*ONLY STANDARD SHEETS MARKED WITH AN "✓" ARE IN THIS PROJECT # 9023-0008

**REVISED OR ADDED

✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-286_01	DRAINAGE TRENCH EXCAVATION	7-15-20
	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-586_01	CATCH BASIN AND DROP INLET TYPES "C" AND "C-L"	7-15-20
	HW-586_02	CATCH BASIN TOPS (TYPES "C" AND "C-L") FOR DOUBLE GRATE TYPE I	7-15-20
	HW-586_03	CATCH BASIN TOPS (TYPES "C" AND "C-L") FOR DOUBLE GRATE TYPE II	7-15-20
✓	HW-586_04	PRECAST CATCH BASIN AND ROUND STRUCTURE	7-15-20
	HW-586_05	PRECAST CATCH BASIN TYPES FOR DOUBLE GRATE TYPE I	7-15-20
	HW-586_06	PRECAST CATCH BASIN TYPES FOR DOUBLE GRATE TYPE II	7-15-20
✓	HW-586_07	CATCH BASIN TOPS TYPE "C" AND "C-L"	7-15-20
✓	HW-586_08	CATCH BASIN FRAMES AND GRATES	7-15-20
	HW-586_09	CATCH BASIN LOCK DOWN TOPS	7-15-20
	HW-586_10a	MANHOLE FRAME AND COVER	7-15-20
	HW-586_10b	MANHOLE FRAME AND GRATE	7-15-20
	HW-586_10c	REINFORCED PRECAST CONCRETE MANHOLE	7-15-20
	HW-586_10d	MANHOLE NON-PRECAST CONCRETE UNIT	7-15-20
	HW-686_01	C.C.M. PIPE INSTALLATION	7-15-20
	HW-686_02	PIPE ENDS	7-15-20
	HW-751_01	UNDERDRAINS AND UNDERDRAIN OUTLETS	7-12-12
	HW-803_01a	PAVED APRONS	6-07-17
	HW-803_01b	PAVED DITCHES AND PAVED CHANNELS	6-07-17
	HW-811_01	CONCRETE CURBING	6-07-17
	HW-813_01	GRANITE STONE TRANSITION CURBING	7-24-13
	HW-813_02	STONE CURBING	6-07-17
✓	HW-815_01	BITUMINOUS CONCRETE CURBING	6-07-17
	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" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 1	1-27-20
	HW-821_02b	45" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 2	1-27-20
	HW-821_03a	TRANSITION - 32" (813) JERSEY SHAPE TO 45" (1145) VERTICAL SHAPE SHEET 1	1-26-12

✓*	SHEET NO.	TITLE	APPROVAL DATE**
	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
	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	2-06-12
	HW-821_07	MISCELLANOUS DETAILS FOR BARRIER TRANSITIONS	7-12-12
	HW-821_08a	F-SHAPE CONC. BARRIER CURB (21"x45") TRANSITION FOR THRIE-BEAM	1-09-20
	HW-821_08b	F-SHAPE CONC. BARRIER CURB (21"x45") TRANSITION FOR THRIE-BEAM - REINF.	1-09-20
	HW-821_09a	SINGLE SLOPE CONC. BARRIER CURB (20"x42") TRANS. FOR THRIE-BEAM	1-09-20
	HW-821_09b	SINGLE SLOPE CONC. BARRIER CURB (20"x42") TRANS. FOR THRIE-BEAM - REINF.	1-09-20
	HW-821_10a	VERTICAL FACE CONC. (21"x54") TRANSITION FOR THRIE-BEAM	1-09-20
	HW-821 10b	VERTICAL FACE CONC. (21"X54") TRANSITION FOR THRIE-BEAM REINF	1-09-20
	HW-821_11a	42" SINGLE SLOPE PRECAST CONCRETE BARRIER CURB -SHEET 1	1-27-20
	HW-821_11b	42" SINGLE SLOPE PRECAST CONCRETE BARRIER CURB -SHEET 2	1-27-20
✓	HW-822_01	TEMPORARY PRECAST CONCRETE BARRIER CURB	7-24-13
	HW-822 02a	TEMPORARY TRAFFIC BARRIER - DETAILS	3-18-21
	HW-822 02b	TEMPORARY TRAFFIC BARRIER (BOLTED)	3-18-21
	HW-822 02c	TEMPORARY TRAFFIC BARRIER & TEMPORARY TRAFFIC BARRIER (PINNED)	3-18-21
	HW-905_01	STONE WALL FENCE	1-25-19
	HW-906_01	WIRE FENCE	1-25-19
	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) GUIDERAIL	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	1-25-19
	HW-910_08	R-B 350 BRIDGE ATTACHMENT TRAILING END	6-09-11

NOT TO SCALE

####

SIGNATURE BLOCK:

OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:

Thomas R. Laliberte
2021.09.30 12:31:16-04'00'

APPROVED BY:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

CTDOT STANDARD SHEET

STANDARD SHEET TITLE:

HIGHWAY STANDARD SHEET INDEX

STANDARD SHEET NO.:

1 OF 2

PLOTTED DATE: 3/18/2021

*ONLY STANDARD SHEETS MARKED WITH AN "✓" ARE IN THIS PROJECT # 9023-0008

**REVISED OR ADDED

✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-910 09a	MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 1	7-15-20
	HW-910 09b	MISCELLANEOUS GUIDERAIL TRANSITIONS SHEET 2	7-15-20
	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 LEADING END ATTACHMENTS AND SYSTEMS 2&3	7-24-13
	HW-910_12b	MERRITT PARKWAY GUIDERAIL HARDWARE DETAILS	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) GUIDERAIL	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
✓	HW-910_20	MASH W-BEAM HARDWARE	1-05-18
✓	HW-910_21	METAL BEAM RAIL (R-B MASH) GUIDERAIL	1-25-19
	HW-910_22	METAL BEAM RAIL (MD-B MASH) GUIDERAIL	1-05-18
	HW-910_23	METAL BEAM RAIL (R-B MASH) HALF & QUARTER POST SPACING GUIDERAIL	1-05-18
	HW-910_24	METAL BEAM RAIL SPAN SECTION TYPES II AND III	1-05-18
	HW-910_25	METAL BEAM RAIL TRANSITION 350 TO MASH	1-05-18
	HW-910_26	THRIE-BEAM ATTACHMENT HARDWARE	1-09-20
✓	HW-910_27	THRIE-BEAM ATTACHMENT	1-09-20
✓	HW-911_01	R-B END ANCHORAGE TYPE I AND II	1-25-19
	HW-911_02	MD-B END ANCHORAGE TYPE I	1-05-18
	HW-911_03	ANCHOR IN EARTH CUT SLOPE & ANCHOR IN ROCK CUT SLOPE	10-18-10
	HW-911_05	MERRITT PARKWAY GUIDERAIL END ANCHORS	7-24-13

✓*	SHEET NO.	TITLE	APPROVAL DATE**
	HW-913_01a	CHAIN LINK FENCE	5-06-19
	HW-913_01b	CHAIN LINK FENCE HARDWARE	5-06-19
	HW-913_02	CHAIN LINK FENCE GATES	5-06-19
	HW-918_01a	THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 1	7-24-13
	HW-918_01b	THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 2	1-26-12
	HW-918_01c	THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 3	7-24-13
	HW-921_01	DRIVEWAY RAMPS AND SIDEWALKS	6-07-17
	HW-949_01a	LANDSCAPE PLANTING	6-15-19
	HW-949_01b	TREE STAKING	6-15-19
	HW-1800_01	GRADING PLAN FOR IMPACT ATTENUATION SYSTEMS (FLARED AND TANGENTIAL)	1-25-19
	HW-1800 02	GRADING PLAN FOR IMPACT ATTENUATION SYSTEMS (MEDIAN/GORE)	1-25-20

NOT TO SCALE

####

SIGNATURE BLOCK:

OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:

APPROVED BY:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

CTDOT STANDARD SHEET

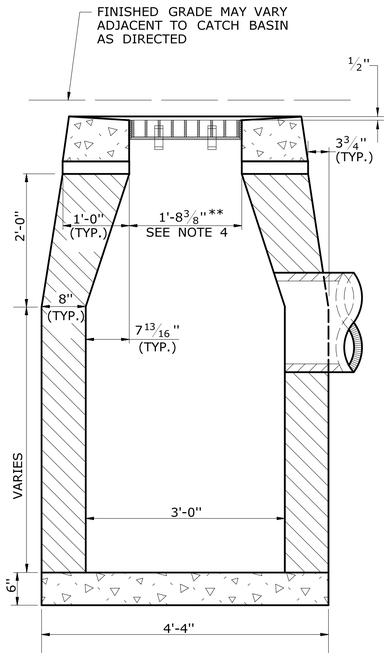
STANDARD SHEET TITLE:

HIGHWAY STANDARD SHEET INDEX

STANDARD SHEET NO.:

