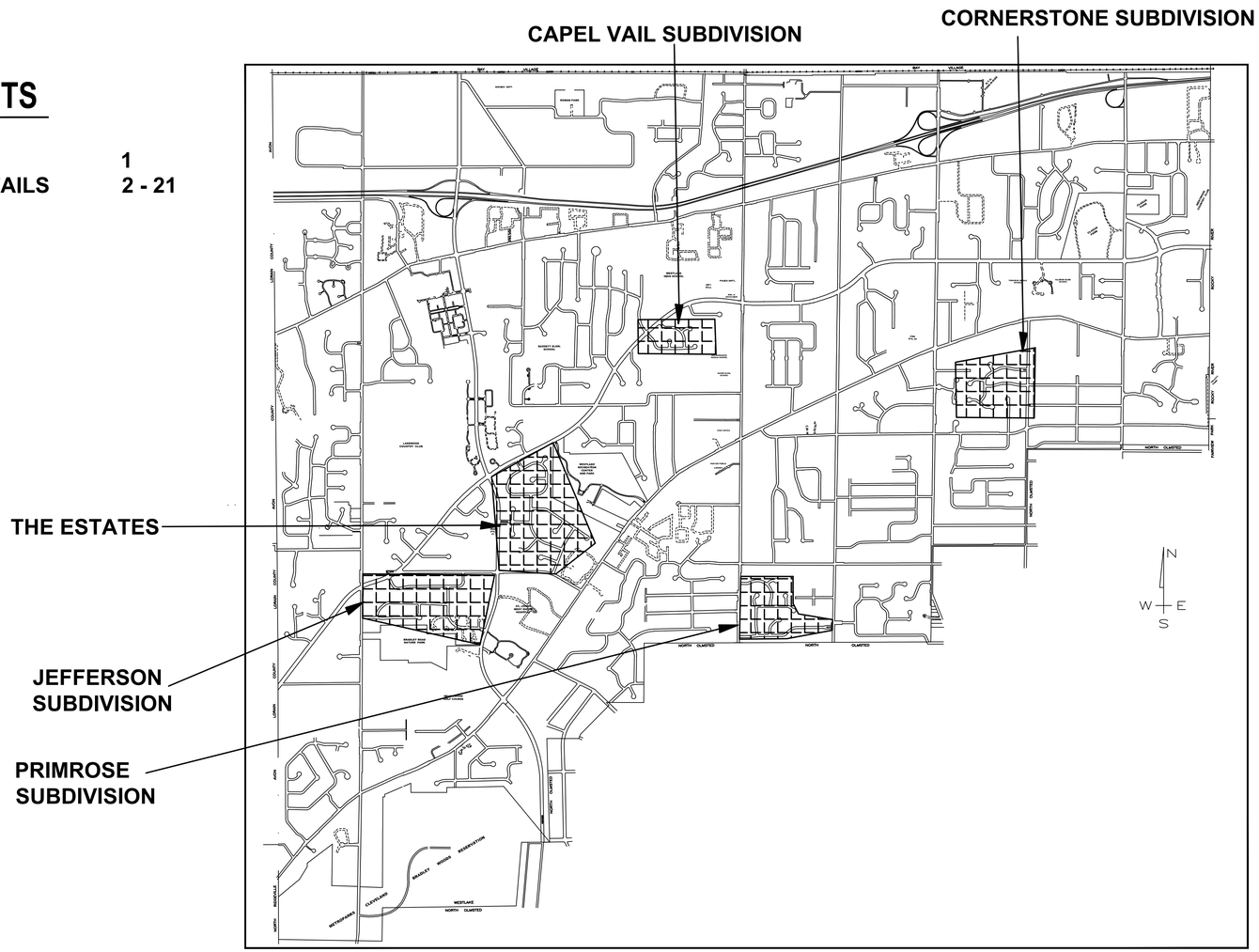
TWO WORKING DAYS
BEFORE YOU DIG
CALL 800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE

CITY OF WESTLAKE
2026 CONCRETE ROAD REPAIR AND BASIN REHABLITATION

INDEX OF SHEETS

TITLE SHEET	1
TYPICAL CITY STANDARD DETAILS	2 - 21



CITY MAP
NO SCALE

APPROVALS

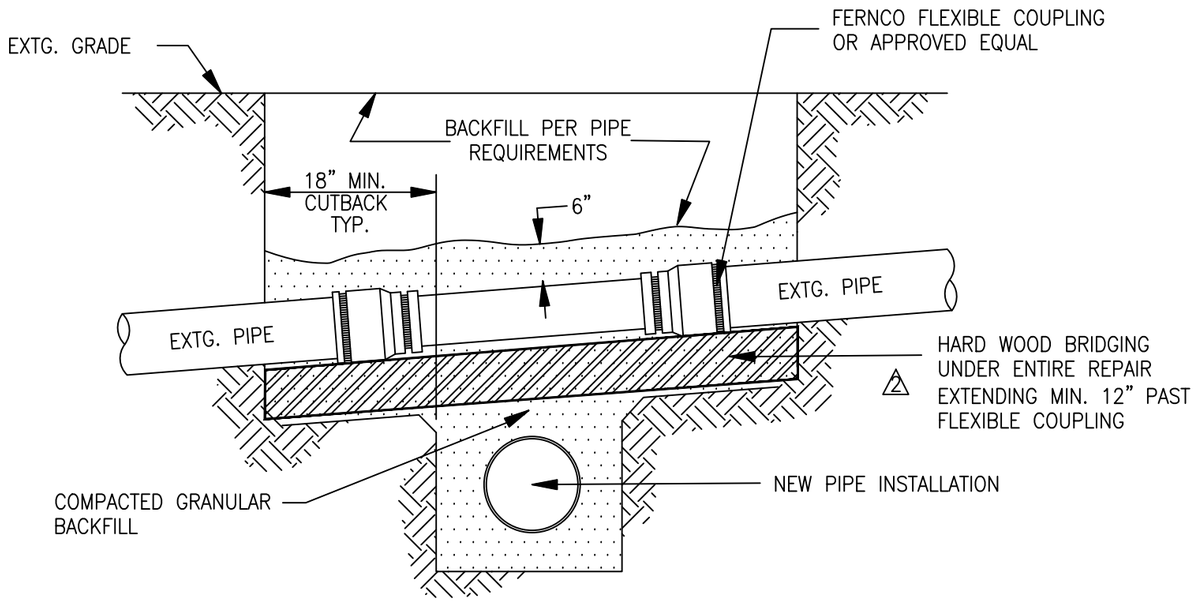
COUNCIL, CITY OF WESTLAKE
DATE March 19, 2026
ORD. NO. By Motion

CITY OF WESTLAKE
DIRECTOR OF ENGINEERING
DATE March 20, 2026

COUNCIL

DAVID S. GREENSPAN	PRESIDENT
DUANE VAN DYKE	WARD 1
NICK C. NUNNARI	WARD 2
DAVE DEL REGNO	WARD 3
TODD LEVECK	WARD 4
AMY G. HAVELKA	WARD 5
MARK R. GETSAY	WARD 6
DENISE ROSENBAUM	CLERK

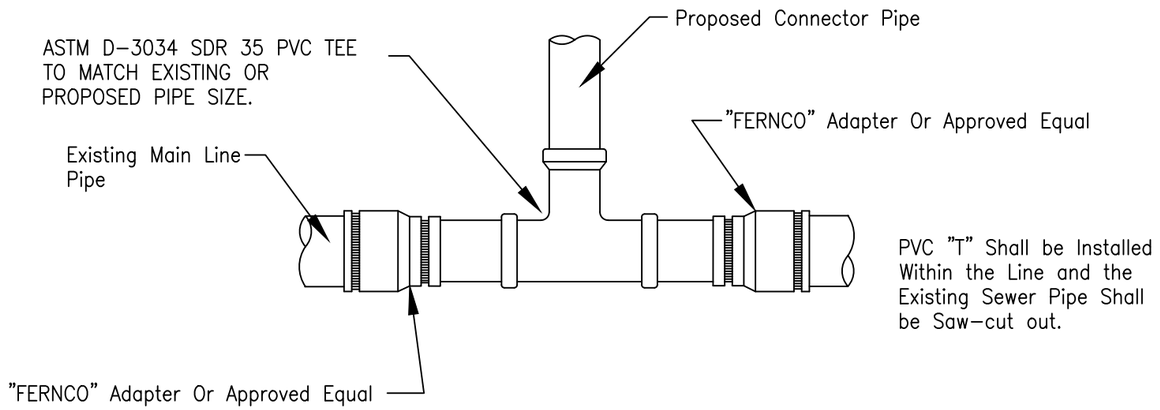
DENNIS M. CLOUGH	MAYOR
JAMES J. SMOLIK	DIRECTOR OF ENGINEERING



REPAIRS ACROSS THE TRENCH REQUIRE THAT THE COUPLINGS ARE SUPPORTED ON UNDISTURBED EARTH AS NOTED.

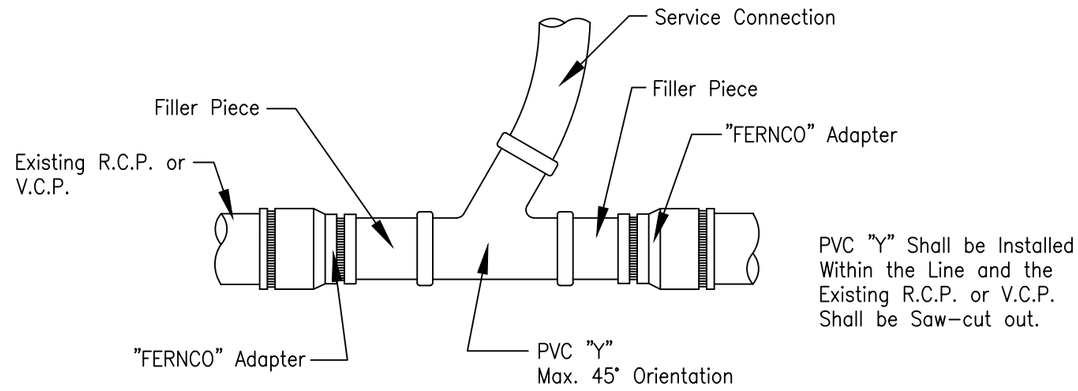
REPLACEMENT PIPE TO BE PER CONTRACT REQUIREMENTS AND PLACED ON MECHANICALLY COMPACTED GRANULAR MATERIAL.

DAMAGED CONNECTION REPLACEMENT

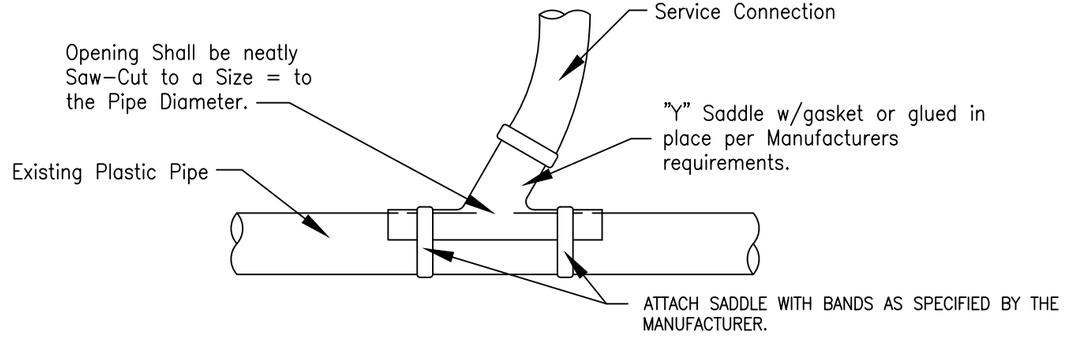


SEWER TEE CONNECTION

WHERE THE INSTALLATION OF A CONNECTION TO AN EXISTING SEWER WILL NOT PERMIT THE USE OF A KOR-N-TEE.



DETAIL FOR R.C.P. & V.C.P.



DETAIL FOR PLASTIC PIPE

NOTE:

Detail for Kor-N-Tee
See City of Westlake Standard Construction Detail Sheet #6.
Use of Kor-N-Tee may be authorized by the Director of Engineering.

REV No.	DATE	BY	DESCRIPTION
2	1/18/19	MAC	Damaged Connection Support (Re-issue)
1	3/4/04	DAH	General Revisions – New Detail

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

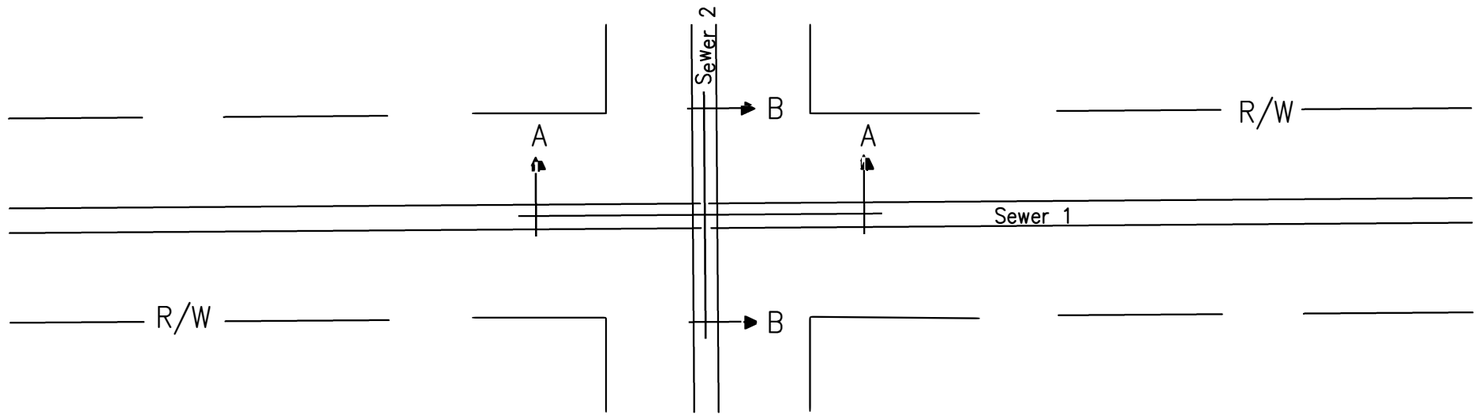
DETAIL
PIPE TAPPING / REPAIR

SCALE: AS NOTED
DATE: DRWN BY:

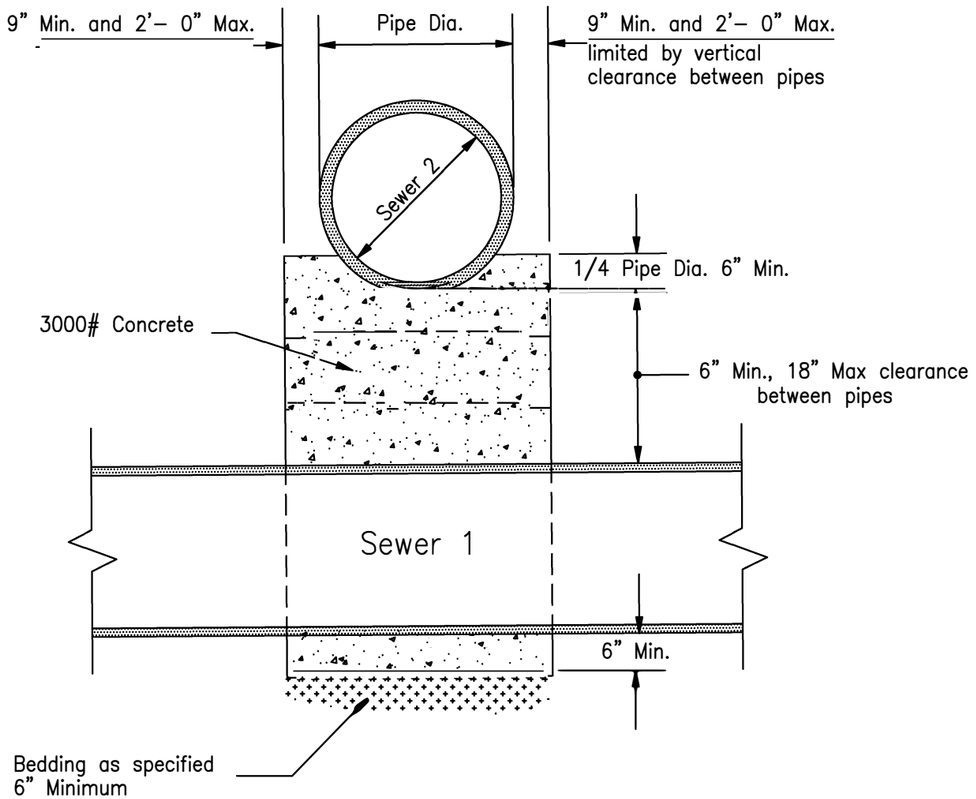
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const details.dwg 4/30/2010 10:34:06 AM EDT

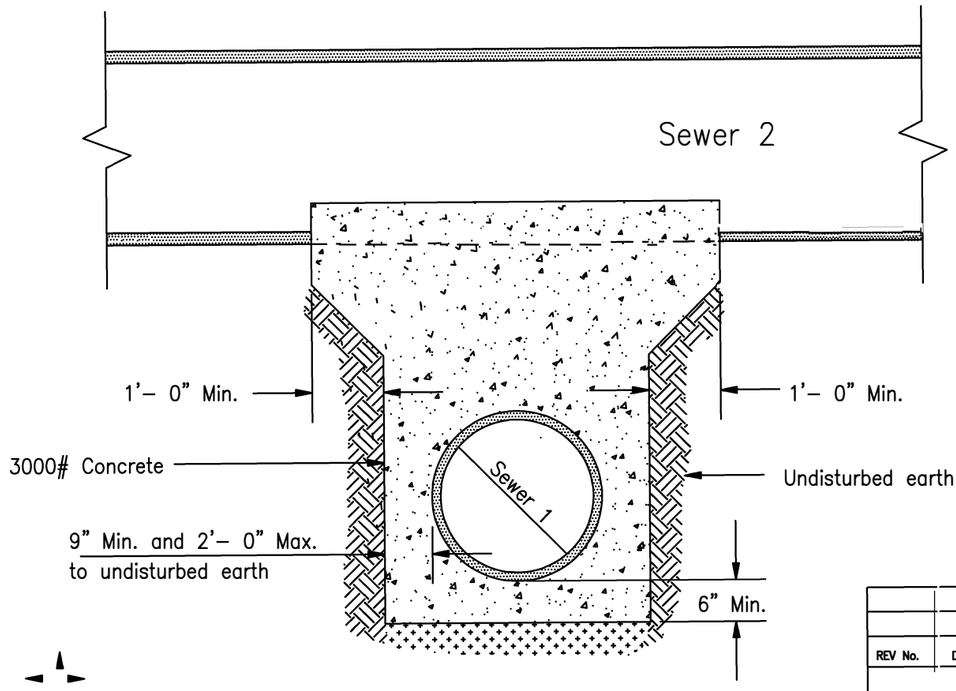
Note:
Encasement required when pipe clearance is less than 18"



PLAN VIEW



SECTION A – A



SECTION B – B

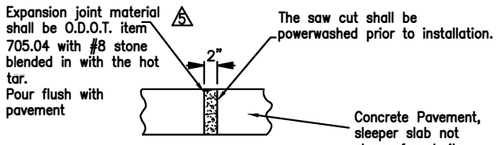
REV No.	DATE	BY	DESCRIPTION

STANDARD CONSTRUCTION DETAIL

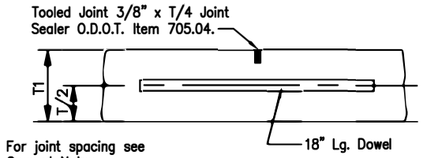
CONCRETE ENCASEMENT TRENCH CROSSING

SCALE: AS NOTED
DATE: DRWN BY:

3

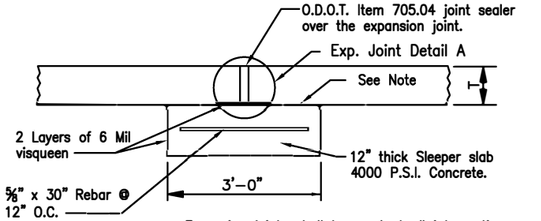


EXP. JOINT DETAIL A



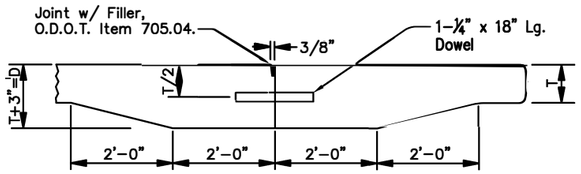
CJ—CONTROL JOINT

Note:
Float finish surface of sleeper slab to be smooth.



