

PROJECT ID 2080-00-71

COUNTY MILWAUKEE

MAY 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: 168



DESIGN DESIGNATION

|                  |   |           |
|------------------|---|-----------|
| A.D.T. (CURRENT) | = | 14,200    |
| A.D.T. (2035)    | = | 16,300    |
| D.H.V.           | = | 1,500     |
| D.               | = | 51%       |
| T.               | = | 2.6%      |
| DESIGN SPEED     | = | 35 M.P.H. |
| ESALS            | = | 800,000   |

CONVENTIONAL SYMBOLS

|                                     |                               |
|-------------------------------------|-------------------------------|
| PLAN                                | UTILITIES                     |
| COUNTY LINE                         | CITY UNDERGROUND CONDUIT      |
| TOWNSHIP OR RANGE LINE              | ELECTRIC                      |
| SECTION LINE                        | FIBER OPTIC                   |
| CORPORATE OR CITY LIMITS            | GAS                           |
| PROPERTY LINE                       | SANITARY SEWER                |
| STANDARD BENCH MARK                 | STORM SEWER                   |
| EXISTING RIGHT OF WAY LINE          | TELEPHONE                     |
| PROPOSED SEWER LATERAL              | WATER                         |
| REFERENCE LINE                      | TRAFFIC & ELECTRICAL SERVICES |
| CONCRETE WALK/DWY. REMOVAL          | MILWAUKEE METRO SEWERAGE DIST |
| LIMITS OF CONCRETE PAVEMENT REMOVAL | CABLE TELEVISION              |
| COMBUSTIBLE FLUIDS                  | WISCONSIN DEPT. OF TRANS.     |
| RAILROADS                           | FIRE & POLICE CALL BOX        |
| FENCE                               | LIGHT POLE                    |
| CATCH BASIN OR INLET                | POWER POLE                    |
| PROFILE                             | TELEPHONE OR TELEGRAPH POLE   |
| GRADE LINE                          | TRAFFIC SIGNAL                |
| ORIGINAL GROUND                     | TRAFFIC SIGNAL CONTROL BOX    |
| GRADE ELEVATION                     | HYDRANT                       |
|                                     | GAS OR WATER GATE VALVE       |
|                                     | MANHOLES - SEWER              |
|                                     | MANHOLES - UTILITY (TYPE)     |
|                                     | TREES - EXISTING              |
|                                     | TREES - TO BE REMOVED         |

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

NORTH TEUTONIA AVENUE

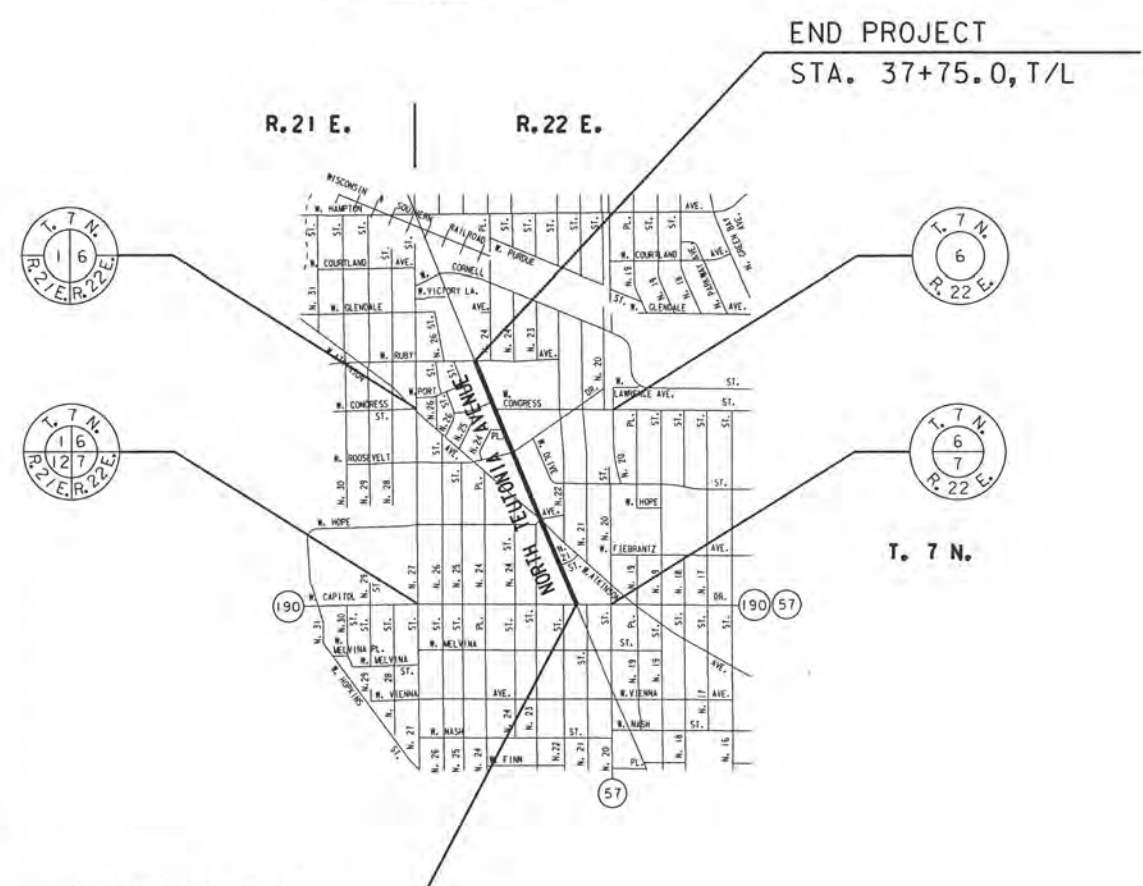
WEST CAPITOL DRIVE TO WEST RUBY AVENUE

LOCAL STREET

MILWAUKEE COUNTY

STATE PROJECT NUMBER

2080-00-71



BEGIN PROJECT

STA. 01+25.6, T/L

Y. = 403,965.342

X. = 2,550,552.010

END PROJECT

STA. 37+75.0, T/L

LAYOUT

SCALE 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.691 MI. (URBAN)

THE COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, MILWAUKEE COUNTY, NAD 27 SOUTH ZONE.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF MILWAUKEE DATUM.

TO CONVERT ELEVATIONS SHOWN ON THIS PLAN TO NATIONAL GEODETIC VERTICAL DATUM OF 1929, ADD 580.603 TO ELEVATIONS SHOWN ON THIS PLAN.

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 2080-00-71    | WISC 2015289    | I        |
|               |                 |          |
|               |                 |          |

Accepted For

City of Milwaukee

1/29/15 (Date) *Michael J. Fugher* FOR Commissioner of Public Works

Original Plans Prepared By

JEFFREY S. POLENSKE  
E-33579  
MILWAUKEE  
WIS.

1/28/15 (Date) *Jeffrey S. Polenske* City Engineer

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor City of Milwaukee

Designer City of Milwaukee

Management Consultant DAAR Engineering, Inc.

C.O. Examiner

APPROVED FOR THE DEPARTMENT

DATE: 1/29/2015 *J. D. Beck* (Management Consultant Signature)

E

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH GRANULAR BACKFILL.
2. 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 AND FERTILIZED WITHIN 5 CALENDAR DAYS.
3. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.
4. TRANSVERSE JOINTS IN THE CONCRETE WALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. ALL LONGITUDINAL AND TRANSVERSE JOINTS REQUIRING SEALING SHALL BE SEALED IN ACCORDANCE WITH THE DETAIL.
6. '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.
7. 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.
8. CONSTRUCTION PERMITS FOR CONCRETE WALK &/ OR CONCRETE DRIVEWAY WORK HAVE BEEN OBTAINED, WHICH RIGHTS SHALL BE EXTENDED TO THE CONTRACTORS.
9. INLET SCREENS ARE TO BE PLACED BETWEEN THE FRAME AND GRATE OF CATCH BASINS / INLETS TO PREVENT SOIL FROM ENTERING THE SEWERS.
10. ALL CURB AND GUTTER SHALL HAVE A FLANGE THICKNESS OF 8-INCH.
11. ALL STATION AND OFFSET OF CURB REFERENCED IN THE PLANS ARE TO THE FACE OF THE CURB.
12. DESIGNER CONTACT: RATTAN MAHAY  
TEL. (414) 286-0486  
rattan.mahay@milwaukee.gov

STANDARD ABBREVIATIONS

- ASPH. - ASPHALT
- B.M. - BENCH MARK
- CTR. - CENTER
- C/L - CENTER LINE
- COMB. - COMBINED
- CONC. - CONCRETE
- C.W. - CONCRETE WALK
- COR. - CORNER
- CUC - CITY UNDERGROUND CONDUIT
- 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                             |
| CONSTRUCTION PERMITS                         |
| PROJECT OVERVIEW                             |
| TYPICAL SECTION                              |
| ALIGNMENT PLAN                               |
| CONSTRUCTION DETAILS                         |
| DRAINAGE DETAILS                             |
| PLAN DETAIL                                  |
| PAVEMENT MARKING PLAN                        |
| TRAFFIC CONTROL                              |
| UTILITIES & DRAINAGE                         |
| ST LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS |
| TREE REMOVAL & PLANTING                      |
| WALK AND DRIVEWAY REMOVAL                    |

UTILITY CONTACTS

CITY OF MILWAUKEE, UTILITY COORDINATOR  
MUSA ABU-KHADER  
841 N. BROADWAY,  
MILWAUKEE, WI 53202  
PHONE: 414-286-2432  
musa.abu-khader@milwaukee.gov

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

WE ENERGIES - GAS  
LATROY BRUMFIELD  
333 W. EVERTT 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  
JAY BULANEK  
2005 PEWAUKEE RD.  
WAUKESHA, WI 53188  
PHONE: 262-896-7669  
CELL: 414-491-2855  
jb5175@att.com

OTHER CONTACTS

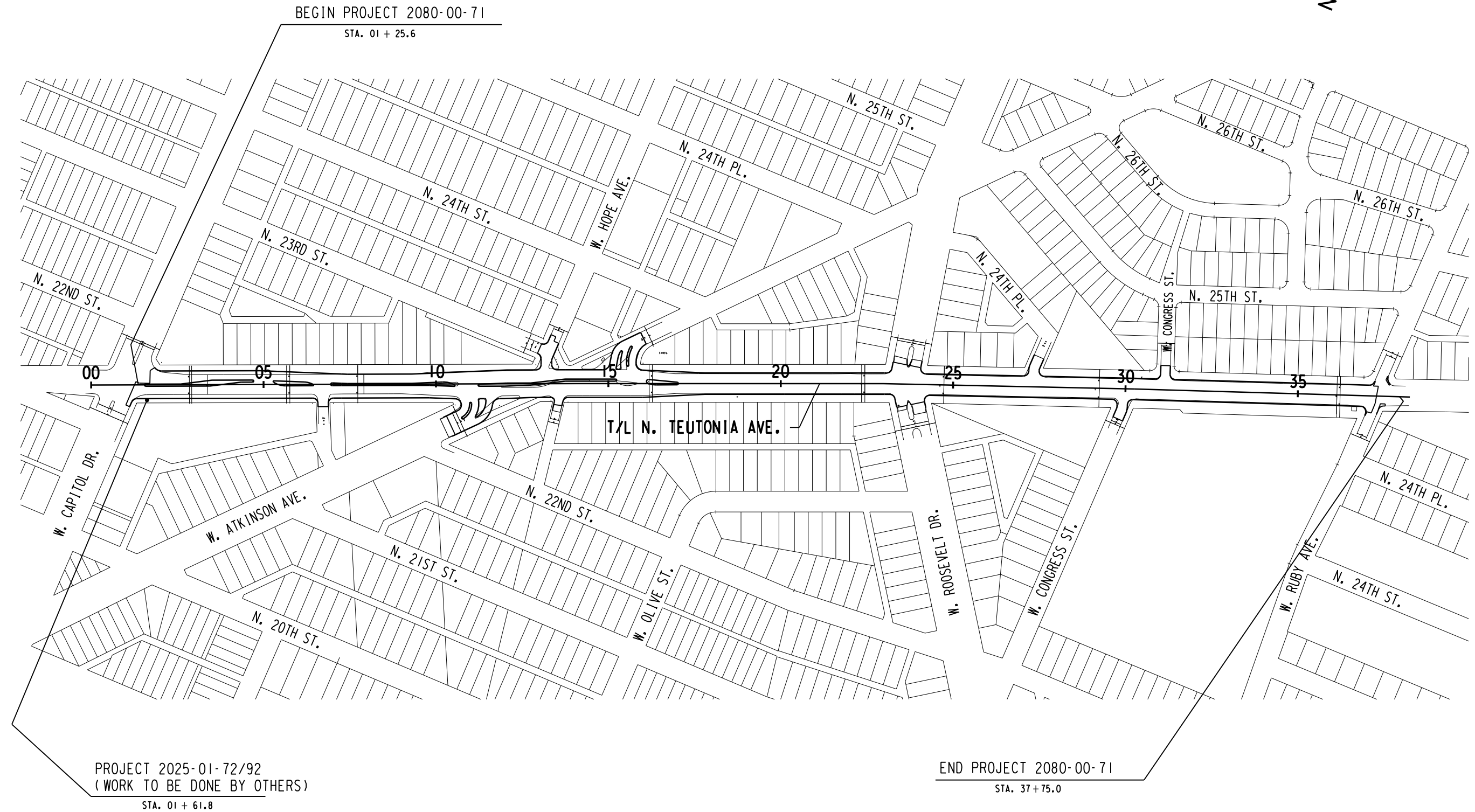
WISCONSIN DEPT. OF NATURAL RESOURCES  
KRISTINA BETZOLD  
2300 N. DR. MARTIN LUTHER KING, JR. DR.  
MILWAUKEE, WI 53212  
PHONE: 414-263-8517  
kristina.betzold@wisconsin.gov

MILWAUKEE COUNTY TRANSIT SYSTEM  
MELANIE MACARTHUR  
1942 N. 17TH ST.  
MILWAUKEE, WI 53205  
PHONE: 414-343-1764  
mmacarthur@mcts.org

DIGGERSHOTLINE

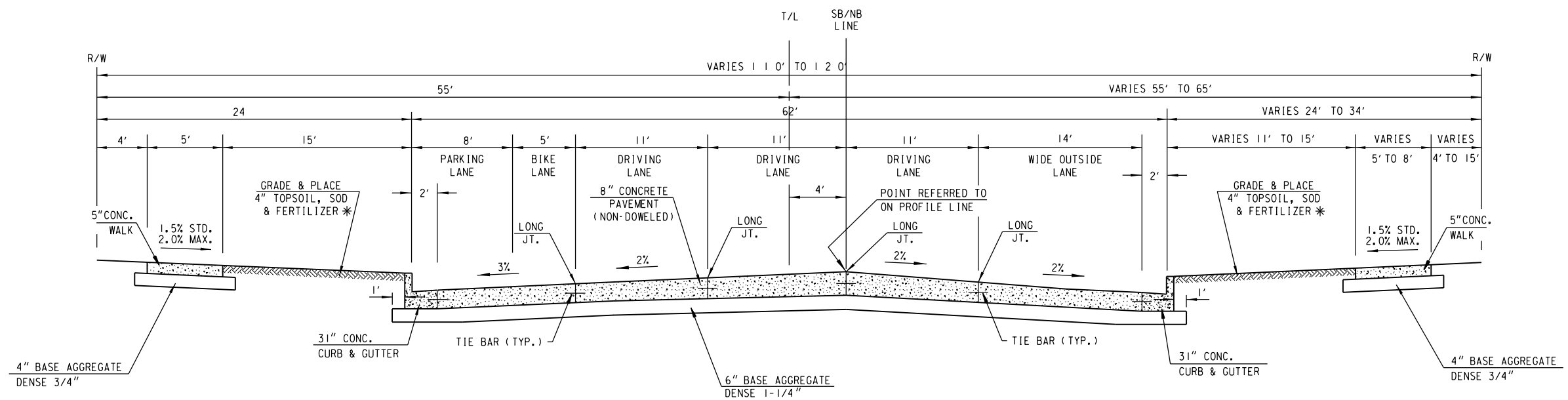
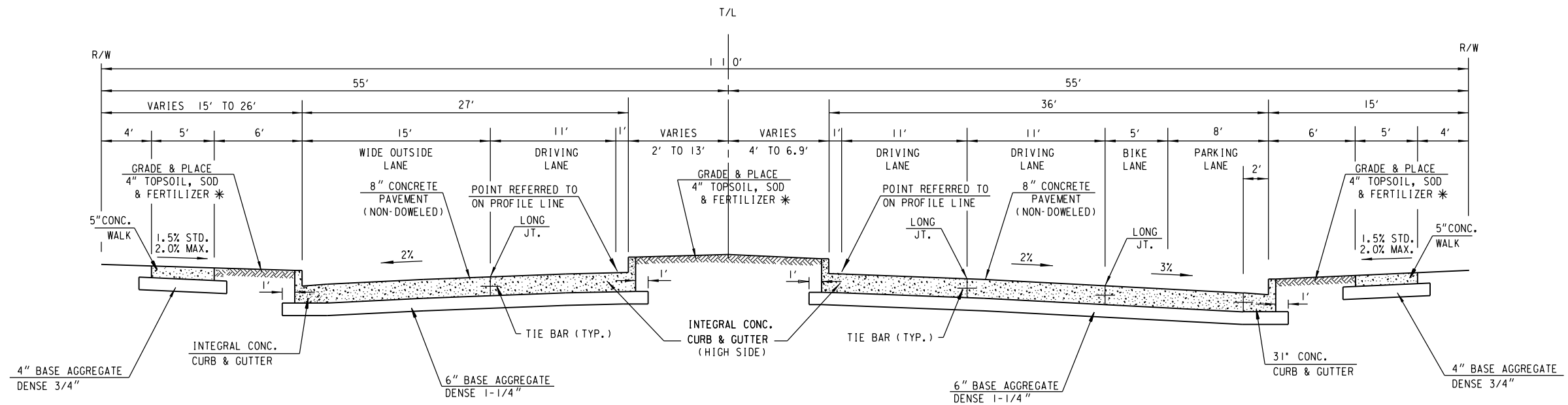
Dial 811 or (800) 242-8511

www.DiggersHotline.com





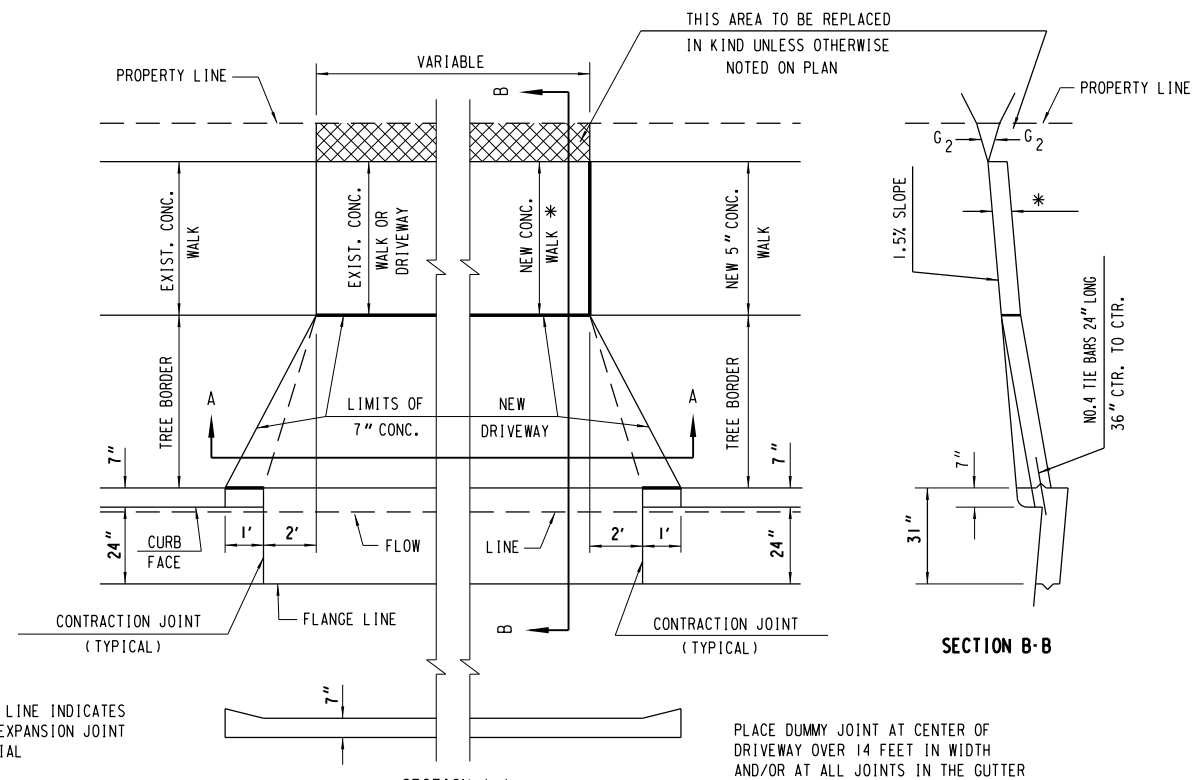
TYPICAL EXISTING SECTION  
NORTH TEUTONIA AVENUE  
STA. 01+25.6 TO STA. 37+75.0





2080-00-71 North Teutonia Avenue

| CONSTRUCTION PERMITS |                       |
|----------------------|-----------------------|
| Number               | Address               |
| 1                    | 4030 N. Teutonia Ave. |
| 2                    | 4074 N. Teutonia Ave. |
| 3                    | 4115 N. Teutonia Ave. |
| 4                    | 4126 N. Teutonia Ave. |
| 6                    | 2305 W. Atkinson Ave. |
| 9                    | 4354 N. Teutonia Ave. |



HEAVY LINE INDICATES  
1/2" EXPANSION JOINT  
MATERIAL

PLACE DUMMY JOINTS AT CENTER OF  
DRIVEWAY AND/OR AT ALL JOINTS  
IN THE GUTTER

SECTION A-A

### FLARED CONCRETE DRIVEWAY

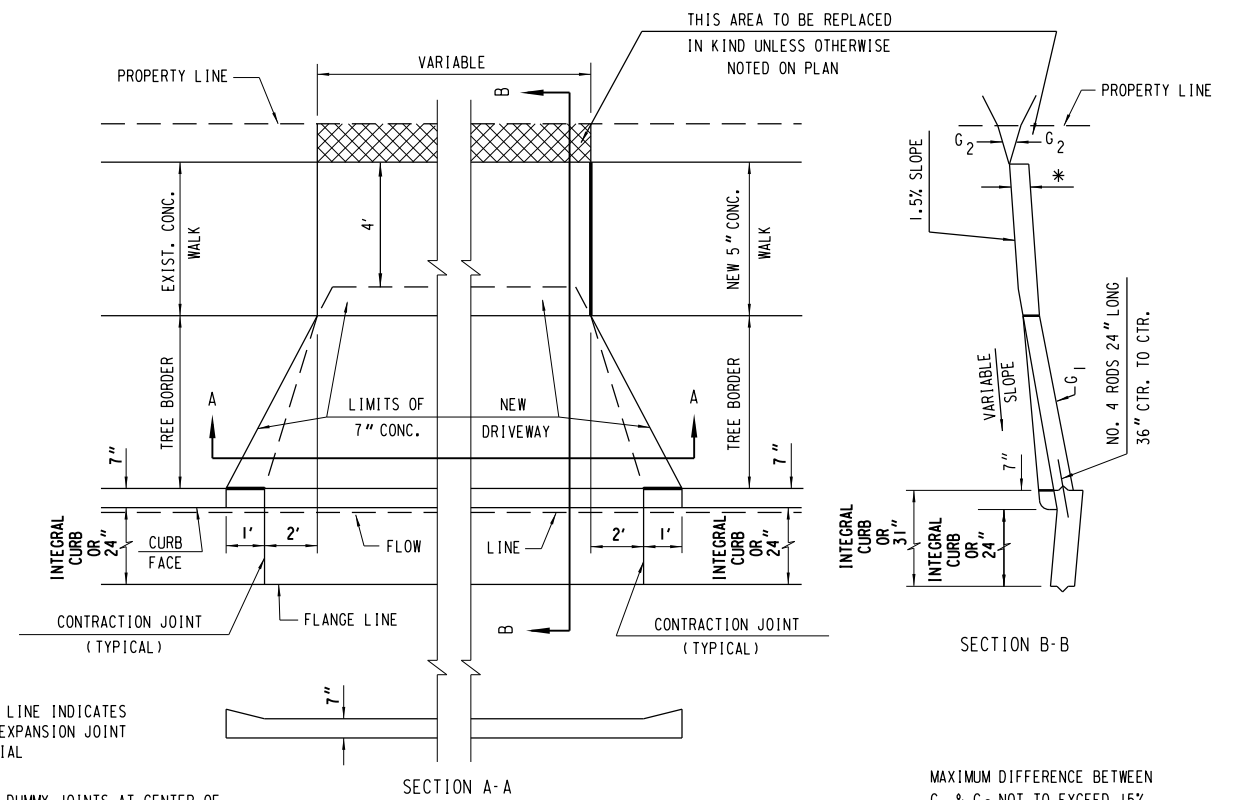
(E)

PLACE DUMMY JOINT AT CENTER OF  
DRIVEWAY OVER 14 FEET IN WIDTH  
AND/OR AT ALL JOINTS IN THE GUTTER

MAXIMUM DIFFERENCE BETWEEN  
 $G_1$  &  $G_2$  NOT TO EXCEED 15%  
DESIRABLE MAXIMUM = 10%

MAXIMUM DIFFERENCE BETWEEN  
 $G_1$  &  $G_2$  IN FILL = 14%

\* LOCATIONS PER PLAN: USE 7" CONC.  
FOR BUSINESS PROPERTY AND 5" CONC.  
FOR RESIDENTIAL PROPERTY.



HEAVY LINE INDICATES  
1/2" EXPANSION JOINT  
MATERIAL

PLACE DUMMY JOINTS AT CENTER OF  
DRIVEWAY AND/OR AT ALL JOINTS  
IN THE GUTTER

SECTION A-A

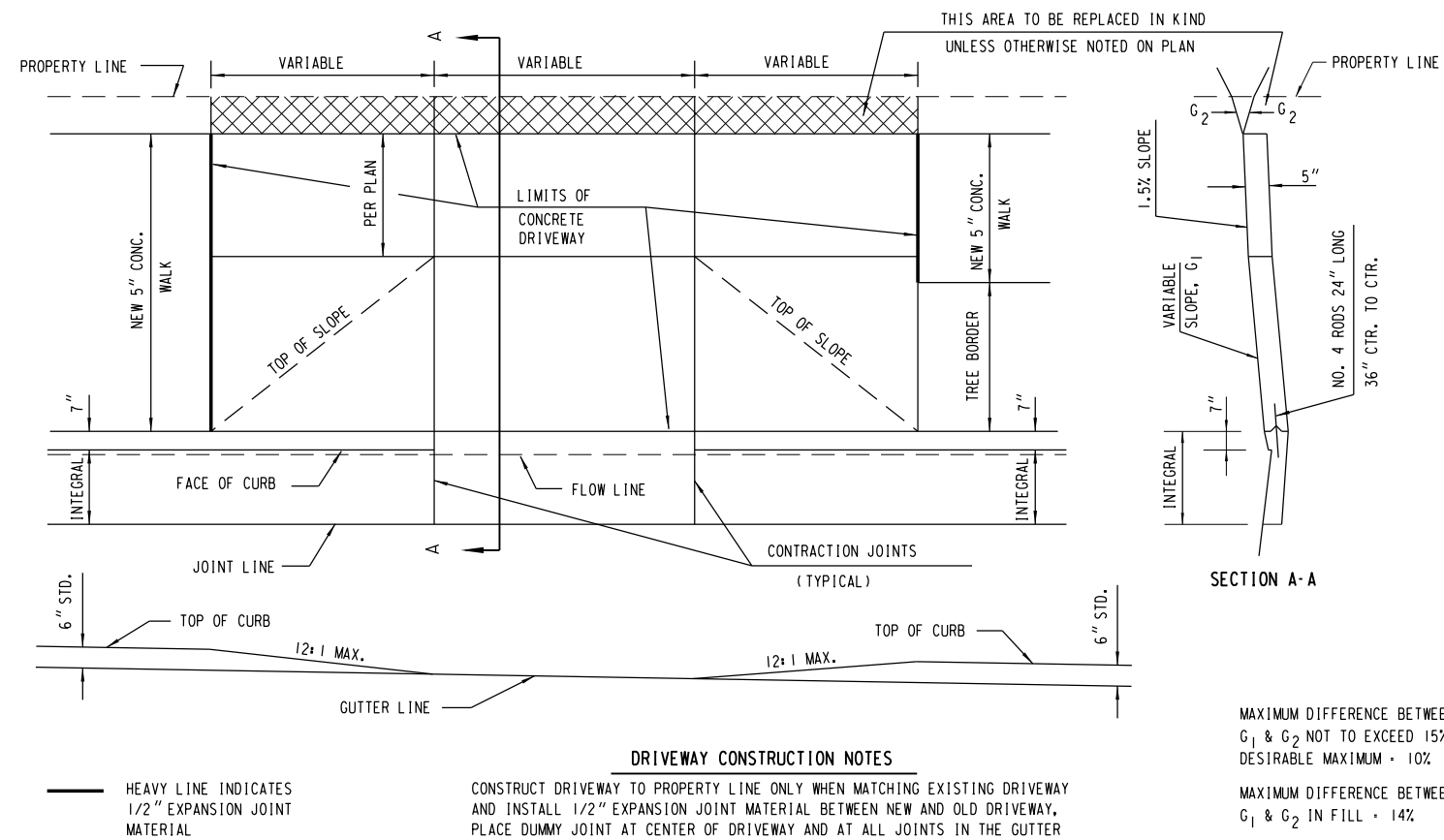
### FLARED CONCRETE DRIVEWAY (MODIFIED)

(E2)

MAXIMUM DIFFERENCE BETWEEN  
 $G_1$  &  $G_2$  NOT TO EXCEED 15%  
DESIRABLE MAXIMUM = 10%

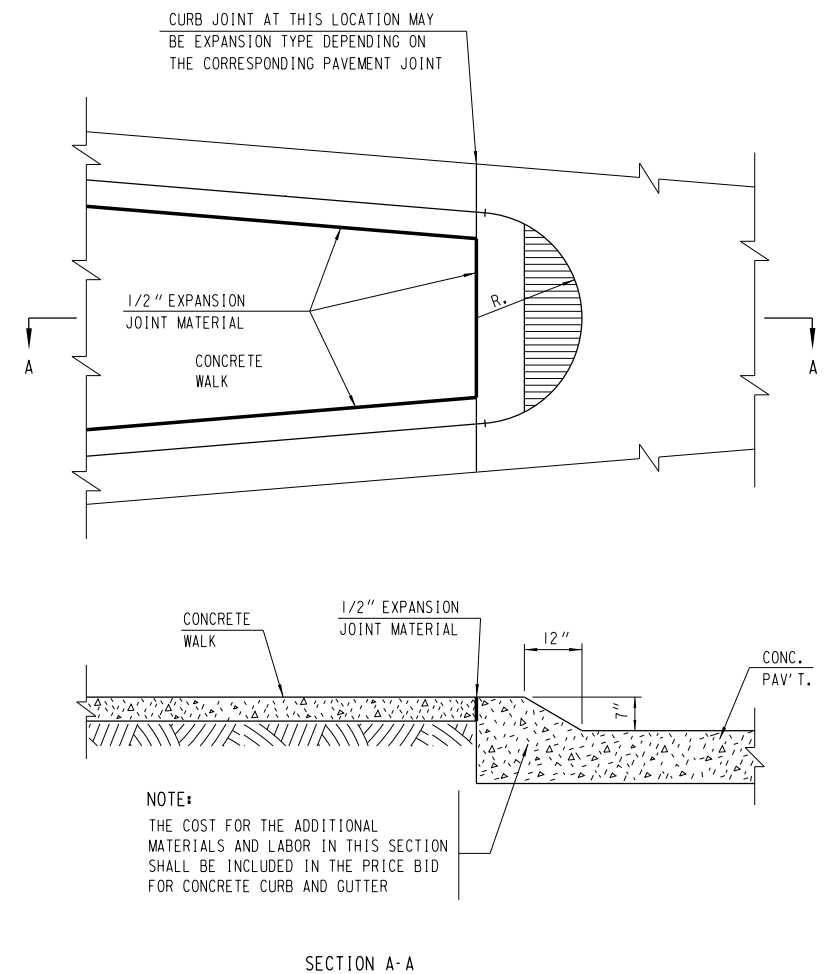
MAXIMUM DIFFERENCE BETWEEN  
 $G_1$  &  $G_2$  IN FILL = 14%

\* LOCATIONS PER PLAN: USE 7" CONC.  
FOR BUSINESS PROPERTY AND 5" CONC.  
FOR RESIDENTIAL PROPERTY.



### DEPRESSED CONCRETE DRIVEWAY (MODIFIED)

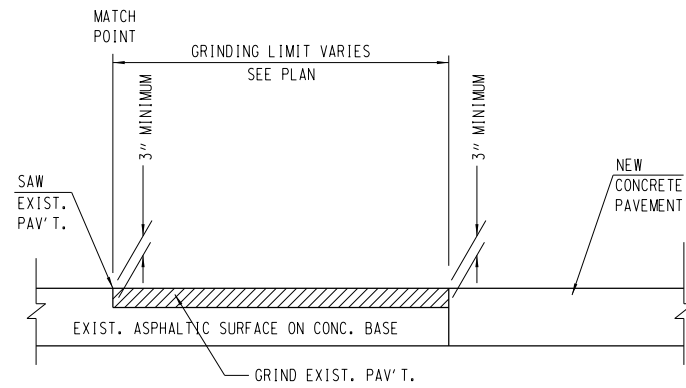
(F)



### SNOWPLOWABLE MEDIAN ISLAND NOSE

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

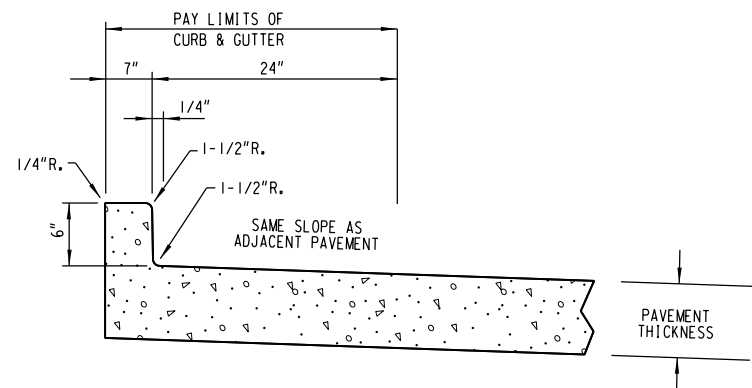
(S)



### REMOVING ASPHALTIC SURFACE BUTT JOINTS

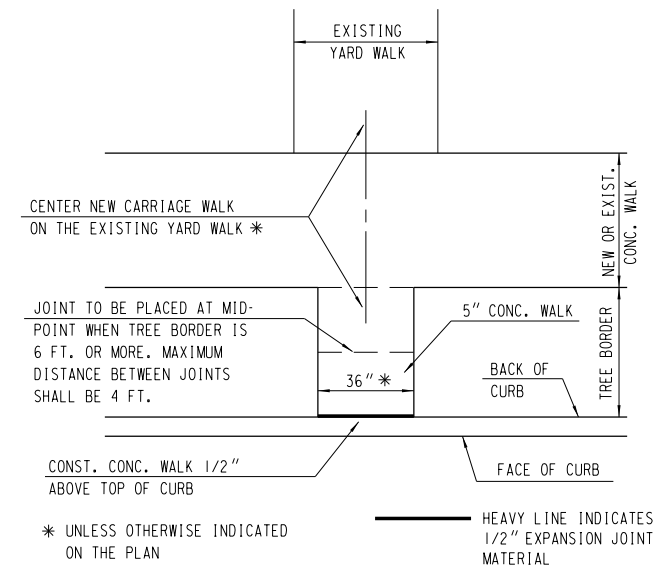
IN ROADWAY AT INTERSECTIONS AND ABUTTING PAVEMENT

®

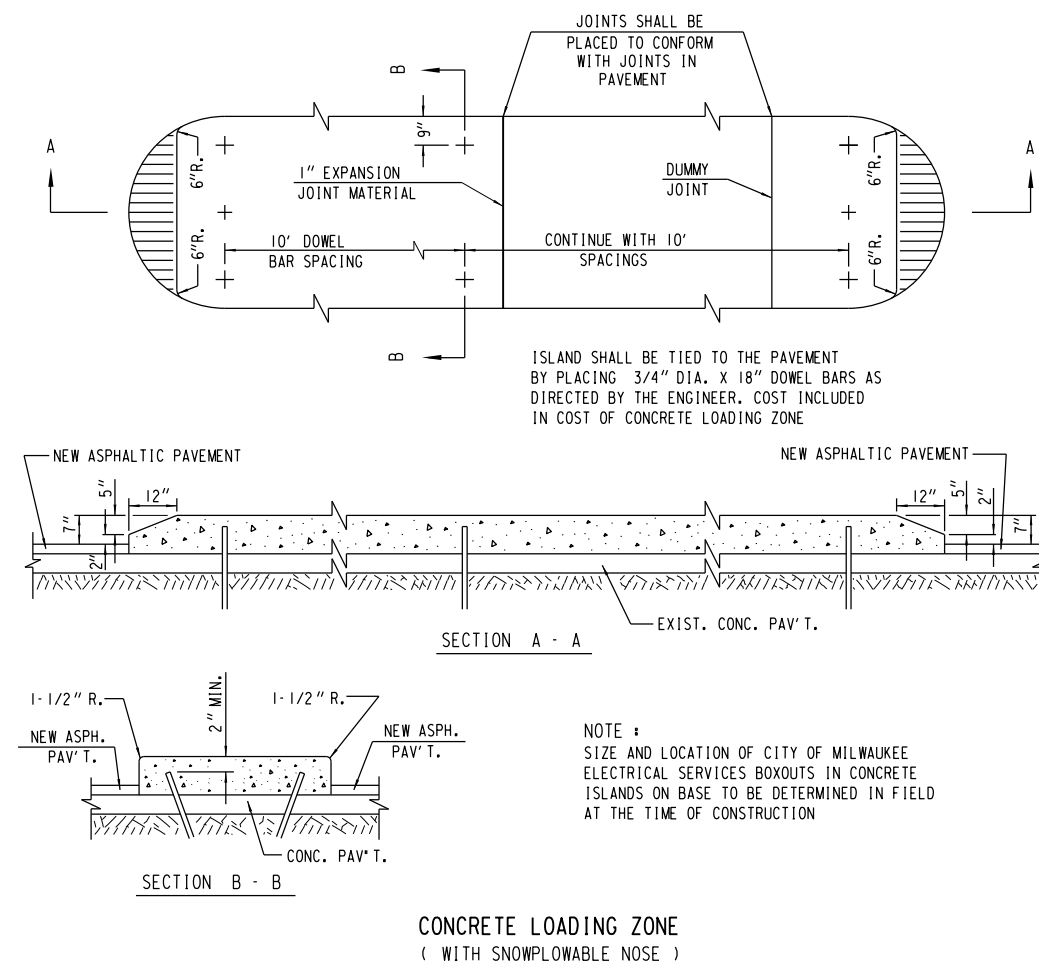


### CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D (REVISED)

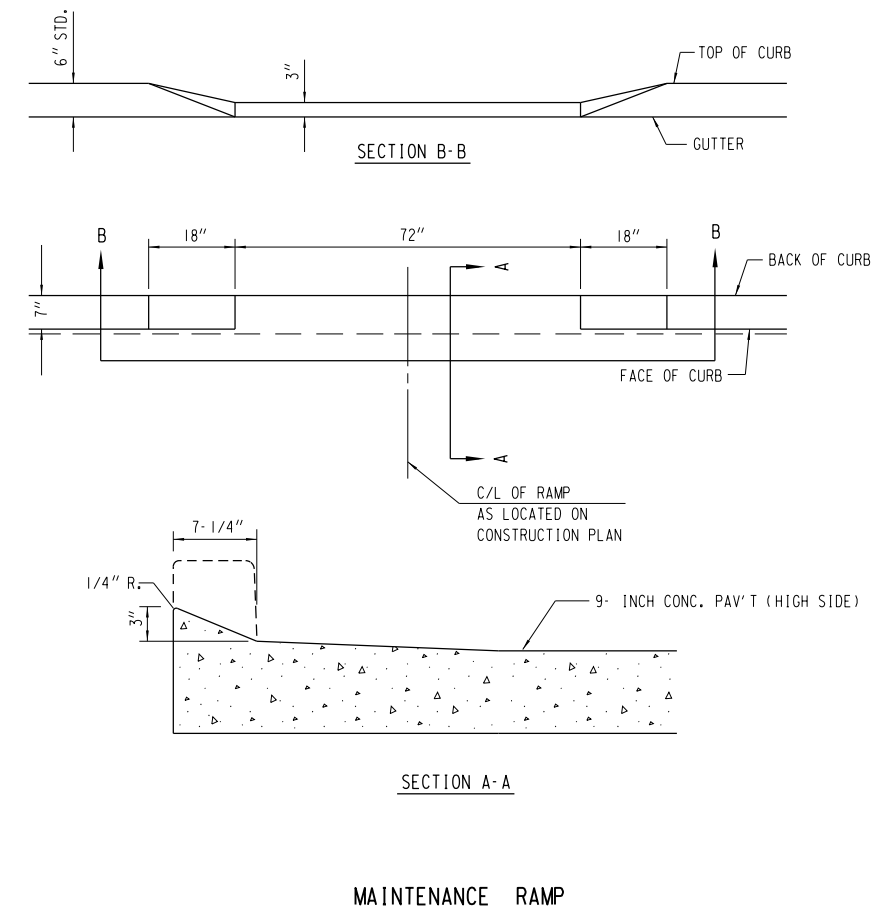
ⓐ



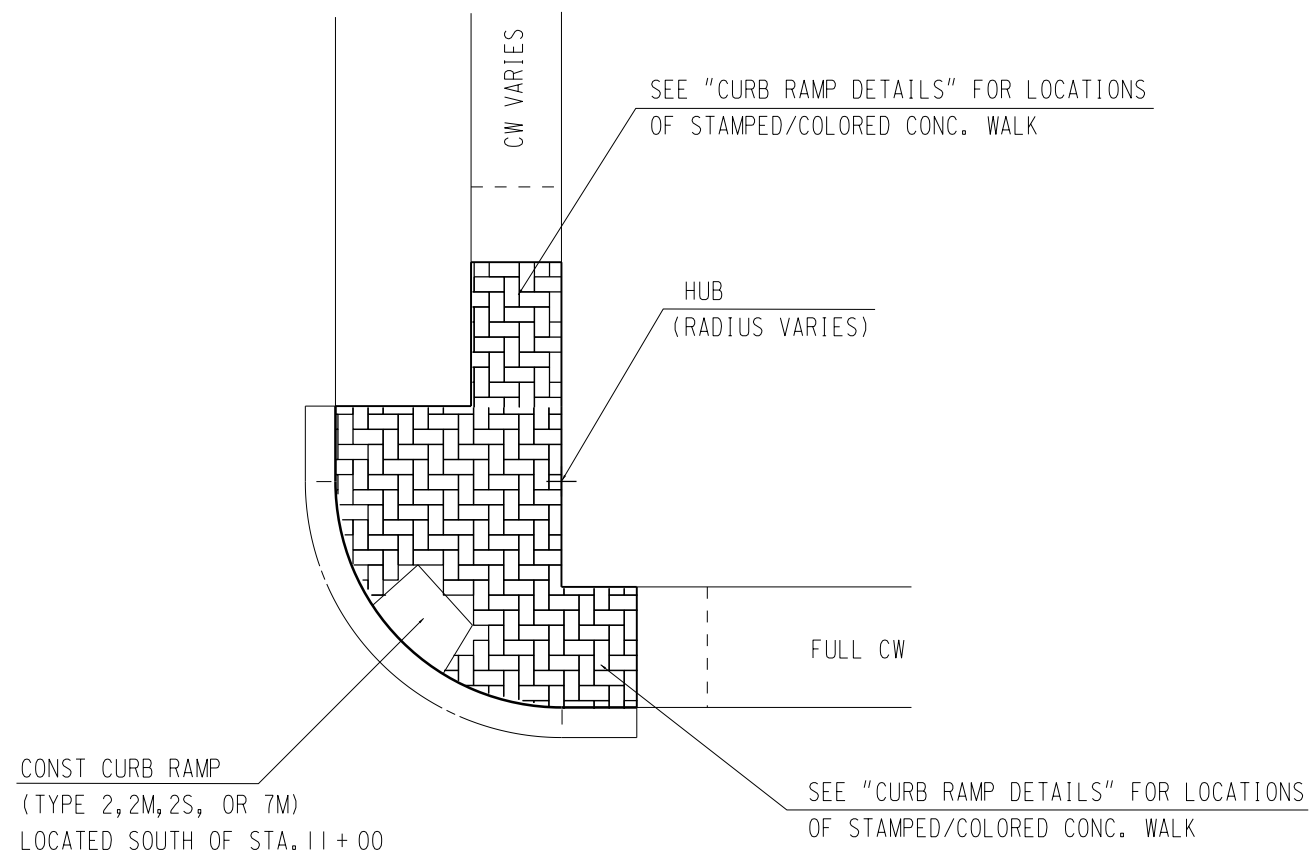
### CARRIAGE WALK



V

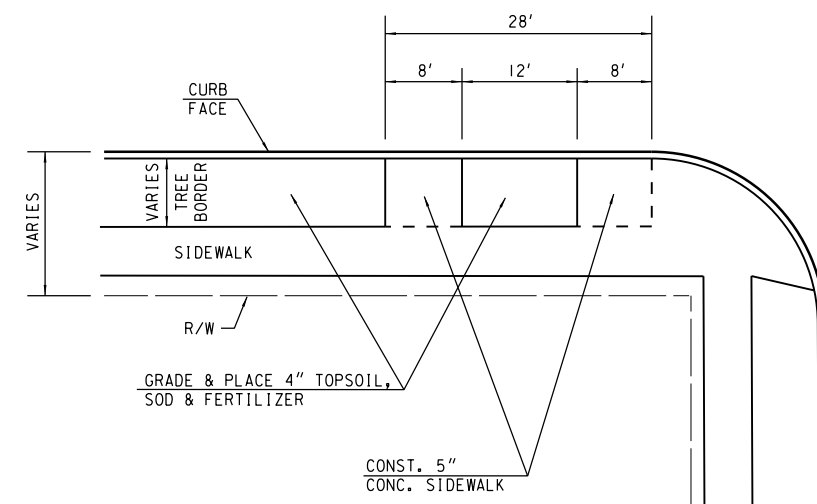


T



TYPICAL DETAIL FOR STAMPED/COLORED CONCRETE WALK  
(HERRINGBONE PATTERN)

⊗

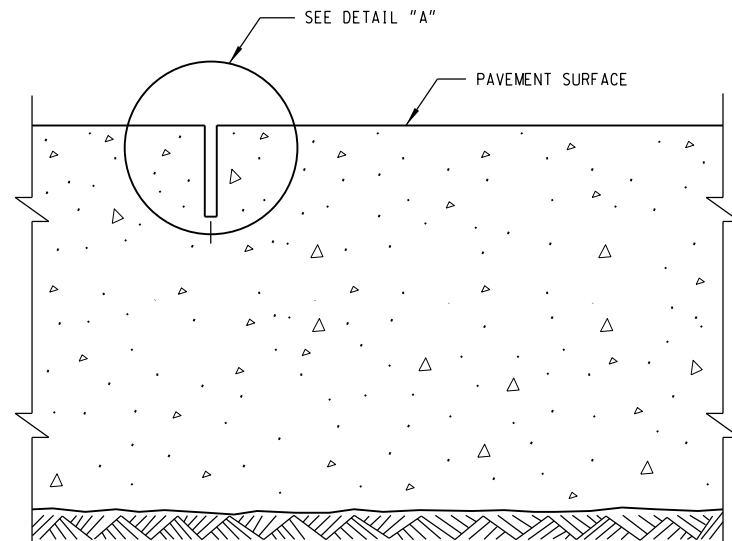


BUS STOP WALK DETAIL



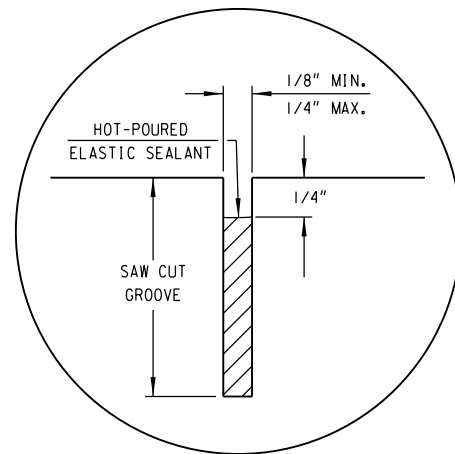
### GENERAL NOTES

THE SLOPE OF PASSENGER BOARDING AREA  
MAY NOT EXCEED 2%.



### SAWED JOINT

NOTE: DETAIL "A" SHOWN IN S.D.D. "CONCRETE PAVEMENT LONGITUDINAL JOINTS AND PAVEMENT TIES" HAS BEEN REVISED AND SHOWN AS "JOINT DETAIL A".



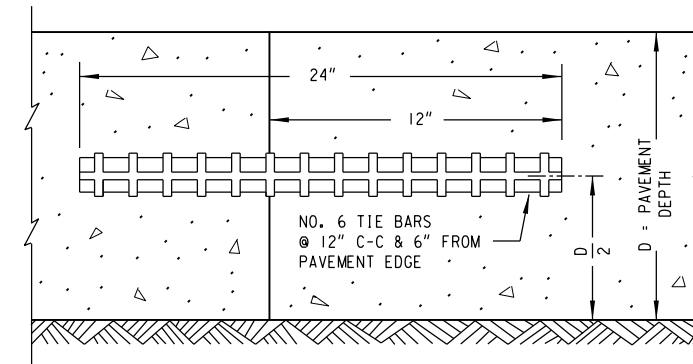
### JOINT DETAIL "A"

### CONSTRUCTION JOINTS

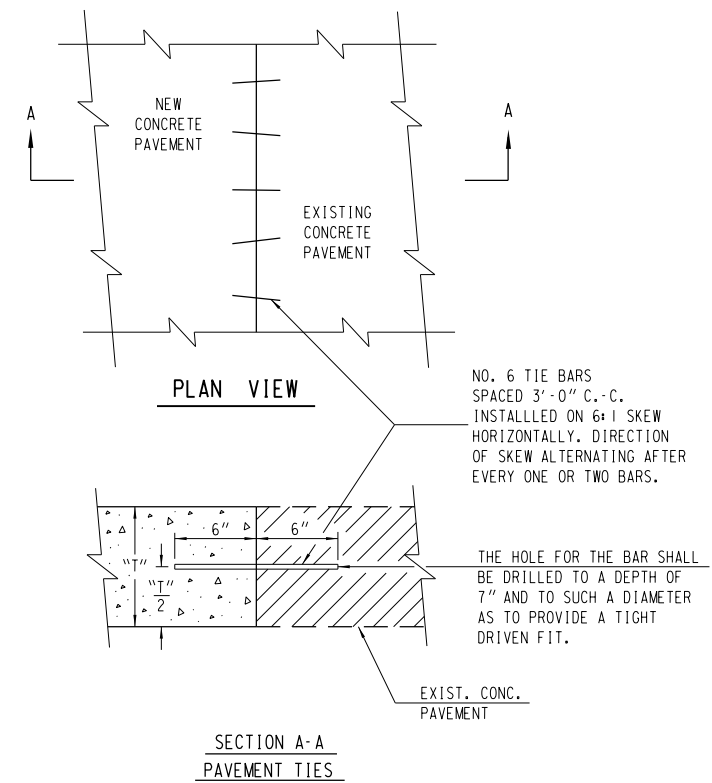
CONSTRUCTION JOINTS MAY BE LOCATED IN ANY PANEL AND BE A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT. CONSTRUCTION JOINTS MAY BE CONSTRUCTED EITHER PARALLEL TO CONTRACTION JOINTS OR AT 90° TO THE CENTERLINE.

TIE BARS MAY BE INSERTED THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN POURED.

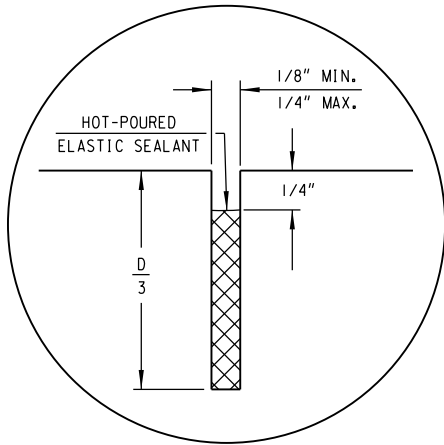
TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



### CONSTRUCTION JOINT



TRANSVERSE NON-DOWELED, REINFORCED CONCRETE PAVEMENT JOINTS



DETAIL "A"

| PAVEMENT DEPTH AND JOINT SPACING TABLE |                           |
|----------------------------------------|---------------------------|
| PAVEMENT DEPTH (D)                     | CONTRACTION JOINT SPACING |
| 6"                                     | 12'                       |
| 7"                                     | 14'                       |
| 8"                                     | 15'                       |
| 9"                                     | 15'                       |
| 10" & ABOVE                            | 18'                       |

GENERAL NOTES

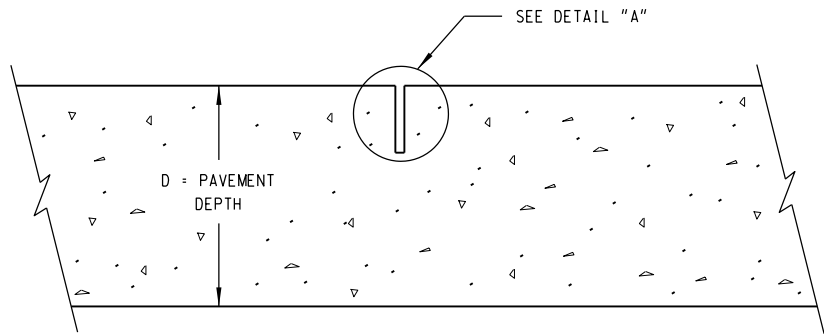
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

CONTRACTION JOINTS

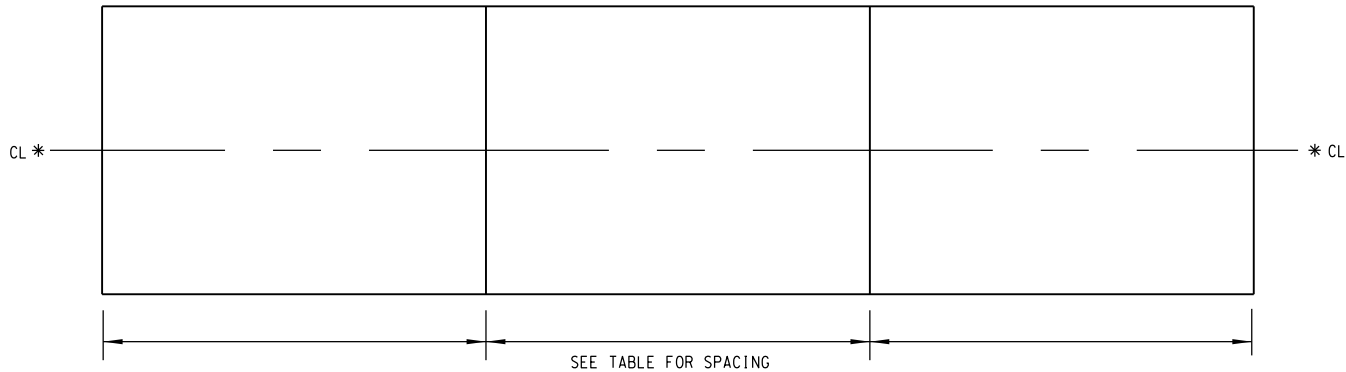
CONTRACTION JOINTS SHALL BE LOCATED AT A UNIFORM SPACING SHOWN IN TABLE.

EXCEPTIONS SHALL BE AS DIRECTED BY THE ENGINEER.

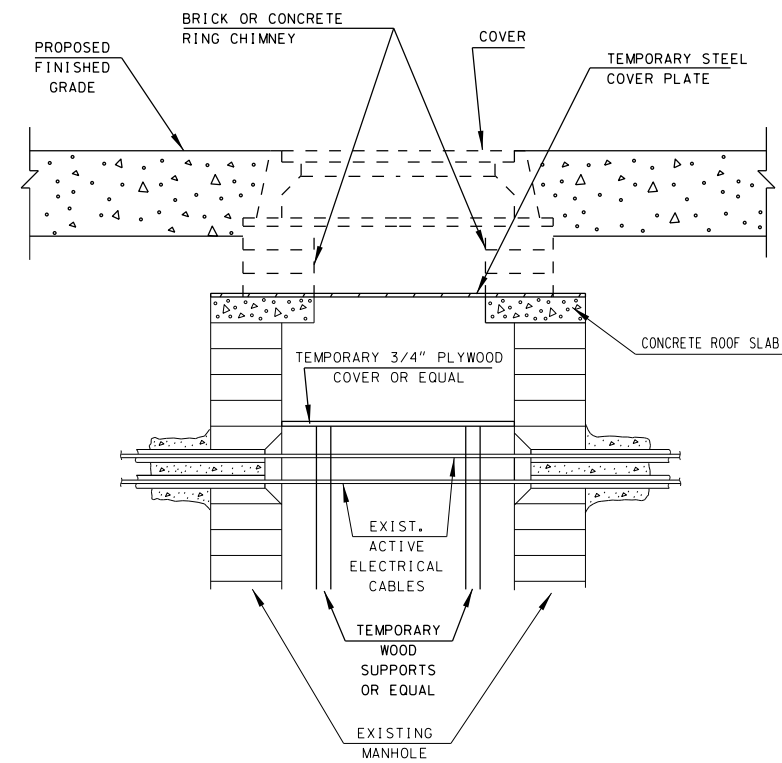
THE SAWCUT SHALL BE TO THE DEPTH OF D/3 AND THE WIDTH OF 1/8 INCH MIN. & 1/4 INCH MAX.



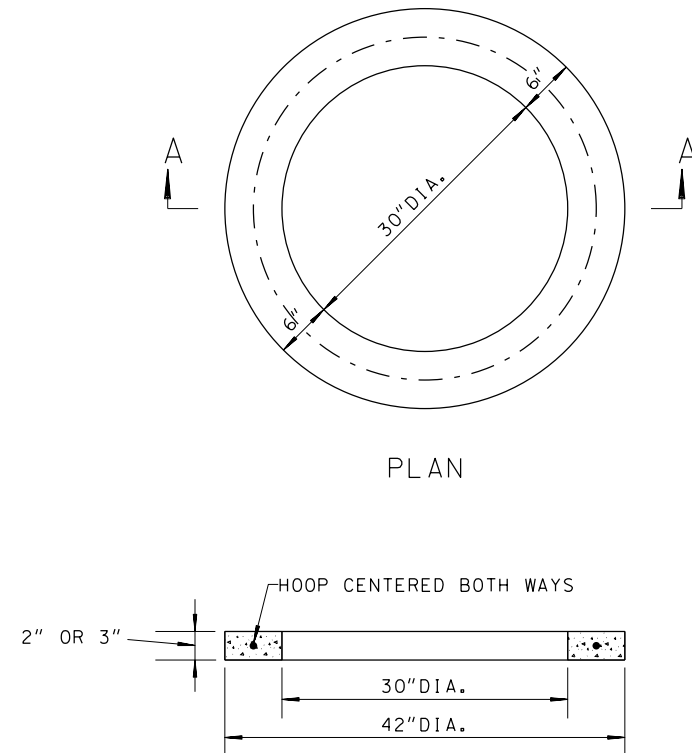
CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS



BLOCK OR PRECAST MANHOLE



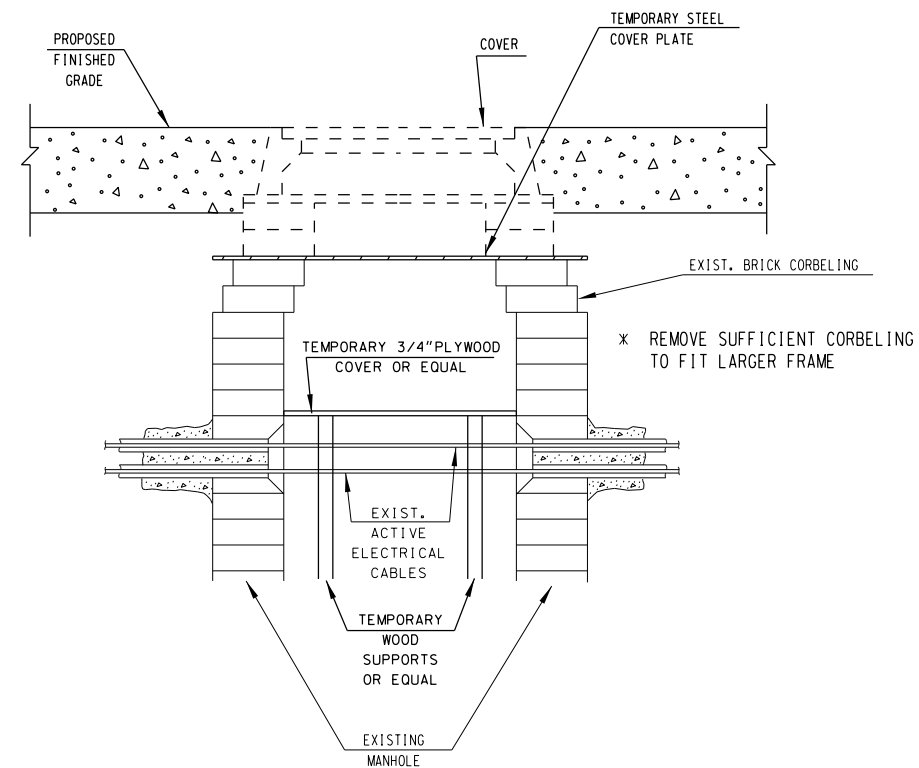
THE ADJUSTING RING SHALL BE 2" OR 3" IN HEIGHT.

THE CIRCUMFERENTIAL STEEL SHALL BE CENTERED WITHIN THE RING.

AREA OF CIRCUMFERENTIAL STEEL = 0.07 SQ. INCH PER VERTICAL FOOT WITH A MINIMUM OF .024 SQ. INCH IN ANY ONE RING.

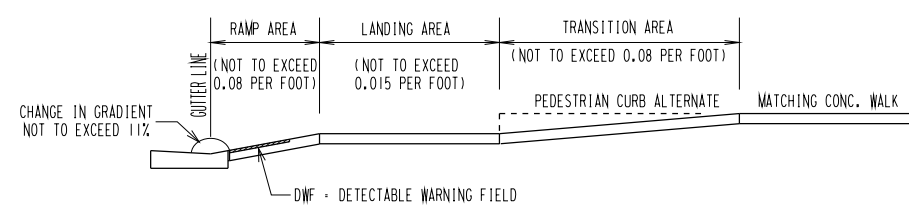
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE CORE SHALL BE 4000 P.S.I.