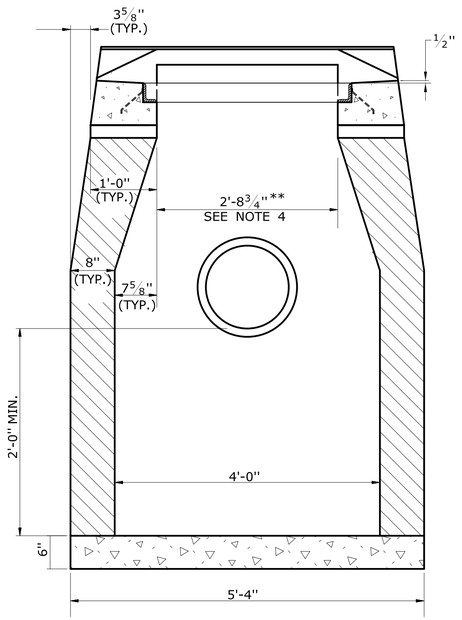
2 OF 2

PLOTTED DATE: 3/18/2021



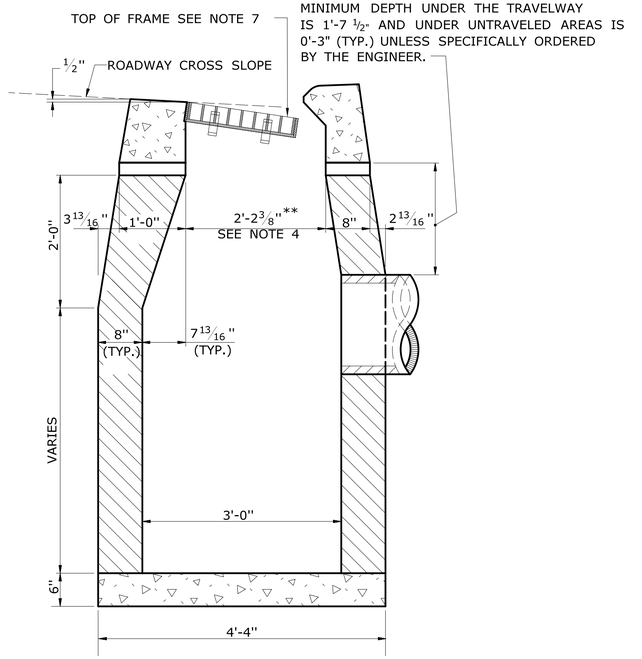
SECTION B

TYPE "C-L" CATCH BASIN



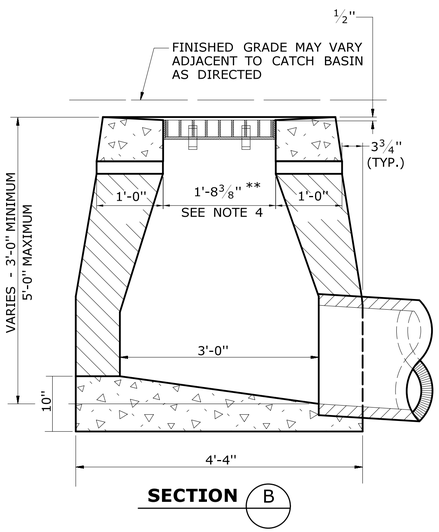
SECTION A

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



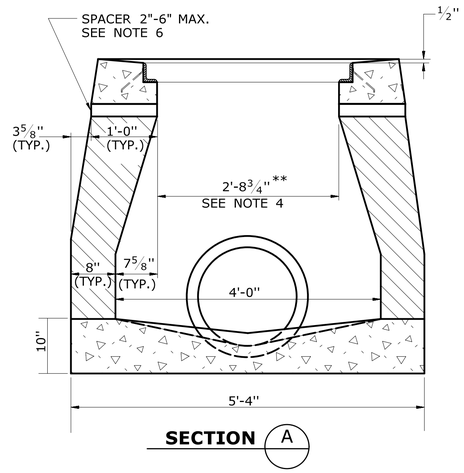
SECTION B

TYPE "C" CATCH BASIN



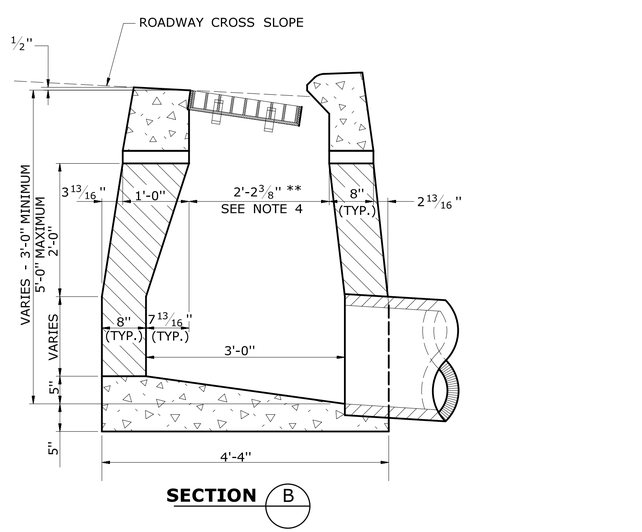
SECTION B

TYPE "C-L" DROP INLET



SECTION A

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

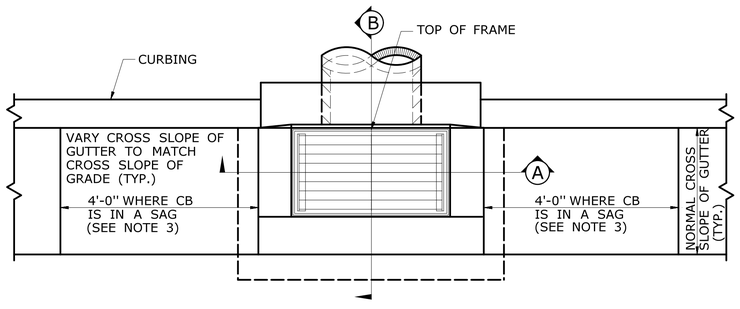


SECTION B

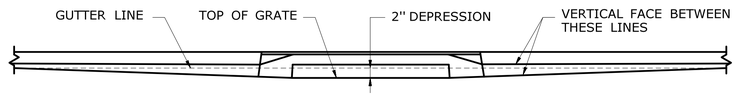
TYPE "C" DROP INLET

GENERAL NOTES:

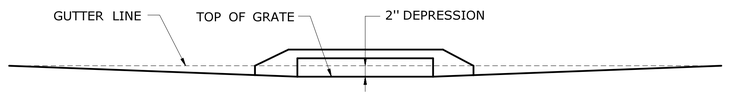
1. FOR CATCH BASIN TOPS, SEE SHEET NO. HW-586_07.
2. ALL FACES OF STRUCTURES IN CONTACT WITH CONCRETE PAVEMENT SHALL BE COVERED WITH A LAYER OF TAR PAPER OR APPROVED EQUAL.
3. USE 6'-0" ON UPGRADE SIDE (SEE PLAN VIEW) OF CONTINUOUS GRADE AND 1'-0" ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED BY THE ENGINEER.
4. IF MASONRY UNITS ARE REQUIRED, THE BASIN SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE DIMENSIONS SHOWN. CORBELLING SHALL BE PERMITTED TO A MAXIMUM OF 3". NO PROJECTION SHALL EXTEND INSIDE THE LIMITS FOR THE CATCH BASIN OPENINGS SHOWN IN THE SECTION VIEWS **.
5. WALL THICKNESS OF ALL CATCH BASINS OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. 12" THICKNESS SHALL START AFTER THE FIRST 10'.
6. SPACERS CAN BE EITHER CONCRETE MASONRY UNIT OR PRECAST WITH THE REQUIRED REINFORCING (RECOMMENDED BY THE MANUFACTURER) AS NEEDED TO PROVIDE THE PROPER GRADE SHOWN ON THE PLANS.
7. TOP OF FRAME ELEVATION SHALL BE MEASURED IN THE CENTER OF GRATE AT GUTTER LINE.



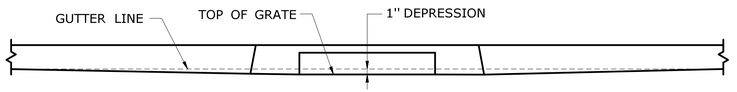
PLAN



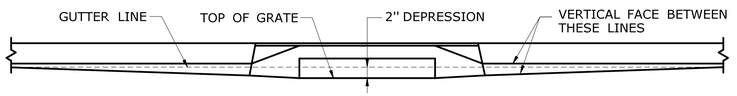
CATCH BASINS IN A LINE WITH 4" CONCRETE PARK CURBING OR 4" BITUMINOUS CONCRETE PARK CURBING



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



CATCH BASINS IN A LINE WITH 6" CONCRETE CURBING OR 6" STONE CURBING

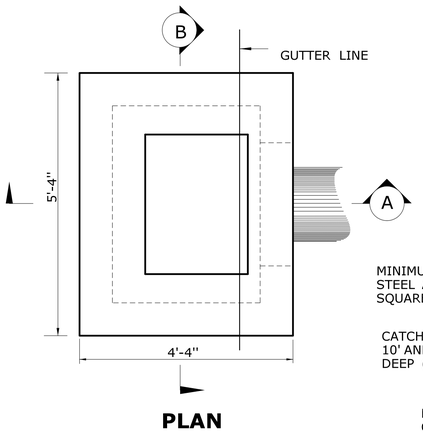


CATCH BASINS IN A LINE WITH 6" BITUMINOUS CONCRETE LIP CURBING (MACHINE FORMED)

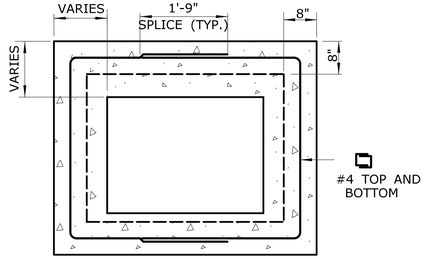
DETAILS OF DEPRESSED GUTTER STRIP FOR TYPE "C" CATCH BASIN

	NOT TO SCALE #####	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY:	APPROVED BY:	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: CATCH BASIN AND DROP INLET TYPES "C" AND "C-L"	STANDARD SHEET NO.: HW-586_01

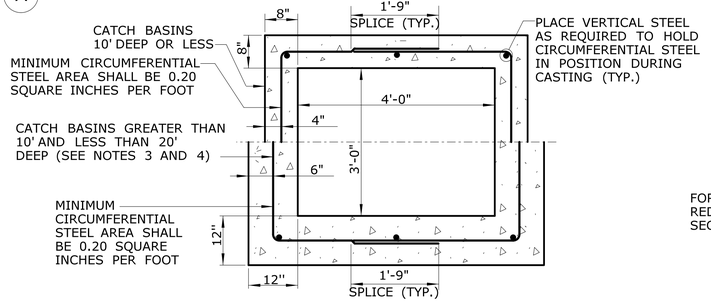
PLOTTED DATE: 7/7/2020



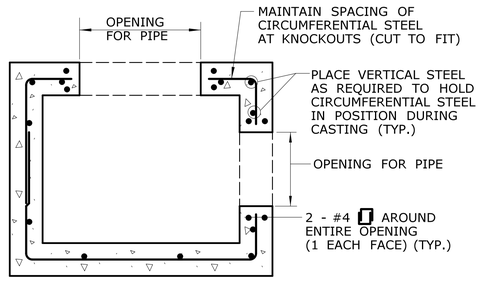
PLAN



REDUCER SECTION (TYP.)



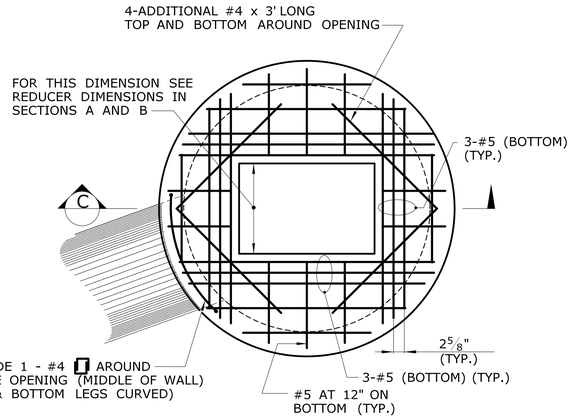
RISER SECTION (TYP.)



