

SEL PROJECT ID 2984-42-70  
WITH: N/A

JUN 2015

ORDER OF SHEETS

SECTION NO. 1	TITLE
SECTION NO. 2	TYPICAL SECTIONS AND DETAILS
SECTION NO. 3	ESTIMATE OF QUANTITIES
SECTION NO. 3	MISCELLANEOUS QUANTITIES
SECTION NO. 4	RIGHT OF WAY PLAT
SECTION NO. 5	PLAN AND PROFILE
SECTION NO. 6	STANDARD DETAIL DRAWINGS
SECTION NO. 7	SIGN PLATES
SECTION NO. 8	STRUCTURE PLANS
SECTION NO. 9	COMPUTER EARTHWORK DATA
SECTION NO. 9	CROSS SECTIONS

TOTAL SHEETS = 50



06

DESIGN DESIGNATION

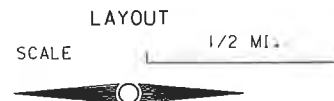
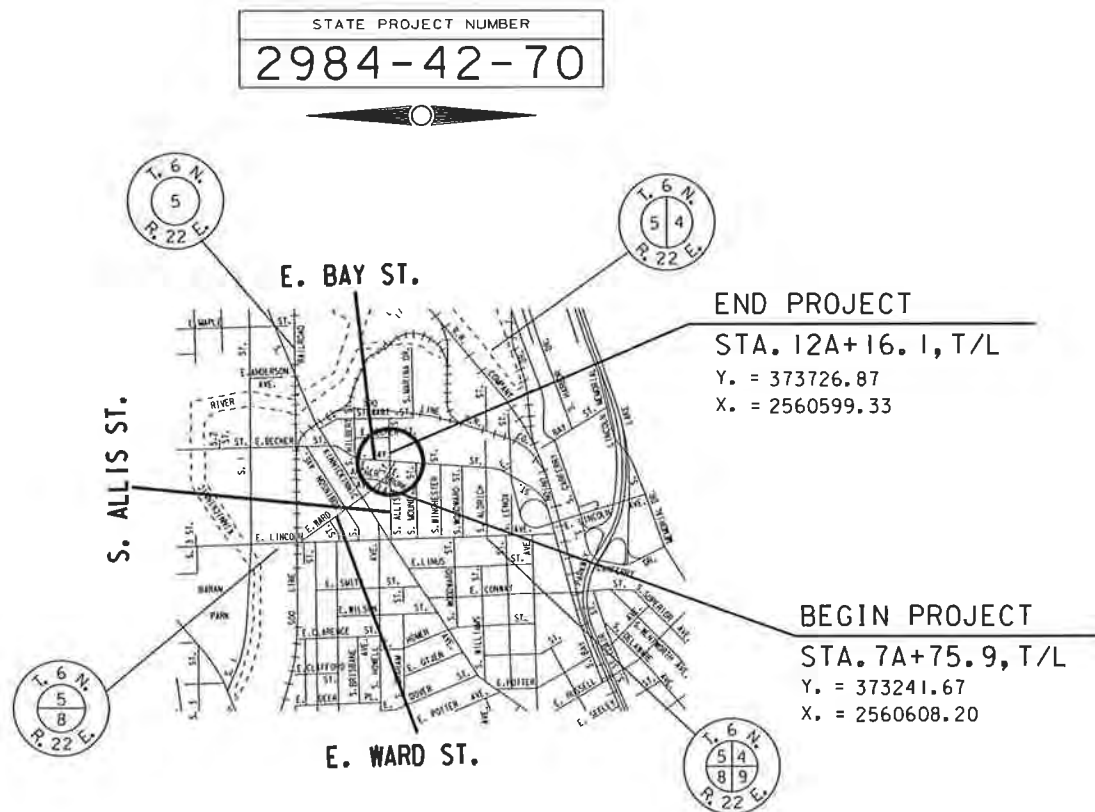
A.D.T. (CURRENT)	= 600
A.D.T. (2034)	= 650
D.H.V.	= 60
D.	= 51
T.	= N/A
DESIGN SPEED	= 25
ESALS	= N/A

CONVENTIONAL SIGNS

COUNTY LINE	---
TOWNSHIP OR RANGE LINE	----
SECTION LINE	-----
CORPORATE OR CITY LIMITS	----- P.L.-----
PROPERTY LINE	-----
STANDARD BENCH MARK	●
EXISTING RIGHT OF WAY LINE	----- R/W-----
PROPOSED SEWER LATERAL	-----
BASE OF SURVEY LINE	-----
CONCRETE WALK/DWY. REMOVAL	-----
LIMITS OF CONCRETE PAVEMENT REMOVAL	XXXXXX
CATCH BASIN OR INLET	-----
EXISTING	☐
PROPOSED	⊕

COMBUSTIBLE FLUIDS UNDER PRESSURE	☠
RAILROADS	++++ (TYPE) +
FENCE	-----
FIRE & POLICE CALL BOX	☒
LIGHT POLE	●
POWER POLE	■
TELEPHONE OR TELEGRAPH POLE	⚡
TRAFFIC SIGNAL	⬢
TRAFFIC SIGNAL CONTROL BOX	⬢
HYDRANT	⦿
GAS OR WATER GATE VALVE	⦿
MANHOLES - SEWER	○
UTILITY (TYPE)	○
TREES - EXISTING	●
TO BE REMOVED	☒

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
EAST WARD STREET  
INTERSECTION WITH SOUTH ALLIS STREET AND EAST BAY STREET  
LOCAL STREET  
MILWAUKEE COUNTY



TOTAL NET LENGTH OF CENTERLINE = 0.010 MI. (URBAN)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2984-42-70	WISC 2015320	I

Accepted For  
City of Milwaukee

2/12/15 *Gherman Kuhn*  
(Date) Commissioner of Public Works

Original Plans Prepared By



2/11/15 *[Signature]*  
(Date) City Engineer

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	City of Milwaukee
Designer	City of Milwaukee
Management Consultant	DAAR
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE 2/24/2015 *[Signature]*  
(Signature)

E

COUNTY MILWAUKEE

GENERAL NOTES

ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENSE 1 1/4-INCH.

ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4" OF TOPSOIL, SODDED AND FERTILIZED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TOPSOILED AREAS SHALL BE SODDED & FERTILIZED WITHIN 5 CALENDER DAYS.

WHEN THE QUANTITY OF ITEMS OF BASE AGGREGATE & / OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIALS AS DIRECTED BY THE ENGINEER.

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

TRANSVERSE JOINTS IN THE CONCRETE WALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ALL LONGITUDINAL AND TRANSVERSE JOINTS REQUIRING SEALING SHALL BE SEALED IN ACCORDANCE WITH THE DETAIL.

"PAVEMENT TIES" AS SHOWN ON STANDARD DETAIL DRAWING "CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES" ARE REQUIRED TO TIE EXISTING CONCRETE TO NEW CONCRETE CURB AND GUTTER.

THE LOCATION OF LONGITUDINAL JOINTS IN ASPHALTIC CONCRETE SHALL BE APPROVED BY THE ENGINEER.

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.

REPLACE ALL CONCRETE CURB AND GUTTER INDICATED FOR REMOVAL AND REPLACEMENT IN EXISTING LOCATION UNLESS OTHERWISE NOTED ON PLAN.

INLET SCREENS ARE TO BE PLACED BETWEEN THE FRAME AND GRATE OF CATCH BASINS / INLETS TO PREVENT SOIL FROM ENTERING THE SEWERS.

ALL CURB AND GUTTER SHOULD HAVE A FLANGE THICKNESS OF 9".

ALL RADII IN THE PLANS ARE REFERENCED TO THE FACE OF CURB.

HMA PAVEMENT				
HMA TYPE	ROADWAY	TOTAL THICKNESS	TWO LAYERS	NOMINAL MAXIMUM SIZE GRADATION
E-3	STA 9+25 STA 10+75 STA 11A+00	3-INCHES	1 1/2 UPPER 1 1/2 LOWER PG. 64-28	12.5MM 12.5MM

STANDARD ABBREVIATIONS

ASPH.	- ASPHALT
B.M.	- BENCH MARK
CTR.	- CENTER
C/L	- CENTER LINE
COMB.	- COMBINED
CONC.	- CONCRETE
C.W.	- CONCRETE WALK
COR.	- CORNER
C	- CURB
ELEV.	- ELEVATION
ENT.	- ENTRANCE
EXIST.	- EXISTING
F	- FLANGE
G	- GUTTER, OR GAS
HYD.	- HYDRANT
LT.	- LEFT
MMSD	- MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
P/L.	- PROPERTY LINE
R OR RAD.	- RADIUS
RET.	- RETAINING
RT.	- RIGHT
R/W	- RIGHT OF WAY
TEL	- AMERITECH
TES	- TRAFFIC ENGINEERING, AND ELECTRICAL SERVICES
T/L	- TRANSIT LINE
WEP	- WISCONSIN ELECTRIC POWER

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
UTILITY CONTACTS
TYPICAL SECTIONS
CONSTRUCTION DETAILS
DRAINAGE DETAILS
UTILITY AND DRAINAGE
TRAFFIC CONTROL
PLAN DETAIL

UTILITY CONTACTS

CITY OF MILWAUKEE, UTILITY COORDINATOR

ANTHONY KOTECKI  
841 N. BROADWAY, RM 710  
MILWAUKEE, WI 53202  
PHONE: 414-286-2433  
akotec@milwaukee.gov

WE ENERGIES - GAS & ELECTRIC

LATROY BRUMFIELD  
333 W. EVERETT ST.  
MILWAUKEE, WI 53203  
PHONE: 414-221-5617  
latroy.brumfield@we-energies.com

TIME WARNER CABLE

STEVE CRAMER  
1320 N. DR. MARTIN LUTHER KING JR. DR.  
MILWAUKEE, WI 53212  
PHONE: 414-277-4045  
steve.cramer@twcable.com

AT & T WISCONSIN

MARK EDER  
2005 PEWAUKEE RD.  
WAUKESHA, WI 53188  
PHONE: 262-896-7434  
tb1368@att.com

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

DEBRA JENSON  
200 W. SEEBOTH ST.  
MILWAUKEE, WI 53204  
PHONE: 414-225-2143  
djenson@mmsd.com

OTHER CONTACTS

WISCONSIN DEPT. OF NATURAL RESOURCES

KRISTINA BETZOLD  
2300 N. DR. MARTIN LUTHER KING JR. DR.  
MILWAUKEE, WI 53212-0436  
PHONE: 414-263-8517  
kristina.betzold@wisconsin.gov

MILWAUKEE COUNTY TRANSIT SYSTEM

MELANIE MACARTHUR  
1942 N. 17TH ST.  
MILWAUKEE, WI 53205  
PHONE: 414-343-1764  
m.macarthur@mcts.org

WISCONSIN DEPT. OF TRANSPORTATION

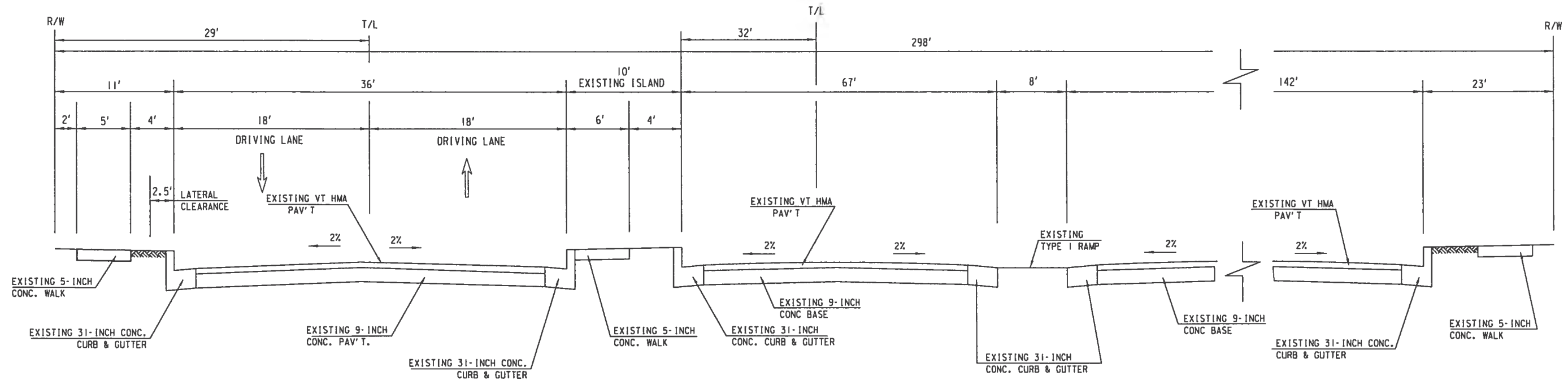
JOAN BONACK, PROJECT MANAGER  
141 NW BARSTOW ST.  
WAUKESHA, WI 53188  
PHONE: 262-548-8809  
joan.bonack@dot.wi.gov

SEWRPC - LAND MONUMENTS

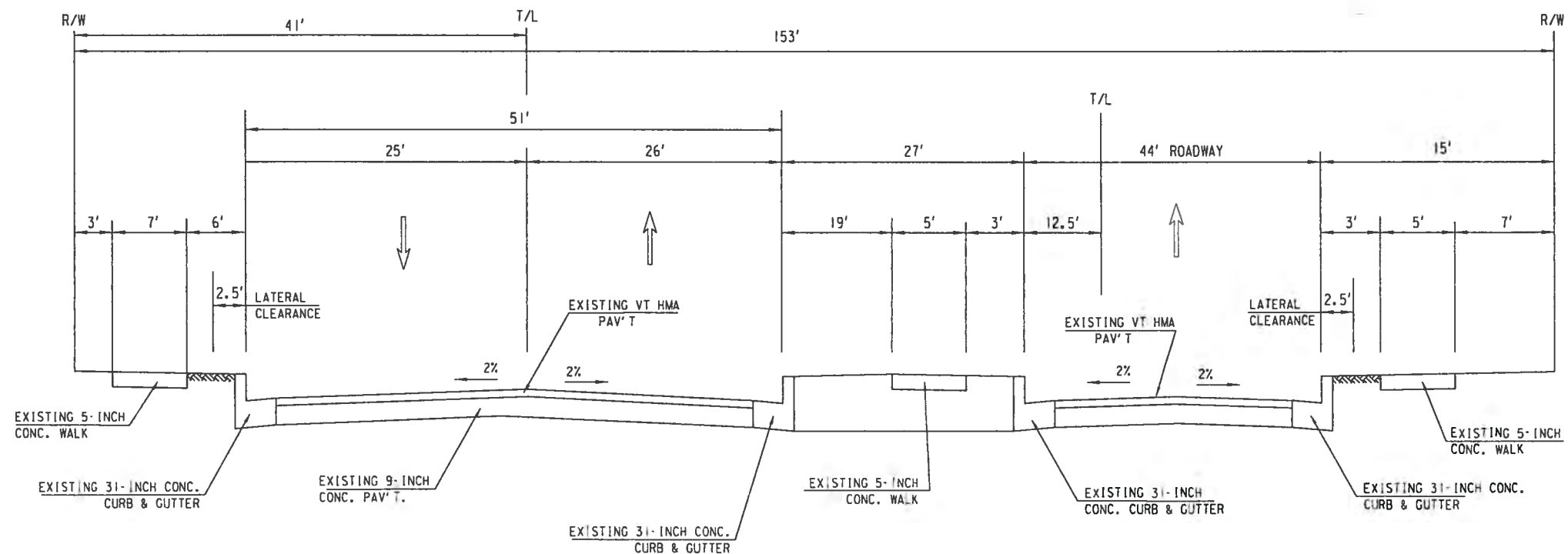
JOHN WASHBURN  
W239 N1812 ROCKWOOD DR.  
WAUKESHA, WI 53187  
PHONE: 262-547-6722 EXT. 295

DON SIMON  
W239 N1812 ROCKWOOD DR.  
WAUKESHA, WI 53187  
PHONE: 262-547-6722 EXT. 249

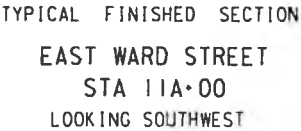
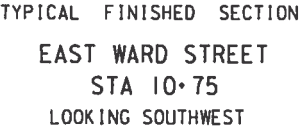


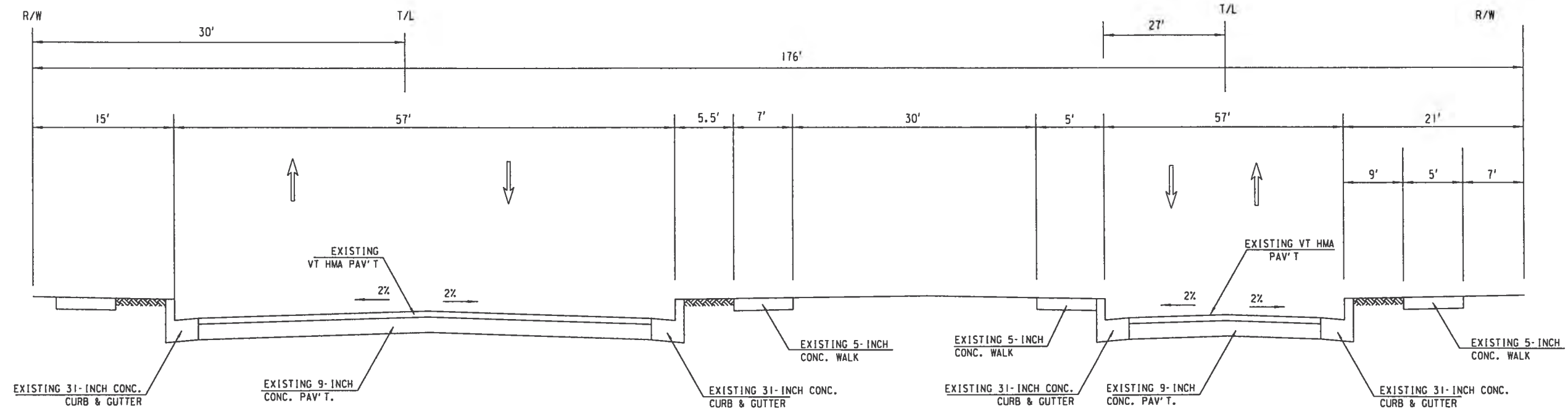


TYPICAL EXISTING SECTION  
EAST WARD STREET  
STA 10+75  
LOOKING SOUTHWEST

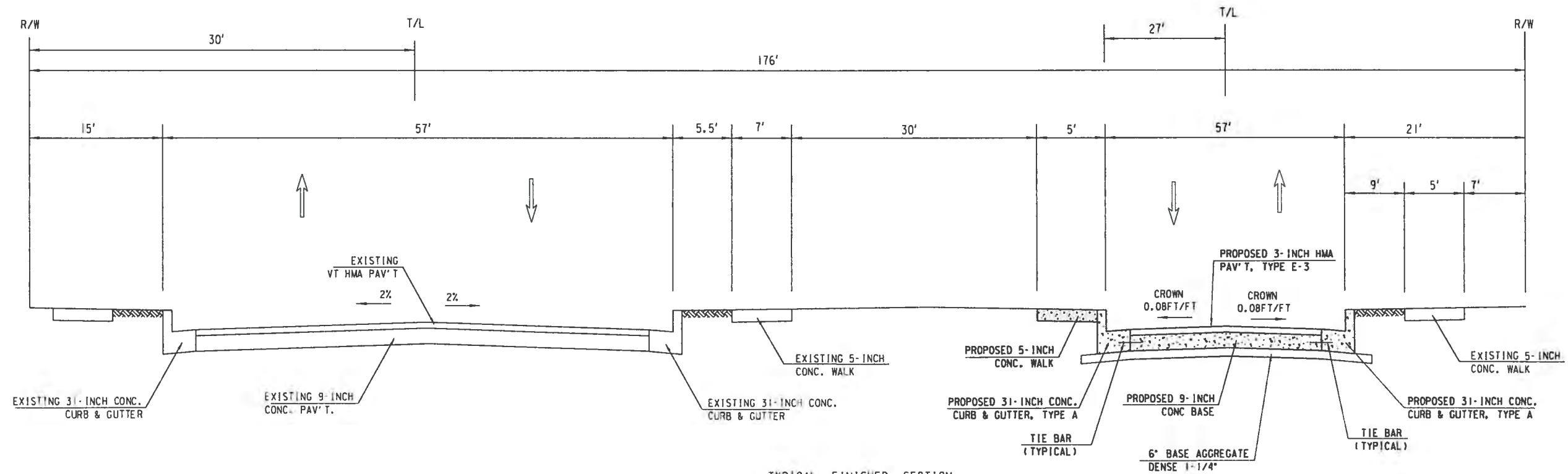


TYPICAL EXISTING SECTION  
EAST WARD STREET  
STA 11A+00  
LOOKING SOUTHWEST



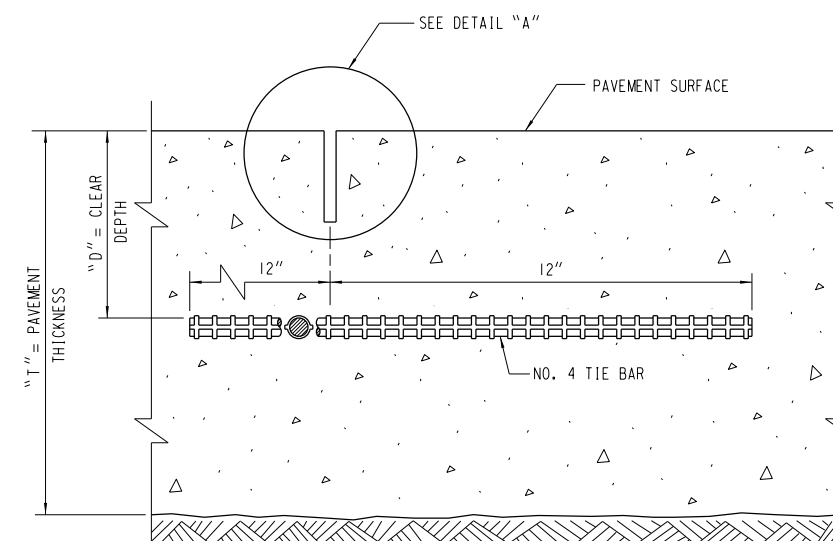


TYPICAL EXISTING SECTION  
SOUTH ALLIS STREET  
LOOKING NORTH  
AT STATION 9A + 25

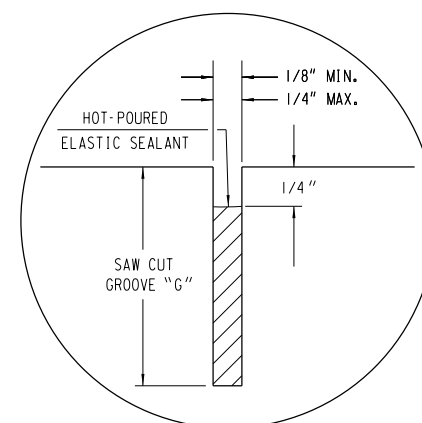


TYPICAL FINISHED SECTION  
SOUTH ALLIS STREET  
LOOKING NORTH  
AT STATION 9A + 25





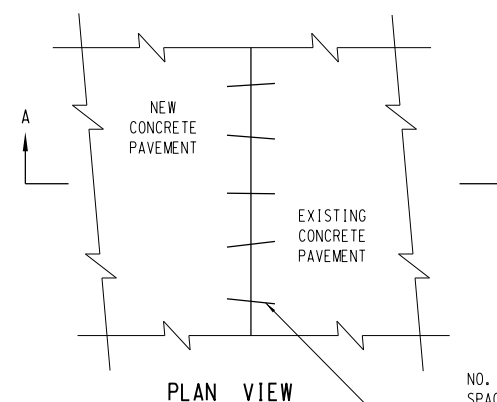
SAWED JOINT



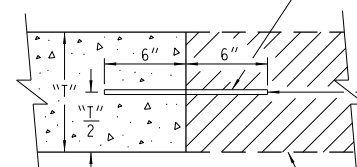
DETAIL "A"

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TIE BARS AND PAVEMENT TIES SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



PLAN VIEW



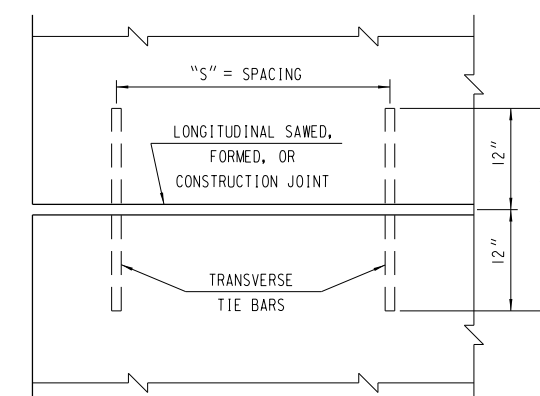
SECTION A-A  
PAVEMENT TIES

NO. 6 TIE BARS  
SPACED 3'-0" C.-C.  
— INSTALLED ON 6:1 SKEW  
HORIZONTALLY. DIRECTION  
OF SKEW ALTERNATING AFTER  
EVERY ONE OR TWO BARS.

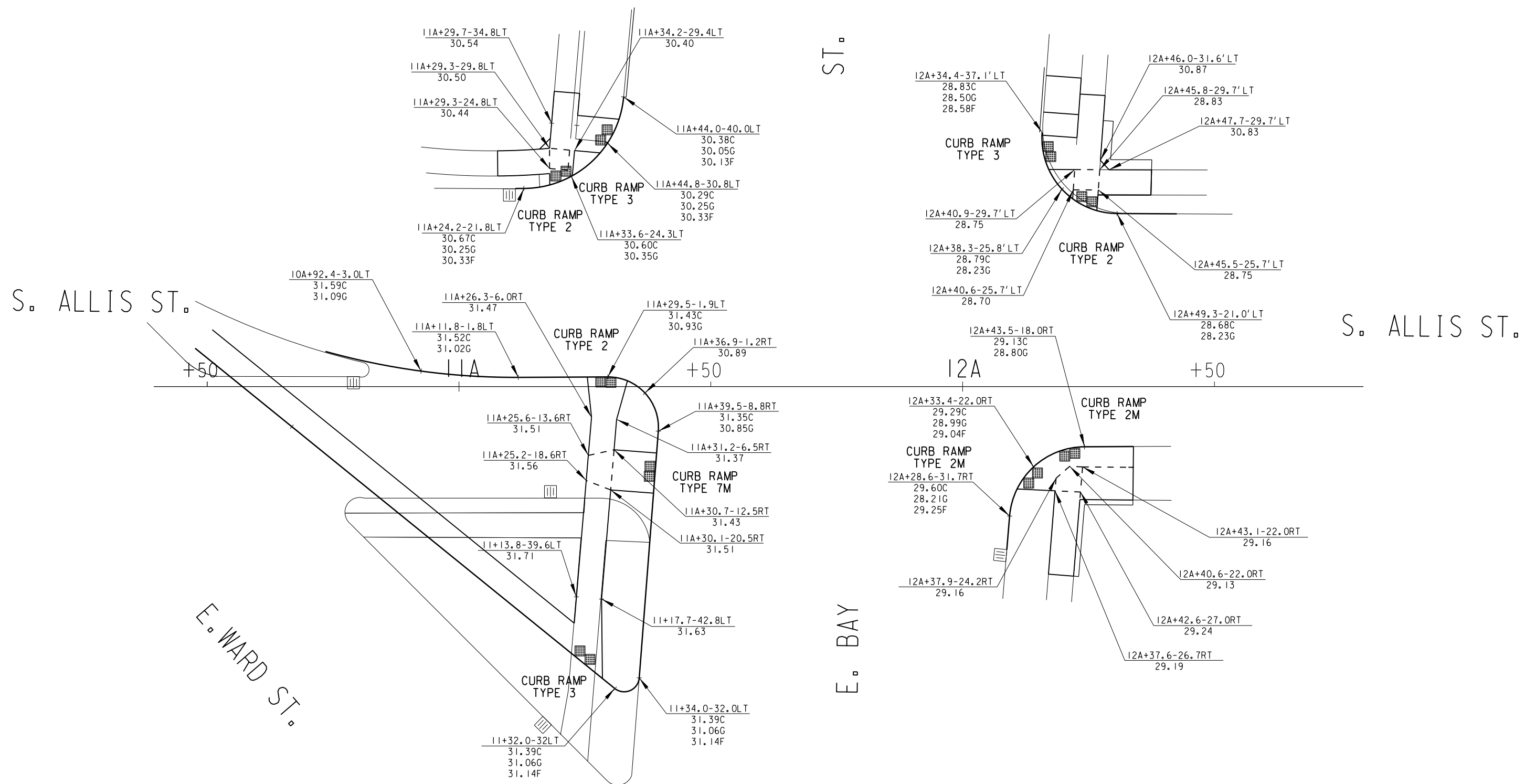
THE HOLE FOR THE BAR SHALL  
BE DRILLED TO A DEPTH OF  
7" AND TO SUCH A DIAMETER  
AS TO PROVIDE A TIGHT  
DRIVEN FIT.