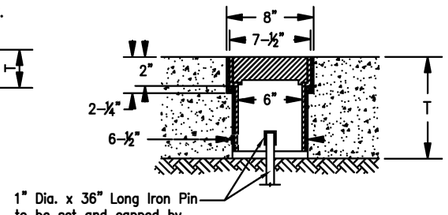
Expansion joints shall be used at all intersections, the beginning and end of all curves with less than a 500' radius, at a minimum of every 500' and where designated on the plans by the Engineer.

EXPANSION JOINT



TK—THICKENED EDGE JOINT

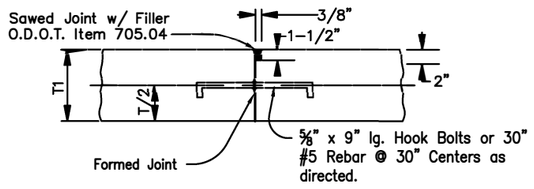
To be used at all intersections and at all points where new pavement abuts existing pavement. Dowel bar not required when abutting full depth asphalt roadways.



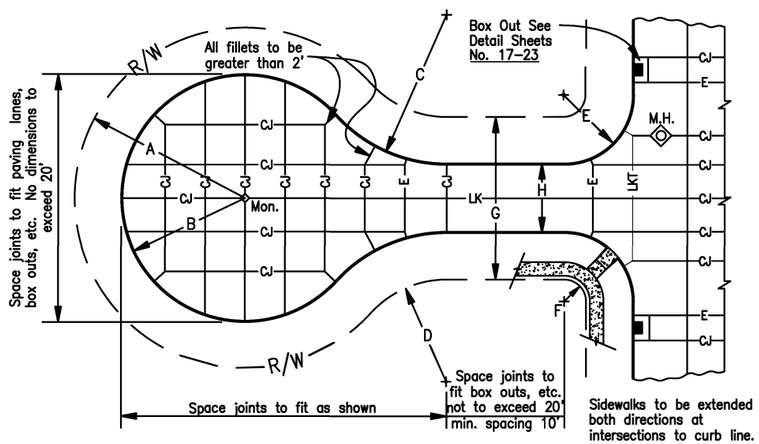
MONUMENT BOX DETAIL
(Not Useable in Landscaped Islands — See Note)

Notes:
Monument Box casting to be EJIW #2960 with special order lid.
Annular space between casting and pavement to be filled with non—shrink grout per O.D.O.T. 705.20
For alternate monument box see detail sheet No. 12

Installation:
1. Core both openings in pavement.
2. Remove debris and prepare concrete for grout per manufacturers specifications.
3. Coat pavement opening and exterior of casting with grout.
4. Install casting and finish flush with pavement.



LONGITUDINAL KEY JOINT



Locate catch basins (low points) to facilitate joint spacing.

TYPICAL JOINT LAYOUT FOR CONCRETE CUL—DE—SAC & INTERSECTION PAVEMENT

JOINT LEGEND

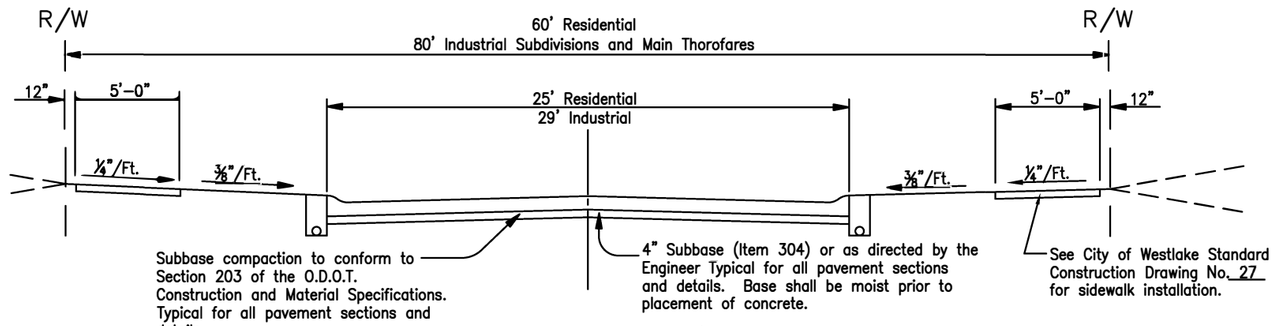
C	Control Joint
E	Expansion Joint
LK	Longitudinal Key Joint
T	Thickened Edge

Use Key Joints, without hook bolts around all manholes.

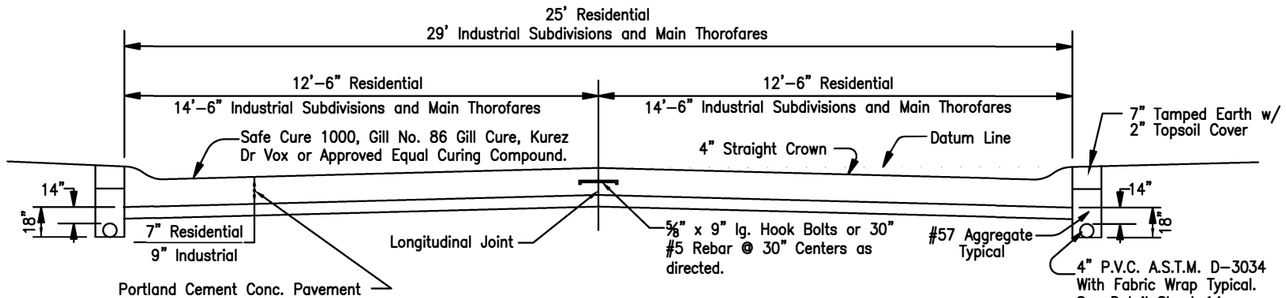
All catch basins and manholes shall be separated from the pavement and curb by Boxing Out.

SCHEDULE OF DIMENSIONS		
	INDUSTRIAL	RESIDENTIAL
A	75.00'	62.50'
B	50.00'	50.00'
C	80.00'	50.00'
D	62.50'	32.50'
E	55.00'	35.00'
F	30.00'	* 25.00'
G	80.00'	60.00'
H	29.00'	25.00'

* USE 30' @ ALL INTERSECTIONS WITH MAJOR ROADWAYS

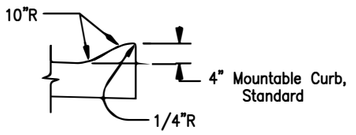


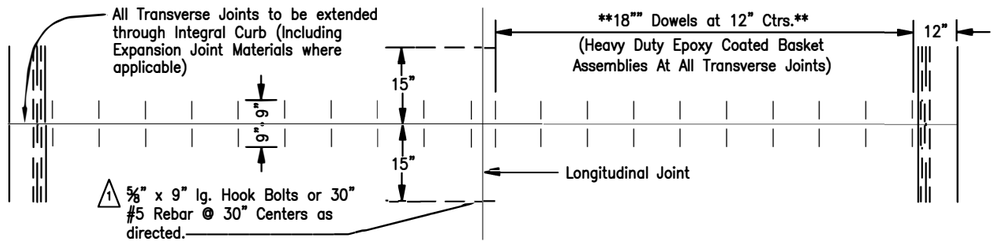
TYPICAL SECTION OF R/W



TYPICAL SECTION OF PAVEMENT

For alternate curb design see detail sheet No. 13





TYPICAL SECTION OF PAVEMENT

GENERAL NOTES:

All material and workmanship shall conform to the latest local & Ohio Department of Transportation Construction and Material Specifications.

Opening of pavement to traffic to be determined by a 600 P.S.I. beam test (job site curing) or 4000 P.S.I. cylinder test (28 days).

One core or cylinder to be taken for each 500 S.Y. of pavement.

All work to be performed under full time inspection by local representative.

Westlake approved Sodium Silicate Sealer to be applied to pavement per manufacturers specifications 30 days after cure.

Transverse Joint Spacing
7" Item 452 Concrete Pavement — 14 Lin. Ft. (Maximum)
9" Item 452 Concrete Pavement — 16 Lin. Ft. (Maximum)

Note:
RESIDENTIAL PAVEMENT T = 7" (1" Dia. Dowel)
INDUSTRIAL PAVEMENT T = 9" (1¼" Dia. Dowel)

REV No.	DATE	BY	DESCRIPTION
5	1/18/19	MAC	Expansion Joint Detail (Re—issue)
4	11/12	DAH	Cul—De—Sac — Control Joint Modification
3	8/12	DAH	General revision (Re—issue)
2	12/9/08	JJS	Expansion Joint Revision

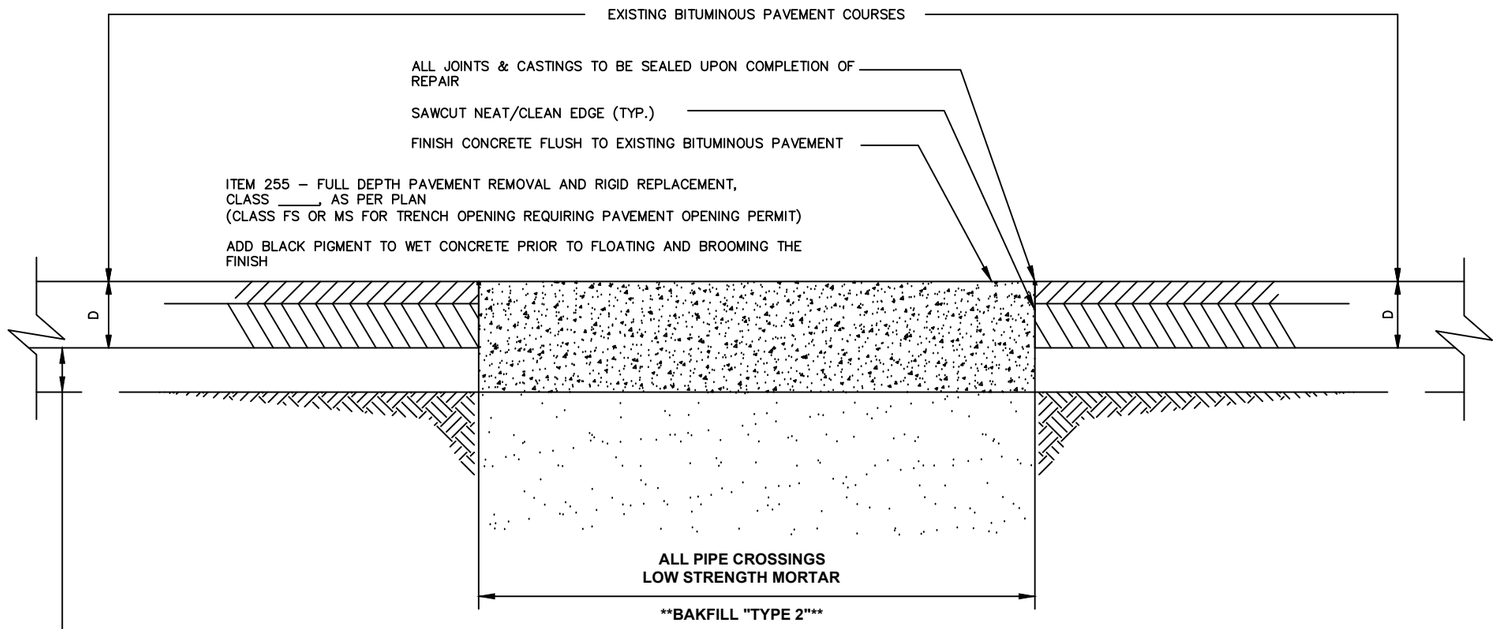
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

PAVEMENT & RIGHT—OF—WAY STANDARDS

SCALE: NOT TO SCALE
DATE: DRWN BY:

4

X:\Caddrawings\Const Details\Cad-2012\011



NOTES:

** 1) TRENCH BACKFILL MATERIAL SHALL BE ITEM SPECIAL – LOW STRENGTH MORTAR BACKFILL MATERIAL, 100 lb., TYPE 2 AS DIRECTED BY THE CITY ENGINEER. THE SPECIFICATION FOR THIS IS AS CONTAINED IN THE O.D.O.T. CONSTRUCTION & MATERIAL SPECIFICATIONS, LATEST EDITION, ITME 613, MODIFIED HEREIN.

2) TRAFFIC SHALL BE MAINTAINED IN A SAFE AND SATISFACTORY MANNER CONFORMING TO THE REQUIREMENTS OF ITEM 614–MAINTAINING TRAFFIC AND THE GENERAL PROVISIONS OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND IN COMPLIANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (O.M.U.T.C.D.). FOR TRENCH OPENINGS REQUIRING PAVEMENT AND/OR BERM OPENING PERMIT(S), THE APPLICANT SHALL FURNISH A MAINTENANCE OF TRAFFIC AND / OR, IF REQUIRED, A DETOUR PLAN TO THE CITY ENGINEER'S OFFICE FOR REVIEW AND APPROVAL 48 HOURS PRIOR TO WORK STARTING.

3) AGGREGATE OR PAVED SHOULDER AREAS AND NON–PAVED BERM OR TREE LAWN AREAS WITHIN THE RIGHT–OF–WAY SHALL BE RESTORED OR REPLACED IN ACCORDANCE WITH THE PLANS OR AS DIRECTED TO MINIMALLY MATCH THEIR PREVIOUSLY UNDISTURBED CONDITIONS.

4) WHEN THE USE OF STEEL PLATES IS NECESSARY THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FOLLOWING:

APRIL 16 TO NOVEMBER 14 – STEEL PLATES ARE TO BE INSTALLED ON THE SURFACE OF THE EXISTING PAVEMENT, PINNED IN PLACE AND RAMPED WITH THE APPROPRIATE TEMPORARY ASPHALT.

NOVEMBER 15 TO APRIL 15 – STEEL PLATES ARE TO BE RECESSED TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND THE STEEL PLATE, TEMPORARY ASPHALT TO BE USED IF REQUIRED.

* The use of Foundry Sand is strictly prohibited. *

The contractor is required to submit a mix design, for City Approval, a minimum of 48 hours prior to the installation of the backfill.

RESTORATION:

ALL PAVEMENT RESTORATION SHALL BE COMPLETED WITHIN 48 HOURS OF THE WORK PERFORMED, OR AS DIRECTED BY THE DIRECTOR OF ENGINEERING.

REV No.	DATE	BY	DESCRIPTION
4	1/18/19	MAC	Modified Detail (Re–Issued)
3	1/13	DAH	Hot AC Applied (Re–Issued)
2	8/12	DAH	General Revisions (Re–Issued)
1	2/26/04	DAH	General Revisions (Re–Issued)

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

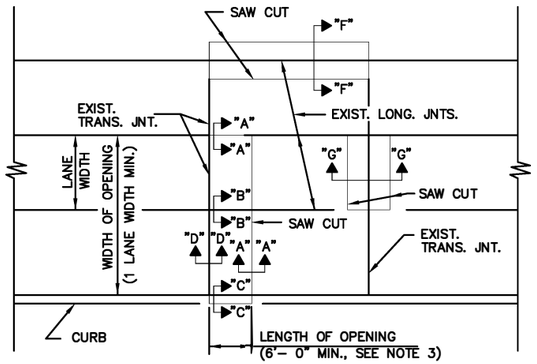
FLEXIBLE PAVEMENT REPAIR DETAIL

SCALE: AS NOTED
DATE: DRWN BY:

5

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STRUCTURAL REPAIR OF RIGID PAVEMENT OR BASE



PLAN
PAVEMENT & JOINT REPAIRS

SECTION A– A: THIS JOINT, WHEN CONSTRUCTED/RECONSTRUCTED LONGITUDINALLY, SHALL BE A "TYPE D JOINT" PER O.D.O.T. BP–2.1. WHEN CONSTRUCTED TRANSVERSELY, THIS JOINT SHALL BE A "SECTION–TYPE T" JOINT AS DETAILED ON THIS SHEET. THE DEFORMED BARS SHALL BE SPACED AT 12" CENTERS ALONG TRANSVERSE JOINTS EXCEPT THAT A 6" TO 12" SPACE SHALL BE PROVIDED ADJACENT TO A LONGITUDINAL JOINT OR THE EDGE OF PAVEMENT. THE DEFORMED BARS SHALL BE SPACED AT UNIFORM 24" TO 30" CENTERS ALONG LONGITUDINAL JOINTS AND BEGIN OR END 12" TO 18" FROM TRANSVERSE JOINTS.

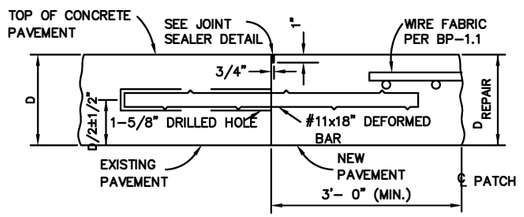
SECTION B– B: THIS JOINT SHALL BE CONSTRUCTED AS A STANDARD LONGITUDINAL JOINT IN ACCORDANCE WITH O.D.O.T. BP–2.1.

SECTION C– C: SEE CUYAHOGA COUNTY CONSTRUCTION DRAWING MD–1C "INTEGRAL CONCRETE CURB REPLACEMENT DETAIL, METHOD B."

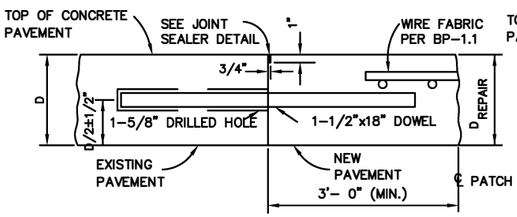
SECTION D– D: EXISTING CONTRACTION OR HINGE JOINTS SHALL BE RECONSTRUCTED AS A "SECTION–TYPE Y" JOINT. EXPANSION JOINTS SHALL BE RECONSTRUCTED AS A "SECTION–TYPE X" JOINT. BOTH ARE DETAILED ON THIS DRAWING. DOWELS SHALL BE INSTALLED AT 12" CENTERS EXCEPT THAT A 6" TO 12" SPACE SHALL BE PROVIDED ADJACENT TO LONGITUDINAL JOINTS OR PAVEMENT EDGES.

NOTES

1. THIS DRAWING IS USED IN CONJUNCTION WITH O.D.O.T. STANDARD CONSTRUCTION DRAWINGS BP–1.1, BP–2.1 AND BP–2.2; AND CUYAHOGA COUNTY CONSTRUCTION DRAWING MD–1C.
2. ALL WORK SHALL CONFORM TO "ITEM 255– FULL DEPTH RIGID PAVEMENT REMOVAL AND REPLACEMENT, CLASS_____, AS PER PLAN." (SEE PLAN NOTE AND ALL THE DETAILS, NOTES, SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS REFERENCED THEREIN.)
3. REMOVE ENTIRE SLAB WHEN LESS THAN TWENTY– FIVE (25) PERCENT SALVAGABLE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. WHERE THE THICKNESS OF THE "ITEM 304–AGGREGATE BASE, AS PER PLAN" SUBBASE REPLACEMENT MATERIAL IS THREE (3) INCHES OR LESS, USE SCREENINGS GRADED IN ACCORDANCE WITH 703.10 EXCEPT THAT THE MINIMUM PERCENT PASSING THE No. 100 SIEVE SHALL BE FIVE (5) PERCENT.

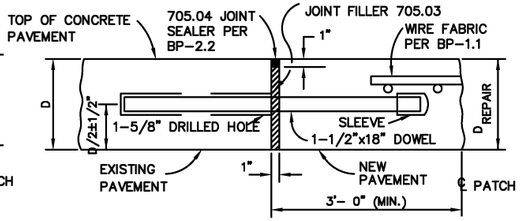


SECTION–TYPE T
(TIED)

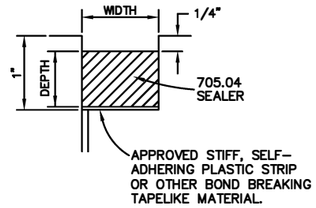


SECTION–TYPE Y
(CONTRACTION)

PREFORMED EXPANSION



SECTION–TYPE X
(EXPANSION)



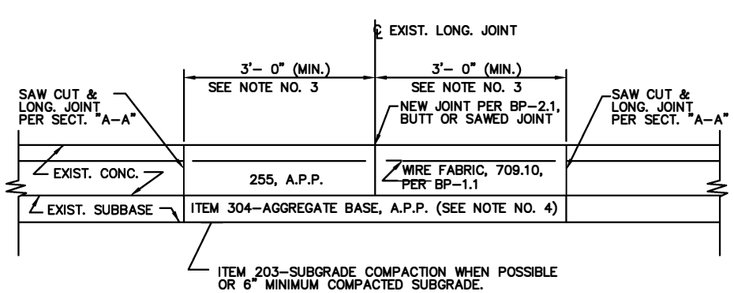
JOINT SEALER DETAIL

TRANSVERSE JOINT LEGEND

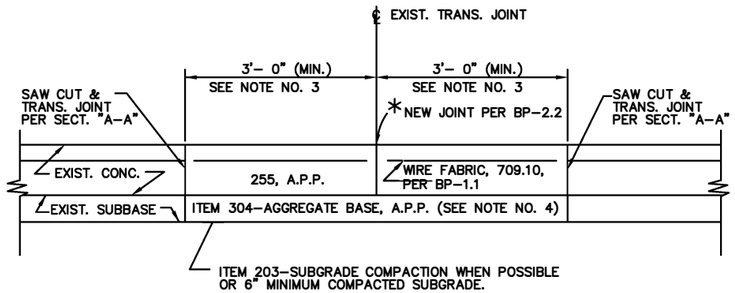
- Ⓒ – CONTRACTION JOINT (PER BP–2.2)
- Ⓔ – EXPANSION JOINT (PER BP–2.2)
- Ⓗ – EXISTING HINGE (WARPING) JOINT
- * REPLACE Ⓒ OR Ⓔ IN KIND. REPLACE Ⓗ WITH Ⓒ.