TYPICAL SECTION THROUGH RISER WITH OPENING

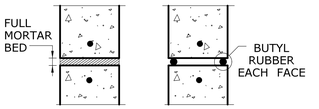
GENERAL NOTES:

1. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.
2. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2 INCHES, EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE $1\frac{1}{2}$ INCHES.
3. WALL THICKNESS OF ALL CATCH BASINS OVER 10 FEET DEEP SHALL BE INCREASED TO 12 INCHES. INSIDE DIMENSIONS SHALL REMAIN THE SAME. THE 12 INCH THICKNESS SHALL START AFTER THE FIRST 10 FEET.
4. BASES AND RISERS AT A DEPTH OF 20 FEET AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
5. RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS SHALL BE PROVIDED. RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
6. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. ROUND STRUCTURES SHALL BE USED WHEN PIPES CANNOT ALIGN WITH A RECTANGULAR STRUCTURE KNOCKOUT.
7. 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 IN EACH DIRECTION. THE MAXIMUM SPACING OF THIS REINFORCEMENT SHALL NOT EXCEED 18 INCHES.
8. THE DETAILS SHOWN IN THE PLAN VIEW FOR PRECAST CONCRETE ROUND STRUCTURES SHALL ALSO BE USED FOR CONVERTING MANHOLES TO CATCH BASINS.
9. FOR CATCH BASIN TOPS, SEE SHEET NO. HW-586_07 FOR RECTANGULAR OPENING OR SHEET NOS. HW-586_10a, HW-586_ 10b OR HW-586_ 10c FOR CIRCULAR OPENING.

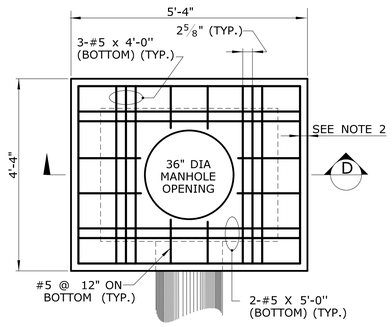


PLAN

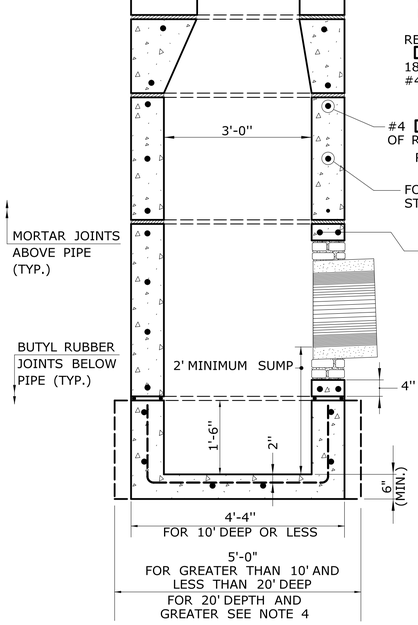
(SEE NOTE 9)



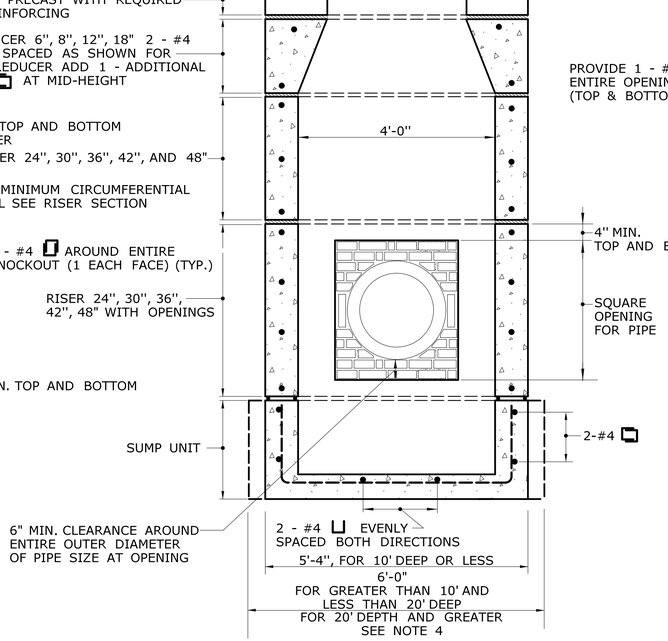
MORTAR JOINT DETAIL **BUTYL RUBBER JOINT DETAIL**



PLAN



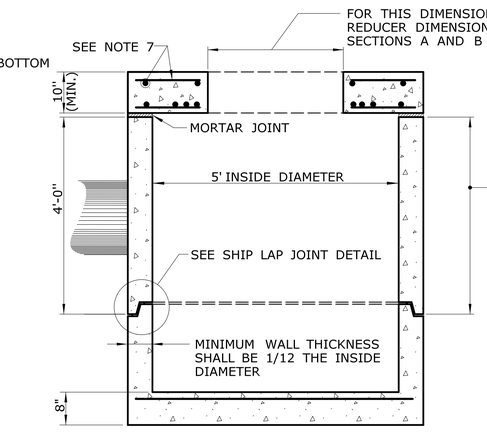
SECTION A



SECTION B

PRECAST CONCRETE TYPE "C" AND "C-L" CATCH BASIN

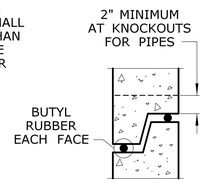
(UNDER 10' DEEP SHOWN)



SECTION C

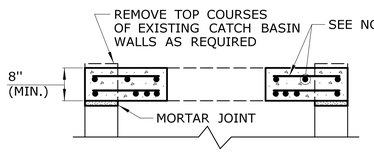
PRECAST CONCRETE TYPE "C" AND "C-L" ROUND STRUCTURE

(SEE NOTE 6)



SHIP LAP JOINT DETAIL

(FOR USE WITH ROUND STRUCTURES ONLY)

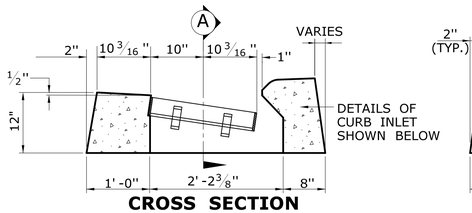


SECTION D

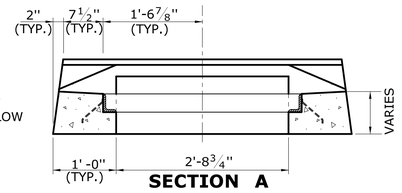
TOP SLAB TO CONVERT CATCH BASIN TO MANHOLE

	NOT TO SCALE ###	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 09:23:30-04'00'	APPROVED BY: James Fallon, P.E.	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: PRECAST CATCH BASIN AND ROUND STRUCTURE	STANDARD SHEET NO.: HW-586_04

PLOTTED DATE: 6/30/2020

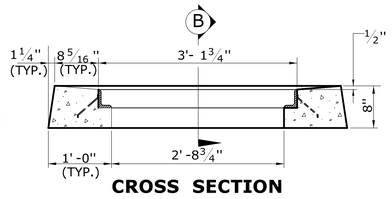


CROSS SECTION

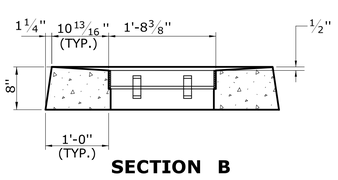


SECTION A

TYPE "C" CATCH BASIN TOP



CROSS SECTION

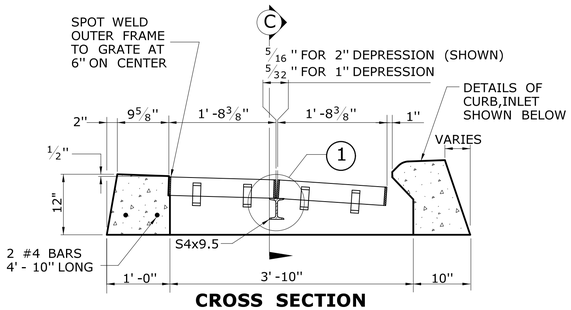


SECTION B

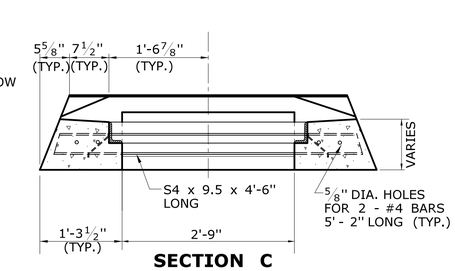
TYPE "C-L" CATCH BASIN TOP

GENERAL NOTES:

1. FOR DETAILS OF FRAMES AND GRATES, SEE SHEET NO. HW-586_08.
2. ALL BARS SHALL HAVE A MINIMUM 2" COVER.

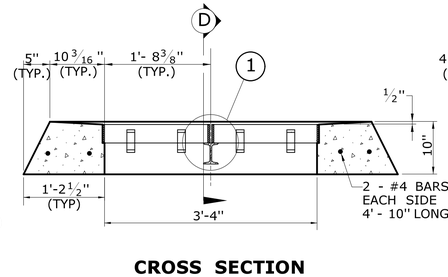


CROSS SECTION

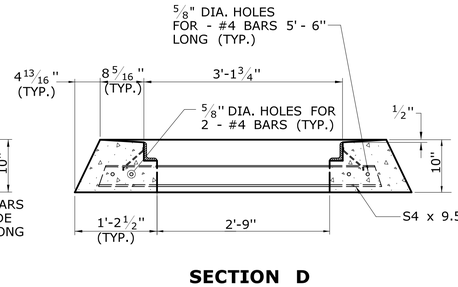


SECTION C

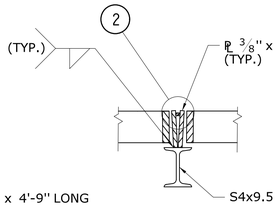
TYPE "C" CATCH BASIN DOUBLE GRATE - TYPE I TOP



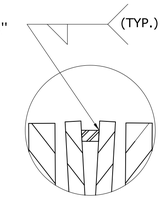
CROSS SECTION



SECTION D

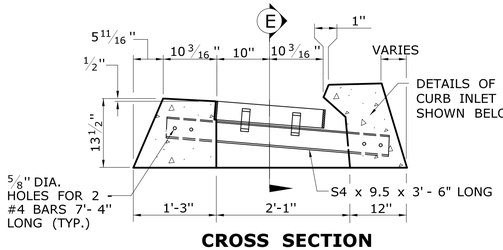


DETAIL "1"

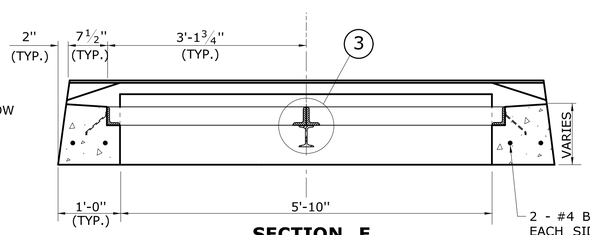


DETAIL "2"

