GENERAL CONSTRUCTION STANDARDS

PART B

Standard Details

City of University Park
Public Works/Engineering Department

March 2010

STANDARD DETAIL INDEX

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

STORM SEWER DETAILS

RECESSED CURB INLETS 4,6,8 AND 10' INLETS

D1-1/4

SCALE: N.T.S.
04/15/06

DEPARTMENT OF PUBLIC WORKS / ENGINEERING

PLAN - RECESSED INLET

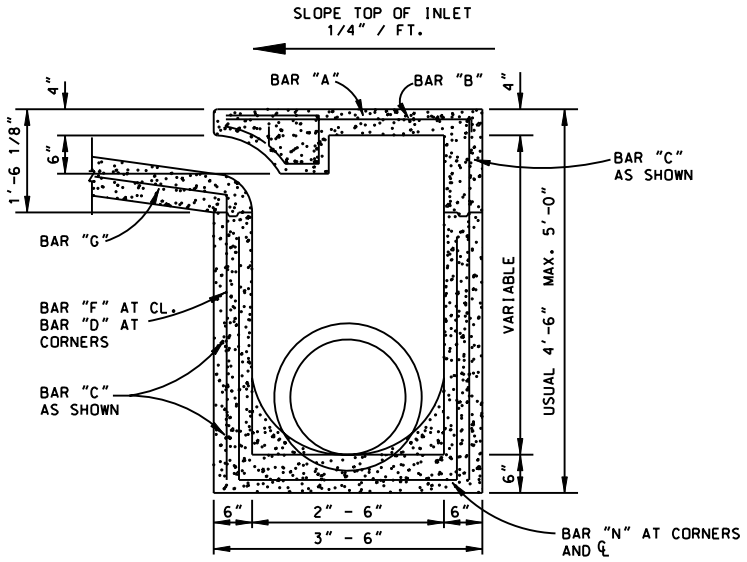
N.T.S.

NOTE :
PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

SECTION A-A

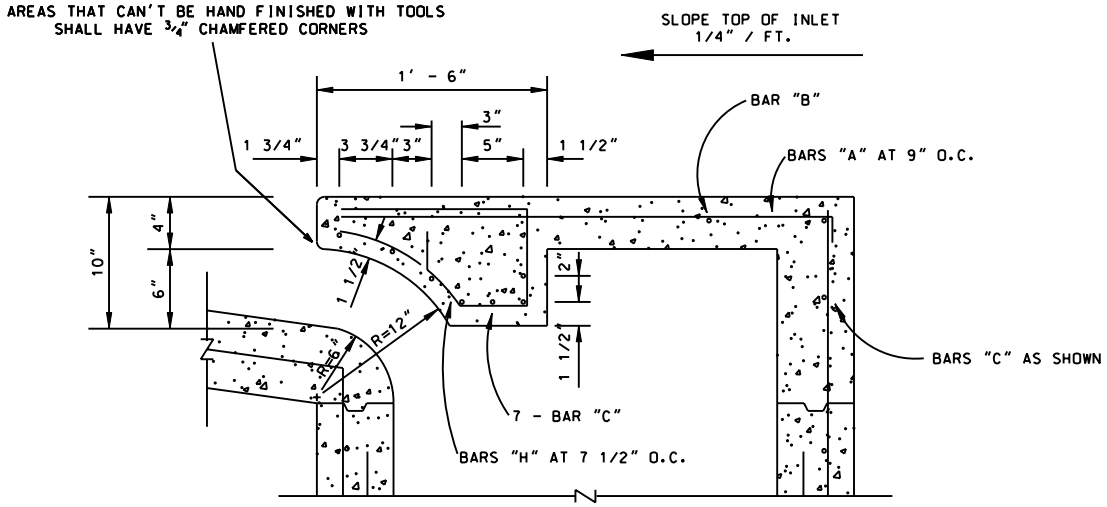
N.T.S.

NOTE: #3 BAR 18" O.C.E.W. IN BLOCK OUT DRILLED INTO EXISTING CONCRETE.



SECTION B-B

N.T.S.



SECTION C-C

N.T.S.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

STORM SEWER DETAILS

RECESSED CURB INLET
4,6,8 & 10 FOOT INLETS

D1– 2 /4

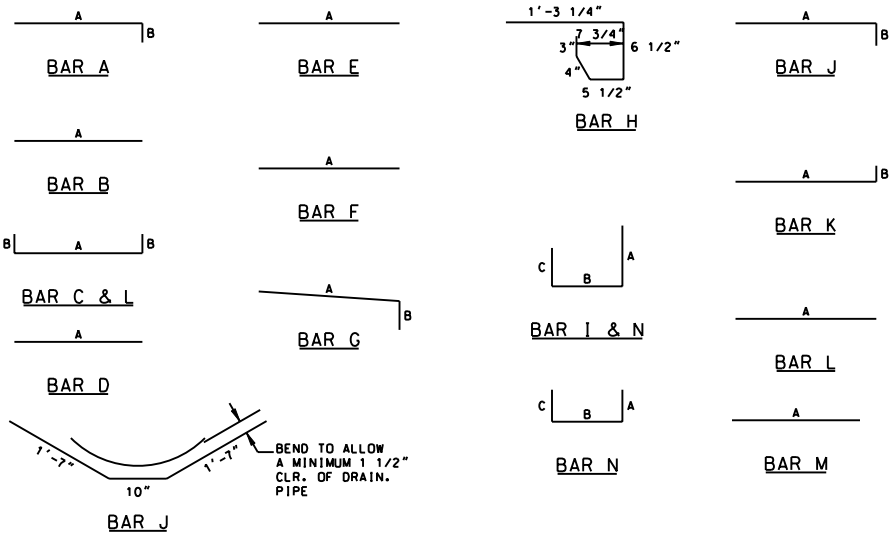
SCALE: N.T.S.
04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

REINFORCING STEEL SCHEDULE

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLET

INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQ'D.	BAR DIMENSIONS		
				A	B	C
4'	A	3	6	3'-2"	0'-3"	-
	B	3	1	2'-10"	-	-
	C	4	15	4'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
6'	A	3	9	3'-2"	0'-3"	-
	B	3	1	4'-10"	-	-
	C	4	15	6'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
8'	A	3	12	3'-2"	0'-3"	-
	B	3	1	6'-10"	-	-
	C	4	15	8'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	4	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
10"	A	3	10	3'-2"	0'-3"	-
	B	3	2	8'-10"	-	-
	C	4	16	10'-8"	0'-6"	-
	D	4	4	4'-8"	-	-
	E	5	6	10'-8"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	15	*	*	*
	I	4	8	4'-8"	3'-2"	3'-2"
	L	4	5	4'-3"	-	-



BAR DIAGRAMS

N.T.S.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

STORM SEWER DETAILS

REINFORCING STEEL SCHEDULE & BAR DIAGRAM

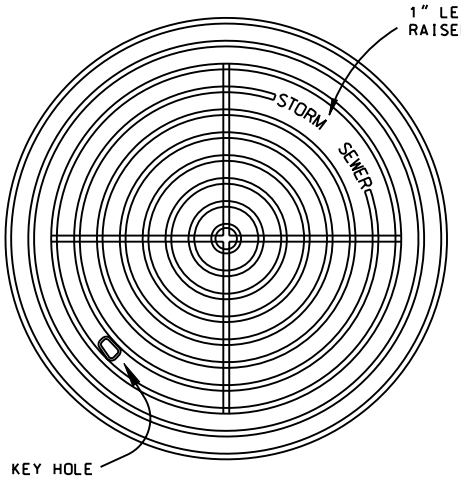
D1-3 /4

SCALE: N.T.S.

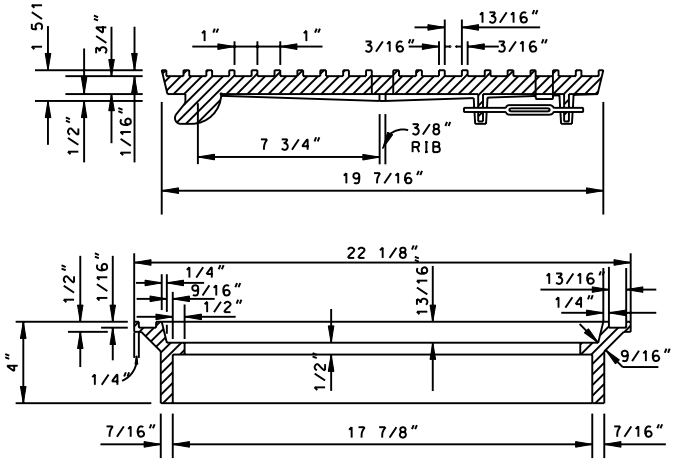
DATE: 04/15/06

DEPARTMENT OF PUBLIC WORKS / ENGINEERING

N.T.S.



PLAN OF FRAME



SECTION OF FRAME AND COVER

INLET FRAME AND COVER

N.T.S.

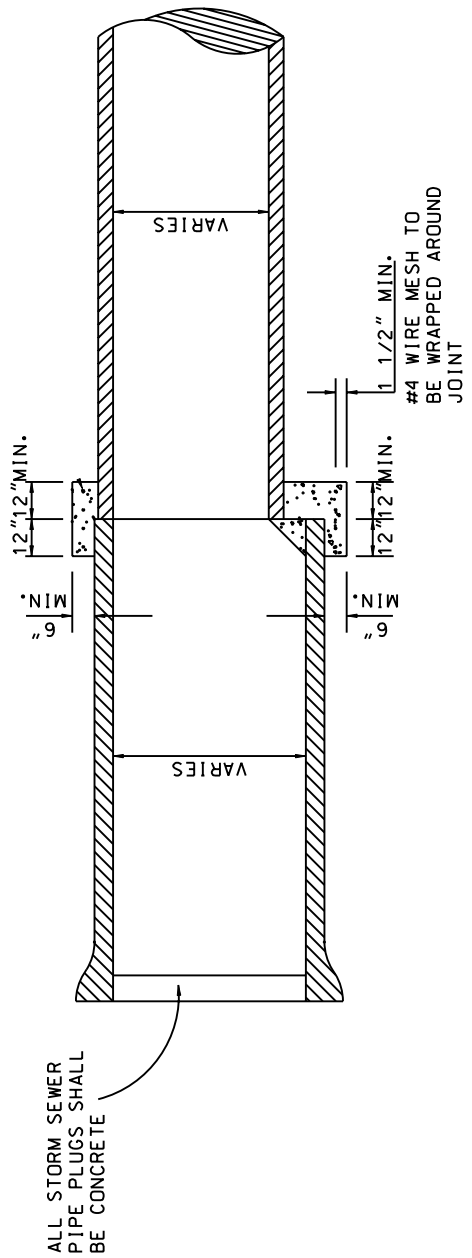
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
INLET FRAME AND COVER

D1–4 /4

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



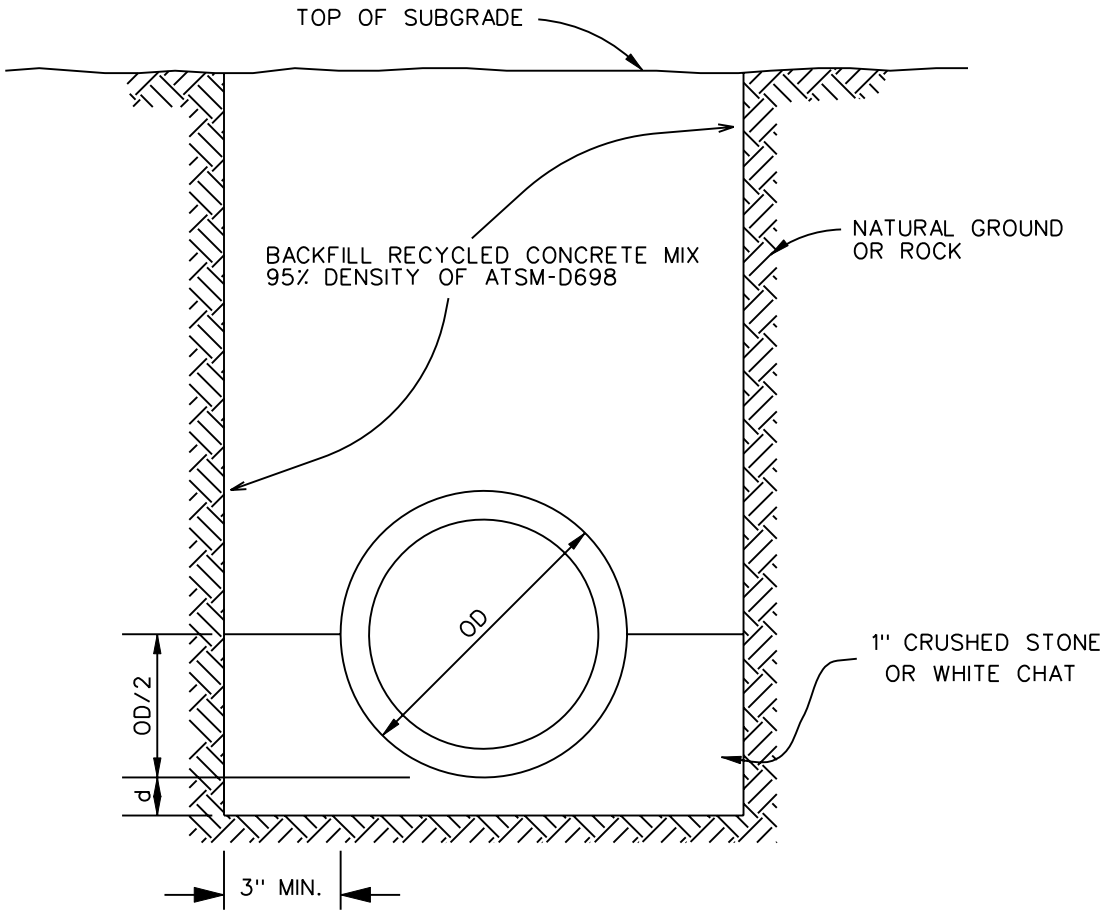
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
CONCRETE COLLAR FOR PIPE CONNECTIONS

D2

SCALE: N.T.S.
DATE: 01/21/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



d=DEPTH OF BEDDING MATERIAL BELOW PIPE.
(6" MIN.)

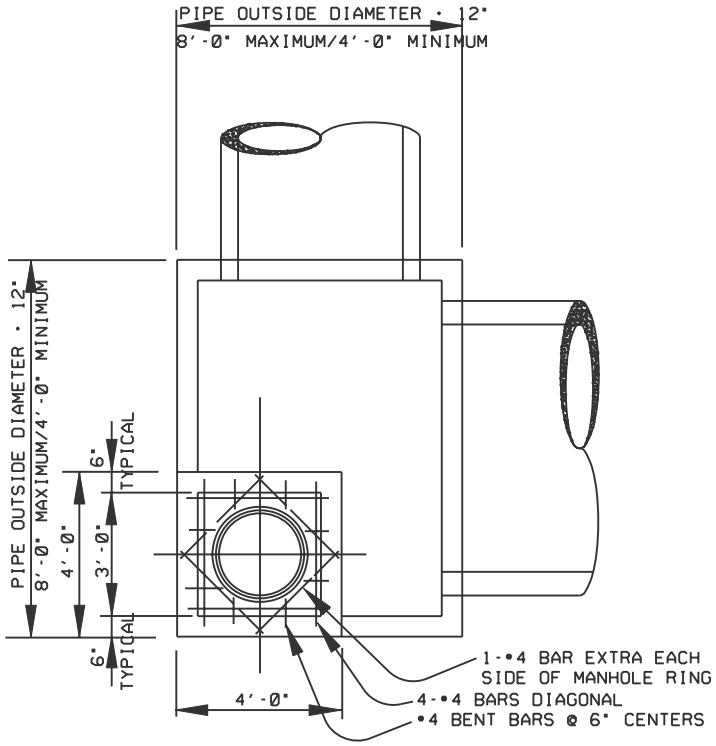
TRENCH WIDTHS SHOWN ARE MINIMUM FOR PROPER PLACEMENT AND COMPACTION OF EMBEDMENT AND BACKFILL.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
STORM SEWER EMBEDMENT

D3

SCALE: N.T.S.
DATE: 04/15/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



GENERAL NOTES:

NTS

GENERAL NOTES:

AN ALTERNATE DESIGN (BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER) WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES AND/OR EQUIVALENT STRUCTURAL DESIGN WITH THE APPROVAL OF THE CITY ENGINEER.

IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE DESIGNING ENGINEER.

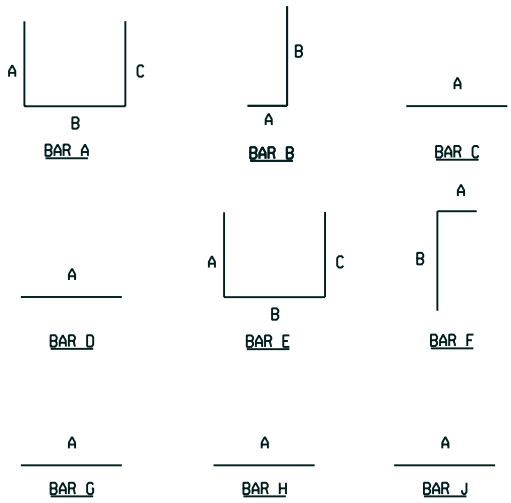
CONNECTING PIPES SHOULD ENTER WITHIN TEN (10) DEGREES OF NORMAL TO THE INLET WALL. IF NECESSARY, PIPE ELBOWS OR CURVED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT. PIPES MAY ENTER ANY OR ALL WALLS, EXCEPT AT CORNERS. THE MAXIMUM SIZE OF PIPE THAT CAN BE ACCOMODATED IS 60 INCHES IN DIAMETER. MORE THAN ONE PIPE MAY ENTER A SIDE, SUBJECT TO THE MAXIMUM BOX DIMENSIONS SHOWN. THE CLEAR DISTANCE BETWEEN ADJACENT PIPES SHOULD BE A MINIMUM OF 9 INCHES.

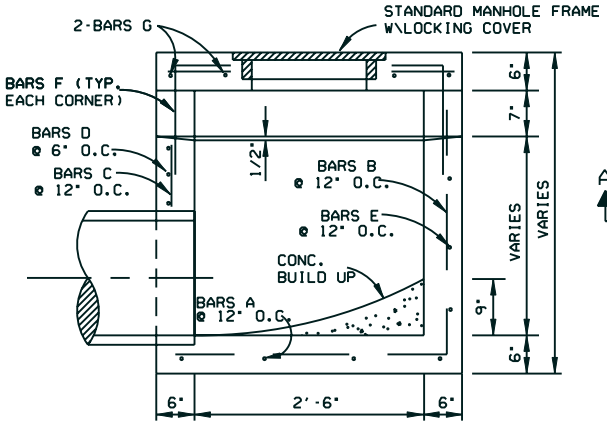
MINIMUM REBAR LAP IS TO BE THIRTY (30) BAR DIAMETERS (MINIMUM LENGTH OF 18 INCHES).

BAR DIAGRAM

BAR	NO. REQ'D	BAR SIZE	BAR BENDING DIMENSIONS		
			A	B	C
A	4	#4	VARIES	3'-0"	VARIES
B	4	#4	3'-0"	VARIES	-
C	2	#4	VARIES	-	-
D	VARIES	#4	3'-0"	-	-
E	VARIES	#4	3'-0"	3'-0"	3'-0"
F	4	#4	1'-0"	2'-0"	-
G	8	#4	3'-2"	-	-
H	8	#4	2'-1"	-	-
J	4	#4	3'-2"	-	-

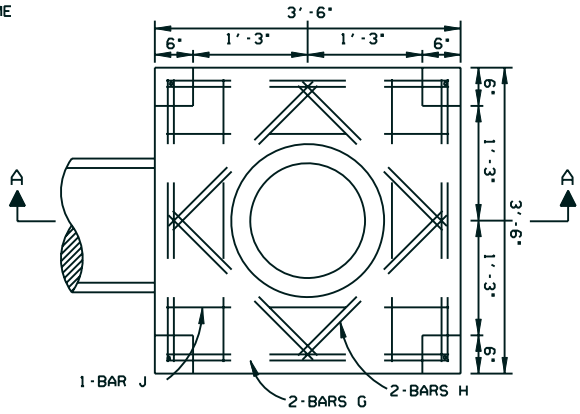
NOTE:
BARS "A" & "E" ARE USED
IN THE WALLS PARALLEL TO THE R.C.P..
BARS "B" ARE IN THE WALL OPPOSITE THE R.C.P..





SECTION A-A

N.T.S.



PLAN VIEW

N.T.S.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
"Y" TYPE INLET

D5

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

UNIVERSITY PARK

GENERAL DESIGN STANDARD

STORM SEWER DETAIL

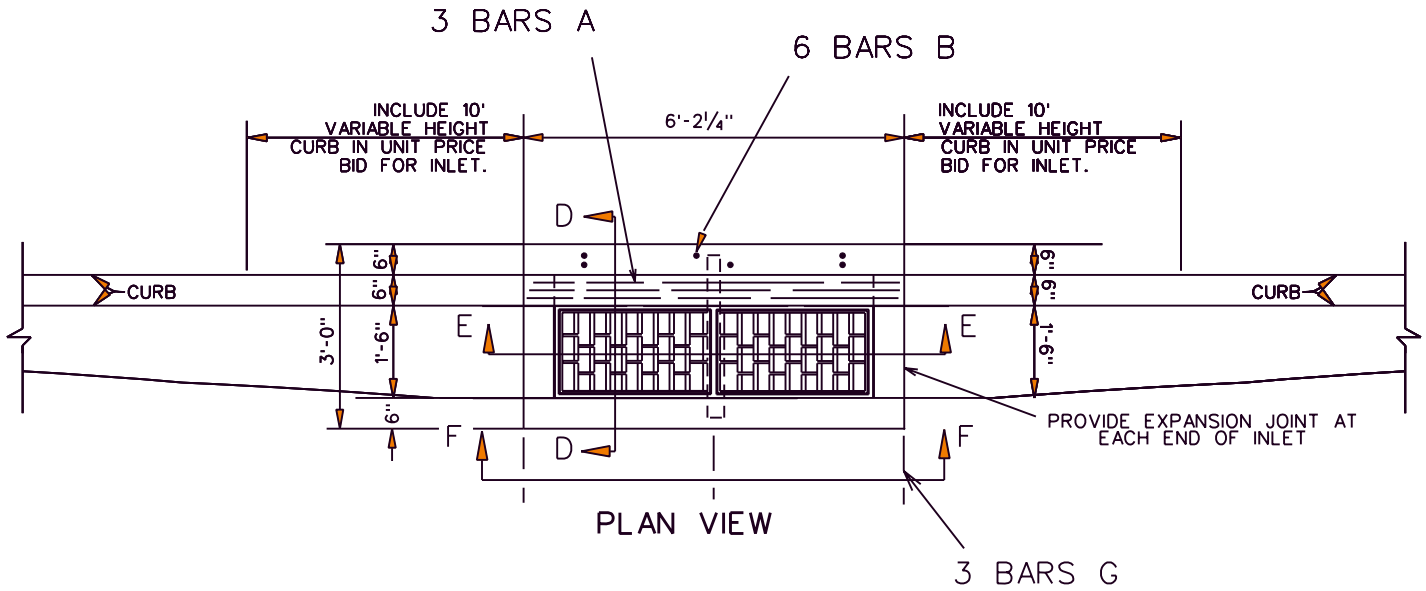
COMBINATION DOUBLE GRATE INLET

PLAN VIEW

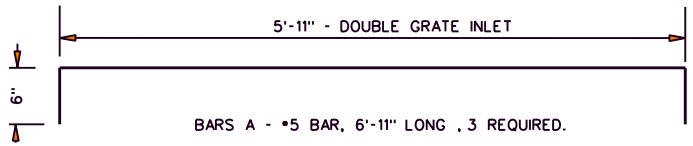
D6- 1/3

SCALE: N.T.S.
DATE: 01/21/10

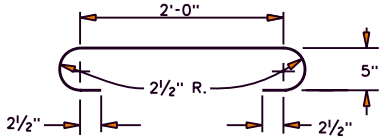
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



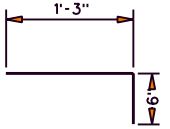
STEEL DETAIL



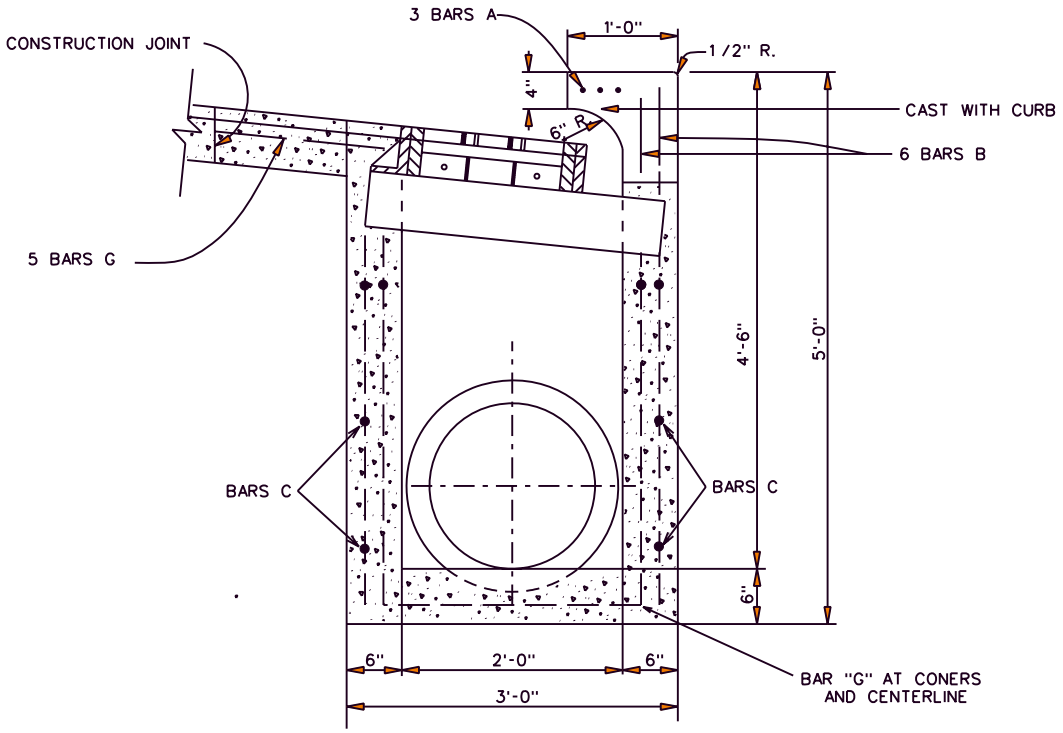
BARS A - #5 BAR, 6'-11" LONG , 3 REQUIRED.



BARS B - #5 BAR,3'-9" LONG,6 REQUIRED.



BARS G - #3 BAR, 1'-3" LONG, 3 REQUIRED.



SECTION "DD"