THIS DRAWING PREVIOUSLY BP–14C.

STRUCTURAL JOINT REPAIR IN RIGID PAVEMENT OR BASE



SECTION "F– F"
LONGITUDINAL JOINT REPAIR
(LENGTH AS DESIGNATED BY THE ENGINEER, WHEN 5'– 0" OR LESS TO THE NEAREST TRANSVERSE JOINT, REPLACE TO JOINT.)



SECTION "G– G"
TRANSVERSE JOINT REPAIR
(FULL LANE WIDTH)

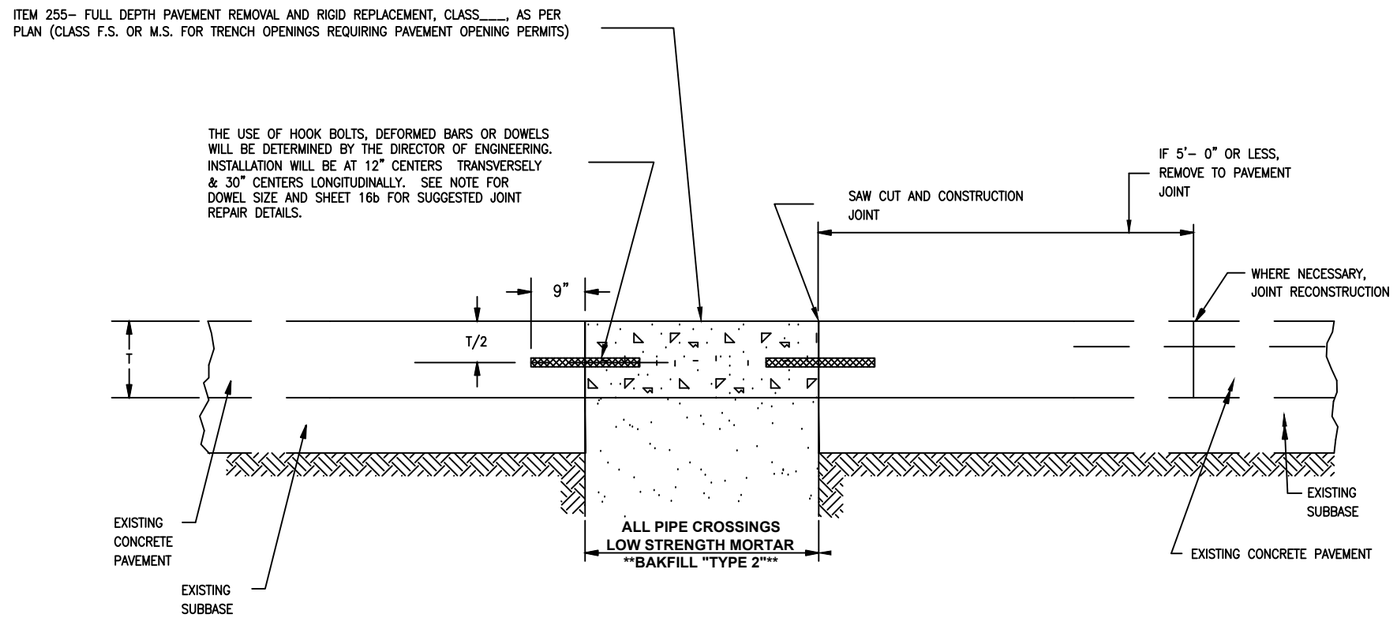
REV No.	DATE	BY	DESCRIPTION
1	2/1/20	CSH	General Revisions– Re–issue

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

STRUCTURAL RIGID PAVEMENT & JOINT REPAIRS

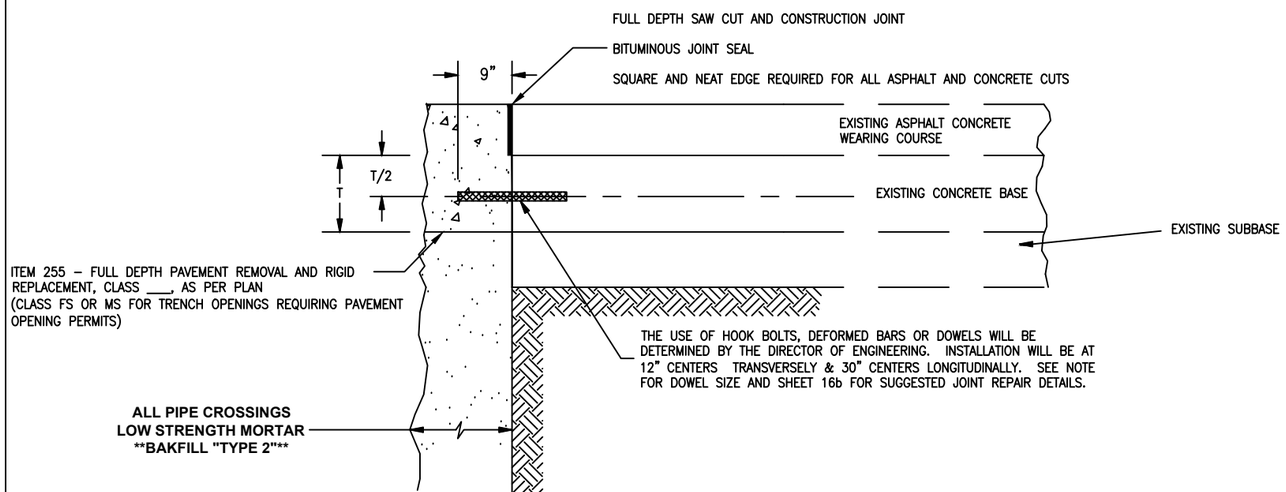
SCALE: AS NOTED
DATE: DRWN BY:

6



THE USE OF FOUNDRY SAND IS STRICTLY PROHIBITED.

THE CONTRACTOR IS REQUIRED TO SUBMIT A MIX DESIGN, FOR CITY APPROVAL, A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF THE BACKFILL.



DETAIL–"A"

CONCRETE BASE/ASPHALT OVERLAY

RESTORATION:

ALL PAVEMENT RESTORATION SHALL BE COMPLETED WITHIN 48 HOURS OF THE WORK PERFORMED, OR AS DIRECTED BY THE DIRECTOR OF ENGINEERING.

REQUIRED CUTBACKS WILL BE REVIEWED BY THE DIRECTOR OF ENGINEERING ON AN INDIVIDUAL BASIS, AND MAY BE REDUCED, PROVIDED THE EXISTING TRENCH OPENING HAS A NEAT AND CLEAN PAVEMENT EDGE.

NOTES:

1) THIS DRAWING IS APPLICABLE TO EXISTING RIGID PAVEMENT OR CONCRETE BASE SURFACE WITH ASPHALT. (SEE DETAIL "A")

2) TRENCH BACKFILL MATERIAL SHALL BE ITEM SPECIAL – LOW STRENGTH MORTAR BACKFILL MATERIAL 100lb., TYPE 2 AS DIRECTED BY THE CITY ENGINEER. THE SPECIFICATION FOR THIS AS CONTAINED IN THE O.D.O.T. CONSTRUCTION & MATERIAL SPECIFICATIONS, LATEST EDITION, ITEM 613, MODIFIED HEREIN.

3) THICKNESS OF ITEM 255 SHALL EQUAL THOSE EXISTING OF TOTAL PAVEMENT PROFILE OR AS CALLED FOR ON THE PLAN.

4) TRAFFIC SHALL BE MAINTAINED IN A SAFE AND SATISFACTORY MANNER CONFORMING TO THE REQUIREMENTS OF ITEM 614 MAINTAINING TRAFFIC AND THE GENERAL PROVISIONS OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND IN COMPLIANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (O.M.U.T.C.D.) FOR STREET OPENING PERMITS, THE APPLICANT SHALL FURNISH A MAINTENANCE OF TRAFFIC AND/OR, IF REQUIRED, A DETOUR PLAN TO THE ENGINEER'S OFFICE FOR REVIEW AND APPROVAL.

5) AGGREGATE OR PAVED SHOULDER AREAS AND NON–PAVED BERM OR TREE LAWN AREAS WITHIN THE RIGHT–OF–WAY SHALL BE RESTORED OR REPLACED IN ACCORDANCE WITH THE PLANS OR AS DIRECTED TO MINIMALLY MATCH THE PREVIOUSLY UNDISTURBED CONDITION.

6) THIS DRAWING IS USED IN CONJUNCTION WITH ALL APPLICABLE CITY OF WESTLAKE STANDARD CONSTRUCTION DRAWINGS, DETAILS, NOTES, SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS REFERENCED THEREIN.

*

7) WHERE EXISTING PAVEMENT THICKNESS IS LESS THAN 7", HOOK BOLTS OR DEFORMED BARS ARE TO BE USED IN LUE OF DOWEL BARS, AS DIRECTED BY THE CITY ENGINEER.

8) WHEN USE OF STEEL PLATES IS REQUIRED THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FOLLOWING:

APRIL 16 TO NOVEMBER 14 – STEEL PLATES ARE RO BE INSTALLED ON THE SURFACE OF THE EXISTING PAVEMENT, PINNED IN PLACE AND RAMPED WITH THE APPROPRIATE TEMPORARY ASPHALT.

NOVEMBER 15 TO APRIL 15 – STEEL PLATES ARE TO BE RECESSED TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND THE STEEL PLATE, TEMPORARY ASPHALT TO BE USED IF REQUIRED.

9) ANCHORING DOWELS AND DEFORMED BARS INTO EXISTING PAVEMENT SHALL BE DONE WITH TWO PART EPOXY CONSISTING OF A RESIN AND A HARDENING AGENT.

NOTE:

RESIDENTIAL PAVEMENT T = 7" (1"x 18" Long Dia. Dowel)

INDUSTRIAL PAVEMENT T = 9" (1¼"x 18" Long Dia. Dowel)

(Heavy Duty Epoxy Coated Basket Assemblies At All Transverse Joints)
As Directed

REV No.	DATE	BY	DESCRIPTION
4	1/18/19	MAC	Detail Revised (Re–Issued)
3	1/25	DAH	Hot AC Applied (Re–Issued)
2	8/12	DAH	General Revisions (Re–Issued)
1	2/26/04	DAH	General Revisions (Re–Issued)

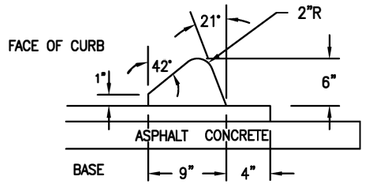
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

RIGID PAVEMENT REPAIR DETAIL

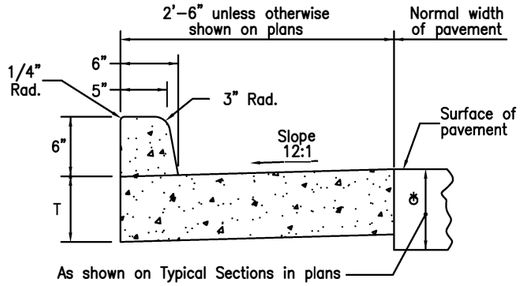
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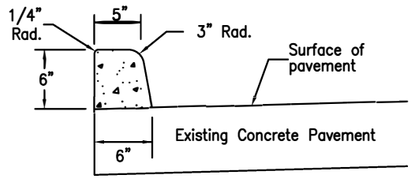
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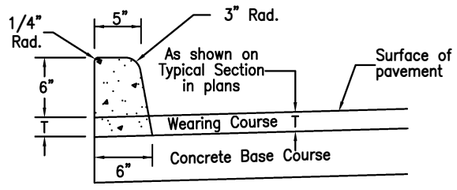
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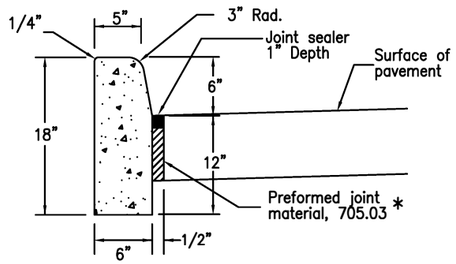
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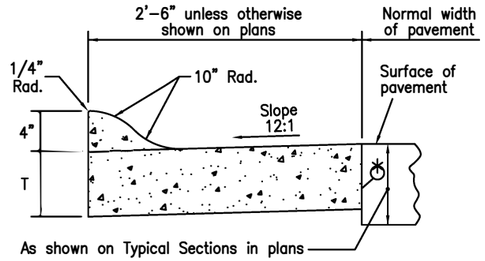
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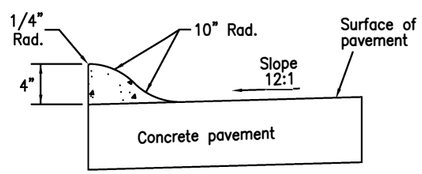
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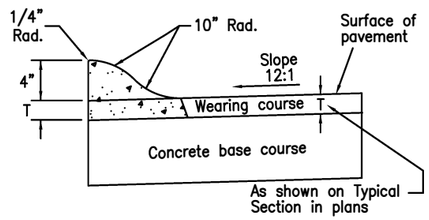
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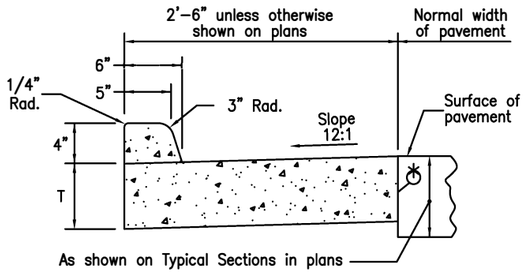
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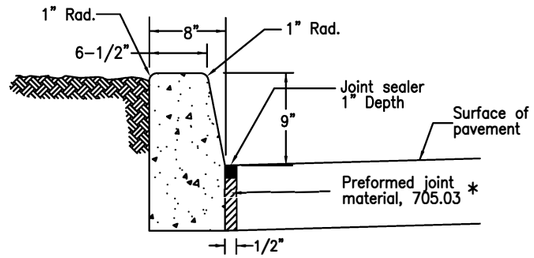
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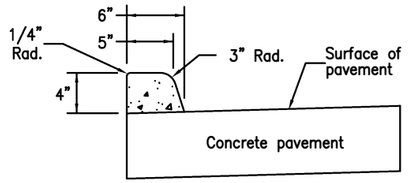
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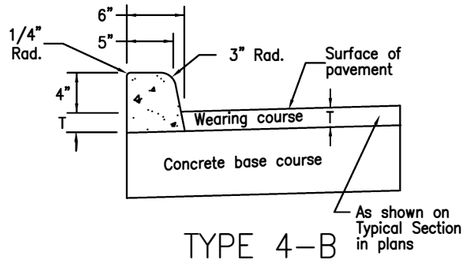
TYPE 4



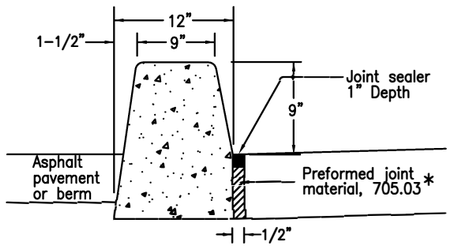
TYPE 7



TYPE 4–A



TYPE 4–B



TYPE 8

NOTES

GENERAL: This drawing shows alternate types of curb that may be used on various types of pavement. Typical section of project shows the type to be used, also the thickness of the edge of the pavement or the edge of the curb and gutter section.

JOINTS: One inch expansion joint shall extend up to the top of the curb and shall be constructed in the curb and gutter section in such a manner that the joint seal will extend the full width of the gutter and into the curb face a sufficient distance to seal the joint to an elevation of at least 2" above the flow line of the gutter. Dowel bars shall be used in the curb and gutter section at expansion joints which are identical with the joints in the pavement.
All joints shall be constructed perpendicular to the edge of the curb and to the surface of the pavement.

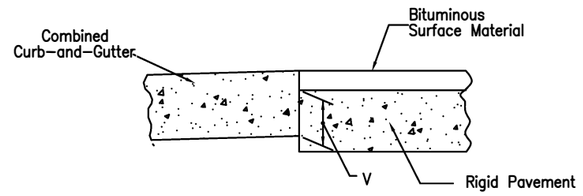
Transverse expansion joint material shall meet the requirements of Item 705.03.

GUTTER PLATE THICKNESS: Thickness of the gutter plate "T" shall be 9" unless otherwise shown on the plans.
TOLERANCES in the dimensions are as follows:
Curbs: −1/32" to +1/4", Gutters 0 to +1/2".

* Expansion joint material and joint sealer is not required for that portion of the curb which is adjacent to a flexible type pavement. Both materials are required as detailed for the full height of rigid pavement and concrete bases.

Ծ Butt joints shall be provided between combined curb–and–gutter and new or existing rigid pavements, with tie bars or hook bolts provided at intervals of 5 feet. See O.D.O.T. Std. BP–2.1 for details of tie bars and hook bolts.

If the combined curb–and–gutter adjoins a new rigid base or an existing rigid base or pavement that is to be surfaced with bituminous material, a butt joint shall also be provided. However, tie bars or hook bolts shall be omitted when the vertical overlap ("V " in detail below) between the curb–and–gutter and rigid pavement is less than 7 inches.



REV No.	DATE	BY	DESCRIPTION
1	2/1/20	CSH	General Revision– Re–issue

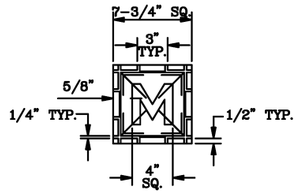
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CONCRETE CURBS & CURB & GUTTER

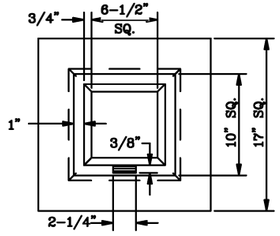
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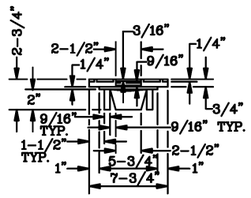
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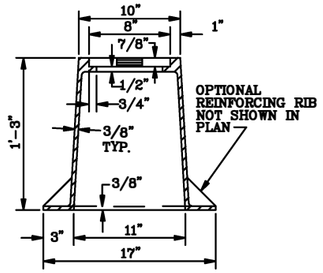
PLAN OF COVER



PLAN OF FRAME

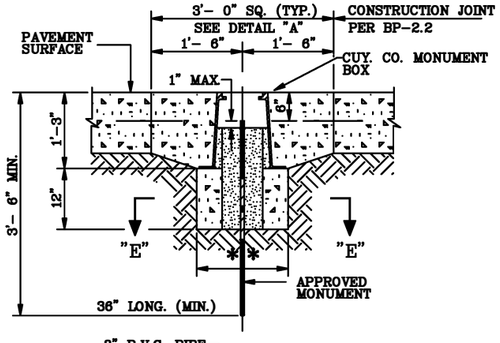


SIDE VIEW OF COVER

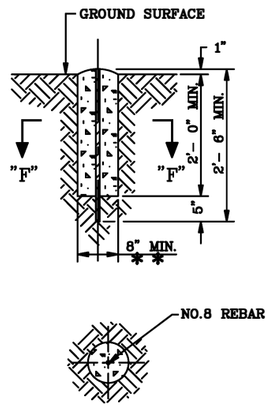


SECTION OF FRAME

MONUMENT BOX



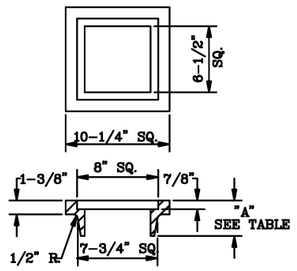
SECTION "E- E"



SECTION "F- F"

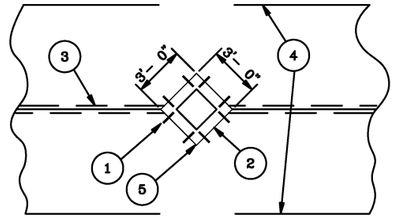
ROADWAY MONUMENT ASSEMBLY

RIGHT OF WAY MONUMENT



ADJUSTING RING

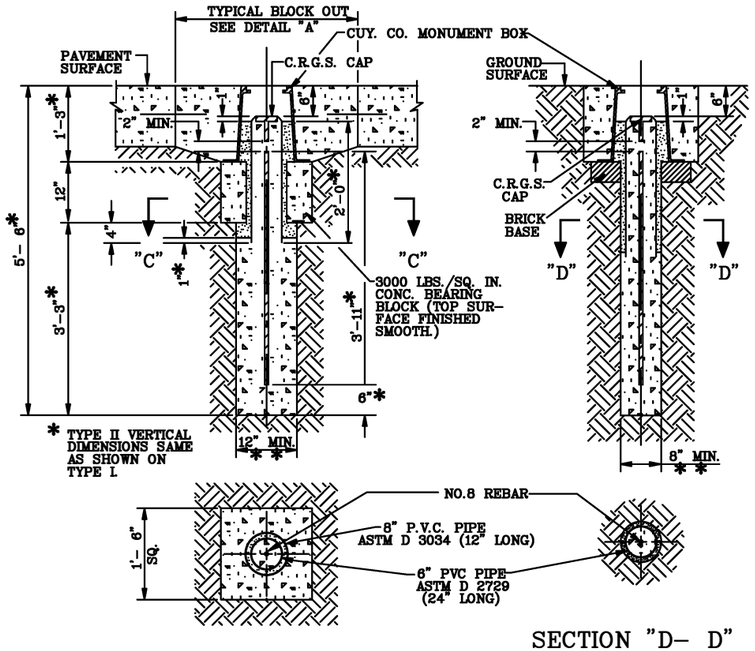
ADJUSTMENT HEIGHT	DIMENSION "A"	MINIMUM WEIGHTS
1-1/2"	2-3/8"	20-LBS.
2-1/2"	3-3/8"	27-LBS.
3"	3-7/8"	30-LBS.
3-1/2"	4-3/8"	32-LBS.