CONCRETE ADJUSTING RING



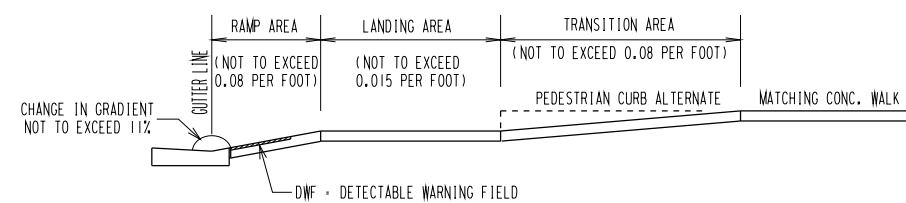
BRICK ROUND MANHOLE

ADJUSTING TES MANHOLES



TYPE - 2 RAMP MODIFIED

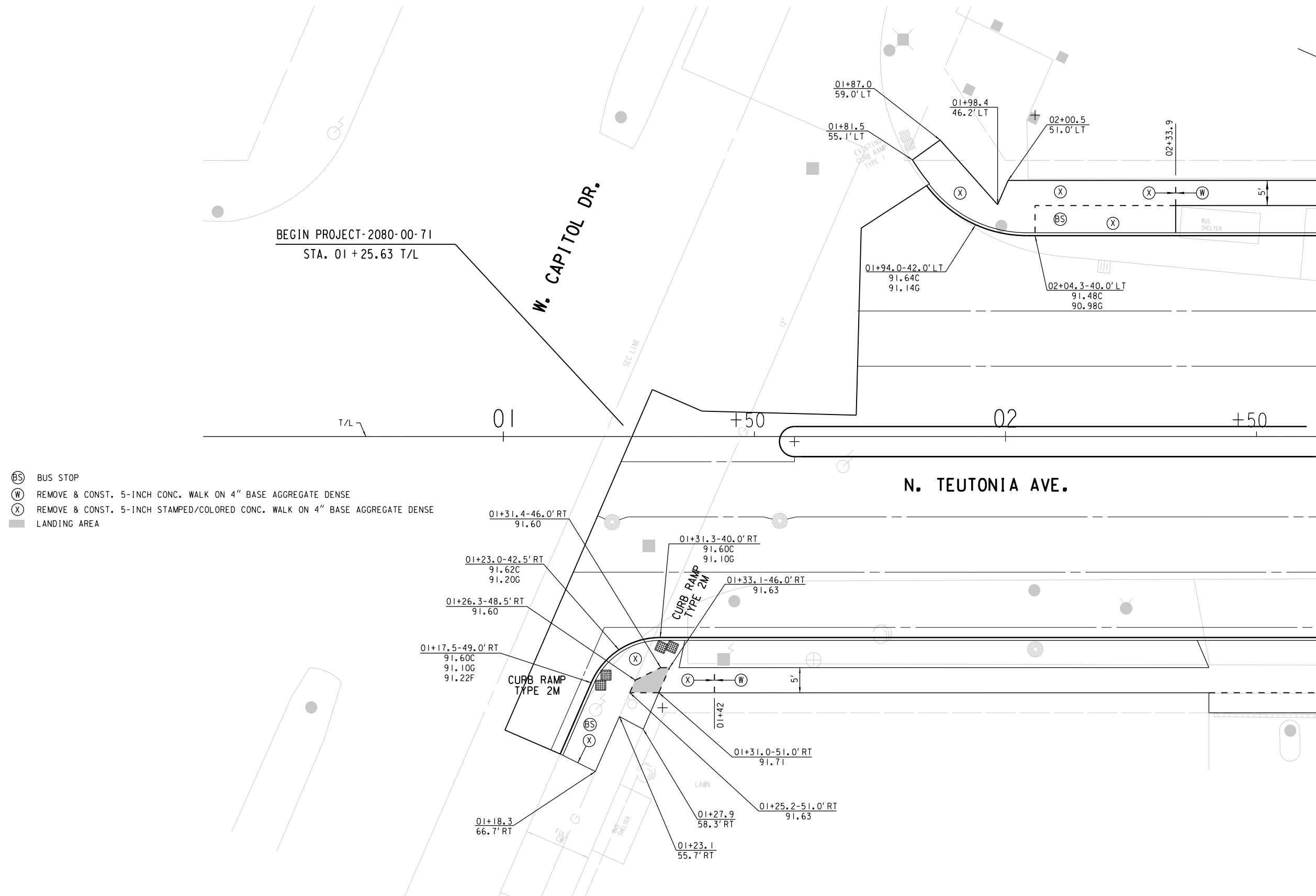
②M



TYPE - 2 RAMP SPECIAL

25



**CURB RAMP DETAILS - N. TEUTONIA AVE. AND W. CAPITOL DR.**

STATE PROJECT NUMBER 2080-00-71

- -

HWY: LOCAL STREET

COUNTY: MILWAUKEE

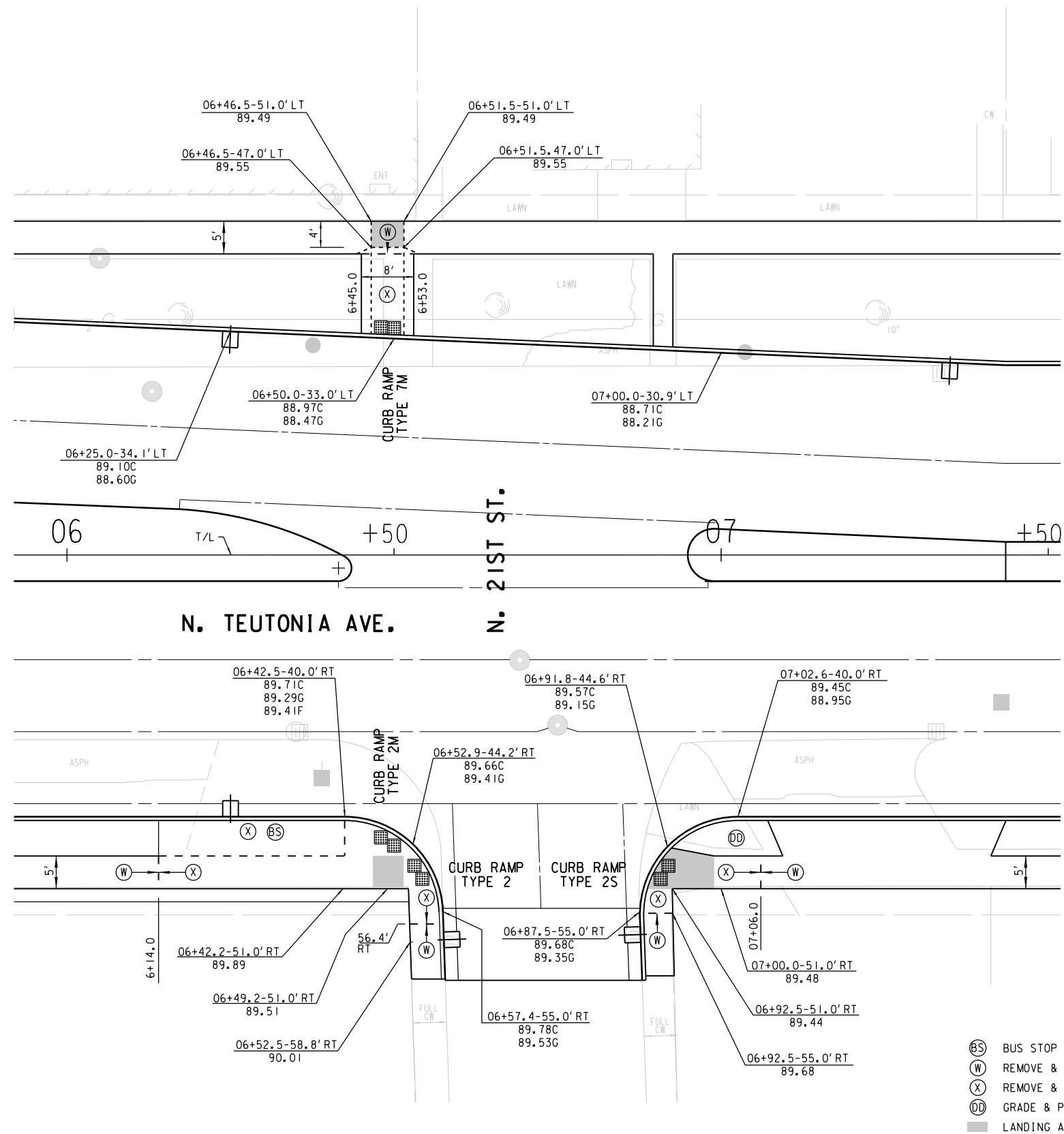
CONSTRUCTION DETAILS

SCALE FEET

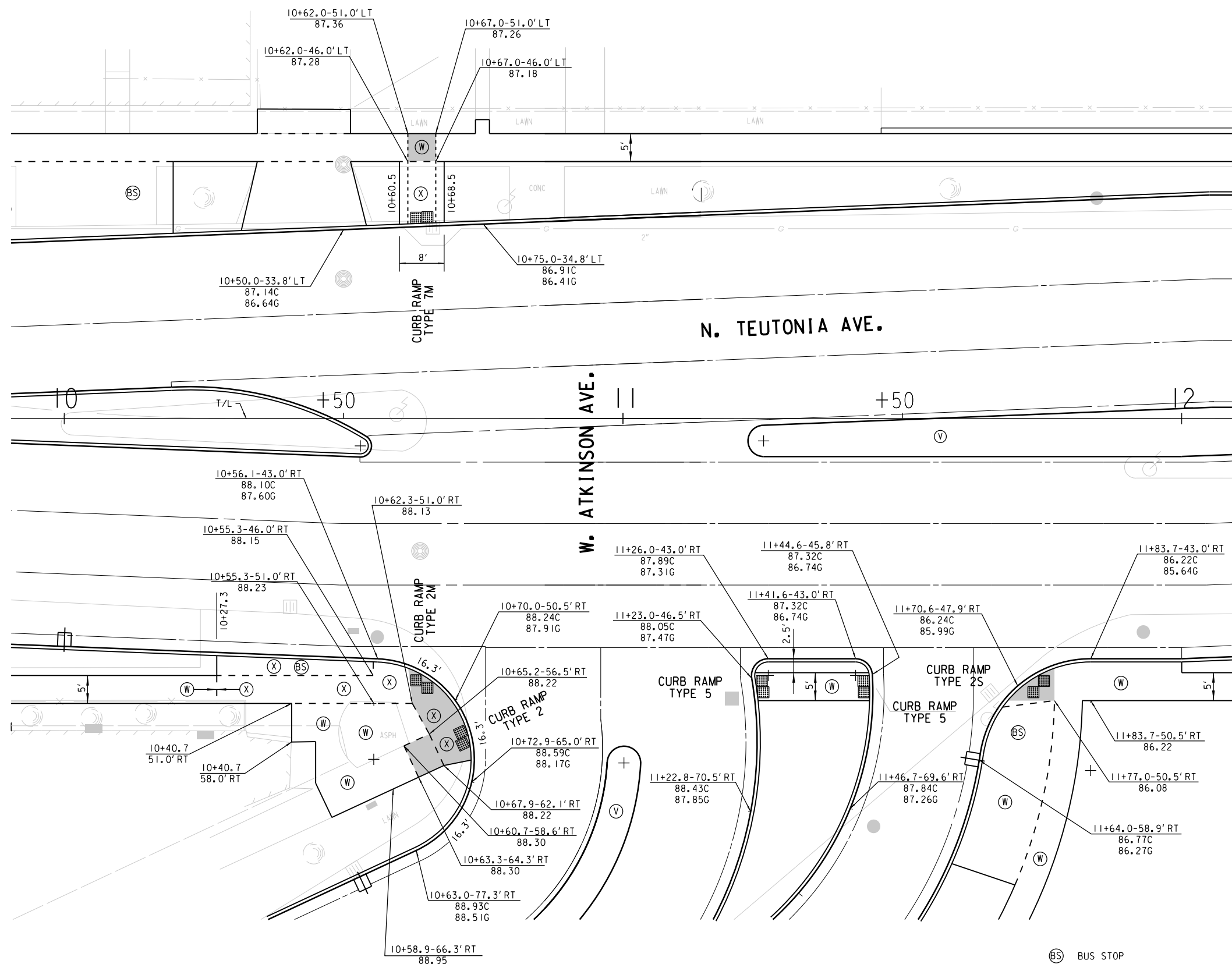


SHEET NO:

E

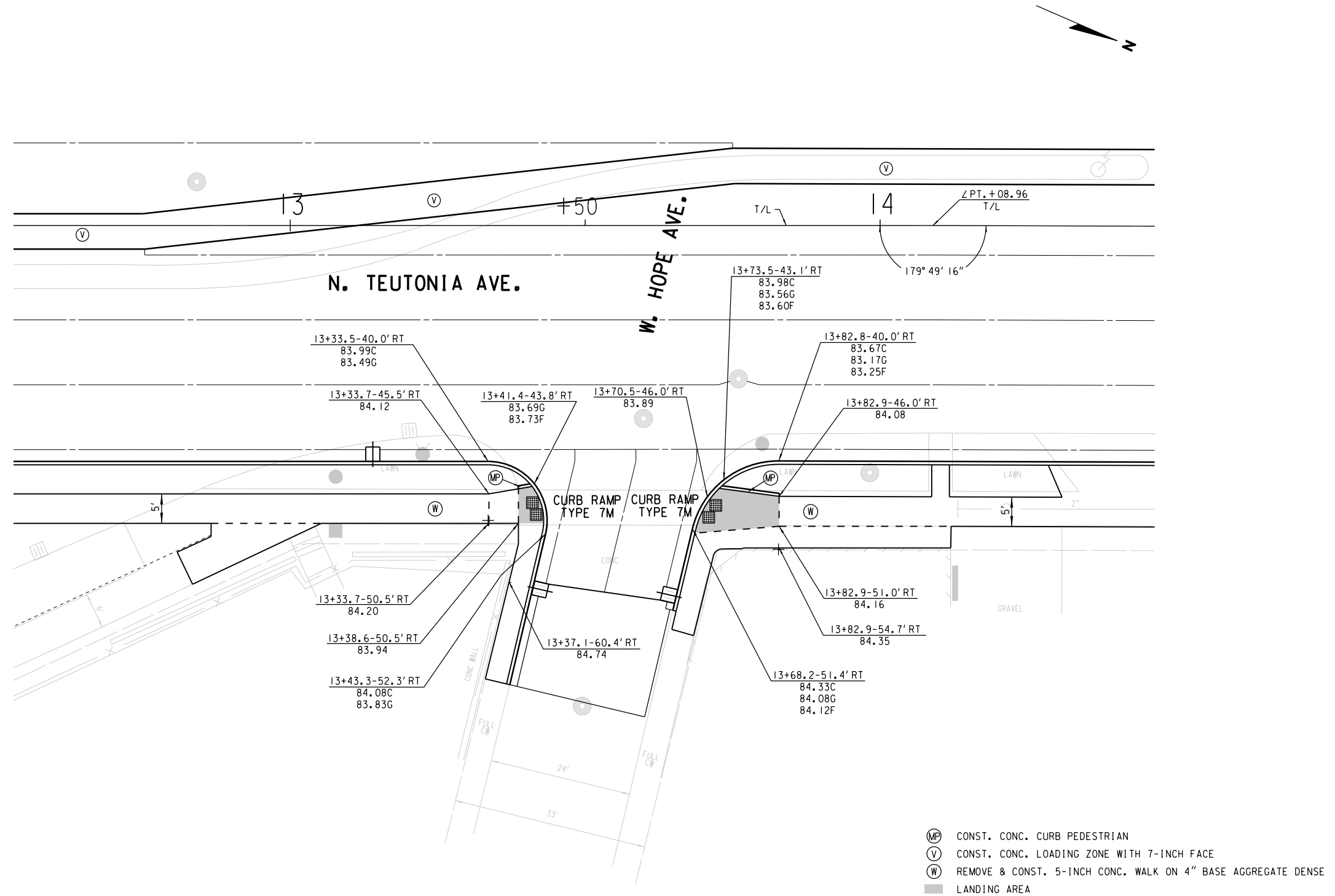


**CURB RAMP DETAILS - N. TEUTONIA AVE. AND N. 21ST ST. (E/S)**



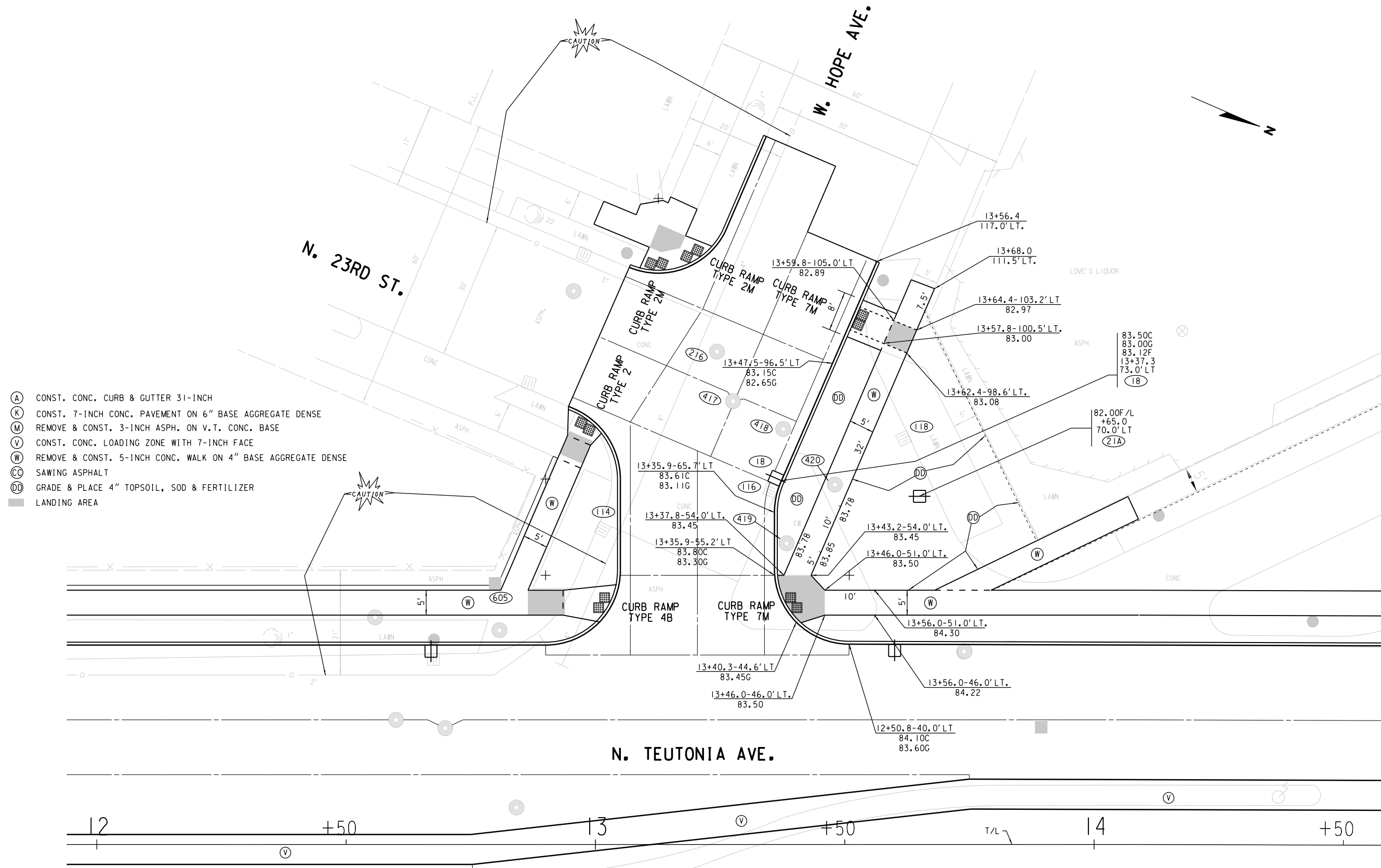
**CURB RAMP DETAILS - N. TEUTONIA AVE. AND W. ATKINSON AVE. (E/S)**

- BS BUS STOP
- V CONST. CONC. LOADING ZONE WITH 7-INCH FACE
- W REMOVE & CONST. 5-INCH CONC. WALK ON 4" BASE AGGREGATE DENSE
- X REMOVE & CONST. 5-INCH STAMPED/COLORED CONC. WALK ON 4" BASE AGGREGATE DENSE
- LANDING AREA



**CURB RAMP DETAILS - N. TEUTONIA AVE. AND W. HOPE AVE. (E/S)**



**WALK, CURB, CURB RAMP AND GUTTER DETAILS - W. HOPE AVE. (W/S)**

STATE PROJECT NUMBER 2080-00-71

- -

HWY: LOCAL STREET

COUNTY: MILWAUKEE

CONSTRUCTION DETAILS

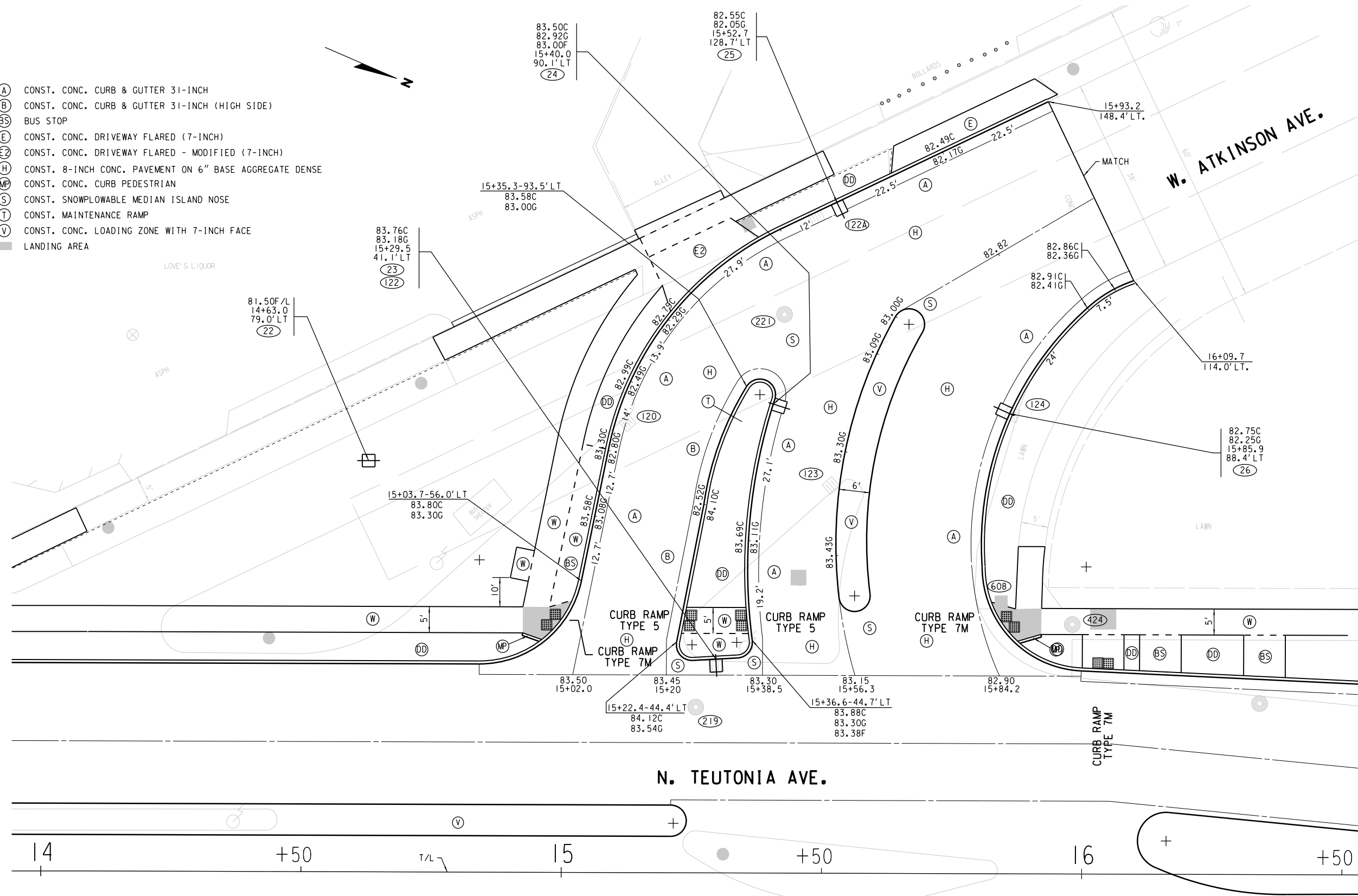
SCALE FEET



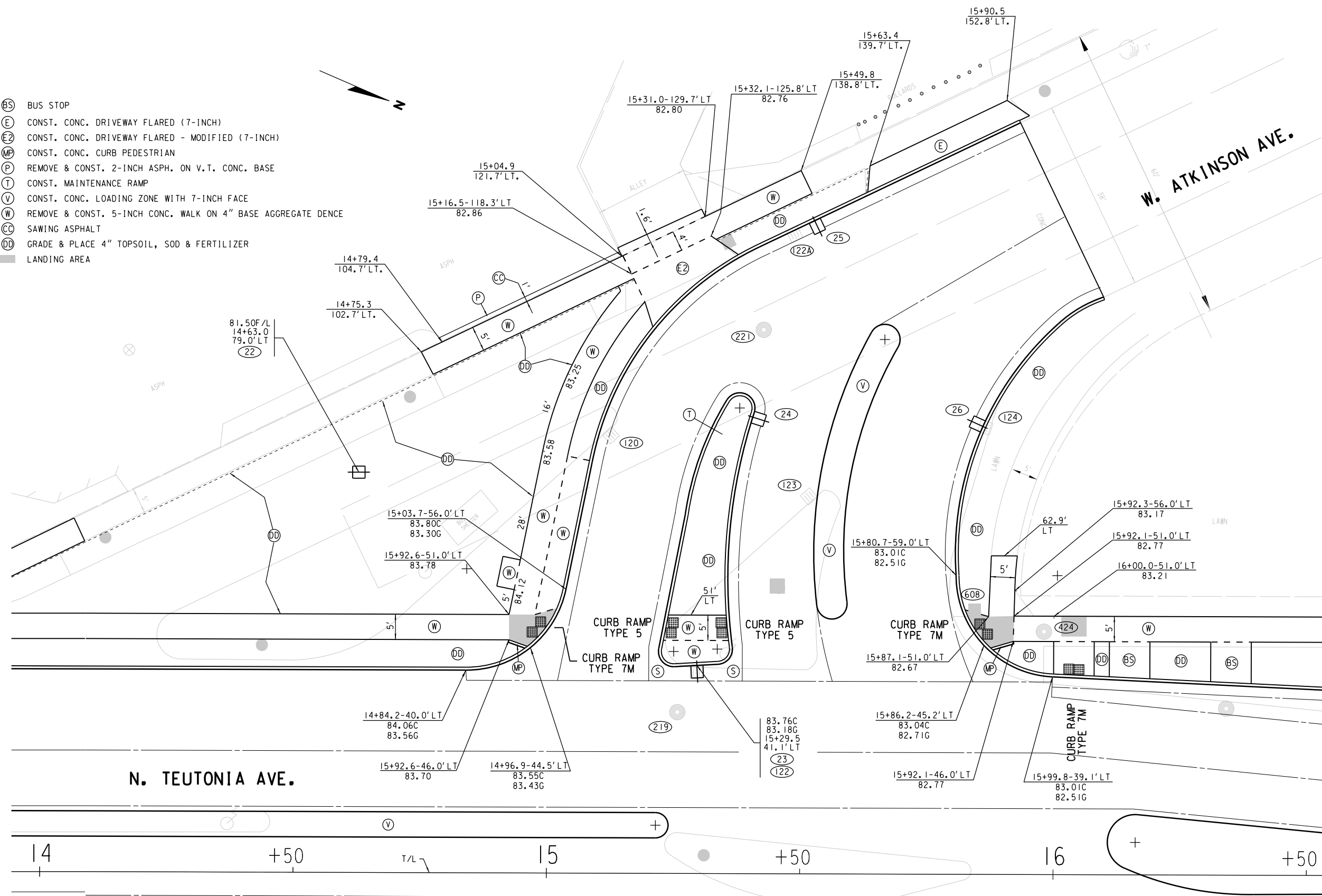
SHEET NO:

E

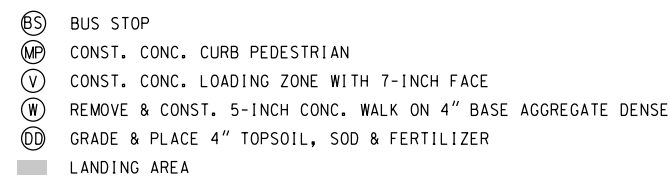
- (A) CONST. CONC. CURB & GUTTER 31-INCH  
(B) CONST. CONC. CURB & GUTTER 31-INCH (HIGH SIDE)  
(BS) BUS STOP  
(E) CONST. CONC. DRIVEWAY FLARED (7-INCH)  
(E2) CONST. CONC. DRIVEWAY FLARED - MODIFIED (7-INCH)  
(H) CONST. 8-INCH CONC. PAVEMENT ON 6" BASE AGGREGATE DENSE  
(MP) CONST. CONC. CURB PEDESTRIAN  
(S) CONST. SNOWPLOWABLE MEDIAN ISLAND NOSE  
(T) CONST. MAINTENANCE RAMP  
(V) CONST. CONC. LOADING ZONE WITH 7-INCH FACE  
■ LANDING AREA



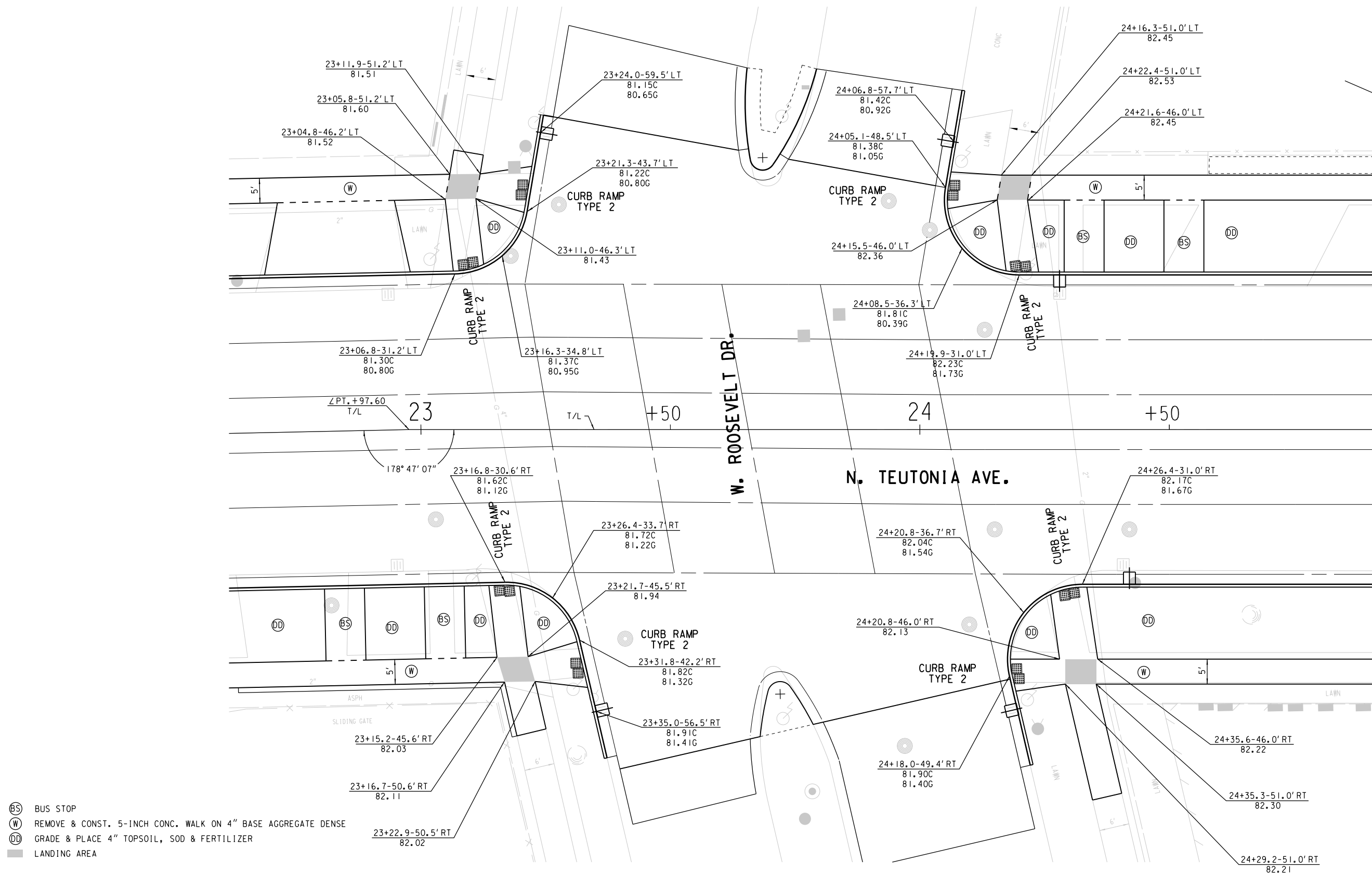
- BS BUS STOP  
E CONST. CONC. DRIVEWAY FLARED (7-INCH)  
E2 CONST. CONC. DRIVEWAY FLARED - MODIFIED (7-INCH)  
MP CONST. CONC. CURB PEDESTRIAN  
P REMOVE & CONST. 2-INCH ASPH. ON V.T. CONC. BASE  
T CONST. MAINTENANCE RAMP  
V CONST. CONC. LOADING ZONE WITH 7-INCH FACE  
W REMOVE & CONST. 5-INCH CONC. WALK ON 4" BASE AGGREGATE DENCE  
CC SAWING ASPHALT  
DD GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER  
LANDING AREA



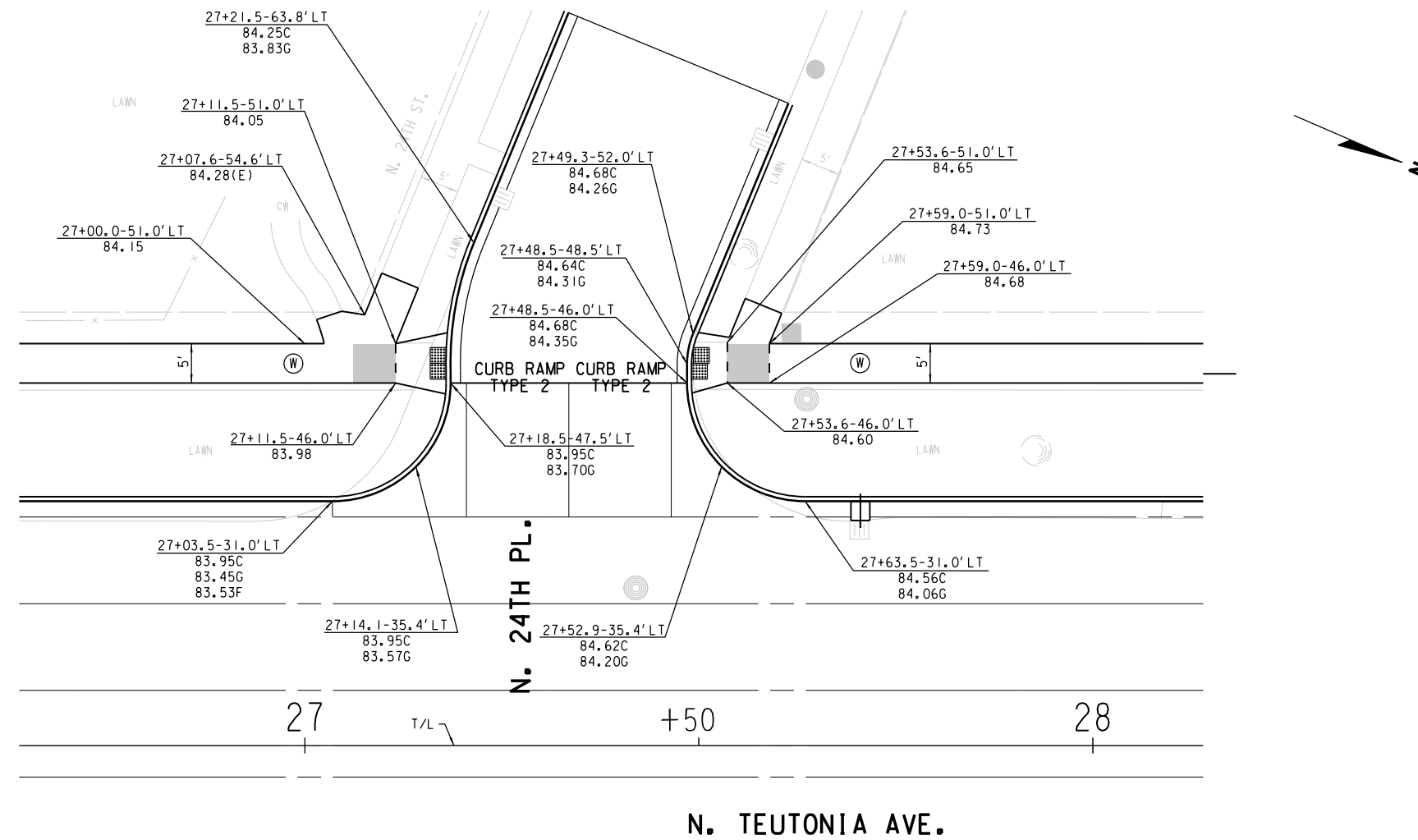
WALK, CURB, CURB RAMP AND GUTTER DETAILS - W. ATKINSON AVE. (W\S)



|                      |            |     |                   |                   |                      |            |                                                                                       |           |   |
|----------------------|------------|-----|-------------------|-------------------|----------------------|------------|---------------------------------------------------------------------------------------|-----------|---|
| STATE PROJECT NUMBER | 2080-00-71 | - - | HWY: LOCAL STREET | COUNTY: MILWAUKEE | CONSTRUCTION DETAILS | SCALE FEET |  | SHEET NO: | E |
|----------------------|------------|-----|-------------------|-------------------|----------------------|------------|---------------------------------------------------------------------------------------|-----------|---|



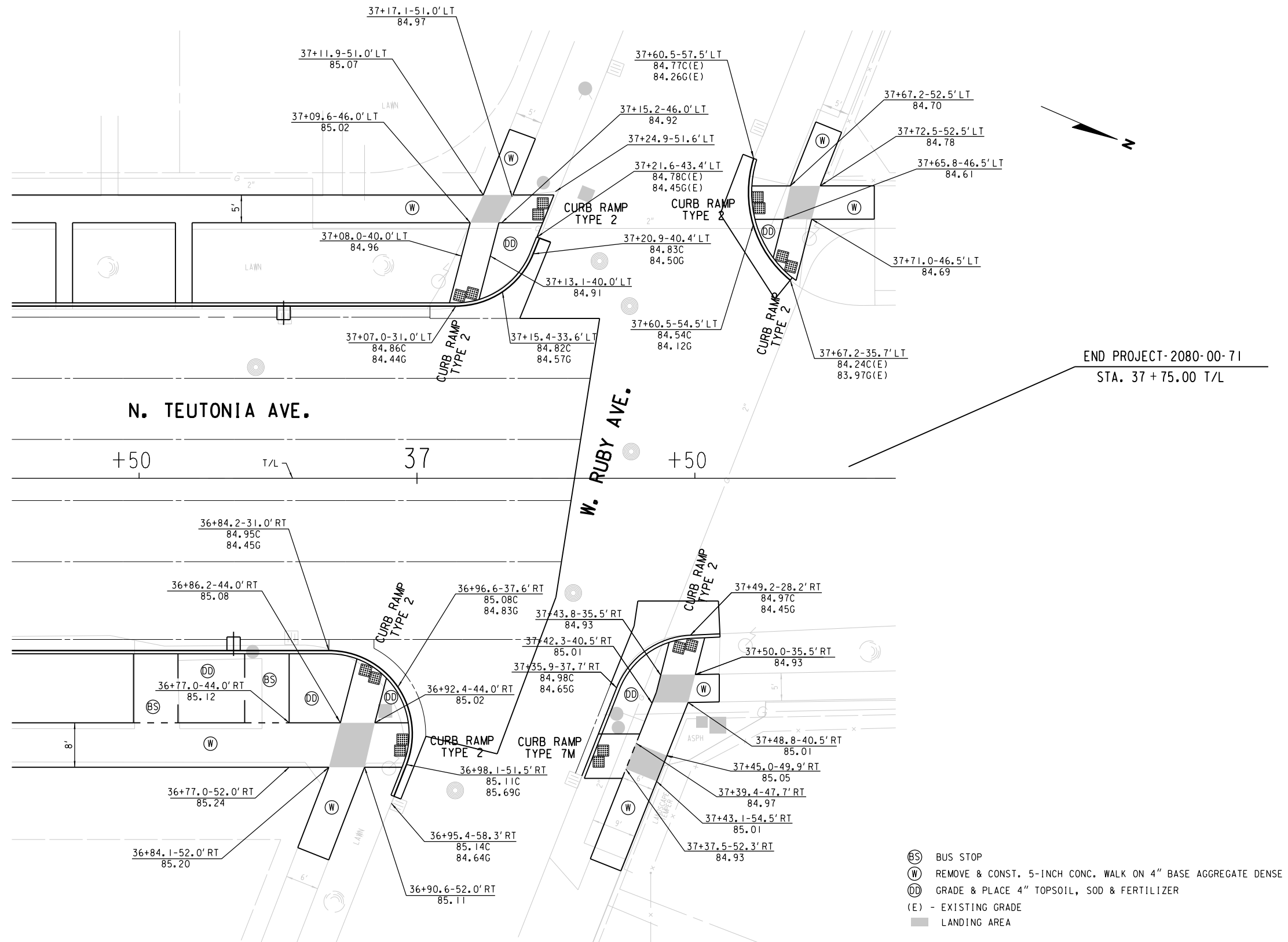
**CURB RAMP DETAILS - N. TEUTONIA AVE. AND W. ROOSEVELT DR.**



- BS BUS STOP
- W REMOVE & CONST. 5-INCH CONC. WALK ON 4" BASE AGGREGATE DENSE
- DD GRADE & PLACE 4" TOPSOIL, SOD & FERTILIZER
- (E) - EXISTING GRADE
- LANDING AREA

### CURB RAMP DETAILS - N. TEUTONIA AVE. AND N. 24TH PL. (W/S)





**CURB RAMP DETAILS - N. TEUTONIA AVE. AND W. RUBY AVE.**

STATE PROJECT NUMBER 2080-00-71

- -

HWY: LOCAL STREET

COUNTY: MILWAUKEE

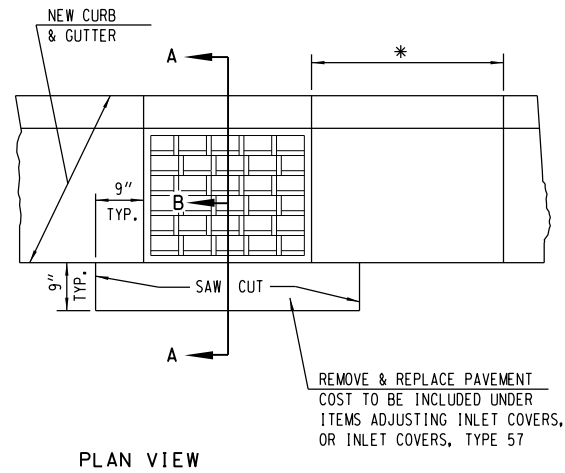
CONSTRUCTION DETAILS

SCALE FEET 0' 20'

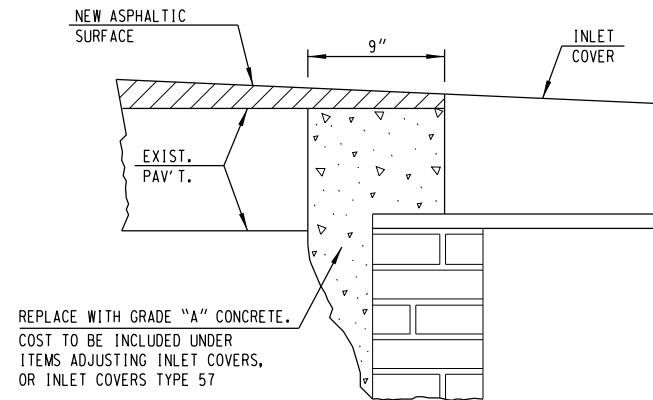
SHEET NO:

E

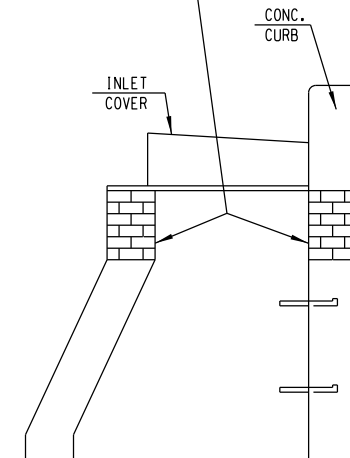
\* REMOVE 3'-0" CURB & GUTTER MIN. OR TO THE NEAREST JOINT, 6'-0" MAX. UNLESS OTHERWISE DIRECTED ON THE PLAN.



PLAN VIEW



SECTION A-B

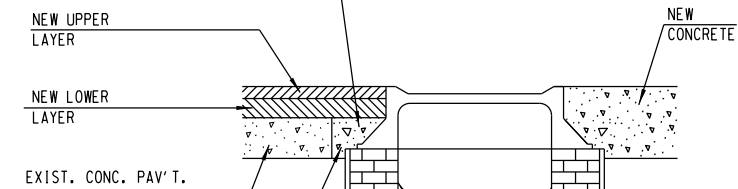


SECTION A-A

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.

### ADJUSTING INLET COVERS

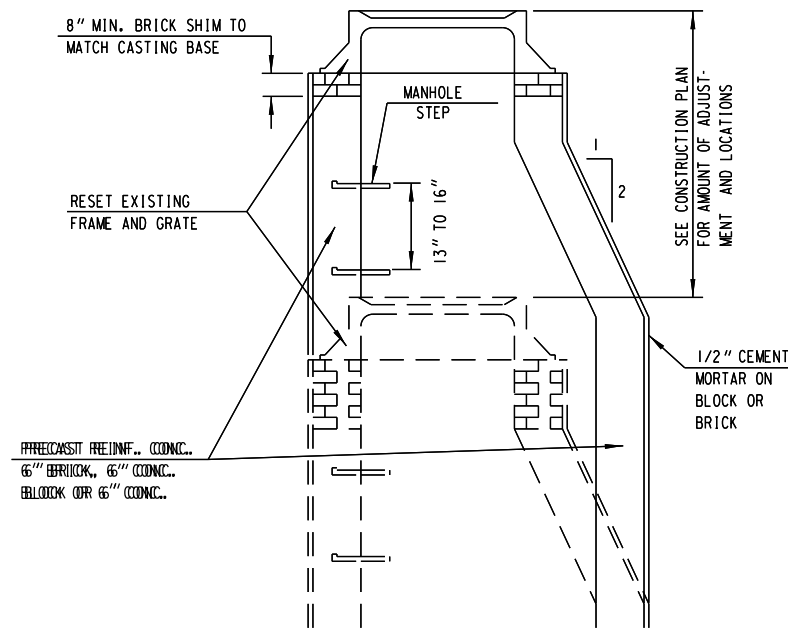
REPLACE WITH CONCRETE BASE  
COST TO BE INCLUDED UNDER  
ITEMS ADJUSTING MH COVERS,  
OR MANHOLE COVERS TYPE 58  
OR TYPE 58A TYPE 0



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



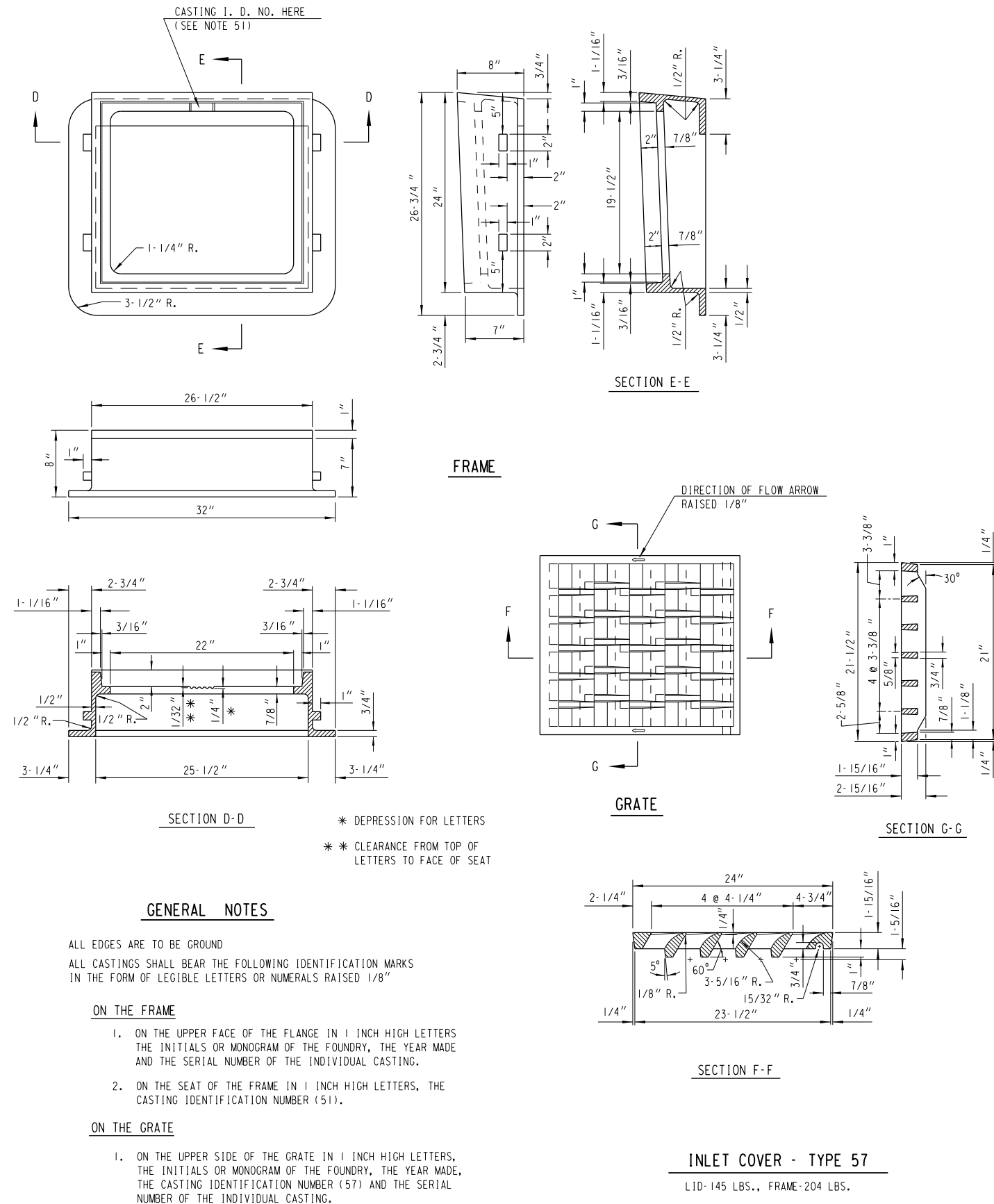
CORBEL MAY BE REVERSED  
STRAIGHT SIDE LEANED  
SLIGHTLY TO CLEAR CURB HEAD.

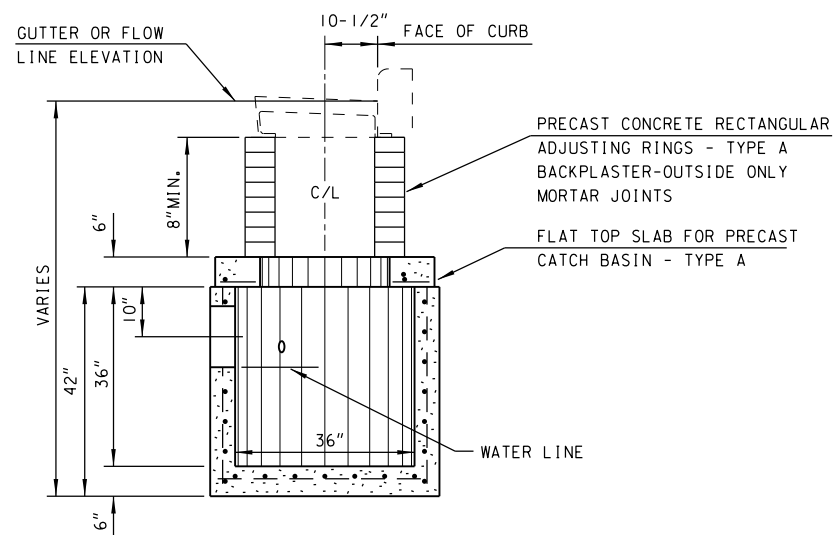
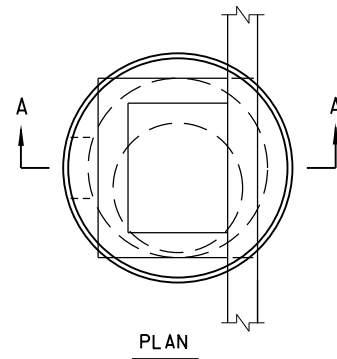
REPAIR BY REMOVING AND REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO THE DEPTH AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. DEPTHS AS INDICATED ON PLAN ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

### 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.

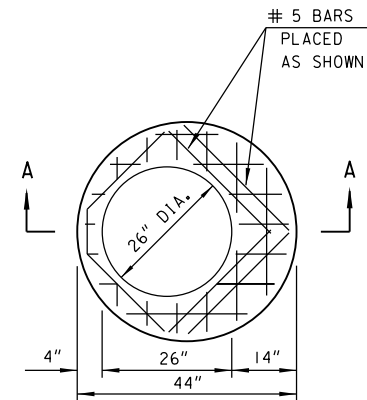




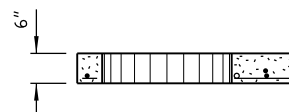
SECTION A-A

CATCH BASIN - TYPE 45AGENERAL 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

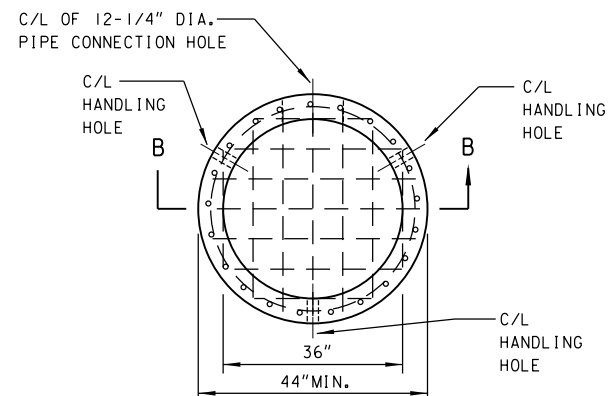
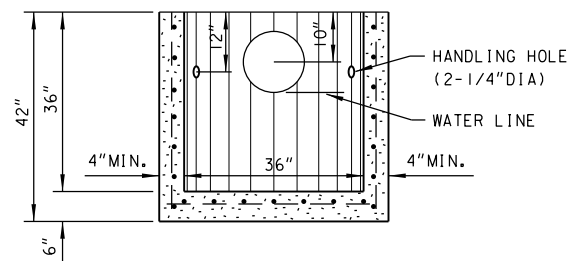
TOP SLAB - TYPE A

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.

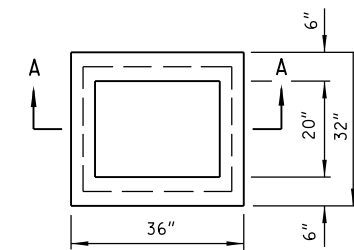
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

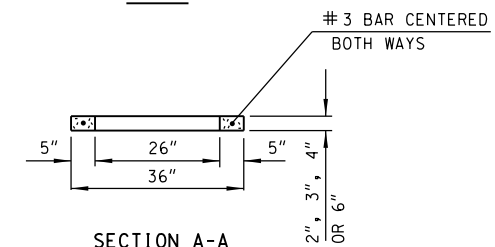
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

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.

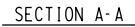
RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

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.

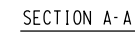
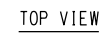
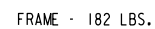
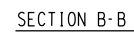
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

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

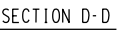


L1D - 107 LBS.

NOTE: ALL EXTERIOR EDGES SHALL BE GROUND.

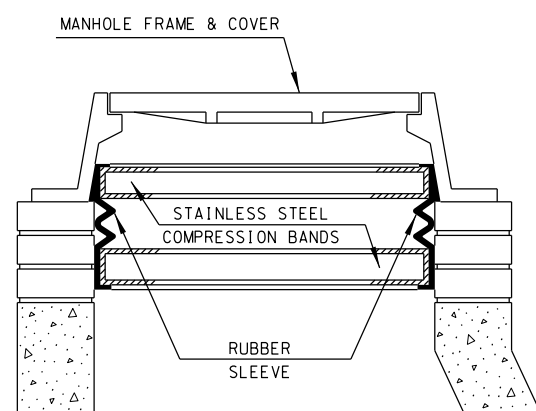


SCALE N.T.S.

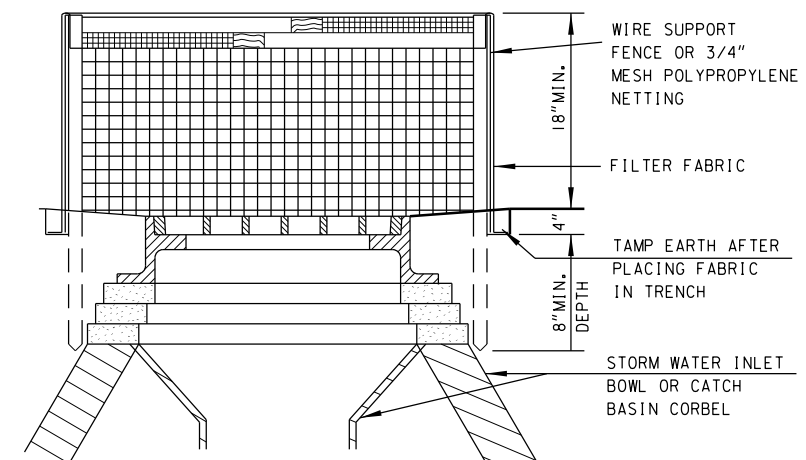
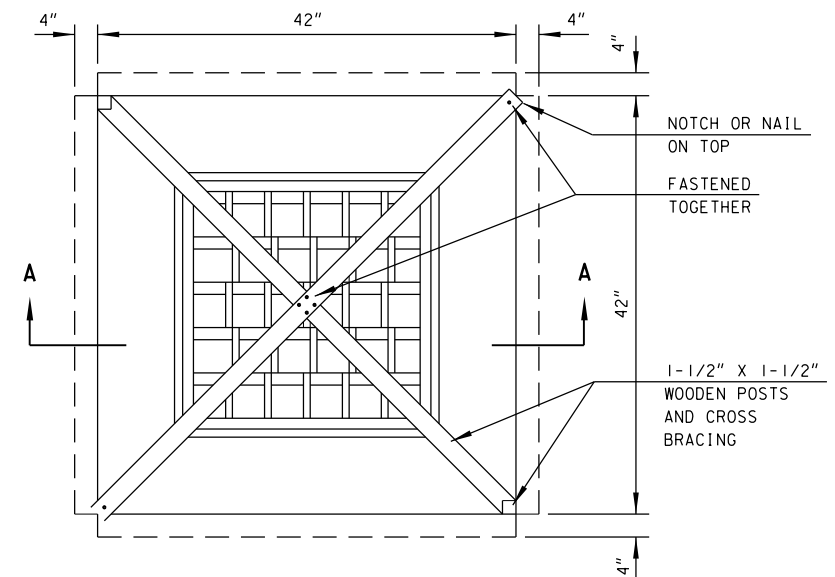


GRATE- 159 LBS., FRAME- 165 LBS.

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 (MS-55) AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.