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

STORM SEWER DETAIL

COMBINATION DOUBLE GRATE INLET SECTION D–D

D6–2 /3

SCALE: N.T.S.
DATE: 01/21/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

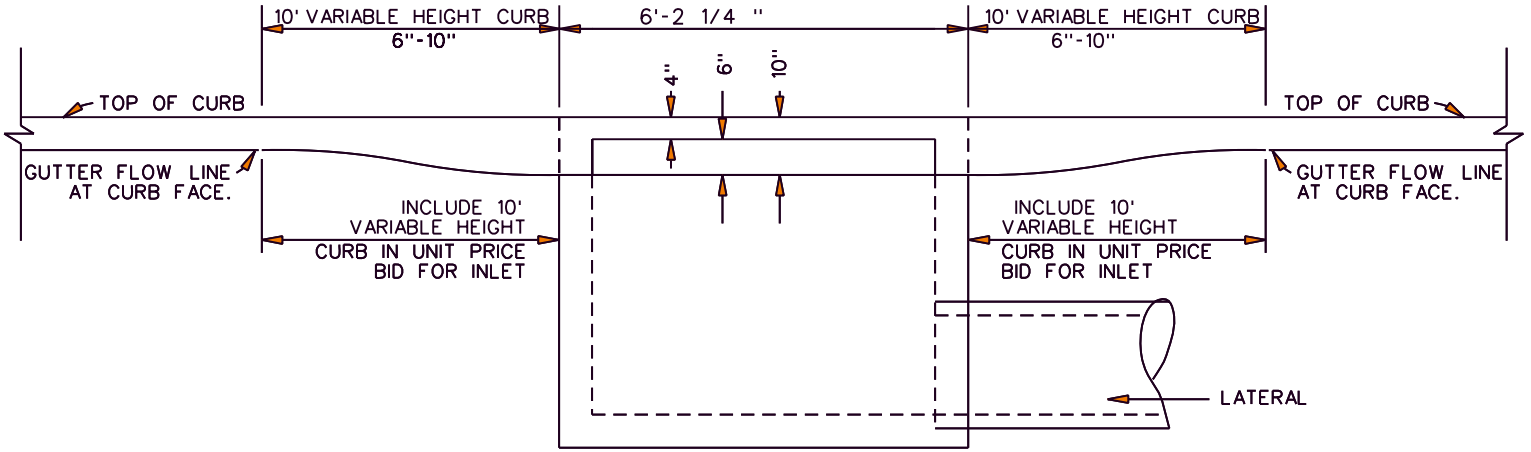
UNIVERSITY PARK

GENERAL DESIGN STANDARD
STORM SEWER DETAIL
COMBINATION DOUBLE GRATE INLET
SECTIONS E–E, F–F

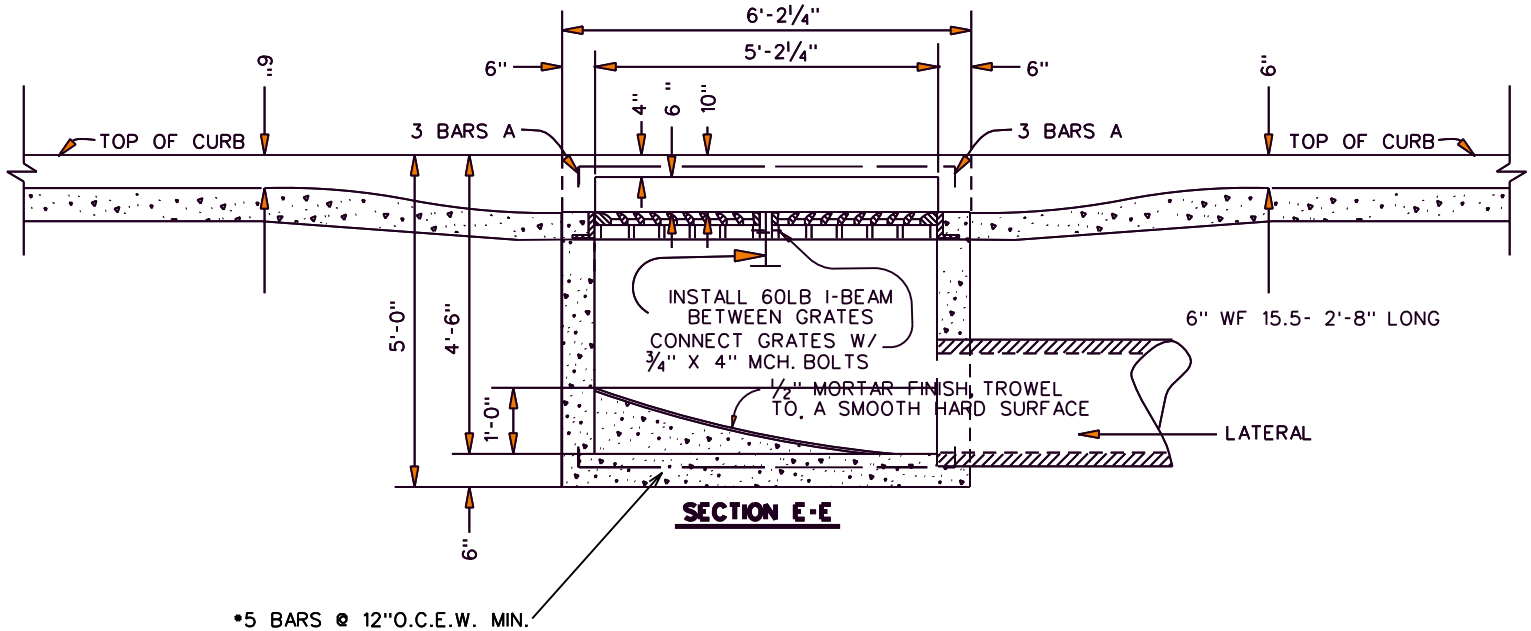
D6–3 /3

SCALE: N.T.S.
08/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



SECTION F-F



SECTION E-E

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

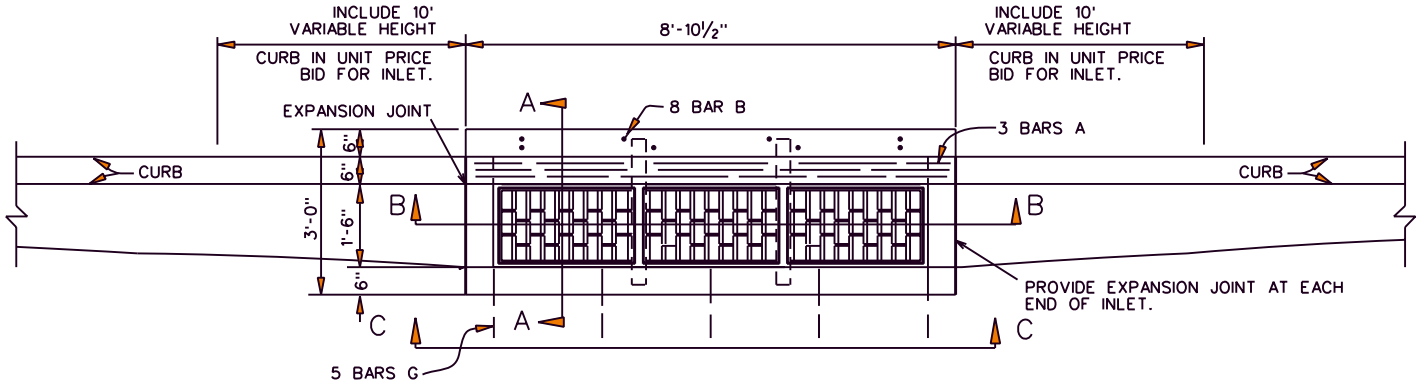
STORM SEWER DETAIL

COMBINATION TRIPLE GRATE INLET

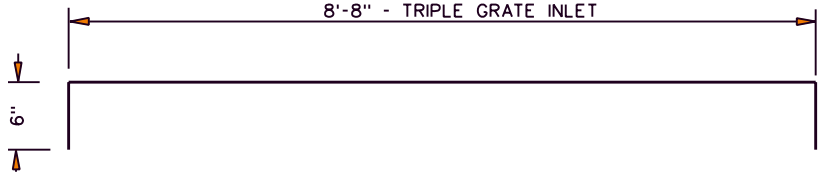
D7-1/3

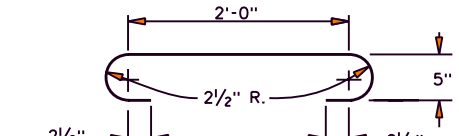
SCALE: N.T.S.
DATE: 0808

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

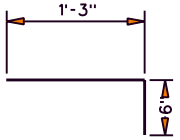


STEEL DETAIL

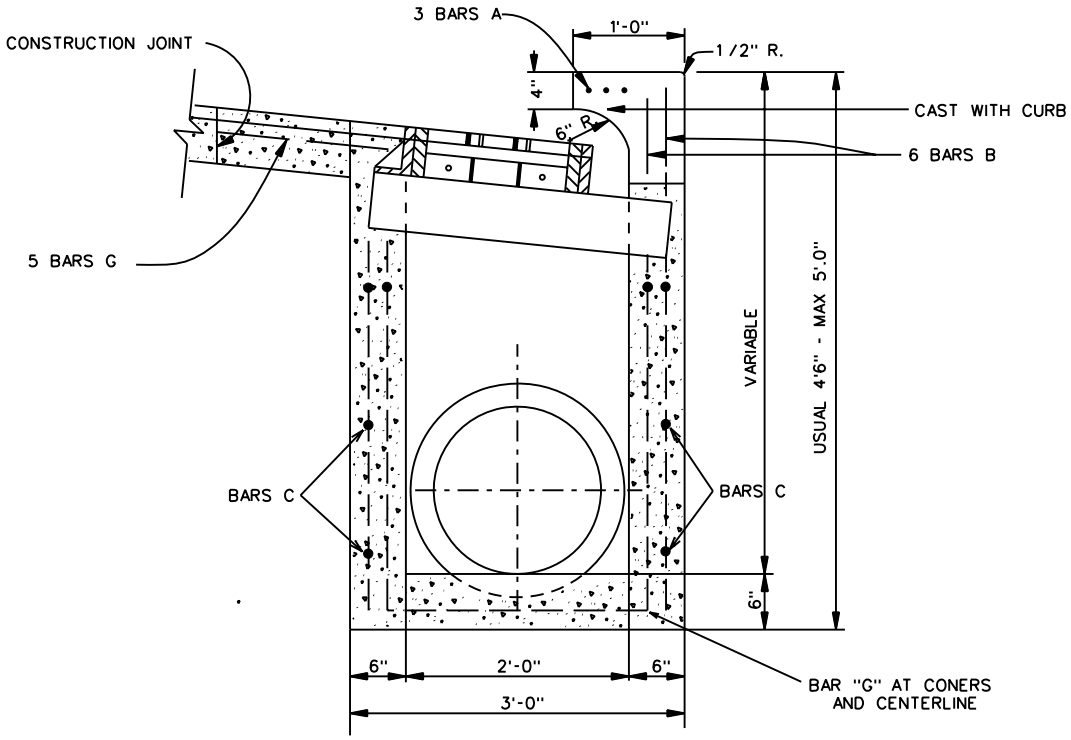




BARS B - #5 BAR, 3'-9" LONG, 8 REQUIRED (TRIPLE GRATE INLET)



BARS G - #3 BAR, 1'-3" LONG, 5 REQUIRED (TRIPLE GRATE INLET)



SECTION "AA"

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

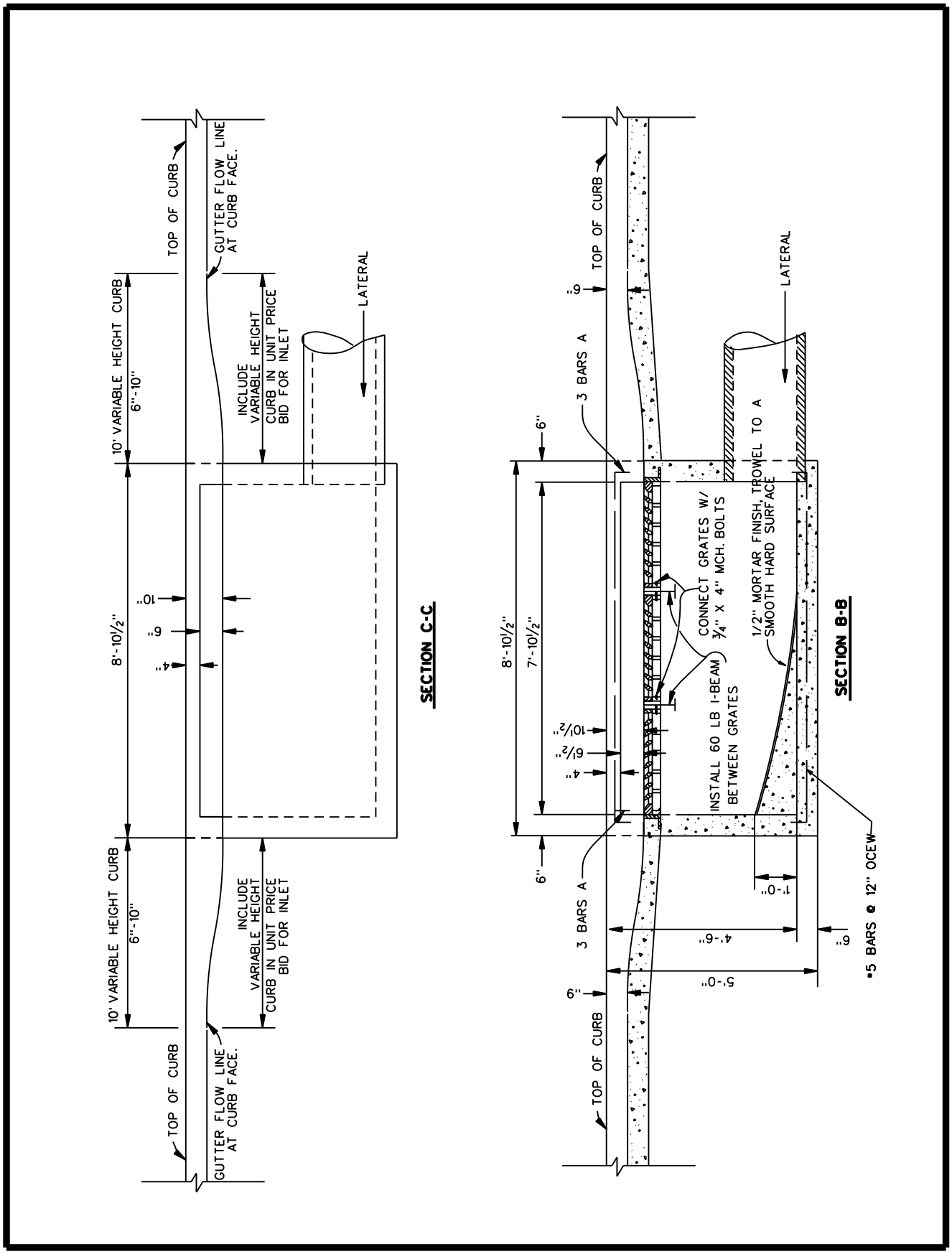
STORM SEWER DETAIL

COMBINATION TRIPLE GRATE INLET SECTION A–A

D7–2 /3

SCALE: N.T.S.
DATE: 01/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

STORM SEWER DETAIL

COMBINATION TRIPLE GRATE INLET

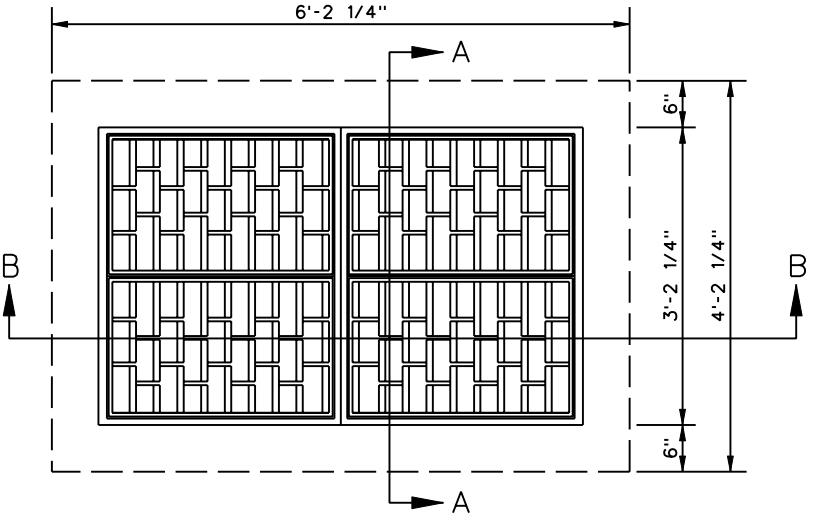
SECTIONS B–B & C–C

D7–3/3

SCALE: N.T.S.

DATE: 01/10

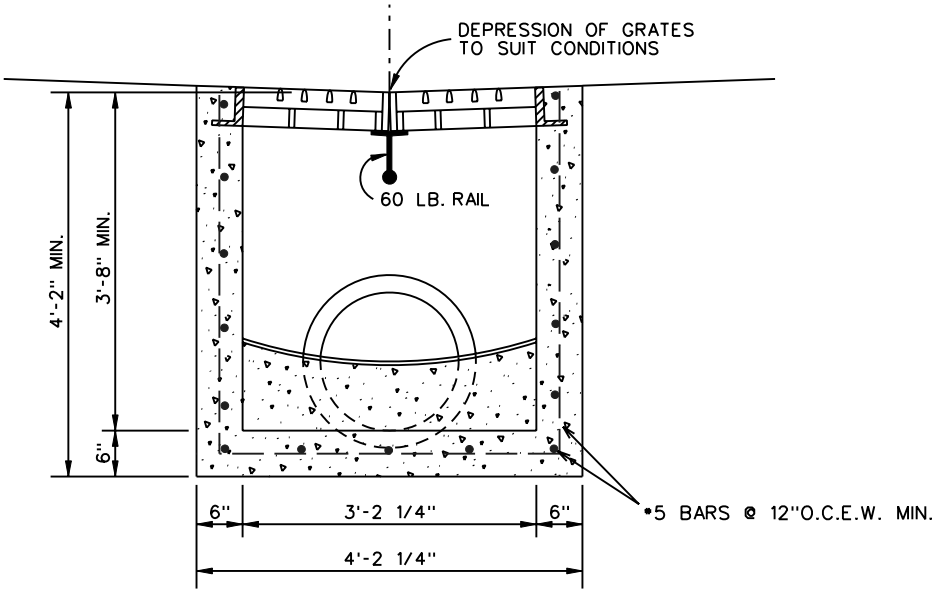
DEPARTMENT OF PUBLIC WORKS / ENGINEERING



PLAN VIEW

FOUR GRATE INLET

NO SCALE



SECTION A-A

UNIVERSITY PARK

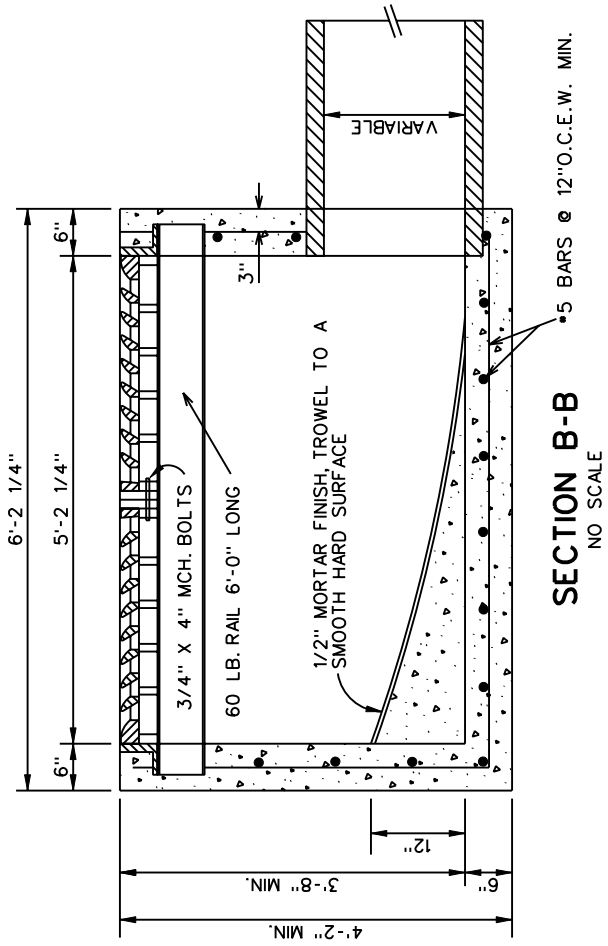
GENERAL DESIGN STANDARD
STORM SEWER DETAIL

FOUR GRATE INLET
PLAN VIEW & SECTION A–A

D8–1/2

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



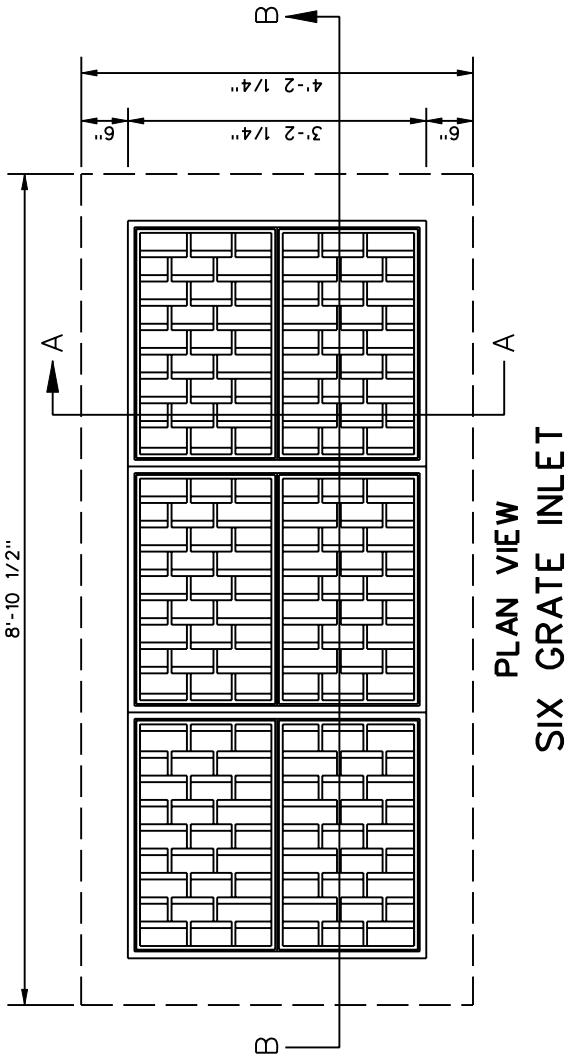
SECTION B-B
NO SCALE

UNIVERSITY PARK

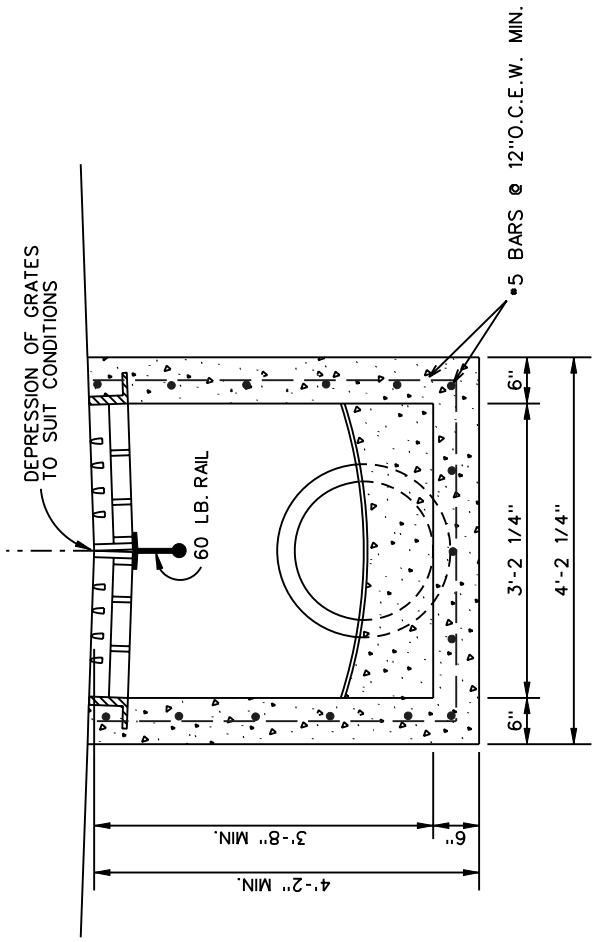
GENERAL DESIGN STANDARD
STORM SEWER DETAIL
FOUR GRATE INLET
SECTION B–B

D8–2 OF 2

SCALE: N.T.S.
DATE: 04/15/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



PLAN VIEW
SIX GRATE INLET



SECTION A-A

UNIVERSITY PARK

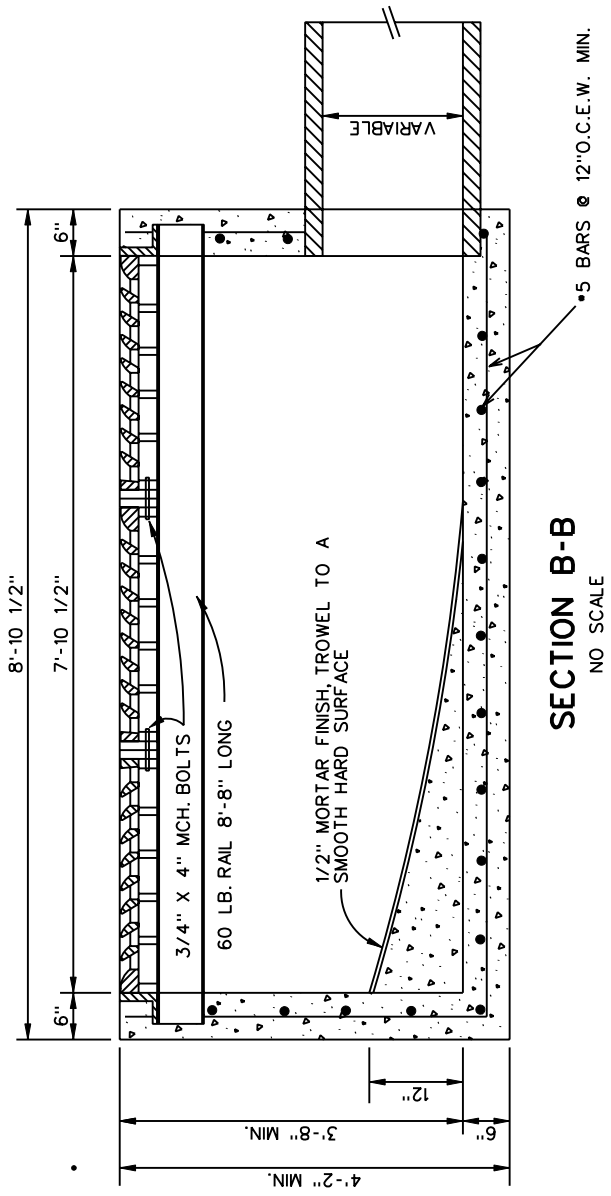
GENERAL DESIGN STANDARD
STORM SEWER DETAIL

SIX GRATE INLET
PLAN VIEW & SECTION A–A

D9–1 OF 2

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



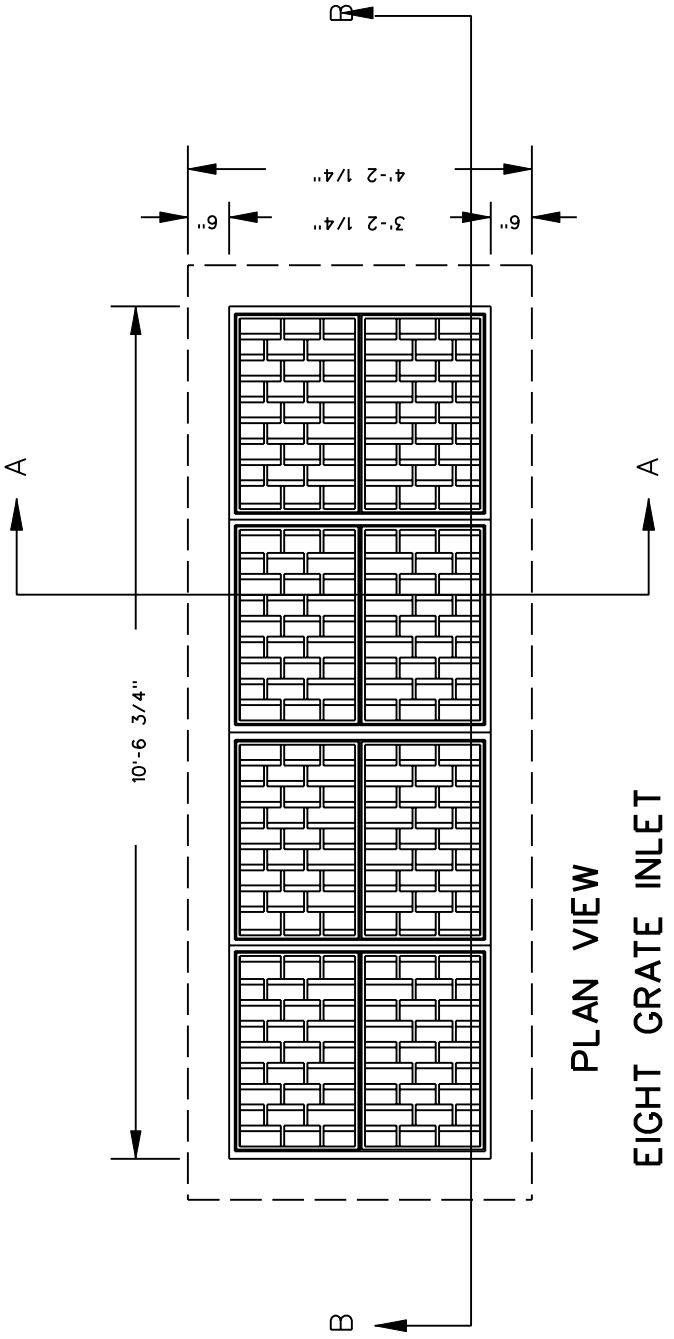
SECTION B-B
NO SCALE

UNIVERSITY PARK

GENERAL DESIGN STANDARD
STORM SEWER DETAIL
SIX GRATE INLET
SECTION B–B

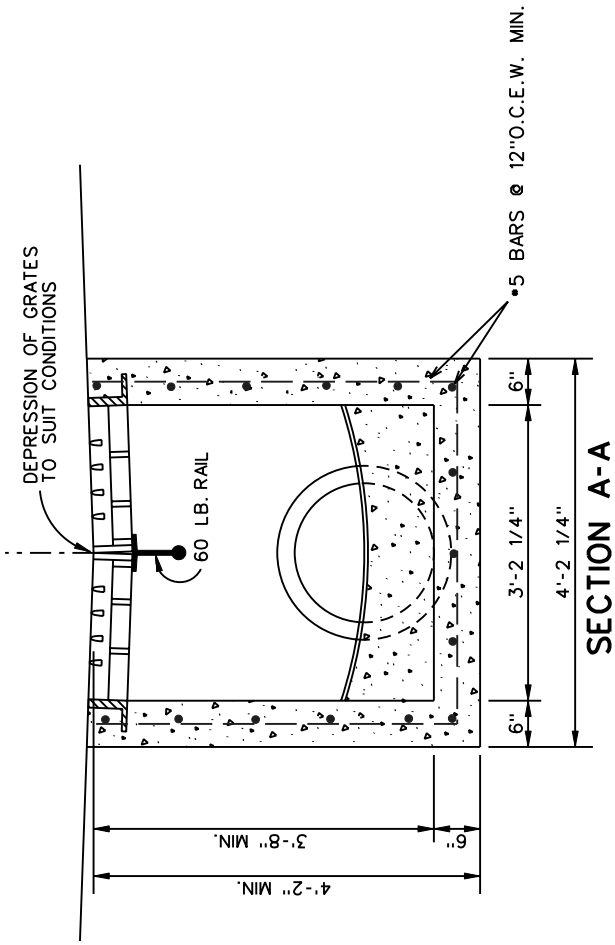
D9– 2 /2

SCALE: N.T.S.
DATE: 04/15/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



PLAN VIEW

EIGHT GRATE INLET



UNIVERSITY PARK

GENERAL DESIGN STANDARD

STORM SEWER DETAIL

EIGHT GRATE INLET

PLAN VIEW & SECTION A–A

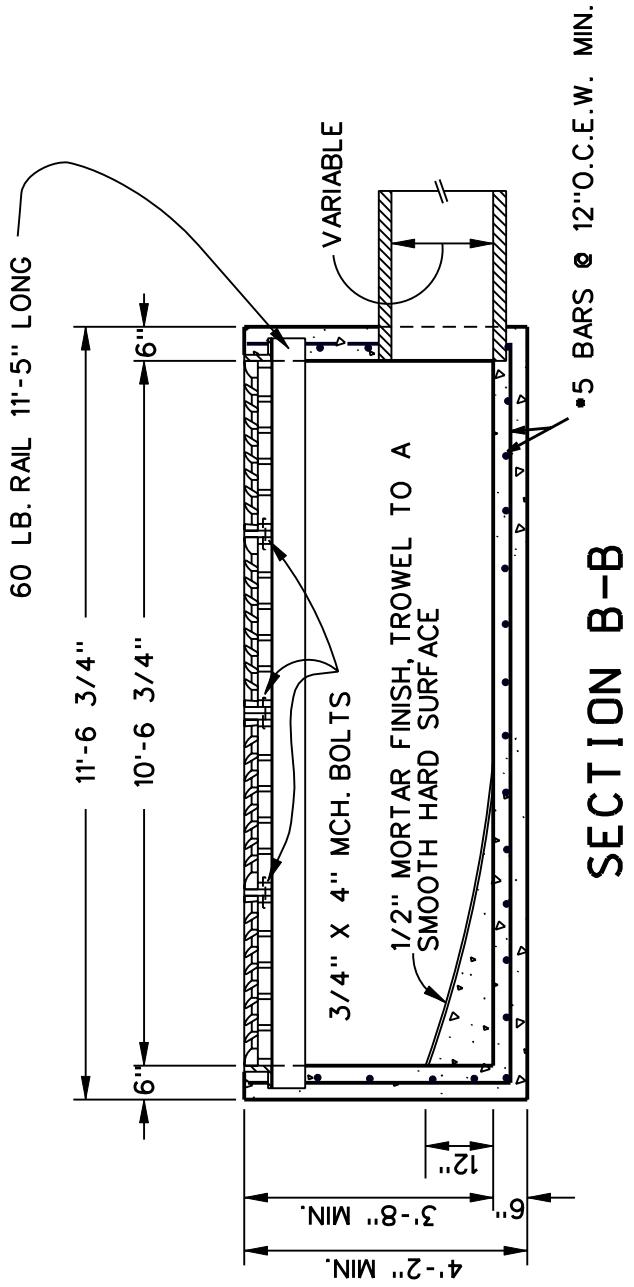
D10–1/2

SCALE: N.T.S.

DATE: 04/15/06

DEPARTMENT OF

PUBLIC WORKS / ENGINEERING



SECTION B–B

UNIVERSITY PARK

GENERAL DESIGN STANDARD
STORM SEWER DETAIL
EIGHT GRATE INLET
SECTION B–B

D10–2/2

SCALE: N.T.S.
DATE: 02/12/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

NOTES :

1. REINFORCEMENT, STRUCTURAL STEEL AND CASTINGS SHALL CONFORM TO THE SPECIFICATIONS.
2. TOP OF INLET SLOPE SHALL CONFORM TO ADJACENT PARKWAY NORMAL 1/4" / FT. SLOPE.
3. CONCRETE FOR INLET CONSTRUCTION SHALL BE CLASS F, 6 1/2" SACK, 4200 PSI HAND FINISH CONCRETE WHEN USED IN STREETS AND ALLEYS.
4. ALTERNATE CONSTRUCTION .
   ALTERNATE PRECAST INLETS MAY BE APPROVED ON AN INDIVIDUAL BASIS PRECAST INLETS SHALL BE OF EQUAL OR BETTER STRENGTH MATERIAL, AND WORKMANSHIP AND SHALL MEET THE STANDARD DESIGN CRITERIA OF THE CAST-IN-PLACE INLETS SHOWN IN THESE DETAILS.
5. THE INLET FRAME & COVER SHALL BE AT THE SAME END OF INLET AS PIPE LATERAL.
6. DIMENSIONS RELATING TO PLACEMENT OF REINFORCING BARS ARE FROM CENTER TO CENTER OF BARS UNLESS OTHERWISE NOTED. BAR SPLICES ARE PERMISSIBLE IF BARS ARE TIED AND OVERLAPPED 30x DIAMETER WITH 18" MIN.
7. PIPE LATERALS MAY ENTER INLET AT SIDES OR ENDS AT ANY GRADE, ANGLE OR LOCATION.
8. STRUCTURAL EXCAVATION WILL NOT BE A SEPARATE PAY ITEM.
9. CHAMFER ALL EXPOSED EDGES AROUND INLET OPENINGS 3/4 ".
10. PROVIDE STREET JOINTS AS SHOWN FOR INTEGRAL CONCRETE PAVEMENT.
11. INCLUDE IN UNIT BID PRICE FOR ALL INLETS COMPLETE IN PLACE, ALL ITEMS, INCLUDING EXCAVATION AND VARIABLE HEIGHT CURB.

