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JOMARIE WASIK
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AND CONSTRUCTION

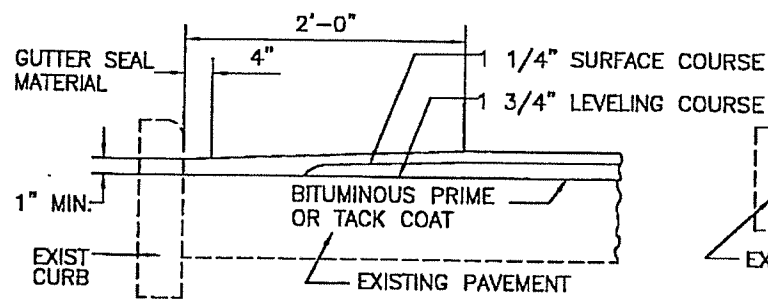


DIVISION OF ENGINEERING AND CONSTRUCTION
STANDARD CONSTRUCTION DRAWINGS

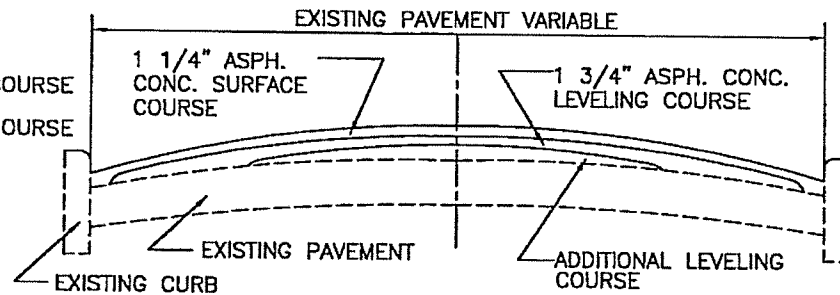
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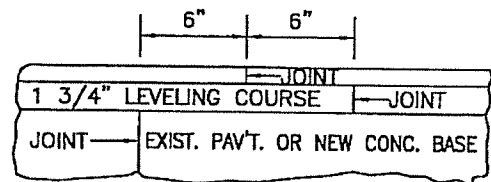
DETAIL SHOWING GUTTER RESURFACING



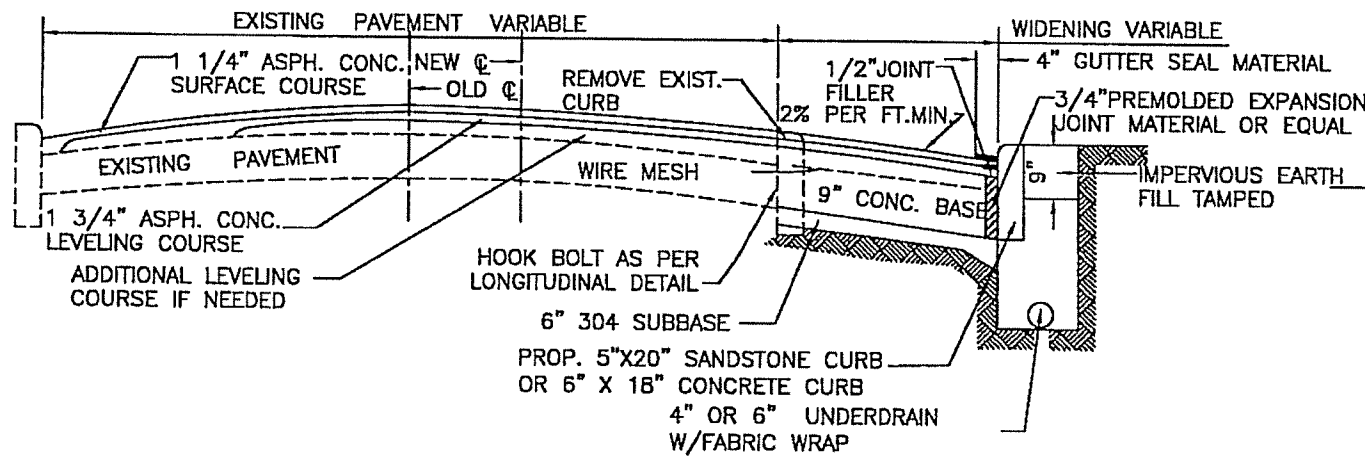
TYPICAL SECTION

NOTES
 SURFACE COURSE AS PER 448 TYPE I HEAVY TRAFFIC
 LEVELING COURSE AS PER 448 TYPE II HEAVY TRAFFIC
 ADDITIONAL LEVELING COURSE AS PER 448 TYPE II HEAVY TRAFFIC
 BITUMINOUS TACK COAT AS PER 407 & SPECIAL
 9" CONCRETE BASE AND INTEGRAL CONCRETE CURB & BASE AS PER 305 & SPECIAL AND 609.04
 IF REQUIRED 12 INCH (W4) X 6 INCH (W8.5) EPOXY COATED REINFORCING MESH MEETING ODOT 709.14
 AGGREGATE BASE AS PER 304 & SPECIAL
 JOINT FILLER AS PER 705.04 (HOT APPLIED)

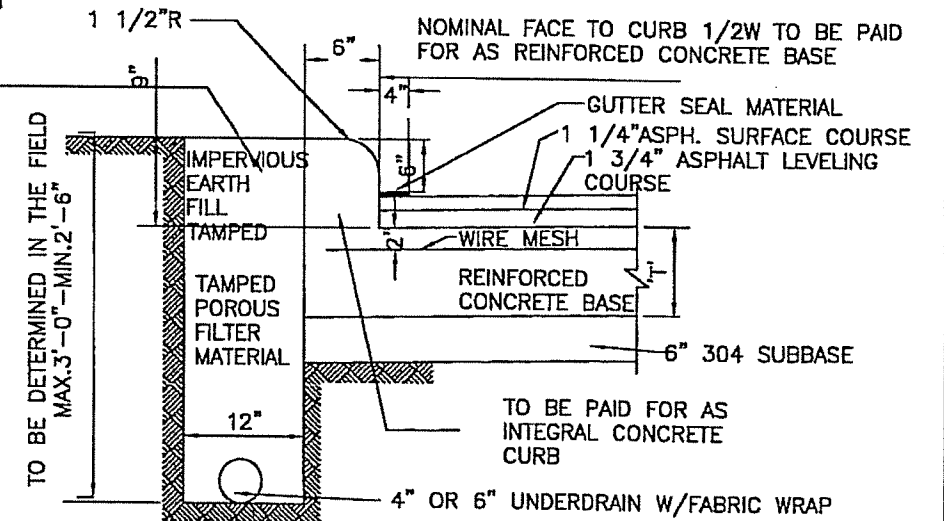
GUTTER SEAL MATERIAL SAME TYPE OF ASPHALT CEMENT USED IN THE ASPHALT CONCRETE
 PREMOLDED EXPANSION JOINT MATERIAL AS PER 705.03 NO. 8 TAMPED POROUS FILTER MATERIAL, LIMESTONE OR GRAVEL
 UNDERDRAIN AS PER 605 & SPECIAL
 INTEGRAL CONCRETE CURB AND BASE JOINT DETAIL SHALL BE AS SHOWN ON DRAWING 644 M SHEETS 4 & 5 (LONGITUDINAL) AND 175 ME SHEET 6 (TRANSVERSE).



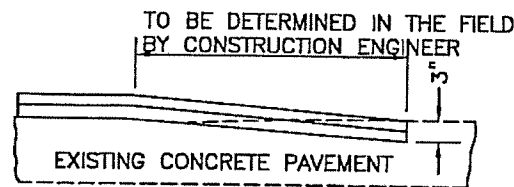
DETAIL FOR LAPPING JOINTS



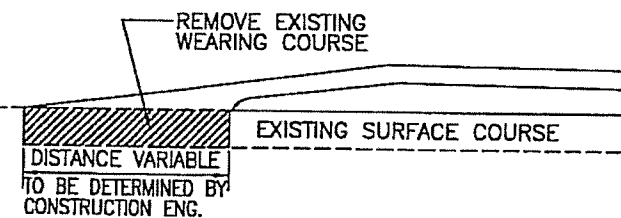
PAVEMENT SECTION WIDENING



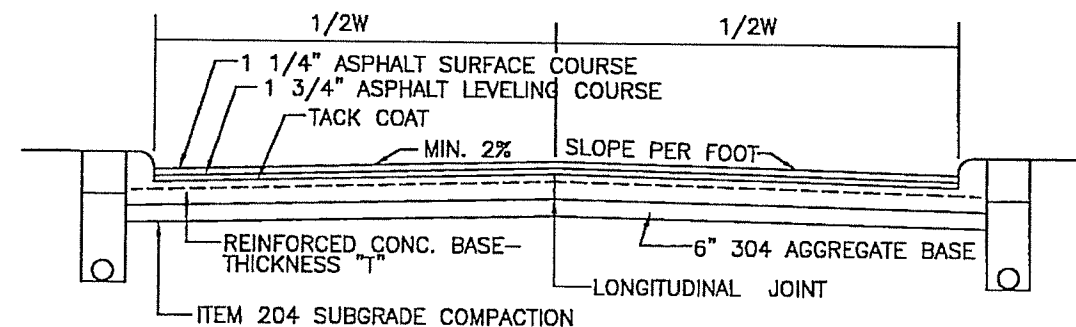
DETAIL OF INTEGRAL CONCRETE CURB & BASE (ASPHALT SURFACE)



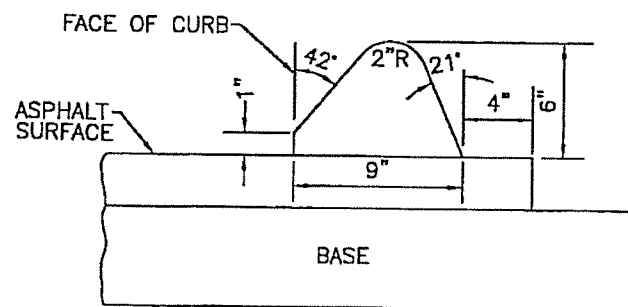
DETAIL FOR MILLING EXISTING CONCRETE PAVEMENT



TYPICAL DETAIL OF PAVEMENT MERGER

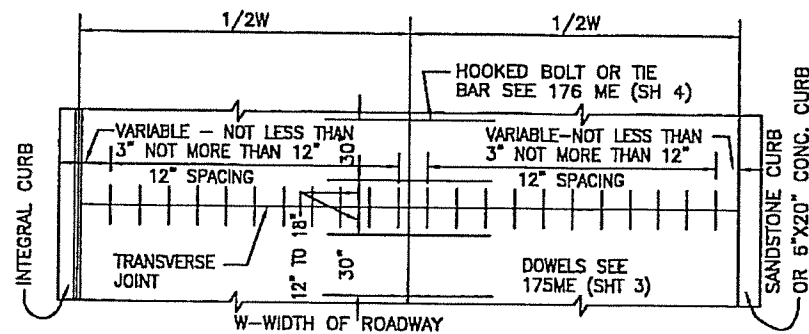


TYPICAL SECTION ASPHALT SURFACE WITH INTEGRAL CONCRETE CURB AND BASE

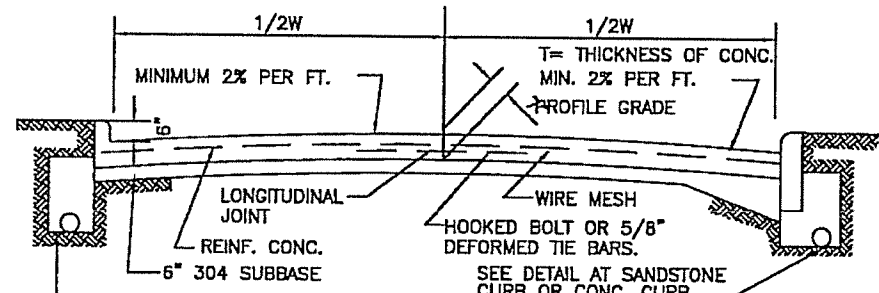


DETAIL OF ASPHALT CONCRETE CURB

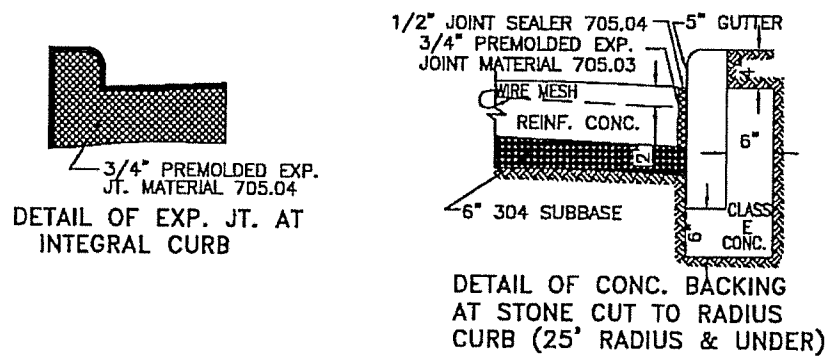
CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK—DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 ASPHALT RESURFACING AND ASPHALT SURFACE ON REINFORCED CONCRETE BASE
 NOT TO SCALE
 DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
 APPROVED: *Russell* DATE: 7-8-08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION
 FILE NO ASPH 1 SHEET 1/1 (2)



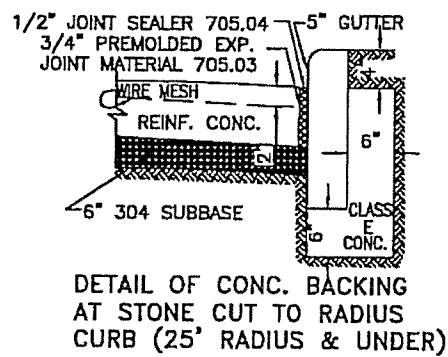
TYPICAL PLAN OF PAVEMENT



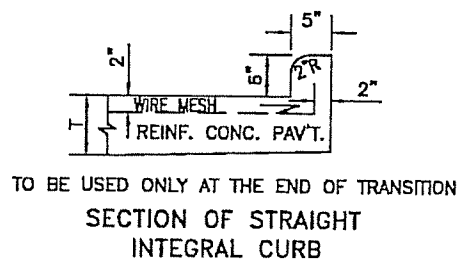
TYPICAL SECTION OF PAVEMENT



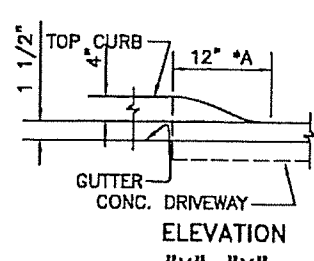
DETAIL OF EXP. JT. AT INTEGRAL CURB



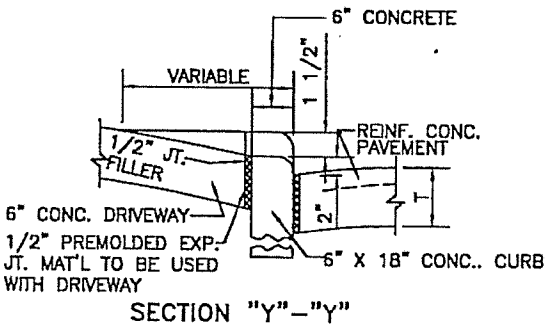
DETAIL OF CONC. BACKING AT STONE CUT TO RADIUS CURB (25' RADIUS & UNDER)



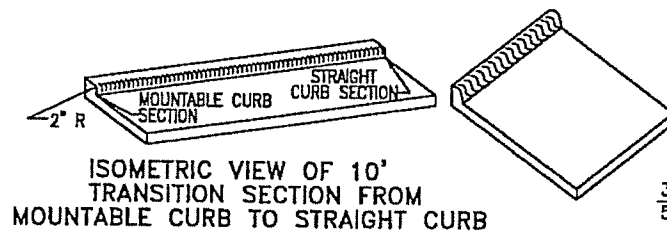
SECTION OF STRAIGHT INTEGRAL CURB



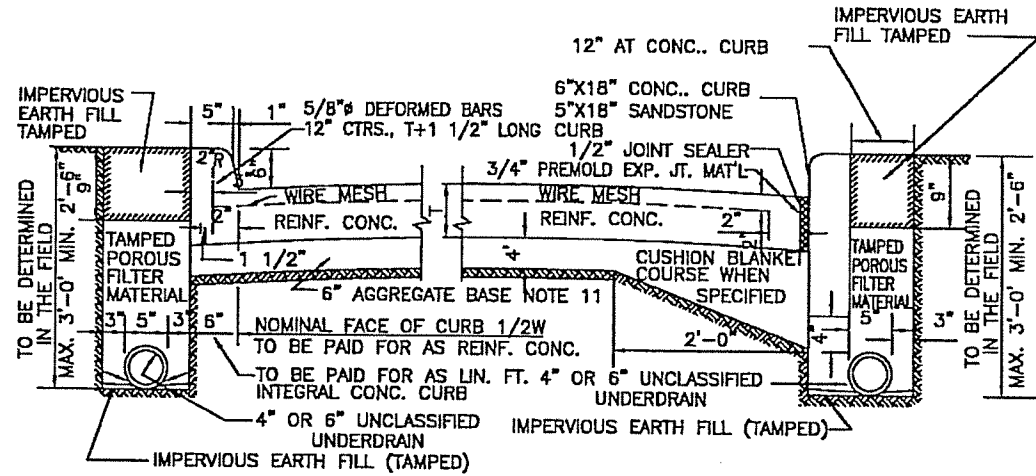
ELEVATION "X"-"X"



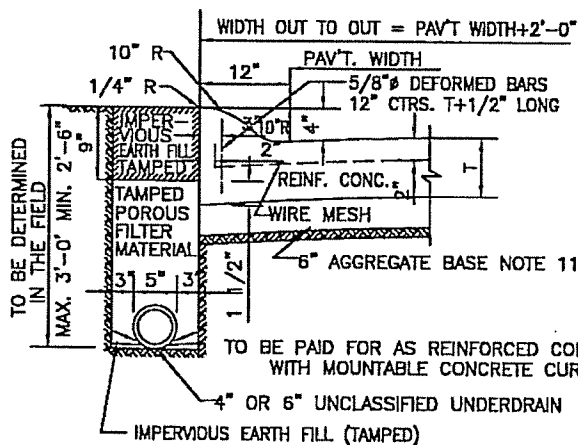
SECTION "Y"-"Y"



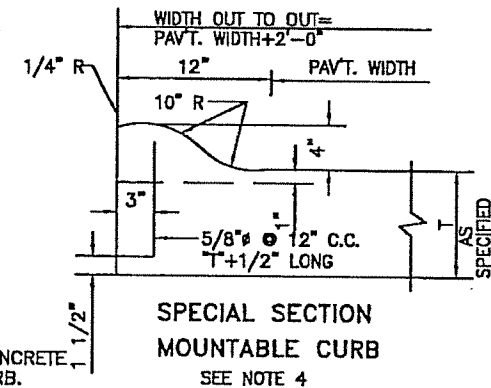
ISOMETRIC VIEW OF 10' TRANSITION SECTION FROM MOUNTABLE CURB TO STRAIGHT CURB



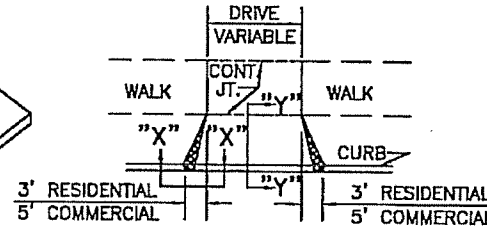
DETAIL OF CONC. INTEGRAL CURB DETAIL OF SANDSTONE CURB



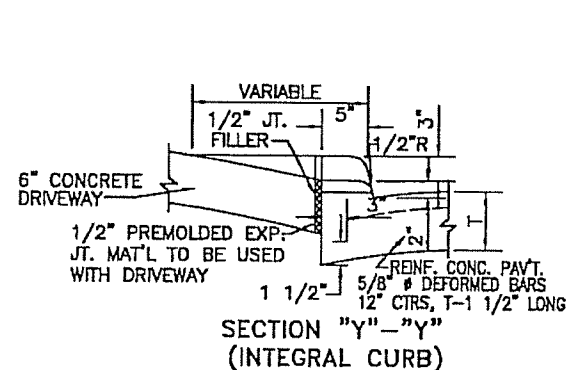
DETAIL OF CONC. MOUNTABLE CURB



SPECIAL SECTION MOUNTABLE CURB SEE NOTE 4



TYPICAL CONC. DRIVEWAY DETAIL



SECTION "Y"-"Y" (INTEGRAL CURB)

NOTES:

1. REINFORCED CONCRETE PAVEMENT SHALL MEET THE REQUIREMENTS OF 451 AND SPECIAL CONCRETE SHALL MEET THE REQUIREMENTS OF CITY OF CLEVELAND 650 MIX.
2. IF THE CURB IS PLACED AFTER THE PAVEMENT, OMIT THE ASPHALT EXPANSION JOINT AND PAVE FULL WIDTH. FILL THE VOID BETWEEN THE CURB & EXP. JOINT WITH DRY SAND TO 1/2" FROM THE CONCRETE SURFACE. THE REMAINING 1/2" SHALL BE FILLED WITH JOINT FILLER AS PER 705.04 (HOT APPLIED JOINT FILLER).
3. TRANSITION FROM STANDARD CURB SECTION TO DROP CURB SECTION TO BE MADE IN 12".
4. CONCRETE FOR CURB WHICH IS TO BE INTEGRAL WITH THE CONCRETE BASE OR PAVEMENT SHALL BE PLACED WHILE THE CONCRETE IS PLASTIC.
5. TRANSVERSE JOINT IN THE PAVEMENT SHALL EXTEND THROUGH CURBS.
6. CONTRACTION JOINT (IMPRESSED OR SAWED) SHALL BE PLACED AT MAXIMUM OF 17' CENTERS.
7. PAVEMENT JOINT ASSEMBLIES SHALL BE AS PER 451.02 (709.13).
8. LONGITUDINAL JOINT SHALL BE 5/8" X 30" DEFORMED EPOXY BAR AS PER 451.02 & 709.00 OR 2- 7/8" X 8" EPOXY HOOK BOLTS PLACED AT 30" CENTERS. TRANSVERSE JOINT SHALL BE AS SHOWN ON DRAWING 175 ME (SHEET 6).
9. STEEL FOR TIE BARS, HOOK BOLTS AND DOWEL BARS SHALL MEET THE REQUIREMENTS OF 451.02.
10. 12 INCH (W4) X 6 INCH (WB.5) EPOXY COATED REINFORCING MESH MEETING ODOT 709.14
11. AGGREGATE BASE AS PER 304 & SPECIAL
12. HOT APPLIED JOINT SEALER AS PER 705.04.
13. PREFORMED EXPANSION JOINT MATERIAL AS PER 705.03.
14. TAMPED POROUS FILTER MATERIAL AS PER 605.
15. UNCLASSIFIED PIPE UNDERDRAIN AS PER 707.31 OR 707.41.

CITY OF CLEVELAND

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 STANDARD CONSTRUCTION DRAWING
 CONSTRUCTION DETAILS OF REINFORCED CONCRETE PAVEMENT
 NOT TO SCALE

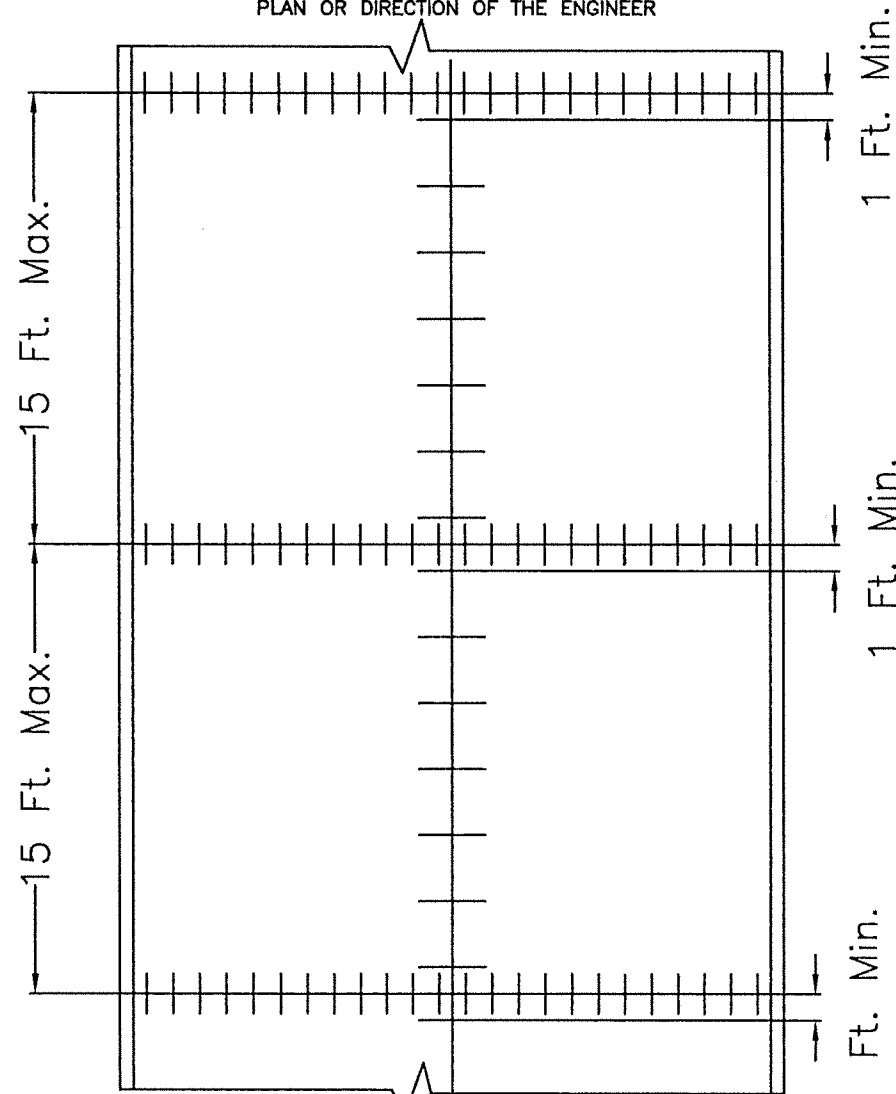
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. McLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7-8-08

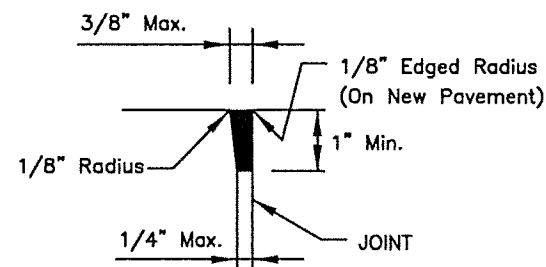
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ALL DOWELS, HOOK BOLTS AND TIE BARS SHALL BE EPOXY COATED (709.00), AS PER PLAN OR DIRECTION OF THE ENGINEER

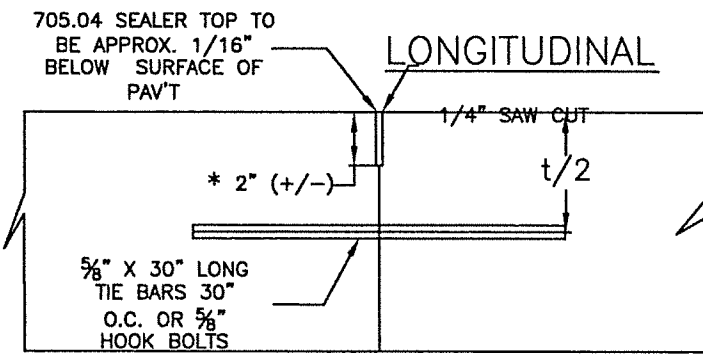


SPACING DIAGRAM FOR JOINTS AND TIE BARS
NOT TO SCALE

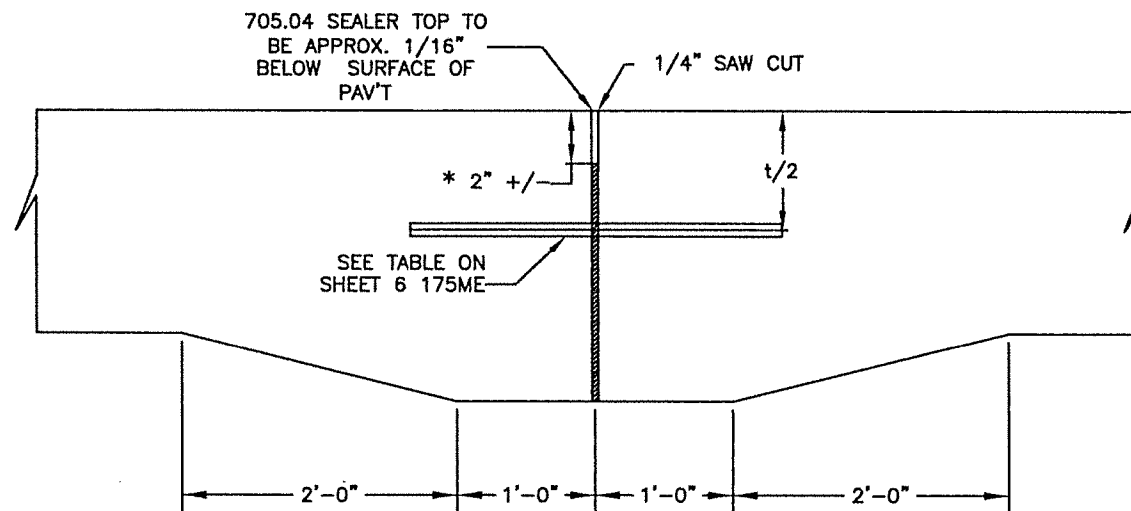
GROOVE AND SEAL DETAIL



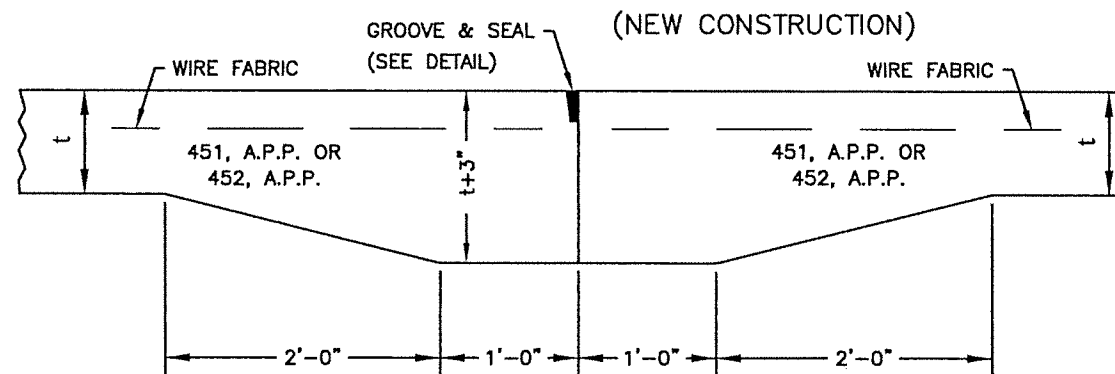
GROOVES FOR SEALING THICKENED EDGE BUTT JOINTS SHALL BE FORMED BY DEPRESSING A DEVICE OR BAR INTO THE NEWLY DEPOSITED CONCRETE ADJACENT TO THE EXISTING OR PREVIOUSLY POURED PAVEMENT. THE DEVICE OR BAR SHALL BE REMOVED AS SOON AS THE CONCRETE IS IN SUCH CONDITION AS TO PRECLUDE DISTORTION OF THE CONCRETE. AFTER THE JOINT IS FORMED IT SHALL BE PROTECTED FROM DIRT AND FOREIGN MATTER UNTIL THE JOINT SEAL (705.04) IS PLACED.



EXPANSION (THICKENED)

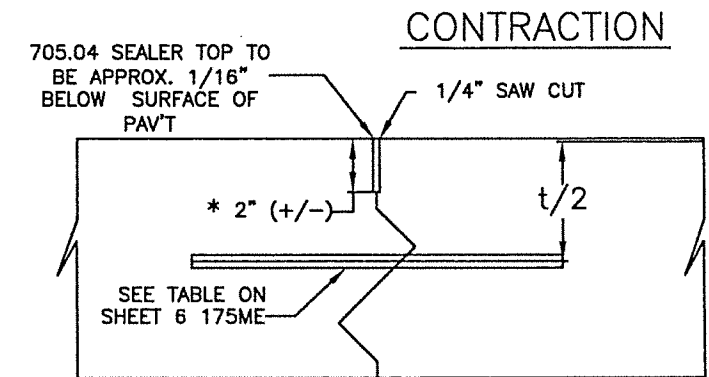


TB-THICKENED EDGE BUTT JOINT

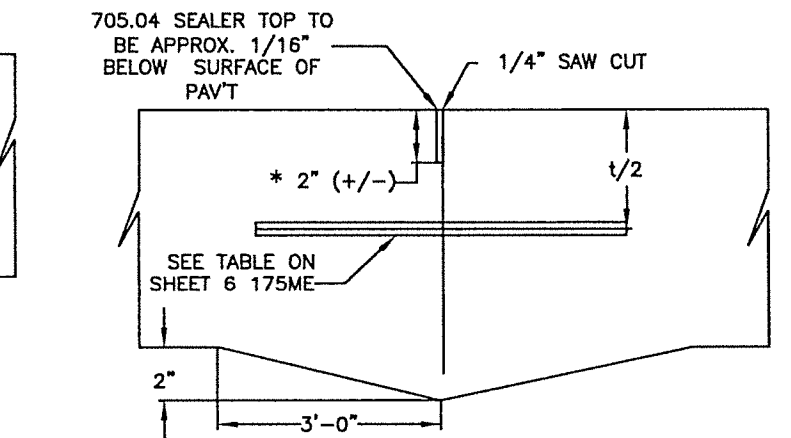


PRIOR TO PLACING THE SECOND HALF OF THE JOINT, AN ASPHALT MATERIAL COATING SHALL BE PAINTED ON VERTICAL FACE OF THE FIRST HALF OF THE JOINT TO PREVENT BONDING. AT THE APPROVAL OF THE ENGINEER, ALTERNATE BOND BREAKING MATERIAL MAY BE USED.

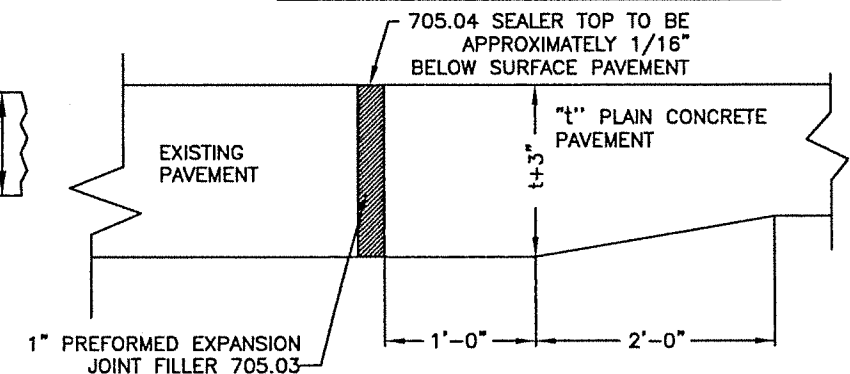
* IF CONCRETE IS THICKER THAN 8" USE T/4 FOR THE JOINT DEPTH



CONSTRUCTION (THICKENED)



BUTT JOINT (THICKENED)



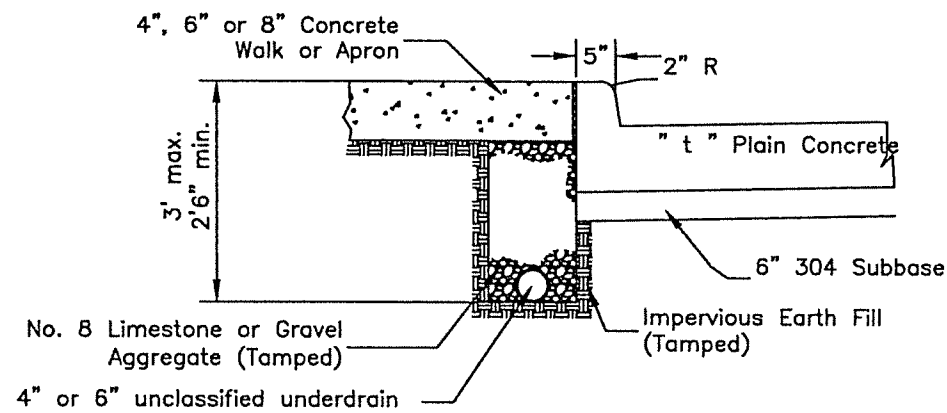
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STANDARD CONSTRUCTION DRAWINGS
TYPICAL CONSTRUCTION
DETAILS FOR PLAIN
CONCRETE PAVEMENT
NOT TO SCALE

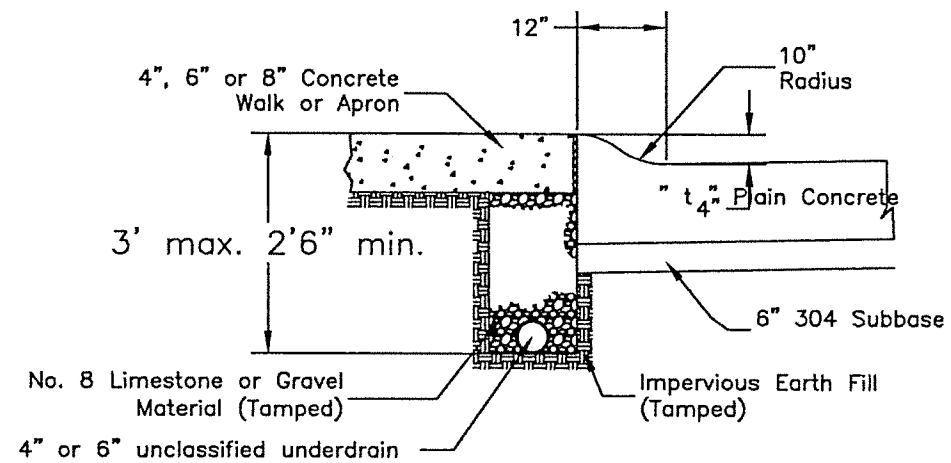
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7/10/08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

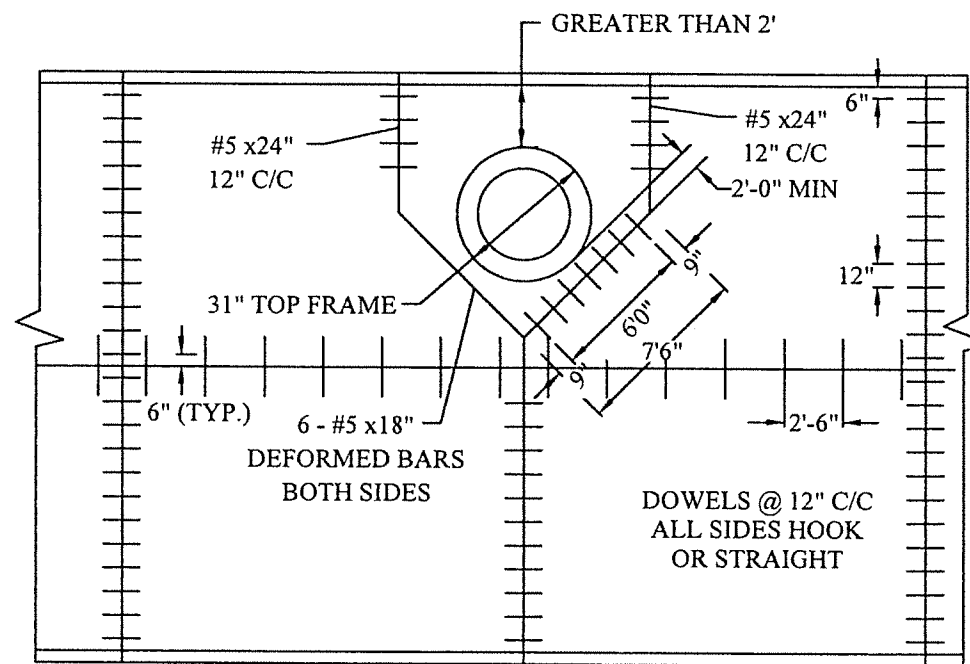
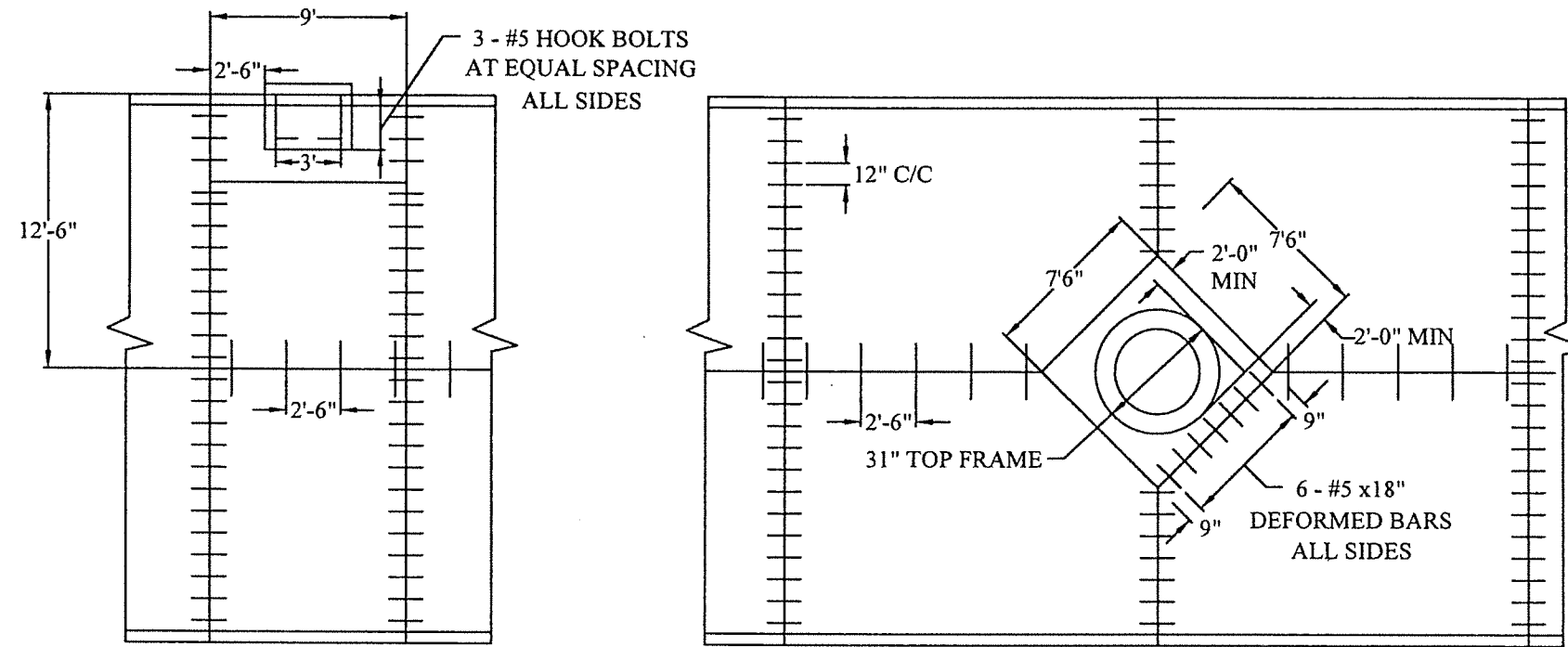
FILE NO. : CONC 1 SHEET 2/4



DETAIL OF CONCRETE INTEGRAL CURB
NOT TO SCALE



DETAIL OF CONCRETE MOUNTABLE CURB
(NOT TO SCALE)



TYPICAL BOXOUTS FOR MANHOLES AND CATCH BASINS

REV 1/14/20

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STANDARD CONSTRUCTION DRAWING
TYPICAL CONSTRUCTION
DETAILS FOR PLAIN
CONCRETE PAVEMENT
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: *4/8/08*

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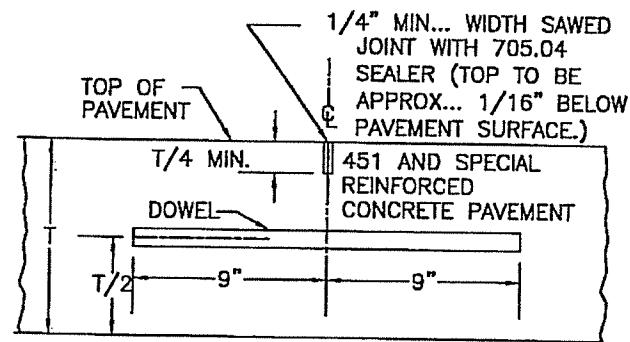
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SHEET 3/4

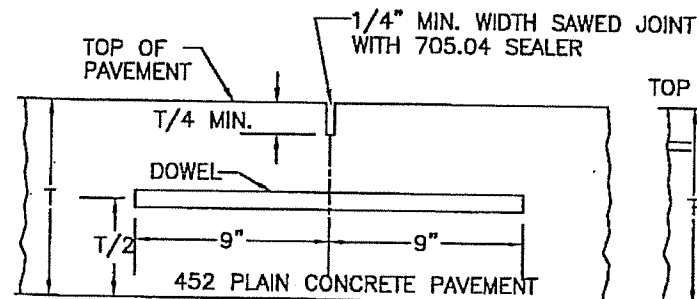
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TRANSVERSE JOINTS

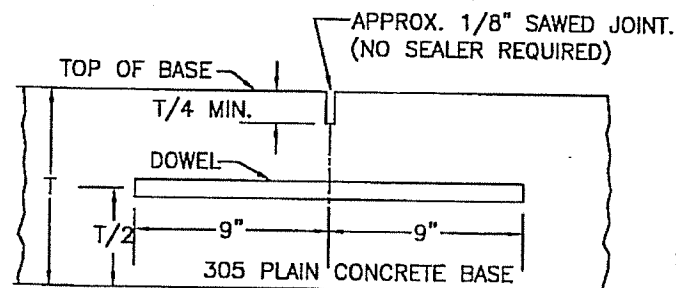
CONTRACTION JOINTS



SECTION-451 AND SPECIAL (PAVEMENT)

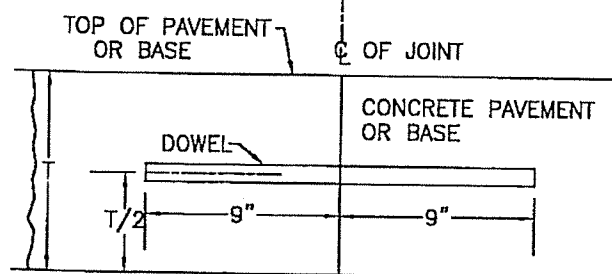


SECTION-452 PLAIN CONCRETE (PAVEMENT)



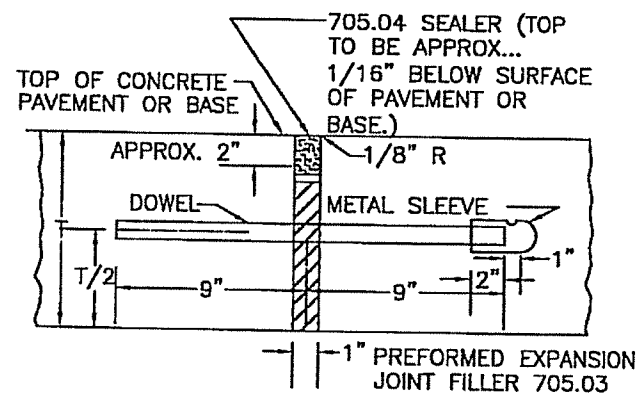
SECTION-305 AND SPECIAL (BASE)

CONSTRUCTION JOINT

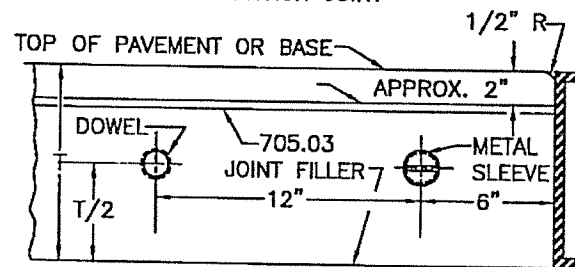


SECTION THROUGH CONSTRUCTION JOINT

EXPANSION JOINT



SECTION THROUGH EXPANSION JOINT



SIDE ELEVATION OF EXPANSION JOINT

ASSEMBLY: NOTES AND DETAILS SHOWN ON THIS DRAWING SHALL BE CONSIDERED IN CONJUNCTION WITH AND SUPPLEMENTAL TO THE PERTINENT SPECIFICATIONS FOR PORTLAND CEMENT CONCRETE PAVEMENTS AND BASES, AND INCIDENTALS RELATED THERETO.

ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE UNLESS OTHERWISE DIRECTED.

WHERE DOWELS ARE SPECIFIED THEY SHALL BE ROUND, STRAIGHT STEEL BARS OF THE SIZE INDICATED IN THE FOLLOWING TABLE, AND SHALL BE EPOXY COATED ODOT 709.13. DOWELS SHALL BE SPACED AT 12" CENTERS, BEGINNING 6" FROM THE LONGITUDINAL JOINT.

BASKET SUPPORTS SHALL BE USED FOR POSITIONING OF THE DOWEL BARS AS SPECIFIED IN THE FOLLOWING TABLE, PROVIDE A FUSION-BONDED EPOXY COATED BASKET DOWEL ASSEMBLY. REPAIR UNCOATED AREAS WITH SURFACE PREPARATION AND PATCHING MATERIAL EQUIVALENT TO THE ORIGINAL EPOXY COATING.

DOWEL SIZE	
THICKNESS OF PAVEMENT	DIAMETER OF DOWEL
8" OR LESS	1"
9"	1 1/8"
10"	1 1/4"
OVER 10"	AS SHOWN ON PLANS

ASSEMBLY: EACH JOINT ASSEMBLY USED TO HOLD DOWELS IN POSITION SHALL BE CONTINUOUS BETWEEN LONGITUDINAL JOINTS OR BETWEEN LONGITUDINAL JOINT AND PAVEMENT EDGE.

THE ASSEMBLY SHALL BE FIRMLY HELD IN PROPER POSITION BY AT LEAST EIGHT 1/2" STEEL PINS DRIVEN AT AN ANGLE TO BRACE THE ASSEMBLY FROM LATERAL AND VERTICAL DISPLACEMENT DURING THE PLACING OF THE CONCRETE. THESE PINS SHALL BE AT LEAST 18" IN LENGTH. TWO OF THESE PINS SHALL BE DRIVEN OPPOSITE EACH OTHER AT EACH END OF THE ASSEMBLY AND THE REMAINING PINS SHALL BE DRIVEN IN STAGGERED POSITIONS ON EACH SIDE OF THE ASSEMBLY. IN EXCEPTIONAL CASES WHERE IT IS IMPRACTICAL TO USE THE 18" LENGTH PINS, SUCH AS WHERE HARDPAN OR ROCK IS ENCOUNTERED, THE ENGINEER MAY AUTHORIZE USE OF SHORTER PINS PROVIDED THE ASSEMBLY IS HELD FIRMLY. WHERE THE ASSEMBLY IS PLACED ON GRANULAR MATERIAL WHICH MAY ALLOW SETTLEMENT OR DISTORTION OF THE ASSEMBLY, A MINIMUM OF 6 STEEL PLATES, EACH HAVING A BEARING AREA OF APPROXIMATELY 25 SQUARE INCHES AND A CROSS-SECTION WHICH WILL NOT BEND UNDER THE IMPOSED LOAD, SHALL BE PLACED UNDER THE ASSEMBLY. ONE PLATE SHALL BE USED AT EACH OF THE FOUR END PINS. THE REMAINING PLATES SHALL BE SPACED UNIFORMLY ON EACH SIDE OF THE ASSEMBLY. THE METHOD OF STAKING AND PLACING BEARING PLATES SHALL BE APPROVED BY THE ENGINEER.

DOWEL SPACING IS SHOWN FOR PAVEMENT LANES OF EVEN FOOT WIDTHS. WHERE OTHER WIDTHS ARE SPECIFIED, STANDARD CAGES MAY BE USED WITH DOWEL SPACINGS ADJUSTED AS FOLLOWS:

THE 6" DOWEL SPACING SHALL BE MAINTAINED AT THE LONGITUDINAL JOINT. THE SPACING AT THE OUTER EDGE OF THE LANE MAY BE INCREASED UP TO 12". WHERE AN ODD WIDTH OF LANE OCCURS, A DOWEL SHALL BE PLACED 6" FROM THE OUTER EDGE OF THE LANE IF THE STANDARD CAGE WOULD PROVIDE FOR A SPACE EXCEEDING 12". SUCH A DOWEL SHALL BE HELD RIGIDLY IN PROPER POSITION BY A METHOD SATISFACTORY TO THE ENGINEER, OR A DOWEL CAGE OF GREATER LENGTH THAN REQUIRED MAY BE USED BY CUTTING THE ASSEMBLY AND SPLICING TO ATTAIN THE REQUIRED LENGTH.

THIS DRAWING IS INTENDED FOR USE WITH A UNIFORM DEPTH PAVEMENT. WHEN THE PROJECT INVOLVES THE PLACING OF VARIABLE DEPTH PAVEMENT, THE JOINT COMPONENTS SHALL BE HELD IN PLACE IN ACCORDANCE WITH THE METHOD SHOWN IN THE PLAN OR AS APPROVED BY THE ENGINEER.

EXPANSION JOINTS: EXPANSION JOINT FILLER SHALL BE PLACED AT 90° TO THE DOWELS, BOTH HORIZONTALLY AND VERTICALLY, SHALL BE HELD RIGIDLY IN POSITION BY THE USE OF A METAL CAP WHICH SHALL BE REMOVED AT SUCH A TIME IN THE FINISHING OPERATION THAT WILL ENABLE THE BEST WORKMANSHIP IN FINISHING THE JOINT TO THE DIMENSIONS SPECIFIED. JOINT FILLER SHALL BE CONTINUOUS FOR THE FULL WIDTH OF EACH LANE.

SMOOTH DOWELS SHALL BE USED, AND FREE MOVEMENT SHALL BE PROVIDED BY APPLYING A COATING OF AN OIL SUCH AS S.A.E. 140 OR OTHER APPROVED "BOND BREAKING" MATERIAL JUST PRIOR TO PLACING THE CONCRETE. ONE FREE END OF EACH DOWEL SHALL BE EQUIPPED, AFTER COATING, WITH A METAL SLEEVE APPROXIMATELY 3" LONG, DESIGNED WITH CRIMPED END AND OVERLAPPING SEAMS, FITTING CLOSELY AROUND THE DOWEL. EACH SLEEVE SHALL BE PROVIDED WITH A DEPRESSION OR INTERIOR PROJECTION TO ACT AS A STOP FOR THE DOWEL, SUFFICIENTLY DISTANT FROM THE CRIMPED END TO ALLOW 1" FOR LONGITUDINAL DOWEL MOVEMENT WITH PAVEMENT EXPANSION. IN LIEU OF THIS REQUIREMENT, ANY OTHER MEAN MAY BE USED IF APPROVED BY THE ENGINEER.

CONTRACTION JOINTS: DOWELS SHALL BE USED IN CONTRACTION JOINTS IN 451 AND SPECIAL REINFORCED CONCRETE PAVEMENT. THEY SHALL BE SMOOTH BARS, AND FREE MOVEMENT SHALL BE PROVIDED BY APPLYING A COATING OF AN OIL SUCH AS S.A.E. 140 OR OTHER "BOND-BREAKING" MATERIAL JUST PRIOR TO PLACING THE CONCRETE.

CONTRACTION JOINTS OF THE TYPE SPECIFIED SHALL BE SPACED IN ACCORDANCE WITH THE FOLLOWING TABLE:

CONTRACTION JOINT SPACING	
TYPES OF PAVEMENT OR BASE	MAXIMUM SPACING BETWEEN JOINTS
451 AND SPECIAL REINFORCED CONCRETE PAVEMENT	17'-0"
305 AND SPECIAL CONCRETE BASE	17'-0"
452 PLAIN CONCRETE PAVEMENT	17'-0"

CONSTRUCTION JOINTS: EITHER SMOOTH OR DEFORMED DOWELS SHALL BE USED IN CONSTRUCTION JOINTS IN ALL PORTLAND CEMENT CONCRETE PAVEMENT AND BASE. DOWELS SHALL BE THOROUGHLY CLEANED OF ALL OIL OR OTHER SUBSTANCE THAT WOULD BREAK THE BOND BETWEEN THE STEEL AND CONCRETE. THE JOINT SHALL BE FORMED BY USING A 2" MINIMUM THICKNESS WOOD BULKHEAD OR EQUAL, WITH OPENINGS PROVIDED FOR DOWEL BARS SPACED AT INTERVALS NOT TO EXCEED 12" AS DIRECTED. THE BULKHEAD SHALL BE SHAPED TO FIT THE TYPICAL SECTION OF THE PAVEMENT OR BASE, AND DOWELS SHALL BE HELD RIGIDLY IN POSITION DURING THE PLACING OF THE CONCRETE. THE CONCRETE SHALL BE CAREFULLY FINISHED SO AS TO PROVIDE A NEAT, TIGHT FITTING JOINT THAT WILL NOT REQUIRE SEALING.

CONSTRUCTION JOINTS IN REINFORCED CONCRETE PAVEMENT SHALL NOT BE LOCATED AT A CONTRACTION JOINT, NOR SHALL THEY BE LOCATED CLOSER THAN 10' TO ANY OTHER PARALLEL JOINT. IN PLAIN CONCRETE PAVEMENT OR BASE, THEY SHALL NOT BE LOCATED CLOSER THAN 5' TO ANOTHER PARALLEL JOINT.

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STANDARD CONSTRUCTION DRAWING
PAVEMENT JOINTS
NOT TO SCALE

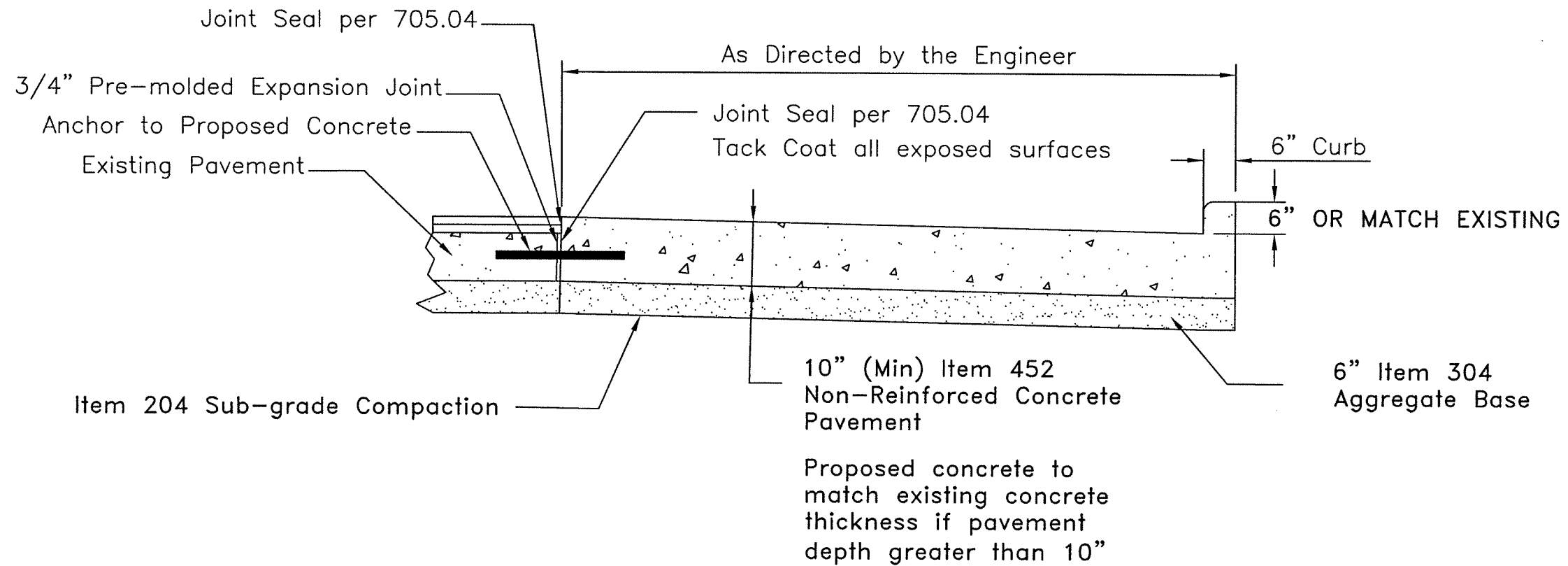
DRAWN BY: R. FLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7-8-08

COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO.: CONC 1 | SHEET 4/4



The work performed under this item will be paid for per square yard under item "Concrete Bus Pad" includes:

- 1 - Full depth sawcutting, removal of existing pavement including subbase.
- 2 - Excavation and embankment required to achieve proper subgrade.
- 3 - Item 304 - Aggregate Base
- 4 - Item 452 - 10" Non-Reinforced Concrete Pavement Joint spacing 15 feet maximum and minimum 5 feet.
- 5 - Item 609 - Integral Concrete, Type 2-A or Vertical Curb, Type 6
- 6 - All incidental items to install Concrete Bus pad in-place as per detail shown herein.

REV 1/14/20

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 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 TYPICAL CONSTRUCTION
 DETAILS FOR BUS PAD
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

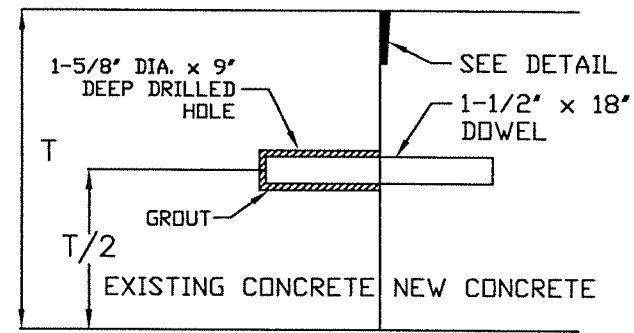
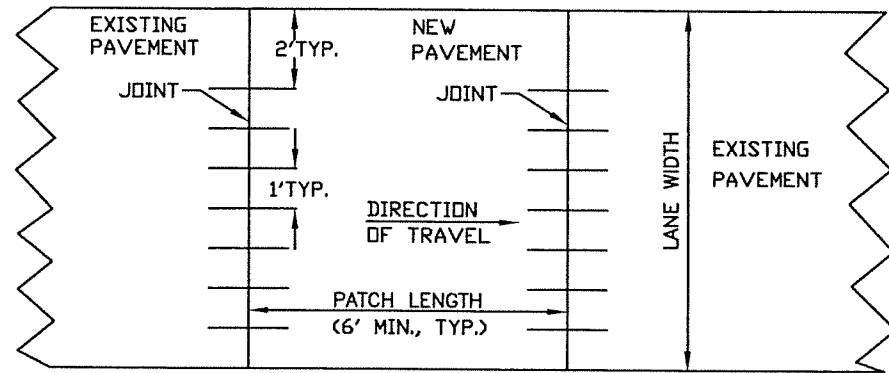
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: [Signature] DATE: 4/14/08

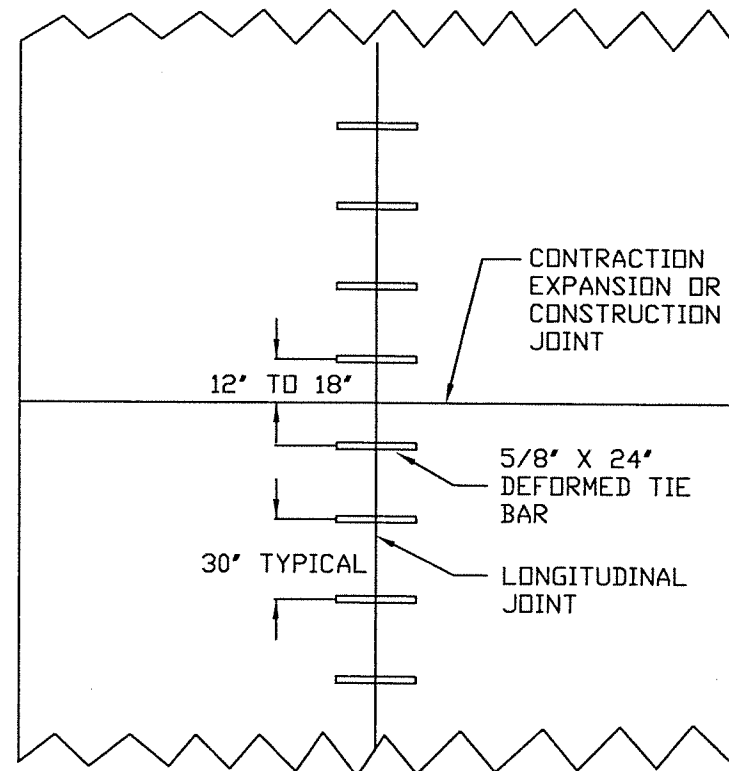
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. : BP 1 SHEET 1/1

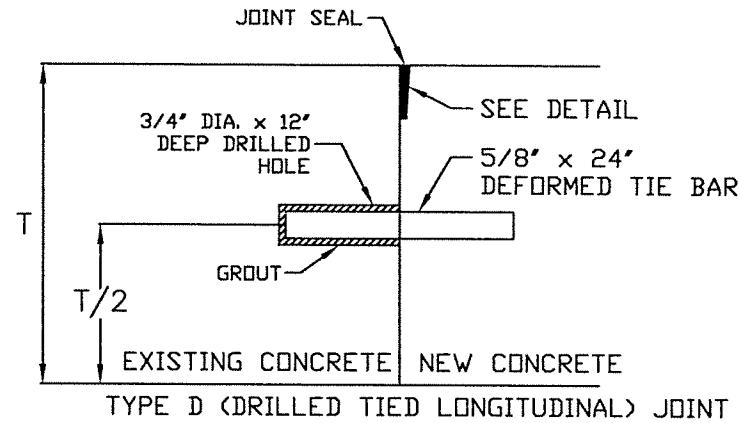
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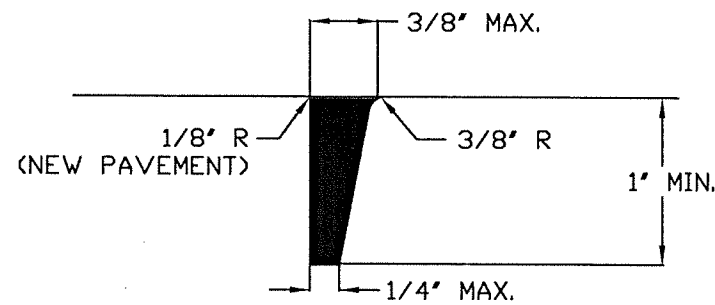
SECTION THROUGH TRANSVERSE JOINT



TIE BAR SPACING



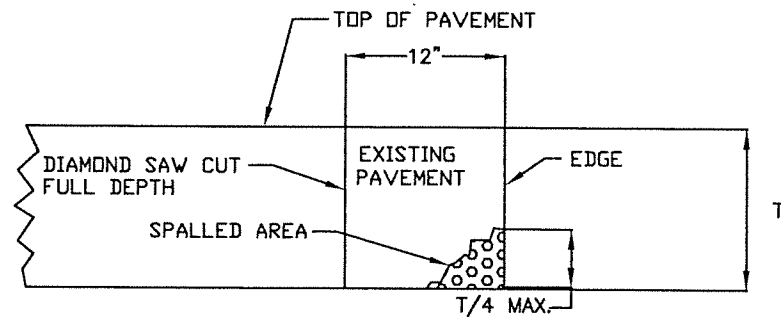
TYPE D (DRILLED TIED LONGITUDINAL) JOINT



GROOVE & SEAL DETAIL

NOTES:

1. ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE.
2. ALL DOWEL HOLES SHALL BE DRILLED BY A MECHANICAL DEVICE THAT WILL ALLOW INDEPENDENT ADJUSTMENT OF ALL DRILL SHAFTS IN THE HORIZONTAL AND VERTICAL DIRECTION. THE DEVICE SHALL BE CAPABLE OF DRILLING A MINIMUM OF THREE HOLES AT ONE TIME.
3. ALL SMOOTH DOWELS SHALL BE COATED WITH A THIN LAYER OF OIL OR OTHER "BOND-BREAKING" MATERIAL AFTER THEY HAVE BEEN INSTALLED IN THE EXISTING PAVEMENT AND JUST PRIOR TO PLACING THE PATCH. ALL DOWELS SHALL BE PLACED PARALLEL TO THE PAVEMENT SURFACE AND THE CENTERLINE OF THE PAVEMENT LANE.
4. ADDITIONAL PAVEMENT REMOVAL: IF AFTER THE REMOVAL OF THE PAVEMENT FROM THE AREA TO BE REPAIRED, THE FACE OF THE REMAINING PAVEMENT IS SPALLED OF DETERIORATED FOR A HEIGHT GREATER THAN ONE-FOURTH (1/4) THE THICKNESS OF THE RIGID PAVEMENT, ADDITIONAL REMOVAL SHALL BE MADE AS SHOWN.
5. LONGITUDINAL JOINT: FOR PATCHES 10 FEET OR GREATER IN LENGTH THE LONGITUDINAL JOINT SHALL BE CONSTRUCTED AS PER STANDARD DRAWING. SPACING OF THE TIE BARS SHALL BE NO MORE THAN 30' NOR LESS THAN 24'.
6. TYPE D (DRILLED TIED LONGITUDINAL) JOINT: TYPE D JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ODOT SPEC. 255.05. GROUT SHALL MEET THE REQUIREMENTS OF ODOT SPEC. 255.02. THE USE OF 5/8" EXPANSION ANCHORS, FF-S-325, GROUP VIII, TYPE I OF GROUP II, TYPE 4, CLASS I MAY BE USED IN LIEU OF THE 5/8" x 24" DEFORMED TIE BAR AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE USE OF SELF DRILLING EXPANSION SHIELD ANCHORS, FF-S-325, GROUP III, TYPE I (A) AND (C) SHALL NOT BE PERMITTED.
7. SEALING JOINTS: SAWED OR HAND FORMED JOINTS SHALL BE SEALED WITH ODOT 705.04 JOINT SEALER.



ADDITIONAL PAVEMENT REMOVAL

REVISED 8/3/09

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DIVISION OF ENGINEERING & CONSTRUCTION
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STREET OPENING REPAIR
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

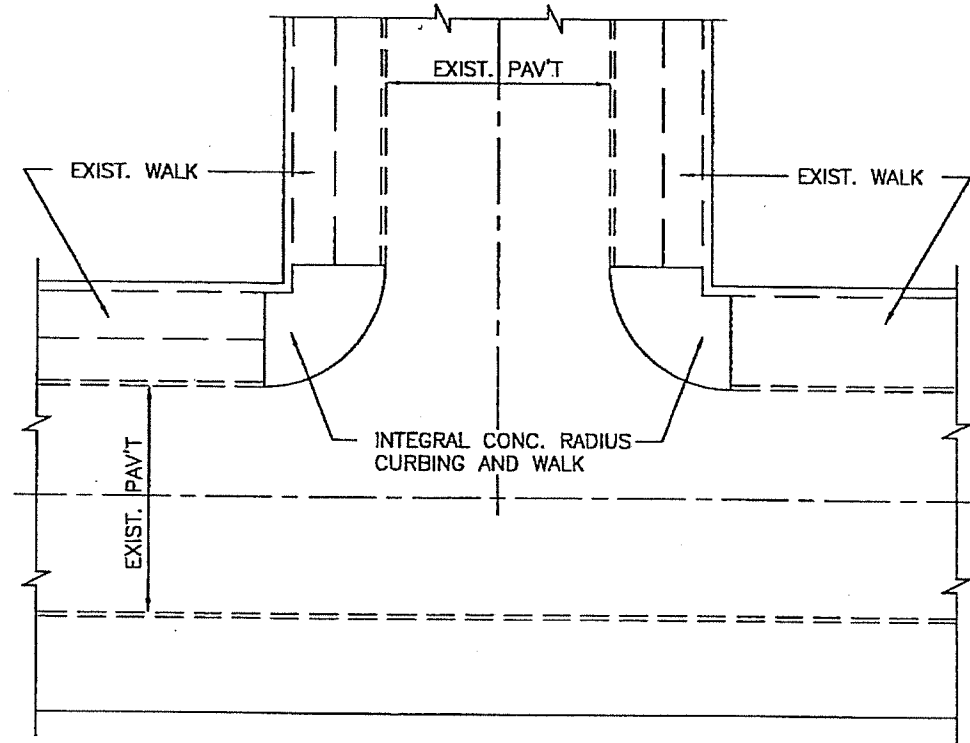
APPROVED: *[Signature]* DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

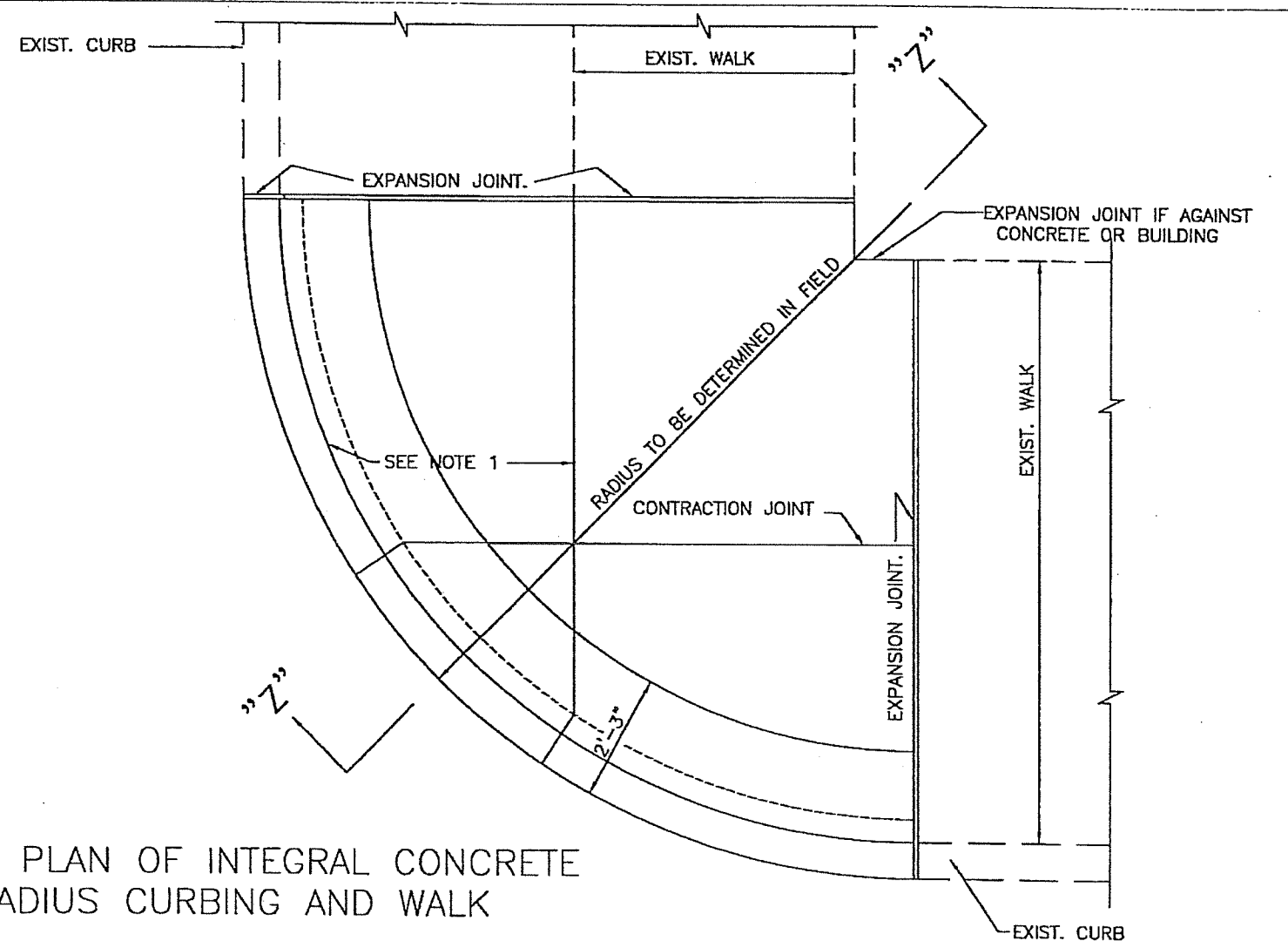
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SHEET 2/2

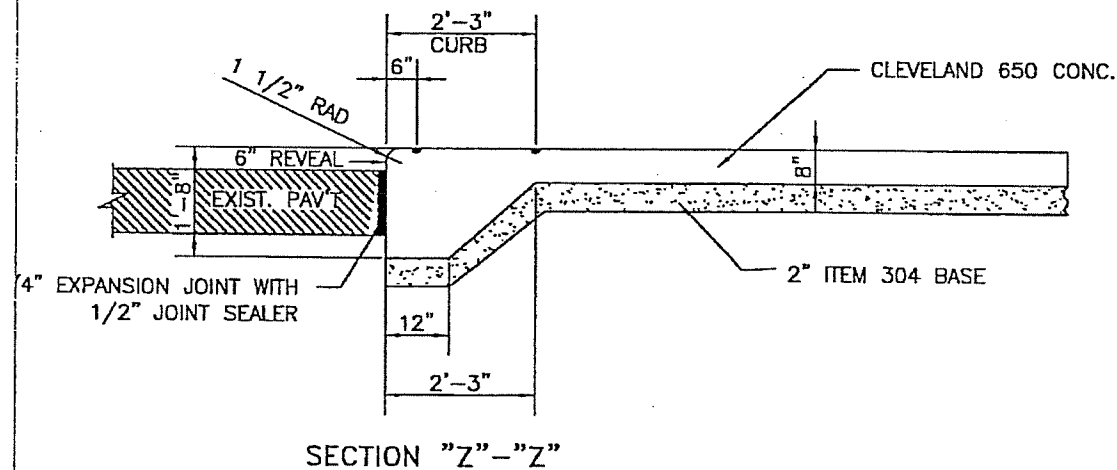
9



TYPICAL PLAN SHOWING INTEGRAL CONCRETE RADIUS CURBING AND WALK



DETAIL PLAN OF INTEGRAL CONCRETE RADIUS CURBING AND WALK



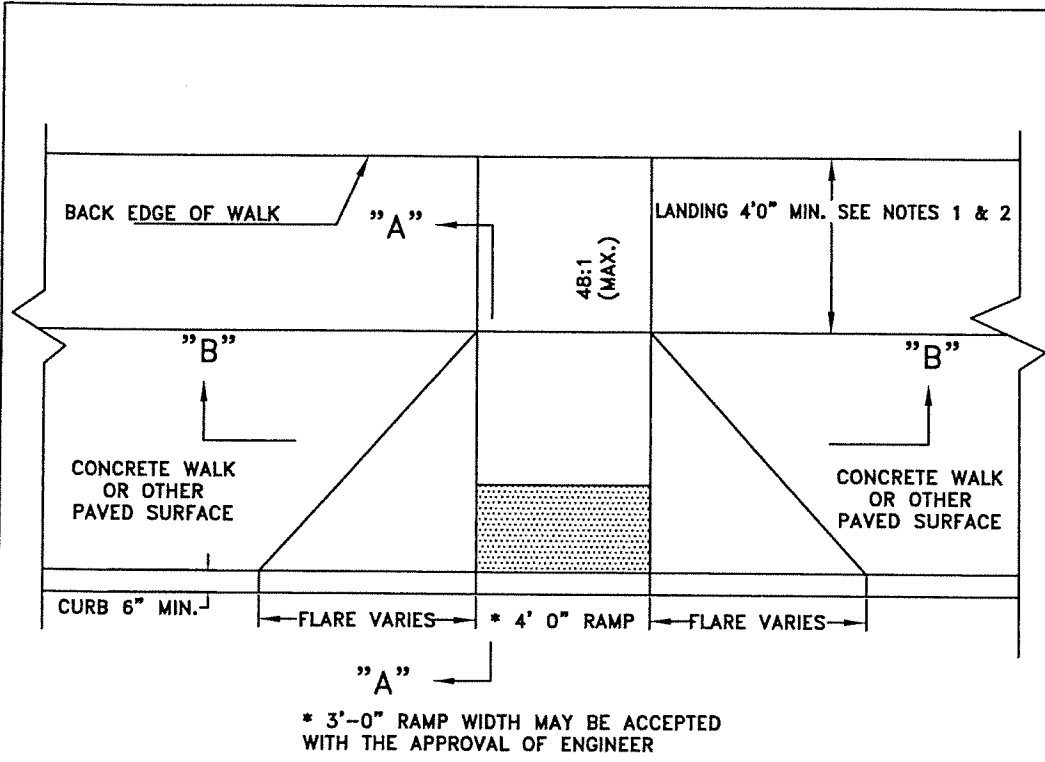
SECTION "Z"- "Z"

NOTES

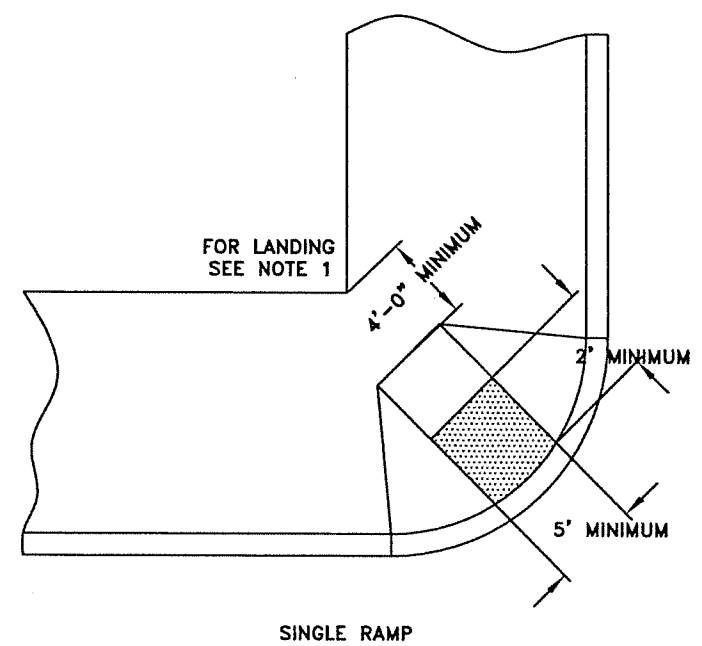
- 1- THE WALK SURFACE SHALL BE CUT INTO SLABS NOT LONGER THAN SIX FEET ON ANY ONE SIDE BY JOINTING IMMEDIATELY BEFORE FINISHING. JOINTS SHALL BE FORMED 6" FROM THE EDGE OF ANY THICKENED SECTION. THESE JOINTS ARE TO BE 1/4" DEEP WITH EDGES ROUNDED TO A 1/4" RADIUS.
- 2- NUMBER OF RAMPS (1 OR 2) IS DEPENDENT ON FIELD CONDITIONS AND NUMBER OF REQUIRED PEDESTRIAN CROSSINGS.
- 3- ALL REQUIRED HANDICAP RAMPS, LAYOUT, AND CONCRETE SHALL BE INCLUDED IN THE PER SQ. FT. OR LUMP SUM BID ITEM FOR:
 "INTEGRAL RADIUS CURBING AND RAMP WITH STAMPED TRUNCATED DOMES"
 OR
 "INTEGRAL RADIUS CURBING AND RAMP WITH ARMOR TILES" AS INDICATED IN THE SCHEDULE OF ITEMS.