EXIST. CONC.  
PAVEMENT

PAVEMENT THICKNESS	CLEAR DEPTH	SAW CUT GROOVE	MAXIMUM TIE BAR SPACING "S"	
			PAVEMENT WIDTH	
			LESS THAN 30'	30' OR MORE
1"	3/8"	1/2"	48"	42"
2"	3/4" ± 1/8"	1 3/4"	45"	36"
3"	3 3/4" ± 1"	2"	39"	30"
4"	4 1/4" ± 1"	2 1/4"	33"	27"
5"	4 3/4" ± 1"	2 1/2"	30"	24"
6"	5 1/4" ± 1"	2 3/4"	27"	21"
8"	5 3/4" ± 1"	3"	24"	21"

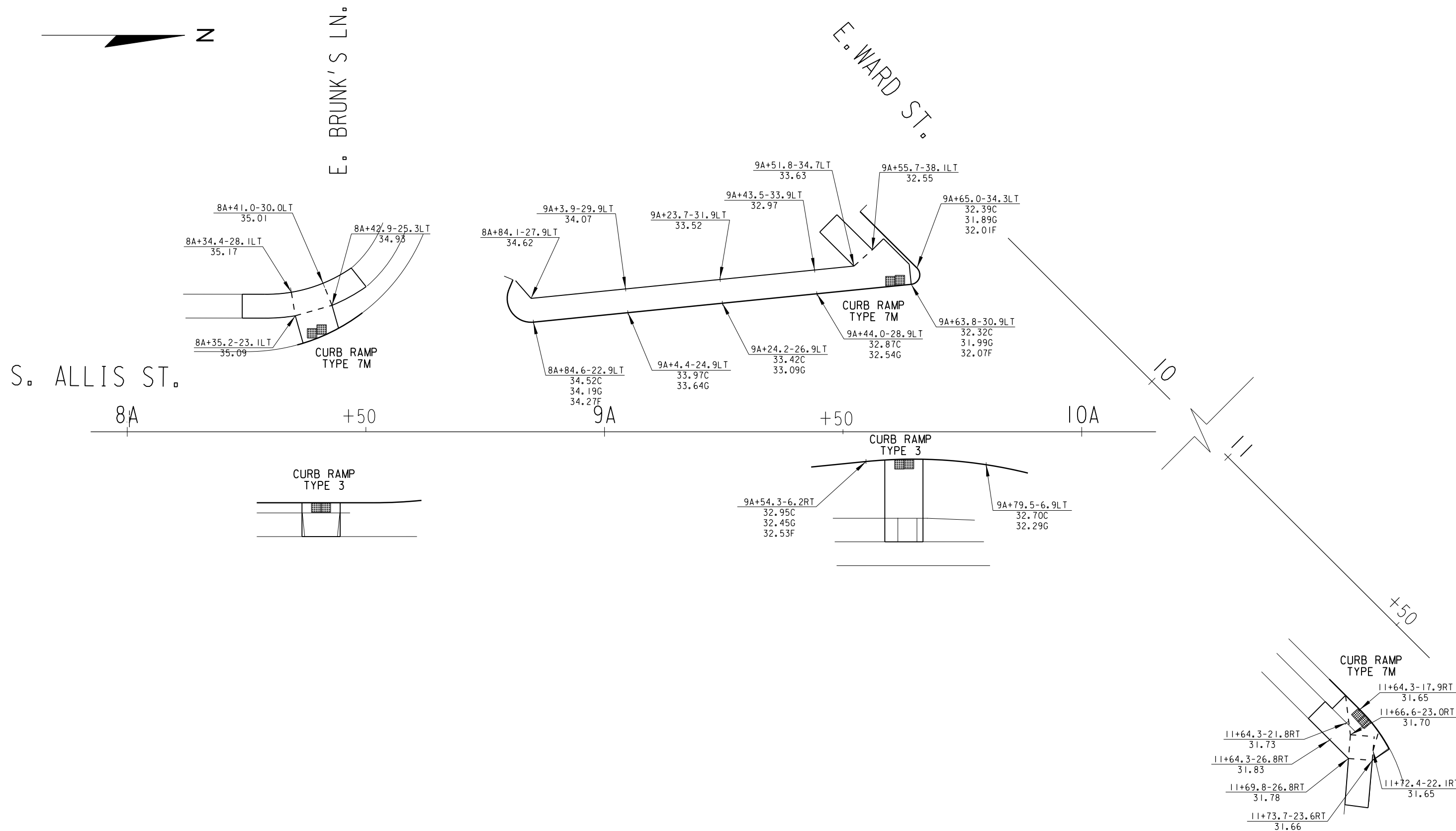


PLAN VIEW  
SHOWING LOCATION OF TIE BARS

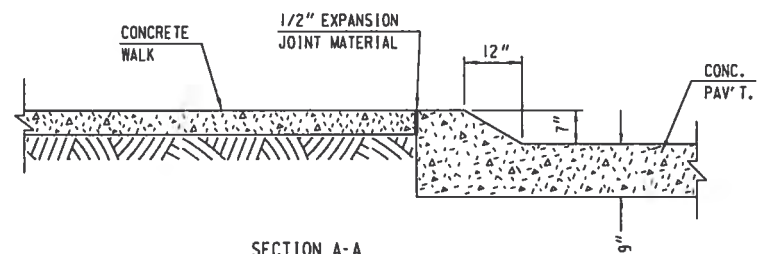
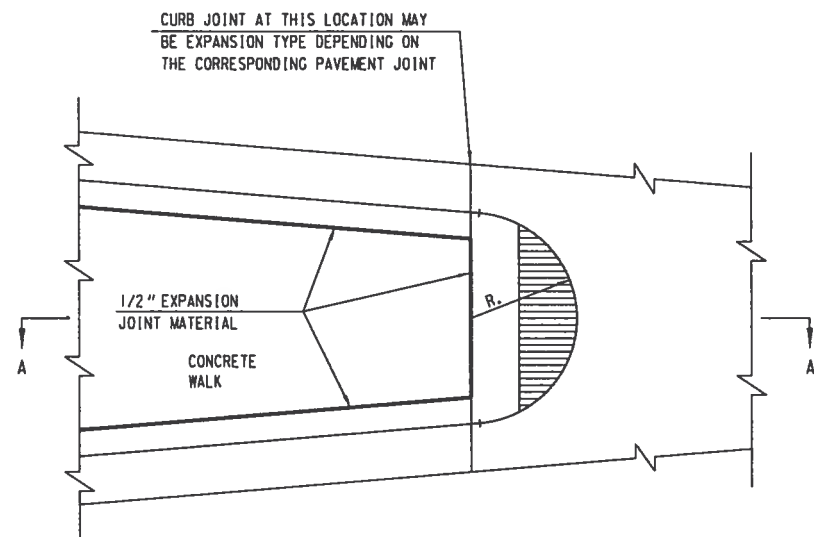


**CURB RAMP DETAILS - E. WARD ST., E. BAY ST., AND S. ALLIS ST.**



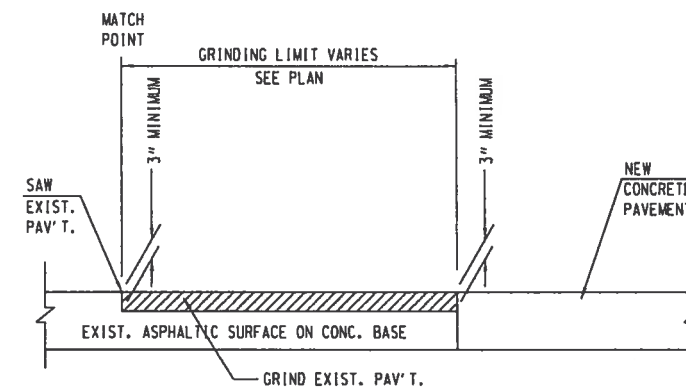


CURB RAMP DETAILS - E. WARD ST., AND S. ALLIS ST.



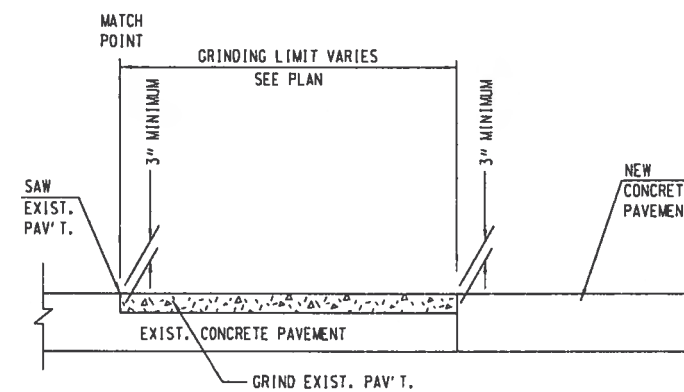
### CONCRETE MEDIAN SLOPE NOSE

(TYPICAL SECTION OF CONCRETE CURB & GUTTER TO BE CONSTRUCTED AT END OF MEDIAN ISLAND)



### REMOVING ASPHALTIC SURFACE BUTT JOINTS IN ROADWAY AT INTERSECTIONS AND ABUTTING PAVEMENT

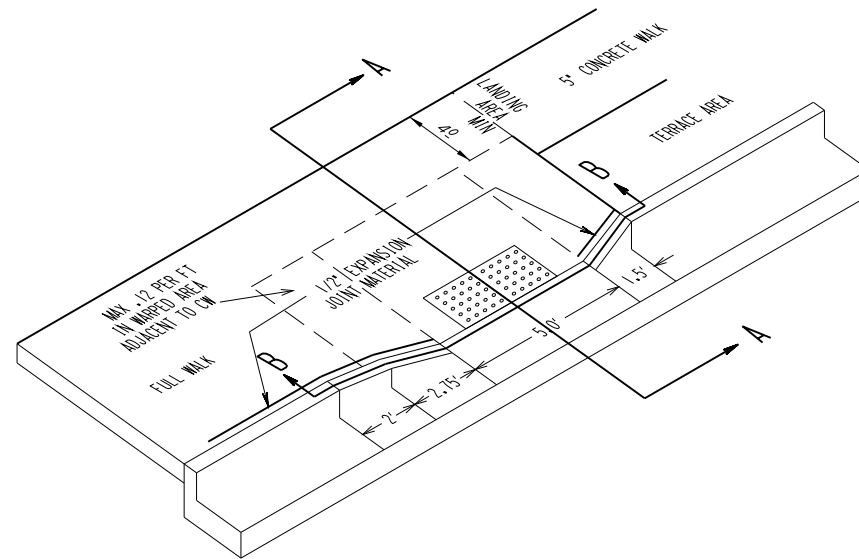
⑥



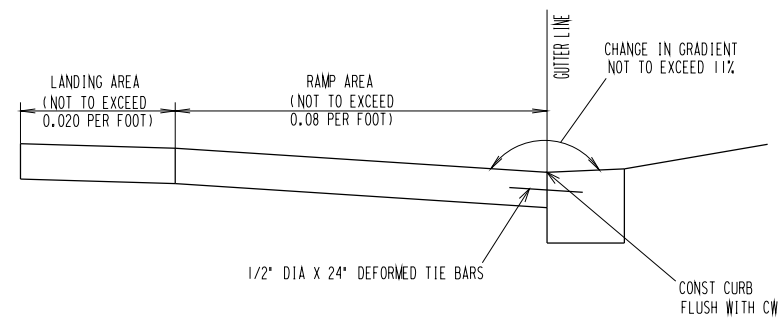
### REMOVING PAVEMENT BUTT JOINTS IN ROADWAY AT INTERSECTIONS AND ABUTTING PAVEMENT

⑤

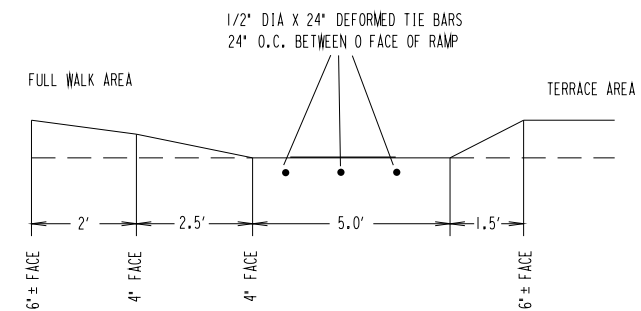




SECTION A-A  
(NOT TO SCALE)

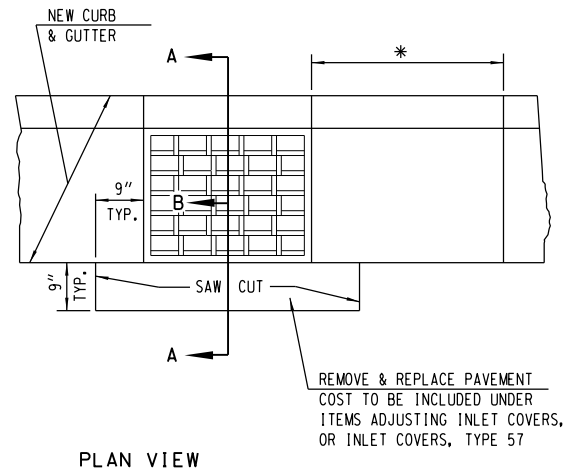


SECTION B-B

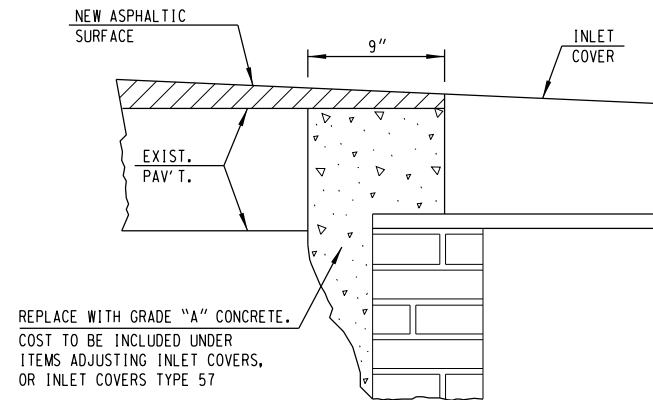


TYPE - 7 RAMP MODIFIED

\* REMOVE 3'-0" CURB & GUTTER MIN. OR TO THE NEAREST JOINT, 6'-0" MAX. UNLESS OTHERWISE DIRECTED ON THE PLAN.

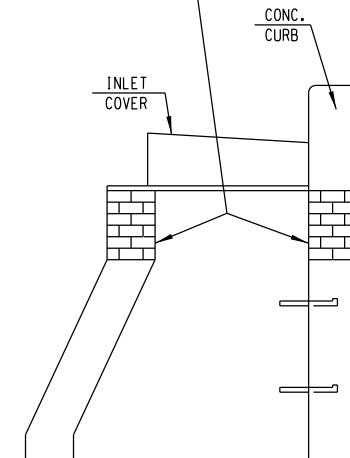


PLAN VIEW



SECTION A-B

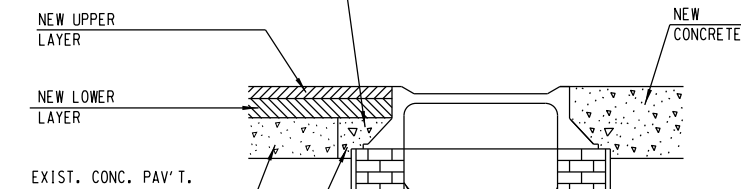
REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING CATCH BASIN COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM. ANY WORK MORE EXTENSIVE THAN DESCRIBED IMMEDIATELY ABOVE SHALL BE CONSTRUED AS WORK UNDER RECONSTRUCTING CATCH BASINS. DEPTHS OF BRICKWORK TO BE REPAIRED, AS INDICATED ON THE PLAN, ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.



SECTION A-A

### ADJUSTING INLET COVERS

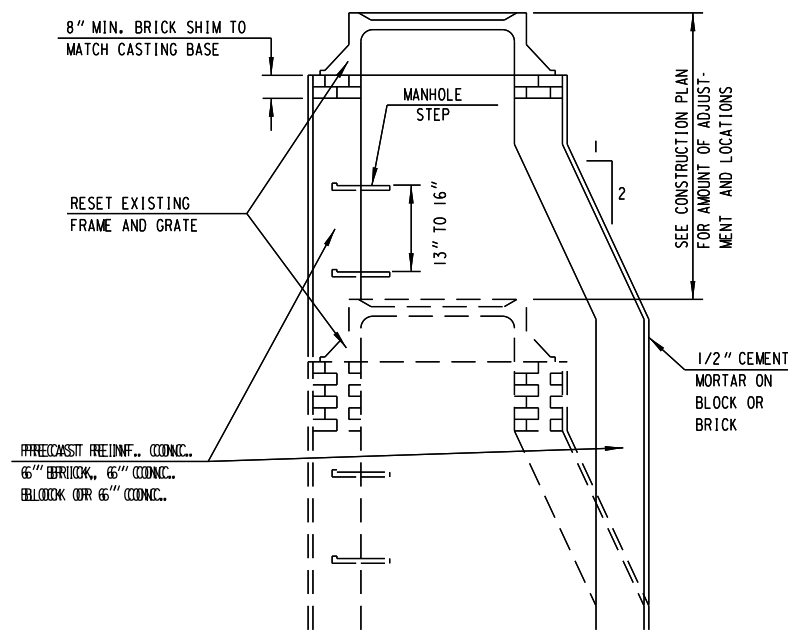
REPLACE WITH CONCRETE BASE  
COST TO BE INCLUDED UNDER  
ITEMS ADJUSTING MH COVERS,  
OR MANHOLE COVERS TYPE 58  
OR TYPE 58A TYPE 0



PAVEMENT REMOVAL COST  
TO BE INCLUDED UNDER ITEMS  
ADJUSTING MANHOLE COVERS  
OR MANHOLE COVERS TYPE 58  
OR TYPE 58A

REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING MANHOLE COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM. ANY WORK MORE EXTENSIVE THAN DESCRIBED IMMEDIATELY ABOVE SHALL BE CONSTRUED AS WORK UNDER RECONSTRUCTING MANHOLES. DEPTHS OF BRICKWORK TO BE REPAIRED, AS INDICATED ON THE PLAN, ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

### ADJUSTING MANHOLE COVERS OR MANHOLE COVERS TYPE 58A



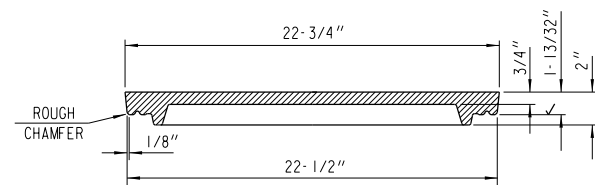
CORBEL MAY BE REVERSED  
STRAIGHT SIDE LEANED  
SLIGHTLY TO CLEAR CURB HEAD.

REPAIR BY REMOVING AND REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO THE DEPTH AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. DEPTHS AS INDICATED ON PLAN ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

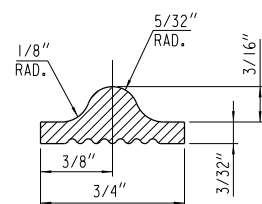
### RECONSTRUCTING MANHOLES AND INLETS

### CONSTRUCTION NOTES

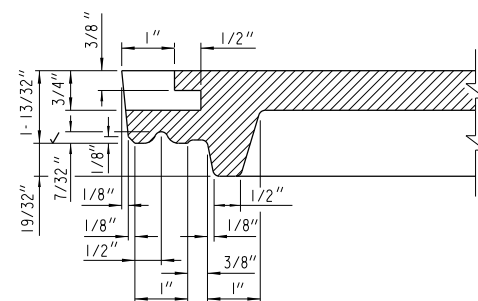
1. LOCATIONS OF STRUCTURES IN CURB & GUTTER SECTIONS REFER TO FACE OF CURB.
2. LOCATIONS OF STRUCTURES NOT IN CURB AND GUTTER SECTIONS REFER TO CENTERLINE OF STRUCTURE.
3. PIPE LENGTHS GIVEN ARE APPROXIMATE OUT TO OUT OF STRUCTURE.
4. GRATE & RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF INLET COVER OR AT CENTERLINE OF MANHOLE COVER.
5. WHEN NEW COVERS ARE PLACED, THE FIRST 12" OF ADJUSTMENT OR REPAIRING SHALL BE INCLUDED IN THE COST OF THE NEW COVER. ANY ADJUSTMENT OR REPAIR OF BRICKWORK 12" OR LESS WILL BE PAID AS ADJUSTING COVERS WHEN RESETTING EXISTING COVERS, ANY ADJUSTMENT OR REPAIR OF BRICKWORK MORE THAN 12" WILL BE PAID AS A RECONSTRUCT.
6. MANHOLE ADJUSTMENTS IN ASPHALTIC PAVEMENT WILL BE MADE AFTER THE LOWER LAYER IS PLACED.
7. WHEN CONSTRUCTING CONCRETE CURB ADJACENT TO INLET COVER TYPE 57, TWO (2) DEFORMED TIE BARS SHALL BE PLACED LONGITUDINALLY THROUGH THE CURB SECTION AND EXTENDED ONE (1) FOOT BEYOND EACH SIDE OF THE FRAME. A DUMMY JOINT SHALL BE CUT IN THE CURB AT EACH SIDE OF THE FRAME.



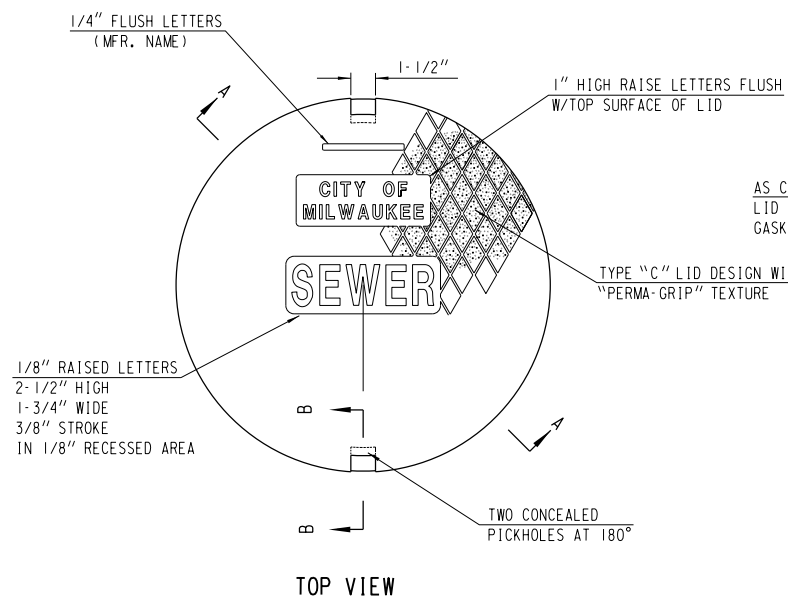
SECTION A-A



"T" GASKET DETAIL



SECTION B-B



TOP VIEW

MANHOLE COVER - TYPE 58-A

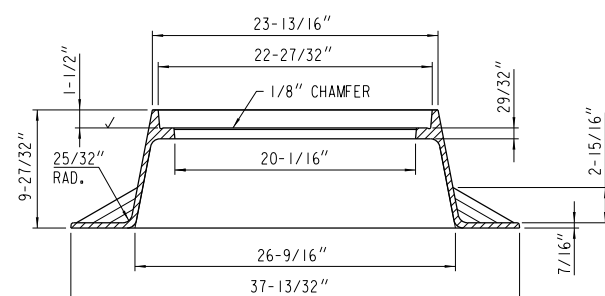
LID - 107 LBS.

## NOTE:

ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8" HAVING A DIGIT OR LETTER HEIGHT OF ONE INCH ON LOWER FACE OF LID:

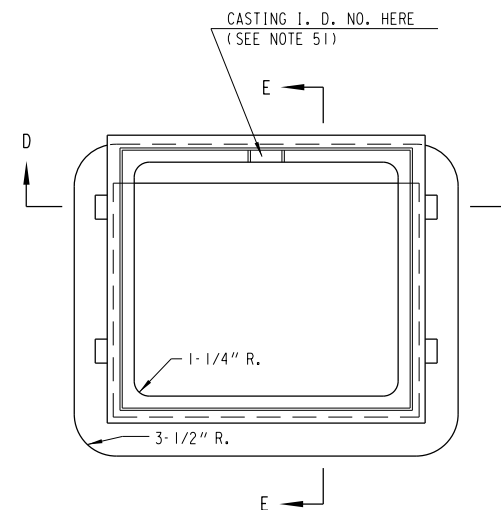
1. THE INITIALS OR MONOGRAM OF THE FOUNDRY.
2. THE CONTRACT NUMBER AND YEAR MADE.
3. THE CASTING IDENTIFICATION NUMBER.
4. THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.

NOTE: ALL EXTERIOR EDGES SHALL BE GROUND.

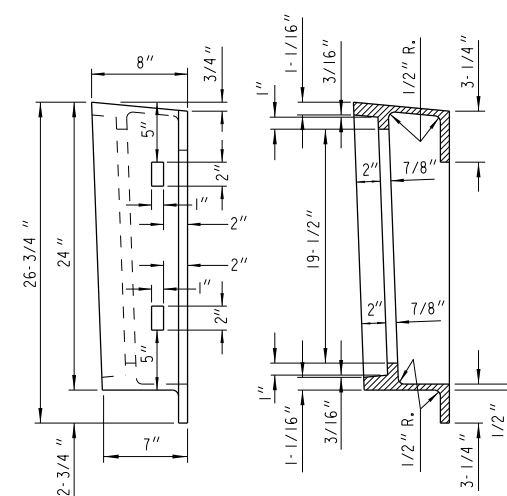


MANHOLE FRAME - TYPE MS21

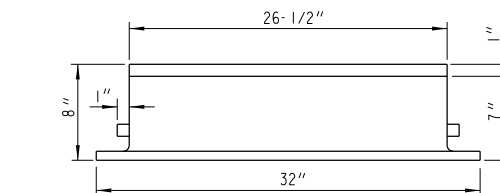
FRAME - 182 LBS.



FRAME



SECTION E-E



SECTION D-D

- \* DEPRESSION FOR LETTERS
- \*\* CLEARANCE FROM TOP OF LETTERS TO FACE OF SEAT

## GENERAL NOTES

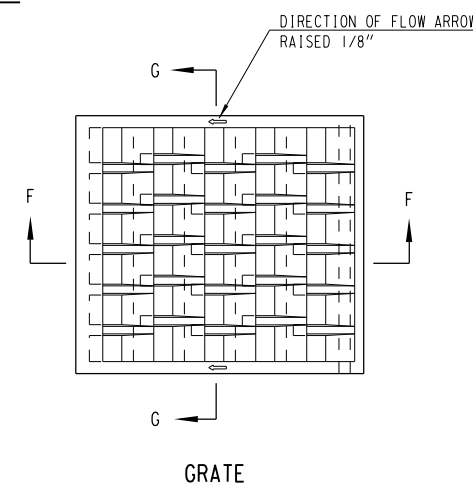
ALL EDGES ARE TO BE GROUND  
ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8"

## ON THE FRAME

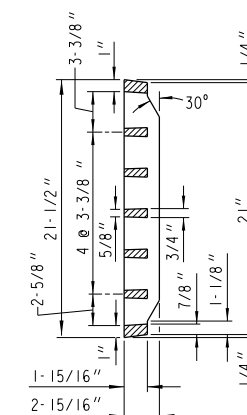
1. ON THE UPPER FACE OF THE FLANGE IN 1 INCH HIGH LETTERS THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.
2. ON THE SEAT OF THE FRAME IN 1 INCH HIGH LETTERS, THE CASTING IDENTIFICATION NUMBER (51).

## ON THE GRATE

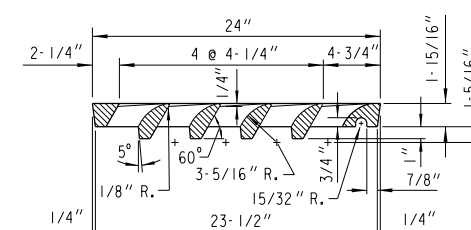
1. ON THE UPPER SIDE OF THE GRATE IN 1 INCH HIGH LETTERS, THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE, THE CASTING IDENTIFICATION NUMBER (57) AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.



GRATE



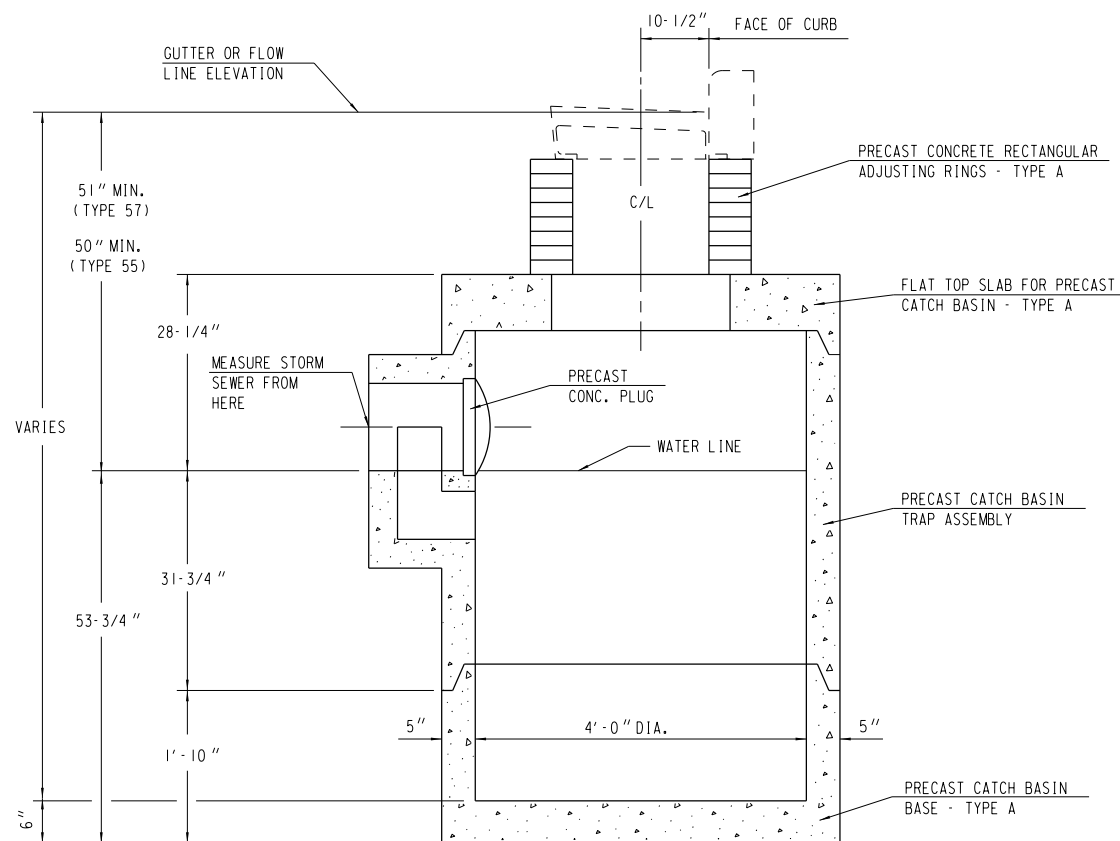
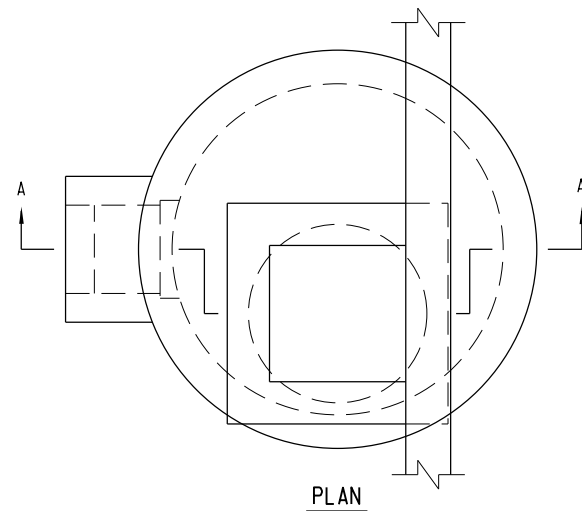
SECTION G-G



SECTION F-F

INLET COVER - TYPE 57

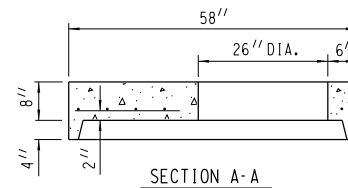
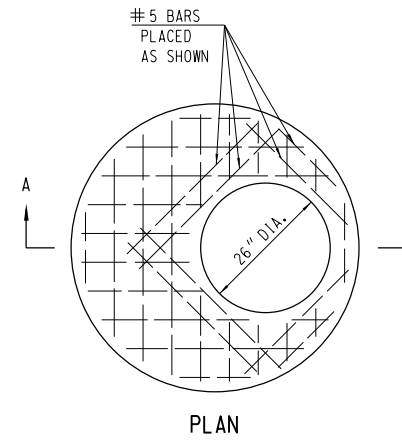
LID-145 LBS., FRAME-204 LBS.