UNIVERSITY PARK

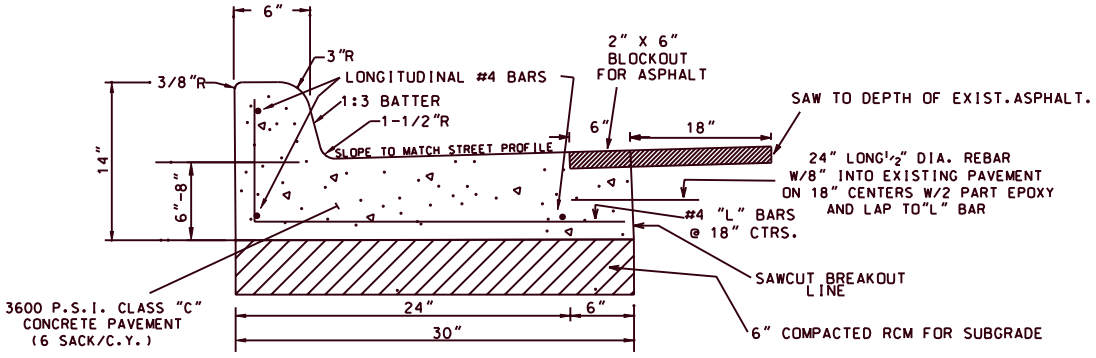
GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS
STORM SEWER INLET NOTES

D11

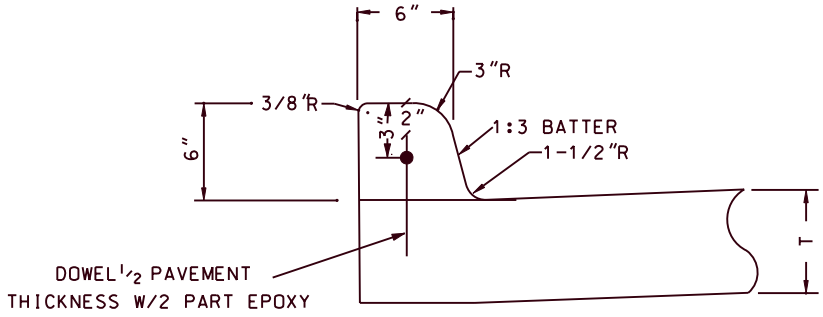
SCALE: N.T.S.
DATE: 01/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

NOTE: CURB & GUTTER SHALL BE GRADED TO DRAIN LONGITUDINALLY MATCH CURB & GUTTER AT BOTH ENDS WITH EXISTING CURB & GUTTER. NEW CURB & GUTTER SHALL HAVE STRAIGHT LINES & TRUE GRADES.



30" CONC. CURB & GUTTER DETAIL



DOWELED CURB

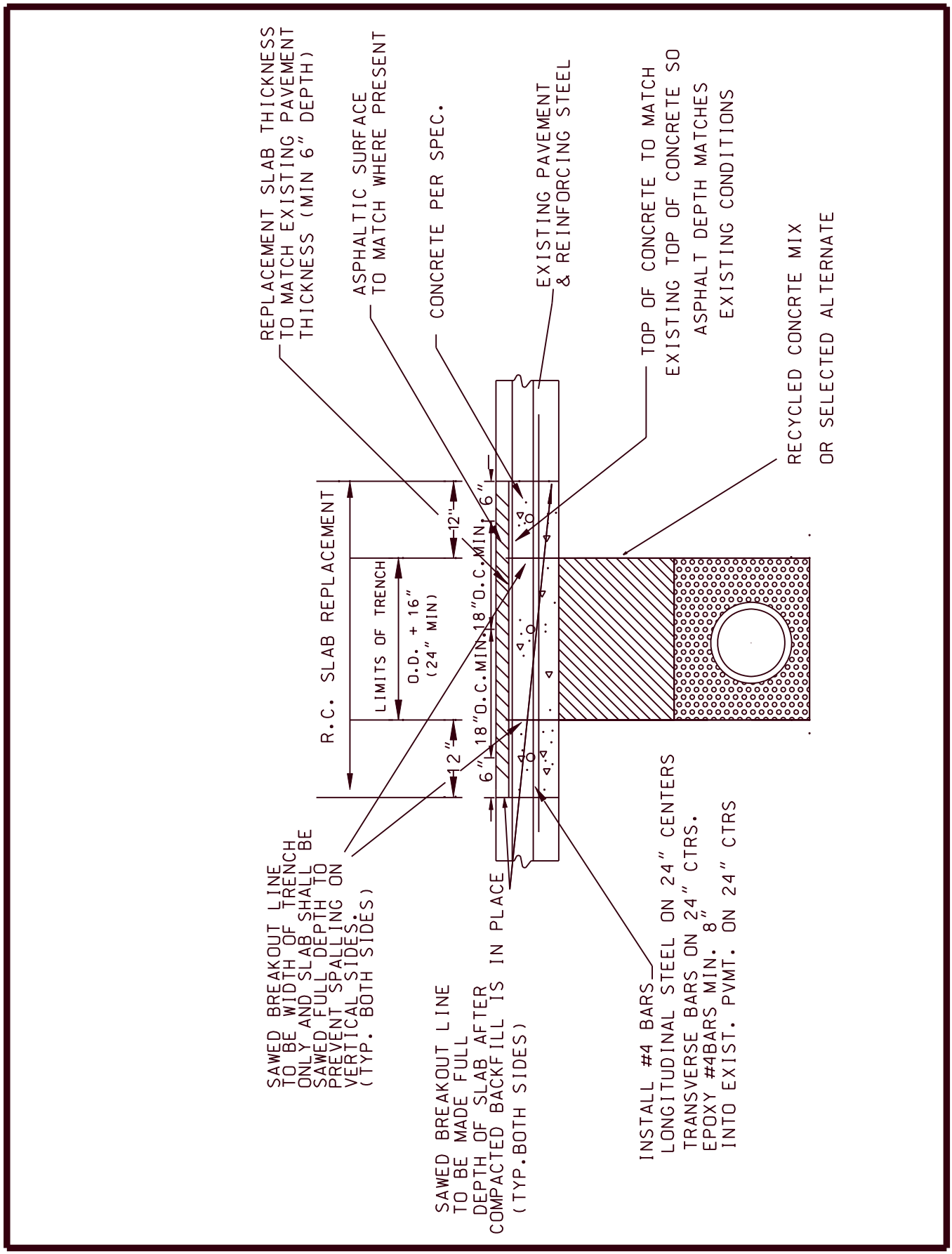
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
PAVING DETAILS
CONCRETE CURBS

P1

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

PAVING DETAILS

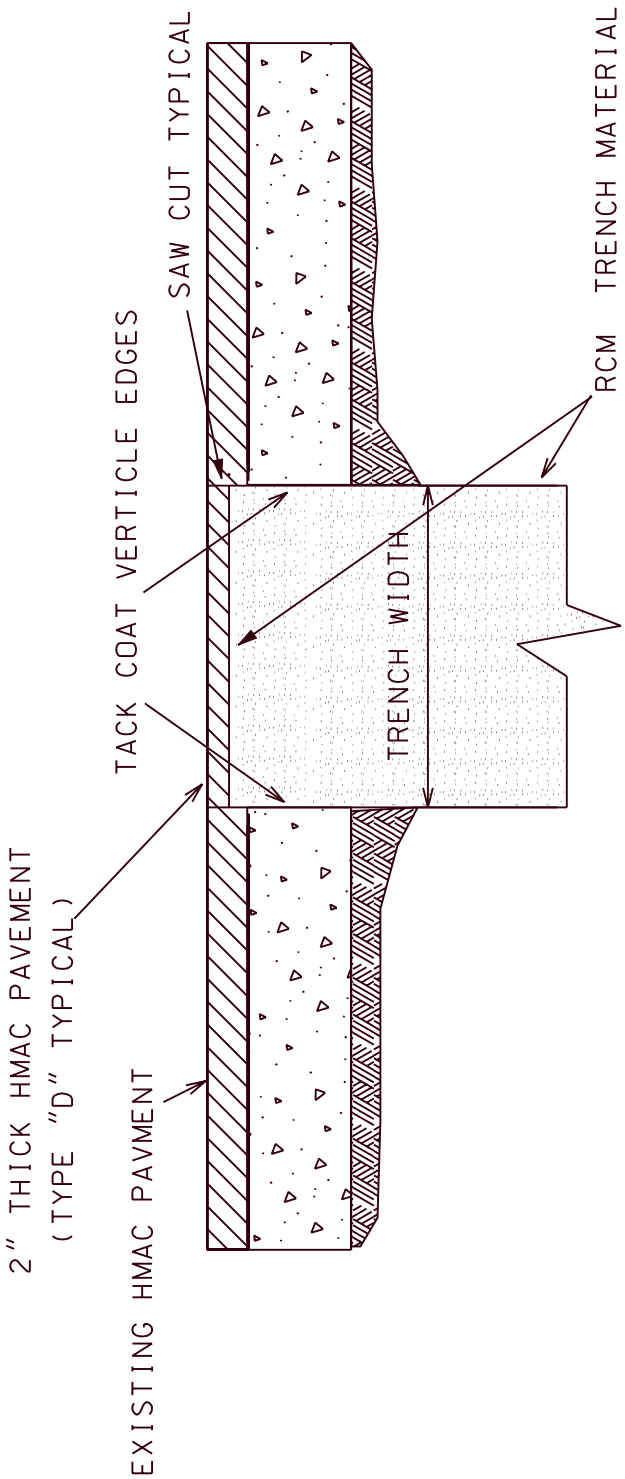
TYP. CONC. SLAB/ASPHALT REPLACEMENT FOR UTILITY CUTS

P2

SCALE: N.T.S.

DATE: 03/10

DEPARTMENT OF PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

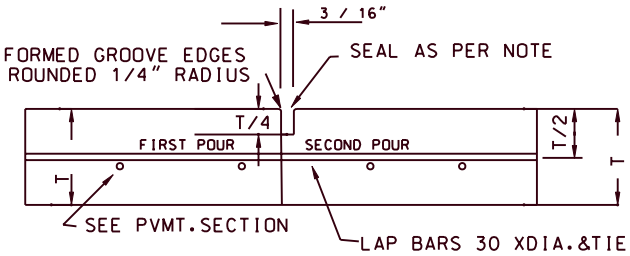
PAVING DETAILS

HMAC TEMPORARY PAVEMENT

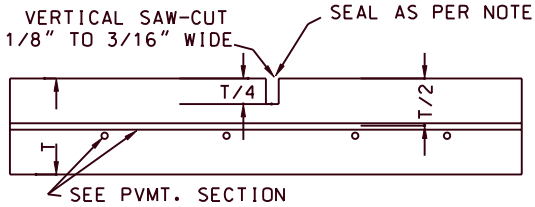
P3

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



CONSTRUCTION JOINT

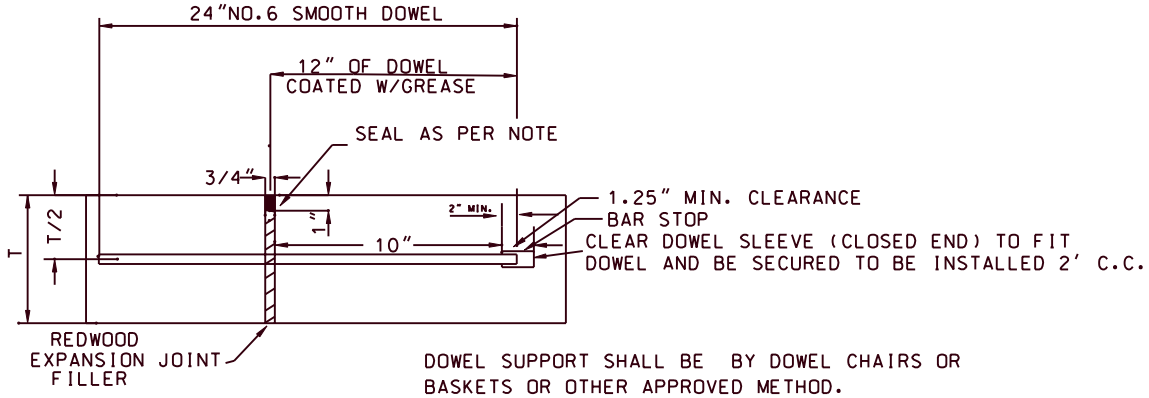


SAWED DUMMY JOINT

IDENTICAL FOR STREETS AND ALLEYS EXCEPT
ALLEY LONGITUDINAL REINFORCEMENT BARS

NOTE:

SEAL JOINTS WITH HOT POUR POLYMER AS PER C.O.G. SPEC. 303.2.14.1.1 COLD APPLIED SEALANT MUST BE APPROVED BY CITY ENGINEER.



DOWEL SUPPORT SHALL BE BY DOWEL CHAIRS OR BASKETS OR OTHER APPROVED METHOD.

EXPANSION JOINT DETAIL

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

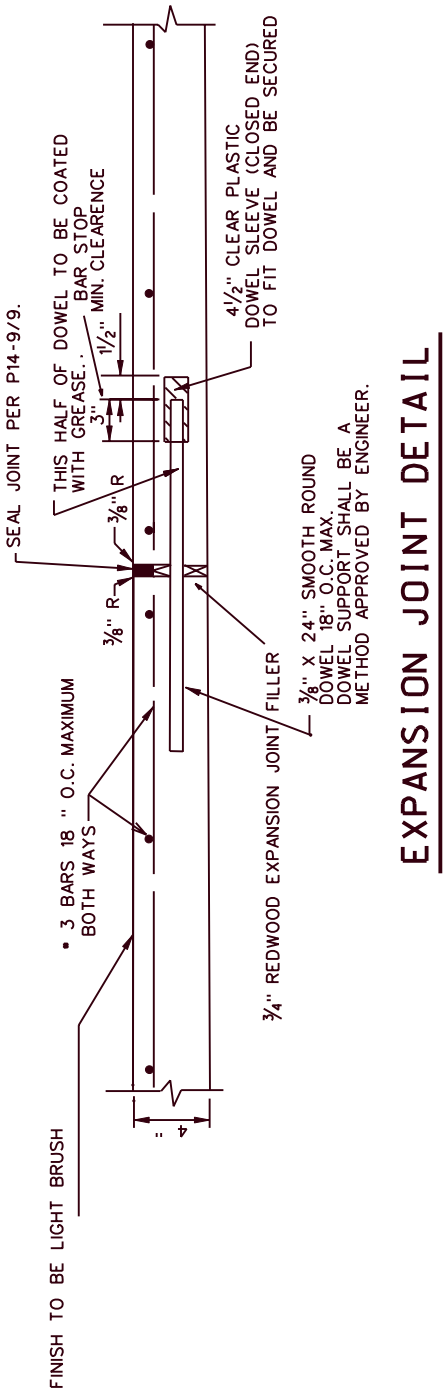
PAVING DETAILS

MISC. PAVING JOINTS

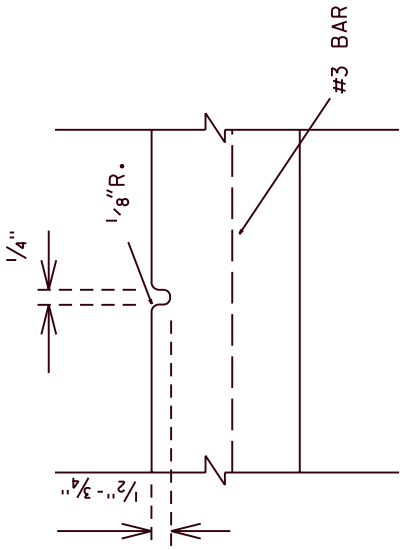
P4

SCALE: N.T.S.
DATE: 03/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



EXPANSION JOINT DETAIL



TOOLED JOINT DETAIL

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

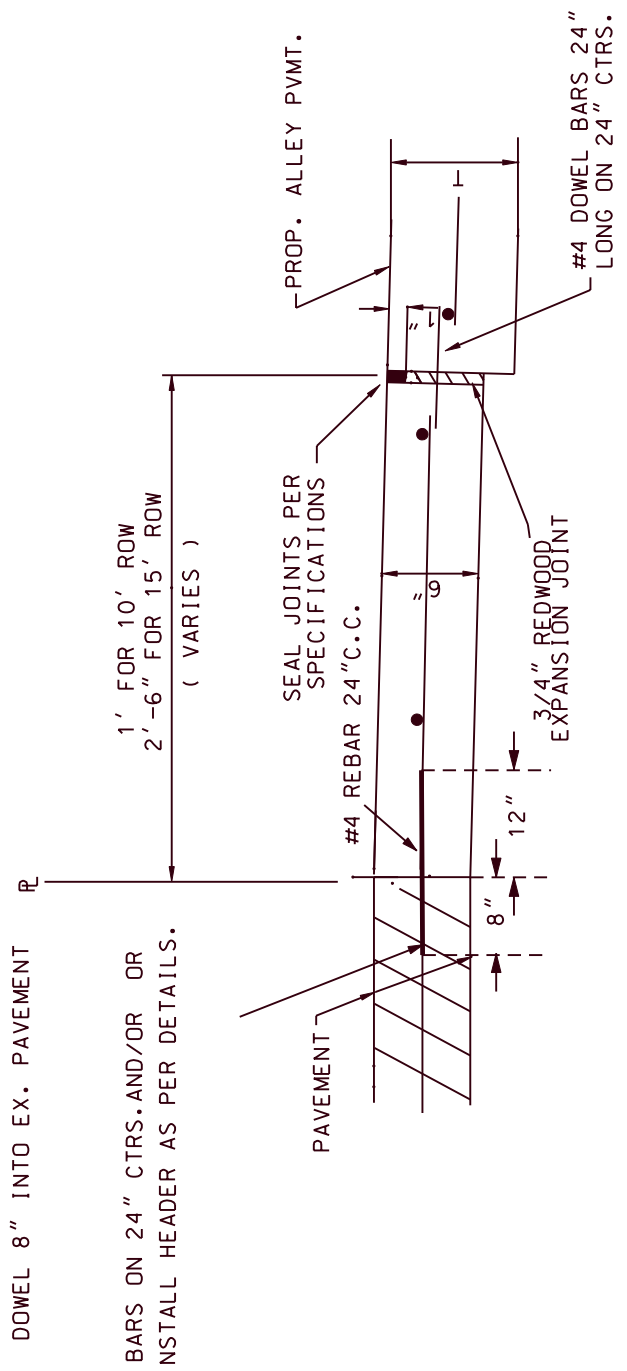
SIDEWALK DETAILS

MISC. SIDEWALK JOINTS

P5

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



WHERE DOWELING IS UNACCEPTABLE SEE P-8

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

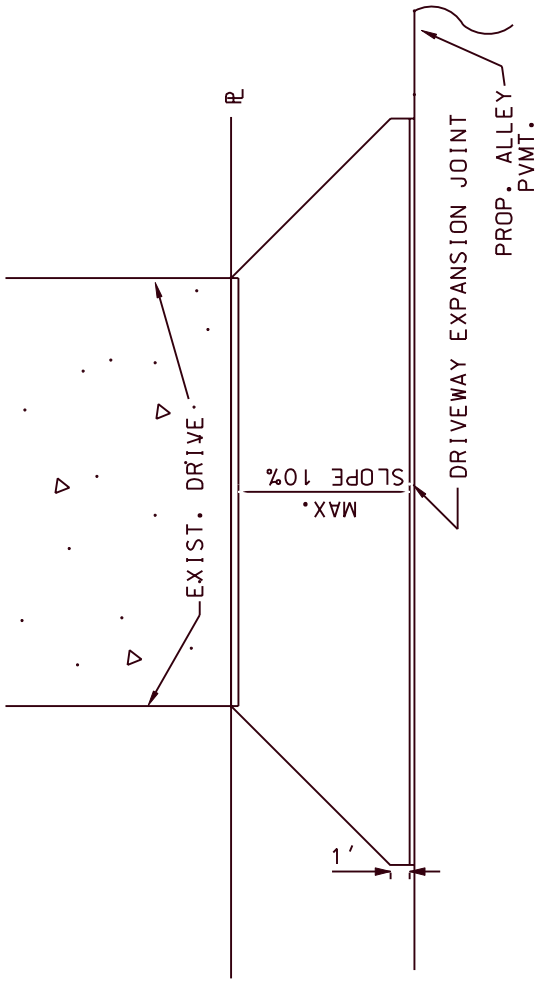
PAVING DETAILS

DRIVEWAY EXPANSION JOINTS

P6

SCALE: N.T.S.
DATE: 02/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

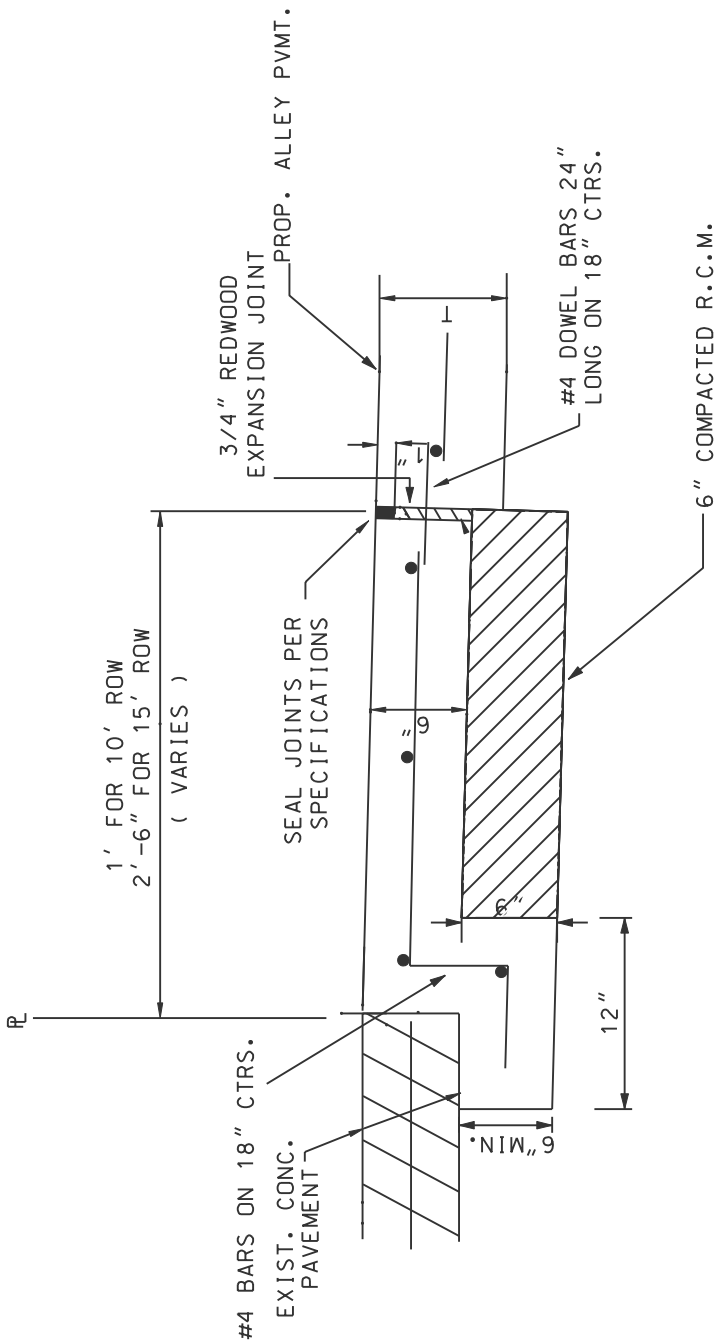
PAVING DETAIL

TYPICAL DRIVE APPROACH IN ALLEY

P7

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



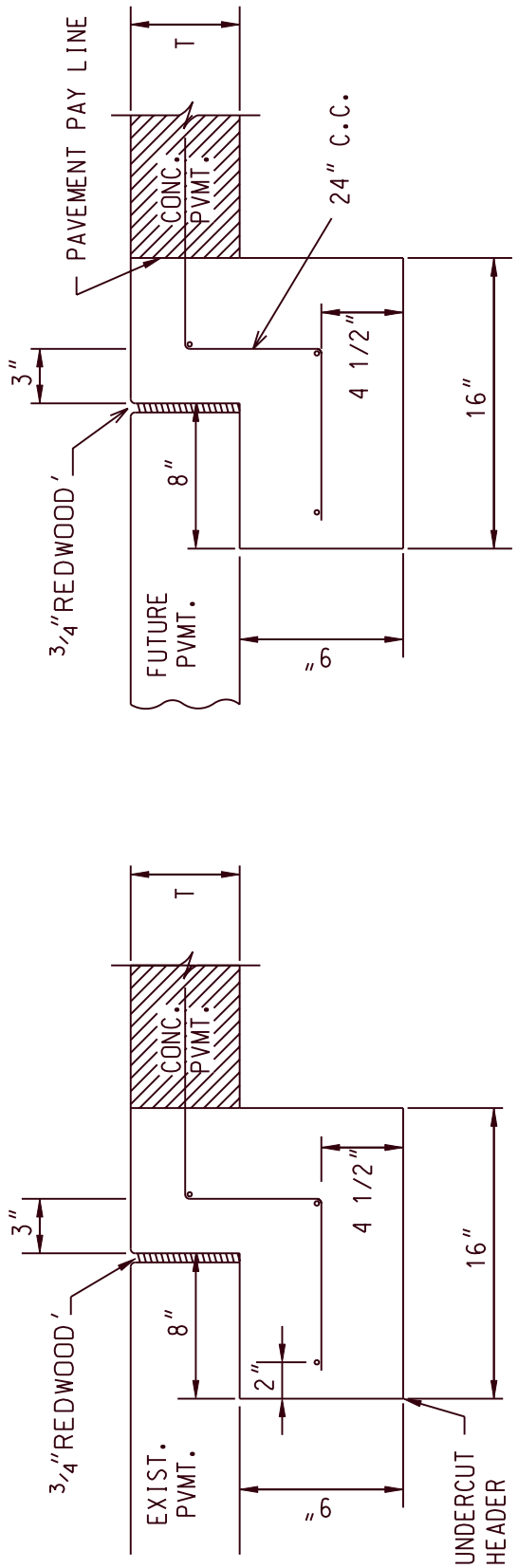
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
PAVING DETAIL
DRIVEWAY HEADER

P8

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



#4 PAVEMENT BARS TO BE BENT DOWN INTO HEADER.
HEADER AND PAVEMENT TO BE MONOLITHIC.

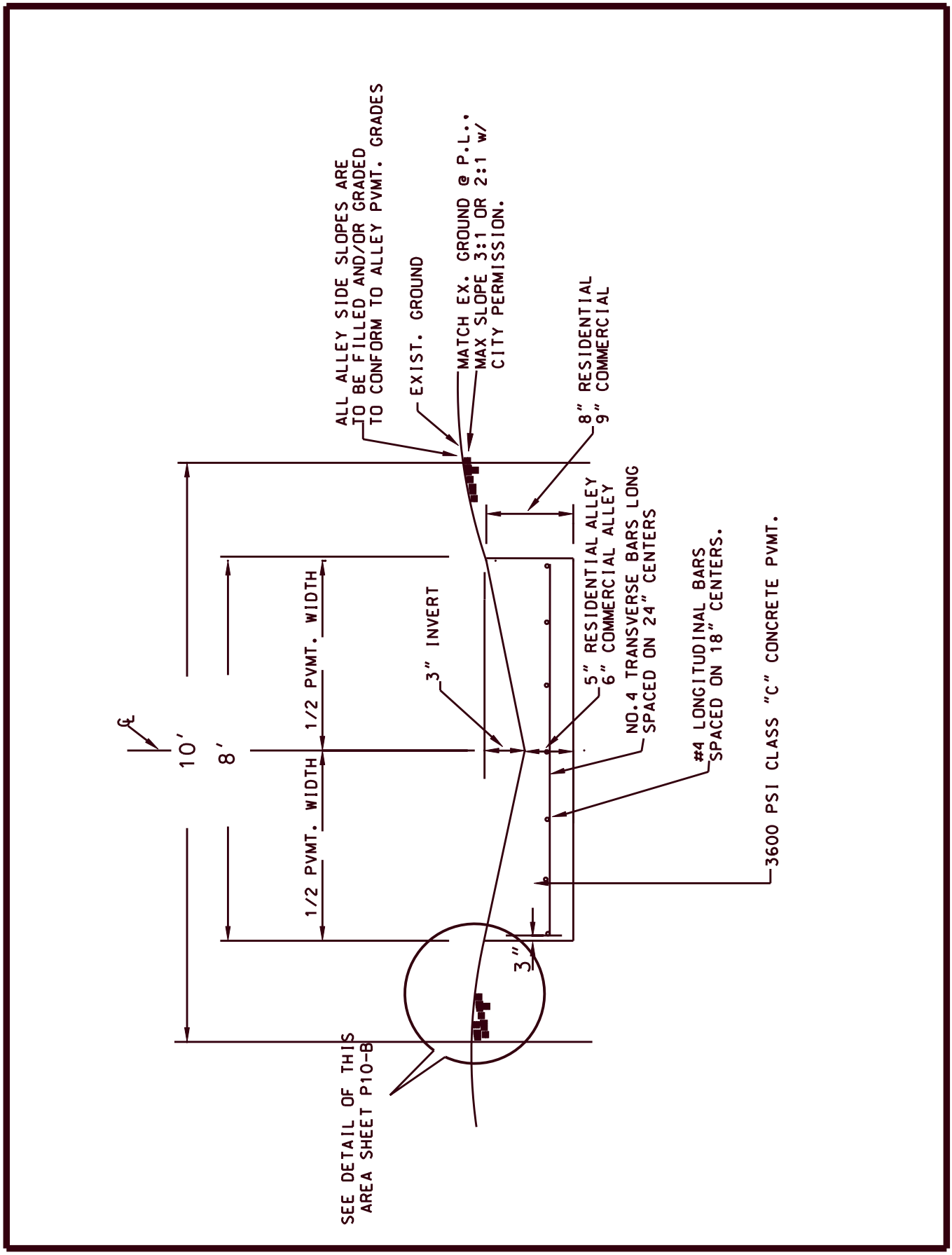
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
PAVING DETAILS
STREET HEADER