CITY OF CLEVELAND
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 STANDARD CONSTRUCTION DRAWING
 DETAIL PLAN FOR INTEGRAL CONCRETE RADIUS CURBING & WALK
 NOT TO SCALE
 DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
 APPROVED: *Russell* DATE: 4/14/08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

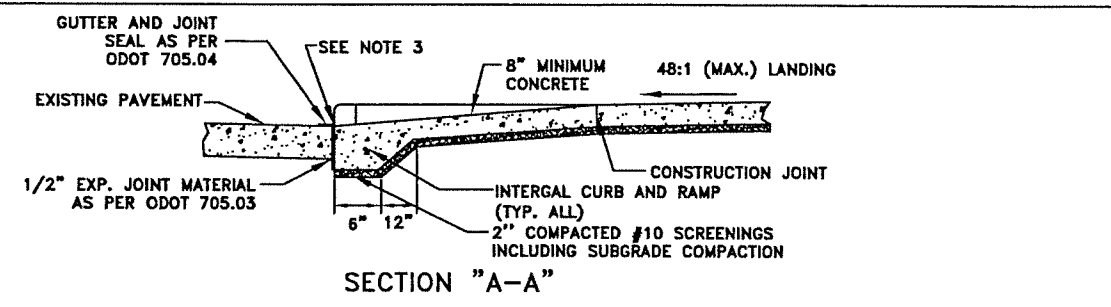
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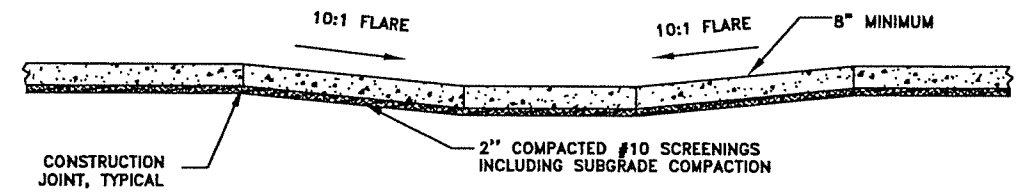
* 3'-0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER



SINGLE RAMP



SECTION "A-A"

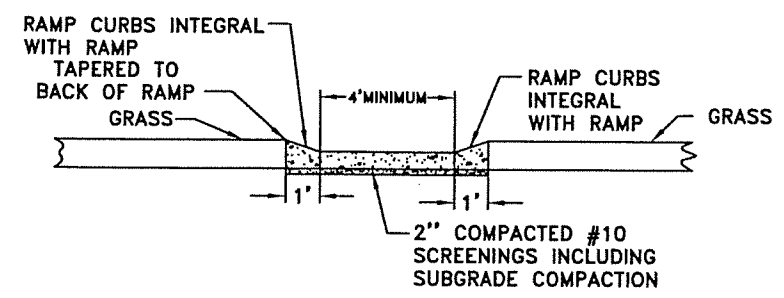


SECTION "B-B"

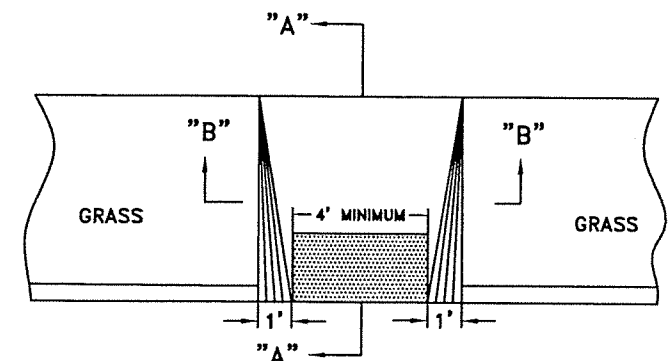
CR-1

NOTES:

- 1) MAY BE REDUCED TO 3'-0" IN EXISTING SIDEWALK IF THE LANDING IS CONSTRAINED ALONG THE BACK EDGE.
- 2) WHERE THE LANDING IS LESS THAN 4'-0", THE RAMP FLARE SHALL BE INCREASED TO 12:1.
- 3) GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 4) SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



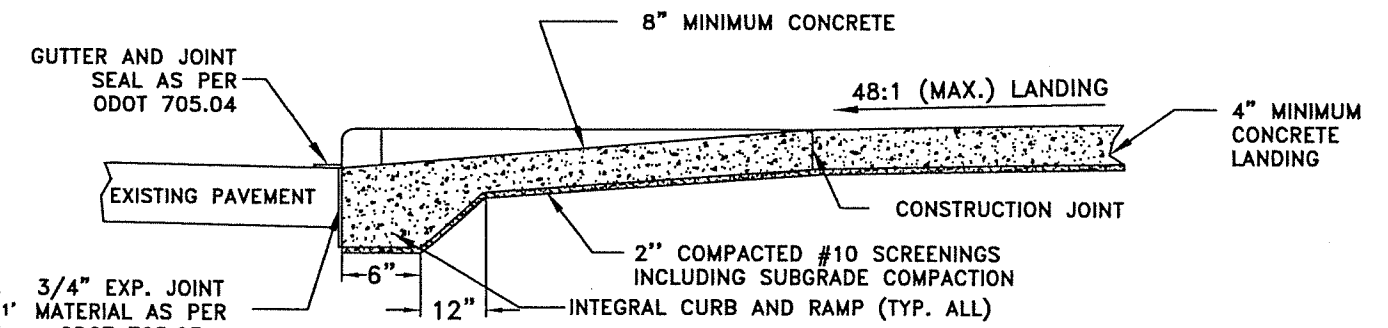
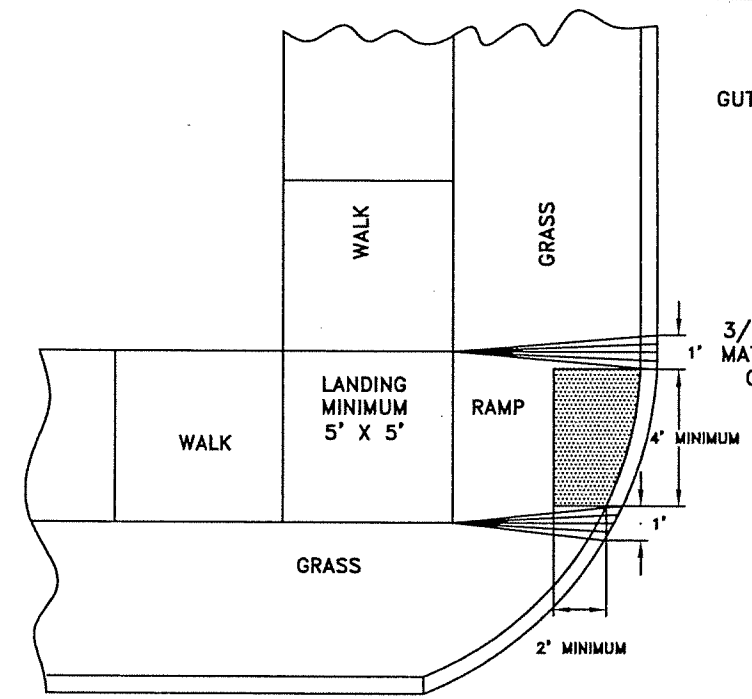
SECTION "B-B"



* 3'-0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER

NOTES:

- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3-GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



SECTION "A-A"

CR-2

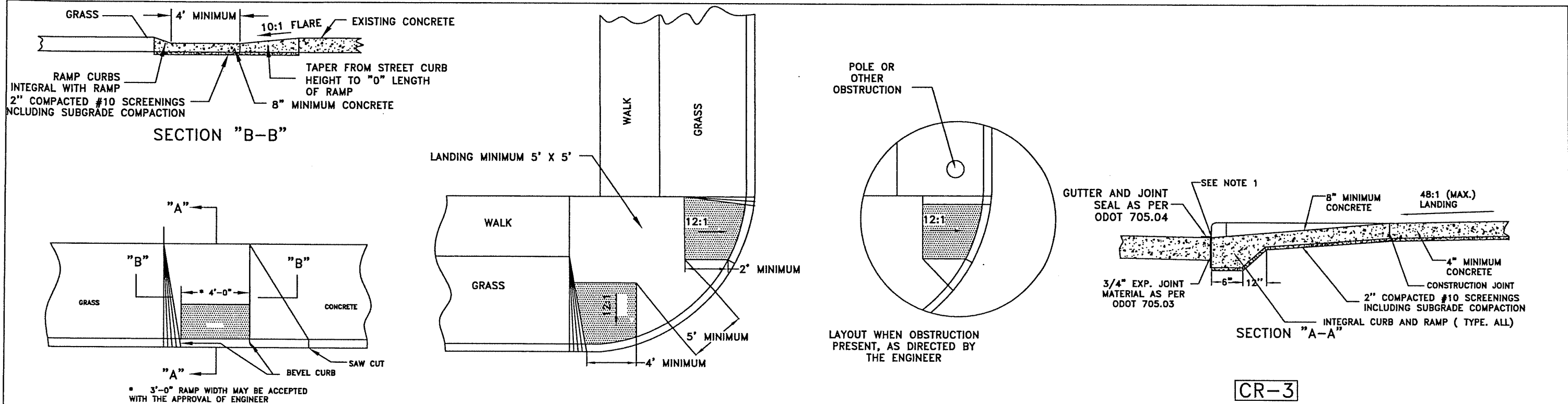
REVISED 12/8/09

CITY OF CLEVELAND
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 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 TYPICAL CONSTRUCTION
 CURB RAMPS
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

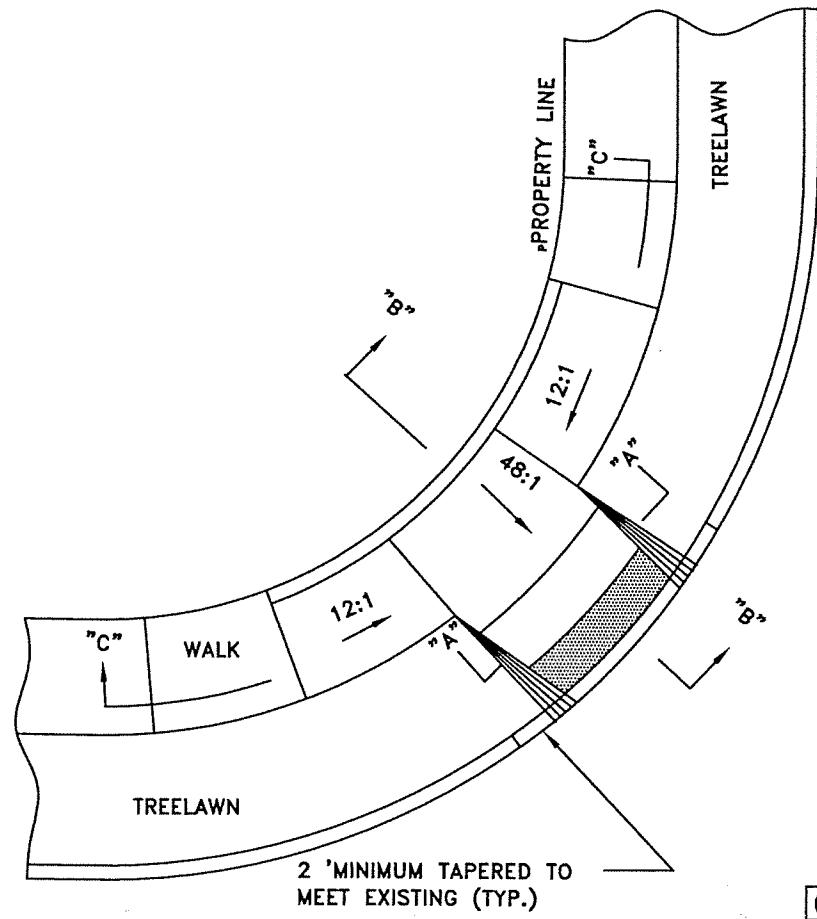
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 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR-1 SHEET 1/6

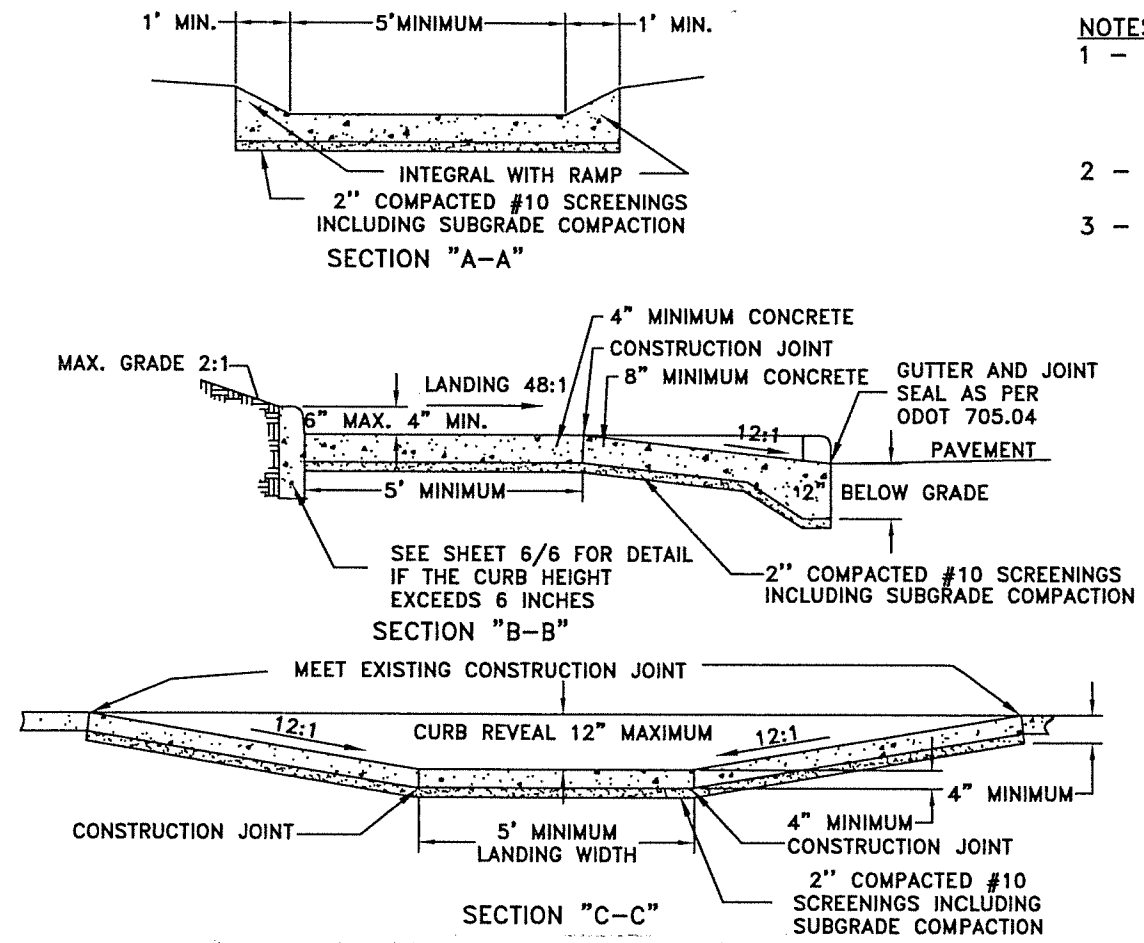


CR-3

- NOTES:**
- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
 - 2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
 - 3-BARRIER CURB INSTALLATION ONLY WHEN ADJACENT OBSTACLE PRESENT AND AS DIRECTED BY THE ENGINEER



CR-4



- NOTES:**
- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
 - 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
 - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

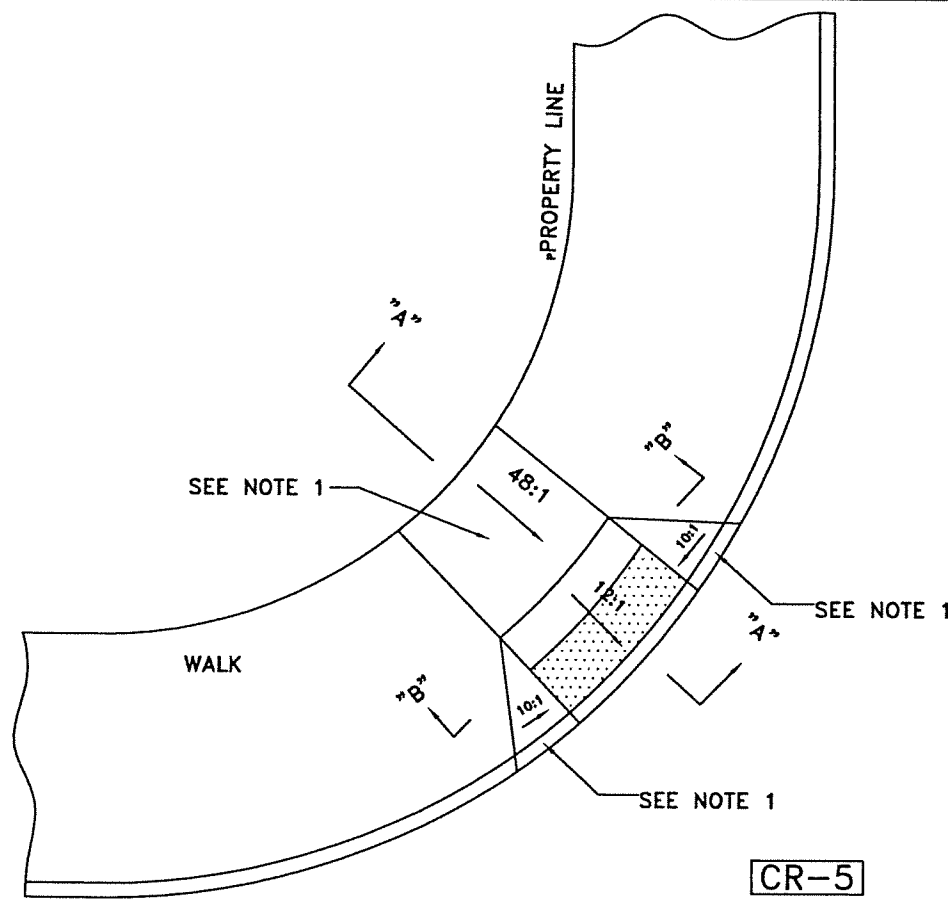
REVISED 12/8/09

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 TYPICAL CONSTRUCTION
 CURB RAMPS
 NOT TO SCALE

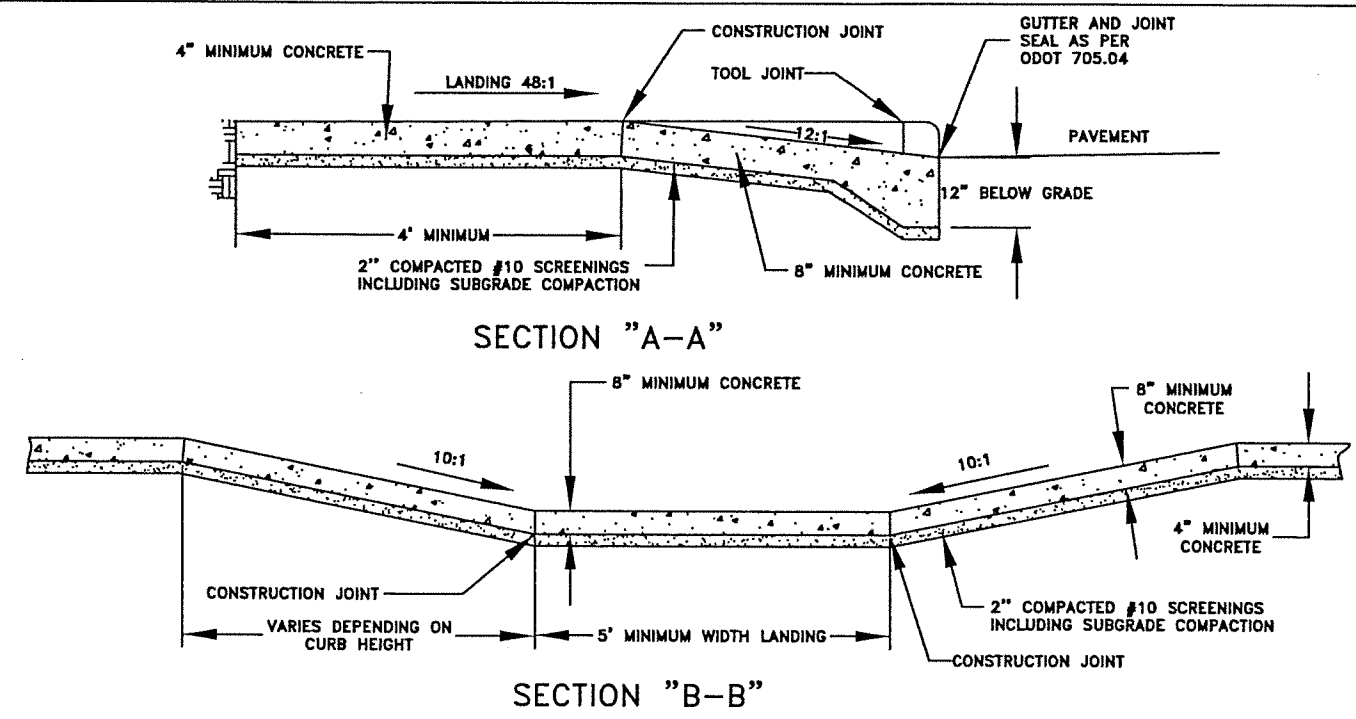
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 2/6

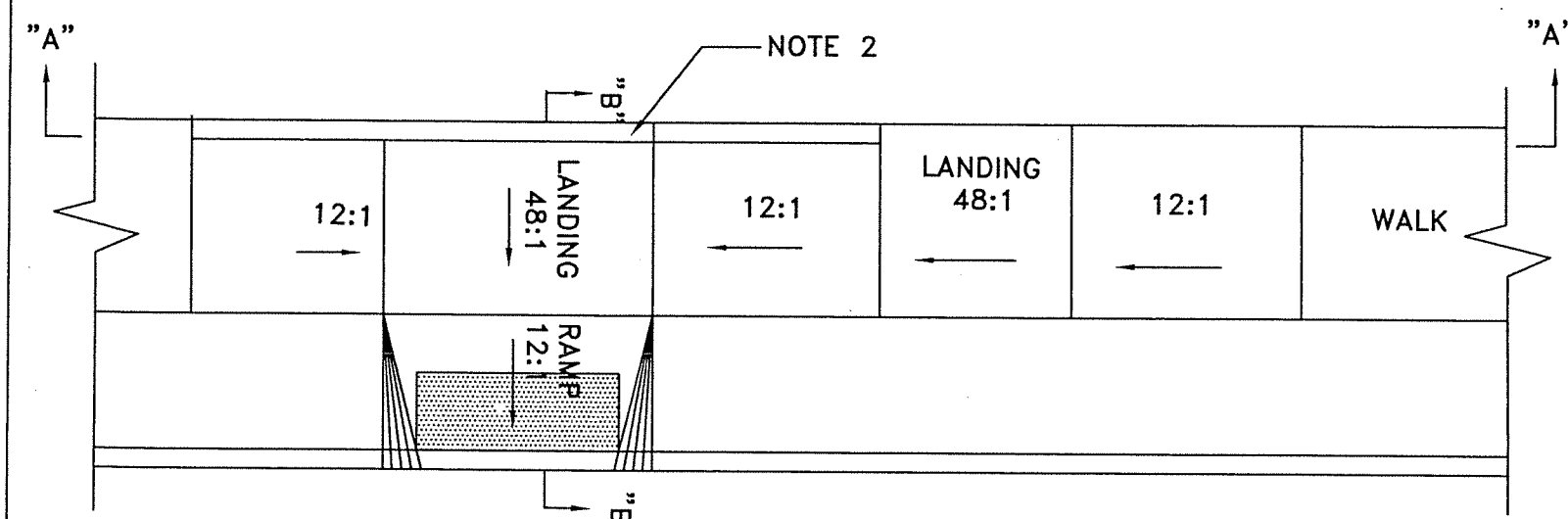


CR-5

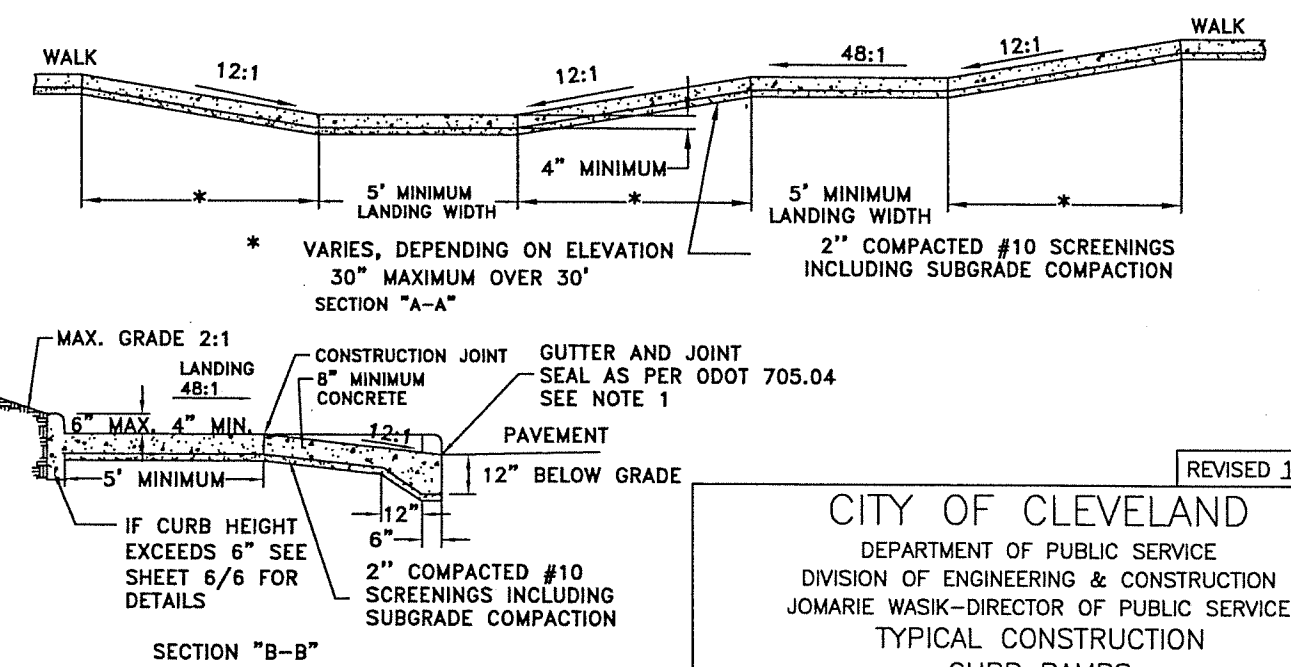


NOTES:

- 1 - WHERE THE LANDING IS LESS THAN 4'-0" THE RAMP FLARE SHALL BE INCREASED TO 12:1.
- 2 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 4 - GUTTER SEAL, 705.04, 6" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



CR-6



SECTION "B-B"

NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

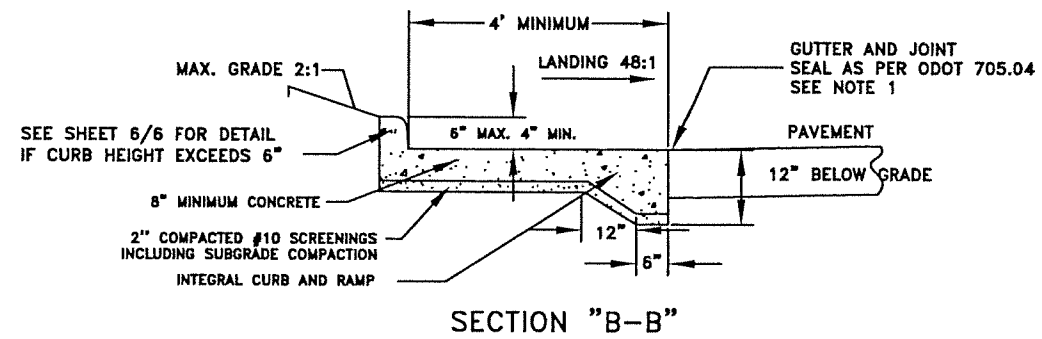
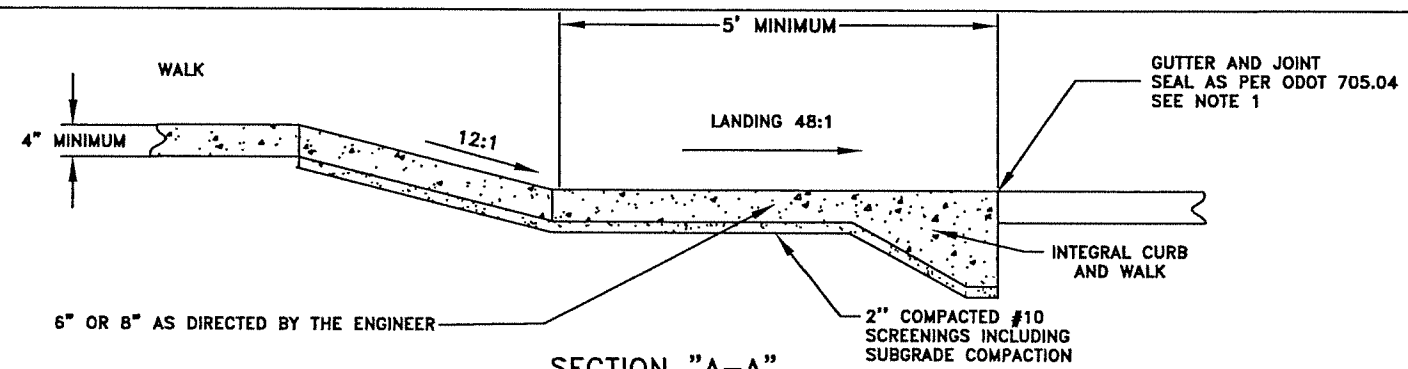
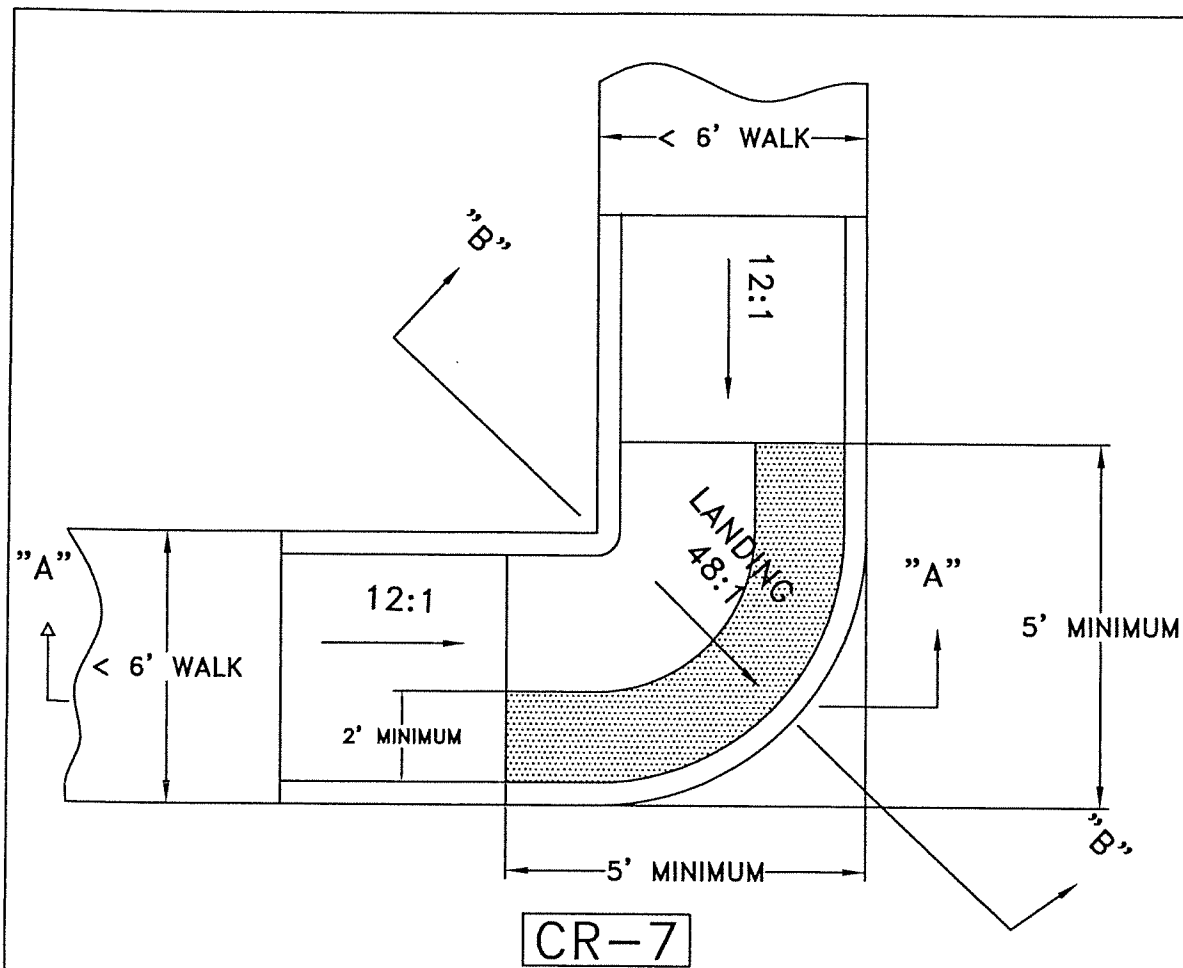
REVISED 12/8/09

CITY OF CLEVELAND
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 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 TYPICAL CONSTRUCTION
 CURB RAMPS
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

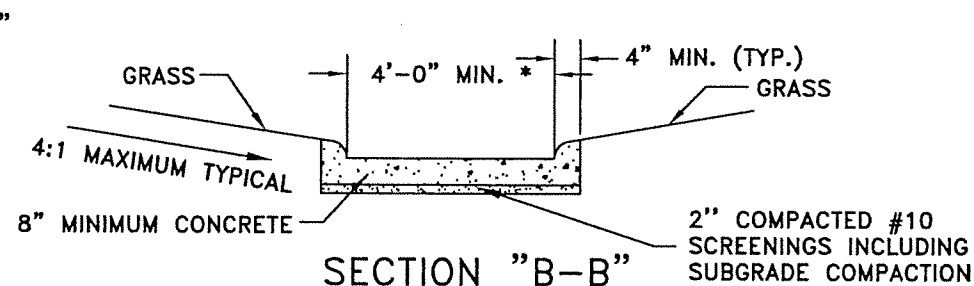
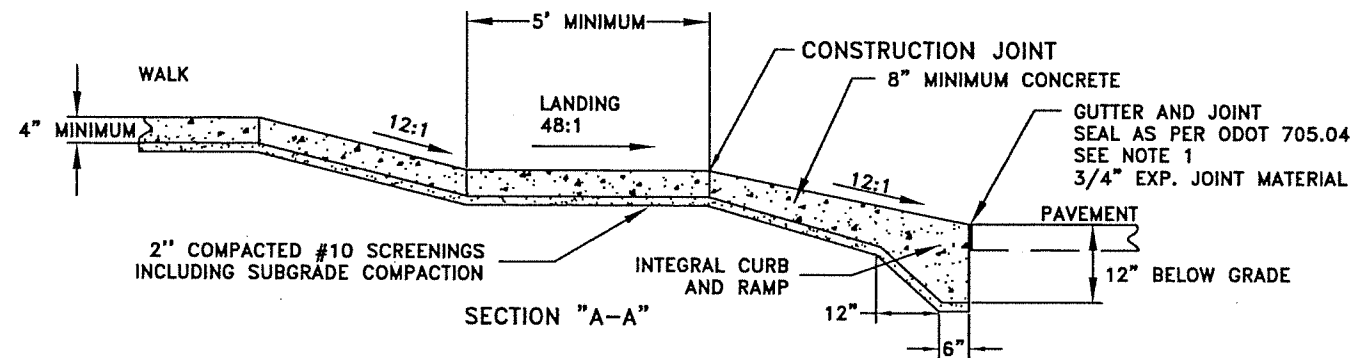
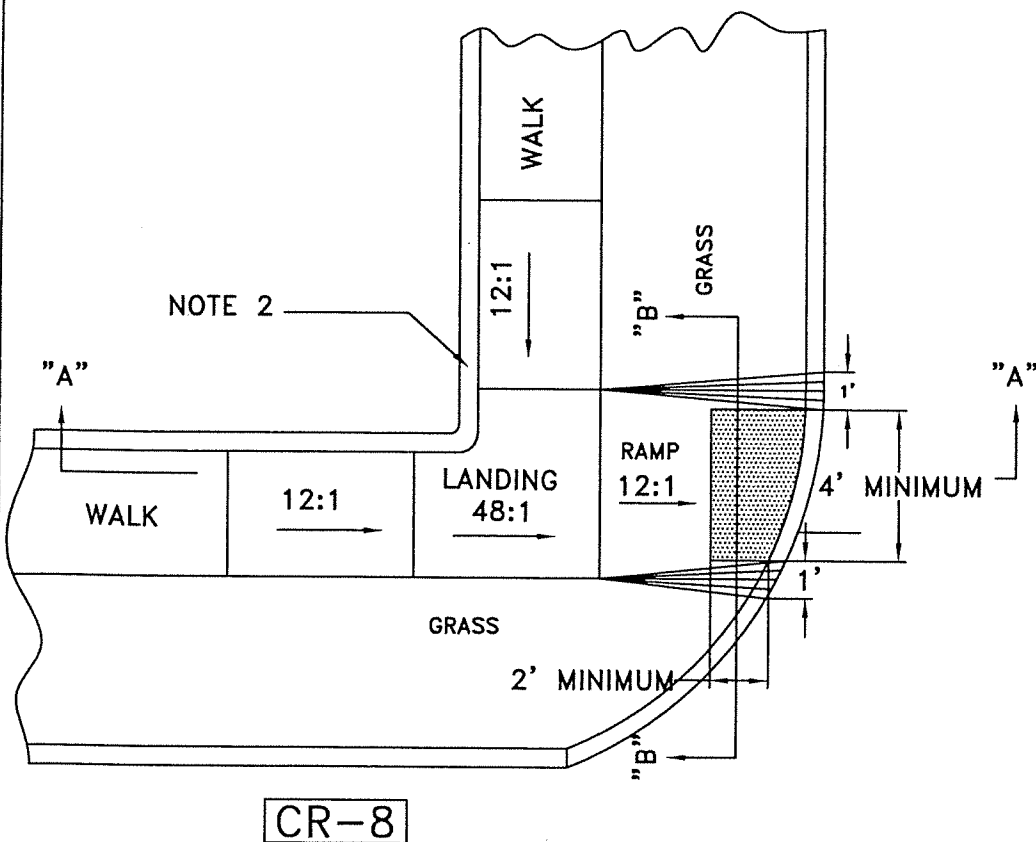
APPROVED: *[Signature]* DATE: 4/14/08
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 3/6



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

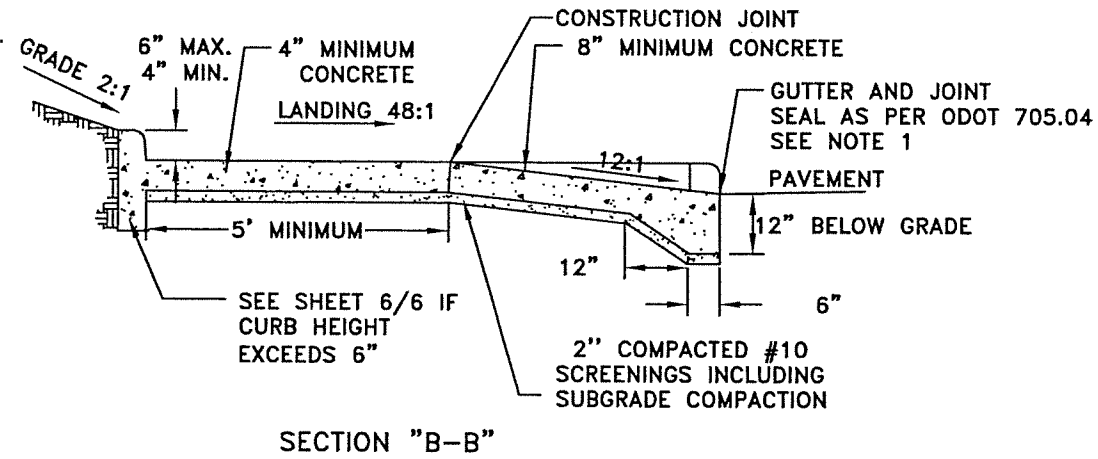
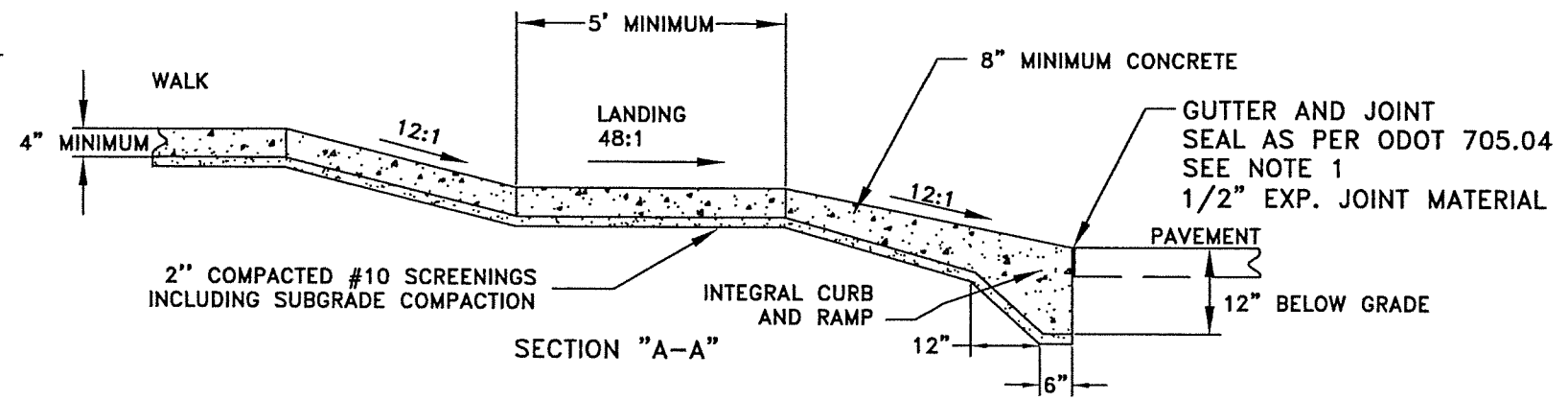
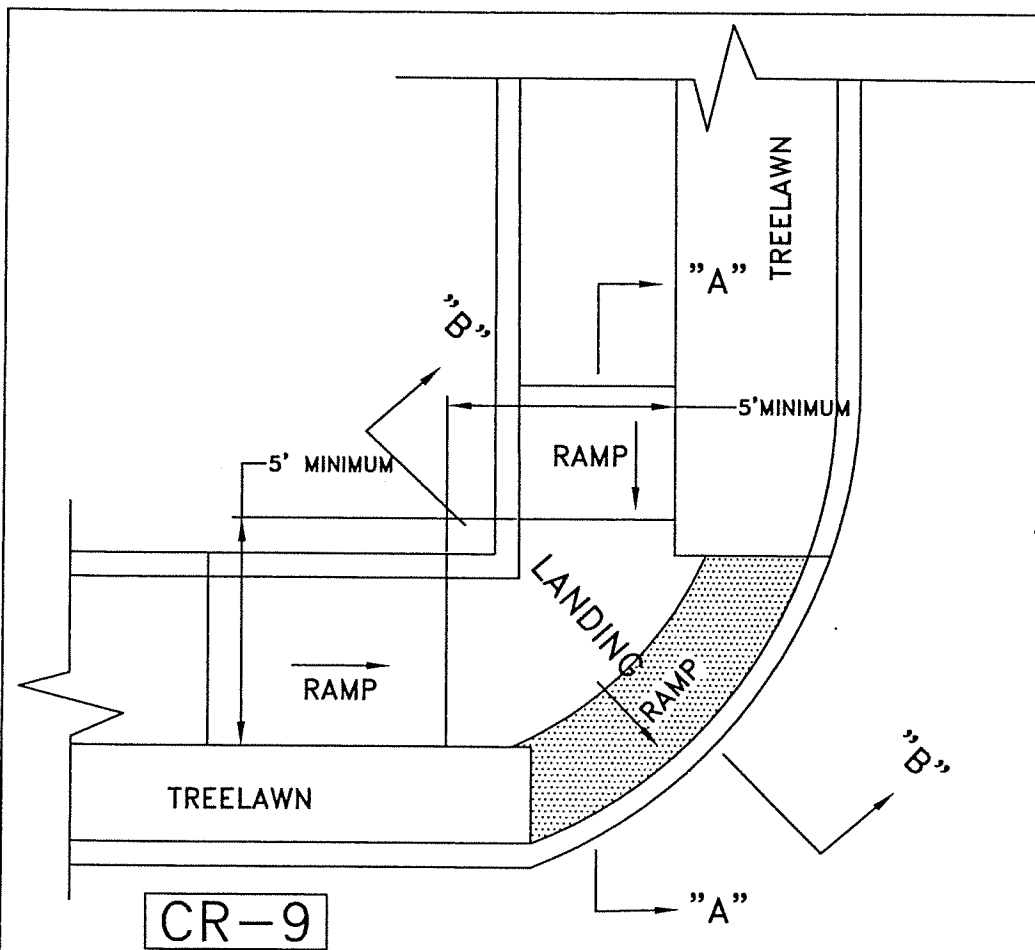
REVISED 12/8/09