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

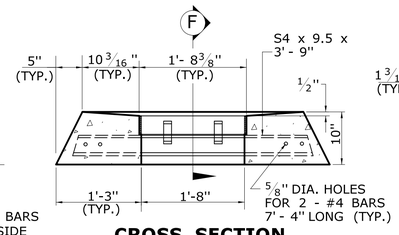


CROSS SECTION

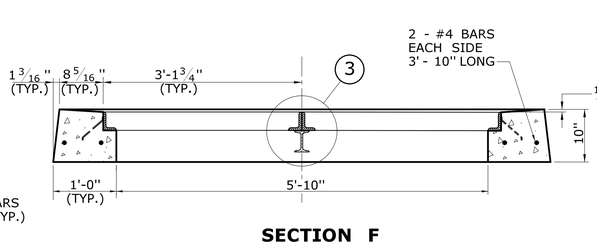


SECTION E

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

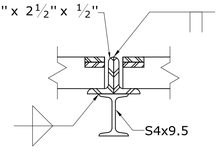


CROSS SECTION

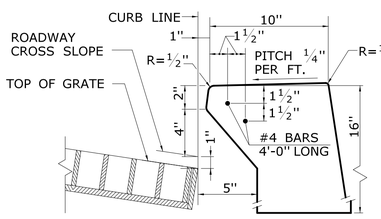


SECTION F

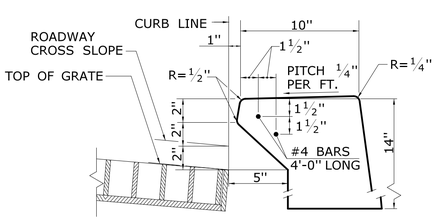
TYPE "C-L" CATCH BASIN DOUBLE GRATE - TYPE II TOP



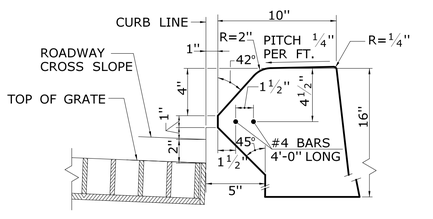
DETAIL "3"



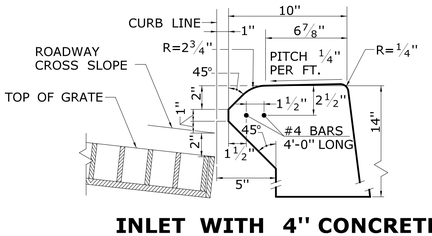
INLET WITH 6" CONCRETE OR STONE CURBING FOR TYPE "C" CB



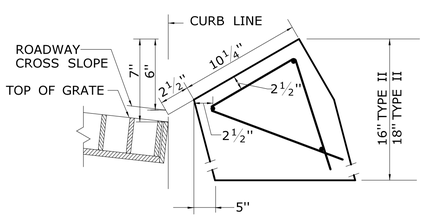
INLET WITH NO CURBING (PLAIN TYPE) FOR TYPE "C" CB



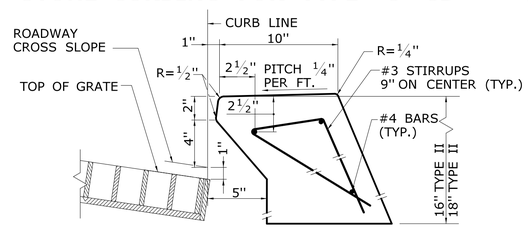
INLET WITH 6" BITUMINOUS CONCRETE LIP CURBING FOR TYPE "C" CB



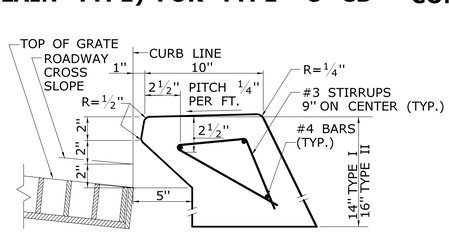
INLET WITH 4" CONCRETE PARK CURBING FOR TYPE "C" CB



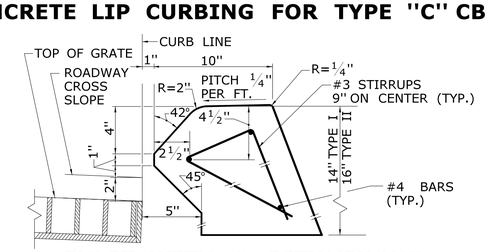
INLET WITH GRANITE SLOPE CURB FOR TYPE "C" CB



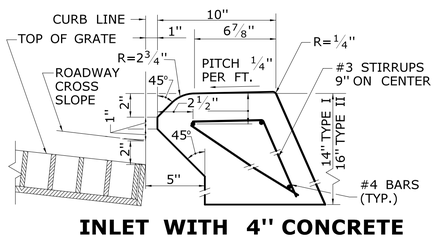
INLET WITH 6" CONCRETE OR STONE CURBING FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



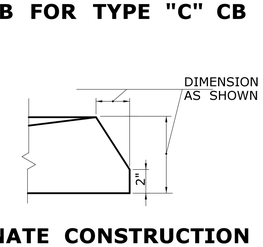
INLET WITH NO CURBING (PLAIN TYPE) FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



INLET WITH 6" BITUMINOUS CONCRETE LIP CURBING FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



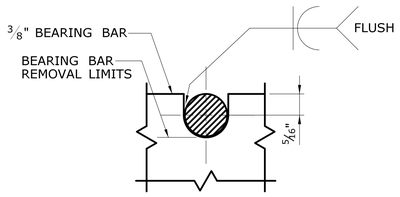
INLET WITH 4" CONCRETE PARK CURBING FOR TYPE "C" CB DOUBLE GRATE TYPE I & II



ALTERNATE CONSTRUCTION OF TYPE II TOP

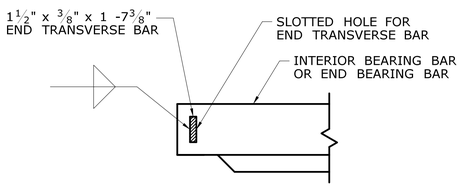
	NOT TO SCALE ###	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 09:24:52-04'00'	APPROVED BY: James Fallon, P.E. Digitally signed by James Fallon, P.E. DN: cn=James Fallon, P.E., o=, ou=, email=James.Fallon@ct.gov, c=US Date: 2020.07.14 06:40:29 -04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: CATCH BASIN TOPS TYPE "C" AND "C-L"	STANDARD SHEET NO.: HW-586_07

PLOTTED DATE: 6/30/2020

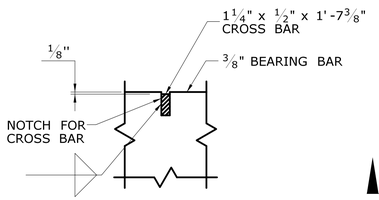


NOTE:
5/8" DIA. ROUND BAR SHALL CONTACT BEARING BAR AT BOTTOM AND BE FLUSH AT TOP.

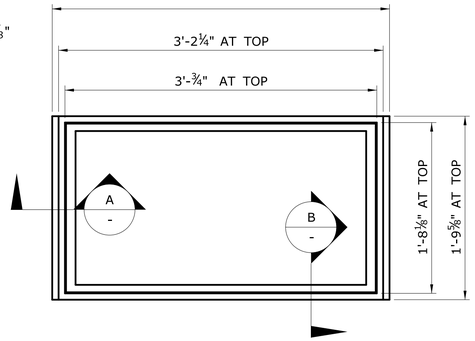
ROUND BAR ATTACHMENT
CATCH BASIN GRATE TYPE A



END TRANSVERSE BAR ATTACHMENT
CATCH BASIN GRATE TYPE A AND B



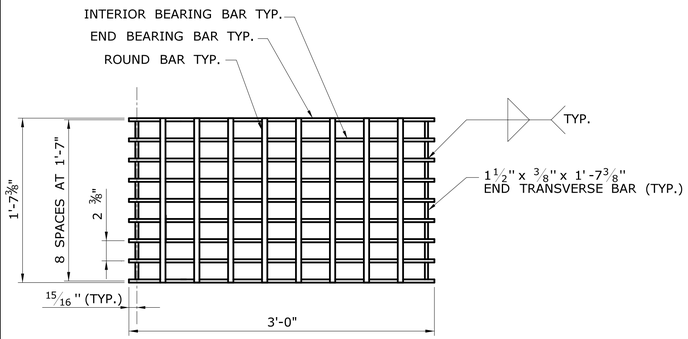
CROSS BAR ATTACHMENT
CATCH BASIN GRATE TYPE B



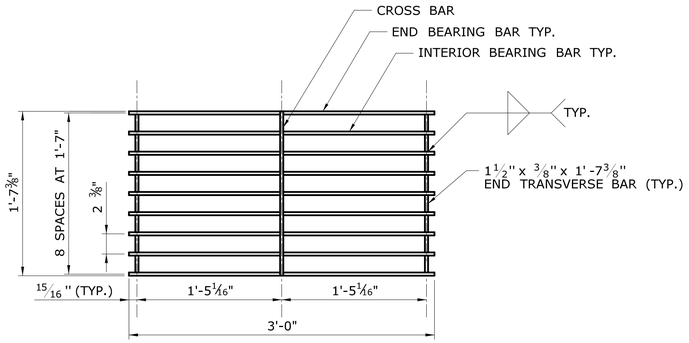
PLAN

GENERAL NOTES:

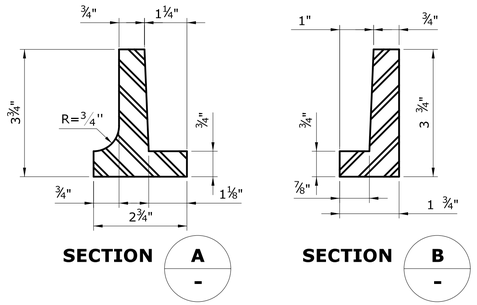
1. STEEL OR CAST IRON SHALL BE USED FOR FRAMES. STEEL SHALL BE USED FOR TYPE "A" AND "B" GRATES.
2. TYPE "A" GRATES SHALL BE USED ON ALL ROADWAYS WHERE BICYCLE TRAFFIC IS ALLOWED OR ON HEAVY DUTY LOCK DOWN TOPS AS DIRECTED BY THE ENGINEER.
3. TYPE "B" GRATES SHALL BE USED ON ALL LIMITED ACCESS HIGHWAYS, RAMPS AND WHERE BICYCLE TRAFFIC IS NOT ALLOWED OR AS DIRECTED BY THE ENGINEER.
4. DO NOT GALVANIZE CAST IRON FRAMES.
5. DIMENSIONAL TOLERANCES SHALL BE ± 1/16 INCH.
6. ALL STEEL BARS SHALL BE WELDED AT ALL INTERSECTIONS.