P9

SCALE: N.T.S.
DATE: 06/26/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

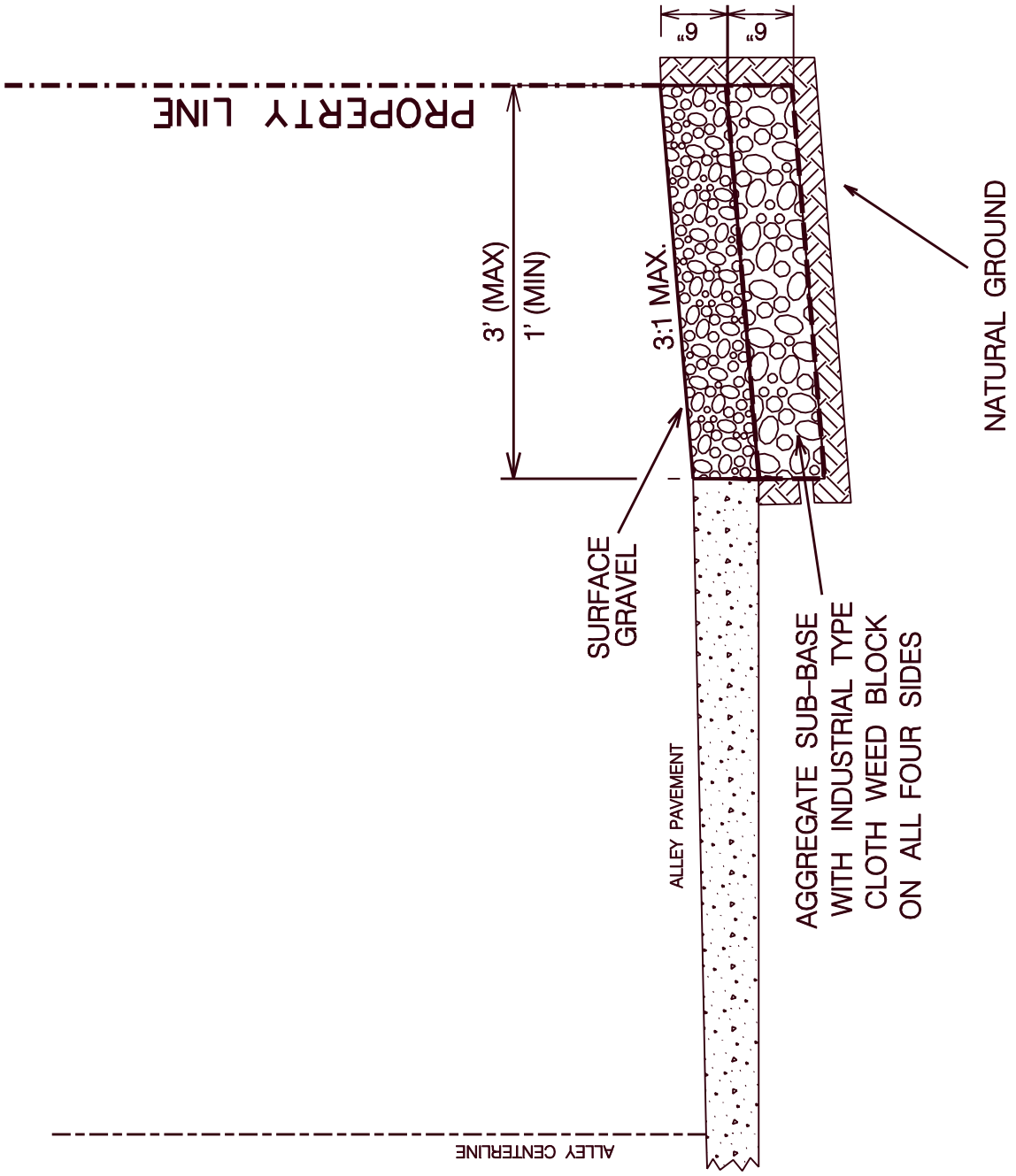
PAVING DETAILS

TYPICAL ALLEY PAVING

P10–A

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



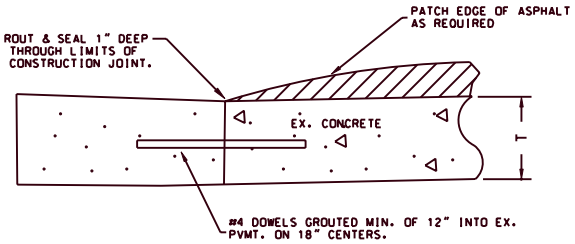
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
PAVING DETAILS
ALLEY ROW DETAIL

P10-B

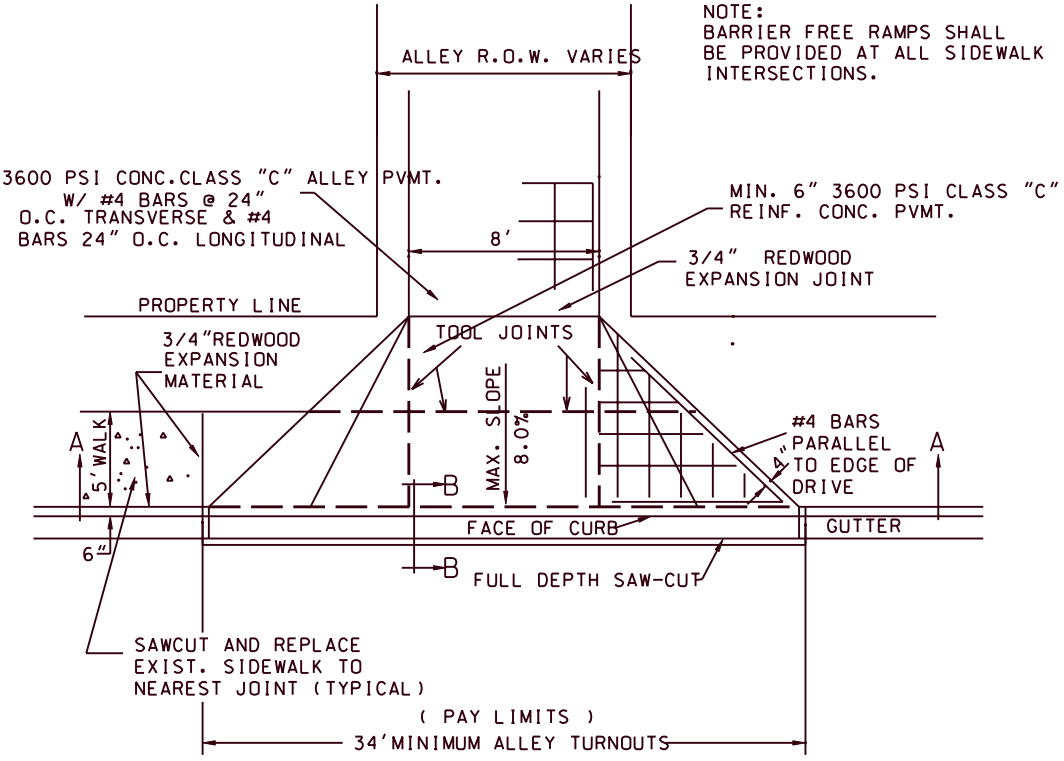
SCALE: N.T.S.
DATE: 16/11/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



SECTION "B-B"

SECTION "A-A"



PLAN VIEW

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

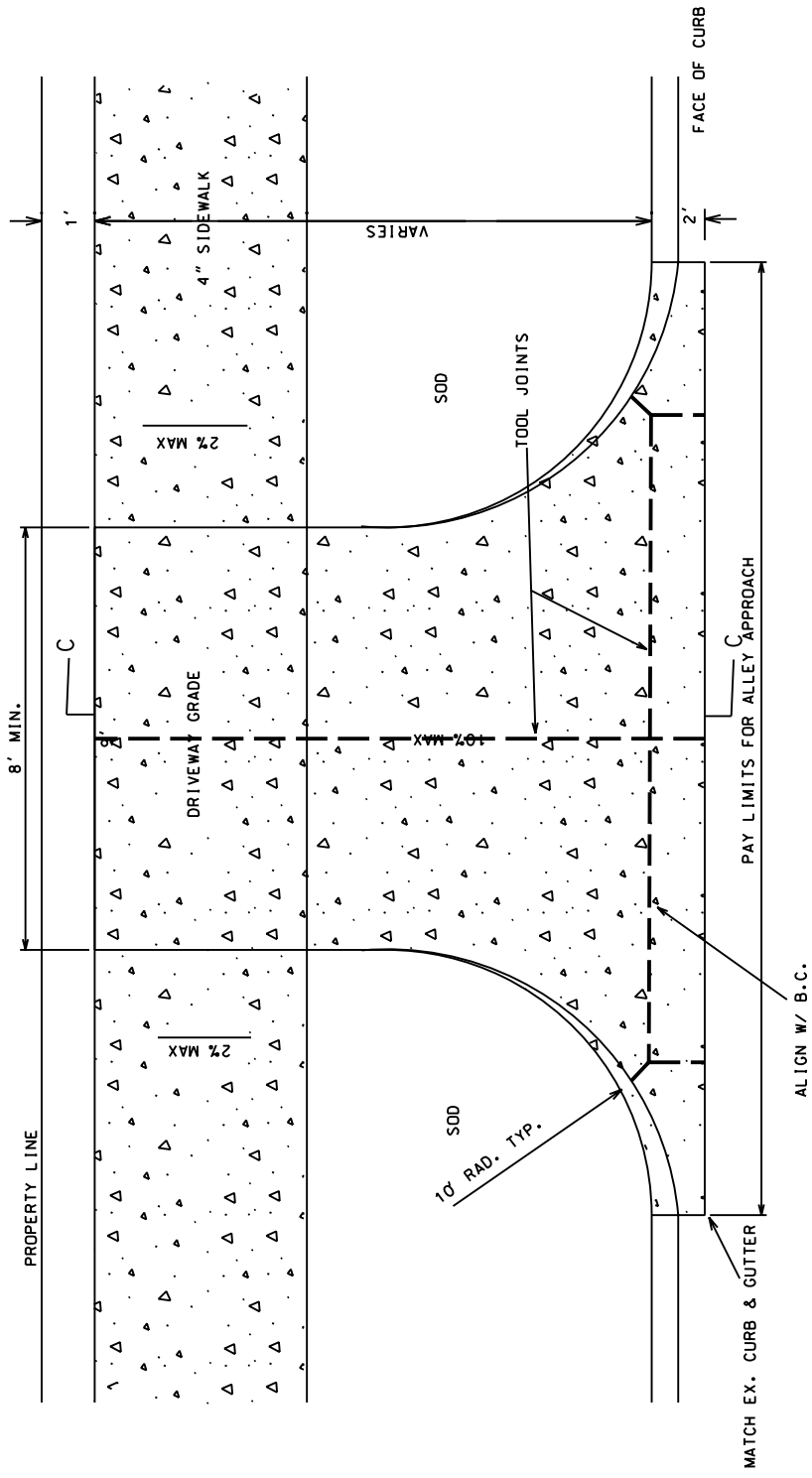
PAVING DETAILS

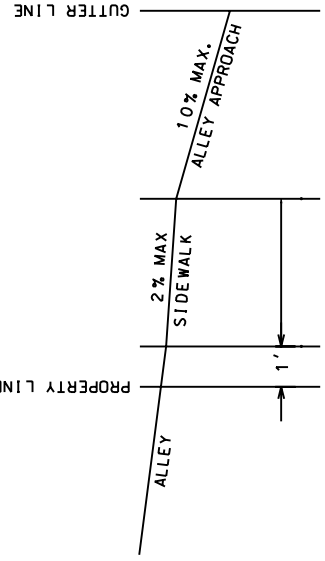
TYPICAL ALLEY APPROACH WITH SIDEWALK BEHIND CURB

P11– 1/2

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF PUBLIC WORKS / ENGINEERING





SECTION C-C

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

PAVING DETAIL

TYPICAL ALLEY APPROACH W/PARKWAY

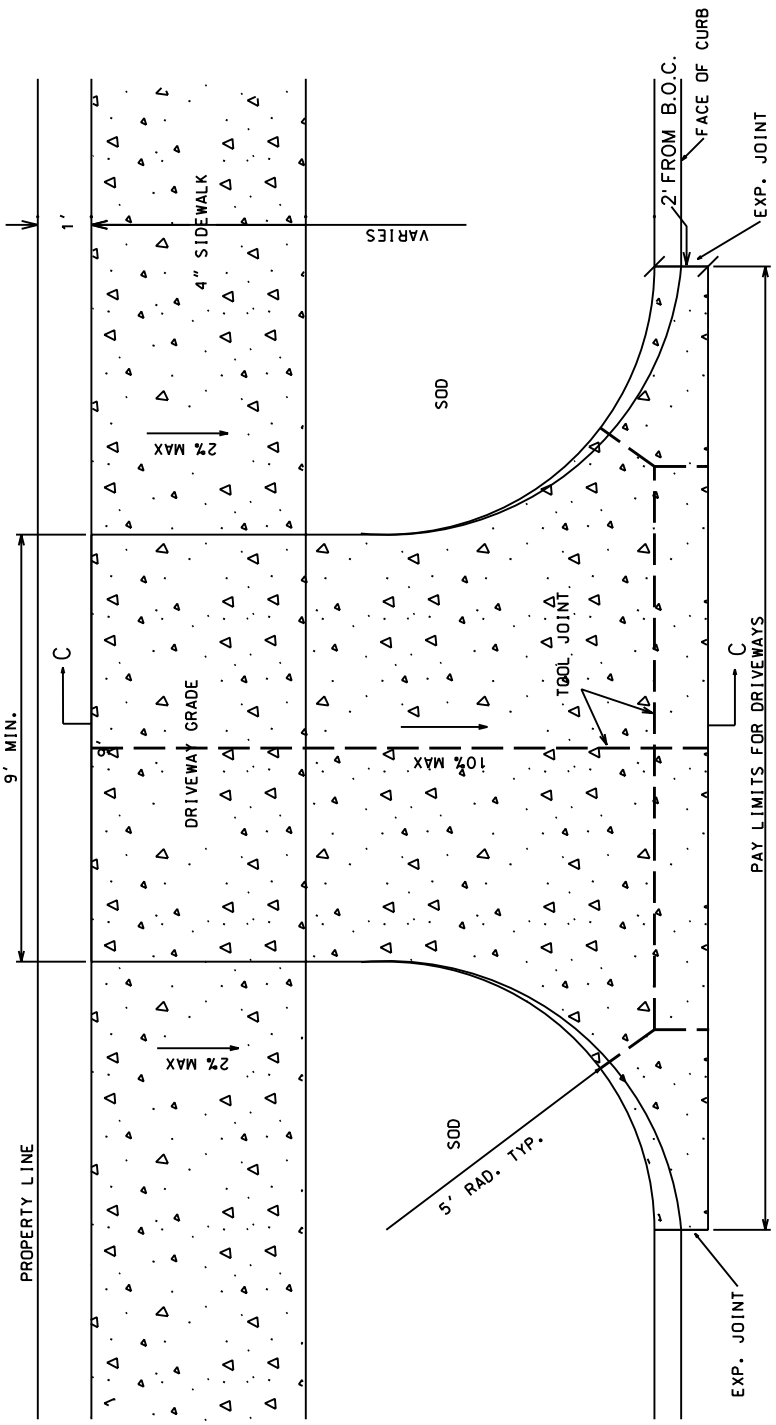
P11 2 /2

SCALE: N.T.S.

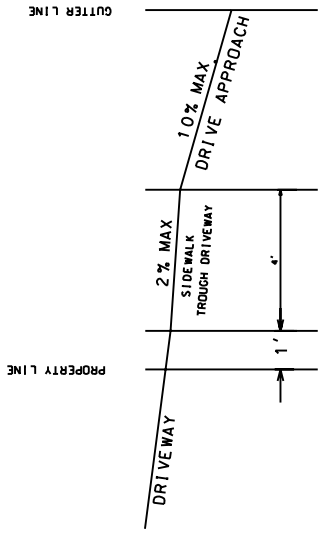
DATE: 04/15/06

DEPARTMENT OF

PUBLIC WORKS / ENGINEERING



PLAN



SECTION C-C

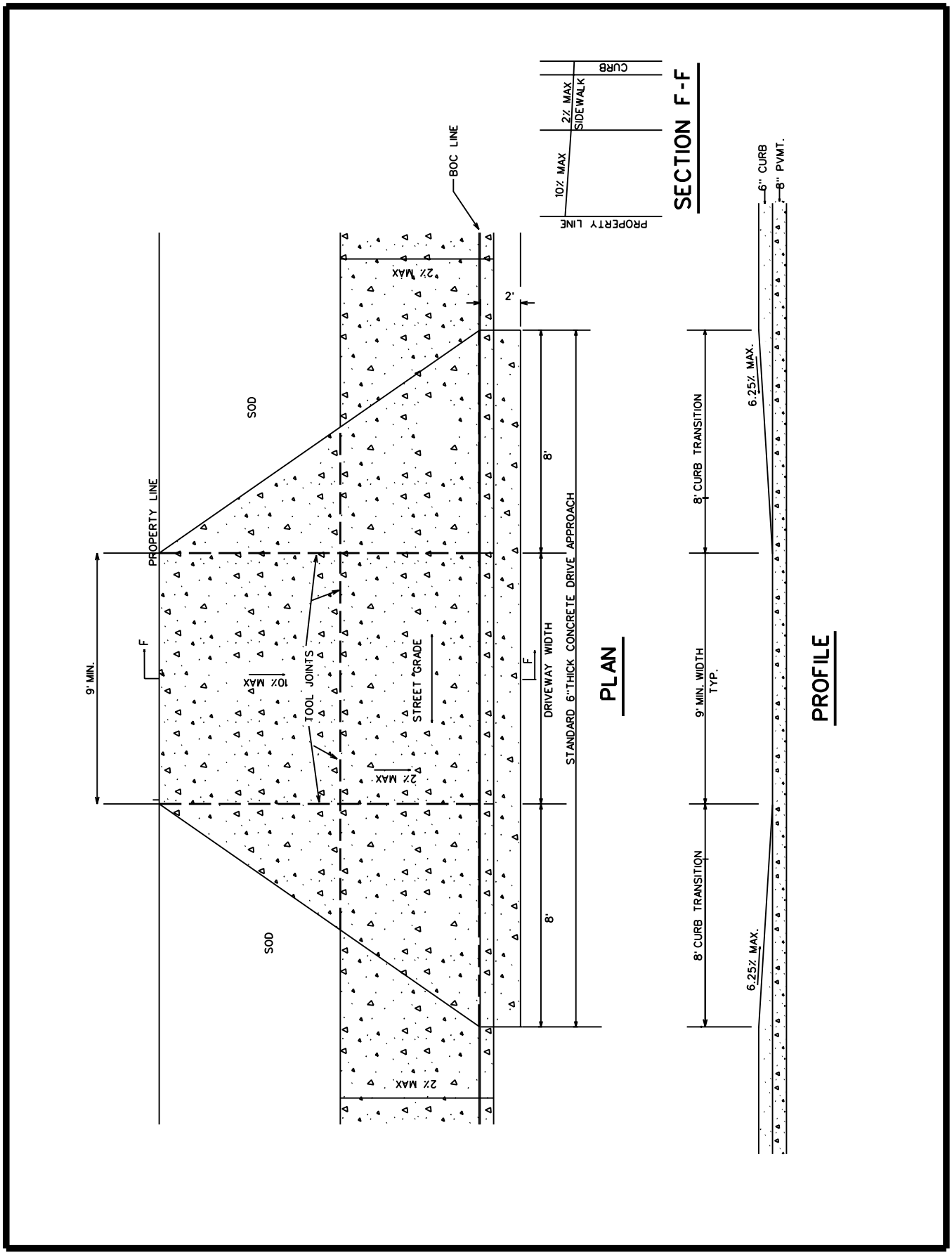
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
DRIVEWAY DETAILS
DRIVEWAY W /SOD PARKWAY

P12–1 /2

SCALE: N.T.S.
DATE: 06/26/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

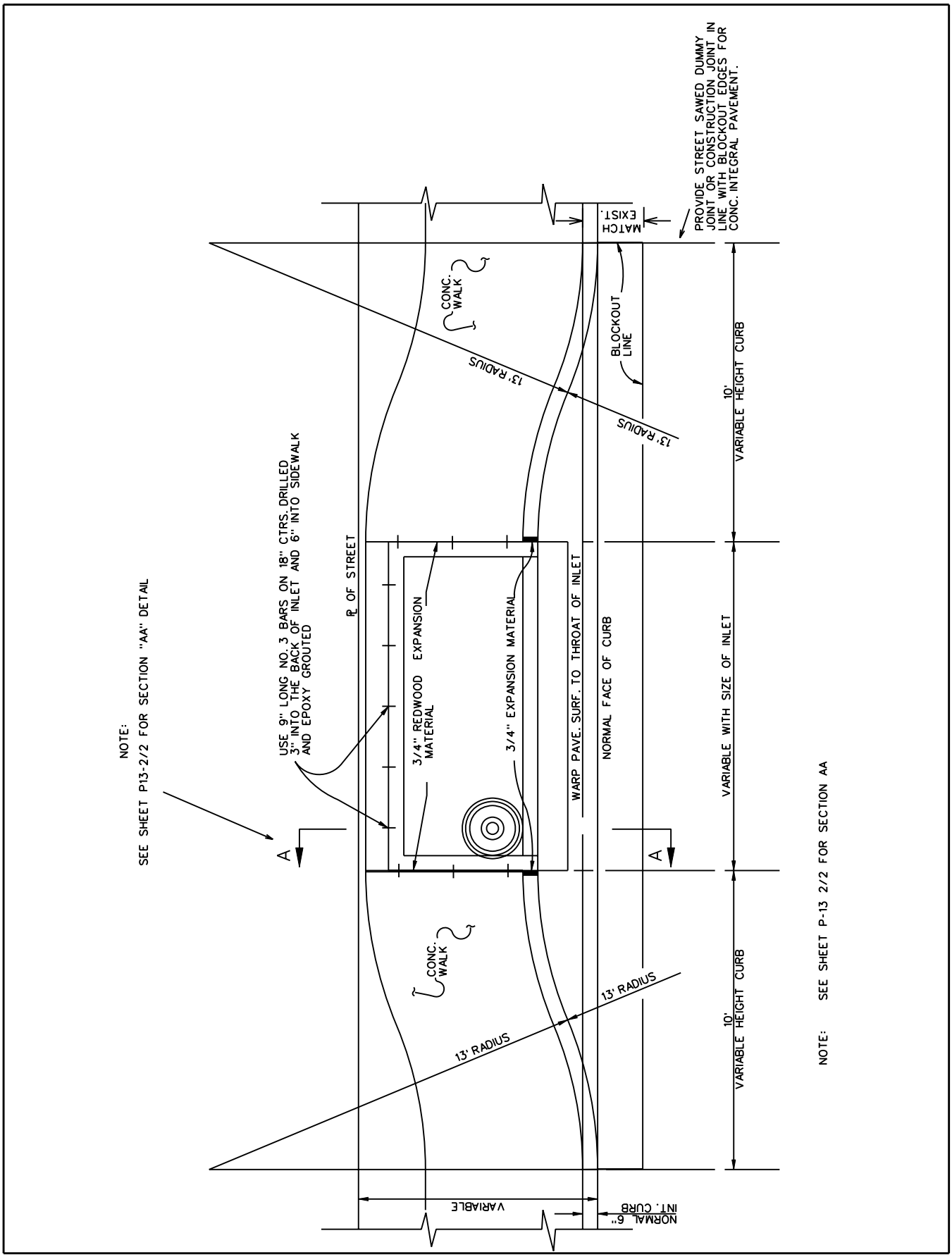
DRIVEWAY DETAILS

DRIVEWAY W/SIDEWALK BEHIND CURB

P12–2 /2

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

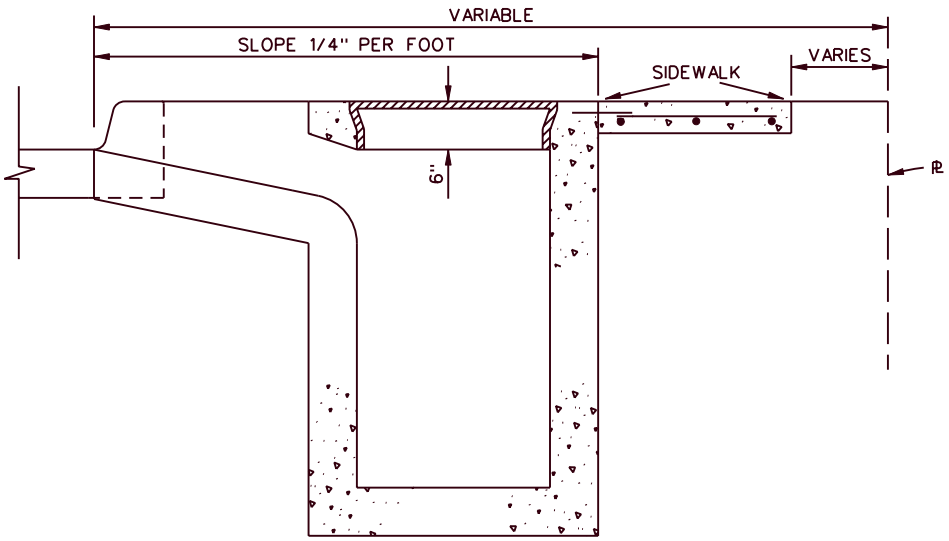
SIDEWALK DETAILS

STANDARD RECESSED STORM DRAINAGE INLETS & CURBS

P13–1 /2

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



SECTION A-A

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

SIDEWALK DETAILS

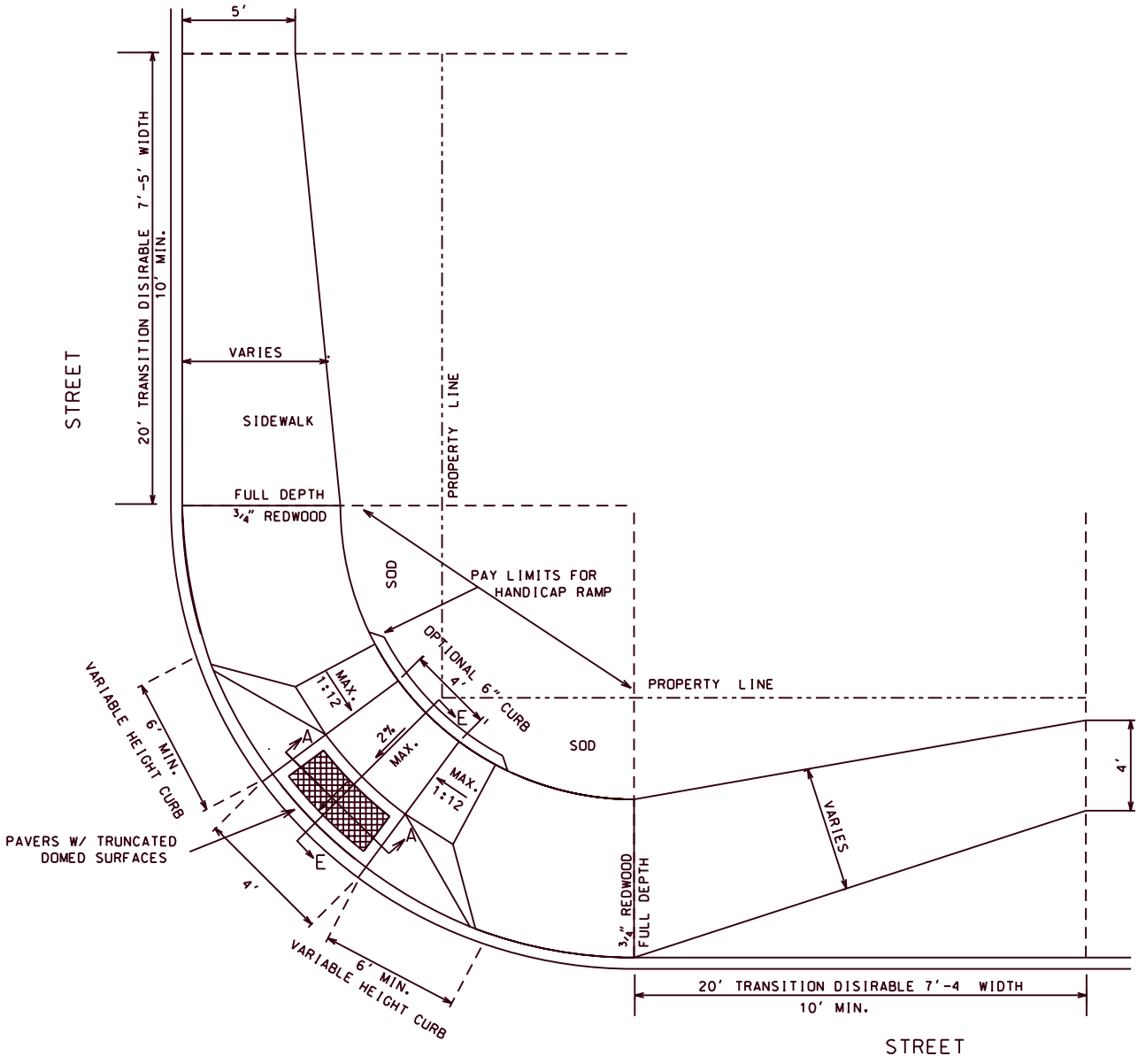
STANDARD RECESSED STORM DRAINAGE INLETS & CURBS

SECTION A-A

P13–2 /2

SCALE: N.T.S.
DATE: 06/26/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



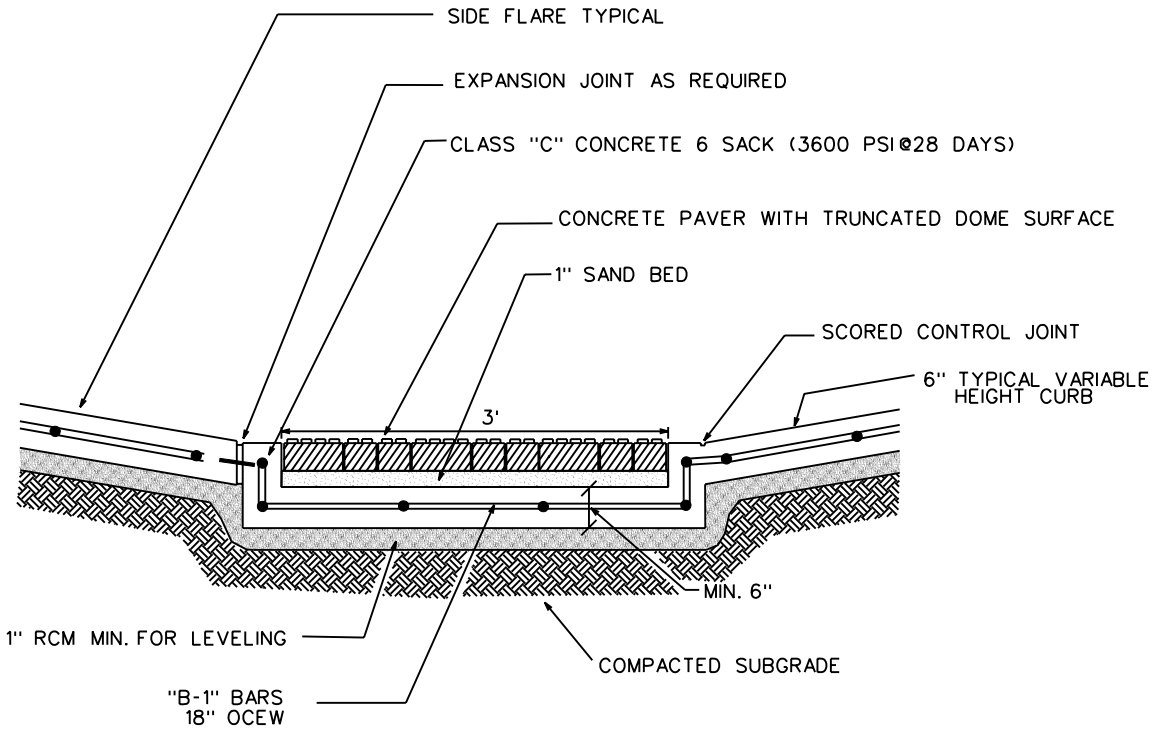
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SIDEWALK DETAILS
ADA RAMP– W/SIDEWALK WITH DIFFERING PKWY.