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 TYPICAL CONSTRUCTION
 CURB RAMPS
 NOT TO SCALE

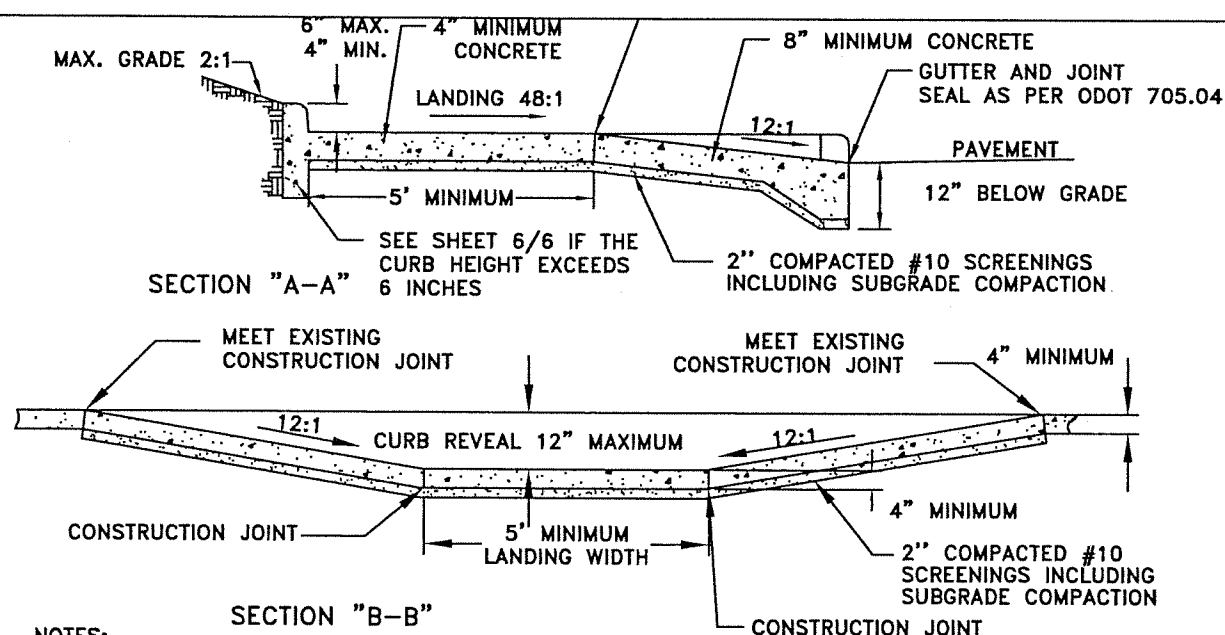
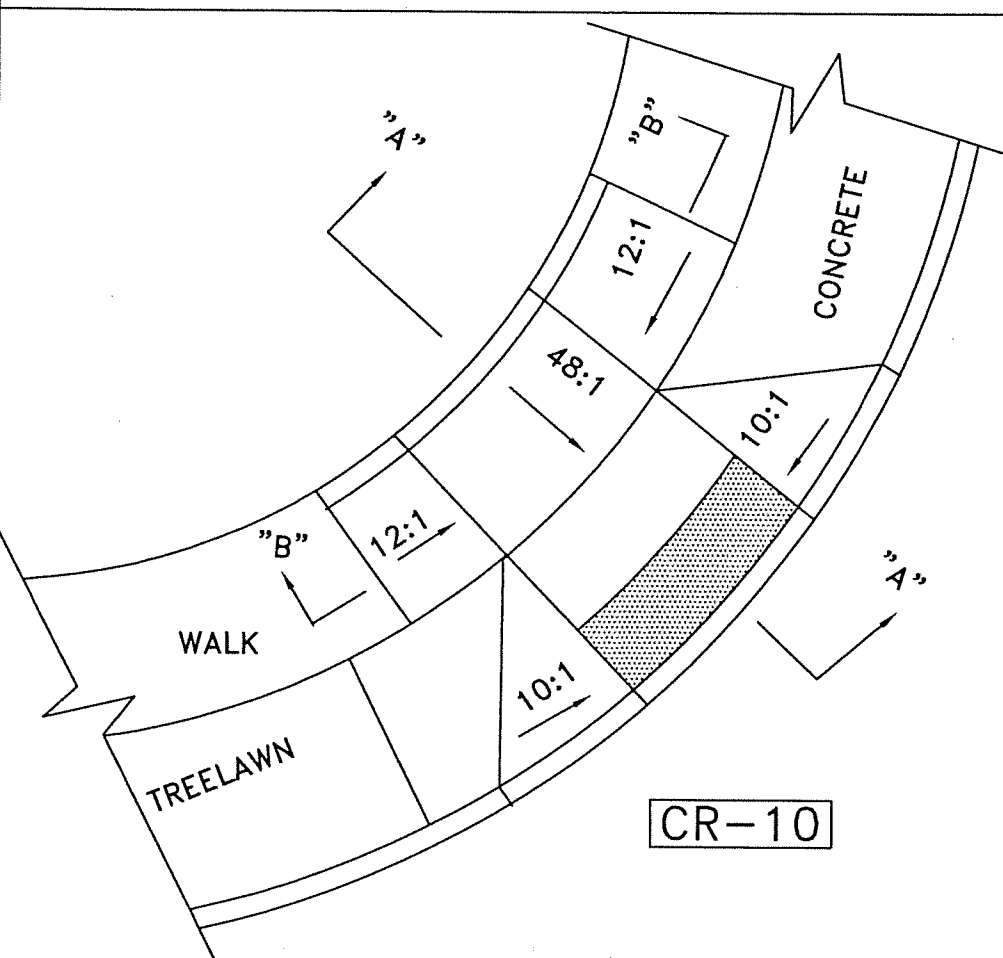
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 4/6 (14)



- NOTES:**
- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
 - 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
 - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

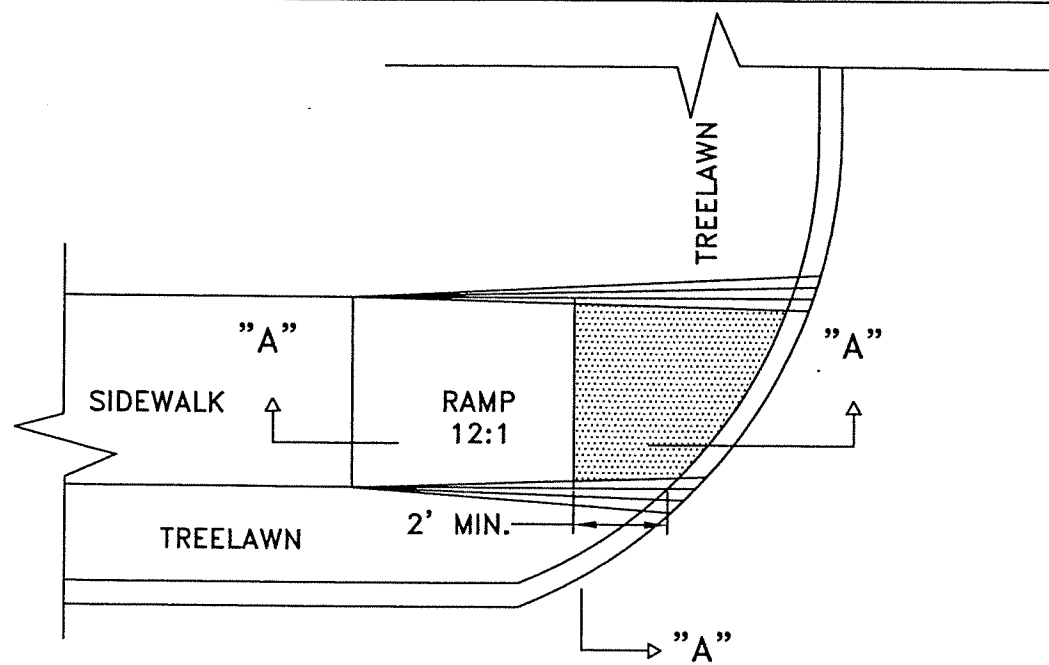


- NOTES:**
- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
 - 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
 - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

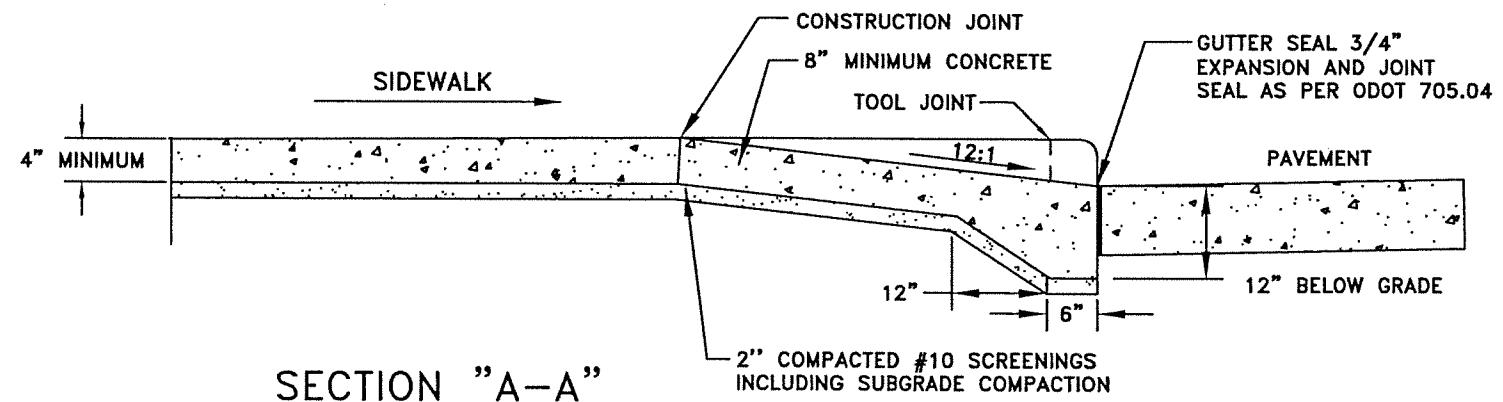
REVISED 12/8/09

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 TYPICAL CONSTRUCTION
 CURB RAMPS
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
 APPROVED: [Signature] DATE: 4/14/08
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

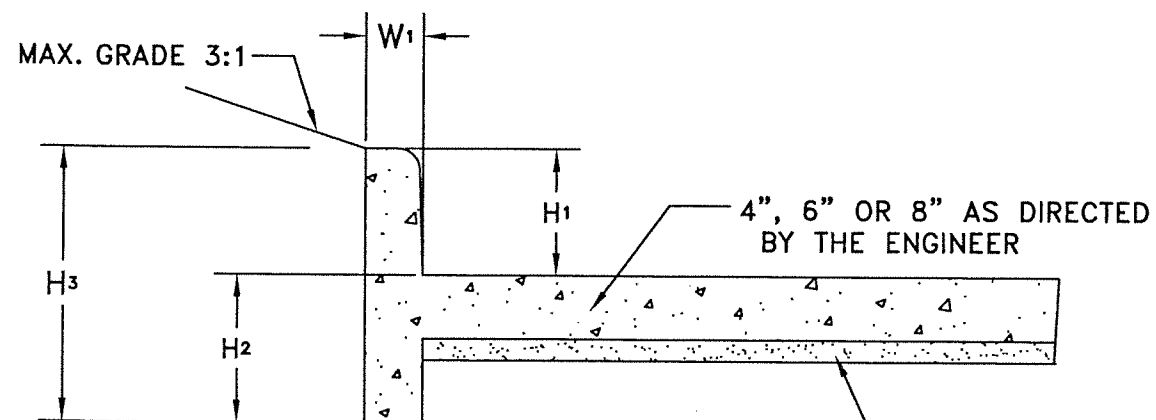


CR-11



NOTES:

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 4 - THIS DETAIL SHALL ONLY BE USED TO RETROFIT EXISTING CURB RAMPS AND SHALL NOT BE USED FOR NEW CURB RAMP CONSTRUCTION.



H ₁	W ₁	H ₂	H ₃
6"	6"	6"	12"
8"	6"	10"	18"
10"	8"	12"	22"
12"	10"	12"	24"

ROLLED CURB
INSTALL ONLY AT THE DIRECTION
OF THE ENGINEER

2" COMPACTED #10 SCREENINGS
INCLUDING SUBGRADE COMPACTION

NOTES:

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL CURB PER THIS DETAIL. ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.

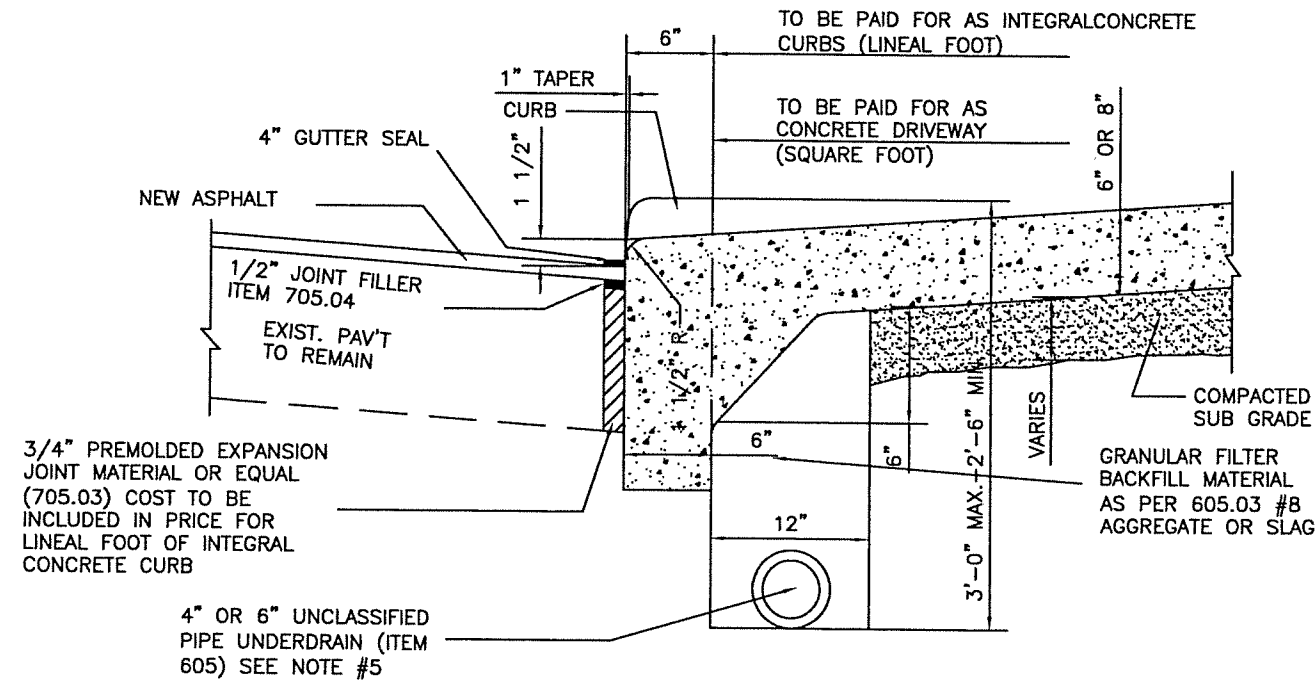
REVISED 12/8/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS & ROLLED CURB DETAIL
NOT TO SCALE

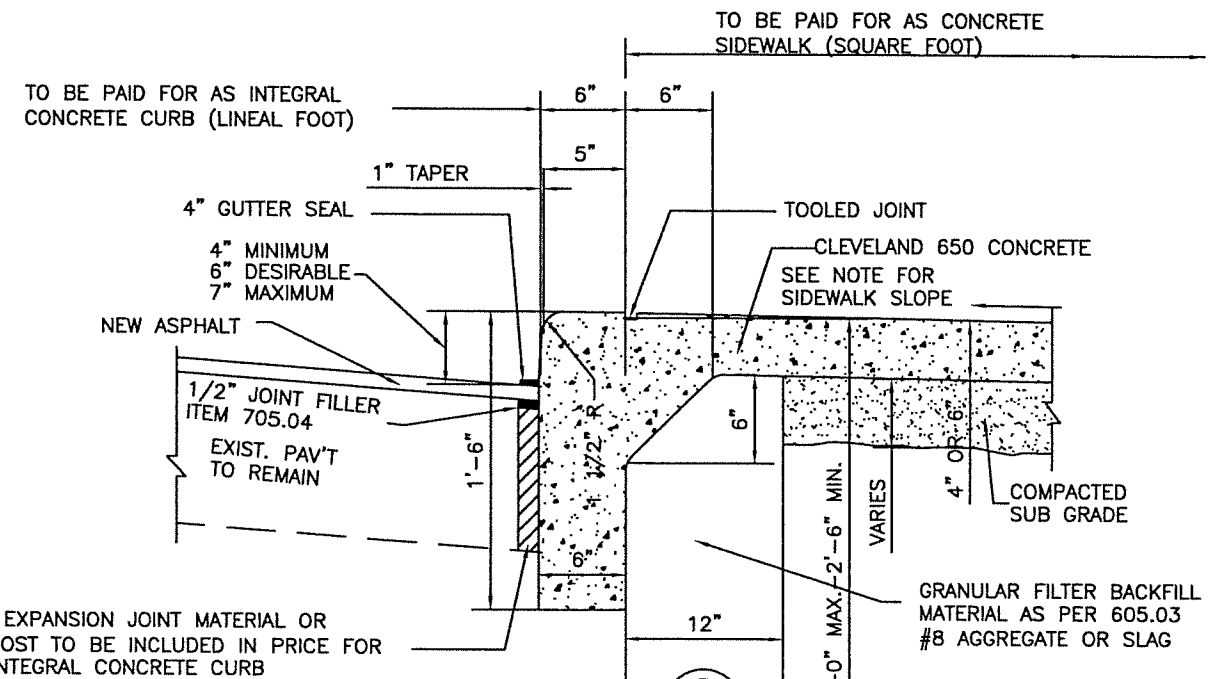
R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

[Signature] DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 6/6

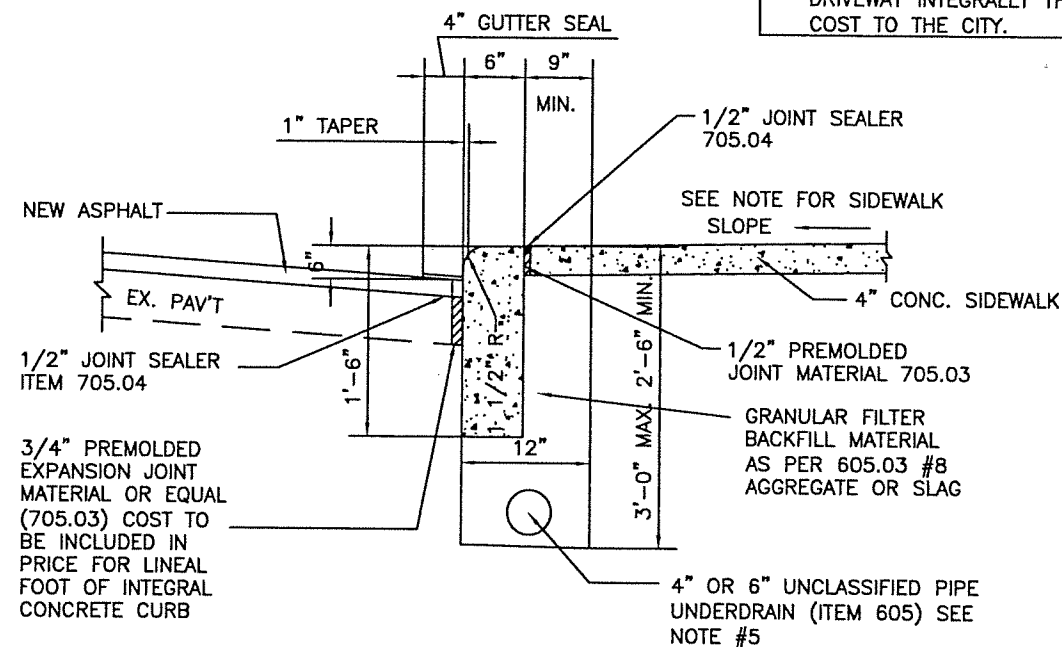


INTEGRAL CONCRETE DRIVEWAY
NO SCALE



INTEGRAL CONCRETE CURB & WALK
NO SCALE

OPTIONAL DETAIL
THE CONTRACTOR MAY USE THIS DETAIL IF GRANTED PERMISSION TO POUR THE CURB AND SIDEWALK OR DRIVEWAY INTEGRALLY THERE SHALL BE NO ADDITIONAL COST TO THE CITY.



CAST-IN-PLACE CONCRETE CURB
NO SCALE

NOTES:

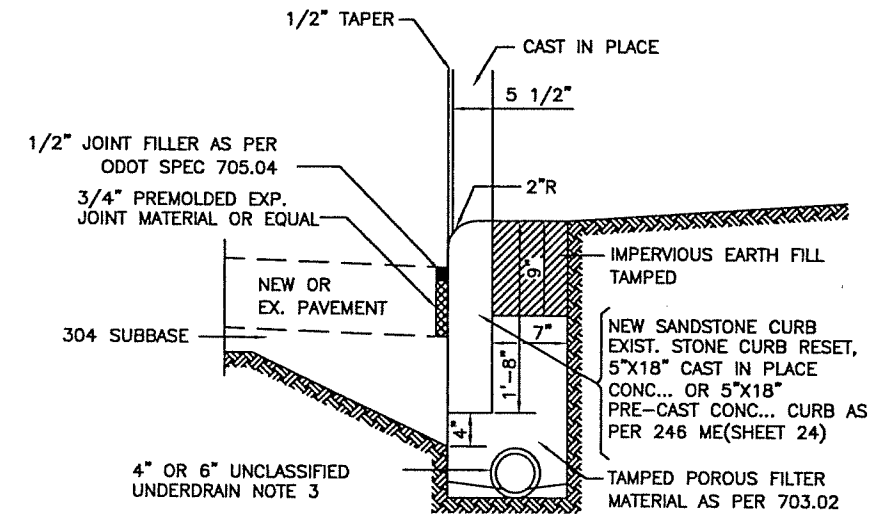
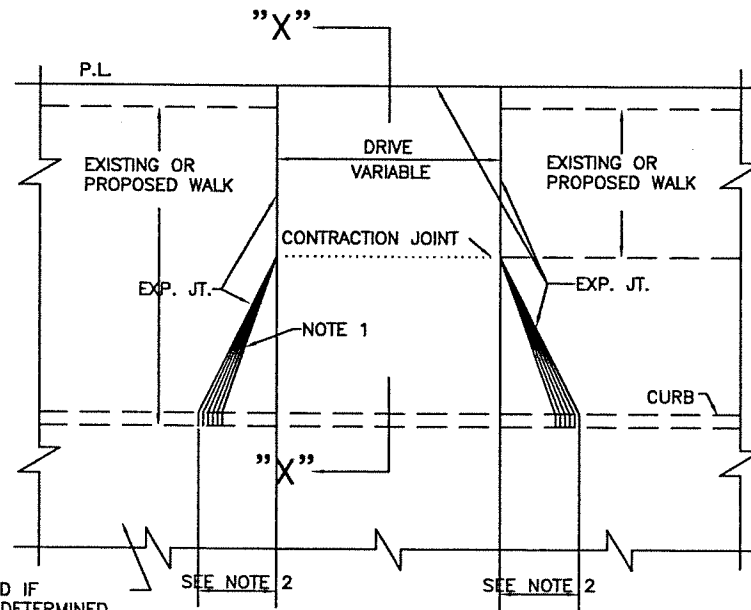
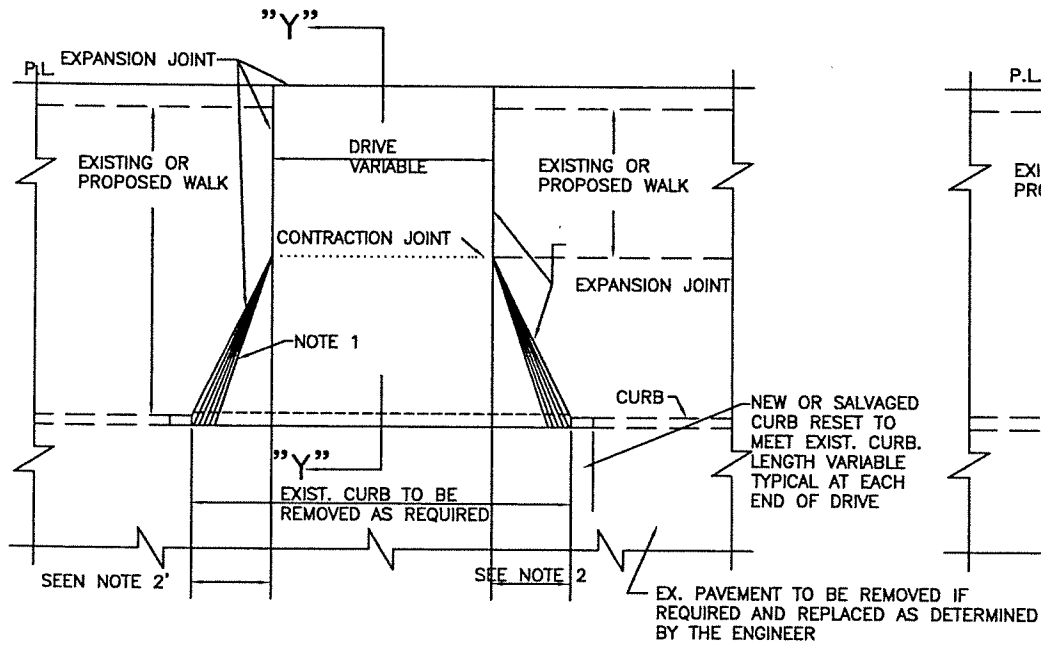
1. SAND BACKFILL AS REQUIRED TO ACHIEVE PROPOSED SUB GRADE. COST TO BE INCLUDED IN UNIT PRICE BID PER SQUARE FOOT OF SIDEWALK OR CONCRETE DRIVEWAY.
2. TRANSVERSE CONTRACTION JOINTS (5' CTRS) AND EXPANSION JOINTS TO BE CONSTRUCTED AS DIRECTED BY THE ENGINEER. JOINTS SHALL BE TOOLED 5" FROM THE STREET FACE OF THE CURB. 1/4" DEEP WITH EDGES ROUNDED TO A 1/4" RADIUS. COST TO BE INCLUDED IN PRICE PER SQUARE FOOT OF SIDEWALK OR CONCRETE DRIVEWAY.
3. TRANSITION FROM STANDARD CURB SECTION TO DROP CURB SECTION TO BE MADE IN 18" DISTANCE FROM DRIVEWAY.
4. SLOPE SHALL BE PROVIDED AS NEEDED TO DRAIN SIDEWALK AND TREETLAWN AREA. 1/8"/ FT. MIN. (1/4"/ FT. DESIRABLE AND 5/8"/ FT. MAX.) IF THE EXISTING CONDITIONS RESULT IN A UNIFORM SLOPE GREATER THAN 1/4"/ FT. THEN THE SLOPE IN THE TREETLAWN AREA MAY EXCEED THE MAX. AS NEEDED TO PROVIDE A SIDEWALK SLOPE OF 1/4"/ FT. THE SLOPE IN THE WALK AREA OF DRIVE APRONS MUST NOT EXCEED ADA REQUIREMENTS OF 1/4"/ FT. CROSS SLOPE.
5. UNDERDRAINS TO BE INSTALLED IN AREAS WHERE CURB IS TO BE REPLACED. THE UNDERDRAIN SHALL BE CONSTRUCTED SO AS TO MATCH THE LOCATION OF ANY EXISTING UNDERDRAIN TO REMAIN. UNDERDRAIN SHALL OUTLET AT CATCH BASIN. UNDERDRAINS SHALL HAVE FILTER FABRIC WRAP OR TRENCH IS WRAPPED WITH FILTER FABRIC AS SPECIFIED.

REVISED 12/3/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
CURB DETAILS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: *[Signature]* DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO. CD 1 SHEET 1/3



PLAN FOR NEW DRIVE WITH INTEGRAL CONCRETE CURB

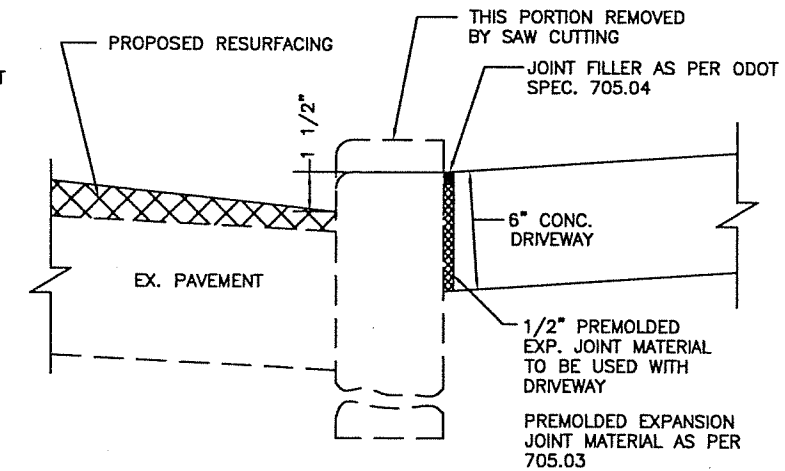
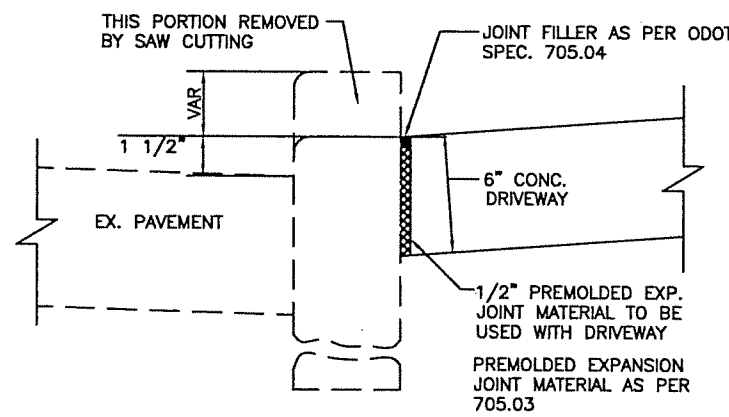
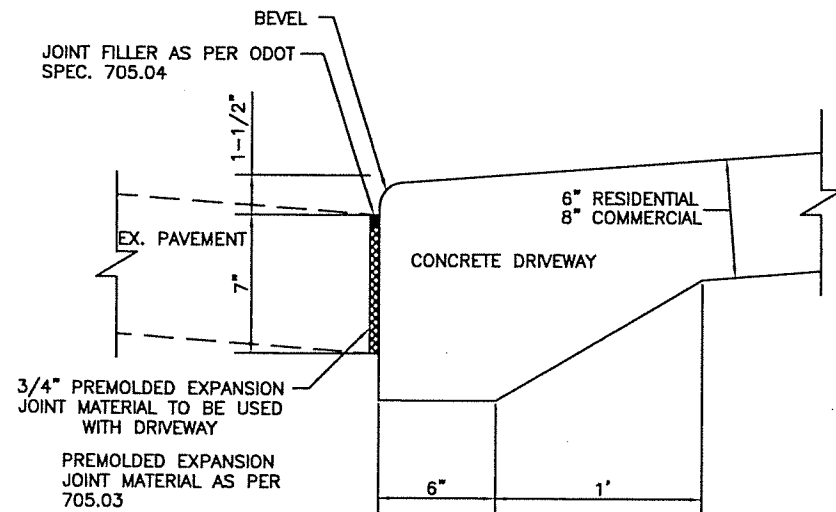
PLAN FOR NEW DRIVE WITH CURB CUT

TYPICAL CURB CONSTRUCTION DETAIL

NOT TO SCALE

NOT TO SCALE

NOT TO SCALE



SECTION "Y"- "Y"

SECTION "X"- "X"

SECTION "X"- "X"

NOT TO SCALE

SHOWING PROPOSED DRIVE GUTTER WITHOUT RESURFACING
NOT TO SCALE

SHOWING PROPOSED DRIVE GUTTER WITH RESURFACING
NOT TO SCALE

NOTES:

- 1 - ON STREETS WITH NARROW TREELAWNS AND SIDEWALKS OR WITH APPROVAL OF THE ENGINEER THE FOLLOWING DETAIL MAY BE USED.
- 2 - APRON FLARES ARE 3' FOR RESIDENTIAL AND 5' COMMERCIAL
- 3 - UNDERDRAINS SHALL HAVE FILTER FABRIC WRAP OR TRENCH IS WRAPPED WITH FILTER FABRIC AS SPECIFIED.

REVISED 8/3/09

CITY OF CLEVELAND

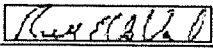
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK - DIRECTOR OF PUBLIC SERVICE

STANDARD PLAN OF
TYPICAL CURB & DETAILS
AT DRIVEWAYS

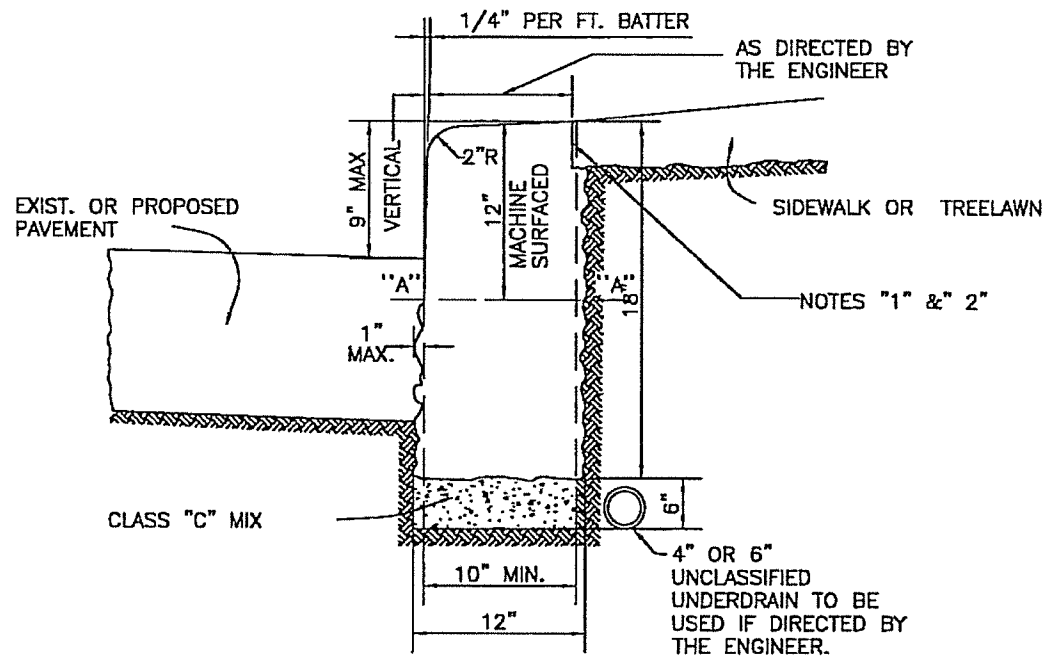
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

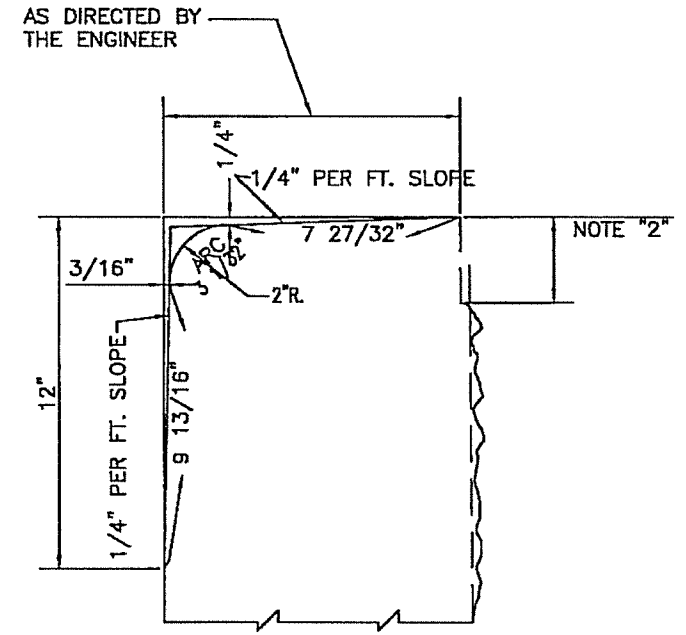
APPROVED:  DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

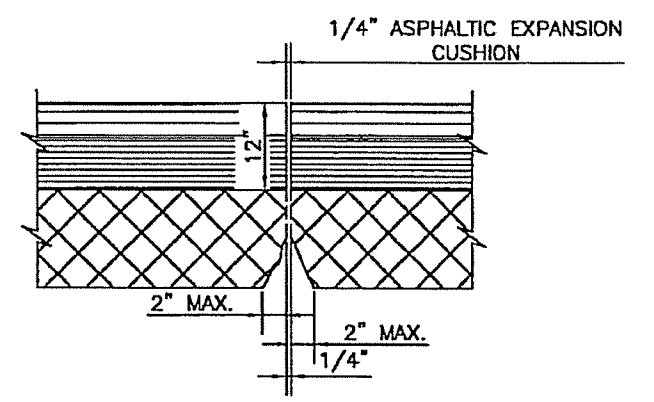


CURB TO BE USED ON STRAIGHT SECTION

TOP FACE AND ENDS OF CURB ABOVE LINE "A"-"A" ARE TO BE MACHINED. ALSO BACK OF CURB 1" FROM TOP AS SHOWN.



DETAIL OF CURB CUTTING



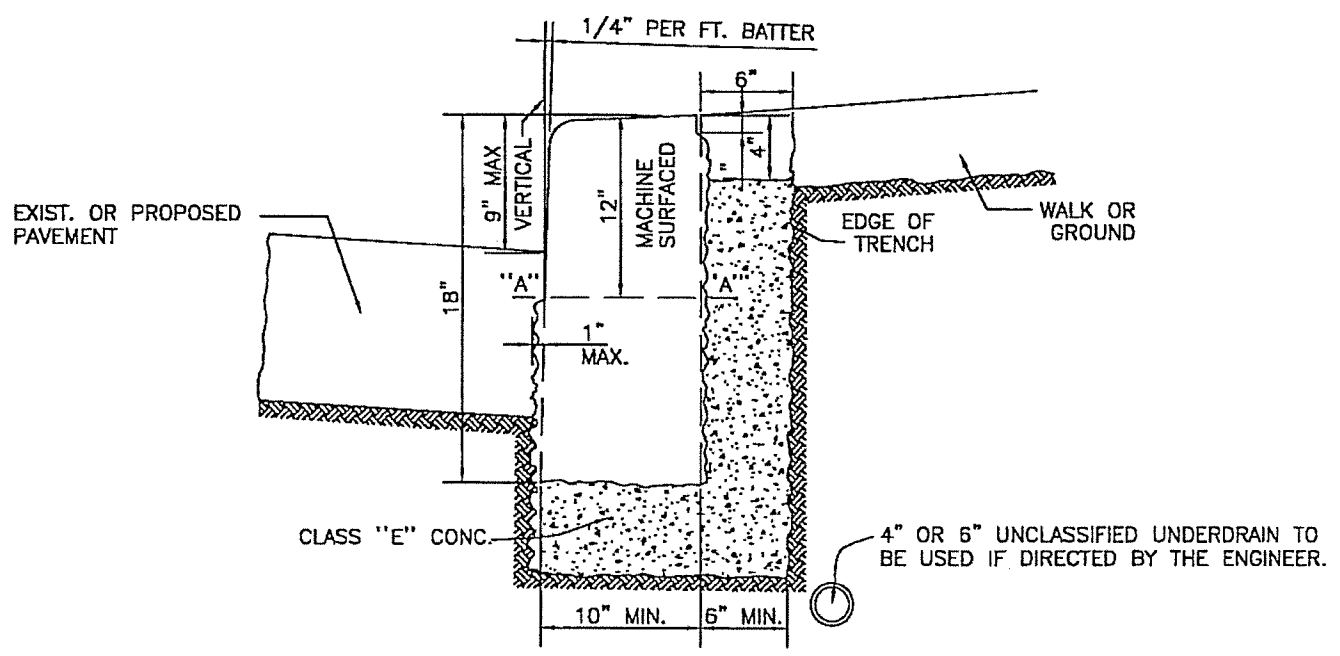
ELEVATION SHOWING CURB JOINT SECTION "A" - "A"

NOTES

CURB SHALL BE SET IN AND BACKED WITH A MINIMUM OF CLASS "C" CONCRETE AS SHOWN. THE ENTIRE CURB TRENCH IS TO BE COMPLETELY FILLED WITH CONCRETE UP TO THE LEVEL SHOWN ON THE SECTION. SEE STANDARD SPECIFICATIONS.

CURB TO BE LIGHT GRAY GRANITE TO MATCH EXISTING CURBING IN MALL LENGTH TO BE 4"-6" WITH CLOSURE STONE NOT LESS THAN 3' LONG.