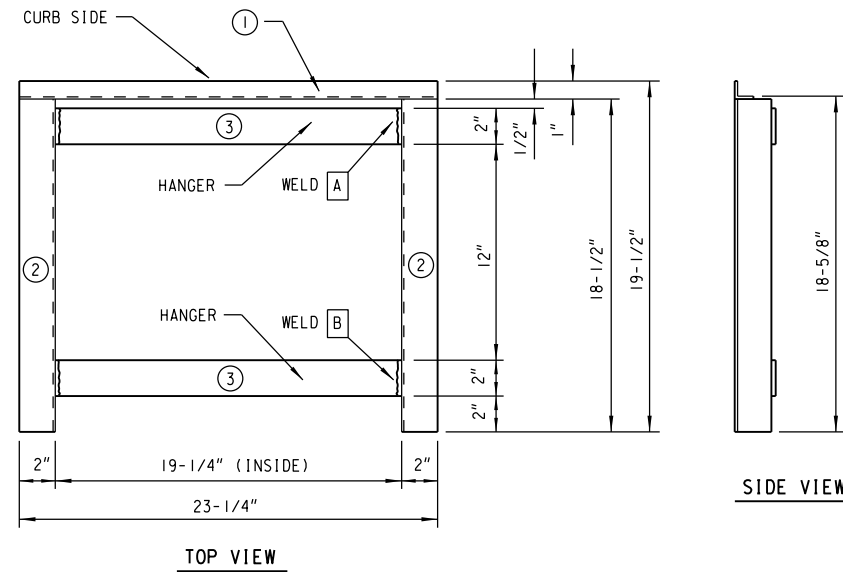
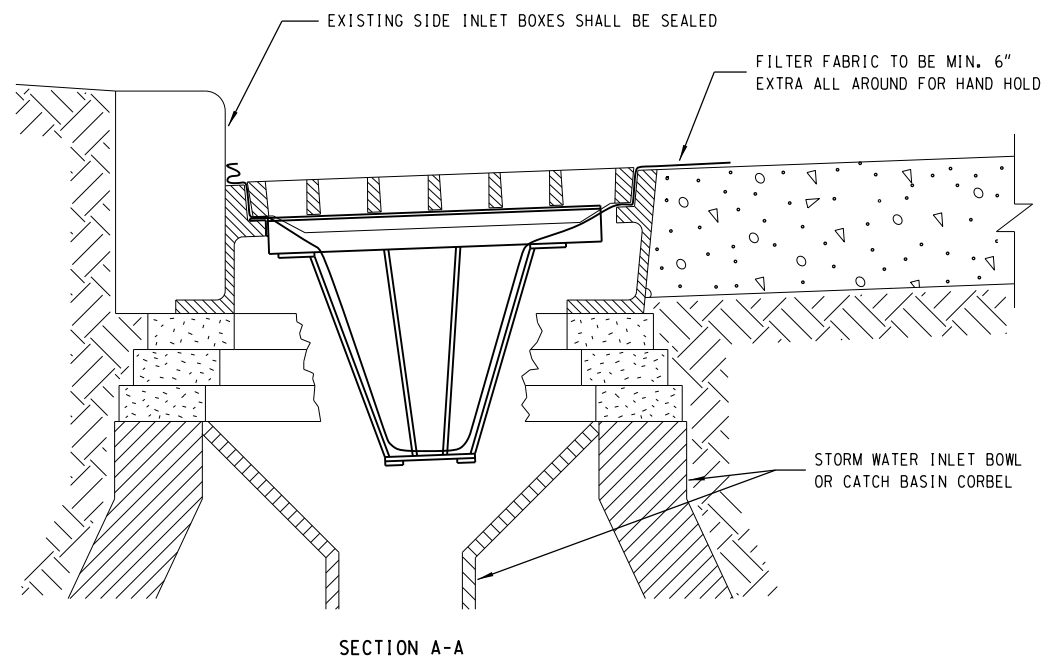
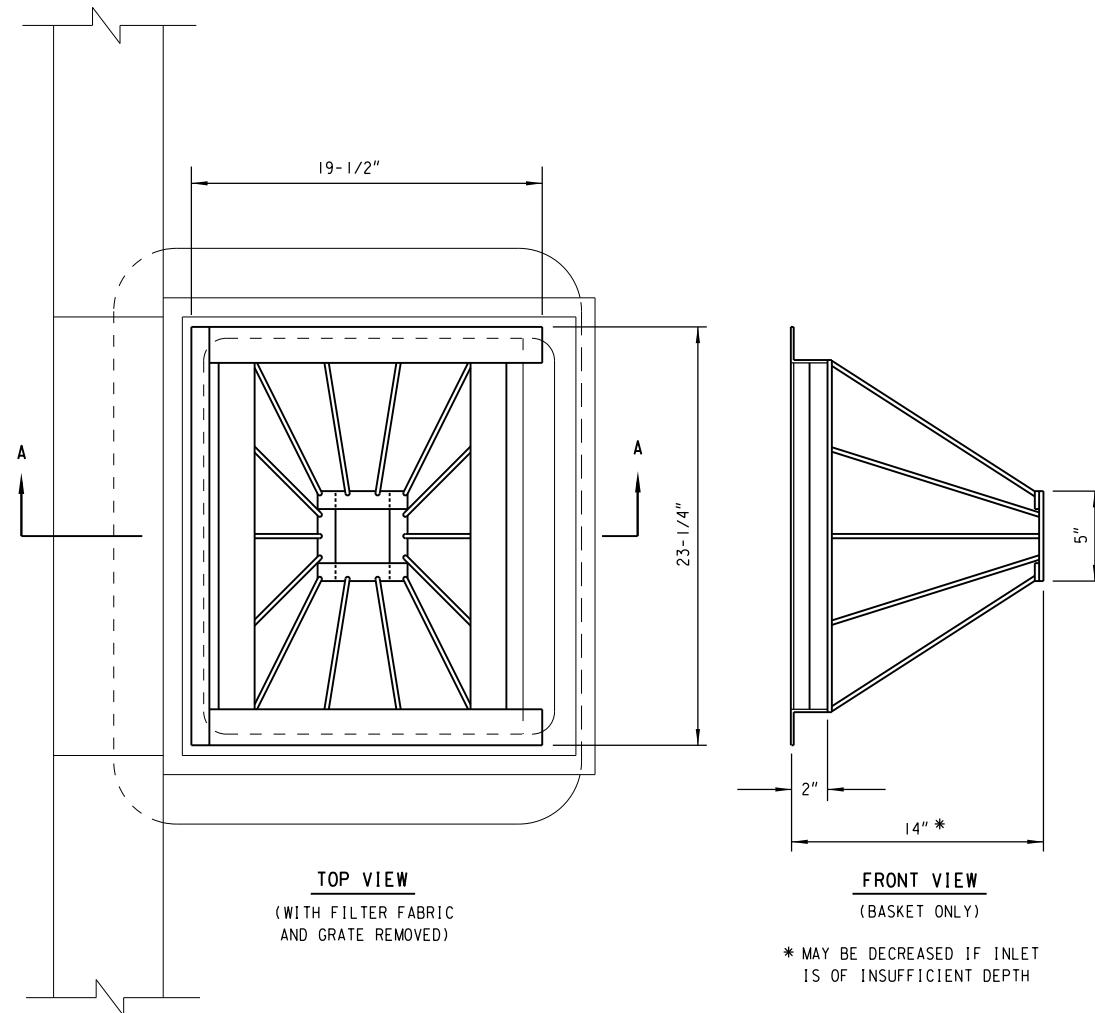


INTERNAL SANITARY MANHOLE SEAL

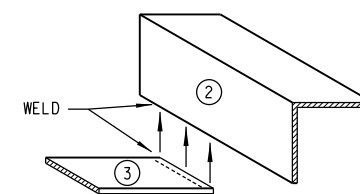
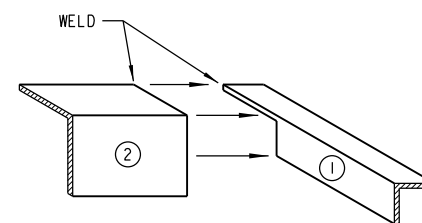


SECTION A-A

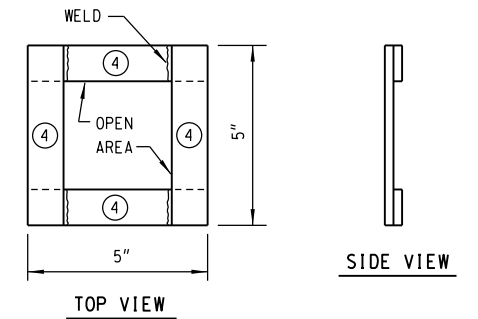
INLET SCREEN  
(NOT PAVED) (TYPE R)



| 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        |

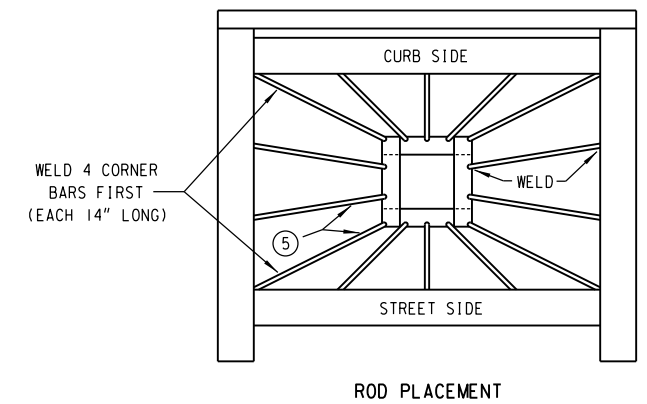


**TYPE M**  
**INLET / CATCH BASIN BASKET**

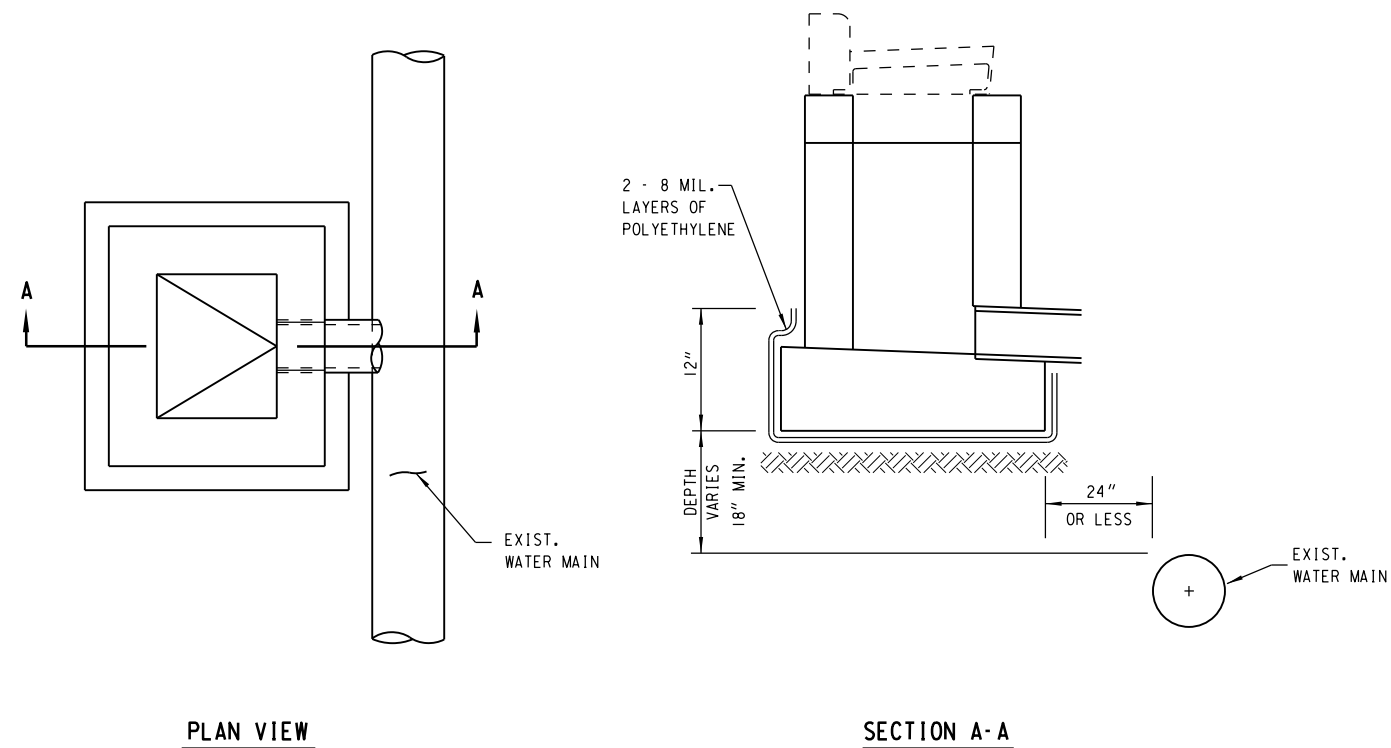


| BAR SCHEDULE |       |      |           |        |          |
|--------------|-------|------|-----------|--------|----------|
| NO.          | SHAPE | SIZE | THICKNESS | LENGTH | QUANTITY |
| ④            | BAR   | 1"   | 1/4"      | 5"     | 4        |

**BASKET BOTTOM**

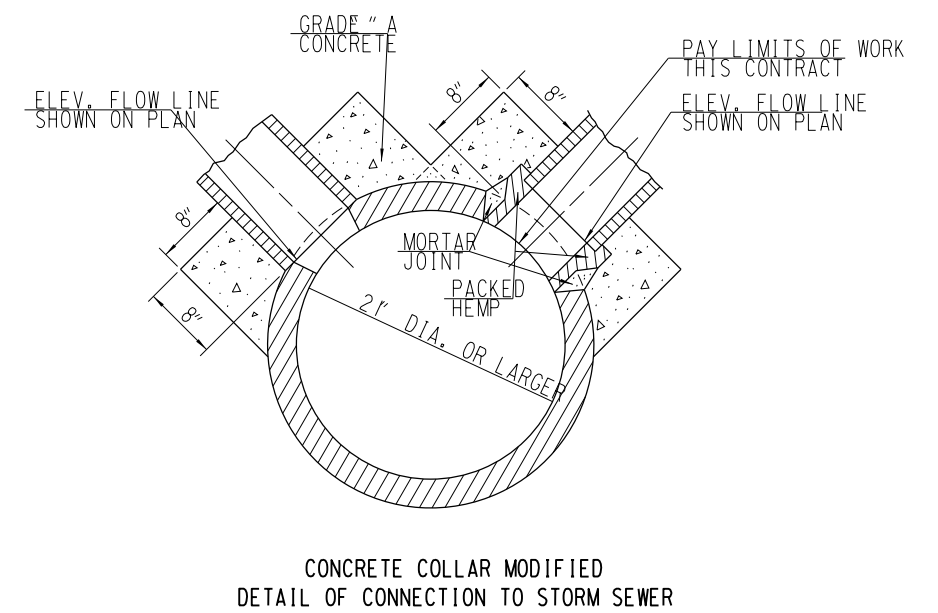


| ROD SCHEDULE |       |           |           |                         |          |
|--------------|-------|-----------|-----------|-------------------------|----------|
| NO.          | SHAPE | SIZE      | THICKNESS | LENGTH                  | QUANTITY |
| ⑤            | ROD   | 1/4" MIN. | 1/8" 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



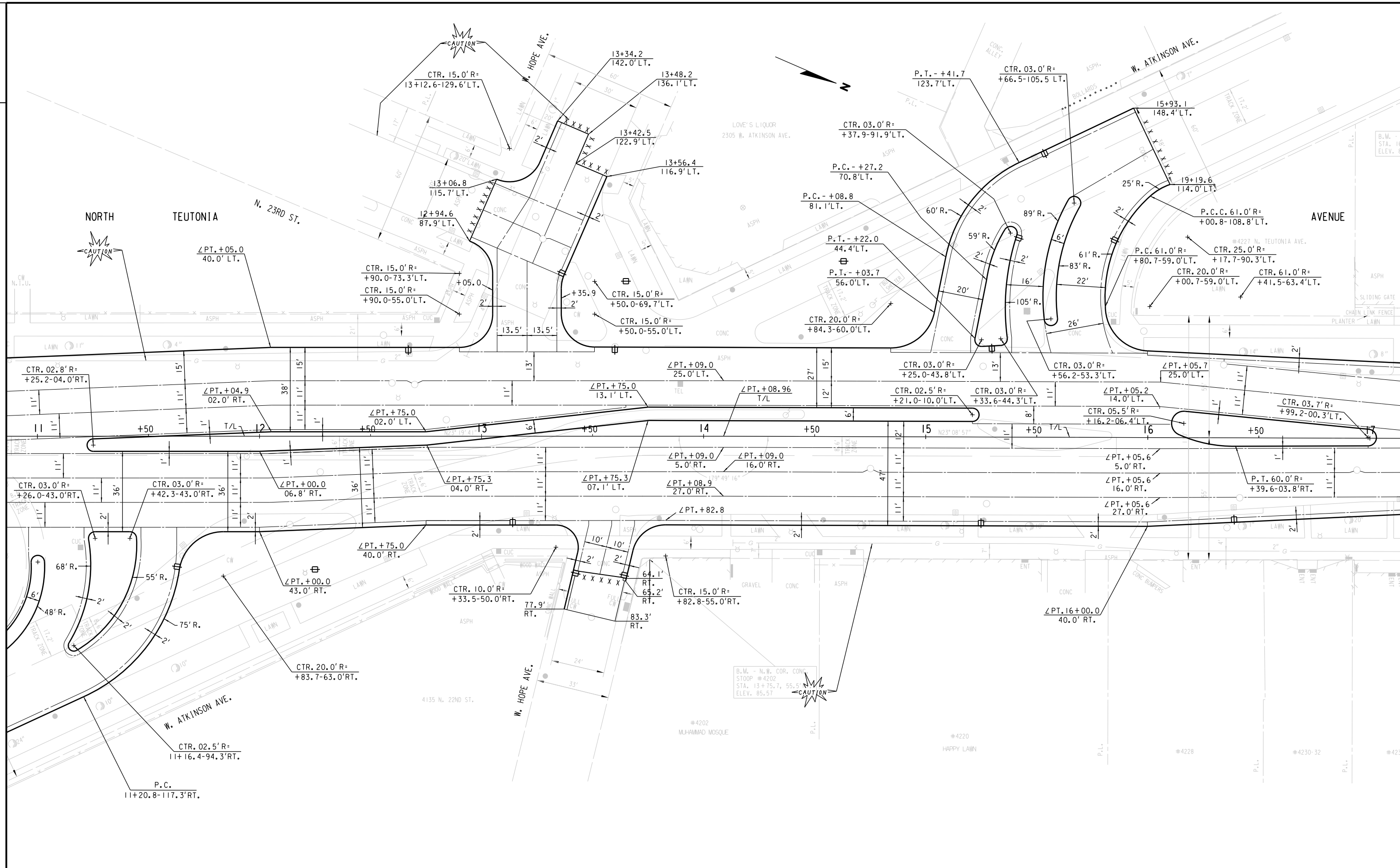
### WATER MAIN PROTECTION

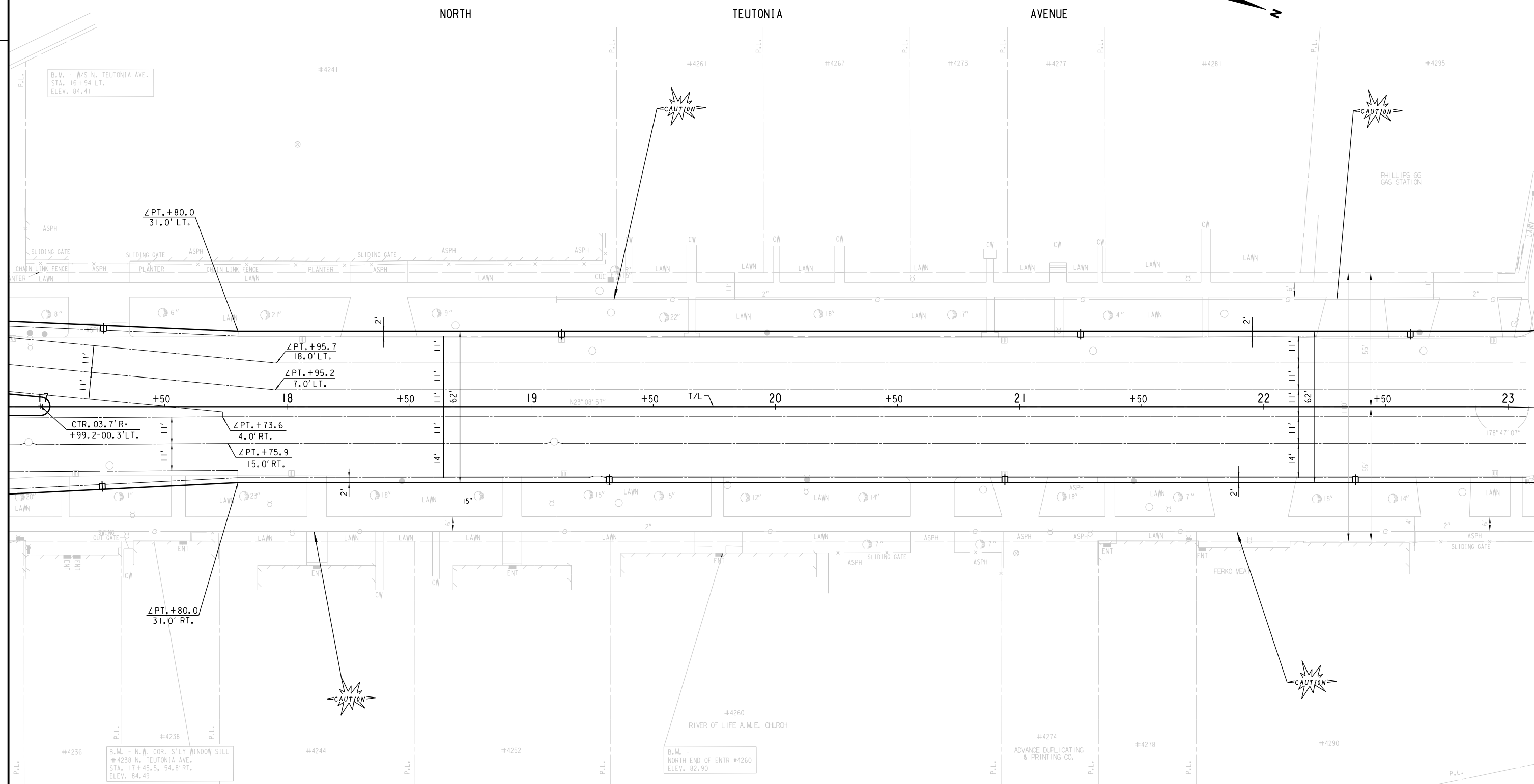
INSTALL ON ALL CATCH BASINS OR INLETS WITH  
LESS THAN 24" HORIZONTAL OUT-TO-OUT CLEARANCE  
FROM STRUCTURE TO WATER MAIN



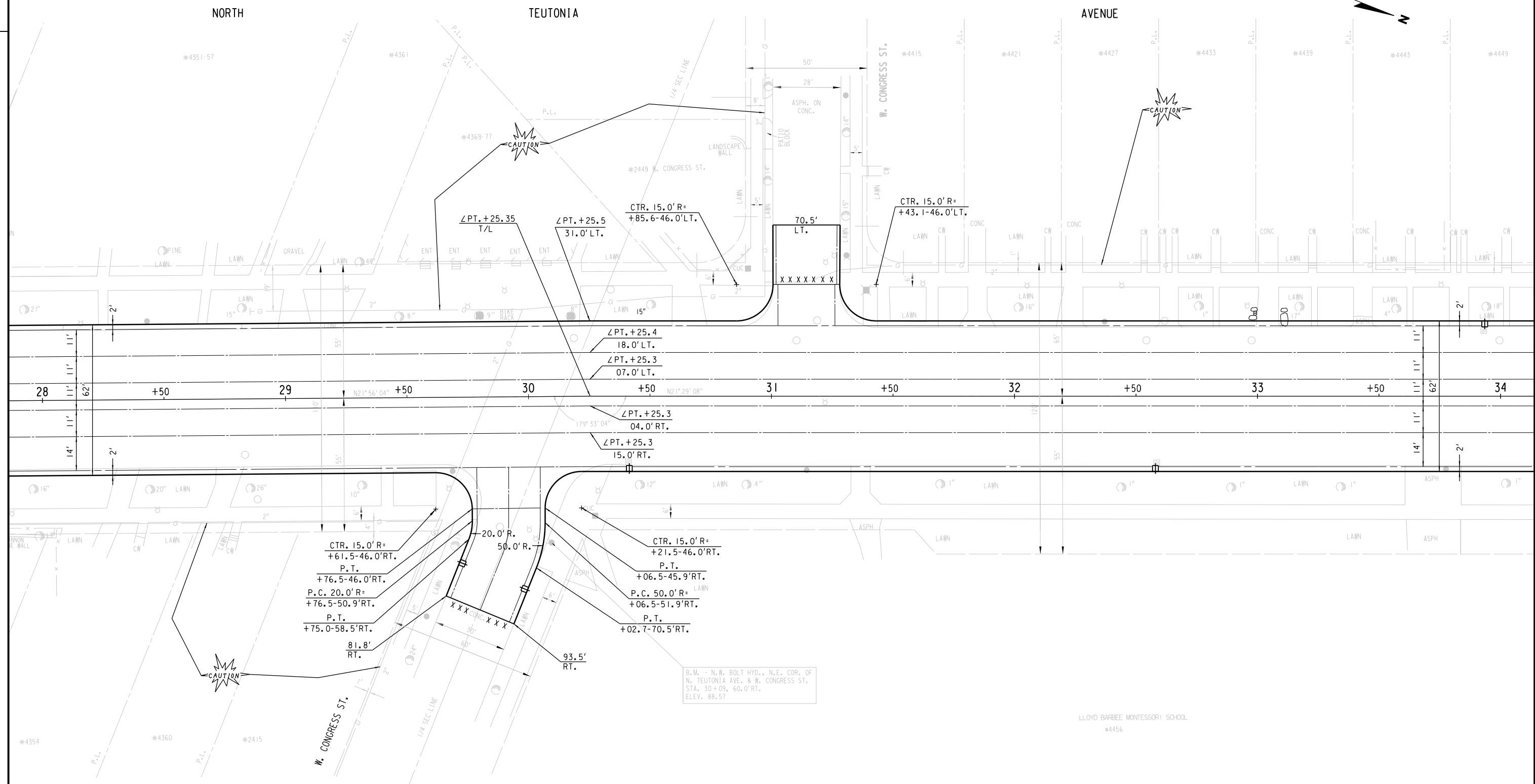


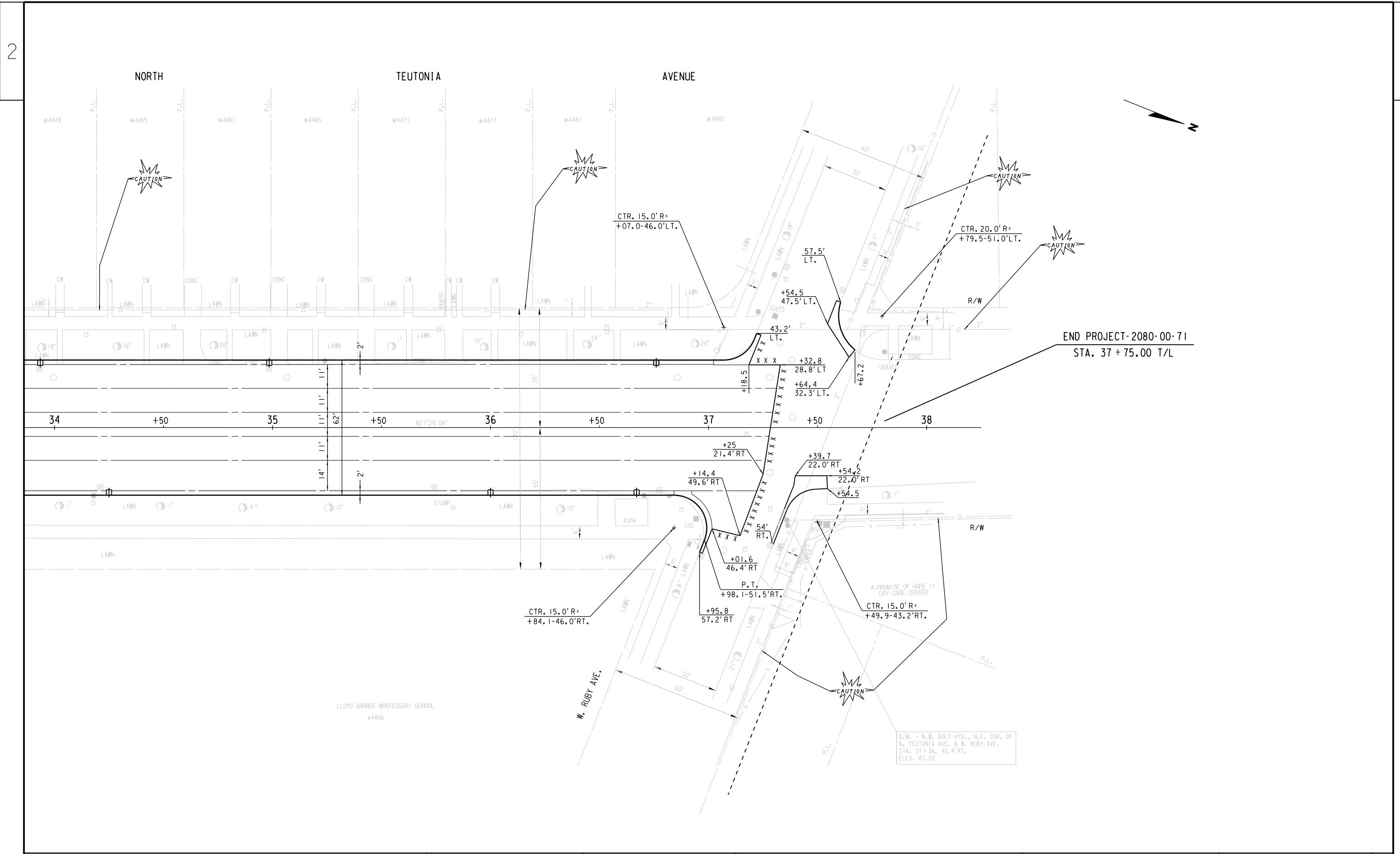












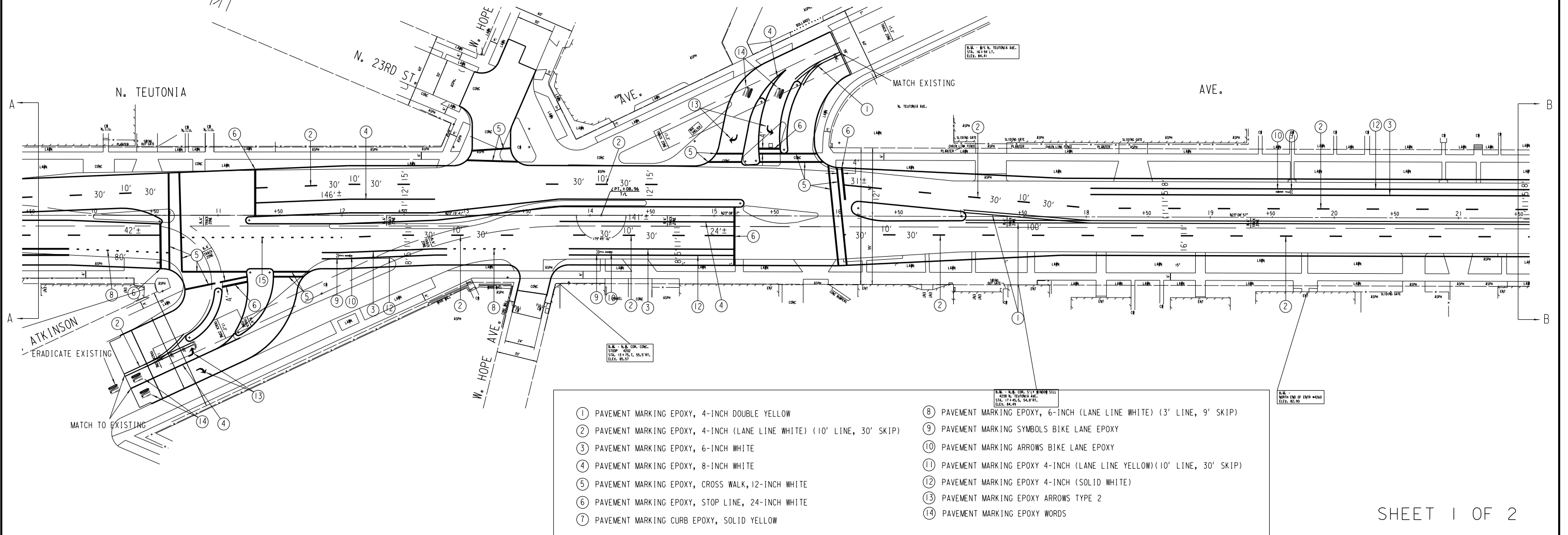
## PAVEMENT MARKING

B.M. - HYD. BPS N. TEUTONIA AVE.  
STA. 00+99.55  
ELEV. 90.11



N. TEUTONIA

AVE.

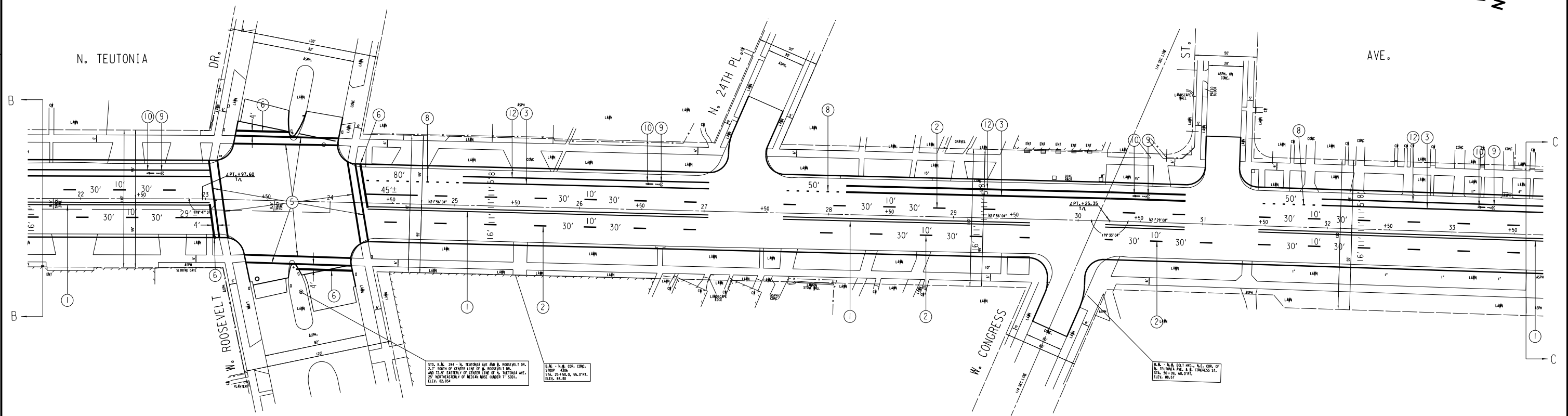


SHEET 1 OF 2

## PAVEMENT MARKING

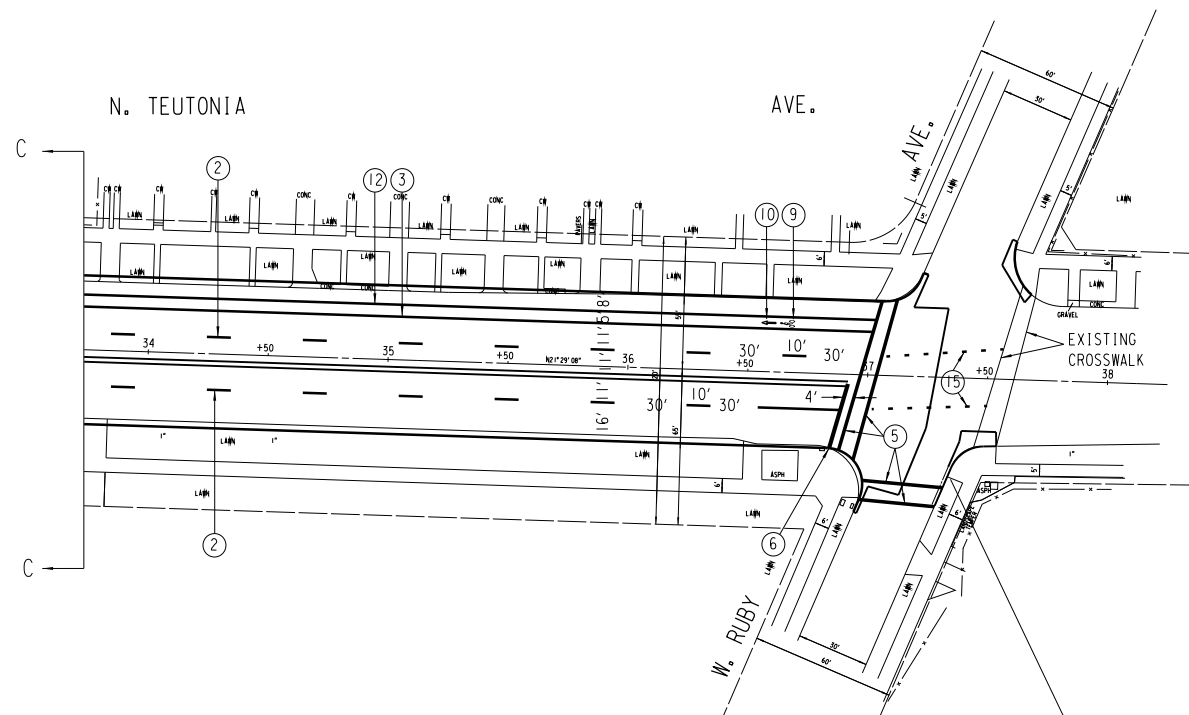
AVE.

N. TEUTONIA



N. TEUTONIA

AVE.



- ① PAVEMENT MARKING EPOXY, 4-INCH DOUBLE YELLOW
- ② PAVEMENT MARKING EPOXY, 4-INCH (LANE LINE WHITE) (10' LINE, 30' SKIP)
- ③ PAVEMENT MARKING EPOXY, 6-INCH WHITE
- ④ PAVEMENT MARKING EPOXY, 8-INCH WHITE
- ⑤ PAVEMENT MARKING EPOXY, CROSS WALK, 12-INCH WHITE
- ⑥ PAVEMENT MARKING EPOXY, STOP LINE, 24-INCH WHITE
- ⑦ PAVEMENT MARKING CURB EPOXY, SOLID YELLOW
- ⑧ PAVEMENT MARKING EPOXY, 6-INCH (LANE LINE WHITE) (3' LINE, 9' SKIP)
- ⑨ PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY
- ⑩ PAVEMENT MARKING ARROWS BIKE LANE EPOXY
- ⑪ PAVEMENT MARKING EPOXY 4-INCH (LANE LINE YELLOW) (10' LINE, 30' SKIP)
- ⑫ PAVEMENT MARKING EPOXY 4-INCH (SOLID WHITE)
- ⑬ PAVEMENT MARKING EPOXY ARROWS TYPE 2
- ⑭ PAVEMENT MARKING EPOXY WORDS

SHEET 2 OF 2

STAGE 1 CONSTRUCTION

- N. TEUTONIA AVENUE NORTHBOUND DRIVING LANES (INCLUDING MEDIAN INTEGRAL CURB AND GUTTER,) BIKE LANE, AND PARKING LANE
- EAST SIDEWALK ALONG N. TEUTONIA AVE
- EAST SIDE ROAD INTERSECTIONS

STAGE 1 TRAFFIC

- N. TEUTONIA AVENUE OPEN TO TRAFFIC.
- TRAFFIC REDUCED TO ONE NORTHBOUND LANE AND ONE SOUTHBOUND LANE ON EXISTING SOUTHBOUND LANES.
- AT W. CAPITOL DRIVE INTERSECTION TRAFFIC REDUCED TO ONE NORTHBOUND LANE, ONE SOUTHBOUND LANE, AND ONE SOUTHBOUND LEFT TURN LANE ON EXISITNG SOUTHBOUND LANES.
- N. 21ST STREET INTERSECTION CLOSED TO TRAFFIC.
- W. ATKINSON AVENUE INTERSECTION CLOSED TO TRAFFIC.
- W. HOPE AVENUE INTERSECTION CLOSED TO TRAFFIC.
- W. ROOSEVELT DRIVE INTERSECTION CONSTRUCTED UNDER TRAFFIC.
- W. CONGRESS STREET INTERSECTION CLOSED TO TRAFFIC.
- WEST SIDEWALK ALONG N. TEUTONIA AVE TO REMAIN OPEN AT ALL TIMES.

STAGE 2 TRAFFIC

- N. TEUTONIA AVENUE OPEN TO TRAFFIC.
- TRAFFIC REDUCED TO ONE NORTHBOUND LANE AND ONE SOUTHBOUND LANE ON NEWLY CONSTRUCTED NORTHBOUND LANES.
- AT W. CAPITOL DRIVE INTERSECTION TRAFFIC REDUCED TO ONE NORTHBOUND LANE, ONE SOUTHBOUND LANE, AND ONE SOUTHBOUND LEFT TURN LANE ON NEWLY CONSTRUCTED NORTHBOUND LANES.
- N. 21 ST STREET INTERSECTION OPEN TO TRAFFIC.
- W. ATKINSON AVENUE INTERSECTION CLOSED TO TRAFFIC.
- W. HOPE AVENUE INTERSECTION CLOSED TO TRAFFIC.
- W. ROOSEVELT DRIVE INTERSECTION CONSTRUCTED UNDER TRAFFIC.
- W. CONGRESS STREET INTERSECTION CLOSED TO TRAFFIC.
- EAST SIDEWALK ALONG N. TEUTONIA AVE TO REMAIN OPEN AT ALL TIMES.

TRAFFIC CONTROL GENERAL NOTES

- 1) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- 2) "W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 3) ALL TYPE III BARRICADES SHALL BE EQUIPPED WITH TWO TYPE A (LOW INTENSITY FLASHING) LIGHTS.
- 4) COVER ALL SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
- 5) ALL BARRELS SPACED AT 25' UNLESS NOTED OTHERWISE.
- 6) ALL FLEXIBLE TUBULAR MARKERS SPACED AT 25' UNLESS NOTED OTHERWISE.

TRAFFIC CONTROL PAVEMENT MARKING LEGEND

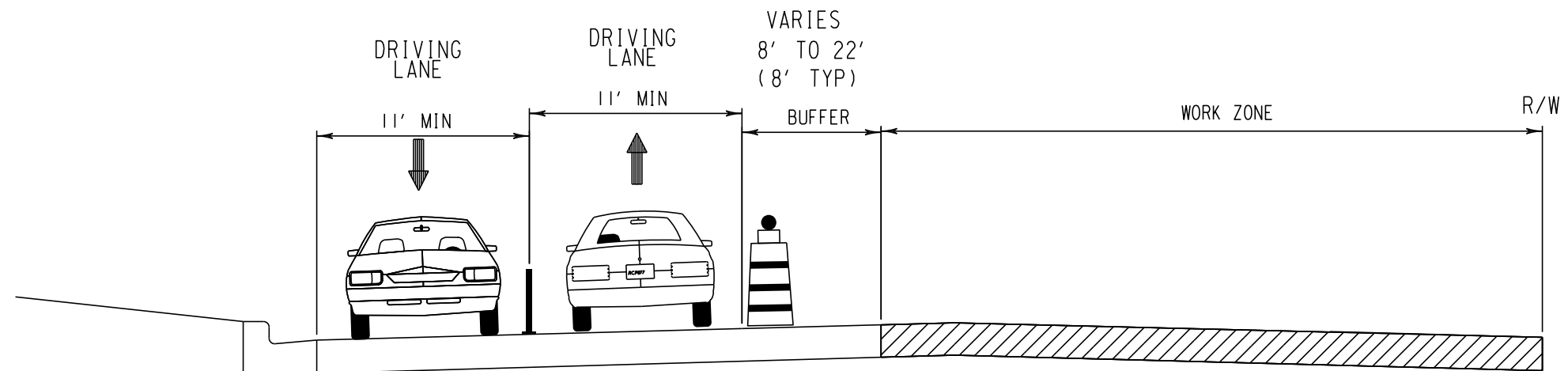
- 1 TEMPORARY PAVEMENT MARKING 4-INCH WHITE
- 2 TEMPORARY PAVEMENT MARKING 4-INCH DOUBLE YELLOW
- 3 TEMPORARY PAVEMENT MARKING 4-INCH YELLOW
- 4 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH WHITE
- 5 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH DOUBLE YELLOW
- 6 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH YELLOW
- 7 TEMPORARY PAVEMENT MARKING ARROWS
- 8 TEMPORARY PAVEMENT MARKING WORDS
- 9 TEMPORARY PAVEMENT MARKING ARROWS REMOVABLE TAPE
- 10 TEMPORARY PAVEMENT MARKING WORDS REMOVABLE TAPE

STAGE 2 CONSTRUCTION

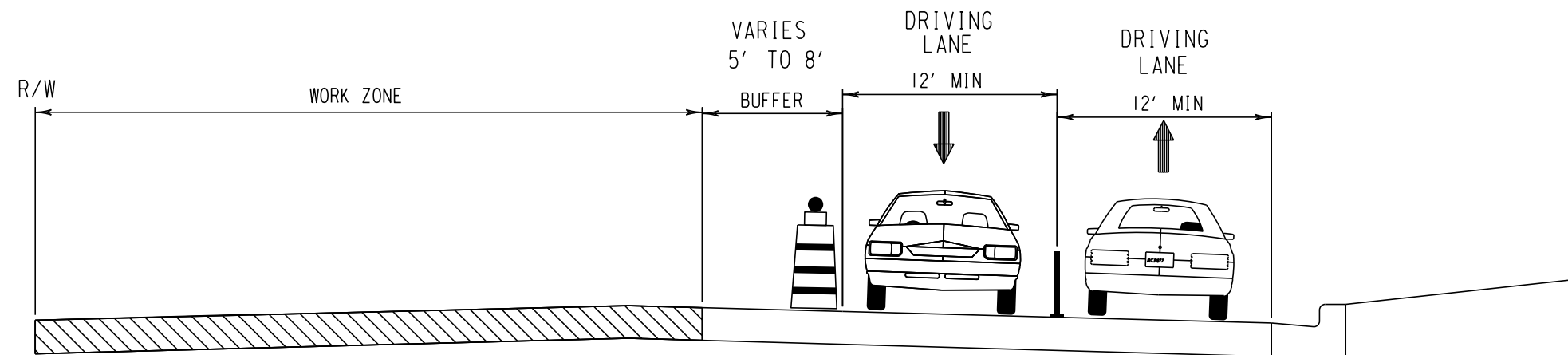
- N. TEUTONIA AVENUE SOUTHBOUND DRIVING LANES, LEFT TURN LANES, BIKE LANE, PARKING LANE, AND MEDIANS
- N. TEUTONIA AVENUE NORTHBOUND LEFT TURN LANES
- WEST SIDEWALK ALONG N. TEUTONIA AVE
- WEST SIDE ROAD INTERSECTIONS

TRAFFIC CONTROL LEGEND

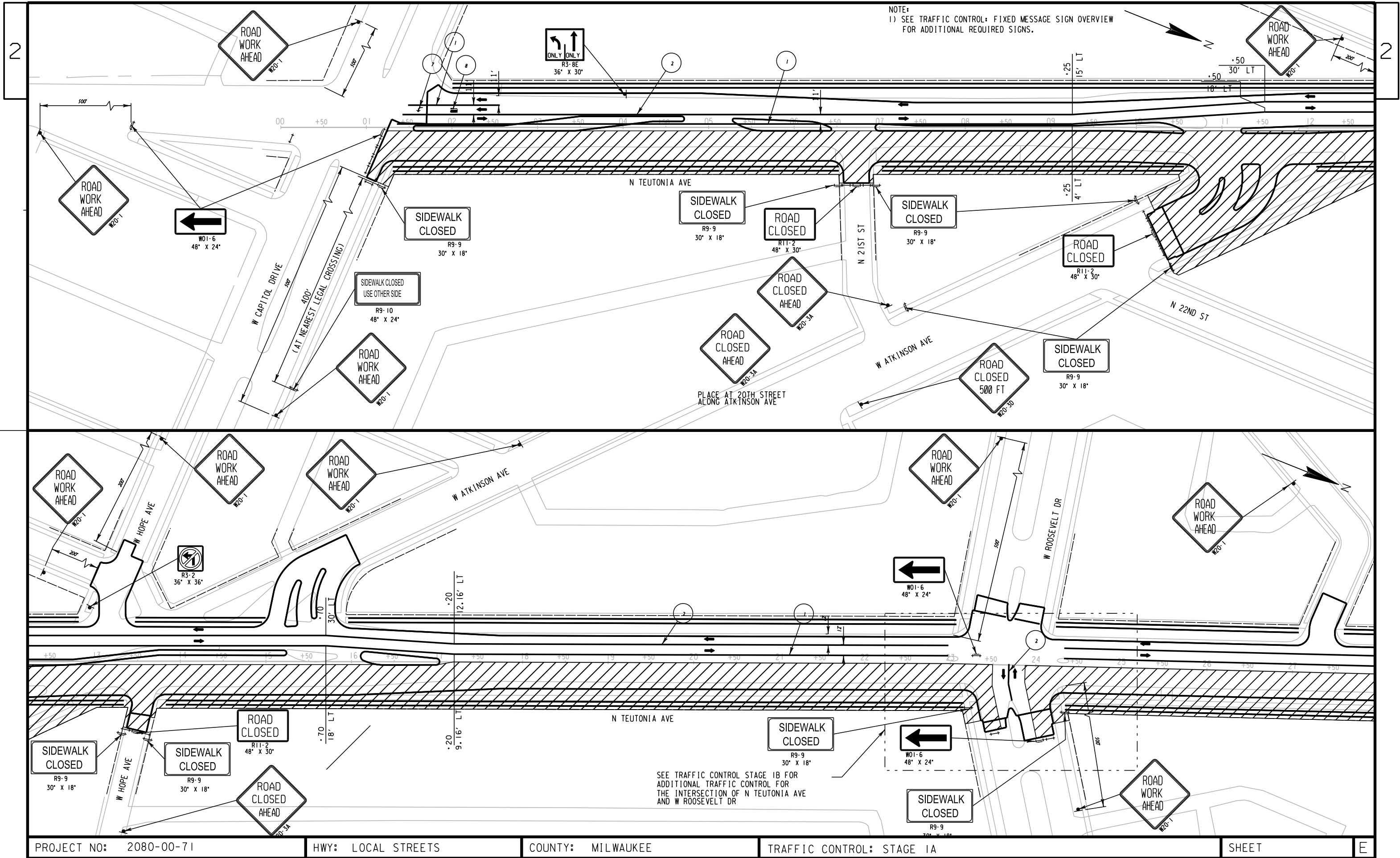
- ⇕ TYPE III BARRICADE WITH TWO TYPE A (FLASHING) LIGHTS
- ⇕ TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A (FLASHING) LIGHTS
- ⊙ FLEXIBLE/TUBULAR MARKER POST
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ┆ SIGN ON POST OR PORTABLE SUPPORT
- ┆ SIGN ON TEMPORARY SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

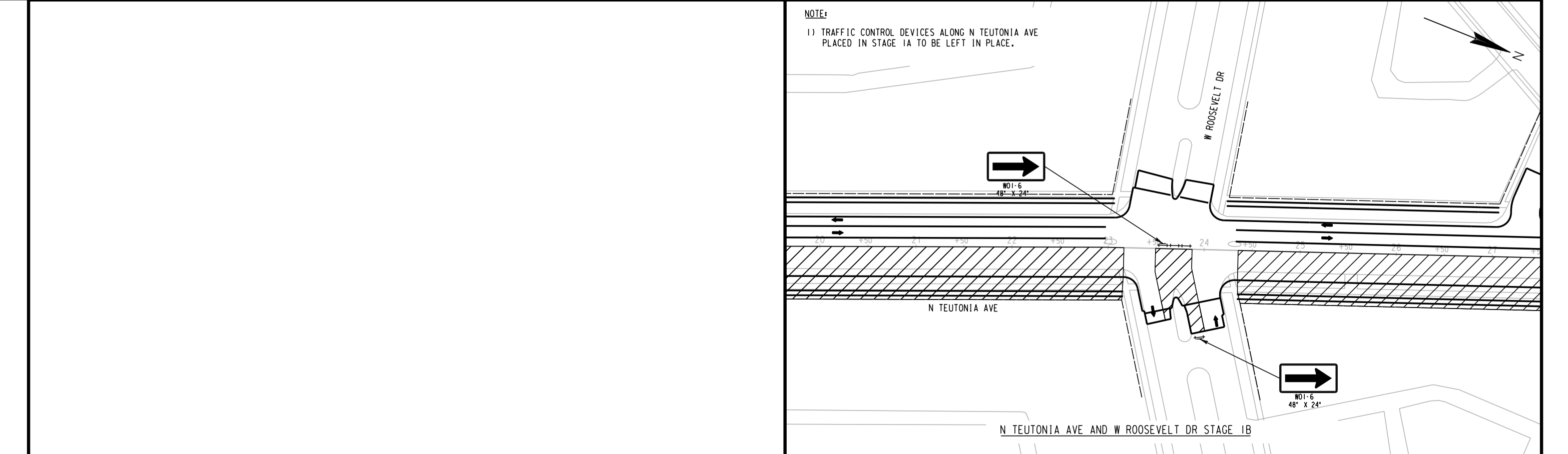
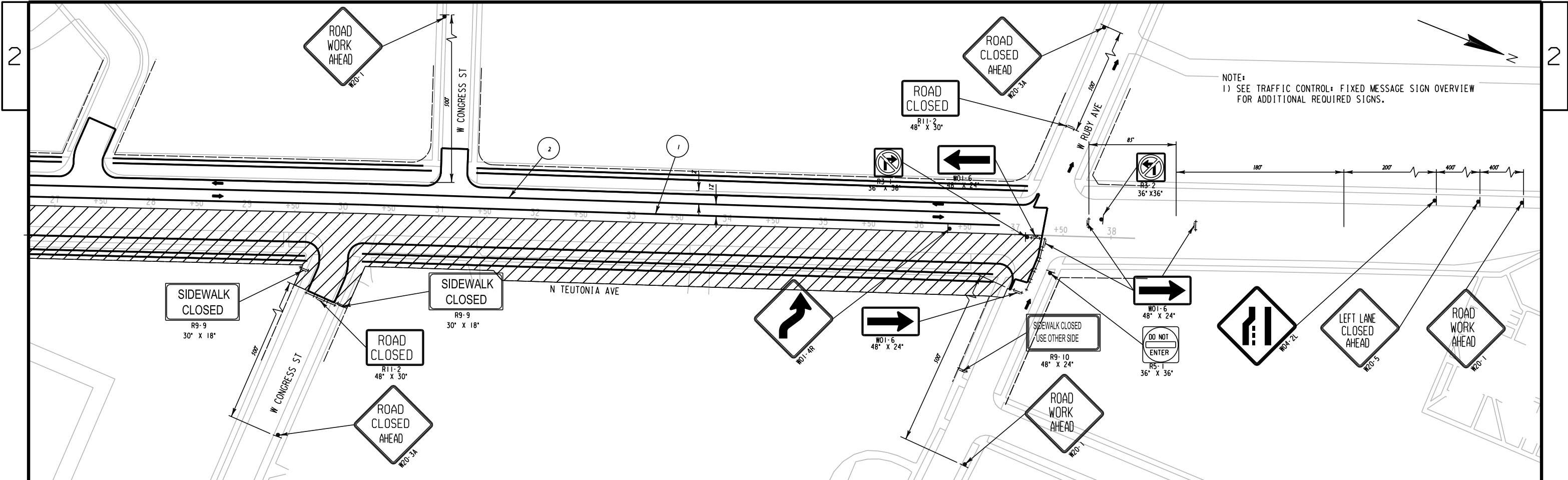


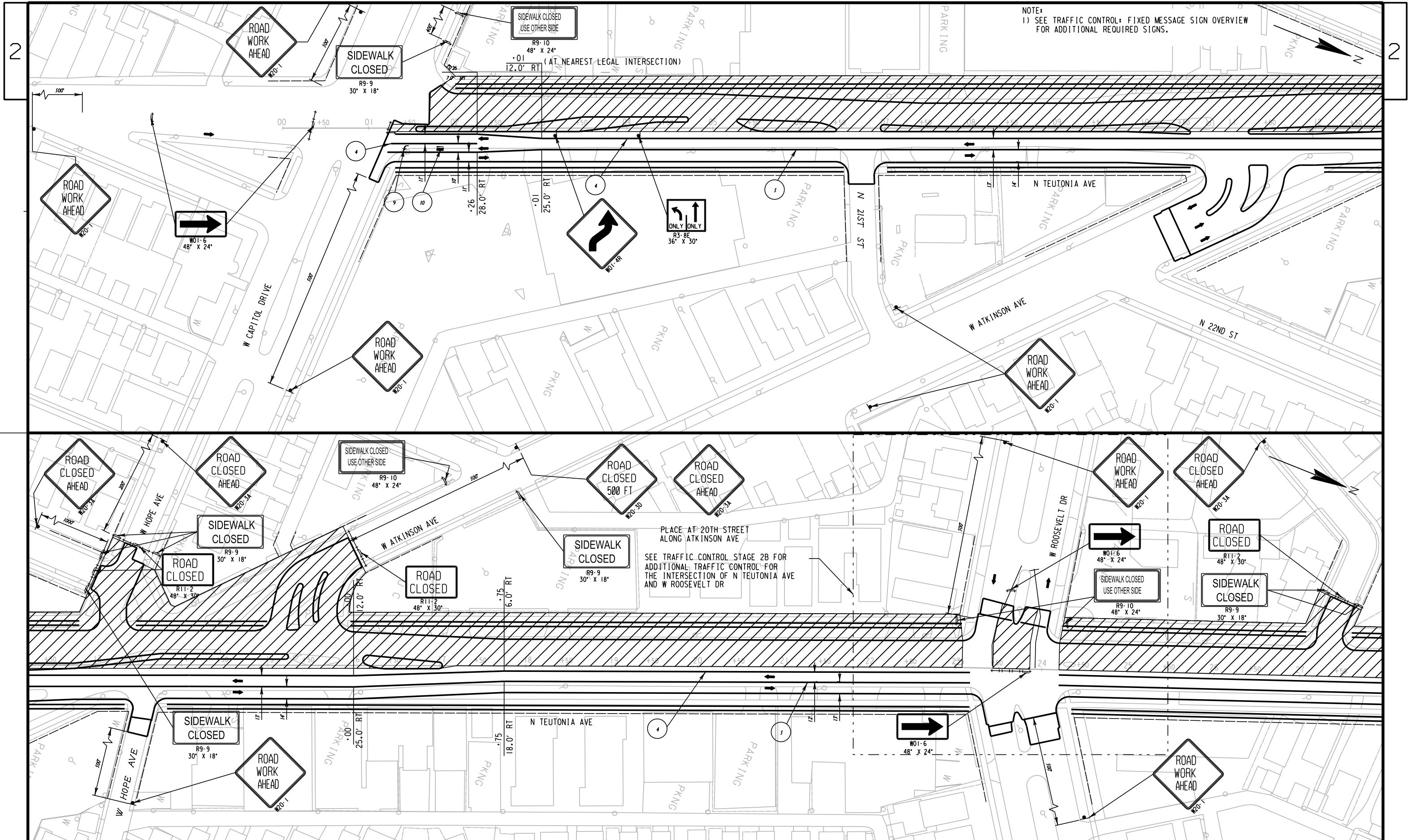
STAGE 1  
N TEUTONIA AVE

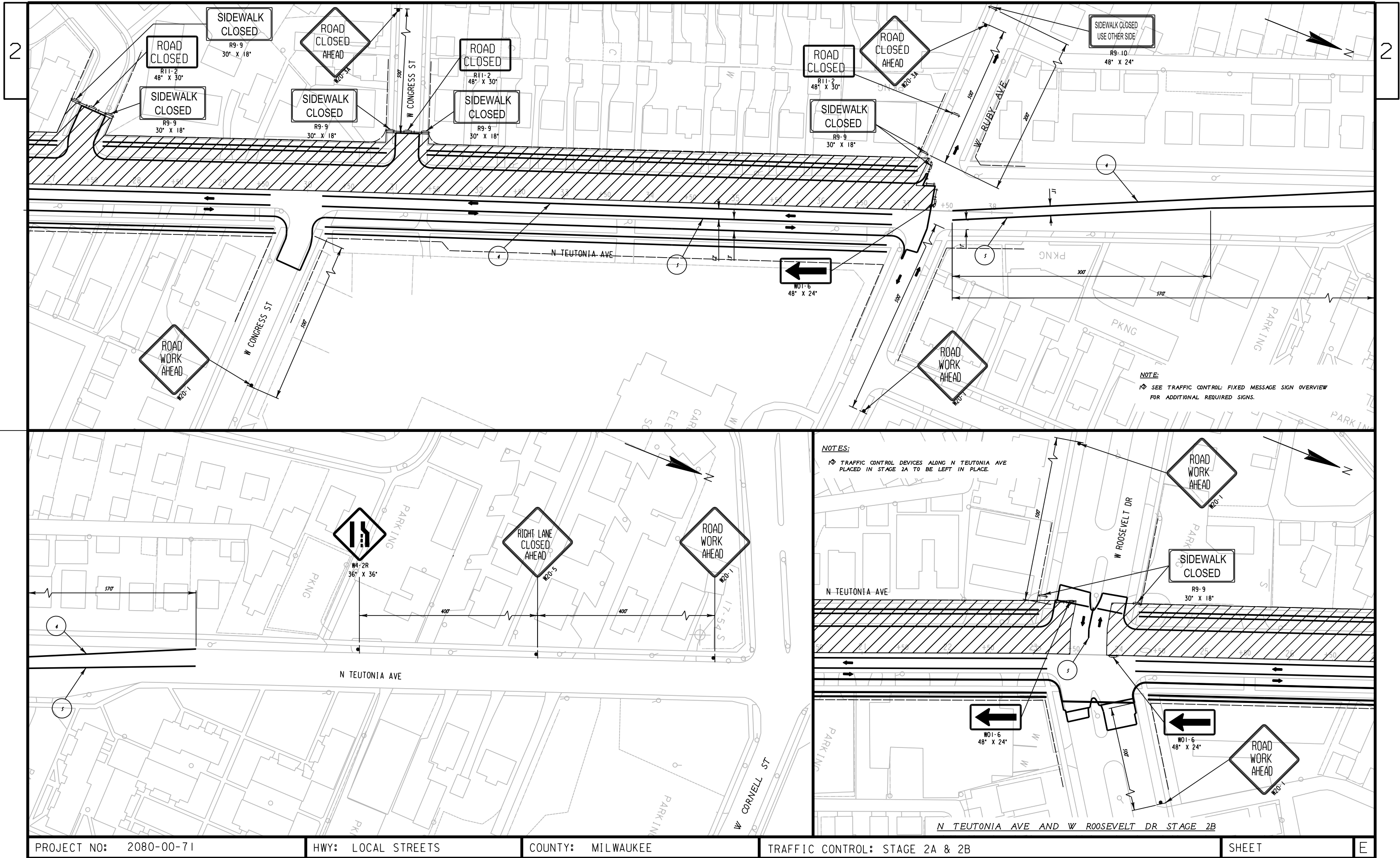


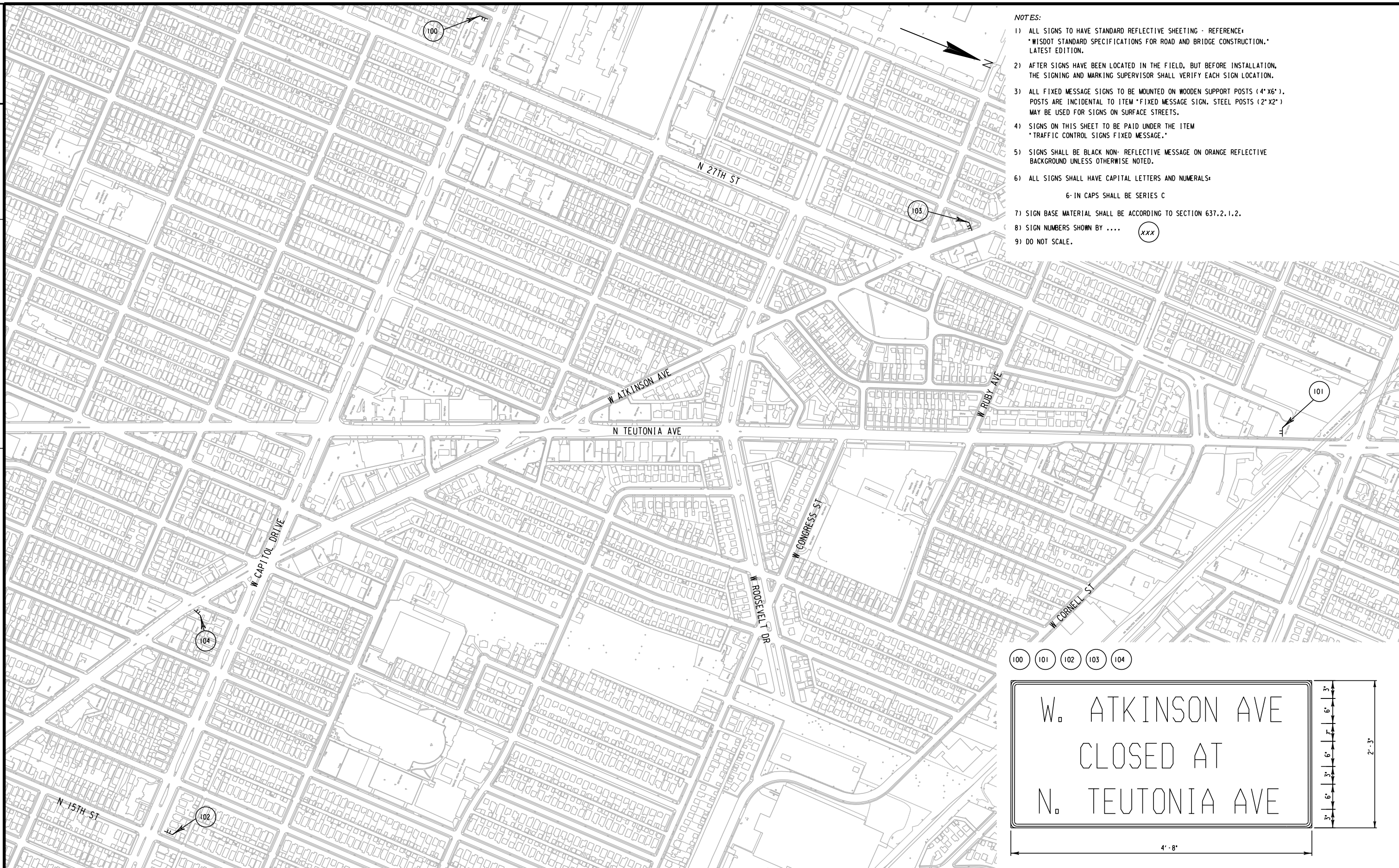
STAGE 2  
N TEUTONIA AVE

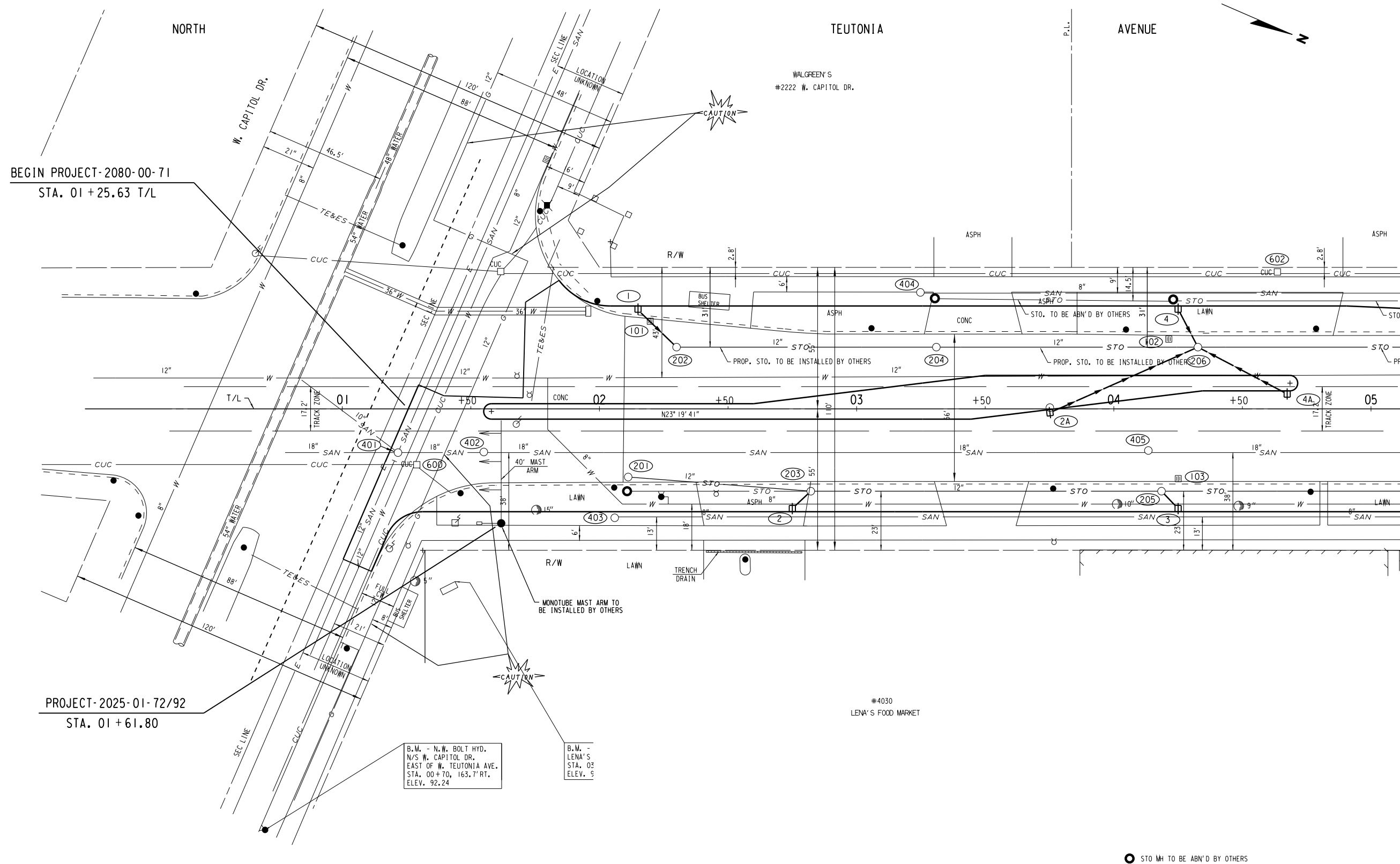


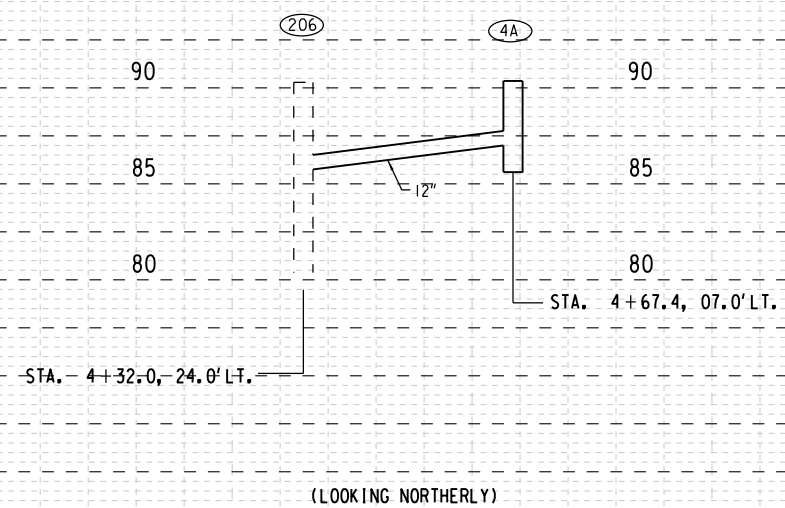
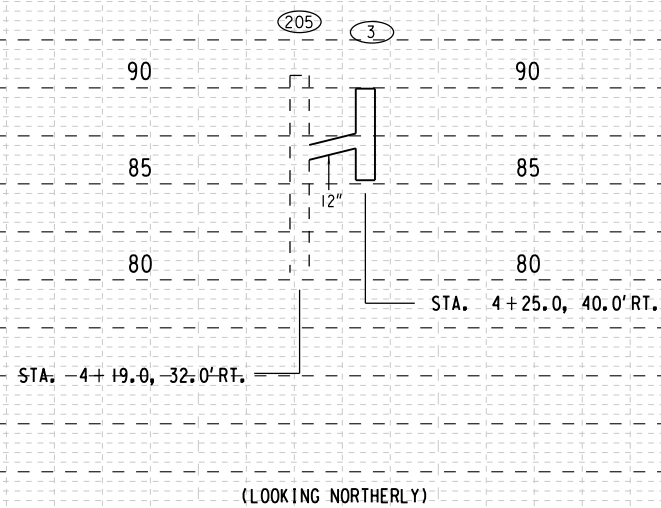
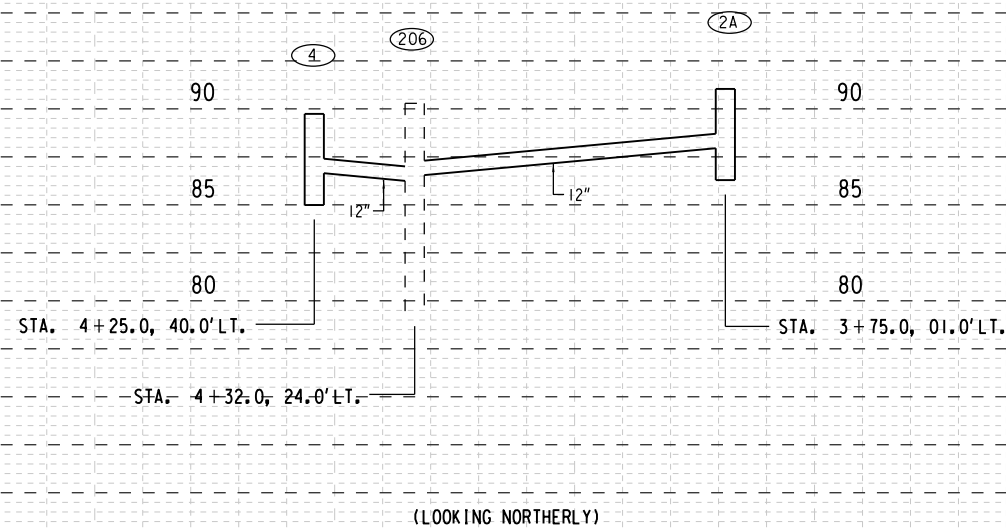
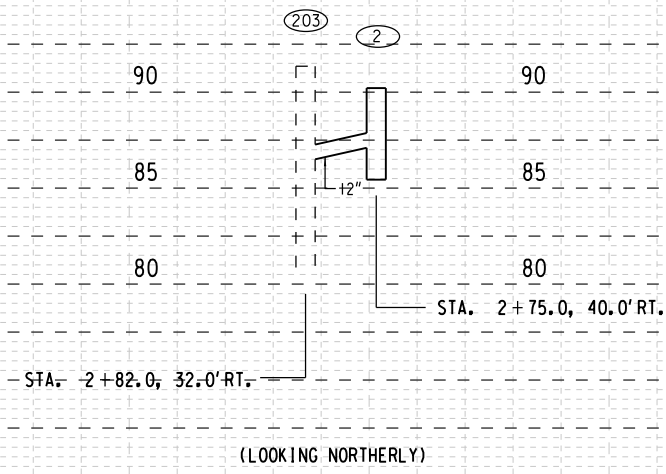
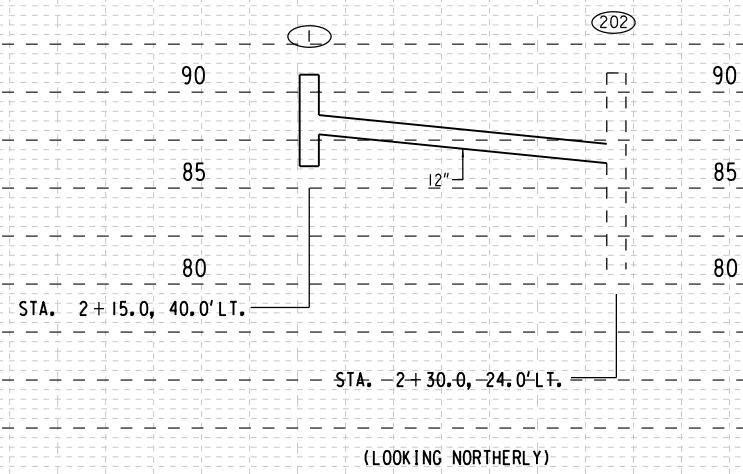




