

**UNIFORM STANDARD
DETAILS**

for

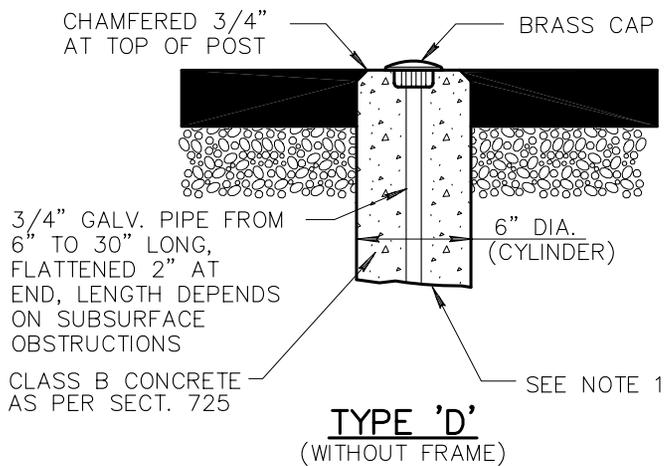
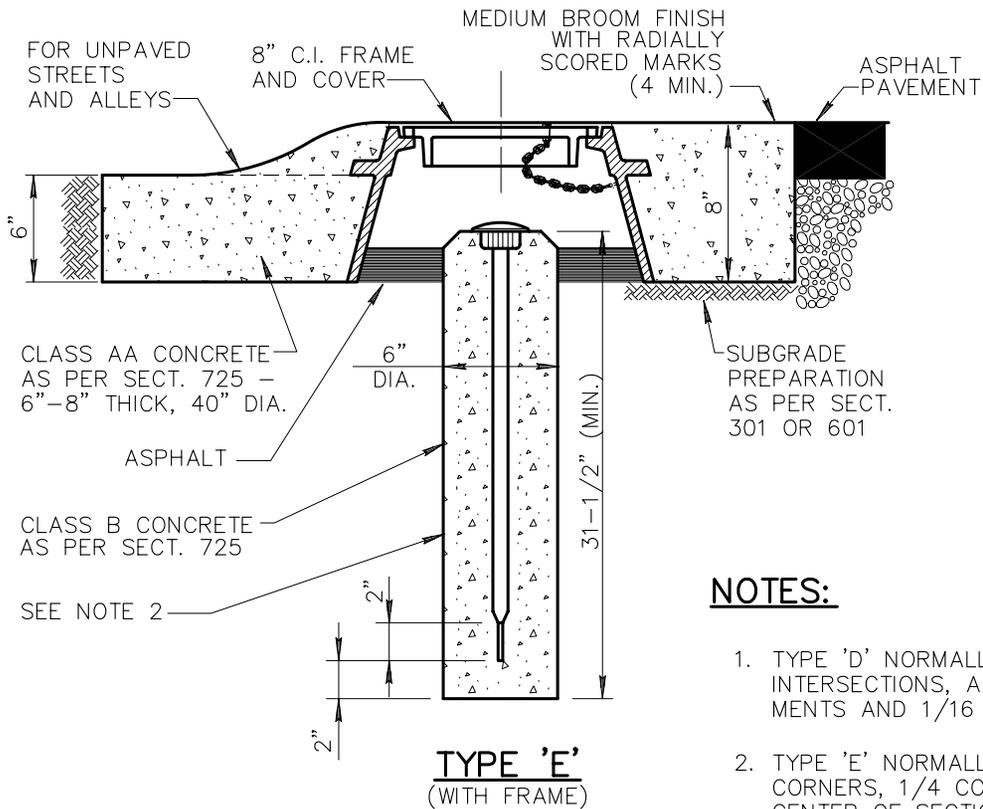
**PUBLIC WORKS
CONSTRUCTION**

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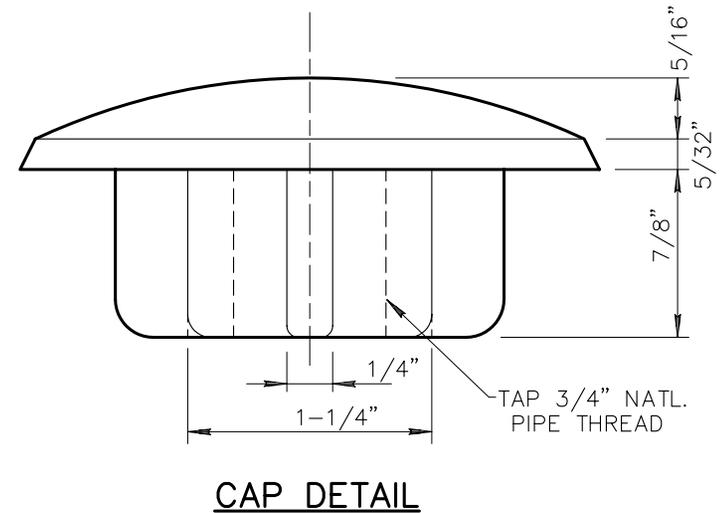
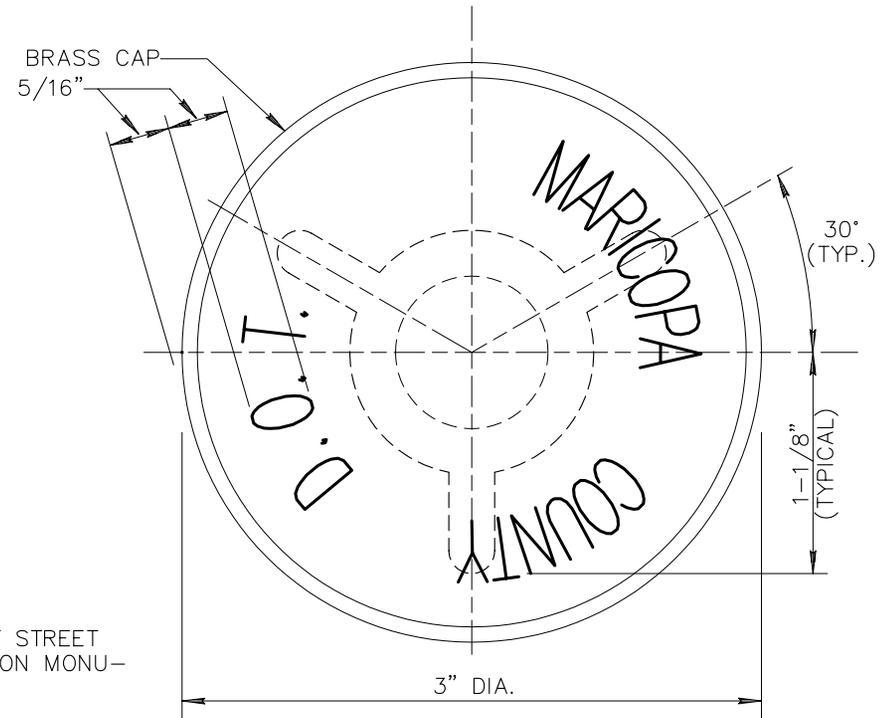
**1998
ARIZONA**

(Includes Revisions Through 2002)



NOTES:

1. TYPE 'D' NORMALLY USED AT STREET INTERSECTIONS, AS SUBDIVISION MONUMENTS AND 1/16 CORNERS.
2. TYPE 'E' NORMALLY USED ON SECTION CORNERS, 1/4 CORNERS AND AT THE CENTER OF SECTIONS. CONCRETE POST IS CHAMFERED 3/4" AT TOP. MINIMUM LENGTH OF POST 31-1/2". LENGTH DEPENDS ON SUBSURFACE OBSTRUCTIONS SUCH AS OLD CONCRETE PAVING, ROCK, ETC. 3/4" GALVANIZED PIPE SET IN THIS POST SHALL BE A MINIMUM OF 30" LONG EXCLUSIVE OF COUPLING, SEE PLANS.
3. CAP TO BE CONSTRUCTED OF RED BRASS OR BRONZE.
4. FRAME AND COVER TO INCLUDE CHAIN PER STD. DETAIL 270.



DETAIL NO.
120-2

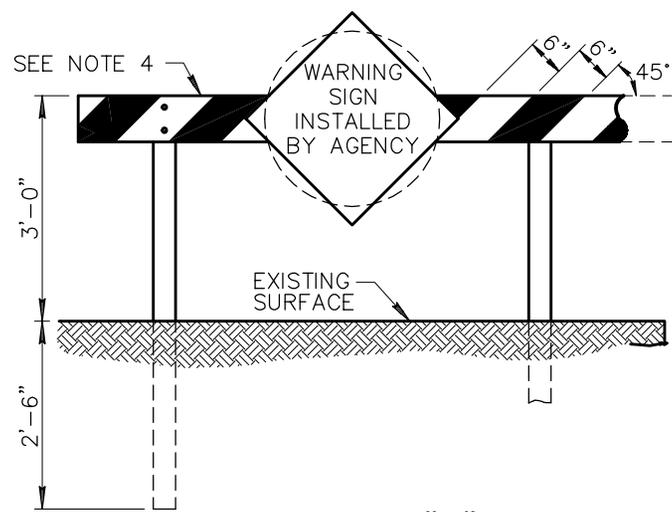
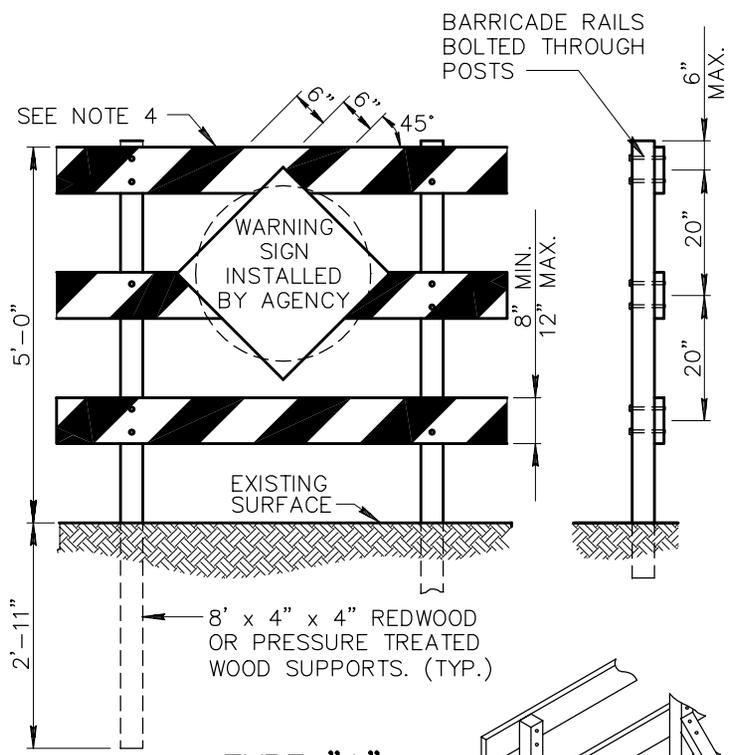
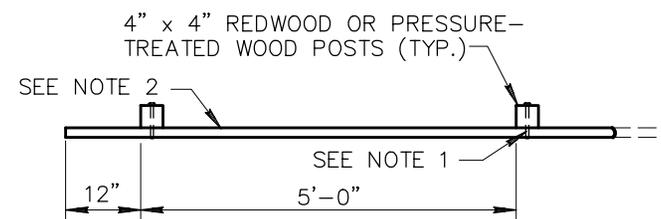
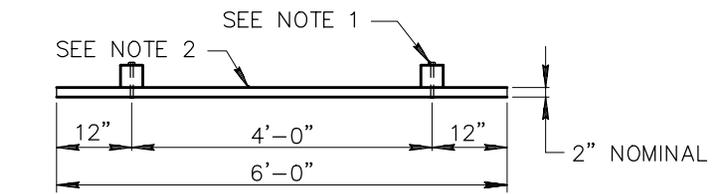


STANDARD DETAIL
ENGLISH

SURVEY MARKER
(FOR UNINCORPORATED AREAS OF COUNTY)