1. MONUMENT ASSEMBLY BLOCK OUT (3/4" DOWEL RODS 2' O.C.)
2. MONUMENT BOX
3. TYPICAL LONGITUDINAL JOINT
4. 451 CONC. PAVEMENTS, A.P.P.
5. 1/4" x 1" GROOVE W/ JOINT FILLER

DETAIL "A"

TYPICAL BLOCK OUT IN RIGID PAVEMENT. (OMIT FOR FULL DEPTH FLEXIBLE PAVEMENT)



SECTION "C- C"
TYPE I

SECTION "D- D"
TYPE II
IN SOIL

CLEVELAND REGIONAL GEODETIC SURVEY MONUMENT ASSEMBLY

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 HEREON.

MINIMUM WEIGHTS:
FRAME 94 LBS.
COVER 16 LBS.
PROVIDED THEY COMPLY WITH THE SPECIFICATIONS, DETAILS, DIMENSIONS AND MINIMUM WEIGHTS,
NEENAH NO.NF- 0000T04,
EAST JORDAN NO.8365
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.

MONUMENT CAPS WILL BE FURNISHED BY THE CLEVELAND REGIONAL GEODETIC SURVEY (C.R.G.S.) OFFICE. CONTACT CUYAHOGA COUNTY ENGINEER'S SURVEY OFFICE TWO (2) WORKING DAYS BEFORE CONSTRUCTING.

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

LEGEND

ITEM 499- CONCRETE, CLASS "C"

SAND, ITEM 703.02- COMPACTED AS REQUIRED

** UNDISTURBED BEARING AND/OR SUITABLY FIRM FOUNDATION PROVIDED IN ACCORDANCE WITH 604.04 AND TO THE SATISFACTION OF THE ENGINEER.

REV No.	DATE	BY	DESCRIPTION
1	8/12	DAH	General Revision - Re-Issue

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

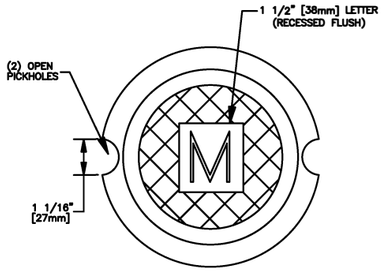
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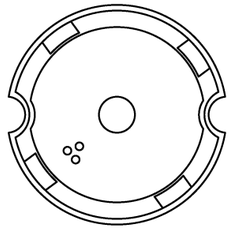
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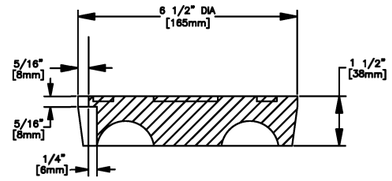
MONUMENT BOX



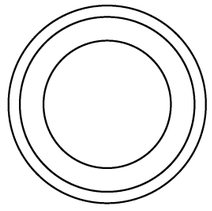
PLAN OF COVER



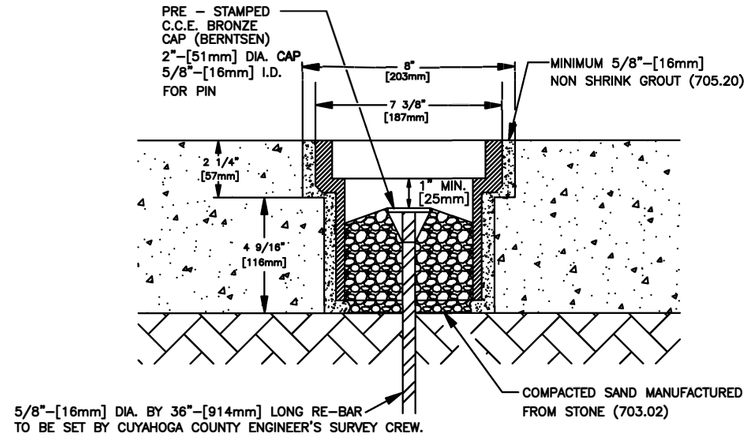
BOTTOM VIEW



SIDE VIEW OF COVER

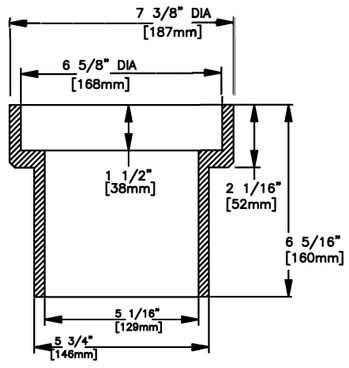


PLAN OF FRAME



MONUMENT BOX DETAIL

(NOT USABLE IN LANDSCAPE ISLANDS)



FRAME SECTION

NOTES:

MONUMENT BOX CASTING TO BE EJIW #29602 WITH SPECIAL ORDER LID.
ANNULAR SPACE BETWEEN CASTING AND PAVEMENT TO BE FILLED WITH
NON–SHRINK GROUT PER O.D.O.T. 705.20

INSTALLATION:

1. CORE BOTH OPENINGS IN PAVEMENT
2. REMOVE DEBRIS AND PREPARE CONCRETE FOR GROUT PER MANUFACTURE SPECIFICATIONS.
3. COAT PAVEMENT OPENING AND EXTERIOR OF CASTING WITH GROUT.
4. INSTALL CASTING AND FINISH FLUSH WITH PAVEMENT.

NOTES

CASTINGS

SHALL MINIMALLY MEET THE REQUIREMENTS OF 604.02 – 711.12, A.S.T.M. A48, CLASS 35 GRAY IRON.

THE ASSEMBLY SHALL BE ESSENITALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON.

TOTAL MINIMUM WEIGHT = 22 LBS. (10KG)

PROVIDED THEY COMPLY WITH THE SPECIFICATIONS, DETAILS, DIMENSIONS AND MINIMUM WEIGHT,

EAST JORDAN – 2960A MONUMENT BOX COVER
EAST JORDAN – 2960Z FRAME SECTION

OR APPROVED EQUAL CASTINGS ARE ACCEPTABLE.

LEGEND:

CONCRETE, CLASS "C" (499)

COMPACTED SAND MANUFACTURED FROM STONE (703.02)

UNDISTURBED EARTH OR AGGREGATE BASE. REPLACEMENT OF UNSUITABLE MATERIAL PER 604.04 AND TO THE SATISFACTION OF THE ENGINEER.

REV No.	DATE	BY	DESCRIPTION
2	9/12	DAH	General Revisions – Re–issue
1	2/17/04	DAH	General Revisions – Re–issue

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

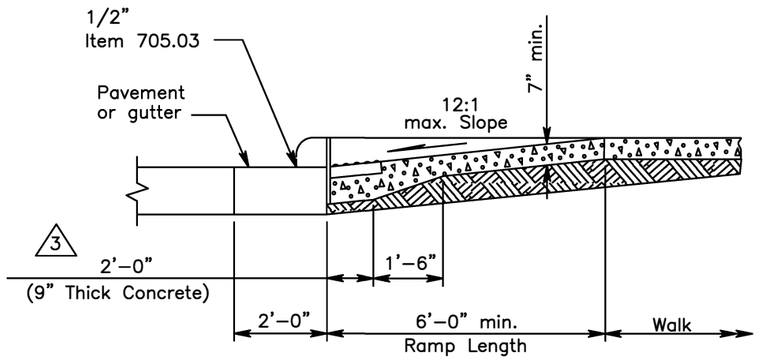
CITY STD. MONUMENT BOX

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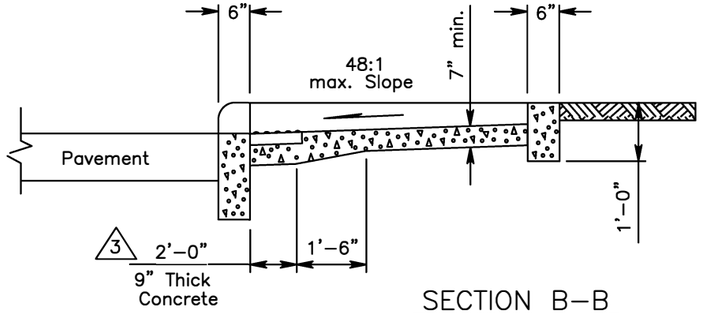
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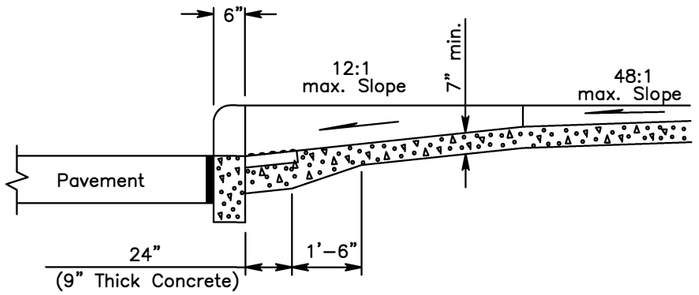
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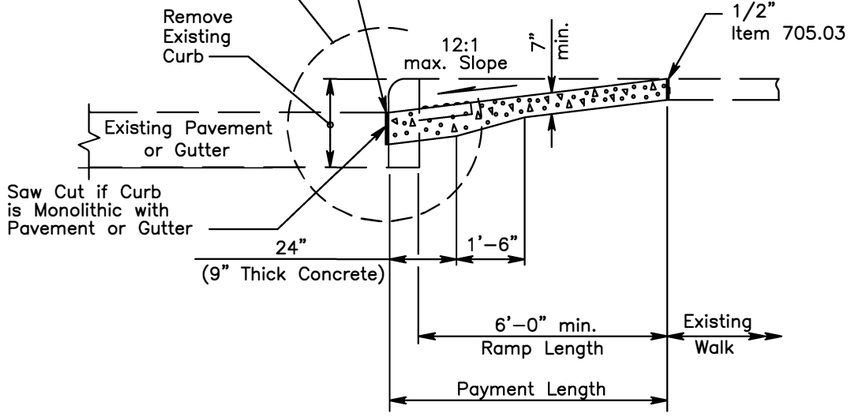
SECTION A–A
NORMAL DETAIL
See Sheet 1 of 3.
(Gutter shown)



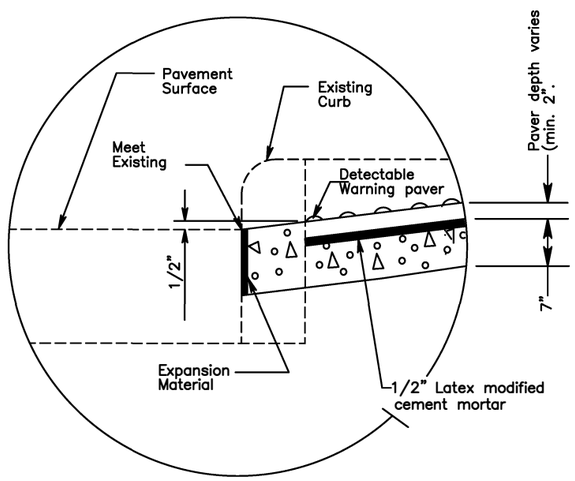
SECTION B–B
See Sheet 1 of 3.



SECTION C–C
See Sheet 1 of 3.



SECTION A–A
EXISTING WALK DETAIL
See Sheet 1 of 3.



DETAIL A

NOTES

SURFACE TEXTURE: Texture of concrete surfaces shall be obtained by coarse brooming transverse to the ramp slopes and shall be rougher than adjacent walk.

TRUNCATED DOMES: Install detectable warnings (truncated domes) for a distance of 24" from the back of the curb for the entire width of the ramp opening as shown on details on Sheet 1.

Pavers will meet ASTM C 902 Class SX, Type 1, or C 936, or C 1272 Type R.

Acceptable manufactors and products are:
1) Whitacre–Greer Fireproofing Company
   1400 S. Mahoning Ave., Alliance, OH 44601, (800) WG PAVER
   ADA Paver 4"x8"x2–1/4", Clear Red (Rustic) # 30
2) Hanover Architectural Products
   240 Bender Rd., Hanover, PA 17331 (717) 637–0500
   Detectable Warning Paver 12"x12"x12", or 24"x24"x2",
   Red or Quarry Red.
3) Endicott Clay Products,
   PO Bx 17, Fairbury, NE 68352, (402) 729–5804
   Handicap Detectable Warning Paver,
   4"x8"x2–1/4", Red Blend.

Pavers will be laid on top of a unreinforced concrete base. Setting bed and joints to be mortared in accordance with manufacturer's instruction, or with a maximum 1/2" thick bed of latex modified cement mortar. Mortar joints to a width not greater than 5/32" and not less than 1/16". Pavers shall not be directly touching each other unless they have spacing bars.

Mortared joints are to be flush with top surface and struck so as to give a smooth surface. Pavers shall be laid such that joints are level with adjoining joints so as to provide a smooth transition from brick to brick and brick to concrete surface.

The surface of any two adjacent units should not differ by more than 1/8" in height. Bricks shall be placed in a running bond pattern. Face of all brick shall be clean of cement and protected so as to avoid chipping during construction.

EXPANSION JOINTS: shall be provided in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. A 1/2" Item 705.03 expansion joint filler shall be provided around the edge of ramps built in existing concrete walk. Lines shown on this drawing indicate the ramp edge and slope changes and are not necessarily joint lines.

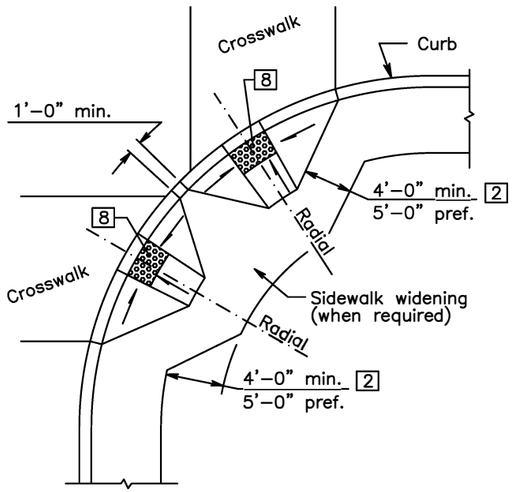
REV No.	DATE	BY	DESCRIPTION
3	1/22/19	MAC	Thickened Edge (Re–Issue)
2	9/12	DAH	General Revision (Re–Issue)
1	1/10/04	DAH	General Revision (Re–Issue)

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

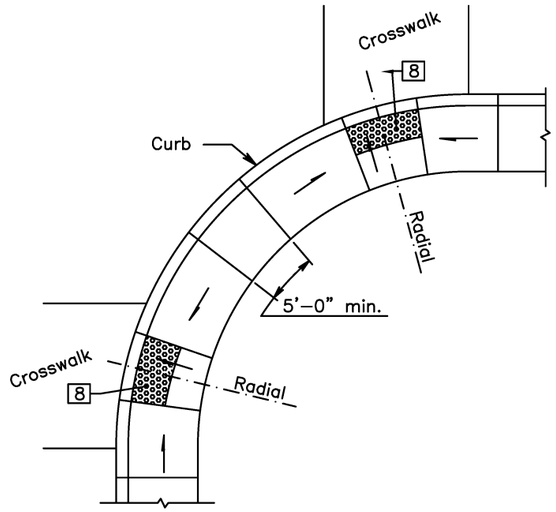
CURB RAMPS CROSS SECTION DETAIL

SCALE: NTS
DATE: 1/10/04 DRWN BY:

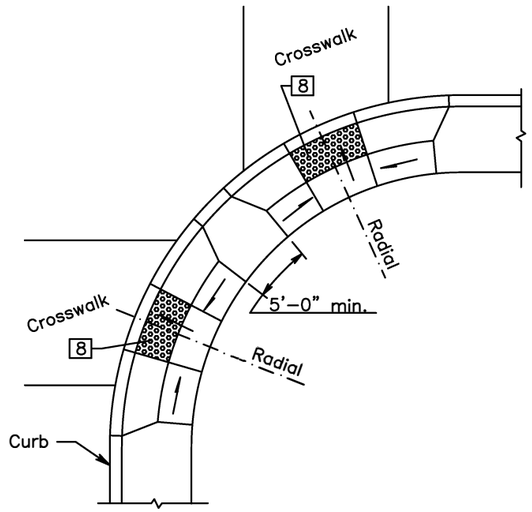
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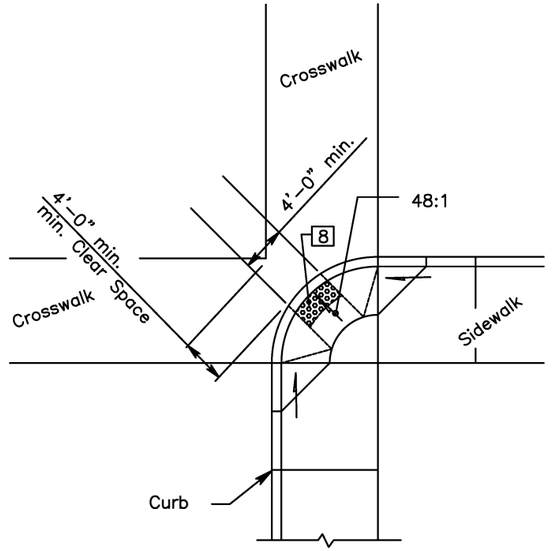
DESIGN A
PERPENDICULAR RAMP



DESIGN B
PARALLEL RAMP



DESIGN C
COMBINATION RAMP



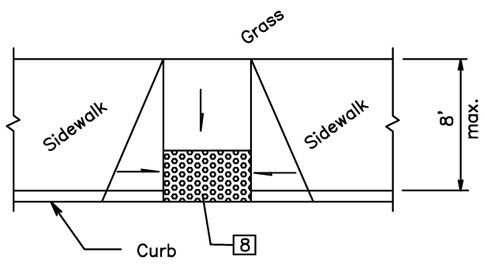
DESIGN D
DIAGONAL RAMP

Use in existing walks only and when site constraints prohibit other designs. The diagonal ramp may be perpendcular, parallel or combination.

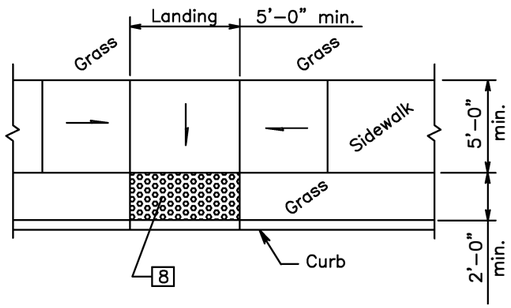
Avoid using where curb radii are less than 20'–0".