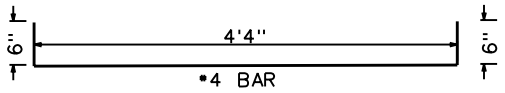
P14–1/9

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



SECTION A-A
DIAGONAL CURB RAMP



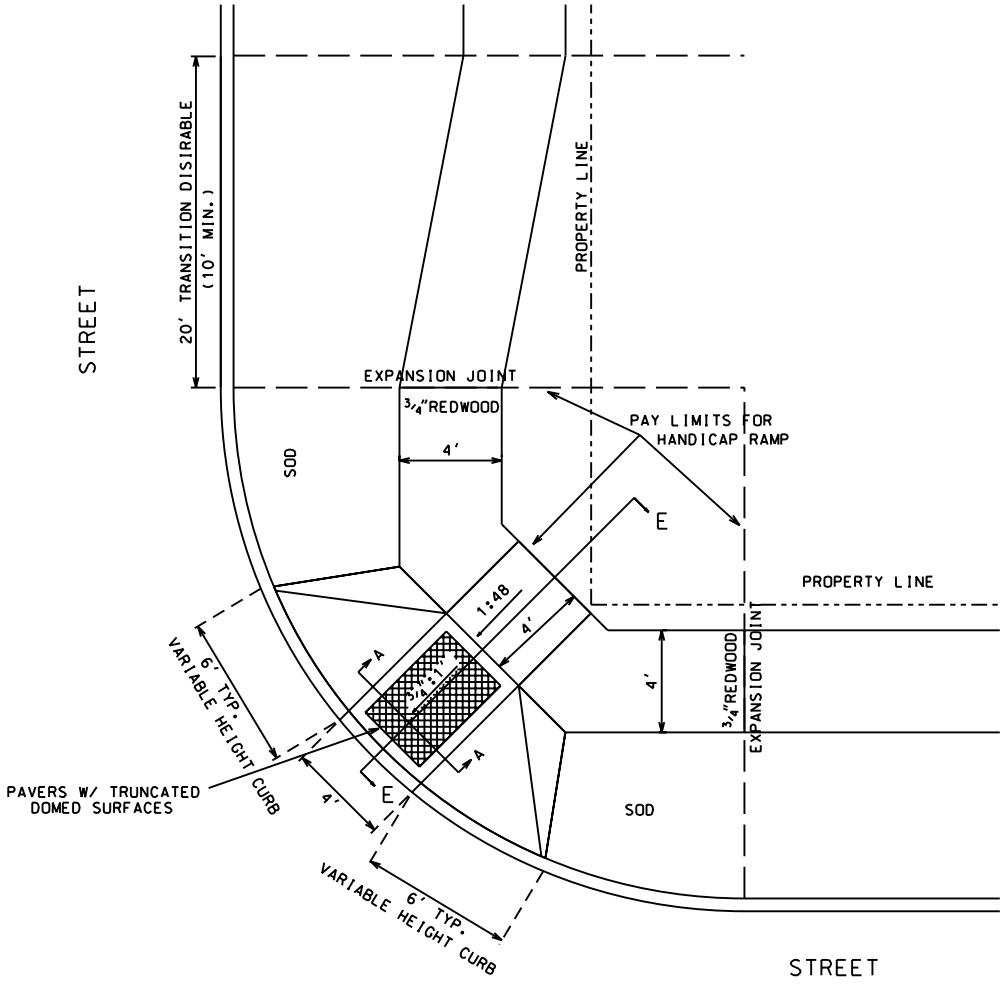
"B-1" BAR

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
PAVING DETAILS
SECTION A–A CURB RAMP

P14–2 /9

SCALE: N.T.S.
07/08
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



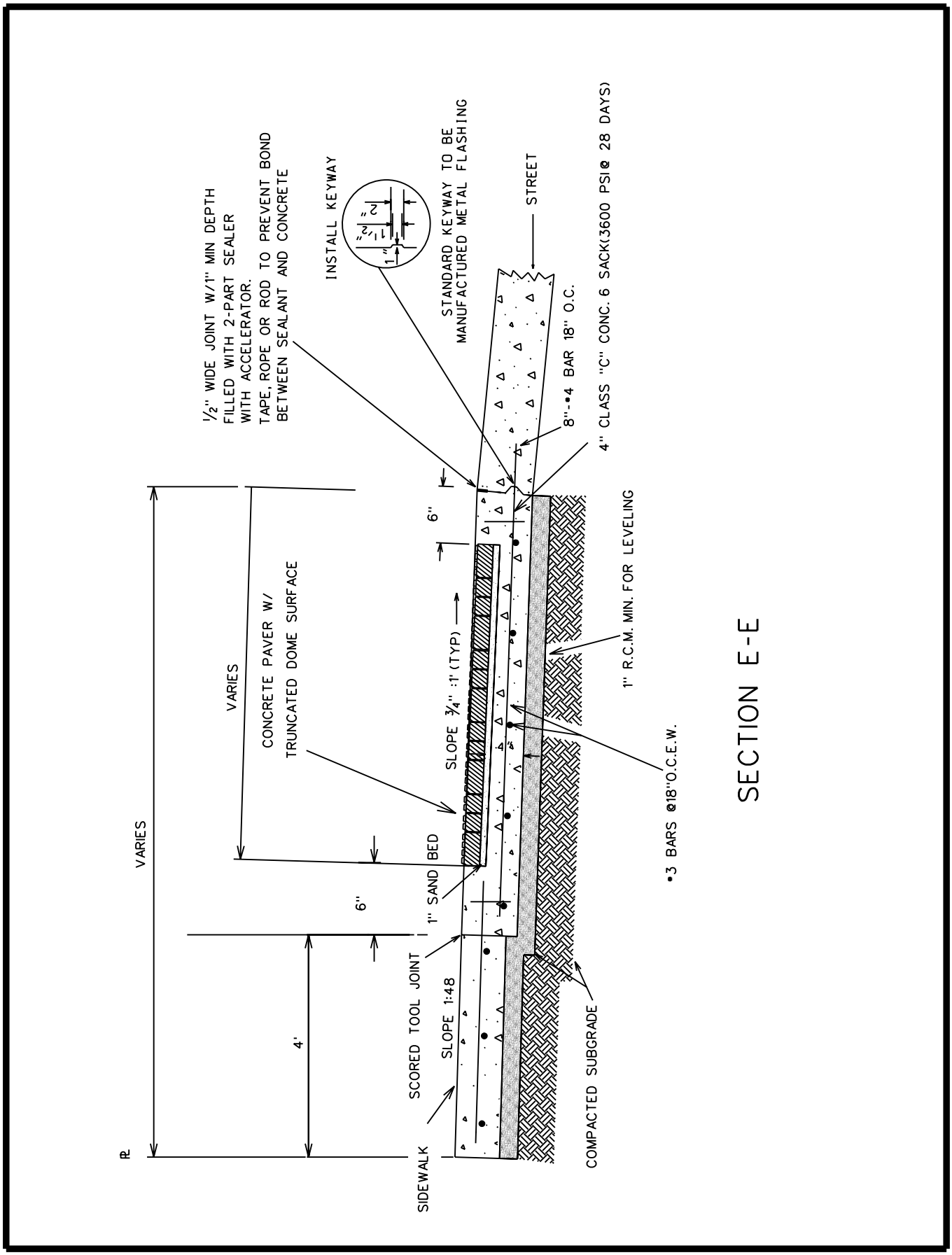
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SIDEWALK DETAILS
RAMP W/ PARALLEL SIDEWALK

P14–3 /9

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



SECTION E-E

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SIDEWALK DETAILS

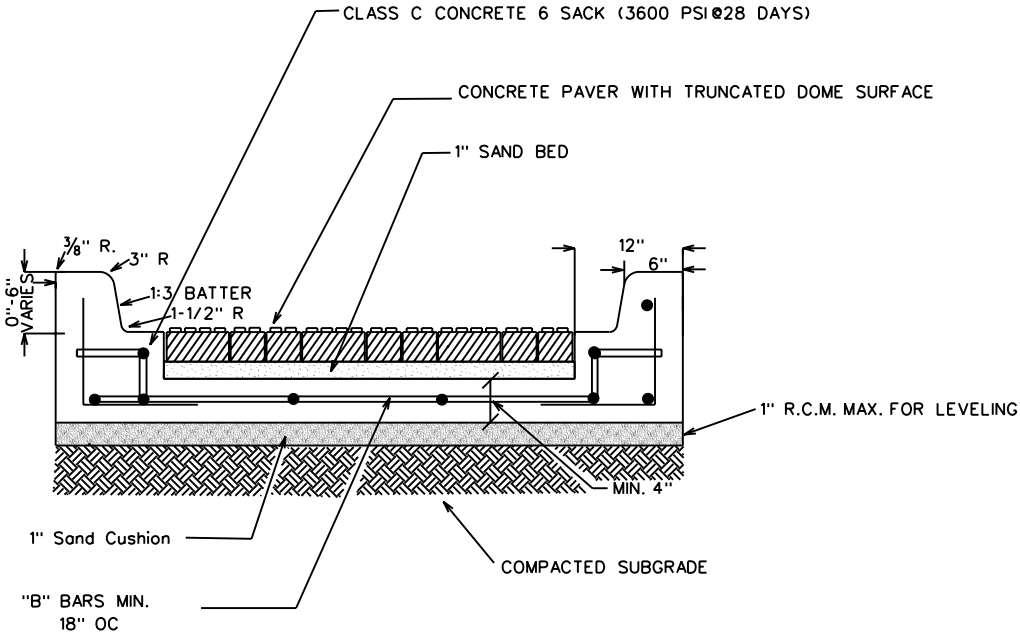
RAMP W/SIDEWALK

SECTION E–E

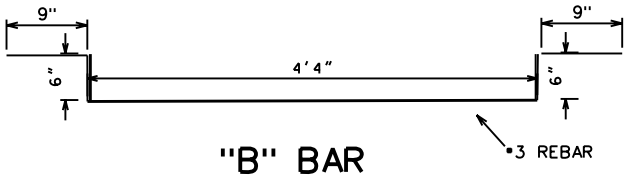
P14–4 /9

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



SECTION A-A



"B" BAR

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

PAVING DETAILS

CURB THRU RAMP

P14 – 5 /9

SCALE: N.T.S.
DATE: 04/15/06

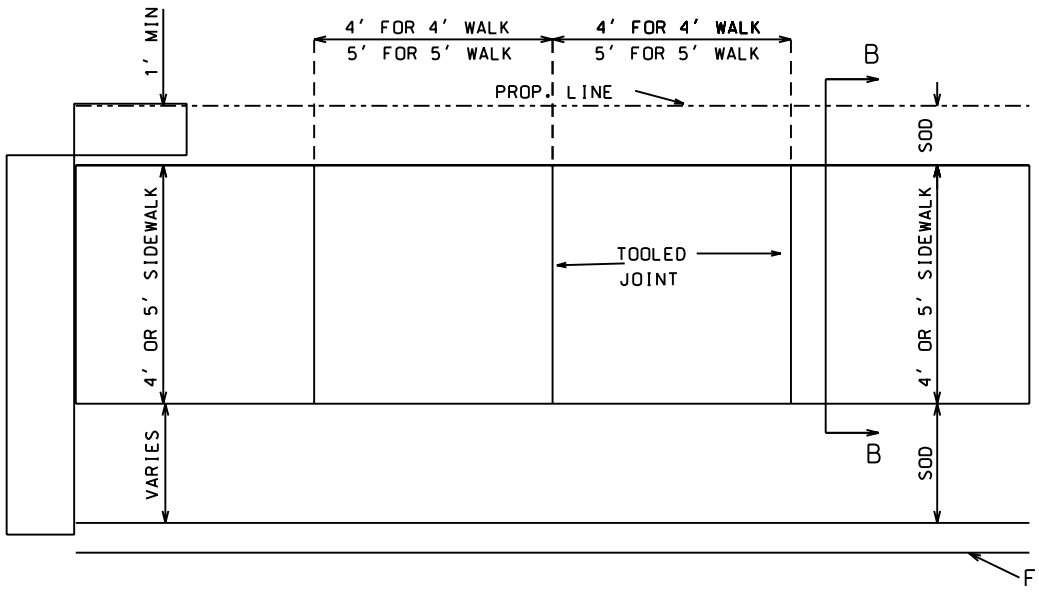
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

SIDEWALK DETAILS

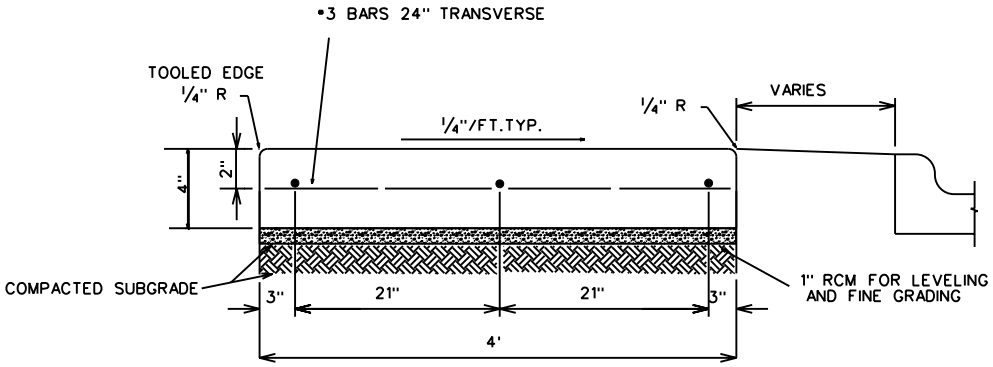
SIDEWALK W/ PARKWAY



NOTE:

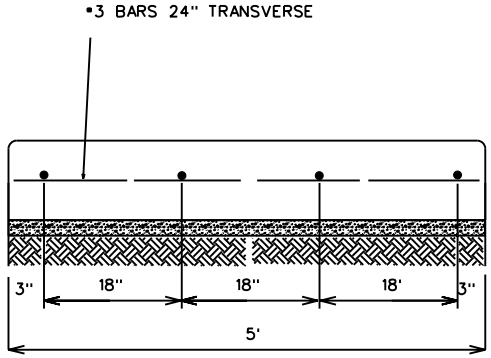
3/4" REDWOOD EXPANSION JOINT
EVERY 40' AND DIRECTIONAL CHANGE
CLASS "A" CONCRETE 5 SACK (3000 PSI @28 DAYS)

PLAN VIEW



BAR SPACING FOR 4' SIDEWALK
•3 BARS

SECTION B-B

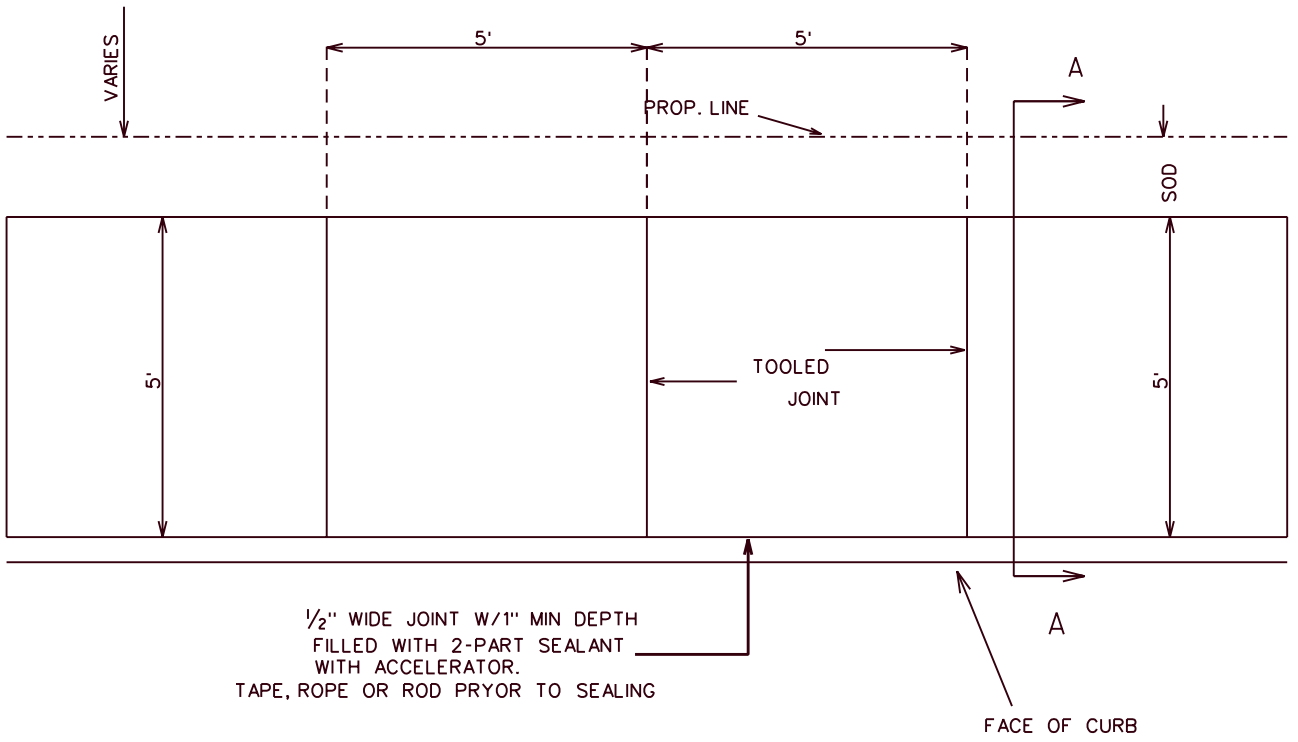


BAR SPACING FOR 5' SIDEWALK
•3 BARS

P14-6 /9

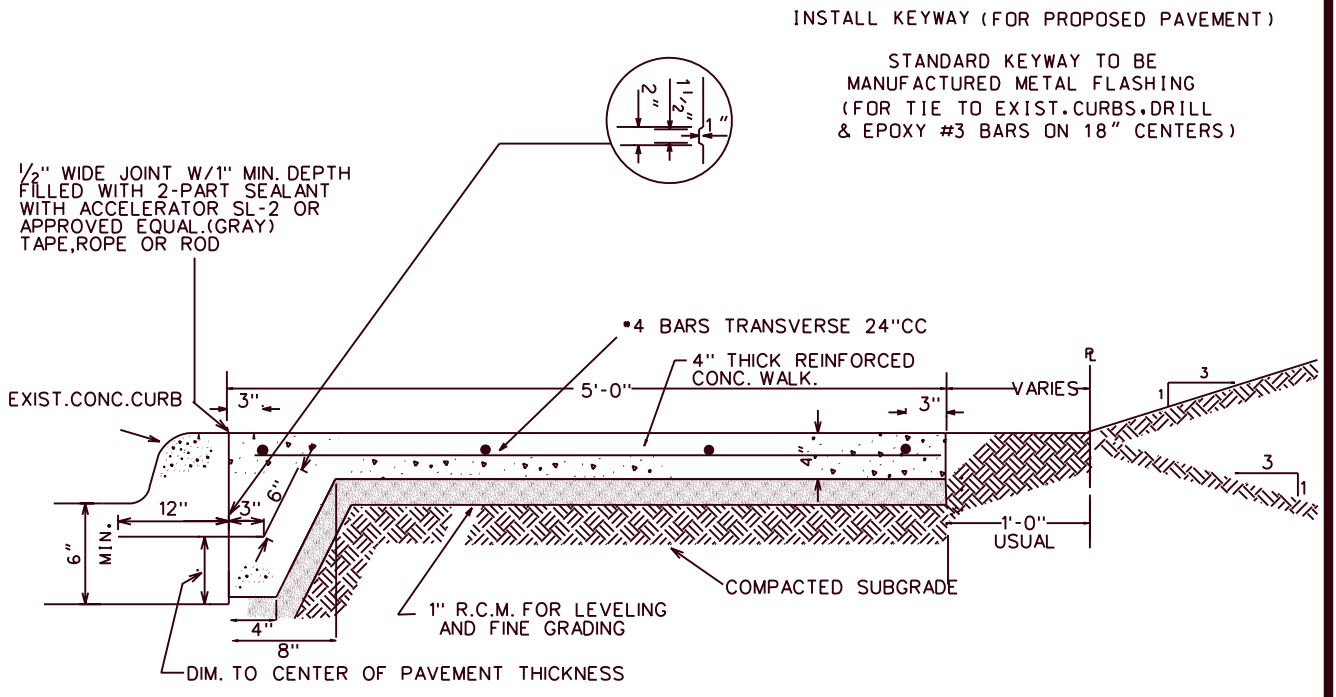
SCALE: N.T.S.
DATE: 06/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



NOTE:
¾" REDWOOD EXPANSION JOINT EVERY 40' ON 4' WALK,
50' ON 5' WALK AND AT DIRECTIONAL CHANGE.
CLASS "A" CONCRETE 5 SACK (3000 PSI@28 DAYS)

PLAN VIEW



SECTION A-A

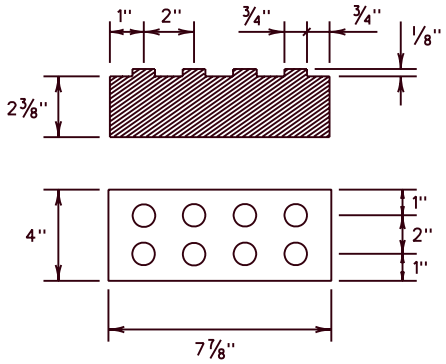
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SIDEWALK DETAILS
SIDEWALK ABUTTING CURB

P14–7 /9

SCALE: N.T.S.
DATE: 03/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



PAVER NOTES

Concrete paver units shall meet all requirements of ASTM C-936, C-33, and shall be laid in a two by two unit basket weave pattern, unless shown otherwise in the plans.

Concrete paver units shall have a truncated dome top surface for detectable warning to pedestrians.

Concrete paver units shall be saw cut only and any cut unit shall be not less than 25 percent of a full unit.

Pavers will have detectable warning that consists of raised truncated domes with a diameter of .09 in. a height of nominal 0.2 in. , and a center to center spacing of nominal 2.35 in. , and shall be red in color.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

SIDEWALK DETAILS

CONCRETE PAVERS WITH TRUNCATED DOME SURFACE

P14–8 /9

SCALE: N.T.S.

DATE: 04/15/06

DEPARTMENT OF PUBLIC WORKS / ENGINEERING

GENERAL NOTES FOR SIDEWALKS:

1. ALL HONEYCOMB IN BACK OF CURB TO BE TROWELED AND WIPED W/NON SHRINK GROUT BEFORE POURING SIDEWALK.
2. LUG MAY BE FORMED BY SHAPING SUBGRADE TO APPROXIMATE DIMENSIONS SHOWN.
3. PAYMENT FOR KEYWAY IS SUBSIDIARY TO CONCRETE SIDEWALK PAT ITEM.
4. PAYMENT FOR EXCAVATION, BORROW, AND COMPACTION IS SUBSIDIARY TO CONCRETE SIDEWALK PAY ITEM.
5. CONTRACTOR SHALL DO ALL NECESSARY FILLING, LEVELING AND FINE GRADING REQUIRED TO BRING THE SUBGRADE TO THE EXACT GRADES.
6. BACKFILL FOR SIDEWALK SUBGRADE SHALL BE RECYCLED CONCRETE MIX.
7. SIDEWALK BACKFILL AND SUBGRADE SHALL BE COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES TO 90% OF ASTM D698 DENSITY WITH A MOISTURE WITHIN -2% TO -4% OF OPTIMUM MOISTURE.
8. ¾" EXPANSION JOINTS ARE REQUIRED EVERY 40", ALSO WHERE SIDEWALK ABUTTS THE CURB. ¾" EXPANSION JOINTS SHALL BE INSTALLED WHERE THERE IS AN EXPANSION JOINT @ THE STREET.
9. CONCRETE SHALL BE CLASS A 5 SACK (3000 PSI @ 28 DAYS) EXCEPT FOR HANDICAP RAMPS WHICH SHALL BE CLASS C 3600 PSI @28 DAYS.
10. REINFORCEMENT SHALL BE NO. 3 BARS ON 18" CENTERS OR NO. 4 BARS ON 24" CENTERS ON CHAIRS (NO WELDED WIRE FABRIC WILL BE ACCEPTABLE AS A SUBSTITUTE FOR STEEL BARS).
11. FINISH OF THE TOP SURFACE SHALL BE "LIGHT BROOM FINISH" WITH TOOLED JOINTS.
12. SLOPE WALK¼" MIN-1/2" MAX PER FT.OR APPROVED BY THE CITY.
13. MIN. CONCRETE THICKNESS ON SIDEWALK SHALL BE 4" AND DRIVEWAYS SHALL BE 6".
14. ALL JOINTS TO BE SEALED WITH SONOLASTIC SL2 (GRAY) AS PER DETAIL.
15. ALL MISCELLANEOUS SIDEWALK DETAILS FOR SIDEWALKS AND HANDICAP RAMPS AGAINST PROPOSED OR EXISTING CURB SHALL APPLY.
16. WHERE BARRIER FREE RAMPS ARE TO BE CONSTRUCTED @ EXISTING STREET LOCATIONS DELETE KEYWAY DETAILS AND DRILL/EPOXY GROUT #3 BARS 8" INTO EXISTING ON 18" CENTERS.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SIDEWALK DETAILS
GENERAL NOTES FOR SIDEWALKS

P14–9 /9

SCALE: N.T.S.
DATE: 03/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

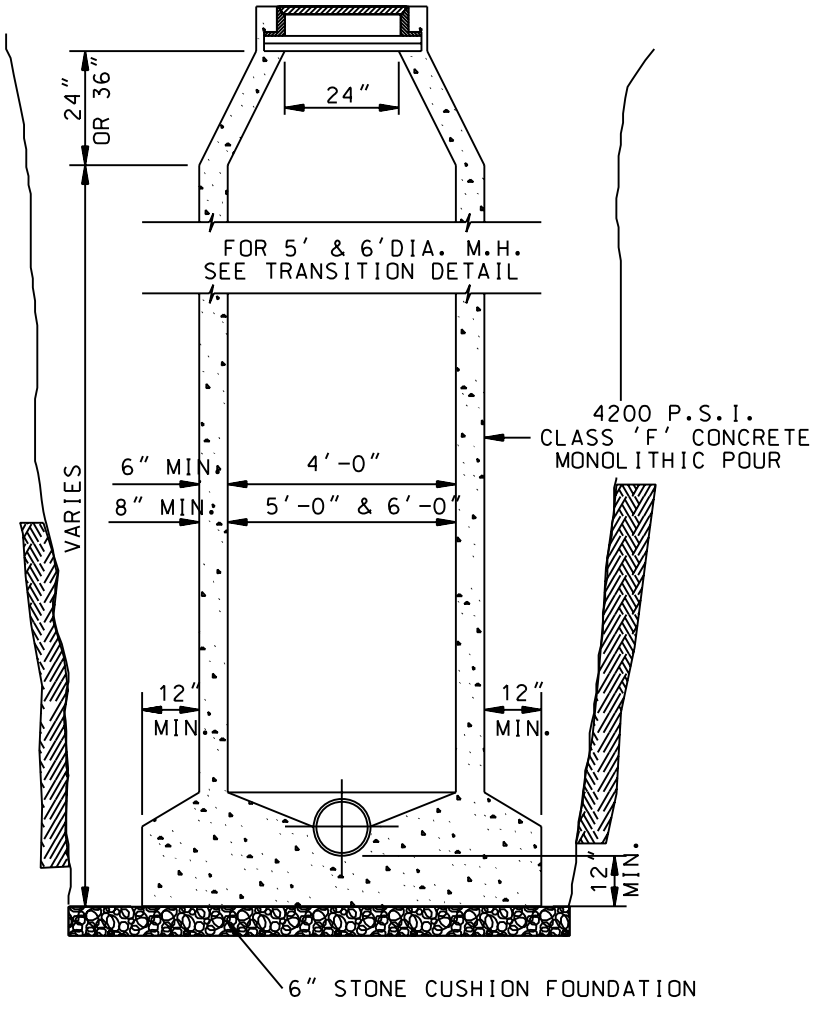
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
STANDARD PRECAST MANHOLE

S1–1 /11

SCALE: N.T.S.
DATE: 01/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

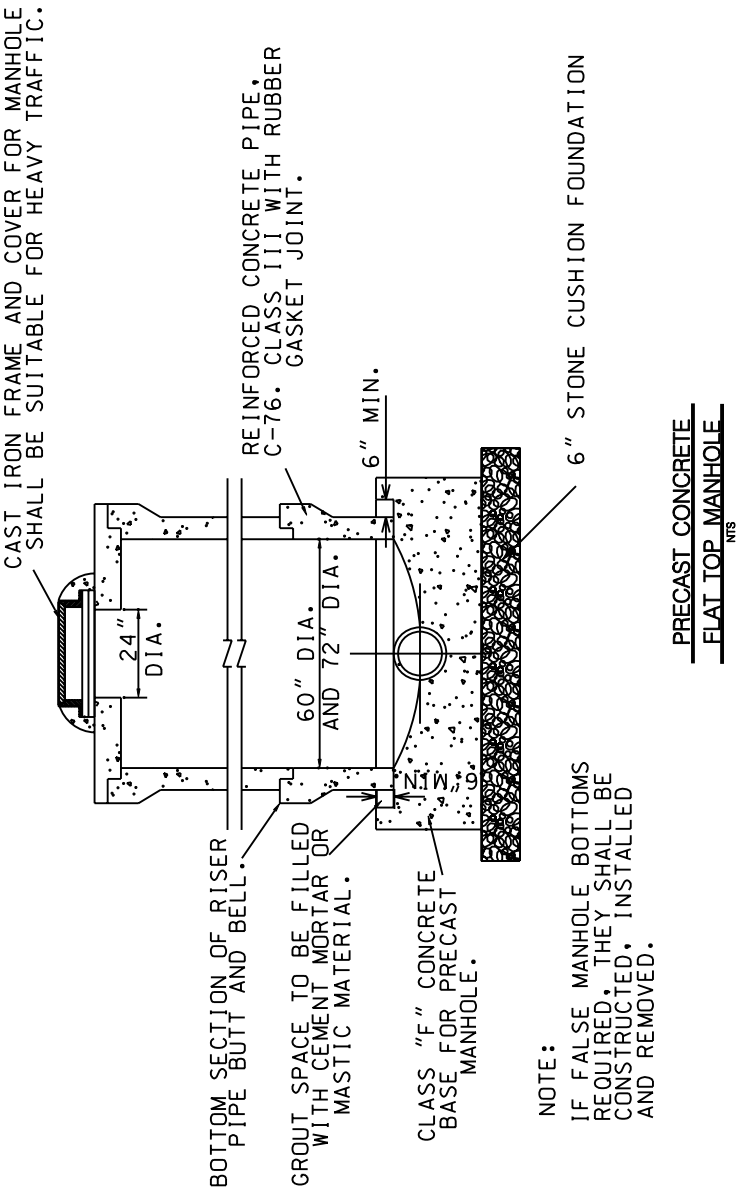
SANITARY SEWER DETAILS

STANDARD CAST-IN-PLACE MANHOLE

S1-2 /11

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



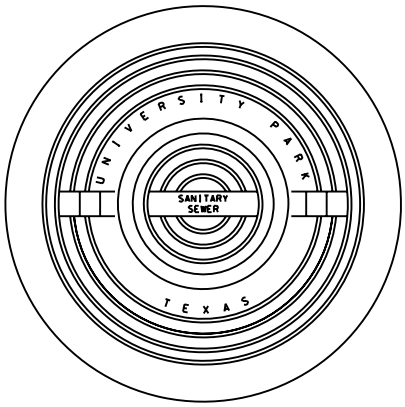
PRECAST CONCRETE
FLAT TOP MANHOLE
NTS

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
PRECAST CONCRETE FLAT TOP MANHOLE

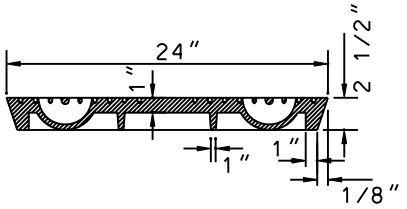
S1–3 /11

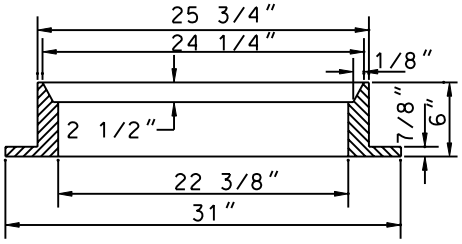
SCALE: N.T.S.
DATE: 04/15/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



APPROXIMATE WEIGHT
RING AND COVER: 385 LBS.

PROVIDE WITH PICK SLOTS ONLY.