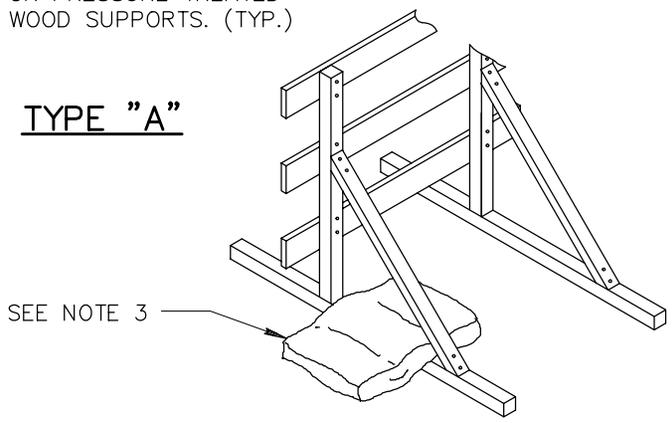
REVISED
01-03-2002

DETAIL NO.
120-2



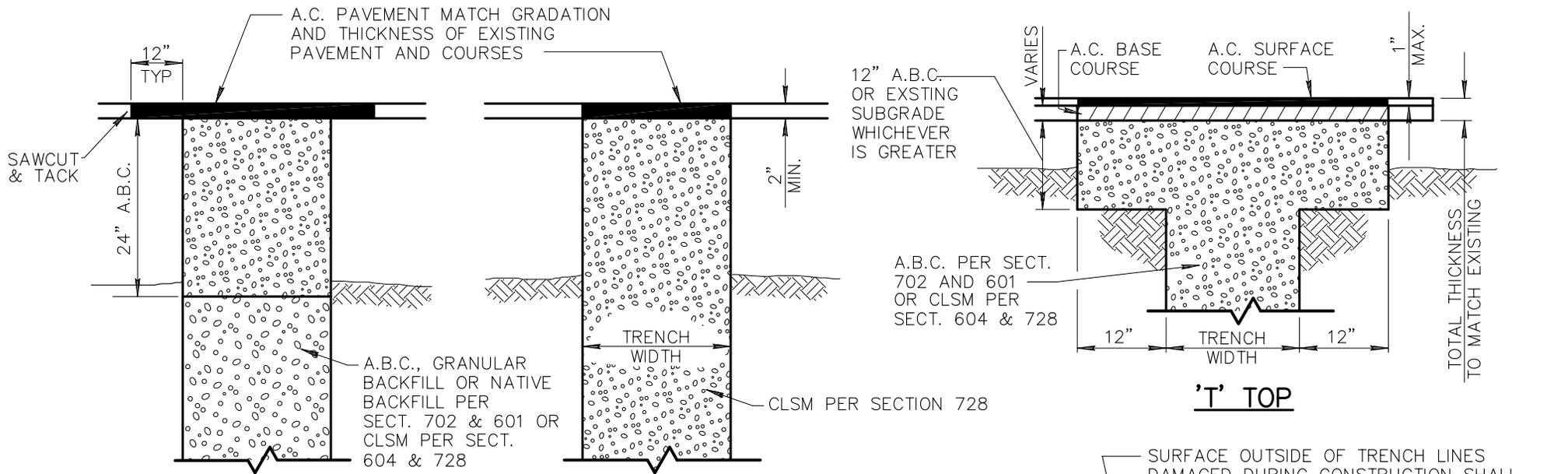
TYPE "B"

TYPE "A"

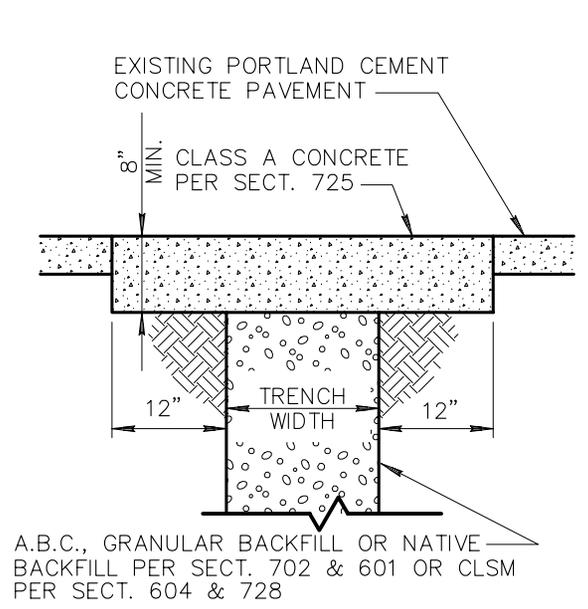


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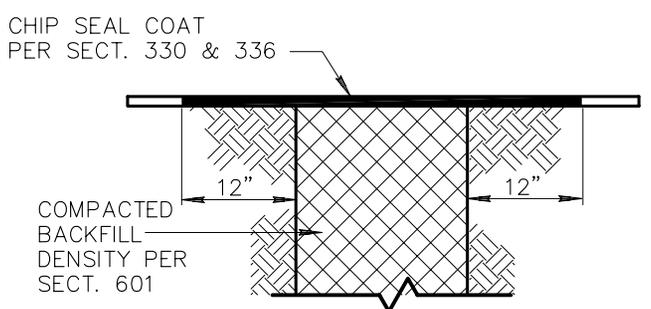
1. FASTEN WITH 1/2" x 5" LAG SCREWS WITH 2 FLAT WASHERS OR (2) 5/8" BOLTS, WITH 4 FLAT WASHERS.
2. 2" x 8" DOUGLAS FIR PLANK (LENGTH TO BE DETERMINED ON PLANS.)
3. WHEN BARRICADE (TYPE "A") IS CONSTRUCTED ON BASES INSTEAD OF POSTS SET INTO THE GROUND, IT MAY BE DESIRABLE TO BALLAST THE BASES WITH SAND BAGS OR BY STAKING TO PROVIDE RESISTANCE TO OVERTURNING DURING PERIODS OF HIGH WINDS.
4. TWO COATS OF WHITE PAINT PER SECTION 790 SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE BARRICADE. AN ADDITIONAL, TWO COATS OF ORANGE PAINT PER SECTION 790 SHALL BE APPLIED TO CREATE THE ALTERNATE ORANGE AND WHITE STRIPES. HIGHWAY SAFETY SPHERES (BEADS) PER ADOT 708-2.02 SHALL BE APPLIED BY HAND TO ALL CROSS MEMBERS, FRONT AND BACK AND ON BOTH COLORS, IMMEDIATELY AFTER PAINTING. THE STRIPES SHALL SLOPE DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS.



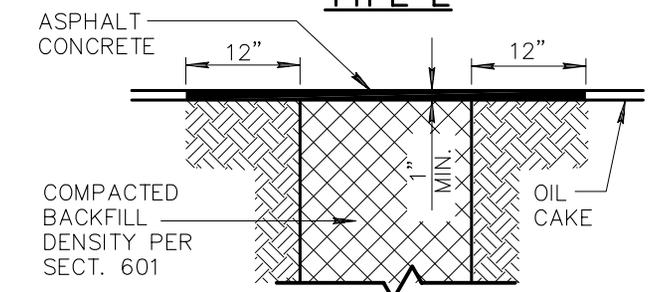
'T' TOP



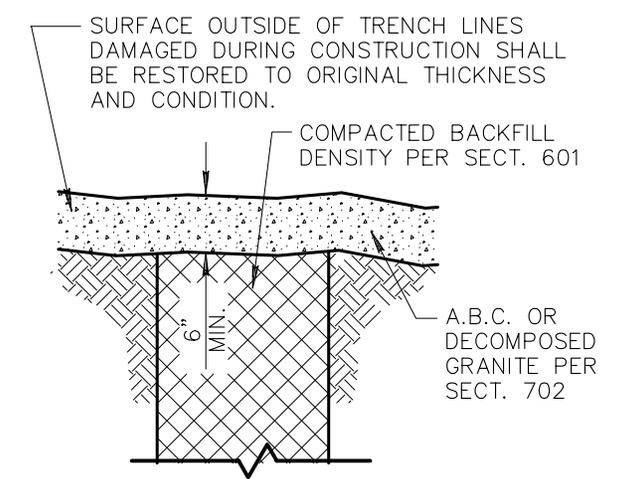
TYPE C



TYPE E

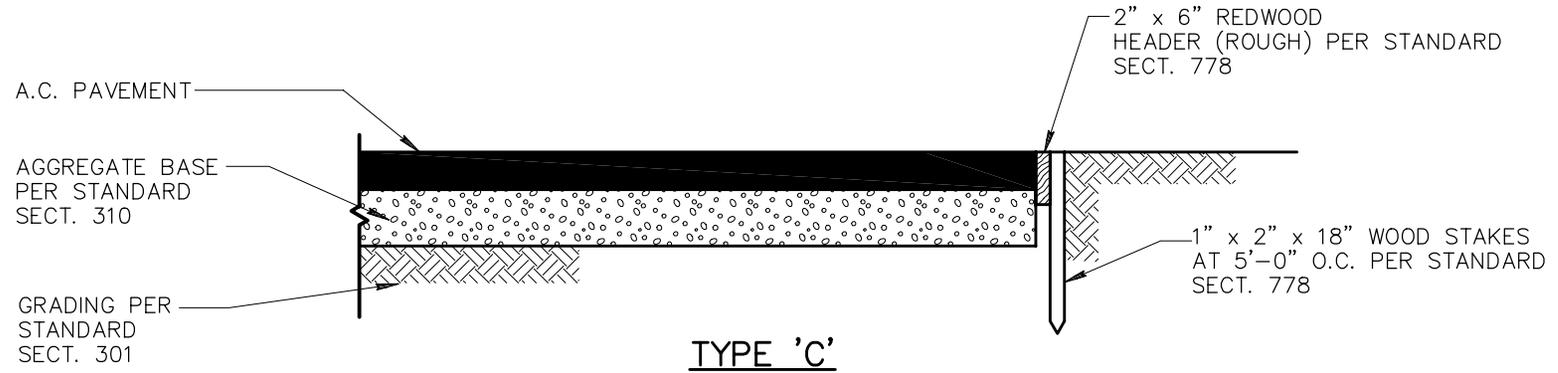
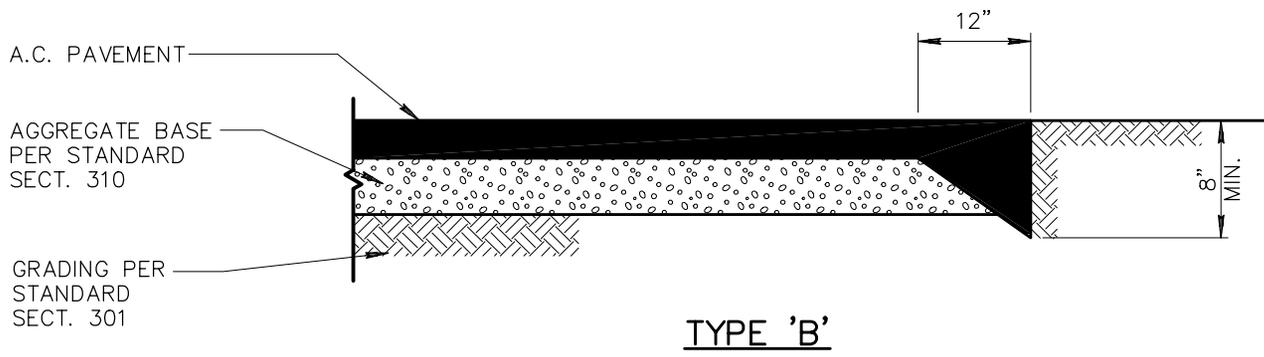
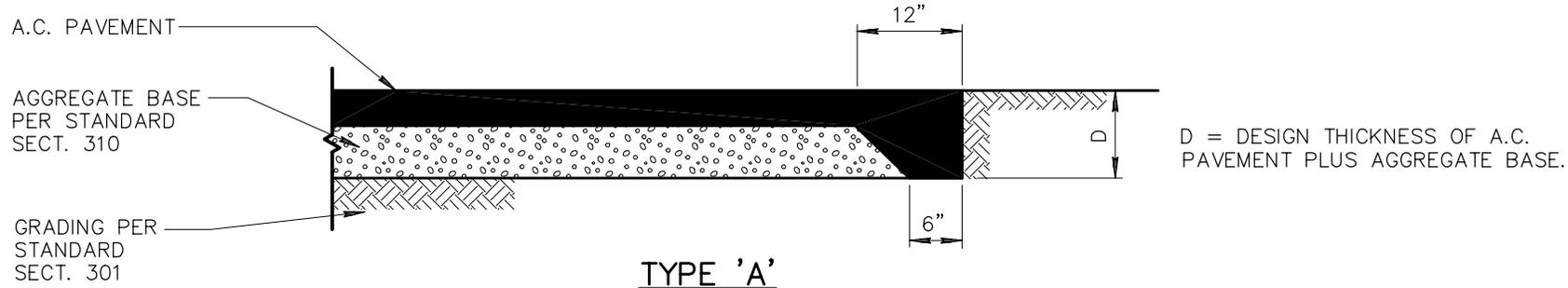


TYPE D



TYPE F

- NOTES:**
1. BEDDING PER SECTION 601.
 2. ASPHALT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 321.
 3. TRENCHES IN ASPHALT PAVEMENTS LESS THAN 18" WIDE SHALL BE BACKFILLED WITH CLSM OR ABC SLURRY (NO CEMENT) AS SPECIFIED BY THE SPECIAL PROVISIONS, PLANS OR ENGINEER
 4. TYPES 'D' AND 'E' REQUIRE 9" OF A.B.C. AT TOP OF TRENCH WHEN THERE IS AN EXISTING BASE.
 5. THE TYPE OF CLSM SHALL BE 1/2 SACK OR 1 SACK AS SPECIFIED BY THE SPECIAL PROVISIONS, PLANS OR ENGINEER