CORNER CURB RAMP DESIGNS

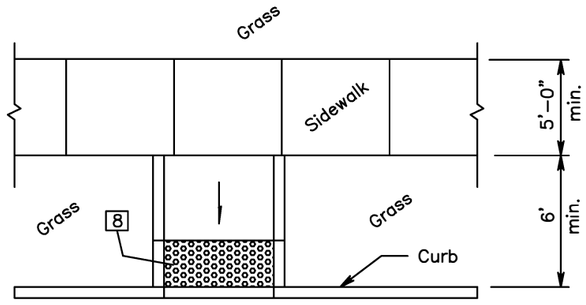
(See Curb Ramp Details on Sht. 1/3 for additional requirements.)



DESIGN E
PERPENDICULAR RAMP



DESIGN F
PARALLEL RAMP



DESIGN G
PERPENDICULAR RAMPS
w/o FLARES

MID BLOCK CURB RAMP DESIGNS

(See Curb Ramp Details on Sht. 1/3 for additional requirements.)

REV No.	DATE	BY	DESCRIPTION
2	9/12	DAH	General Revision – Re-Issue
1	1/10/04	DAH	General Revision – Re-Issue

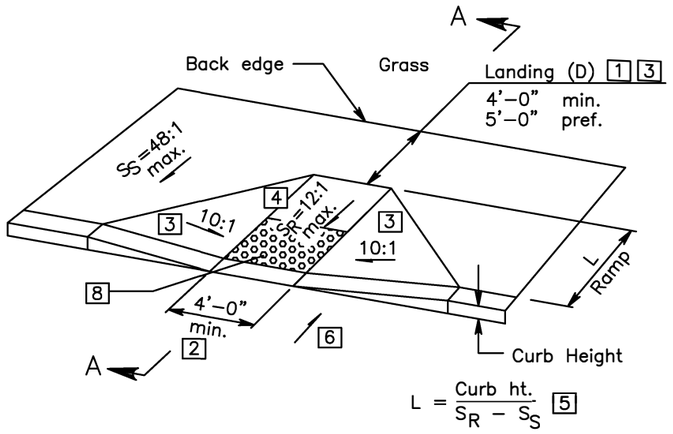
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CURB RAMPS

SCALE: NTS
DATE: 1/10/04 DRWN BY:

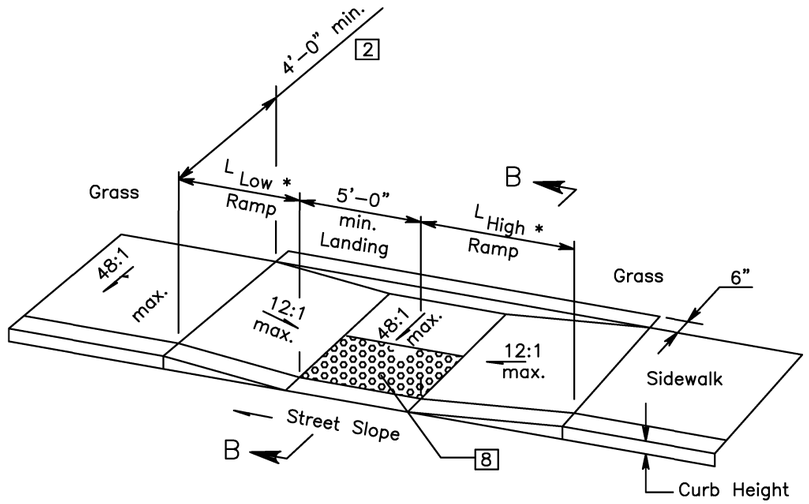
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See Sht. 3/3 for SECTION A–A

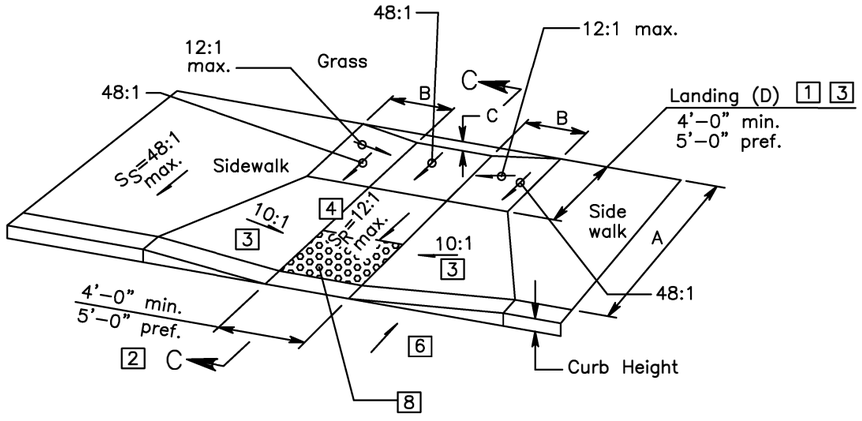
PERPENDICULAR CURB RAMP DETAIL



See Sht. 3/3 for SECTION B–B

PARALLEL CURB RAMP DETAIL

(DOUBLE)

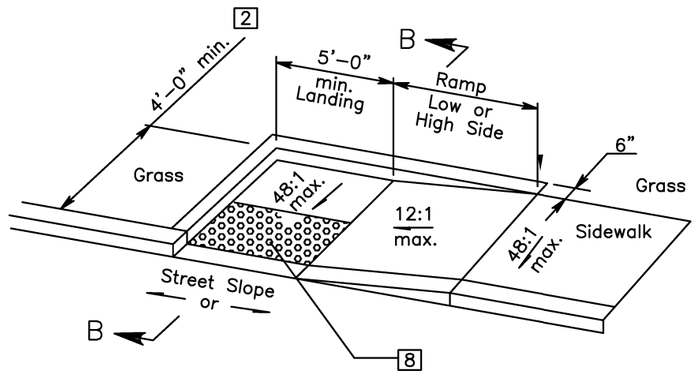


See Sht. 3/3 for SECTION C–C

COMBINED CURB RAMP DETAIL

$B = C / 0.083$

$C = [\text{Curb ht.} + A(S_S)] - [(A-D)S_R + D(0.02)]$



See Sht. 3/3 for SECTION B–B

PARALLEL CURB RAMP DETAIL

(SINGLE)

LEGEND

1 May be reduced to 3'–0" in existing sidewalks if the landing is unconstrained along the back edge.

2 May be reduced to 3'–4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.

3 Where landing width (D) has been reduced to 3'–0" the flared sides shall have a maximum slope of 12:1.

Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheel chair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.

4 The slope of the ramp toward the curb is preferred to be 12:1 or flatter related to the horizontal, but the maximum slope shall be 12:1 relative to the existing or proposed walk slope.

In existing sidewalks, where the maximum ramp slope (SR) is not feasible, it may be reduced as follows:

A) 10:1 for a max. rise of 6",
B) 8:1 for a max. rise of 3",
C) 6:1 over a max. run of 2'–0" for historic areas where a flatter slope is not feasible.

5 The minimum length of a perpendicular ramp is 6' from the back of a 6" curb and may be increased where feasible to obtain a flatter ramp slope or to better blend with the walk configuration.

6 Gutter counter slopes at the foot of perpendicular curb ramps should not exceed 20:1 over a distance of 2'–0" from the curb.

7 Dimensions derived by equation are nominal. Construct ramps to meet required slopes and existing conditions.

8 Detectable Warnings (truncated domes) are to be installed in the location shown. Dimensions for location of the domes are 24" from the back of the curb by the width of the ramp.

Street Slope	Ramp Length @ 1"/ft	
	$L_{LOW\ SIDE}$ *	$L_{HIGH\ SIDE}$ *
0.01	5'–5"	6'–10"
0.02	4'–10"	7'–11"
0.03	4'–5"	9'–5"
0.04	4'–1"	11'–8"
0.05	3'–9"	15'–2"
* Measured along the back of a 6" high curb.		

$L_{HIGH} = \frac{\text{Curb ht.}}{0.083 - \text{Street Slope}}$ 7

$L_{LOW} = \frac{\text{Curb ht.}}{0.083 + \text{Street Slope}}$ 7

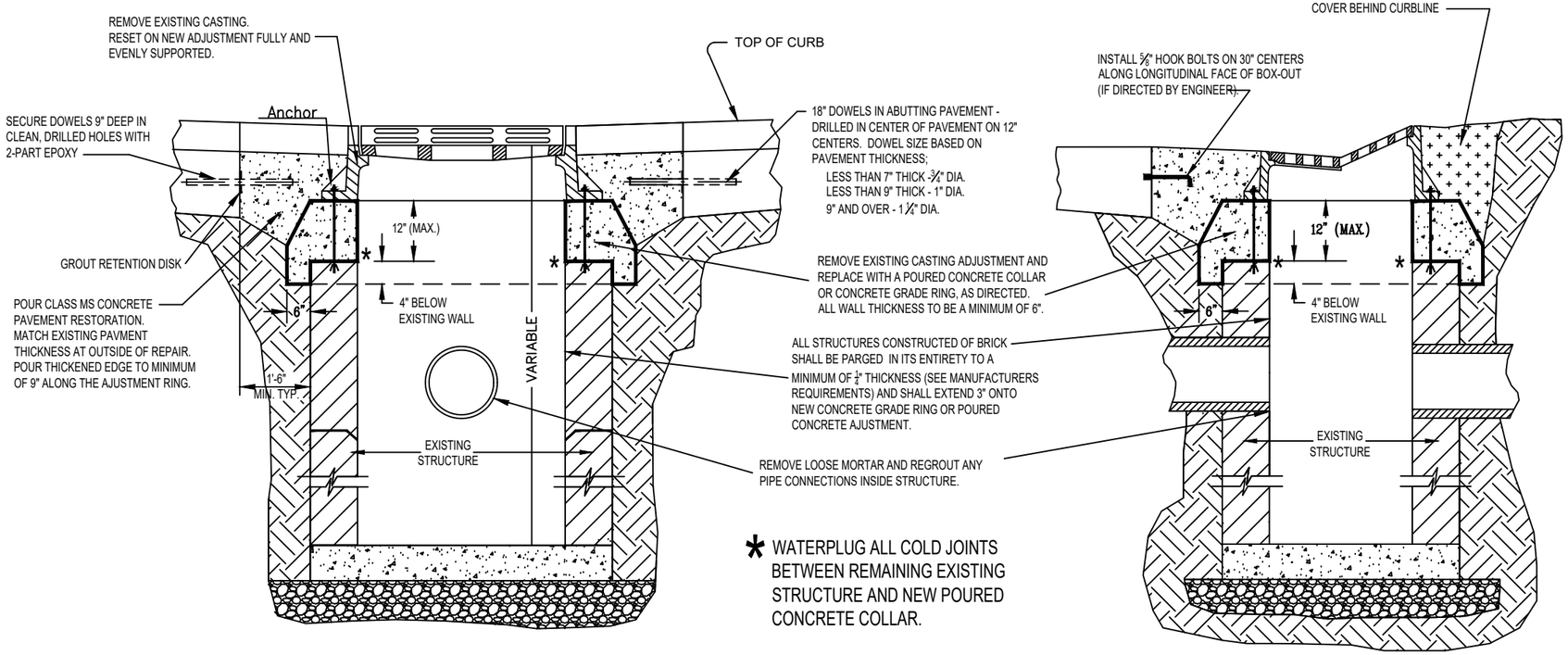
REV No.	DATE	BY	DESCRIPTION
2	9/12	DAH	General Revisions – Re–issue
1	1/10/04	DAH	General Revisions – Re–issue

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CURB RAMPS

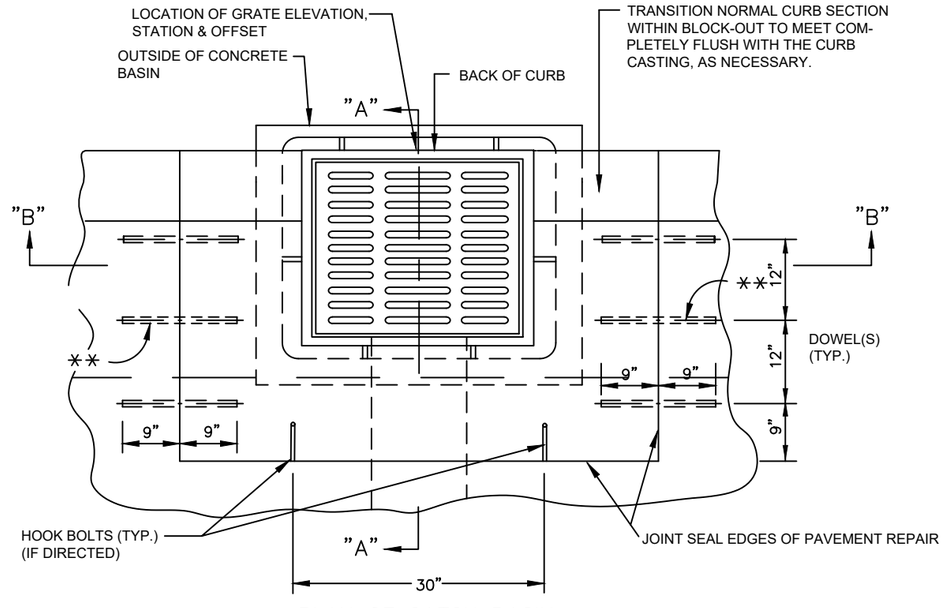
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SECTION "A–A"

SECTION "B– B"



PLAN OF CATCH BASIN AND PAVEMENT JOINTS

** DOWEL LOCATION FOR CURB AND GUTTER

NOTES

1.) CASTINGS: SHALL BE REMOVED FROM THE STRUCTURE AND THOROUGHLY CLEANED OF CONCRETE / FOREIGN MATERIAL. CASTINGS ARE TO BE RESET ON NEW ADJUSTMENT WITH THEIR BASE FULLY AND EVENLY SUPPORTED BY THE ADJUSTMENT. DAMAGED CASTINGS WILL BE REPLACED AT THE DIRECTION OF ENGINEER UNDER MISC. METAL. CASTINGS DAMAGED BY THE CONTRACTOR WILL BE REPLACED AT NO ADDITIONAL COST TO THE CITY.

2.) EXISTING ADJUSTMENT: EXISTING DAMAGED BRICK OR CONCRETE SHALL BE REMOVED TO THE SOLID PORTION OF THE STRUCTURE. ALL WALLS ARE TO BE REMOVED TO THE SAME LEVEL AS DIRECTED BY THE FIELD REPRESENTATIVE.

3.) NEW ADJUSTMENT: USING THE SALVAGED CASTING, RECONSTRUCT THE STRUCTURE TO THE NEW GRADE, CONFORMING AS NEARLY AS PRACTICABLE TO THE EXISTING DIMENSION USING A POURED "MS" CONCRETE COLLAR OR PRE CAST CONCRETE GRADE RINGS.

4.) PAVEMENT REPAIR LIMITS : WILL BE MARKED BY THE ENGINEER.

5.) DOWELS: 18" LONG, EPOXY COATED DOWELS ARE REQUIRED FOR USE ON 12" CENTERS ALONG TRANSVERSE FACES OF BOX-OUTS. DOWEL DIAMETER WILL BE DEPENDENT ON THE THICKNESS OF ABUTTING PAVEMENT.

6.) HOOK BOLTS: 5/8" HOOK BOLTS, OR CITY APPROVED REPLACEMENT PER CITY DETAIL, ARE TO BE PLACED ON 30" CENTERS ALONG THE LONGITUDINAL FACE OF BOX-OUT IN CENTER OF ABUTTING CONCRETE. IF THEIR INSTALLATION IS DIRECTED BY THE ENGINEER.

7.) CONCRETE: MS, AIR-ENTRAINED CONCRETE (6% +/- 2%) SHALL BE POURED FROM THE BOTTOM OF THE ABUTTING PAVEMENT TO LEVEL AS NOTED IN THE DETAIL

REV No.	DATE	BY	DESCRIPTION
3	2/1/20	CSH	Casting Anchors– Re–issue
2	1/18/19	MAC	General Revisions (Re–issue)
1	8/12	DAH	General Revisions (Re–issue)

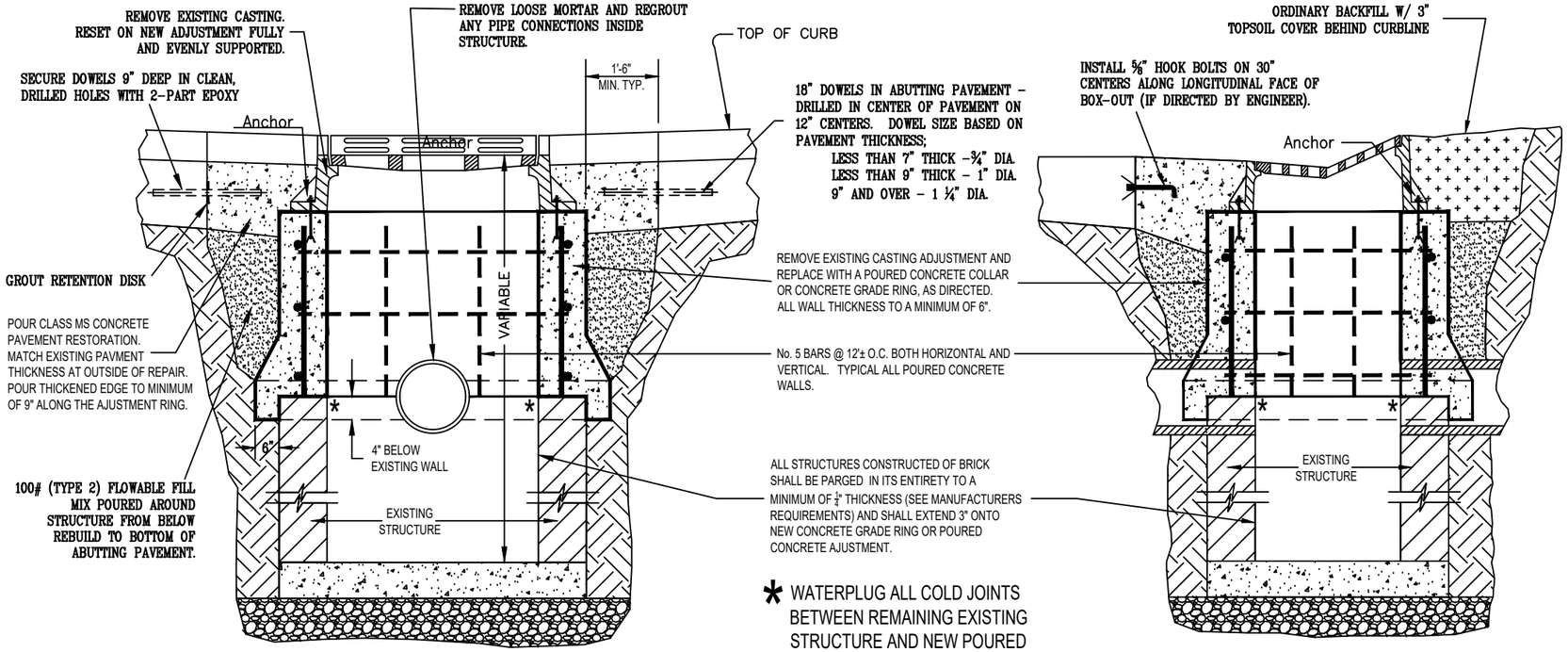
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CATCH BASIN ADJUSTMENT

SCALE: AS NOTED
DATE: DRWN BY:

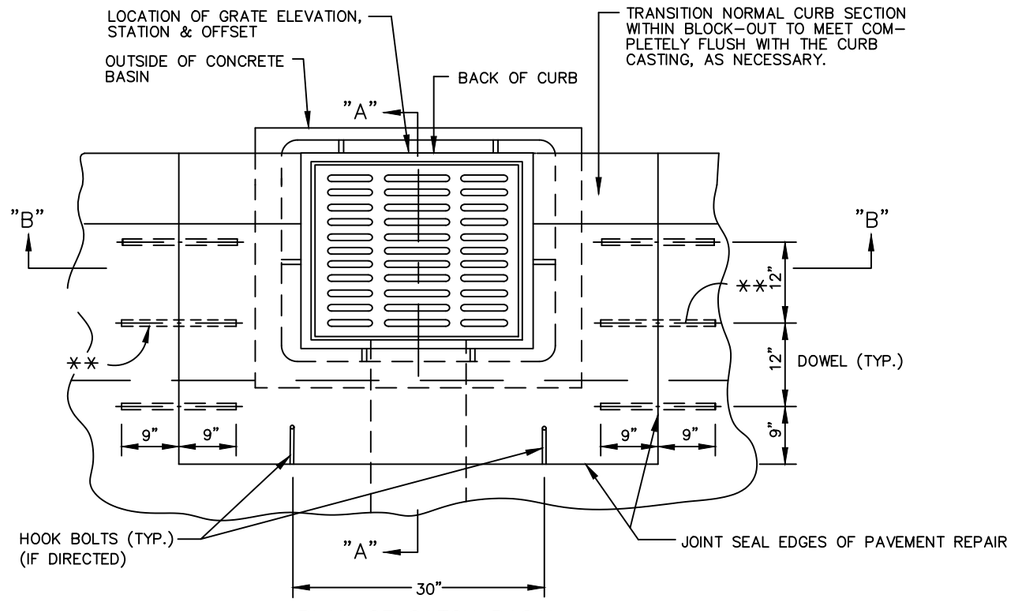
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SECTION "B- B"

SECTION "A-A"



PLAN OF CATCH BASIN AND PAVEMENT JOINTS

** DOWEL LOCATION FOR CURB AND GUTTER

NOTES

1.) CASTINGS SHALL BE REMOVED FROM THE STRUCTURE AND THOROUGHLY CLEANED OF CONCRETE / FOREIGN MATERIAL. CASTINGS ARE TO BE RESET ON NEW ADJUSTMENT WITH THEIR BASE FULLY AND EVENLY SUPPORTED BY THE ADJUSTMENT. DAMAGED CASTINGS WILL BE REPLACED AT THE DIRECTION OF ENGINEER UNDER MISC. METAL. CASTINGS DAMAGED BY THE CONTRACTOR WILL BE REPLACED AT NO ADDITIONAL COST TO THE CITY.