PLAN

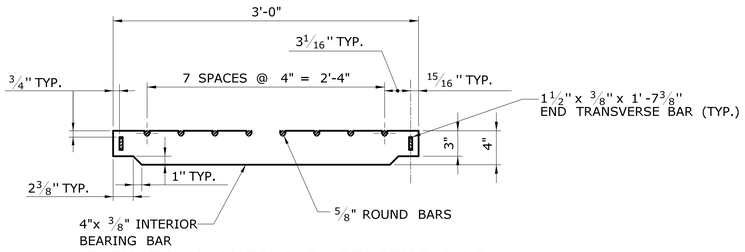


PLAN

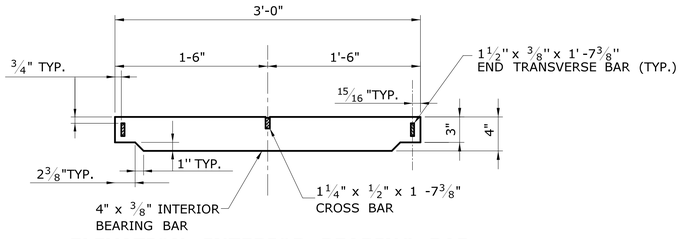


SECTION A - SECTION B -

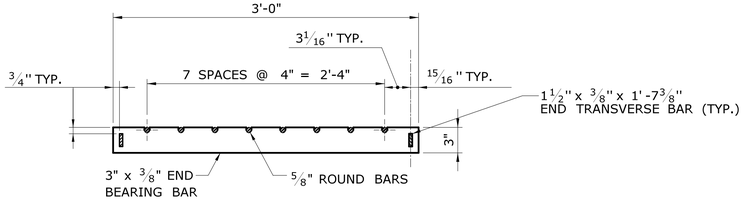
CAST IRON FRAME ALTERNATE



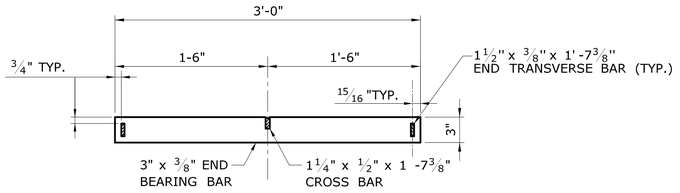
ELEVATION- INTERIOR BEARING BAR



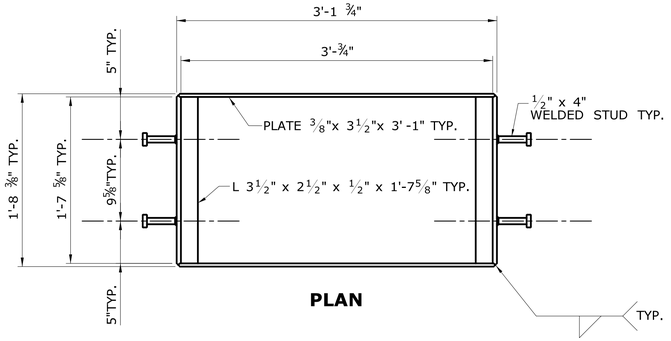
ELEVATION- INTERIOR BEARING BAR



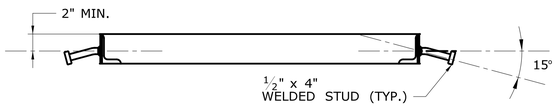
ELEVATION- END BEARING BAR
CATCH BASIN GRATE TYPE A



ELEVATION- END BEARING BAR
CATCH BASIN GRATE TYPE B



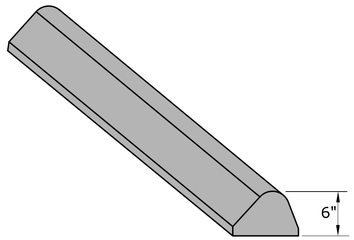
PLAN



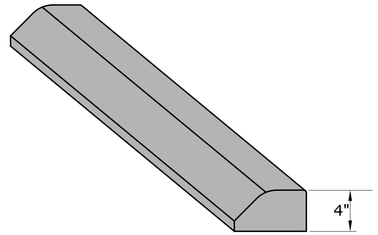
WELDED STUD ANCHOR DETAILS
STEEL FRAME

	NOT TO SCALE ###	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 09:25:23-04'00'	APPROVED BY: James Fallon, P.E.	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: CATCH BASIN FRAMES AND GRATES	STANDARD SHEET NO.: HW-586_08

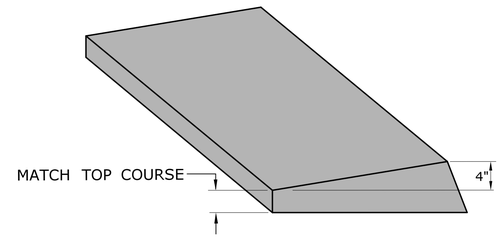
PLOTTED DATE: 6/30/2020



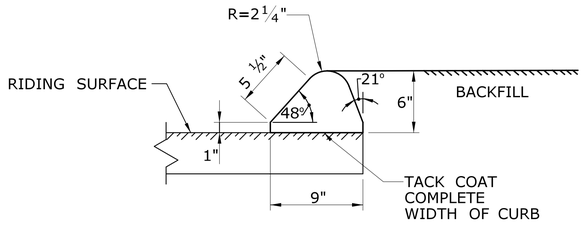
BITUMINOUS CONCRETE LIP CURBING
(6" HIGH)



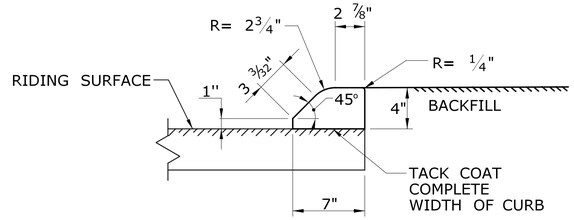
BITUMINOUS CONCRETE PARK CURBING
(4" HIGH)



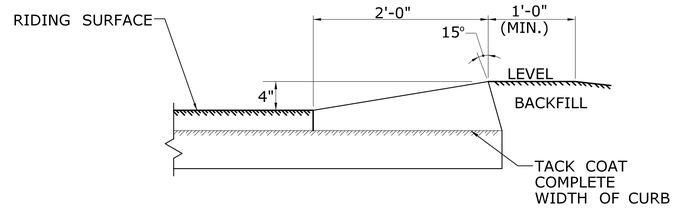
BITUMINOUS CONCRETE BERM CURBING
(4" HIGH)



SECTION



SECTION



SECTION

NOT TO SCALE
####

SIGNATURE BLOCK:
OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:

APPROVED BY:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

CTDOT STANDARD SHEET

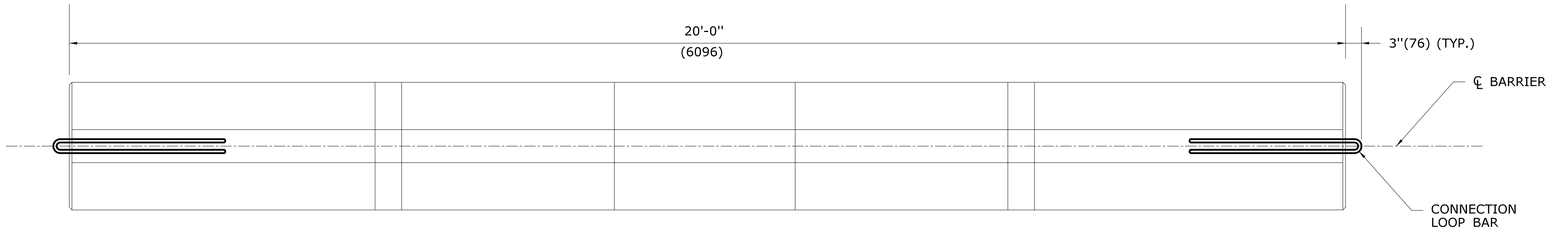
STANDARD SHEET TITLE:
BITUMINOUS CONCRETE CURBING

STANDARD SHEET NO.:
HW-815_01

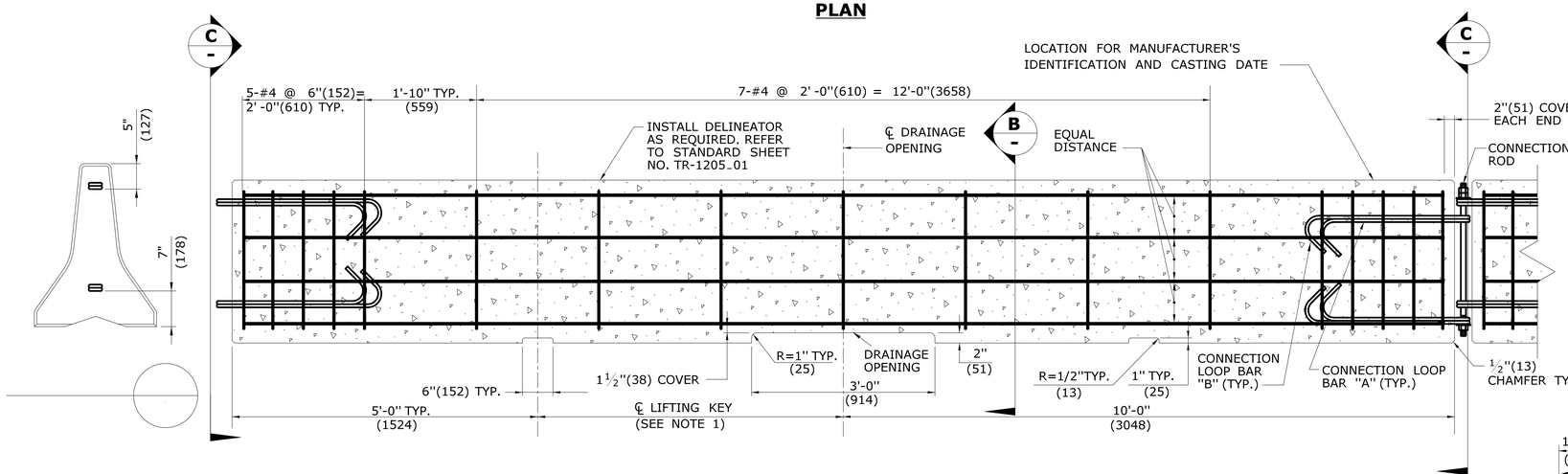
PLOTTED DATE: 7/7/2020

GENERAL NOTES:

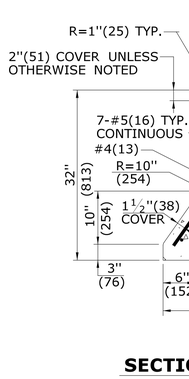
1. ALTERNATE DESIGNS FOR LIFTING KEYS, HOLES OR OTHER HANDLING DEVICES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. EXPECTED PERMANENT DYNAMIC DEFLECTION IS 3'-6" (1148) BASED ON TL-3 CRASH TESTS WITH 240' (73152) OF TPCBC.