- 1 - EXPANSION JOINT NOT SHOWN
- 2 - 6" MINIMUM, INCREASE IF REQUIRED TO MATCH EXISTING WALK OR APRON THICKNESS
- 3 - FOR 8" OR 12" MALL CURBING DECREASE OR INCREASE THE THICKNESS DIMENSIONS AND TOLERANCES BY 2"



CURB DETAIL TO BE USED ON ALL CURVED SECTIONS

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD DETAILS SHOWING GRANITE CURBING
NOT SCALE

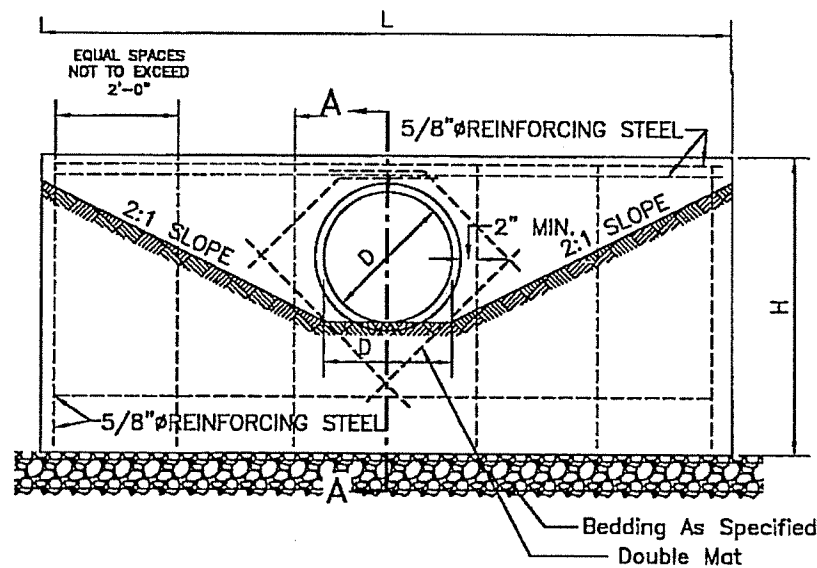
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: [Signature] DATE: 4/14/08

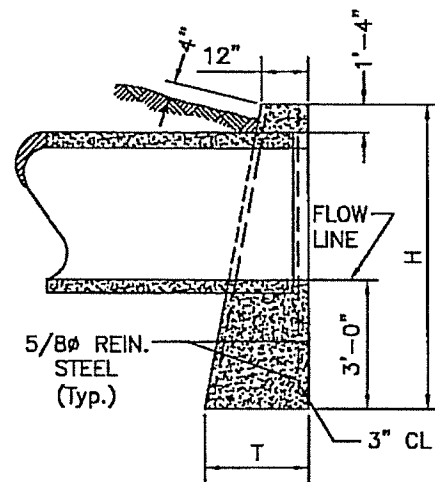
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CR 1	SHEET 3/3
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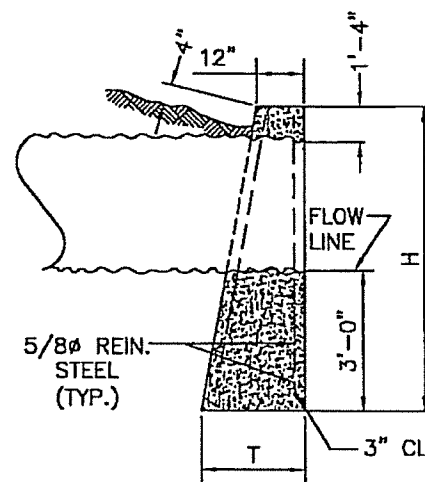
HEADWALL ELEVATION

NOTE: ALL REINFORCEMENT IS TO BE EPOXY COATED



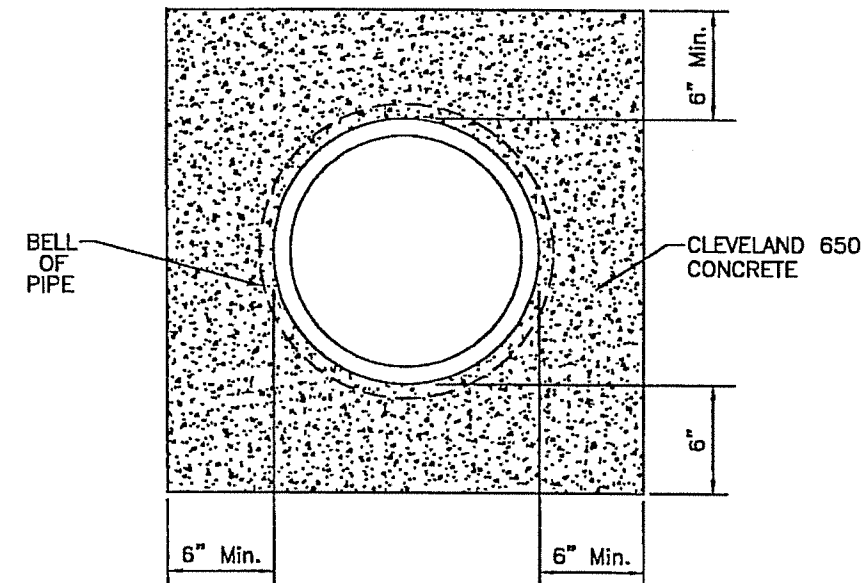
SECTION A-A

RIGID PIPE



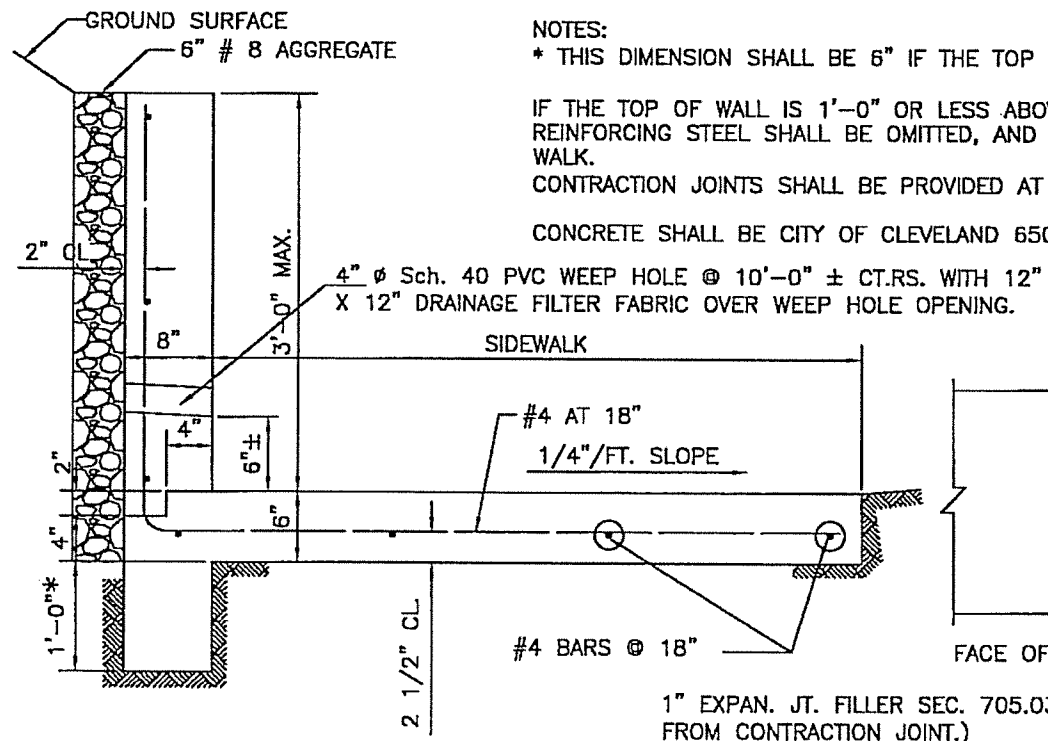
SECTION A-A

CORRUGATED PIPE



**STANDARD SECTION OF PIPE SEWER
INCASED IN 6\"/>**

NOTE: 6\"/>



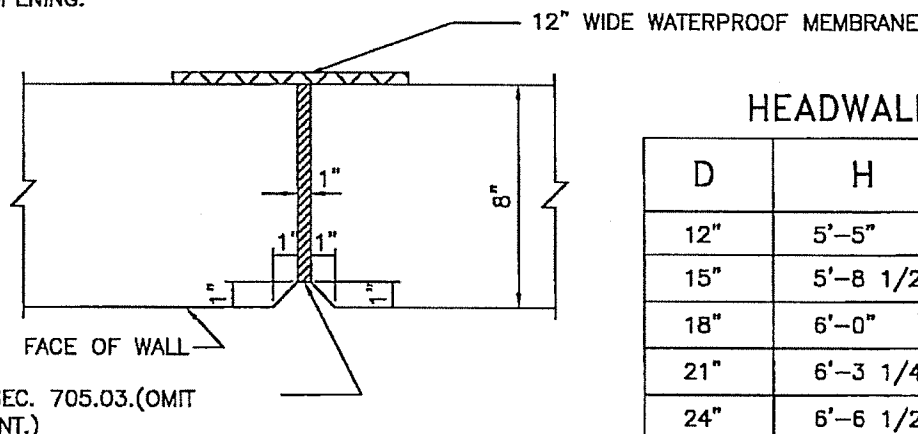
**DETAIL FOR CONCRETE
WALL & SIDEWALK**

NOTE: ALL REINFORCEMENT IS TO BE EPOXY COATED

NOTES:
 * THIS DIMENSION SHALL BE 6\"/>

IF THE TOP OF WALL IS 1'-0\"/>

CONCRETE SHALL BE CITY OF CLEVELAND 650 MIX



**DETAIL OF EXPANSION
JOINT AND
CONTRACTION JOINT**

HEADWALL DIMENSIONS

D	H	L	T
12"	5'-5"	5'-6"	1'-9"
15"	5'-8 1/2"	5'-9"	1'-11"
18"	6'-0"	6'-0"	2'-0"
21"	6'-3 1/4"	7'-0"	2'-2"
24"	6'-6 1/2"	8'-0"	2'-5"
27"	6'-10 1/2"	9'-0"	2'-8"
30"	7'-1 1/2"	10'-0"	2'-11"
36"	7'-8"	12'-0"	3'-2"

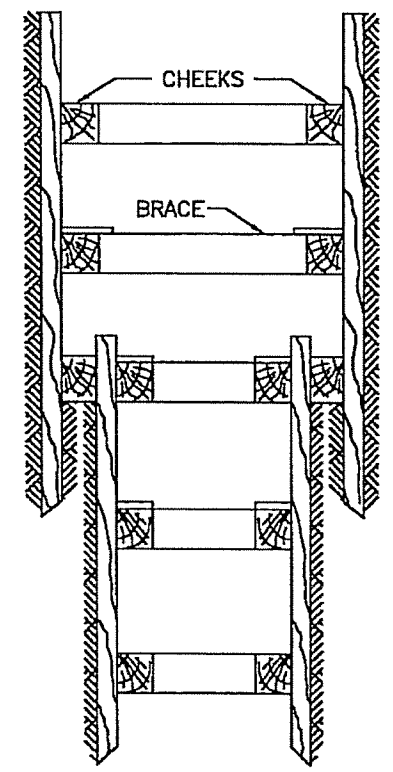
CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK- DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 MISCELLANEOUS CONCRETE CONSTRUCTION DETAILS
 NO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7-8-08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

DEPTH OF TRENCH IN FEET	2 IN. SHEETING FEET BOARD MEAS.	SIZE OF SEWERS																						
		12"	21"	30"	42"	54"	66"	72"	84"	90"	102"	108"	120"											
		15"	24"	33"	48"	60"	#10C BR.	78"		96"		114"												
		18"	27"	36"	#4C BR.	#7C BR.	#11C BR.	#13C BR.																
				#2C BR.	#5C BR.	#8C BR.	#12C BR.	#14C BR.																
		#3C BR.	#6C BR.	#9C BR.	#15C BR.																			
WIDTH OF TRENCH IN FEET (SEE NOTE)																								
3	4	5	6	7	8	9	10	11	12	13	14													
SIZE OF BRACES AND CHEEKS IN INCHES																								
6x6	6x6	6x6	6x6	8X8	6x6	8X8	6x6	8X8	6x6	8X8	6x6	8X8	6x6	8X8	6x6	8X8	6x6	8X8	6x6	8X8				
6	24	15	16	18	20	34	21	36	22	39	24	42	25	44	27	47	28	50	30	52	31	55	TWO SETS OF BRACES	
8	32	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" "	
10	40	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" "	
12	48	27	28	28	29	51	30	52	30	53	31	55	32	56	33	57	33	59	34	60	35	61	THREE SETS OF BRACES	
14	56	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" "	
16	64	34	35	36	37	65	38	67	38	68	39	70	40	71	41	73	41	74	42	76	43	77	2 SETS OF SHEETING FOUR SETS OF BRACES	
18	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" " "	
20	88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" " "	
22	96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" " "	
24	104	43	44	45	46	80	46	81	47	83	48	84	49	86	49	87	50	89	51	90	52	92	FIVE SETS OF BRACES	
26	112	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" "	
28	120	43	44	45	46	80	46	81	47	83	48	84	49	86	49	87	50	89	51	90	52	92	FIVE SETS OF BRACES	



NOTES:
 1 - THE MIN. TRENCH WIDTH IS DETERMINED AS PER DWG. ME 146 AND IS THE TRENCH WIDTH AT THE TOP OF THE SEWER OR AT THE TOP OF THE UTILITY BEING INSTALLED AS PER OWNING UTILITIES REQUIREMENTS.
 2 - THIS CHART SHOWS MINIMUM SHEETING & BRACING REQUIREMENTS. CONTRACTOR SHALL SUBMIT A SHEETING & BRACING SCHEDULE, COMPLETE WITH CALCULATIONS, DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 SHEETING & BRACING CHART
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7-8-09
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

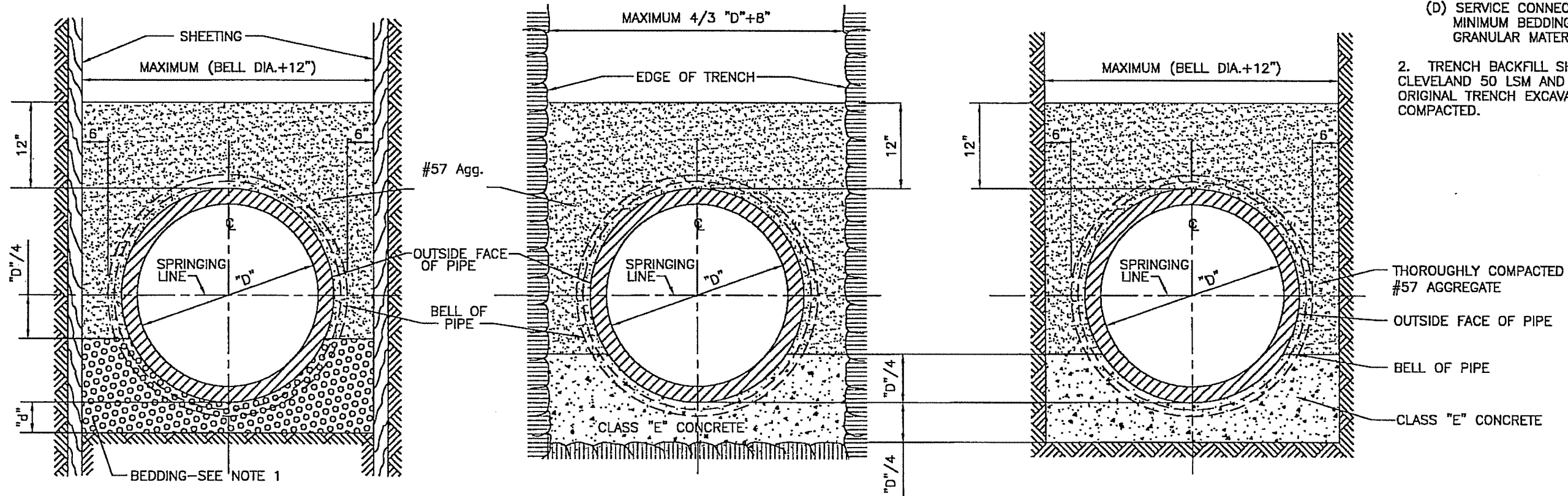
FILE NO. : 164ME (21)

NOTES:

1. THE PIPE BEDDING MATERIAL SHALL BE COARSE NATURAL AGGREGATE COMPLYING WITH 703.01 WITH THE FOLLOWING PROVISIONS:

- (A) 4" BEDDING DEPTH "d" OF NO. 57 GRANULAR MATERIAL FOR 8" TO 24" PIPE
- (B) 6" BEDDING DEPTH "d" OF NO. 5 GRANULAR MATERIAL FOR 27" TO 60" PIPE
- (C) 8" BEDDING DEPTH "d" OF NO. 4 GRANULAR MATERIAL FOR PIPE SIZES GREATER THAN 60". THE MINIMUM DEPTH OF THE BEDDING SHALL BE 2" BELOW THE PIPE BELLS, IF ANY, BUT IN NO CASE SHALL THE BEDDING BE LESS THAN 8"
- (D) SERVICE CONNECTIONS SHALL HAVE A 3" MINIMUM BEDDING DEPTH OF NO. 57 GRANULAR MATERIAL.

2. TRENCH BACKFILL SHALL IN PAVED AREAS SHALL BE CLEVELAND 50 LSM AND OUTSIDE OF PAVED AREAS ORIGINAL TRENCH EXCAVATION MAY BE USED, PROPERLY COMPACTED.



TYPICAL SECTION

PIPE SEWERS IN ORDINARY EARTH BEDDING

TYPICAL SECTION

PIPE SEWER IN ROCK AND OR SHALE WHERE DIRECTED

TYPICAL SECTION

PIPE SEWER IN CONCRETE CRADLE

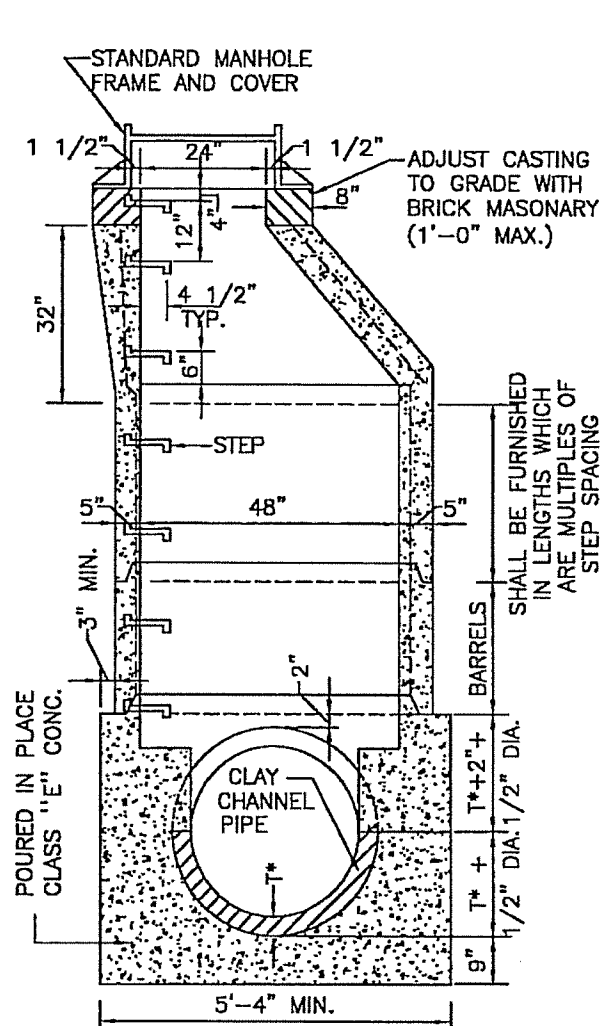
CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 STANDARD TRENCH FOR PIPE SEWERS
 NOT TO SCALE

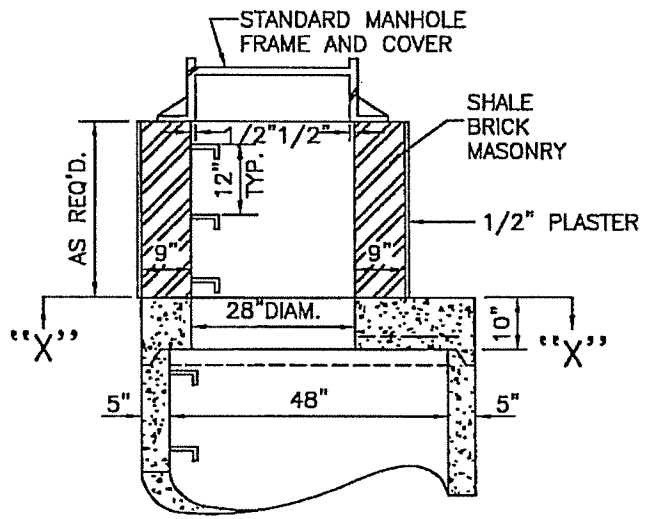
DRAWN BY: R. ELIODZINSKAS DATE: 8/28/07

SUBMITTED BY: W. MCLAUGHLIN DATE: 8/28/07

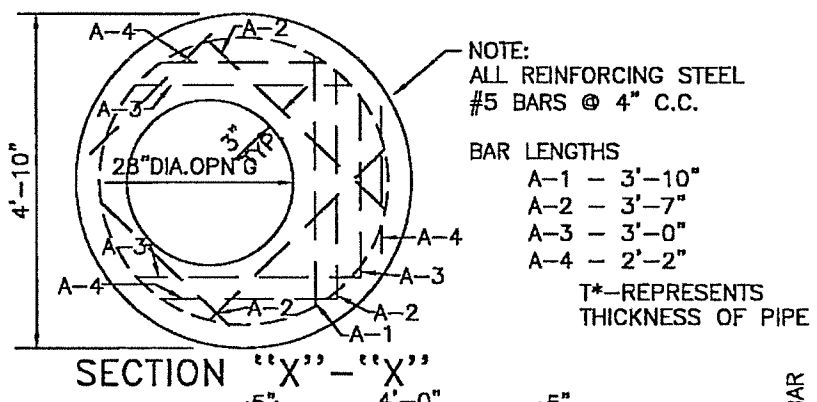
APPROVED: *[Signature]* DATE: 7-8-08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION



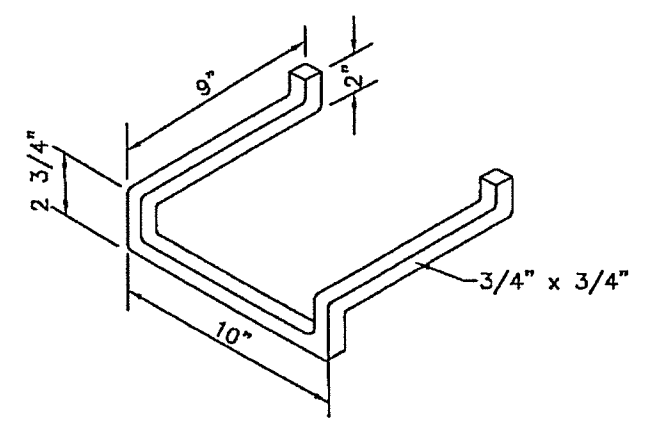
SEWERS 42" AND UNDER



ALTERNATE DOME

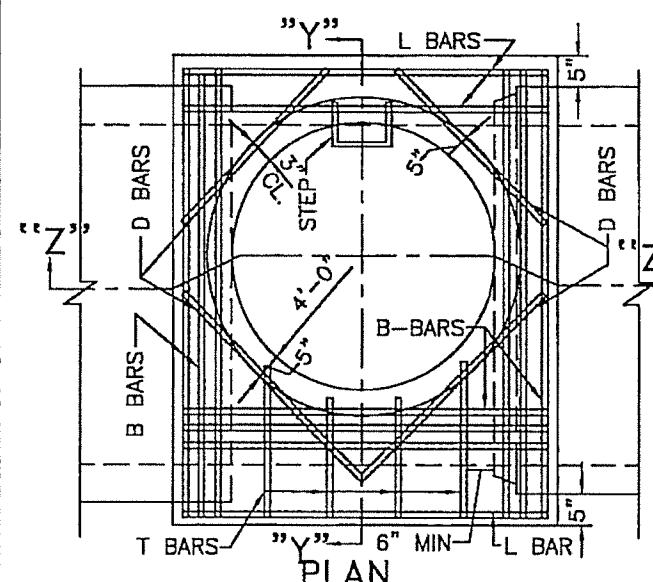


SECTION "X" - "X"



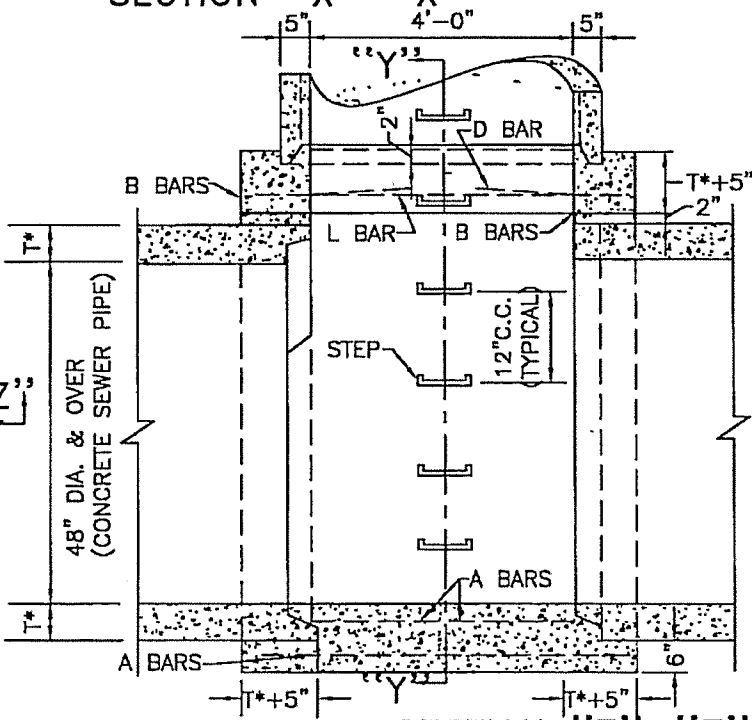
STEP DETAIL

NOTE:
STEPS SHALL BE CAST IRON AS PER ASTM A 48 CLASS 30 GRAY IRON OR ALUMINUM AS PER ASTM B 221,6061-T6

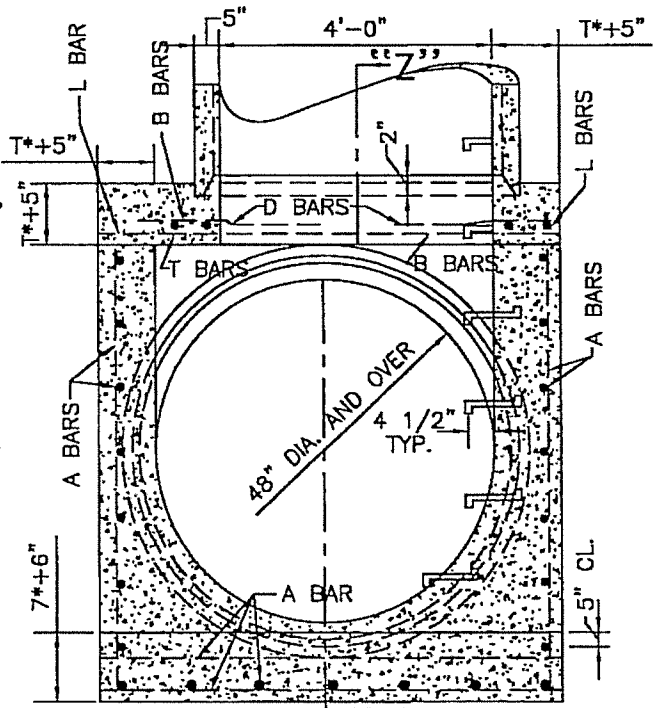


PLAN

CONNECTION BOX FOR PRECAST MANHOLES ON SEWERS 48" AND OVER



SECTION "Z" - "Z"



SECTION "Y" - "Y"

NOTES:

NO HOLES FOR 12" INLET OR CATCH BASIN CONNECTIONS SHALL BE CUT IN ANY SECTION LESS THAN 36" MANHOLE BARREL NOT MORE THAN 2 INLET CONNECTIONS SPACED 2± FEET APART HORIZONTALLY PERMITTED IN 3 OR 4 FOOT MANHOLE SECTIONS.

ALL JOINTS AND PIPE OPENINGS IN THE MANHOLE SHALL BE THOROUGHLY CALKED WITH 1:3 CEMENT MORTAR HAVING A 1/2" MINIMUM THICKNESS.

PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM DESIGNATION C 478-06a: MINIMUM WALL THICKNESS SHALL BE 5 INCHES.

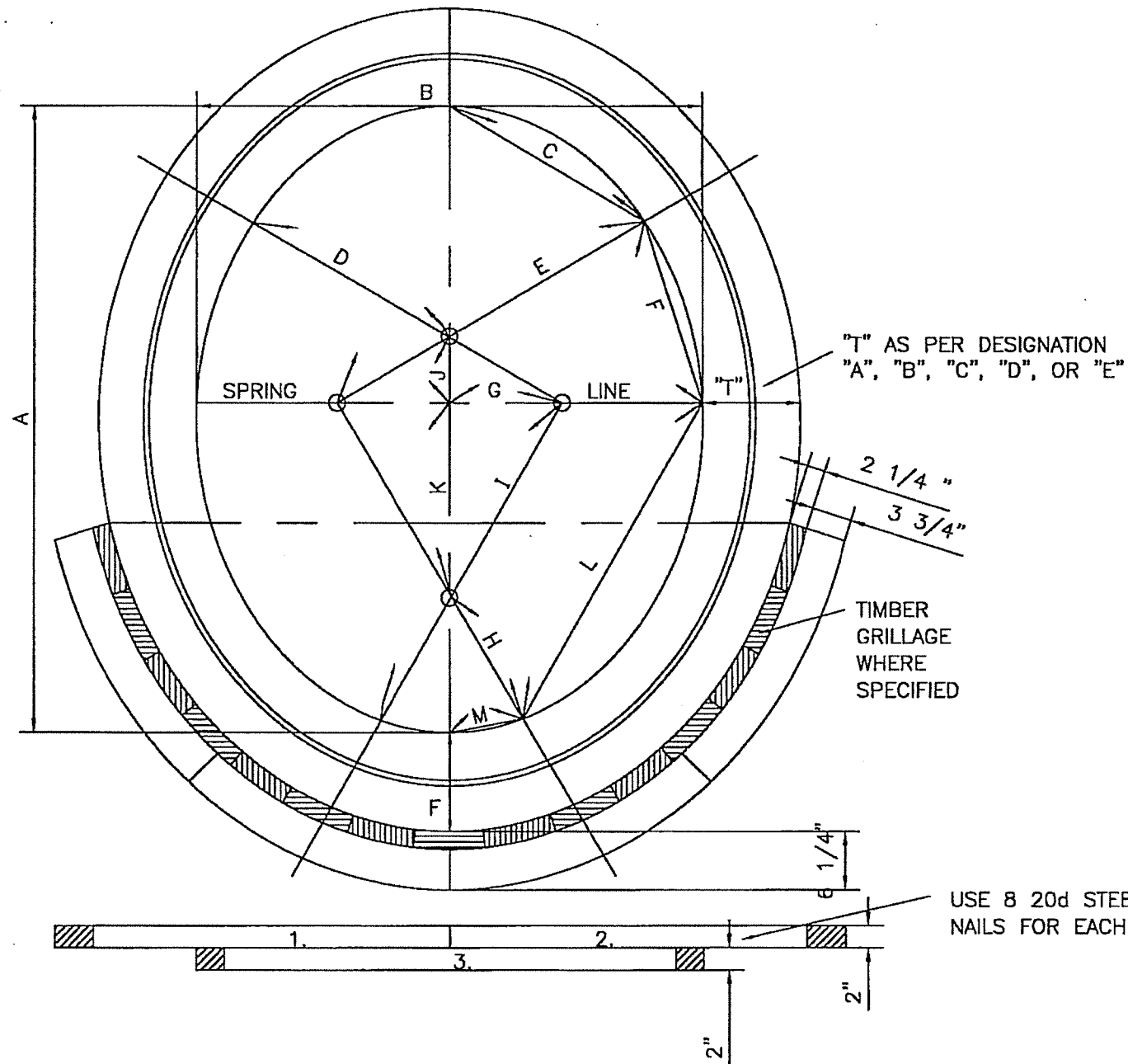
CONNECTION BOXES FOR SEWERS 48" AND OVER IN DIAMETER SHALL BE REINFORCED AS SHOWN AND AS SPECIFIED BELOW:

- A) BARS SHALL BE SPACED AT 12" CENTERS IN BOTH DIRECTIONS.
- B) BARS SHALL BE SPACED AT 3" CENTERS IN BOTH DIRECTIONS.
A, B & L BARS SIZES:
5/8" DIAM. FOR 48" TO 60" SEWERS.
3/4" DIAM. FOR 66" TO 78" SEWERS.
7/8" DIAM. FOR 84" TO 96" SEWERS.
- C) T BARS SHALL BE 5/8" DIAM. SPACED AT 12" CENTERS.
- D) BARS SHALL BE 5/8" DIAMETER EPOXY COATED REINFORCING STEEL SHALL HAVE 2" CLEARANCE EXCEPT WHERE OTHERWISE SPECIFIED.
- E) STANDARD MANHOLE FRAME AS PER A-503 (SHEET 61) AND COVER AS PER A-605 (SHEET 62) OR A-695 (SHEET 63)

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
DETAIL PLAN OF PRECAST CONCRETE MANHOLE
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 8/28/07
SUBMITTED BY: W. MCLAUGHLIN DATE: 8/28/07

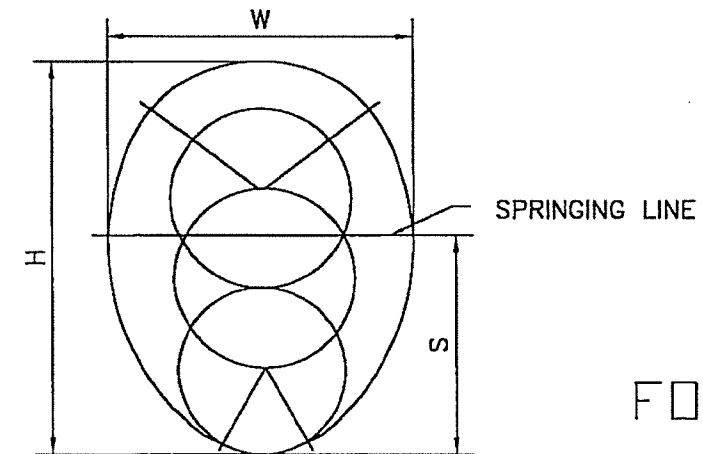
APPROVED: *[Signature]* DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION



EGG SHAPED SEWERS					NO.	H FEET	W FEET	S FEET	AREA SQ. FT.	NO.	H FEET	W FEET	S FEET	AREA SQ. FT.
NO.	H FEET	W FEET	S FEET	AREA SQ. FT.	8	5.12	4.04	2.71	16.00	15	7.79	6.14	4.12	36.99
2	2.25	1.94	1.28	3.41	9	5.54	4.37	2.93	18.72	16	8.13	6.41	4.30	40.32
3	2.75	2.23	1.64	4.75	10	5.94	4.69	3.14	21.54	17	8.47	6.68	4.47	43.71
4	3.23	2.54	1.70	6.35	11	6.33	4.99	3.35	24.46	18	8.79	6.94	4.65	47.17
5	3.74	2.95	1.98	8.55	12	6.71	5.29	3.55	27.47	19	9.12	7.19	4.82	50.70
6	4.23	3.34	2.23	10.90	13	7.08	5.58	3.74	30.57	20	9.43	7.44	4.98	54.29
7	4.69	3.70	2.48	13.39	14	7.44	5.87	3.93	33.74					

TYPES OF EGG SHAPED SEWERS

- "A"—1 RING OF BRICK ALL AROUND.
- "B"—1 RING OF BRICK ALL AROUND & 1 RING EXTRA ON ARCH.
- "C"—2 RINGS OF BRICK ALL AROUND .
- "D"—2 RINGS OF BRICK ALL AROUND & 1 RING EXTRA ON ARCH.
- "E"—3 RINGS OF BRICK ALL AROUND.



FOR RECORD ONLY

TABULAR DIMENSIONS FOR EGG SHAPED SEWERS NO.2 TO NO. 8

NO.	A	B	C	D	E	F	G	H	I	J	K	L	M
2	2'-3"	1'-11 1/4"					6 3/8"	9"	1'-6"		6 3/8"		
3	2'-9"	2'-2 3/4"					10 5/8"	9"	2'-0"		10 5/8"		
4	3'-2 3/4"	2'-6 5/8"	1'-2 1/8"	1'-2 1/8"	1'-10 1/2"	11 1/2"	7 3/16"	8 1/8"	1'-10 1/2"	4 1/16"	12 3/16"	1'-10 1/2"	4 1/4"
5	3'-9"	2'-11 3/8"	1'-4 3/8"	1'-4 3/8"	2'-1 7/8"	1'-1 3/8"	8 3/16"	9 1/2"	2'-1 7/8"	4 3/4"	1'-2 1/4"	2'-1 7/8"	4 7/8"
6	4'-2 3/4"	3'-4"	1'-6 1/2"	1'-6 1/2"	2'-5 1/4"	1'-3 1/8"	9 1/4"	10 3/4"	2'-5 1/4"	5 3/8"	1'-4 1/8"	2'-5 1/4"	5 1/2"
7	4'-8 1/4"	3'-8 3/8"	1'-8 1/2"	1'-8 1/2"	2'-8 1/2"	1'-4 3/4"	10 5/16"	11 7/8"	2'-8 1/2"	5 15/16"	1'-5 13/16"	2'-8 1/2"	6 1/8"
8	5'-1 1/2"	4'-0 1/2"	1'-10 1/2"	1'-10 1/2"	2'-11 1/2"	1'-6 1/4"	11 1/4"	1'-1"	2'-11 1/2"	6 1/2"	1'-7 1/2"	2'-11 1/2"	6 3/4"

CITY OF CLEVELAND

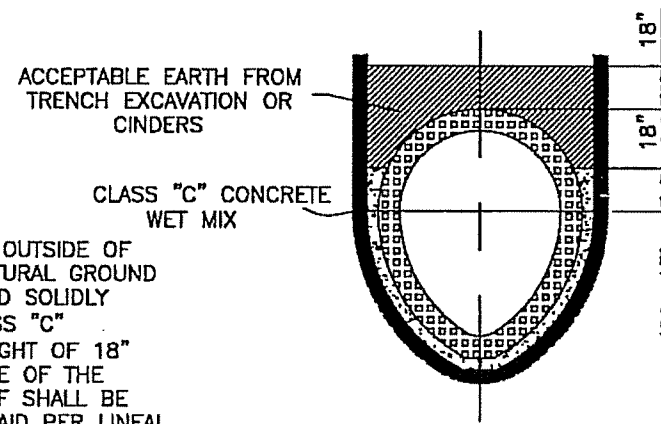
DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 STANDARD PLAN FOR EGG SHAPED SEWERS
 DIMENSIONS & AREAS
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. McLAUGHLIN DATE: 4/8/08

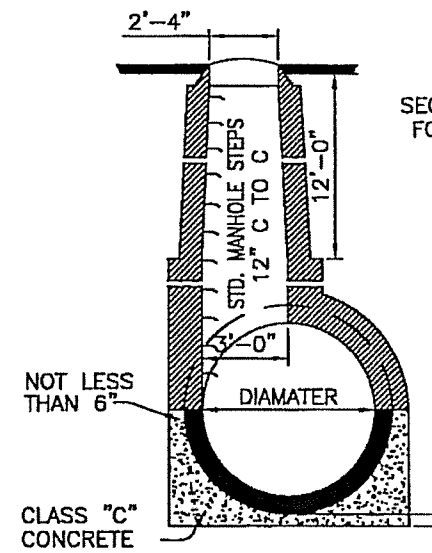
APPROVED: *[Signature]* DATE: 7-8-08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

TYPICAL SECTION OF TRENCH
FOR
VITRIFIED BLOCK CONSTRUCTION



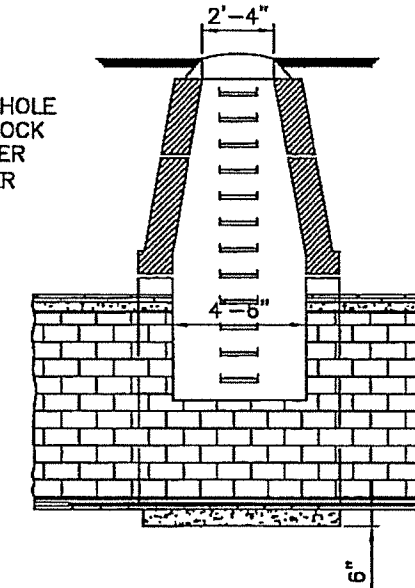
THE SPACE BETWEEN THE OUTSIDE OF THE BLOCKS AND THE NATURAL GROUND SHALL BE COMPLETELY AND SOLIDLY FILLED WITH WET MIX CLASS "C" CONCRETE UP TO THE HEIGHT OF 18" ABOVE THE SPRINGING LINE OF THE SEWER. THE COST THEREOF SHALL BE INCLUDED IN THE PRICE PAID PER LINEAL FOOT OF SEWER CONSTRUCTED.