2.) EXISTING STRUCTURE SHALL BE REMOVED TO SOLID STRUCTURE OR TO SPRINGLINE OF DEEPEST PIPE, WHICHEVER IS DEEPER.

3.) RECONSTRUCTED STRUCTUIRE USING THE SALVAGED CASTING, RECONSTRUCT THE STRUCTURE TO THE NEW GRADE, CONFORMING AS NEARLY AS PRACTICABLE TO THE EXISTING DIMENSION USING BRICK.

5.) PAVEMENT REPAIR LIMITS WILL BE MARKED BY THE ENGINEER.

6.) DOWELS: 18" LONG, EPOXY COATED DOWELS ARE REQUIRED FOR USE ON 12" CENTERS ALONG TRANSVERSE FACES OF BOX-OUTS. DOWEL DIAMETER DEPENDENT ON THICKNESS OF ABUTTING PAVEMENT.

7.) HOOK BOLTS: 5/8" HOOK BOLTS, OR CITY APPROVED REPLACEMENT PER CITY DETAIL, ARE TO BE PLACED ON 30" CENTERS ALONG LONGITUDINAL FACE OF BOX-OUT IN CENTER OF ABUTTING CONCRETE. IF THEIR INSTALLATION IS DIRECTED BY THE ENGINEER.

8.) FLOWABLE FILL LOW STRENGTH MORTAR MIX OF 100 LBS. CEMENT / YD. SHALL BE POURED OUTSIDE OF STRUCTURE FROM BELOW BOTTOM OF BRICK TO A THICKENED PAVEMENT EDGE AROUND STRUCTURE AND BOTTOM OF ABUTTING PAVEMENT.

9.) CONCRETE MS, AIR-ENTRAINED CONCRETE (6% +/- 2%) SHALL BE POURED IN THICKENED PAVEMENT REPAIR ATOP CURED BASE OF FLOWABLE FILL.

REV No.	DATE	BY	DESCRIPTION
3	2/1/20	CSH	Casting Anchors- Re-issue
2	1/18/19	MAC	General Revisions (Re-Issue)
1	8/12	DAH	General Revisions (Re-Issue)

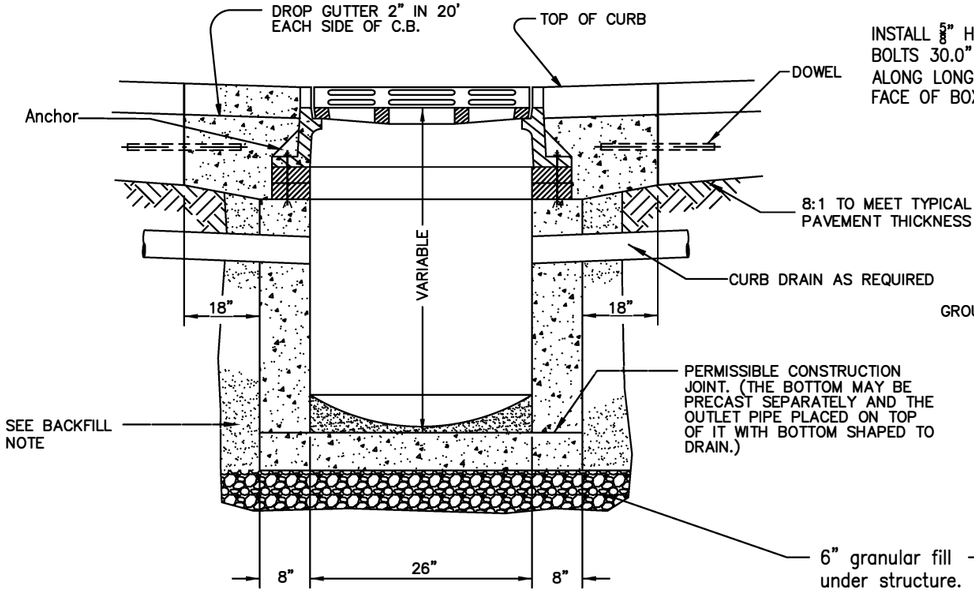
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CATCH BASIN RECONSTRUCT

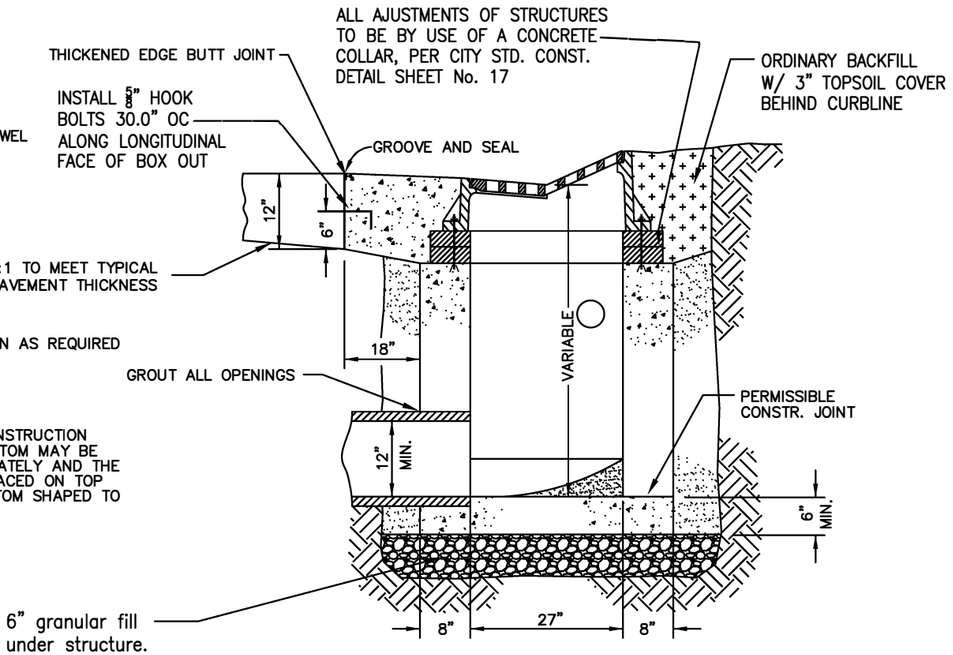
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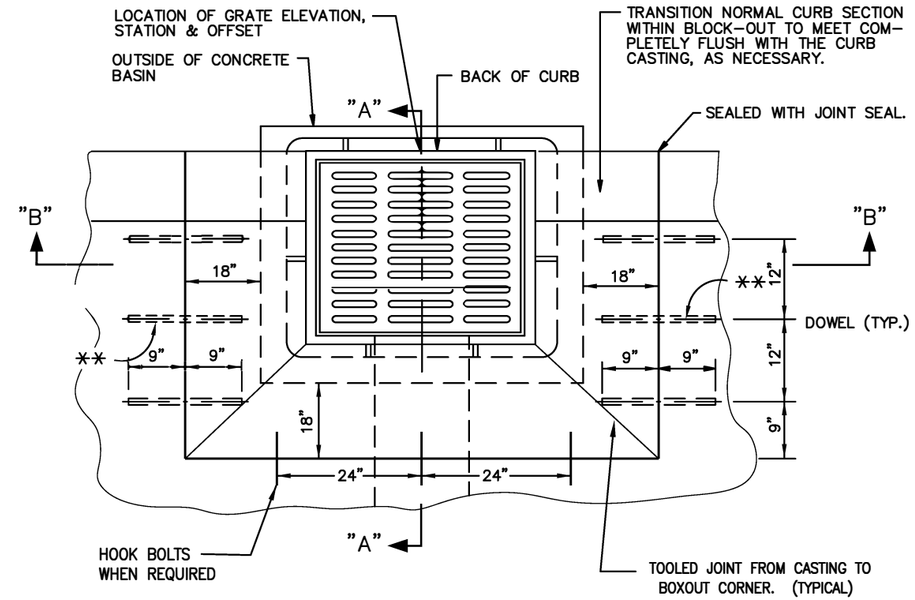
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SECTION "B– B"



SECTION "A–A"



PLAN OF CATCH BASIN AND PAVEMENT JOINTS

** DOWEL LOCATION FOR CURB AND GUTTER

Note:

RESIDENTIAL PAVEMENT T = 7" (1"x 18" Long Dia. Dowel)

INDUSTRIAL PAVEMENT T = 9" (1¼"x 18" Long Dia. Dowel)

PRECAST CATCH BASIN

A PRECAST CONCRETE CHAMBER MAY BE USED. THE WALL THICKNESS SHALL BE A MINIMUM OF 6". REINFORCING STEEL SHALL BE USED IN ALL CASES. No.3 BARS SHALL BE USED WHERE THE WALL HEIGHT FROM THE TOP OF THE WALL TO BOTTOM OF SLAB IS 3.0' OR LESS AND No.4 BARS SHALL BE USED WHEN THE WALL HEIGHT EXCEEDS 3.0'. SHOP DRAWINGS SHALL BE REQUIRED IF PRECAST CONCRETE STRUCTURE IS USED.

NOTES:

BACKFILL FOR ALL STRUCTURES WITHIN THE LIMITS OF THE PAVEMENT SHALL BE LOW STRENGTH MORTAR BACKFILL, TYPE 2 PER CURRENT O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS MODIFIED HEREIN.

THE USE OF FOUNDRY SAND IS STRICTLY PROHIBITED.

THE CONTRACTOR IS REQUIRED TO SUBMIT A MIX DESIGN, FOR CITY APPROVAL, A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF THE BACKFILL.

CURB DRAINS INSTALLED SHALL BE STUBBED OUT 1' PAST THE LIMITS OF EXCAVATION WITH SOLID PIPE.

NOTES:

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604–711.12, A.S.T.M. A 48, CLASS 36 GRAY IRON OR 711.13 DUCTILE IRON. AFTER ACCEPTANCE, EXPOSED PARTS OF CURB CASTING TO BE THOROUGHLY CLEANED AND GIVEN ONE COAT OF ASPHALT VARNISH OR COAL TAR PITCH PAINT AT THE SITE.

TOTAL MINIMUM ASSEMBLY WEIGHT = 600 LBS.
600 LBS.

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:
NEENAH NO. R–3514–F
EAST JORDON No. 7390 WITH BICYCLE SAFE GRATE

BEARING AREAS FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTINGS AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED. MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

DOWELS FOUR (4) 1"X18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT.

PRECAST CONSTRUCTION IS PERMITTED, (EXCEPT FOR THE BLOCK–OUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH SIX PLUS OR MINUS TWO PERCENT (6±2%) AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND REPLACEMENT WITHOUT DAMAGE.

BLOCKOUT WHERE ONE SIDE OF THE BLOCKOUT IS LOCATED AT A TRANSVERSE PAVEMENT JOINT THE TRANSVERSE PAVEMENT JOINT SHALL BE THICKENED AND CONTINUED IN KIND WITHIN THE LIMITS OF THE BLOCKOUT. EXCEPT AS DESCRIBED ABOVE, BLOCKOUTS SHALL BE LOCATED NO CLOSER THAN FIVE (5) FEET FROM A TRANSVERSE PAVEMENT JOINT.
WHERE THE SPECIFIED CATCH BASIN WORK REQUIRES THE CONSTRUCTION/RECONSTRUCTION OF BLOCKOUTS IN EXISTING PAVEMENT, THE BLOCKOUTS SHALL CONFORM, AS CLOSELY AS POSSIBLE, TO THE DETAILS SHOWN HEREON EXCEPT THAT THE DOWELS SHALL BE PLACED/REPLACED IN ACCORDANCE WITH THE "SECTION–TYPE X" JOINT, PER O.D.O.T. CONSTRUCTION DRAWING BP–2.5C. ("SECTION–TYPE Y" JOINT WHERE BLOCKOUT JOINT IS AT A EXISTING CONTRACTION OR HINGE JOINT LOCATION.)
A CLASS "C" CONCRETE APRON, THE SIZE OF THE 2.0' GUTTER BLOCKOUT, SHALL BE CAST IN PLACE IN FLEXIBLE PAVEMENT AND NO DOWELS ARE REQUIRED.

REV No.	DATE	BY	DESCRIPTION
6	2/1/20	CSH	Casting Anchors– Re–issue
5	1/18/19	MAC	General Revisions (Re–issue)
4	9/13	DAH	Adjust to Grade Revision (Re–issue)
3	6/13	DAH	Removed Expansion & Caps (Re–issue)
2	8/12	DAH	General Revisions (Re–issue)
1	2/26/04	DAH	General Revisions (Re–issue)

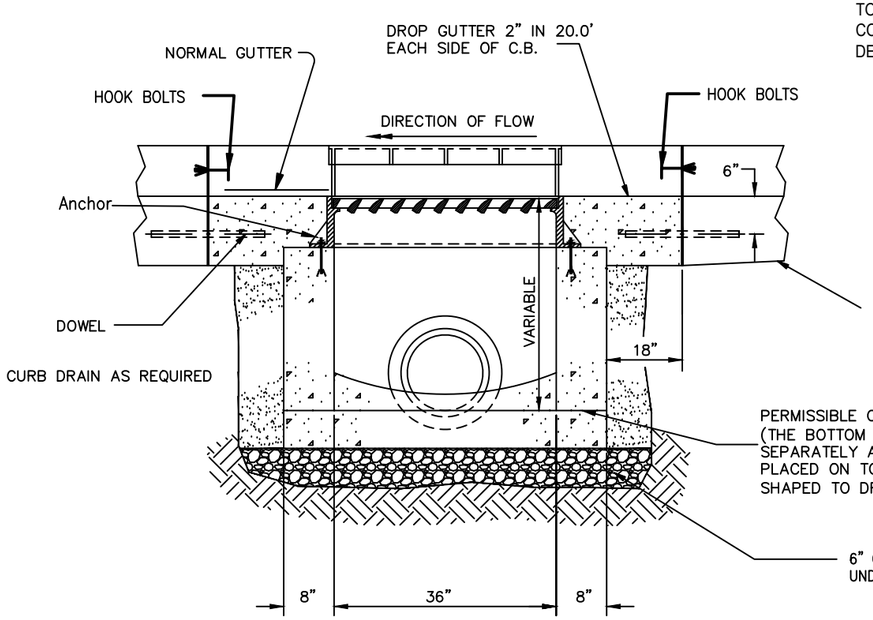
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CATCH BASIN
MOUNTABLE CURB

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DATE: DRWN BY:

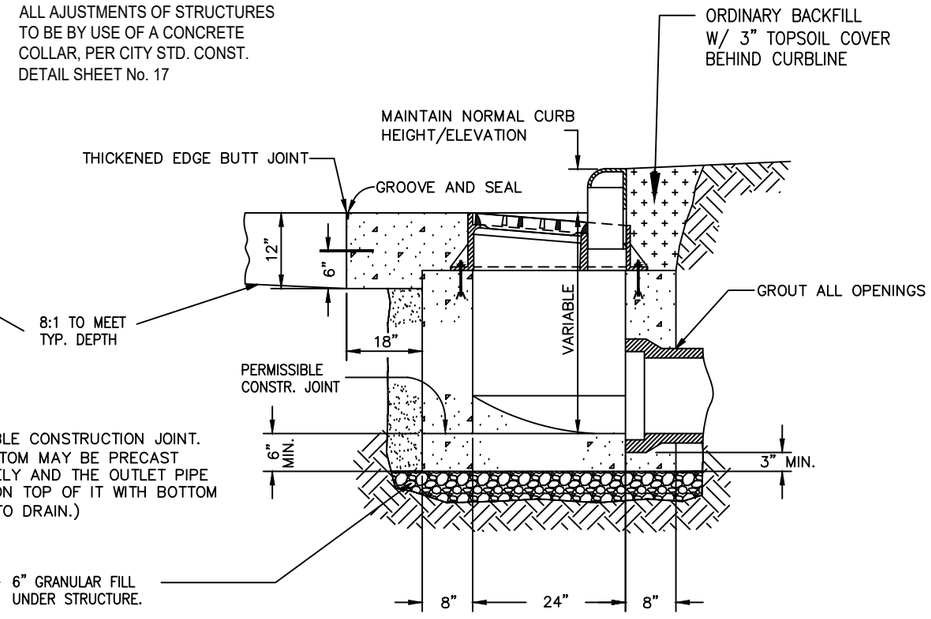
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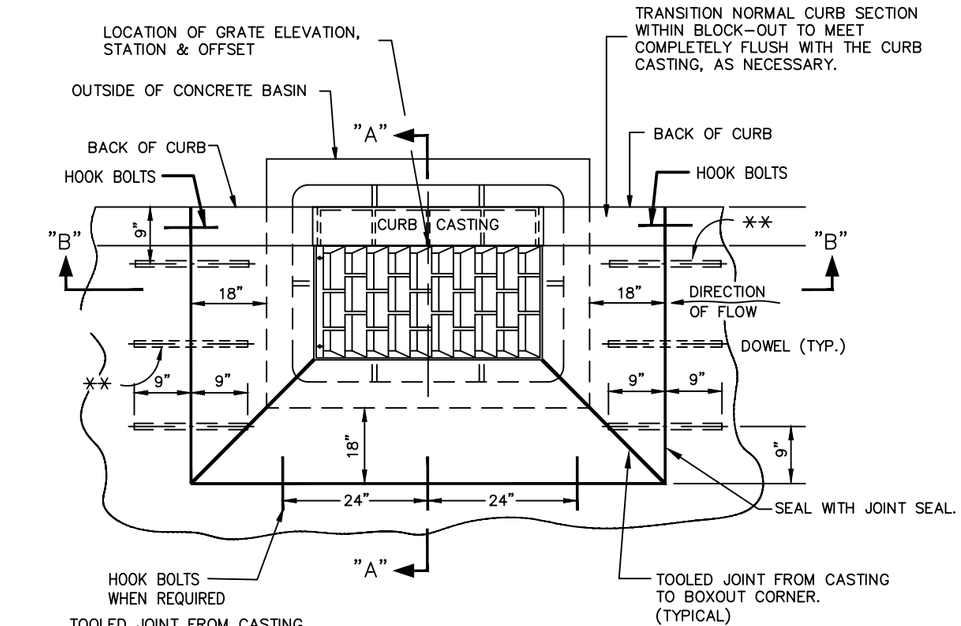


SECTION "B– B"

ALL AJUSTMENTS OF STRUCTURES
TO BE BY USE OF A CONCRETE
COLLAR, PER CITY STD. CONST.
DETAIL SHEET No. 17



SECTION "A–A"



PLAN OF CATCH BASIN
AND PAVEMENT JOINTS

** DOWEL LOCATION FOR
CURB AND GUTTER

NOTE:

RESIDENTIAL PAVEMENT T = 7" (1"x 18" Long Dia. Dowel)

INDUSTRIAL PAVEMENT T = 9" (1¼"x 18" Long Dia. Dowel)

NOTES:

BACKFILL FOR ALL STRUCTURES WITHIN THE LIMITS OF THE PAVEMENT SHALL BE LOW STRENGTH MORTAR BACKFILL, TYPE 2 PER CURRENT O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS MODIFIED HEREIN.

THE USE OF FOUNDRY SAND IS STRICTLY PROHIBITED.

THE CONTRACTOR IS REQUIRED TO SUBMIT A MIX DESIGN, FOR CITY APPROVAL, A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF THE BACKFILL.