SECTION A-A  
CATCH BASIN - TYPE 44A

GENERAL NOTES

1. REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6" W16 X W16 WELDED STEEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.
2. PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.
3. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 4" IN DEPTH WHICH MEETS REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.
4. SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON PLAN.
5. A PRECAST CONCRETE PLUG SHALL BE CEMENTED INTO THE OPENING AT THE INNER FACE OF THE CATCH BASIN TRAP ASSEMBLY.

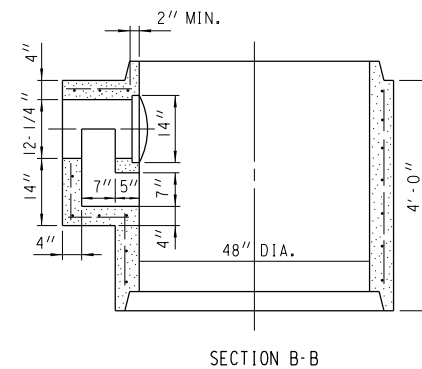
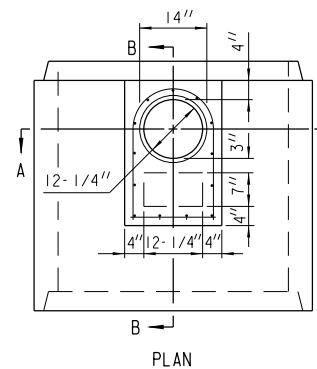
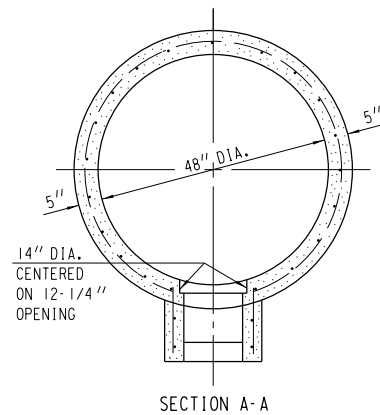


TOP SLAB - TYPE A

FLAT TOP SLAB SHALL BE 8" THICK REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.12 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED IN THE CENTER THIRD OF THE SECTION AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.



TRAP ASSEMBLY

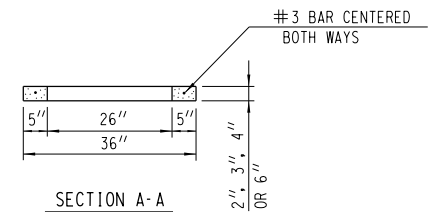
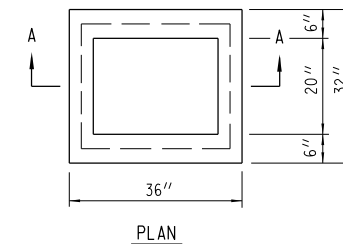
CIRCUMFERENTIAL REINFORCEMENT SHALL CONSIST OF ONE LINE OF STEEL NOT LESS THAN 0.12 SQ. IN. PER LINEAL FOOT, AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

TRAP ASSEMBLY SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.12 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED IN THE CENTER THIRD OF THE SECTION AS SHOWN.

CIRCUMFERENTIAL AND TRAP ASSEMBLY REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.

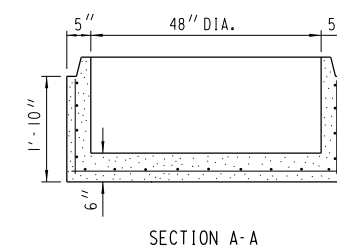
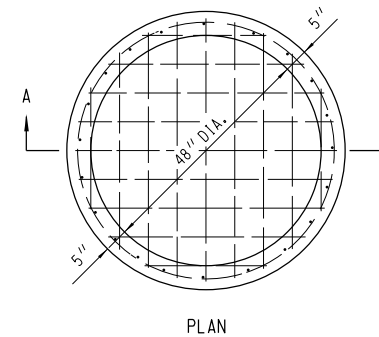
TWO HANDLING HOLES 2 1/4 INCHES IN DIAMETER SHALL BE CAST OR DRILLED IN THE WALL.



RECTANGULAR ADJUSTING RING - TYPE A

THE ADJUSTING RINGS SHALL BE 2", 3", 4" OR 6" IN HEIGHT.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.



BASE - TYPE A

CIRCUMFERENTIAL REINFORCEMENT SHALL CONSIST OF ONE LINE OF STEEL NOT LESS THAN 0.12 SQ. IN. PER LINEAL FOOT, AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

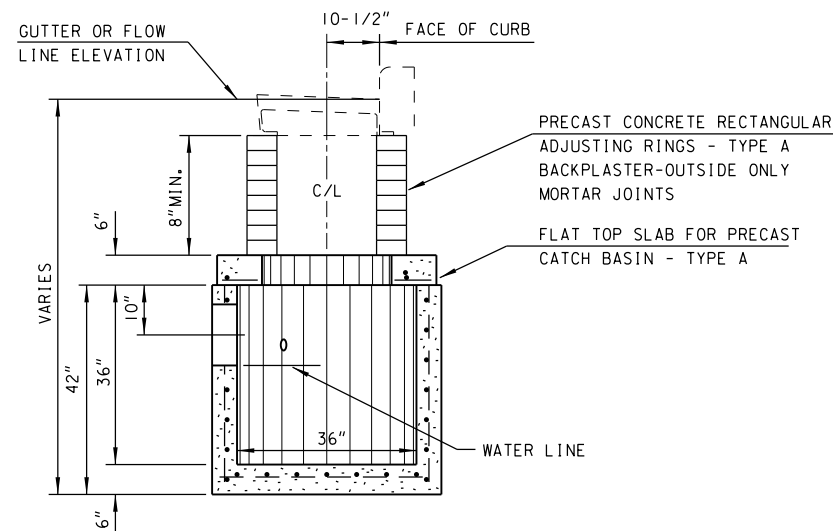
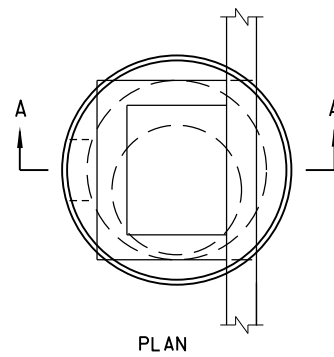
BOTTOM SLAB SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.12 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED IN THE CENTER THIRD OF THE SLAB.

CIRCUMFERENTIAL AND BOTTOM SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.

TWO HANDLING HOLES 2 1/4 INCHES IN DIAMETER SHALL BE CAST OR DRILLED IN THE WALL.

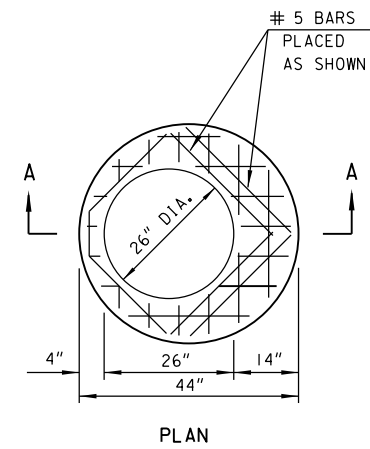




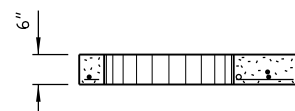
SECTION A-A

**CATCH BASIN - TYPE 45A****GENERAL NOTES**

1. PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199 AND ASTM DESIGNATION C-478 AND THESE DETAILED REQUIREMENTS WHICH SHALL GOVERN WHERE THEY ALTER THE AASHTO AND ASTM STANDARDS.
2. ALL REINFORCEMENT STEEL SHALL BE GRADE 60 OR GREATER AND EMBEDDED AT LEAST 1" CLEAR.
3. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 4" IN DEPTH WHICH MEETS REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.
4. SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON PLAN.



PLAN



SECTION A-A

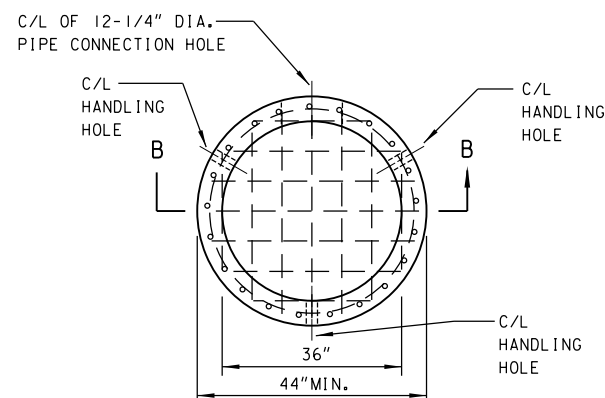
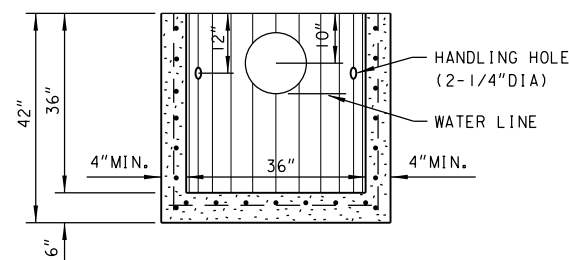
**TOP SLAB - TYPE A**

FLAT TOP SLAB SHALL BE 6" THICK REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.32 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED NEAR THE BOTTOM OF THE SLAB WITH 1" CLEAR COVER.

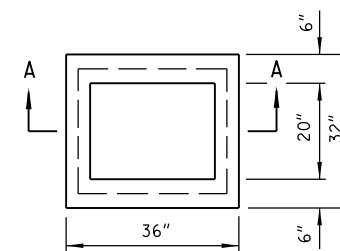
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

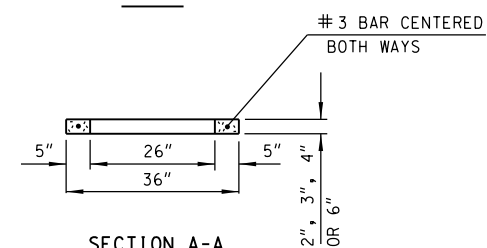
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

**RISER SECTION WITH INTEGRAL BASE PLAN**

SECTION B-B



PLAN



SECTION A-A

**RECTANGULAR ADJUSTING RING - TYPE A**

THE ADJUSTING RINGS SHALL BE 2", 3", 4" OR 6" IN HEIGHT.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.

CIRCUMFERENTIAL AND LONGITUDINAL REINFORCEMENT IN THE RISER SECTION SHALL EACH CONSIST OF ONE LAYER OF STEEL NOT LESS THAN 0.12 SQ. IN. PER FOOT AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

THE BASE SLAB SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.32 SQ. IN. PER FOOT IN BOTH DIRECTIONS, PLACED ABOVE THE MIDPOINT OF THE SLAB.

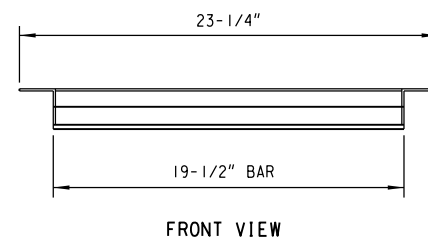
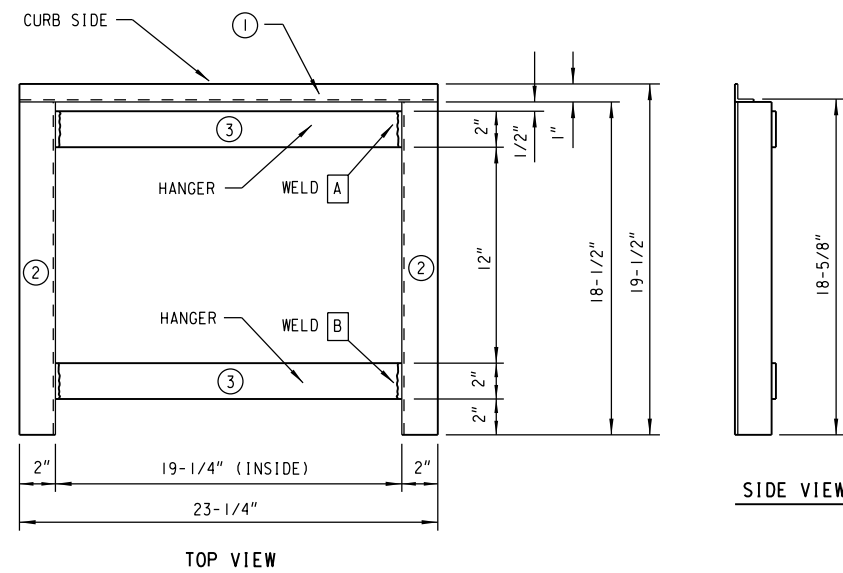
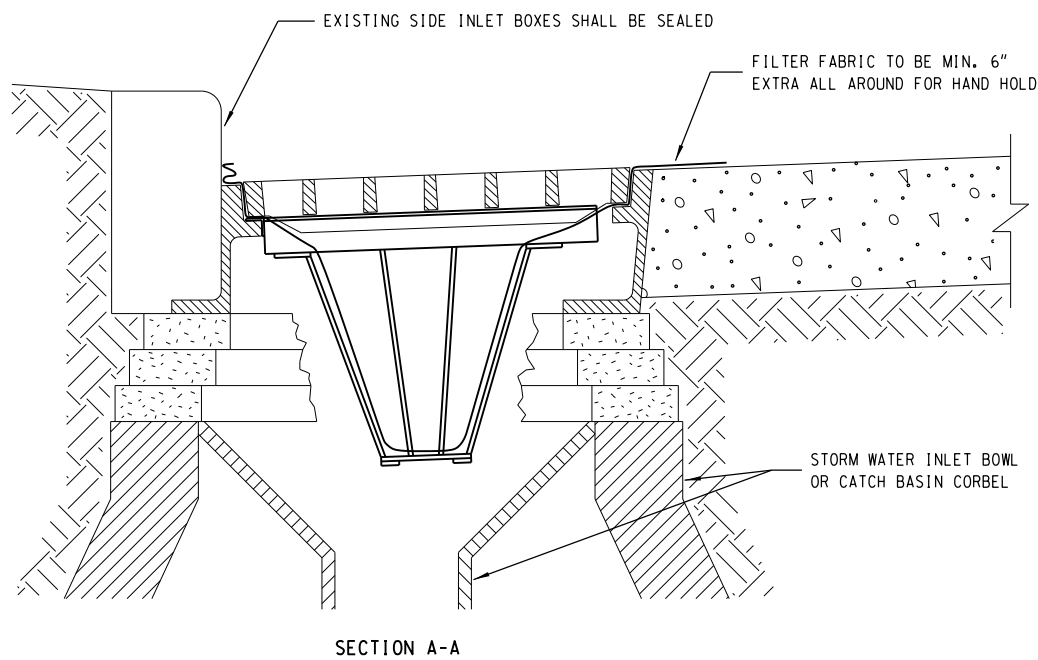
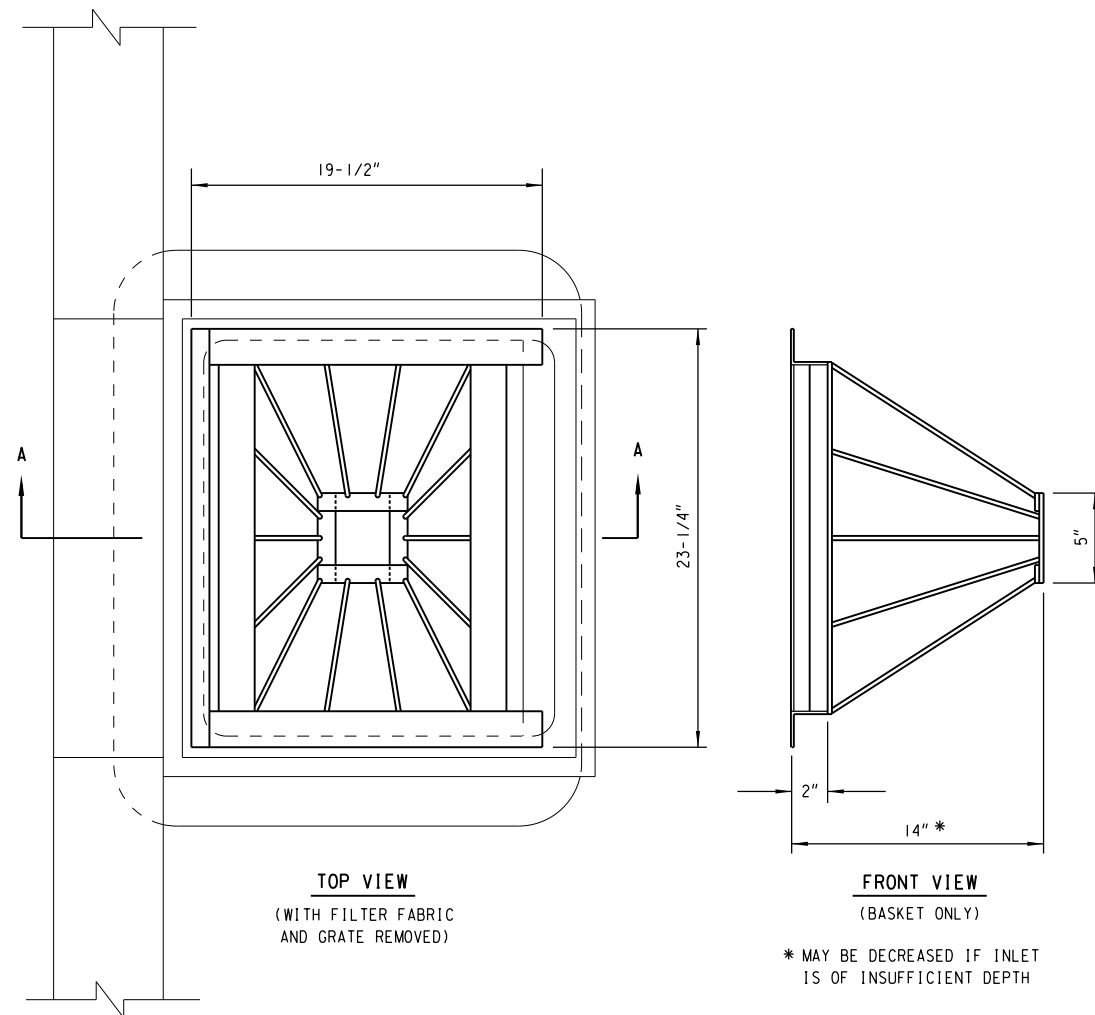
RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

TWO TO THREE HANDLING HOLES 2-1/4" IN DIAMETER AND A PIPE CONNECTION HOLE 12-1/4" IN DIAMETER SHALL BE CAST OR CORED IN THE RISER SECTION AT THE LOCATIONS SHOWN. LIFTING DEVICES MAY BE SUBSTITUTED FOR HANDLING HOLES.

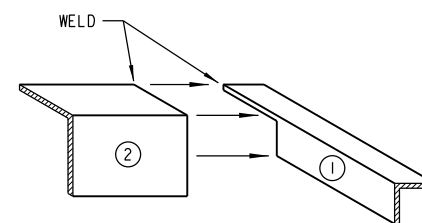
NO JOINTS OR HOLES SHALL BE BELOW THE WATERLINE.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

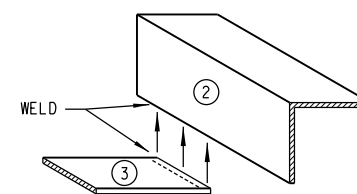
RISER SECTION MAY TAPER TO A 33" INTERNAL DIAMETER AT IT'S BOTTOM PROVIDED A 44" MINIMUM OUTSIDE DIAMETER IS MAINTAINED.



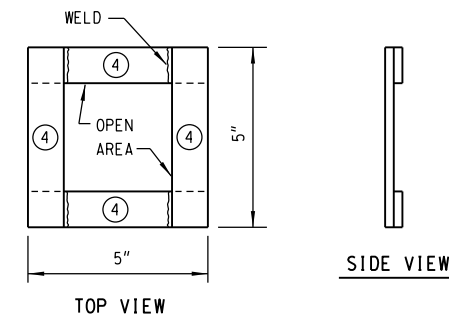
BAR SCHEDULE					
NO.	SHAPE	SIZE	THICKNESS	LENGTH	QUANTITY
①	ANGLE	1" X 1"	1/8"	23-1/4"	1
②	ANGLE	2" X 2"	1/8"	18-1/2"	2
③	BAR	2"	1/4"	19-1/2"	2



**WELD CONNECTION - A**  
TOP FRAME

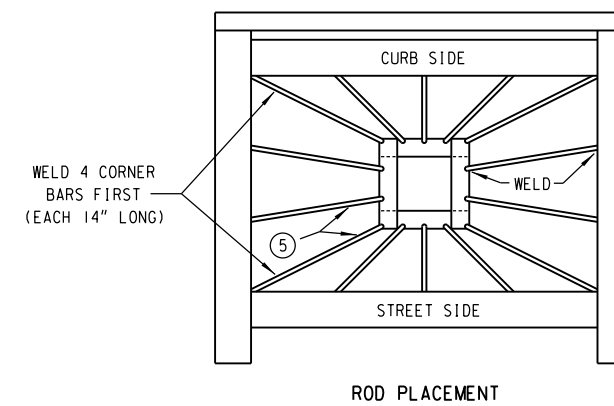


**WELD CONNECTION - B**  
BASKET HANGER  
TO TOP FRAME



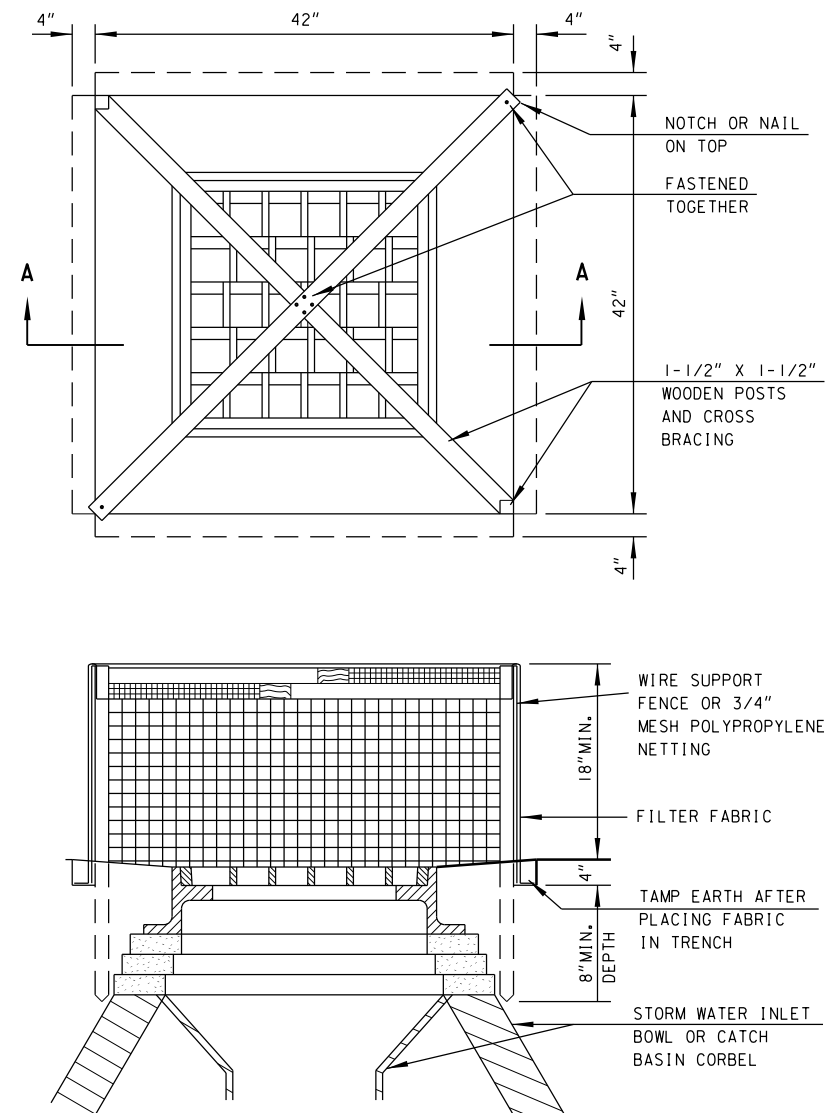
BAR SCHEDULE					
NO.	SHAPE	SIZE	THICKNESS	LENGTH	QUANTITY
④	BAR	1"	1/4"	5"	4

**BASKET BOTTOM**



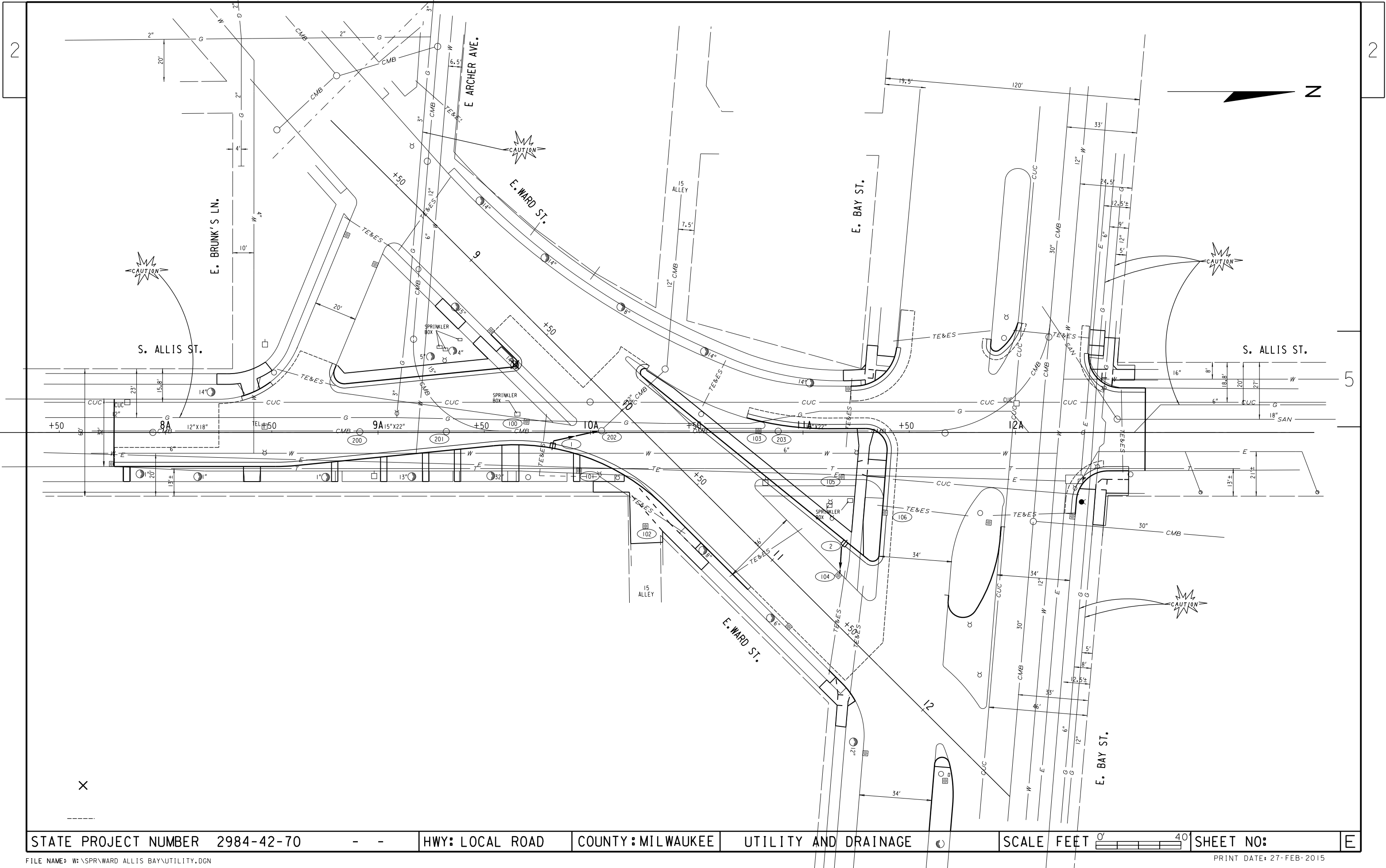
ROD SCHEDULE					
NO.	SHAPE	SIZE	THICKNESS	LENGTH	QUANTITY
⑤	ROD	1/4" MIN.	1/8"	12" TO 14" (CUT TO FIT)	14

