 3'-3" (991) WITH 4" (102) FLANGE MUST BE USED WHEN THE TOP DIAMETER OF THE PRECAST CONE IS LESS THAN 3'-6" (1067). ALL OTHER FRAME DIMENSIONS SHALL REMAIN THE SAME.
- COVER:

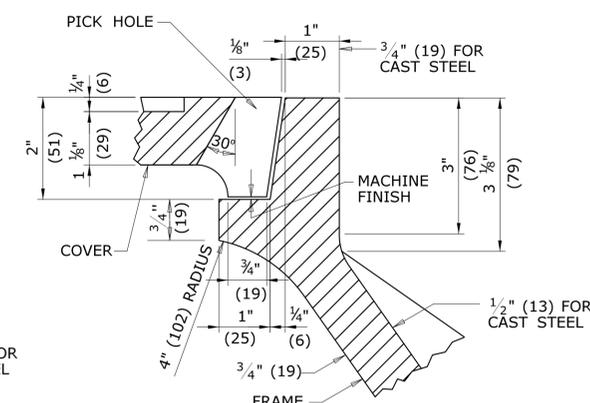
	CAST IRON	STEEL
MIN. COVER WEIGHT	134LB.(61kg)	134LB.(61kg)
- ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.



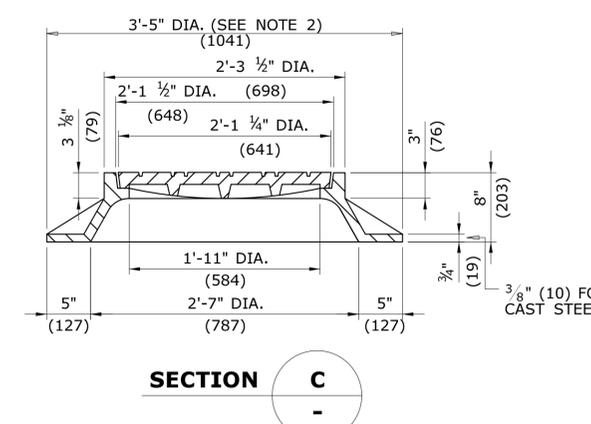
UNDERSIDE OF COVER DETAIL



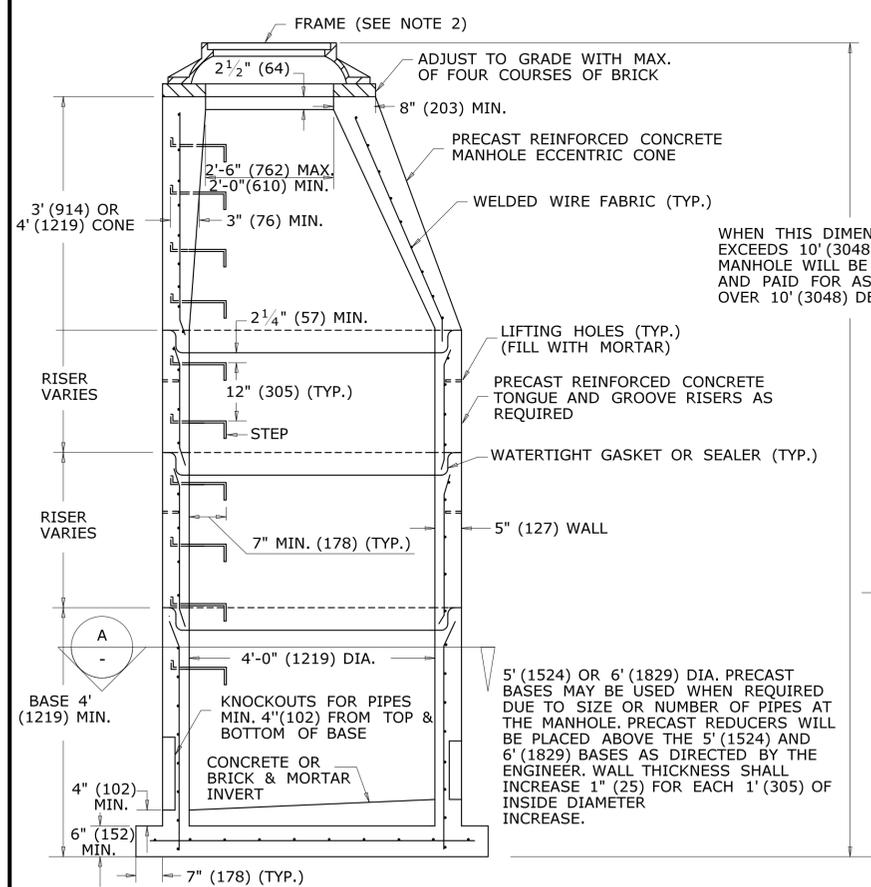
NON SKID LUG DETAIL



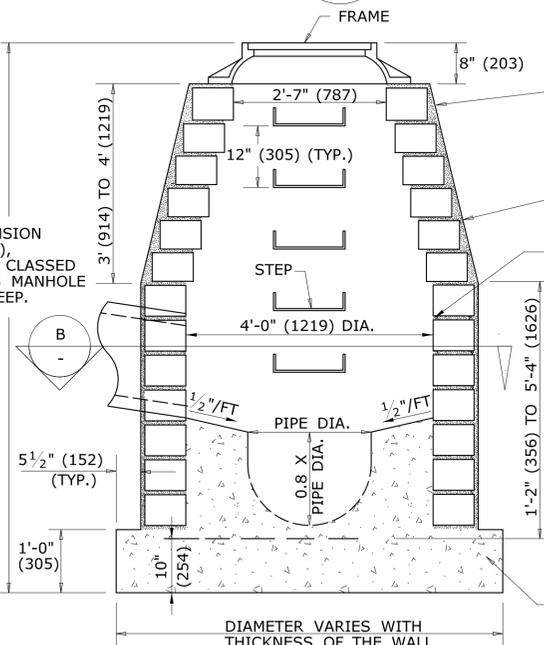
DETAIL OF SEAT



FRAME AND COVER DETAILS



ELEVATION MANHOLE
REINFORCED PRECAST CONCRETE UNIT



ELEVATION MANHOLE
MASONRY CONCRETE UNIT OR CLASS "A" CONCRETE

WALL SHALL BE A MIN. OF 6"(152) WITH MASONRY CONCRETE UNITS, CLASS "A" CONCRETE WALL SHALL BE 12"(300) THICK WHEN DEPTH OF MANHOLE IS GREATER THAN 10'(3048) DEEP.

MASONRY WALLS SHALL BE PLASTERED OUTSIDE WITH 2:1 CEMENT MORTAR 1/2"(13) THICK. MASONRY MUST BE WET WHEN MORTAR IS APPLIED.