CURB DRAINS INSTALLED SHALL BE STUBBED OUT 1' PAST THE LIMITS OF EXCAVATION WITH SOLID PIPE.

NOTES:

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604–711.12, A.S.T.M. A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON. AFTER ACCEPTANCE, EXPOSED PARTS OF CURB CASTING TO BE THOROUGHLY CLEANED AND GIVEN ONE COAT OF ASPHALT VARNISH OR COAL TAR PITCH PAINT, AT THE SITE.

MINIMUM FRAME WEIGHT =	340 LBS.
MINIMUM GRATE WEIGHT =	135 LBS.
MINIMUM CURB CASTING WEIGHT =	110 LBS.
TOTAL MINIMUM ASSEMBLY WEIGHT =	585 LBS.

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:
NEENAH No. R–3246–CL
EAST JORDON No. 7035 WITH M6 GRATE

BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

DOWELS: SIX (6) 1"X18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT.

PRECAST CONSTRUCTION IS PERMITTED, (EXCEPT FOR THE BLOCKOUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH 6± 2% AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

BLOCKOUT: WHERE ONE SIDE OF THE BLOCKOUT IS LOCATED AT A TRANSVERSE PAVEMENT JOINT THE TRANSVERSE PAVEMENT JOINT SHALL BE THICKENED AND CONTINUED IN KIND WITHIN THE LIMITS OF THE BLOCKOUT. EXCEPT AS DESCRIBED ABOVE, BLOCKOUTS SHALL BE LOCATED NO CLOSER THAN 5.0' FROM A TRANSVERSE PAVEMENT JOINT.
WHERE THE SPECIFIED CATCH BASIN WORK REQUIRES THE CONSTRUCTION/RECONSTRUCTION OF BLOCKOUTS IN EXISTING PAVEMENT, THE BLOCKOUTS SHALL CONFORM, AS CLOSELY AS POSSIBLE, TO THE DETAILS SHOWN HEREON EXCEPT THAT THE DOWELS SHALL BE PLACED/REPLACED IN ACCORDANCE WITH THE "SECTION–TYPE X" JOINT, PER O.D.O.T. CONSTRUCTION DRAWING BP–2.5C. ("SECTION–TYPE Y" JOINT WHERE BLOCKOUT JOINT IS AT A EXISTING CONTRACTION OR HINGE JOINT LOCATION.)
A CLASS "C" CONCRETE APRON, THE SIZE OF 2.0' GUTTER BLOCKOUT, SHALL BE CAST IN PLACE IN FLEXIBLE PAVEMENT AND NO DOWELS ARE REQUIRED.

THIS CATCH BASIN IS NOT INTENDED FOR USE WITH MOUNTABLE TYPE CURBS NOR SHOULD IT BE LOCATED WITHIN A DRIVE APRON. (SEE CITY OF WESTLAKE STANDARD CONSTRUCTION DRAWING No. 19).

PRECAST CATCH BASIN

A PRECAST CONCRETE CHAMBER SHALL BE USED. THE WALL THICKNESS SHALL BE A MINIMUM OF 6". REINFORCING STEEL SHALL BE USED IN ALL CASES. No. 3 BARS SHALL BE USED WHERE THE WALL HEIGHT FROM THE TOP OF THE WALL TO BOTTOM OF SLAB IS 3 FEET OR LESS AND No. 4 BARS SHALL BE USED WHEN THE WALL HEIGHT EXCEEDS 3 FEET. SHOP DRAWINGS SHALL BE REQUIRED WHEN PRECAST CONCRETE STRUCTURE IS USED.

REV No.	DATE	BY	DESCRIPTION
6	2/1/20	CSH	Casting Anchors– Re–issue
5	1/22/19	MAC	General Revisions (Re–Issue)
4	9/13	DAH	Adjust to Grade Revision (Re–Issue)
3	6/13	DAH	Removed Expansion & Caps (Re–Issue)
2	8/12	DAH	General Revisions (Re–Issue)
1	2/27/04	DAH	General Revisions (Re–Issue)

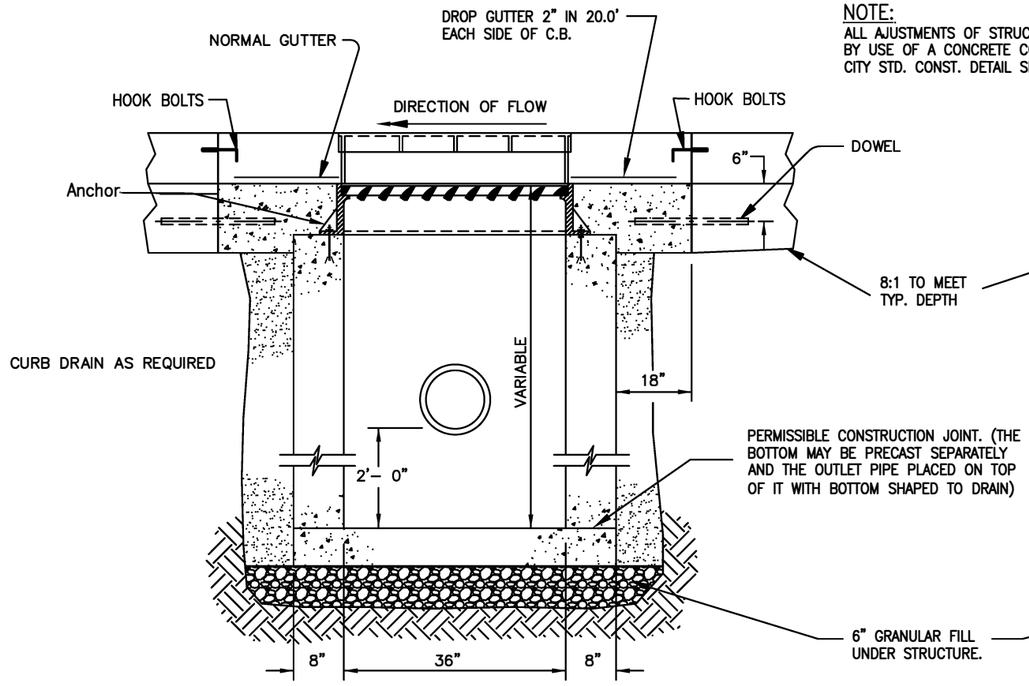
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CURB INLET
BARRIER CURB

SCALE: AS NOTED
DATE: DRWN BY:

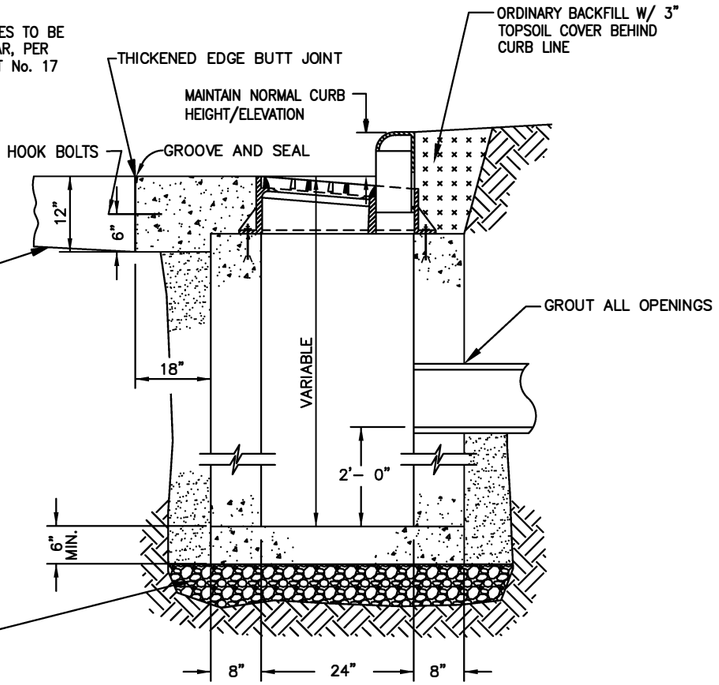
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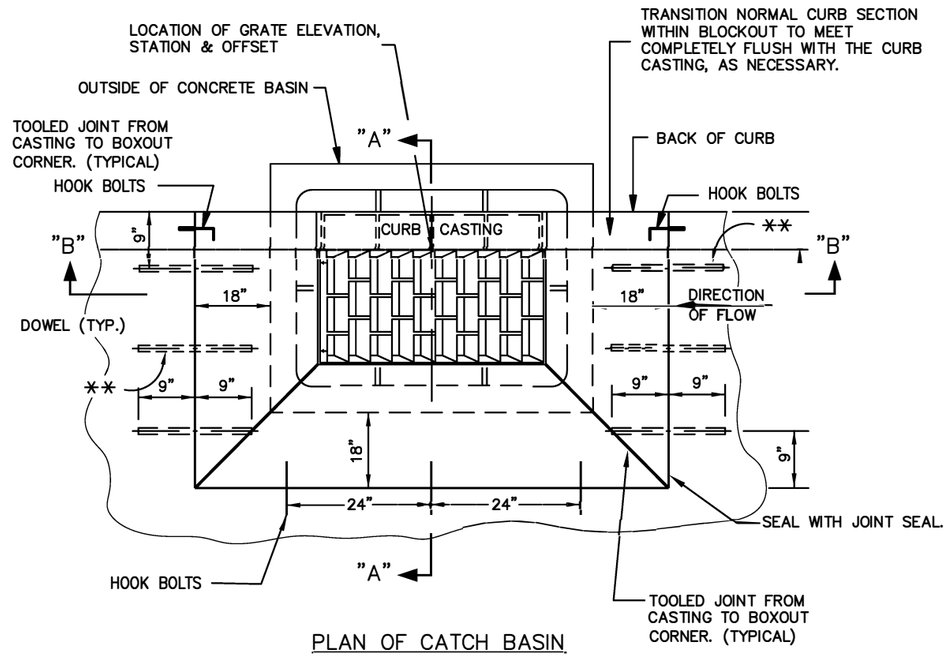


SECTION "B- B"

NOTE:
ALL AJUSTMENTS OF STRUCTURES TO BE BY USE OF A CONCRETE COLLAR, PER CITY STD. CONST. DETAIL SHEET No. 17



SECTION "A-A"



PLAN OF CATCH BASIN AND PAVEMENT JOINTS

** DOWEL LOCATION FOR GUTTER CURB AND GUTTER

Note:

RESIDENTIAL PAVEMENT T = 7" (1"x 18" Long Dia. Dowel)

INDUSTRIAL PAVEMENT T = 9" (1¼"x 18" Long Dia. Dowel)

NOTES:

BACKFILL FOR ALL STRUCTURES WITHIN THE LIMITS OF THE PAVEMENT SHALL BE LOW STRENGTH MORTAR BACKFILL, TYPE 2 PER CURRENT O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS MODIFIED HEREIN.

THE USE OF FOUNDRY SAND IS STRICTLY PROHIBITED.

THE CONTRACTOR IS REQUIRED TO SUBMIT A MIX DESIGN, FOR CITY APPROVAL, A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF THE BACKFILL.

CURB DRAINS INSTALLED SHALL BE STUBBED OUT 1' PAST THE LIMITS OF EXCAVATION WITH SOLID PIPE.

PRECAST CATCH BASIN:

A PRECAST CONCRETE CHAMBER SHALL BE USED. THE WALL THICKNESS SHALL BE A MINIMUM OF 6". REINFORCING STEEL SHALL BE USED IN ALL CASES. No. 3 BARS SHALL BE USED WHERE THE WALL HEIGHT FROM THE TOP OF THE WALL TO BOTTOM OF SLAB IS 3.0' OR LESS AND No. 4 BARS SHALL BE USED WHEN THE WALL HEIGHT EXCEEDS 3.0'.
SHOP DRAWINGS SHALL BE REQUIRED IF PRECAST CONCRETE STRUCTURE IS USED.

NOTES:

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604-711.12, A.S.T.M. A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON. AFTER ACCEPTANCE, EXPOSED PARTS OF CURB CASTING TO BE THOROUGHLY CLEANED AND GIVEN ONE COAT OF ASPHALT VARNISH OR COAL TAR PITCH PAINT, AT THE SITE.

MINIMUM FRAME WEIGHT =	340 LBS.
MINIMUM GRATE WEIGHT =	135 LBS.
MINIMUM CURB CASTING WEIGHT =	110 LBS.
TOTAL MINIMUM ASSEMBLY WEIGHT =	585 LBS.

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:
NEENAH No. R-3246-CL
EAST JORDON No. 7035 WITH M6 GRATE

BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

DOWELS: SIX (6) 1"X18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT.

PRECAST CONSTRUCTION IS PERMITTED, (EXCEPT FOR THE BLOCKOUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH 6± 2% AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND REPLACEMENT WITHOUT DAMAGE.

BLOCKOUT: WHERE ONE SIDE OF THE BLOCKOUT IS LOCATED AT A TRANSVERSE PAVEMENT JOINT THE TRANSVERSE PAVEMENT JOINT SHALL BE THICKENED AND CONTINUED IN KIND WITHIN THE LIMITS OF THE BLOCKOUT. EXCEPT AS DESCRIBED ABOVE, BLOCKOUTS SHALL BE LOCATED NO CLOSER THAN 5.0' FROM THE TRANSVERSE PAVEMENT JOINT.
WHERE THE SPECIFIED CATCH BASIN WORK REQUIRES THE CONSTRUCTION/RECONSTRUCTION OF BLOCKOUTS IN EXISTING PAVEMENT, THE BLOCKOUTS SHALL CONFORM, S CLOSELY AS POSSIBLE, TO THE DETAILS SHOWN HEREON EXCEPT THAT THE DOWELS SHALL BE PLACED/REPLACED IN ACCORDANCE WITH THE "SECTION-TYPE X" JOINT, PER O.D.O.T. CONSTRUCTION DRAWING BP-2.5C. (SECTION-TYPE Y" JOINT WHERE BLOCKOUT JOINT IS AT A EXISTING CONTRACTION OR HINGE JOINT LOCATION.)
A CLASS "C" CONCRETE APRON, THE SIZE OF THE 2.0' GUTTER BLOCKOUT, SHALL BE CAST IN PLACE IN FLEXIBLE PAVEMENT AND NO DOWELS ARE REQUIRED.

THIS CATCH BASIN IS NOT INTENDED FOR USE WITH MOUNTABLE TYPE CURBS NOR SHOULD IT BE LOCATED WITHIN A DRIVE APRON. SEE CITY OF WESTLAKE STANDARD CONSTRUCTION DRAWING No. 20).

REV No.	DATE	BY	DESCRIPTION
6	2/1/20	CSH	Casting Anchors- Re-issue
5	1/22/19	MAC	General Revisions (Re-Issue)
4	9/13	DAH	Adjust to Grade Revision (Re-Issue)
3	6/13	DAH	Removed Expansion & Caps (Re-Issue)
2	8/12	DAH	General Revisions (Re-Issue)
1	2/27/04	DAH	General Revisions (Re-Issue)

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

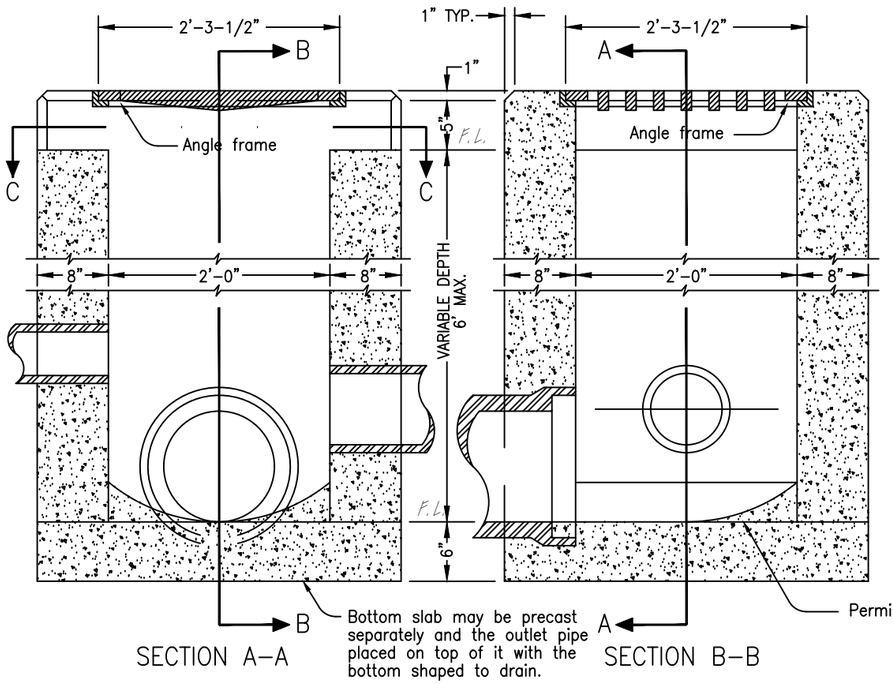
CATCH BASIN W/SUMP
BARRIER CURB

SCALE: AS NOTED
DATE: DRWN BY:

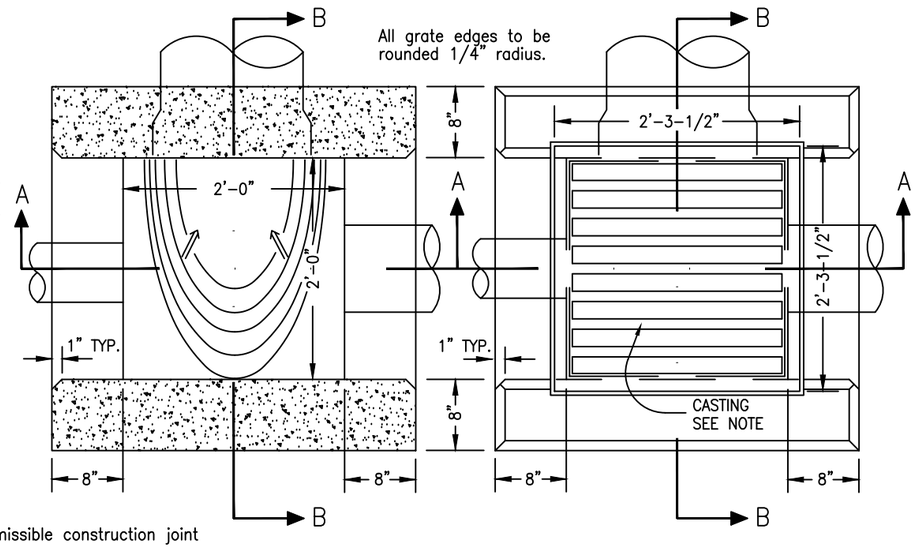
18

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STANDARD No. 2–2–A CATCH BASIN



SECTION A–A SECTION B–B



SECTION C–C PLAN

Notes:

Location and elevation when given on the plans is top center of the grate. When side openings are provided, elevation shall be the flow line of the side inlet.

Casting and Frame Casting to be East Jordan Iron Works No. 5110 w/Type M2 Flat Grate or as approved equal.

Brick, concrete block or cast–in–place walls have a nominal thickness of 8 inches. Precast walls shall have a min. thickness of 6 inches and be reinforced sufficiently to permit shipping and handling without damage. Brick or concrete block shall not be used above the flow line of the side opening for type 2–2–A.

2–2–A Side Inlets to be placed 4 to 6 inches below normal elevations of median or ditch flow line returning to normal 10 feet each side of the basin.

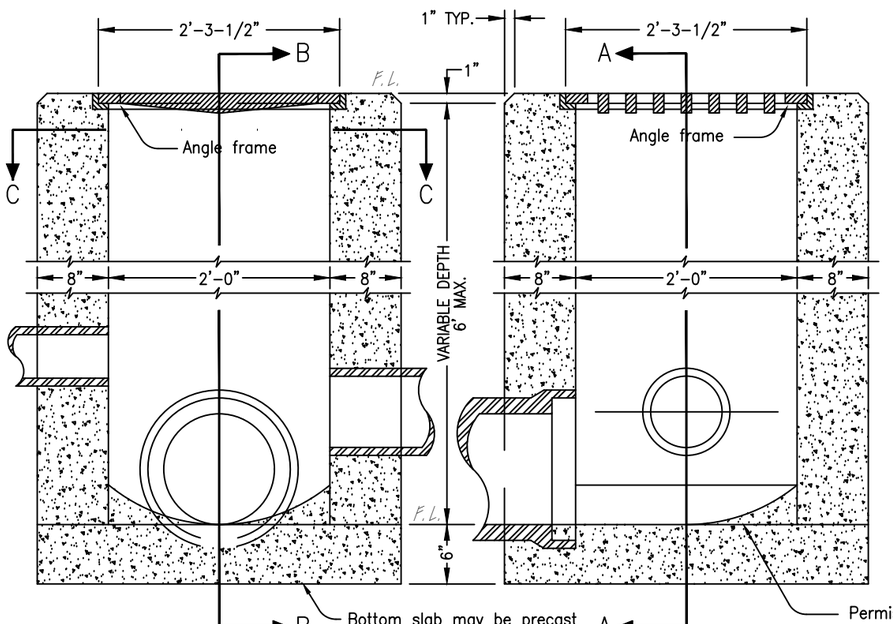
2–2–B Grate elevation to be placed 4 to 6 inches below normal ditch returuning to normal 10 feet each side of the basin.