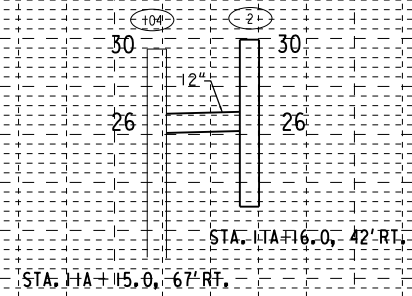
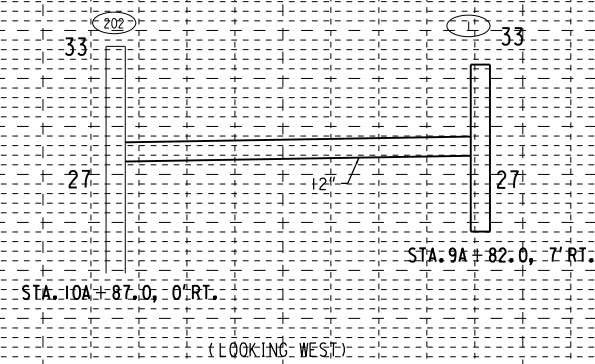
**TYPE M**  
**INLET / CATCH BASIN BASKET**



SECTION A-A

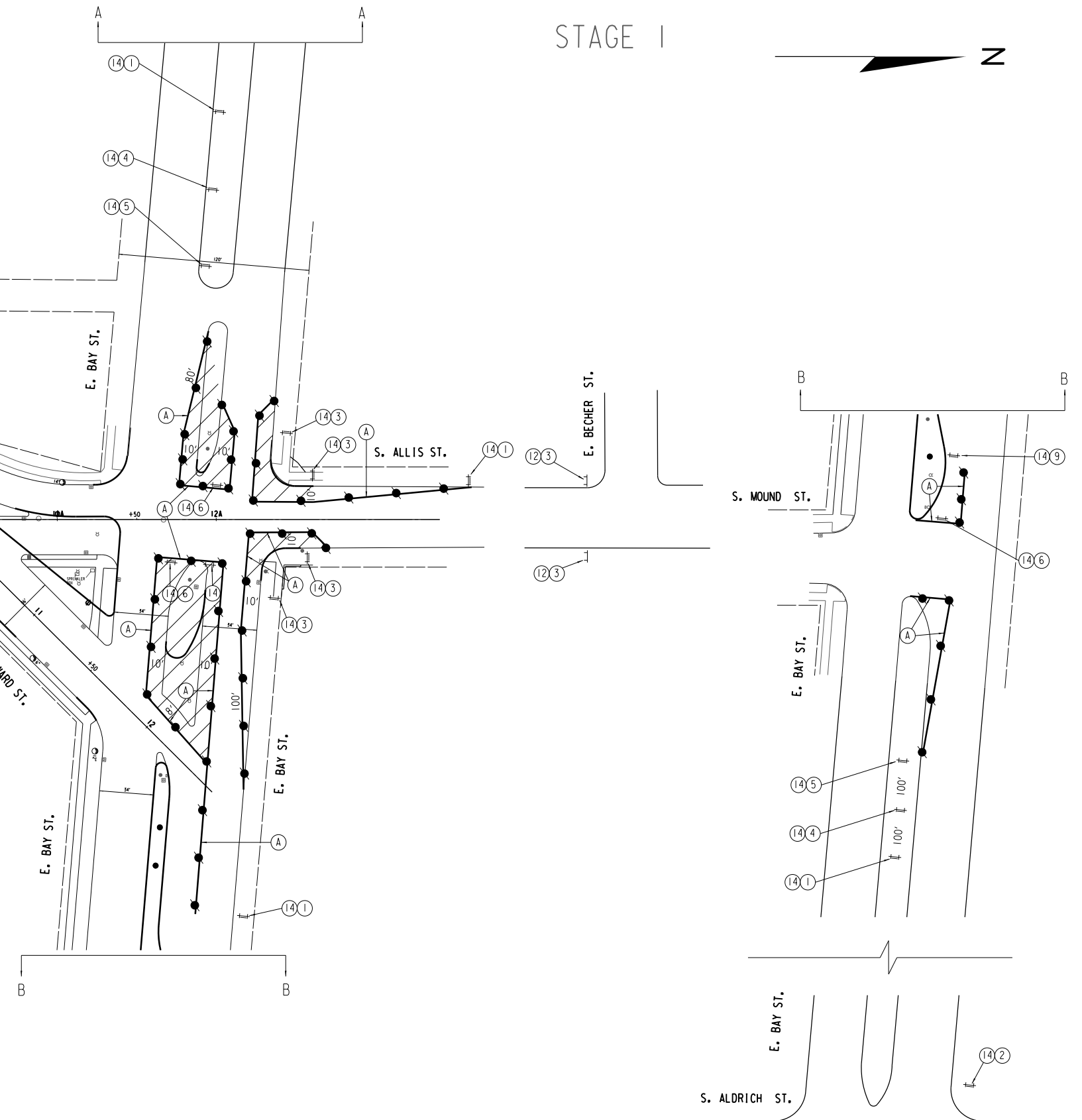
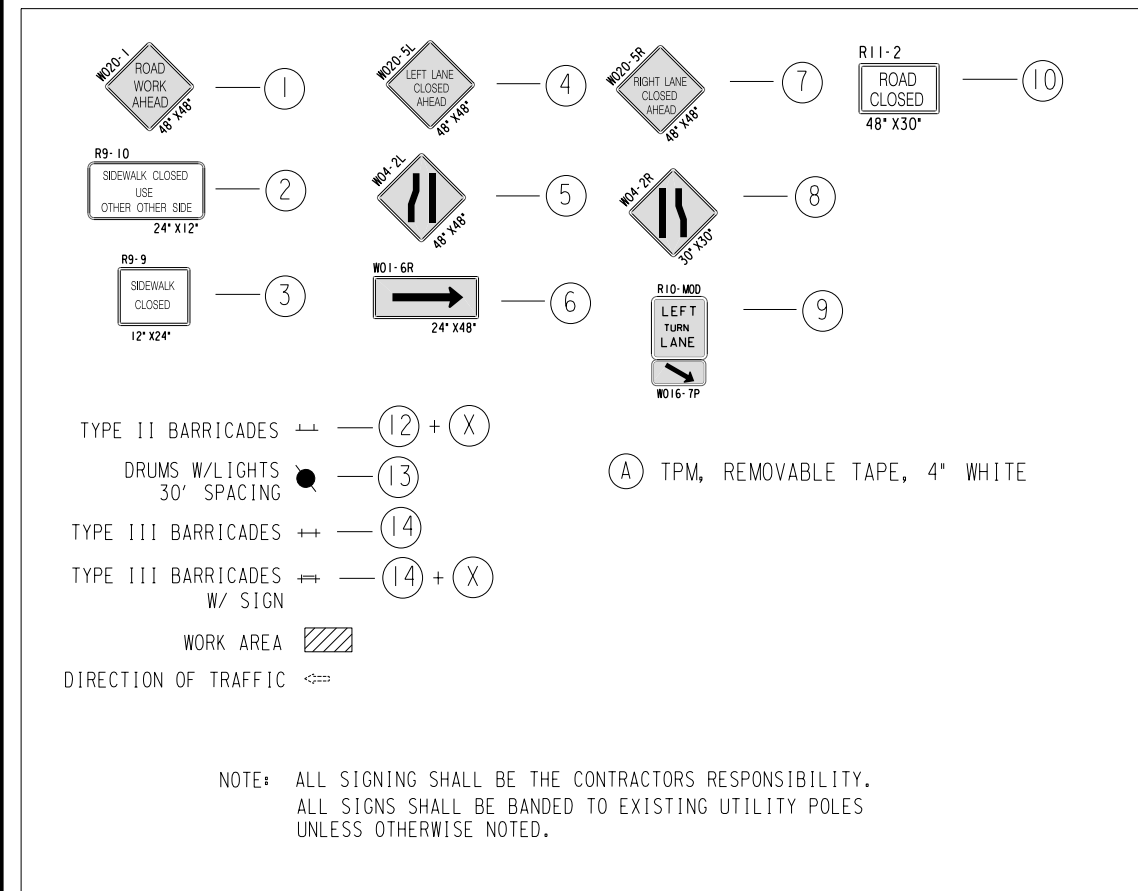
INLET SCREEN  
(NOT PAVED) (TYPE R)







STAGE I



SHEET 1 OF 3

STATE PROJECT NUMBER 2984-42-70

- -

HWY: LOCAL ROAD

COUNTY: MILWAUKEE

TRAFFIC CONTROL

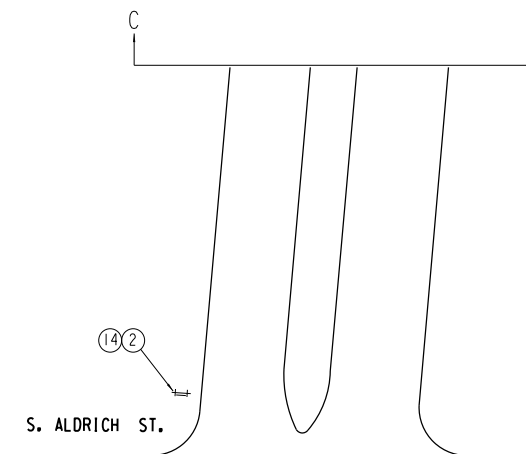
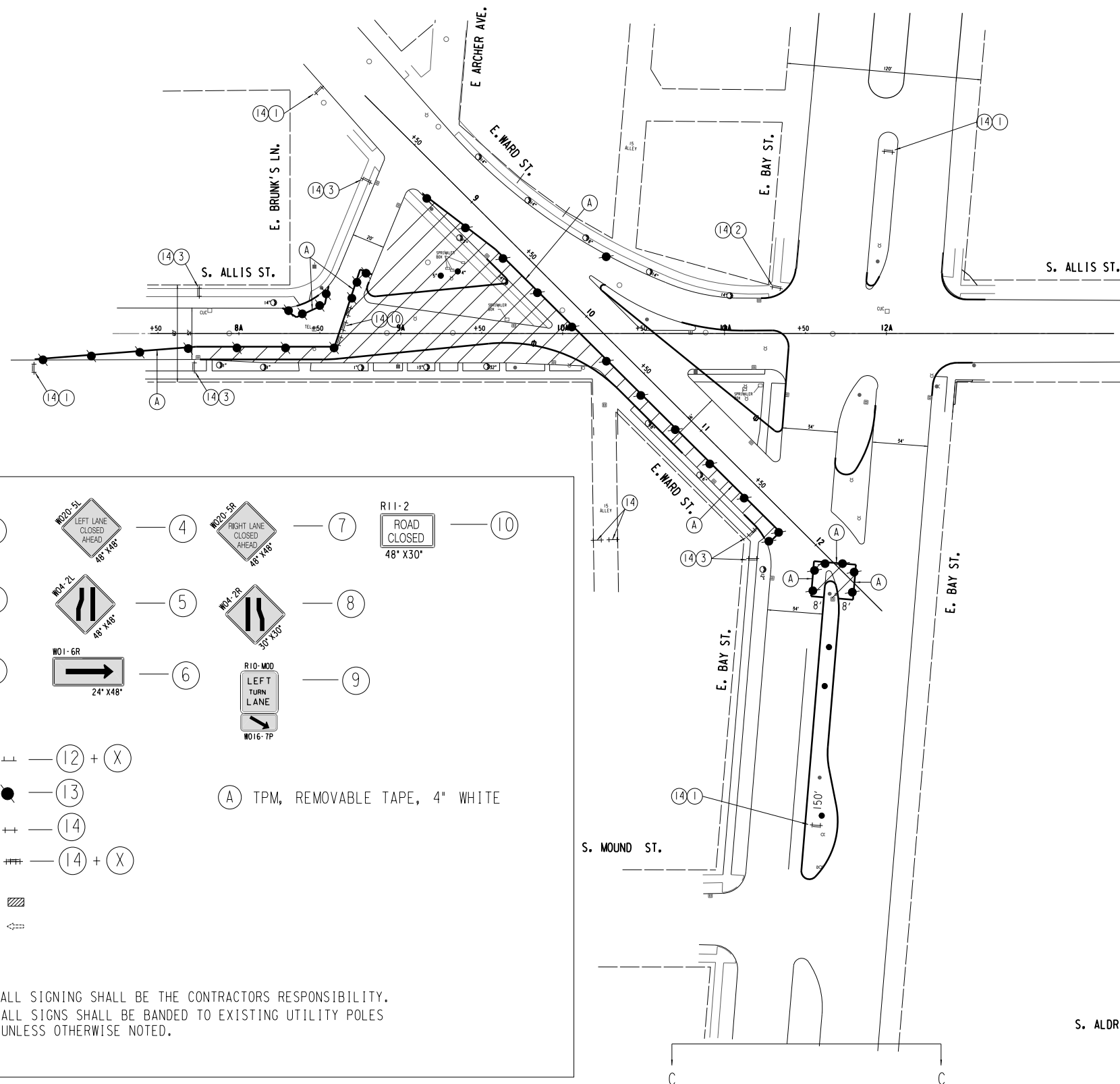
SCALE FEET 0' 80'

SHEET NO:

E



## STAGE 2



NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.  
ALL SIGNS SHALL BE BANNED TO EXISTING UTILITY POLES  
UNLESS OTHERWISE NOTED.

SHEET 2 OF 3

STATE PROJECT NUMBER 2984-42-70

- -

HWY: LOCAL ROAD

COUNTY: MILWAUKEE

TRAFFIC CONTROL

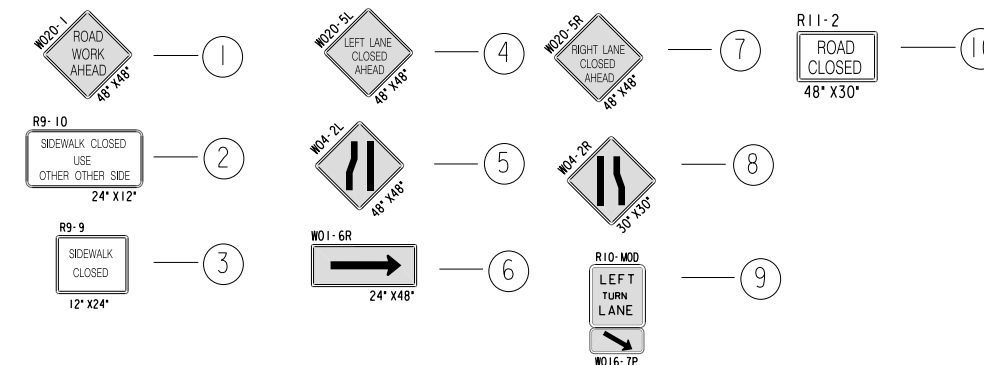
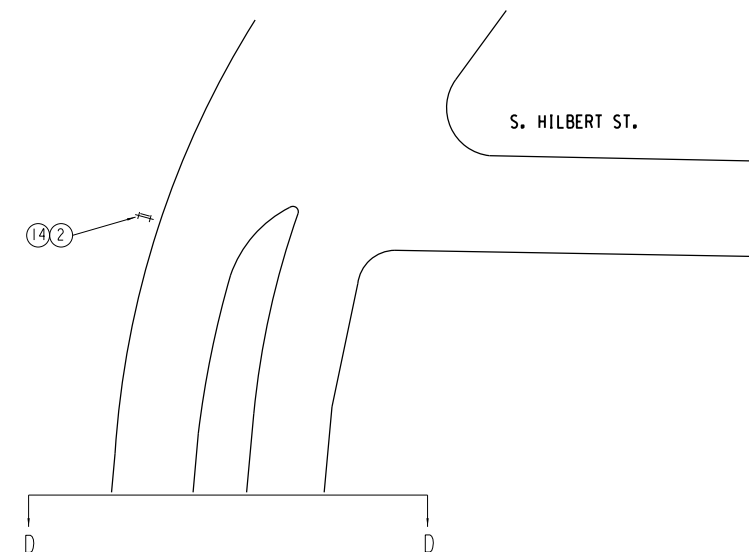
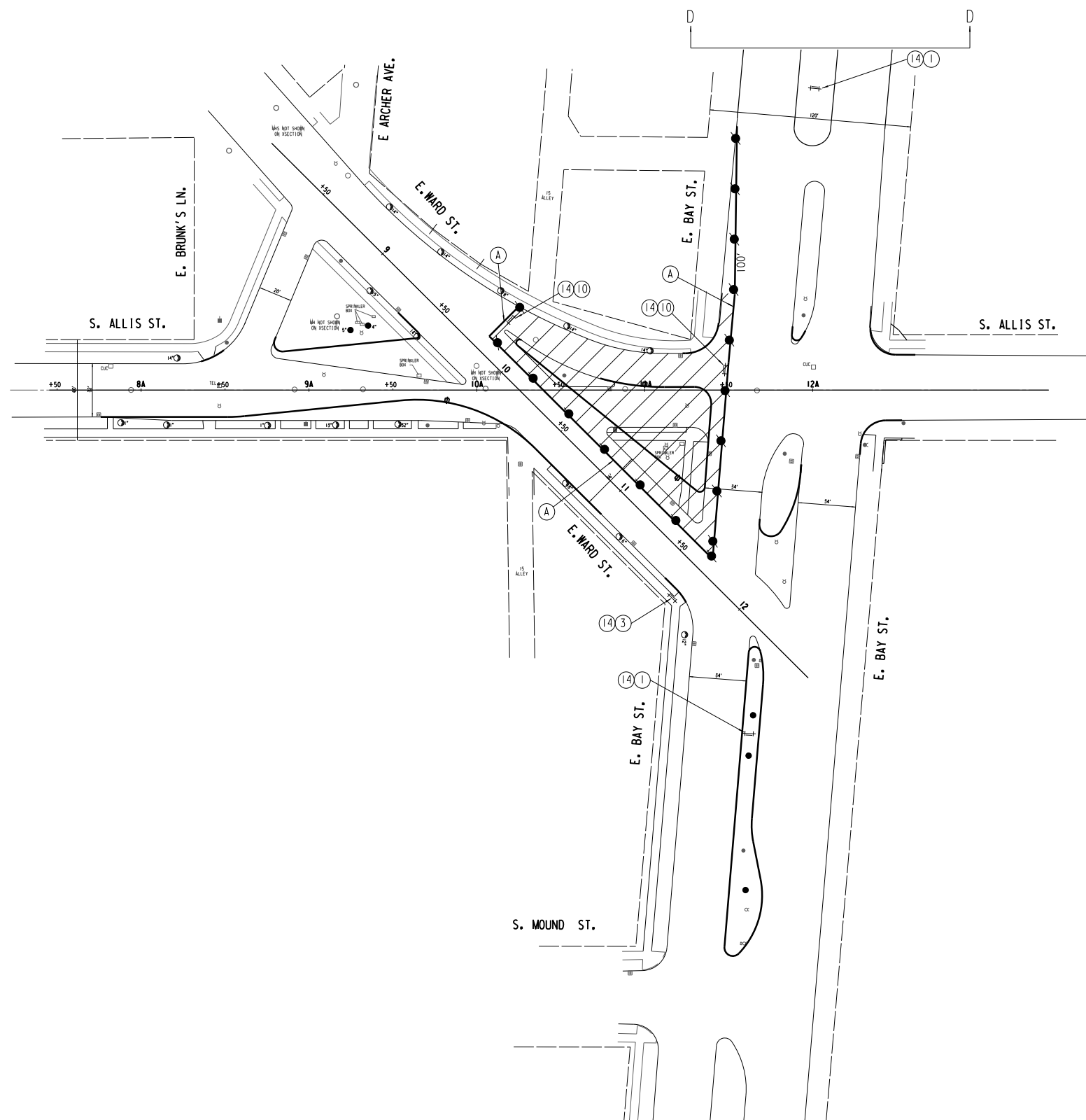
SCALE FEET



SHEET NO:

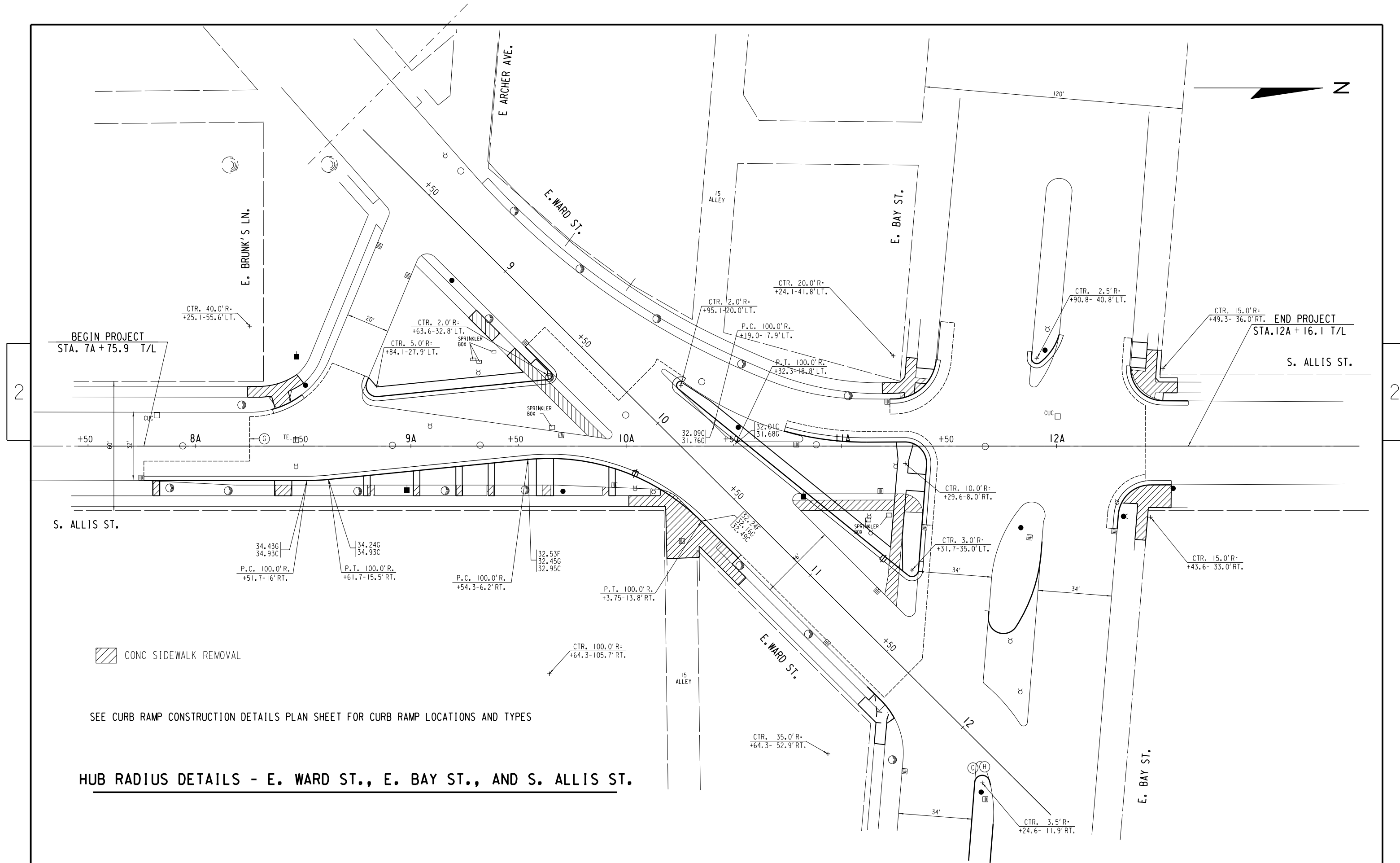
E

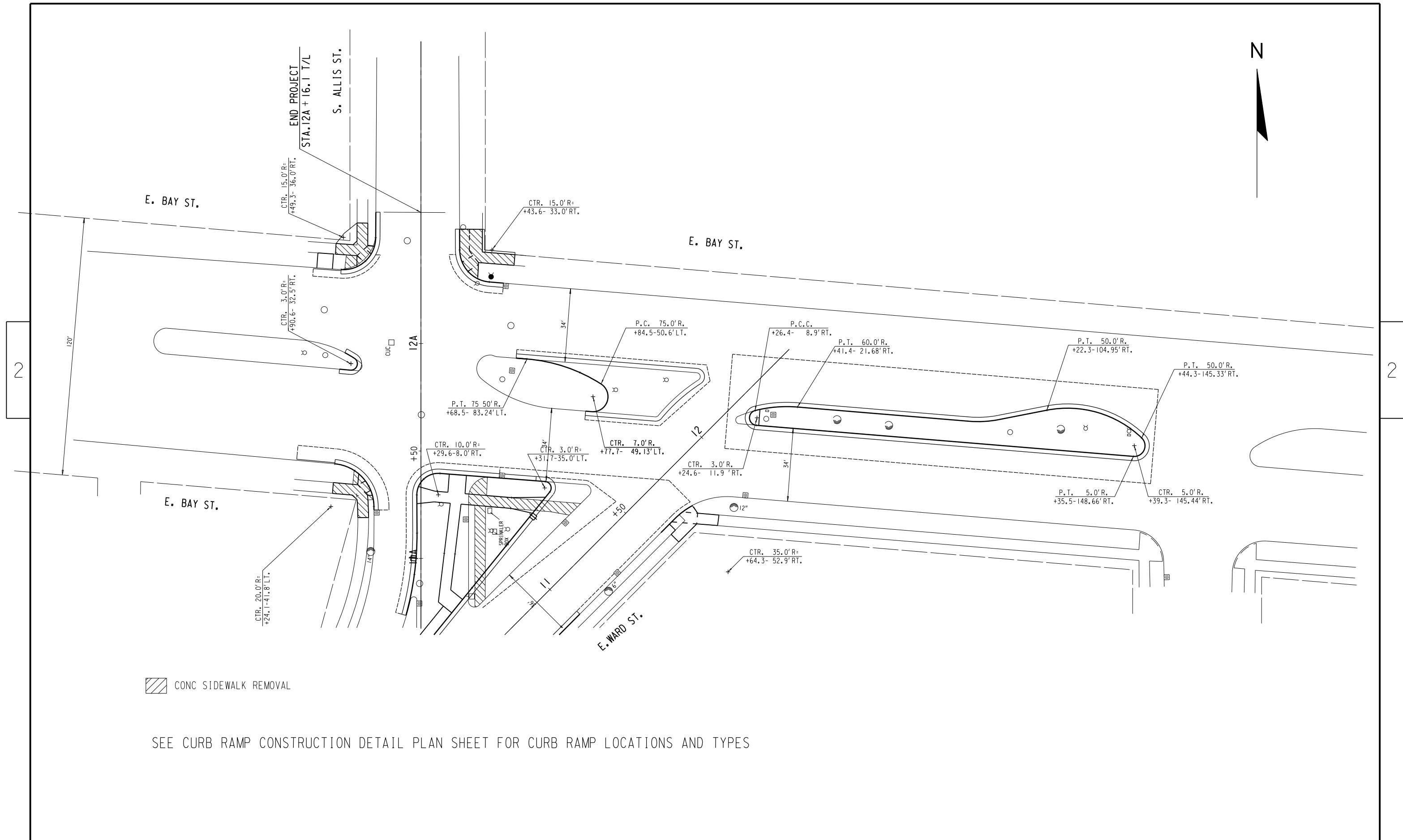
# STAGE 3



- TYPE II BARRICADES ++ — (12) + (X)
- DRUMS W/LIGHTS 30' SPACING ● — (13)
- TYPE III BARRICADES ++ — (14)
- TYPE III BARRICADES W/ SIGN ++ — (14) + (X)
- WORK AREA [Hatched Box]
- DIRECTION OF TRAFFIC [Arrow]
- (A) TPM, REMOVABLE TAPE, 4" WHITE

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.  
ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES  
UNLESS OTHERWISE NOTED.