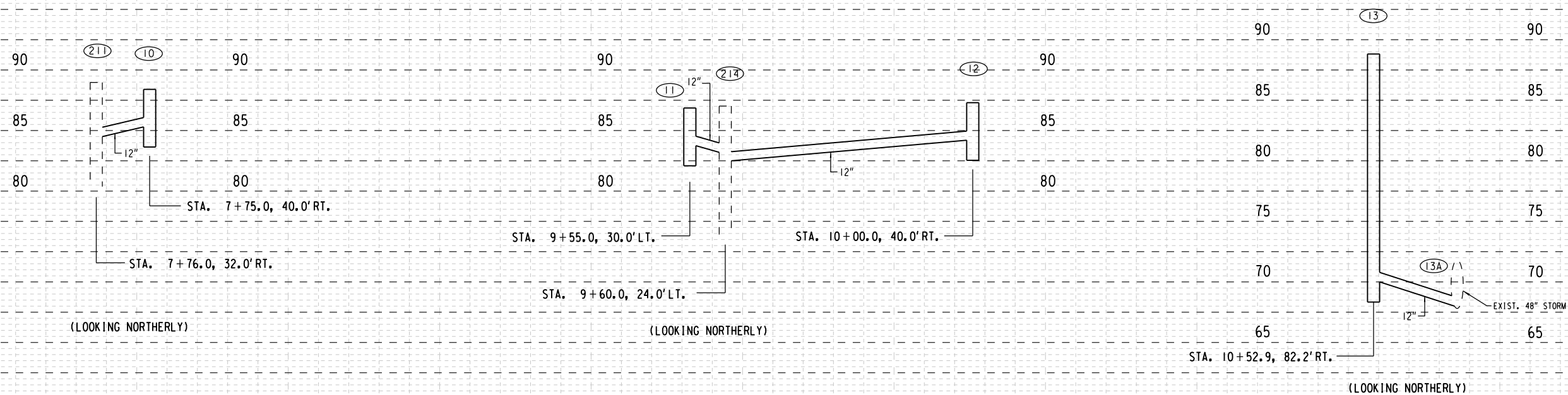
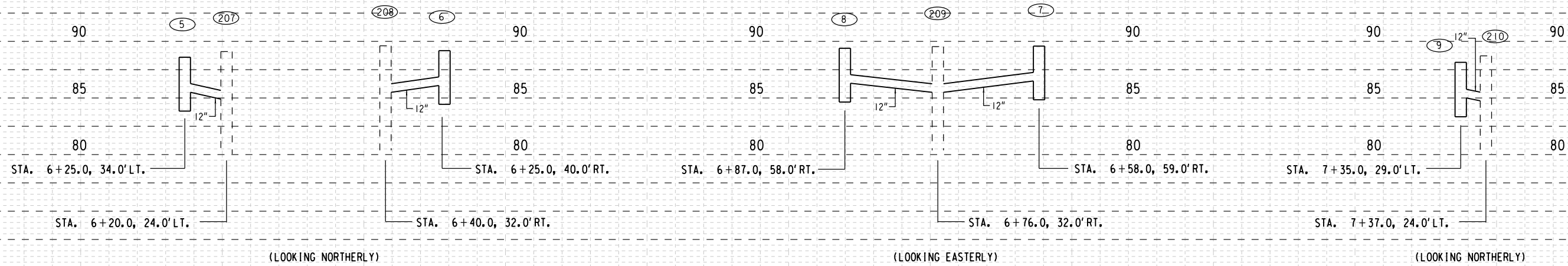


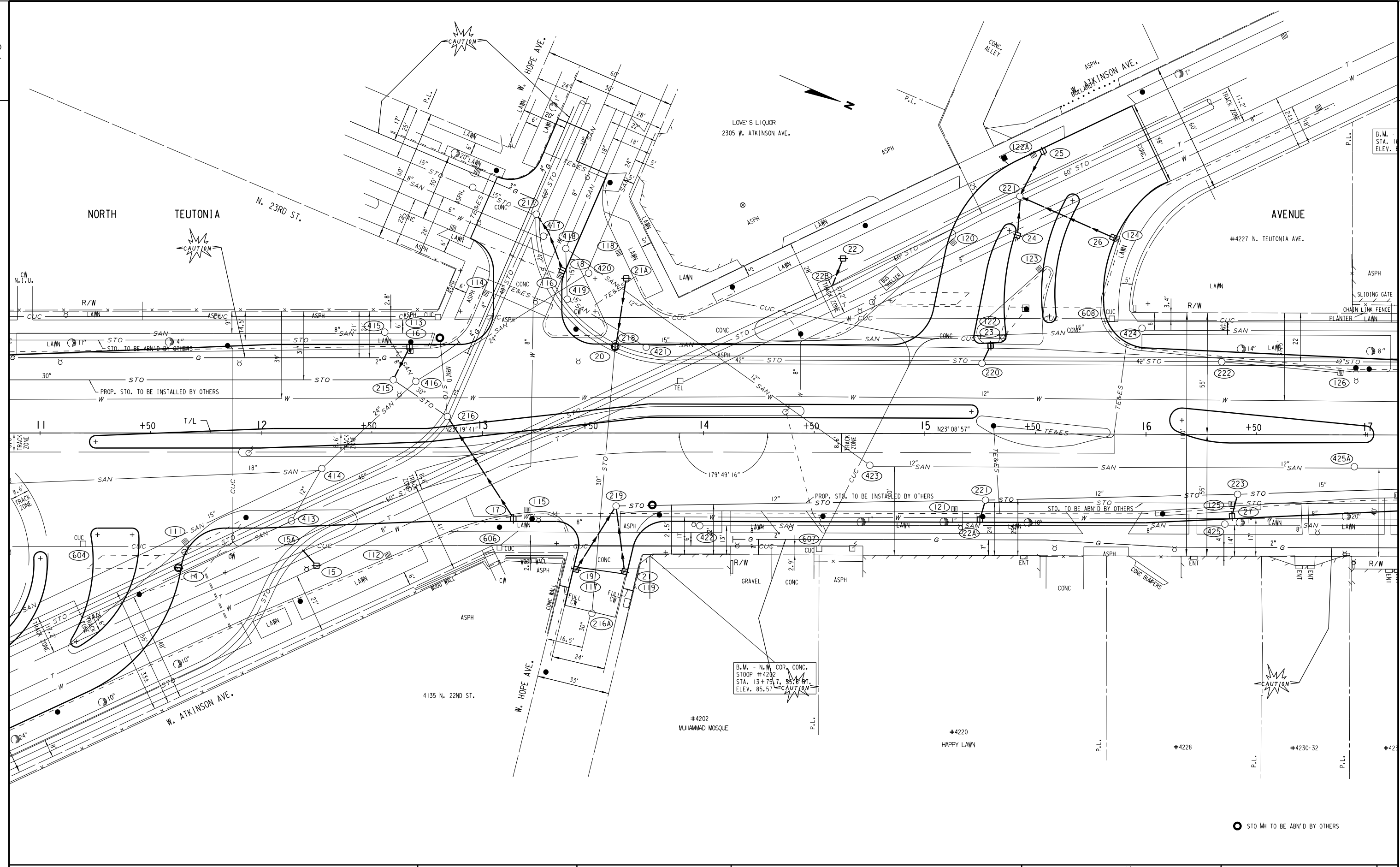


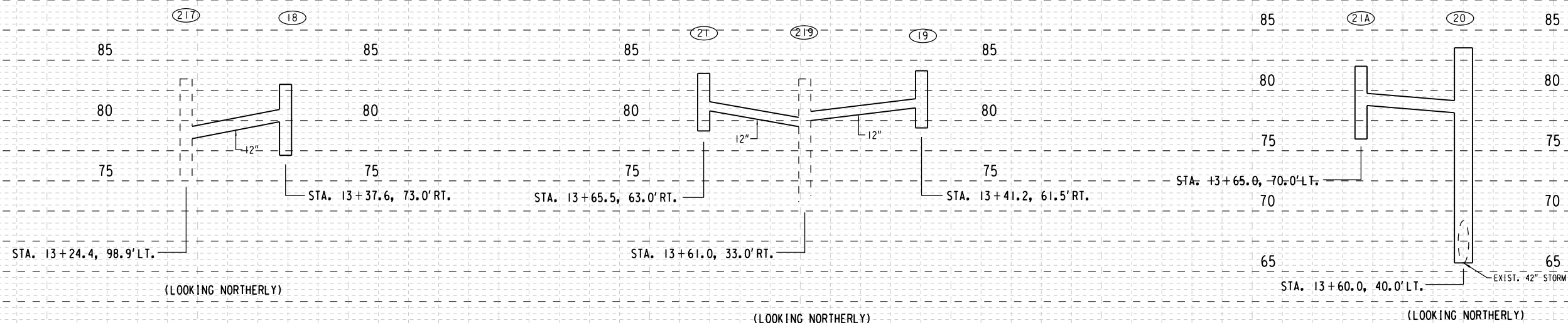
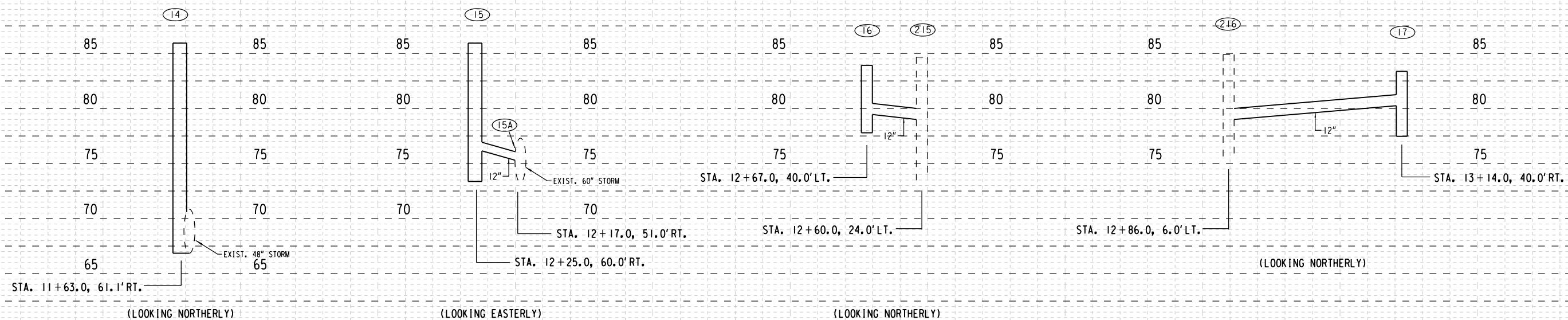


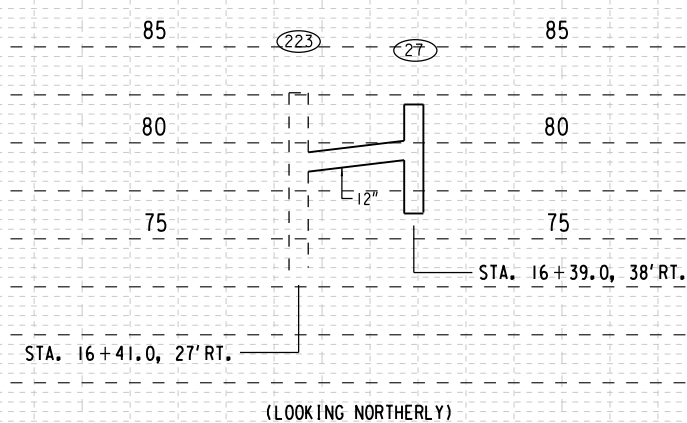
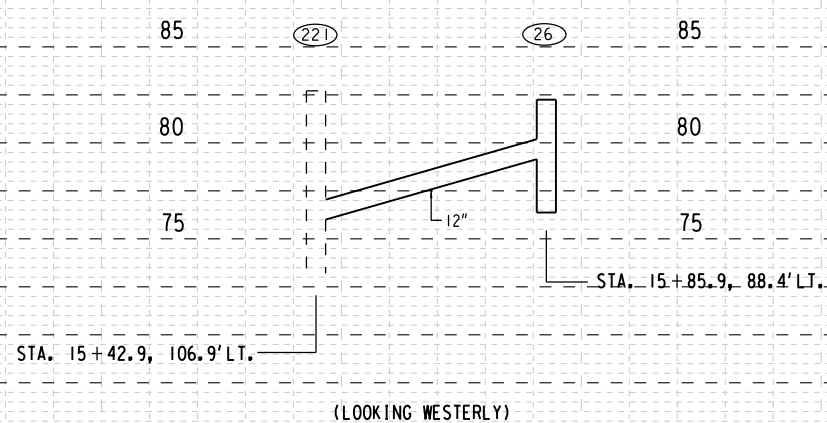
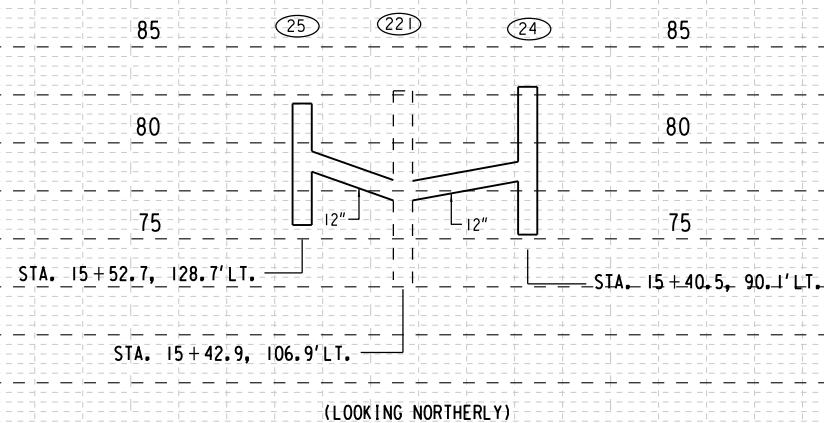
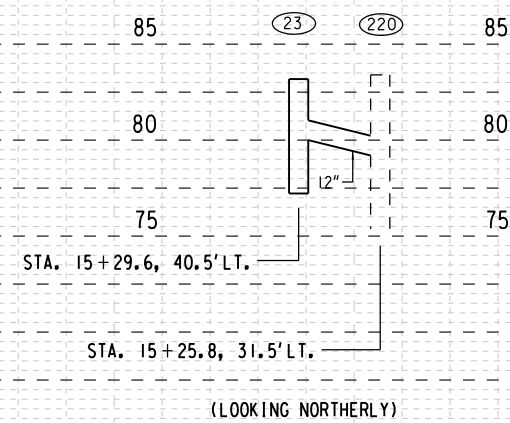
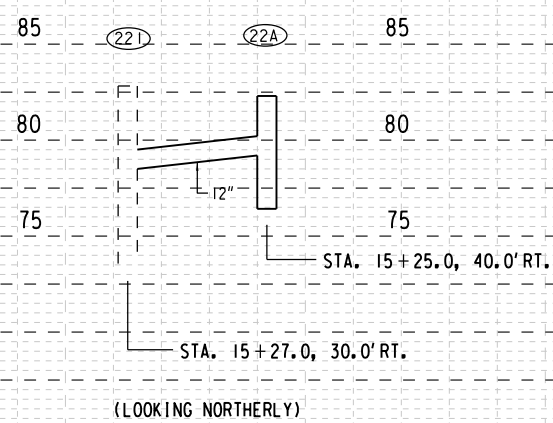
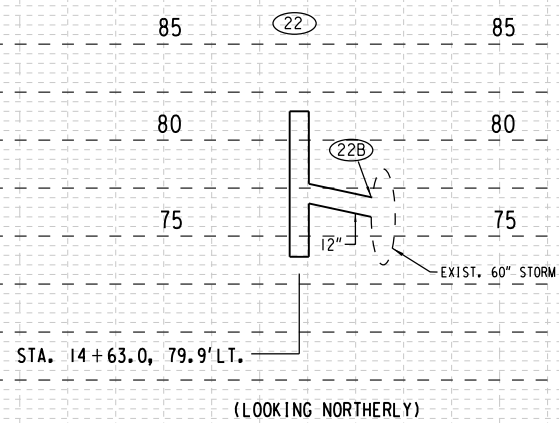




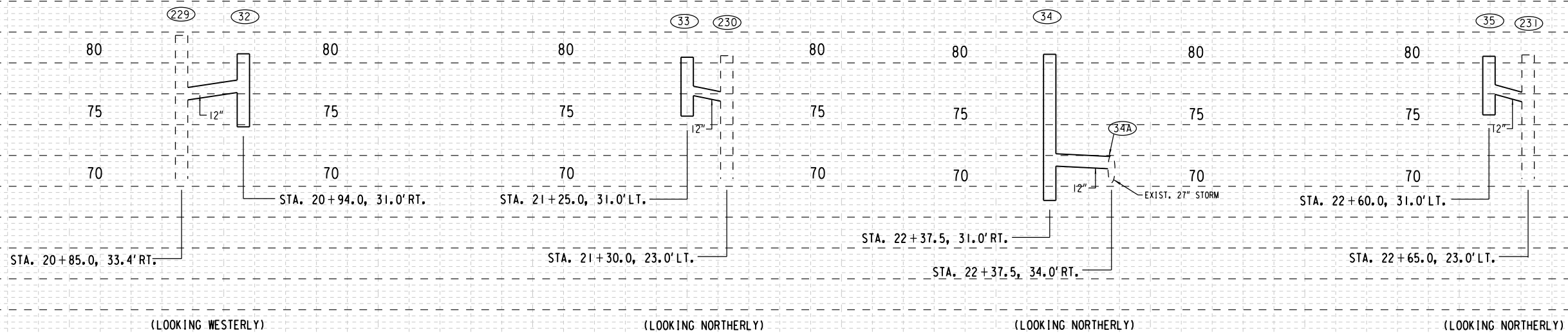
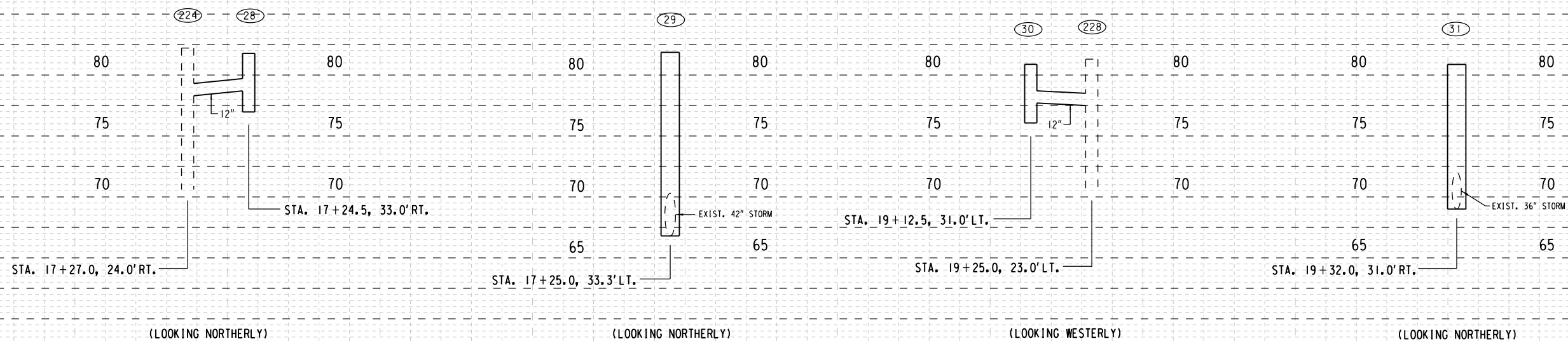


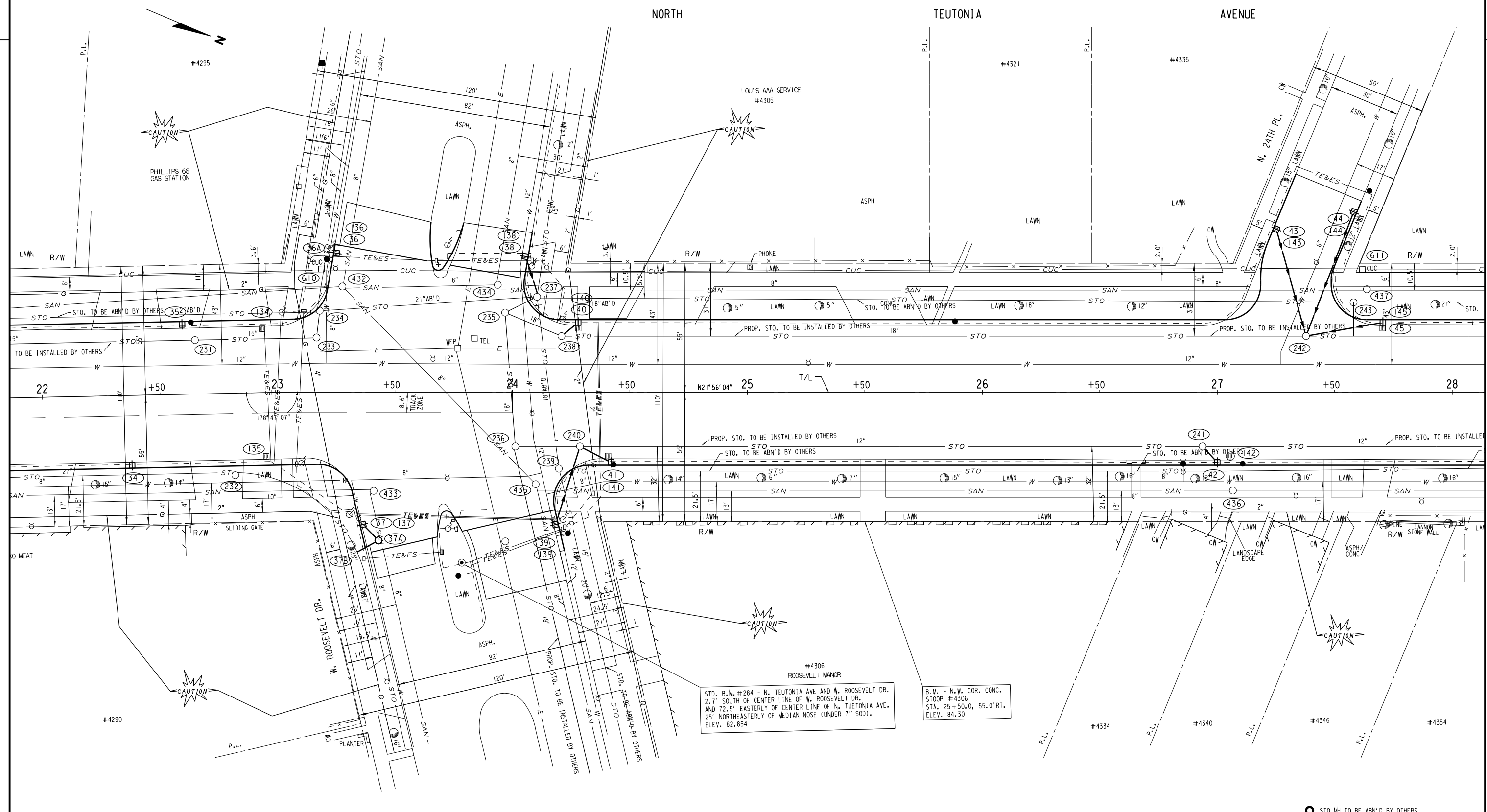


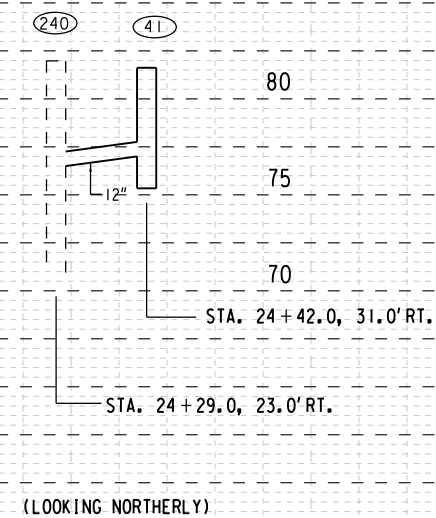
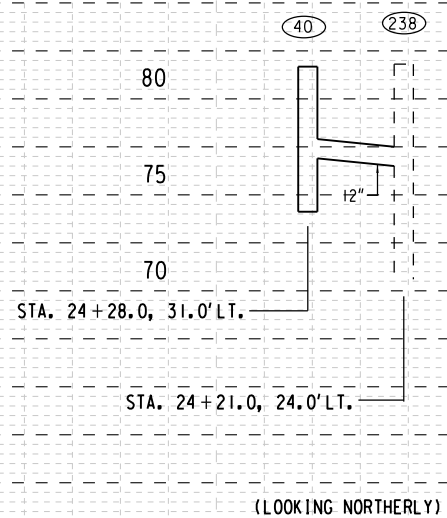
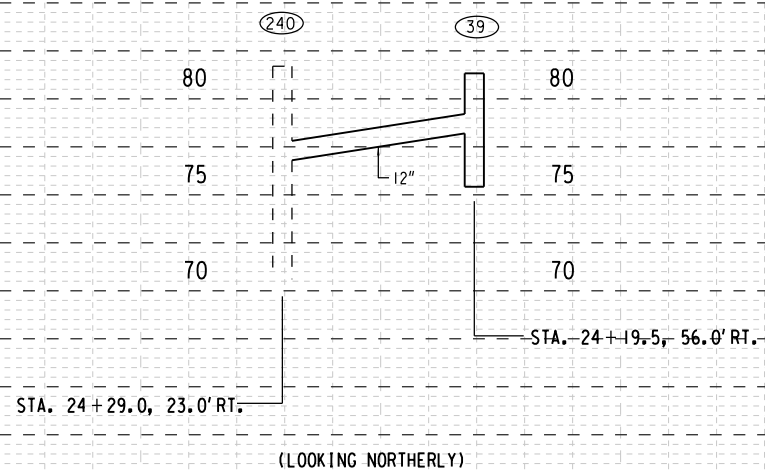
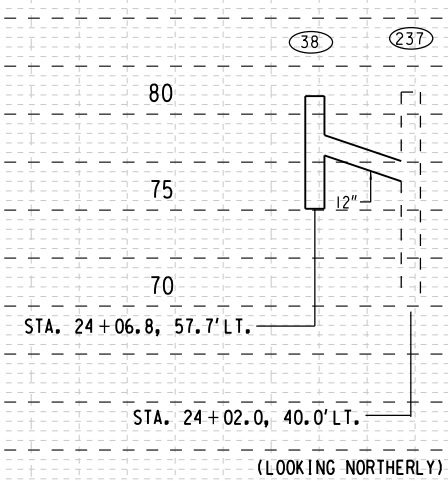
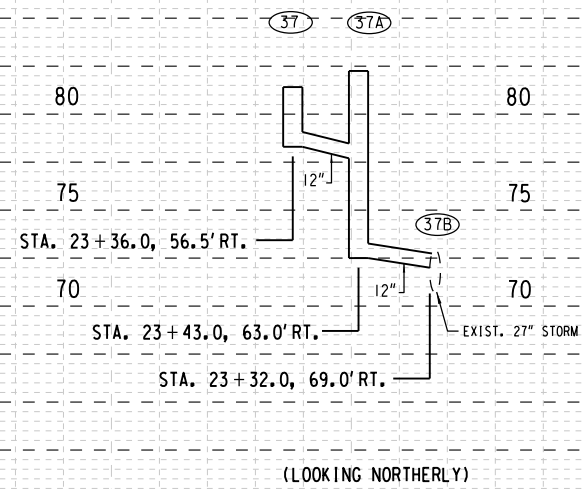
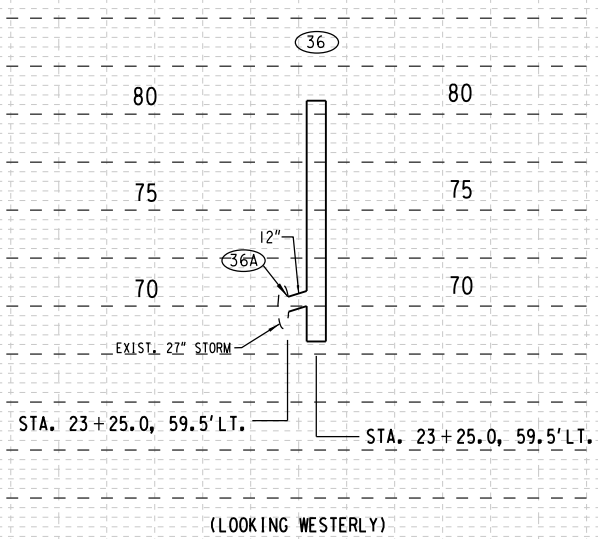


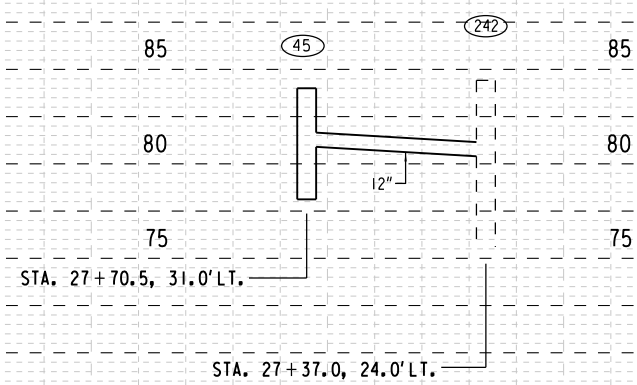
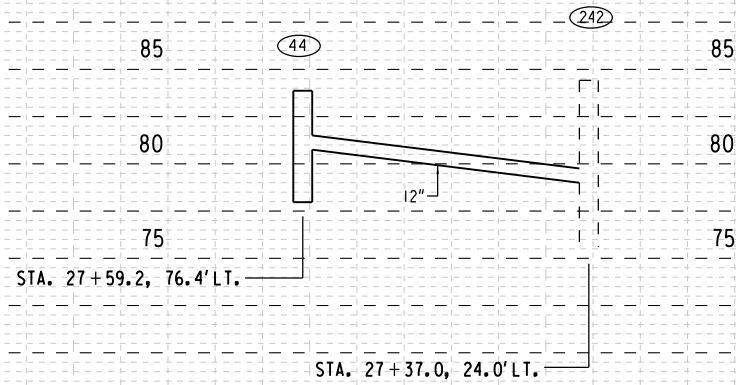
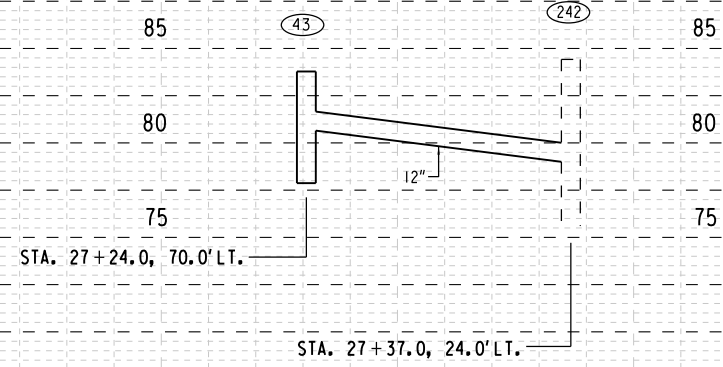
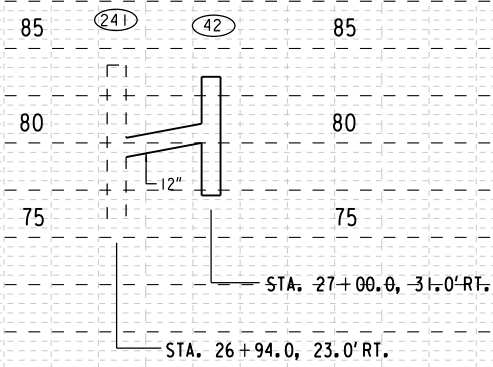


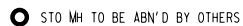


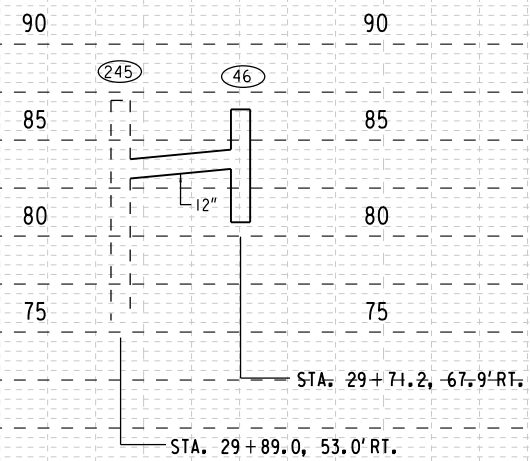




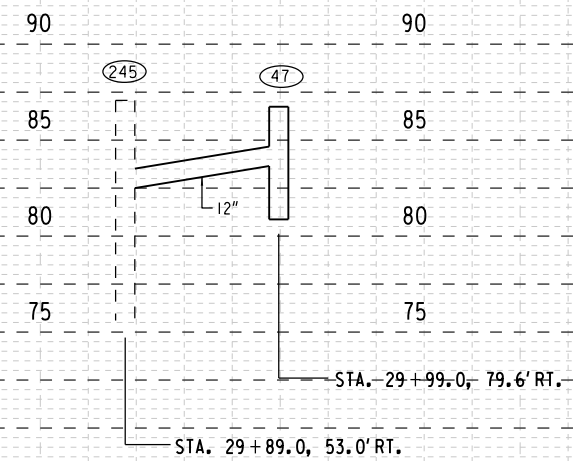




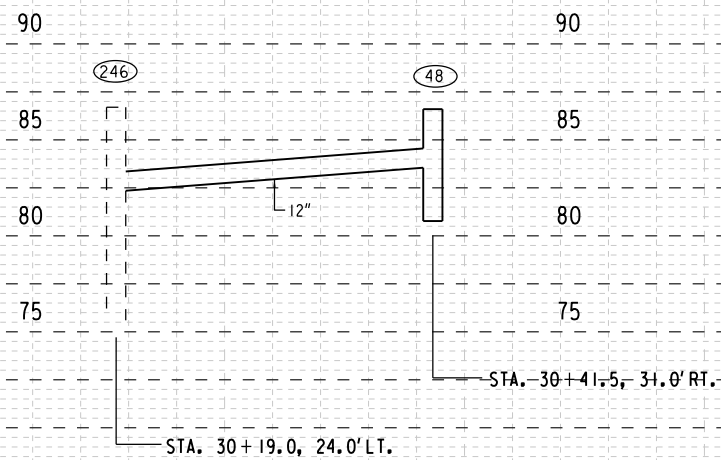




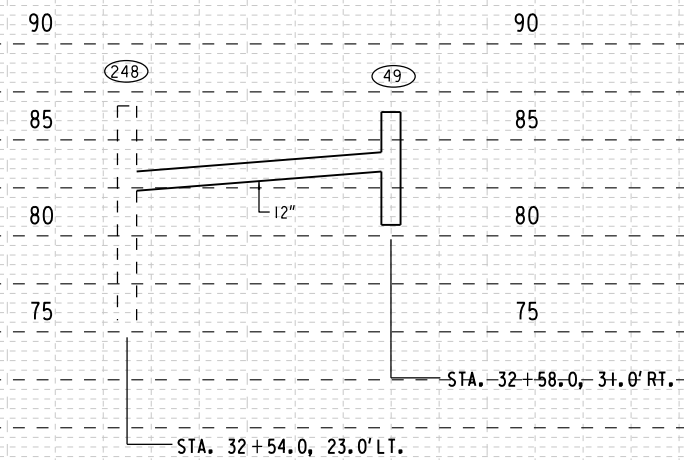
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(LOOKING NORTHERLY)

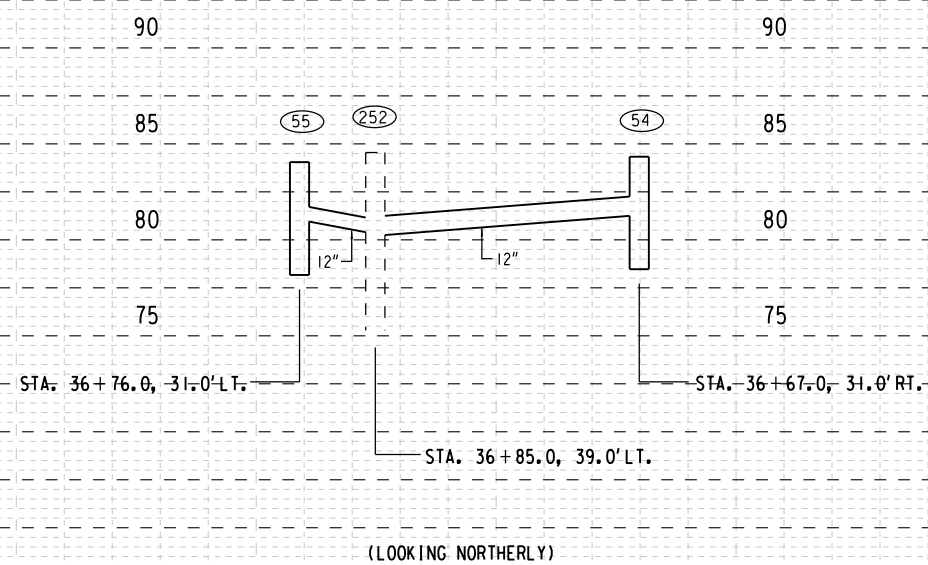
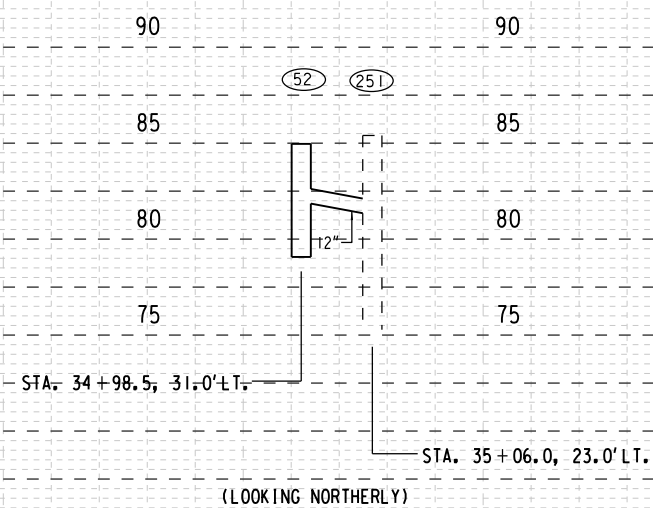


(LOOKING NORTHERLY)



(LOOKING NORTHERLY)





TRAFFIC & STREET LIGHTING GENERAL NOTES:

PRIOR TO CONSTRUCTION, THE LOCATION OF UNDERGROUND UTILITIES SHALL BE DETERMINED IN THE FIELD BY CONTACTING "DIGGERS HOTLINE."

STREET LIGHTING & TRAFFIC SIGNALS SHALL BE INSTALLED IN COMPLIANCE WITH WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 652 EXCEPT:

THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCLUDING REPAIRS, REPLACEMENT OR RELOCATION ETC. OF STREET LIGHTING OR TRAFFIC SIGNAL FACILITIES IF THE CONTRACTOR DOES ANY DEVIATION FROM THE STREET LIGHTING OR TRAFFIC SIGNAL DESIGN WITHOUT THE STREET LIGHTING ENGINEERS SIGNED PERMISSION.

- 1
- DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- 2
- LOCATIONS OF THE PVC CONDUITS WHERE THEY ARE REQUIRED ARE IDENTIFIED IN THE PRINTS. HOWEVER, INSTALLATION MAY REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. APPROPRIATE ADJUSTMENT ON CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. ANY RELOCATIONS MUST BE APPROVED BY THE ENGINEER. FIELD MARK EACH CONDUIT LOCATION BY STAMPING AND PAINTING WITH RED PAINT ON TOP AND BACKSIDE OF CURB.
- 3
- TYPICAL CONDUIT INSTALLED UP TO DIRECT BURIED STREET LIGHT POLES IS AS FOLLOWS 3-INCH OR 2.5-INCH (AS NOTED) SCHEDULE 40 RIGID PVC TO STREET LIGHTING METAL HOUSING (PEDESTAL), THE 1.5-INCH SCHEDULE 40 RIGID PVC TO STREET LIGHT POLE CABLE SLOT, AND THE 2-INCH SCHEDULE 40 RIGID PVC TO SIGNAL STANDARD BASE AND RISER FOR TRAFFIC SIGNAL ON STREET LIGHT POLE.
- 4
- DEPTH OF CONDUIT INSTALLED BELOW THE STREETS, HIGHWAYS, ROADS, AND ALLEYS SHALL BE 24-INCHES MINIMUM AND 36-INCHES MAXIMUM. (MEASURED FROM FINISHED FLANGE LINE)
- 5
- CONDUIT INSTALLED BEHIND CURB, AND UNDER DRIVEWAYS SHALL BE INSTALLED AT THE BASE OF THE BACKSIDE OF THE CURB/GUTTER SECTION.
- 6
- WHEN THERE IS MORE THAN ONE CONDUIT TO BE LAID BEHIND THE CURB, PLACE ALL CONDUITS IN THE SAME TRENCH.
- 7
- ANY EXCEPTION TO THE MINIMUM OR MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- 8
- THE TRENCH SHALL BE FREE OF DEBRIS AND OVERPOUR AND SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.
- 9
- BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.
- 10
- ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (SEE NEC 352.28 2008 CODE)
- 11
- PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED IMMEDIATELY AFTER INSTALLATION WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.
- 12
- ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.
- 13
- CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX OR JUNCTION BOX OR BASE TO BASE, ETC.).
- 14
- PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUIT.
- 15
- ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.
- 16
- WHEN ENDS OF CONDUIT DO NOT CONNECT TO A VAULT AND WILL END UP UNDER CONCRETE WALK. THE CONTRACTOR IS REQUIRED TO LEAVE A 24" X 24" BOX FORM CENTERED OVER THE END OF CONDUIT AND FILL THE BOXFORM WITH CRUSHED GRAVEL. (PER WISDOT SPEC 209.2.1(I) GRANULAR BACKFILL)
- 17
- ALL PIPE CROSSINGS AND VAULTS SHALL BE AT LEAST SIX (6) FEET AWAY FROM FIRE HYDRANTS, UNLESS NOTED OTHERWISE, OR APPROVED BY THE STREET LIGHTING ENGINEER.
- 18
- ALL POLES AND TRAFFIC STANDARDS IN CONCRETE ARE REQUIRED TO HAVE A 30"X30" BOX SHAPED JOINT PLACED AROUND THEM USING AN EXPANSION JOINT FILLER. UNLESS NOTED OTHERWISE (SEE DETAIL 122)
- 19
- TYPICAL RECTANGULAR VAULTS SHOULD BE INSTALLED AS SHOWN ON PLANS, BUT WHEN IT IS NOT POSSIBLE, A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS AND FIRE HYDRANTS SHOULD BE USED, OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.

TRAFFIC & STREET LIGHTING GENERAL NOTES:

- 20
- COORDINATE NEW CONDUIT CONNECTIONS WITH EXISTING CONDUIT, DUCT PACKAGES, AND VAULTS/ MANHOLES WITH CITY OF MILWAUKEE STREET LIGHTING. THE CITY REQUIRES THREE WORKING DAYS ADVANCED NOTICE. CONTACT ELECTRICAL SUPERVISOR STREET LIGHTING - DENNIS MILLER (OFFICE) 414-286-5942 (CELL) 414-708-4251 OR DISPATCHER @ 414-286-5944 TRAFFIC SIGNALS - AL NICHOLS (OFFICE) 414-286-3687 (CELL) 414-708-5148 OR DISPATCHER @ 414-286-3687
- 21
- IMMEDIATELY AFTER THE CONTRACTOR HAS COMPLETED ALL THE ELECTRICAL VAULT, CONDUIT AND CONDUIT CONNECTIONS, AND JUST BEFORE ELECTRICAL WORK IS COVERED UP WITH CONCRETE, SOIL, OR ETC. THE CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SHOP SUPERVISORS FOR FINAL INSPECTION AND APPROVAL OF ALL WORK. STREET LIGHTING - DENNIS MILLER (OFFICE) 414-286-5942 (CELL) 414-708-4251 STREET LIGHTING - GEORGE BERDINE (OFFICE) 414-286-5943 (CELL) 414-708-4245 STREET LIGHTING - THOMAS HUGHES (OFFICE) 414-286-3457 (CELL) 414-708-3175 STREET LIGHTING - DISPATCHER @ 414-286-5944 TRAFFIC SIGNALS - AL NICHOLS (OFFICE) 414-286-3687 (CELL) 414-708-5148 TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687
- 22
- CONDUIT WILL ONLY BE INSTALLED AFTER THE CURB IS POURED, UNLESS APPROVED BY BOTH THE ENGINEER & STREET LIGHTING SHOP SUPERVISOR.

UTILITY LINE CODE

- *SAN*

————

SANITARY SEWER
- *STO*

————

STORM SEWER
- *W*

————

WATER
- *G*

————

GAS
- —

~~6~~

— —

PROPOSED GAS
- *E*

————

ELECTRIC
- *TE&ES*

————

TRAFFIC & STREET LIGHTING
- — — — —

OLD CITY UNDERGROUND CONDUIT
- *CUC*

————

PROPOSED CITY UNDERGROUND CONDUIT
- *T*

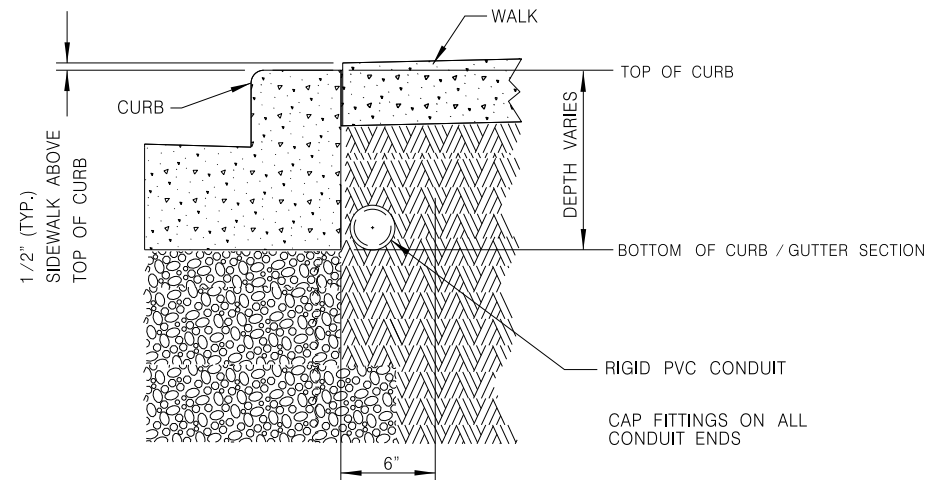
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TELEPHONE
- *TV*

————

CABLE

NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.  
2.) CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.



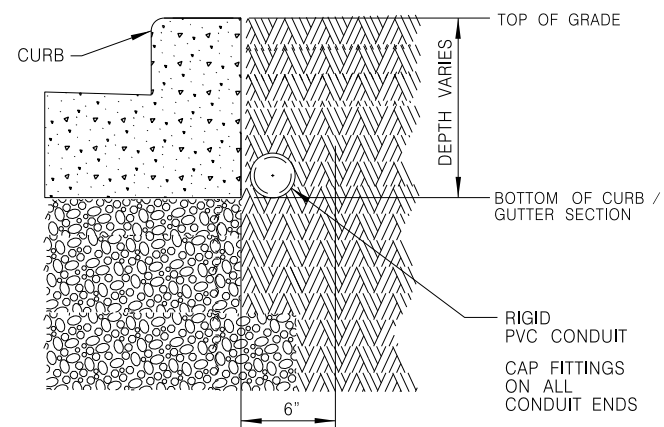
100 DETAIL "A"  
TYPICAL CONDUIT INSTALLATION  
BEHIND CURB NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

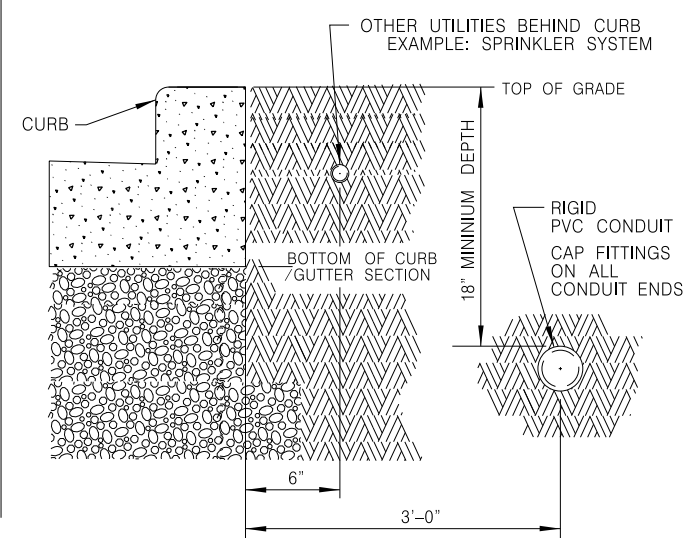
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.

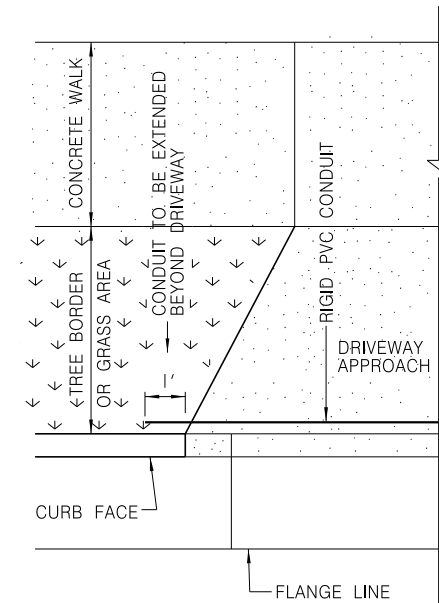


DETAIL "C"

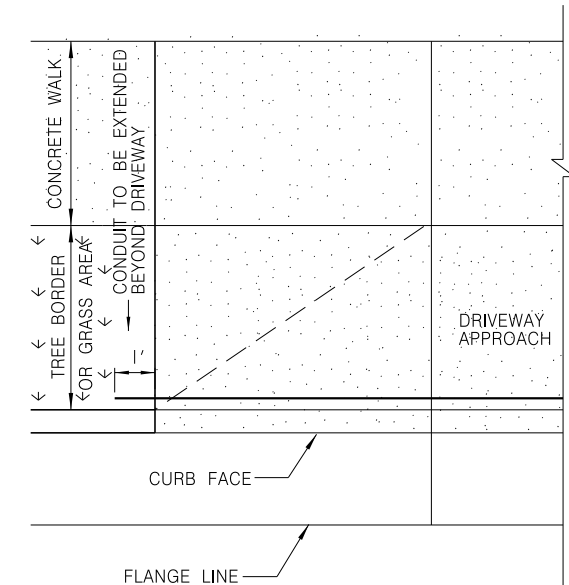


100 DETAIL "B" & "C"  
TYPICAL CONDUIT INSTALLATION  
BEHIND CURB NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

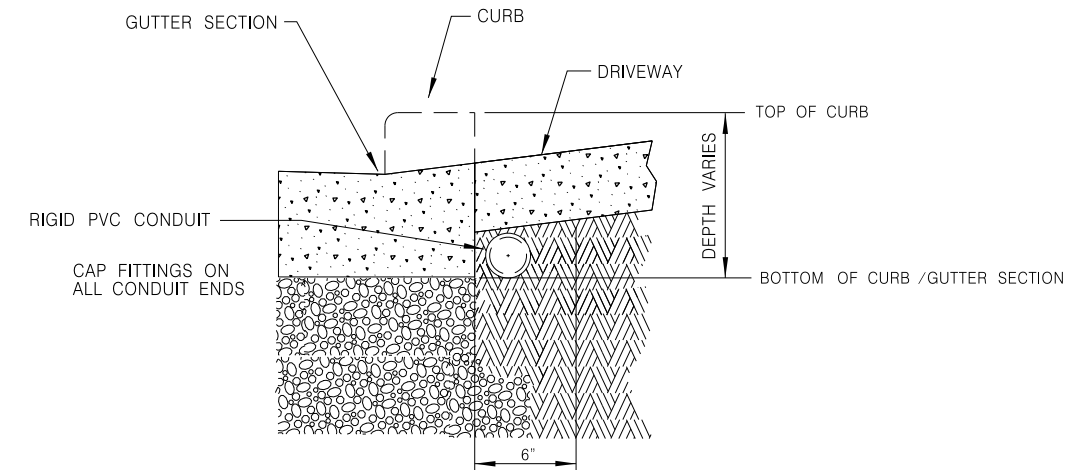


TYPICAL PLAN VIEW FOR  
FLARED DRIVEWAY



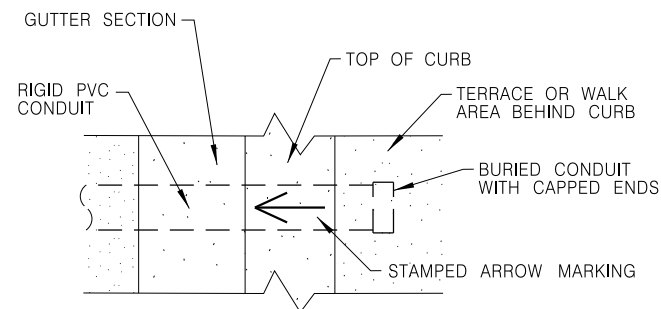
TYPICAL PLAN VIEW FOR  
DEPRESSED DRIVEWAY

NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.  
2.) CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.



101 DETAIL  
TYPICAL CONDUIT INSTALLATION  
UNDER DRIVEWAYS OR PEDESTRIAN RAMPS NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

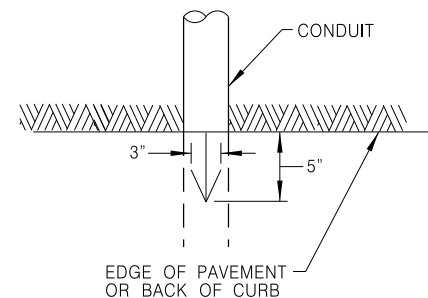


TOP VIEW OF CURB STAMPING

NOT TO SCALE

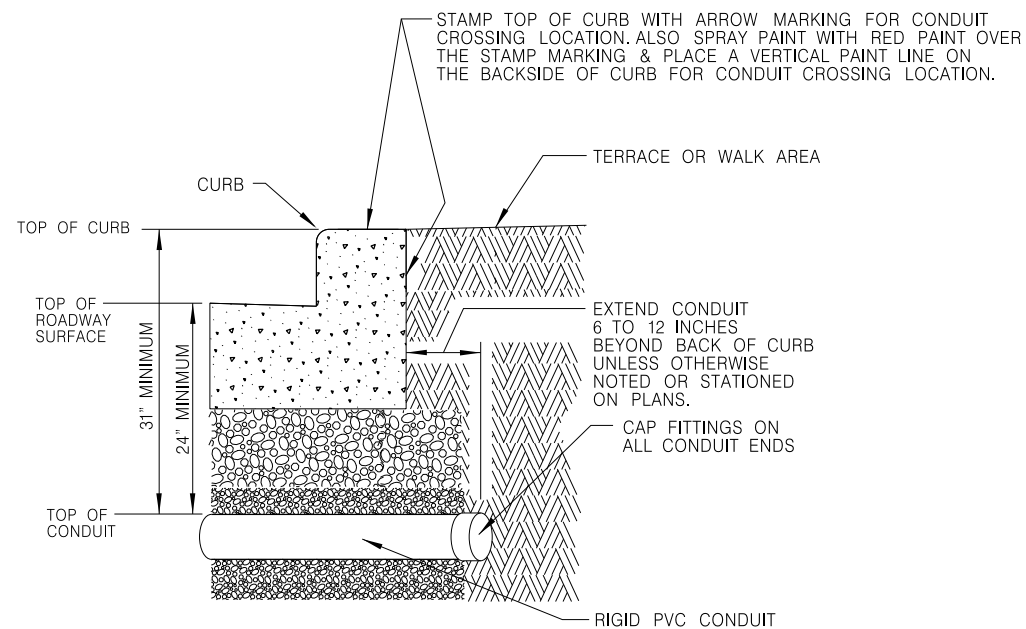
## NOTE:

ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4-INCH TO 3/8-INCH DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER THE PAVEMENT.



ARROW MARK

NOT TO SCALE



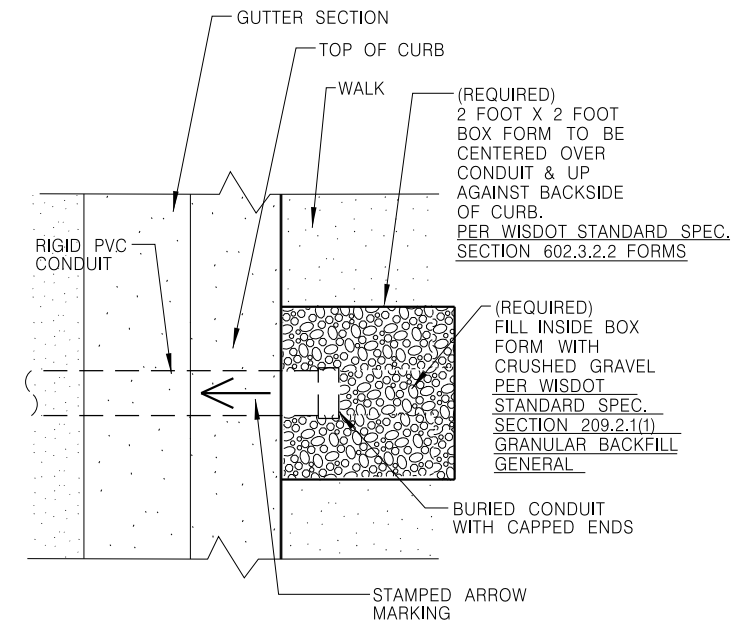
102

DETAIL VERSION #1

TYPICAL CONDUIT INSTALLATION  
FOR CROSSING ROADWAYS

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

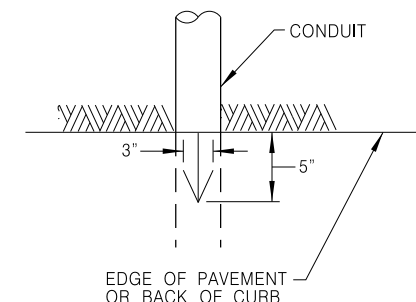


TOP VIEW OF CURB STAMPING

NOT TO SCALE

## NOTE:

ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4-INCH TO 3/8-INCH DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER THE PAVEMENT.