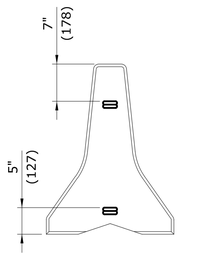
PLAN



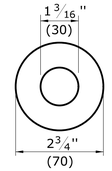
ELEVATION



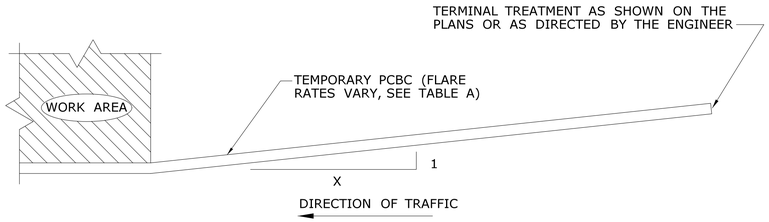
SECTION B -



END VIEW C -



WASHER DETAIL



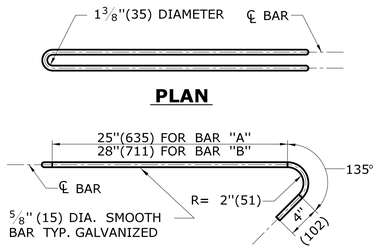
PLAN - TYPICAL INSTALLATION

TABLE A

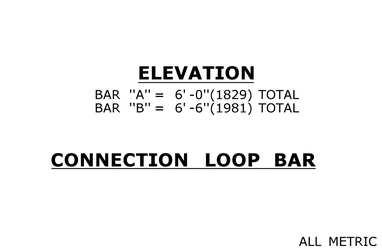
FLARE RATES

* SPEED	FLARE RATE (X : 1)
≤ 30MPH(48KPH)	4 : 1
> 30MPH(48KPH) <45MPH(72KPH)	6 : 1
≥ 45MPH(72KPH) NON-LIMITED ACCESS HIGHWAYS	8 : 1
ALL LIMITED ACCESS HIGHWAYS	10 : 1

* DESIGN SPEED THROUGH THE WORK AREA.



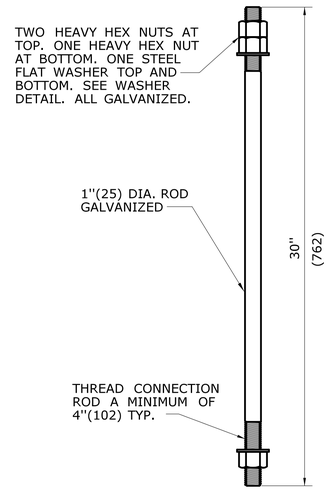
PLAN



ELEVATION

BAR "A" = 6'-0"(1829) TOTAL
BAR "B" = 6'-6"(1981) TOTAL

CONNECTION LOOP BAR

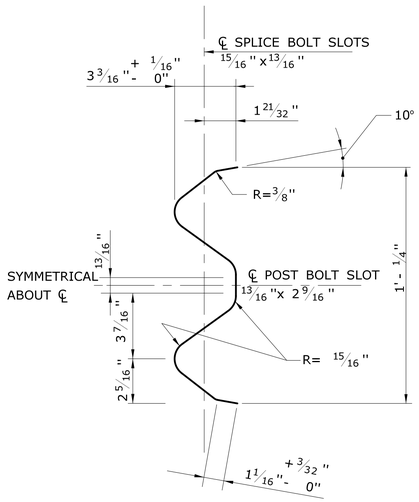


CONNECTION ROD

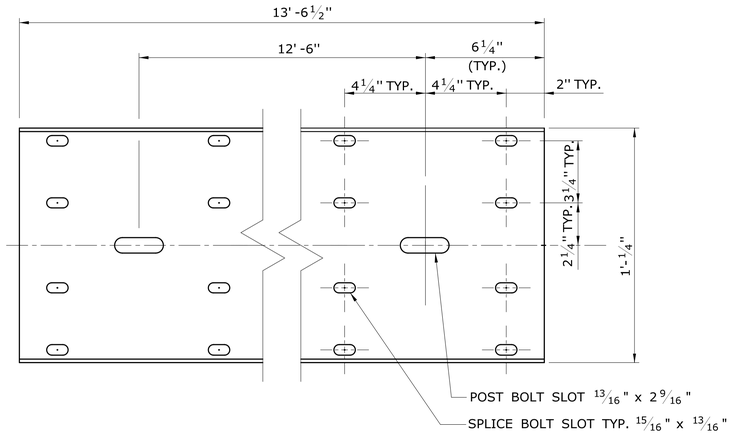
ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

	NOT TO SCALE #####	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 09:56:23-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 09:55:49-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: TEMPORARY PRECAST CONCRETE BARRIER CURB	STANDARD SHEET NO.: HW-822_01

PLOTTED DATE: 7/7/2020

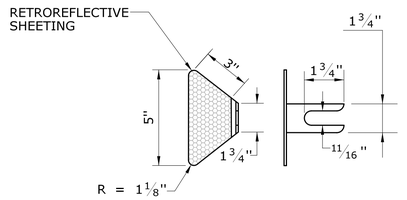


SECTION VIEW



ELEVATION VIEW

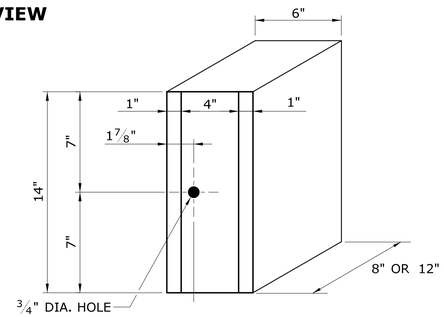
TYPICAL W-BEAM RAIL ELEMENT



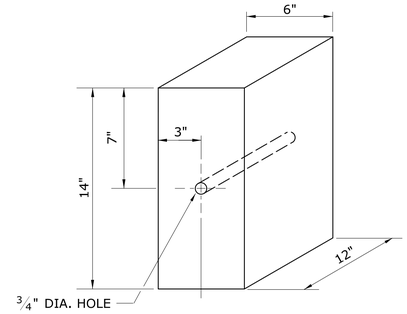
W-BEAM DELINEATOR

GENERAL NOTES:

1. W6 x 9 POSTS MAY BE USED IN PLACE OF W6 x 8.5 POSTS.
2. W-BEAM GUIDERAIL SHALL USE CLASS A (12 GAUGE), TYPE II W-BEAM RAIL ELEMENTS.
3. SEVEN FOOT LONG STEEL POSTS (W6 X 8.5) ARE TO BE INSTALLED WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES



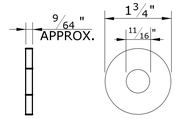
8" or 12" PLASTIC BLOCKOUT
NOMINAL DIMENSIONS



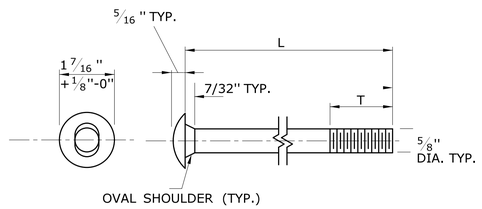
12" WOOD BLOCKOUT

W-BEAM DELINEATOR INSTALLATION NOTES:

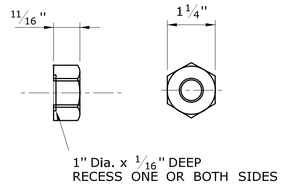
1. INSTALL W-BEAM DELINEATORS ON RAIL THAT IS PARALLEL TO AND NOT GREATER THAN 8' FROM THE EDGE OF THE ROADWAY. A MINIMUM OF THREE W-BEAM DELINEATORS SHALL BE INSTALLED ON ANY LENGTH OF GUIDERAIL.
2. THE SPACING OF W-BEAM DELINEATORS IS 50 FEET, INSTALLED AT RAIL SPLICE LOCATIONS. SPACING IS 25 FEET ON RADII LESS THAN 300 FEET.
3. NO W-BEAM DELINEATORS ARE PERMITTED WITHIN 75 FEET OF THE IMPACT HEAD OF ANY TANGENTIAL OR FLARED IMPACT ATTENUATION SYSTEM.
4. RETROREFLECTIVE SHEETING SHALL BE WHITE EXCEPT ON THE LEFT SIDE OF DIVIDED STREETS, HIGHWAYS, RAMPS, AND ONE WAY ROADS IN THE DIRECTION OF TRAVEL WHERE IT SHALL BE YELLOW.



WASHER
[FWC16a]



BUTTONHEAD BOLT

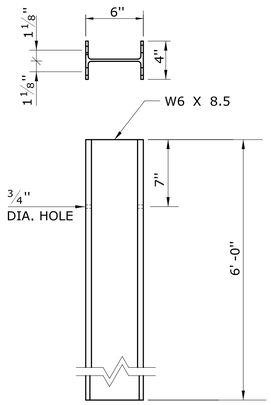


HEX NUT

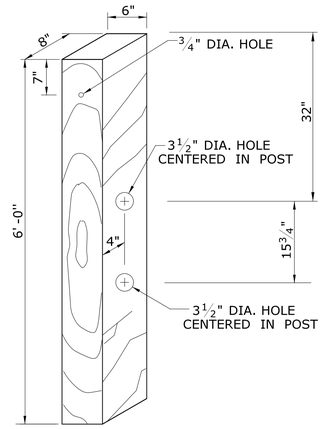
DESIGNATOR	L	T	INTENDED USE
FBB01	1-1/4"	1-1/8"	RAIL SPLICE BOLTS
FBB02	2"	1-3/4"	RUB RAIL BOLTS
FBB03	10"	4"	POST BOLTS (8" BLOCK OUTS)
	14"	4"	POST BOLT (12" BLOCK OUTS)
FBB04	18"	4"	POST BOLTS (2- 8"BLOCK OUTS)
	22"	4"	POST BOLT (CRT WOOD POST SYSTEM)

5/8" BUTTON HEAD BOLT(S) AND RECESSED NUT(S)

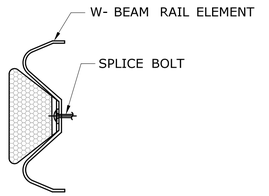
NOTE: AFTER GALVANIZING, THE NUT SHALL BE FREE RUNNING ON THE BOLT. DIAMETER SHOWN IS TYPICAL FOR ALL GUIDERAIL BOLTS. SEE DETAILS ABOVE FOR SPECIFIC LENGTHS.