Side Inlets shall be provided on both sides of the No. 2–2–A catch basins in sags and on upstream side only where the ditch has a continuous down grade past the catch basin.

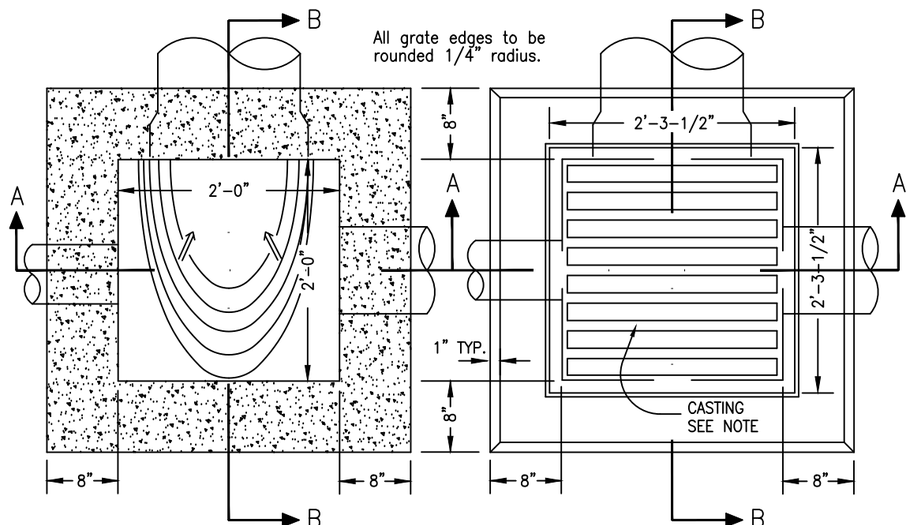
Concrete, cast in place, to be Class C. All precast concrete shall meet the requirements of 706.13.

Openings for pipes shall be O.D +2" when fabricated or field cut.

STANDARD No. 2–2–B CATCH BASIN



SECTION A–A SECTION B–B



SECTION C–C PLAN

REV No.	DATE	BY	DESCRIPTION
1	2/1/20	CSH	General Revision– Re–issue

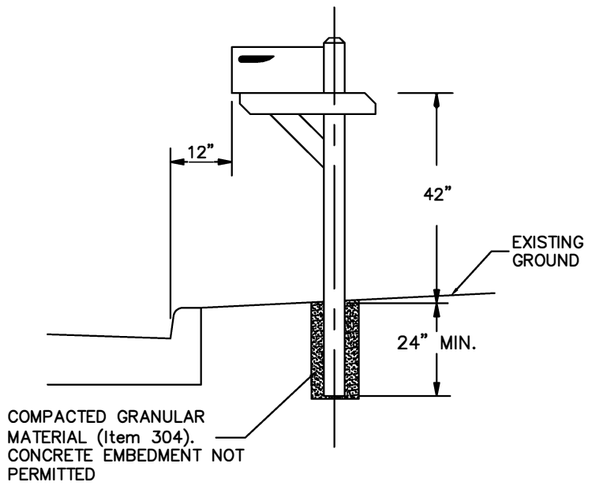
CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

CATCH BASIN
2–2–A 2–2–B

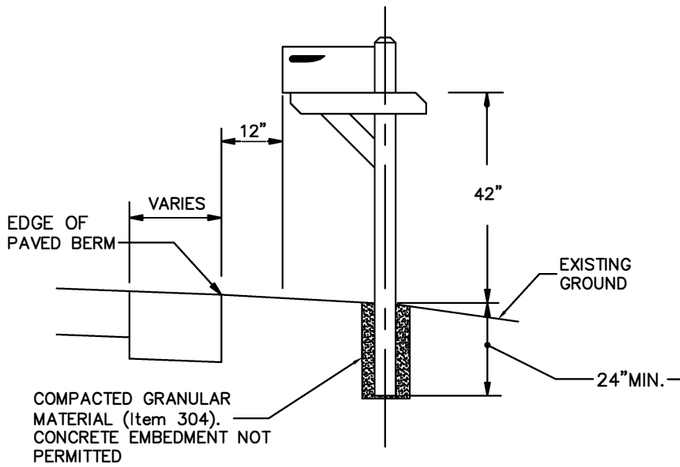
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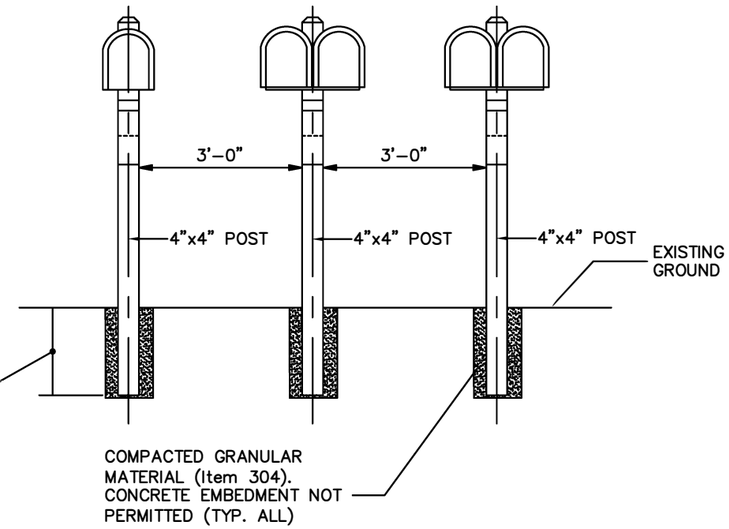
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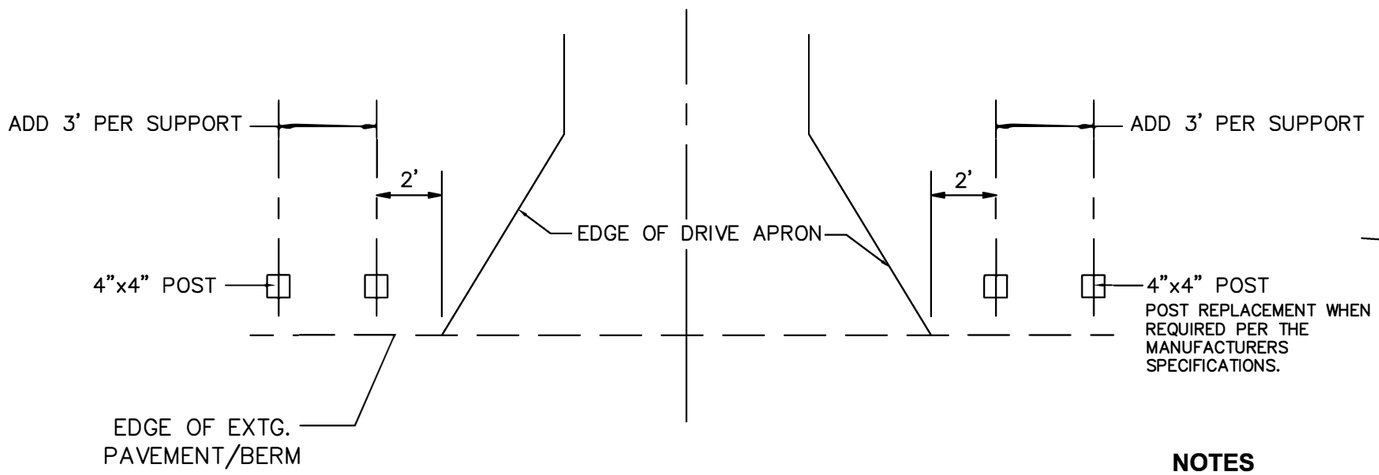
MAILBOX INSTALLATION DETAILS
CURBED PAVEMENT



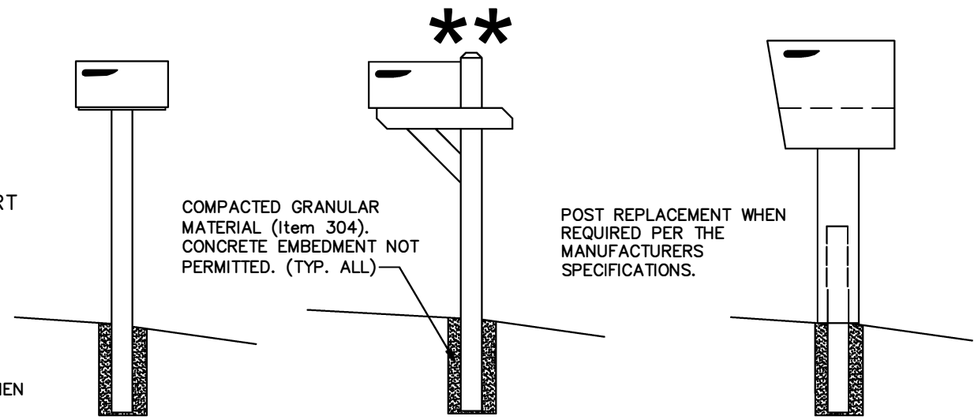
MAILBOX INSTALLATION DETAILS
PAVED SHOULDERS



GROUP MAILBOX INSTALLATION



MAILBOX INSTALLATION DETAILS
DRIVEWAY LOCATIONS



ACCEPTED MAILBOXES
AND POSTS

NOTES

1) ALL MAILBOX REPLACEMENT TO BE COORDINATED WITH THE HOMEOWNER.

** 2) SUGGESTED MAILBOX REPLACEMENT. SEE DETAIL SHEET 34 FOR CONSTRUCTION AND MATERIAL REQUIREMENTS

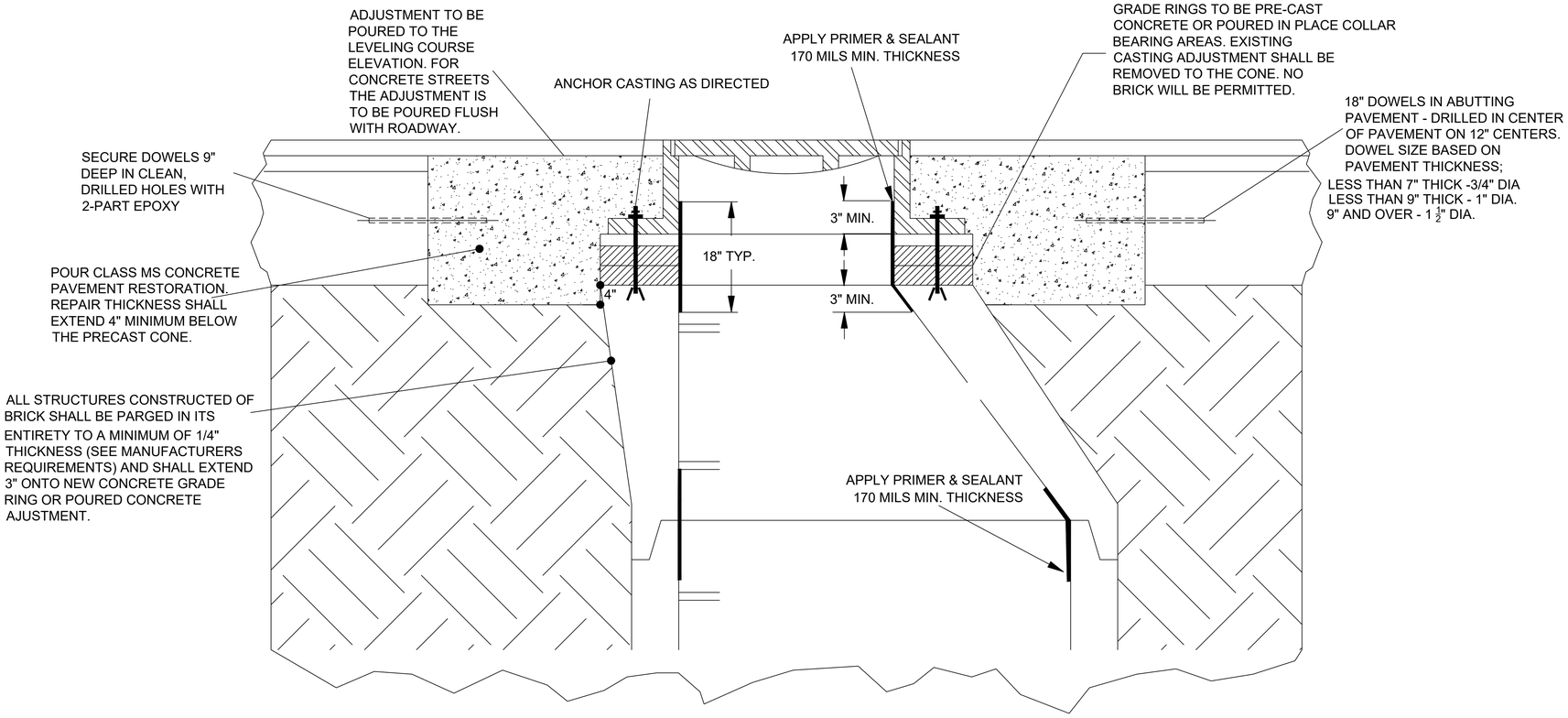
3) SPECIALTY DESIGN MAILBOXES ARE TO BE REPLACED IN KIND AND COORDINATED WITH THE HOMEOWNERS APPROVAL OF THE COMPLETED PRODUCT. CONTRACTOR IS RESPONSIBLE FOR DAMAGES TO EXISTING MAILBOX.

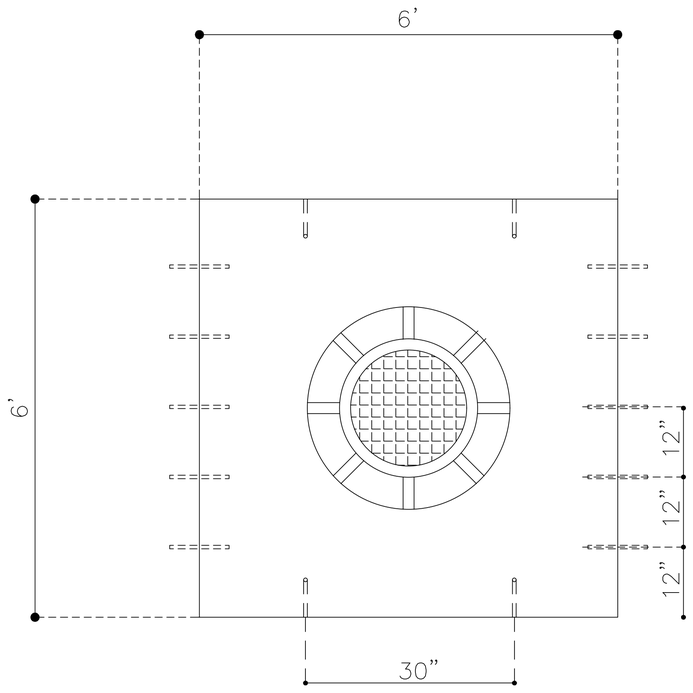
REV No.	DATE	BY	DESCRIPTION

STANDARD CONSTRUCTION DETAIL

MAILBOX DETAILS

SCALE: NTS
DATE: 02/02/08 DRWN BY:





NOTES

1.) CASTINGS: SHALL BE REMOVED FROM THE STRUCTURE AND THOROUGHLY CLEANED OF CONCRETE / FOREIGN MATERIAL. CASTINGS ARE TO BE RESET ON NEW ADJUSTMENT WITH THEIR BASE FULLY AND EVENLY SUPPORTED BY THE ADJUSTMENT. DAMAGED CASTINGS WILL BE REPLACED AT THE DIRECTION OF ENGINEER UNDER MISC. METAL. CASTINGS DAMAGED BY THE CONTRACTOR WILL BE REPLACED AT NO ADDITIONAL COST TO THE CITY.

2.) EXISTING ADJUSTMENT: EXISTING DAMAGED BRICK OR CONCRETE SHALL BE REMOVED TO THE MANHOLE CONE. ALL WALLS ARE TO BE REMOVED TO THE SAME LEVEL AS DIRECTED BY THE FIELD REPRESENTATIVE.

3.) NEW ADJUSTMENT: USING THE SALVAGED CASTING, RECONSTRUCT THE STRUCTURE TO THE NEW GRADE, CONFORMING AS NEARLY AS PRACTICABLE TO THE EXISTING DIMENSION USING A POURED "MS" CONCRETE COLLAR OR PRE CAST CONCRETE GRADE RINGS.

4.) PAVEMENT REPAIR LIMITS : WILL BE MARKED BY THE ENGINEER.

5.) DOWELS: 18" LONG, EPOXY COATED DOWELS ARE REQUIRED FOR USE ON 12" CENTERS ALONG TRANSVERSE FACES OF BOX-OUTS. DOWEL DIAMETER WILL BE DEPENDENT ON THE THICKNESS OF ABUTTING PAVEMENT.

6.) HOOK BOLTS: 5/8" HOOK BOLTS, OR CITY APPROVED REPLACEMENT PER CITY DETAIL, ARE TO BE PLACED ON 30" CENTERS ALONG THE LONGITUDINAL FACE OF BOX-OUT IN CENTER OF ABUTTING CONCRETE. IF THEIR INSTALLATION IS DIRECTED BY THE ENGINEER.

7.) CONCRETE: MS, AIR-ENTRAINED CONCRETE (6% +/- 2%) SHALL BE POURED FROM THE BOTTOM OF THE ABUTTING PAVEMENT TO LEVEL AS NOTED IN THE DETAIL

8.) ANCHORS: ANCHORS 1 2" DIA ALLTHREAD WITH WASHERS AND HEX NUT (MIN 4). ANCHOR TO BE SECURED INTO THE ECCENTRIC CONE TOP.

REHABILITATION NOTES:

1.) REMOVE MANHOLE LID.

2.) CLEAN SURFACE OF INTERIOR OF CASTING, PRECAST MANHOLE AND ADJUSTMENT BRICK OR ADJUSTMENT RINGS. REMOVE ALL RUST, DEBRIS, FOREIGN MATERIAL AND LOOSE BRICK, CONCRETE OR MORTAR. SAND BLASTER, MECHANICAL GRINDER OR PRESSURE WASHER TO BE USED FOR CLEANING.

3.) STOP ACTIVE INTERNAL LEAKS WITH WATER PLUG.

4.) FILL VOIDS WITH CEMENTITOUS GROUT (STRONG-SEAL QSR OR APPROVED EQUAL).

5.) IF THE MASONRY SURFACE IS ROUGH, IRREGULAR, OR CONTAINS EXCESSIVE VOIDS AND WILL NOT PROVIDE AN EFFECTIVE SEAL, APPLY PATCHING MIX TO PROVIDE A SMOOTH UNIFORM SURFACE. ALLOW MIX TO CURE PRIOR TO INSTALLING THE FLEXIBLE MANHOLE SEALANT SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.

6.) DRY INTERIOR SURFACES PER MANUFACTURER'S RECOMMENDATION,

7.) APPLY MANHOLE ADJUSTMENT RING PRIMER AND SEALANT (FLEX-SEAL OR APPROVED EQUAL). APPLY TO ENTIRE SURFACE OF ADJUSTMENT RING(S) AS WELL AS MANHOLE STRUCTURE AND CASTING AT LEAST 3" ABOVE, AND BELOW ADJUSTMENT RING. ALLOW TO PRIMER TO CURE PRIOR TO APPLICATION OF SEALANT.

8.) PREFABRICATED PLUGS SHALL BE USED FOR VENTED MANHOLE LIDS IN PAVED AREAS TO MITIGATE WATER INFLOW.

9.) THE PLUGS SHALL BE NEOPRENE STYLE OR APPROVED EQUAL.

10.) THE VENTED HOLES OF THE CASTING SHALL BE CLEAN OF FOREIGN DEBRIS SO THE PLUG CAN BE INSTALLED AND SEAL AGAINST THE CASTING.

11.) ONE VENT HOLE SHALL BE LEFT OPEN TO FACILITATE FUTURE LID REMOVAL AND TO VENT SANITARY GASSES FROM THE SYSTEM.

REV No.	DATE	BY	DESCRIPTION
1	3/18	WMD	General Revisions – Re-issue

CITY OF WESTLAKE, OHIO
DEPARTMENT OF ENGINEERING

MANHOLE ADJUSTMENT & ADJUSTMENT RING REHABILITATION

SCALE: AS NOTED
DATE: DRWN BY:

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