DETAIL NO.
201

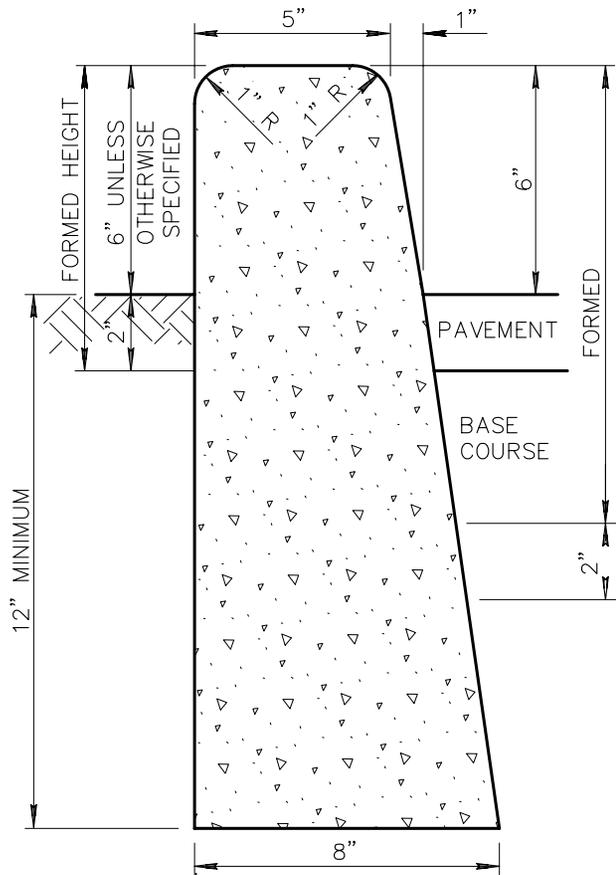


STANDARD DETAIL
ENGLISH

PAVEMENT SECTION AT TERMINATION

REVISED

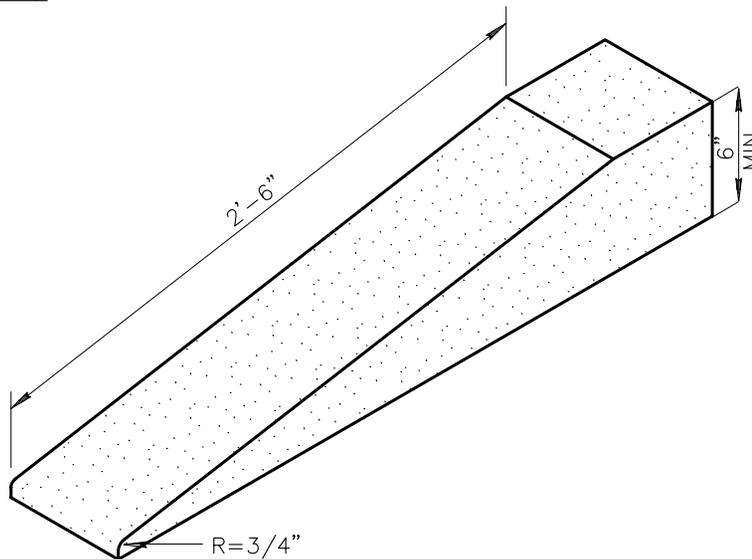
DETAIL NO.
201



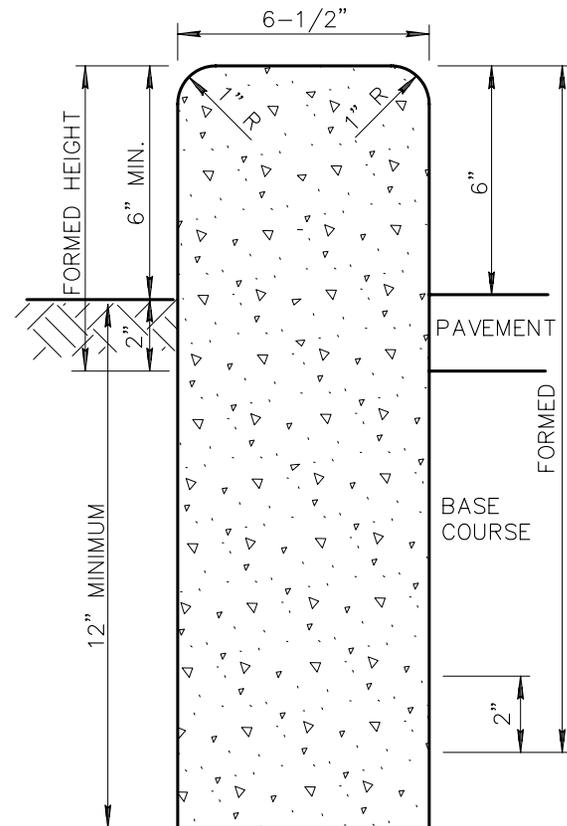
TYPE 'A'

NOTES:

1. ALL VERTICAL SURFACES TO BE FORMED.
2. VERTICAL SURFACES DOWN FROM 2" BELOW UNDISTURBED SOIL MAY BE PLACED AGAINST NEAT CUT IF APPROVED BY THE ENGINEER AND CONCRETE WILL NOT EXTEND MORE THAN 1" BEYOND THEORETICAL FACE.
3. ALL EXPOSED SURFACES TO BE STRIPPED GREEN AND TROWEL FINISHED.
4. CONCRETE CURBS CONFORM TO SECT. 340.
5. MAXIMUM SPACING OF CONTRACTION JOINTS IS 10'
6. CONCRETE TO BE CLASS 'B' PER SECT. 725.



TYPICAL CURB TERMINATION



TYPE 'B'

DETAIL NO.

222



**STANDARD DETAIL
ENGLISH**

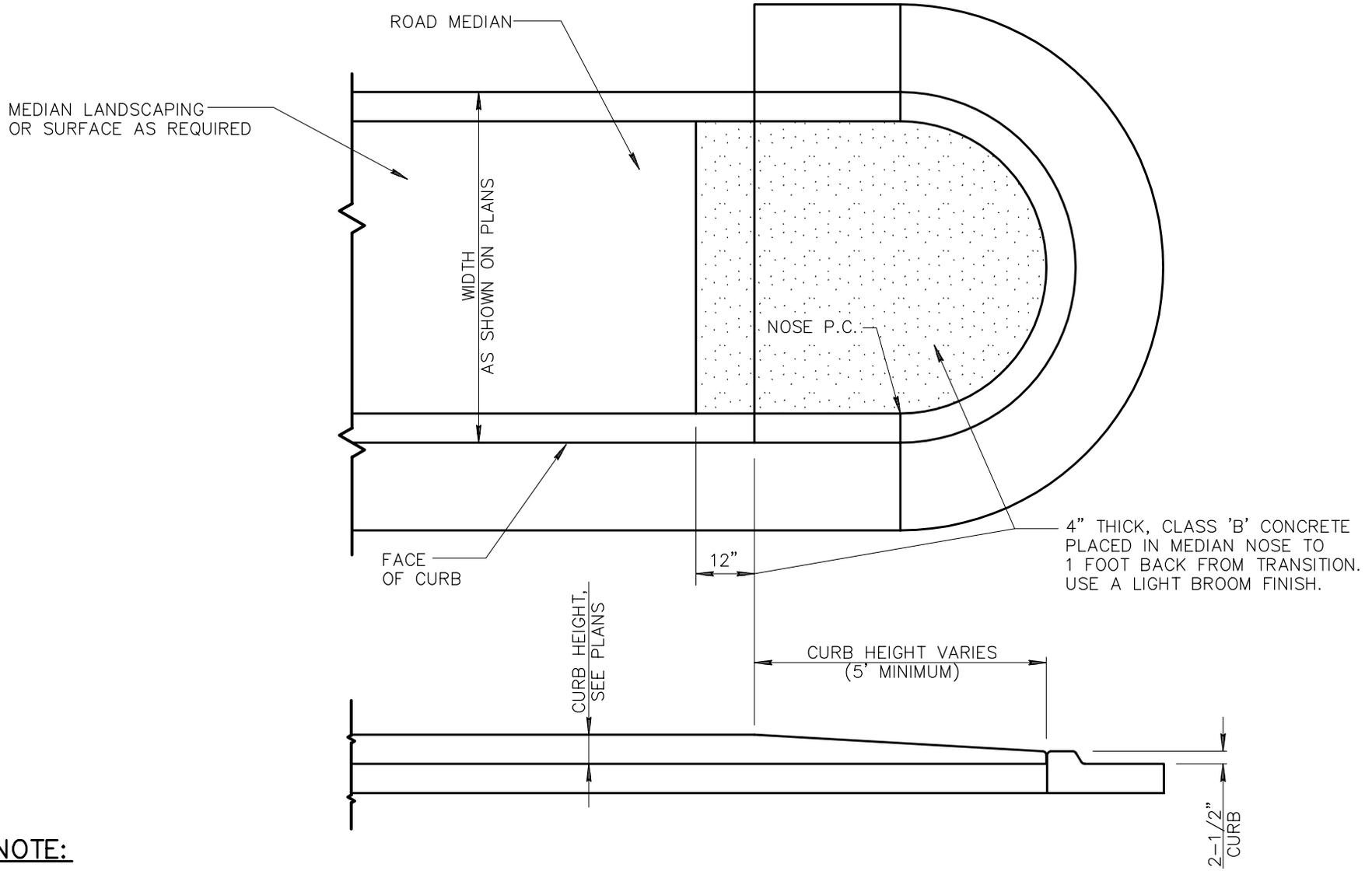
**SINGLE CURB -
TYPES A, B AND TERMINATION**

REVISED

01-03-2002

DETAIL NO.

222



NOTE:
 LENGTH OF TRANSITION SHALL BE EQUAL TO RADIUS OF MEDIAN NOSE, (5' MINIMUM). FOR LOCATION SEE PLANS.

DETAIL NO.
223

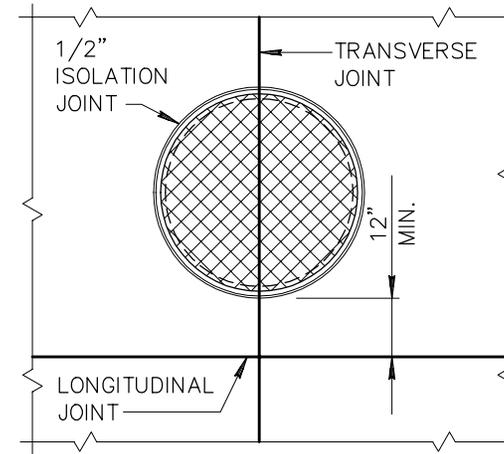
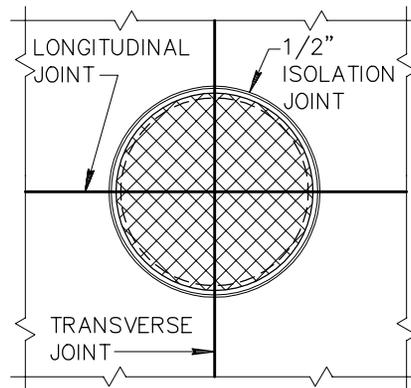
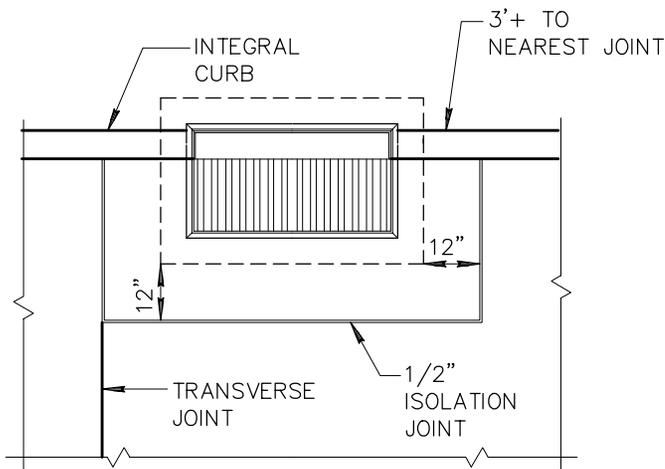
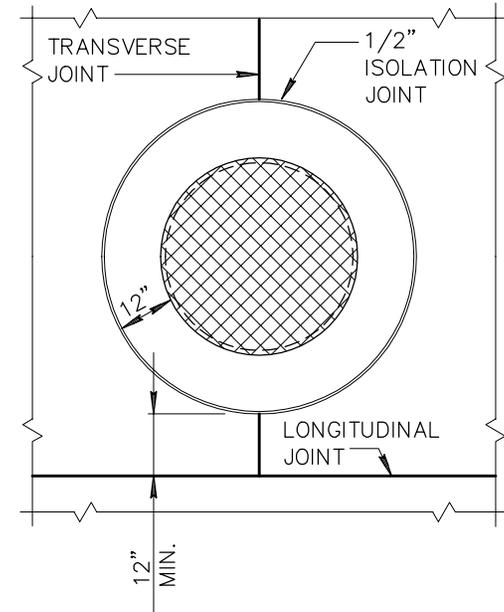
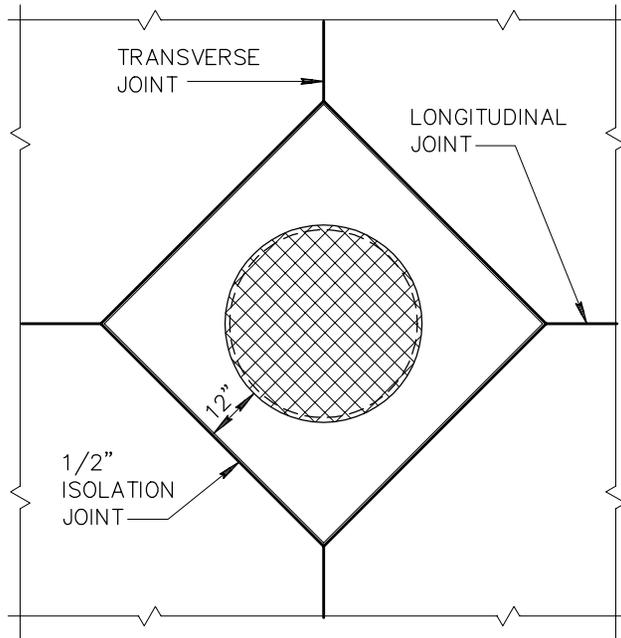
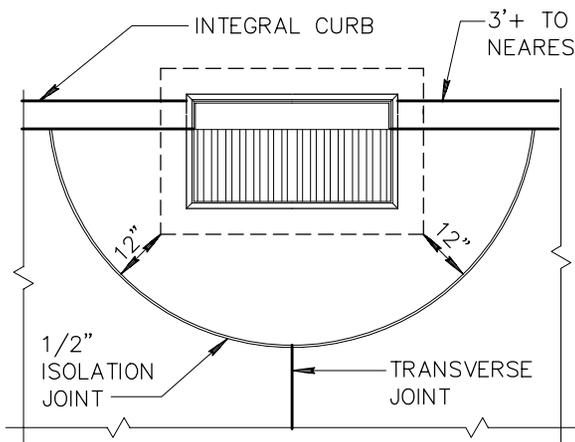