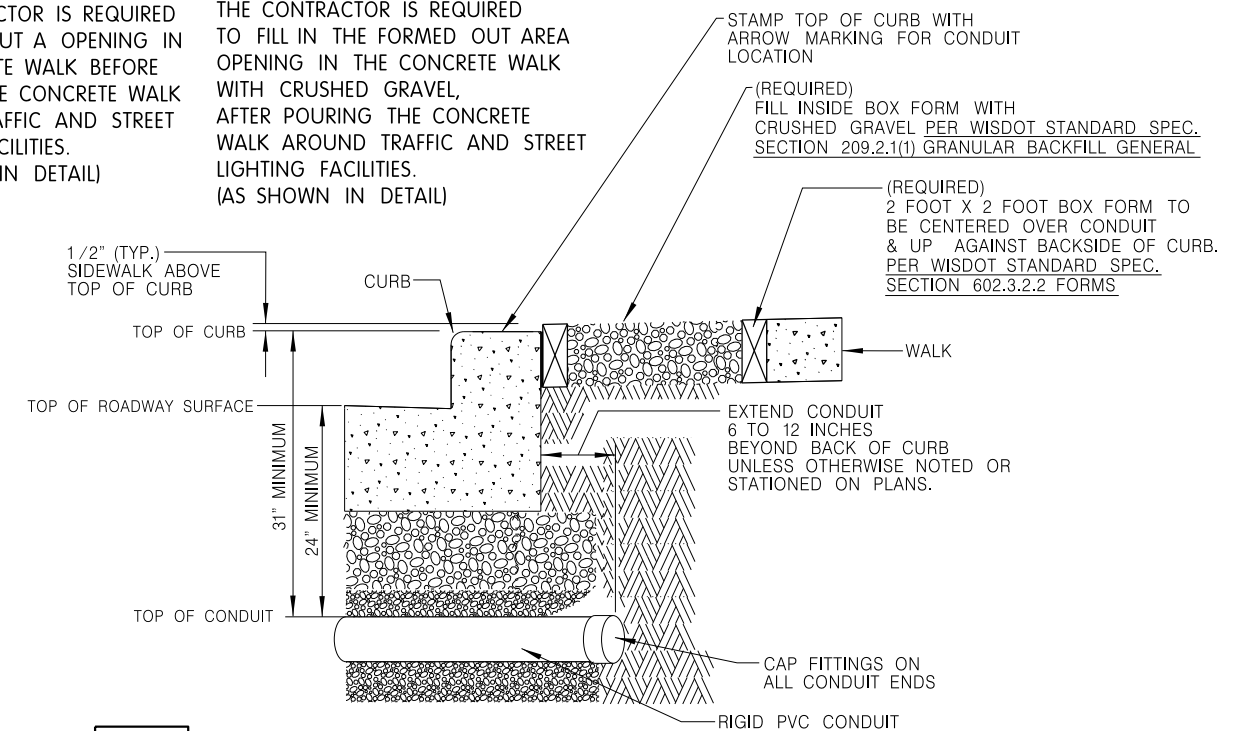


ARROW MARK

NOT TO SCALE

THE CONTRACTOR IS REQUIRED TO FORM OUT A OPENING IN THE CONCRETE WALK BEFORE POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES. (AS SHOWN IN DETAIL)

THE CONTRACTOR IS REQUIRED TO FILL IN THE FORMED OUT AREA OPENING IN THE CONCRETE WALK WITH CRUSHED GRAVEL, AFTER POURING THE CONCRETE WALK AROUND TRAFFIC AND STREET LIGHTING FACILITIES. (AS SHOWN IN DETAIL)



103

DETAIL VERSION 1

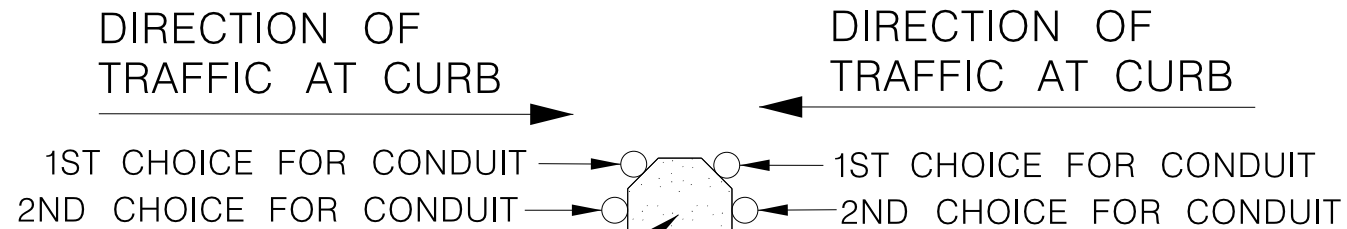
TYPICAL CONDUIT INSTALLATION  
FOR CROSSING ROADWAYS  
FROM FULL WALK AREAS

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

SHEET 3 OF 9

NOTE: CAP FITTINGS ON  
CONDUIT ENDS



104

DETAIL

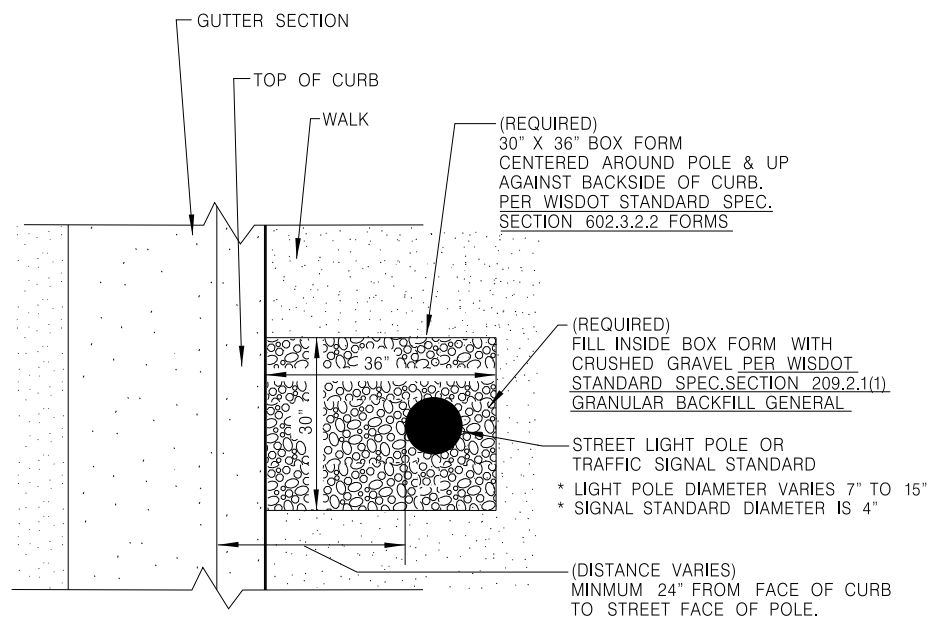
TYPICAL TRAFFIC SIGNAL RISER CONDUIT  
LOCATIONS ON STREET LIGHT POLE  
DEPENDING ON DIRECTION OF  
TRAFFIC AT CURB

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC / STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

THE CONTRACTOR IS REQUIRED  
TO FORM OUT A OPENING IN  
THE CONCRETE WALK BEFORE  
POURING THE CONCRETE WALK  
AROUND TRAFFIC AND STREET  
LIGHTING FACILITIES.  
(AS SHOWN IN ADJACENT DETAIL)

THE CONTRACTOR IS REQUIRED  
TO FILL IN THE FORMED OUT AREA  
OPENING IN THE CONCRETE WALK  
WITH CRUSHED GRAVEL,  
AFTER POURING THE CONCRETE  
WALK AROUND TRAFFIC AND STREET  
LIGHTING FACILITIES.  
(AS SHOWN IN ADJACENT DETAIL)



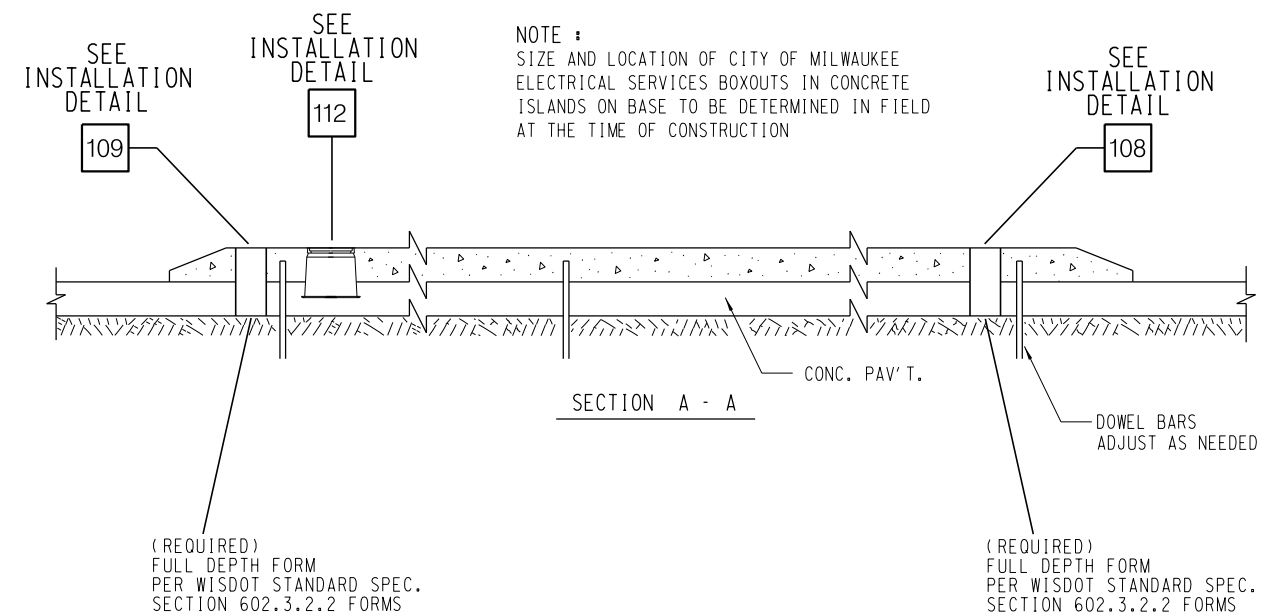
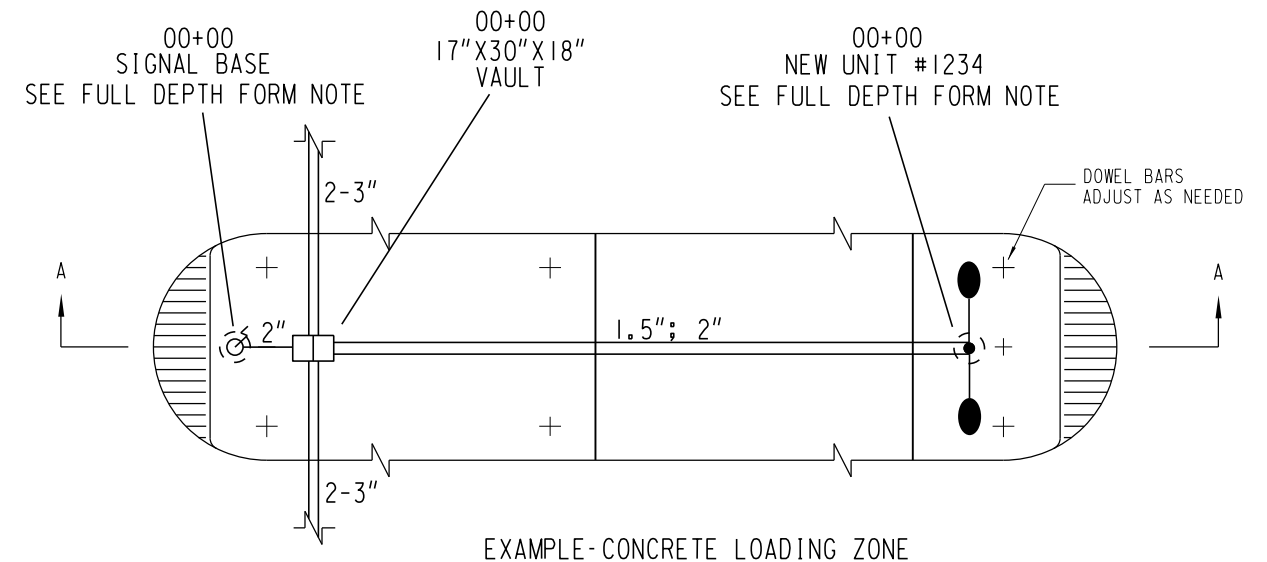
105

DETAIL

TYPICAL 30" X 36" BOX FORM  
AROUND STREET LIGHTING POLE OR  
TRAFFIC SIGNAL STANDARD

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



FULL DEPTH FORM NOTE

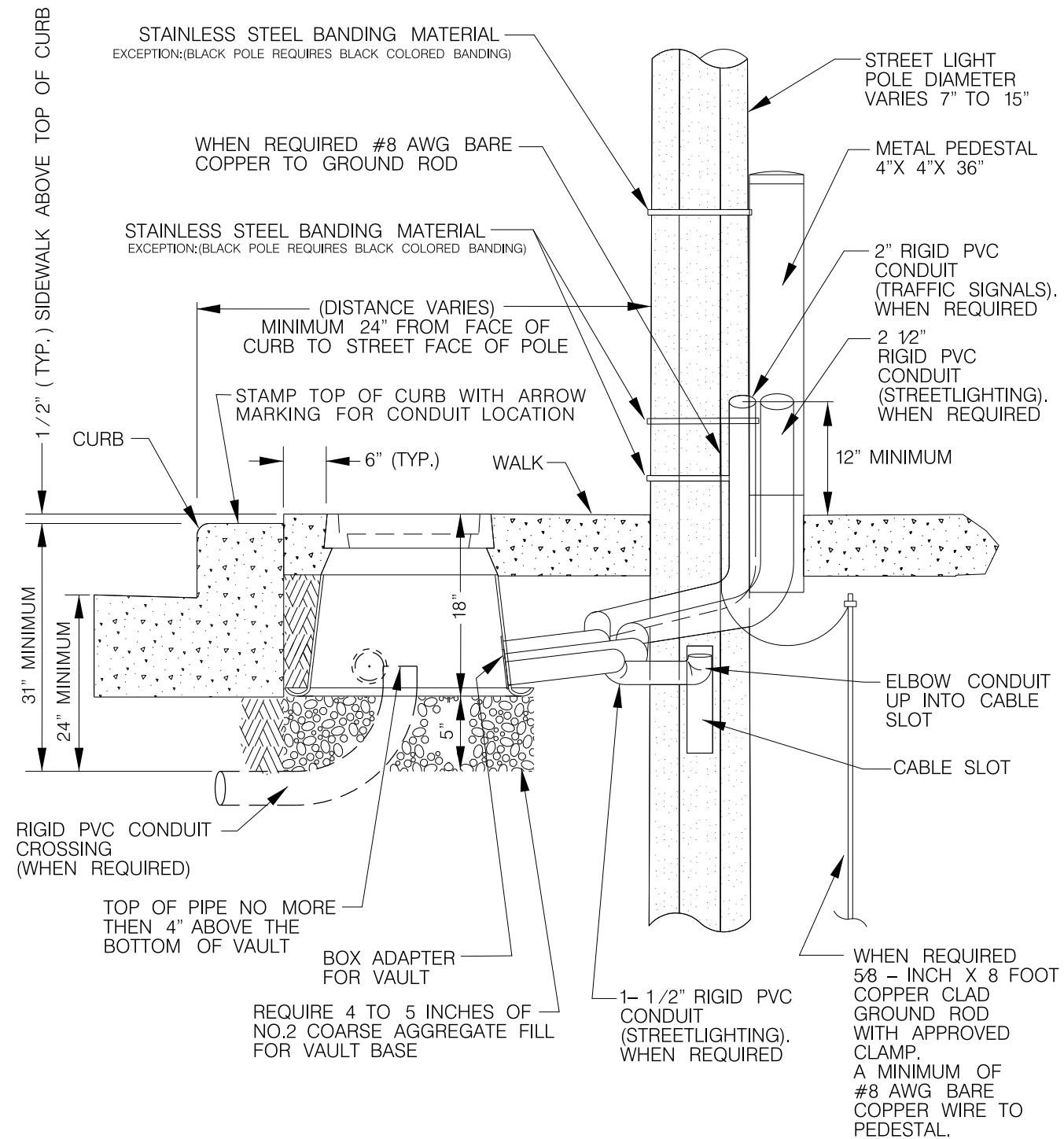
TYPICAL 30" X 36" BOX FORM  
AROUND STREET LIGHTING POLE OR  
TRAFFIC SIGNAL STANDARD

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOT TO SCALE

SHEET 4 OF 9

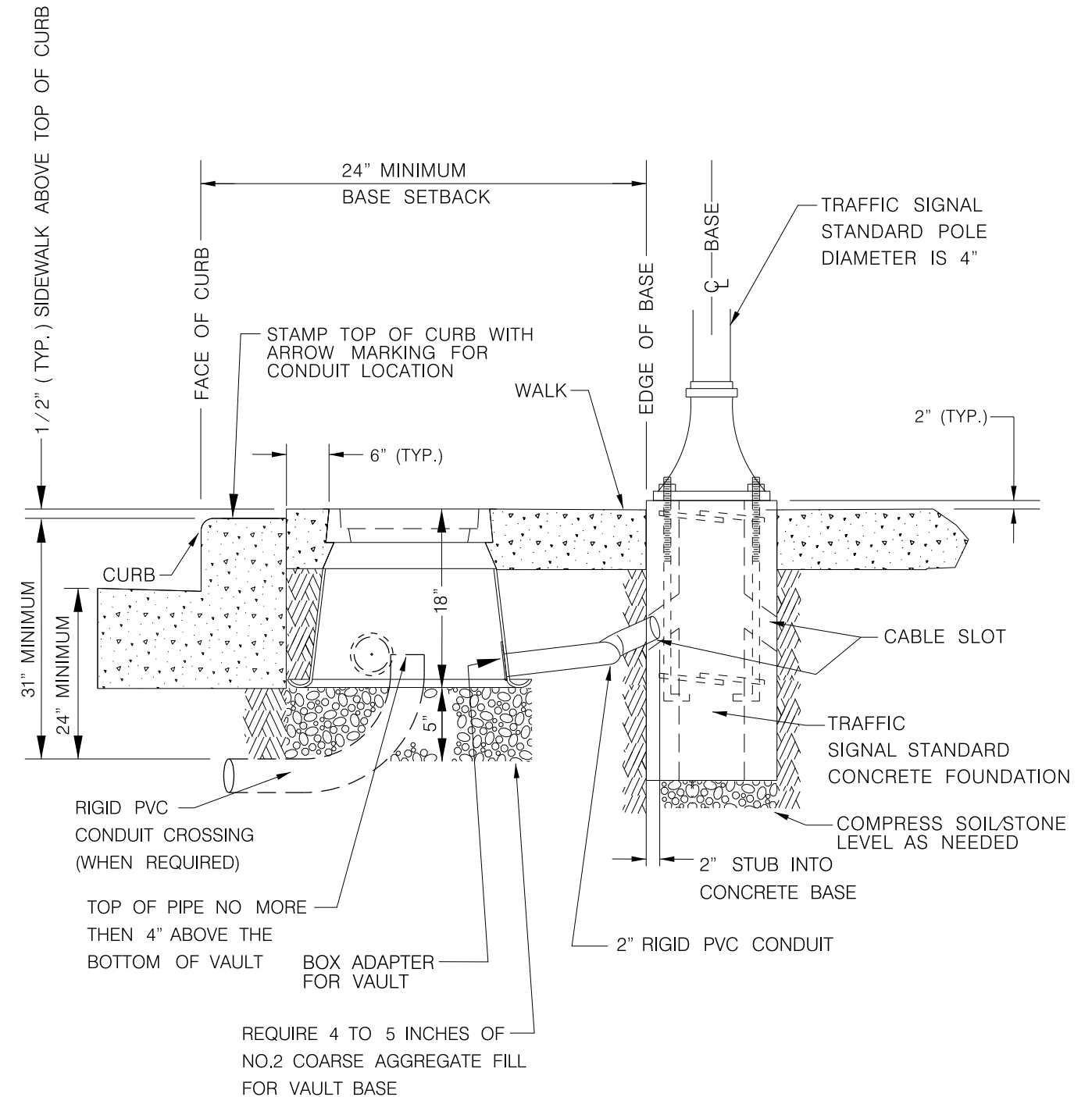
## 2



108 DETAIL TYPICAL CONDUIT INSTALLATION FROM VAULT TO POLE NOT TO SCALE

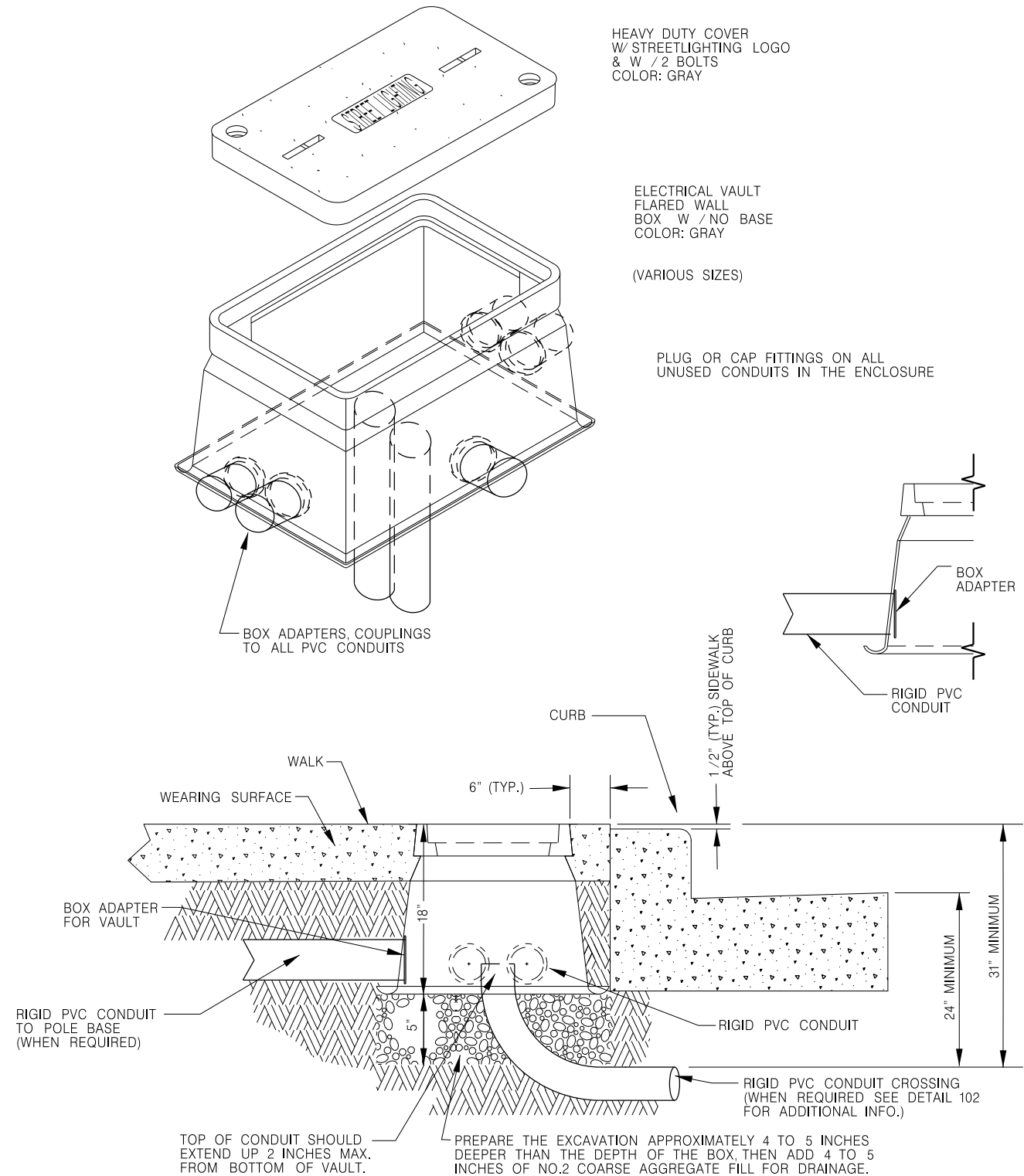
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

2



|     |                                                                                                                             |              |
|-----|-----------------------------------------------------------------------------------------------------------------------------|--------------|
| 109 | <p>DETAIL</p> <hr/> <p>TYPICAL CONDUIT INSTALLATION<br/>FROM VAULT TO SIGNAL STANDARD<br/>AND TYPICAL BASE INSTALLATION</p> | NOT TO SCALE |
|-----|-----------------------------------------------------------------------------------------------------------------------------|--------------|

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC & LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



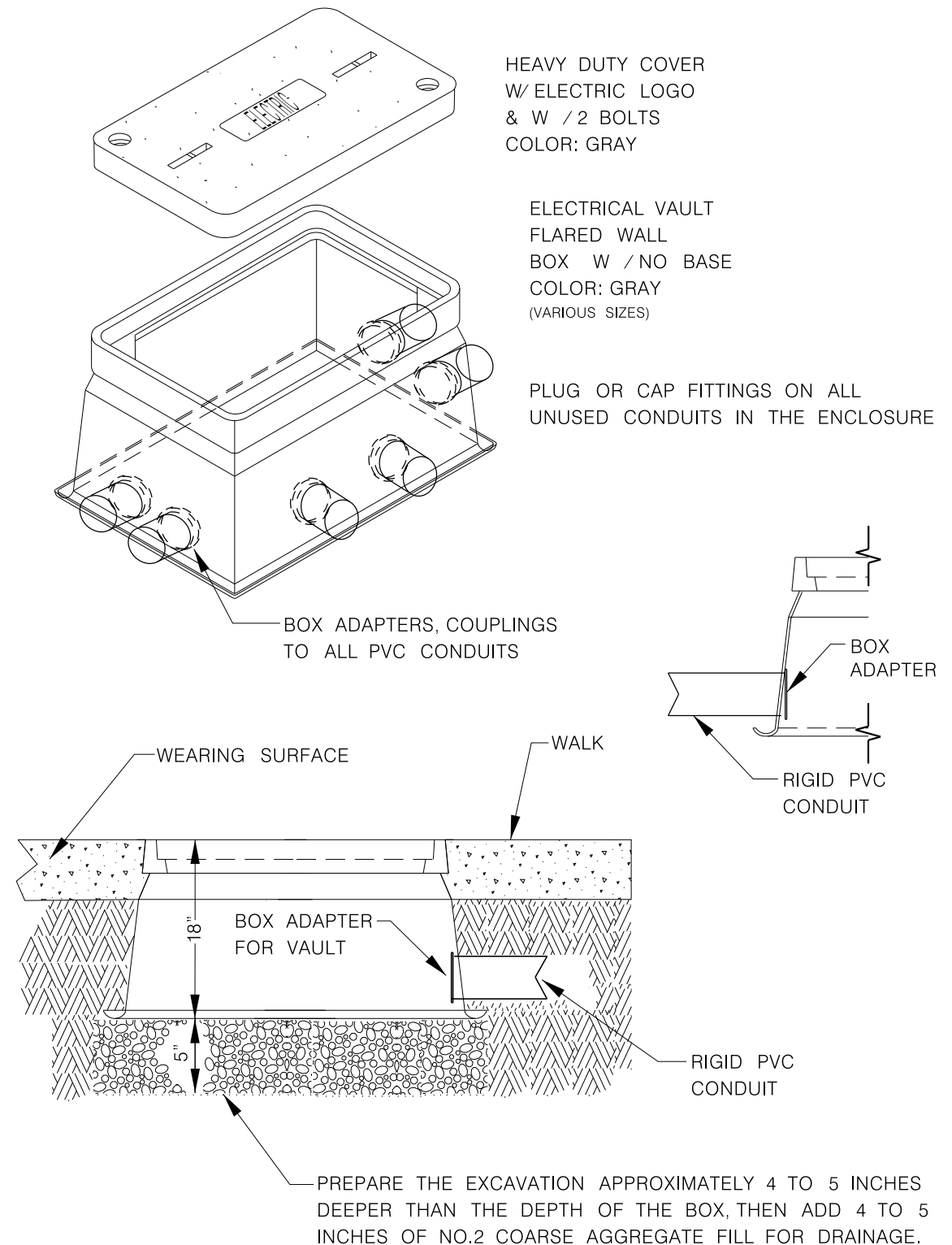
112

DETAIL

TYPICAL VAULT INSTALLATION IN WALK

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



113

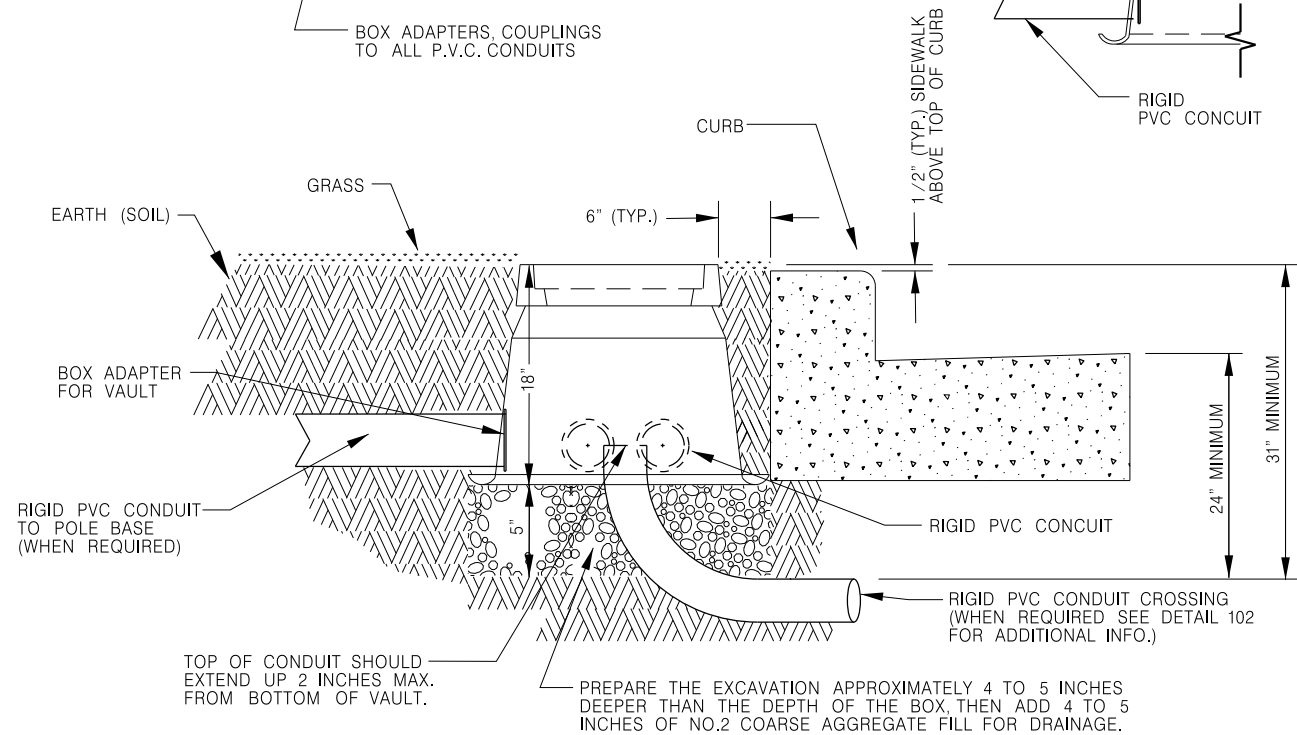
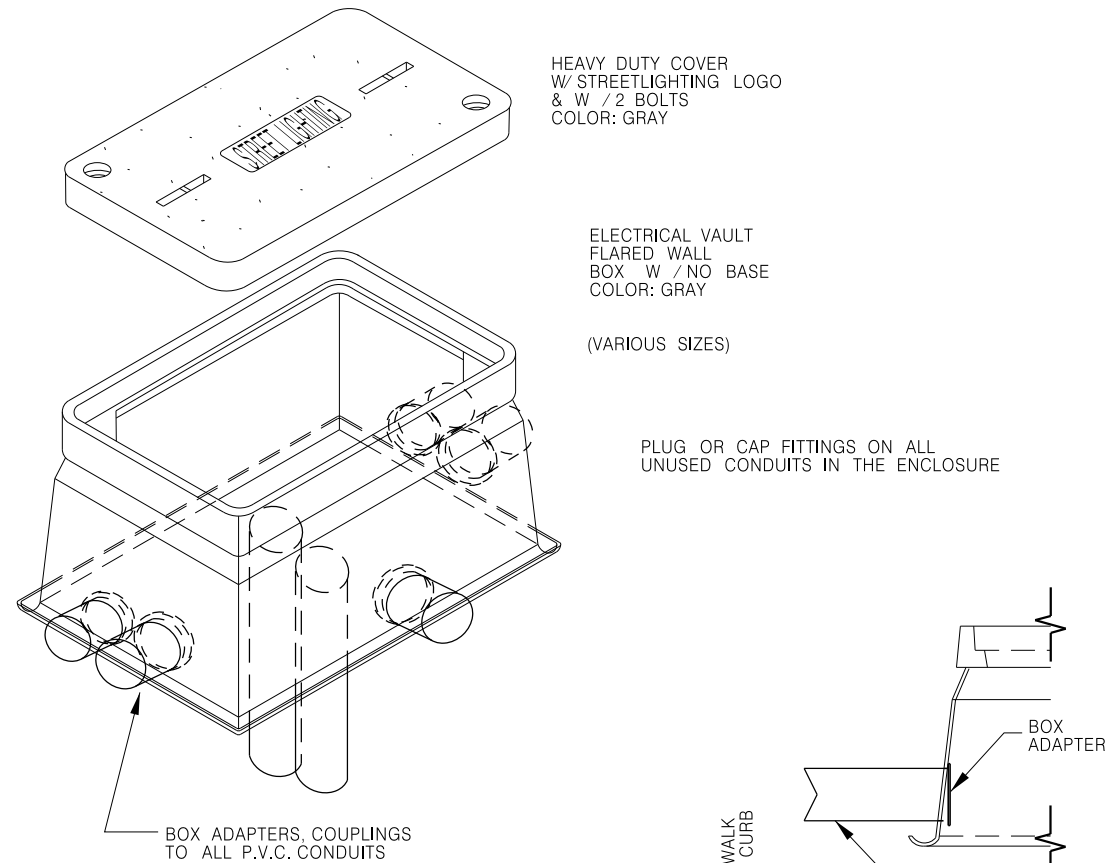
DETAIL

TYPICAL VAULT INSTALLATION  
IN SIDEWALK

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

SHEET 6 OF 9



121

## DETAIL

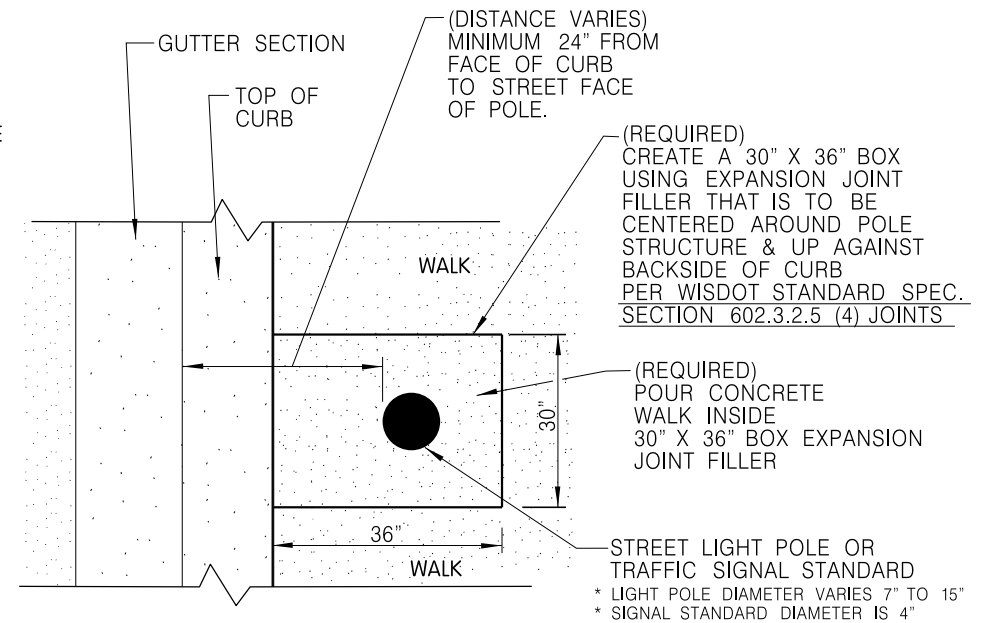
TYPICAL VAULT INSTALLATION IN GRASS AREA

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

THE CONTRACTOR IS REQUIRED TO INSTALL EXPANSION JOINT FILLER INTO THE CONCRETE WALK, WHICH SHALL BE 1/2" WIDE MINIMUM TO BE USED TO CREATE A SEPARATION BETWEEN A SMALL CONCRETE AREA AROUND THE TRAFFIC & STREET LIGHTING FACILITIES AND THE REST OF THE CONCRETE WALK.

THE BOX SIZE OF THE AREA CREATED USING THE EXPANSION JOINT FILLER IS STANDARD AROUND LIGHT POLES AND TRAFFIC SIGNALS, BUT WILL VARY WHEN PLACED AROUND TRAFFIC & LIGHTING CONTROL CABINETS.



## DETAIL VERSION #1

122

TYPICAL 30" X 36" BOX EXPANSION JOINT FILLER  
AROUND STREET LIGHTING POLE OR  
TRAFFIC SIGNAL STANDARD

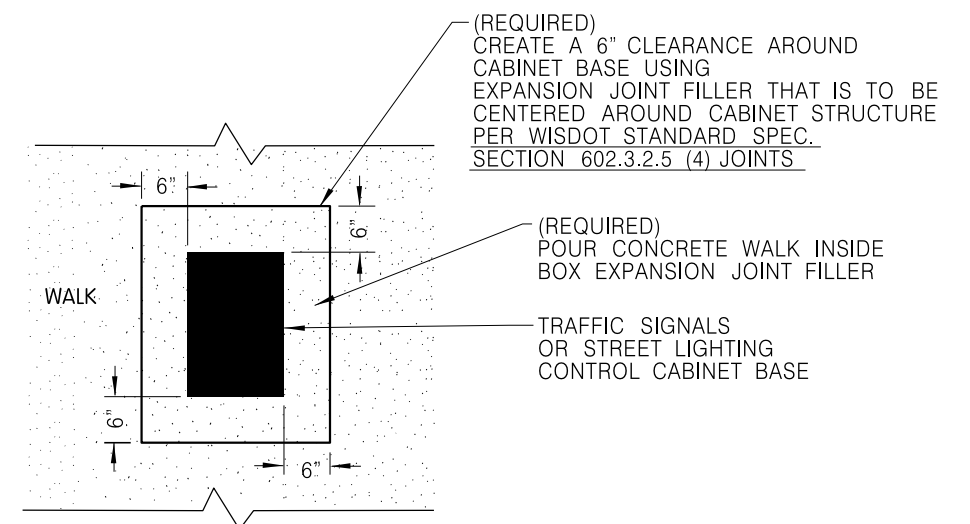
NOT TO SCALE

PLOTDATE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

THE CONTRACTOR IS REQUIRED TO INSTALL EXPANSION JOINT FILLER INTO THE CONCRETE WALK, WHICH SHALL BE 1/2" WIDE MINIMUM TO BE USED TO CREATE A SEPARATION BETWEEN A SMALL CONCRETE AREA AROUND THE TRAFFIC & STREET LIGHTING FACILITIES AND THE REST OF THE CONCRETE WALK.

THE BOX SIZE OF THE AREA CREATED USING THE EXPANSION JOINT FILLER IS STANDARD AROUND LIGHT POLES AND TRAFFIC SIGNALS, BUT WILL VARY WHEN PLACED AROUND TRAFFIC & LIGHTING CONTROL CABINETS.



## DETAIL VERSION #2

122

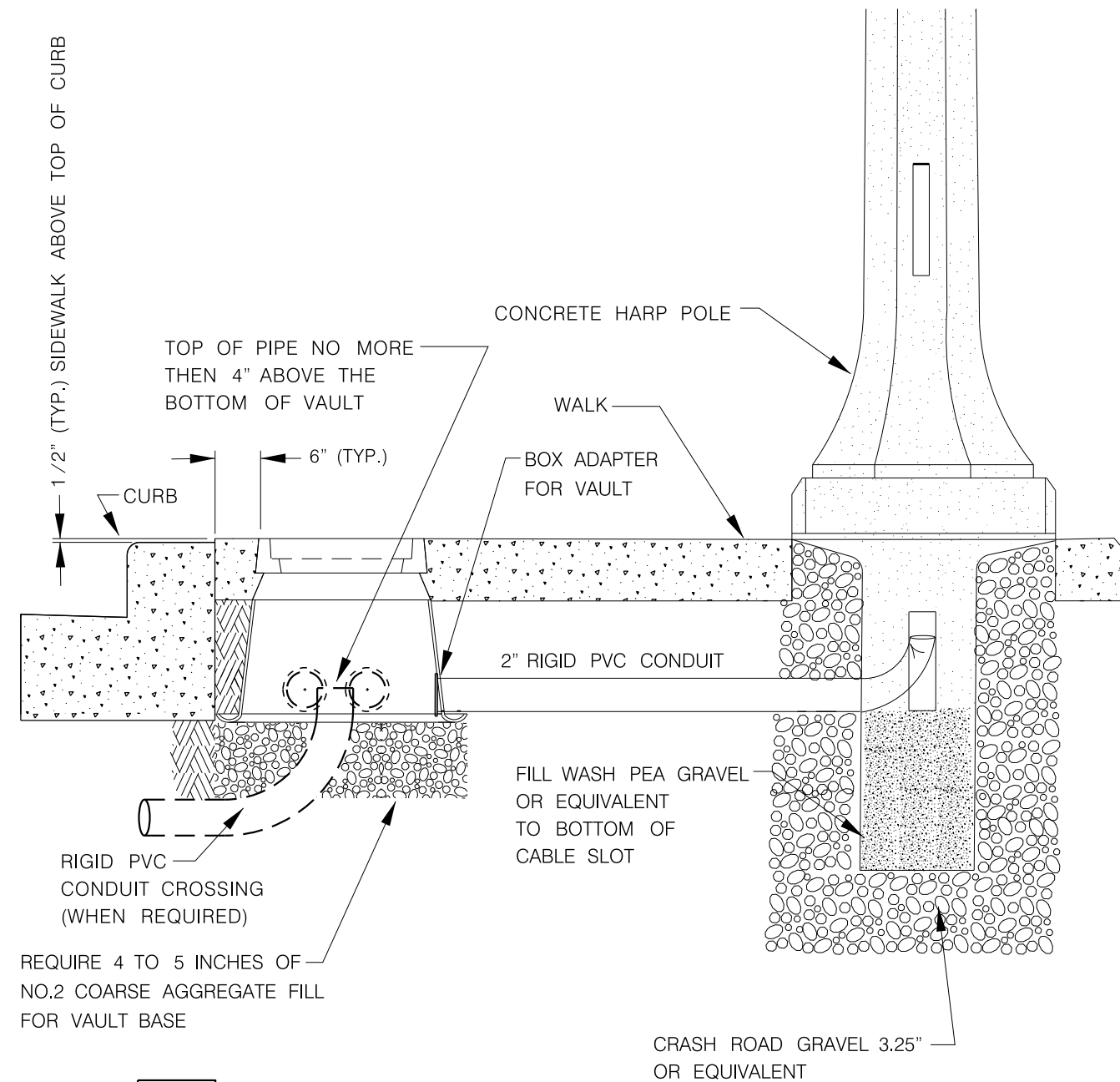
TYPICAL BOX EXPANSION JOINT FILLER  
AROUND TRAFFIC SIGNAL  
OR STREET LIGHTING CONTROL CABINET

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

SHEET 7 OF 9

## 2



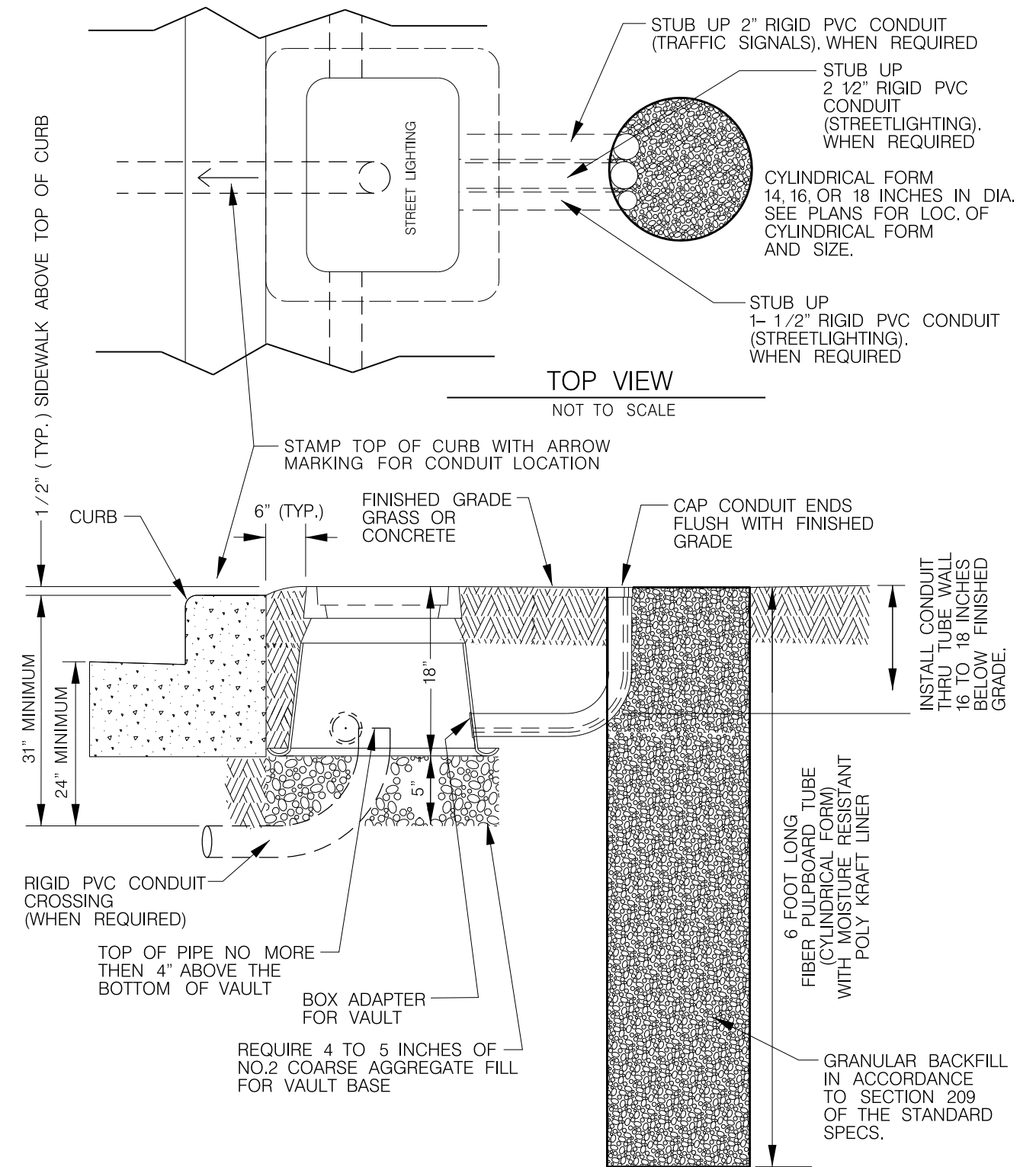
123

DETAIL

NOT TO SCALE

## TYPICAL CONDUIT INSTALLATION FROM VAULT TO CONCRETE HARP POLE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



138

## DETAIL

NOT TO SCALE

TYPICAL CONDUIT INSTALLATION  
FROM VAULT TO CYLINDRICAL FORM

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

SHEET 8 OF 9

PROJECT NO: 2080-00-71

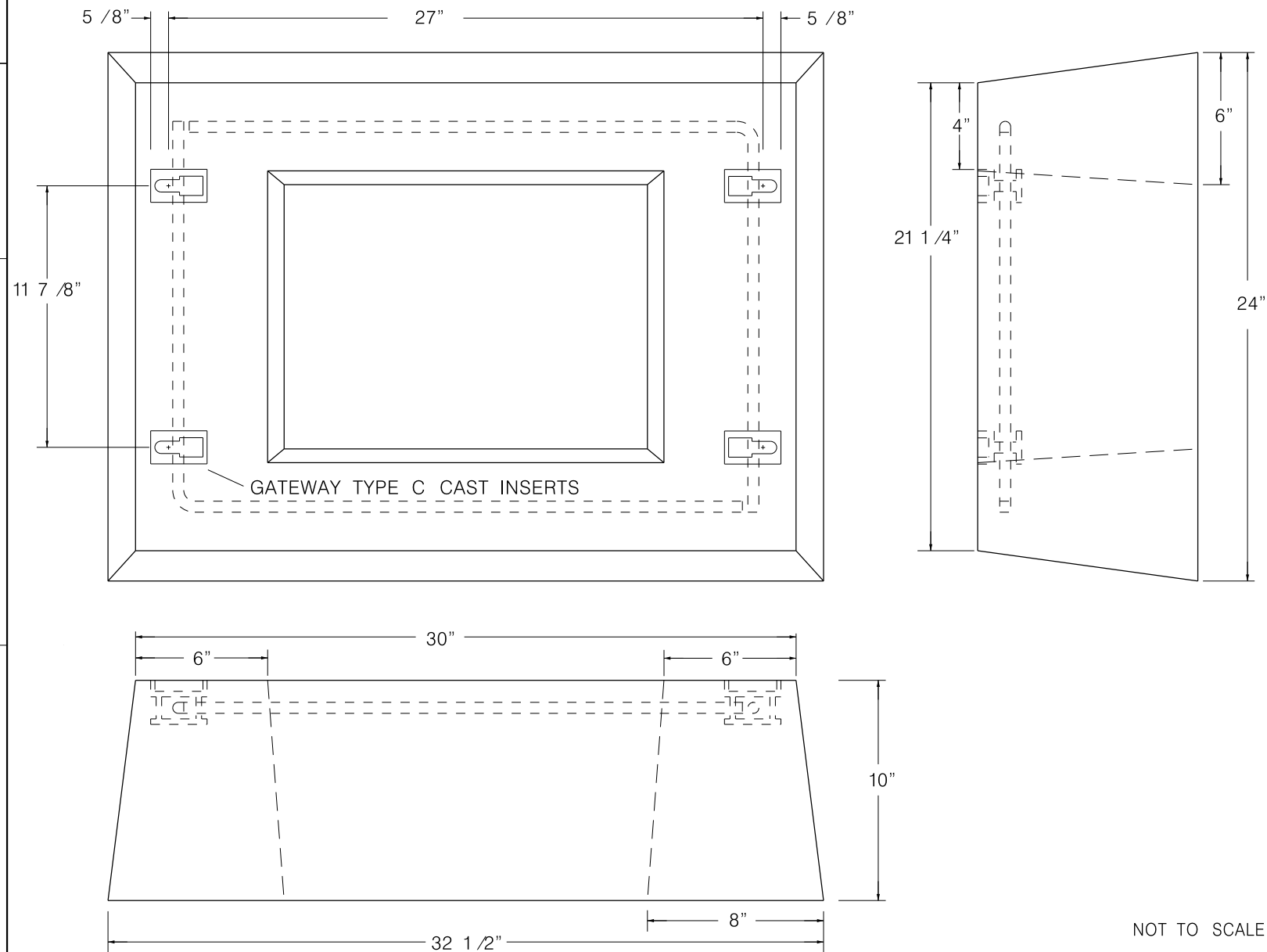
HWY: LOCAL STREET

COUNTY: MILWAUKEE

STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS

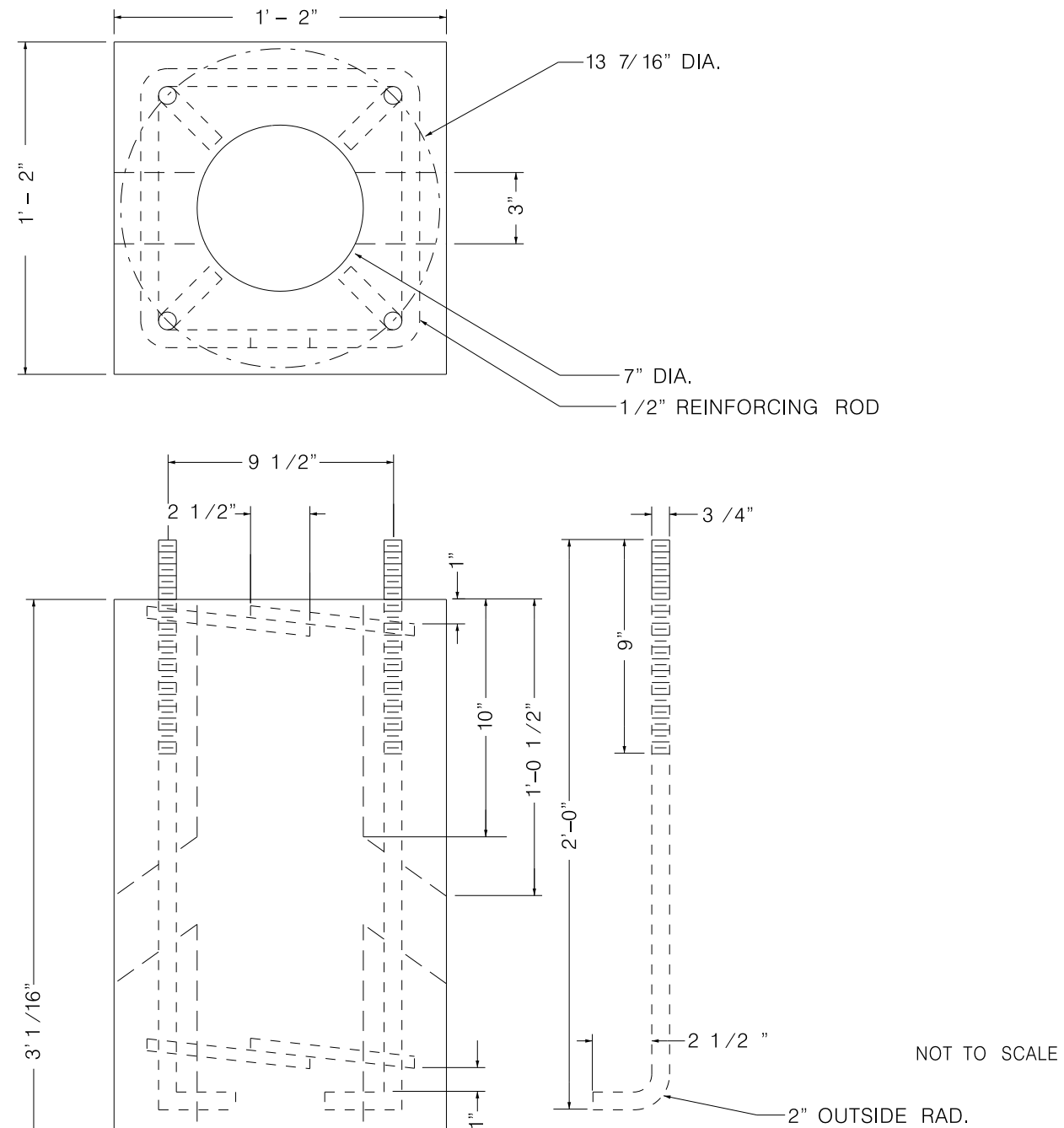
SHEET

11



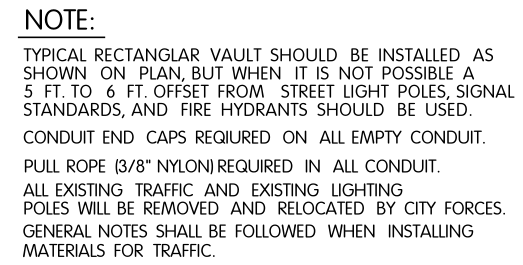
6 BAG MIX #1 STONE

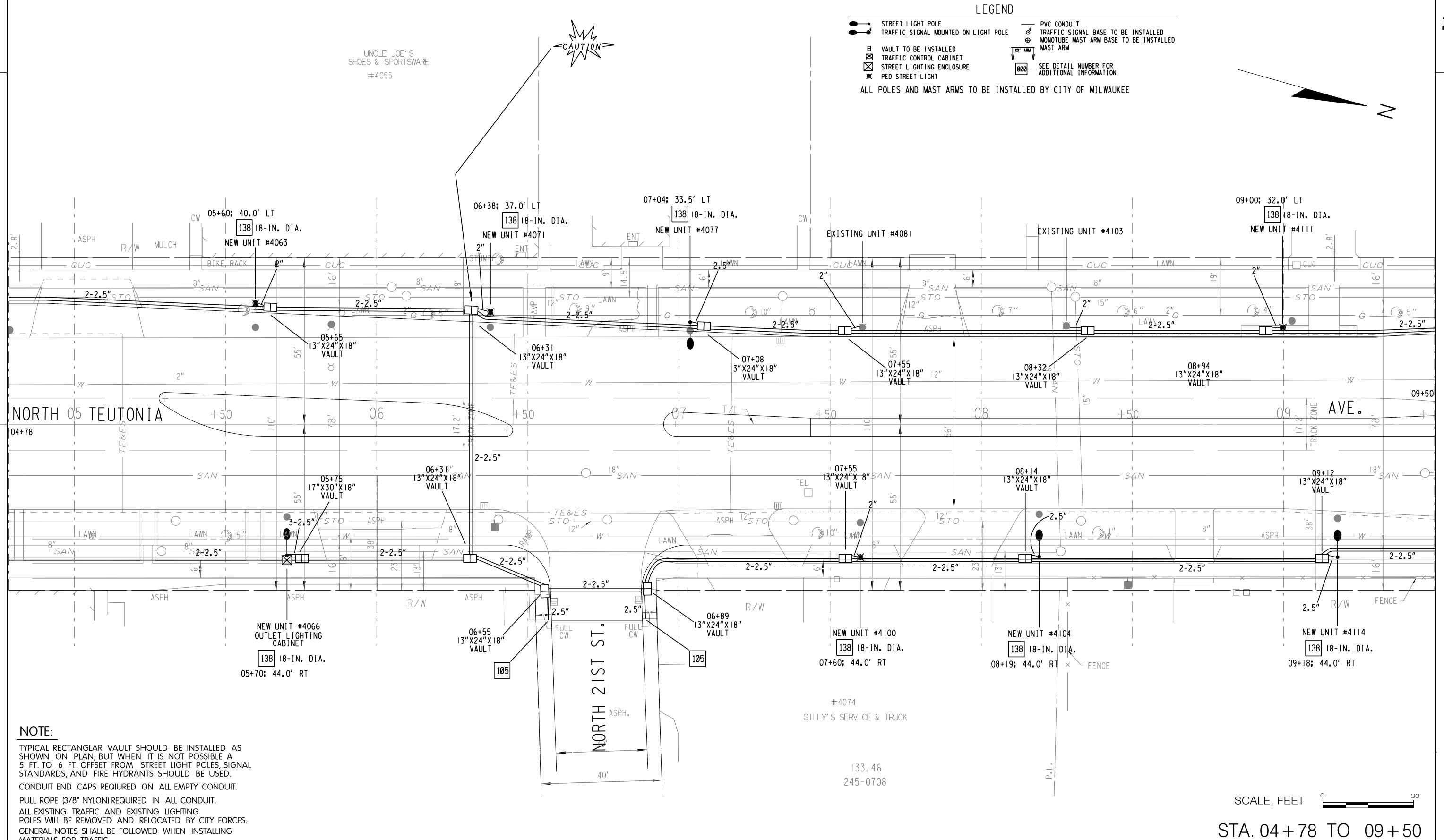
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| COMM. CODE 1238-927            |              |            |         |          |
| CONCRETE FOUNDATION            |              |            |         |          |
| TRAFFIC SIGNAL CONTROL CABINET |              |            |         |          |
| BUREAU OF TRAFFIC ENGINEERING  |              |            |         |          |
| AND                            |              |            |         |          |
| ELECTRICAL SERVICES            |              |            |         |          |
| D.P.W. CITY OF MILWAUKEE       |              |            |         |          |
| TRAFFIC CONTROL MATERIAL       |              |            |         |          |
| DATE                           | SCALE        | DRAWN      | CHECKED | APPROVED |
| 4-22-75                        | 1/4"=1"      | J.H.S.     | B.J.T.  | R.J.B.   |
| SUPERSEDES                     | REVISED DATE | DRG.       |         |          |
| C-65-546-T                     | 01-30-02     | C-75-564-T |         |          |
| SUPERSEDED BY                  | NEW DRG.     | F-82-536-T |         |          |



6 BAG MIX #1 STONE

|                               |              |            |         |          |
|-------------------------------|--------------|------------|---------|----------|
| COMM. CODE 1238-936           |              |            |         |          |
| CONCRETE FOUNDATION           |              |            |         |          |
| TRAFFIC SIGNAL STANDARD       |              |            |         |          |
| BUREAU OF TRAFFIC ENGINEERING |              |            |         |          |
| AND                           |              |            |         |          |
| ELECTRICAL SERVICES           |              |            |         |          |
| D.P.W. CITY OF MILWAUKEE      |              |            |         |          |
| TRAFFIC CONTROL MATERIAL      |              |            |         |          |
| DATE                          | SCALE        | DRAWN      | CHECKED | APPROVED |
| 4-18-75                       | Not To Scale | J.H.S.     | B.J.T.  | R.J.B.   |
| SUPERSEDES                    | REVISED DATE | DRG.       |         |          |
| C-65-546-T                    | 07-29-03     | C-75-563-T |         |          |
| SUPERSEDED BY                 | NEW DRG.     | F-82-535-T |         |          |





## LEGEND

- STREET LIGHT POLE
  - TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
  - VAULT TO BE INSTALLED
  - TRAFFIC CONTROL CABINET
  - STREET LIGHTING ENCLOSURE
  - PED STREET LIGHT
  - PVC CONDUIT
  - TRAFFIC SIGNAL BASE TO BE INSTALLED
  - MONOTUBE MAST ARM BASE TO BE INSTALLED
  - MAST ARM
  - SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION
- ALL POLES AND MAST ARMS TO BE INSTALLED BY CITY OF MILWAUKEE

NORTH TEUTONIA

AVE.

WEST ATKINSON AVE.

## NOTE:

TYPICAL RECTANGULAR VAULT SHOULD BE INSTALLED AS SHOWN ON PLAN, BUT WHEN IT IS NOT POSSIBLE A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS, AND FIRE HYDRANTS SHOULD BE USED.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.

ALL EXISTING TRAFFIC AND EXISTING LIGHTING POLES WILL BE REMOVED AND RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC.

PROJECT NO: 2080-00-71

HWY: LOCAL STREET

COUNTY: MILWAUKEE

STREET LIGHTING &amp; TRAFFIC SIGNAL CONDUIT PLAN

SHEET

E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects-LFA\Preliminary Engineering\2080-00-91 Teutonia Ruby to Capitol\2080-00-71 TR &amp; SL 90%\2080-00-71 TR&amp;SL 90%.dgn

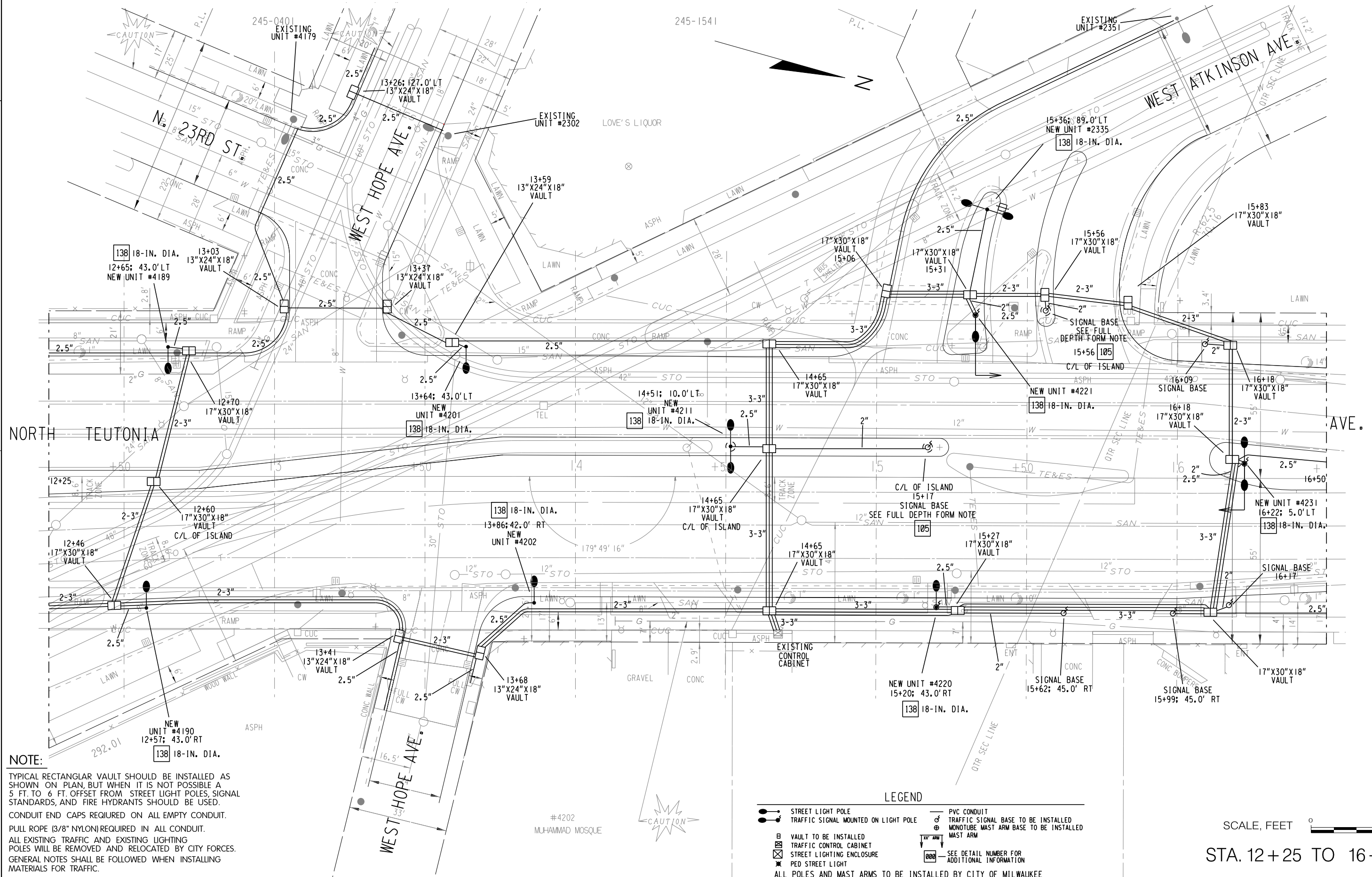
PLOT DATE : 19-DEC-2014 11:42

PLOT BY : jbond

PLOT NAME :

PLOT SCALE : 30.000000:1.000000

WISDOT/CADDs SHEET 42



## NOTE:

TYPICAL RECTANGULAR VAULT SHOULD BE INSTALLED AS SHOWN ON PLAN, BUT WHEN IT IS NOT POSSIBLE A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS, AND FIRE HYDRANTS SHOULD BE USED.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8\" NYLON) REQUIRED IN ALL CONDUIT.

ALL EXISTING TRAFFIC AND EXISTING LIGHTING POLES WILL BE REMOVED AND RELOCATED BY CITY FORCES.

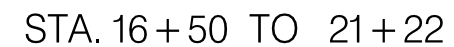
GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING MATERIALS FOR TRAFFIC.