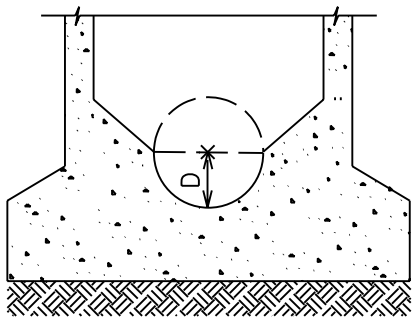
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
RING & COVER

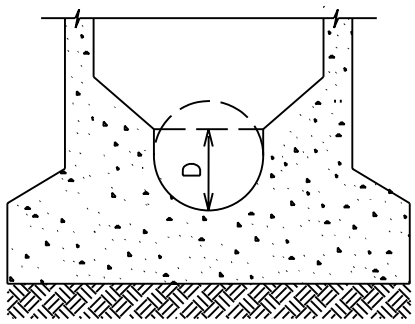
S1–4 /11

SCALE: N.T.S.
DATE: 04/15/06

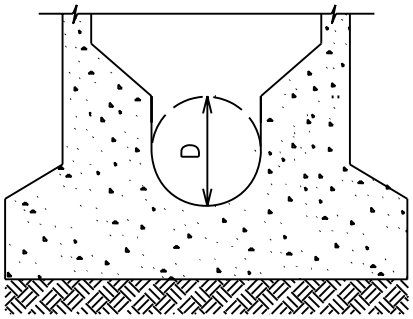
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



PIPES W/DIAMETER OF LESS THAN 15"
D= DISTANCE OF 1/2 DIAMETER OF LARGEST PIPE.



PIPES W/DIAMETER OF 15"-24"
D= DISTANCE OF 3/4 DIAMETER OF LARGEST PIPE.



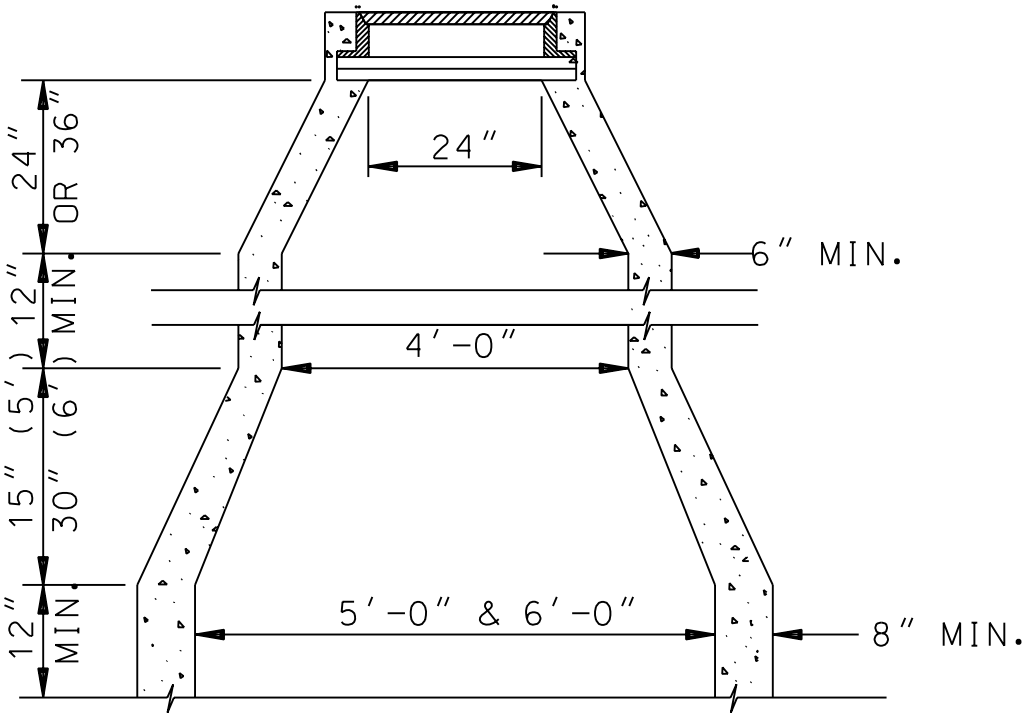
PIPES W/DIAMETER GREATER THAN 24"
D= DISTANCE OF FULL DIAMETER OF LARGEST PIPE.

NOTE: BENCH SHALL HAVE 1/2" PER FT. MIN. SLOPE.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
MANHOLE INVERT DEPTH

S1-5 /11
SCALE: N.T.S.
DATE: 04/15/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

SANITARY SEWER DETAILS

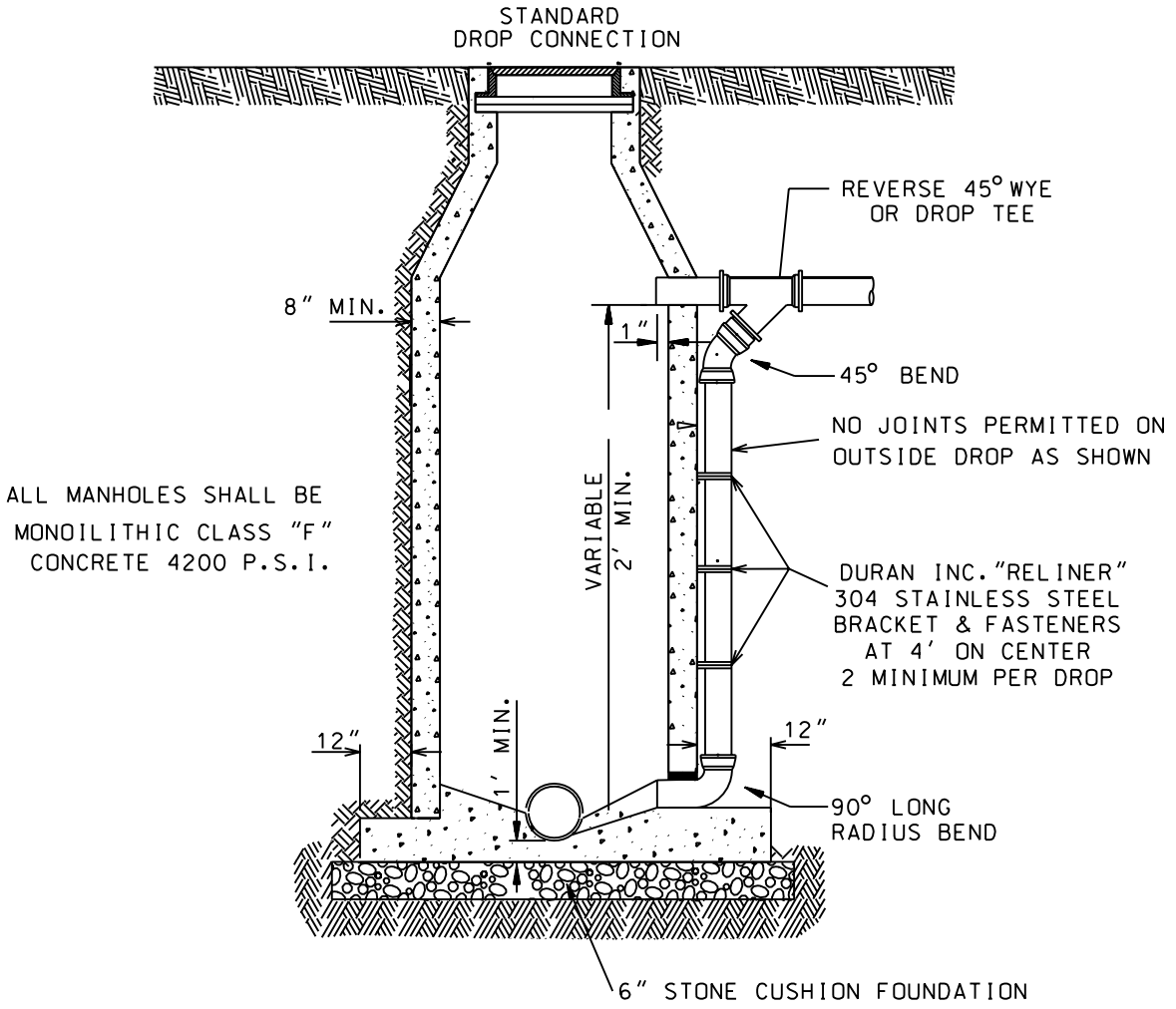
TRANSITION FOR 5 & 6 FOOT MANHOLES

S1–6 /11

SCALE: N.T.S.

DATE: 04/15/06

DEPARTMENT OF PUBLIC WORKS / ENGINEERING



CAST-IN-PLACE NOTES:

1. CONCRETE SHALL BE A MONOLITHIC POUR.

2. DROP MANHOLES SHALL BE INSTALLED WHEN THE INFLOW AND OUTFALL ELEVATIONS DIFFER BY 18" OR MORE.

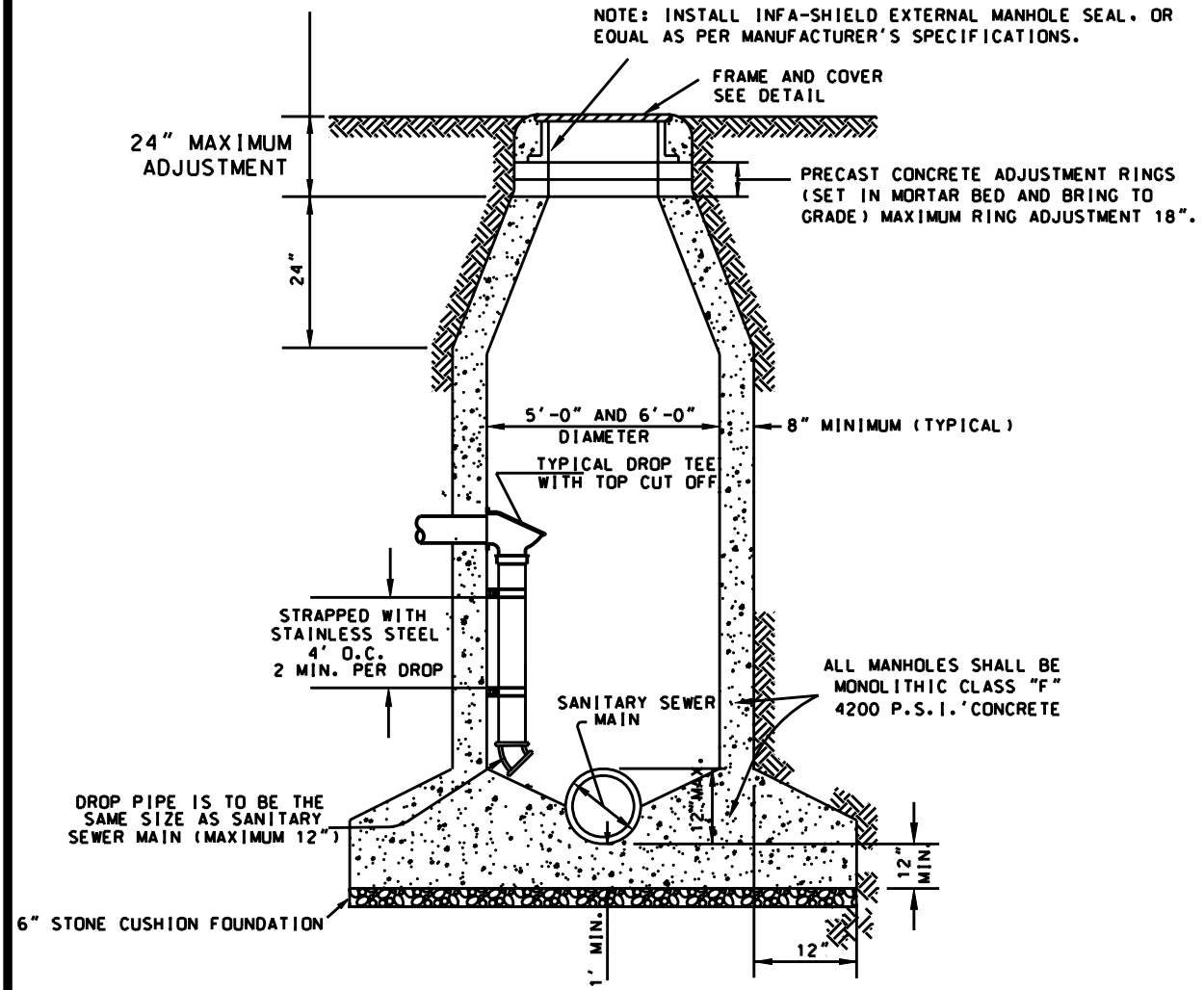
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
4' OUTSIDE DROP MANHOLE

S1–7 /11

SCALE: N.T.S.
DATE: 09/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



CAST-IN-PLACE NOTES:

1. CONCRETE SHALL BE A MONOLITHIC POUR.
2. DROP MANHOLES SHALL BE INSTALLED WHEN THE INFLOW AND OUTFALL ELEVATIONS DIFFER BY 18" OR MORE.
3. SEE SHEET S1-7/11_B DURAN INC."RELINER" DETAIL FOR PIPING AND FITTINGS INFORMATION.

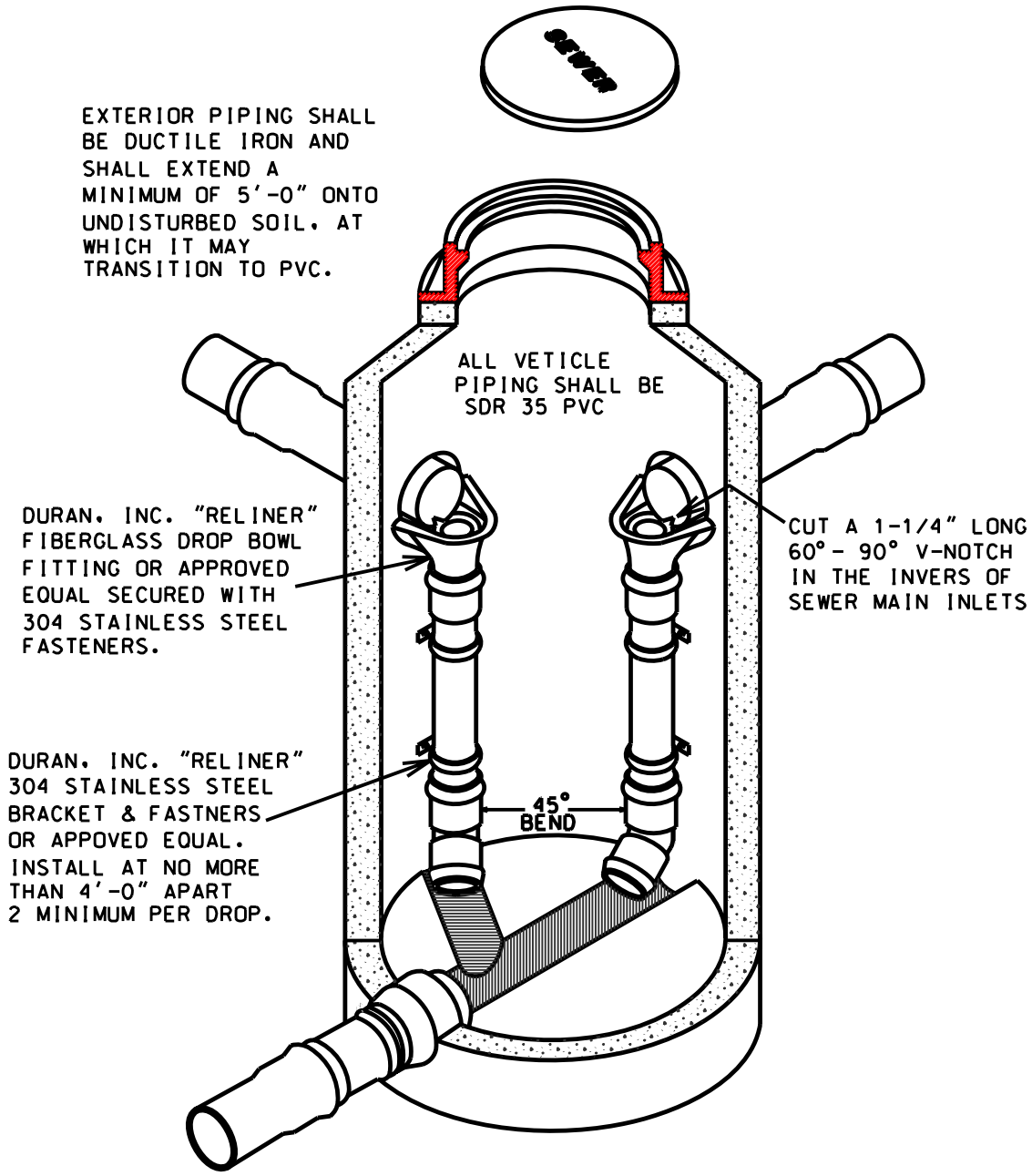
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS
5' & 6' INSIDE DROP MANHOLE

S1-7 /11_A

SCALE: N.T.S.
DATE: 09/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

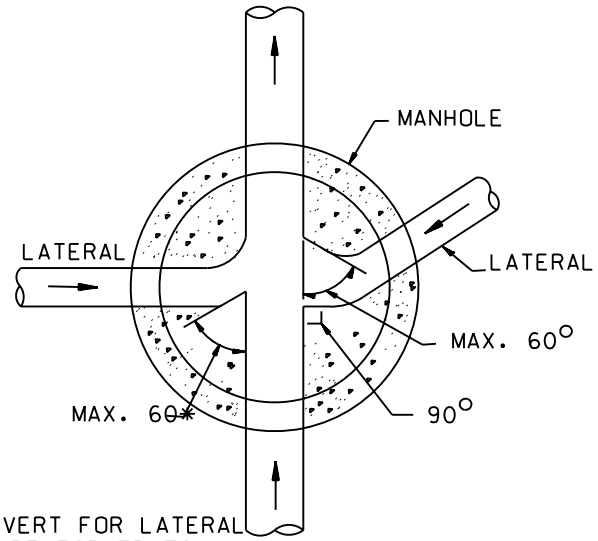
GENERAL CONSTRUCTION STANDARD
STORM SEWER DETAILS

DROP BOWL CONNECTION FOR STANDARD MANHOLE

S1–7 /11_B

SCALE: N.T.S.
DATE: 08/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



NOTE: CONCRETE INVERT FOR LATERAL CONNECTION SHALL BE FORMED TO INTERSECT THE MAIN LINE INVERT TO PRVIDE POSITIVE FLOW DOWN STREAM.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAILS

INVERT DETAIL FOR LATERAL CONNECTIONS AT MANHOLE

S1–8 /11

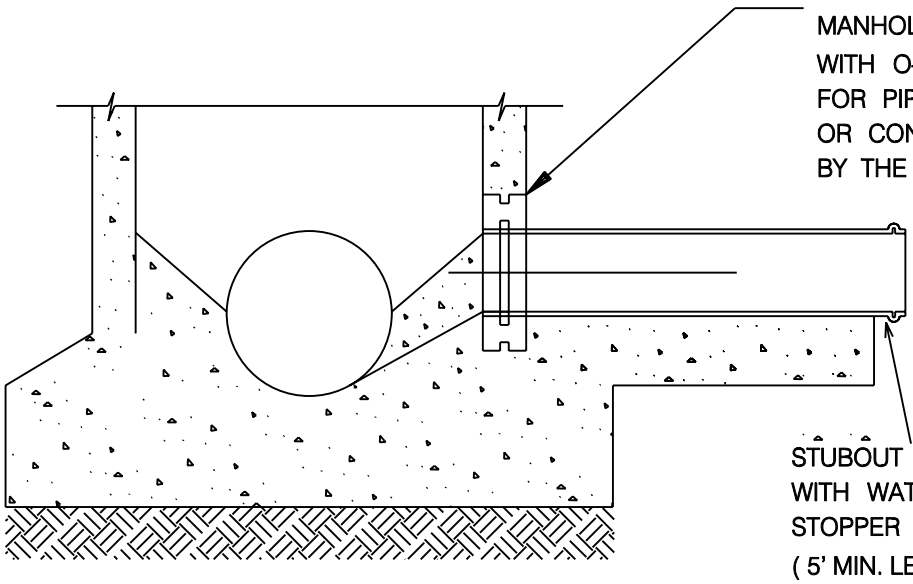
SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

NOTE:

SEE SHEET SI–5/11 FOR MH INVERT DETAIL

A–LOCK REQUIRED ON ALL MH CONNECTIONS
UNLESS APPROVED BY CITY ENGINEER



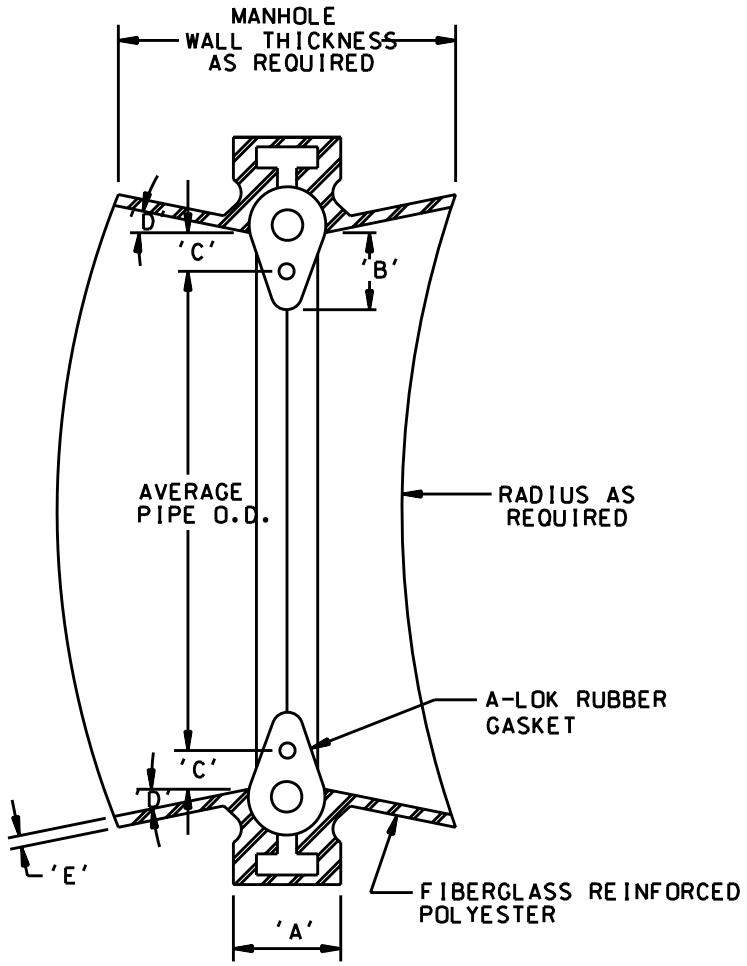
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
SANITARY SEWER DETAIL
STUB OUT DETAIL

S1–9 /11

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



DIMENSION FOR MANHOLE PIPE CONNECTOR A.S.T.M. C-923

PIPE SIZE	'A'	'B'	'C'	'D'	'E'
4"-6"	1 1/2"	7/8"	3/8"	10°	0.10+/-
8"-16"	2 1/8"	1 3/8"	5/8"	10°	0.10+/-

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

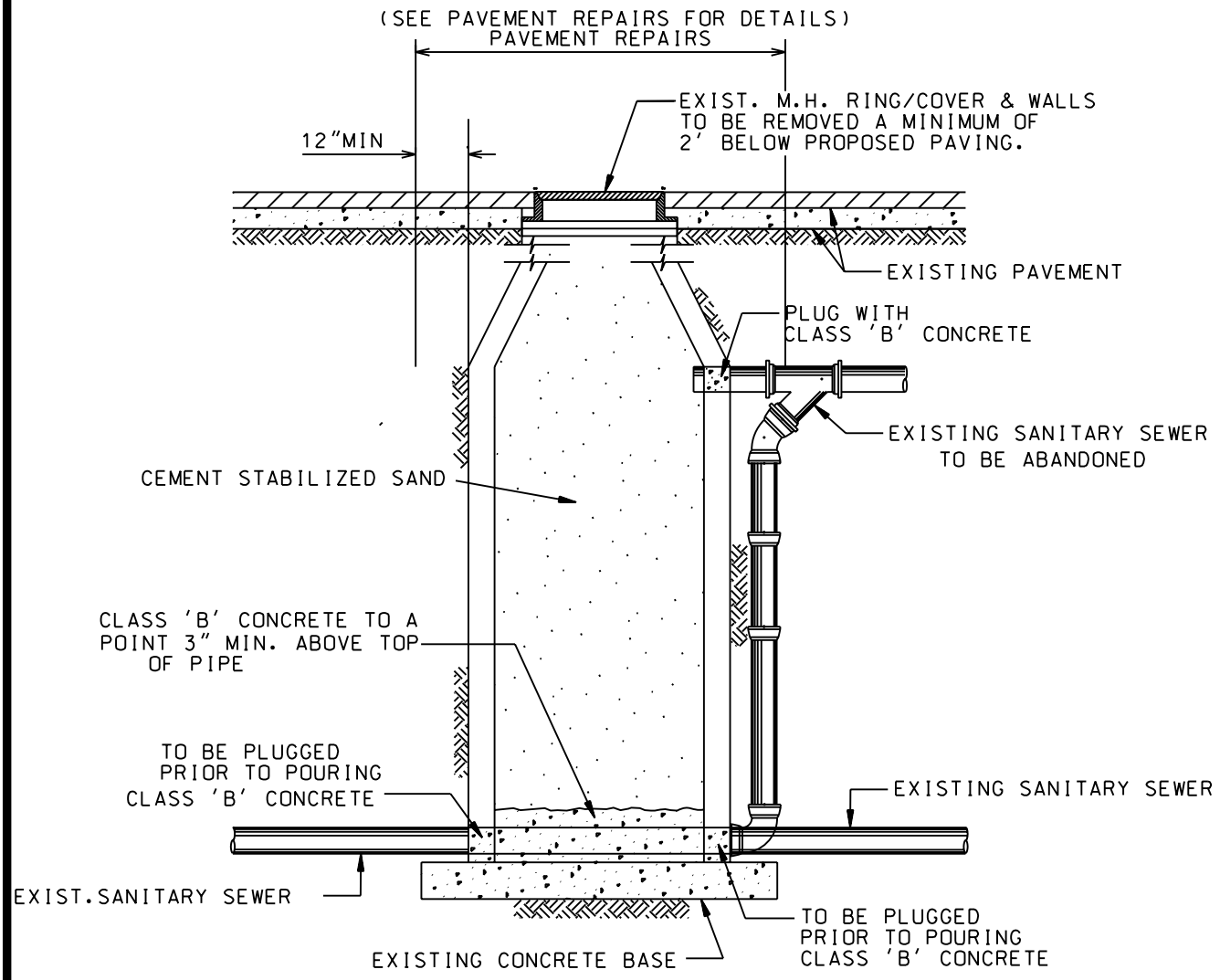
SANITARY SEWER DETAILS

A-LOCK MANHOLE PIPE CONNECTOR FOR ALL MANHOLE CONNECTIONS

S1-10 /11

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

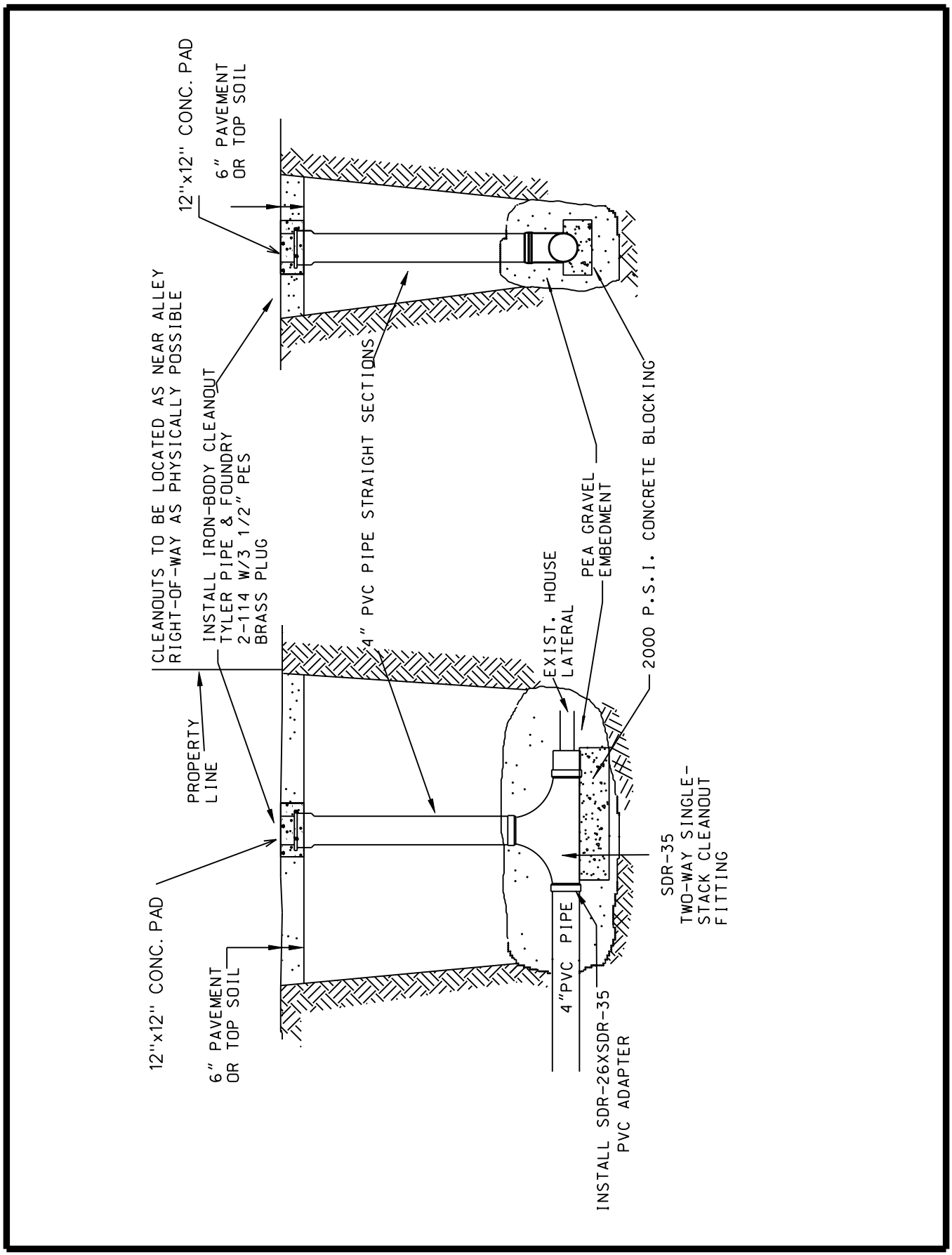
SANITARY SEWER DETAILS

ABANDONMENT OF EXISTING MANHOLE IN PAVEMENT

S1–11 /11

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

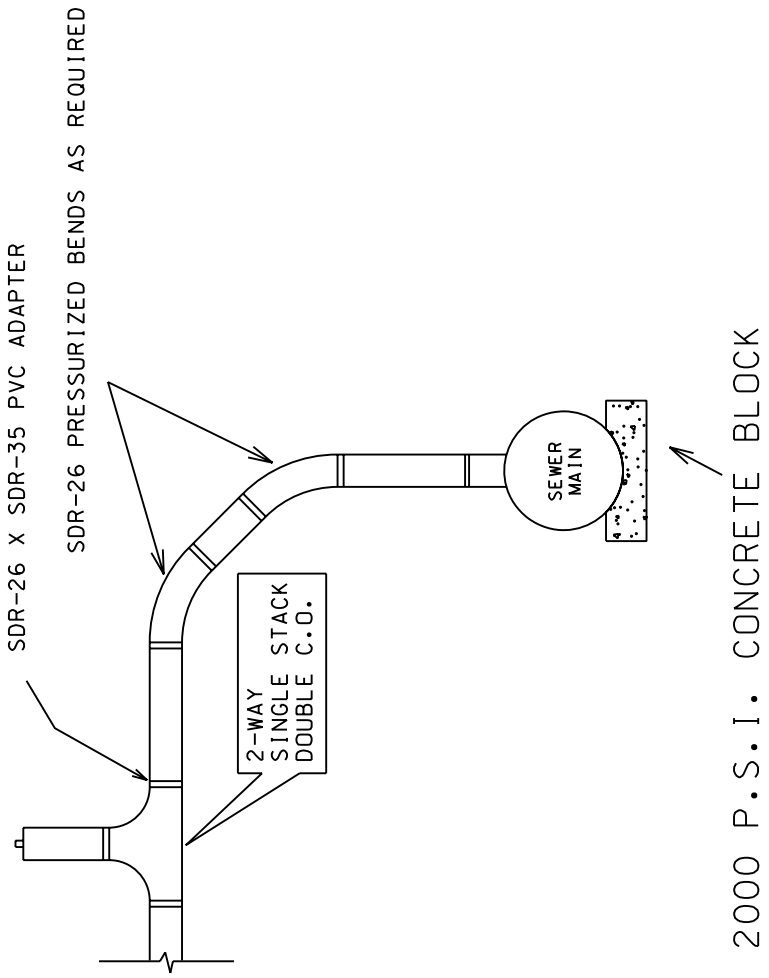
SANITARY SEWER DETAILS

TWO –WAY SINGLE STACK CLEAN OUT

S2

SCALE: N.T.S.
DATE: 01/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

SANITARY SEWER DETAILS

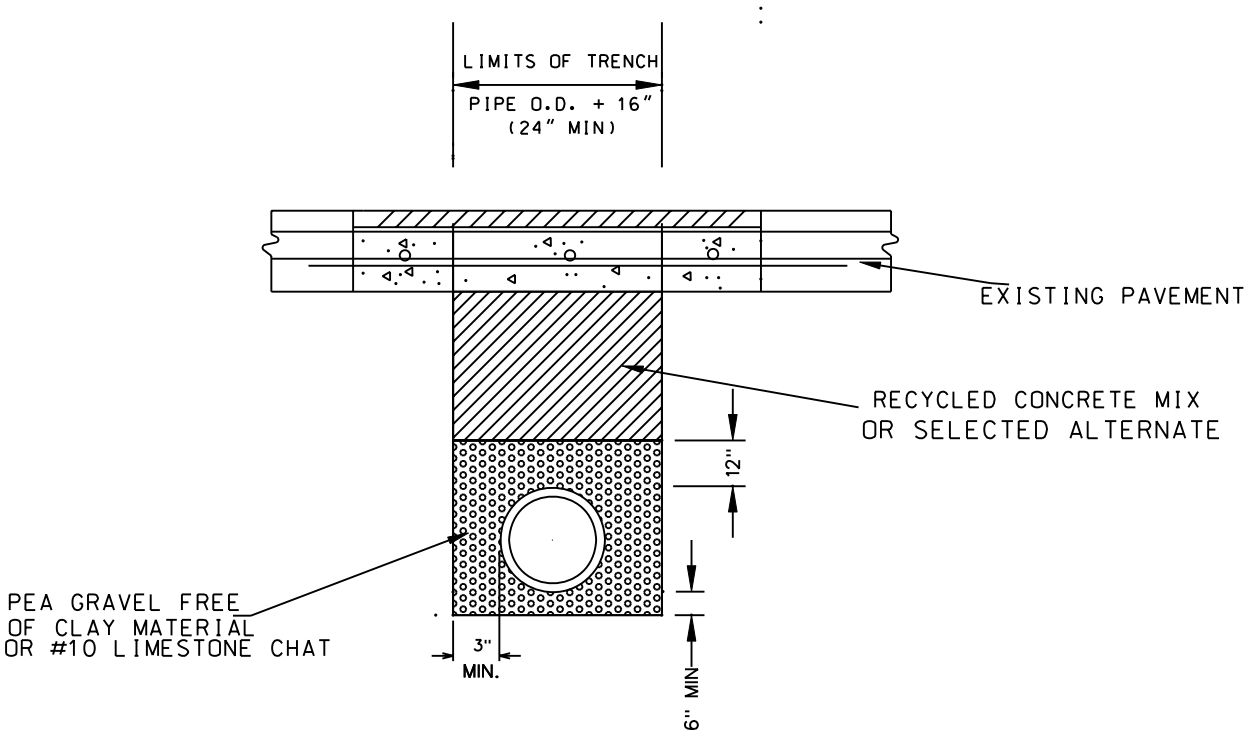
SANITARY SEWER LATERAL

S3

SCALE: N.T.S.