STANDARD DETAIL
 ENGLISH

MEDIAN NOSE TRANSITION

REVISED

DETAIL NO.
223



DRAINAGE INLET

MANHOLE COVERS

MANHOLE COVERS

DETAIL NO.

224



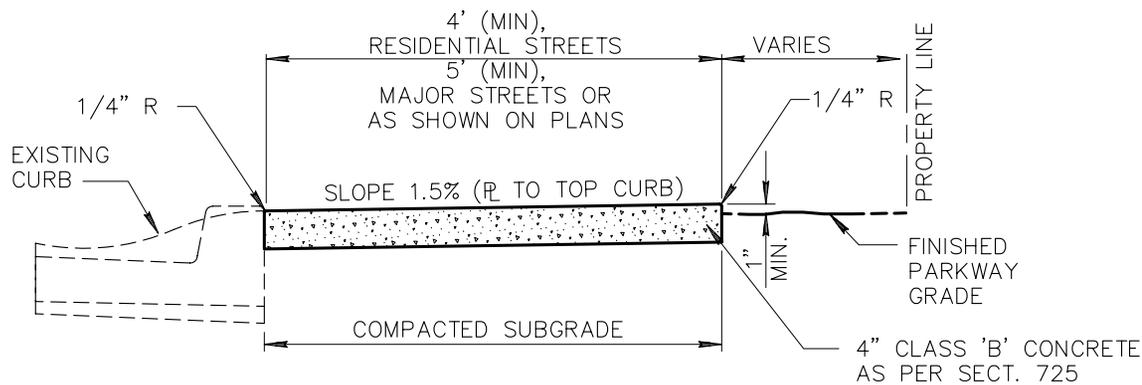
STANDARD DETAIL
ENGLISH

**JOINT FOR DRAINAGE INLETS
AND MANHOLE COVERS**

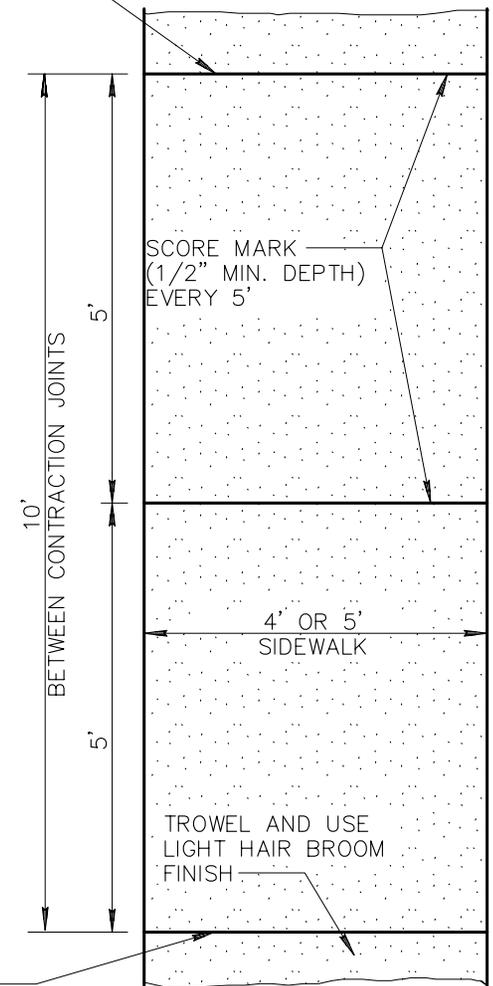
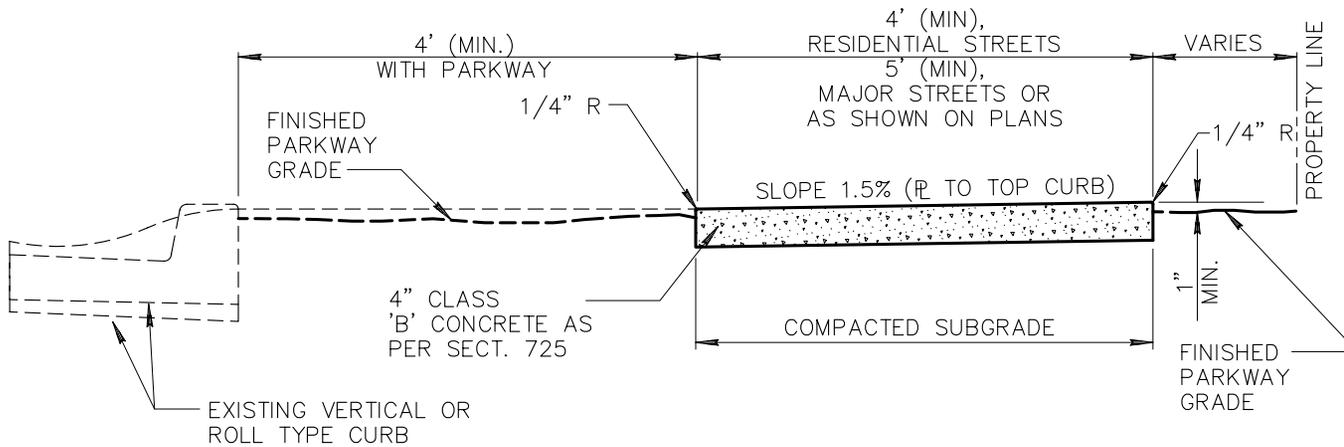
REVISED

DETAIL NO.

224

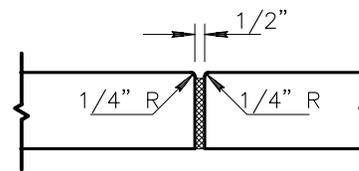


CONTRACTION JOINT CURB AND GUTTER JOINT SHALL MATCH SIDEWALK JOINTS

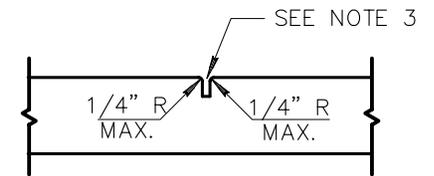


NOTES:

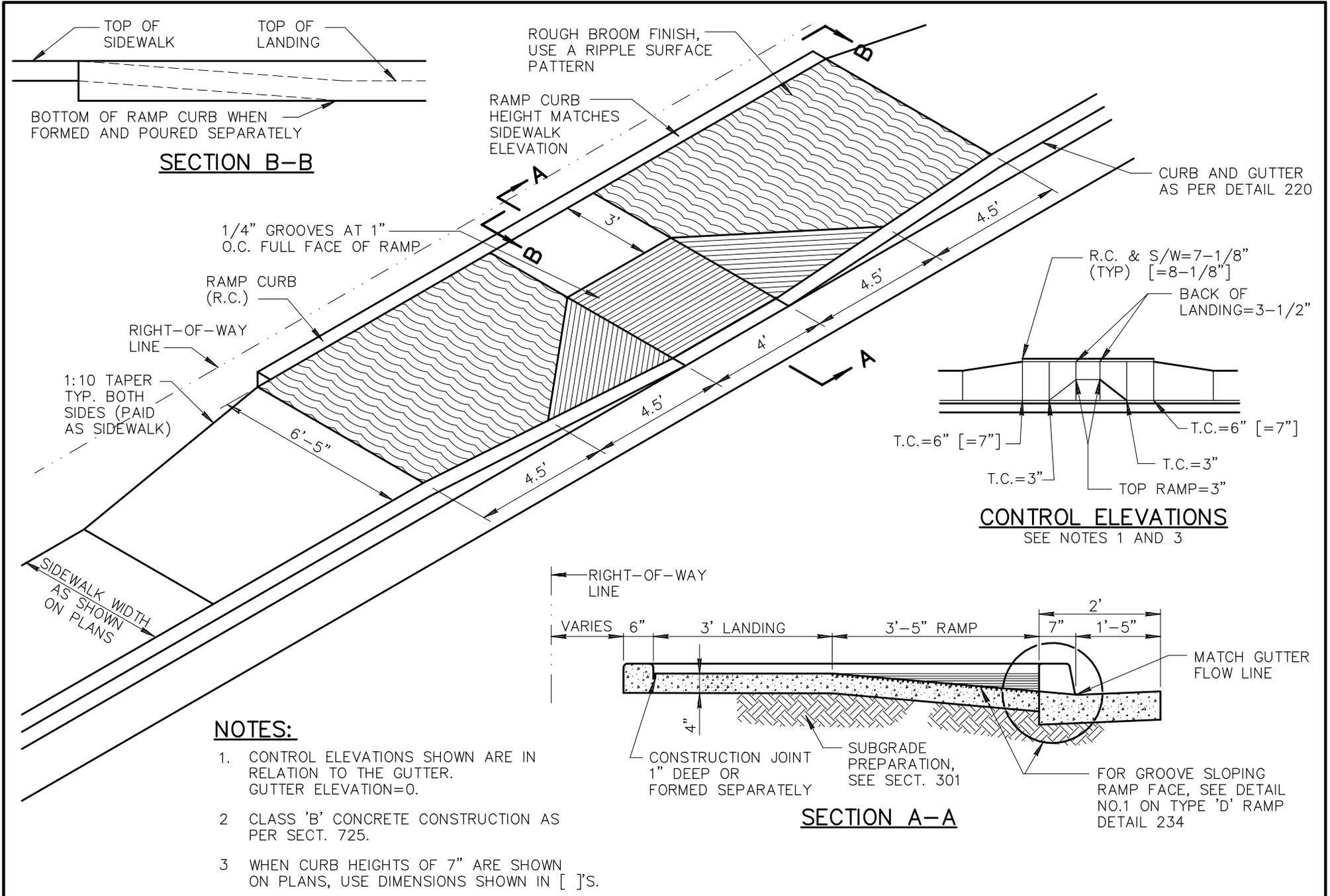
1. SIDEWALK CONSTRUCTION SHALL CONFORM TO SECT. 340.
2. EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER, A.S.T.M. D-1751.
3. LARGE AGGREGATE, IN CONTRACTION JOINT, SHALL BE SEPARATED TO A DEPTH OF 1", FINISH DEPTH SHALL BE A MINIMUM OF 3/4".
4. EXPANSION JOINT 100' MAXIMUM SPACING PER SECT. 340.



EXPANSION JOINT



CONTRACTION JOINT



DETAIL NO.