ALL JOINTS SHALL BE POINTED FLUSH AND FULL

WALLS SHALL BE BUILT OF MASONRY CONCRETE UNITS OR CLASS "A" CONCRETE AT THE OPTION OF THE CONTRACTOR.

MASONRY CONCRETE UNITS SHALL BE LAID IN CEMENT SAND MORTAR 1:2 MIX, JOINTS SHALL NOT BE OVER 1/2"(13) ON INSIDE FACE

WHEN THIS DIMENSION EXCEEDS 10' (3048), MANHOLE WILL BE CLASSED AND PAID FOR AS MANHOLE OVER 10' (3048) DEEP.

5' (1524) OR 6' (1829) DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' (1524) AND 6' (1829) BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS SHALL INCREASE 1" (25) FOR EACH 1' (305) OF INSIDE DIAMETER INCREASE.

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

1	6/11	REVISE STEP WIDTH PER OSHA
2	7/13	REVISE COVER FRAME WEIGHT
-	-	-
-	-	-
-	-	-
-	-	-
REV.	DATE	REVISION DESCRIPTION

NOT TO SCALE

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Plotted Date: 6/13/2013

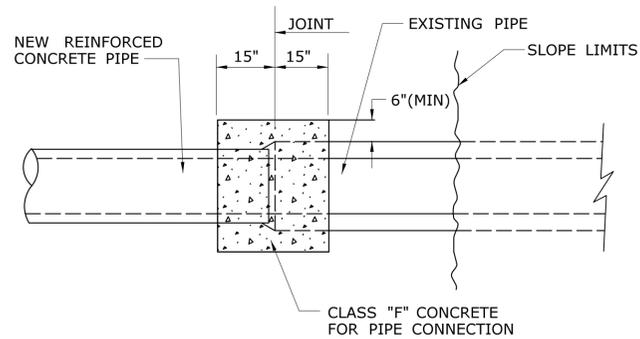
SUBMITTED BY: _____ NAME/DATE/TIME: _____