NOTE:
THIS SECTION APPLIES
ALSO FOR CIRCULAR
SECTION

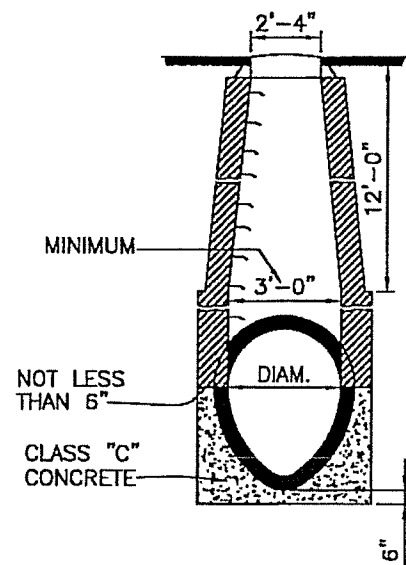


SECTION "A-A"

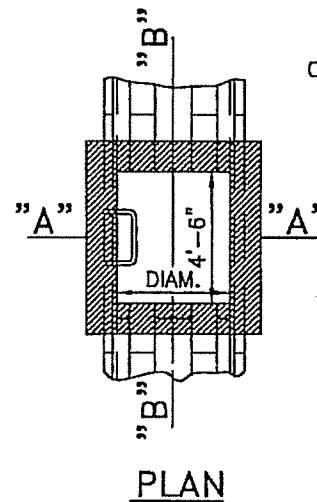
SECTIONS OF MANHOLE
FOR VITRIFIED BLOCK
CIR. SEWER OVER
4'-6" DIAMETER



SECTION "B-B"

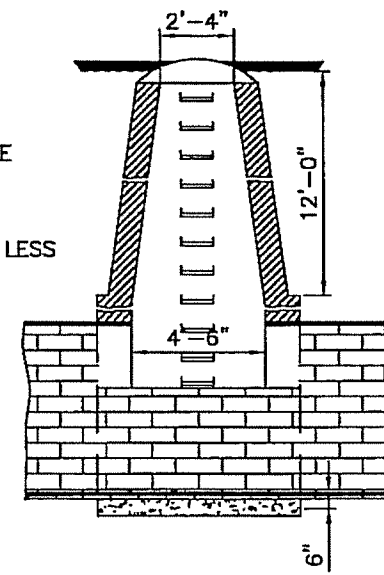


SECTION "A-A"

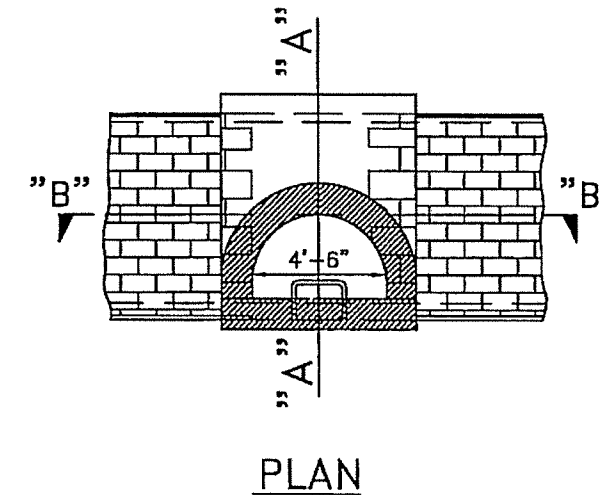


PLAN

SECTIONS OF MANHOLE
FOR
VITRIFIED BLOCK &
CIR. SEWER
OF 4'-6" DIAMETER OR LESS



SECTION "B-B"



PLAN

MORTAR SHALL BE COMPOSED OF
ONE PORTLAND CEMENT (SEC.
701.04) TO TWO PARTS SAND (SEC.
703.03) BY VOLUME.

RECORD ONLY

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
VITRIFIED BLOCK SEWER CONSTRUCTION DETAILS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08

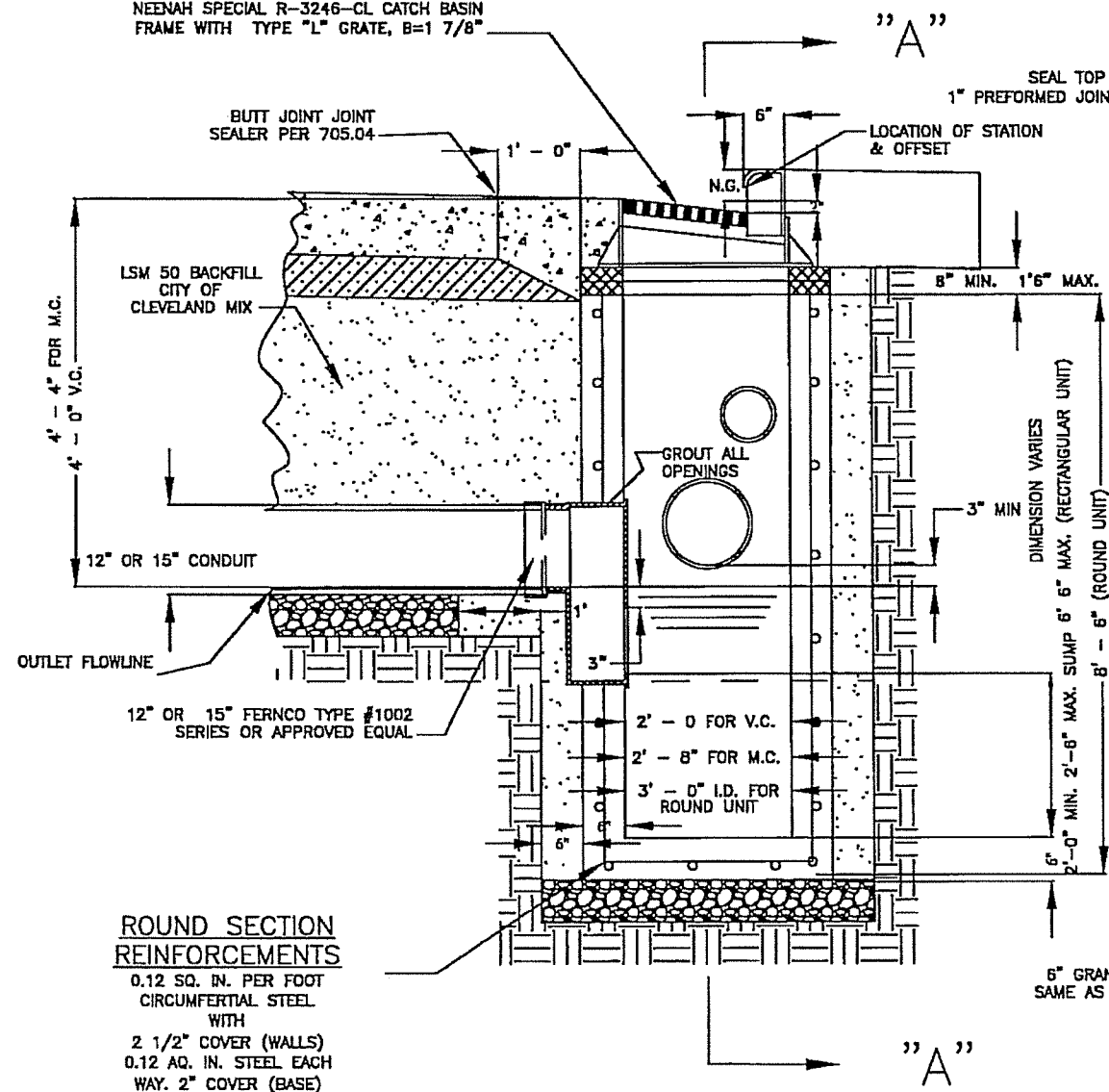
SUBMITTED BY: W. McLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7-3-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. B-429

CB-1 CATCH BASIN

EAST JORDON IRONWORKS INC. CAT. No. 7035
WITH TYPE M2 GRATE AND TYPE T1 BACK OR
APPROVED EQUAL
NEENAH SPECIAL R-3246-CL CATCH BASIN
FRAME WITH TYPE "L" GRATE, B=1 7/8"

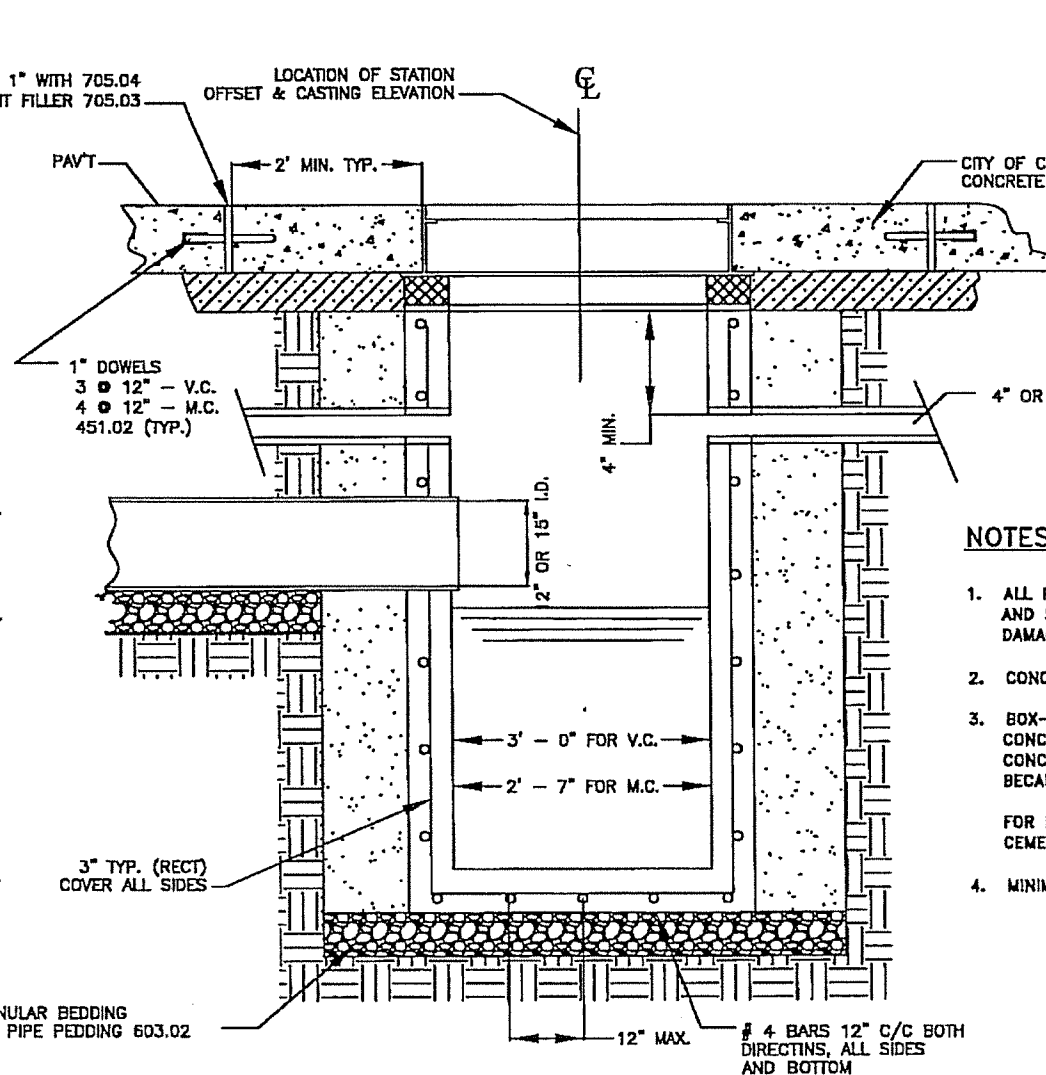


VERTICAL CURB

ALTERNATE BASIN SHAPE

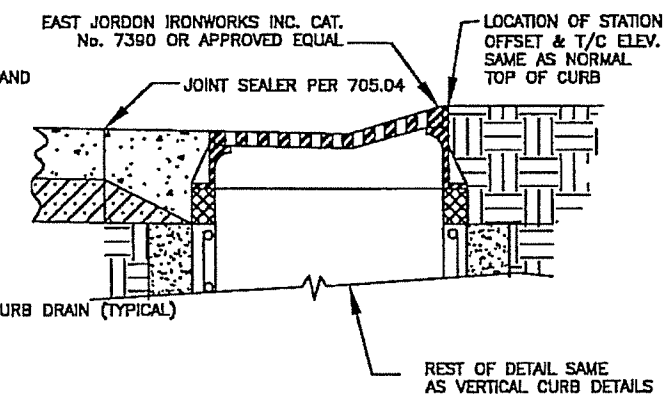
A ROUND PRECAST CONCRETE UNIT MAY BE USED IN LIEU OF RECTANGULAR UNIT. THE ROUND SECTION SHALL BE 36" I.D. UNIT WITH INTEGRAL BASE AND PRECAST TOP TRANSITION SECTION (ROUND TO RECTANGULAR) TO FIT CASTING BEING USED. THE TRANSITION UNIT REQUIRES A # 5 REBAR AT CORNERS OF THE RECTANGULAR SHAPED SECTION AND 3 X 8 W6 X W5 WELDED WIRE FABRIC IN VERTICAL SECTION. ALSO, IF APPROVED BY THE ENGINEER, 8" THICK MASONRY WALL MAY BE USED IN LIEU OF PRECAST UNITS.

NOTE: IF PRECAST CATCH BASIN IS CONSTRUCTED IN TWO PIECES THE JOINT BETWEEN UNITS MUST BE A PERMIUM JOINT, PER 706.11.



"A" - "A"

LEGEND	
V.C.	= VERTICAL CURB
M.C.	= MOUNTABLE CURB
T/C	= TOP OF CASTING
N.G.	= NORMAL GUTTER



MOUNTABLE CURB

NOTES

1. ALL REINFORCING SHALL BE # 4 DEFORMED BARS, AS PER ODOT 709, AND SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE TO DECTANGULAR SHAPE.
2. CONCRETE SHALL BE ODOT 499 CLASS "C" 4000 PSI IN 28 DAYS.
3. BOX-OUT SHALL BE PAID FOR AS PAVEMENT IN PORTLAND CEMENT CONCRETE PAVEMENT AND AS PART OF THE CATCH BASIN IN ASPHALTIC CONCRETE PAVEMENT WITH NO REDUCTION IN PAVEMENT OR CURB QUANTITY BECAUSE OF CASTING.

FOR FULL WIDTH ASPHALTIC CONCRETE PAVEMENT CONSTRUCT A PORTLAND CEMENT CONCRET APRON.
4. MINIMUM WALL THICKNESS 8" CAST IN PLACE AND 6" FOR PRECAST.

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD DETAIL FOR
RECTANGULAR CATCH BASIN
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

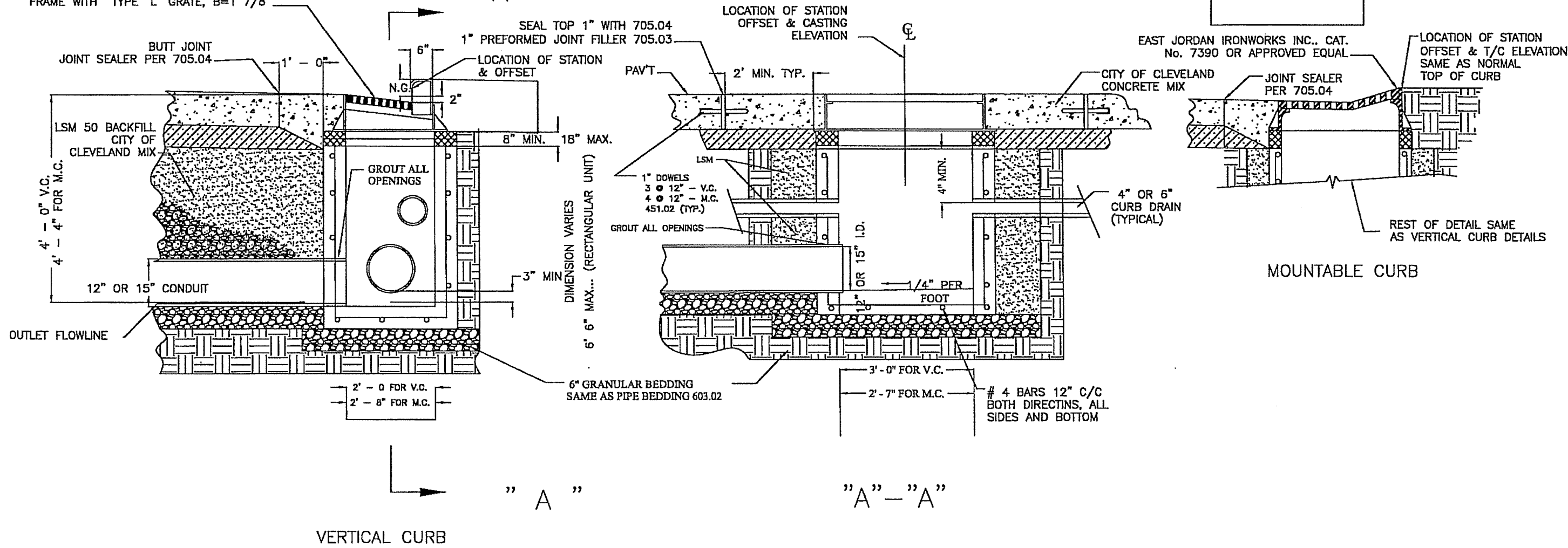
APPROVED: [Signature] DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB-1	SHEET 1/7	26
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EAST JORDAN IRONWORKS INC... CAT. No. 7035
 WITH TYPE M2 GRATE AND TYPE T1 BACK
 OR APPROVED EQUAL
 NEENAH SPECIAL R-3246-CL CATCH BASIN
 FRAME WITH TYPE "L" GRATE, B=1 7/8"

INLET BASIN

LEGEND
 V.C. = VERTICAL CURB
 M.C. = MOUNTABLE CURB
 T/C = TOP OF CASTING
 N.G. = NORMAL GUTTER



NOTES

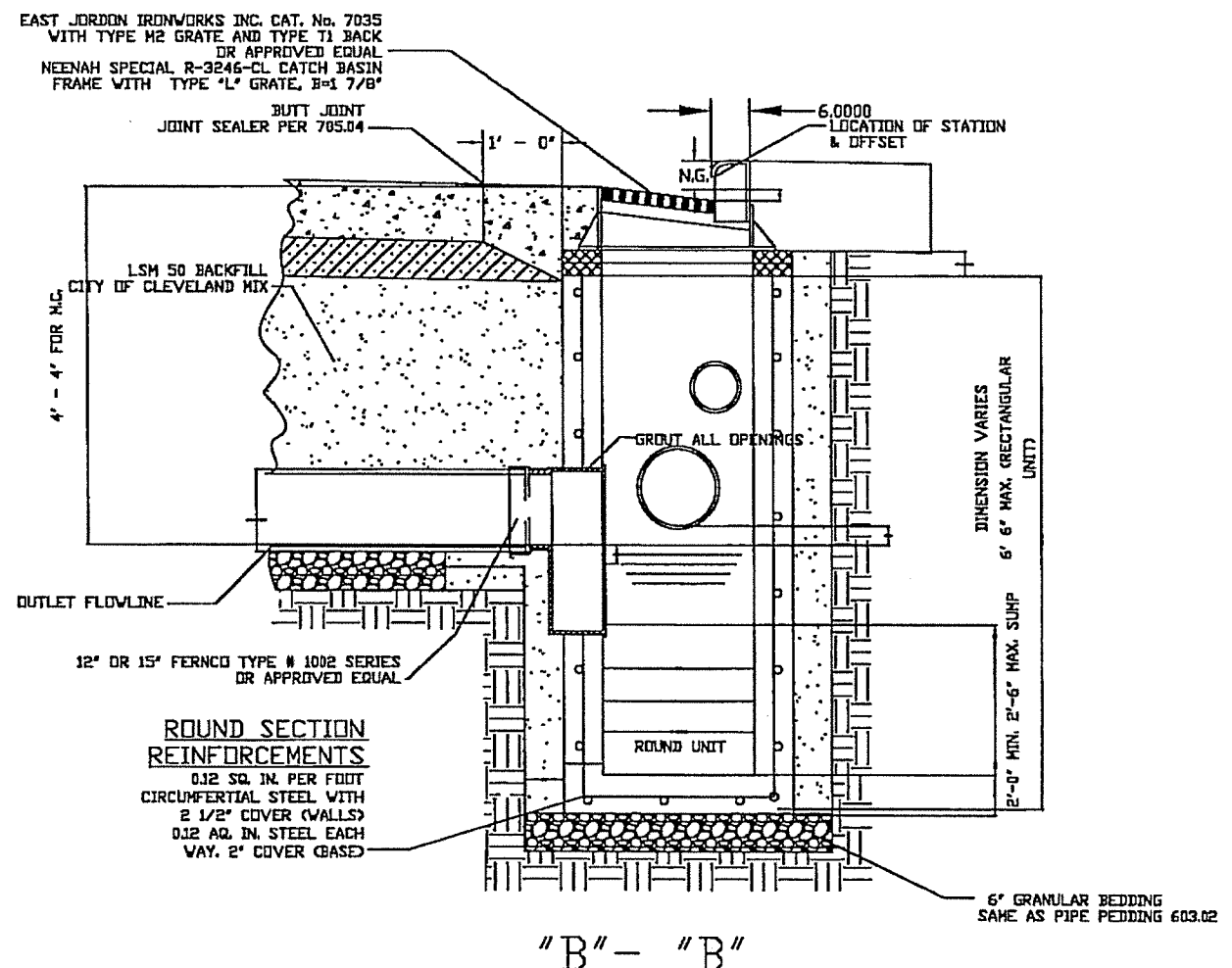
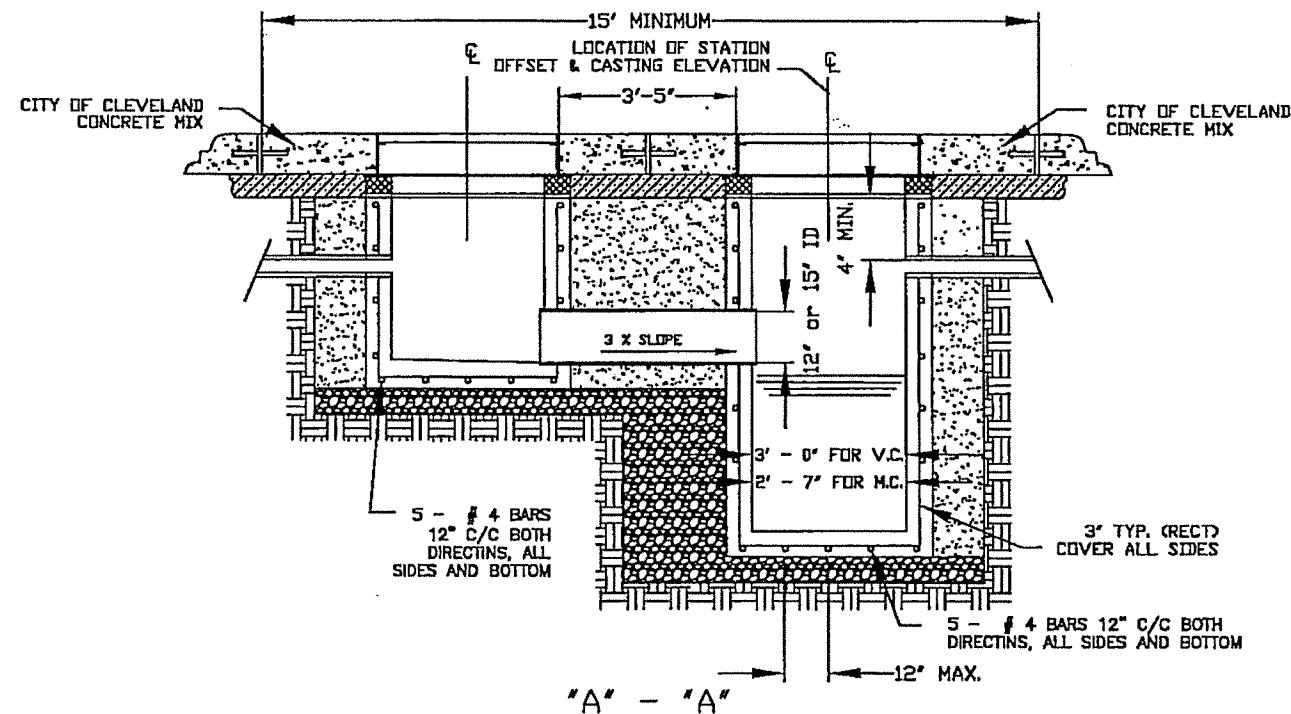
1. ALL REINFORCING SHALL BE # 4 DEFORMED BARS, AS PER ODOT 709, AND SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE TO RECTANGULAR SHAPE.
2. CONCRETE SHALL BE ODOT 499 CLASS "C" 4000 PSI IN 28 DAYS.
3. BOX-OUT SHALL BE PAID FOR AS PAVEMENT IN PORTLAND CEMENT CONCRETE PAVEMENT AND AS PART OF THE CATCH BASIN IN ASPHALTIC CONCRETE PAVEMENT WITH NO REDUCTION IN PAVEMENT OR CURB QUANTITY BECAUSE OF CASTING.
4. FOR FULL WIDTH ASPHALTIC CONCRETE PAVEMENT- CONSTRUCT A PORTLAND CEMENT CONCRETE APRON.
5. MINIMUM WALL THICKNESS 8" FOR CAST IN PLACE AND 6" FOR PRECAST

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 STANDARD RECTANGULAR PRECAST CONCRETE
 INLET BASIN
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

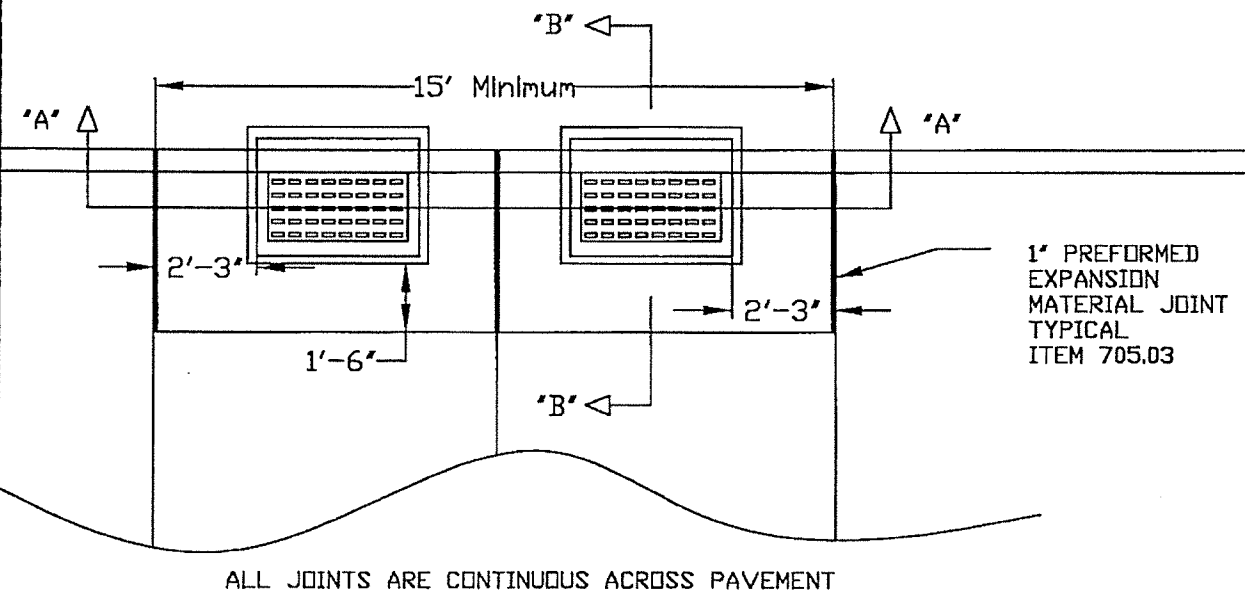
APPROVED: *[Signature]* DATE: 7-8-09
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB-1 SHEET 2/7 (27)



NOTES

1. THE CATCH BASIN SHALL BE SET AT THE LOW POINT OF A SAG VERTICAL CURVE OR AT THE POINT WHERE THE GRADE OF THE STREET CHANGES FROM NEGATIVE TO POSITIVE OR DOWNSTREAM FROM THE INLET BASIN.
2. THE CONCRETE BETWEEN THE CASTINGS SHALL BE SLOPED TO MATCH THE SLOPE OF THE CASTINGS.
3. REFER TO CB-1 AND IB-1 FOR FULL DETAILS AND DIMENSIONS.
4. PIPE BETWEEN BASINS SHALL BE EXTRA STRENGTH VCP PIPE AND IS INCLUDED IN THE BID ITEM FOR TWIN BASIN CB-3.
5. DOWEL SPACING AND SIZE SHALL BE AS FOLLOWS:
 1" DOWELS-
 3 @ 12" - V.C.
 4 @ 12" - M.C.
 451.02 (TYP.)
6. MINIMUM WALL THICKNESS 8" FOR CAST IN PLACE AND 6" FOR PRECAST



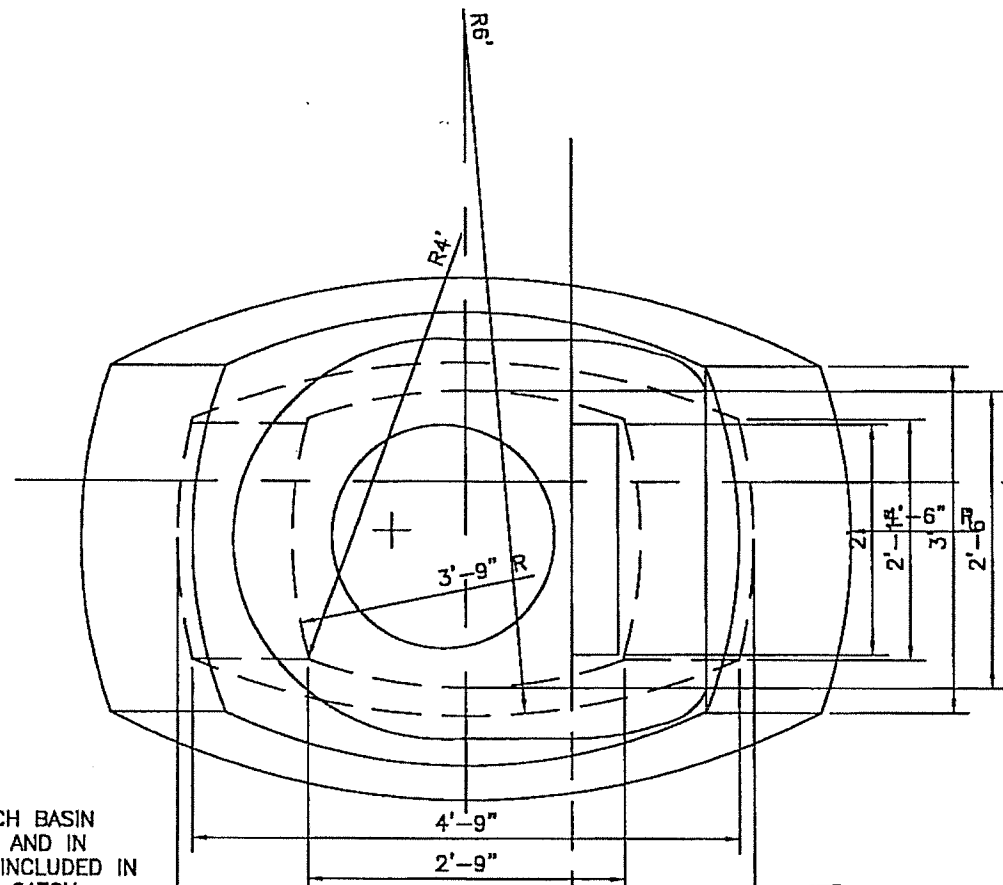
ALL JOINTS ARE CONTINUOUS ACROSS PAVEMENT

CITY OF CLEVELAND
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 DETAILS FOR
 TWIN BASIN - CB-3
 NOT TO SCALE

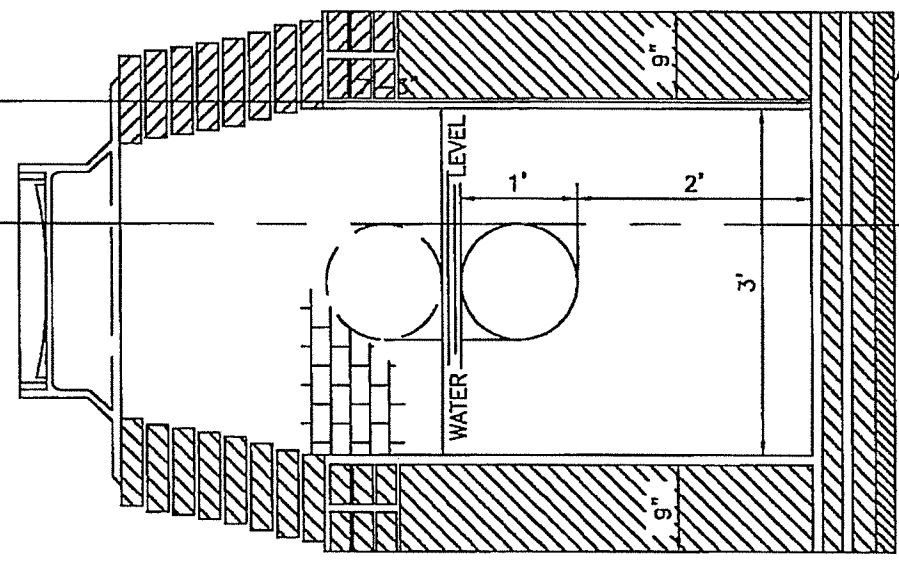
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 7-8-08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1 SHEET 3/7 (28)



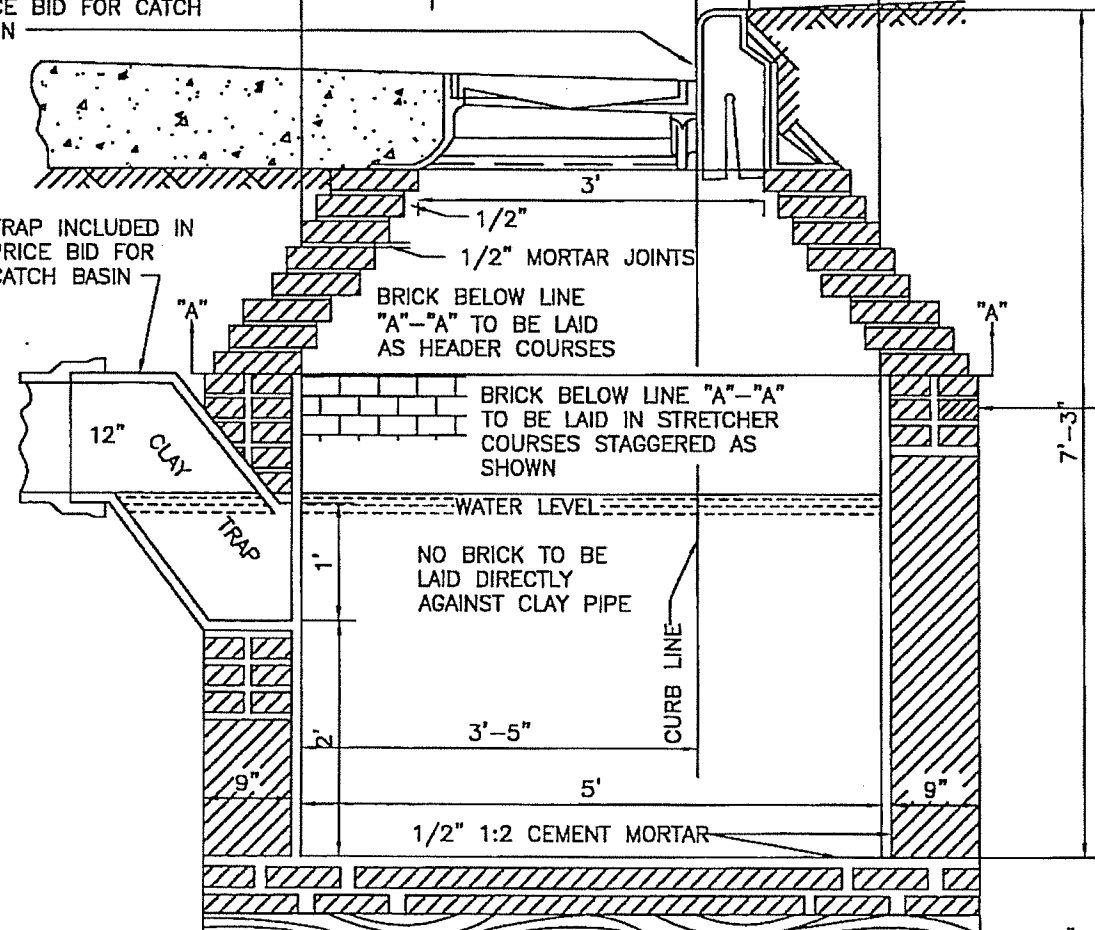
TOP OF CURB



2" OAK GRILLAGE IF REQUIRED BY THE ENGINEER

TRANSVERSE SECTION

STANDARD CATCH BASIN TOP COMPLETE AND IN PLACE, TO BE INCLUDED IN PRICE BID FOR CATCH BASIN



TRAP INCLUDED IN PRICE BID FOR CATCH BASIN

12" CLAY TRAP

BRICK BELOW LINE "A"- "A" TO BE LAID AS HEADER COURSES

BRICK BELOW LINE "A"- "A" TO BE LAID IN STRETCHER COURSES STAGGERED AS SHOWN

NO BRICK TO BE LAID DIRECTLY AGAINST CLAY PIPE

1:2 PORTLAND CEMENT MORTAR

SPECIFICATIONS: ALL BRICK SHALL BE SHALE BRICK AS PER 704.111

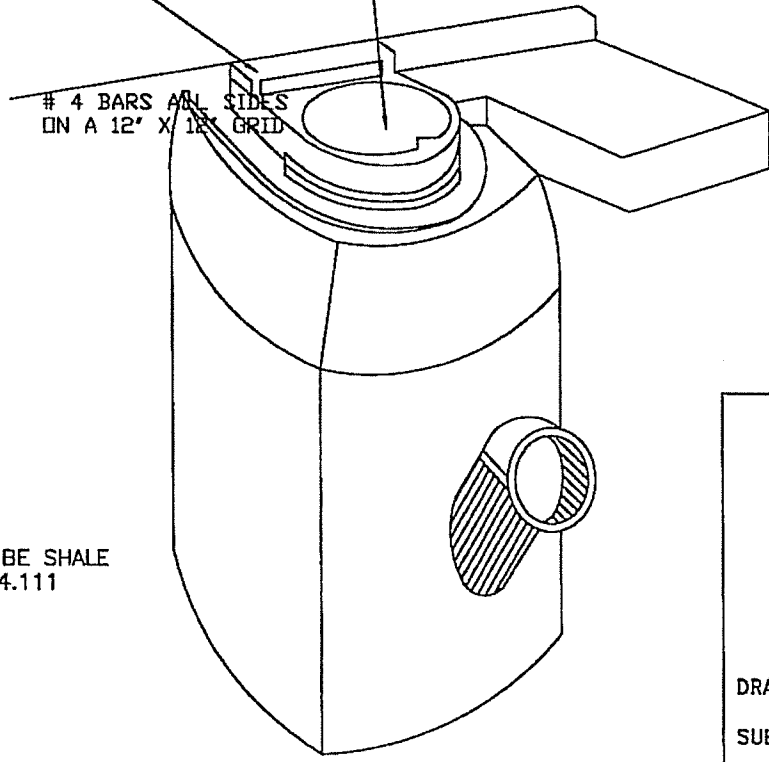
2" OAK GRILLAGE IF REQUIRED BY THE ENGINEER

LONGITUDINAL SECTION

FOR CAST IRON CURB BOX SEE DRAWING A-694

FOR IRON COVER SEE DRAWING A-693

4 BARS ALL SIDES ON A 12" X 12" GRID



PERSPECTIVE NOT TO SCALE

FOR RECORD ONLY

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WAKSIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD PLAN FOR GUTTER CATCH BASIN
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS

DATE: 4/8/08

SUBMITTED BY: W. McLAUGHLIN

DATE: 4/8/08

APPROVED: *[Signature]*

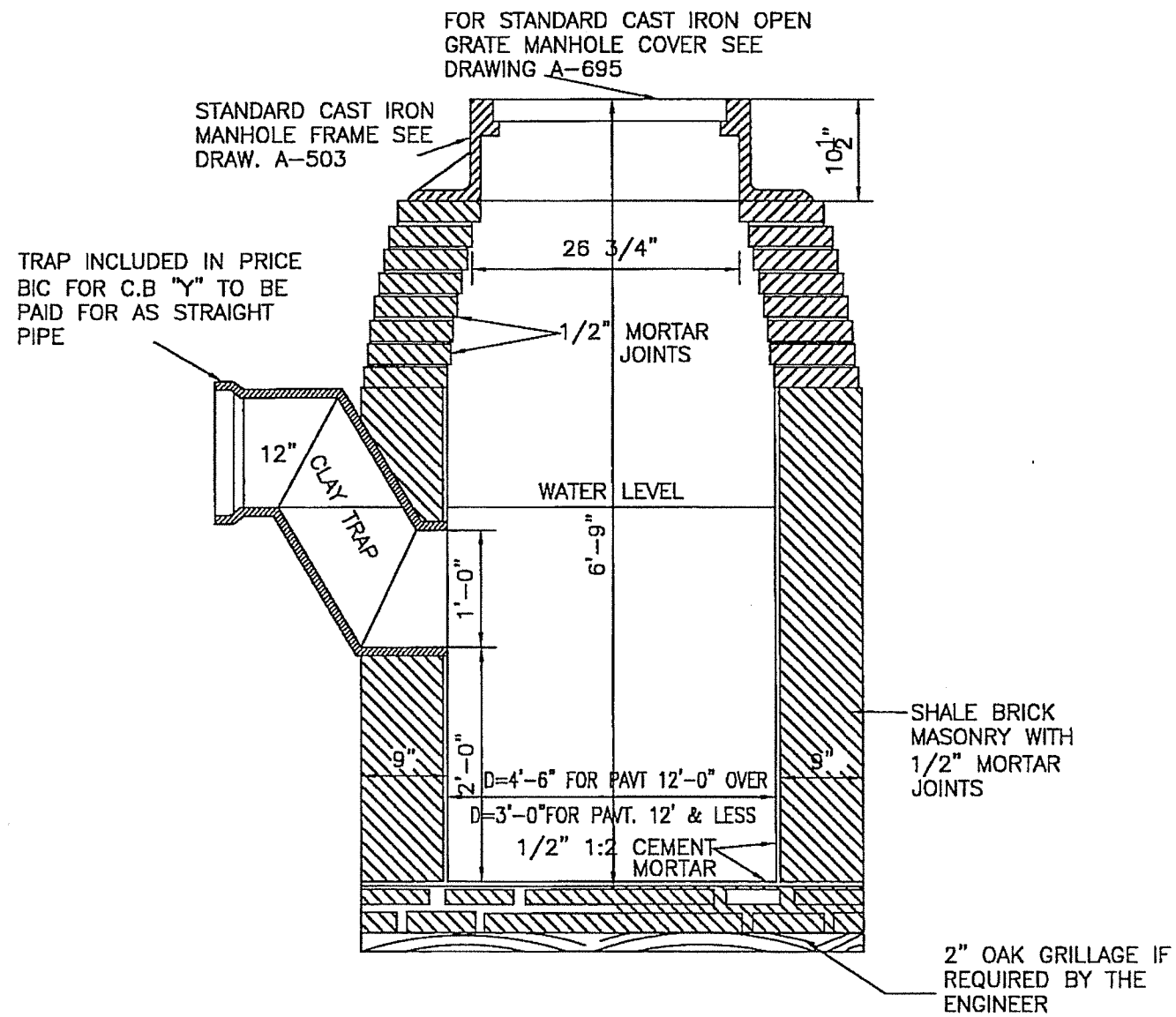
DATE: 7-8-08

COMMISSIONER OF ENGINEERING & CONSTRUCTION

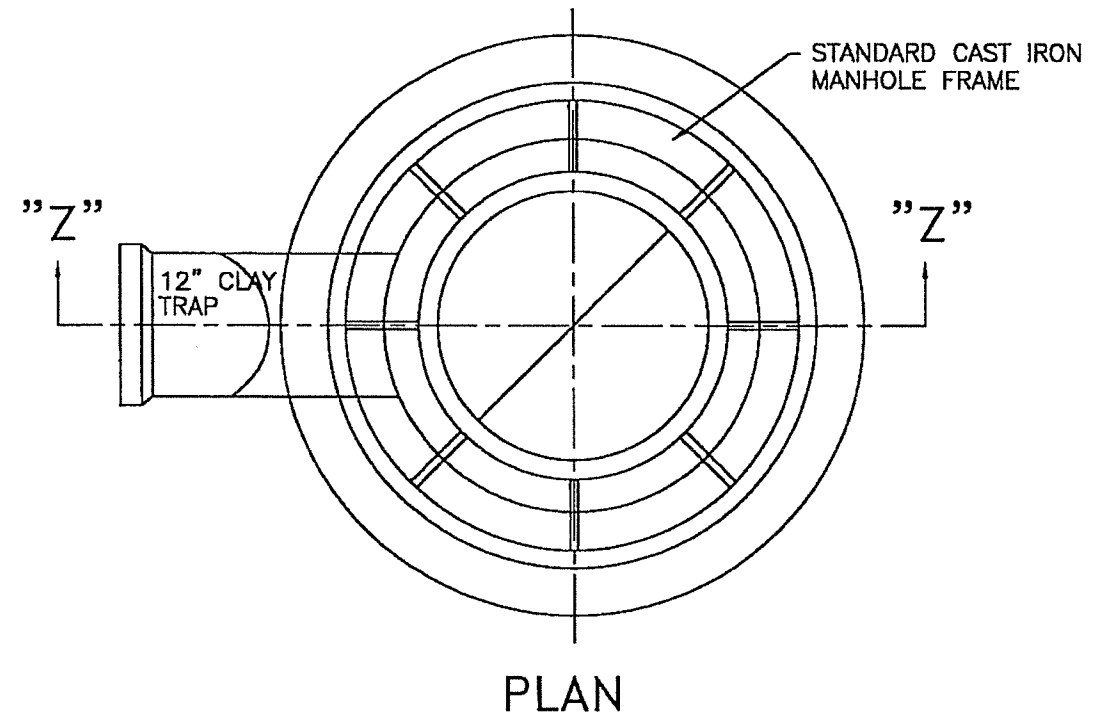
FILE NO. CB 1

SHEET 4/7

29



SECTION "Z-Z"

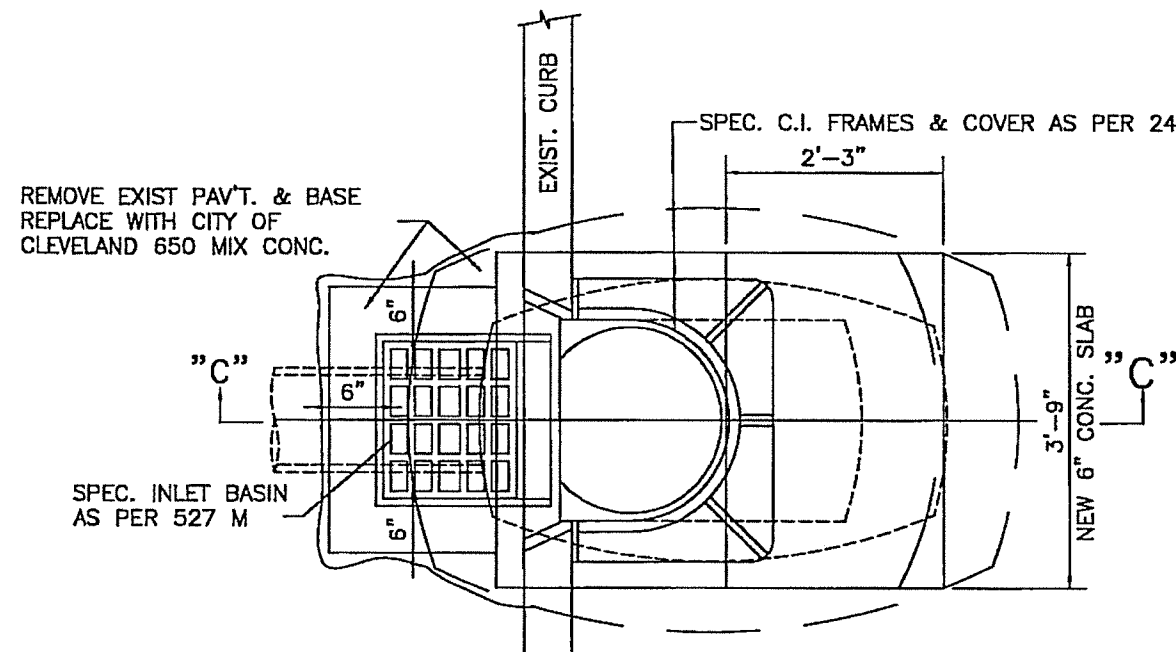


MORTAR SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT (701.04) TO TWO PARTS SAND (SEE 703.03) BY VOLUME.