233



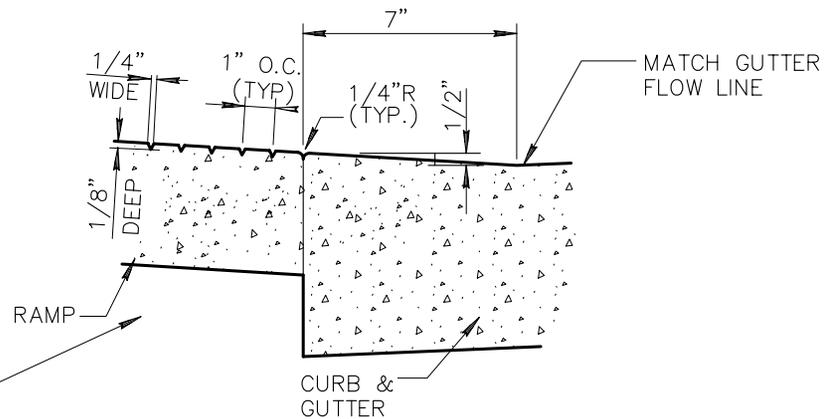
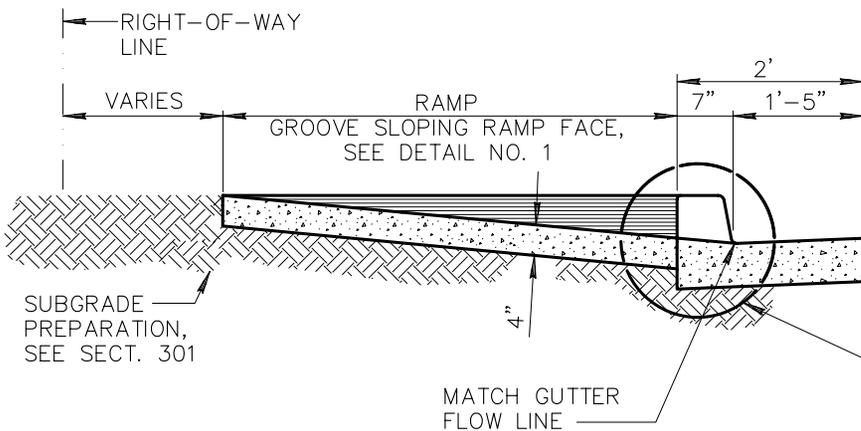
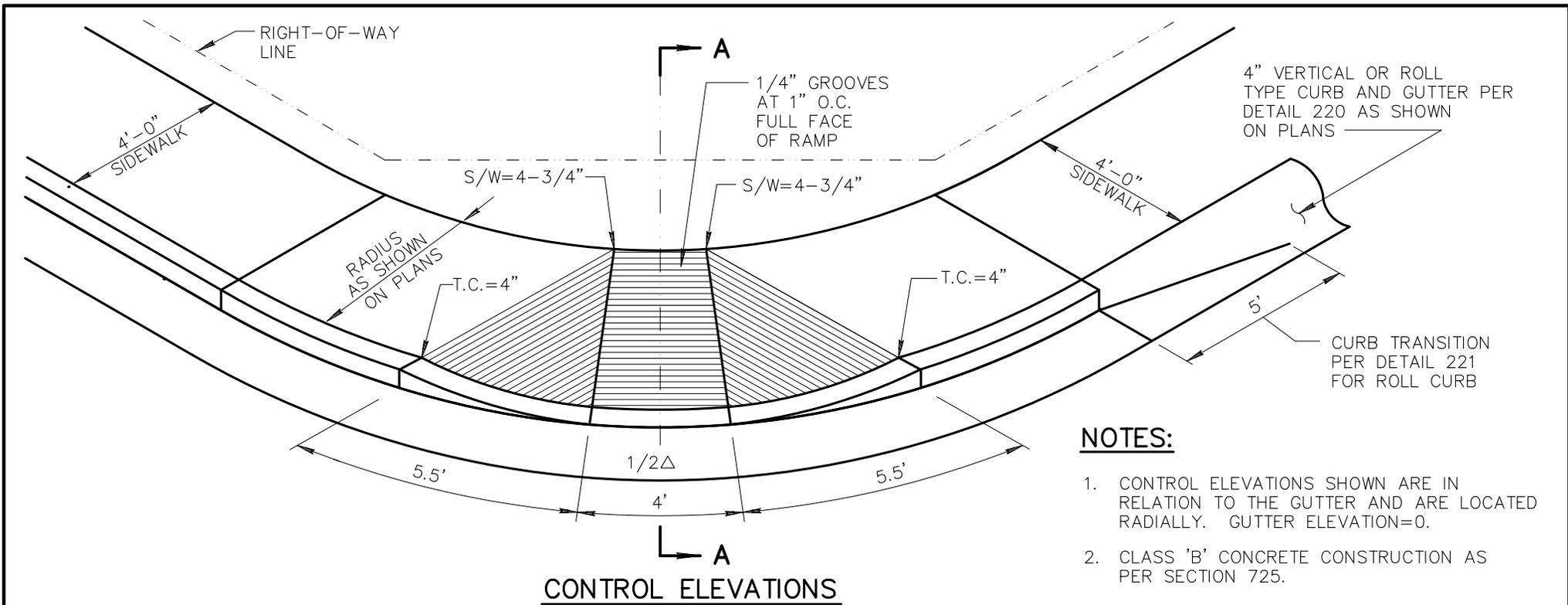
STANDARD DETAIL
ENGLISH

SIDEWALK RAMPS - TYPE 'C'

REVISED

DETAIL NO.

233



DETAIL NO.

234



STANDARD DETAIL
ENGLISH

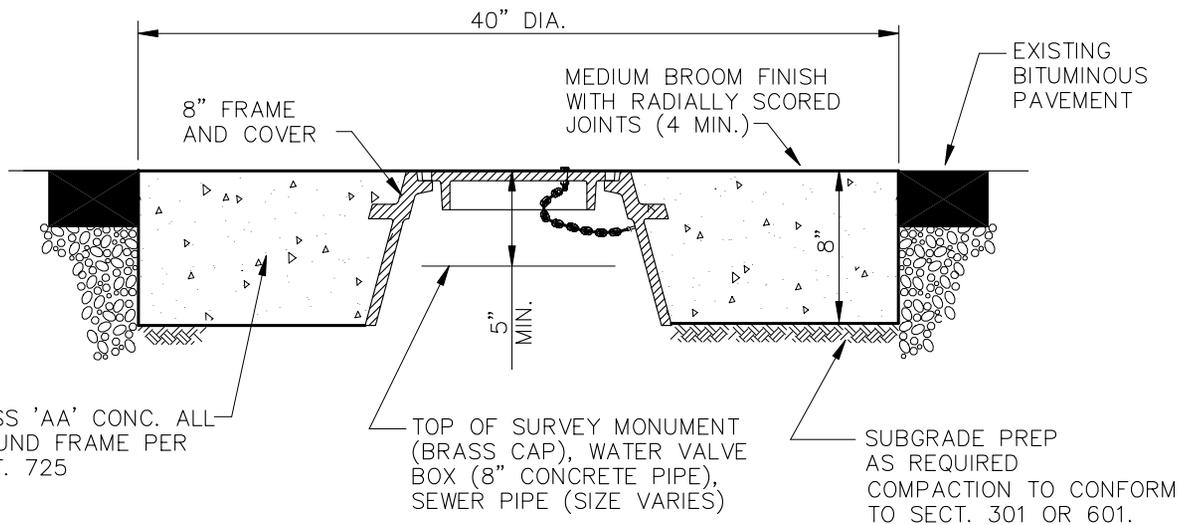
SIDEWALK RAMPS - TYPE 'D'

REVISED

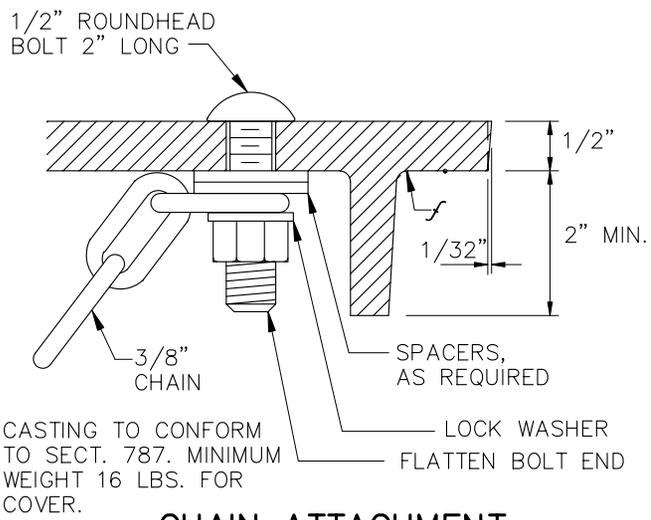
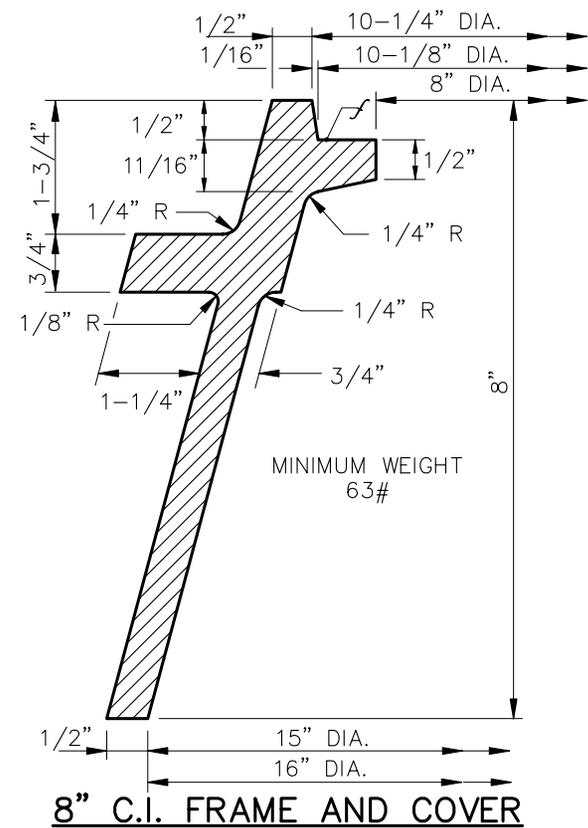
01-03-2002

DETAIL NO.

234

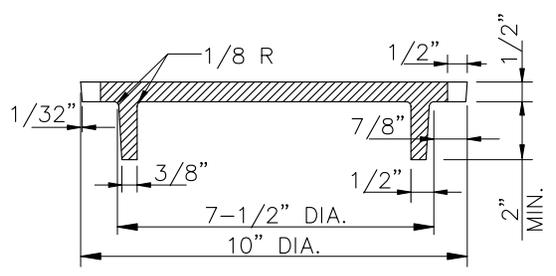


WATER VALVE, SURVEY MONUMENT, OR SEWER CLEAN OUT FRAME & GRADE ADJUSTMENT



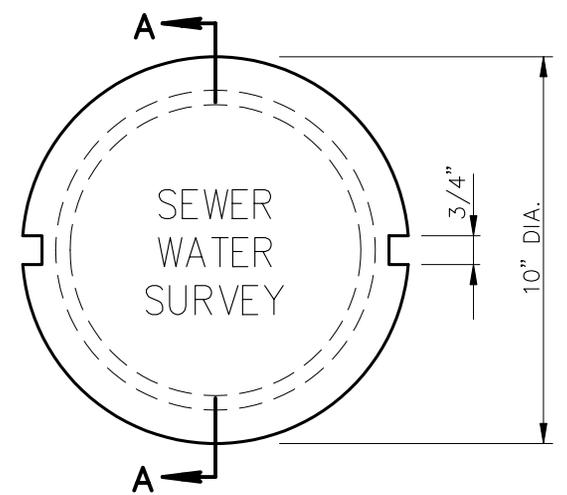
CHAIN ATTACHMENT
(AS REQUIRED)

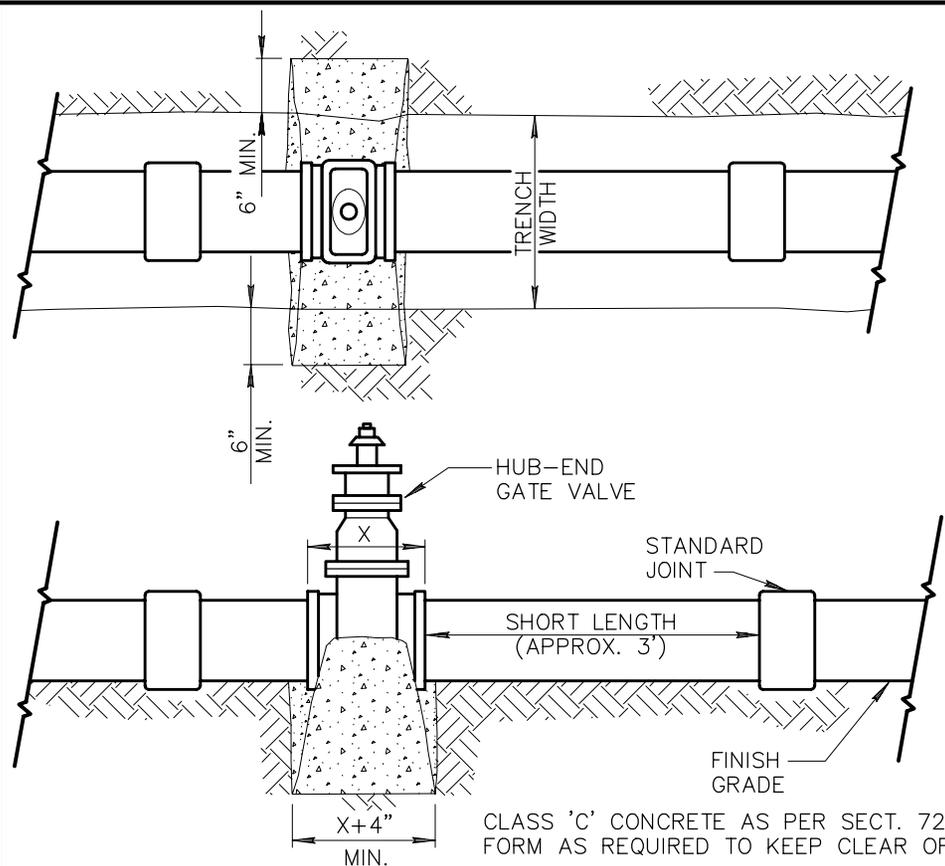
LETTERS ON COVER TO BE AS FOLLOWS:
 "SEWER", "WATER", OR "SURVEY" AS DIRECTED
 TOTAL WIDTH OF WORD "SEWER" OR "WATER"
 3-3/4". TOTAL WIDTH OF WORD "SURVEY"
 4-1/2". LETTER SIZE 5/8" x 3/4", RAISED 1/16"
 ABOVE LEVEL OF COVER, TYPE OF LETTERS
 TO BE SUBMITTED FOR APPROVAL.