STEEL POST
6'-0" LONG



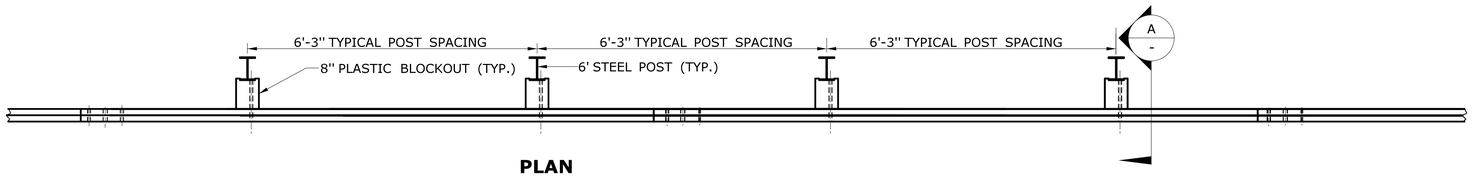
CONTROL RELEASE TIMBER (CRT) POST
6' - 0" LONG



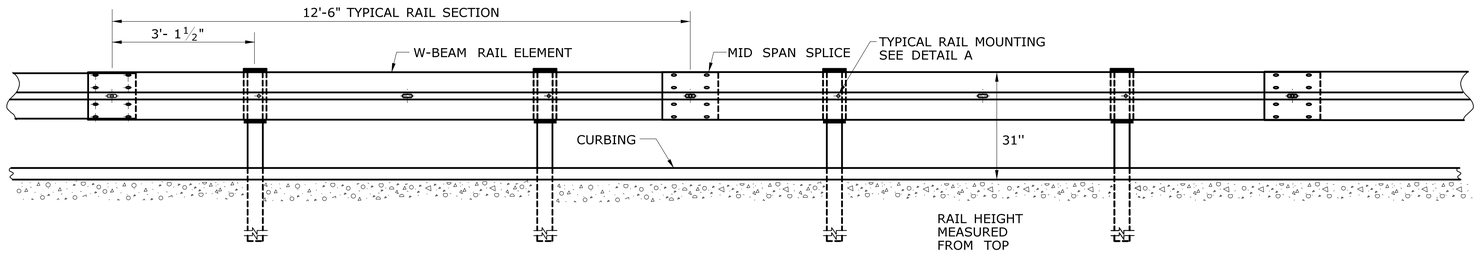
W-BEAM DELINEATOR INSTALLATION

	NOT TO SCALE #####	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 10:22:13-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 10:16:08-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: MASH W-BEAM HARDWARE	STANDARD SHEET NO.: HW-910_20

PLOTTED DATE: 7/1/2020



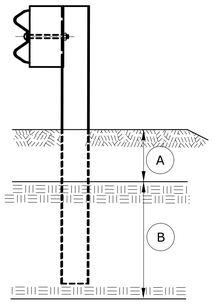
PLAN



ELEVATION
METAL BEAM RAIL (R-B MASH) GUIDERAIL

GENERAL NOTES:

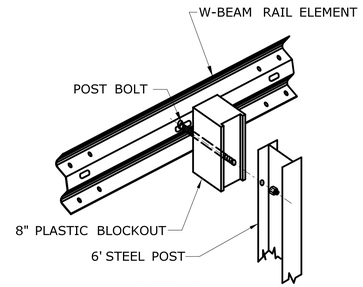
1. SEE SHEET HW-910_20 FOR MASH W-BEAM HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. THREE BLOCKOUTS MAY BE USED FOR ONE POST ONLY. TWO BLOCKOUTS MAY BE USED FOR A SERIES OF POSTS. THE COST OF ADDITIONAL BLOCKOUTS AND LONGER BOLTS SHALL BE INCLUDED IN THE PRICE PER FOOT OF GUIDERAIL. EXTRA BLOCKOUTS AT TRANSITIONS TO BRIDGE PARAPETS SHOULD BE AVOIDED. DO NOT USE ADDITIONAL BLOCKS IF IT CAUSES THE POST TO BE DRIVIEN BEYOND AN EMBANKMENT HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.
3. IF BLOCKOUTS DO NOT AVOID POST FROM OBSTRUCTION, ONE POST MAY BE OMITTED IF 50 FEET OF GUIDERAIL EXISTS ON BOTH SIDES OF LOCATION. USE METAL BEAM RAIL SPAN SECTION TYPE II OR III FOR MORE THAN ONE CONSECUTIVE OMITTED POST, SEE SHEET HW-910_24.
4. W-BEAM GUIDERAIL MAY BE PLACED 1' OR MORE FROM THE EDGE OF PAVEMENT ONLY ON SLOPES 10:1 OR FLATTER AND WITHOUT CURBING.
5. IF THE RAIL IS INSTALLED WITHIN 2' OF THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE SHOULDER SLOPE EXTENDED TO THE RAIL. IF THE RAIL IS INSTALLED BEYOND 2' FROM THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL.
6. RAIL HEIGHT CONSTRUCTION TOLERANCE IS +/- 1 INCH.



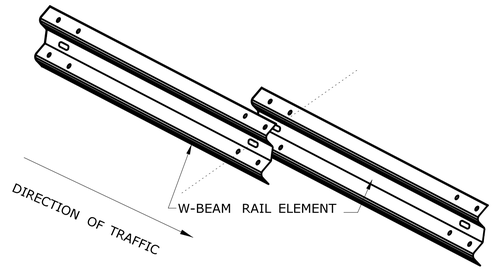
CONDITION 1 :
IF SOIL DEPTH IS ≤ 18" DEEP (A) DRILL 20" DIA. HOLE 24" INTO LEDGE. (B)

CONDITION 2 :
IF SOIL DEPTH IS > 18" DEEP (A) DRILL 8" DIA. HOLE 12" INTO LEDGE (B) OR TO THE DEPTH OF FULL EMBEDMENT WHICHEVER IS LESS.

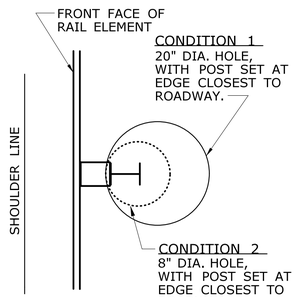
ELEVATION



DETAIL A
RAIL MOUNTING

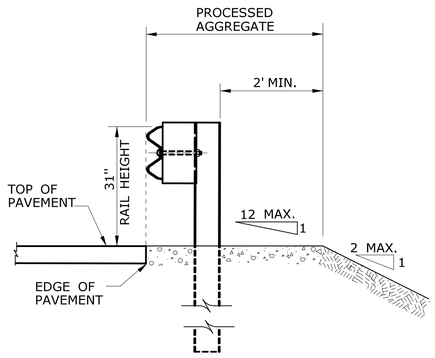


LAP W-BEAM RAIL SECTIONS
NOTE: EIGHT (8) SPLICE BOLTS PER JOINT



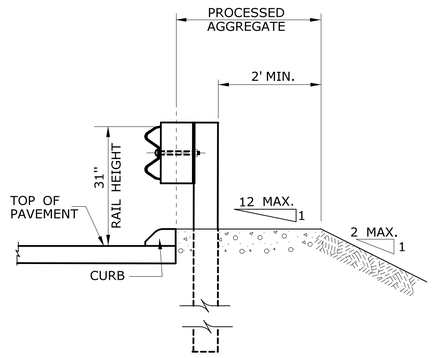
PLAN

GUIDERAIL POSTS IN ROCK



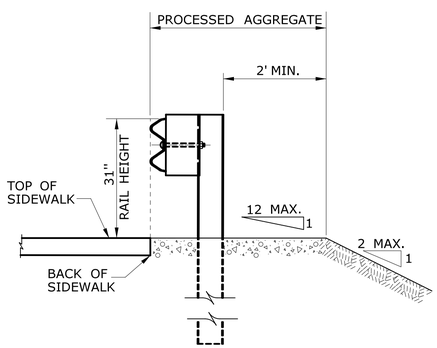
SECTION A -

NO CURB APPLICATION



SECTION A -

CURB APPLICATION



SECTION A -

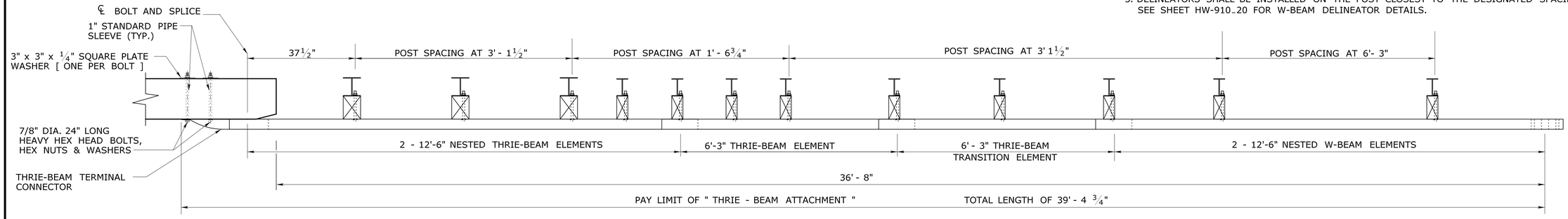
SIDEWALK APPLICATION

	NOT TO SCALE #####	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 10:22:41-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 10:16:41-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: METAL BEAM RAIL (R-B MASH) GUIDERAIL	STANDARD SHEET NO.: HW-910_21

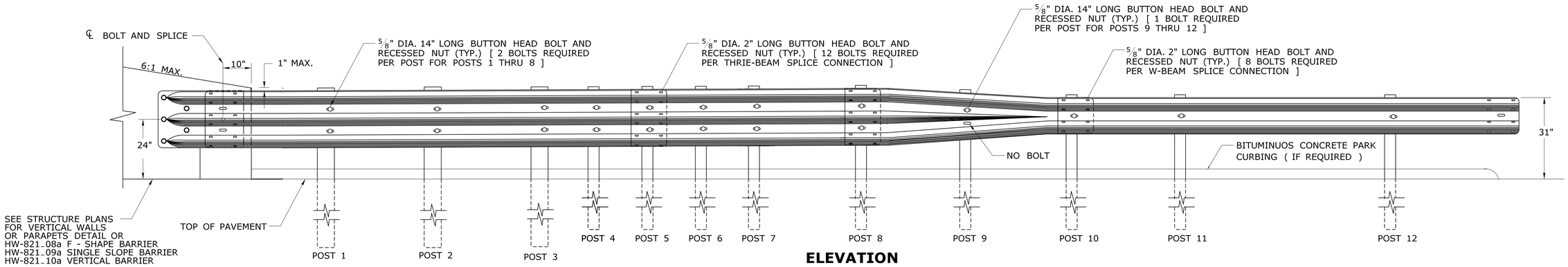
PLOTTED DATE: 7/1/2020

GENERAL NOTES:

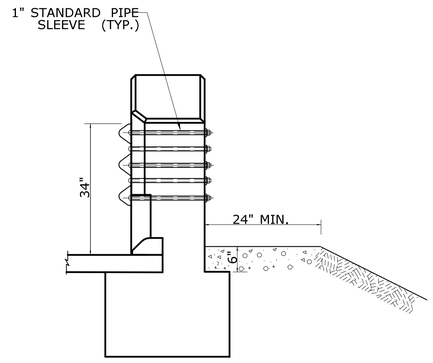
1. PROVIDE 2 FOOT MINIMUM EMBANKMENT BETWEEN THE BACK OF THE GUIDERAIL POST(S) / CONCRETE BARRIER AND THE BREAK IN THE FILL SLOPE.
2. INSTALL THRIE - BEAM TERMINAL CONNECTOR BETWEEN NESTED GUIDERAIL ELEMENTS, EXCEPT FOR SINGLE DIRECTION ROADWAY APPPLICATION ONLY WHERE THE THRIE - BEAM TERMINAL CONNECTOR IS INSTALLED OUTSIDE OF NESTED GUIDERAIL ELEMENTS ON THE TRAILING END.
3. DELINEATORS SHALL BE INSTALLED ON THE POST CLOSEST TO THE DESIGNATED SPACING. SEE SHEET HW-910_20 FOR W-BEAM DELINEATOR DETAILS.