FOR RECORD ONLY

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE STANDARD PLAN FOR PARK STYLE CATCH BASIN
 NOT TO SCALE
 DRAWN BY: R. PLIODZINSKAS DATE: 8/28/07
 SUBMITTED BY: W. McLAUGHLIN DATE: 8/28/07
 APPROVED: *[Signature]* DATE: 7-8-08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

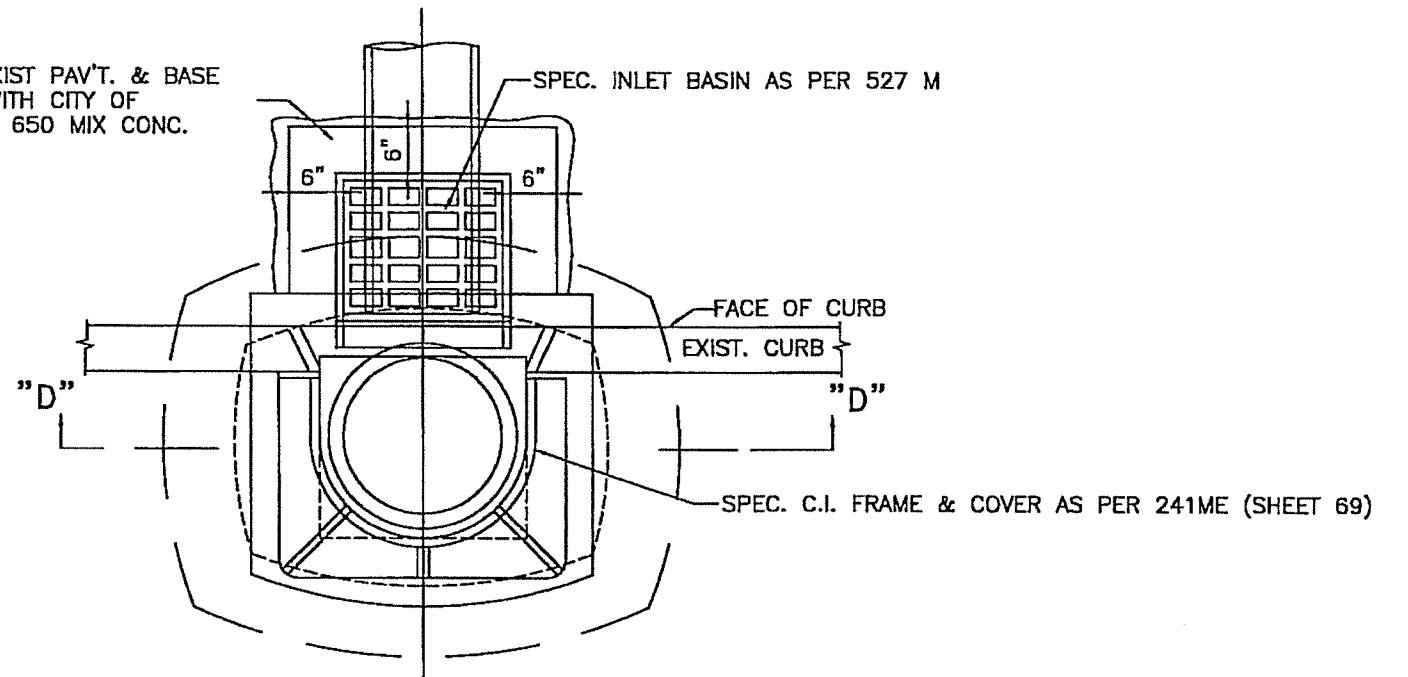
DETAIL "A"



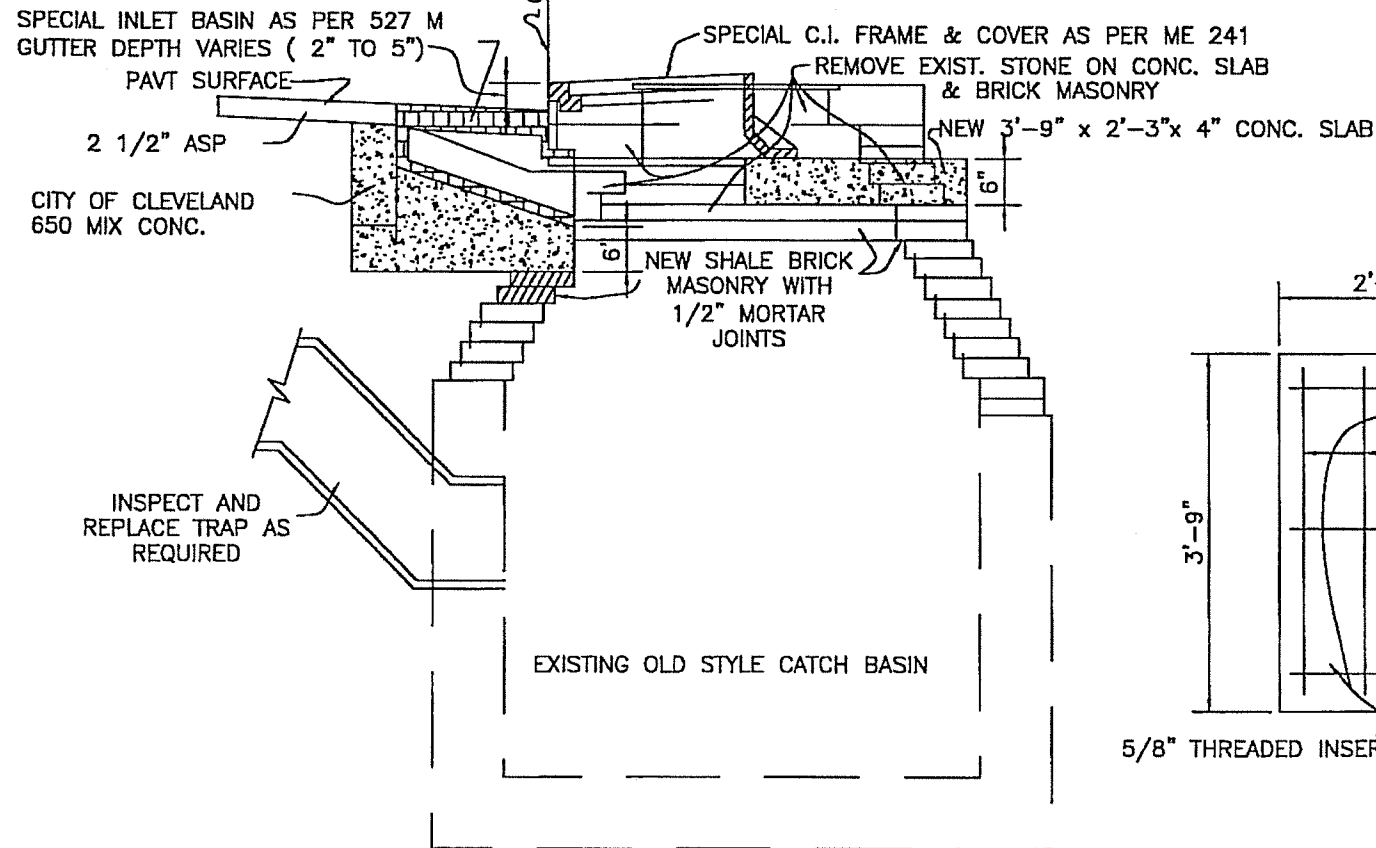
PLAN OF CATCH BASIN WITH SPECIAL INLET

DETAIL "B"

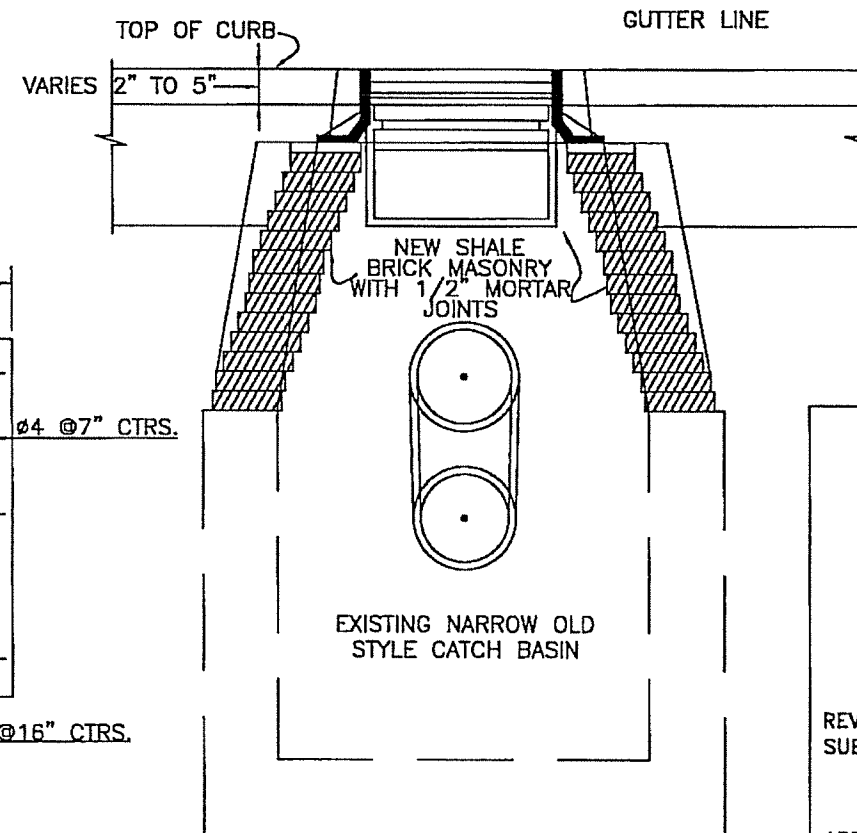
REMOVE EXIST PAV'T. & BASE
REPLACE WITH CITY OF
CLEVELAND 650 MIX CONC.



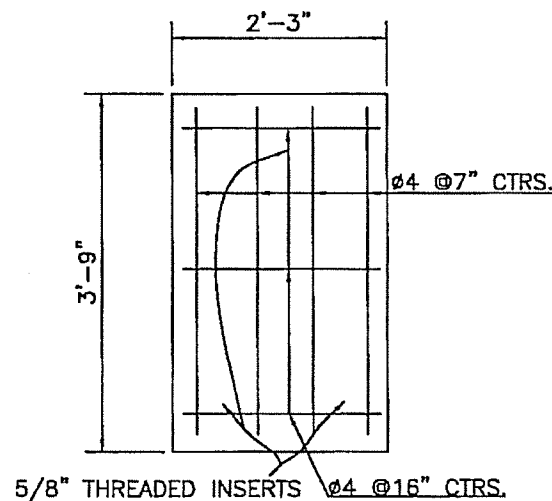
PLAN OF NARROW CATCH BASIN WITH SPECIAL INLET



SECTION "C"- "C"



SECTION "D"- "D"



PLAN OF 6\"/>

MORTAR SHALL BE COMPOSED OF ONE PART
PORTLAND CEMENT (SEC. 701.04) TO TWO
PARTS OF SAND (SEC. 703.03) BY VOLUME.

NOTE: THIS PLAN TO BE USED FOR OLD STYLE
CATCH BASIN RECONSTRUCTION AT LOCATIONS
WITH DEFICIENT DEPTH OF GUTTER

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
PLAN FOR REBUILDING OLD STYLE CATCH BASIN
NOT TO SCALE

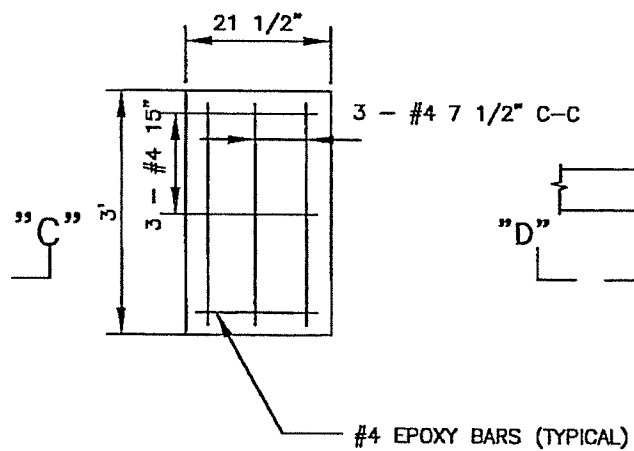
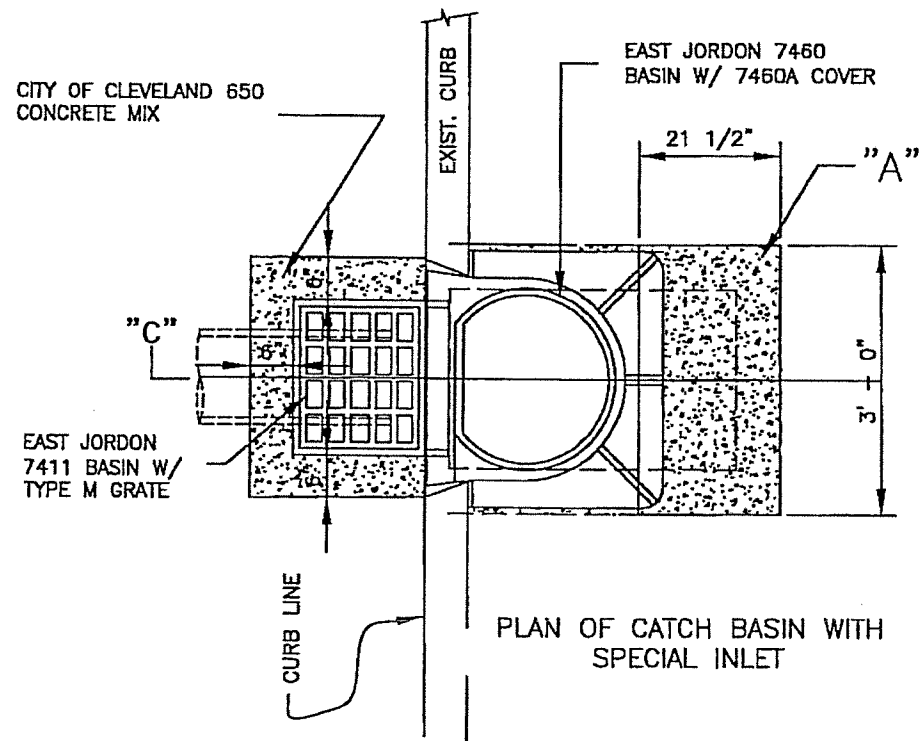
REVISED BY: R. PLIODZINSKAS
SUBMITTED BY: W. MCLAUGHLIN

DATE: 4/8/08
DATE: 4/8/08

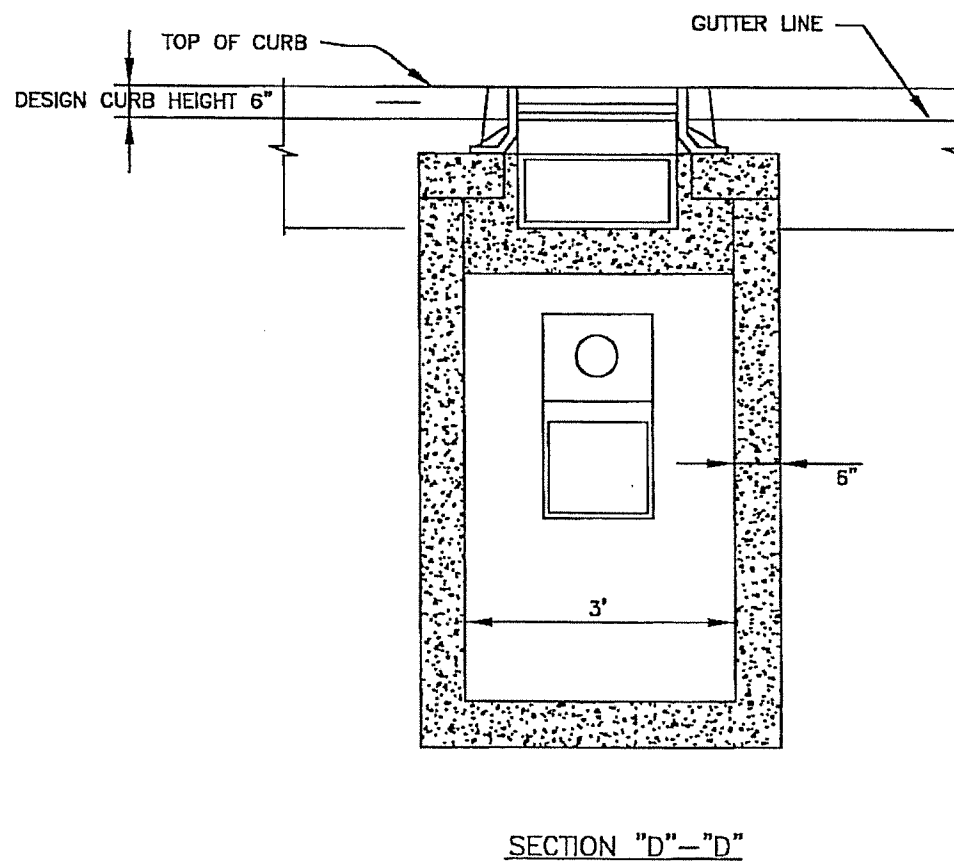
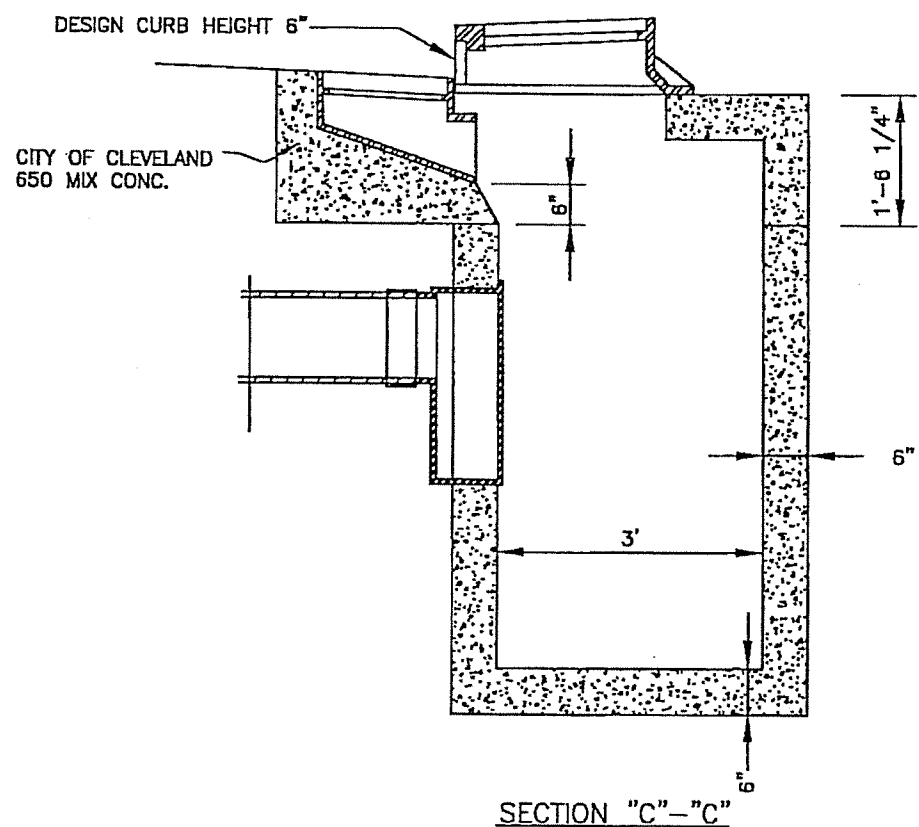
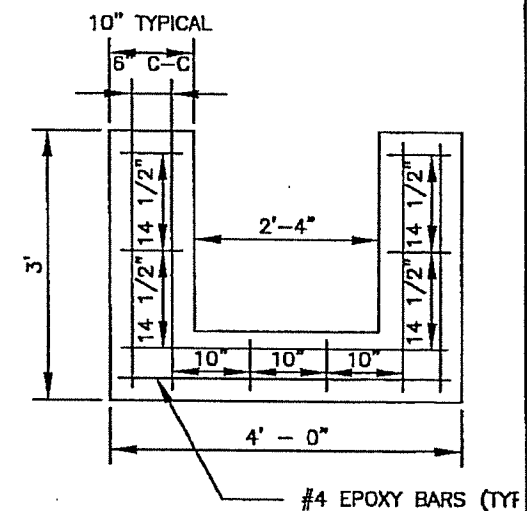
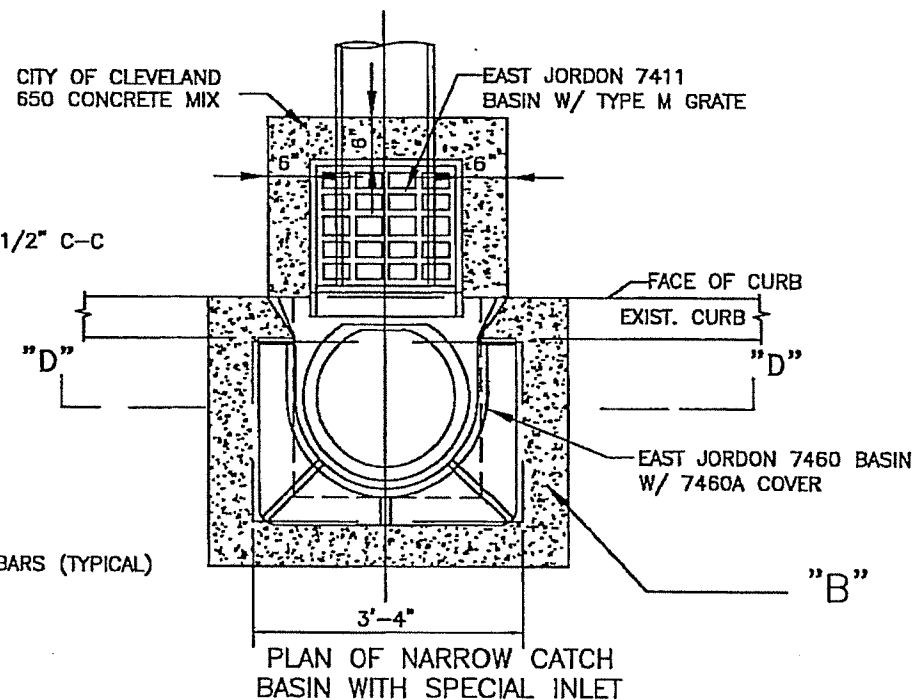
APPROVED: *[Signature]* DATE: 7-8-08

COMMISSIONER OF ENGINEERING & CONSTRUCTION

SETTING METHOD "A"



SETTING METHOD "B"



NOTE: THIS CATCH BASIN TO BE USED FOR CONSTRUCTION AT LOCATIONS WHICH PREVENT THE INSTALLATION OF A CB-1 IN THE ROADWAY, AS DIRECTED BY THE ENGINEER.

CATCH BASIN BASE DIMENSIONS ON DRAWING CB-1, ONLY RECTANGULAR BASIN SHALL BE ALLOWED.

THIS DETAIL FOR STREETS WITH VERTICAL CURB ONLY

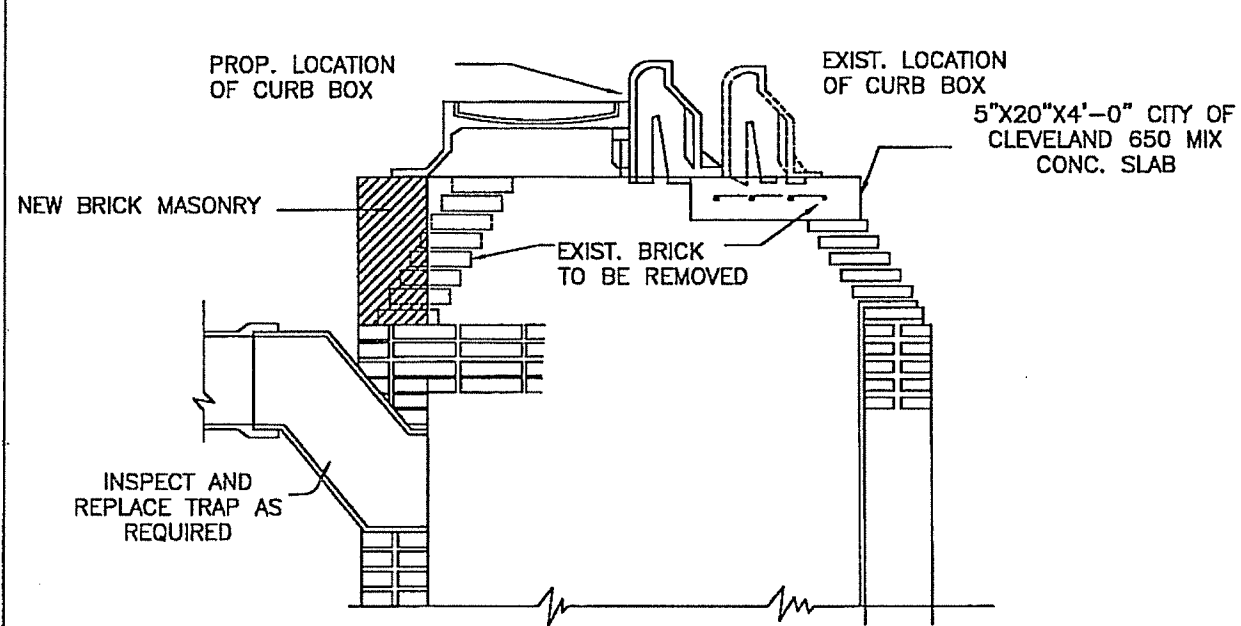
CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 PLAN FOR CATCH BASIN 2
 NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

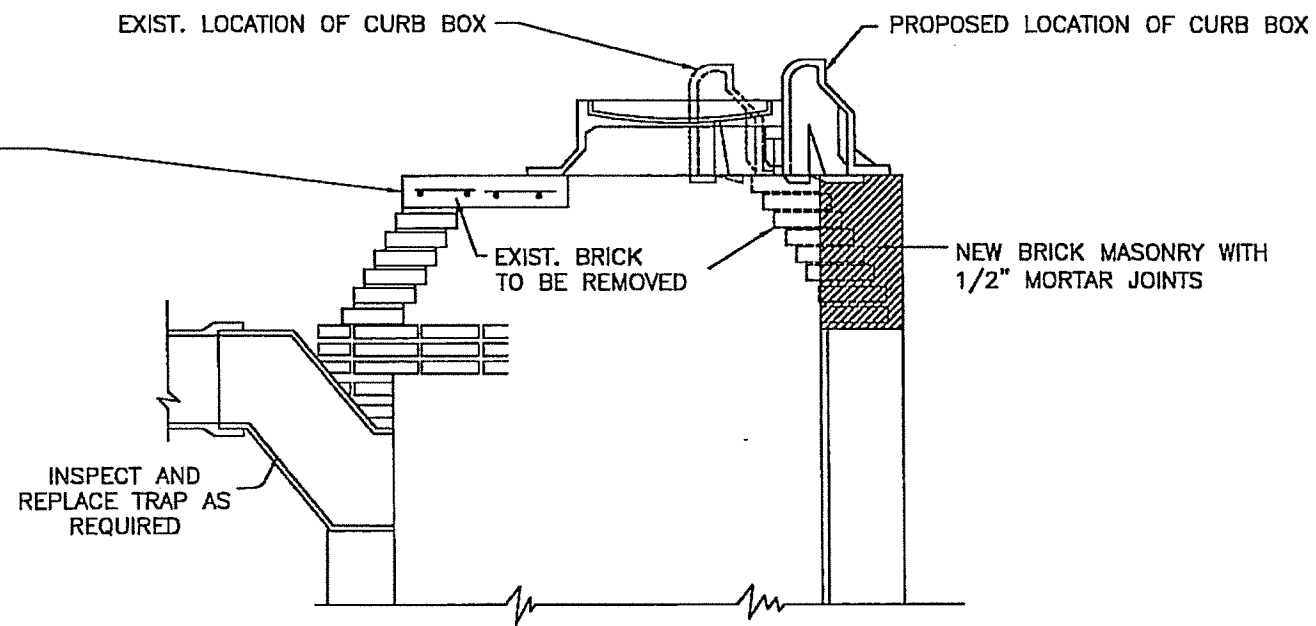
APPROVED: *[Signature]* DATE: 7-8-08

COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB-1 SHEET 6/7 (32)



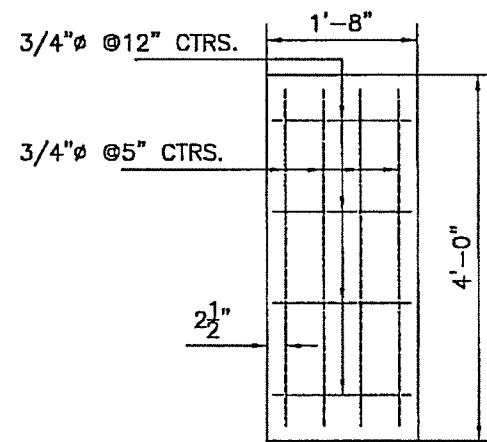
ADJUSTING INWARD
1/2"=1'-0"



ADJUSTED OUTWARD
1/2"=1'-0"

MORTAR SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT (SEC.701.04) TO TWO PARTS SAND (SEC. 703.03) BY VOLUME.

NOTE : CATCH BASINS SPECIFIED TO BE ADJUSTED TO LINE AND GRADE SHALL INCLUDE REBUILDING BRICKWORK AND MOVING CASTING NOT TO EXCEED ONE FOOT.



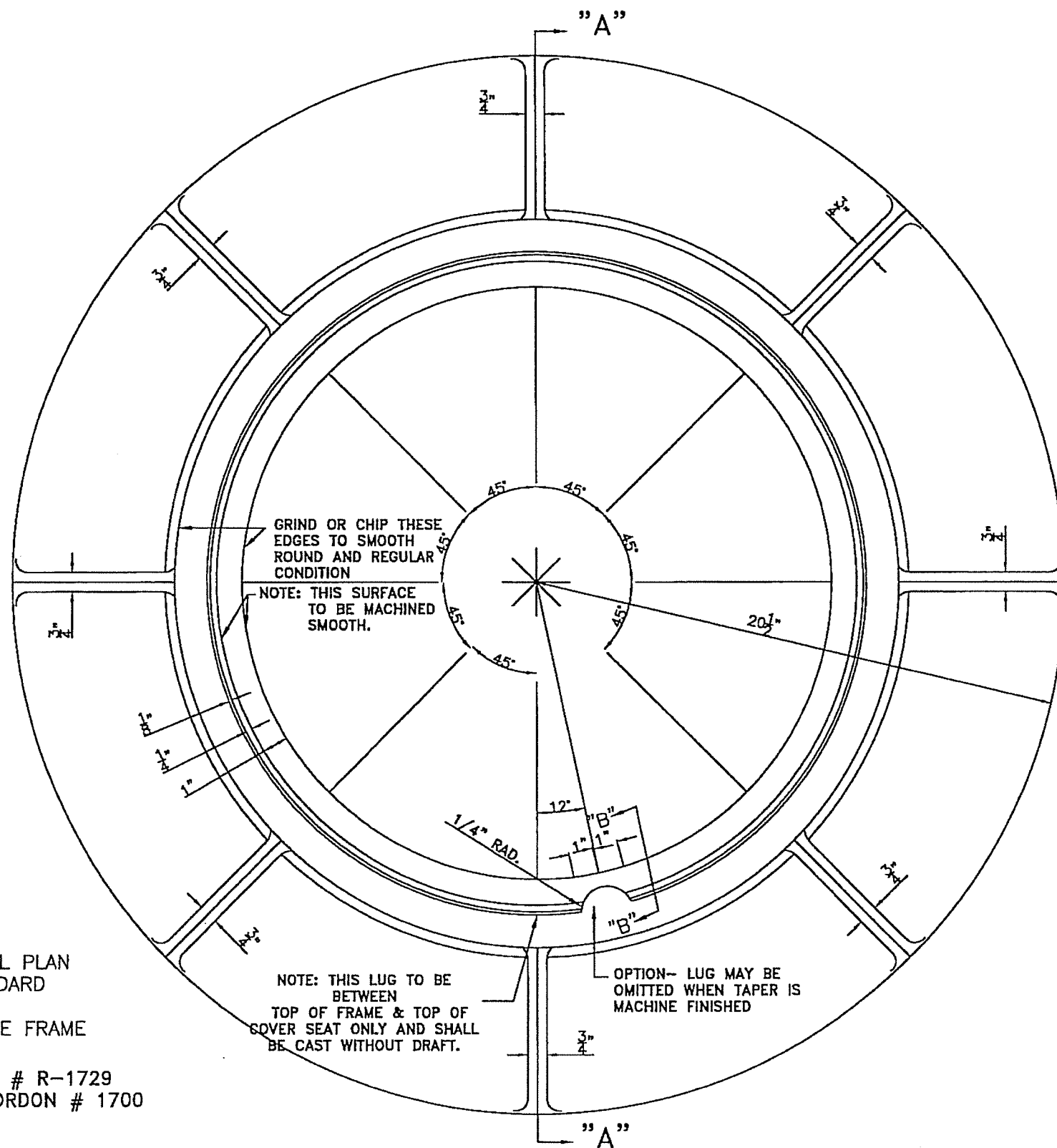
DETAILS OF CONC. SLAB
1/2"=1'-0"

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK—DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 DETAIL PLAN FOR CATCH BASINS
 ADJUSTED TO LINE & GRADE
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
 APPROVED: *[Signature]* DATE: 7-8-08

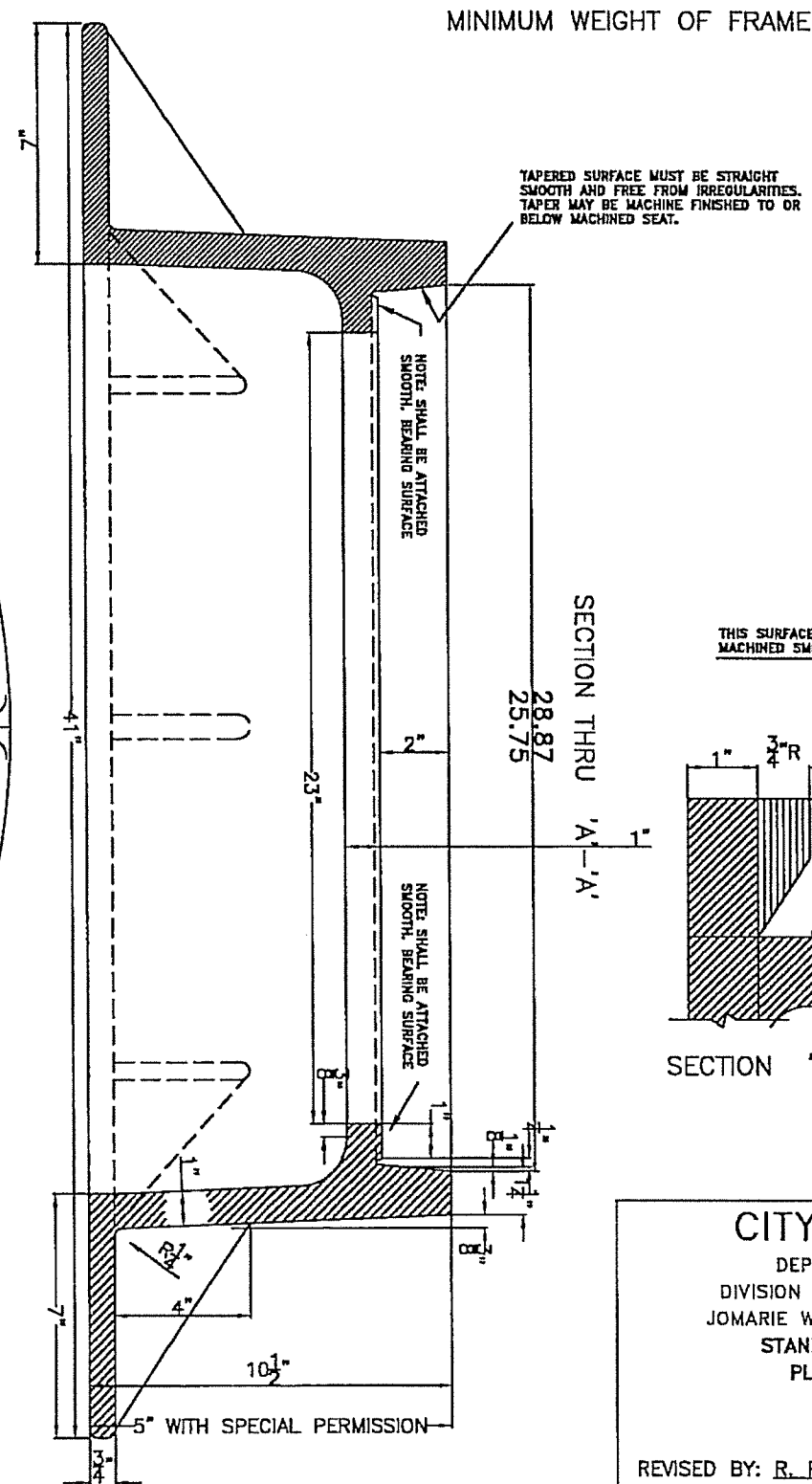
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1	SHEET 7/7	33
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DETAIL PLAN
STANDARD
MANHOLE FRAME
NEENAH # R-1729
EAST JORDON # 1700