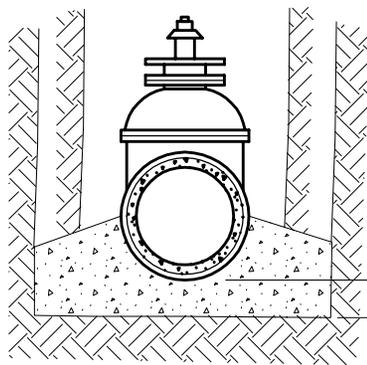
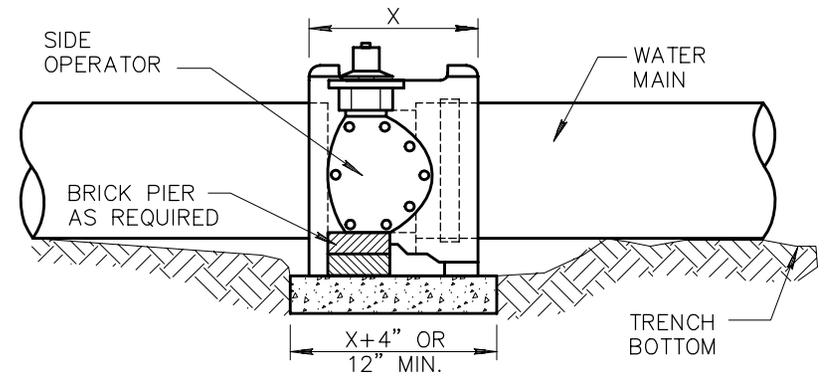
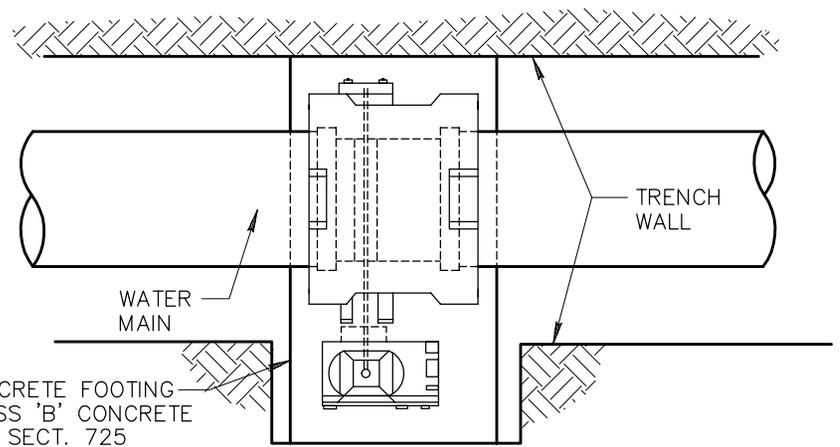
COVER SECTION A-A

DETAIL TYPICAL FOR BOTH FRAME AND COVER



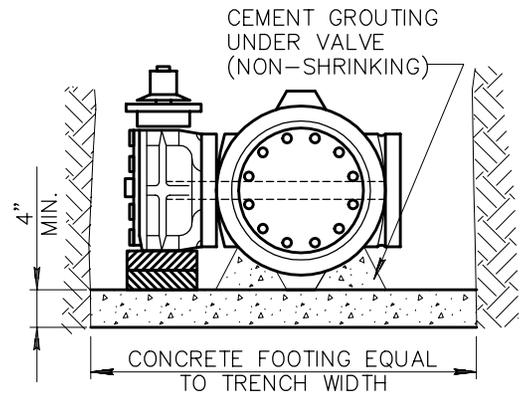


CLASS 'C' CONCRETE AS PER SECT. 725
FORM AS REQUIRED TO KEEP CLEAR OF JOINTS.



NOTE:
THIS DETAIL COVERS WATER GATE VALVES, 4" TO 12" INCLUSIVE REGARDLESS OF TYPE OF PIPE USED. LARGER LINES TO BE DETAILED ON PLANS.

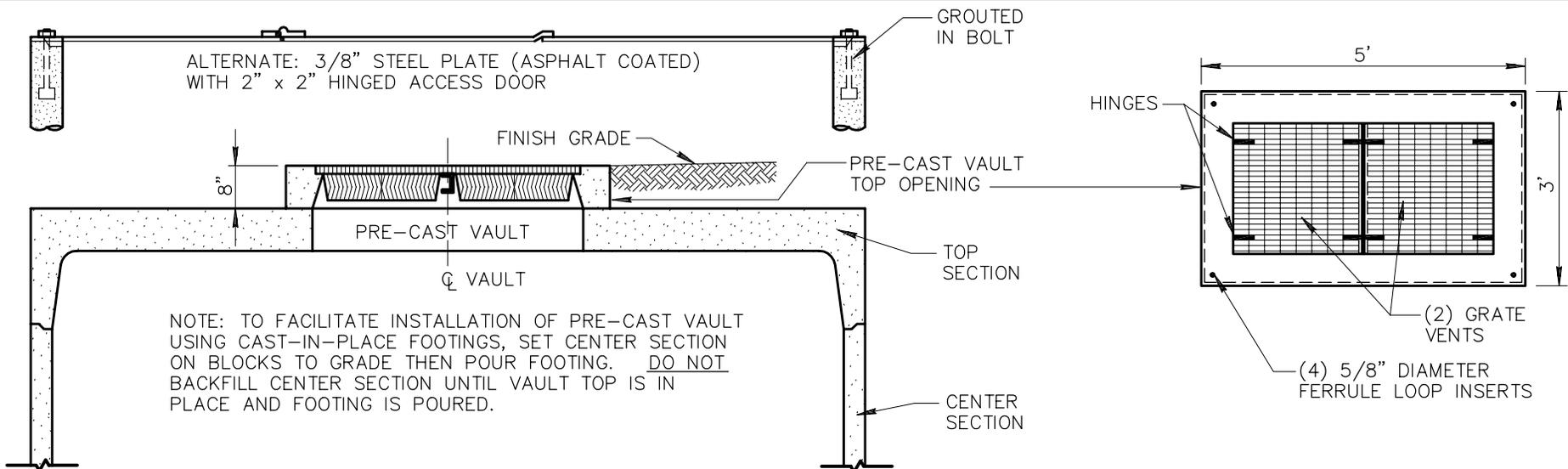
WATER GATE VALVE



BUTTERFLY VALVE

NOTES:

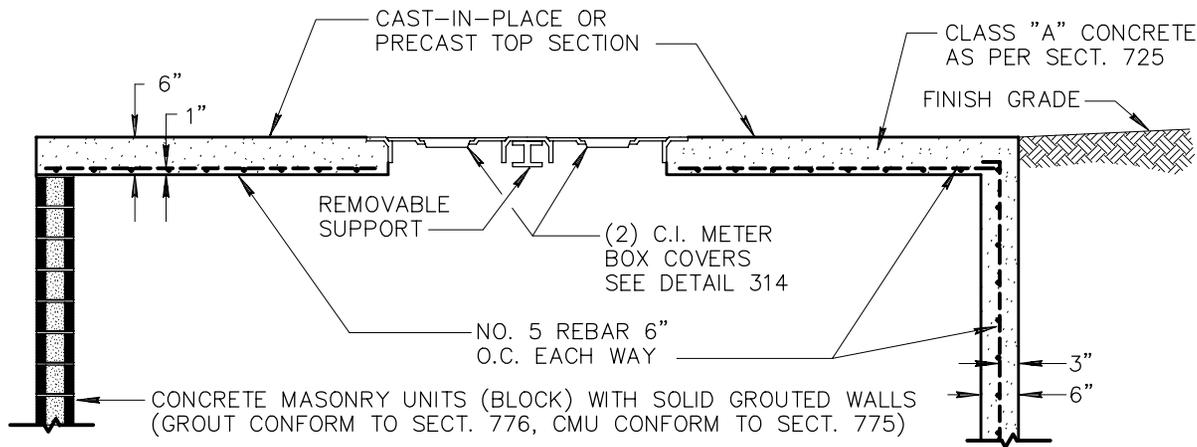
1. THIS DETAIL COVERS BUTTERFLY VALVE INSTALLATION, 3" TO 12" INCLUSIVE, REGARDLESS OF TYPE OF PIPE OR JOINT USED. LARGER LINES TO BE DETAILED ON PLANS.
2. VALVE BOX AND COVER REQUIRED PER DETAILS 270 AND 391.



NOTE: TO FACILITATE INSTALLATION OF PRE-CAST VAULT USING CAST-IN-PLACE FOOTINGS, SET CENTER SECTION ON BLOCKS TO GRADE THEN POUR FOOTING. DO NOT BACKFILL CENTER SECTION UNTIL VAULT TOP IS IN PLACE AND FOOTING IS POURED.

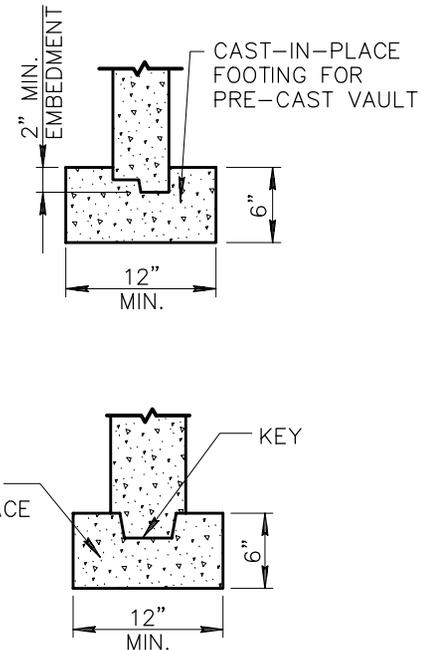
PRE-CAST VAULT SECTION

NOTE: PRECAST REINFORCED VAULT SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DETAILS AS APPROVED BY ENGINEER.



BLOCK MASONRY MAY BE USED IN LIEU OF CAST-IN-PLACE VAULT WALLS, NO. 4 REBAR IN EVERY OTHER CORE.

CAST-IN-PLACE VAULT SECTION



DETAIL NO.