DATE: 01/10

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

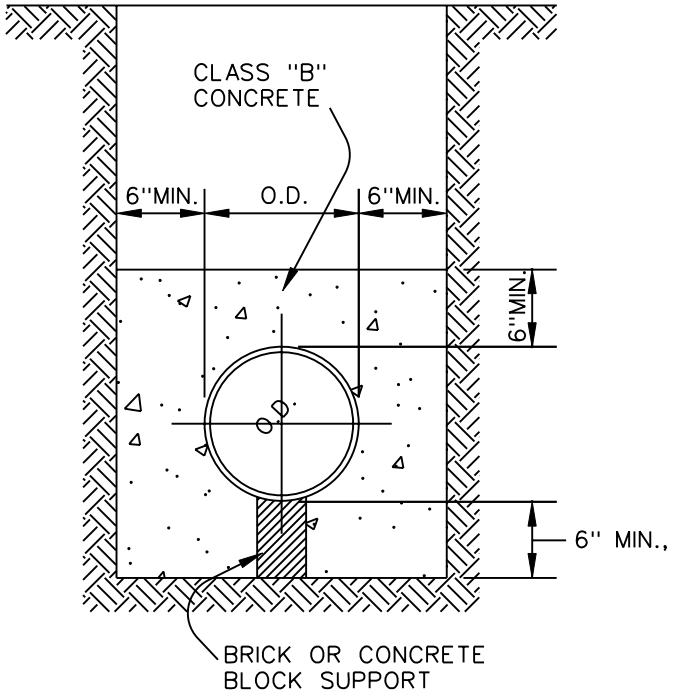
SANITARY SEWER DETAILS

TYPICAL SEWER EMBEDMENT

S4

SCALE: N.T.S.
DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARDS
SANITARY SEWER DETAILS
CONCRETE ENCASEMENT

S5

SCALE: N.T.S.
DATE: 04/15/06

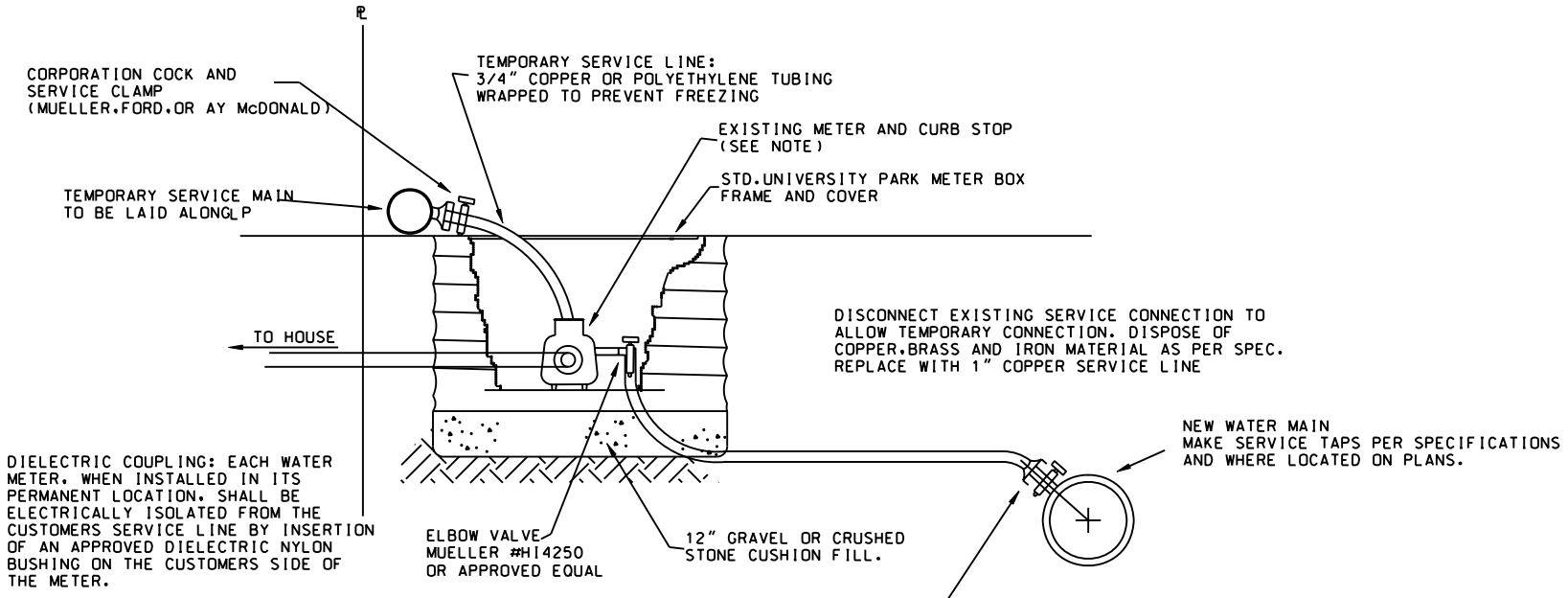
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

TYPICAL SERVICE CONNECTION

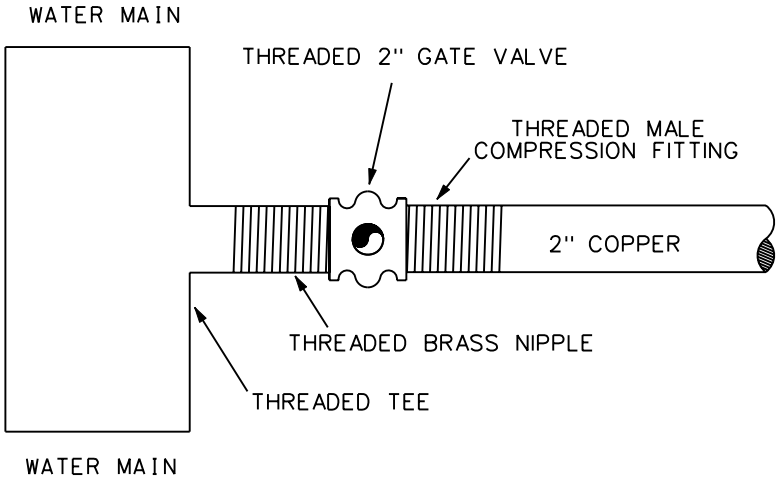


NOTE: DURING INCLEMENT WEATHER CONTRACTOR TO PROTECT SERVICE. CORP METERS AND TEMPORARY WATER MAIN WITH PIPE WRAP. HAY AND ACTIVE RUNNING SERVICE FOR THE MAIN.

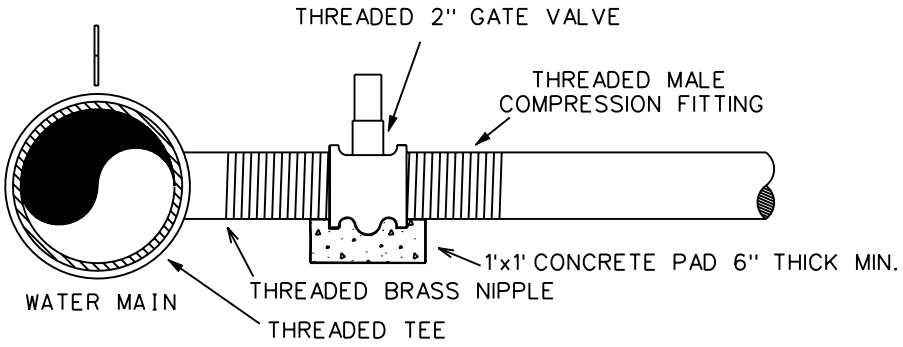
W1

SCALE: N.T.S.
DATE: 04/10

DEPARTMENT OF PUBLIC WORKS / ENGINEERING



TOP VIEW



SIDE VIEW

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

2" WATER SERVICE

W2

SCALE: N.T.S.

DATE: 07/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

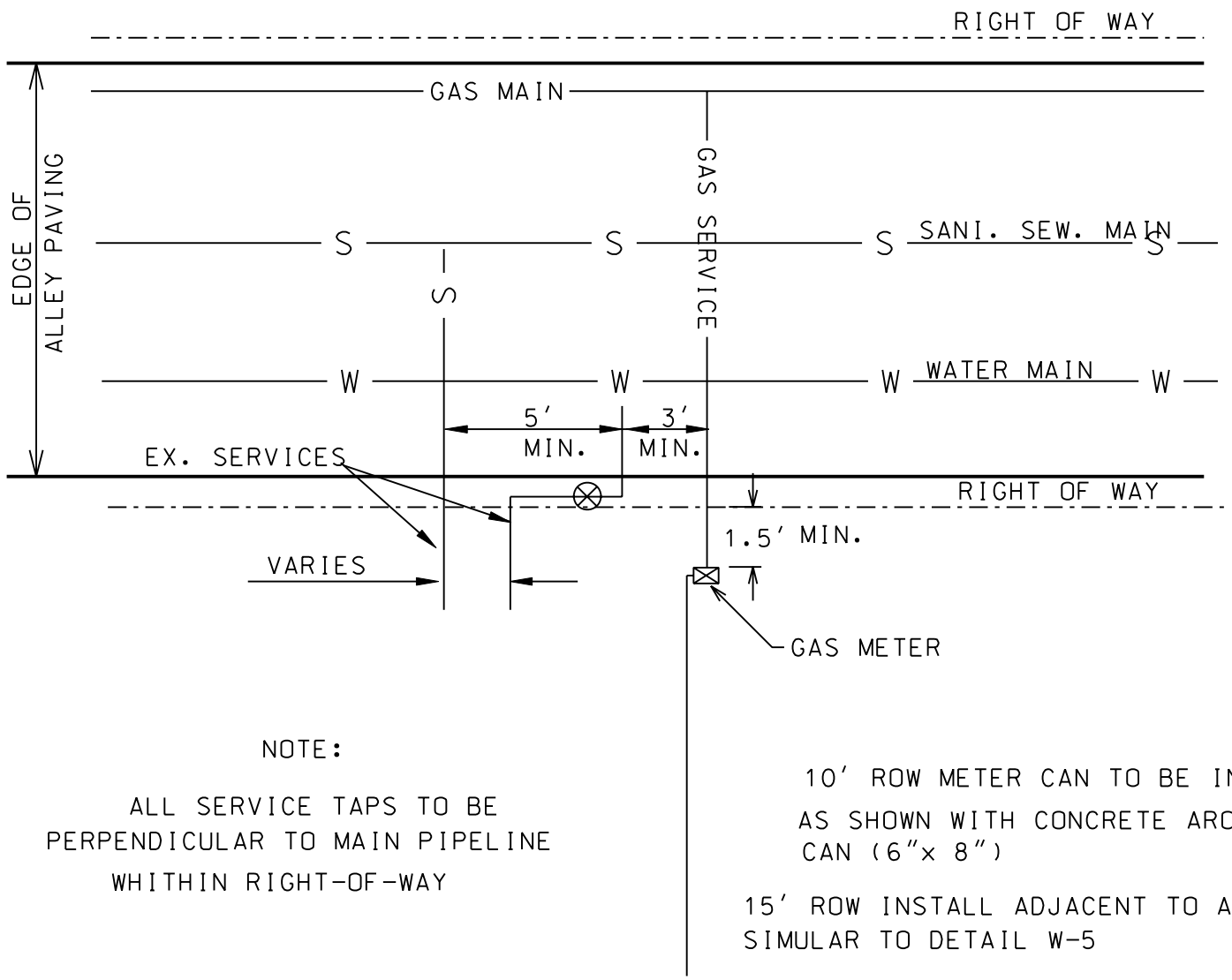
WATER DETAILS

WATER METER RELOCATION WITH FENCE

W3

SCALE: N.T.S.
DATE: 04/10

DEPARTMENT OF PUBLIC WORKS / ENGINEERING

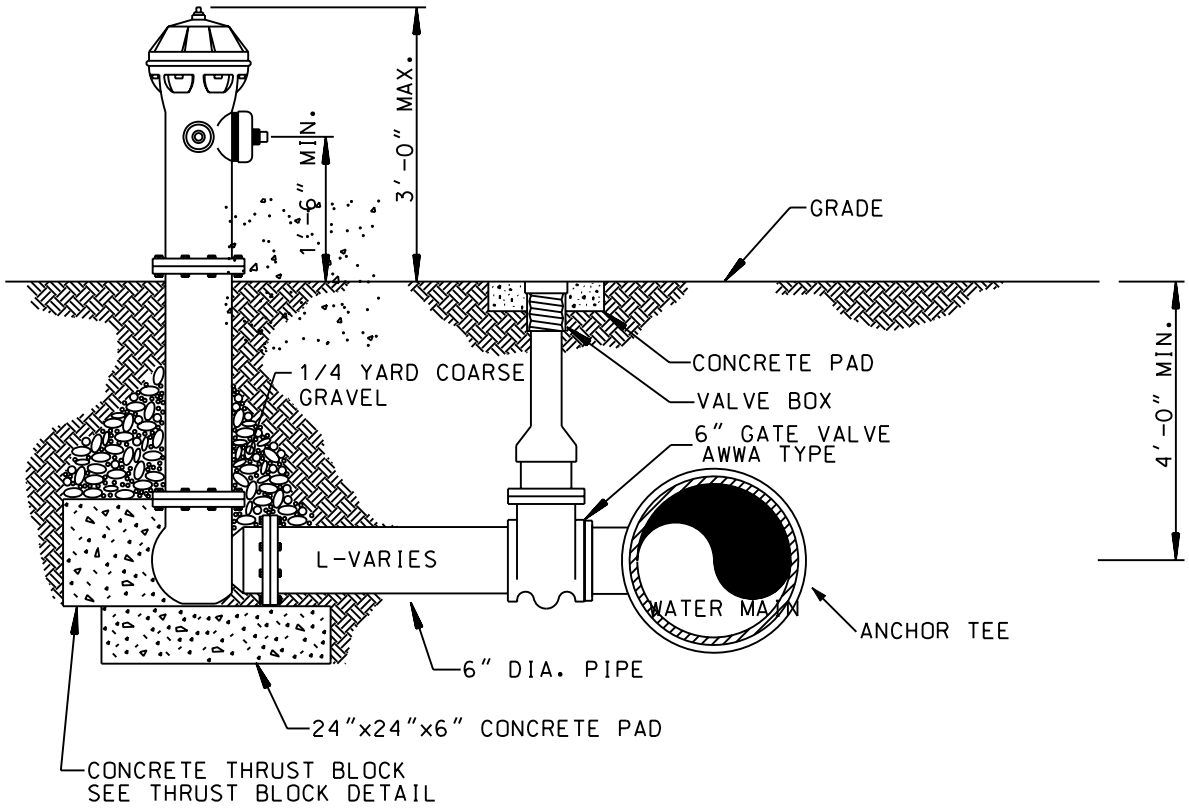


NOTE:

ALL SERVICE TAPS TO BE PERPENDICULAR TO MAIN PIPELINE WHITHIN RIGHT-OF-WAY

10' ROW METER CAN TO BE INSTALLED AS SHOWN WITH CONCRETE AROUND METER CAN (6"x 8")

15' ROW INSTALL ADJACENT TO ALLEY PAVING- SIMULAR TO DETAIL W-5



FIRE HYDRANT NOTES :

1. C.L. OF F.H. BARREL SHALL BE NOT LESS THAN 2 OR MORE THAN 7' FROM BACK OF CURB OR EDGE OF PAVEMENT.
2. DO NOT SET F.H. IN AN EXISTING OR PROPOSED SIDEWALK, UNLESS OTHERWISE NOTED.
3. ALL TEES SHALL BE ANCHOR TEES FROM THE MAIN TO F.H. VALVES.
4. SET F.H. ON THE LOT LINE EXTENDED WHEN POSSIBLE
5. NEVER PLACE F.H. WHERE FIRE TRUCK COULD NOT PARK BESIDE IT
6. NO MORE THAN ONE EXTENSION ALLOWED ON BARREL OF F.H. W/ MAX 18" EXTENSION USE OFFSET OR 2 BENDS AS REQUIRED.
7. USE OFFSET OR 2 BENDS AS REQUIRED FOR EXTRA DEPTH WATER MAINS.

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

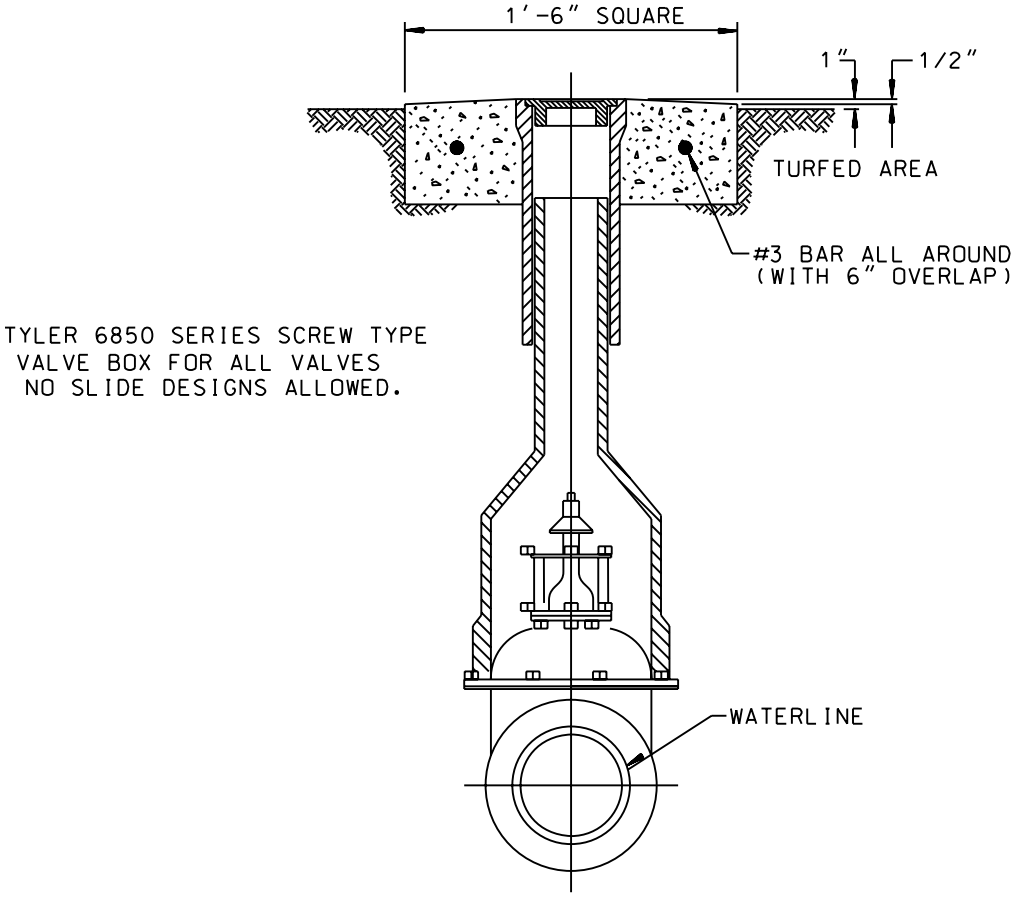
TYPICAL FIRE HYDRANT ASSEMBLY

W4

SCALE: N.T.S.

04/15/06

DEPARTMENT OF PUBLIC WORKS / ENGINEERING



NOTE: VALVE BOX SHALL BE CAST-IRON. TWO PIECE. TYLER "SERIES 6850" W/LID

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

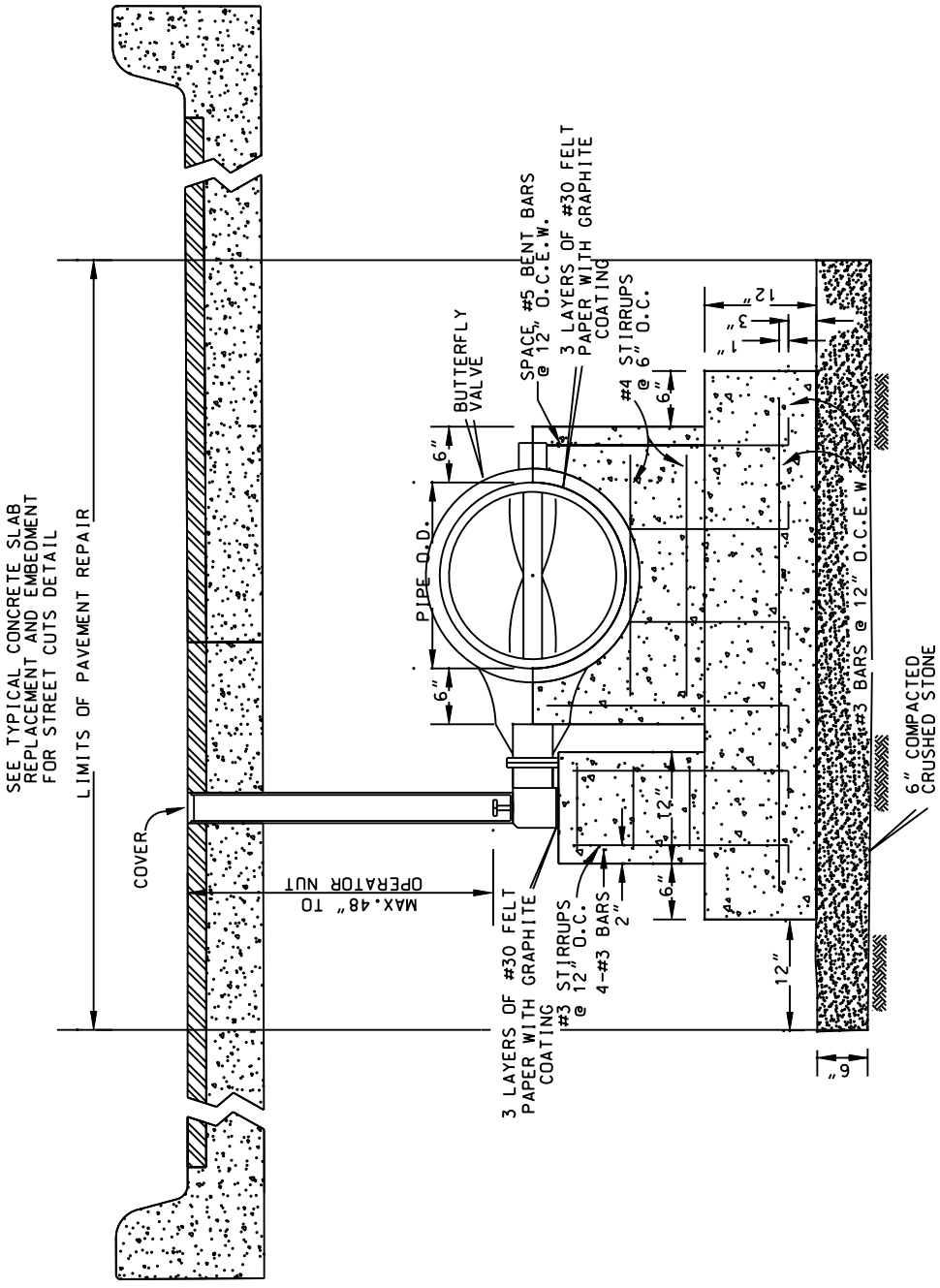
WATER DETAILS

GATE VALVE AND BOX

W5

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



NOTE: A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHERE THE OPERATOR NUT IS LOCATED IN EXCESS OF 48" BELOW FINISHED GRADE. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT IT IS WITHIN 48" OF THE VALVE BOX LID.

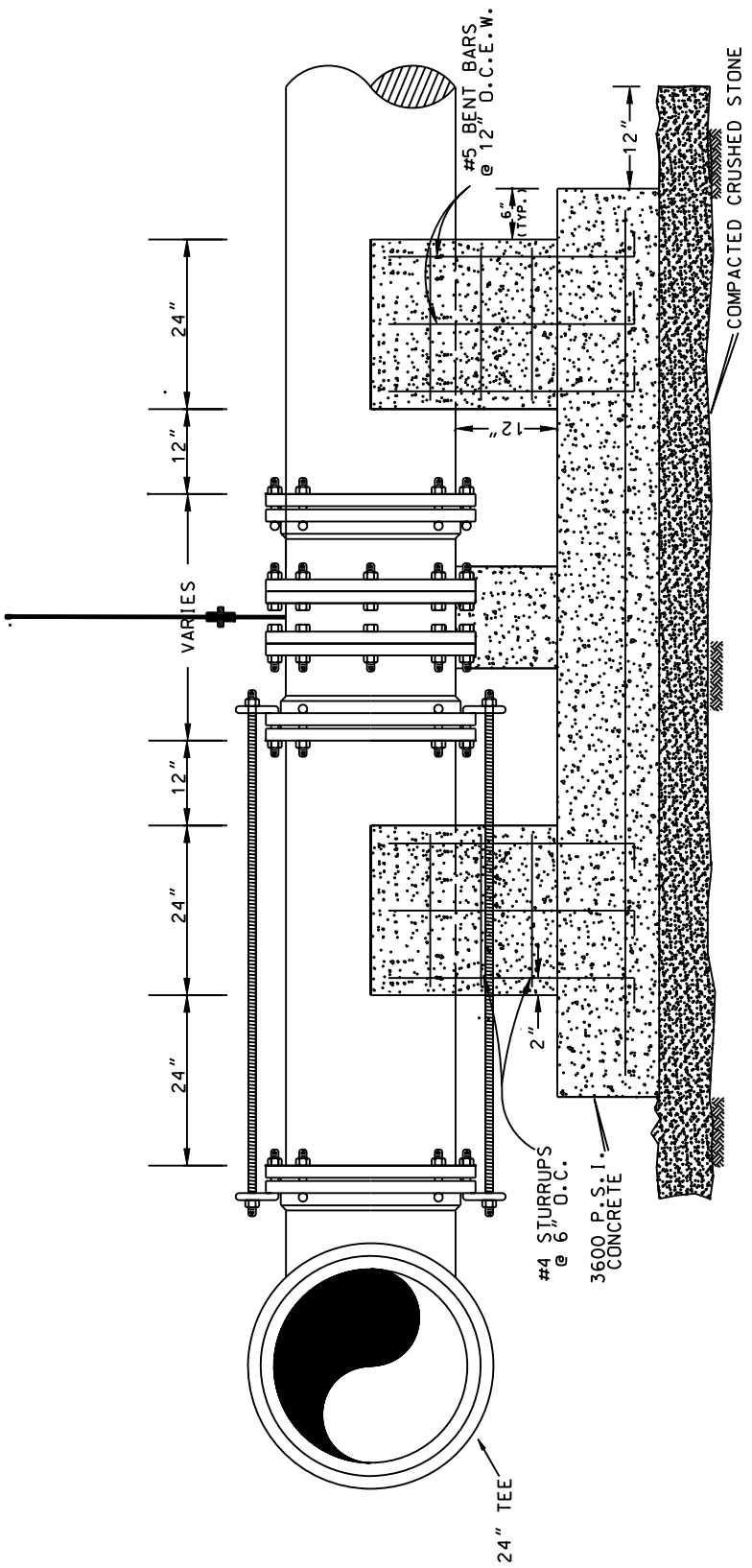
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
WATER DETAILS
BUTTERFLY VALVE

W6–1 /3

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

BUTTERFLY VALVE

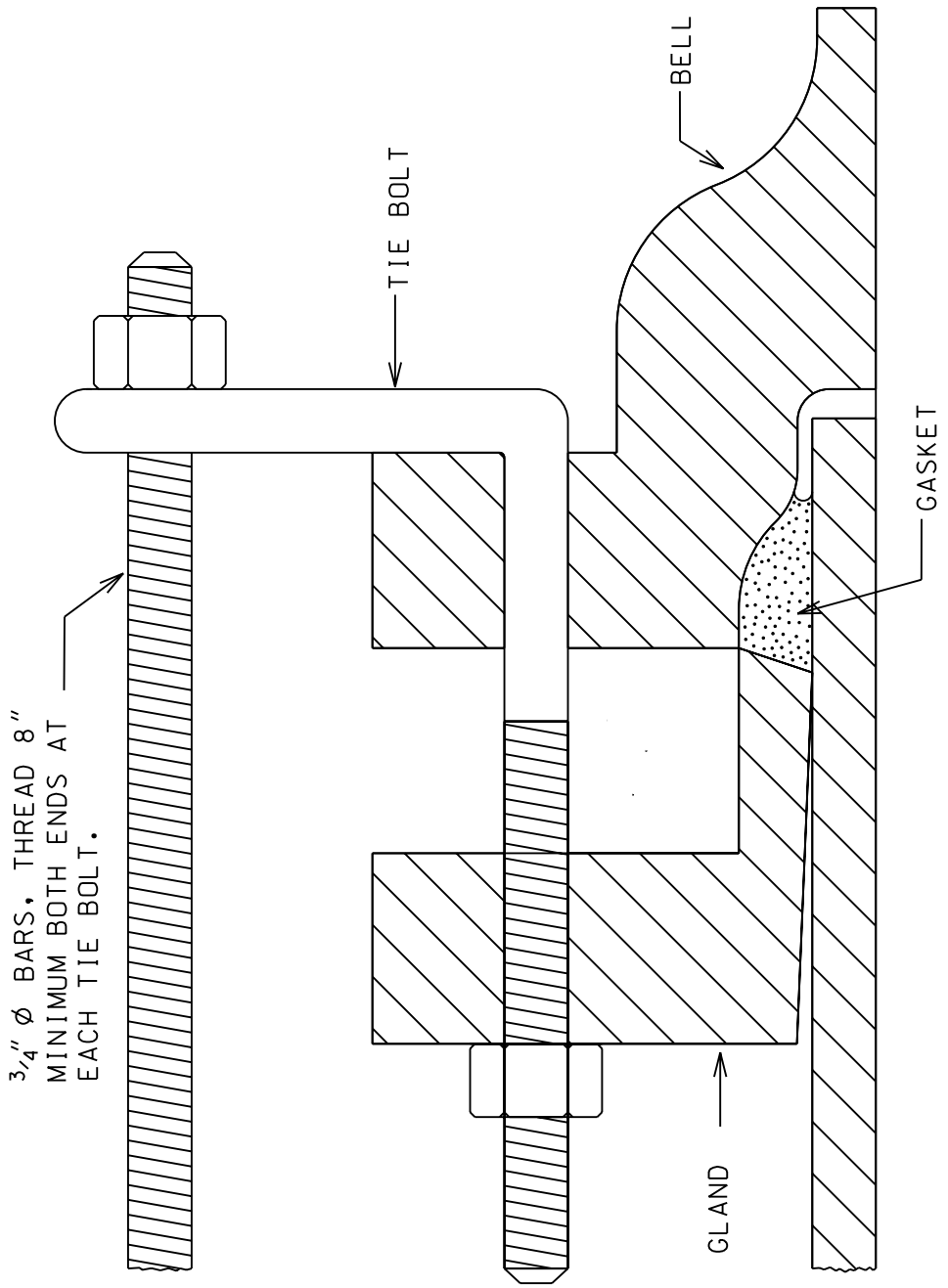
W6–2 /3

SCALE: N.T.S.