 CONC SIDEWALK REMOVAL

SEE CURB RAMP CONSTRUCTION DETAIL PLAN SHEET FOR CURB RAMP LOCATIONS AND TYPES

DATE 14APR15		E S T I M A T E O F Q U A N T I T I E S			
LINE		2984-42-70			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0120	Clearing	ID	10.000	10.000
0020	201.0220	Grubbing	ID	10.000	10.000
0030	204.0100	Removing Pavement	SY	380.000	380.000
0040	204.0105	Removing Pavement Butt Joints	SY	850.000	850.000
0050	204.0115	Removing Asphaltic Surface Butt Joints	SY	490.000	490.000
0060	204.0150	Removing Curb & Gutter	LF	1,150.000	1,150.000
0070	204.0155	Removing Concrete Sidewalk	SY	310.000	310.000
0080	204.0255	Abandoning Catch Basins	EACH	3.000	3.000
0090	205.0100	Excavation Common	CY	249.000	249.000
0100	213.0100	Finishing Roadway (project) 01. 2984-42-70	EACH	1.000	1.000
0110	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	160.000	160.000
0120	320.0155	Concrete Base 9-Inch	SY	410.000	410.000
0130	415.0310	Concrete Alley	SY	24.000	24.000
0140	416.0170	Concrete Driveway 7-Inch	SY	25.000	25.000
0150	416.0610	Drilled Tie Bars	EACH	5.000	5.000
0160	455.0120	Asphaltic Material PG64-28	TON	18.000	18.000
0170	455.0605	Tack Coat	GAL	70.000	70.000
0180	460.1103	HMA Pavement Type E-3	TON	290.000	290.000
0190	460.2000	Incentive Density HMA Pavement	DOL	190.000	190.000
0200	601.0331	Concrete Curb & Gutter 31-Inch	LF	960.000	960.000
0210	602.0410	Concrete Sidewalk 5-Inch	SF	2,950.000	2,950.000
0220	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	104.000	104.000
0230	611.8105	Adjusting Catch Basin Covers	EACH	2.000	2.000
0240	619.1000	Mobilization	EACH	1.000	1.000
0250	620.0300	Concrete Median Sloped Nose	SF	45.000	45.000
0260	625.0100	Topsoil	SY	560.000	560.000
0270	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0280	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0290	629.0210	Fertilizer Type B	CWT	1.000	1.000
0300	631.1000	Sod Lawn	SY	560.000	560.000
0310	642.5201	Field Office Type C	EACH	1.000	1.000
0320	643.0100	Traffic Control (project) 01. 2984-42-70	EACH	1.000	1.000
0330	643.0300	Traffic Control Drums	DAY	2,450.000	2,450.000
0340	643.0410	Traffic Control Barricades Type II	DAY	50.000	50.000
0350	643.0420	Traffic Control Barricades Type III	DAY	825.000	825.000
0360	643.0705	Traffic Control Warning Lights Type A	DAY	1,650.000	1,650.000
0370	643.0715	Traffic Control Warning Lights Type C	DAY	2,450.000	2,450.000
0380	643.0900	Traffic Control Signs	DAY	1,900.000	1,900.000
0390	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	4,650.000	4,650.000
0400	650.4000	Construction Staking Storm Sewer	EACH	4.000	4.000
0410	650.4500	Construction Staking Subgrade	LF	300.000	300.000
0420	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	960.000	960.000
0430	650.9910	Construction Staking Supplemental Control (project) 01. 2984-42-70	LS	1.000	1.000
0440	690.0150	Sawing Asphalt	LF	93.000	93.000
0450	690.0250	Sawing Concrete	LF	430.000	430.000
0460	715.0415	Incentive Strength Concrete Pavement	DOL	24.000	24.000
0470	SPV.0060	Special 01. Inlet Covers Type 57	EACH	2.000	2.000
0480	SPV.0060	Special 02. Catch Basin Type 44A	EACH	2.000	2.000
0490	SPV.0060	Special 03. Manhole Covers Type 58A	EACH	6.000	6.000

DATE 14APR15		E S T I M A T E O F Q U A N T I T I E S				
LINE		2984-42-70				
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0500	SPV. 0060	Special 04. Inlet Screen Type M	EACH	5.000	5.000	
0510	SPV. 0060	Special 05. Inlet Screen Type R	EACH	4.000	4.000	
0520	SPV. 0090	Special 01. Construction Staking	LF	370.000	370.000	
		Concrete Sidewalk				
0530	SPV. 0090	Special 02. Storm Sewer Pipe Corrugated	LF	34.000	34.000	
		PVC 12-Inch				

DRAINAGE STRUCTURES								STORM SEWER							
GROUP CODE	NO.	LOCATION	COVER ELEV.	COVER		DEPTH	LOCATION		SIZE (INCHES)	LENGTH (FEET)	INVERT ELEV.		REMARKS		
				STR	TYPE		FROM	TO			INLET	DISCH.			
0010	1	9A + 82 - 7' RT	32.25	44A	57	8.7	1	202	12	14	27.85	27.55	CAUTION WATER, TEL. ETC CAUTION TRUCKS		
0010	2	11A + 16 - 50' RT	31.16	44A	57	8.7	2	104	12	20	26.90	26.55			

34 L.F. STORM SEWER PIPE 12" (ITEM SPV.0090.02)  
2 INLET COVERS TYPE 57 (SPV.0060.01)  
2 CATCH BASINS TYPE 44A (SPV.0060.02)

MANHOLE COVERS TYPE 58A							
GROUP CODE	NO.	LOCATION			PROP. ELEV.	COVER TYPE	REMARKS
0020	200	8A + 90	-	0' RT	34.40	58A	NON-PARTICIPATING
0020	201	9A + 32	-	0' RT	33.20	58A	NON-PARTICIPATING
0020	202	10A + 05	-	0' RT	32.57	58A	NON-PARTICIPATING
0020	203	10A + 87	-	0' RT	31.59	58A	NON-PARTICIPATING
0020	104	11A + 15	-	67' RT	31.63	58A	NON-PARTICIPATING
0020	203	11A + 17	-	21' RT	31.50	58A	NON-PARTICIPATING

6 ADJUSTING MANHOLE COVERS (SPV.0060.03)

ABANDON CATCH BASIN			
GROUP CODE	NO.	LOCATION	
0010	100	9A + 70	- 5' LT.
0010	101	9A + 95	- 17' RT.
0010	103	9A + 75	- 0' RT.

3 ABANDON CATCH BASINS (ITEM 204.0255)

ADJUSTING CATCH BASIN COVERS							
GROUP CODE	NO.	LOCATION			PROP. ELEV.	COVER TYPE	REMARKS
0010	102	10A + 25	-	44' RT	32.38	57	-
0010	106	11A + 38	-	38' RT	-	57	-

2 ADJUSTING CATCH BASIN COVER (ITEM 611.8105)



STATION TO STATION	LOCATION	CLEARING	GRUBBING	REMOVING PAVEMENT	REMOVING PAVEMENT BUTT JOINTS	REMOVING ASPHALTIC SURFACE BUTT JOINTS	REMOVING CURB AND GUTTER	REMOVING CONCRETE SIDEWALK	EXCAVATION COMMON	FINISHING ROADWAY (PROJECT)	1 1/4" BASE AGGREGATE	CONCRETE BASE 9-INCH	CONCRETE ALLEY	CONCRETE DRIVEWAY 7-INCH	DRILLED TIE BARS	ASPHALTIC MATERIAL PG. 64-22	TACK COAT	HMA PAVEMENT TYPE E-3	INCENTIVE DENSITY HMA PAVEMENT	CONCRETE CURB AND GUTTER 31-INCH	CONCRETE SIDEWALK 5-INCH	CURB RAMP DETECTABLE WARNING FIELD	MOBILIZATION	CONCRETE MEDIAN SLOPE NOSE	TOPSOIL	MOBILIZATION EROSION CONTROL	MOBILIZATION EMERGENCY EROSION CONTROL	FERTILYZER TYPE B	SOD LAWN
		I.D.	I.D.	S.Y.	S.Y.	S.Y.	L.F.	S.Y.	C.Y.	EACH	TON	S.Y.	S.Y.	S.Y.	H	TON	GAL.	TON	DOL	L.F.	S.F.	S.F.	EACH	S.F.	S.Y.	EACH	EACH	CWT	S.Y.
		201.0120	201.0220	204.0100	204.0105	204.0115	204.0150	204.0155	205.0100	213.0100	305.0120	320.0155	415.0310	416.0170	416.0610	455.0115	455.0605	460.1103	460.2000	601.0331	602.0410	602.0505	619.1000	620.0300	625.0100	628.1905	628.1910	629.0210	631.1000
STA. 7+75.9 TO STA. 12+16.1	L	10	10	200	460	0	600	170	242	1	80	210	0	0	5	7	30	120	190	490	1470	56	1	35	280	1	1	1	280
SUBTOTAL		10	10	200	460	0	600	170	242	1	80	210	0	0	5	7	30	120	190	490	1470	56	1	35	280	1	1	1	280

STA. 7+75.9 TO STA. 12+16.1	R	10	10	180	390	490	550	140	242	1	80	200	24	25	5	11	40	170	190	470	1480	48	1	10	280	1	1	1	280
SUBTOTAL				180	390	490	550	140			80	200	24	25	5	11	40	170	190	470	1480	48		10	280				280
GRAND TOTAL		10	10	380	850	490	1150	310	249	1	160	410	24	25	5	18	70	290	190	960	2950	104	1	45	560	1	1	1	560

STATION TO STATION	LOCATION	FIELD OFFICE TYPE C	TRAFFIC CONTROL (PROJECT)	TEMP. PAVEMENT MARKING REM. TAPE, 4-INCH	CONSTRUCTION STAKING STORM SEWER	CONSTRUCTION STAKING SUBGRADE	CONST STAKING CURB & GUTTER	CONST STAKING SUPPLEMENTAL CONTROL (PROJECT)	SAWING ASPHALT	SAWING CONCRETE	CONST STAKING CONCRETE SIDEWALK	INLET SCREEN TYPE R	INLET SCREEN TYPE M
		EACH	EACH	L.F.	EACH	LF	L.F.	L.S.	L.F.	L.F.	L.F.	EACH	EACH
		642.5201	643.0100	649.0400	650.4000	650.4500	650.5500	650.5500	690.0150	690.0250	SPV.0090.01	SPV.0060.05	SPV.0060.04
STA. 7+75.9 TO STA. 12+16.1	L	1	1	4650	4	300	490	1	0	340	120	4	5
SUBTOTAL		1	1		4	300	490	1	0	340	120	4	5

STA. 7+75.9 TO STA. 12+16.1	R	1	1	4650	4	300	470	1	93	90	250	4	5
SUBTOTAL							470		93	90	250		
GRAND TOTAL		1	1	4650	4	300	960	1	93	430	370	4	5

EARTH WORK SUMMARY

FROM/TO STATION	LOCATION	EXCAVATION COMMON (1) (ITEM # 205.0100)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE ± (7)	WASTE
		CUT (2)	EBX EXCAVATION (3)						
		CY	CY						
							1.20 FACTOR		
9+00 TO 12+00		249	0	95	154	84	101	53	148

EXISTING ASPHALTIC PAV'T THICKNESS IS VARIABLE

1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

2) SALVAGED/ UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

3) EBS EXCAVATION TO BE BACKFILLED WITH BASE AGGREGATE DENSE 1 1/4-INCH

4) SALVAGED/UNUSABLE PAVEMENT MATERIAL.

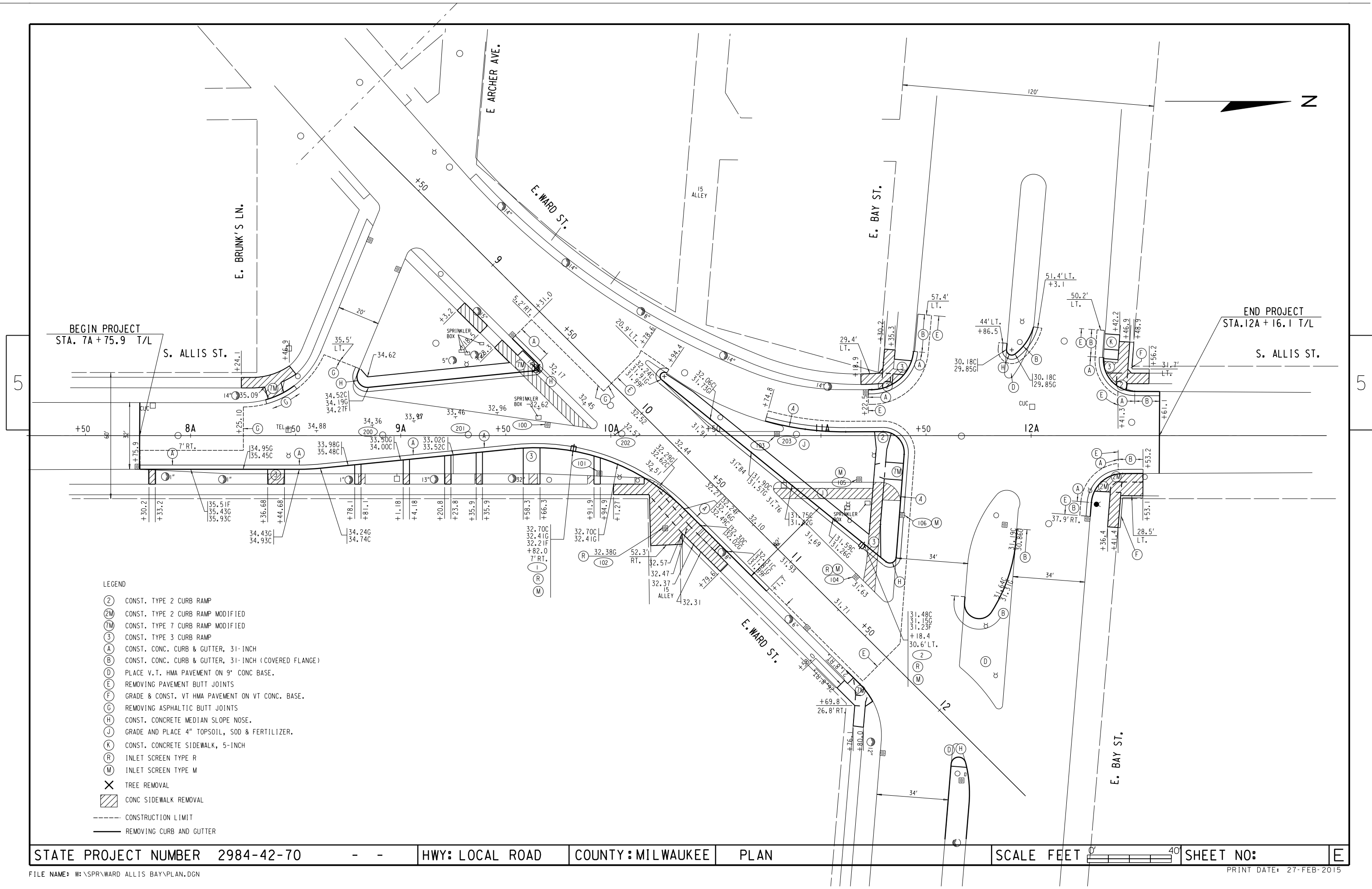
5) AVAILABLE MATERIAL = CUT-SALVAGED/UNUSABLE PAVEMENT MATERIAL.

6) EXPANDED FILL FACTOR = 1.20.

7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL.

ESTIMATE OF TRAFFIC CONTROL ITEMS REQUIRED									
ITEMS			STAGE 1		STAGE 2		STAGE 3		TOTAL
			(EACH)	(DAYS)	(EACH)	(DAYS)	(EACH)	(DAYS)	
①	643.0300	TRAFFIC CONTROL, DRUMS	49	1,225	32	800	17	425	2,450
②	643.0420	TRAFFIC CONTROL, BARRICADES, TYPE III	17	425	11	275	5	125	825
	643.0705	TRAFFIC CONTROL, WARNING LIGHTS, TYPE"A"(FLASHING)	34	850	22	550	10	250	1,650
	643.0715	TRAFFIC CONTROL, WARNING LIGHTS, TYPE"C"(STEADY)	49	1,225	32	800	17	425	2,450
	643.0410	TRAFFIC CONTROL, BARRICADES, TYPE II	2	50					50
③ TEMPORARY PAVEMENT MARKING									
	649.0400	REMOVABLE TAPE, 4-INCH	1,320 LF		780 LF		2,550 LF		4,650 LF
④	ITEMS (643.0900)	SIZE	DESCRIPTION		STAGE 1		STAGE 2		TOTAL
	SIGN FRAME TYPE "D"				23		10		38
	R11-2	48"X30"	ROAD CLOSED				1		3
	W01-6R	48"X24"	ARROW (RIGHT)		3				3
	W04-2L	36"X36"	PAV'T WIDTH TRANS. (LEFT)		2				2
	W04-2R	36"X36"	PAV'T WIDTH TRANS. (RIGHT)		4				4
	W020-1	48"X48"	ROAD WORK AHEAD		4		1		9
	W020-5L	48"X48"	LEFT LANE CLOSED AHEAD		3				3
	W020-5R								
	R9-9		SIDEWALK CLOSED		6		1		11
	R9-10		SIDEWALK CLOSED USE OTHER SIDE		1		1		3
			46		20		10		76
			1,150 DAYS		500 DAYS		250 DAYS		1,900 DAYS
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.									

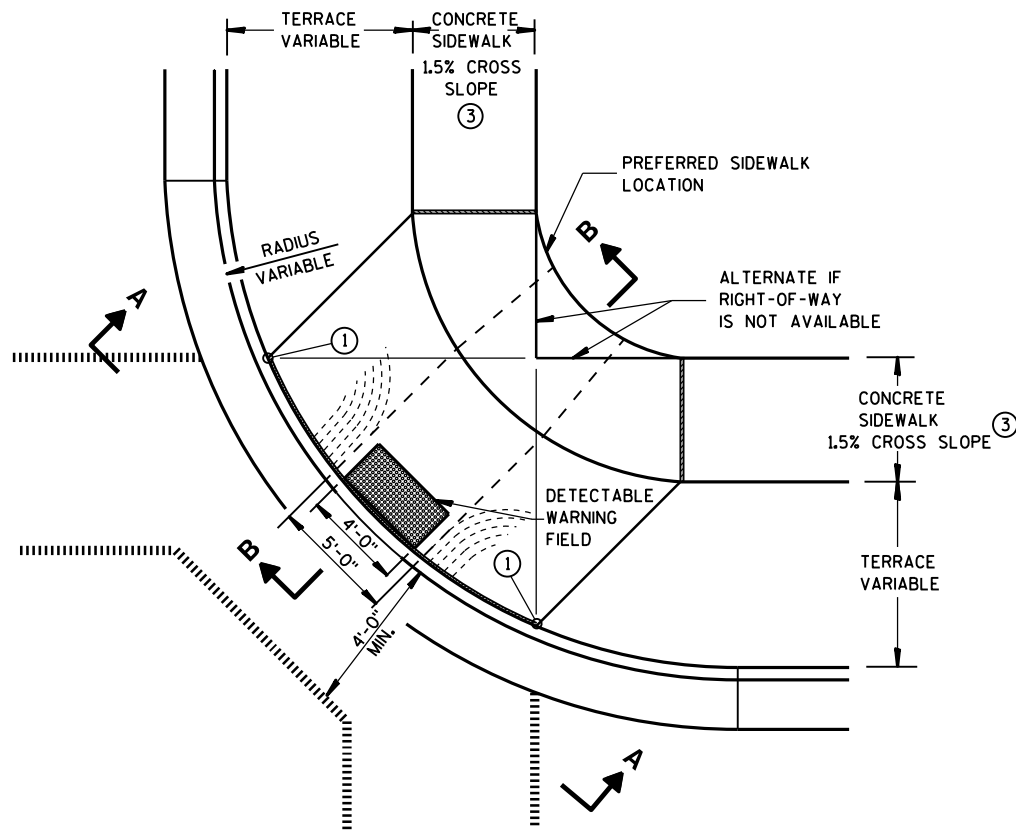
- ① ALL DRUMS HAVE STEADY BURNING YELLOW LIGHTS
- ② ALL TYPE III BARRICADES HAVE 2 FLASHING YELLOW LIGHTS
- ③ WHEN PLACING TEMPORARY PAVEMENT MARKING REMOVABLE TAPE, THE TAPE SHALL BE SLICED OR CUT ACROSS ITS WIDTH EVERY 25 FEET. THIS WILL LIMIT RAVELING.
- ④ PAID FOR UNDER THE ITEM "TRAFFIC CONTROL SIGNS" 1,900 DAYS INCLUDES STAGE I, STAGE II AND STAGE III SIGN DAYS
- ALL CATEGORY 010 PAVING- URBAN



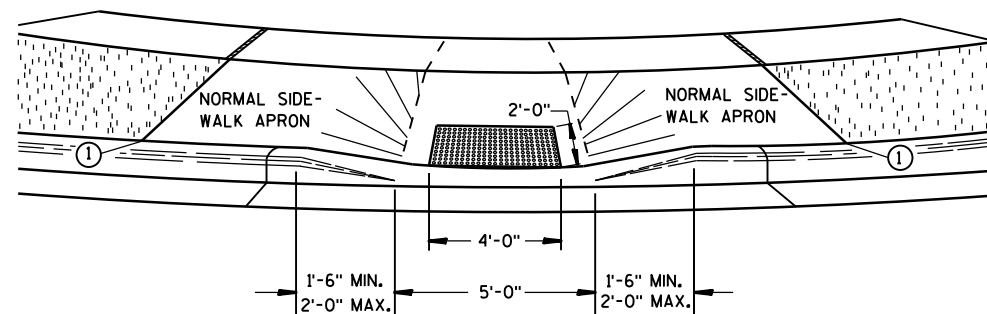
- LEGEND
- ② CONST. TYPE 2 CURB RAMP
  - ②M CONST. TYPE 2 CURB RAMP MODIFIED
  - ⑦M CONST. TYPE 7 CURB RAMP MODIFIED
  - ③ CONST. TYPE 3 CURB RAMP
  - A CONST. CONC. CURB & GUTTER, 31-INCH
  - B CONST. CONC. CURB & GUTTER, 31-INCH (COVERED FLANGE)
  - D PLACE V.T. HMA PAVEMENT ON 9" CONC. BASE.
  - E REMOVING PAVEMENT BUTT JOINTS
  - F GRADE & CONST. VT HMA PAVEMENT ON VT CONC. BASE.
  - G REMOVING ASPHALTIC BUTT JOINTS
  - H CONST. CONCRETE MEDIAN SLOPE NOSE.
  - J GRADE AND PLACE 4" TOPSOIL, SOD & FERTILIZER.
  - K CONST. CONCRETE SIDEWALK, 5-INCH
  - R INLET SCREEN TYPE R
  - M INLET SCREEN TYPE M
  - X TREE REMOVAL
  - CONC SIDEWALK REMOVAL
  - CONSTRUCTION LIMIT
  - REMOVING CURB AND GUTTER

Standard Detail Drawing List

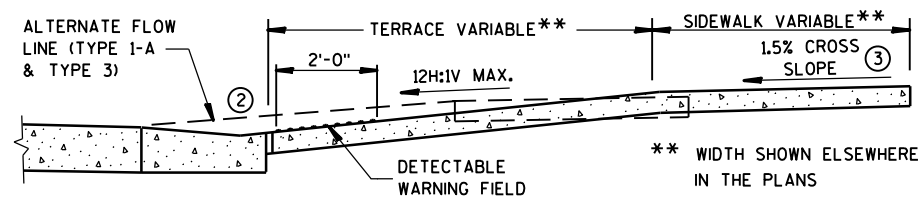
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D17-06	MANHOLES, MANHOLE & INLET COVERS
11B02-02	CONCRETE MEDIAN NOSE
13C01-17	CONCRETE PAVEMENT LONGI TUDINAL JOINTS AND TIES
13C15-05A	CONCRETE BASE
13C15-05B	CONCRETE BASE
15D21-03	TRAFFI C CONTROL, I NTERSECTI ON WI THIN SI NGLE LANE CLOSURE
15D30-01	TRAFFI C CONTROL, SI DEWALK CLOSURE



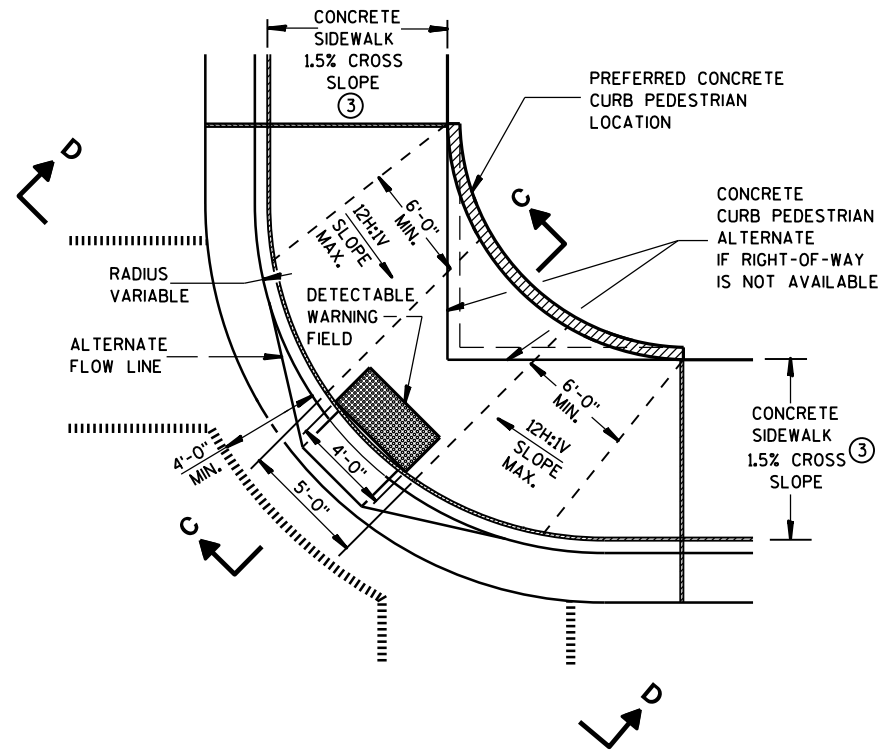
**PLAN VIEW  
TYPE 1 RAMP**  
(CENTER OF CORNER RADIUS)



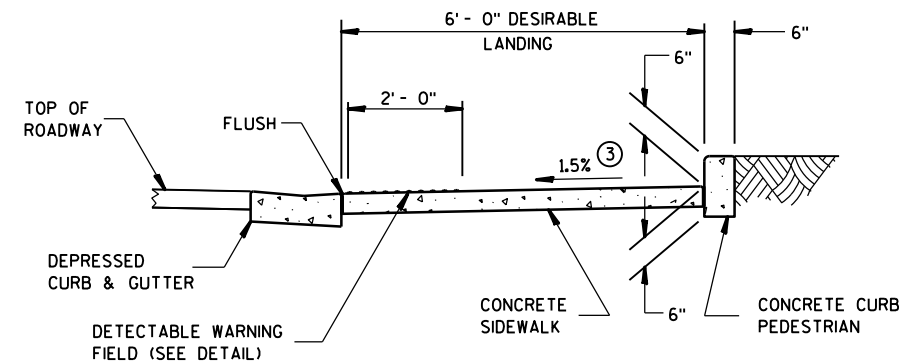
**VIEW A-A**



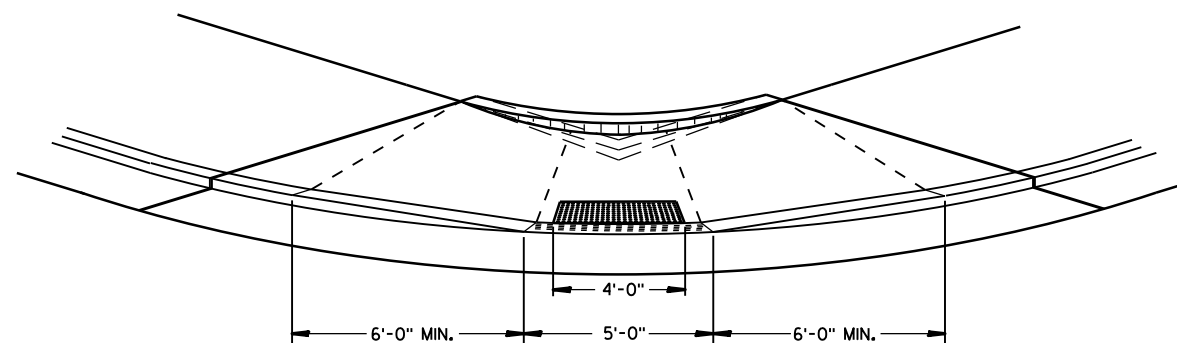
**SECTION B-B**



**PLAN VIEW  
TYPE 1-A RAMP**  
(NO TERRACE)



**SECTION C-C**



**VIEW D-D**

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

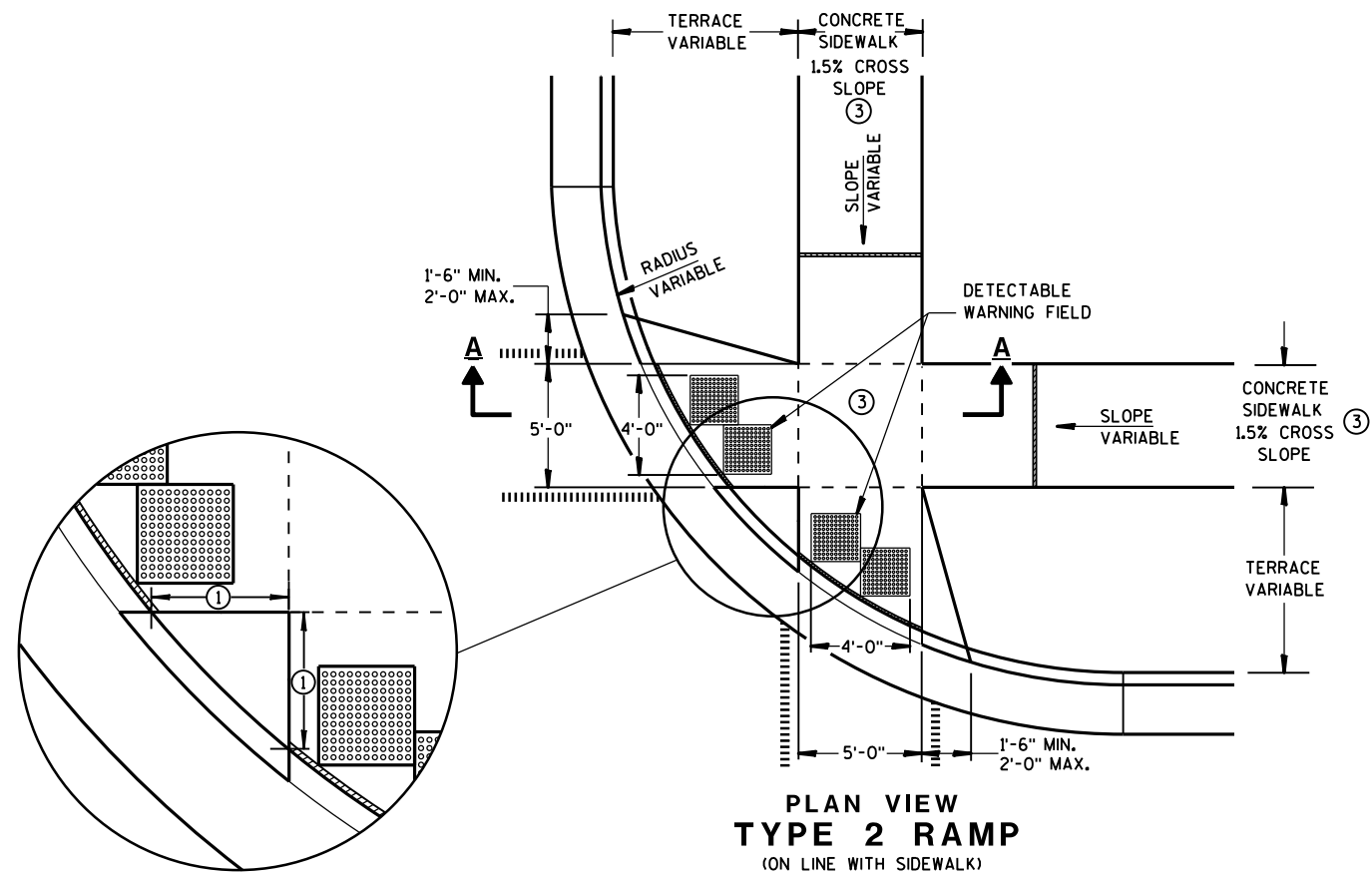
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

## LEGEND

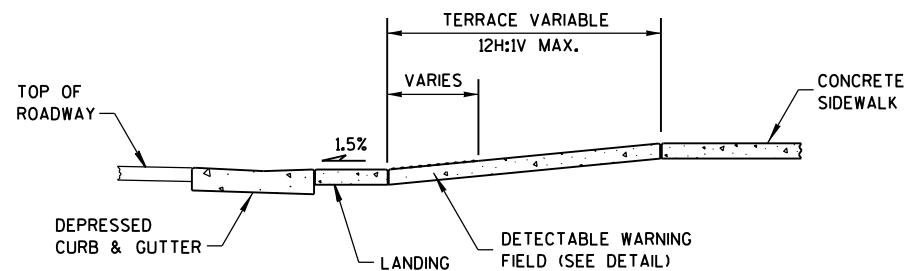
- 1/2" EXPANSION JOINT-SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