## LEGEND

- |                                                              |                                      |  |                                              |
|--------------------------------------------------------------|--------------------------------------|--|----------------------------------------------|
|                                                              | STREET LIGHT POLE                    |  | PVC CONDUIT                                  |
|                                                              | TRAFFIC SIGNAL MOUNTED ON LIGHT POLE |  | TRAFFIC SIGNAL BASE TO BE INSTALLED          |
|                                                              | VAULT TO BE INSTALLED                |  | MONOTUBE MAST ARM BASE TO BE INSTALLED       |
|                                                              | TRAFFIC CONTROL CABINET              |  | MAST ARM                                     |
|                                                              | STREET LIGHTING ENCLOSURE            |  | SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION |
|                                                              | PEDESTRIAN STREET LIGHT              |  |                                              |
| ALL POLES AND MAST ARMS TO BE INSTALLED BY CITY OF MILWAUKEE |                                      |  |                                              |

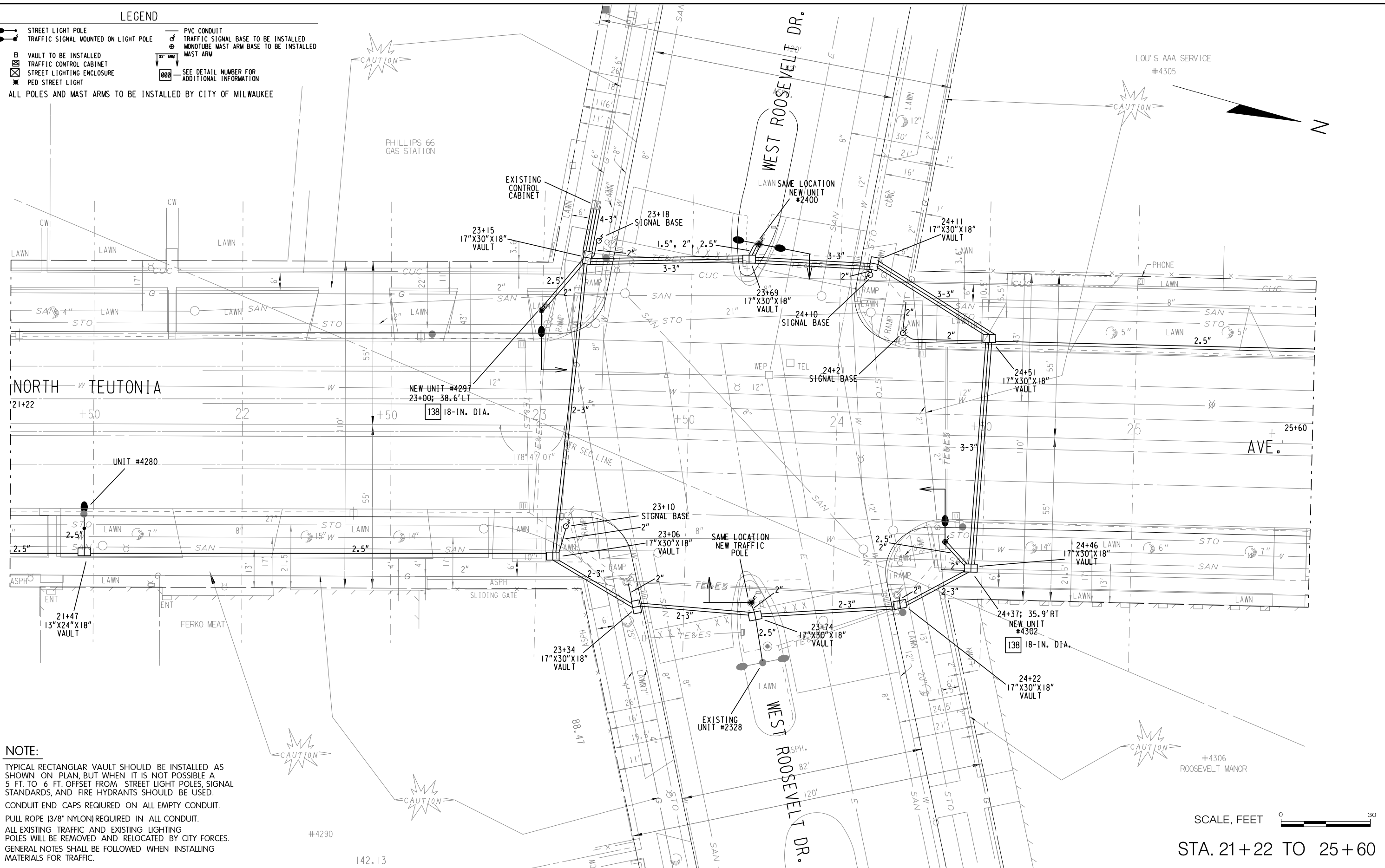
SCALE, FEET

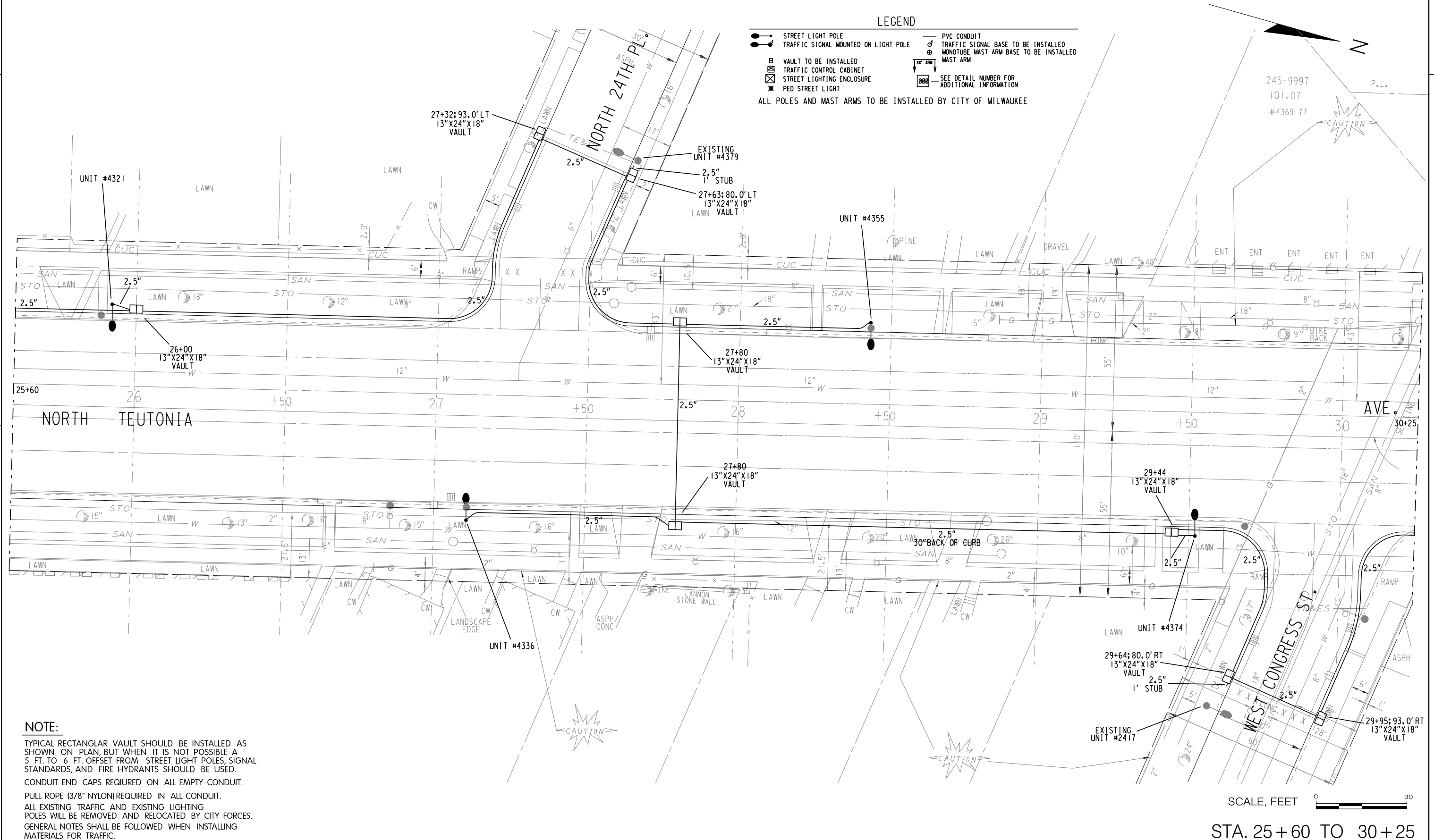
STA. 12+25 TO 16+50

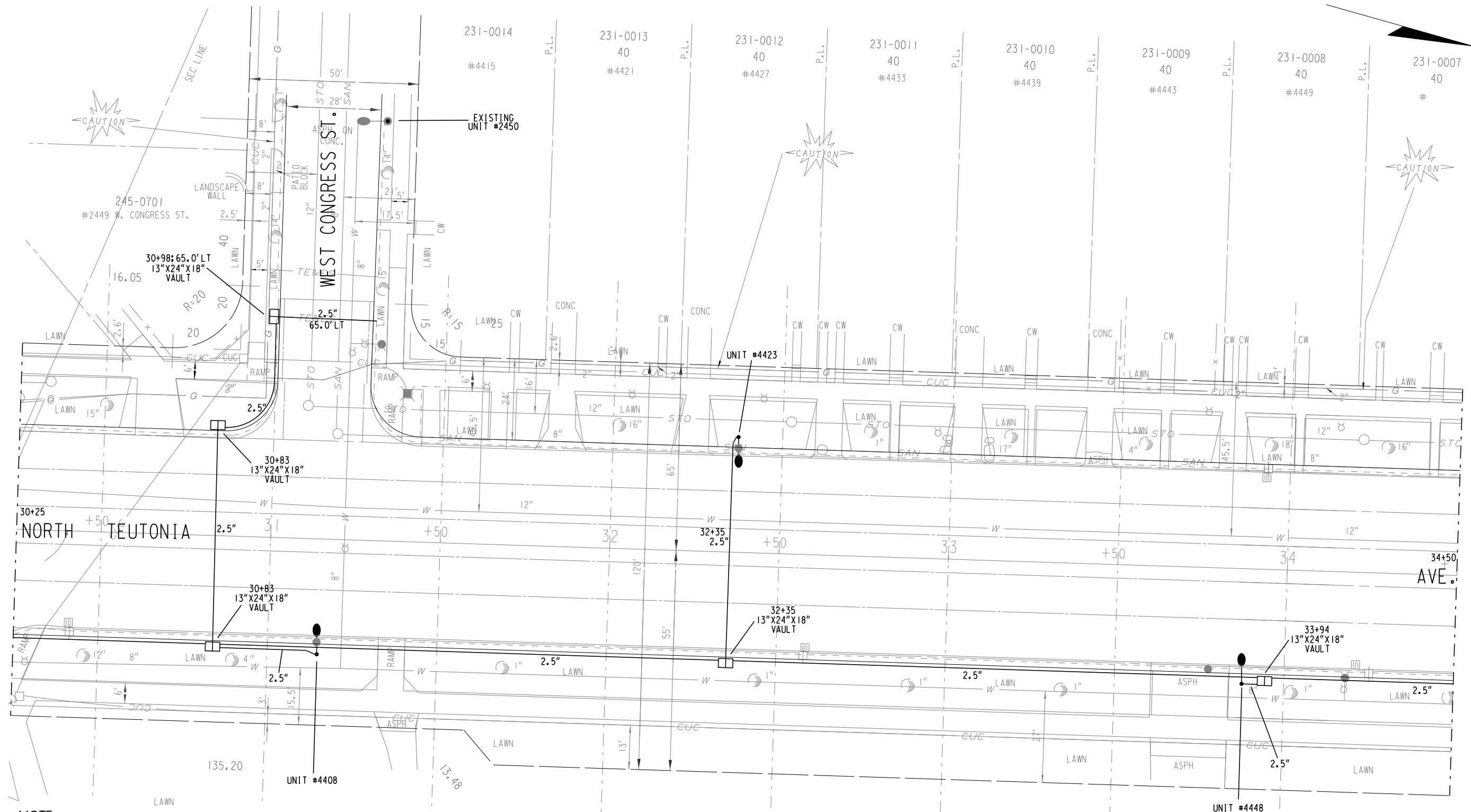


## LEGEND

- STREET LIGHT POLE  
TRAFFIC SIGNAL MOUNTED ON LIGHT POLE  
VAULT TO BE INSTALLED  
TRAFFIC CONTROL CABINET  
STREET LIGHTING ENCLOSURE  
PED STREET LIGHT  
PVC CONDUIT  
TRAFFIC SIGNAL BASE TO BE INSTALLED  
MONOTUBE MAST ARM BASE TO BE INSTALLED  
MAST ARM  
SEE DETAIL NUMBER FOR  
ADDITIONAL INFORMATION  
ALL POLES AND MAST ARMS TO BE INSTALLED BY CITY OF MILWAUKEE





**NOTE:**

TYPICAL RECTANGULAR VAULT SHOULD BE INSTALLED AS SHOWN ON PLAN, BUT WHEN IT IS NOT POSSIBLE A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS, AND FIRE HYDRANTS SHOULD BE USED.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8\"

ALL EXISTING TRAFFIC AND EXISTING LIGHTING

POLES WILL BE REMOVED AND RELOCATED BY CITY FORCES.

GENERAL NOTES SHALL BE FOLLOWED WHEN INSTALLING

MATERIALS FOR TRAFFIC.

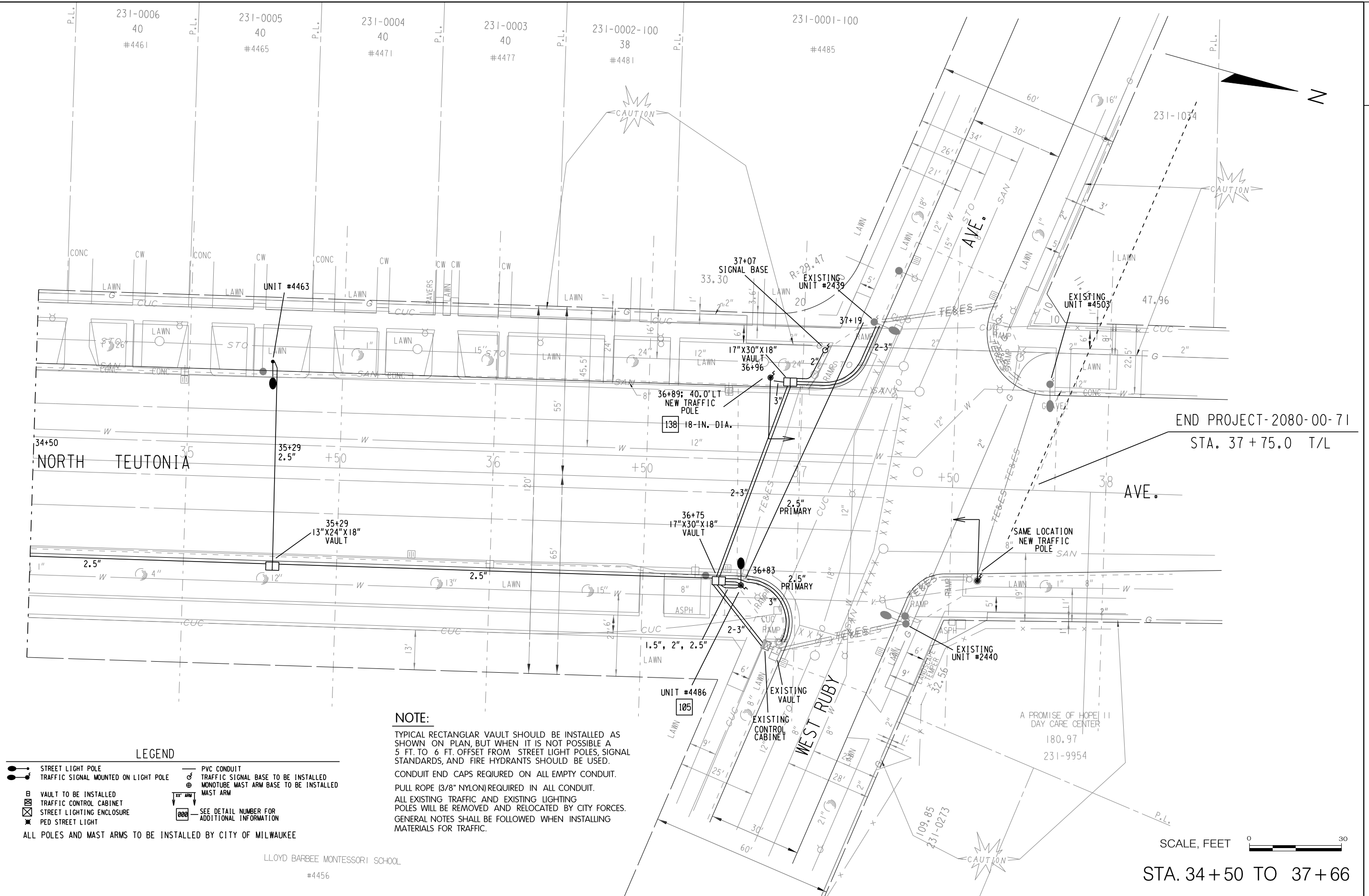
**LEGEND**

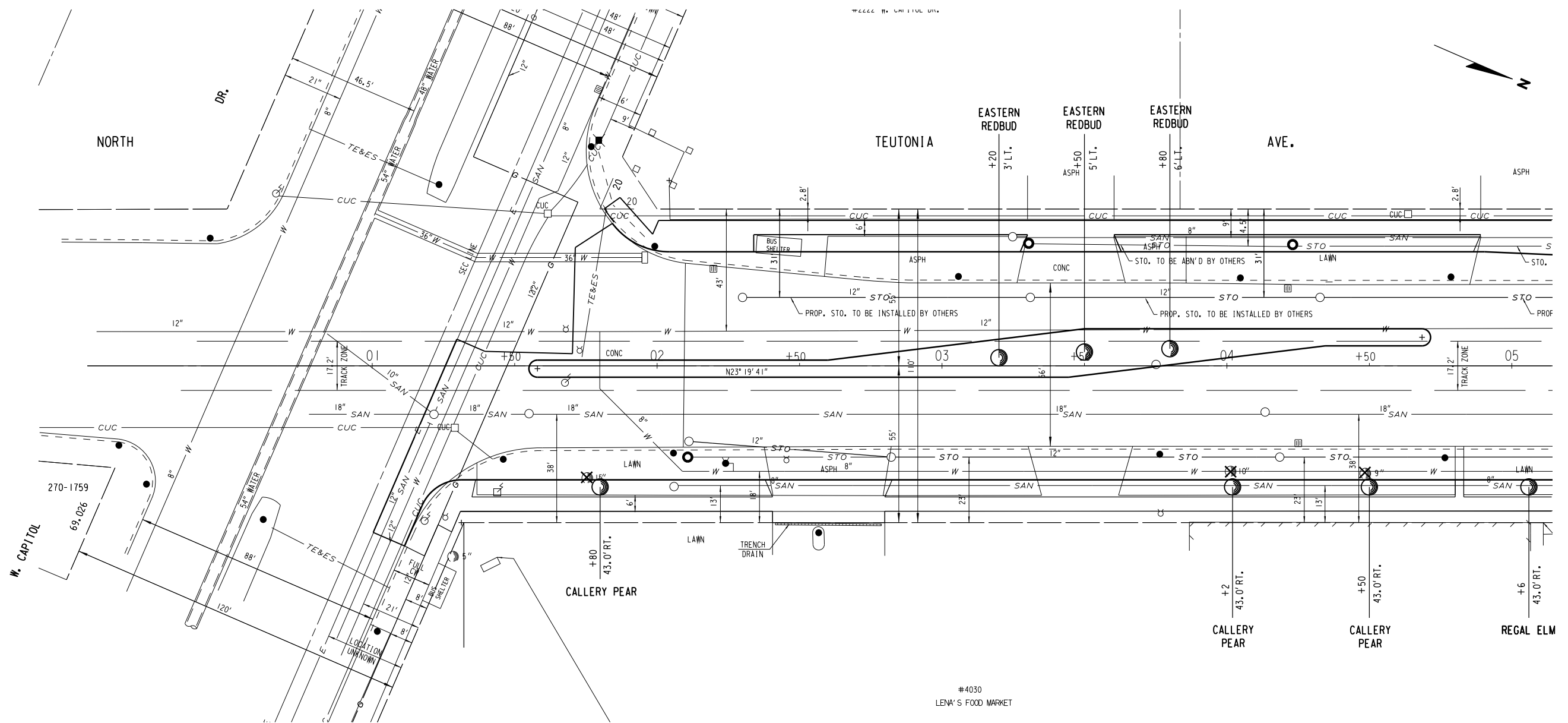
- |  |                                      |  |                                              |
|--|--------------------------------------|--|----------------------------------------------|
|  | STREET LIGHT POLE                    |  | PVC CONDUIT                                  |
|  | TRAFFIC SIGNAL MOUNTED ON LIGHT POLE |  | TRAFFIC SIGNAL BASE TO BE INSTALLED          |
|  | VAULT TO BE INSTALLED                |  | MONOTUBE MAST ARM BASE TO BE INSTALLED       |
|  | TRAFFIC CONTROL CABINET              |  | MAST ARM                                     |
|  | STREET LIGHTING ENCLOSURE            |  | SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION |
|  | PED STREET LIGHT                     |  |                                              |
- ALL POLES AND MAST ARMS TO BE INSTALLED BY CITY OF MILWAUKEE

517.49

SCALE, FEET

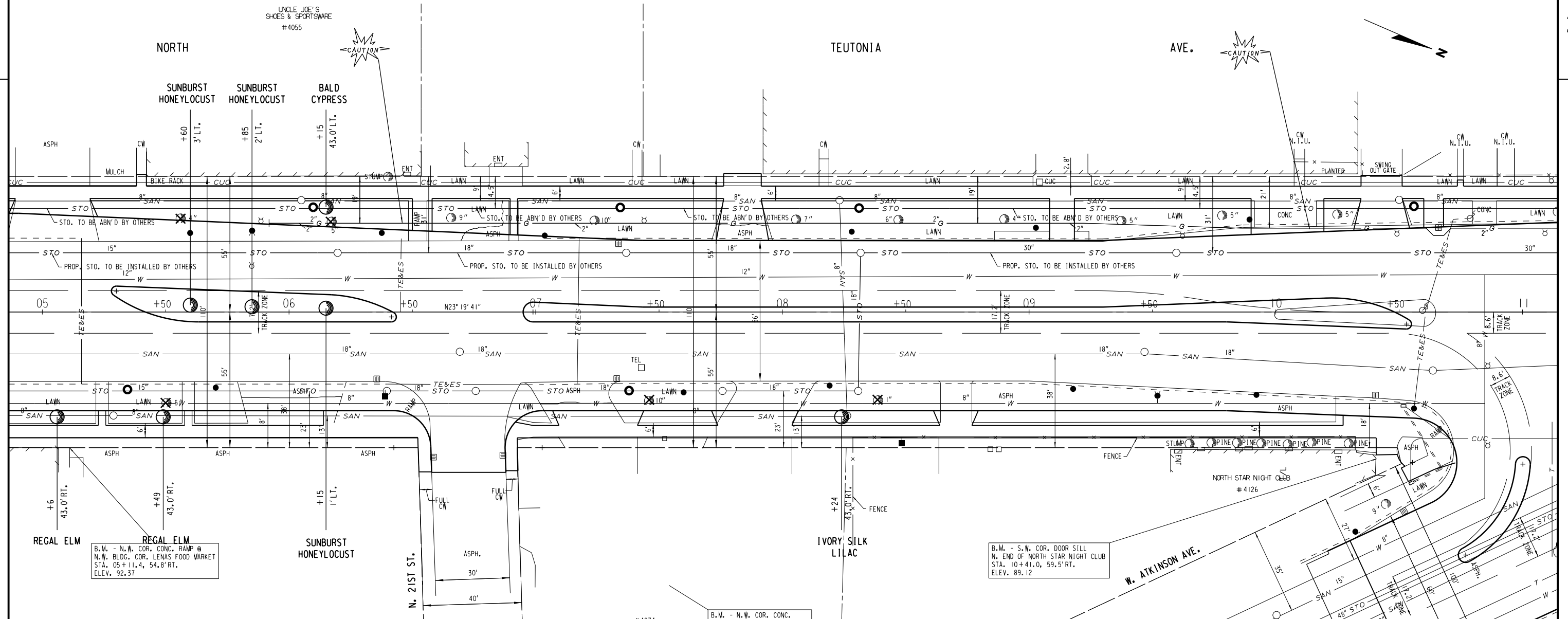
STA. 30+25 TO 34+50

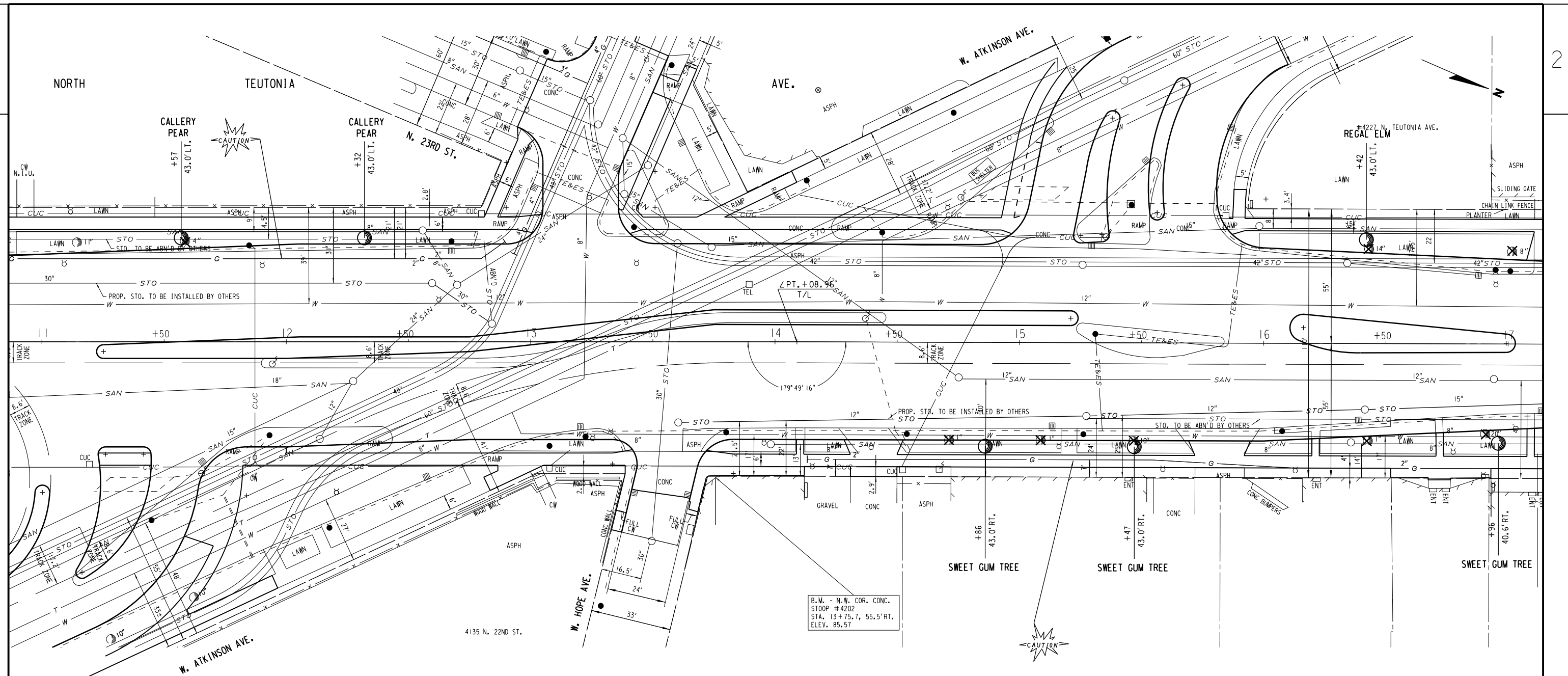




| PLANTING DATA CHART  |                                           |                   |                |              |         |                     |            |         |              |                   |                      |                 |                  |
|----------------------|-------------------------------------------|-------------------|----------------|--------------|---------|---------------------|------------|---------|--------------|-------------------|----------------------|-----------------|------------------|
| COMMON NAME          | SCIENTIFIC NAME                           | SIZE WHEN PLANTED | ROOT ZONE MODE | MINIMUM SIZE |         |                     |            |         | BRACE OR GUY | FERT. UNITS REQ'D | RODENT PROTECT REQ'D | MULCH RING DIA. | REMARKS          |
|                      |                                           |                   |                | BALL / POT   |         | ROOT SPREAD *       | PLANT HOLE |         |              |                   |                      |                 |                  |
|                      |                                           |                   |                | DIA.         | DEPTH   |                     | DIA.       | DEPTH   |              |                   |                      |                 |                  |
| FREEMAN MAPLE        | ACER FREEMANII "AUTUMN BLAZE"             | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SUNBURST HONEYLOCUST | GLEDTISIA TRIACANTHOS "SUNBURST"          | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| CALLERY PEAR         | PYRUS CALLERYANA "CLEVELAND SELECT"       | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| REGAL ELM            | ULMUS PARVIFOLIA "REGAL"                  | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| IVORY SILK LILAC     | SYRINGA RETICULATA "IVORY SILK"           | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| EASTERN REDBUD       | CERCIS CANADENSIS                         | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SWEET GUM TREE       | LIQUIDAMBAR STYRACIFLUA "GRANTS SEEDLESS" | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| BALD CYPRESS         | TAXODIUM DISTICHUM                        | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| TULIP TREE           | LIRIODENDRON TULIPIFERA                   | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| ENGLISH OAK          | QUECUS ROBUR "CRIMSON SPIRE"              | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |

● - PLANT NEW TREE (TYPE)  
✕ - CLEAR & GRUB TREE  
BR BARE ROOT  
B&B BALLED AND BURLAPPED  
CAL CALIPER  
CG CONTAINER GROWTH  
(\*) FOR BARE ROOT PLANTS





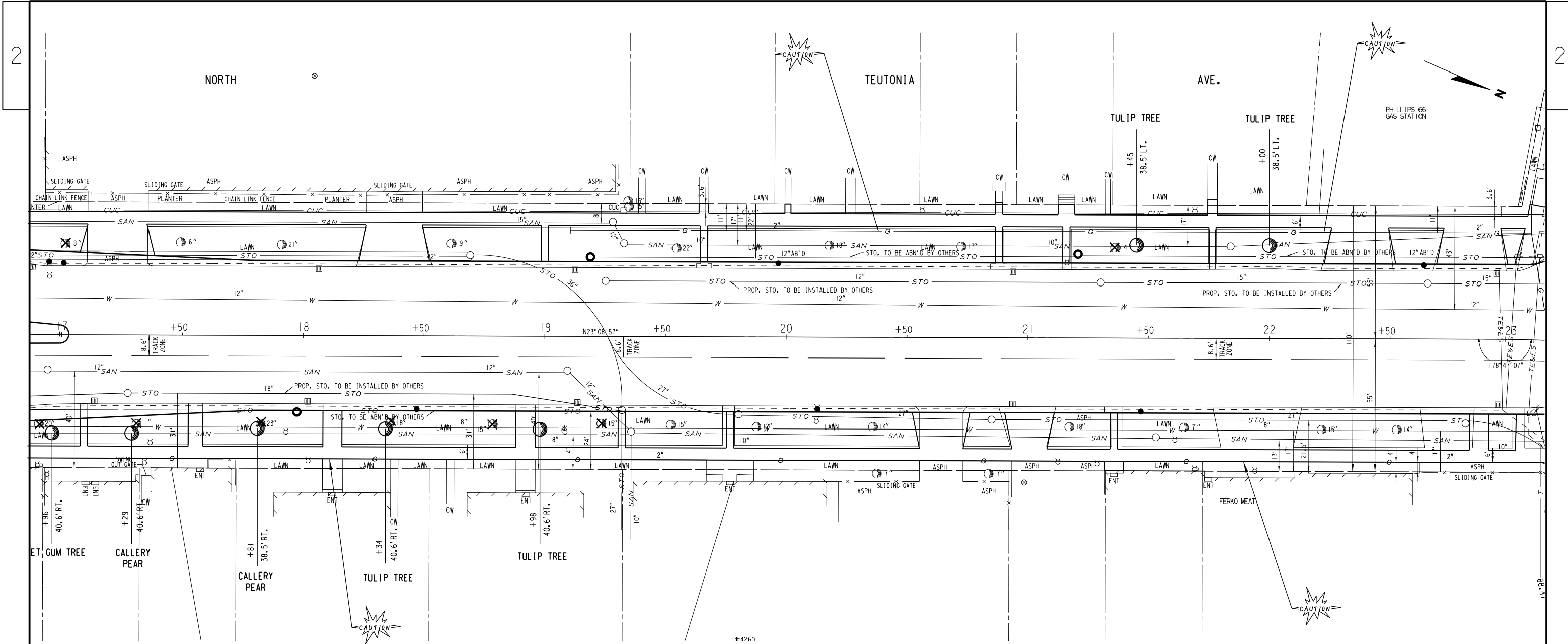
PLANTING DATA CHART

| PLANTING DATA CHART  |                                           |                   |                |              |         |                     |            |         |              |                   |                      |                 |                  |
|----------------------|-------------------------------------------|-------------------|----------------|--------------|---------|---------------------|------------|---------|--------------|-------------------|----------------------|-----------------|------------------|
| COMMON NAME          | SCIENTIFIC NAME                           | SIZE WHEN PLANTED | ROOT ZONE MODE | MINIMUM SIZE |         |                     |            |         | BRACE OR GUY | FERT. UNITS REQ'D | RODENT PROTECT REQ'D | MULCH RING DIA. | REMARKS          |
|                      |                                           |                   |                | BALL / POT   |         | ROOT SPREAD *       | PLANT HOLE |         |              |                   |                      |                 |                  |
|                      |                                           |                   |                | DIA.         | DEPTH   |                     | DIA.       | DEPTH   |              |                   |                      |                 |                  |
| FREEMAN MAPLE        | ACER FREEMANII "AUTUMN BLAZE"             | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SUNBURST HONEYLOCUST | GLEDTISIA TRIACANTHOS "SUNBURST"          | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| CALLERY PEAR         | PYRUS CALLERYANA "CLEVELAND SELECT"       | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| REGAL ELM            | ULMUS PARVIFOLIA "REGAL"                  | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| IVORY SILK LILAC     | SYRINGA RETICULATA "IVORY SILK"           | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| EASTERN REDBUD       | CERCIS CANADENSIS                         | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SWEET GUM TREE       | LIIQIDAMBAR STYRACIFLUA "GRANTS SEEDLESS" | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| BALD CYPRESS         | TAXODIUM DISTICHUM                        | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| TULIP TREE           | LIRIODENDRON TULIPIFERA                   | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| ENGLISH OAK          | QUECUS ROBUR "CRIMSON SPIRE"              | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |

⊙ - PLANT NEW TREE (TYPE)

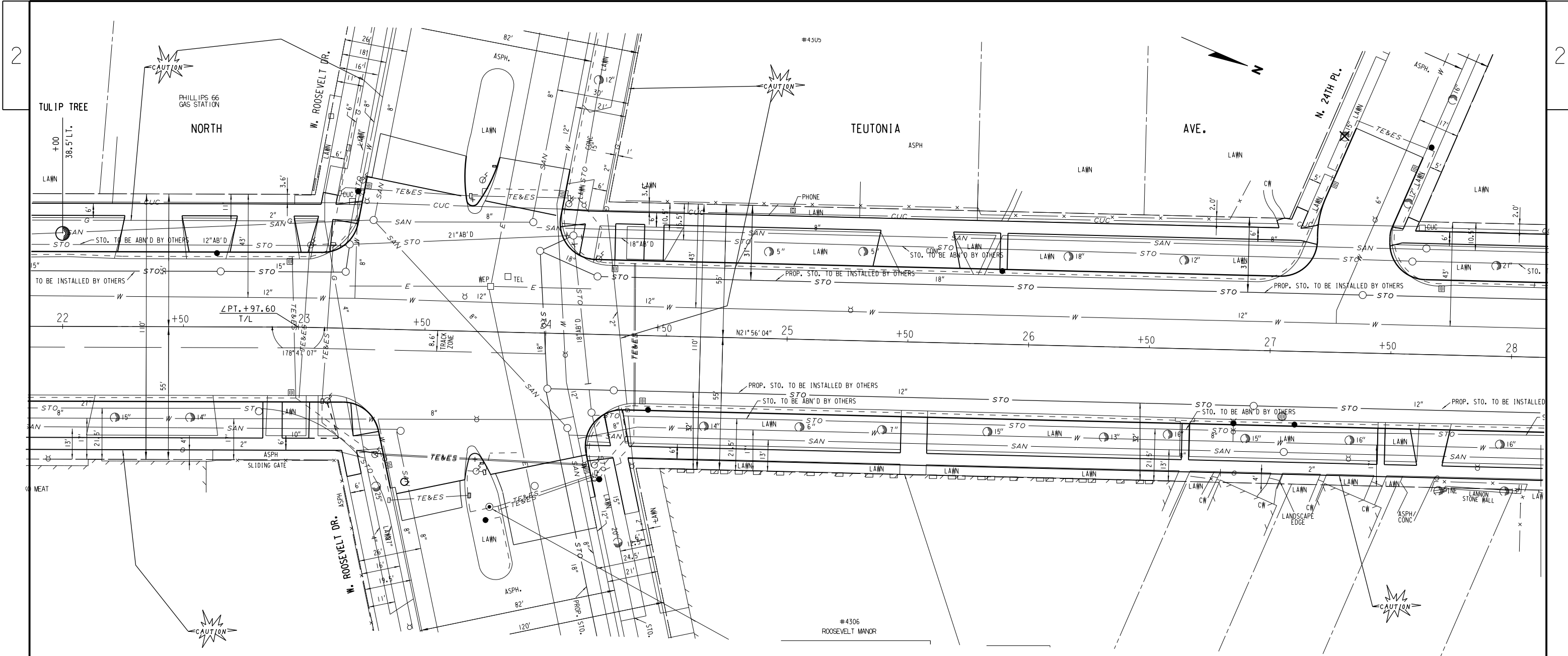
✕ - CLEAR & GRUB TREE

BR BARE ROOT  
B&B BALLED AND BURLAPPED  
CAL CALIPER  
CG CONTAINER GROWTH  
(\*) FOR BARE ROOT PLANTS



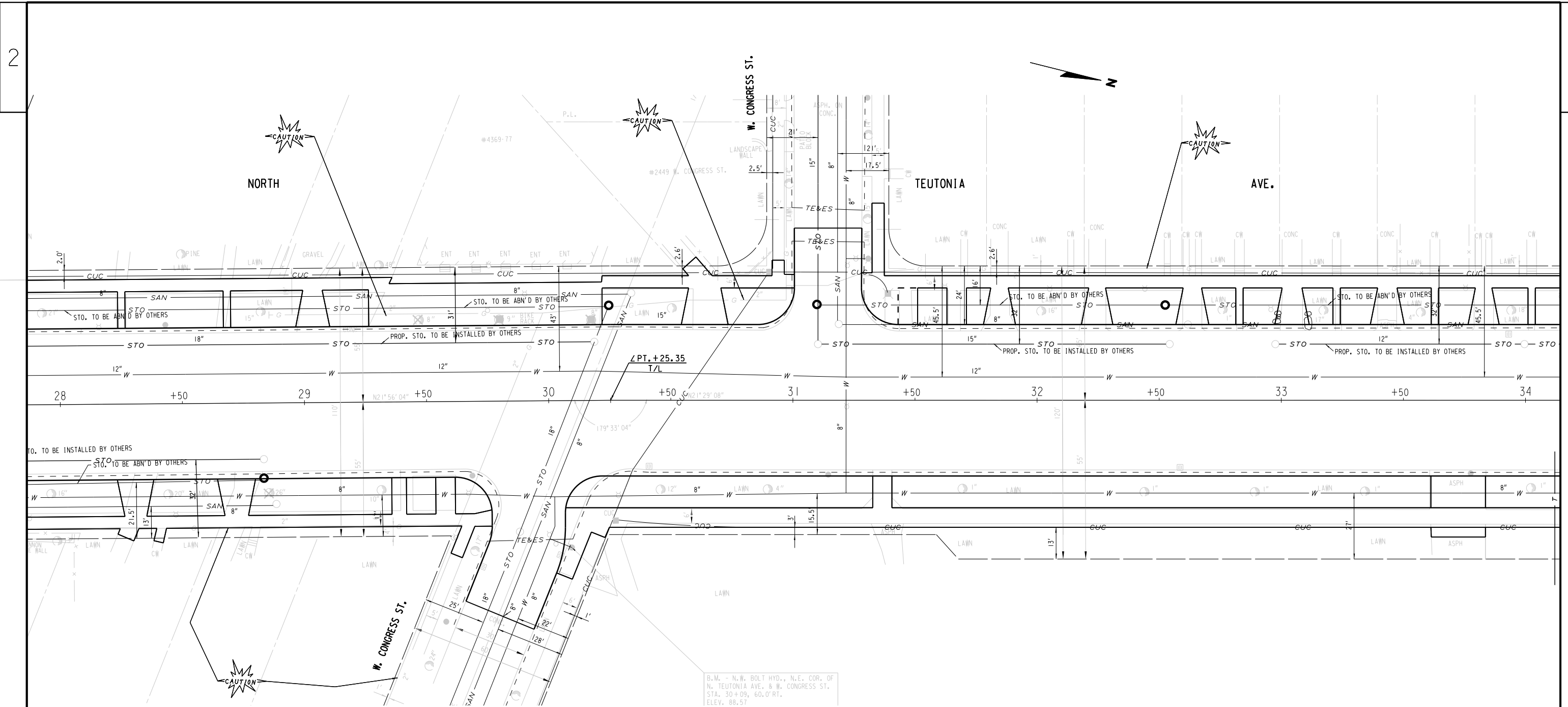
| PLANTING DATA CHART  |                                           |                   |                |              |         |                     |            |         |              |                   |                      |                 |                  |
|----------------------|-------------------------------------------|-------------------|----------------|--------------|---------|---------------------|------------|---------|--------------|-------------------|----------------------|-----------------|------------------|
| COMMON NAME          | SCIENTIFIC NAME                           | SIZE WHEN PLANTED | ROOT ZONE MODE | MINIMUM SIZE |         |                     |            |         | BRACE OR GUY | FERT. UNITS REQ'D | RODENT PROTECT REQ'D | MULCH RING DIA. | REMARKS          |
|                      |                                           |                   |                | BALL / POT   |         | ROOT SPREAD *       | PLANT HOLE |         |              |                   |                      |                 |                  |
|                      |                                           |                   |                | DIA.         | DEPTH   |                     | DIA.       | DEPTH   |              |                   |                      |                 |                  |
| FREEMAN MAPLE        | ACER FREEMANII "AUTUMN BLAZE"             | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SUNBURST HONEYLOCUST | GLEDITSIA TRIACANTHOS "SUNBURST"          | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| CALLERY PEAR         | PYRUS CALLERYANA "CLEVELAND SELECT"       | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| REGAL ELM            | ULMUS PARVIFOLIA "REGAL"                  | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| IVORY SILK LILAC     | SYRINGA RETICULATA "IVORY SILK"           | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| EASTERN REDBUD       | CERCIS CANADENSIS                         | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SWEET GUM TREE       | LIQUIDAMBAR STYRACIFLUA "GRANTS SEEDLESS" | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| BALD CYPRESS         | TAXODIUM DISTICHUM                        | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| TULIP TREE           | LIRIODENDRON TULIPIFERA                   | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| ENGLISH OAK          | QUECUS ROBUR "CRIMSON SPIRE"              | 3.0 CAL.          | B & B          | 24" MIN      | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |

- PLANT NEW TREE (TYPE)
- CLEAR & GRUB TREE
- BR BARE ROOT
- B&B BALLED AND BURLAPPED
- CAL CALIPER
- CG CONTAINER GROWTH
- (\*) FOR BARE ROOT PLANTS



| PLANTING DATA CHART  |                                           |                   |                |                 |         |                     |                 |         |              |                   |                      |                 |                  |
|----------------------|-------------------------------------------|-------------------|----------------|-----------------|---------|---------------------|-----------------|---------|--------------|-------------------|----------------------|-----------------|------------------|
| COMMON NAME          | SCIENTIFIC NAME                           | SIZE WHEN PLANTED | ROOT ZONE MODE | MINIMUM SIZE    |         |                     |                 |         | BRACE OR GUY | FERT. UNITS REQ'D | RODENT PROTECT REQ'D | MULCH RING DIA. | REMARKS          |
|                      |                                           |                   |                | BALL / POT DIA. | DEPTH   | ROOT SPREAD *       | PLANT HOLE DIA. | DEPTH   |              |                   |                      |                 |                  |
| FREEMAN MAPLE        | ACER FREEMANII "AUTUMN BLAZE"             | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SUNBURST HONEYLOCUST | GLEDITSIA TRIACANTHOS "SUNBURST"          | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| CALLERY PEAR         | PYRUS CALLERYANA "CLEVELAND SELECT"       | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| REGAL ELM            | ULMUS PARVIFOLIA "REGAL"                  | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| IVORY SILK LILAC     | SYRINGA RETICULATA "IVORY SILK"           | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| EASTERN REDBUD       | CERCIS CANADENSIS                         | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SWEET GUM TREE       | LIQUIDAMBAR STYRACIFLUA "GRANTS SEEDLESS" | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| BALD CYPRESS         | TAXODIUM DISTICHUM                        | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| TULIP TREE           | LIRIODENDRON TULIIFERA                    | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| ENGLISH OAK          | QUECUS ROBUR "CRIMSON SPIRE"              | 3.0 CAL.          | B & B          | 24" MIN         | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN         | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |

○ - PLANT NEW TREE (TYPE)  
✕ - CLEAR & GRUB TREE  
BR BARE ROOT  
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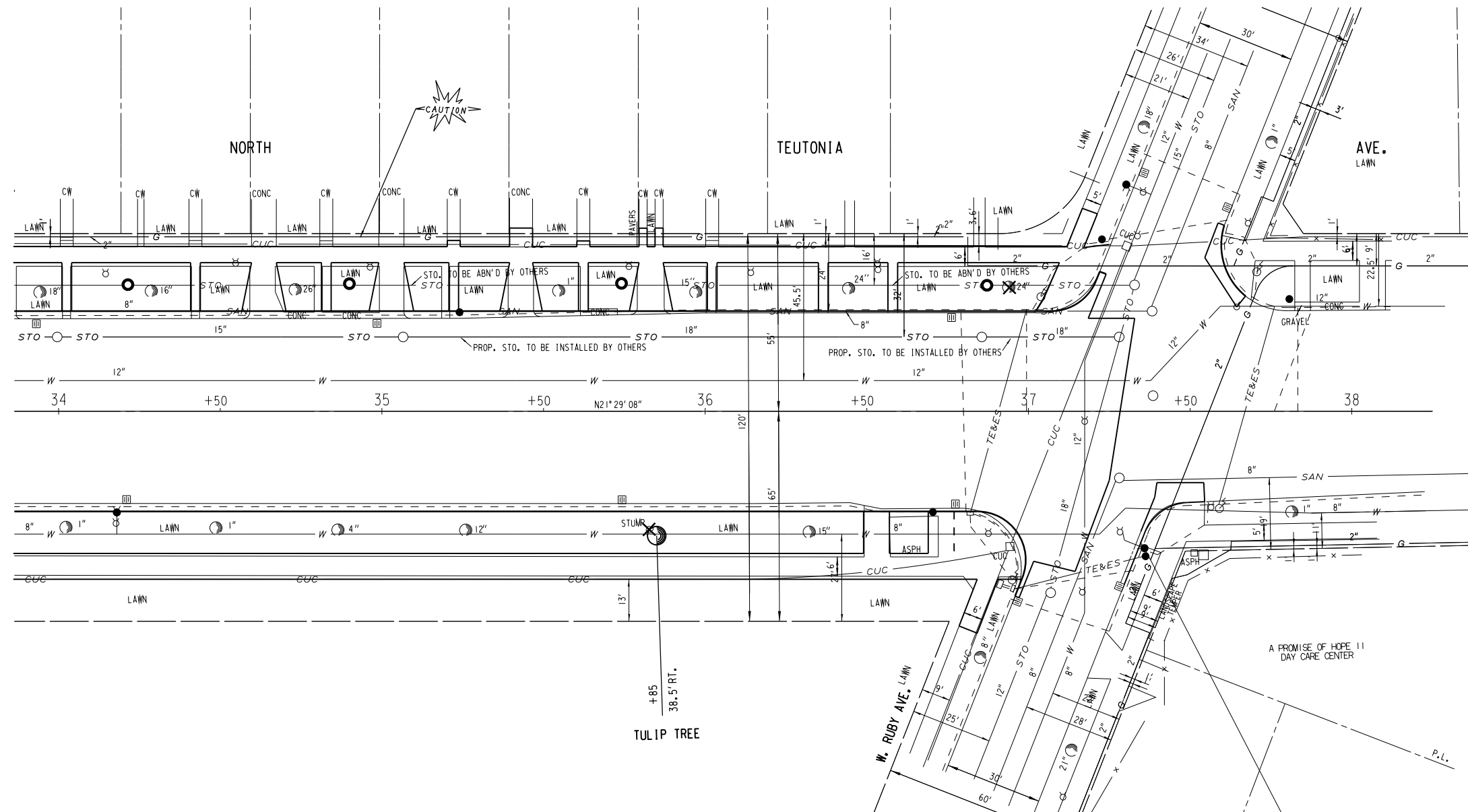


| PLANTING DATA CHART  |                                           |                   |                |            |         |                     |            |         |              |                   |                      |                 |                  |
|----------------------|-------------------------------------------|-------------------|----------------|------------|---------|---------------------|------------|---------|--------------|-------------------|----------------------|-----------------|------------------|
| COMMON NAME          | SCIENTIFIC NAME                           | SIZE WHEN PLANTED | ROOT ZONE MODE | BALL / POT |         | ROOT SPREAD *       | PLANT HOLE |         | BRACE OR GUY | FERT. UNITS REQ'D | RODENT PROTECT REQ'D | MULCH RING DIA. | REMARKS          |
|                      |                                           |                   |                | DIA.       | DEPTH   |                     | DIA.       | DEPTH   |              |                   |                      |                 |                  |
| FREEMAN MAPLE        | ACER FREEMANII "AUTUMN BLAZE"             | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SUNBURST HONEYLOCUST | GLEDTISIA TRIACANTHOS "SUNBURST"          | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| CALLERY PEAR         | PYRUS CALLERYANA "CLEVELAND SELECT"       | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| REGAL ELM            | ULMUS PARVIFOLIA "REGAL"                  | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| IVORY SILK LILAC     | SYRINGA RETICULATA "IVORY SILK"           | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| EASTERN REDBUD       | CERCIS CANADENSIS                         | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SWEET GUM TREE       | LIQUIDAMBAR STYRACIFLUA "GRANTS SEEDLESS" | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| BALD CYPRESS         | TAXODIUM DISTICHUM                        | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| TULIP TREE           | LIRIODENDRON TULIPIFERA                   | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| ENGLISH OAK          | QUERCUS ROBUR "CRIMSON SPIRE"             | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |

☉ - PLANT NEW TREE (TYPE)

✂ - CLEAR & GRUB TREE

BR BARE ROOT  
B&B BALLED AND BURLAPPED  
CAL CALIPER  
CG CONTAINER GROWTH  
(\*) FOR BARE ROOT PLANTS



PLANTING DATA CHART

| COMMON NAME          | SCIENTIFIC NAME                           | SIZE WHEN PLANTED | ROOT ZONE MODE | BALL / POT |         | MINIMUM SIZE<br>ROOT SPREAD * | PLANT HOLE |         | BRACE OR GUY | FERT. UNITS REQ'D | RODENT PROTECT REQ'D | MULCH RING DIA. | REMARKS          |
|----------------------|-------------------------------------------|-------------------|----------------|------------|---------|-------------------------------|------------|---------|--------------|-------------------|----------------------|-----------------|------------------|
|                      |                                           |                   |                | DIA.       | DEPTH   |                               | DIA.       | DEPTH   |              |                   |                      |                 |                  |
| FREEMAN MAPLE        | ACER FREEMANII "AUTUMN BLAZE"             | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SUNBURST HONEYLOCUST | GLEDITSIA TRIACANTHOS "SUNBURST"          | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| CALLERY PEAR         | PYRUS CALLERYANA "CLEVELAND SELECT"       | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| REGAL ELM            | ULMUS PARVIFOLIA "REGAL"                  | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| IVORY SILK LILAC     | SYRINGA RETICULATA "IVORY SILK"           | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| EASTERN REDBUD       | CERCIS CANADENSIS                         | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| SWEET GUM TREE       | LIQUIDAMBAR STYRACIFLUA "GRANTS SEEDLESS" | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| BALD CYPRESS         | TAXODIUM DISTICHUM                        | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| TULIP TREE           | LIRIODENDRON TULIPIFERA                   | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |
| ENGLISH OAK          | QUECUS ROBUR "CRIMSON SPIRE"              | 3.0 CAL.          | B & B          | 24" MIN    | 20" MIN | 2 TIMES TREE HEIGHT           | 42" MIN    | 24" MIN | BRACE        | 3-EACH            | NONE                 | 48"             | SPECIMEN QUALITY |

BR BARE ROOT  
B&B BALLED AND BURLAPPED  
CAL CALIPER  
CG CONTAINER GROWTH  
(\*) FOR BARE ROOT PLANTS

| DATE 16MAR15 |            | E S T I M A T E O F Q U A N T I T I E S                          |      |            |            |
|--------------|------------|------------------------------------------------------------------|------|------------|------------|
| LINE         |            | 2080-00-71                                                       |      |            |            |
| NUMBER       | ITEM       | ITEM DESCRIPTION                                                 | UNIT | TOTAL      | QUANTITY   |
| 0010         | 201.0120   | Clearing                                                         | ID   | 347.000    | 347.000    |
| 0020         | 201.0220   | Grubbing                                                         | ID   | 347.000    | 347.000    |
| 0030         | 204.0100   | Removing Pavement                                                | SY   | 27,970.000 | 27,970.000 |
| 0040         | 204.0115   | Removing Asphaltic Surface Butt Joints                           | SY   | 700.000    | 700.000    |
| 0050         | 204.0150   | Removing Curb & Gutter                                           | LF   | 250.000    | 250.000    |
| 0060         | 204.0155   | Removing Concrete Sidewalk                                       | SY   | 6,950.000  | 6,950.000  |
| 0070         | 204.0210   | Removing Manholes                                                | EACH | 1.000      | 1.000      |
| 0080         | 204.0220   | Removing Inlets                                                  | EACH | 23.000     | 23.000     |
| 0090         | 204.0260   | Abandoning Inlets                                                | EACH | 33.000     | 33.000     |
| 0100         | 205.0100   | Excavation Common **p**                                          | CY   | 19,352.000 | 19,352.000 |
| 0110         | 205.0501.S | Excavation, Hauling, and Disposal of Petroleum Contaminated Soil | TON  | 242.000    | 242.000    |
| 0120         | 209.0100   | Backfill Granular                                                | CY   | 30.000     | 30.000     |
| 0130         | 213.0100   | Finishing Roadway (project) 01. 2080-00-71                       | EACH | 1.000      | 1.000      |
| 0140         | 305.0110   | Base Aggregate Dense 3/4-Inch                                    | TON  | 790.000    | 790.000    |
| 0150         | 305.0120   | Base Aggregate Dense 1 1/4-Inch                                  | TON  | 11,330.000 | 11,330.000 |
| 0160         | 320.0145   | Concrete Base 8-Inch                                             | SY   | 42.000     | 42.000     |
| 0170         | 415.0070   | Concrete Pavement 7-Inch                                         | SY   | 100.000    | 100.000    |
| 0180         | 415.0080   | Concrete Pavement 8-Inch                                         | SY   | 29,500.000 | 29,500.000 |
| 0190         | 415.0210   | Concrete Pavement Gaps                                           | EACH | 4.000      | 4.000      |
| 0200         | 416.0170   | Concrete Driveway 7-Inch                                         | SY   | 1,080.000  | 1,080.000  |
| 0210         | 416.0610   | Drilled Tie Bars                                                 | EACH | 100.000    | 100.000    |
| 0220         | 440.4410.S | Incentive IRI Ride                                               | DOL  | 5,600.000  | 5,600.000  |
| 0230         | 455.0605   | Tack Coat                                                        | GAL  | 10.000     | 10.000     |
| 0240         | 465.0105   | Asphaltic Surface                                                | TON  | 140.000    | 140.000    |
| 0250         | 601.0322   | Concrete Curb & Gutter 22-Inch                                   | LF   | 170.000    | 170.000    |
| 0260         | 601.0331   | Concrete Curb & Gutter 31-Inch                                   | LF   | 5,830.000  | 5,830.000  |
| 0270         | 601.0452   | Concrete Curb & Gutter Integral 30-Inch Type D                   | LF   | 3,080.000  | 3,080.000  |
| 0280         | 602.0410   | Concrete Sidewalk 5-Inch                                         | SF   | 42,700.000 | 42,700.000 |
| 0290         | 602.0505   | Curb Ramp Detectable Warning Field Yellow                        | SF   | 300.000    | 300.000    |
| 0300         | 602.1000   | Concrete Loading Zone                                            | SF   | 3,020.000  | 3,020.000  |
| 0310         | 608.0412   | Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch            | LF   | 1,420.000  | 1,420.000  |
| 0320         | 611.2004   | Manholes 4-FT Diameter                                           | EACH | 1.000      | 1.000      |
| 0330         | 611.2005   | Manholes 5-FT Diameter                                           | EACH | 2.000      | 2.000      |
| 0340         | 611.2006   | Manholes 6-FT Diameter                                           | EACH | 3.000      | 3.000      |
| 0350         | 611.3003   | Inlets 3-FT Diameter                                             | EACH | 1.000      | 1.000      |
| 0360         | 611.9705   | Salvaged Manhole Covers                                          | EACH | 89.000     | 89.000     |
| 0370         | 611.9710   | Salvaged Inlet Covers                                            | EACH | 32.000     | 32.000     |
| 0380         | 619.1000   | Mobilization                                                     | EACH | 1.000      | 1.000      |
| 0390         | 620.0300   | Concrete Median Sloped Nose                                      | SF   | 180.000    | 180.000    |
| 0400         | 623.0200   | Dust Control Surface Treatment                                   | SY   | 29,600.000 | 29,600.000 |
| 0410         | 625.0100   | Topsoil                                                          | SY   | 9,350.000  | 9,350.000  |
| 0420         | 629.0210   | Fertilizer Type B                                                | CWT  | 6.000      | 6.000      |
| 0430         | 631.1000   | Sod Lawn                                                         | SY   | 9,350.000  | 9,350.000  |
| 0440         | 632.0101   | Trees (species) (size) (root) 01. Freeman Maple, B&B, 3"         | EACH | 5.000      | 5.000      |
| 0450         | 632.0101   | Trees (species) (size) (root) 02. Sunburst Honeylocust B&B, 3"   | EACH | 3.000      | 3.000      |
| 0460         | 632.0101   | Trees (species) (size) (root) 03. Callery Pear B&B, 3"           | EACH | 7.000      | 7.000      |

| DATE 16MAR15 |          | E S T I M A T E O F Q U A N T I T I E S                                |      |            |            |
|--------------|----------|------------------------------------------------------------------------|------|------------|------------|
| LINE         |          |                                                                        |      |            | 2080-00-71 |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                                       | UNIT | TOTAL      | QUANTITY   |
| 0470         | 632.0101 | Trees (species) (size) (root) 04. Regal Elm, B&B, 3"                   | EACH | 3.000      | 3.000      |
| 0480         | 632.0101 | Trees (species) (size) (root) 05. Ivory Silk Lilac, B&B, 3"            | EACH | 4.000      | 4.000      |
| 0490         | 632.0101 | Trees (species) (size) (root) 06. Eastern Redbud, B&B, 3"              | EACH | 3.000      | 3.000      |
| 0500         | 632.0101 | Trees (species) (size) (root) 07. Sweet Gum Tree, B&B, 3"              | EACH | 3.000      | 3.000      |
| 0510         | 632.0101 | Trees (species) (size) (root) 08. Bald Cypress, B&B, 3"                | EACH | 3.000      | 3.000      |
| 0520         | 632.0101 | Trees (species) (size) (root) 09. Tulip Tree, B&B, 3"                  | EACH | 5.000      | 5.000      |
| 0530         | 632.0101 | Trees (species) (size) (root) 10. English Oak, B&B, 3"                 | EACH | 3.000      | 3.000      |
| 0540         | 632.9101 | Landscape Planting Surveillance and Care Cycles                        | EACH | 26.000     | 26.000     |
| 0550         | 642.5401 | Field Office Type D                                                    | EACH | 1.000      | 1.000      |
| 0560         | 643.0100 | Traffic Control (project) 01. 2080-00-71                               | EACH | 1.000      | 1.000      |
| 0570         | 643.0300 | Traffic Control Drums                                                  | DAY  | 28,575.000 | 28,575.000 |
| 0580         | 643.0420 | Traffic Control Barricades Type III                                    | DAY  | 6,797.000  | 6,797.000  |
| 0590         | 643.0500 | Traffic Control Flexible Tubular Marker Posts                          | EACH | 556.000    | 556.000    |
| 0600         | 643.0600 | Traffic Control Flexible Tubular Marker Bases                          | EACH | 556.000    | 556.000    |
| 0610         | 643.0705 | Traffic Control Warning Lights Type A                                  | DAY  | 13,594.000 | 13,594.000 |
| 0620         | 643.0715 | Traffic Control Warning Lights Type C                                  | DAY  | 28,575.000 | 28,575.000 |
| 0630         | 643.0900 | Traffic Control Signs                                                  | DAY  | 7,350.000  | 7,350.000  |
| 0640         | 643.1000 | Traffic Control Signs Fixed Message                                    | SF   | 52.500     | 52.500     |
| 0650         | 646.0106 | Pavement Marking Epoxy 4-Inch                                          | LF   | 8,999.000  | 8,999.000  |
| 0660         | 646.0116 | Pavement Marking Epoxy 6-Inch                                          | LF   | 2,645.000  | 2,645.000  |
| 0670         | 646.0126 | Pavement Marking Epoxy 8-Inch                                          | LF   | 604.000    | 604.000    |
| 0680         | 646.0600 | Removing Pavement Markings                                             | LF   | 6,803.000  | 6,803.000  |
| 0690         | 647.0166 | Pavement Marking Arrows Epoxy Type 2                                   | EACH | 4.000      | 4.000      |
| 0700         | 647.0206 | Pavement Marking Arrows Bike Lane Epoxy                                | EACH | 13.000     | 13.000     |
| 0710         | 647.0306 | Pavement Marking Symbols Bike Lane Epoxy                               | EACH | 13.000     | 13.000     |
| 0720         | 647.0356 | Pavement Marking Words Epoxy                                           | EACH | 4.000      | 4.000      |
| 0730         | 647.0456 | Pavement Marking Curb Epoxy                                            | LF   | 381.000    | 381.000    |
| 0740         | 647.0576 | Pavement Marking Stop Line Epoxy 24-Inch                               | LF   | 290.000    | 290.000    |
| 0750         | 647.0776 | Pavement Marking Crosswalk Epoxy 12-Inch                               | LF   | 1,396.000  | 1,396.000  |
| 0760         | 649.0100 | Temporary Pavement Marking 4-Inch                                      | LF   | 10,424.000 | 10,424.000 |
| 0770         | 649.0400 | Temporary Pavement Marking Removable Tape 4-Inch                       | LF   | 11,977.000 | 11,977.000 |
| 0780         | 649.1700 | Temporary Pavement Marking Arrows                                      | EACH | 1.000      | 1.000      |
| 0790         | 649.1800 | Temporary Pavement Marking Arrows Removable Tape                       | EACH | 1.000      | 1.000      |
| 0800         | 649.1900 | Temporary Pavement Marking Words                                       | EACH | 1.000      | 1.000      |
| 0810         | 649.2000 | Temporary Pavement Marking Words Removable Tape                        | EACH | 1.000      | 1.000      |
| 0820         | 650.4000 | Construction Staking Storm Sewer                                       | EACH | 160.000    | 160.000    |
| 0830         | 650.4500 | Construction Staking Subgrade                                          | LF   | 3,390.000  | 3,390.000  |
| 0840         | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter                     | LF   | 5,830.000  | 5,830.000  |
| 0850         | 650.7000 | Construction Staking Concrete Pavement                                 | LF   | 3,510.000  | 3,510.000  |
| 0860         | 650.8500 | Construction Staking Electrical Installations (project) 01. 2080-00-71 | LS   | 1.000      | 1.000      |

| DATE 16MAR15 |          |                                                                            | E S T I M A T E O F Q U A N T I T I E S |            |            |
|--------------|----------|----------------------------------------------------------------------------|-----------------------------------------|------------|------------|
| LINE         |          |                                                                            |                                         |            | 2080-00-71 |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                                           | UNIT                                    | TOTAL      | QUANTITY   |
| 0870         | 650.9910 | Construction Staking Supplemental Control (project) 01. 2080-00-71         | LS                                      | 1.000      | 1.000      |
| 0880         | 652.0220 | Conduit Rigid Nonmetallic Schedule 40 1 1/2-Inch                           | LF                                      | 115.000    | 115.000    |
| 0890         | 652.0225 | Conduit Rigid Nonmetallic Schedule 40 2-Inch                               | LF                                      | 440.000    | 440.000    |
| 0900         | 652.0230 | Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch                           | LF                                      | 8,735.000  | 8,735.000  |
| 0910         | 652.0235 | Conduit Rigid Nonmetallic Schedule 40 3-Inch                               | LF                                      | 5,790.000  | 5,790.000  |
| 0920         | 690.0150 | Sawing Asphalt                                                             | LF                                      | 880.000    | 880.000    |
| 0930         | 690.0250 | Sawing Concrete                                                            | LF                                      | 180.000    | 180.000    |
| 0940         | 715.0415 | Incentive Strength Concrete Pavement                                       | DOL                                     | 8,867.000  | 8,867.000  |
| 0950         | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR                                | HRS                                     | 1,800.000  | 1,800.000  |
| 0960         | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                                  | HRS                                     | 1,800.000  | 1,800.000  |
| 0970         | SPV.0045 | Special 01. Temporary Crosswalk                                            | DAY                                     | 89.000     | 89.000     |
| 0980         | SPV.0060 | Special 01. Inlet Covers Type 57                                           | EACH                                    | 24.000     | 24.000     |
| 0990         | SPV.0060 | Special 02. Manhole Covers Type 58A                                        | EACH                                    | 1.000      | 1.000      |
| 1000         | SPV.0060 | Special 03. Inlets Type 45A                                                | EACH                                    | 54.000     | 54.000     |
| 1010         | SPV.0060 | Special 04. Inlet Screen Type M                                            | EACH                                    | 104.000    | 104.000    |
| 1020         | SPV.0060 | Special 05. Inlet Screen Type R                                            | EACH                                    | 93.000     | 93.000     |
| 1030         | SPV.0060 | Special 06. Internal Sanitary Manhole Seal                                 | EACH                                    | 43.000     | 43.000     |
| 1040         | SPV.0060 | Special 07. Adjusting Tes Manhole Cover                                    | EACH                                    | 12.000     | 12.000     |
| 1050         | SPV.0060 | Special 08. Adjusting Water Box                                            | EACH                                    | 60.000     | 60.000     |
| 1060         | SPV.0060 | Special 09. Rectangular Polymer Concrete Vault 13-Inch X 24-Inch X 18-Inch | EACH                                    | 48.000     | 48.000     |
| 1070         | SPV.0060 | Special 10. Rectangular Polymer Concrete Vault 17-Inch X 30-Inch X 18-Inch | EACH                                    | 38.000     | 38.000     |
| 1080         | SPV.0060 | Special 11. Install Traffic Signal Bases                                   | EACH                                    | 20.000     | 20.000     |
| 1090         | SPV.0060 | Special 12. Utility Line Opening (ULO)                                     | EACH                                    | 6.000      | 6.000      |
| 1100         | SPV.0060 | Special 13. Inlet Covers Type 55                                           | EACH                                    | 3.000      | 3.000      |
| 1110         | SPV.0060 | Special 14. Concrete Collar Modified                                       | EACH                                    | 6.000      | 6.000      |
| 1120         | SPV.0060 | Special 15. Water Main Protection                                          | EACH                                    | 9.000      | 9.000      |
| 1130         | SPV.0060 | Special 16. 18" Diameter x 6 ft. Cylindrical Column Form                   | EACH                                    | 33.000     | 33.000     |
| 1140         | SPV.0060 | Special 17. Construction Staking Curb Ramp                                 | EACH                                    | 47.000     | 47.000     |
| 1150         | SPV.0090 | Special 01. Construction Staking Concrete Sidewalk                         | LF                                      | 7,330.000  | 7,330.000  |
| 1160         | SPV.0165 | Special 01. Colored Stamped Concrete Sidewalk 5-Inch                       | SF                                      | 1,850.000  | 1,850.000  |
| 1170         | SPV.0170 | Special 01. Test Rolling                                                   | STA                                     | 74.000     | 74.000     |
| 1180         | SPV.0180 | Special 01. Joint Sealing                                                  | SY                                      | 29,460.000 | 29,460.000 |
| 1190         | SPV.0180 | Special 02. Track Zone Removal                                             | SY                                      | 3,430.000  | 3,430.000  |
| 1200         | SPV.0195 | Special 01. Management Of Solid Waste                                      | TON                                     | 43.000     | 43.000     |

| REMOVALS             |   |             |             |                   |                                        |                        |                            |                |                 |                    |
|----------------------|---|-------------|-------------|-------------------|----------------------------------------|------------------------|----------------------------|----------------|-----------------|--------------------|
| LOCATION             |   | CLEARING    | GRUBBING    | REMOVING PAVEMENT | REMOVING ASPHALTIC SURFACE BUTT JOINTS | REMOVING CURB & GUTTER | REMOVING CONCRETE SIDEWALK | SAWING ASPHALT | SAWING CONCRETE | TRACK ZONE REMOVAL |
|                      |   | 201.0120 ID | 201.0220 ID | 204.0100 SY       | 204.0115 SY                            | 204.0150 LF            | 204.0155 SY                | 690.0150 LF    | 690.0250 LF     | SPV.0180.02 SY     |
| STA 1+25.6 TO 5+00   | L | 34          | 34          | 1340              | 0                                      | 0                      | 360                        | 40             | 0               | 350                |
| STA 5+00 TO 11+00    | L | 18          | 18          | 2060              | 0                                      | 0                      | 590                        | 0              | 0               | 610                |
| STA 11+00 TO 17+00   | L | 33          | 33          | 4280              | 0                                      | 0                      | 440                        | 210            | 10              | 290                |
| STA 17+00 TO 22+00   | L | 71          | 71          | 1380              | 0                                      | 0                      | 450                        | 50             | 0               | 240                |
| STA 22+00 TO 28+00   | L | 0           | 0           | 2160              | 270                                    | 140                    | 570                        | 170            | 0               | 100                |
| STA 28+00 TO 34+00   | L | 26          | 26          | 2050              | 70                                     | 50                     | 690                        | 30             | 10              | 0                  |
| STA 34+00 TO 37+75.0 | L | 0           | 0           | 1120              | 0                                      | 0                      | 340                        | 0              | 10              | 0                  |
| SUBTOTALS (LEFT)     |   | 182         | 182         | 13780             | 340                                    | 190                    | 3440                       | 500            | 30              | 1590               |
| STA 1+25.6 TO 5+00   | R | 0           | 0           | 2570              | 0                                      | 0                      | 510                        | 170            | 40              | 350                |
| STA 5+00 TO 11+00    | R | 56          | 56          | 2040              | 160                                    | 40                     | 710                        | 0              | 0               | 610                |
| STA 11+00 TO 17+00   | R | 29          | 29          | 2940              | 50                                     | 0                      | 490                        | 20             | 90              | 540                |
| STA 17+00 TO 22+00   | R | 8           | 8           | 1380              | 0                                      | 0                      | 500                        | 40             | 10              | 240                |
| STA 22+00 TO 28+00   | R | 15          | 15          | 2070              | 150                                    | 20                     | 520                        | 120            | 10              | 100                |
| STA 28+00 TO 34+00   | R | 33          | 33          | 2130              | 0                                      | 0                      | 520                        | 30             | 0               | 0                  |
| STA 34+00 TO 37+75.0 | R | 24          | 24          | 1060              | 0                                      | 0                      | 260                        | 0              | 0               | 0                  |
| SUBTOTALS (RIGHT)    |   | 165         | 165         | 14190             | 360                                    | 60                     | 3510                       | 380            | 150             | 1840               |
| GRAND TOTAL          |   | 347         | 347         | 27970             | 700                                    | 250                    | 6950                       | 880            | 180             | 3430               |