321



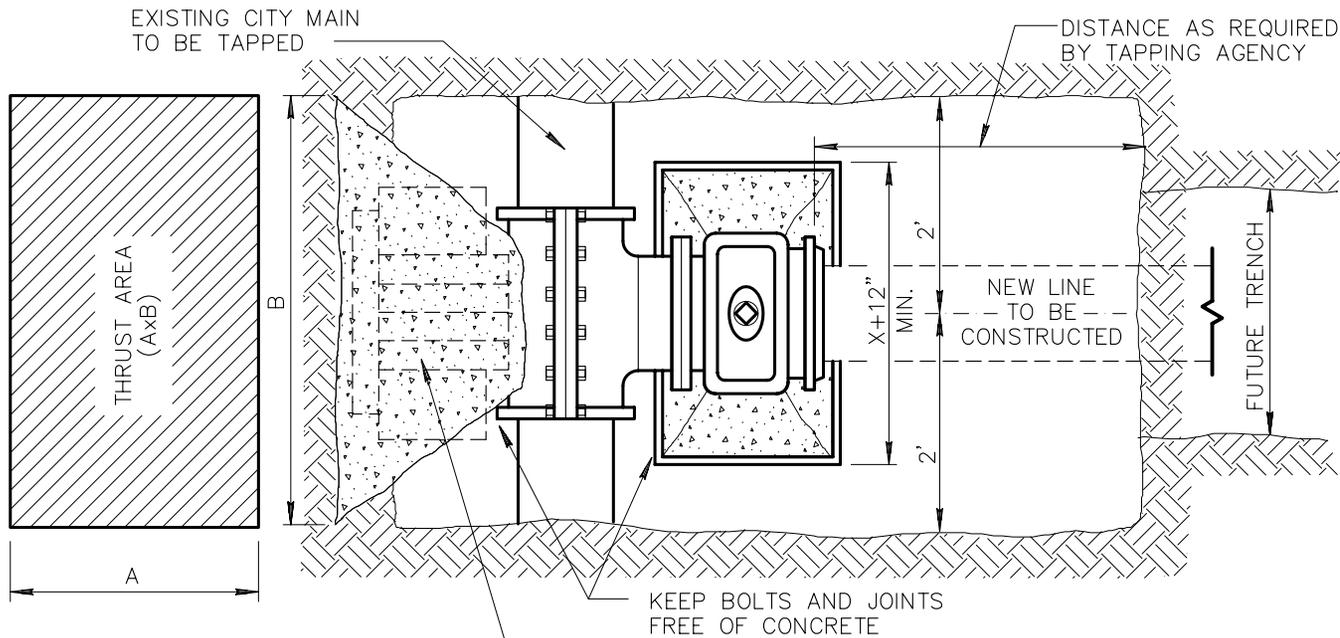
STANDARD DETAIL
ENGLISH

STANDARD WATER METER VAULT

REVISED

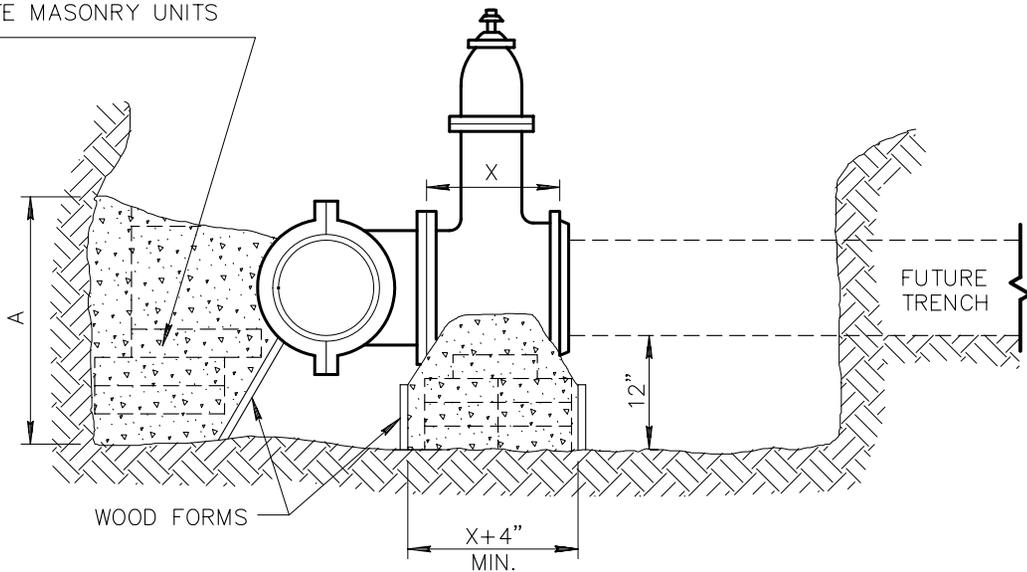
DETAIL NO.

321



PLAN

OPTIONAL BLOCKING - 2" x 8" x 12" SOLID CONCRETE MASONRY UNITS AS INDICATED.

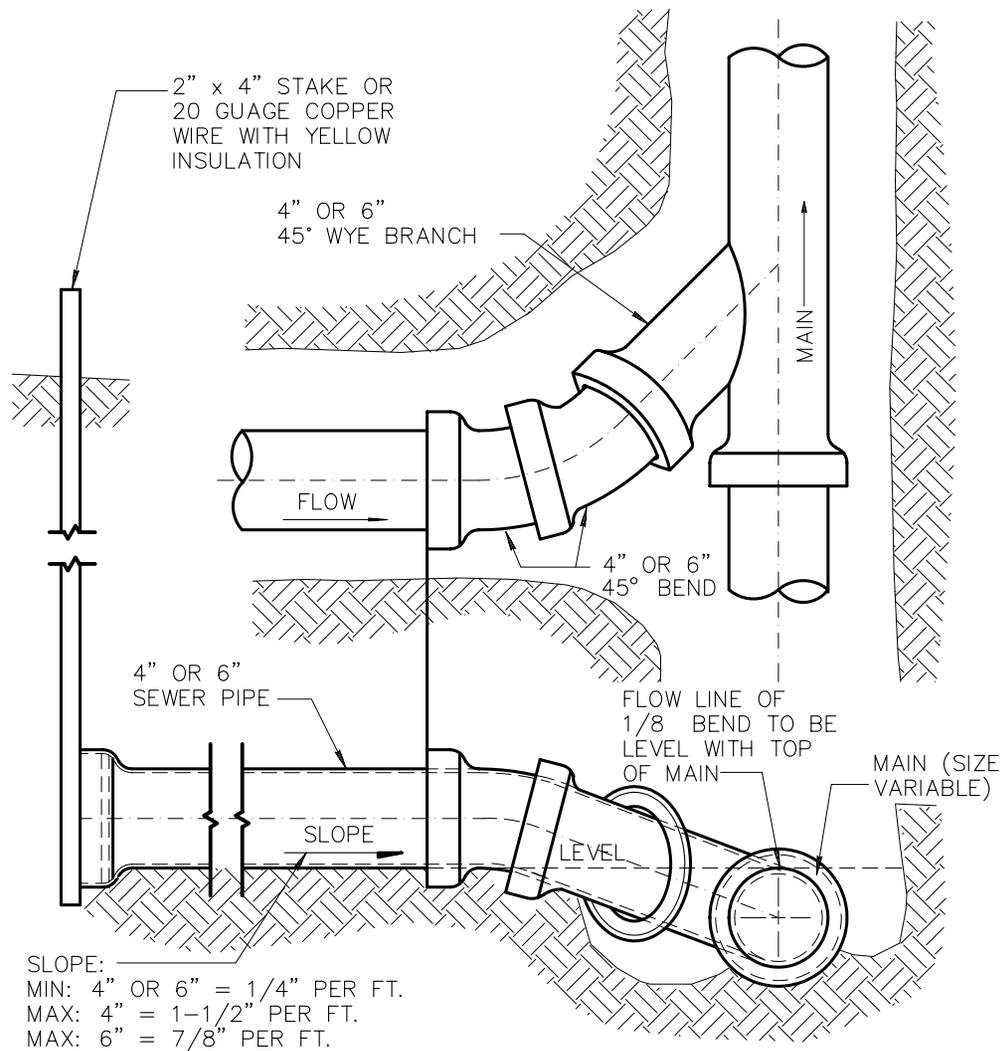


ELEVATION

NOTES:

1. TAPPING SLEEVE TO BE PLACED A MINIMUM OF 18" FROM ANY BELL COUPLING, VALVE, FITTING OR OTHER OBSTRUCTION
2. CONTRACTOR SHALL EXCAVATE AS SHOWN AND SHALL SET TAPPING SLEEVE AND VALVE AND TIGHTEN ALL BOLTS PRIOR TO THE PRESSURE TEST.
3. ALL TAPPING SLEEVES AND VALVES MUST BE PRESSURE TESTED PRIOR TO BLOCKING OR TAPPING. THE TEST MUST BE WITNESSED AND APPROVED BY THE INSPECTOR.
4. BLOCKS ARE TO EXTEND TO UNDISTURBED GROUND AND BE INSTALLED BEFORE THE TAP IS MADE. ALL FLANGE BOLTS SHALL BE FREE AND CLEAR OF CONCRETE.
5. CONCRETE THRUST BLOCKS SHALL BE CLASS 'B' PER SECT. 725. NORMALLY, CURE TIME FOR CONCRETE IS 24 HOURS BEFORE BACKFILLING.
6. TAPS SHALL BE MADE BY CITY CREWS AT PREVAILING RATES OR BY APPROVED CONTRACTORS WHEN ALLOWED BY AGENCY.
7. THIS DETAIL COVERS TAPPING SLEEVES 4" THROUGH 16" IN SIZE ON DUCTILE IRON, CAST IRON AND ASBESTOS CEMENT PIPE. ANY OTHER SIZE OR TYPE OF PIPE WILL REQUIRE A SEPARATE SUBMITTAL AND APPROVAL BY THE ENGINEER.

SIZE OF PIPE BEING CONNECTED	MINIMUM THRUST AREA REQUIRED EQUALS (AxB) (SQURE FEET)
4" AND LESS	3
6"	4
8"	6
10"	9
12"	13
16"	23

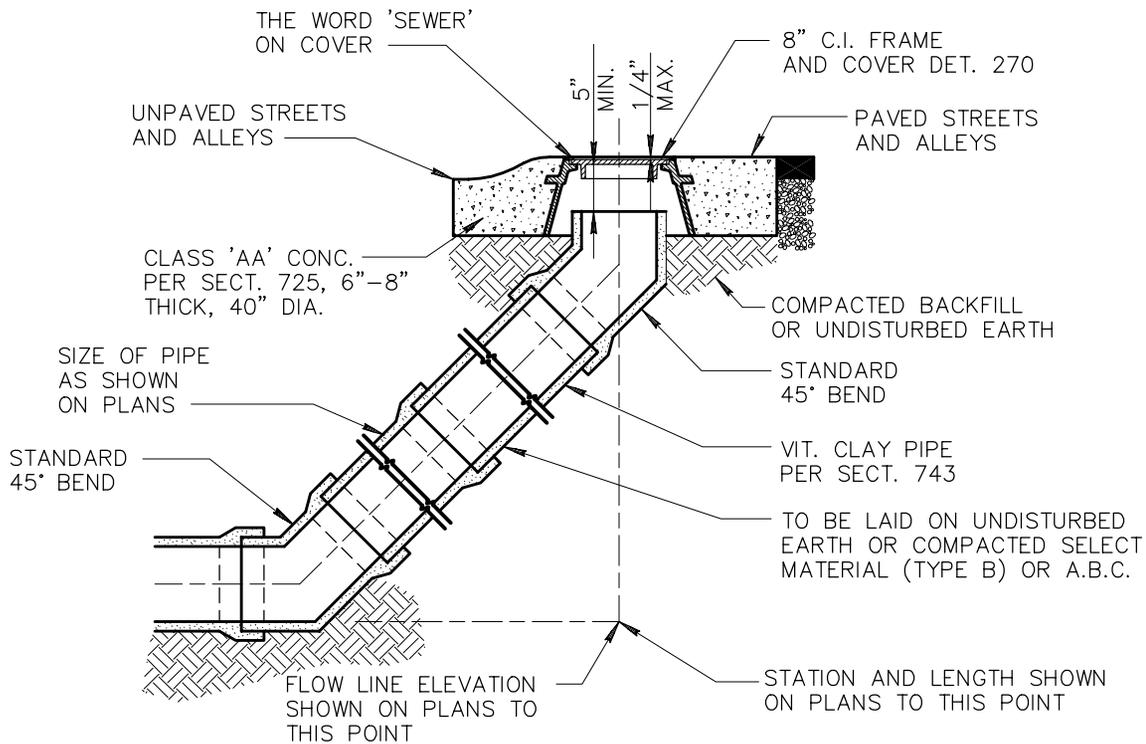


SLOPE:
 MIN: 4" OR 6" = 1/4" PER FT.
 MAX: 4" = 1-1/2" PER FT.
 MAX: 6" = 7/8" PER FT.

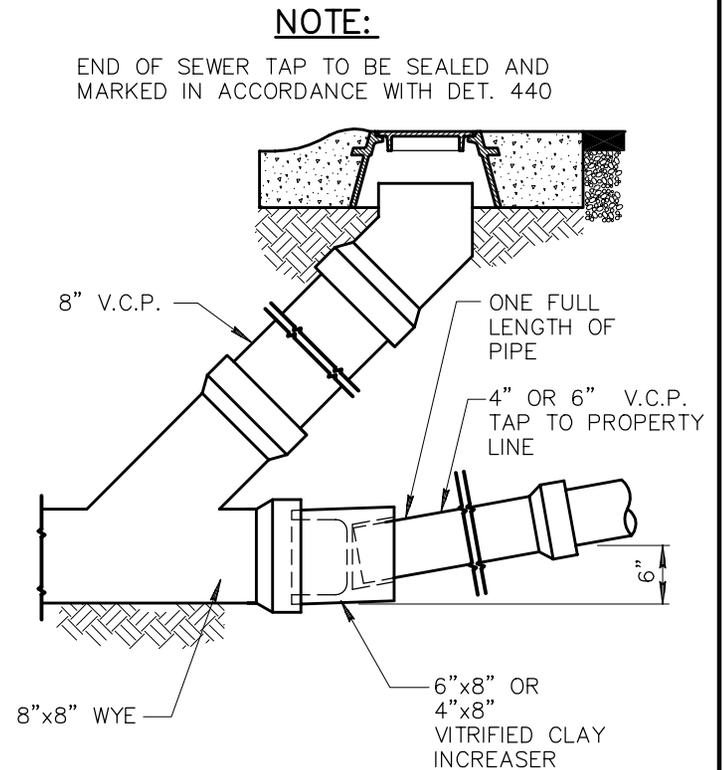
TYPE "A"

NOTES:

1. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
2. SIZE OF TAP SHALL BE DESIGNATED ON PLANS.
3. CONSTRUCT TAP AT MINIMUM SLOPE IF COVER WILL BE LESS THAN 5' AT PROPERTY LINE.
4. ALL FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321. THE CONTRACTOR MAY VARY FROM THE DRAWING TO USE THE APPROPRIATE WYES, TEE-WYES AND BENDS TO ENSURE NO MISALIGNMENT OF THE PIPE AND FITTINGS. BLOCK OR BRACE FITTINGS JOINTS TO ENSURE ZERO DEGREES ANGULAR JOINT DIRECTION.
5. END OF TAP TO BE SEALED AND MARKED AS NOTED.