DATE: 04/15/06

DEPARTMENT OF

PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

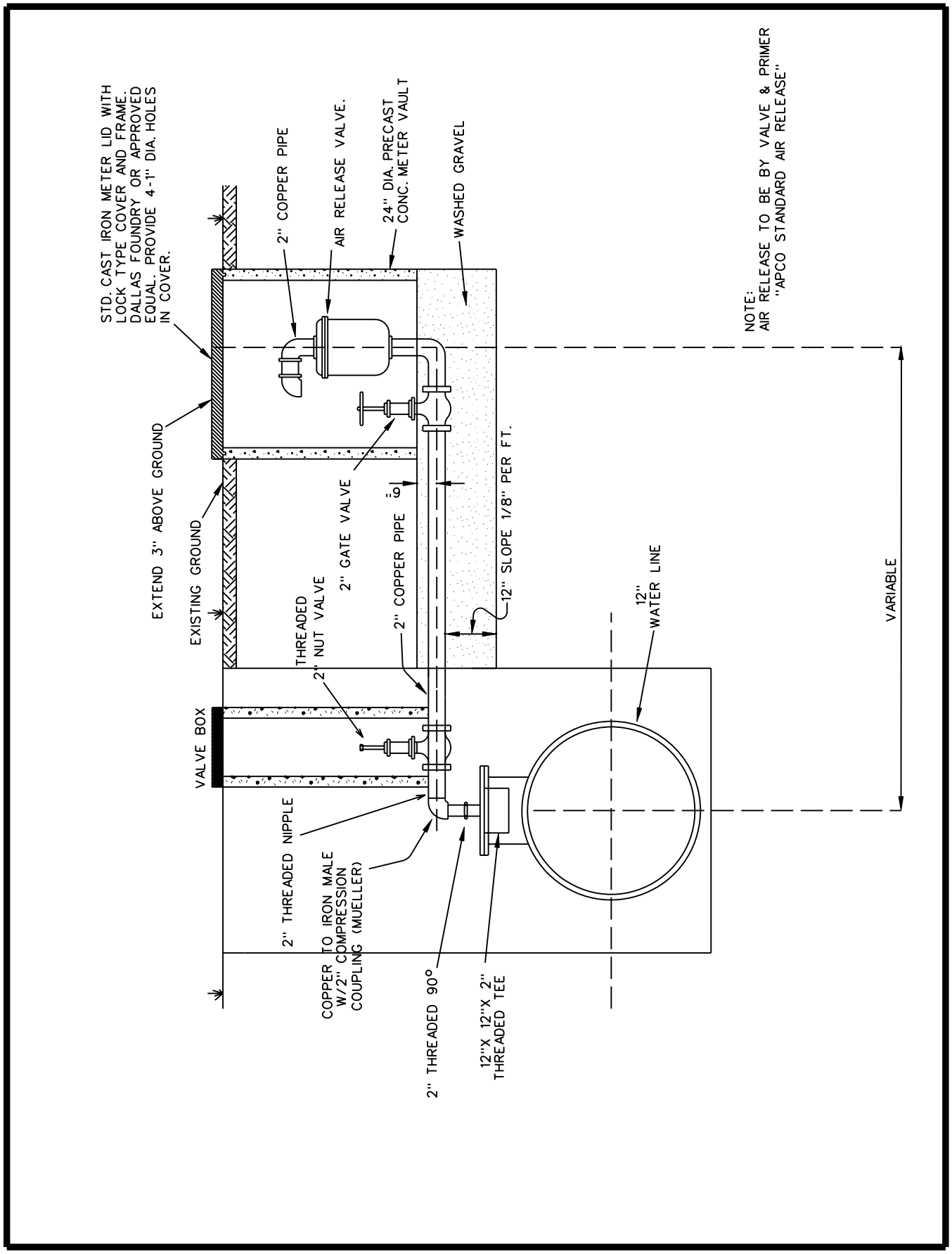
WATER DETAILS

CROSS SECTION BOLT ASSEMBLY

W6–3 /3

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

AIR RELEASE VALVE INSTALLATION

W7

SCALE: N.T.S.
DATE: 09/08

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

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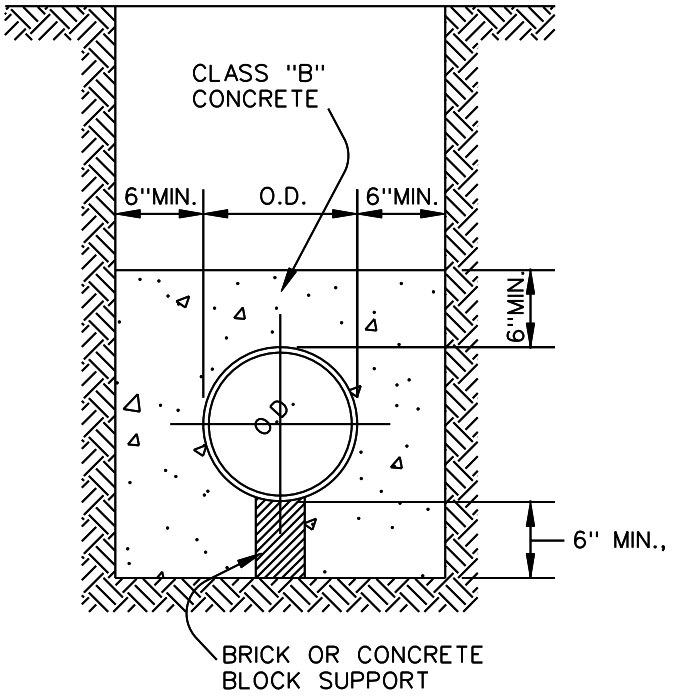


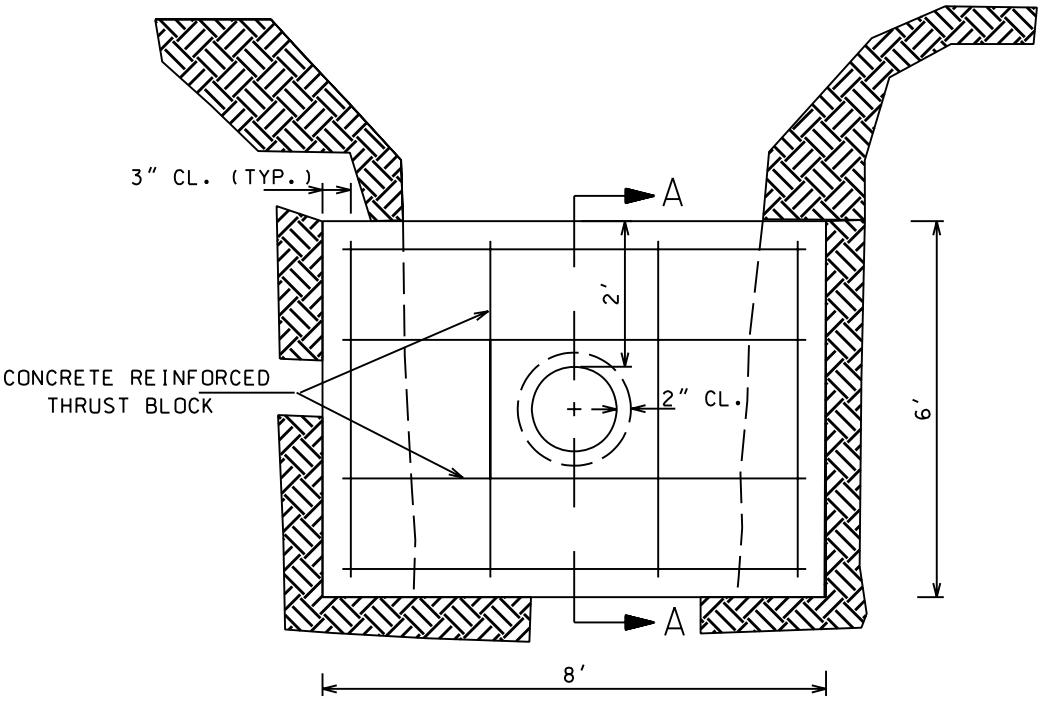
UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
WATER DETAILS
CONCRETE ENCASEMENT

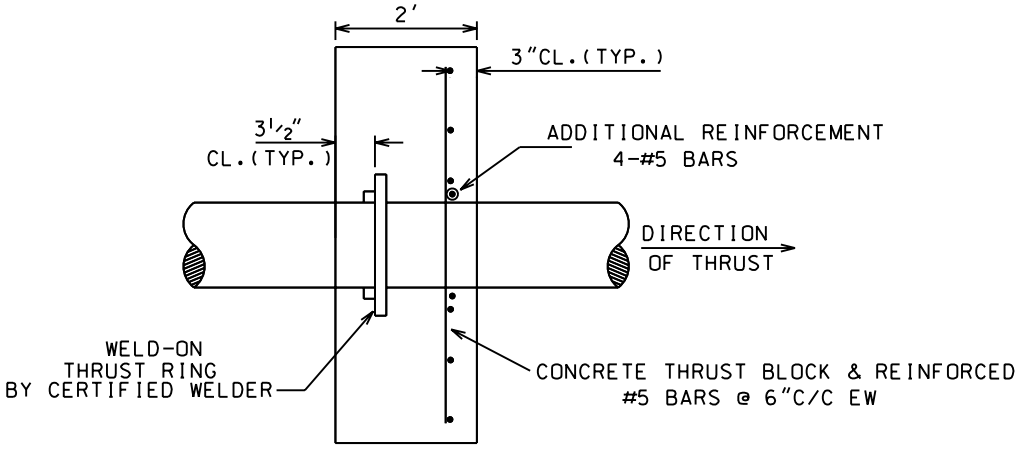
W8

SCALE: N.T.S.
DATE: 04/15/06

DEPARTMENT OF
PUBLIC WORKS / ENGINEERING



ELEVATION



SECTION A-A

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
WATER DETAILS
CONCRETE STRADDLE BLOCK

W9

SCALE: N.T.S.
04/15/06
DEPARTMENT OF
PUBLIC WORKS / ENGINEERING

I	11.25°		22.50°		30°		45°		67.50°		90°	
I.D. (IN)	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.
6	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5
8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5
12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

THRUST BLOCK DETAILS

VERTICAL BEND THRUST BLOCK

W10–1/4

SCALE: N.T.S.
DATE: 04/15 06

DEPARTMENT OF
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UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

THRUST BLOCK DETAILS

HORIZONTAL THRUST BLOCK

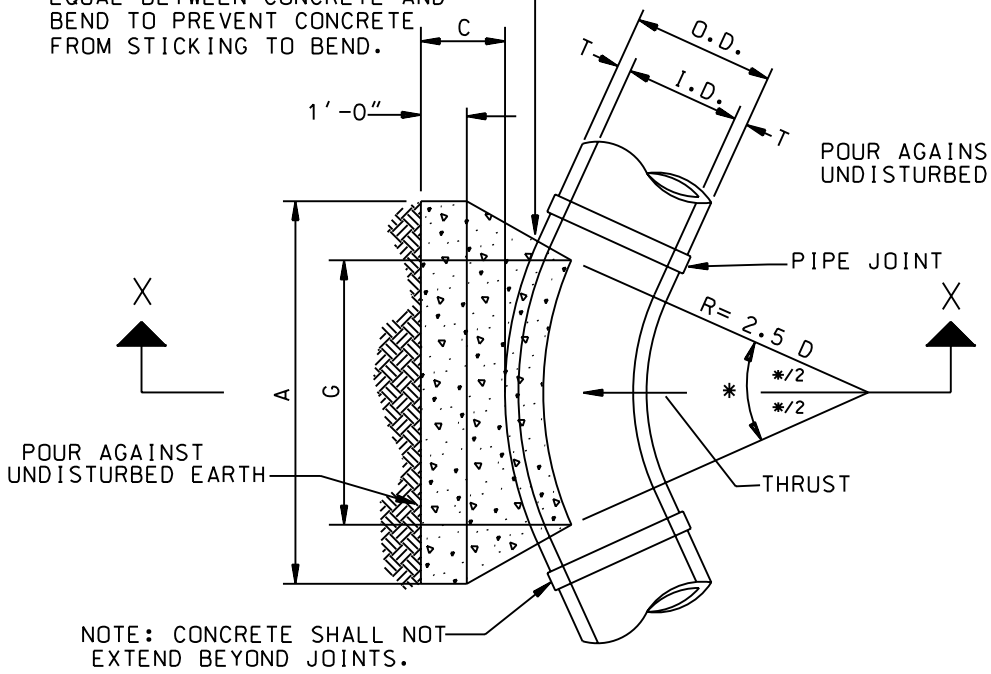
W10-2 /4

SCALE: N.T.S.
DATE: 04/05/06

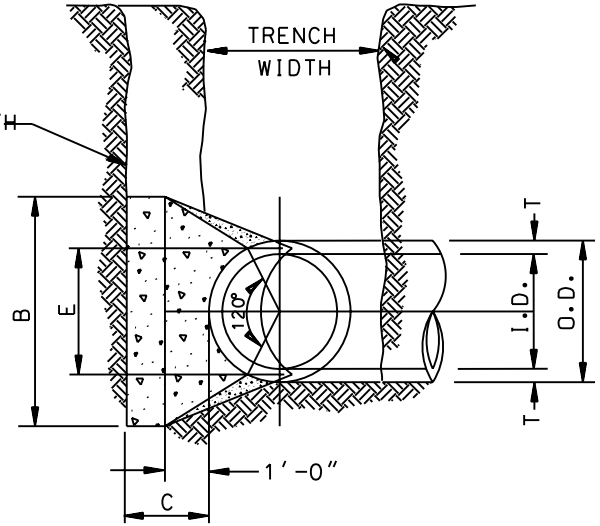
DEPARTMENT OF PUBLIC WORKS / ENGINEERING

NOTE :

USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND TO PREVENT CONCRETE FROM STICKING TO BEND.



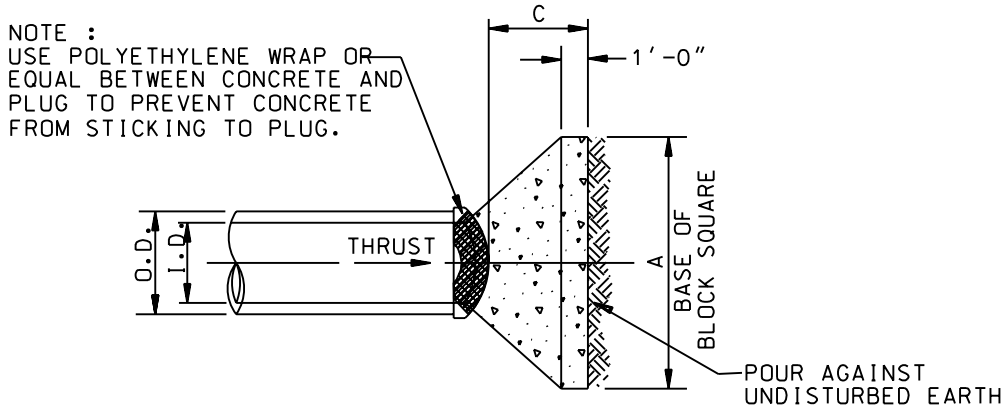
PLAN



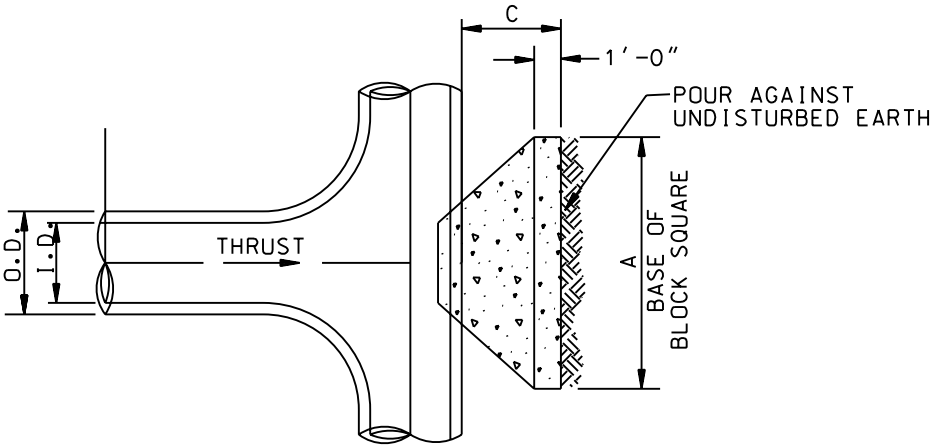
SECTION X-X

					I = 11.25								I = 22.50								I = 30							
							EARTH			ROCK					EARTH			ROCK					EARTH			ROCK		
I.D. (IN)	T (IN)	C 11.25 FT.	C 22.50 FT.	E (FT)	G (FT)	THRUST TONS	A (FT)	B (FT)	VOL (CY)	A (FT)	B (FT)	VOL (CY)	G (FT)	THRUST TONS	A (FT)	B (FT)	VOL (CY)	A (FT)	B (FT)	VOL (CY)	G (FT)	THRUST TONS	A (FT)	B (FT)	VOL (CY)	A (FT)	B (FT)	VOL (CY)
4,6,8	0.4	1.5	1.5	0.9	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1
12	0.5	1.5	1.5	1.2	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2

					I = 45								I = 67.50								I = 90							
							EARTH			ROCK					EARTH			ROCK					EARTH			ROCK		
I.D. (IN)	T (IN)	C 11.25 FT.	C 22.50 FT.	E (FT)	G (FT)	THRUST TONS	A (FT)	B (FT)	VOL (CY)	A (FT)	B (FT)	VOL (CY)	G (FT)	THRUST TONS	A (FT)	B (FT)	VOL (CY)	A (FT)	B (FT)	VOL (CY)	G (FT)	THRUST TONS	A (FT)	B (FT)	VOL (CY)	A (FT)	B (FT)	VOL (CY)
4,6,8	0.4	1.5	1.5	0.9	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1	2.1	5.6	3.0	2.0	0.3	2.0	1.5	0.2	2.7	7.1	5.0	1.5	0.4	2.0	2.0	0.2
12	0.5	1.5	1.5	1.2	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3	3.1	12.6	5.5	2.5	0.8	3.5	2.0	0.4	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5



PLAN OF PLUG THRUST BLOCK



PLAN OF TEE THRUST BLOCK

			EARTH		ROCK	
I.D. (IN)	THRUST TONS	C (FT)	A (FT)	VOL. (CY)	A (FT)	VOL. (CY)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
12	11.3	1.5	3.5	0.6	2.5	0.3
24	45.2	2.5	7.0	3.1	5.0	1.7

PLUG & TEE THRUST BLOCK

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD
THRUST BLOCK DETAILS
VARIOUS THRUST BLOCKS

W10–3 /4

SCALE: N.T.S.
DATE: 04/15/06

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GENERAL NOTES FOR ALL THRUST BLOCKS :

1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I.

2. VOLUMES OF VERTICAL BEND THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THRUST ON THE VERTICAL BEND.

3. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.

4. CONCRETE FOR BLOCKING SHALL BE CLASS B CONCRETE.

6. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.

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GENERAL CONSTRUCTION STANDARD

THRUST BLOCK DETAILS

THRUST BLOCK NOTES

W10–4 /4

SCALE: N.T.S.
DATE: 04/15/06

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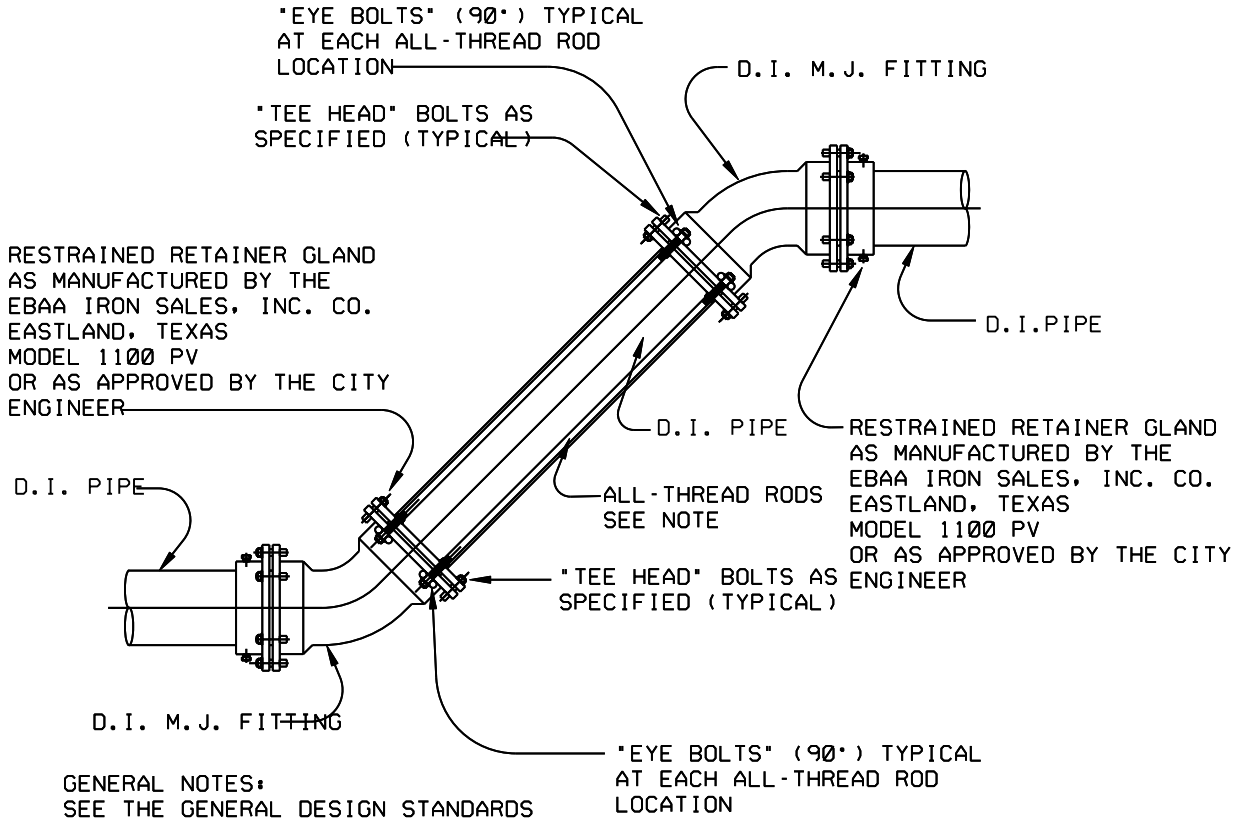

GENERAL NOTES:
SEE THE GENERAL DESIGN STANDARDS FOR THE REQUIRED METALLURGICAL SPECIFICATIONS FOR ALL BOLTS, NUTS, WASHERS AND ALL-THREAD RODS. SEE GENERAL DESIGN STANDARDS FOR THE REQUIRED COATINGS AND COVERING FOR THE FITTINGS, ETC.

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GENERAL CONSTRUCTION STANDARD

WATER DETAILS

OFFSET AND/OR LOWERING OF WATER MAIN THRUST HARNESS

W–11

SCALE: N.T.S.
DATE: 04/15/06

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GENERAL CONSTRUCTION STANDARD

THRUST BLOCK DETAILS

RACI PIPE INSULATOR

SPACING AND DETAIL

W12

SCALE: N.T.S.
DATE: 04/15/06

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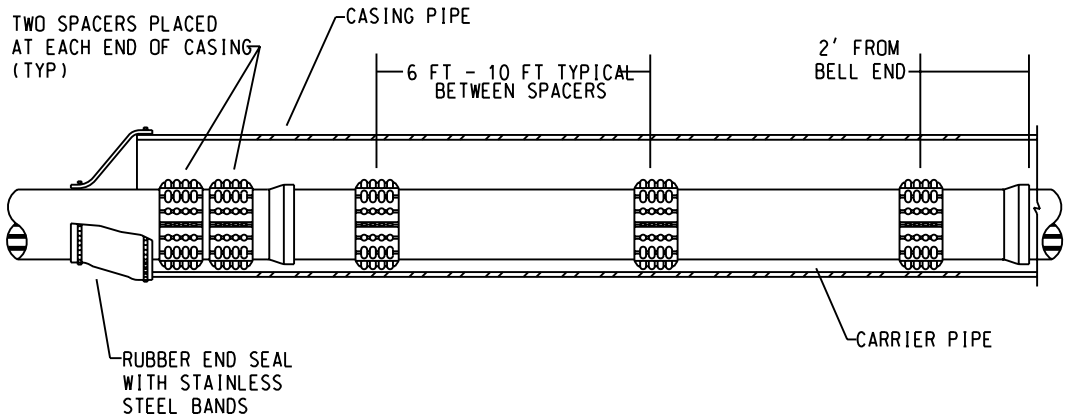


INSULATOR SPACING DETAIL

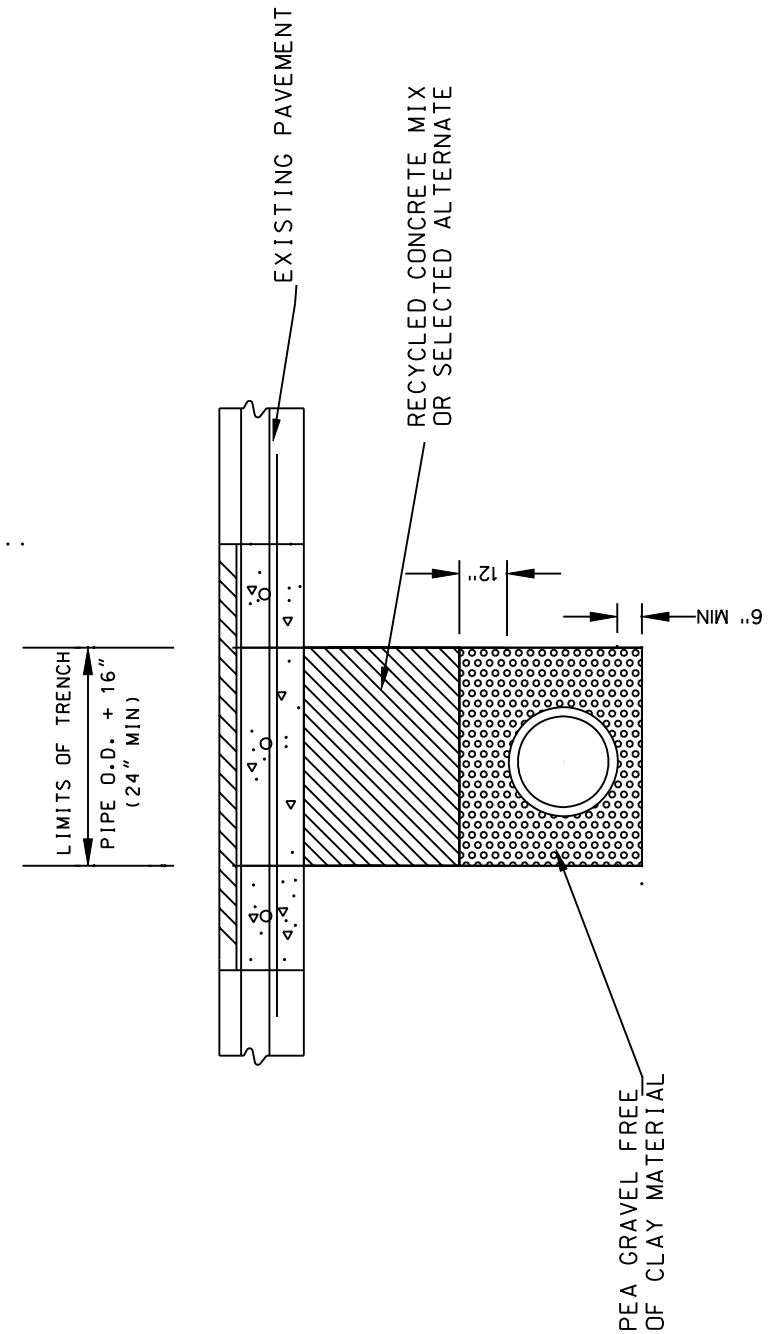
NOTES:

#1. SPACERS SHALL BE RACI HIGH DENSITY POLYETHYLENE OR ENGINEER PRE-APPROVED EQUAL.

#2. SEE SPECIFICATIONS FOR SPACING AND LOAD LIMITS.

#3 GROUTING BETWEEN CASING & CARRIER PIPES REQUIRED.

SEE APPROPRIATE TABLE FROM RACI CASING SPACER SPECIFICATIONS, FOR SPACER TYPE AND SPACING.



REFER TO P2 FOR
DETAIL INFORMATION

UNIVERSITY PARK

GENERAL CONSTRUCTION STANDARD

WATER DETAILS

TYPICAL WATER EMBEDMENT

W13

SCALE: N.T.S.
DATE: 03/10

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