ALL ITEMS IN CATEGORY 0010

|                            |                             |     |                                                        |                                                          |                                              |                                                  |                                                  |                                                  |                                                  |                                                        |                                                        |                                                                  |                                                  |                                                                      |                                               |                                                        |                                                                        |   |
|----------------------------|-----------------------------|-----|--------------------------------------------------------|----------------------------------------------------------|----------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------|---|
| 3                          | CONCRETE CONSTRUCTION ITEMS |     |                                                        |                                                          |                                              |                                                  |                                                  |                                                  |                                                  |                                                        |                                                        |                                                                  |                                                  |                                                                      |                                               |                                                        |                                                                        | 3 |
|                            | LOCATION                    |     | BASE<br>AGGREGATE<br>DENSE 3/4-INCH<br>305.0110<br>TON | BASE<br>AGGREGATE<br>DENSE 1 1/4 INCH<br>305.0120<br>TON | CONCRETE<br>BASE<br>8-INCH<br>320.0145<br>SY | CONCRETE<br>PAVEMENT<br>7-INCH<br>415.0070<br>SY | CONCRETE<br>PAVEMENT<br>8-INCH<br>415.0080<br>SY | CONCRETE<br>PAVEMENT<br>GAPS<br>415.0210<br>EACH | CONCRETE<br>DRIVEWAY<br>7-INCH<br>416.0170<br>SY | CONCRETE<br>CURB & GUTTER<br>22-INCH<br>601.0322<br>LF | CONCRETE<br>CURB & GUTTER<br>31-INCH<br>601.0331<br>LF | CURB & GUTTER<br>INTERGAL<br>30-INCH<br>TYPE D<br>601.0452<br>LF | CONCRETE<br>SIDEWALK<br>5-INCH<br>602.0410<br>SF | CURB RAMP<br>DETECTABLE<br>WARNING<br>FIELD YELLOW<br>602.0505<br>SF | CONCRETE<br>LOADING<br>ZONE<br>602.1000<br>SF | CONCRETE<br>MEDIAN<br>SLOPED<br>NOSE<br>620.0300<br>SF | COLORED<br>STAMPED<br>CONCRETE<br>SIDEWALK 5-INCH<br>SPV.0165.01<br>SF |   |
|                            | STA 1+25.6 TO 5+00          | L   | 30                                                     | 640                                                      | 15                                           | 0                                                | 1650                                             | 0                                                | 60                                               | 0                                                      | 300                                                    | 450                                                              | 1370                                             | 10                                                                   | 0                                             | 0                                                      | 0                                                                      |   |
|                            | STA 5+00 TO 11+00           | L   | 60                                                     | 690                                                      | 0                                            | 0                                                | 1690                                             | 0                                                | 120                                              | 0                                                      | 500                                                    | 590                                                              | 2980                                             | 0                                                                    | 0                                             | 10                                                     | 580                                                                    |   |
|                            | STA 11+00 TO 17+00          | L   | 80                                                     | 1340                                                     | 0                                            | 0                                                | 3430                                             | 1                                                | 50                                               | 0                                                      | 440                                                    | 700                                                              | 4380                                             | 70                                                                   | 2060                                          | 60                                                     | 0                                                                      |   |
|                            | STA 17+00 TO 22+00          | L   | 50                                                     | 620                                                      | 6                                            | 0                                                | 1610                                             | 0                                                | 80                                               | 0                                                      | 500                                                    | 100                                                              | 2550                                             | 0                                                                    | 0                                             | 0                                                      | 0                                                                      |   |
|                            | STA 22+00 TO 28+00          | L   | 50                                                     | 770                                                      | 5                                            | 0                                                | 2200                                             | 0                                                | 150                                              | 80                                                     | 170                                                    | 0                                                                | 2790                                             | 50                                                                   | 0                                             | 10                                                     | 0                                                                      |   |
|                            | STA 28+00 TO 34+00          | L   | 80                                                     | 780                                                      | 0                                            | 0                                                | 2030                                             | 0                                                | 190                                              | 50                                                     | 600                                                    | 0                                                                | 4390                                             | 20                                                                   | 0                                             | 0                                                      | 0                                                                      |   |
|                            | STA 34+00 TO 37+75.0        | L   | 40                                                     | 410                                                      | 0                                            | 0                                                | 1070                                             | 0                                                | 80                                               | 0                                                      | 330                                                    | 0                                                                | 2320                                             | 20                                                                   | 0                                             | 0                                                      | 0                                                                      |   |
|                            | SUBTOTALS (LEFT)            |     | 390                                                    | 5250                                                     | 26                                           | 0                                                | 13680                                            | 1                                                | 730                                              | 130                                                    | 2840                                                   | 1840                                                             | 20780                                            | 170                                                                  | 2060                                          | 80                                                     | 580                                                                    |   |
| STA 1+25.6 TO 5+00         | R                           | 40  | 1270                                                   | 0                                                        | 0                                            | 3400                                             | 0                                                | 70                                               | 0                                                | 390                                                    | 220                                                    | 2270                                                             | 20                                               | 0                                                                    | 0                                             | 0                                                      |                                                                        |   |
| STA 5+00 TO 11+00          | R                           | 30  | 1130                                                   | 0                                                        | 0                                            | 2780                                             | 2                                                | 90                                               | 20                                               | 520                                                    | 570                                                    | 1850                                                             | 0                                                | 280                                                                  | 30                                            | 1270                                                   |                                                                        |   |
| STA 11+00 TO 17+00         | R                           | 80  | 1110                                                   | 0                                                        | 0                                            | 2850                                             | 0                                                | 50                                               | 20                                               | 480                                                    | 450                                                    | 4190                                                             | 40                                               | 680                                                                  | 60                                            | 0                                                      |                                                                        |   |
| STA 17+00 TO 22+00         | R                           | 50  | 620                                                    | 6                                                        | 0                                            | 1610                                             | 1                                                | 80                                               | 0                                                | 500                                                    | 0                                                      | 2890                                                             | 0                                                | 0                                                                    | 0                                             | 0                                                      |                                                                        |   |
| STA 22+00 TO 28+00         | R                           | 60  | 720                                                    | 10                                                       | 0                                            | 2090                                             | 0                                                | 20                                               | 0                                                | 120                                                    | 0                                                      | 3360                                                             | 30                                               | 0                                                                    | 10                                            | 0                                                      |                                                                        |   |
| STA 28+00 TO 34+00         | R                           | 90  | 810                                                    | 0                                                        | 100                                          | 2000                                             | 0                                                | 40                                               | 0                                                | 660                                                    | 0                                                      | 4660                                                             | 20                                               | 0                                                                    | 0                                             | 0                                                      |                                                                        |   |
| STA 34+00 TO 37+75.0       | R                           | 50  | 420                                                    | 0                                                        | 0                                            | 1090                                             | 0                                                | 0                                                | 0                                                | 320                                                    | 0                                                      | 2700                                                             | 20                                               | 0                                                                    | 0                                             | 0                                                      |                                                                        |   |
| SUBTOTALS (RIGHT)          |                             | 400 | 6080                                                   | 16                                                       | 100                                          | 15820                                            | 3                                                | 350                                              | 40                                               | 2990                                                   | 1240                                                   | 21920                                                            | 130                                              | 960                                                                  | 100                                           | 1270                                                   |                                                                        |   |
| GRAND TOTAL                |                             | 790 | 11330                                                  | 42                                                       | 100                                          | 29500                                            | 4                                                | 1080                                             | 170                                              | 5830                                                   | 3080                                                   | 42700                                                            | 300                                              | 3020                                                                 | 180                                           | 1850                                                   |                                                                        |   |
| ALL ITEMS IN CATEGORY 0010 |                             |     |                                                        |                                                          |                                              |                                                  |                                                  |                                                  |                                                  |                                                        |                                                        |                                                                  |                                                  |                                                                      |                                               |                                                        |                                                                        |   |
| PROJECT NO: 2080-00-71     |                             |     |                                                        |                                                          | HWY: LOCAL                                   |                                                  |                                                  | COUNTY: MILWAUKEE                                |                                                  |                                                        | MISCELLANEOUS QUANTITIES                               |                                                                  |                                                  |                                                                      |                                               | SHEET:                                                 |                                                                        | E |
| FILE NAME : _____          |                             |     |                                                        |                                                          | PLOT DATE : _____                            |                                                  |                                                  | PLOT BY : _____                                  |                                                  |                                                        | PLOT NAME : _____                                      |                                                                  | PLOT SCALE : 1:1                                 |                                                                      |                                               |                                                        |                                                                        |   |

| MISCELLANEOUS ITEMS  |   |                                                                                                        |                                        |                                                           |                                         |                                                     |                                      |                                                               |                                                             |                                                                      |
|----------------------|---|--------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------|-----------------------------------------|-----------------------------------------------------|--------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|
|                      |   | EXCAVATION,<br>HAULING, AND<br>DISPOSAL OF<br>PETROLEUM<br>CONTAMINATED<br>SOIL<br>TONS<br>205.0501.S. | GRANULAR<br>BACKFILL<br>CY<br>209.0100 | FINISHING<br><br>ROADWAY<br>(PROJECT)<br>EACH<br>213.0100 | DRILLED<br>TIE BARS<br>EACH<br>416.0610 | INCENTIVE<br><br>"IRI"<br>RIDE<br>DOL<br>440.4410.S | MOBILIZATION<br><br>EACH<br>619.1000 | DUST<br>CONTROL<br><br>SURFACE<br>TREATMENT<br>SY<br>623.0200 | FIELD OFFICE<br><br>TYPE D<br>(PROJECT)<br>EACH<br>642.5401 | INCENTIVE<br>STRENGTH<br><br>CONCRETE<br>PAVEMENT<br>DOL<br>715.0415 |
| STA 1+25.6 TO 5+00   | L | 0                                                                                                      | ↑                                      | ↑                                                         | 0                                       | ↑                                                   | ↑                                    | 1650                                                          | ↑                                                           | ↑                                                                    |
| STA 5+00 TO 11+00    | L | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 1690                                                          |                                                             |                                                                      |
| STA 11+00 TO 17+00   | L | 85                                                                                                     |                                        |                                                           | 30                                      |                                                     |                                      | 3430                                                          |                                                             |                                                                      |
| STA 17+00 TO 22+00   | L | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 1610                                                          |                                                             |                                                                      |
| STA 22+00 TO 28+00   | L | 136                                                                                                    |                                        |                                                           | 0                                       |                                                     |                                      | 2200                                                          |                                                             |                                                                      |
| STA 28+00 TO 34+00   | L | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 2030                                                          |                                                             |                                                                      |
| STA 34+00 TO 37+75.0 | L | 0                                                                                                      |                                        |                                                           | 20                                      |                                                     |                                      | 1070                                                          |                                                             |                                                                      |
| SUBTOTALS (LEFT)     |   | 221                                                                                                    |                                        |                                                           | 50                                      |                                                     |                                      | 13680                                                         |                                                             |                                                                      |
| STA 1+25.6 TO 5+00   | R | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 3400                                                          |                                                             |                                                                      |
| STA 5+00 TO 11+00    | R | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 2780                                                          |                                                             |                                                                      |
| STA 11+00 TO 17+00   | R | 0                                                                                                      |                                        |                                                           | 10                                      |                                                     |                                      | 2850                                                          |                                                             |                                                                      |
| STA 17+00 TO 22+00   | R | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 1610                                                          |                                                             |                                                                      |
| STA 22+00 TO 28+00   | R | 0                                                                                                      |                                        |                                                           | 0                                       |                                                     |                                      | 2090                                                          |                                                             |                                                                      |
| STA 28+00 TO 34+00   | R | 0                                                                                                      |                                        |                                                           | 10                                      |                                                     |                                      | 2100                                                          |                                                             |                                                                      |
| STA 34+00 TO 37+75.0 | R | 21                                                                                                     | ↓                                      | ↓                                                         | 30                                      | ↓                                                   | ↓                                    | 1090                                                          | ↓                                                           | ↓                                                                    |
| SUBTOTALS (RIGHT)    |   | 21                                                                                                     |                                        |                                                           | 50                                      |                                                     |                                      | 15920                                                         |                                                             |                                                                      |
| GRAND TOTAL          |   | 242                                                                                                    | 30                                     | 1                                                         | 100                                     | 5600                                                | 1                                    | 29600                                                         | 1                                                           | 8867                                                                 |

ALL ITEMS IN CATEGORY 0010

3

| MISCELLANEOUS ITEMS              |   |                                         |                                         |                                               |                                       |                                         |
|----------------------------------|---|-----------------------------------------|-----------------------------------------|-----------------------------------------------|---------------------------------------|-----------------------------------------|
| ITEM NAME<br>UNIT<br>ITEM NUMBER |   | INLET                                   | INLET                                   | TEMPORARY<br>CROSSWALK<br>DAYS<br>SPV.0045.01 | TEST<br>ROLLING<br>STA<br>SPV.0170.01 | JOINT<br>SEALING<br>SY<br>SPV.0180.01   |
|                                  |   | SCREEN<br>TYPE M<br>EACH<br>SPV.0060.04 | SCREEN<br>TYPE R<br>EACH<br>SPV.0060.05 |                                               |                                       |                                         |
|                                  |   |                                         |                                         |                                               |                                       | OF<br>SOLID WASTE<br>TON<br>SPV.0195.01 |
| STA 1+25.6 TO 5+00               | L | ↑                                       | ↑                                       | ↑                                             | 4                                     | 1650                                    |
| STA 5+00 TO 11+00                | L | ↑                                       | ↑                                       | ↑                                             | 6                                     | 1920                                    |
| STA 11+00 TO 17+00               | L | ↑                                       | ↑                                       | ↑                                             | 6                                     | 3340                                    |
| STA 17+00 TO 22+00               | L | ↑                                       | ↑                                       | ↑                                             | 6                                     | 1610                                    |
| STA 22+00 TO 28+00               | L | ↑                                       | ↑                                       | ↑                                             | 6                                     | 2200                                    |
| STA 28+00 TO 34+00               | L | ↑                                       | ↑                                       | ↑                                             | 6                                     | 2030                                    |
| STA 34+00 TO 37+75.0             | L | ↑                                       | ↑                                       | ↑                                             | 3                                     | 1070                                    |
| SUBTOTALS (LEFT)                 |   |                                         |                                         |                                               | 37                                    | 13820                                   |
| STA 1+25.6 TO 5+00               | R | ↓                                       | ↓                                       | ↓                                             | 4                                     | 3400                                    |
| STA 5+00 TO 11+00                | R | ↓                                       | ↓                                       | ↓                                             | 6                                     | 2760                                    |
| STA 11+00 TO 17+00               | R | ↓                                       | ↓                                       | ↓                                             | 6                                     | 2690                                    |
| STA 17+00 TO 22+00               | R | ↓                                       | ↓                                       | ↓                                             | 6                                     | 1610                                    |
| STA 22+00 TO 28+00               | R | ↓                                       | ↓                                       | ↓                                             | 6                                     | 2090                                    |
| STA 28+00 TO 34+00               | R | ↓                                       | ↓                                       | ↓                                             | 6                                     | 2000                                    |
| STA 34+00 TO 37+75.0             | R | ↓                                       | ↓                                       | ↓                                             | 3                                     | 1090                                    |
| SUBTOTALS (RIGHT)                |   |                                         |                                         |                                               | 37                                    | 15640                                   |
| GRAND TOTAL                      |   | 104                                     | 93                                      | 89                                            | 74                                    | 29460                                   |
| ALL ITEMS IN CATEGORY 0010       |   |                                         |                                         |                                               |                                       |                                         |

| MISCELLANEOUS LANDSCAPING ITEMS |   |                |                        |                           |
|---------------------------------|---|----------------|------------------------|---------------------------|
| LOCATION                        |   | TOPSOIL        | SOD                    | FERTILIZER                |
|                                 |   | 625.0100<br>SY | LAWN<br>631.1000<br>SY | TYPE B<br>629.0210<br>CWT |
| STA 1+25.6 TO 5+00              | L | 280            | 280                    | ↑                         |
| STA 5+00 TO 11+00               | L | 950            | 950                    | ↑                         |
| STA 11+00 TO 17+00              | L | 1240           | 1240                   | ↑                         |
| STA 17+00 TO 22+00              | L | 760            | 760                    | ↑                         |
| STA 22+00 TO 28+00              | L | 690            | 690                    | ↑                         |
| STA 28+00 TO 34+00              | L | 630            | 630                    | ↑                         |
| STA 34+00 TO 37+75.0            | L | 460            | 460                    | ↑                         |
| TOTAL                           |   | 5010           | 5010                   |                           |
| STA 1+25.6 TO 5+00              | R | 260            | 260                    | ↓                         |
| STA 5+00 TO 11+00               | R | 420            | 420                    | ↓                         |
| STA 11+00 TO 17+00              | R | 980            | 980                    | ↓                         |
| STA 17+00 TO 22+00              | R | 720            | 720                    | ↓                         |
| STA 22+00 TO 28+00              | R | 810            | 810                    | ↓                         |
| STA 28+00 TO 34+00              | R | 740            | 740                    | ↓                         |
| STA 34+00 TO 37+75.0            | R | 410            | 410                    | ↓                         |
| TOTAL                           |   | 4340           | 4340                   |                           |
| GRAND TOTAL                     |   | 9350           | 9350                   | 6                         |
| ALL ITEMS IN CATEGORY 0010      |   |                |                        |                           |

3

| CONSTRUCTION STAKING ROADWAY ITEMS |   |                                                                                     |                                                 |                                                      |                                                             |                                                                                       |                                                                                       |                                                                                       |                                                                |
|------------------------------------|---|-------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------|
|                                    |   | CONST.<br>STAKING<br>STORM SEWER<br>650.4000<br>EA                                  | CONST.<br>STAKING<br>SUBGRADE<br>650.4500<br>LF | CONST.<br>STAKING<br>CURB & GUTTER<br>650.5500<br>LF | CONST.<br>STAKING<br>CONCRETE<br>PAVEMENT<br>650.7000<br>LF | CONST.<br>STAKING<br>ELECTRICAL<br>INSTALLATIONS<br>(PROJECT)<br>650.8500<br>LUMP SUM | CONST.<br>STAKING<br>SUPPLEMENTAL<br>CONTROL<br>(PROJECT)<br>650.9910<br>LUMP SUM     | CONST.<br>STAKING<br>CURB<br>RAMP<br>SPV.0060.17<br>EA                                | CONST.<br>STAKING<br>CONCRETE<br>SIDEWALK<br>SPV.0090.01<br>LF |
| LOCATION                           |   |                                                                                     |                                                 |                                                      |                                                             |                                                                                       |                                                                                       |                                                                                       |                                                                |
| STA 1+25.6 TO 5+00                 | L |   | 180                                             | 300                                                  | 180                                                         |   |   |   | 475                                                            |
| STA 5+00 TO 11+00                  | L |                                                                                     | 0                                               | 500                                                  | 0                                                           |                                                                                       |                                                                                       |                                                                                       | 275                                                            |
| STA 11+00 TO 17+00                 | L |                                                                                     | 530                                             | 440                                                  | 530                                                         |                                                                                       |                                                                                       |                                                                                       | 720                                                            |
| STA 17+00 TO 22+00                 | L |                                                                                     | 250                                             | 500                                                  | 250                                                         |                                                                                       |                                                                                       |                                                                                       | 500                                                            |
| STA 22+00 TO 28+00                 | L |                                                                                     | 300                                             | 170                                                  | 300                                                         |                                                                                       |                                                                                       |                                                                                       | 600                                                            |
| STA 28+00 TO 34+00                 | L |                                                                                     | 320                                             | 600                                                  | 320                                                         |                                                                                       |                                                                                       |                                                                                       | 540                                                            |
| STA 34+00 TO 37+75.0               | L |                                                                                     | 160                                             | 330                                                  | 160                                                         |                                                                                       |                                                                                       |                                                                                       | 400                                                            |
| TOTAL                              |   |                                                                                     | 1740                                            | 2840                                                 | 1740                                                        |                                                                                       |                                                                                       |                                                                                       | 3510                                                           |
| STA 1+25.6 TO 5+00                 | R |  | 180                                             | 390                                                  | 180                                                         |  |  |  | 340                                                            |
| STA 5+00 TO 11+00                  | R |                                                                                     | 0                                               | 520                                                  | 0                                                           |                                                                                       |                                                                                       |                                                                                       | 600                                                            |
| STA 11+00 TO 17+00                 | R |                                                                                     | 410                                             | 480                                                  | 530                                                         |                                                                                       |                                                                                       |                                                                                       | 790                                                            |
| STA 17+00 TO 22+00                 | R |                                                                                     | 250                                             | 500                                                  | 250                                                         |                                                                                       |                                                                                       |                                                                                       | 500                                                            |
| STA 22+00 TO 28+00                 | R |                                                                                     | 300                                             | 120                                                  | 300                                                         |                                                                                       |                                                                                       |                                                                                       | 600                                                            |
| STA 28+00 TO 34+00                 | R |                                                                                     | 350                                             | 660                                                  | 350                                                         |                                                                                       |                                                                                       |                                                                                       | 600                                                            |
| STA 34+00 TO 37+75.0               | R |                                                                                     | 160                                             | 320                                                  | 160                                                         |                                                                                       |                                                                                       |                                                                                       | 390                                                            |
| TOTAL                              |   |                                                                                     | 1650                                            | 2990                                                 | 1770                                                        |                                                                                       |                                                                                       |                                                                                       | 3820                                                           |
| GRAND TOTAL                        |   | 105                                                                                 | 3390                                            | 5830                                                 | 3510                                                        | 1                                                                                     | 1                                                                                     | 47                                                                                    | 7330                                                           |
| ALL ITEMS IN CATEGORY 0010         |   |                                                                                     |                                                 |                                                      |                                                             |                                                                                       |                                                                                       |                                                                                       |                                                                |

| ASPHALT CONSTRUCTION ITEMS |    |                                 |                                         |
|----------------------------|----|---------------------------------|-----------------------------------------|
| LOCATION                   |    | TACK<br>COAT<br>455.0605<br>GAL | ASPHALTIC<br>SURFACE<br>465.0105<br>TON |
| STA 1+25.6 TO 5+00         | LT | 0                               | 0                                       |
| STA 5+00 TO 11+00          | LT | 0                               | 0                                       |
| STA 11+00 TO 17+00         | LT | 0                               | 0                                       |
| STA 17+00 TO 22+00         | LT | 0                               | 0                                       |
| STA 22+00 TO 28+00         | LT | 0                               | 50                                      |
| STA 28+00 TO 34+00         | LT | 0                               | 10                                      |
| STA 34+00 TO 37+75.0       | LT | 0                               | 0                                       |
| SUBTOTALS (LEFT)           |    | 0                               | 60                                      |
| STA 1+25.6 TO 5+00         | RT | 0                               | 10                                      |
| STA 5+00 TO 11+00          | RT | 10                              | 30                                      |
| STA 11+00 TO 17+00         | RT | 0                               | 0                                       |
| STA 17+00 TO 22+00         | RT | 0                               | 0                                       |
| STA 22+00 TO 28+00         | RT | 0                               | 30                                      |
| STA 28+00 TO 34+00         | RT | 0                               | 10                                      |
| STA 34+00 TO 37+75.0       | RT | 0                               | 0                                       |
| SUBTOTALS (RIGHT)          |    | 10                              | 80                                      |
| GRAND TOTALS               |    | 10                              | 140                                     |
| ALL ITEMS IN CATEGORY 0010 |    |                                 |                                         |

TRAFFIC & LIGHTING MISCELLANEOUS QUANTITIES

| Item No.    | Description                                                | Unit | Quantity |
|-------------|------------------------------------------------------------|------|----------|
| 652.0220    | Conduit Rigid Nonmetallic Schedule 40 1 1/2-Inch           | LF   | 115      |
| 652.0225    | Conduit Rigid Nonmetallic Schedule 40 2-Inch               | LF   | 440      |
| 652.0230    | Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch           | LF   | 8,735    |
| 652.0235    | Conduit Rigid Nonmetallic Schedule 40 3-Inch               | LF   | 5,790    |
| SPV.0060.09 | Rectangular Polymer Concrete Vault 13-Inchx24-Inchx18-Inch | Each | 48       |
| SPV.0060.10 | Rectangular Polymer Concrete Vault 17-Inchx30-Inchx18-Inch | Each | 38       |
| SPV.0060.11 | Install Traffic Signal Bases                               | Each | 20       |
| SPV.0060.12 | Utility Line Opening (ULO)                                 | Each | 6        |
| SPV.0060.16 | 18" Diameter X 6' Cylindrical Column Form                  | Each | 33       |

ALL ITEMS CATEGORY 0010

| NON-PARTICIPATING ITEMS |   |                | CONST.                  |
|-------------------------|---|----------------|-------------------------|
|                         |   |                | ADJUSTING STAKING       |
| ITEM NAME               |   | WATER BOX EACH | STORM SEWER 650.4000 EA |
| UNIT                    |   |                |                         |
| ITEM NUMBER             |   | SPV.0060.08    |                         |
| STA 1+25.6 TO 5+00      | L | 1              | ↑                       |
| STA 5+00 TO 11+00       | L | 5              |                         |
| STA 11+00 TO 17+00      | L | 6              |                         |
| STA 17+00 TO 22+00      | L | 3              |                         |
| STA 22+00 TO 28+00      | L | 4              |                         |
| STA 28+00 TO 34+00      | L | 7              |                         |
| STA 34+00 TO 37+75.0    | L | 5              |                         |
| SUBTOTALS (LEFT)        |   | 31             |                         |
| STA 1+25.6 TO 5+00      | R | 2              | ↓                       |
| STA 5+00 TO 11+00       | R | 1              |                         |
| STA 11+00 TO 17+00      | R | 7              |                         |
| STA 17+00 TO 22+00      | R | 7              |                         |
| STA 22+00 TO 28+00      | R | 3              |                         |
| STA 28+00 TO 34+00      | R | 6              |                         |
| STA 34+00 TO 37+75.0    | R | 3              |                         |
| SUBTOTALS (RIGHT)       |   | 29             |                         |
| GRAND TOTAL             |   | 60             | 55                      |

ALL ITEMS IN CATEGORY 0020

MISCELLANEOUS QUANTITIES-DRAINAGE TABLE

| DRAINAGE STRUCTURES |                   |         |           |                 |           |             | STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH |           |             |                  |        |            |       | REMARKS                                                                                 |
|---------------------|-------------------|---------|-----------|-----------------|-----------|-------------|-------------------------------------------------------|-----------|-------------|------------------|--------|------------|-------|-----------------------------------------------------------------------------------------|
| NUMBER              | TYPE OF STRUCTURE | STATION | OFFSET    | COVER ELEVATION | STRUCTURE | FRAME & LID | CONNECTION STRUCTURE                                  | SIZE (IN) | LENGTH (FT) | INVERT ELEVATION |        | PIPE SLOPE | DEPTH |                                                                                         |
|                     |                   |         |           |                 |           |             |                                                       |           |             | INLET            | OUTLET |            |       |                                                                                         |
| 1                   | INLET             | 2+15.0  | 40.0 LT   | 90.91           | 45A       |             | 202                                                   | 12        | 22          | 87.80            | 86.50  | 0.05909    | 4.77  | Use Salvaged Type 57 Lid                                                                |
| 2                   | INLET             | 2+75    | 40 RT     | 90.21           | 45A       |             | 203                                                   | 12        | 11          | 87.10            | 86.50  | 0.05455    | 4.77  | Water Main Protection Needed. Use Salvage Type 57 lid                                   |
| 2A                  | INLET             | 3+75    | 1' LT     | 91.04           | 45A       | 57          | 206                                                   | 12        | 61          | 87.95            | 86.55  | 0.02295    | 4.75  |                                                                                         |
| 3                   | INLET             | 4+25    | 40 RT     | 89.96           | 45A       |             | 205                                                   | 12        | 10          | 86.85            | 86.25  | 0.06000    | 4.77  | Water Main Protection Needed, Use Salvaged Type 57 Lid                                  |
| 4                   | INLET             | 4+25    | 40' LT    | 89.74           | 45A       |             | 206                                                   | 12        | 17          | 86.65            | 86.25  | 0.02353    | 4.75  | Use Salvaged Type 57 Lid                                                                |
| 4A                  | INLET             | 4+73.4  | 10.0' LT  | 90.36           | 45A       |             | 206                                                   | 12        | 39          | 87.25            | 86.25  | 0.02564    | 4.77  | Use Salvaged Type 57 Lid                                                                |
| 5                   | INLET             | 6+25    | 34' LT    | 88.60           | 45A       | 57          | 207                                                   | 12        | 11          | 85.50            | 84.90  | 0.05455    | 4.76  | Protect 12" Gas Main                                                                    |
| 6                   | INLET             | 6+25    | 40' RT    | 89.18           | 45A       |             | 208                                                   | 12        | 17          | 86.10            | 85.50  | 0.03529    | 4.74  | Water Main Protection Needed, Use Salvaged Type 57 Lid                                  |
| 7                   | INLET             | 6+57.4  | 58.8 RT   | 89.58           | 45A       |             | 209                                                   | 12        | 32          | 86.50            | 85.50  | 0.03125    | 4.74  | Use Salvaged Type 57 Lid                                                                |
| 8                   | INLET             | 6+87.9  | 58' RT    | 89.39           | 45A       |             | 209                                                   | 12        | 29          | 86.30            | 85.50  | 0.02759    | 4.75  | Use Salvaged Type 57 Lid                                                                |
| 9                   | INLET             | 7+35    | 29' LT    | 88.15           | 45A       |             | 210                                                   | 12        | 5           | 85.00            | 84.75  | 0.05000    | 4.81  | Protect 2" Gas Main, Use Salvaged Type 57 Lid                                           |
| 10                  | INLET             | 7+75    | 40' RT    | 88.40           | 45A       |             | 211                                                   | 12        | 14          | 85.30            | 84.50  | 0.05714    | 4.76  | Water Main Protection Needed. Use Salvaged Type 57 Lid.                                 |
| 11                  | INLET             | 9+55    | 30' LT    | 86.86           | 45A       | 57          | 214                                                   | 12        | 8           | 83.75            | 83.20  | 0.06875    | 4.77  |                                                                                         |
| 12                  | INLET             | 10+00   | 40' RT    | 87.30           | 45A       | 57          | 214                                                   | 12        | 78          | 84.20            | 82.50  | 0.02179    | 4.76  | Water Main Protection Needed                                                            |
| 13                  | INLET             | 10+52.9 | 82.2' RT  | 88.82           | 45A       |             | 13A                                                   | 12        | 26          | 70.00            | 68.00  | 0.07692    | 20.48 | Core connect to existing storm sewer with concrete collar, Use Salvaged Type 57 Lid.    |
| 14                  | STORM MH          | 11+63   | 61.1' RT  | 85.27           | 6'-0" MH  | 57          |                                                       |           |             | 66.85            | 66.85  |            | 18.42 | New Manhole                                                                             |
| 15                  | INLET             | 12+25.0 | 60' RT    | 85.50           | 45A       | 55          | 15A                                                   | 12        | 12          | 76.15            | 75.30  | 0.07083    | 11.01 | Core connect to existing storm sewer with concrete collar                               |
| 16                  | INLET             | 12+67.0 | 40' LT    | 83.92           | 45A       |             | 215                                                   | 12        | 17          | 79.45            | 79.00  | 0.02647    | 6.13  | Protect Street Lightin Pole, Use Salvaged Type 57 Lid                                   |
| 17                  | INLET             | 13+14.0 | 40' LT    | 83.37           | 45A       |             | 216                                                   | 12        | 54          | 80.25            | 79.00  | 0.02315    | 4.78  | Water main protection needed, Use Salvaged Type 57 Lid                                  |
| 18                  | INLET             | 13+37.6 | 72.8 LT   | 83.00           | 45A       |             | 217                                                   | 12        | 29          | 79.90            | 78.50  | 0.04828    | 4.76  | Protect San Manhole, Use Salvaged Type 57 Lid                                           |
| 19                  | INLET             | 13+41.2 | 61.5' RT  | 84.13           | 45A       |             | 219                                                   | 12        | 35          | 81.05            | 80.00  | 0.03000    | 4.74  | Use Salvaged Type 57 Lid                                                                |
| 20                  | STORM MH          | 13+60   | 40' LT    | 83.53           | 6'-0" MH  |             |                                                       |           |             | 65.70            | 65.70  |            | 17.83 | New 6' Storm MH with Inlet Cover on top of existing 42" sewer, Use Salvaged Type 57 Lid |
| 21                  | INLET             | 13+65.4 | 62.9 RT   | 83.91           | 45A       |             | 219                                                   | 12        | 30          | 80.80            | 79.50  | 0.04333    | 4.77  | Use Salvaged Type 57 Lid                                                                |
| 21A                 | INLET             | 13+65   | 70' LT    | 82.00           | 45A       | 55          | 20                                                    | 12        | 30          | 78.90            | 77.50  | 0.04667    | 4.91  |                                                                                         |
| 22                  | INLET             | 14+63   | 79.9' LT  | 81.50           | 45A       | 55          | 22B                                                   | 12        | 11          | 76.70            | 75.50  | 0.10909    | 6.46  | Core connect to existing storm sewer with concrete collar                               |
| 22A                 | INLET             | 15+25   | 40' RT    | 82.30           | 45A       |             | 221                                                   | 12        | 10          | 79.20            | 78.50  | 0.07000    | 4.76  | Water Main Protection Needed for 8" Water Main, Use Salvaged Type 57 Lid                |
| 23                  | INLET             | 15+29.6 | 40.5' LT  | 83.18           | 45A       | 57          | 220                                                   | 12        | 9           | 80.00            | 79.20  | 0.08889    | 4.84  |                                                                                         |
| 24                  | INLET             | 15+40.5 | 90.1' LT  | 82.92           | 45A       |             | 221A                                                  | 12        | 22          | 78.00            | 77.00  | 0.04545    | 6.58  | Protect & Support Telephone Conduit, Protect 8" Water Main, Use Salvaged Type 57 Lid.   |
| 25                  | INLET             | 15+52.7 | 128.7' LT | 82.05           | 45A       |             | 221A                                                  | 12        | 17          | 78.50            | 77.00  | 0.08824    | 5.21  | Use Salvaged Type 57 Lid                                                                |
| 26                  | INLET             | 15+85.9 | 88.4' LT  | 82.25           | 45A       |             | 221A                                                  | 12        | 44          | 79.15            | 76.00  | 0.07159    | 4.76  | Protect & Support Telephone Conduit, Use Salvaged Type 57 lid                           |
| 27                  | INLET             | 16+39   | 38' RT    | 82.23           | 45A       |             | 223                                                   | 12        | 11          | 79.10            | 78.50  | 0.05455    | 4.79  | Water Main Protection Needed for 8" Water Main, Use Salvaged Type 57 Lid                |
| 28                  | INLET             | 17+24.5 | 34.7' RT  | 81.78           | 45A       |             | 224                                                   | 12        | 9           | 78.65            | 78.30  | 0.03889    | 4.79  | Use Salvaged Type 57 Lid.                                                               |
| 29                  | STORM MH          | 17+25   | 33.3' LT  | 81.86           | 5'-0" MH  | 57          |                                                       |           |             | 67.60            | 67.60  |            | 14.26 | New Storm MH With Inlet Grate to be built                                               |
| 30                  | INLET             | 19+12.5 | 31' LT    | 80.85           | 45A       |             | 228                                                   | 12        | 15          | 77.70            | 77.25  | 0.03000    | 4.81  | Use Salvaged Type 57 Lid                                                                |
| 31                  | STORM MH          | 19+32   | 31' RT    | 80.87           | 5'-0" MH  | 57          |                                                       |           |             | 69.00            | 69.00  |            | 13.53 | Storm MH With Inlet Grate                                                               |
| 32                  | INLET             | 20+94.0 | 31' RT    | 80.74           | 45A       |             | 229                                                   | 12        | 9           | 77.60            | 77.00  | 0.06667    | 4.80  | Use Salvaged Type 57 Lid                                                                |
| 33                  | INLET             | 21+25   | 31' LT    | 80.46           | 45A       |             | 230                                                   | 12        | 9           | 77.35            | 76.90  | 0.05000    | 4.77  | Use Salvaged Type 57 Lid                                                                |

| NUMBER | TYPE OF<br>STRUCTURE | STATION | OFFSET   | COVER<br>ELEVATION | STRUCTURE         | FRAME &<br>LID | CONNECTION<br>STRUCTURE | SIZE<br>(IN) | LENGTH<br>(FT) | INVERT ELEVATION |        | PIPE<br>SLOPE | DEPTH | REMARKS                                                   |
|--------|----------------------|---------|----------|--------------------|-------------------|----------------|-------------------------|--------------|----------------|------------------|--------|---------------|-------|-----------------------------------------------------------|
|        |                      |         |          |                    |                   |                |                         |              |                | INLET            | OUTLET |               |       |                                                           |
| 34     | INLET                | 22+37.5 | 31' RT   | 80.70              | 45A               | 57             | 34A                     | 12           | 3              | 71.40            | 71.10  | 0.10000       | 10.96 | Core connect to existing storm sewer with concrete collar |
| 35     | INLET                | 22+60   | 31' LT   | 80.54              | 45A               |                | 231                     | 12           | 9              | 77.45            | 76.85  | 0.06667       | 4.75  | Use Salvaged Type 57 Lid                                  |
| 36     | INLET                | 23+24   | 59.5' LT | 80.65              | 45A               | 57             | 36A                     | 12           | 3              | 70.00            | 69.75  | 0.08333       | 12.31 | Core connect to existing storm sewer with concrete collar |
| 37     | INLET                | 23+35   | 56.5' RT | 81.41              | 3'-0" Storm Inlet | 57             | 37A                     | 12           | 10             | 78.30            | 77.70  | 0.06000       | 3.11  | To new Manhole.                                           |
| 37A    | STORM MH             | 23+43   | 63' RT   | 82.25              | 4'-0" MH          | 58A            | 37B                     | 12           | 13             | 72.50            | 72.00  | 0.03846       | 9.75  | Core connect to existing storm sewer with concrete collar |
| 38     | INLET                | 24+06.8 | 57.7' LT | 80.92              | 45A               |                | 237                     | 12           | 17             | 77.80            | 76.50  | 0.07647       | 4.78  | Use Salvaged Type 57 Lid                                  |
| 39     | INLET                | 24+19.5 | 56' RT   | 81.33              | 45A               | 57             | 240                     | 12           | 35             | 78.20            | 76.80  | 0.04000       | 4.79  | Protect & Support TE&ES, Traffic Signal                   |
| 40     | INLET                | 24+28   | 31' LT   | 81.68              | 45A               | 57             | 238                     | 12           | 10             | 76.90            | 76.50  | 0.04000       | 6.44  | Protect 2" Gas Main                                       |
| 41     | INLET                | 24+42   | 31' RT   | 81.62              | 45A               |                | 240                     | 12           | 15             | 77.00            | 76.50  | 0.03333       | 6.28  | Use Salvaged Type 57 Lid                                  |
| 42     | INLET                | 27+00   | 31' RT   | 83.50              | 45A               |                | 241                     | 12           | 10             | 80.00            | 79.25  | 0.07500       | 5.16  | Use Salvaged Type 57 Lid                                  |
| 43     | INLET                | 27+24   | 70.0' LT | 83.78              | 45A               |                | 242                     | 12           | 48             | 80.65            | 79.00  | 0.03438       | 4.79  | Use Salvaged Type 57 Lid                                  |
| 44     | INLET                | 27+59.2 | 76.4' LT | 83.87              | 45A               |                | 242                     | 12           | 57             | 80.75            | 79.00  | 0.03070       | 4.78  | Use Salvaged Type 57 Lid                                  |
| 45     | INLET                | 27+70.5 | 31' LT   | 84.00              | 45A               | 57             | 242                     | 12           | 34             | 80.90            | 80.40  | 0.01471       | 4.76  |                                                           |
| 46     | INLET                | 29+71.2 | 67.9' RT | 86.60              | 45A               | 57             | 245                     | 12           | 23             | 83.50            | 83.00  | 0.02174       | 4.76  | Protect & Support TE&ES                                   |
| 47     | INLET                | 29+99.0 | 79.6' RT | 86.74              | 45A               | 57             | 245                     | 12           | 28             | 83.65            | 82.50  | 0.04107       | 4.75  |                                                           |
| 48     | INLET                | 30+41.5 | 31' RT   | 86.60              | 45A               | 57             | 246                     | 12           | 59             | 83.55            | 82.30  | 0.02119       | 4.71  | Protect & Support CUC                                     |
| 49     | INLET                | 32+58.0 | 31' RT   | 86.45              | 45A               | 57             | 248                     | 12           | 55             | 83.35            | 82.80  | 0.01000       | 4.76  |                                                           |
| 50     | INLET                | 33+93.5 | 31' LT   | 85.51              | 45A               | 57             | 250                     | 12           | 10             | 82.45            | 82.00  | 0.04500       | 4.72  |                                                           |
| 51     | INLET                | 34+25   | 31' RT   | 85.59              | 45A               | 57             | 250                     | 12           | 60             | 82.40            | 81.15  | 0.02083       | 4.85  |                                                           |
| 52     | INLET                | 34+98.5 | 31' LT   | 84.96              | 45A               | 57             | 251                     | 12           | 11             | 81.85            | 81.35  | 0.04545       | 4.77  |                                                           |
| 53     | INLET                | 36+00   | 31' RT   | 84.68              | 45A               | 57             | 252                     | 12           | 88             | 81.55            | 80.40  | 0.01307       | 4.79  |                                                           |
| 54     | INLET                | 36+67   | 31' RT   | 84.33              | 45A               | 57             | 252                     | 12           | 57             | 81.25            | 80.25  | 0.01754       | 4.74  |                                                           |
| 55     | INLET                | 36+76   | 31' LT   | 84.05              | 45A               | 57             | 252                     | 12           | 12             | 80.95            | 80.40  | 0.04583       | 4.76  |                                                           |

|                      |                                                                  |      |      |
|----------------------|------------------------------------------------------------------|------|------|
| 0010 (PARTICIPATING) | STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH (608.0412) | 1420 | LF   |
| 0010 (PARTICIPATING) | MANHOLES 4-FT DIAMETER (611.2004)                                | 1    | EACH |
| 0010 (PARTICIPATING) | MANHOLES 5-FT DIAMETER (611.2005)                                | 2    | EACH |
| 0010 (PARTICIPATING) | MANHOLES 6-FT DIAMETER (611.2006)                                | 3    | EACH |
| 0010 (PARTICIPATING) | INLET 3-FT DIAMETER (611.3003)                                   | 1    | EACH |
| 0010 (PARTICIPATING) | INLET COVERS TYPE 57 (SPV.0060.01)                               | 24   | EACH |
| 0010 (PARTICIPATING) | MANHOLE COVERS TYPE 58A (SPV.0060.02)                            | 1    | EACH |
| 0010 (PARTICIPATING) | INLETS TYPE 45A (SPV.0060.03)                                    | 54   | EACH |
| 0010 (PARTICIPATING) | INLET COVERS TYPE 55 (SPV.0060.13)                               | 3    | EACH |
| 0010 (PARTICIPATING) | CONCRETE COLLAR MODIFIED (SPV.0060.14)                           | 6    | EACH |
| 0010 (PARTICIPATING) | WATER MAIN PROTECTION (SPV.0060.15)                              | 9    | EACH |

ABANDONING INLETS

| GROUP CODE | NUMBER | STATION | OFFSET    | SALVAGE FRAME & LID |
|------------|--------|---------|-----------|---------------------|
| 0010       | 101    | 2+19.8  | 35.3 LT   | Yes                 |
| 0010       | 102    | 4+21.4  | 28 LT     | Yes                 |
| 0010       | 103    | 4+25    | 28 RT     | No                  |
| 0010       | 106    | 7+32.9  | 28 RT     | No                  |
| 0010       | 107    | 7+33.6  | 28' LT    | No                  |
| 0010       | 108    | 10+40.4 | 35.0 RT   | No                  |
| 0010       | 109    | 10+51.3 | 79.7 RT   | No                  |
| 0010       | 110    | 10+66.0 | 35.5 LT   | Yes                 |
| 0010       | 111    | 11+66.5 | 50.1 RT   | No                  |
| 0010       | 112    | 12+57.9 | 56.3 RT   | No                  |
| 0010       | 114    | 13+00.3 | 63.8 LT   | Yes                 |
| 0010       | 115    | 13+20.3 | 35.6 RT   | Yes                 |
| 0010       | 118    | 13+62   | 80' LT    | Yes                 |
| 0010       | 120    | 15+13.4 | 35.6 RT   | No                  |
| 0010       | 121    | 15+11.9 | 87.0 LT   | Yes                 |
| 0010       | 122A   | 15+49   | 125' Left | Yes                 |
| 0010       | 123    | 15+52.6 | 73.1' LT  | Yes                 |
| 0010       | 125    | 16+38.8 | 33.3' RT  | Yes                 |
| 0010       | 126    | 16+88   | 28.4' LT  | Yes                 |
| 0010       | 127    | 17+13.5 | 28' RT    | No                  |
| 0010       | 128    | 18+01.8 | 28' RT    | No                  |
| 0010       | 129    | 18+06.5 | 28' LT    | No                  |
| 0010       | 130    | 19+12.5 | 28' LT    | No                  |
| 0010       | 131    | 19+12.5 | 28' RT    | No                  |
| 0010       | 132    | 20+93.6 | 28' RT    | No                  |
| 0010       | 133    | 20+93.8 | 28' LT    | No                  |
| 0010       | 134    | 22+94.1 | 28' LT    | No                  |
| 0010       | 135    | 22+94.6 | 28' RT    | Yes                 |
| 0010       | 142    | 27+04.7 | 28' RT    | Yes                 |
| 0010       | 146    | 29+67.7 | 67.3' RT  | Yes                 |
| 0010       | 147    | 30+03.6 | 63.6' RT  | Yes                 |
| 0010       | 153    | 35+73   | 28' RT    | No                  |
| 0010       | 155    | 36+84.1 | 30' RT    | Yes                 |

0010

ABANDONING INLETS (204.0260)

33 EACH

0010

SALVAGED INLET COVERS (611.9710)

16 EACH (to be used on new structures in drainage table)

REMOVING INLETS

| GROUP CODE | NUMBER | STATION | OFFSET   | SALVAGE FRAME & LID |
|------------|--------|---------|----------|---------------------|
| 0010       | 104    | 6+57.3  | 58.8 LT  | Yes                 |
| 0010       | 105    | 6+87.9  | 58.1 RT  | Yes                 |
| 0010       | 113    | 12+67.5 | 38.4 LT  | Yes                 |
| 0010       | 116    | 13+36.3 | 70.6 LT  | Yes                 |
| 0010       | 117    | 13+42   | 62' RT   | Yes                 |
| 0010       | 119    | 13+65.4 | 62.9 RT  | No                  |
| 0010       | 122    | 15+29.6 | 40.5' LT | Yes                 |
| 0010       | 124    | 15+87.6 | 87.2 LT  | Yes                 |
| 0010       | 136    | 23+24   | 59.5' LT | Yes                 |
| 0010       | 137    | 23+35   | 56.5' RT | No                  |
| 0010       | 138    | 24+06.8 | 57.7' LT | Yes                 |
| 0010       | 139    | 24+19.5 | 56' rt   | Yes                 |
| 0010       | 140    | 24+28   | 28' LT   | Yes                 |
| 0010       | 141    | 24+40.1 | 28' RT   | Yes                 |
| 0010       | 143    | 27+24   | 70.0' LT | No                  |
| 0010       | 144    | 27+59.2 | 76.4' LT | No                  |
| 0010       | 145    | 27+70.5 | 28' LT   | No                  |
| 0010       | 148    | 30+40.0 | 28' RT   | Yes                 |
| 0010       | 149    | 32+57.3 | 28' RT   | No                  |
| 0010       | 150    | 33+93.5 | 28' LT   | Yes                 |
| 0010       | 151    | 34+19.7 | 28' RT   | No                  |
| 0010       | 152    | 34+98.8 | 28' LT   | Yes                 |
| 0010       | 154    | 36+76   | 30' LT   | Yes                 |

0010

REMOVING INLETS (204.0220)

23 EACH

0010

SALVAGED INLET COVERS (611.9710)

16 EACH (to be used on new structures in drainage table)

REMOVING MANHOLES

| GROUP CODE | NUMBER | STATION | OFFSET   |
|------------|--------|---------|----------|
| 0010       | 218    | 13+60.1 | 40.3' LT |
|            |        |         |          |
|            |        |         |          |

0010

REMOVING MANHOLES (204.0210)

1 EACH

SALVAGED MANHOLE COVERS

| GROUP CODE | NUMBER | STATION | OFFSET   | PROPOSED ELEV. | REMARKS |
|------------|--------|---------|----------|----------------|---------|
| 0020       | 401    | 1+21.7  | 17.0' RT | 92.07          |         |
| 0020       | 402    | 1+55.1  | 16.8' RT | 91.51          |         |
| 0020       | 403    | 2+05.9  | 42.4' RT | 91.19          |         |
| 0010       | 201    | 2+11    | 26.5' RT | 90.81          |         |
| 0010       | 202    | 2+30.0  | 24' LT   | 91.3           |         |
| 0010       | 203    | 2+82.0  | 32' RT   | 90.51          |         |
| 0020       | 404    | 3+24.8  | 45.3' LT | 89.99          |         |
| 0010       | 204    | 3+30.5  | 24' LT   | 90.7           |         |
| 0020       | 405    | 4+13.4  | 16.2'RT  | 90.76          |         |
| 0010       | 205    | 4+19    | 32' RT   | 90.26          |         |
| 0010       | 206    | 4+32.0  | 24' RT   | 90.3           |         |
| 0020       | 406    | 5+28.8  | 42' RT   | 89.89          |         |
| 0020       | 407    | 6+05.0  | 45.3' LT | 89.51          |         |
| 0010       | 207    | 6+20.0  | 24' LT   | 89.37          |         |
| 0010       | 208    | 6+40    | 32' RT   | 88.72          |         |
| 0020       | 408    | 6+69.2  | 16.1' LT | 89.92          |         |
| 0010       | 209    | 6+76.0  | 32' RT   | 88.54          |         |
| 0010       | 210    | 7+37    | 24' LT   | 88.72          |         |
| 0010       | 211    | 7+76    | 32' RT   | 88.82          |         |
| 0010       | 212    | 8+31    | 32' RT   | 88.61          |         |
| 0010       | 213    | 8+31    | 24' LT   | 88.62          |         |
| 0020       | 408A   | 8+23.2  | 45.3' LT | 88.79          |         |
| 0020       | 409    | 8+26.3  | 42' RT   | 88.94          |         |
| 0020       | 410    | 9+46.8  | 16.2' RT | 88.32          |         |
| 0020       | 411    | 10+50   | 45.5' LT | 87.42          |         |
| 0020       | 412    | 10+63.7 | 23.7' RT | 87.9           |         |
| 0020       | 413    | 12+13.7 | 39.8' RT | 85.02          |         |
| 0020       | 414    | 12+27.4 | 16.1' RT | 85.26          |         |
| 0020       | 415    | 12+55.8 | 45.6' LT | 84.73          |         |
| 0010       | 214    | 9+60    | 24' LT   | 87.77          |         |
| 0020       | 416    | 12+69.9 | 23.3' LT | 84.48          |         |
| 0010       | 215    | 12+60   | 24' LT   | 84.64          |         |
| 0010       | 216    | 12+86   | 7.3' LT  | 84.64          |         |
| 0010       | 217    | 13+24.4 | 98.9' LT | 83.12          |         |
| 0020       | 417    | 13+27.6 | 88.9' LT | 83.3           |         |
| 0020       | 418    | 13+37.7 | 83.3' LT | 82.99          |         |
| 0020       | 419    | 13+38.3 | 60.4' LT | 83.75          |         |
| 0020       | 420    | 13+48   | 72.2' LT | 83.76          |         |
| 0010       | 218    | 13+60.1 | 40.3' LT | 84.03          |         |

SALVAGED MANHOLE COVERS (continued)

| GROUP CODE | NUMBER | STATION | OFFSET    | PROPOSED ELEV. | REMARKS   |
|------------|--------|---------|-----------|----------------|-----------|
| 0010       | 219    | 13+61   | 33' RT    | 83.64          |           |
| 0020       | 421    | 13+74.1 | 38.8' LT  | 83.61          |           |
| 0020       | 422    | 13+98.3 | 41.9' RT  | 83.58          |           |
| 0020       | 423    | 14+75.1 | 14.6' RT  | 83.5           |           |
| 0010       | 220    | 15+25.8 | 31.5' LT  | 83.47          |           |
| 0010       | 221    | 15+27.0 | 30.2' RT  | 82.6           |           |
| 0010       | 221A   | 15+42.9 | 106.9' LT | 82.71          |           |
| 0020       | 424    | 15+98.2 | 47.3' LT  | 83.09          |           |
| 0010       | 222    | 16+34.2 | 32.9' LT  | 82.63          | 3" Repair |
| 0020       | 425    | 16+35.7 | 41.2' RT  | 82.84          |           |
| 0010       | 223    | 16+41   | 27' RT    | 82.36          |           |
| 0020       | 425A   | 16+94   | 15' RT    | 82.69          |           |
| 0010       | 224    | 17+27   | 24' RT    | 82.21          |           |
| 0010       | 225    | 18+69.1 | 33.3' LT  | 81.71          |           |
| 0020       | 426    | 19+09.4 | 13.8' RT  | 81.64          |           |
| 0010       | 226    | 19+32.1 | 31' RT    | 81.37          |           |
| 0010       | 227    | 19+80.5 | 32' RT    | 81.63          |           |
| 0020       | 427    | 19+28.2 | 47' LT    | 82.18          |           |
| 0020       | 428    | 19+32.8 | 38.1' LT  | 81.93          |           |
| 0020       | 429    | 19+35.8 | 38.1' RT  | 81.7           |           |
| 0010       | 228    | 19+25   | 23' LT    | 80.9           |           |
| 0010       | 229    | 20+85   | 33.4' RT  | 81.4           |           |
| 0010       | 230    | 21+30.5 | 23' LT    | 80.78          |           |
| 0020       | 430    | 21+53.0 | 40.5' RT  | 81.92          |           |
| 0020       | 431    | 21+84.0 | 37.6' LT  | 81.65          |           |
| 0010       | 231    | 22+65   | 23' LT    | 80.8           |           |
| 0010       | 232    | 22+81.2 | 35' RT    | 81.06          | 9" Repair |
| 0010       | 233    | 23+16.4 | 23.5' LT  | 81.27          |           |
| 0010       | 234    | 23+18.8 | 34.8' LT  | 80.95          |           |
| 0020       | 432    | 23+28.7 | 44.6' LT  | 80.99          |           |
| 0020       | 433    | 23+39.9 | 41.4' RT  | 81.55          |           |
| 0020       | 434    | 23+94.9 | 45.3' LT  | 81.39          |           |
| 0010       | 235    | 23+96.9 | 34' LT    | 81.15          |           |
| 0010       | 236    | 24+01.3 | 22.9' RT  | 82.15          |           |
| 0010       | 237    | 24+10.5 | 40.6' LT  | 81.81          |           |
| 0020       | 435    | 24+08.9 | 38.6' RT  | 81.83          |           |
| 0010       | 238    | 24+21   | 23.8' LT  | 81.98          |           |
| 0010       | 239    | 24+20   | 32.7' RT  | 81.7           |           |
| 0010       | 240    | 24+29   | 23' RT    | 81.85          |           |
| 0010       | 241    | 26+94   | 23' RT    | 84             |           |

SALVAGED MANHOLE COVERS (continued)

| GROUP CODE | NUMBER | STATION | OFFSET   | PROPOSED ELEV. | REMARKS   |
|------------|--------|---------|----------|----------------|-----------|
| 0020       | 436    | 27+05.5 | 41.3' RT | 84.53          |           |
| 0010       | 242    | 27+37.0 | 24' LT   | 84.2           |           |
| 0010       | 243    | 27+58   | 38.3' LT | 84.69          |           |
| 0020       | 437    | 27+64.6 | 42.5' LT | 84.74          | 3" Repair |
| 0010       | 244    | 28+83.4 | 23.0' RT | 85.34          |           |
| 0020       | 438    | 28+87.0 | 40.9' RT | 86.15          |           |
| 0010       | 245    | 29+89   | 53.0' RT | 87.07          |           |
| 0010       | 246    | 30+19   | 24.0' LT | 86.13          |           |
| 0020       | 439    | 30+35.0 | 43.4 LT  | 86.99          |           |
| 0010       | 247    | 31+10.3 | 23' LT   | 87.2           |           |
| 0020       | 440    | 31+19.5 | 30.7 LT  | 87.16          |           |
| 0010       | 248    | 32+54.0 | 23' LT   | 86.52          |           |
| 0020       | 441    | 32+62.4 | 30.5 LT  | 86.2           |           |
| 0010       | 249    | 32+97.6 | 23.0' LT | 86.25          |           |
| 0010       | 250    | 33+99.0 | 23' LT   | 85.78          |           |
| 0010       | 251    | 35+06   | 23' LT   | 85.3           |           |
| 0010       | 252    | 36+85   | 39' LT   | 84.28          |           |

0010SALVAGED MANHOLE COVERS (611.9705)46 EACH

0020SALVAGED MANHOLE COVERS (611.9705)43 EACH

ADJUSTING TES MANHOLE COVER

| Category | Number | Station | Offset   | Prop. Elev. | Cover Type             |
|----------|--------|---------|----------|-------------|------------------------|
| 0020     | 600    | 1+29    | 21.7 RT  | 91.83       | Use Existing           |
| 0020     | 604    | 11+19.5 | 50.1 RT  | 87.75       | To be provided by City |
| 0020     | 605    | 12+79.9 | 52.4 LT  | 84.29       | To be provided by City |
| 0020     | 606    | 13+07.7 | 51.8 RT  | 84.61       | To be provided by City |
| 0020     | 607    | 14+52.2 | 52.3 RT  | 83.6        | To be provided by City |
| 0020     | 608    | 15+84.6 | 51.6 LT  | 83.19       | To be provided by City |
| 0020     | 609    | 19+32.7 | 50.7' LT | 82.18       | To be provided by City |
| 0020     | 610    | 23+14.8 | 56.0' LT | 81.55       | To be provided by City |
| 0020     | 611    | 27+62.9 | 52.3' LT | 84.86       | To be provided by City |
| 0020     | 612    | 30+25.6 | 48.2' RT | 87.67       | To be provided by City |
| 0020     | 613    | 30+91.8 | 52.5' LT | 87.47       | To be provided by City |
| 0020     | 614    | 36+92.4 | 41.8' RT | 85.1        | To be provided by City |

0020ADJUSTING TES MANHOLE COVER (SPV.0060.07)12 EACH

INTERNAL SANITARY MANHOLE SEAL

| CODE | NUMBER | STATION | OFFSET   |
|------|--------|---------|----------|
| 0020 | 401    | 1+21.7  | 17.0 LT  |
| 0020 | 402    | 1+55.1  | 16.8 RT  |
| 0020 | 403    | 2+05.9  | 42.4 RT  |
| 0020 | 404    | 3+24.8  | 45.3 LT  |
| 0020 | 405    | 4+13.4  | 16.2 RT  |
| 0020 | 406    | 5+28.8  | 42.0 RT  |
| 0020 | 407    | 6+05.0  | 45.3 LT  |
| 0020 | 408    | 6+69.2  | 16.1 LT  |
| 0020 | 408A   | 8+23.2  | 45.3 LT  |
| 0020 | 409    | 8+26.3  | 42 RT    |
| 0020 | 410    | 9+46.8  | 16.2 RT  |
| 0020 | 411    | 10+50   | 45.5 LT  |
| 0020 | 412    | 10+63.7 | 23.7 RT  |
| 0020 | 413    | 12+13.7 | 39.8 RT  |
| 0020 | 414    | 12+27.4 | 16.1 RT  |
| 0020 | 415    | 12+55.8 | 45.6 LT  |
| 0020 | 416    | 12+69.9 | 23.3 LT  |
| 0020 | 417    | 13+27.6 | 88.9 LT  |
| 0020 | 418    | 13+37.7 | 83.3 LT  |
| 0020 | 419    | 13+38.3 | 60.4 LT  |
| 0020 | 420    | 13+48   | 72.2 LT  |
| 0020 | 421    | 13+74.1 | 38.8' LT |
| 0020 | 422    | 13+98.3 | 41.9 RT  |
| 0020 | 423    | 14+75.1 | 14.6 RT  |
| 0020 | 424    | 15+98.2 | 47.3' LT |
| 0020 | 425    | 16+35.7 | 41.2' RT |
| 0020 | 425A   | 16+94   | 15' RT   |
| 0020 | 426    | 19+09.4 | 13.8' RT |
| 0020 | 427    | 19+28.2 | 47' LT   |
| 0020 | 428    | 19+32.8 | 38.1' LT |
| 0020 | 429    | 19+35.8 | 38.1' RT |
| 0020 | 430    | 21+53.0 | 40.5' RT |
| 0020 | 431    | 21+84.0 | 37.6' LT |
| 0020 | 432    | 23+28.7 | 44.6' RT |
| 0020 | 433    | 23+39.9 | 41.4' RT |
| 0020 | 434    | 23+94.9 | 45.3' LT |
| 0020 | 435    | 24+08.9 | 38.6' RT |
| 0020 | 436    | 27+05.5 | 41.3' RT |
| 0020 | 437    | 27+64.6 | 42.5' LT |
| 0020 | 438    | 28+87.0 | 40.9' RT |
| 0020 | 439    | 30+35.0 | 43.4 LT  |
| 0020 | 440    | 31+19.5 | 30.7 LT  |
| 0020 | 441    | 32+62.4 | 30.5 LT  |

0020INTERNAL SANITARY MANHOLE SEAL (SPV.0060.06)43 EACH

| TREE PLANTING      |                    |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|--------------------|--------------------|----------|---------------------------|-------------------------------------|--------------------------|-----------------------|------------------------------|----------------------------|----------------------------|--------------------------|------------------------|-------------------------|
| CATEGORY           |                    | LOCATION | 0010                      |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
| ITEM NUMBER        |                    |          | 632.0101.01               | 632.0101.02                         | 632.0101.03              | 632.0101.04           | 632.0101.05                  | 632.0101.06                | 632.0101.07                | 632.0101.08              | 632.0101.09            | 632.0101.10             |
| DESCRIPTION        |                    |          | FREEMAN<br>MAPLE, B&B, 3" | SUNBURST<br>HONEYLOCUST,<br>B&B, 3" | CALLERY PEAR,<br>B&B, 3" | REGAL ELM, B&B,<br>3" | IVORY SILK<br>LILAC, B&B, 3" | EASTERN<br>REDBUD, B&B, 3" | SWEET GUM<br>TREE, B&B, 3" | BALD CYPRESS,<br>B&B, 3" | TULIP TREE,<br>B&B, 3" | ENGLISH OAK,<br>B&B, 3" |
| UNIT PAY           |                    |          | EACH                      | EACH                                | EACH                     | EACH                  | EACH                         | EACH                       | EACH                       | EACH                     | EACH                   | EACH                    |
| STATION TO STATION | STA 1+25.6 TO 5+00 | LT       |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 5+00 TO 11+00  |          |                           |                                     |                          |                       | 3                            |                            | 3                          |                          | 2                      |                         |
|                    | STA 11+00 TO 17+00 |          |                           |                                     | 2                        | 1                     |                              |                            |                            |                          | 1                      |                         |
|                    | STA 17+00 TO 22+00 |          |                           |                                     |                          |                       |                              |                            |                            | 1                        |                        |                         |
|                    | STA 22+00 TO 28+00 |          |                           |                                     |                          |                       |                              |                            |                            | 1                        |                        |                         |
|                    | STA 28+00 TO 34+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 34+00 TO 37+75 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    |                    |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 1+25.6 TO 5+00 | RT       |                           |                                     | 3                        |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 5+00 TO 11+00  |          |                           |                                     |                          | 2                     | 1                            |                            |                            |                          |                        |                         |
|                    | STA 11+00 TO 17+00 |          |                           |                                     |                          |                       |                              | 3                          |                            |                          |                        |                         |
|                    | STA 17+00 TO 22+00 |          |                           |                                     | 2                        |                       |                              |                            |                            | 2                        |                        |                         |
|                    | STA 22+00 TO 28+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 28+00 TO 34+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 34+00 TO 37+75 |          |                           |                                     |                          |                       |                              |                            |                            | 1                        |                        |                         |
|                    |                    |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 1+25.6 TO 5+00 | MEDIAN   |                           |                                     |                          |                       |                              | 3                          |                            |                          |                        |                         |
|                    | STA 5+00 TO 11+00  |          | 5                         | 3                                   |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 11+00 TO 17+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 17+00 TO 22+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 22+00 TO 28+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 28+00 TO 34+00 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    | STA 34+00 TO 37+75 |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
|                    |                    |          |                           |                                     |                          |                       |                              |                            |                            |                          |                        |                         |
| TOTALS             |                    |          | 5                         | 3                                   | 7                        | 3                     | 4                            | 3                          | 3                          | 3                        | 5                      | 3                       |

SIGNS FIXED MESSAGE

|                          |                                           | 643.1000        |      |      |             |  |
|--------------------------|-------------------------------------------|-----------------|------|------|-------------|--|
|                          |                                           | TRAFFIC CONTROL |      |      |             |  |
|                          |                                           | SIGN SIZE       |      |      | SIGNS FIXED |  |
|                          |                                           | W x H           |      |      | MESSAGE     |  |
| SIGN NO.                 | SIGN MESSAGE                              | (FT) x          | (FT) |      | SF          |  |
| 100                      | W. ATKINSON AVE CLOSED AT W. TEUTONIA AVE | 4.67            | x    | 2.25 | 10.5        |  |
| 101                      | W. ATKINSON AVE CLOSED AT W. TEUTONIA AVE | 4.67            | x    | 2.25 | 10.5        |  |
| 102                      | W. ATKINSON AVE CLOSED AT W. TEUTONIA AVE | 4.67            | x    | 2.25 | 10.5        |  |
| 103                      | W. ATKINSON AVE CLOSED AT W. TEUTONIA AVE | 4.67            | x    | 2.25 | 10.5        |  |
| 104                      | W. ATKINSON AVE CLOSED AT W. TEUTONIA AVE | 4.67            | x    | 2.25 | 10.5        |  |
| PROJECT 2080-00-71 TOTAL |                                           |                 |      |      | 52.5        |  |

Item is category 0010

TRAFFIC CONTROL PROJECT ITEMS

|  |  | 643.0100           |      |
|--|--|--------------------|------|
|  |  | TRAFFIC            |      |
|  |  | CONTROL            |      |
|  |  | (PROJECT)          |      |
|  |  | LOCATION           | EACH |
|  |  | PROJECT 2080-00-71 | 1    |