APPROVED BY: _____ NAME/DATE/TIME: _____

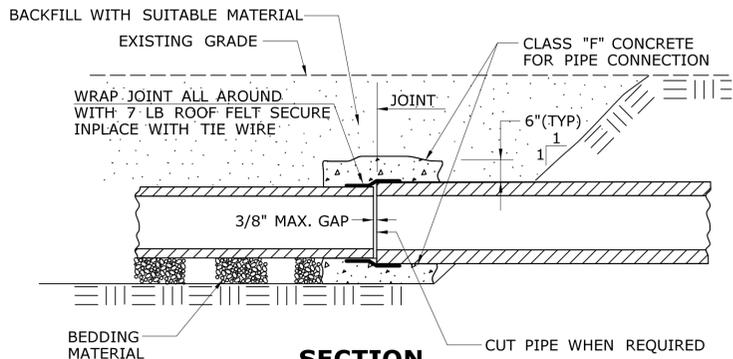
CTDOT
STANDARD SHEET
OFFICE OF ENGINEERING

STANDARD SHEET TITLE: **MANHOLE - FRAME & COVER**

STANDARD SHEET NO.: **HW-507_10**



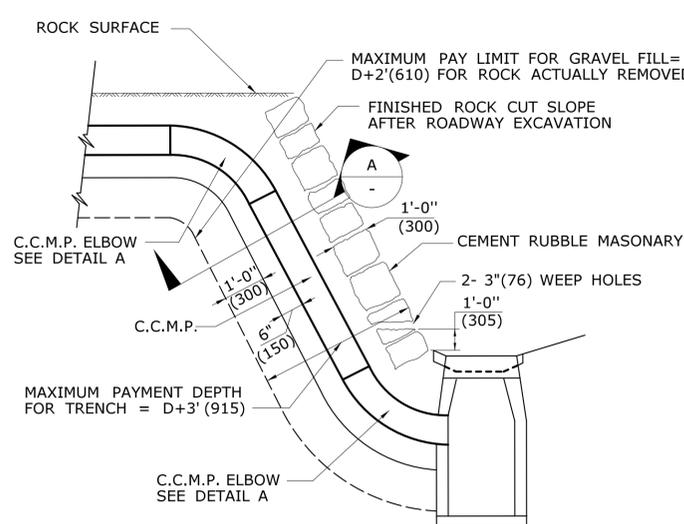
PLAN



**SECTION
CONCRETE PIPE CONNECTION**

NOTES:

- "CONCRETE PIPE CONNECTION" IS INTENDED FOR USE WHERE A REINFORCED CONCRETE PIPE REPAIR OR MODIFICATION IS NEEDED SOMEWHERE WITHIN A PIPE RUN WHERE A BELL/SPIGOT JOINT CANNOT BE ACHIEVED.
- MAINTAIN INTERIOR ALIGNMENT OF PIPE AT JOINTS UNTIL CONCRETE IS PROPERLY CURED.
- BACKFILL OF PIPE REPAIR WITH SUITABLE MATERIAL MAY NOT TAKE PLACE UNTIL CONCRETE IS PROPERLY CURED.
- CONTRACTOR SHALL MAINTAIN LINE AND GRADE OF PIPE REPAIR OR MODIFICATION BY METHODS APPROVED BY THE ENGINEER.
- HOLES OR GAPS AT JOINT LARGER THAN 3/8" SHALL BE FILLED OR WRAPPED TO PREVENT CONCRETE FROM ENTERING PIPE.
- TRENCH EXCAVATION SHALL BE TO THE MAXIMUM EXTENT NEEDED TO PERFORM WORK.



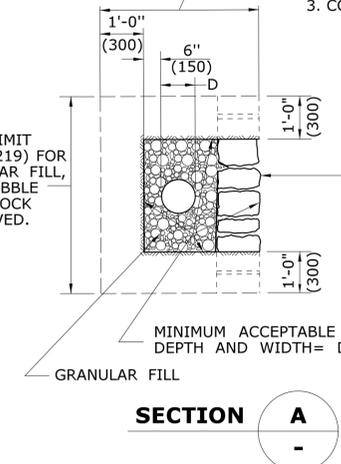
TYPICAL INSTALLATION OF C.C.M.P. IN ROCK SLOPE

MAXIMUM PAY LIMIT DEPTH FOR TRENCH = $D+3'(915)$. MAXIMUM PAY LIMIT FOR GRAVEL FILL = $D+2'(610)$ FOR ROCK ACTUALLY REMOVED.

MAXIMUM PAY LIMIT WIDTH = $D+4'(1219)$ FOR TRENCH, GRANULAR FILL, AND CEMENT RUBBLE MASONRY FOR ROCK ACTUALLY REMOVED.