**CURB RAMPS  
TYPES 1 AND 1-A**

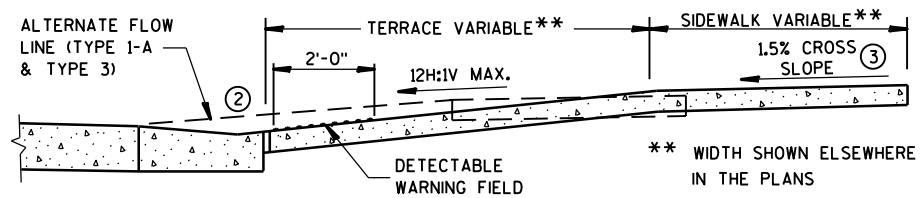
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**PLAN VIEW  
TYPE 2 RAMP**  
(ON LINE WITH SIDEWALK)



**SECTION A-A**



**SECTION B-B**

## GENERAL NOTES

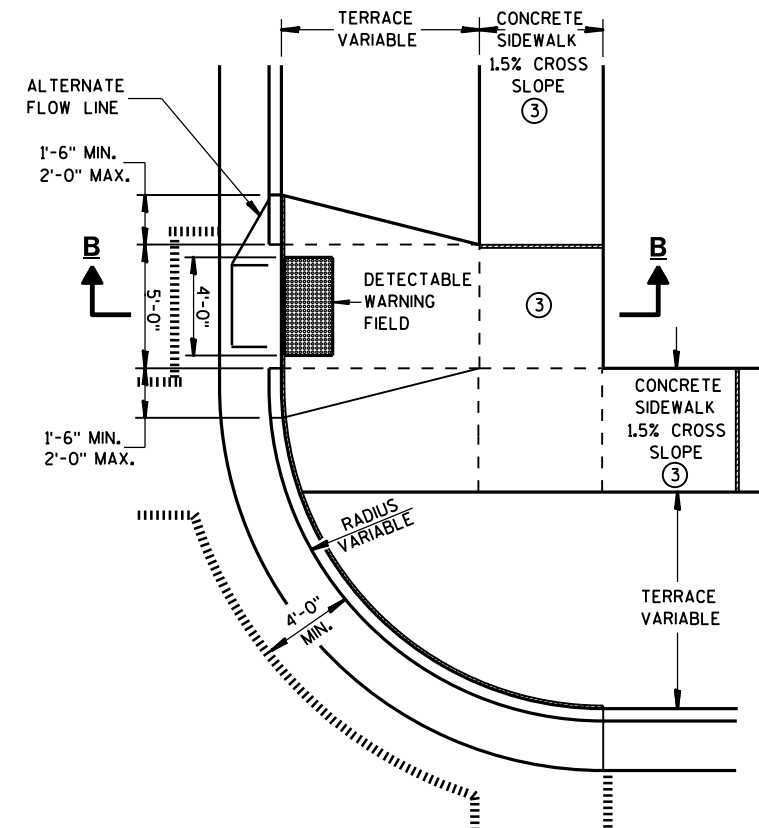
USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

## LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



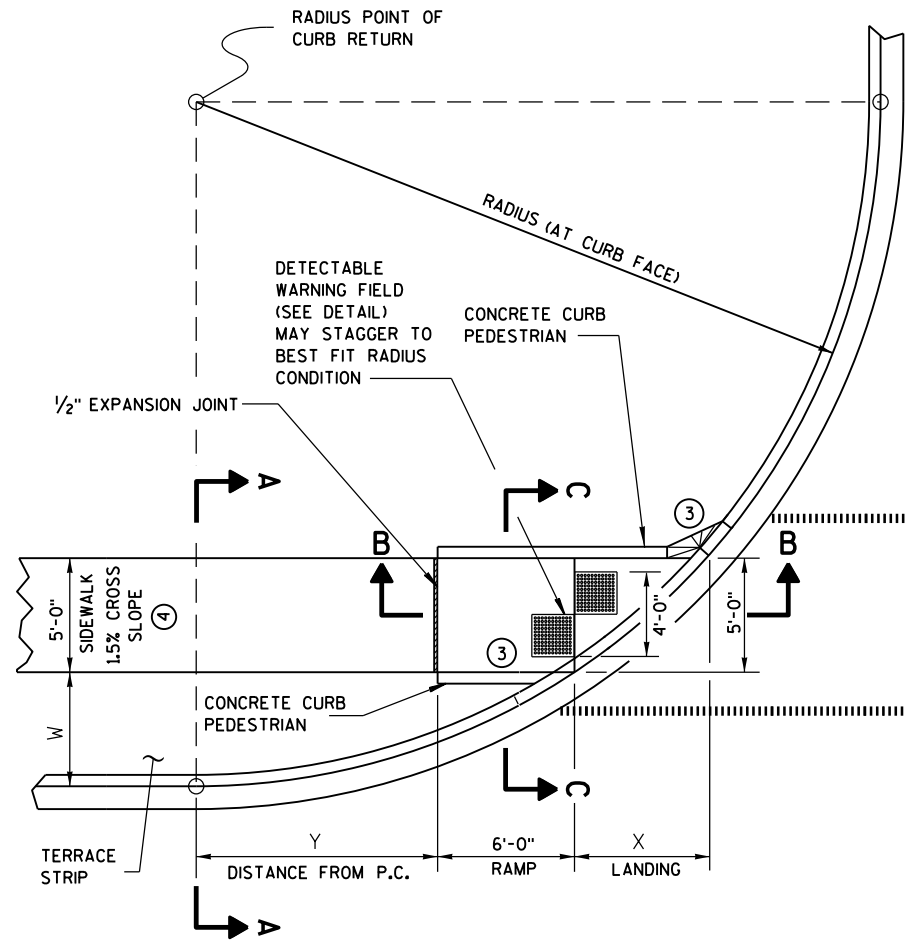
**PLAN VIEW  
TYPE 3 RAMP**  
(OUTSIDE OF CROSSWALK AREA)

**CURB RAMPS  
TYPES 2 AND 3**

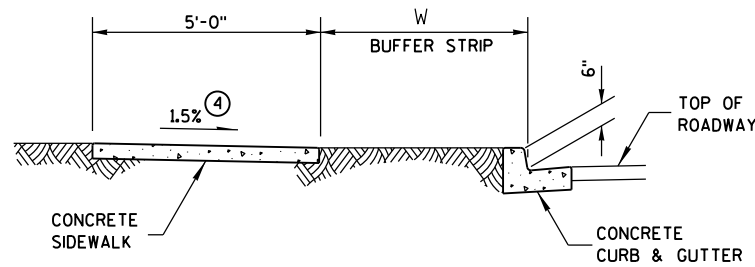
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



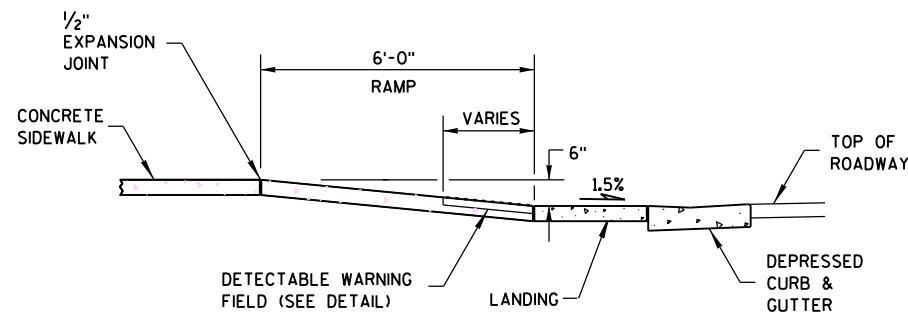




**CURB RAMP TYPE 4B**  
PLAN VIEW



**SECTION A-A FOR TYPE 4B**

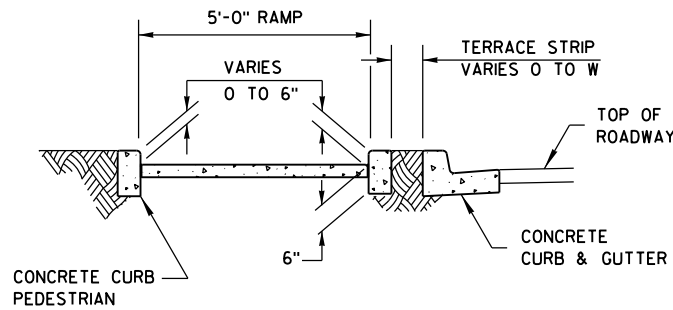


**SECTION B-B FOR TYPE 4B**

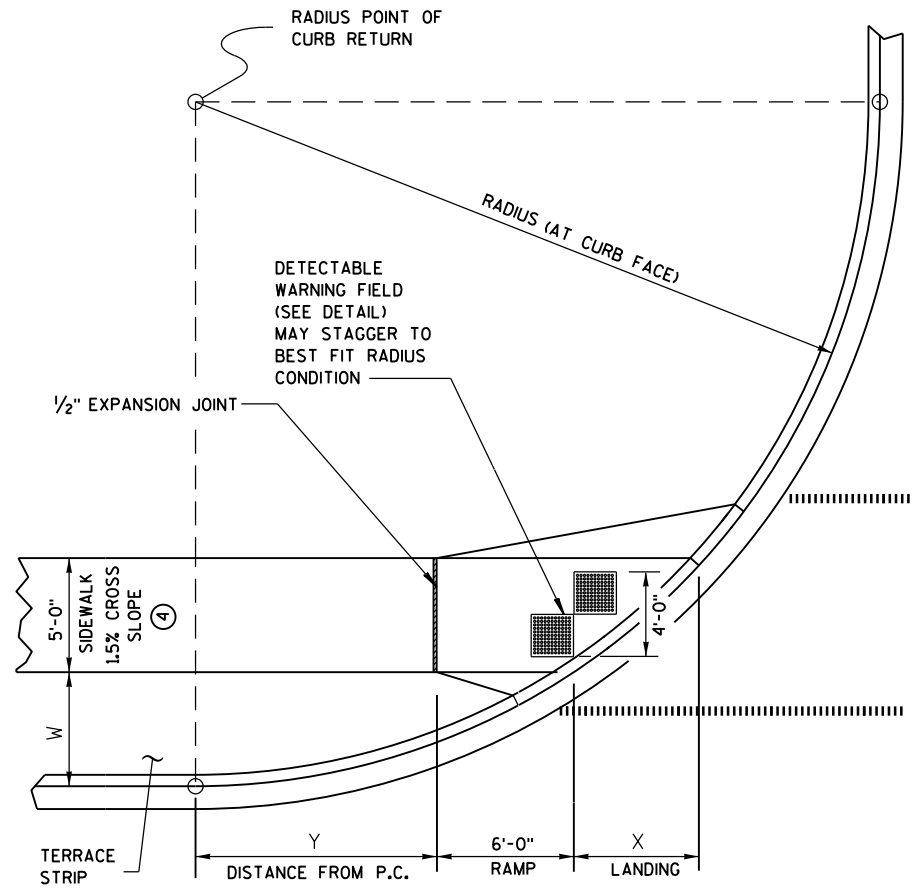
- LEGEND**
- 1/2" EXPANSION JOINT-SIDEWALK
  - CONTRACTION JOINT FIELD LOCATED
  - PAVEMENT MARKING CROSSWALK (WHITE)

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5 1/2"	4'-6 1/2"	4'-8 1/2"	6'-0"	4'-1"	7'-2 3/4"	3'-7"	8'-3 1/2"	3'-1 1/2"	9'-2 1/2"
30 FEET	7'-3 3/4"	7'-1"	6'-5 1/2"	8'-11 1/2"	5'-9 1/4"	10'-7"	5'-2 1/2"	12'-0"	4'-8 3/4"	13'-3 1/4"
40 FEET	8'-9 1/2"	9'-2 1/2"	7'-10"	11'-5 1/4"	7'-1"	13'-4 1/2"	6'-5 3/4"	15'-3/4"	5'-11 1/2"	16'-7 1/4"
50 FEET	10'-3/4"	11'-3/4"	9'-1/4"	13'-7 1/4"	8'-2 1/2"	15'-9 1/2"	7'-6 1/2"	17'-9"	6'-11 3/4"	19'-6 1/4"
60 FEET	11'-2 1/2"	12'-8 3/4"	10'-3/4"	15'-6 1/2"	9'-2 1/4"	17'-11 3/4"	8'-5 3/4"	20'-1 3/4"	7'-10 1/2"	22'-1 1/2"

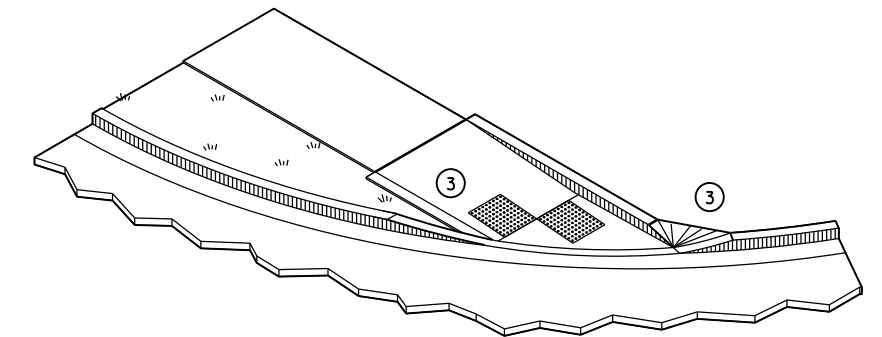
INTERMEDIATE RADII CAN BE INTERPOLATED



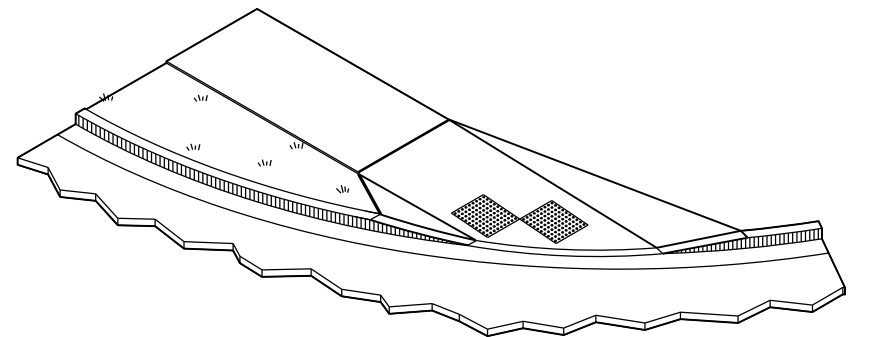
**SECTION C-C FOR TYPE 4B**



**CURB RAMP TYPE 4B1**  
PLAN VIEW



**ISOMETRIC VIEW FOR TYPE 4B**



**ISOMETRIC VIEW FOR TYPE 4B1**

**CURB RAMPS**  
**TYPE 4B AND 4B1**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

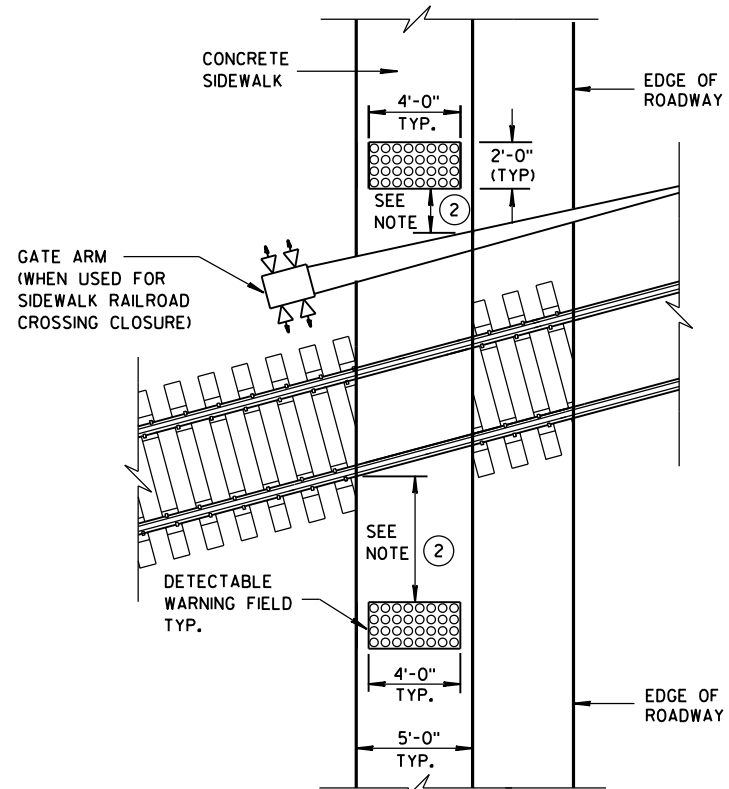
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

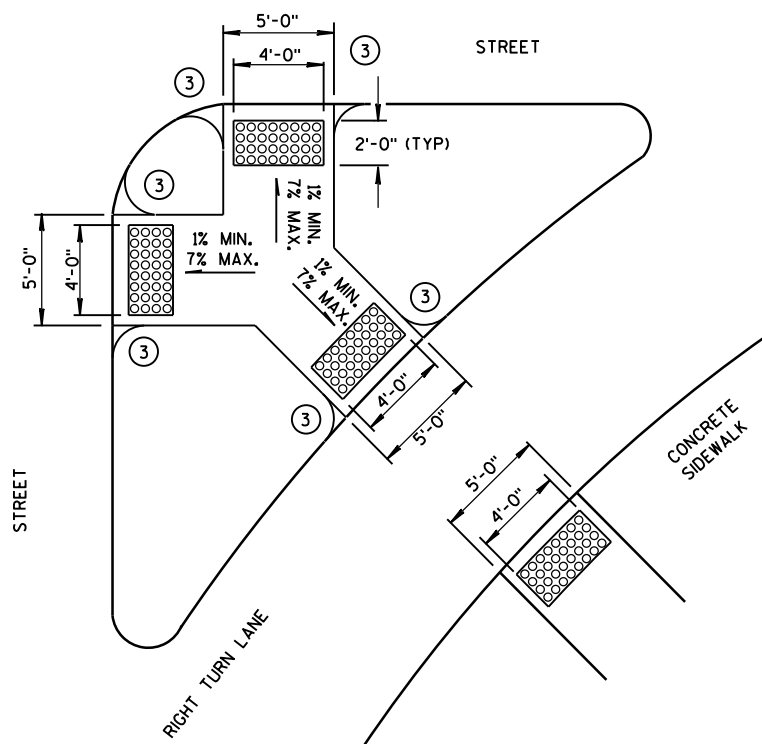
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

3 INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

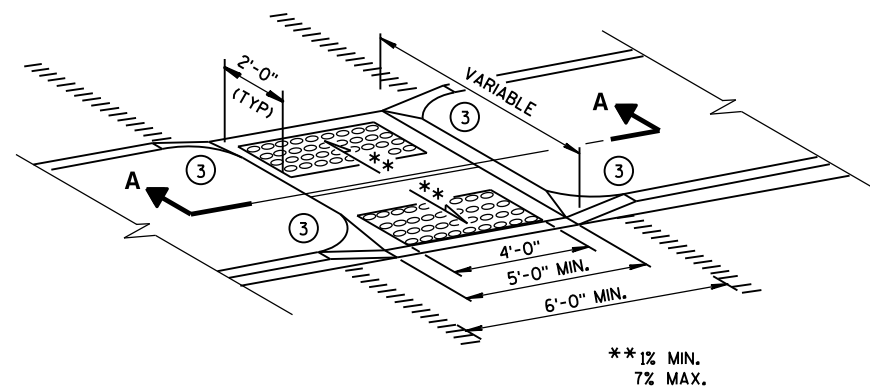
4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



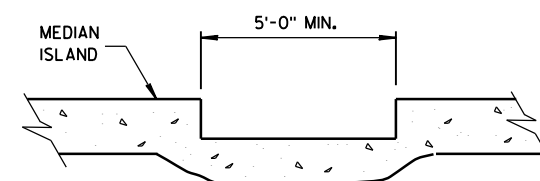
**TYPE 8**  
**DETECTABLE WARNINGS**  
**AT RAILROAD CROSSING**



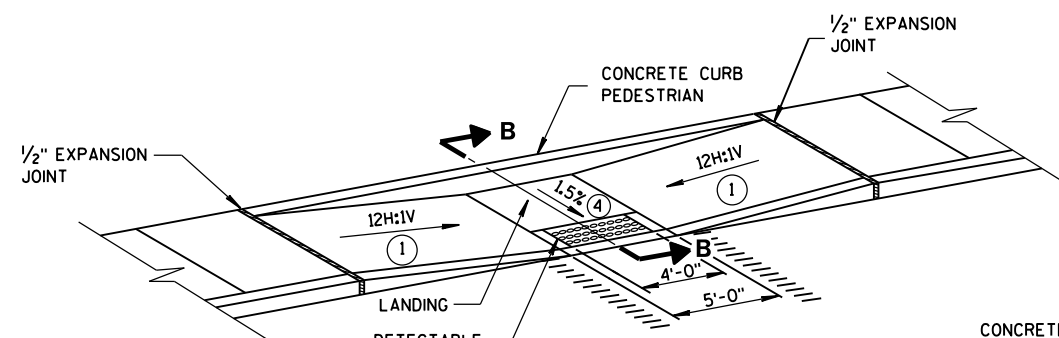
**TYPE 6**  
**DETECTABLE WARNING AT ISLANDS**



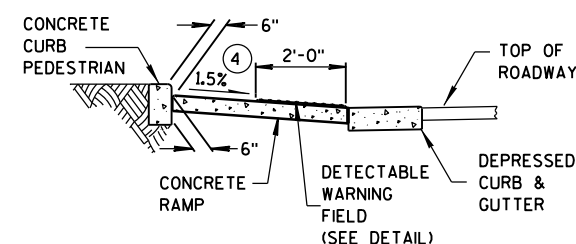
**MEDIAN ISLAND**  
**NON-ELEVATED CROSSING**  
**TYPE 5**



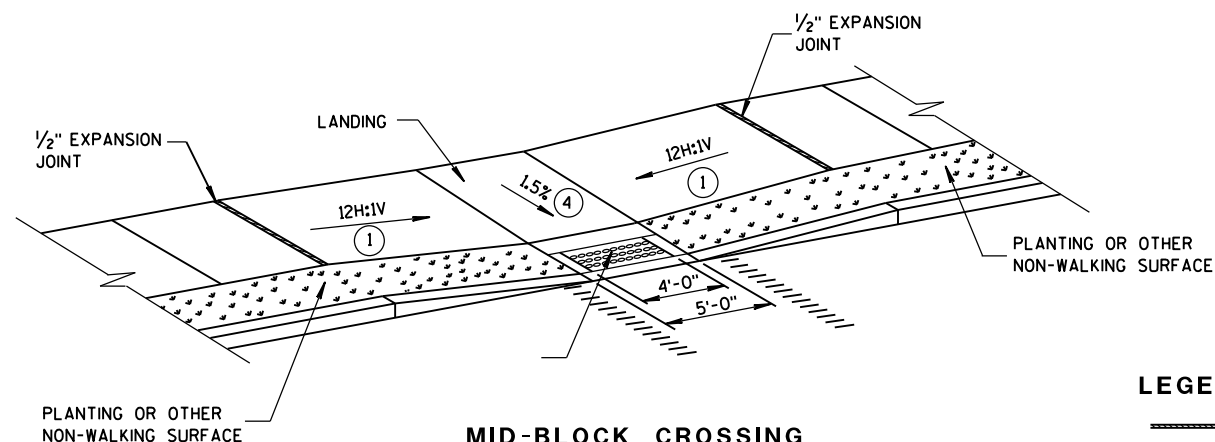
**SECTION A-A**



**MID-BLOCK CROSSING**  
**TYPE 7A**



**SECTION B-B**



**MID-BLOCK CROSSING**  
**TYPE 7B**

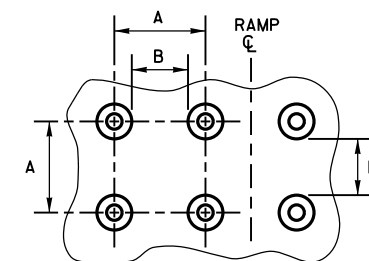
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

## GENERAL NOTES

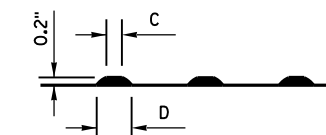
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- 1 SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- 2 THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET  $\pm$  0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- 3 INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.
- 4  $\pm$ 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



**PLAN VIEW**



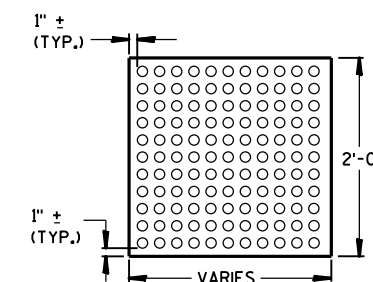
**ELEVATION VIEW**

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

\* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

## TRUNCATED DOMES

### DETECTABLE WARNING PATTERN DETAIL



**PLAN VIEW**  
**DETECTABLE WARNING**  
**FIELD (TYPICAL)**

## LEGEND

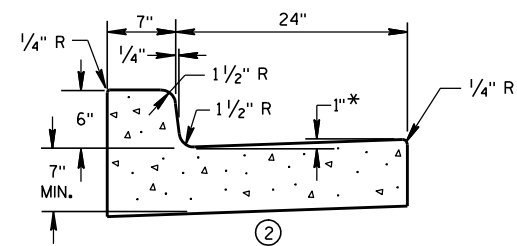
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS**  
**TYPES 5, 6, 7A, 7B & 8**

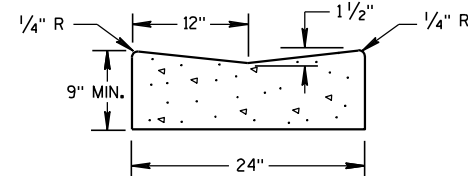
**STATE OF WISCONSIN**  
**DEPARTMENT OF TRANSPORTATION**

**APPROVED**  
2-6-2013  
DATE  
FHWA

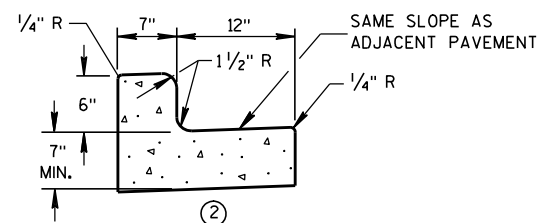
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



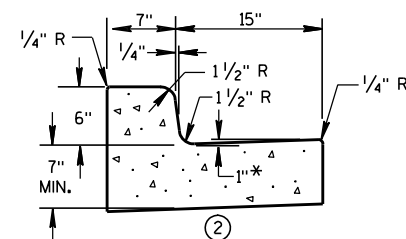
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

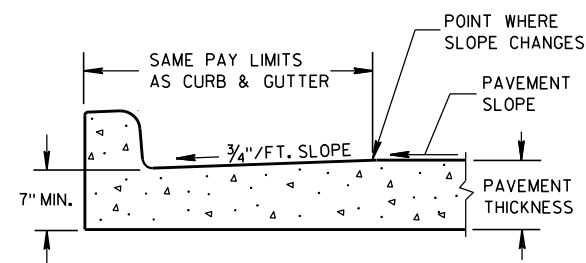


① CONCRETE CURB & GUTTER 19"

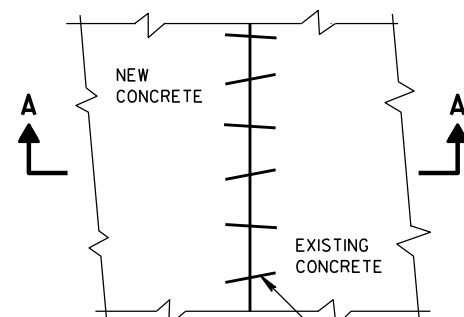


① CONCRETE CURB & GUTTER 22"

\* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



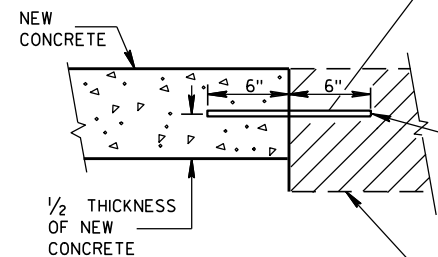
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

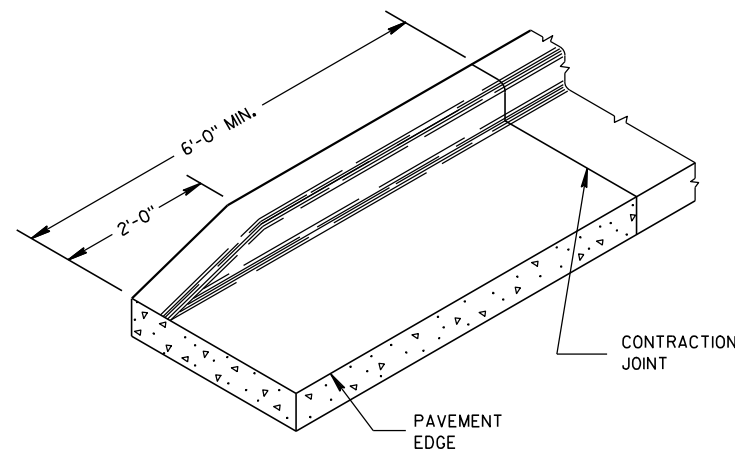
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



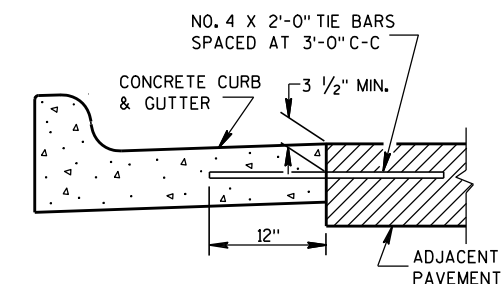
SECTION A-A  
PAVEMENT TIES

THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

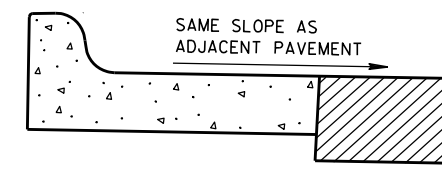
EXISTING CONCRETE



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION  
(TYPICAL FOR ALL CURB & GUTTER)

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.