EXCEPT WHERE LIMITS ARE NOTED - A CASTING VARIATION OF 1/8" PER FOOT PERMITTED

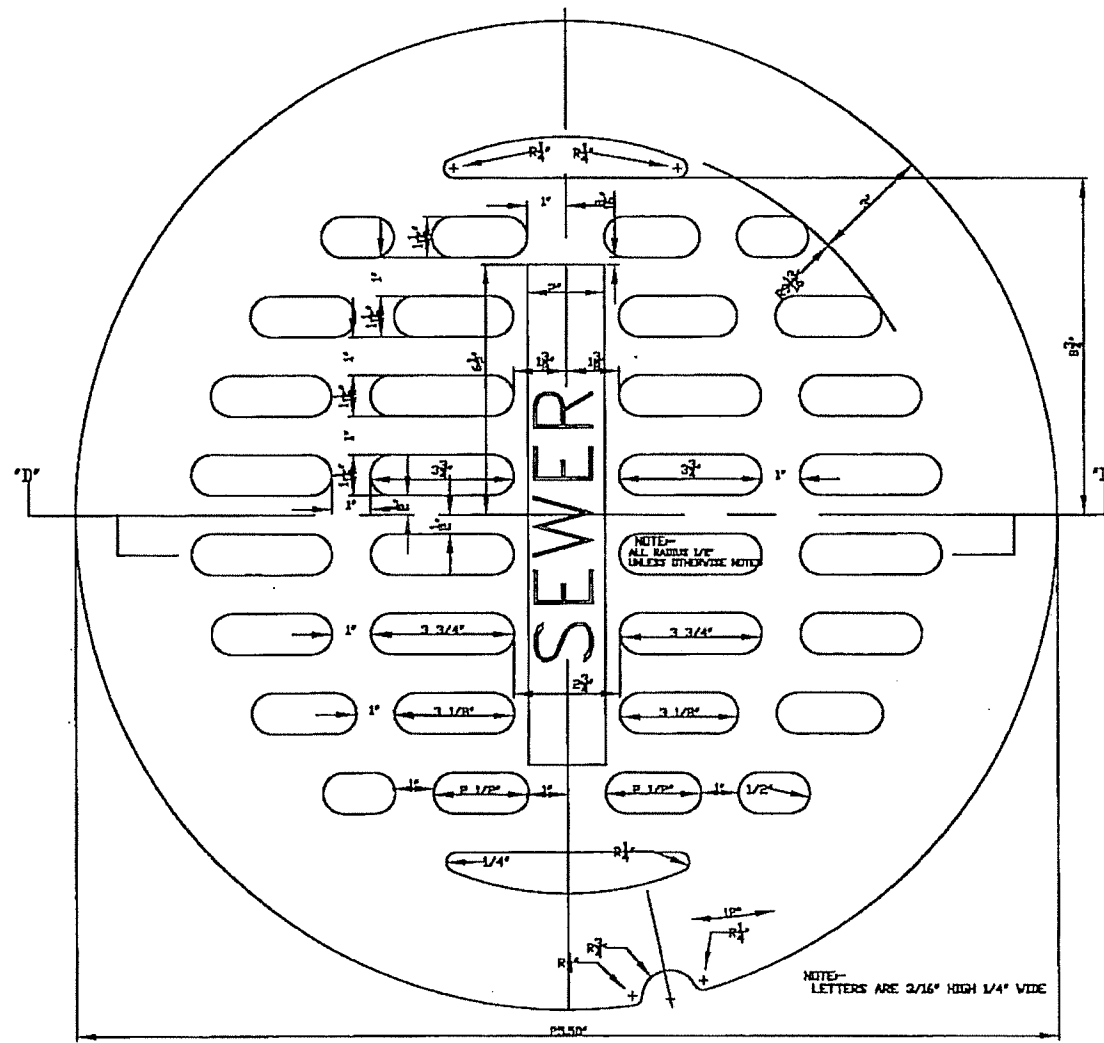


CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
PLAN FOR STANDARD MANHOLE
FRAME CAST IRON
NOT TO SCALE

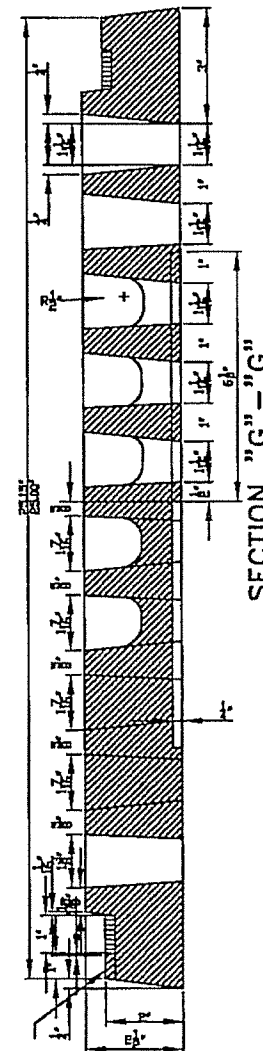
REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: *[Signature]* DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. A-503

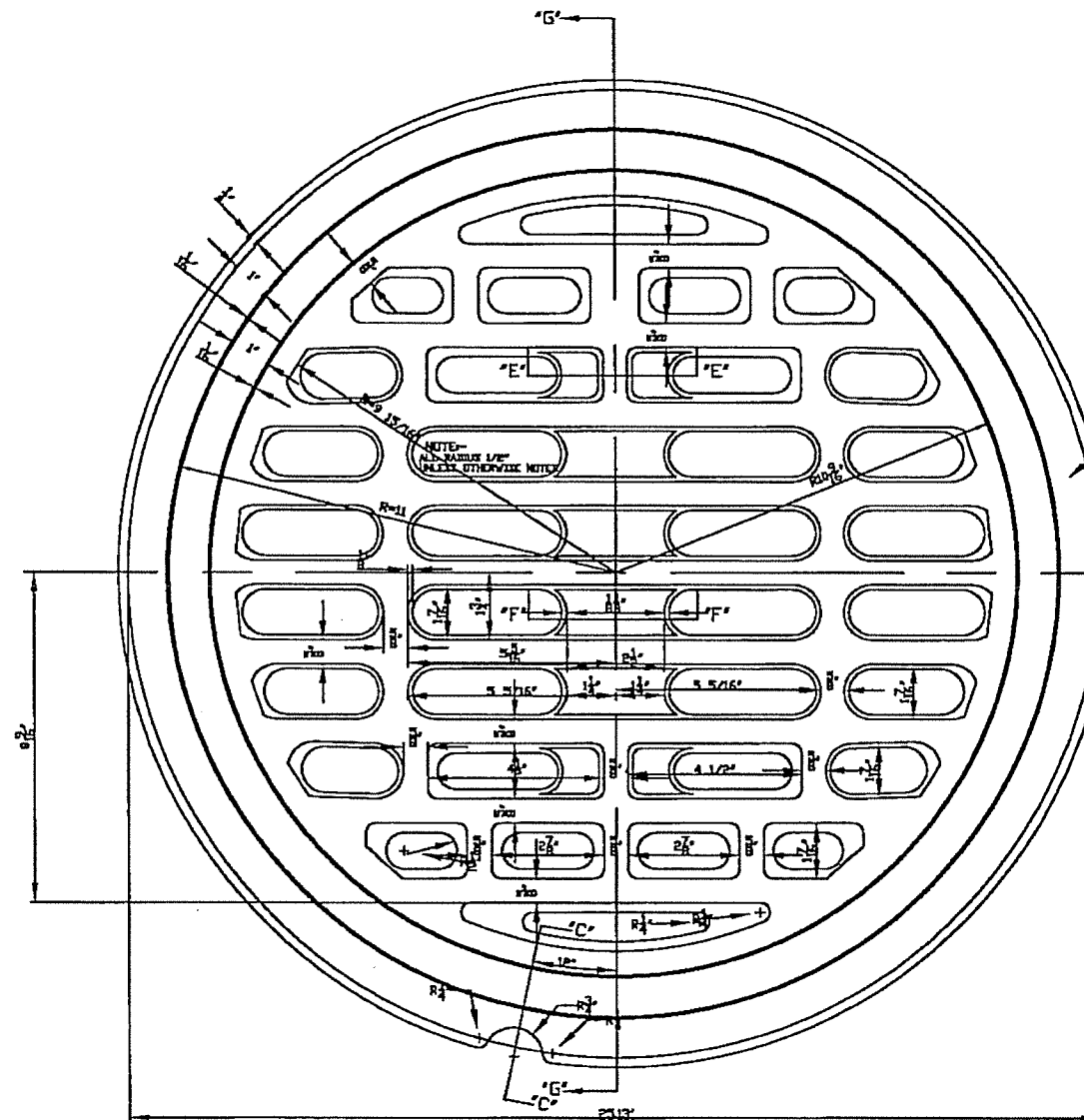
MINIMUM WEIGHT OF COVER - 190 POUNDS



PLAN OF TOP

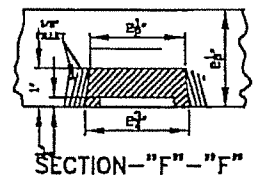


SECTION "G"-"G"

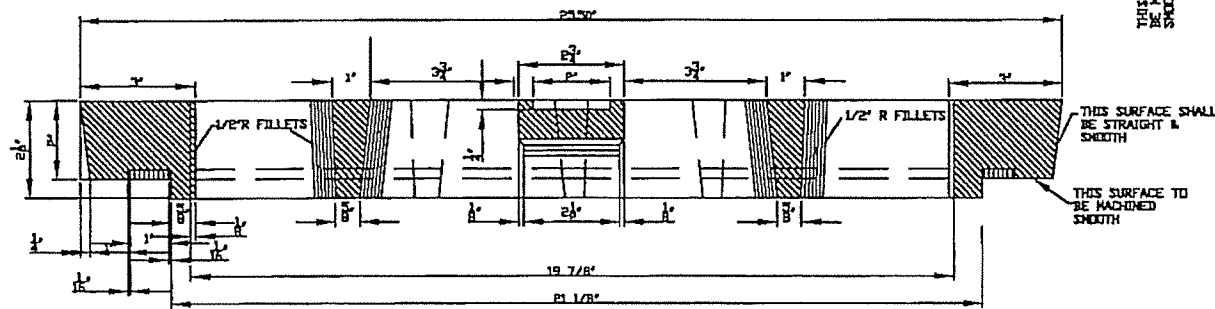


PLAN OF BOTTOM

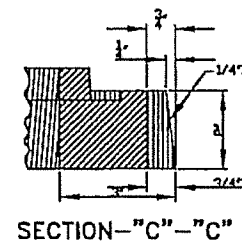
THIS SURFACE TO BE MACHINED SMOOTH



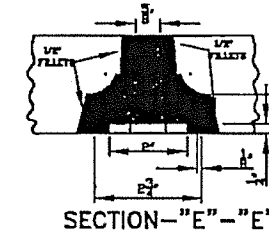
SECTION-"F"-"F"



SECTION "D"-"D"



SECTION-"C"-"C"



SECTION-"E"-"E"

FRAME COVER
EAST JORDON # 1700 TYPE 'M' FLAT COVER

EXCEPT WHERE LIMITS ARE NOTED-A
CASTING VARIATION ON 1/8" PER FOOT
PERMITTED

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD CAST IRON MANHOLE COVER
NOT TO SCALE

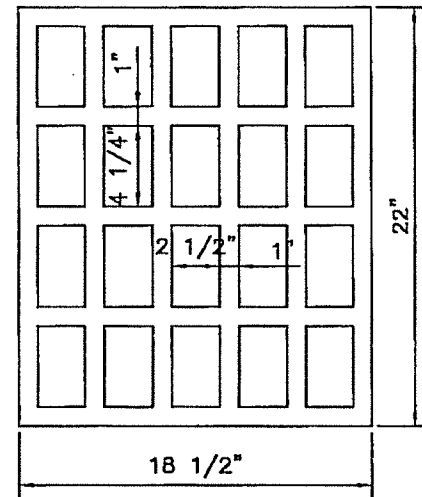
REVISED BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. McLAUGHLIN DATE: 4/8/08

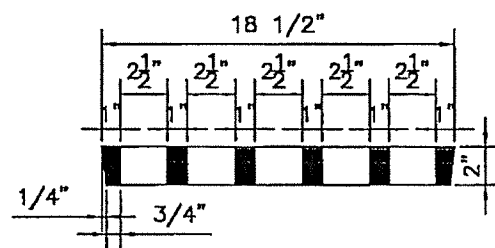
APPROVED: [Signature] DATE: 7-8-08

COMMISSIONER OF ENGINEERING & CONSTRUCTION

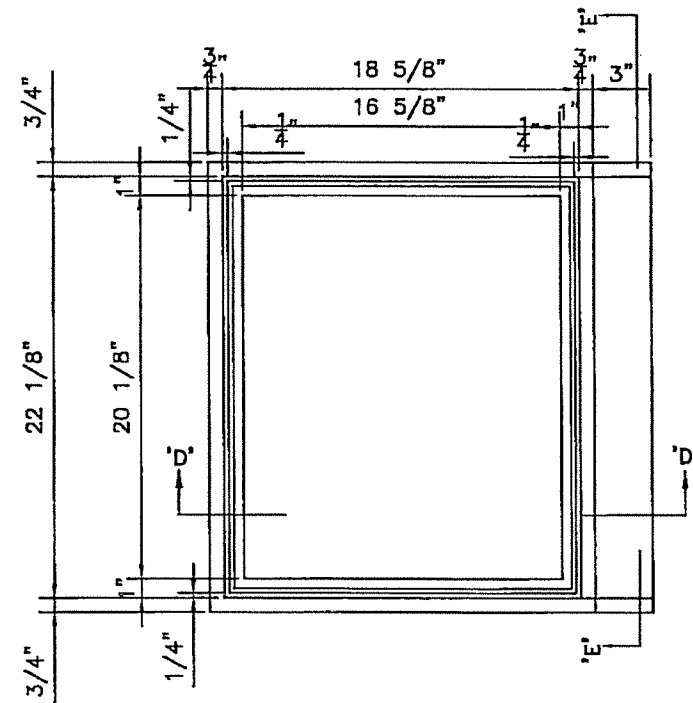
FILE NO. A-695



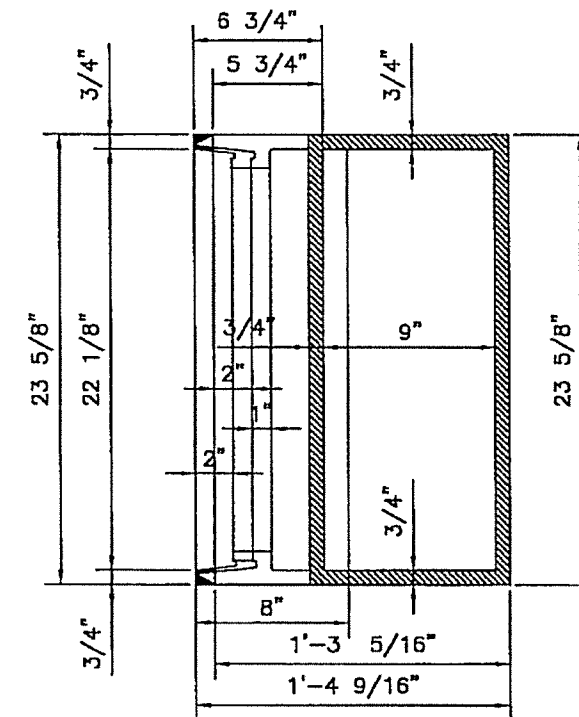
PLAN OF GRATE



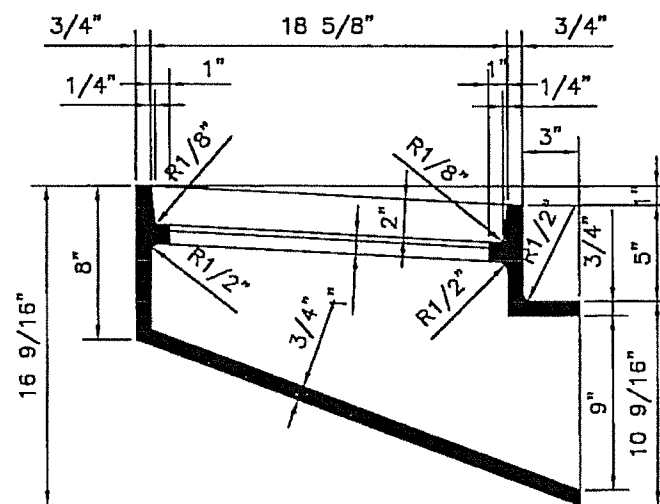
SECTION 'C'-'C'



PLAN OF INLET BASIN



SECTION 'E'-'E'



SECTION 'D'-'D'

MINIMUM WEIGHT OF GRATE - 90 POUNDS
MINIMUM WEIGHT OF FRAME - 330 POUNDS

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
DETAIL PLAN FOR SPECIAL
CAST IRON INLET BASIN
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08

SUBMITTED BY: W. McLAUGHLIN DATE: 4/8/08

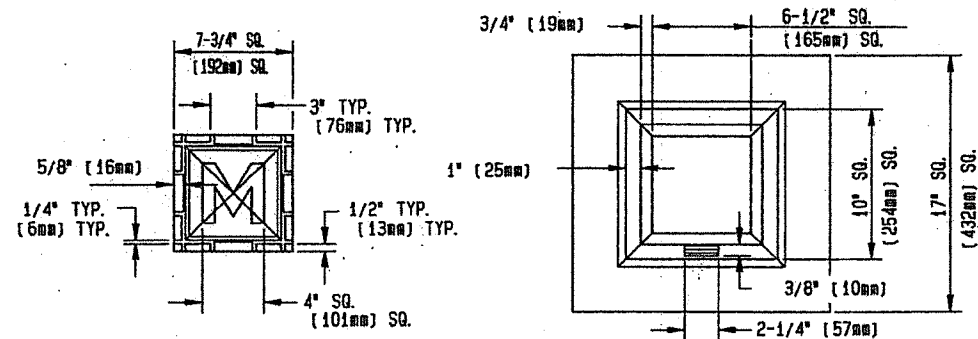
APPROVED: *[Signature]* DATE: 7-9-08

COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1

37

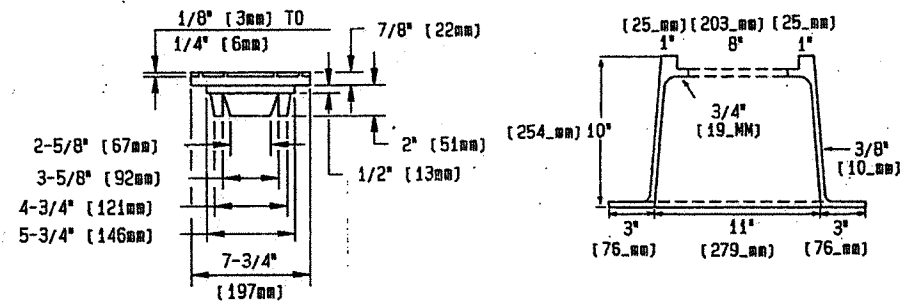
EAST JORDON IRON WORKS
CATCH BASIN CURB INLET # 7411
GRATE # 7411M



PLAN OF COVER

PLAN OF FRAME

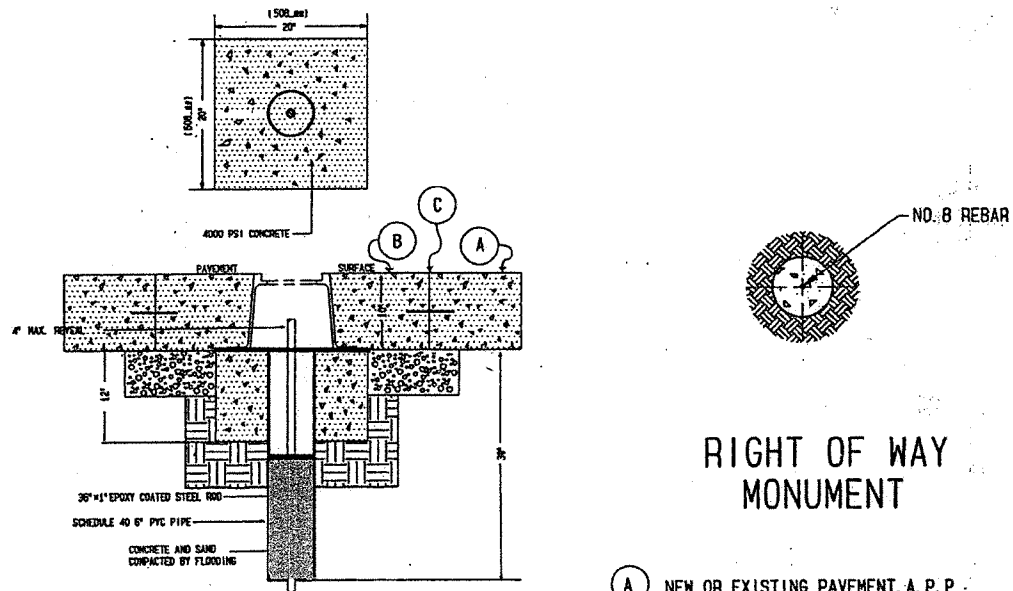
(22_MM)



SIDE VIEW OF COVER

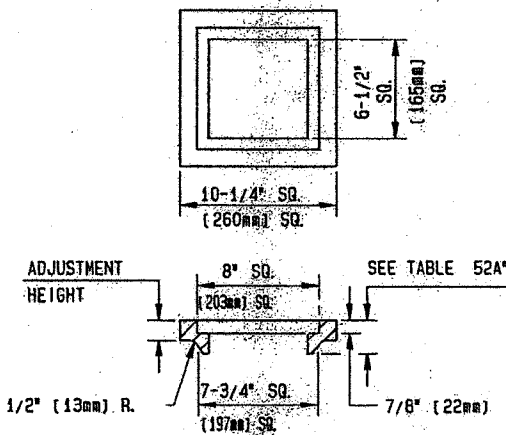
SECTION OF FRAME

MONUMENT ASSEMBLY SECTION



RIGHT OF WAY MONUMENT

- (A) NEW OR EXISTING PAVEMENT, A.P.P.
- (B) NEW 3" ASPHALT OVER 7" CONCRETE OR 10" CONCRETE AS DETERMINED BY THE ABUTTING PAVEMENT.
- (C) 4" GUTTER SEAL AS PER ODOT 404.13 FOR ASPHALT SURFACES OR JOINT SEALER AS PER ODOT 451.13 FOR CONCRETE SURFACE DO NOT SEAL THE COVER TO FRAME



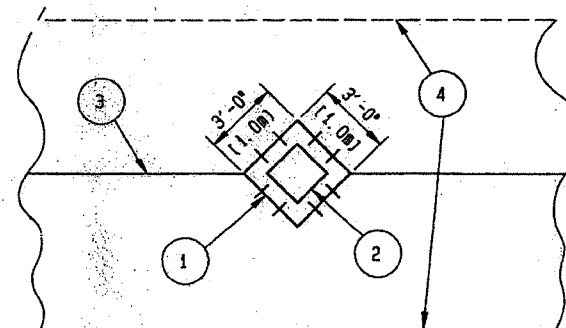
ADJUSTING RING

* SEE NOTE BELOW

NOTE: ADJUSTING RING IS TO BE TACK WELDED TO THE FRAME BY AT LEAST TWO (2) POINTS OF AN APPROVED METHOD.

ADJUSTMENT HEIGHT	DIMENSION 52A*	MINIMUM WEIGHTS
1-1/8" (29mm)	2" (51mm)	14-LBS. (6.4kg)
1-1/2" (38mm)	2-3/8" (60mm)	20-LBS. (9.1kg)
2-1/2" (64mm)	3-3/8" (86mm)	27-LBS. (12.2kg)
3" (76mm)	3-7/8" (98mm)	30-LBS. (13.6kg)
3-1/2" (89mm)	4-3/8" (111mm)	32-LBS. (14.5kg)

* NOTE: USE OF ADJUSTING RING(S) MUST BE APPROVED BY THE CITY SURVEY SECTION.



- (1) MONUMENT ASSEMBLY BLOCK OUT OR FULL DEPTH SAW CUT CONSTRUCTION JOINT. 1/2" x 12" (305mm) LONG 1-1/4" (32mm) DIA. DOWELS. (BY CONTRACTOR), MAY BE OMITTED IF THE EXISTING CONCRETE BASE, IF ANY IS LESS THAN 6" IN THICKNESS.
- (2) MONUMENT BOX (BY CONTRACTOR)
- (3) TYPICAL LONGITUDINAL JOINT
- (4) NEW CONCRETE OR ASPHALT OVER CONCRETE PAVEMENT, OR EXISTING PAVEMENT.

TYPICAL BLOCK OUT IN NEW RIGID PAVEMENT, OR MINIMUM FULL DEPTH SAW CUT IN EXISTING PAVEMENT.

NOTES

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604.02-711.12, A.S.T.M. A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON.
 THE ASSEMBLY SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON.

MINIMUM WEIGHTS:

FRAME..... 94 LBS. (42.6 kg)
 COVER..... 16 LBS. (7.3 kg)

PROVIDED THEY COMPLY WITH THE SPECIFICATIONS, DETAILS, DIMENSIONS AND MINIMUM WEIGHTS, EAST JORDAN NO. 8360 OR APPROVED EQUAL CASTINGS ARE ACCEPTABLE.

BEARING AREAS SHALL BE FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTION SHALL EXIST ON THE BEARING AREAS AND THE COVER SHALL SEAT IN ITS FRAME WITHOUT ROCKING.

PRIOR TO CONSTRUCTION OF PAVEMENT, THE FRAME SHALL BE SET TO GRADE IN SUCH A MANNER THAT WILL PREVENT ANY PAVEMENT MATERIAL FROM ENTERING THE CASTING.

CONTACT CITY OF CLEVELAND SURVEY DEPT. AT (216) 664-2460 AT LEAST TWO (2) WEEKS PRIOR TO THE DISTURBANCE OF ANY EXISTING MONUMENTS.

ALL MONUMENTS ARE TO BE SET UNDER THE DIRECTION OF A REGISTERED SURVEYOR. (REF. O.A.C. 4733-37-03)

WHERE CLEVELAND REGIONAL GEODETIC SURVEY (C.R.G.S.) MONUMENT ASSEMBLIES ARE MARKED ON THE PLANS TO BE ABANDONED, THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE THE MONUMENT CASTINGS AND BRONZE C.R.G.S. MARKERS FOR SALVAGE BY THE COUNTY. THE CONTRACTOR SHALL ALSO NOTIFY THE REGIONAL GEODETIC SURVEY OFFICE AT (216) 348-3846, SO THAT THE MONUMENT CASTINGS AND BRONZE C.R.G.S. MARKERS MAY BE PICKED UP. PAYMENT SHALL BE MADE UNDER ITEM 202-MONUMENT ASSEMBLY ABANDONED, C.R.G.S. MONUMENT.

- ITEM 202- MONUMENT ASSEMBLY ABANDONED, C.R.G.S. MONUMENT
- ITEM 604- CITY OF CLEVELAND MONUMENT BOX
- ITEM 604- CITY OF CLEVELAND ROADWAY MONUMENT ASSEMBLY
- ITEM 604- CITY OF CLEVELAND RIGHT OF WAY MONUMENT
- ITEM 604- MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN (ONLY WHEN EXISTING MONUMENT BOX CONFORMS TO MB-1C AND IS SUITABLE FOR REUSE)

- LEGEND
- [Pattern] CONCRETE, 4000P.S.I. AS PER CONCRETE MIX
 - [Pattern] SAND (703.02), COMPACTED AS REQUIRED
 - [Pattern] SUBBASE/AGGREGATE BASE PER THE PLANS. (6" MINIMUM; INCREASE, IF REQUIRED, TO MATCH THE BOTTOM OF THE NEW OR EXISTING SUBBASE)
 - [Pattern] UNDISTURBED EARTH OR SUITABLE BACKFILL AND FIRM FOUNDATION IN ACCORDANCE WITH 604.04 AND TO THE SATISFACTION OF THE ENGINEER.

CITY OF CLEVELAND

MONUMENT BOX & ASSEMBLIES

STANDARD CONSTRUCTION DRAWING

MB-1C

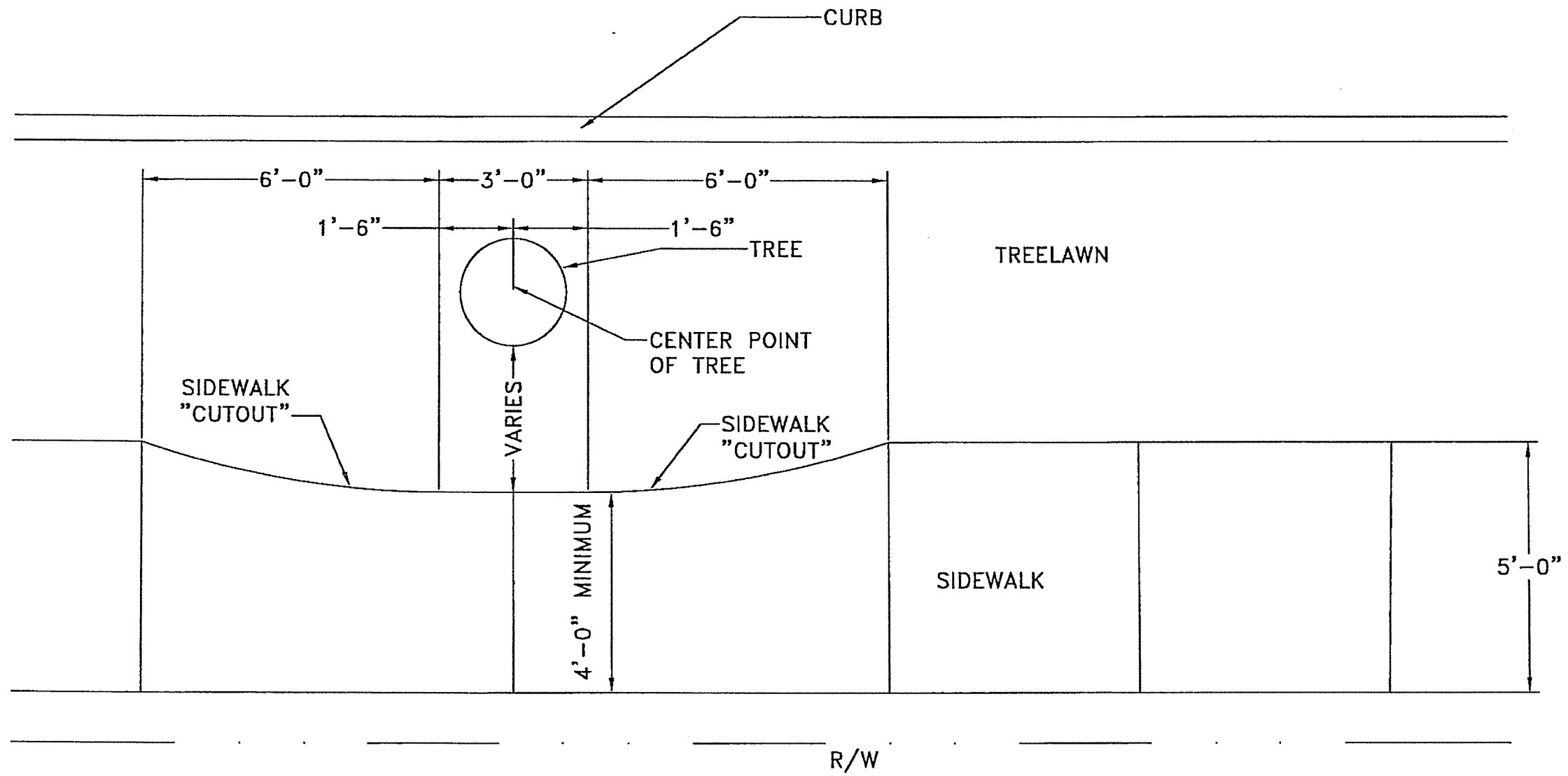
APPROVED: GJE DATE: 10-15-14

REVISIONS
 UPDATED:
 01/05/11

UPDATED:
 10/15/14

(38)

Note: All NEW SURVEY MONUMENT ASSEMBLIES MUST BE APPROVED BY THE CITY OF CLEVELAND'S SURVEY SECTION. MUST BE LAYED OUT AND REFERENCED BY A PROFESSIONAL LAND SURVEYOR LICENSED TO PRACTICE IN THE STATE OF OHIO. THE FOLLOWING PROCEDURE MUST BE USED FOR THE INSTALLATION/CONSTRUCTION OF ALL SURVEY MONUMENT ASSEMBLIES. 01.) USE REFERENCES PROVIDED BY SURVEYOR TO POSITION 6" X 30" P.V.C. (BE SURE P.V.C IS PLUM), 02.) FILL P.V.C. HALF WAY W/SAND., 03.) SECURE P.V.C. WITH A 20" X 20" X 12" CONCRETE PAD (P.V.C MUST BE FLUSH W/CONC. PAD). P.V.C AND CONC. PAD MUST BE SET AT THE APPROPRIATE DEPTH BELOW FINISH GRADE SO THAT THE MON. BOX/CASTING RESTS ON TOP OF CONC. PAD., 04.) COVER P.V.C & CONC. PAD WITH VISQUEEN/PLASTIC BOND BREAKER., 05.) AFTER CONC. HAS SET, CENTER MON. BOX/CASTING OVER P.V.C., 06.) MON. BOX/CASTING MUST BE SECURED WITH A 3" X 3" CONC. PAD (DEPTH BELOW FINISHED GRADE TO BE DETERMINED BY THE DEPTH OF PAVEMENT., 07.) SET 5/8" X 36" EPOXY COATED IRON PIN (REBAR) USING REFERENCES PROVIDED BY SURVEYOR (BE SURE I.P. IS PLUM AND EXTENDS OUT OF P.V.C. AT LEAST 1" AND NO MORE THAN 3"), 08.) BACKFILL P.V.C. W/QUICKCRETE., 09.) I.P.S. TO BE SET BY THE CITY OF CLEVELAND'S SURVEY SECTION WHEN POSSIBLE, AND WILL BE DETERMINED BASED ON THE SCOPE & SIZE OF THE PROJECT, BEFORE CONTRACT IS AWARDED. FINAL NOTE: CONTRATORS ARE RESPONSIBLE FOR SUPPLYING ALL MATERIALS (INCLUDING I.P.S & QUICKCREET)



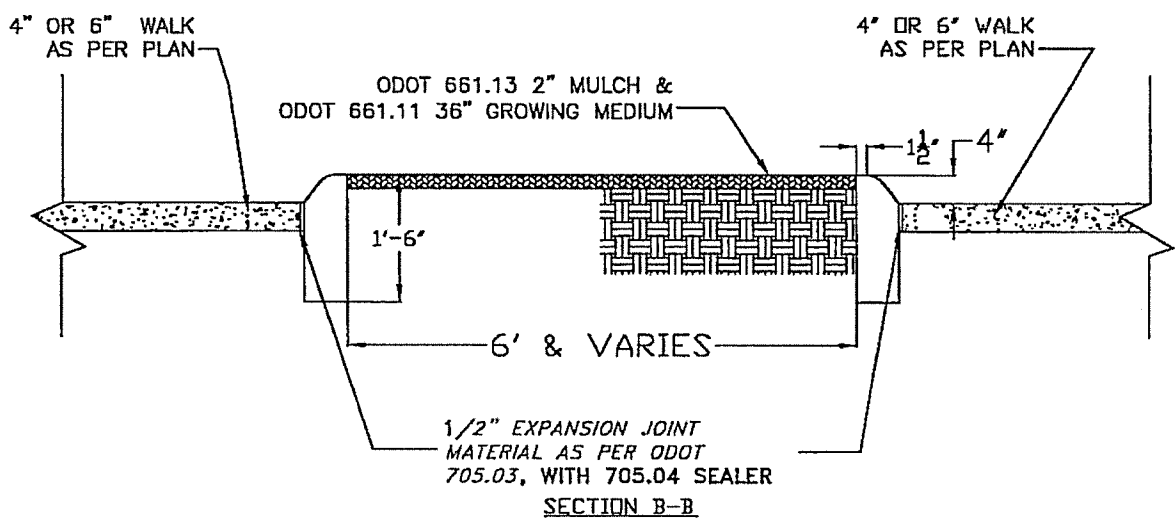
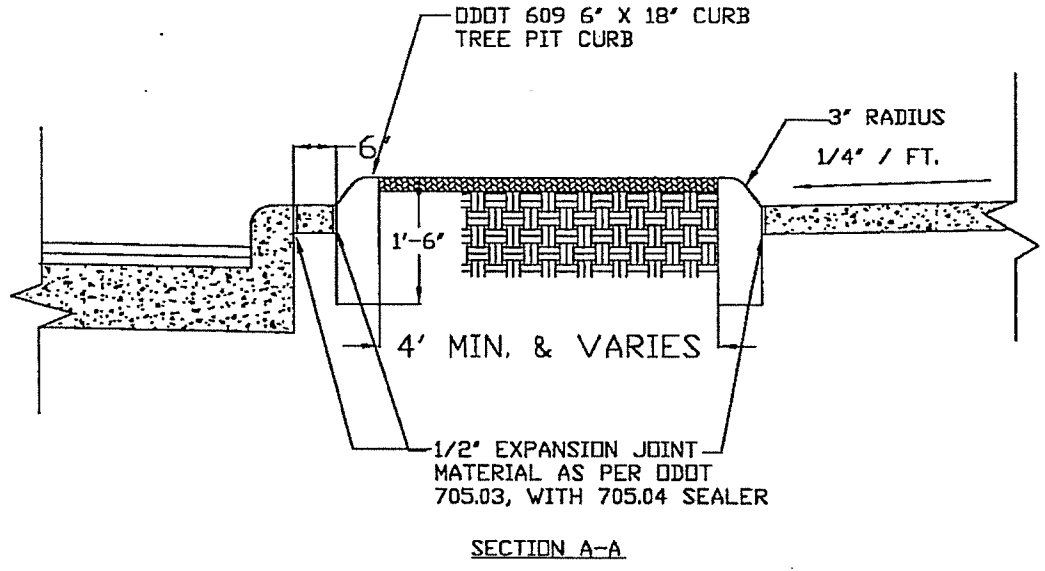
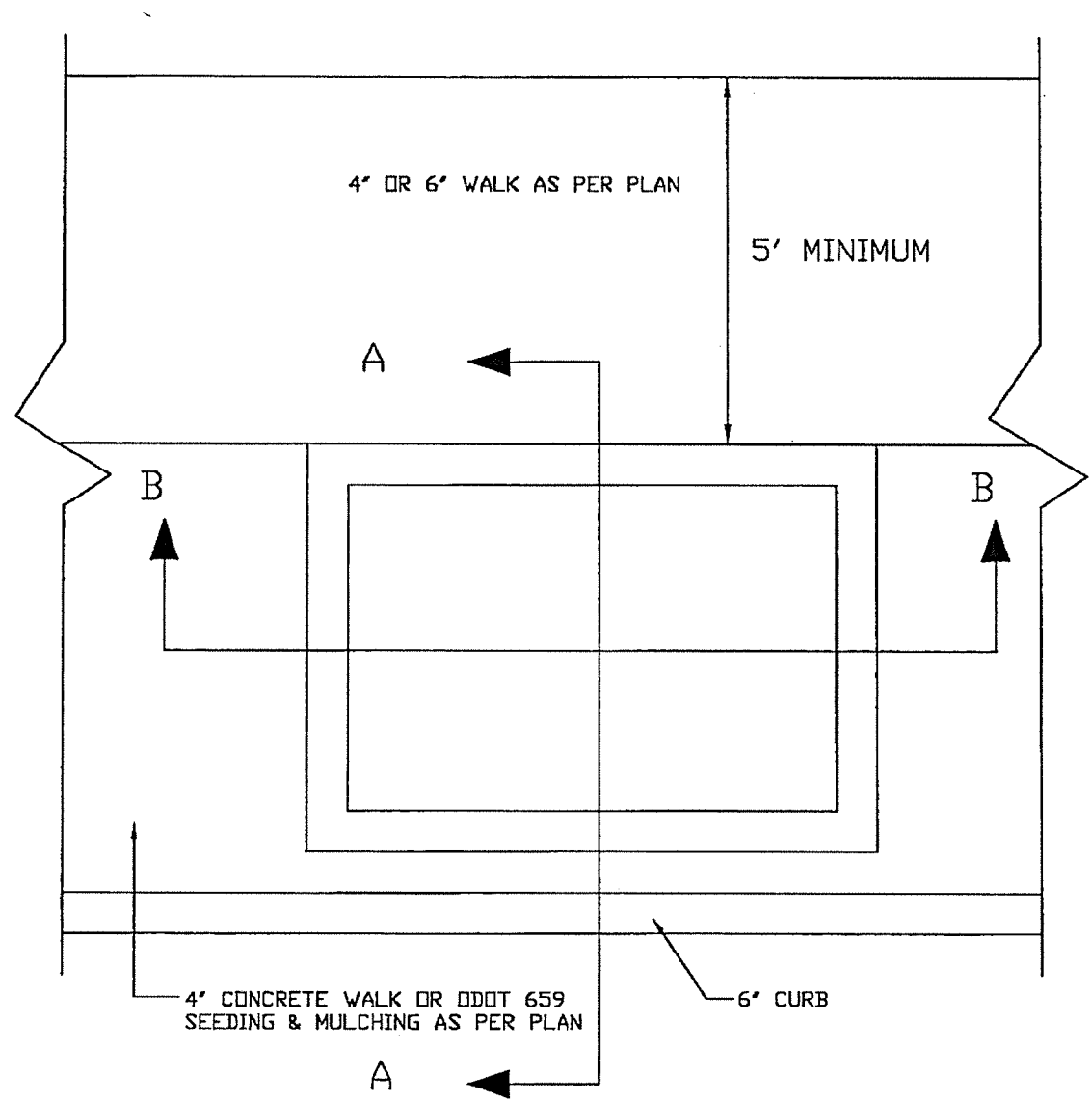
NOTES:
 THIS DETAIL IS TO BE USED ONLY AT THE DIRECTION OF THE ENGINEER WITH
 CONSULTATION WITH THE DIVISION OF URBAN FORESTRY.

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK—DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 TYPICAL CONSTRUCTION DETAIL
 SIDEWALK TREE BUMPOUT
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. TP 1 | SHEET 1/2 | (39)



NOTE:
 1 - 6" THICK SIDEWALK IN BUSINESS DISTRICTS
 2 - CONTRACTOR SHALL OBTAIN APPROVAL FROM THE DIVISION OF URBAN FORESTRY FOR SPACING REQUIREMENTS AND TREE SPECIES.
 3 -

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC SERVICE
 DIVISION OF ENGINEERING & CONSTRUCTION
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
 STANDARD CONSTRUCTION DRAWING
 TREE PIT
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *Russell* DATE: 4/14/08
 COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. TP 1	SHEET 2/2	40
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