GENERAL NOTES:

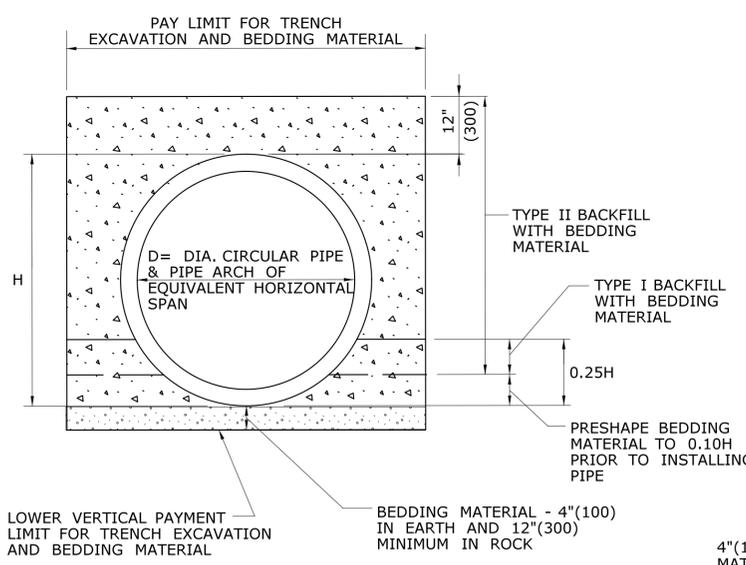
- ROCK REMOVED BEYOND THE MAXIMUM PAY LIMIT SHOWN SHALL BE REPLACED WITH CEMENT RUBBLE MASONRY AND GRANULAR FILL.
- FILL, AS REQUIRED TO CLOSE THE OPENING AS SHOWN ON THE PLANS, WILL BE AT THE CONTRACTORS EXPENSE. HOWEVER, THE PAY LIMIT LINES MAY BE MODIFIED TO COINCIDE WITH NATURAL FAULTS OR FISSURES OF ROCK AS THE ENGINEER MAY DETERMINE.
- COATED CORRUGATED METAL PIPE (C.C.M.P.)



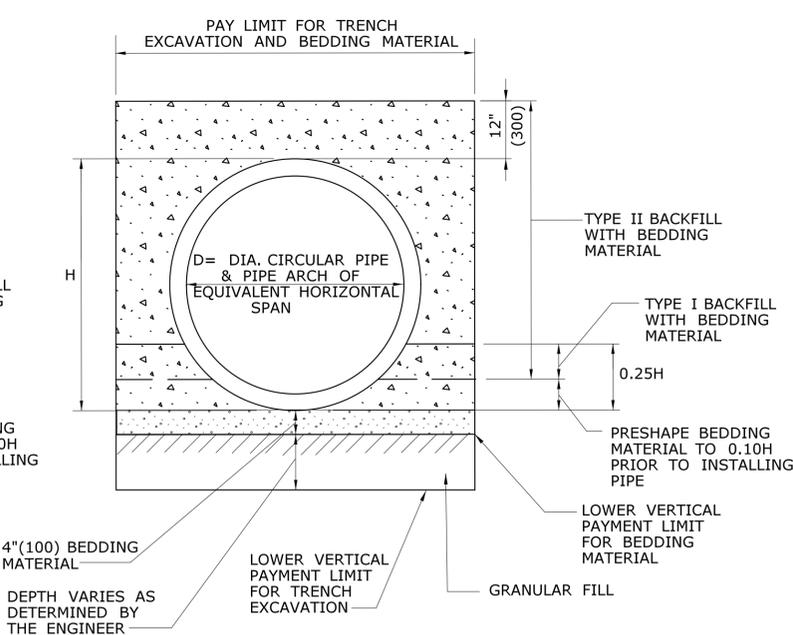
SECTION A

1'-0"(300) CEMENT RUBBLE MASONRY FOR FULL WIDTH OF TRENCH OPENED. THE CEMENT RUBBLE MASONRY SHALL BE COMPOSED OF ROCK OF THE SAME APPEARANCE AS, OR SIMILAR TO THE ADJACENT ROCK CUT.

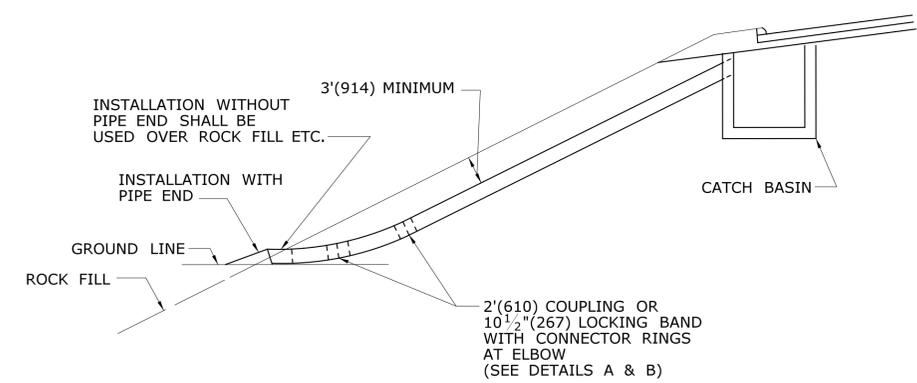
MINIMUM ACCEPTABLE DIMENSIONS FOR DEPTH AND WIDTH = $D+2'(610)$ (EACH)