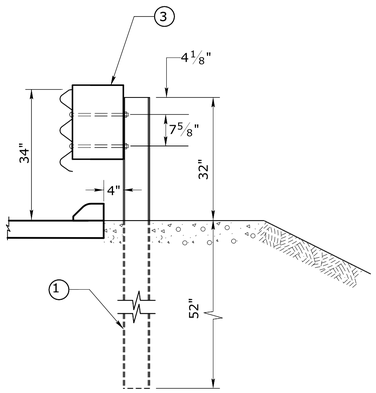
PLAN



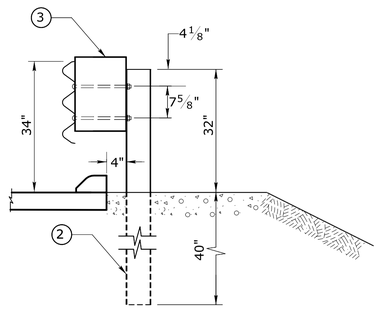
ELEVATION



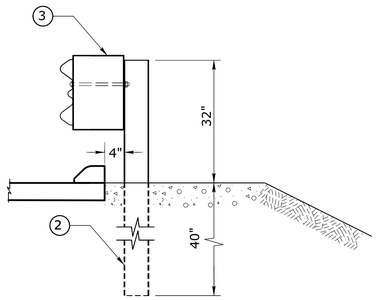
THRIE BEAM CONNECTION



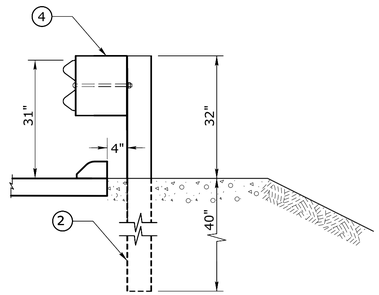
POST 1,2 & 3



POST 4,5,6,7 & 8



POST 9



POST 10, 11 & 12

LEGEND

1. W6 x 15, 7 FOOT LONG STEEL POST
2. W6 x 8.5 OR W6 x 9, 6 FOOT LONG STEEL POST
3. 6" x 12" x 19" TREATED TIMBER BLOCKOUT
4. 6" x 12" x 14 1/4" TREATED TIMBER BLOCKOUT

MASH 2016 COMPLIANT
APPROVAL ID. 2019-01

NOT TO SCALE
####

SIGNATURE BLOCK:
OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

SUBMITTED BY:
Leo Fontaine, P.E.
2020.07.08 10:27:56-04'00'

APPROVED BY:
James Fallon, P.E.
2020.07.15 10:19:04-04'00'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

CTDOT STANDARD SHEET

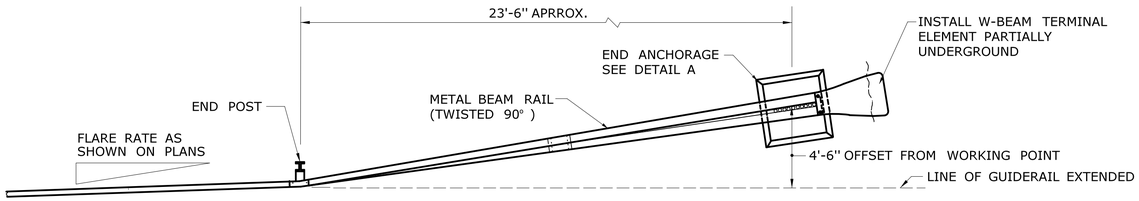
STANDARD SHEET TITLE:
THRIE-BEAM ATTACHMENT

STANDARD SHEET NO.:
HW-910_27

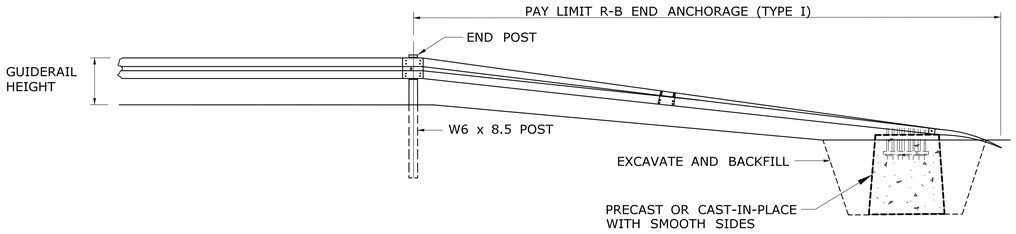
PLOTTED DATE: 7/1/2020

GENERAL NOTES:

1. J-HOOK BOLTS MAY BE SUBSTITUTED FOR BOTTOM PLATE ANCHORAGE IN CONCRETE END ANCHORS USING THE SAME SIZE, STRENGTH, AND LENGTH AS NOTED ON THE PLANS.
2. INSTALLATION OF RADII DIFFERENT THAN WHAT IS SHOWN IN DETAIL "C" FOR R-B END ANCHORAGE TYPE II MUST BE APPROVED BY THE ENGINEER.

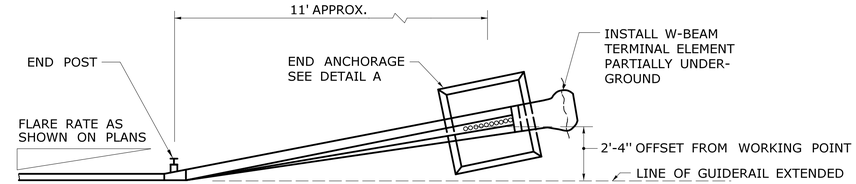


PLAN

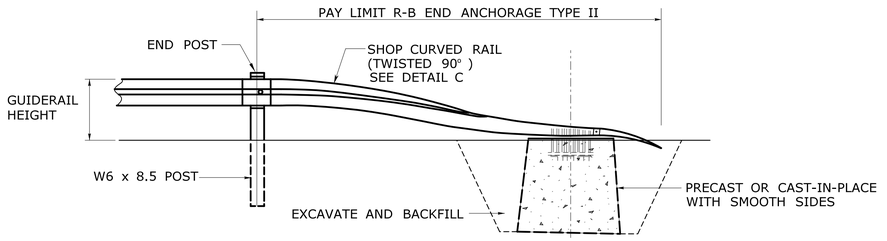


ELEVATION

R-B END ANCHORAGE TYPE I

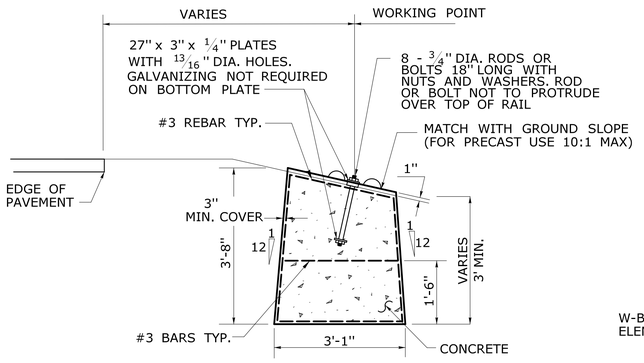


PLAN

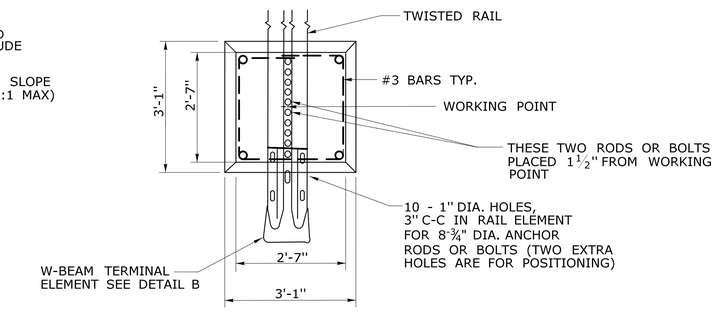


ELEVATION

R-B END ANCHORAGE TYPE II

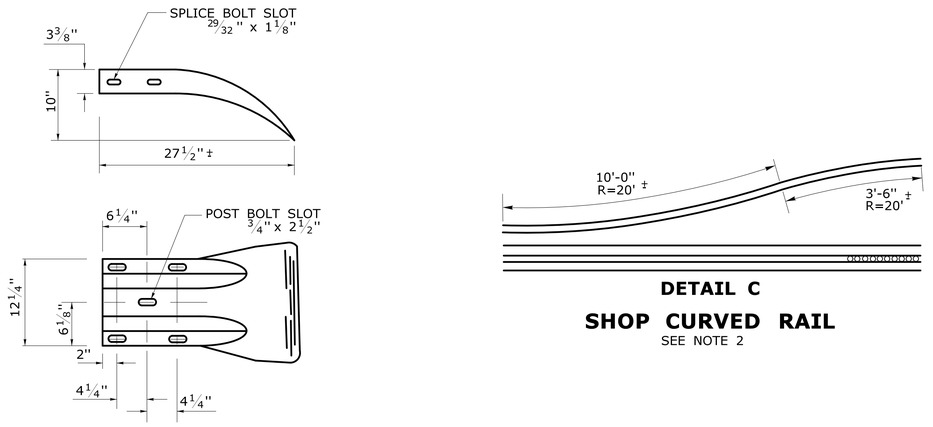


ELEVATION



PLAN

DETAIL A
ROADSIDE CONCRETE END ANCHOR
SEE NOTE 2



DETAIL B
W-BEAM TERMINAL ELEMENT

DETAIL C
SHOP CURVED RAIL
SEE NOTE 2

	NOT TO SCALE #####	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 10:28:15-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 10:19:27-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: R-B END ANCHORAGE TYPE I AND II	STANDARD SHEET NO.: HW-911_01

PLOTTED DATE: 7/1/2020