CLEANOUT INSTALLATION



SEWER TAP AT CLEANOUT

DETAIL NO.

441



STANDARD DETAIL
ENGLISH

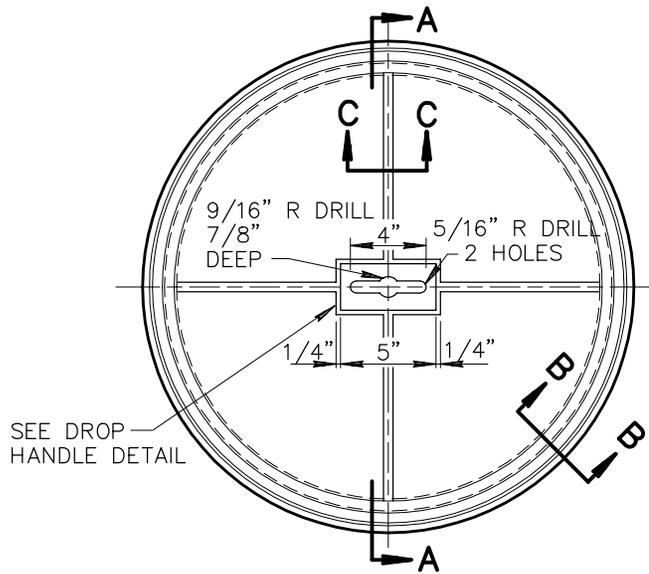
SEWER CLEANOUT

REVISED

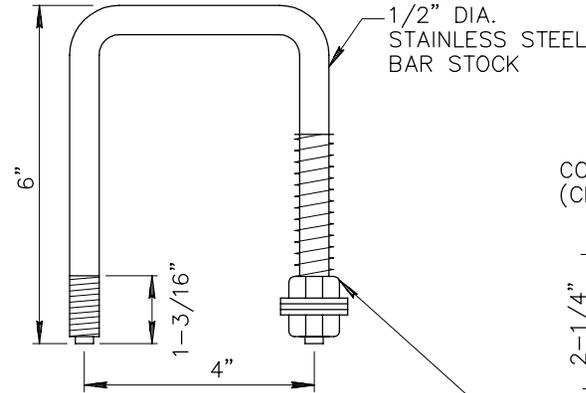
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DETAIL NO.

441

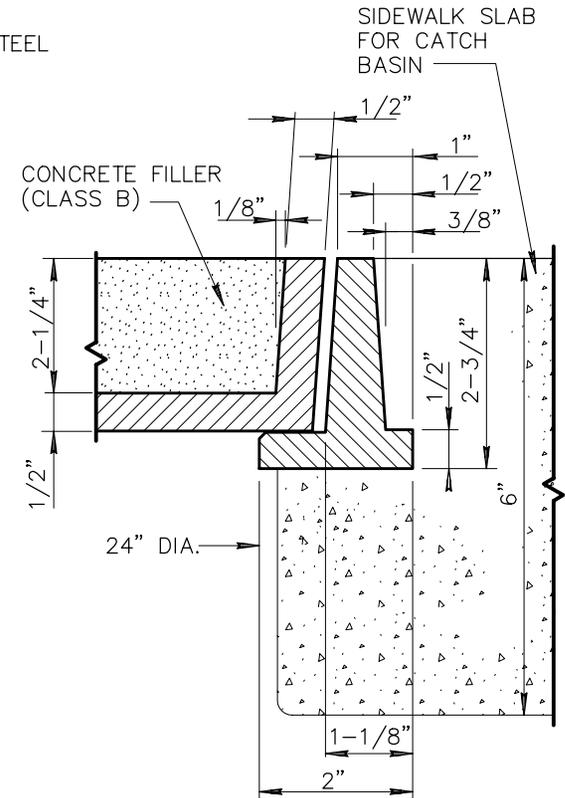


PLAN VIEW

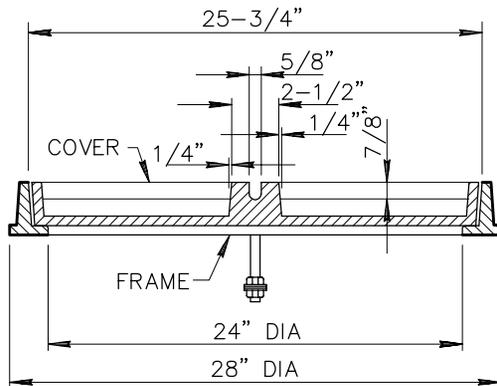


- FURNISH FOR EACH SIDE OF HANDLE
- 1 EACH 304-S.STL. SPRING
2-1/2" x 17/32" I.C. x 3/32"
 - 2 EACH 1/2" HEX NUT
 - 3 EACH 1/2" FLAT WASHER
 - 1 EACH 1/2" LOCK WASHER

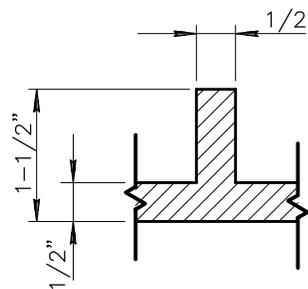
DROP HANDLE



SECTION B-B



SECTION A-A



SECTION C-C

NOTES:

1. FRAME SHALL BE NON-LOCKING.
2. FRAME AND COVER SHALL BE CAST IRON OR ASTM A-36 STRL. HORIZONTAL SURFACE OF COVER IN CONTACT WITH FRAME SHALL BE MACHINED. ASA B-46 ROUGHNESS SHALL NOT EXCEED 1/32".
3. COVER SHALL BE FILLED WITH CONCRETE AND BROOM FINISHED.
4. SMALL VARIATIONS IN DIMENSIONS OF FEATURES OF A MINOR NATURE THAT ARE PART OF THE FOUNDRY'S CASTING ARE PERMISSIBLE.

DETAIL NO.
536-2



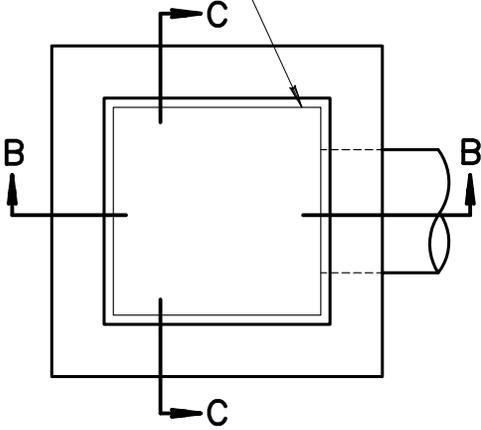
STANDARD DETAIL
ENGLISH

**ALTERNATE COVER FOR
CURB OPENING CATCH BASINS**

REVISED

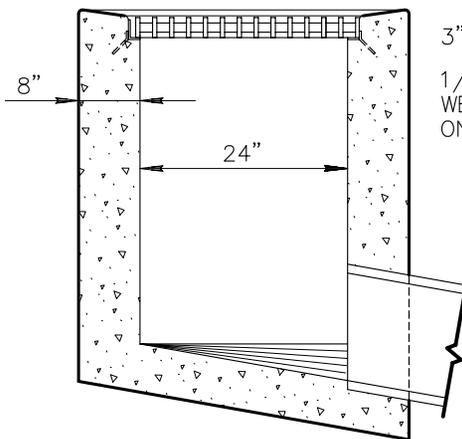
DETAIL NO.
536-2

29" x 29" I.D.
GRATE FRAME

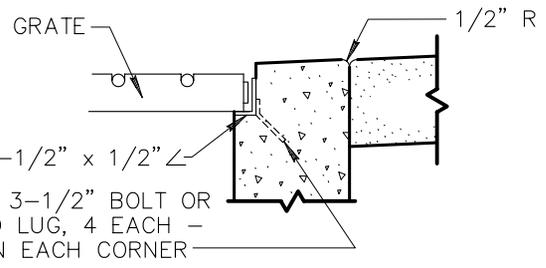


PLAN

SINGLE GRATE

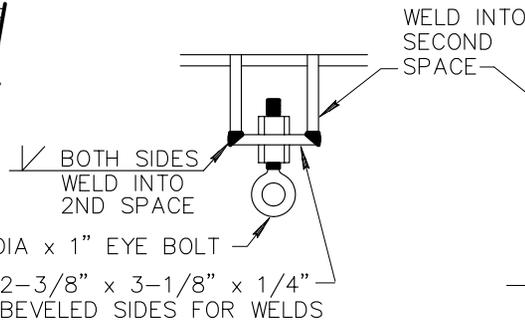


SECTION B-B

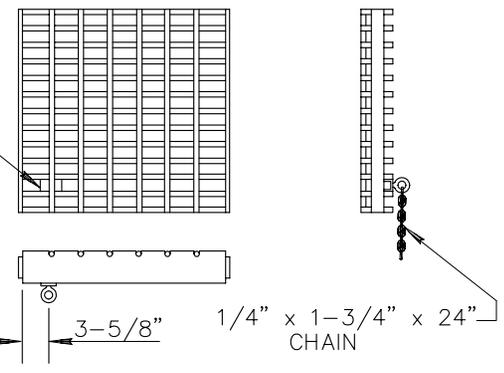


DETAIL OF ANGLE FRAME
GRATE SUPPORT

ALL CONCRETE SHALL BE CLASS 'A' PER SECT. 725. EXPOSED EDGES SHALL BE FINISHED WITH A 1/2" RADIUS.

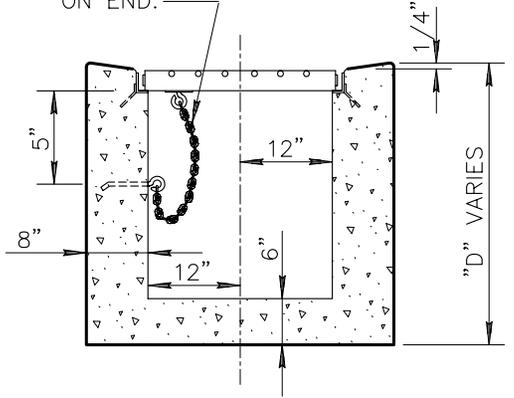


1/2" DIA x 1" EYE BOLT
2-3/8" x 3-1/8" x 1/4"
BEVELED SIDES FOR WELDS



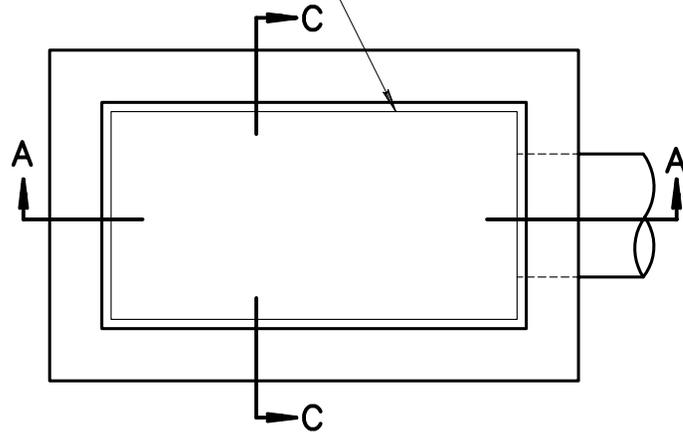
BAR GRATE
SEE DETAIL 539

1/4" x 1-3/4" x 24" CHAIN TO 1" x 6" EYE BOLT IN WALL. BEND BOLT 1" ON END.



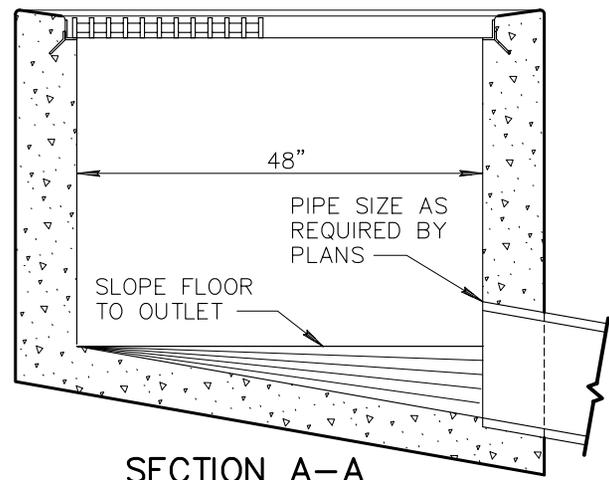
SECTION C-C

29" x 53" I.D.
GRATE FRAME



PLAN

DOUBLE GRATE



SECTION A-A

DETAIL NO.
537



STANDARD DETAIL
ENGLISH

CATCH BASIN - TYPE 'G'

REVISED
01-03-2002

DETAIL NO.
537