**PIPE TRENCH DETAIL
WHERE GRANULAR FILL IS NOT USED**



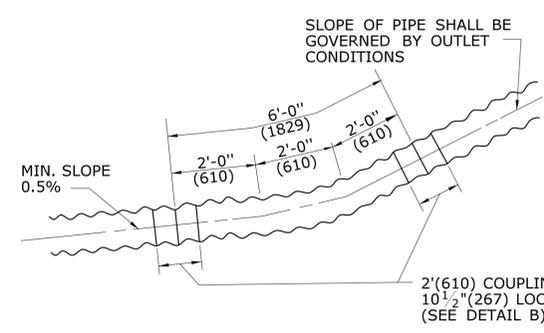
**PIPE TRENCH DETAIL
WHERE GRANULAR FILL IS USED AS BEDDING**



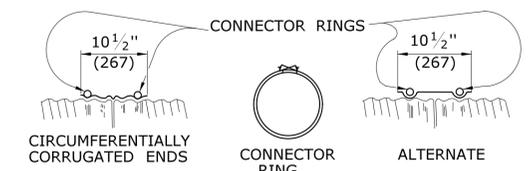
TYPICAL INSTALLATION OF C.C.M.P. ELBOW IN FILL SLOPE

**TABLE C
CONNECTOR RINGS**

PIPE DIAMETER	LENGTH OF RING
12" (300)	52" (1321)
15" (381)	61" (1549)
18" (457)	71" (1803)
21" (533)	80" (2032)
24" (610)	90" (2286)
30" (762)	108" (2743)
36" (915)	128" (3251)
42" (1066)	147" (3734)
48" (1219)	166" (4216)



**DETAIL A
C.C.M.P. ELBOW AND COUPLING**



**DETAIL B
ELBOW DIMENSIONS**

RODS: 7/16" (11) DIAMETER ELECTRO-GALVANIZED WITH 6" (152) LENGTH OF 1/2" (13) ROLLED THREADS EACH END, FURNISHED CURVED, TO FIT PIPE. SEE TABLE C

LUGS: DOUBLE TAKE UP, CAST IRON, ELECTRO-GALVANIZED.

NOTE: THE COUPLER FASTENING DEVICE SHALL NOT INTERFERE WITH INSTALLATION OF CONNECTOR RINGS.

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION
3	7/13	ADD CONCRETE PIPE CONNECTION DETAIL
2	6/01/10	REVISE TITLE TO SAY TRENCH DETAIL
1	6/01/10	REMOVE GRAVEL, REPLACE W/ GRANULAR

Plotted Date: 6/13/2013

NOT TO SCALE

**STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION**

File name: CTDOT_Highway_STD2013.dgn Model: 17-HW-651_01

SUBMITTED BY: NAME/DATE/TIME:

APPROVED BY: NAME/DATE/TIME:

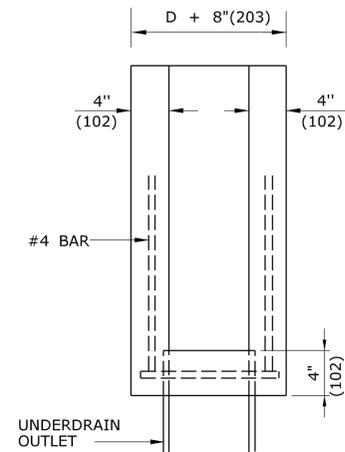
**CTDOT
STANDARD SHEET
OFFICE OF ENGINEERING**

STANDARD SHEET TITLE: **C.C.M.P. PIPE INSTALLATIONS IN FILL & ROCK SLOPES & PIPE TRENCH DETAIL**

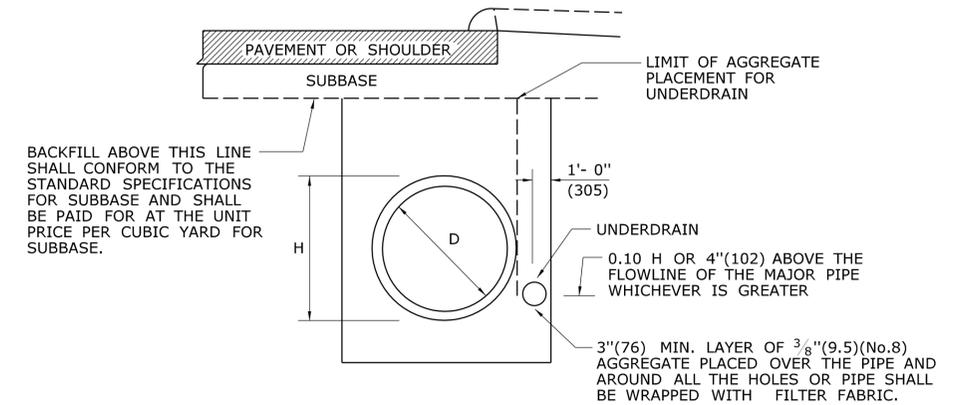
STANDARD SHEET NO.: **HW-651_01**

GENERAL NOTES:

1. THE OUTLET ENDWALL CAN BE EITHER PRECAST OR CAST IN PLACE. CONCRETE SHALL BE CLASS "C" CONCRETE.
2. IF PRECAST CONCRETE ENDWALL IS USED, THE OUTLET SHALL BE GROUTED AND SEALED TO ENDWALL OPENING WITH NON-SHRINK GROUT.

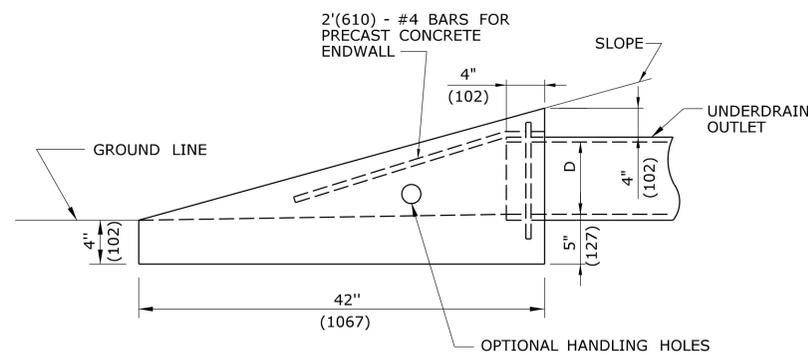


PLAN VIEW

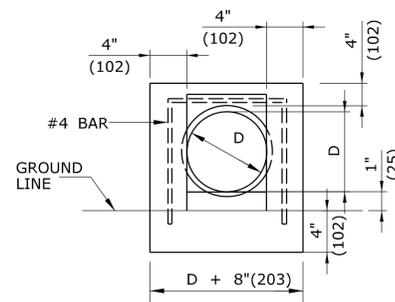


NOTE:
PAY LIMIT FOR TRENCH EXCAVATION AND BEDDING SHALL BE THE SAME AS FOR THE CULVERT ALONE. MATERIAL ABOVE THE BEDDING SHALL BE SUITABLE MATERIAL OR GRANULAR FILL.