**CONCRETE GUTTER, CURB AND  
GUTTER AND PAVEMENT TIES**  
(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

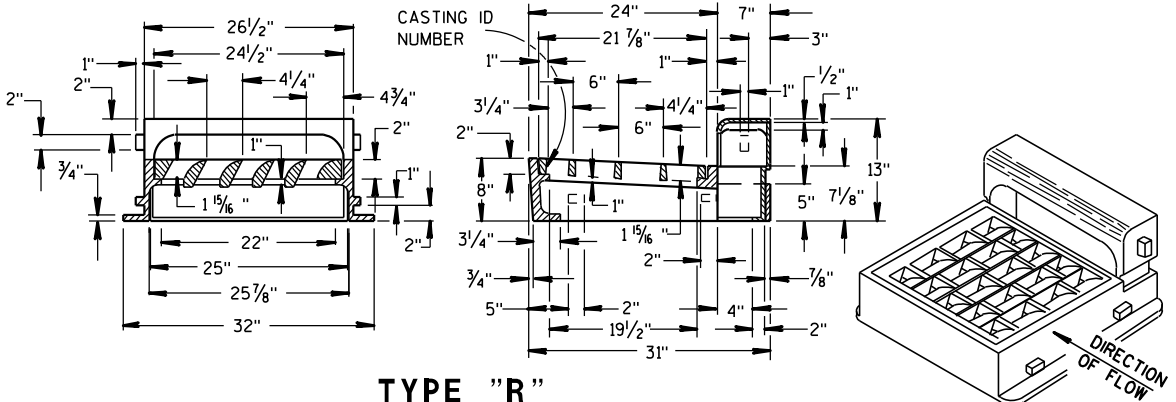
APPROVED

11/22/2010  
DATE

FHWA

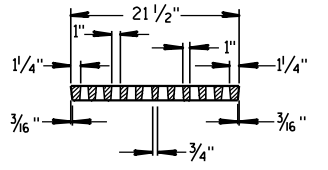
/S/ Jerry Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

INLET COVERS



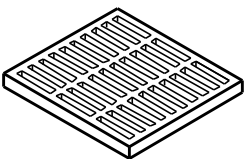
TYPE "R"

SHOWING SPECIAL GRATE NO. 1  
(TO BE NOTED AS R-1 IN DRAINAGE TABLE)



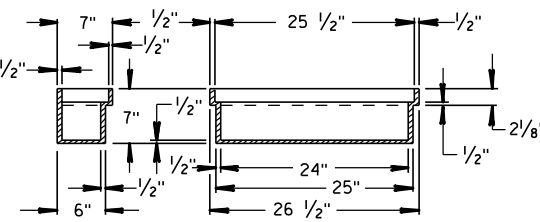
GRATE FOR TYPE "R" INLET COVER

(GRATE..... 150 LBS.)  
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)



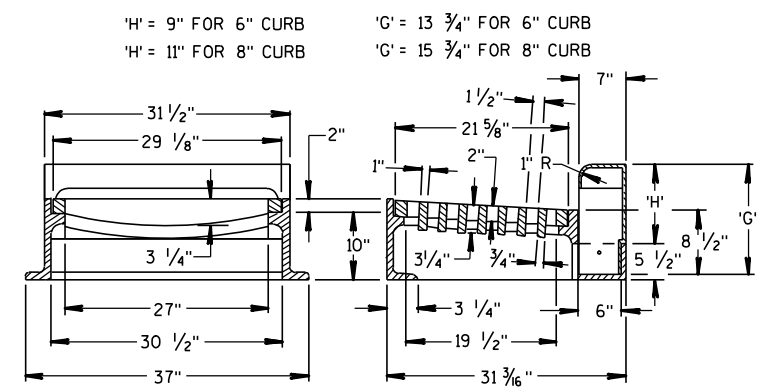
NOTE:  
CURB PLUG USED IN PLACE  
OF CURB BOX IN ABSENCE  
OF CONC. CURB. FILL TO  
TOP WITH CONCRETE.

(APPROX. WEIGHT - 510 LBS.)  
FRAME..... 245 LBS.  
CURB..... 120 LBS.  
GRATE..... 145 LBS.



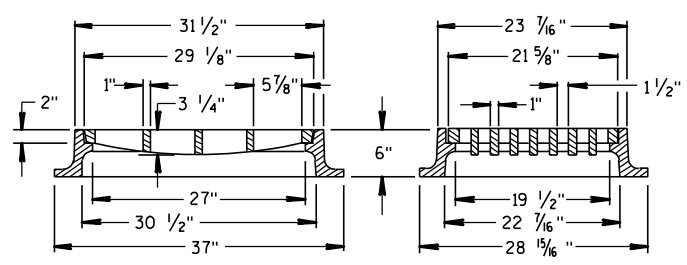
SECTION B-B SECTION A-A  
SPECIAL CURB PLUG "P"

(CURB PLUG..... 85 LBS.)  
(TO BE NOTED AS R-P IN DRAINAGE TABLE)



TYPE "W"

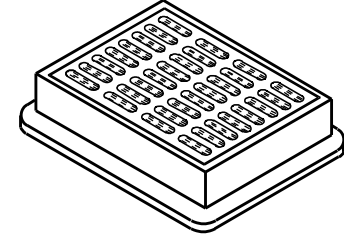
(APPROX. WEIGHT - 670 LBS.)  
FRAME..... 350 LBS.  
CURB BOX..... 135 LBS.  
GRATE..... 185 LBS.



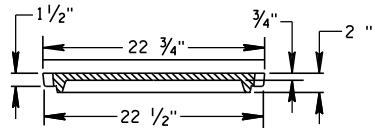
TYPE "X"

(APPROX. WEIGHT - 470 LBS.)

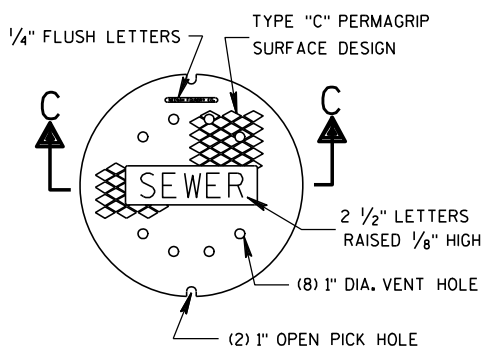
ALTERNATE GRATE  
(FOR EXPRESSWAY RAMPS)  
TYPES "W" & "X"



MANHOLE COVER



SECTION C-C



TYPE "Q"

(APPROX. WEIGHT - 290 LBS.)

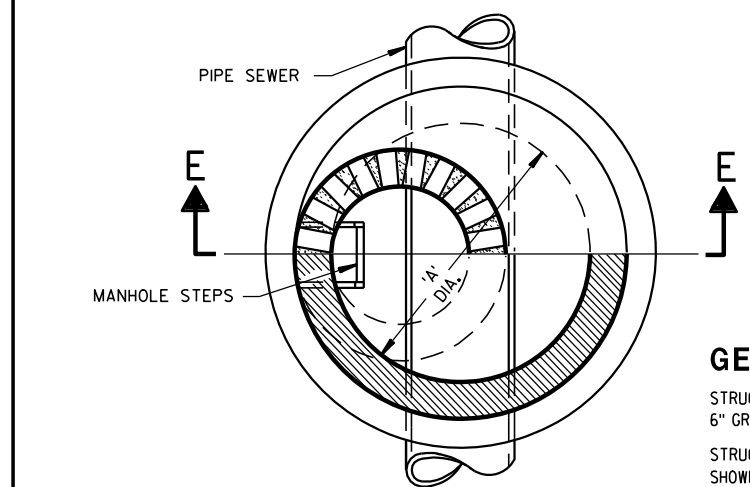
TABLE OF DIMENSIONS

TYPE	'A'	'B'	'C'
11	3'-6"	2'-8"	12" - 36"*
12	4'-0"	3'-8"	12" - 42"***
13	5'-0"	5'-8"	42" - 48"
14	6'-0"	7'-8"	54" - 60"

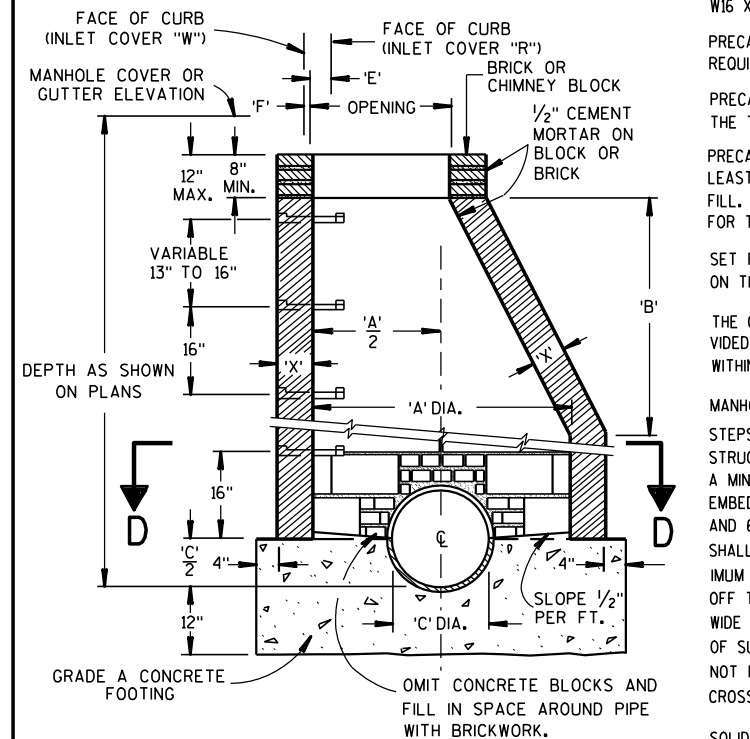
\* 12" - 21" FOR PRECAST MANHOLES  
\*\* 12" - 24" FOR PRECAST MANHOLES

THE FIRST STEP SHALL BE PLACED  
16" ABOVE THE BENCH.

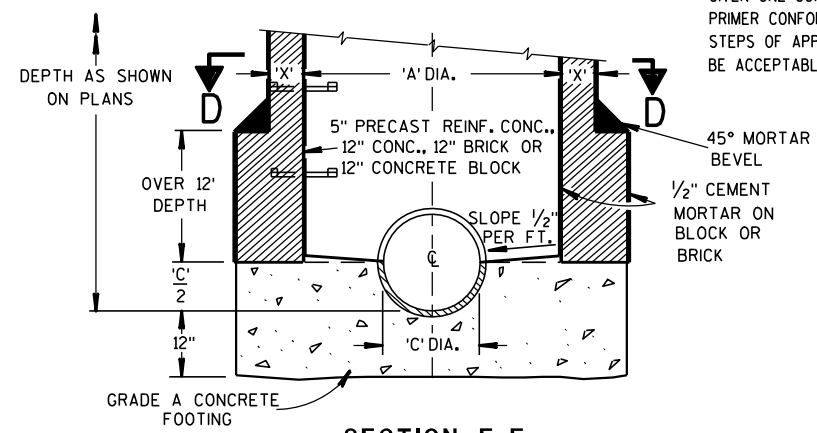
MANHOLE



HALF SECTION D-D



SECTION E-E



SECTION E-E

TYPES 11, 12, 13 & 14

TABLE OF OPENING DIMENSIONS

COVER	TYPE	DESCRIPTION	OPENING	'E'	'F'
"O"	ROUND	2'-2" DIA.	—	—	—
"W"	CURB BOX	1'-8" X 2'-6"	—	1"	—
"X"	INLET	1'-10" X 2'-6"	—	—	—
"R"	CURB BOX	2'-0" X 2'-1"	4"	—	—

GENERAL NOTES

STRUCTURE WALL THICKNESS 'X' TO BE 8" BRICK, 6" CONCRETE BLOCK, 6" GRADE A CONCRETE OR 5" PRECAST REINFORCED CONCRETE.

STRUCTURE FOOTINGS ARE TO BE GRADE A CONCRETE OF THE THICKNESS SHOWN IN THE DETAIL OR 5" PRECAST REINFORCED CONCRETE.

REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6" W16 X W16 WELDED SREEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.

PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6" IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACK-FILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON THE PLANS.

THE CONTRACTOR MAY FORM AND POUR MONOLITHIC CONCRETE INVERT PROVIDED THE PIPE ENDS ARE EXTENDED INTO THE M.H. AND NOT TERMINATED WITHIN THE M.H. WALLS.

MANHOLE STEPS

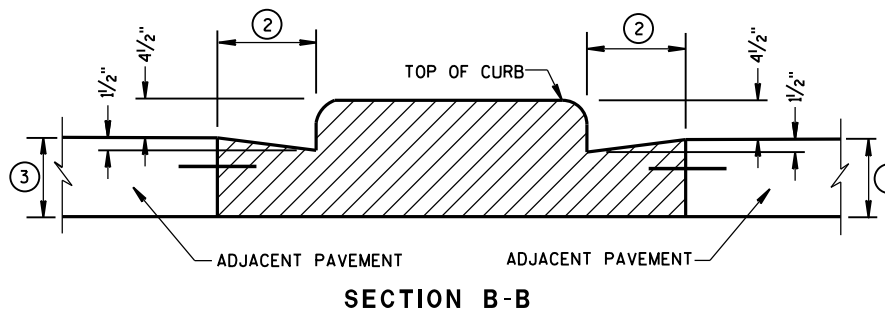
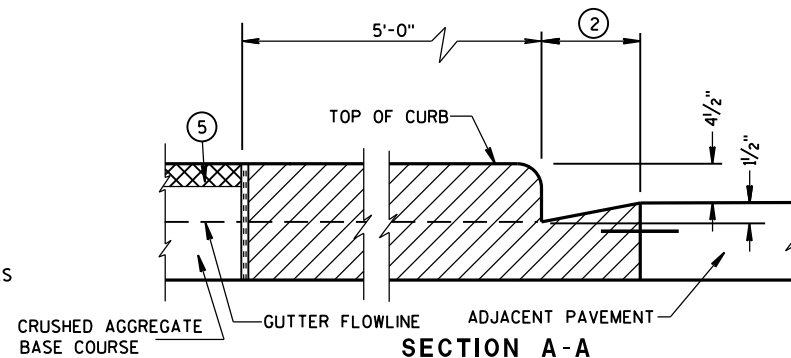
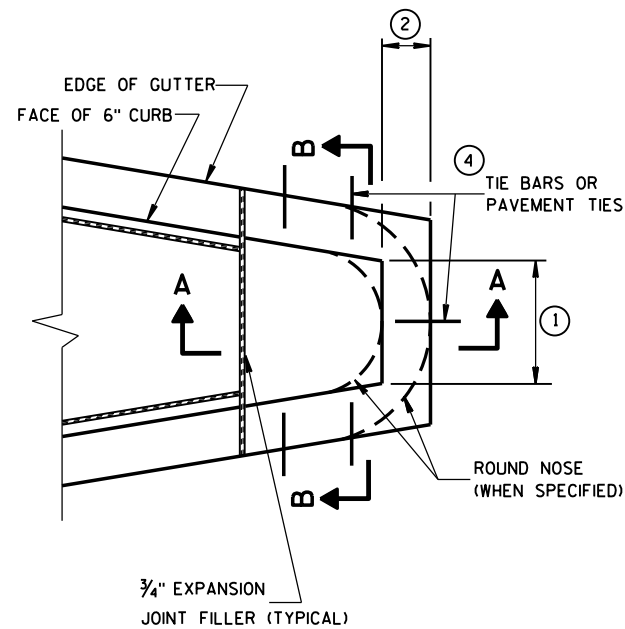
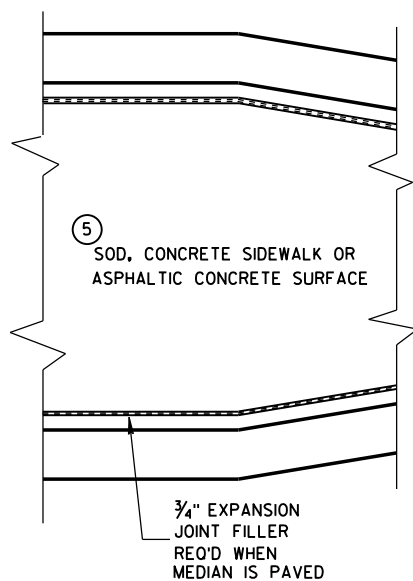
STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAX. SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM WALL EMBEDMENT OF 3 INCHES IN PRECAST MANHOLE AND 6 INCHES IN 8 INCH BRICK OR 6 INCH BLOCK MANHOLE; TREAD OF STEP SHALL HAVE A NON-SKID SURFACE AND BE FLANKED BY CLEATS, WITH A MINIMUM OF 10 INCHES CLEAR BETWEEN CLEATS, TO PREVENT FOOT SLIPPING OFF THE EDGE CLEATS SHALL BE A MINIMUM OF 3/4 INCH HIGH BY 3/4 INCH WIDE HAVING A MINIMUM THICKNESS OF 3/8 INCH. STEPS SHALL BE CAPABLE OF SUPPORTING A CONCENTRATED LOAD OF 300 LBS. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCING BAR WILL BE ACCEPTABLE.

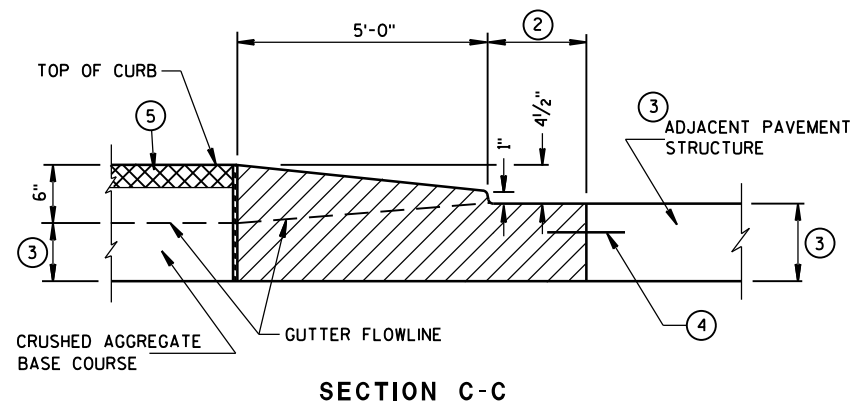
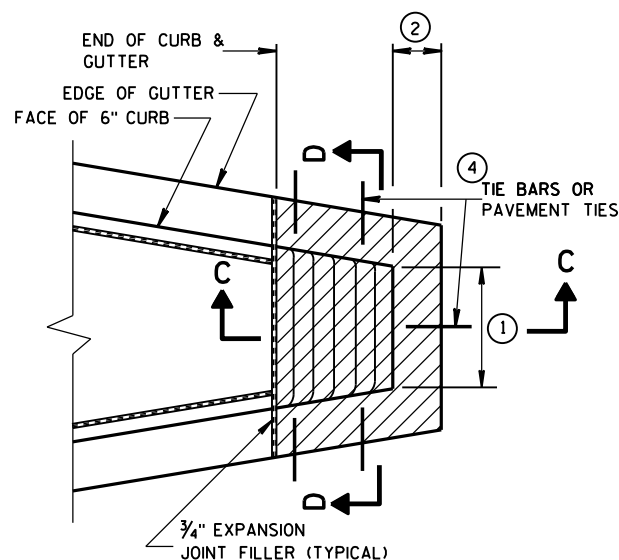
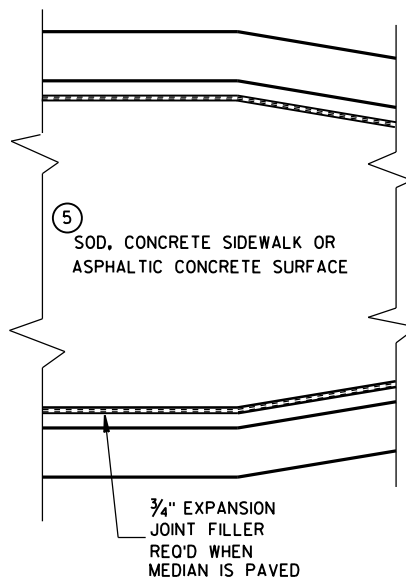
MANHOLES,  
MANHOLE & INLET COVERS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

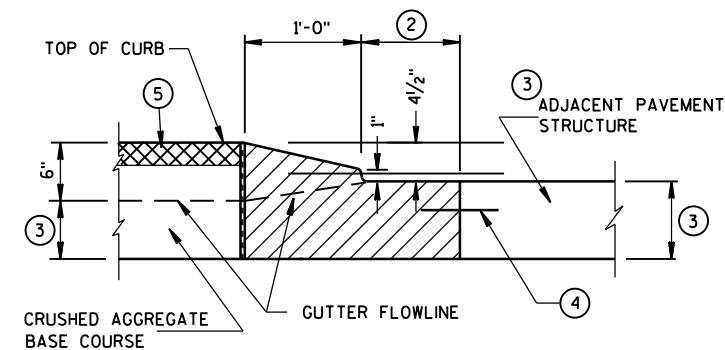
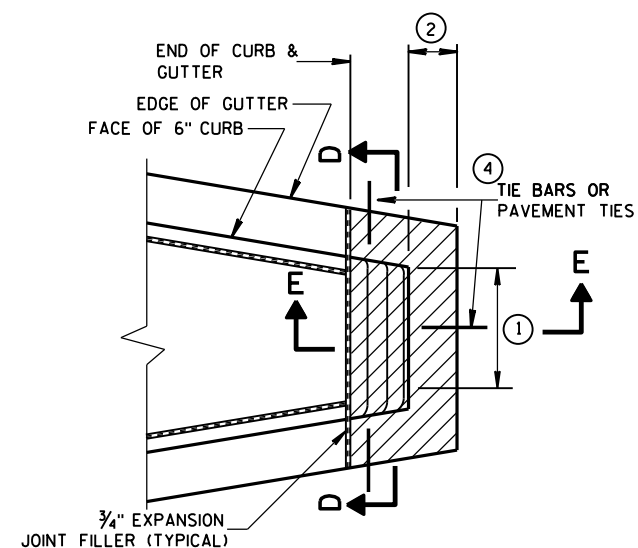
APPROVED  
4/12/2011  
DATE  
/S/ Jerry H. Zogg  
ROADSIDE STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



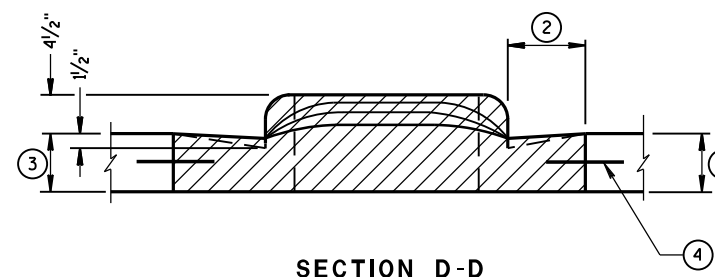
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
  - (1) NEW OR EXISTING CONCRETE PAVEMENT.
  - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
  - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

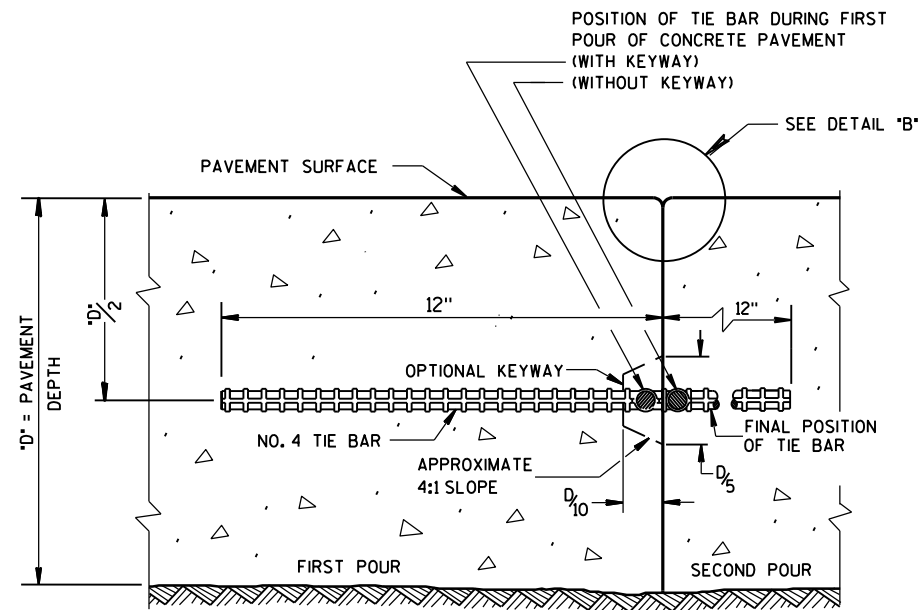
APPROVED

6/8/2006

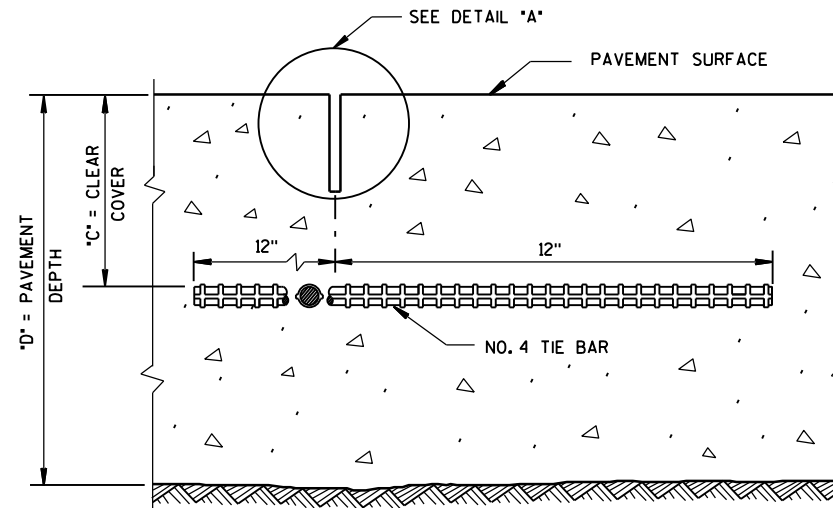
DATE

FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



CONSTRUCTION JOINT



SAWED JOINT

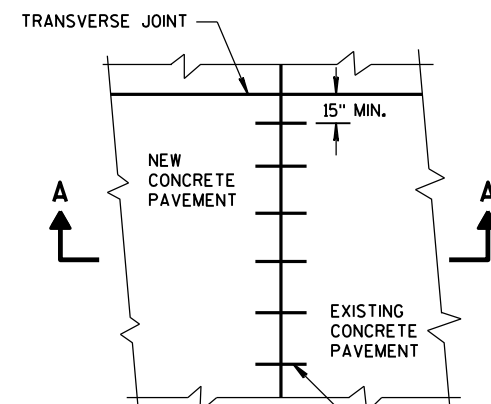
## GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

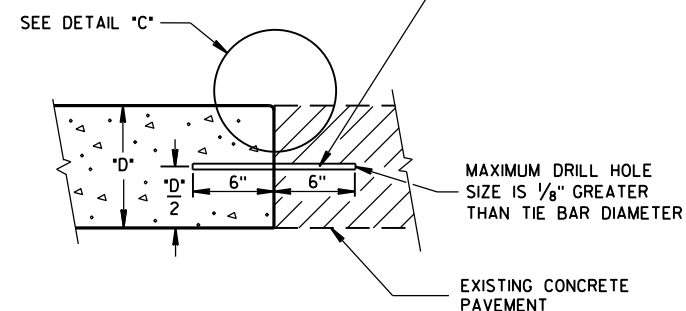
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

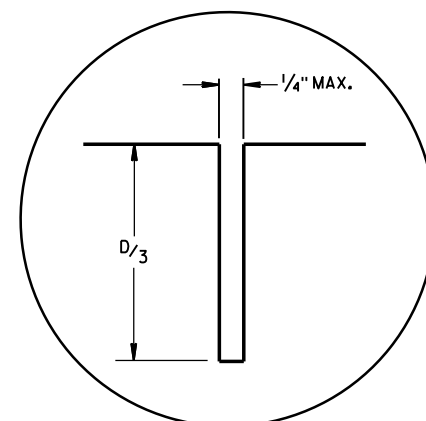


PLAN VIEW

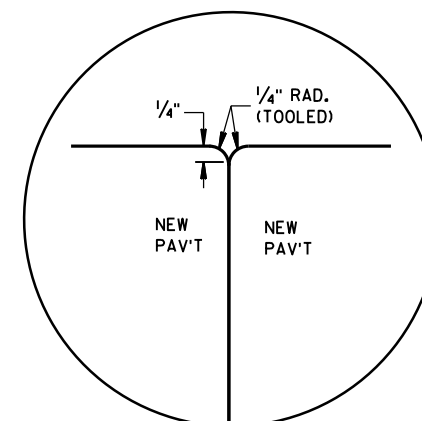
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



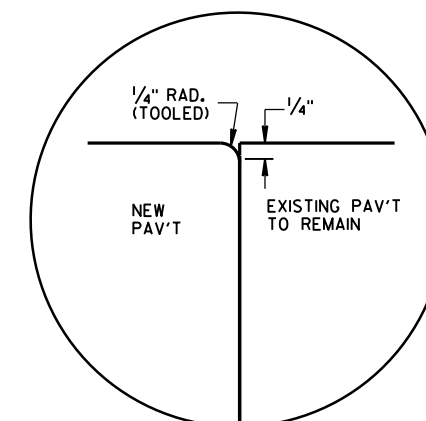
SECTION A-A  
LONGITUDINAL CONSTRUCTION JOINT  
TIE BARS ANCHORED  
INTO EXISTING PAVEMENT



DETAIL "A"



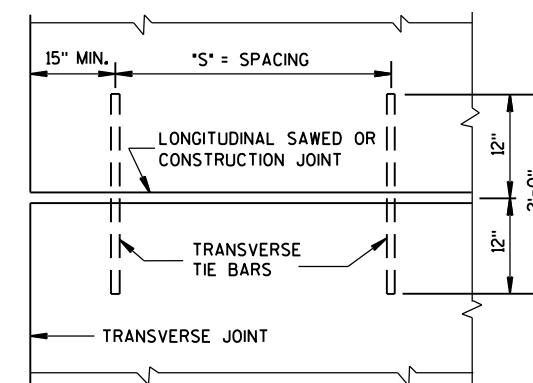
DETAIL "B"



DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH 24' OR 26'	≥ 30'
6, 6 1/2"	3 ± 1/2"	48"	42"
7, 7 1/2"	3 1/4 ± 1"	45"	36"
8, 8 1/2"	3 3/4 ± 1"	39"	30"
9, 9 1/2"	4 1/4 ± 1"	33"	27"
10, 10 1/2"	4 3/4 ± 1"	30"	24"
11, 11 1/2"	5 1/4 ± 1"	27"	21"
12"	5 3/4 ± 1"	24"	21"



PLAN VIEW  
SHOWING LOCATION OF TIE BARS

## CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

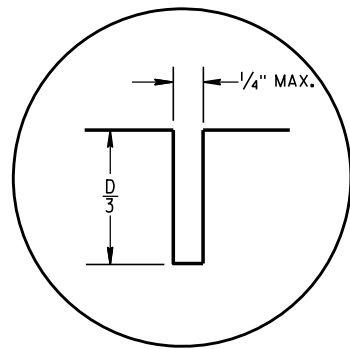
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

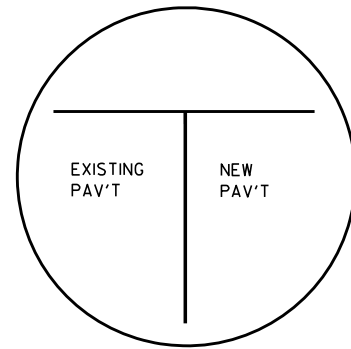
9/2014  
DATE

/S/ Deb Bischoff  
PAVEMENT POLICY & DESIGN ENGINEER

FHWA

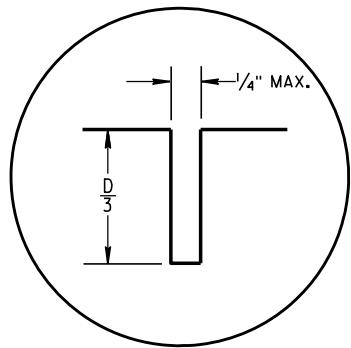


C1

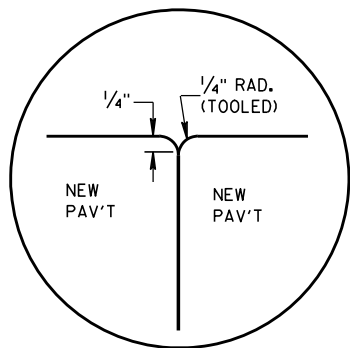


C2

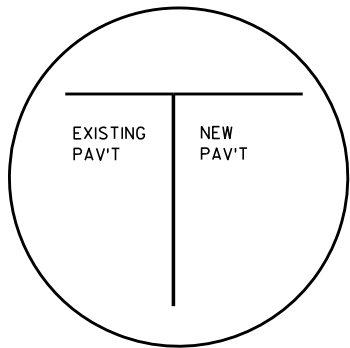
## TRANSVERSE JOINTS



L1

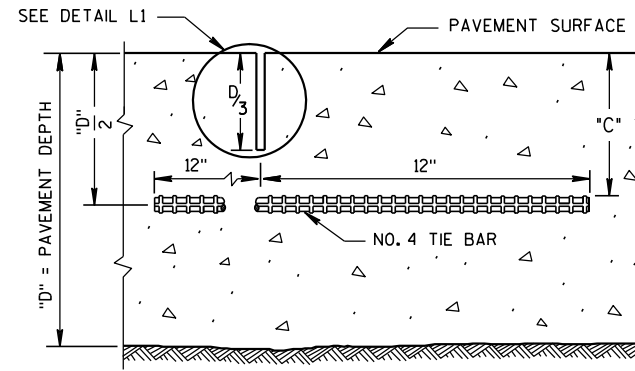


L2

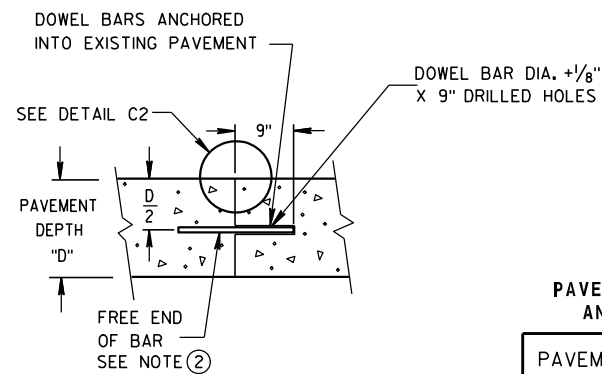


L3

## LONGITUDINAL JOINTS



SECTION C-C  
SAWED JOINT



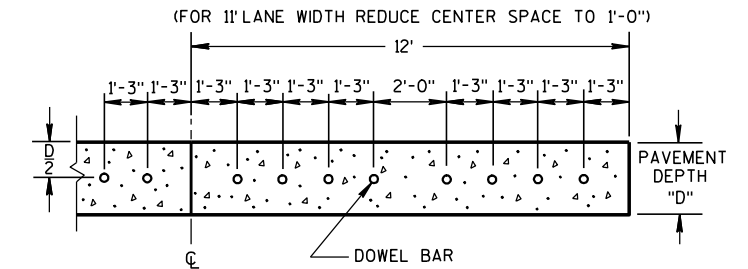
SECTION D-D

## GENERAL NOTES

ANCHOR TIE BARS AND DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 24 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.
- ② APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



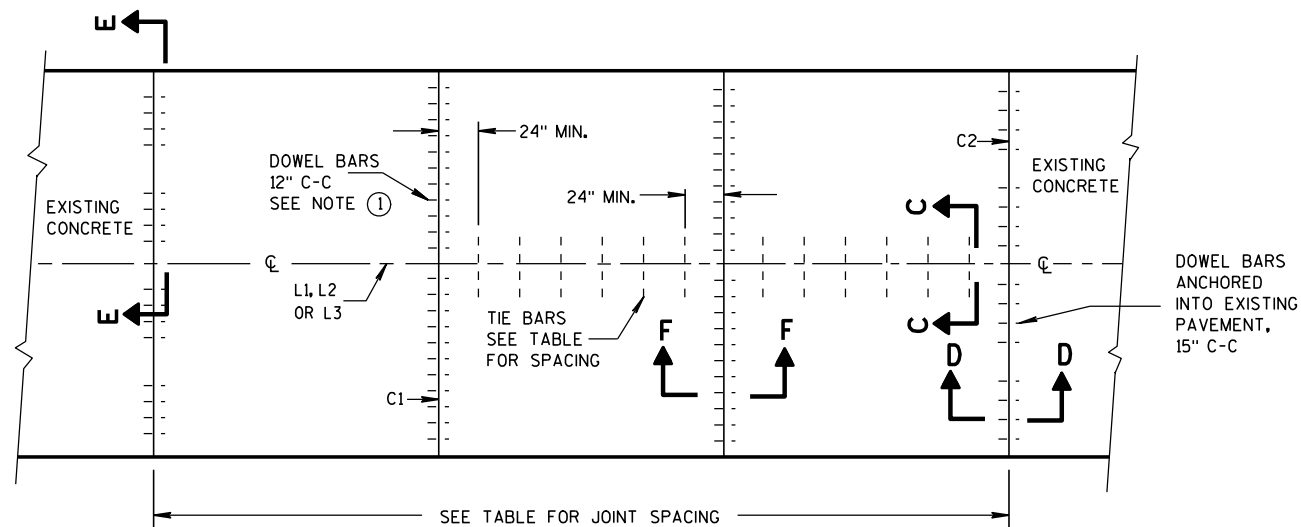
SECTION E-E  
SPACING OF DOWEL BARS  
ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE  
AND JOINT SPACING TABLE

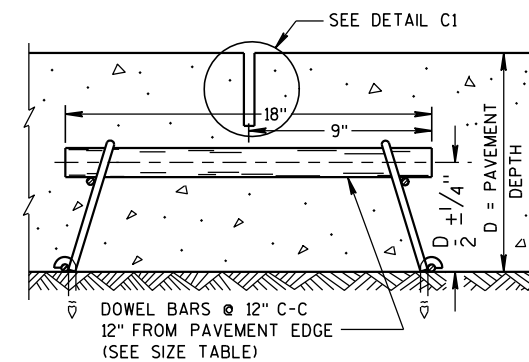
PAVEMENT DEPTH "D"	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6, 6 1/2"	NONE	12'
7, 7 1/2"	1"	14'
8, 8 1/2"	1 1/4"	15'
9, 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

TIE BAR LOCATION TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING C-C	
		PAVEMENT WIDTH 24' OR 26'	≥ 30'
6, 6 1/2"	3" ± 1/2"	48"	42"
7, 7 1/2"	3 1/4" ± 1"	45"	36"
8, 8 1/2"	3 3/4" ± 1"	39"	30"
9, 9 1/2"	4 1/4" ± 1"	33"	27"
10, 10 1/2"	4 3/4" ± 1"	30"	24"
11, 11 1/2"	5 1/4" ± 1"	27"	21"
12"	5 3/4" ± 1"	24"	21"



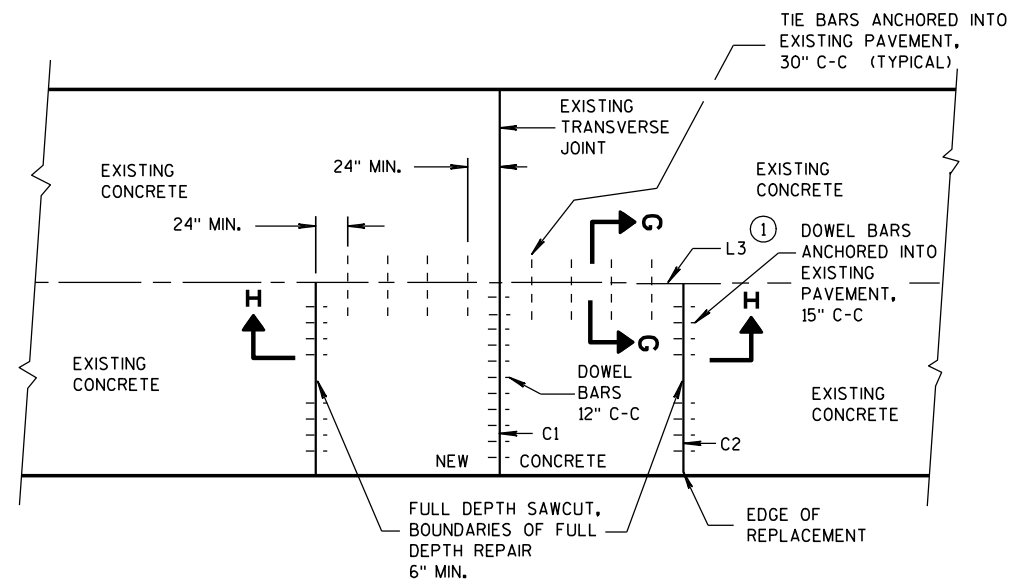
PLAN VIEW  
CONCRETE BASE  
CONTRACTION JOINT LOCATIONS



SECTION F-F  
CONTRACTION JOINT

CONCRETE BASE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

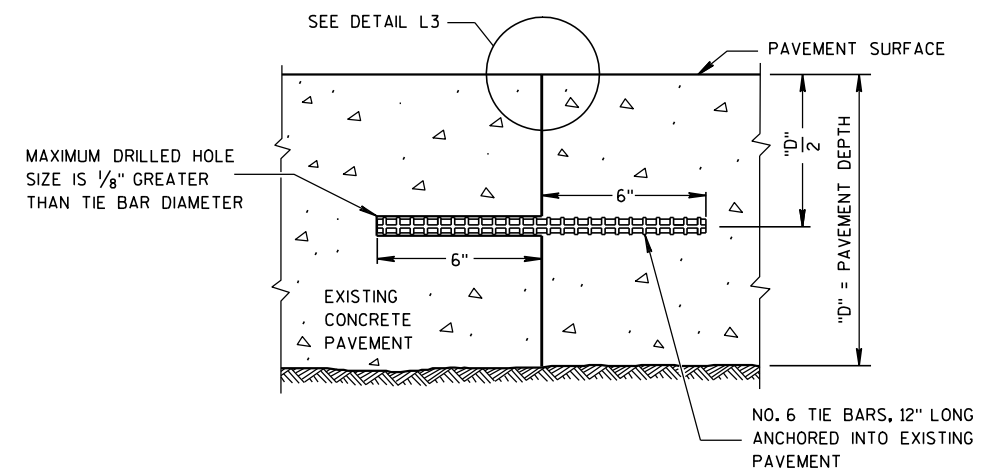


PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR

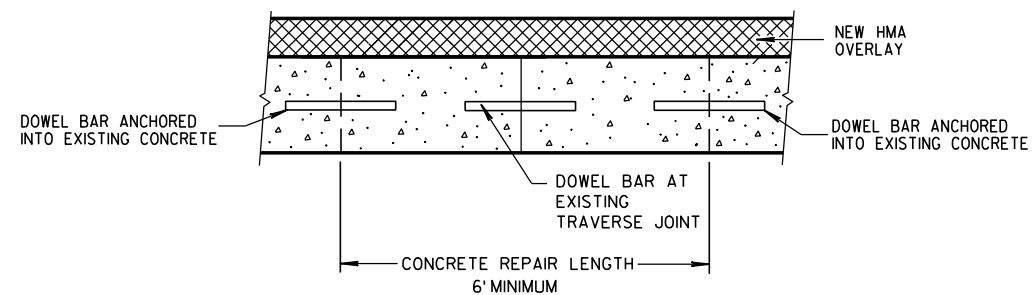
GENERAL NOTES

- ① USE AN ENGINEER-APPROVED BOND BREAKER AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

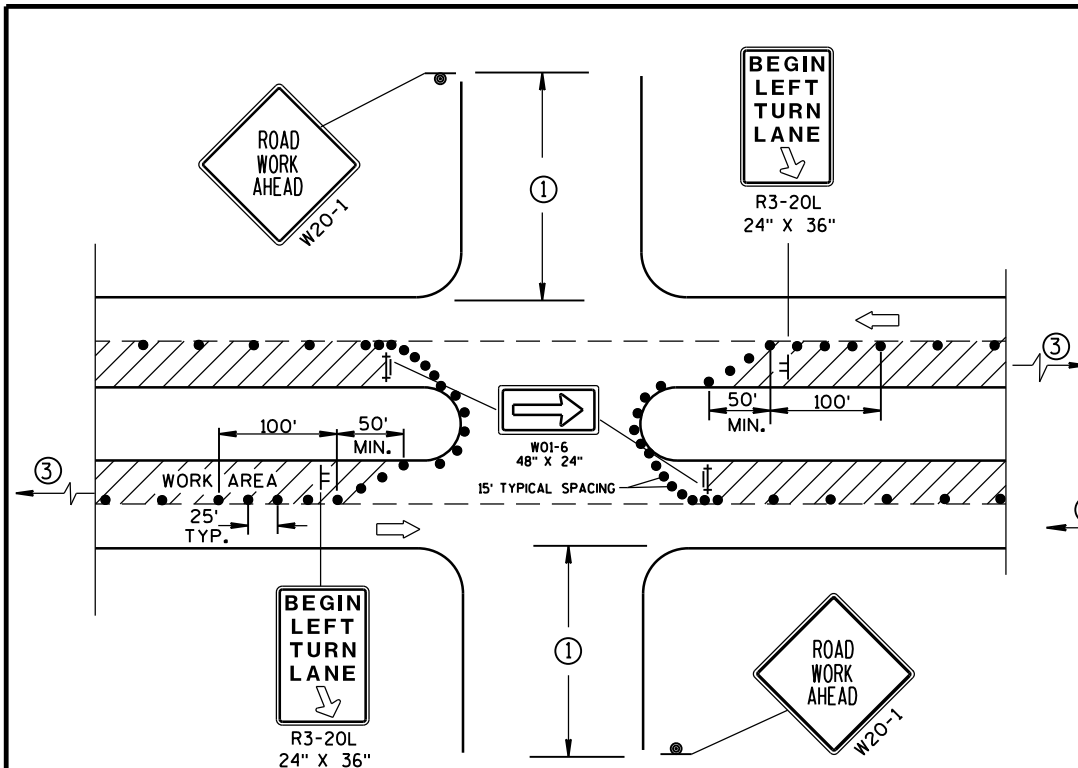
12-11-2009

DATE

FHWA

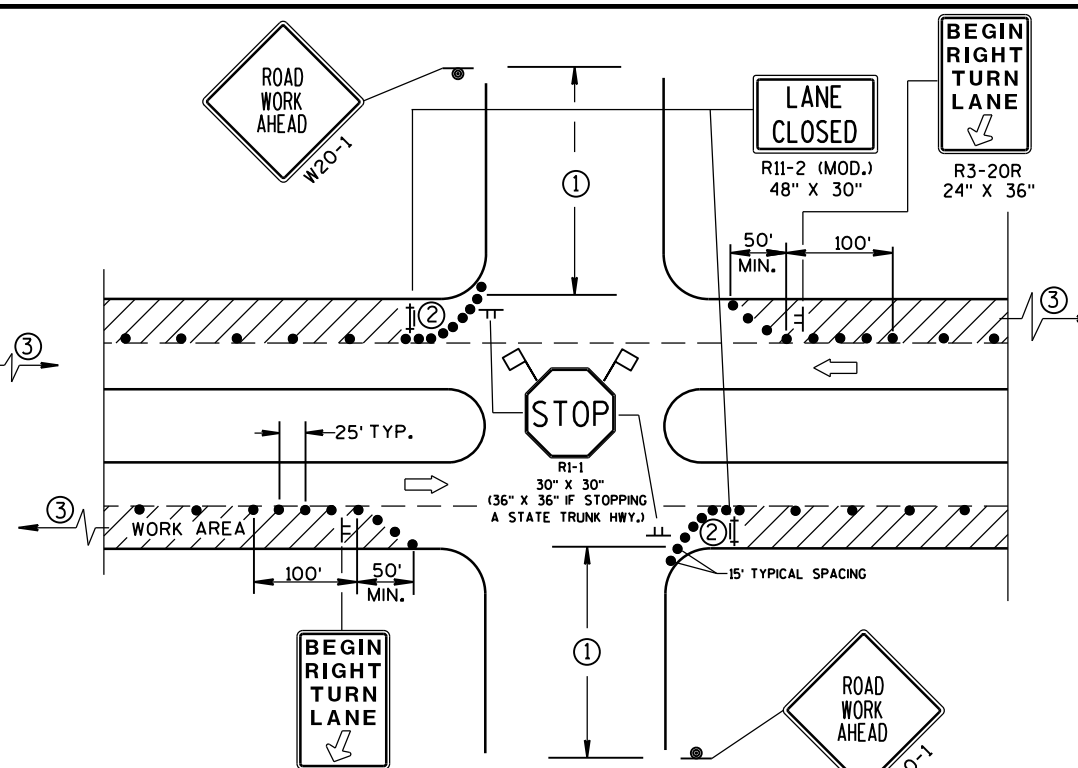
/S/ Deb Bischoff  
PAVEMENT POLICY & DESIGN ENGINEER





DETAIL A  
FOR LEFT LANE CLOSURE AT  
INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT  
INTERSECTIONS WHENEVER  
STAGING OF WORK ALLOWS.  
TAPER AND TURN LANE  
LENGTHS BASED ON FIELD  
CONDITIONS AS APPROVED  
BY THE ENGINEER.



DETAIL B  
FOR RIGHT LANE CLOSURE  
AT INTERSECTION

### GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

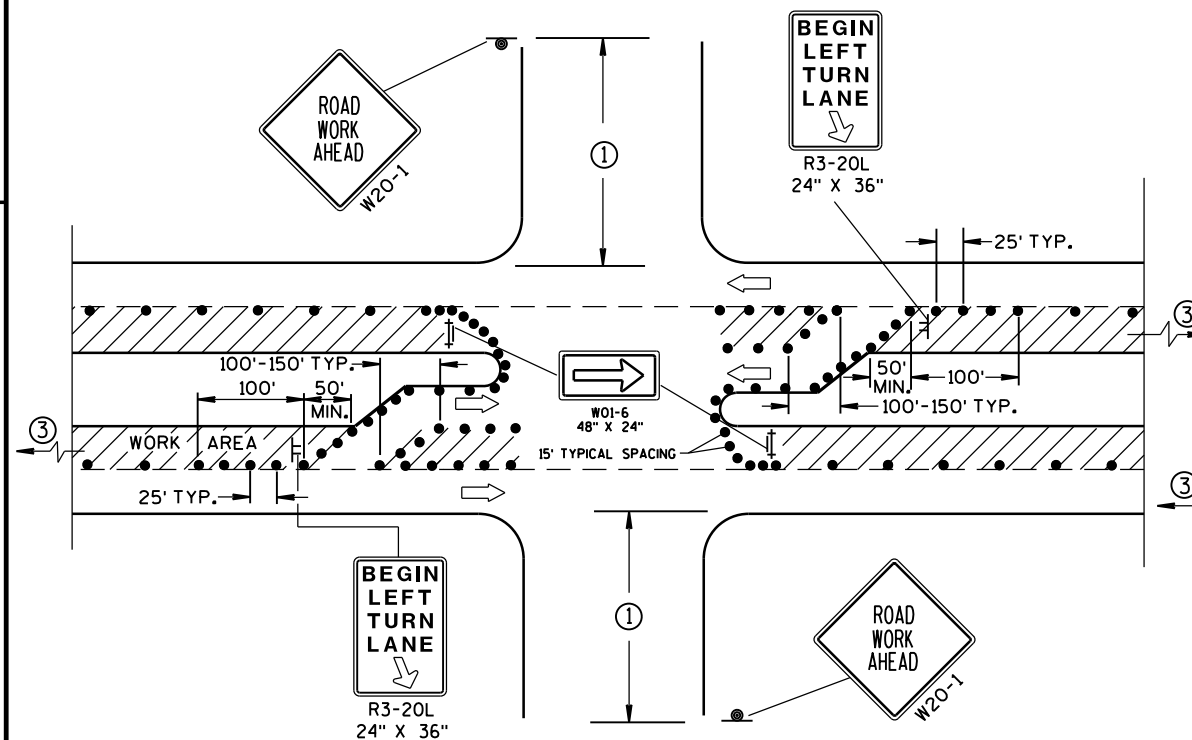
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

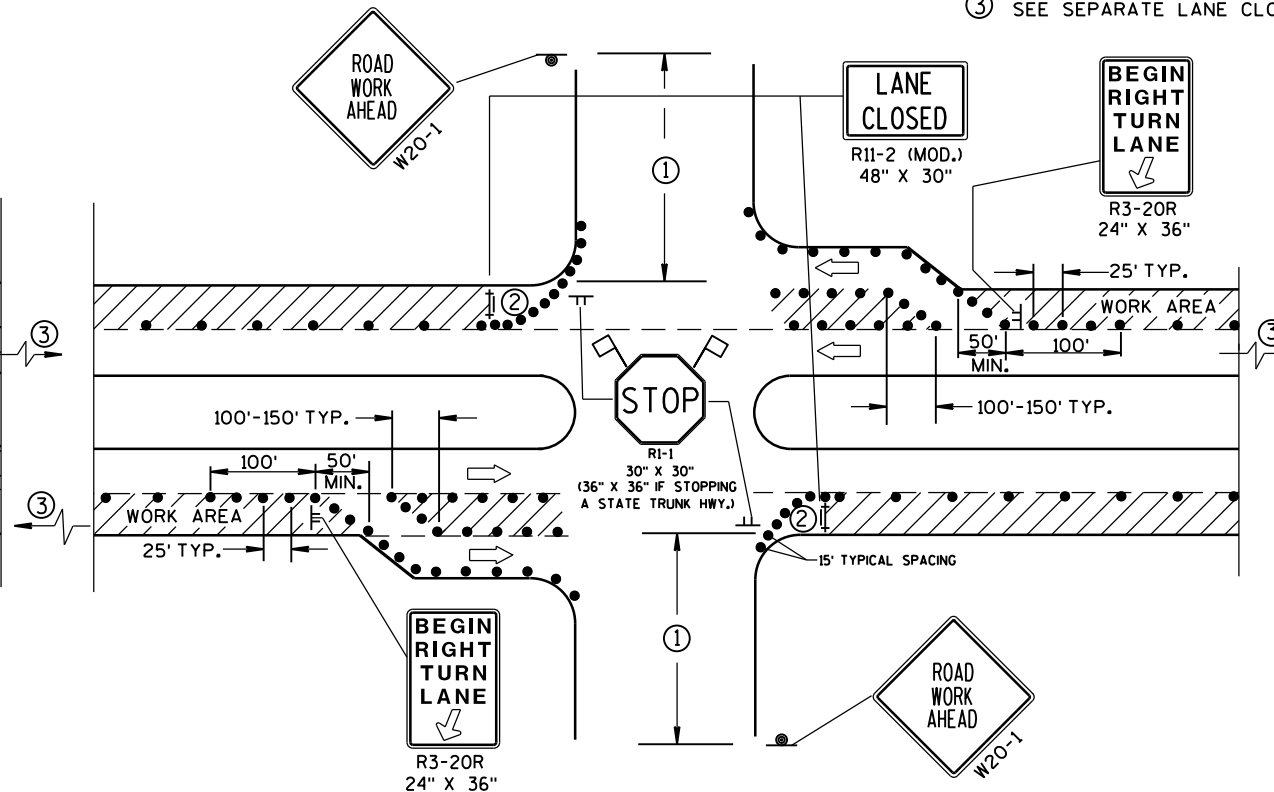
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.  
350' IF 35-40 MPH.  
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

### LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA



DETAIL C  
FOR LEFT LANE CLOSURE AT INTERSECTION OR  
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

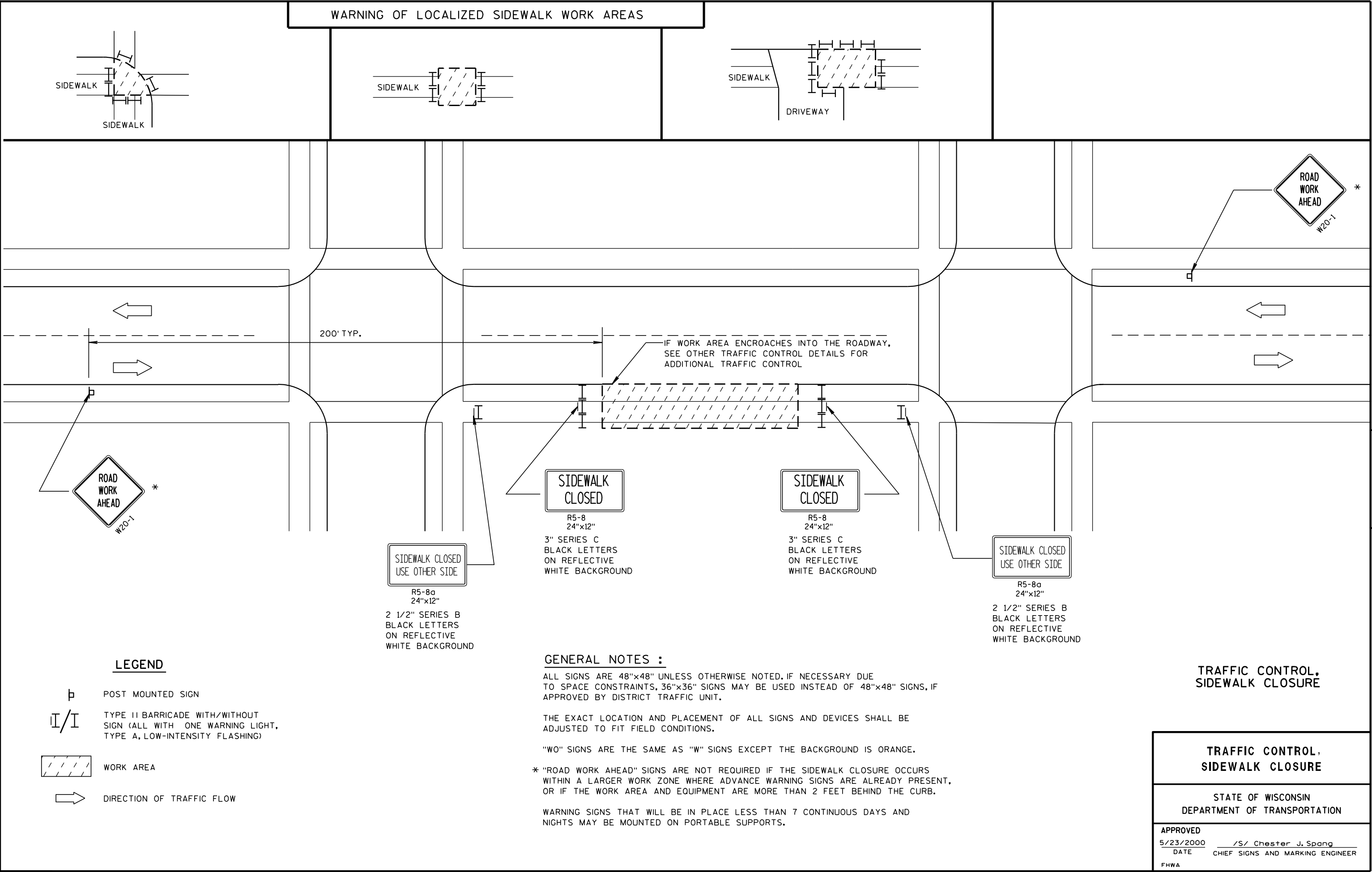


DETAIL D  
FOR RIGHT LANE CLOSURE AT INTERSECTION  
(WITH RIGHT TURN BAY OPEN)

### TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Nov. 2014 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA





STATION	CUT CY	FILL (-) CY	LARGEST CUT FEET	LARGEST FILL (-) FEET
9+00	16	0	0.50	
9+50	64	9	0.50	0.33
10+00	0	33		0.27
10+50	0	13		0.30
11+00	18	49	0.56	0.25
11+50	17	0	0.60	
12+00	39	0	0.52	
TOTAL	154	101		

EARTH WORK SUMMARY

EXCAVATION COMMON (205.0100)	249 CY
(INCLUDES 88 CY PAV'T REMOVAL)	
FILL (INCLUDES 20% SHRINKAGE)	101 CY
WASTE	148 CY

## Notes



## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions  
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>