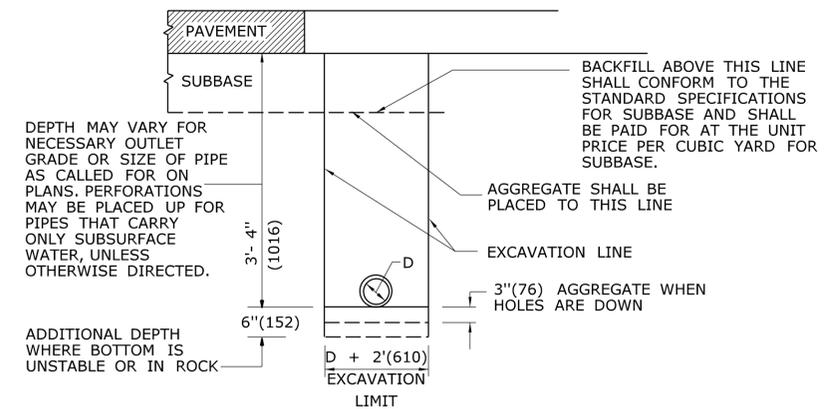
**CULVERT AND UNDERDRAIN
IN THE SAME TRENCH**



ENDWALL



ELEVATION



UNDERDRAIN

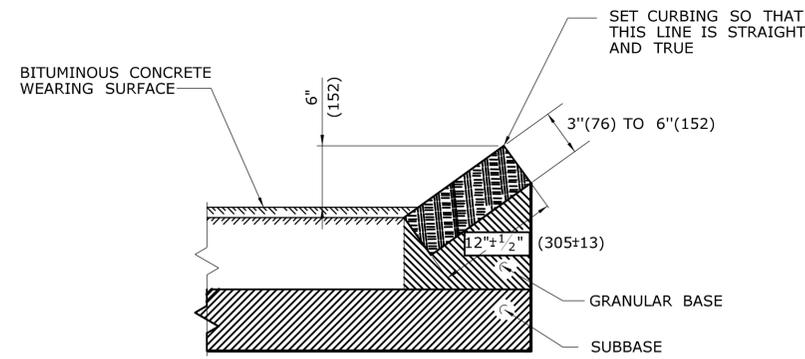
UNDERDRAIN OUTLET DETAILS

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

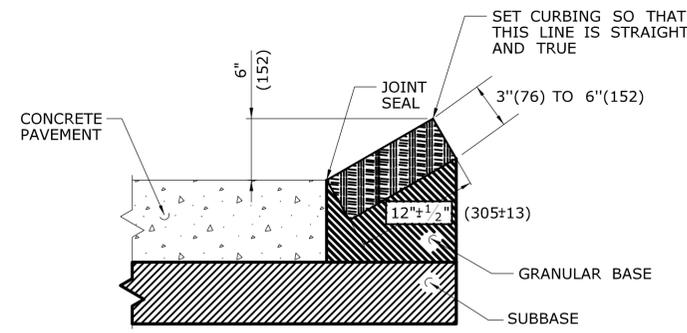
1	6/01/10	REMOVED RODENT SCREEN DETAILS AND REVISED TITLES							
-	-	-							
-	-	-							
-	-	-							
-	-	-							
-	-	-							
REV.	DATE	REVISION DESCRIPTION	Plotted Date: 6/23/2011	NOT TO SCALE		SUBMITTED BY: _____ NAME/DATE/TIME: _____ APPROVED BY: _____ NAME/DATE/TIME: _____	CTDOT STANDARD SHEET OFFICE OF ENGINEERING	STANDARD SHEET TITLE: UNDERDRAINS AND UNDERDRAIN OUTLETS	STANDARD SHEET NO.: HW-751_01
File name: CTDOT_HIGHWAY_STD_JUNE2011.dgn Model: 20 - HW-751_01									

NOTE:

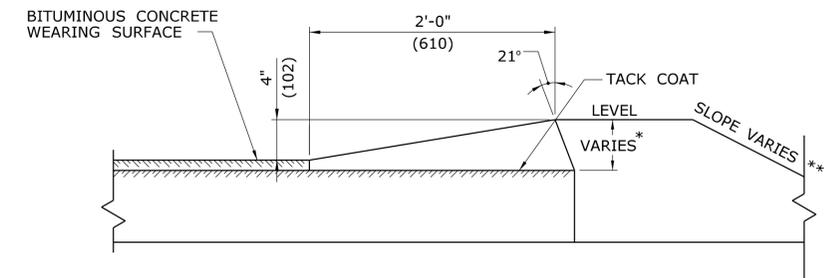
1. ALL CONSTRUCTION DIMENSIONS ARE NOMINAL.



TYPICAL SECTION SHOWING SLOPE CURBING SET ADJACENT TO BITUMINOUS CONCRETE SURFACES



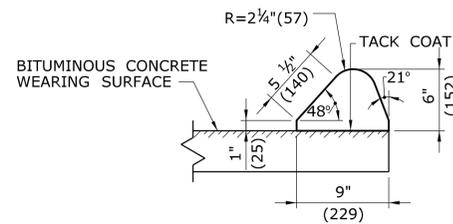
TYPICAL SECTION SHOWING SLOPE CURBING SET ADJACENT TO CONCRETE SURFACES



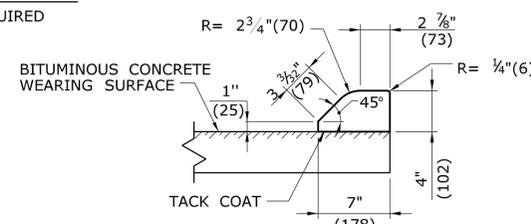
* THIS DIMENSION VARIES WITH THE THICKNESS OF THE TOP COURSE AND SLOPE OF SHOULDER.
 ** SEE TYPICAL SECTIONS FOR PROJECT. IN FILL AREAS 2'(610) LEVEL BEHIND THE CURB IS REQUIRED.

GRANITE SLOPE CURBING

1/2"(13) MORTAR JOINT REQUIRED

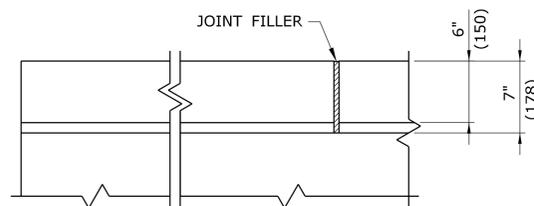


6" (150) BITUMINOUS CONCRETE LIP CURBING

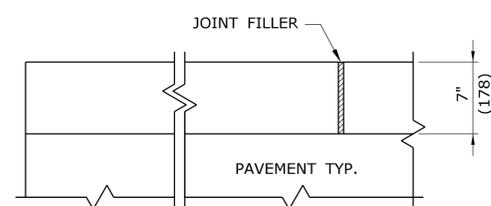


4" (100) BITUMINOUS CONCRETE PARK CURBING

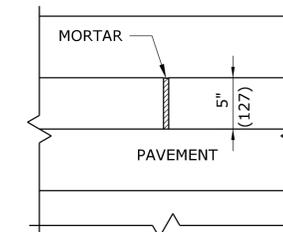
BITUMINOUS CONCRETE BERM



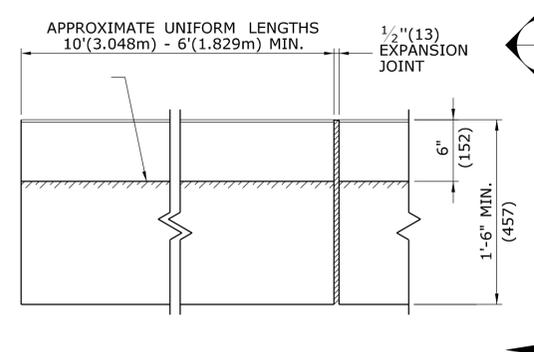
PLAN



PLAN

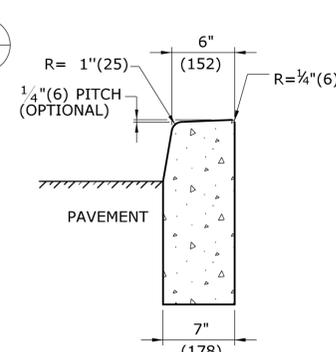


PLAN

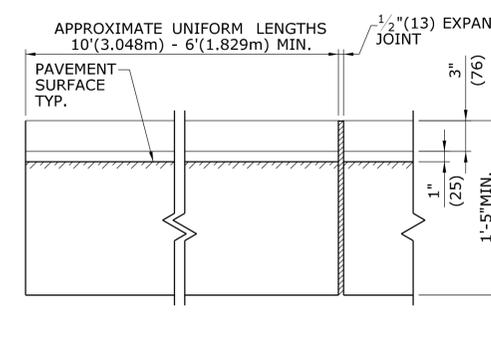


ELEVATION

6" (150) CONCRETE CURBING

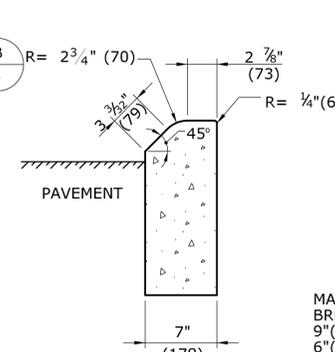


SECTION A

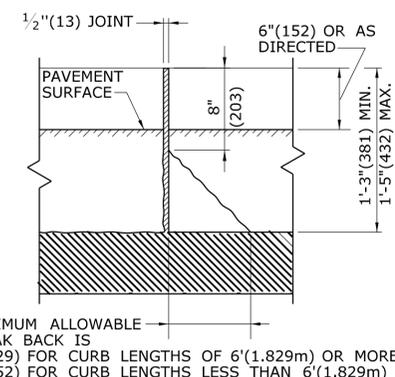


ELEVATION

4" (100) CONCRETE PARK CURBING

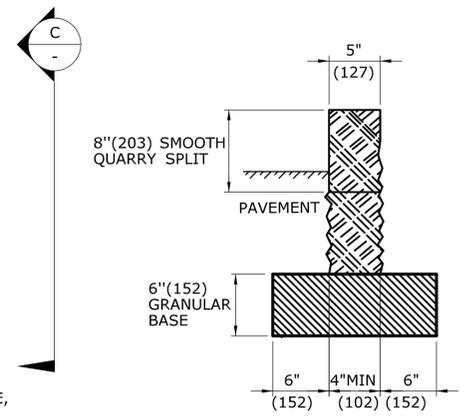


SECTION B



ELEVATION

STONE CURBING



SECTION C

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>		<p>NOT TO SCALE</p>		<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>		<p>SUBMITTED BY: NAME/DATE/TIME:</p>		<p>CTDOT STANDARD SHEET</p>		<p>STANDARD SHEET TITLE:</p>		<p>STANDARD SHEET NO.:</p>	
<p>1 6/01/10 REVISED TITLE FOR 6" CONC. CURB</p>		<p>Plotted Date: 6/23/2011</p>		<p>Filename: CTDOT_HIGHWAY_STD_JUNE2011.dgn Model: 22 - HW-811_01</p>		<p>APPROVED BY: NAME/DATE/TIME:</p>		<p>OFFICE OF ENGINEERING</p>		<p>CURBING</p>		<p>HW-811_01</p>	
REV.	DATE	REVISION DESCRIPTION											