Item is category 0010

TRAFFIC CONTROL

|                          |      | 643.0300        |        | 643.0420        |       | 643.0500                |      | 643.0600        |        | 643.0705        |        | 643.0715        |       | 643.0900        |  |
|--------------------------|------|-----------------|--------|-----------------|-------|-------------------------|------|-----------------|--------|-----------------|--------|-----------------|-------|-----------------|--|
|                          |      | TRAFFIC CONTROL |        | TRAFFIC CONTROL |       | TRAFFIC CONTROL         |      | TRAFFIC CONTROL |        | TRAFFIC CONTROL |        | TRAFFIC CONTROL |       | TRAFFIC CONTROL |  |
|                          |      | DRUMS           |        | BARRICADES      |       | FLEXIBLE TUBULAR MARKER |      | WARNING LIGHTS  |        | WARNING LIGHTS  |        | WARNING LIGHTS  |       | SIGNS           |  |
|                          |      | DURATION        |        | TYPE III        |       | POSTS                   |      | BASES           |        | TYPE A          |        | TYPE C          |       |                 |  |
| LOCATION                 | DAYS | EACH            | DAYS   | EACH            | DAYS  | EACH                    | EACH | EACH            | EACH   | DAYS            | EACH   | DAYS            | EACH  | DAYS            |  |
| STAGE 1A                 | 61   | 169             | 10,309 | 45              | 2,745 | 129                     | 129  | 90              | 5,490  | 169             | 10,309 | 49              | 2,989 |                 |  |
| STAGE 1B                 | 14   | 175             | 2,450  | 45              | 630   | 129                     | 129  | 90              | 1,260  | 175             | 2,450  | 49              | 686   |                 |  |
| STAGE 2A                 | 61   | 212             | 12,932 | 46              | 2,806 | 149                     | 149  | 92              | 5,612  | 212             | 12,932 | 49              | 2,989 |                 |  |
| STAGE 2B                 | 14   | 206             | 2,884  | 44              | 616   | 149                     | 149  | 88              | 1,232  | 206             | 2,884  | 49              | 686   |                 |  |
| PROJECT 2080-00-71 TOTAL |      |                 | 28,575 |                 | 6,797 | 556                     | 556  |                 | 13,594 |                 | 28,575 |                 | 7,350 |                 |  |

All items in category 0010

| TEMPORARY PAVEMENT MARKING |          |           |          |                       |          |           |           |           |           |
|----------------------------|----------|-----------|----------|-----------------------|----------|-----------|-----------|-----------|-----------|
|                            | 646.0600 | 649.0100  |          | 649.0400              |          | 649.1700  | 649.1800  | 649.1900  | 649.2000  |
|                            | REMOVING | TEMPORARY |          | TEMPORARY             |          | TEMPORARY | TEMPORARY | TEMPORARY | TEMPORARY |
|                            | PAVEMENT | PAVEMENT  |          | PAVEMENT              |          | PAVEMENT  | PAVEMENT  | PAVEMENT  | PAVEMENT  |
|                            | MARKINGS | MARKING   |          | MARKING               |          | MARKING   | MARKING   | MARKING   | MARKING   |
|                            |          | 4-INCH    |          | REMOVABLE TAPE 4-INCH |          | ARROWS    | ARROWS    | WORDS     | WORDS     |
|                            |          | (WHITE)   | (YELLOW) | (WHITE)               | (YELLOW) |           |           |           |           |
| LOCATION                   | LF       | LF        | LF       | LF                    | LF       | EACH      | EACH      | EACH      | EACH      |
| STAGE 1A                   | 6,610    | 3,522     | 6,902    | --                    | --       | 1         | --        | 1         | --        |
| STAGE 2A                   | 193      | --        | --       | 4,041                 | 7,900    | --        | 1         | --        | 1         |
| STAGE 2B                   | --       | --        | --       | --                    | 36       | --        | --        | --        | --        |
| PROJECT 2080-00-71 TOTAL   | 6,803    | 3,522     | 6,902    | 4,041                 | 7,936    | 1         | 1         | 1         | 1         |
|                            |          | 10,424    |          | 11,977                |          |           |           |           |           |

All items in category 0010

| LIST OF TRAFFIC CONTROL SIGNS |        |           |
|-------------------------------|--------|-----------|
| ITEMS                         | AMOUNT | SIZE (")  |
| STAGE 1                       |        |           |
| R3-2                          | 1      | 36" x 36" |
| R3-8E                         | 1      | 36" x 30" |
| R9-9                          | 12     | 36" x 18" |
| R9-10                         | 2      | 48" x 24" |
| R11-2                         | 4      | 48" x 30" |
| W01-4R                        | 1      | 48" x 48" |
| W01-6                         | 8      | 48" x 24" |
| W04-2L                        | 1      | 48" x 48" |
| W20-1                         | 13     | 48" x 48" |
| W20-3A                        | 4      | 48" x 48" |
| W20-3D                        | 1      | 48" x 48" |
| W20-5                         | 1      | 48" x 48" |
| STAGE 1 SUBTOTAL              | 49     |           |
| STAGE 2                       |        |           |
| M1-94                         | 1      | 66" x 15" |
| M4-9L                         | 1      | 30" x 24" |
| R3-8E                         | 1      | 36" x 30" |
| R9-9                          | 14     | 36" x 18" |
| R9-10                         | 5      | 48" x 24" |
| R11-2                         | 5      | 48" x 30" |
| W01-4R                        | 1      | 48" x 48" |
| W01-6                         | 6      | 48" x 24" |
| W04-2R                        | 1      | 36" x 36" |
| W20-1                         | 11     | 48" x 48" |
| W20-3A                        | 5      | 48" x 48" |
| W20-3D                        | 1      | 48" x 48" |
| W20-5                         | 1      | 48" x 48" |
| STAGE 2 SUBTOTAL              | 53     |           |
| PROJECT 2080-00-71 TOTAL      | 102    |           |

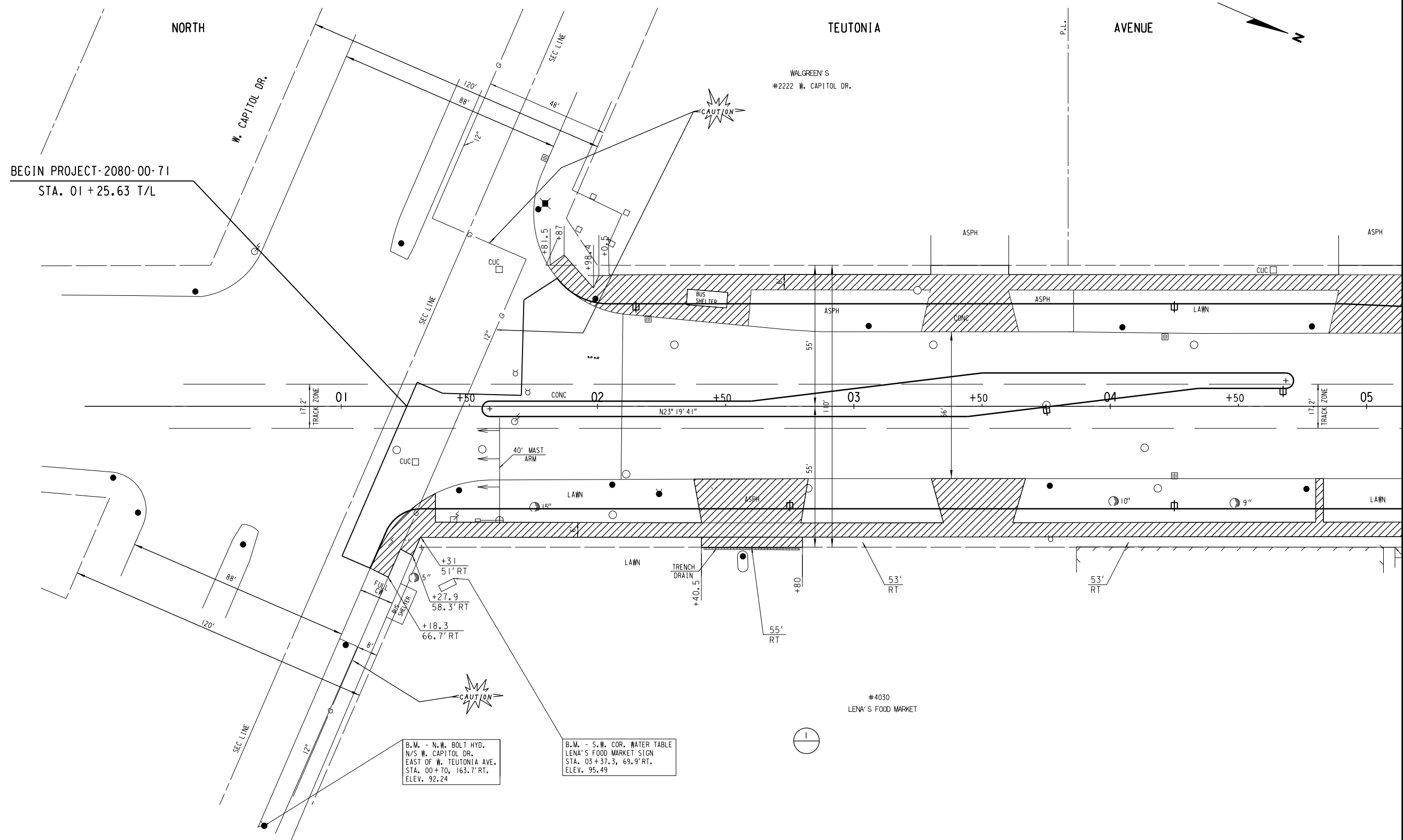
| PAVEMENT MARKING         |   |         |        |                   |          |          |              |                 |                 |          |          |                 |                 |      |       |
|--------------------------|---|---------|--------|-------------------|----------|----------|--------------|-----------------|-----------------|----------|----------|-----------------|-----------------|------|-------|
|                          |   |         |        | 646.0106          | 646.0116 | 646.0126 | 647.0166     | 647.0206        | 647.0306        | 647.0356 | 647.0456 | 647.0576        | 647.0776        |      |       |
|                          |   |         |        | PAVEMENT          | PAVEMENT | PAVEMENT | PAVEMENT     | PAVEMENT        | PAVEMENT        | PAVEMENT | PAVEMENT | PAVEMENT        | PAVEMENT        |      |       |
|                          |   |         |        | MARKING           | MARKING  | MARKING  | MARKING      | MARKING         | MARKING         | MARKING  | MARKING  | MARKING         | MARKING         |      |       |
|                          |   |         |        | EPOXY             | EPOXY    | EPOXY    | ARROWS EPOXY | ARROWS          | SYMBOLS         | WORDS    | CURB     | STOP LINE EPOXY | CROSSWALK EPOXY |      |       |
|                          |   |         |        | 4-INCH            | 6-INCH   | 8-INCH   | TYPE 2       | BIKE LANE EPOXY | BIKE LANE EPOXY | EPOXY    | EPOXY    | 24-INCH         | 12-INCH         |      |       |
|                          |   |         |        | (WHITE)           | (YELLOW) | (WHITE)  | (WHITE)      | (WHITE)         | (WHITE)         | (WHITE)  |          | (WHITE)         | (WHITE)         |      |       |
| STATION                  | - | STATION | OFFSET | LOCATION          | LF       | LF       | LF           | LF              | EACH            | EACH     | EACH     | EACH            | LF              | EACH | LF    |
| 1+25.6                   | - | 17+13   | RT     | N TEUTONIA AVE NB | 1,412    | 576      | 1,068        | 269             | 2               | 6        | 6        | 2               | --              | 82   | 145   |
| 1+27                     | - | 17+13   | LT     | N TEUTONIA AVE SB | 340      | 612      | --           | 335             | 2               | --       | --       | 2               | 381             | 117  | 696   |
| 17+13                    | - | 37+75   | RT/LT  | N TEUTONIA AVE    | 2,578    | 3,481    | 1,577        | --              | --              | 7        | 7        | --              | --              | 91   | 555   |
| PROJECT 2080-00-71 TOTAL |   |         |        |                   | 4,330    | 4,669    | 2,645        | 604             | 4               | 13       | 13       | 4               | 381             | 290  | 1,396 |
|                          |   |         |        |                   | 8,999    |          |              |                 |                 |          |          |                 |                 |      |       |

All items in category 0010

EARTHWORK SUMMARY

| From/To<br>Station | Location         | Excavation Common<br>205.0100 |                   | Unusable<br>Pavement<br>Material | Available<br>Material | Unexp<br>anded<br>Fill | Expanded<br>Fill | Waste  | Borrow |
|--------------------|------------------|-------------------------------|-------------------|----------------------------------|-----------------------|------------------------|------------------|--------|--------|
|                    |                  | Cut                           | EBS<br>Excavation |                                  |                       |                        | 1.20 Factor      |        |        |
|                    |                  | CY                            | CY                | CY                               | CY                    | CY                     | CY               | CY     | CY     |
| 1+25 TO 37+75      | N. Teutonia Ave. | 19,352                        | 0                 | 10,100                           | 9,252                 | 479                    | 575              | 18,777 | 0      |

Excavation Common is the sum of the Cut and EBS Excavation. |  
Unsuable Pavement Material is included in Cut.  
Available Material = Cut - Pavement Material



1 OF 7

NORTH

TEUTONIA

AVENUE

B.M. - HYD. W/S N. TEUTONIA AVE.  
STA. 05+85 LT.  
ELEV. 90.11

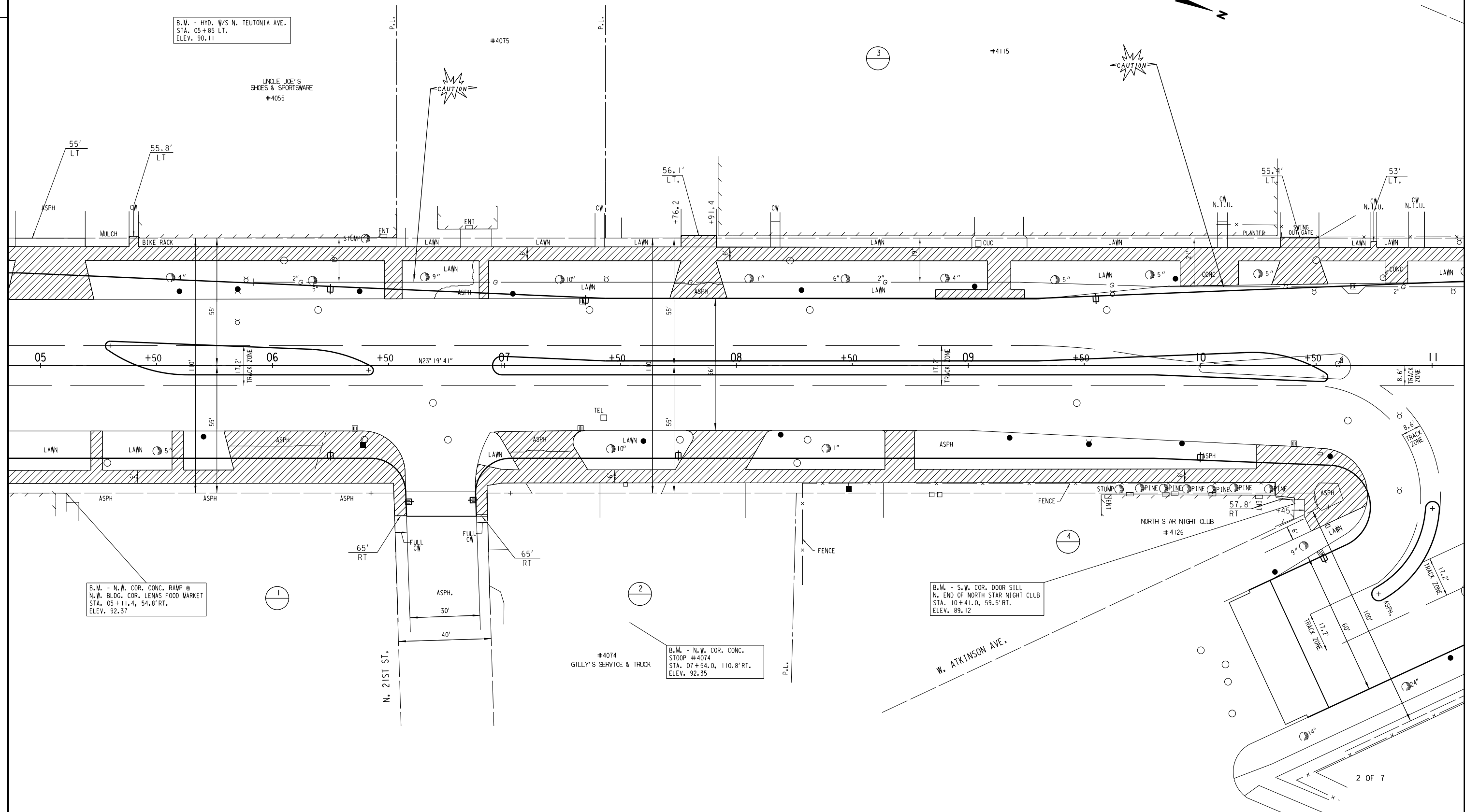
UNCLE JOE'S  
SHOES & SPORTSWARE  
#4055

#4075

#4115

CAUTION

CAUTION

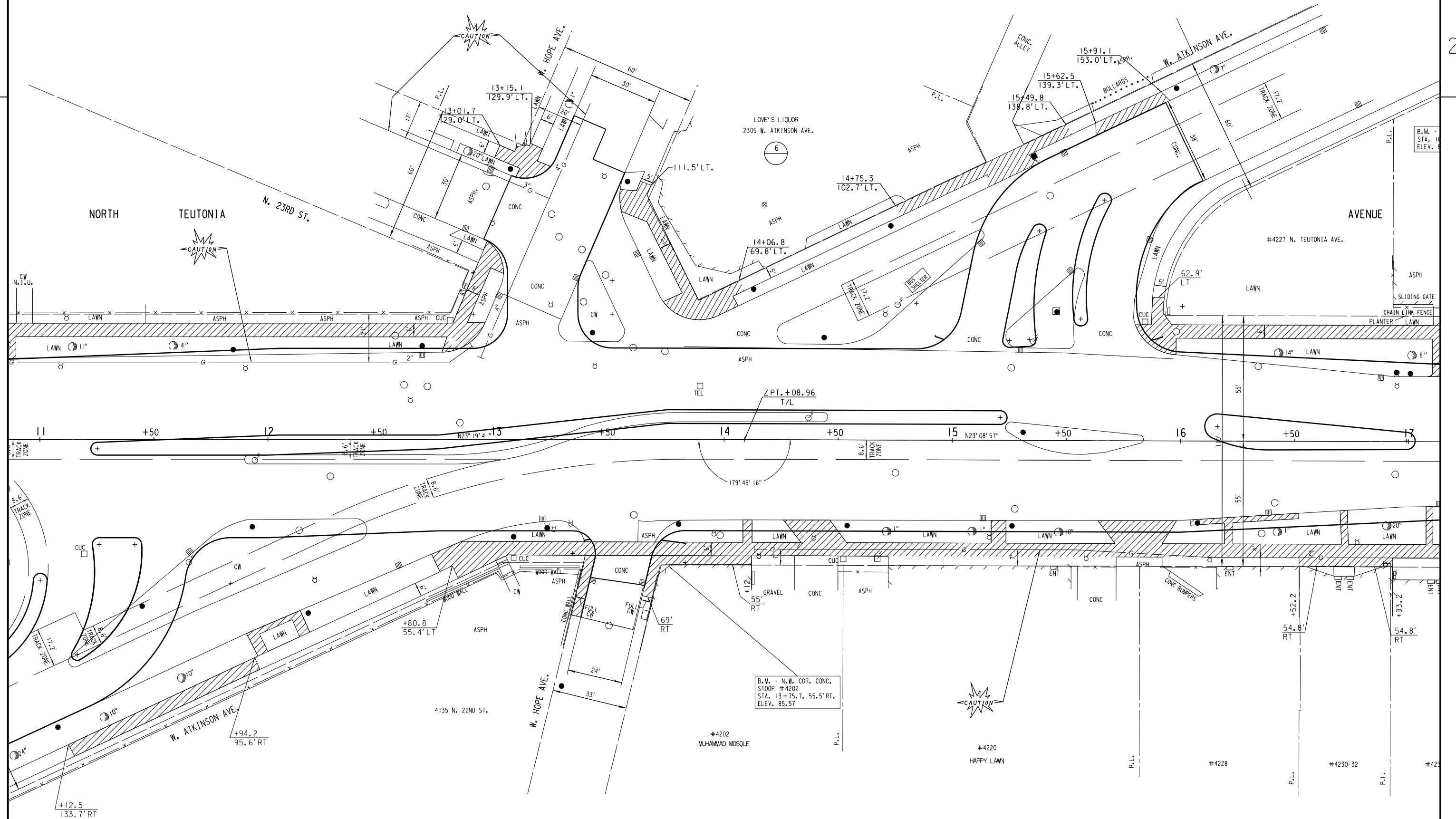


B.M. - N.W. COR. CONC. RAMP @  
N.W. BLDG. COR. LENAS FOOD MARKET  
STA. 05+111.4, 54.8' RT.  
ELEV. 92.37

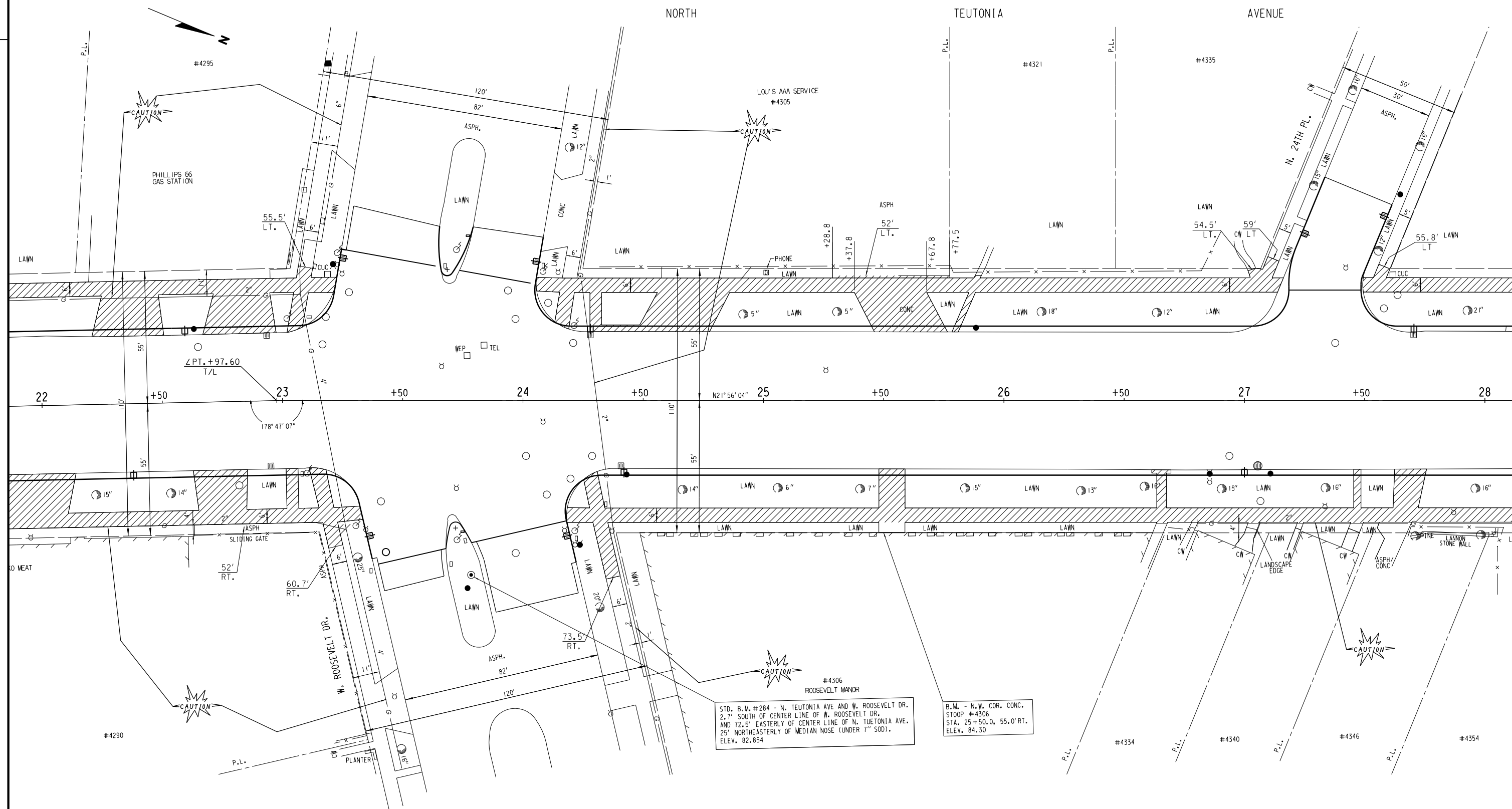
B.M. - S.W. COR. DOOR SILL  
N. END OF NORTH STAR NIGHT CLUB  
STA. 10+41.0, 59.5' RT.  
ELEV. 89.12

#4074  
GILLY'S SERVICE & TRUCK

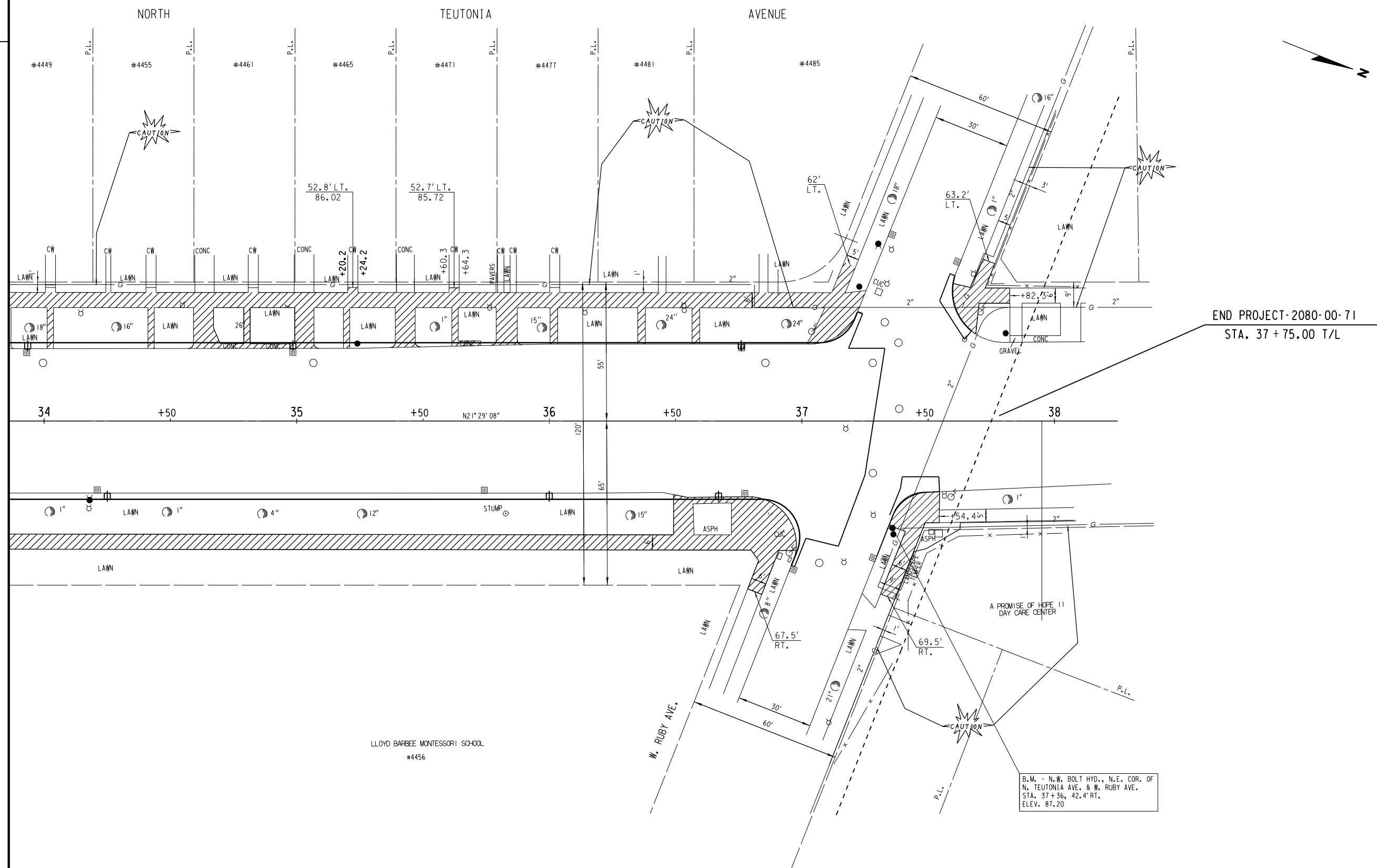
B.M. - N.W. COR. CONC.  
STOOP #4074  
STA. 07+54.0, 110.8' RT.  
ELEV. 92.35



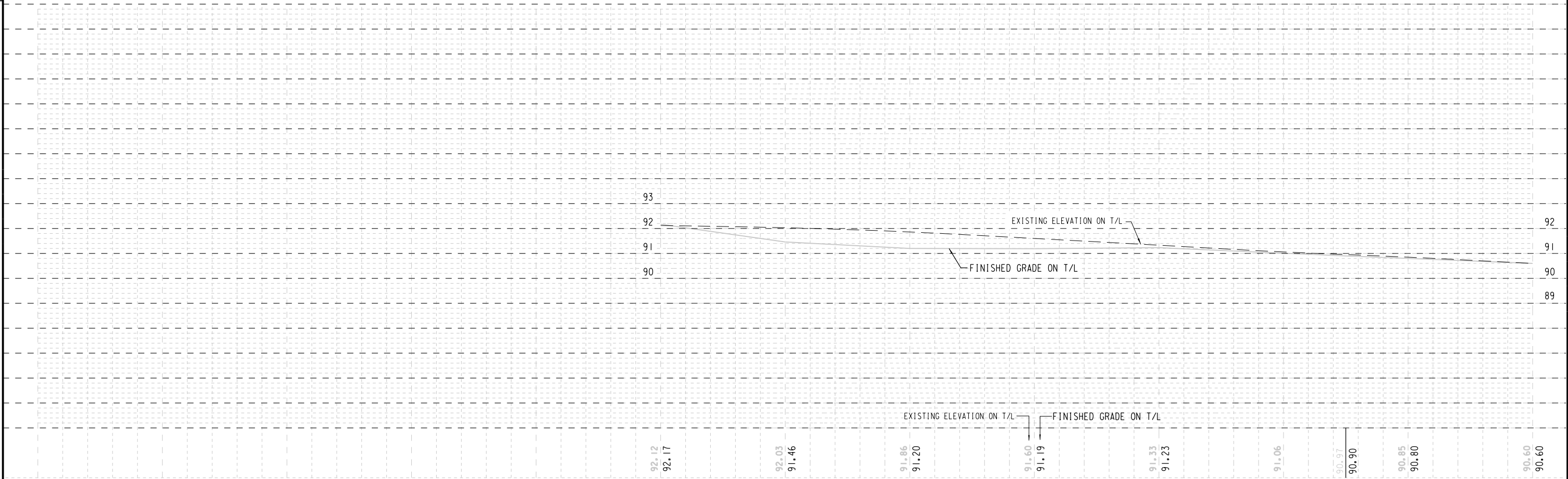




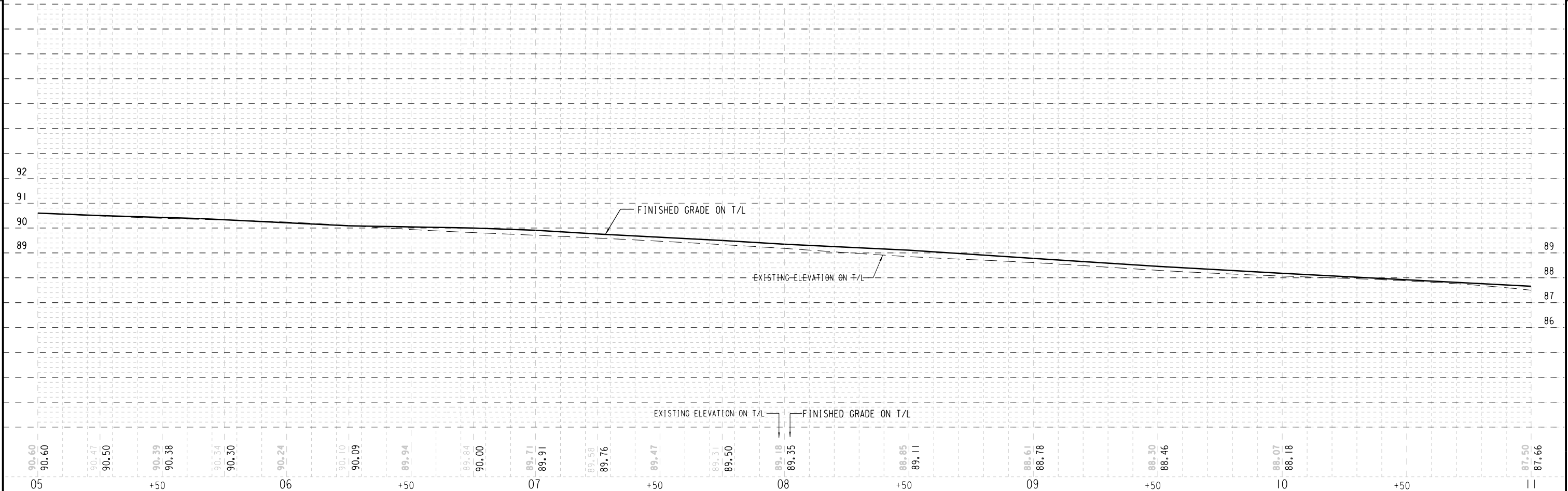




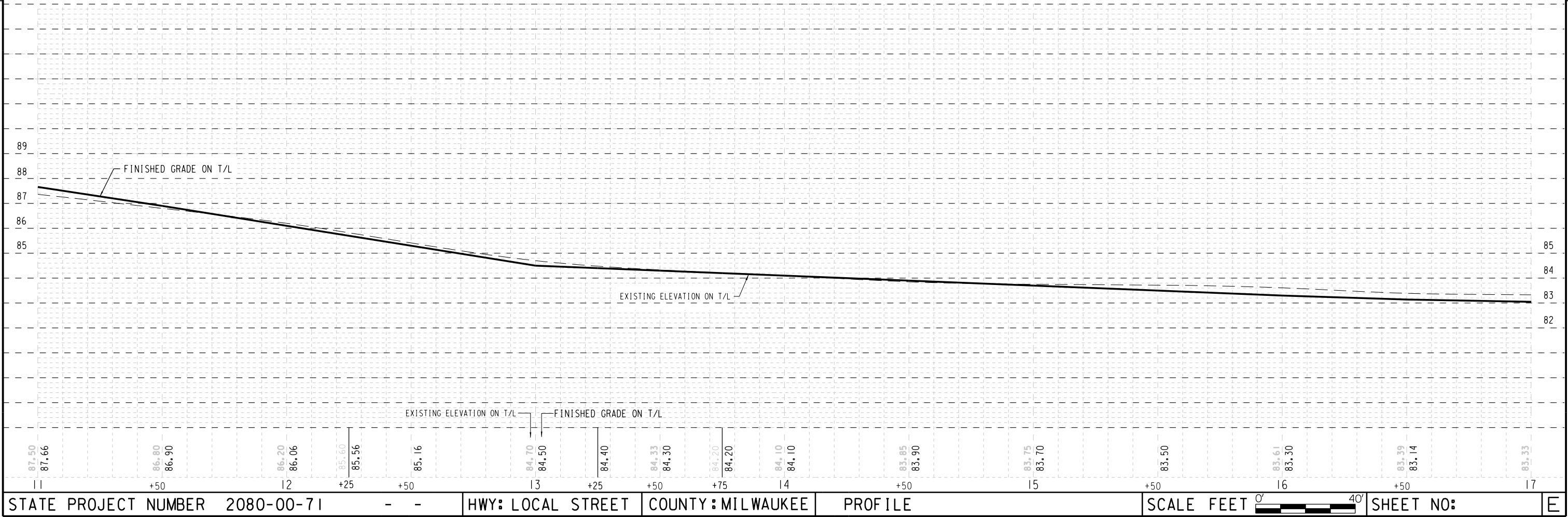




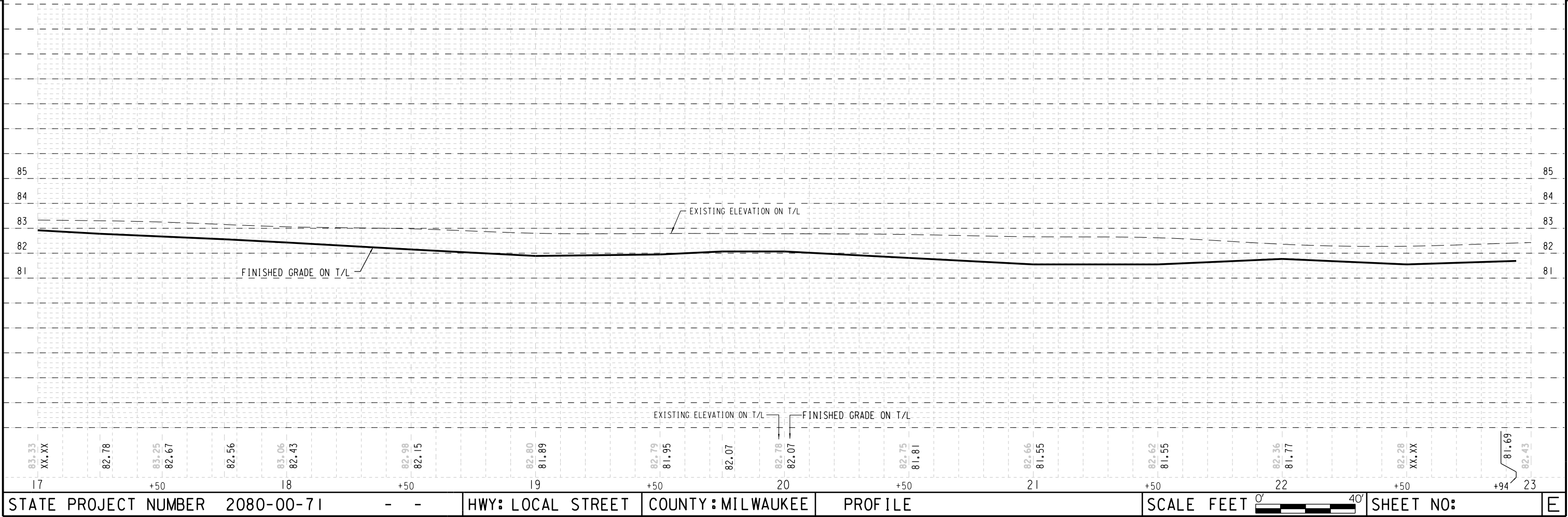


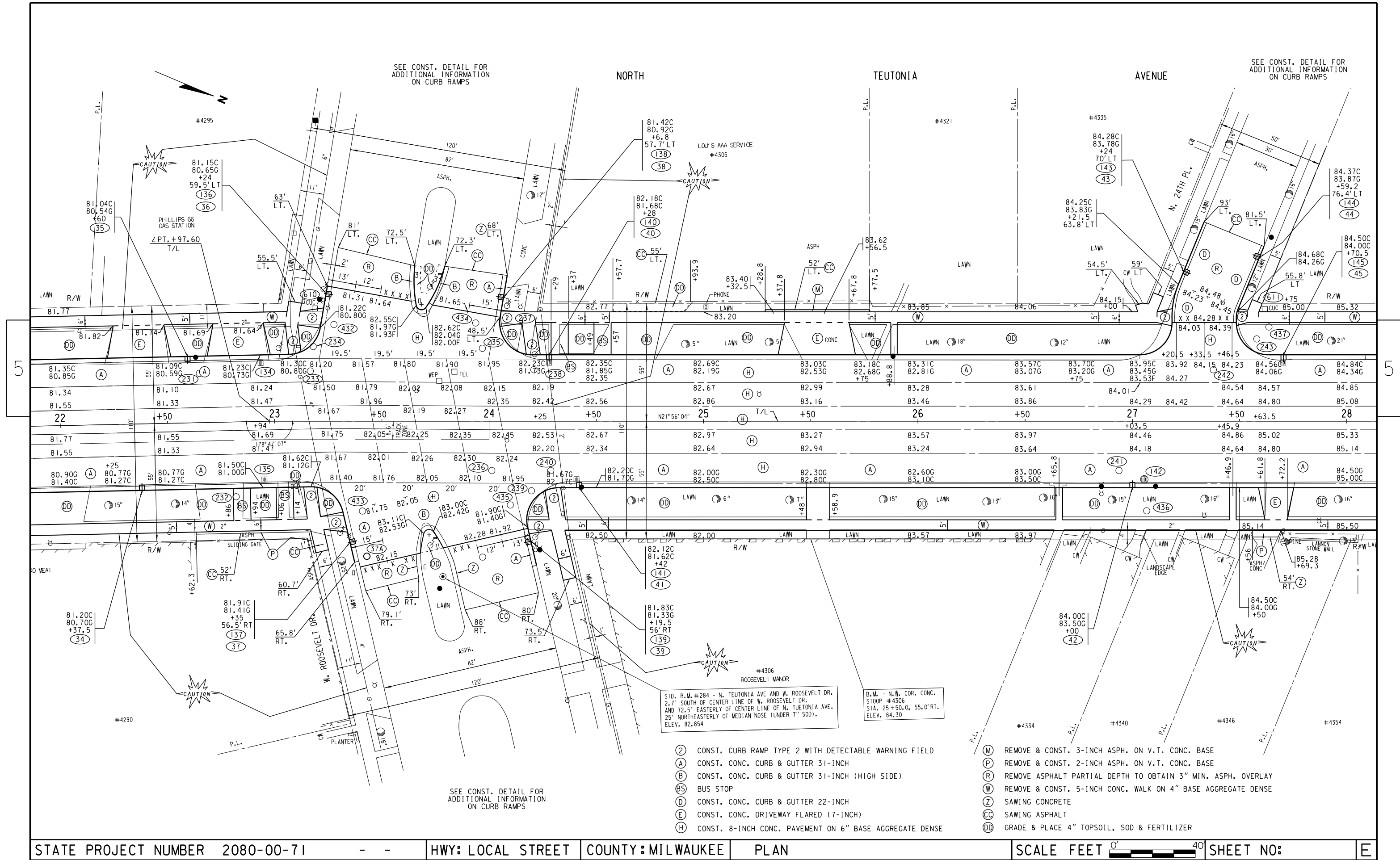


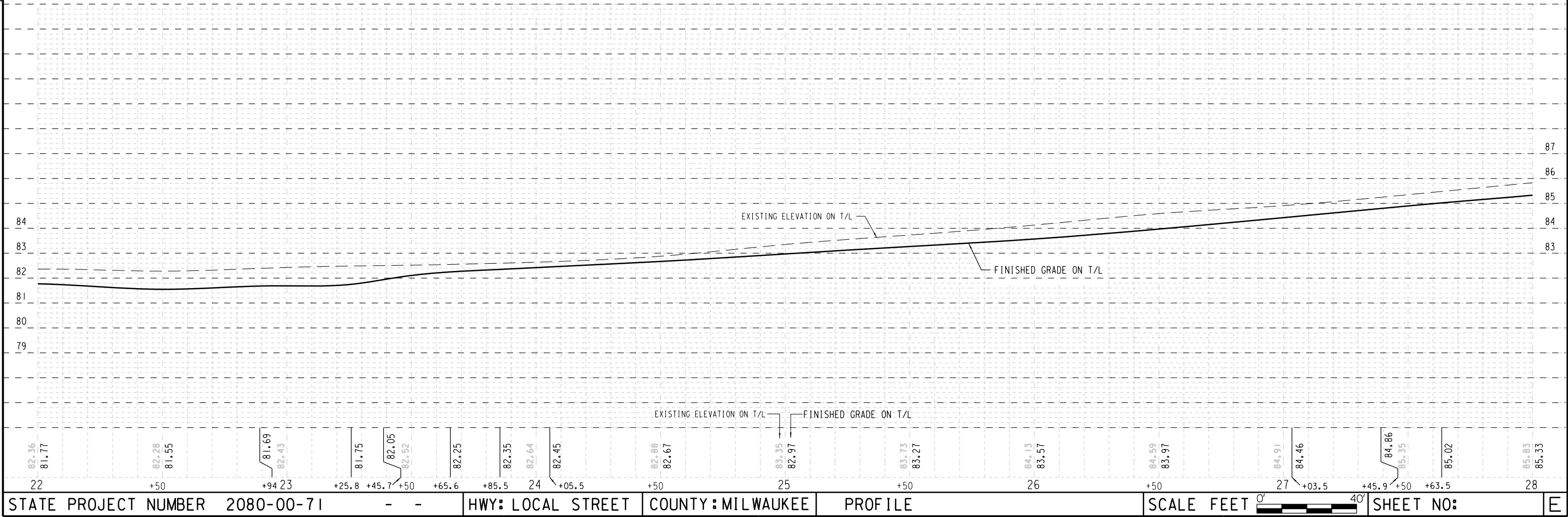


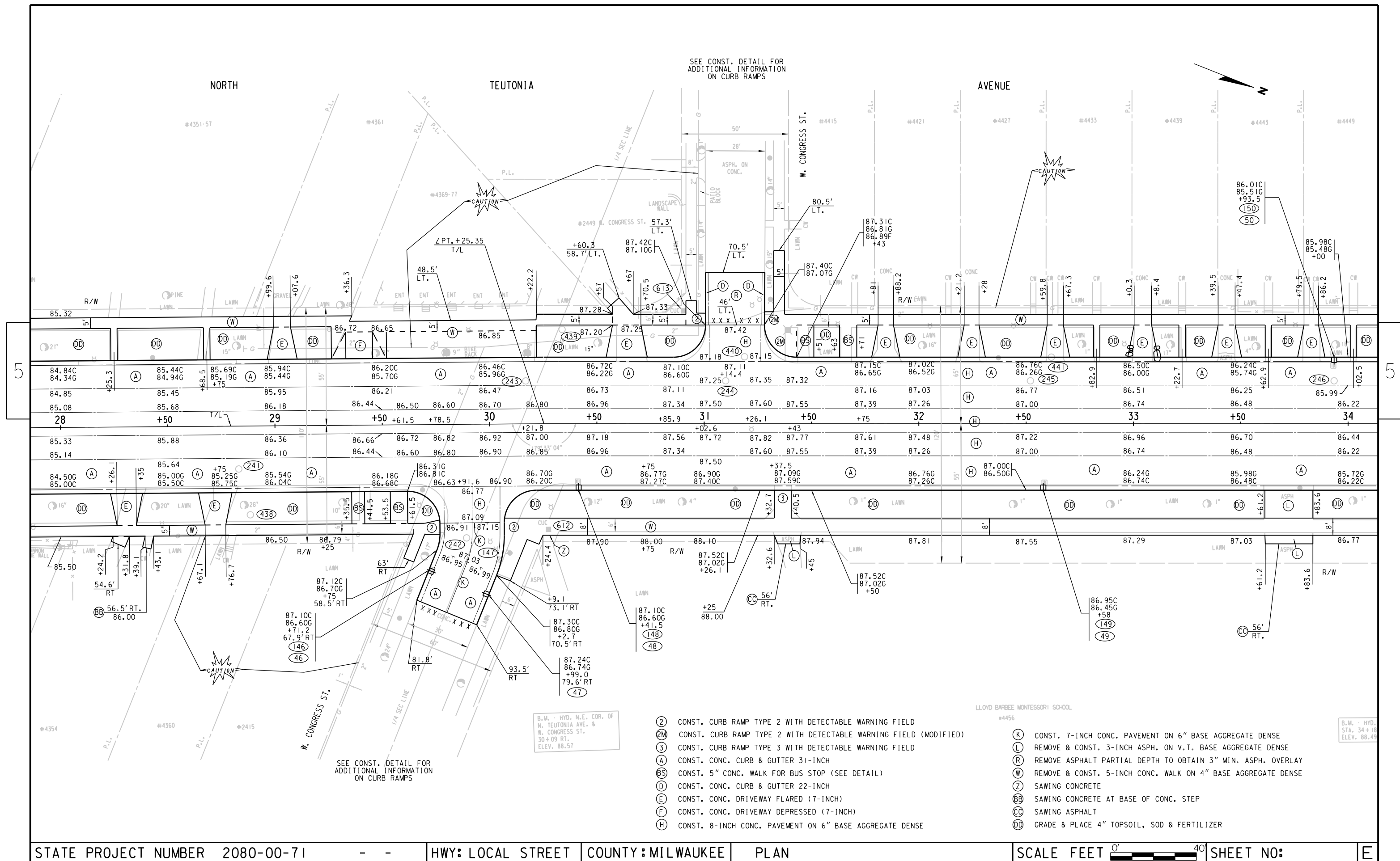


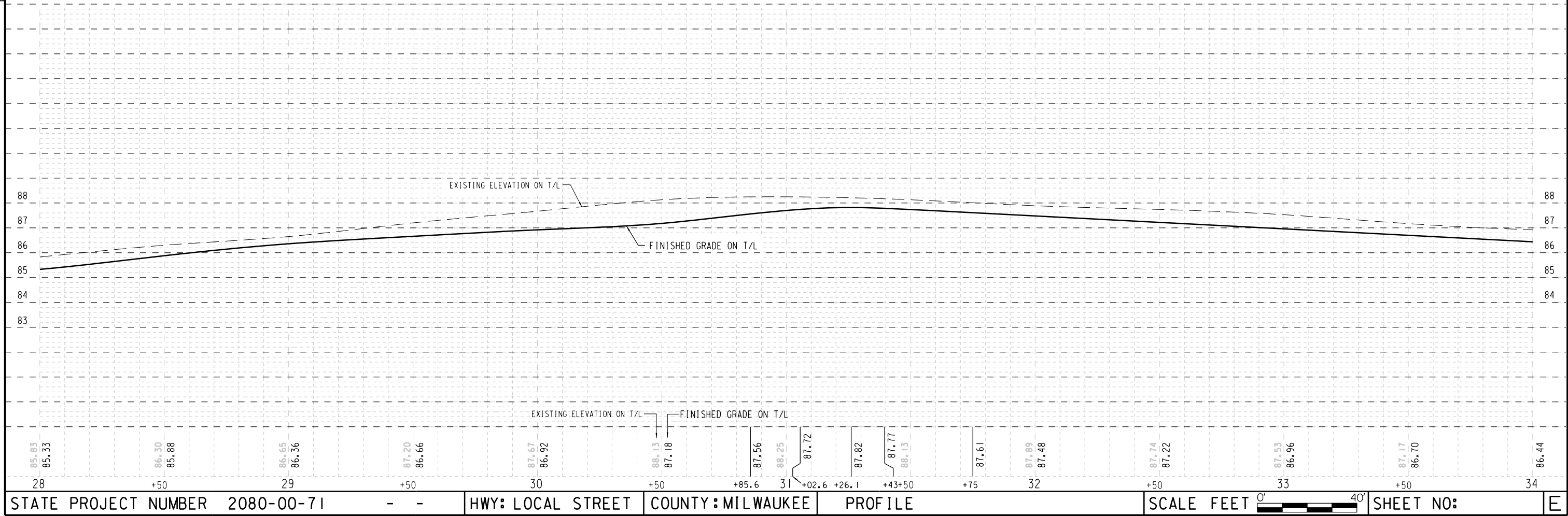


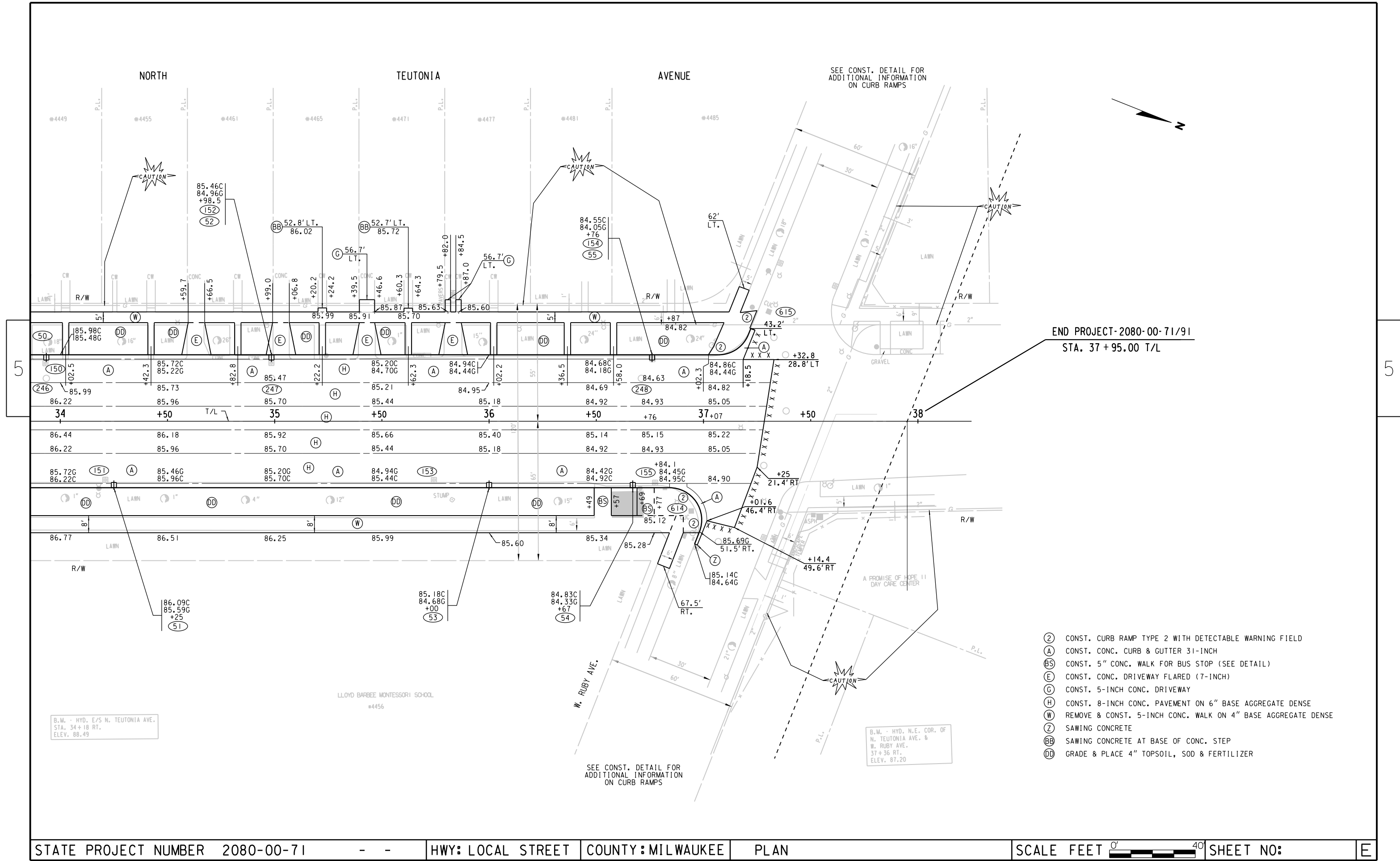


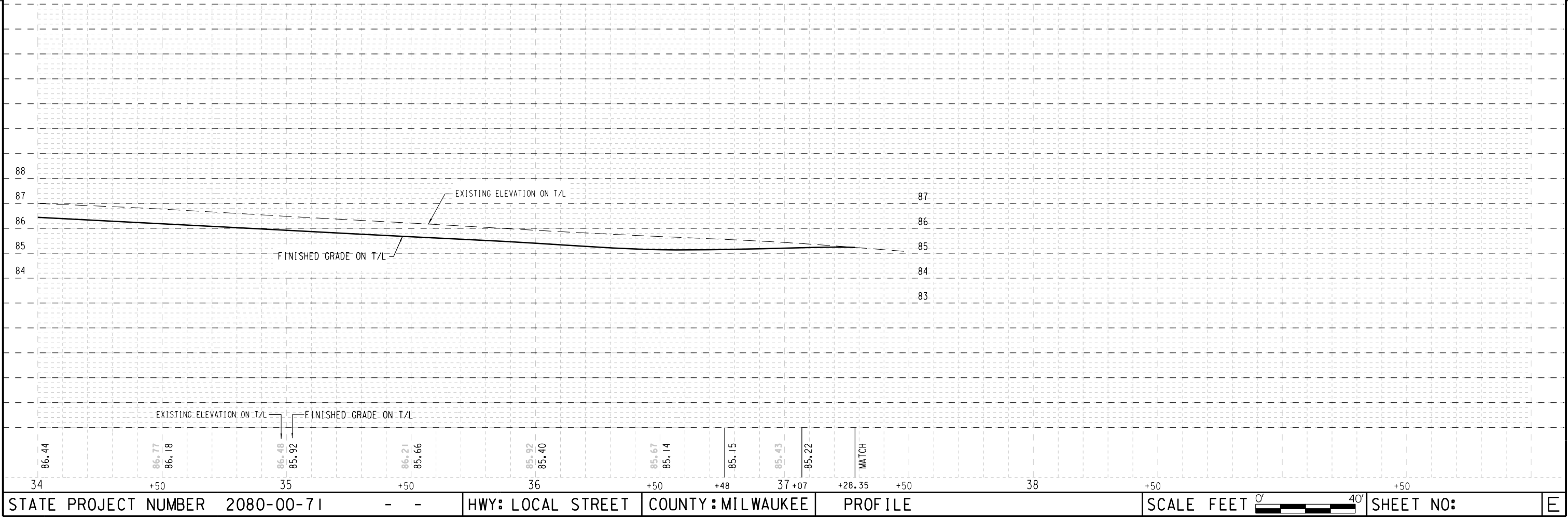










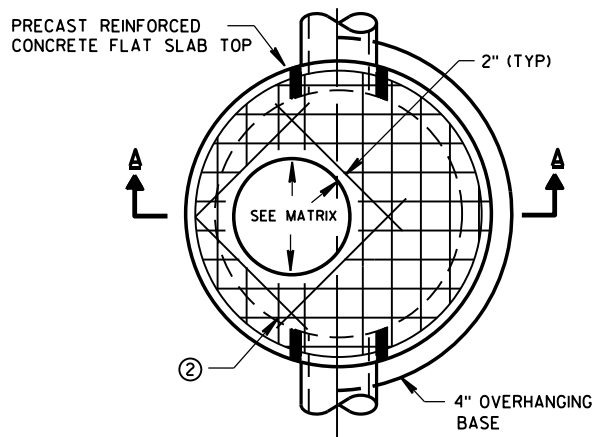


| STATION | CUT<br>C.Y. | FILL (-)<br>C.Y. | LARGEST CUT<br>IN FEET | LARGEST FILL (-)<br>IN FEET |
|---------|-------------|------------------|------------------------|-----------------------------|
|         |             |                  |                        |                             |
| 1+00    | 0           | 0                |                        |                             |
| 1+50    | 56          | 0                | 0.85                   |                             |
| 2+00    | 108         | 0                | 0.90                   |                             |
| 2+50    | 127         | 0                | 0.87                   |                             |
| 3+00    | 127         | 16               | 0.85                   | 0.92                        |
| 3+50    | 127         | 28               | 0.90                   | 0.92                        |
| 4+00    | 127         | 27               | 0.87                   | 0.92                        |
| 4+50    | 127         | 15               | 0.85                   | 0.92                        |
| 5+00    | 127         | 5                | 0.90                   | 0.92                        |
| 5+50    | 125         | 8                | 0.87                   | 0.92                        |
| 6+00    | 121         | 26               | 0.85                   | 0.92                        |
| 6+50    | 118         | 17               | 0.90                   | 0.92                        |
| 7+00    | 141         | 0                | 0.87                   |                             |
| 7+50    | 111         | 14               | 0.85                   | 0.92                        |
| 8+00    | 110         | 12               | 0.90                   | 0.92                        |
| 8+50    | 110         | 12               | 0.87                   | 0.92                        |
| 9+00    | 110         | 12               | 0.85                   | 0.92                        |
| 9+50    | 110         | 13               | 0.90                   | 0.92                        |
| 10+00   | 113         | 16               | 0.87                   | 0.92                        |
| 10+50   | 119         | 21               | 0.85                   | 0.92                        |
| 11+00   | 278         | 0                | 0.90                   |                             |
| 11+50   | 274         | 36               | 0.87                   | 0.92                        |
| 12+00   | 150         | 48               | 0.85                   | 0.92                        |
| 12+50   | 131         | 62               | 0.90                   | 0.92                        |
| 13+00   | 129         | 24               | 0.87                   | 0.92                        |
| 13+50   | 248         | 6                | 0.85                   | 0.92                        |
| 14+00   | 142         | 4                | 0.90                   | 0.92                        |
| 14+50   | 127         | 45               | 0.87                   | 0.92                        |
| 15+00   | 129         | 88               | 0.85                   | 0.92                        |
| 15+50   | 252         | 20               | 0.90                   | 0.92                        |
| 16+00   | 278         | 0                | 0.87                   |                             |
| 16+50   | 122         | 0                | 0.85                   |                             |
| 17+00   | 114         | 0                | 0.90                   |                             |
| 17+50   | 115         | 0                | 0.87                   |                             |
| 18+00   | 107         | 0                | 0.85                   |                             |
| 18+50   | 104         | 0                | 0.90                   |                             |
| 19+00   | 97          | 0                | 0.87                   |                             |
| 19+50   | 100         | 0                | 0.85                   |                             |

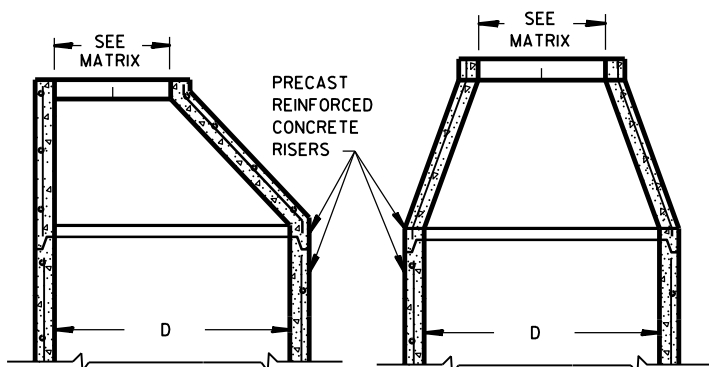
| STATION | CUT<br>C.Y. | FILL (-)<br>C.Y. | LARGEST CUT<br>IN FEET | LARGEST FILL (-)<br>IN FEET |
|---------|-------------|------------------|------------------------|-----------------------------|
|         |             |                  |                        |                             |
| 20+50   | 107         | 0                | 0.87                   |                             |
| 21+00   | 113         | 0                | 0.85                   |                             |
| 21+50   | 107         | 0                | 0.90                   |                             |
| 22+00   | 104         | 0                | 0.87                   |                             |
| 22+50   | 96          | 0                | 0.85                   |                             |
| 23+00   | 97          | 0                | 0.90                   |                             |
| 23+50   | 222         | 0                | 0.87                   |                             |
| 24+00   | 207         | 0                | 0.87                   |                             |
| 24+50   | 130         | 0                | 0.85                   |                             |
| 25+00   | 130         | 0                | 0.90                   |                             |
| 25+50   | 111         | 0                | 0.87                   |                             |
| 26+00   | 109         | 0                | 0.87                   |                             |
| 26+50   | 107         | 0                | 0.85                   |                             |
| 27+00   | 106         | 0                | 0.90                   |                             |
| 27+50   | 104         | 0                | 0.87                   |                             |
| 28+00   | 102         | 0                | 0.87                   |                             |
| 28+50   | 107         | 0                | 0.85                   |                             |
| 29+00   | 104         | 0                | 0.90                   |                             |
| 29+50   | 107         | 0                | 0.87                   |                             |
| 30+00   | 111         | 0                | 0.87                   |                             |
| 30+50   | 119         | 0                | 0.85                   |                             |
| 31+00   | 115         | 0                | 0.90                   |                             |
| 31+50   | 115         | 0                | 0.87                   |                             |
| 32+00   | 115         | 0                | 0.87                   |                             |
| 32+50   | 119         | 0                | 0.85                   |                             |
| 33+00   | 119         | 0                | 0.90                   |                             |
| 33+50   | 119         | 0                | 0.87                   |                             |
| 34+00   | 119         | 0                | 0.87                   |                             |
| 34+50   | 119         | 0                | 0.85                   |                             |
| 35+00   | 115         | 0                | 0.90                   |                             |
| 35+50   | 100         | 0                | 0.87                   |                             |
| 36+00   | 119         | 0                | 0.87                   |                             |
| 36+50   | 100         | 0                | 0.85                   |                             |
| 37+00   | 104         | 0                | 0.90                   |                             |
| 37+50   | 56          | 0                | 0.87                   |                             |
|         |             |                  |                        |                             |
| TOTAL   | 9252        | 575              |                        |                             |

Standard Detail Drawing List

|           |                                                         |
|-----------|---------------------------------------------------------|
| 08B09-01  | MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER |
| 08C06-01  | INLETS 3-FT AND 4-FT DIAMETER                           |
| 08D01-17  | CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES        |
| 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      |
| 09B02-08  | CONDUIT UNDER PAVED HIGHWAYS                            |
| 13C04-16  | URBAN NON-DOWELED CONCRETE PAVEMENT                     |
| 13C15-05A | CONCRETE BASE                                           |
| 13C18-02A | CONCRETE PAVEMENT JOINTING                              |
| 13C18-02B | CONCRETE PAVEMENT STEEL REINFORCEMENT                   |
| 13C18-02C | CONCRETE PAVEMENT JOINT TIES                            |
| 13C18-02D | CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES          |
| 14A02-01  | TREE PLANTING DETAIL                                    |
| 15C03-02  | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES              |
| 15C07-12A | PAVEMENT MARKING SYMBOLS                                |
| 15C07-12B | PAVEMENT MARKING WORDS                                  |
| 15C07-12C | PAVEMENT MARKING ARROWS                                 |
| 15C08-16A | PAVEMENT MARKING (MAINLINE)                             |
| 15C08-16B | PAVEMENT MARKING (INTERSECTIONS)                        |
| 15C11-05  | FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES            |
| 15C29-03A | BICYCLE LANE MARKING                                    |
| 15C29-03B | BICYCLE LANE MARKING                                    |
| 15C29-03C | URBAN BICYCLE LANE MARKING                              |
| 15C29-03D | URBAN BICYCLE LANE MARKING                              |
| 15C29-03E | PAVEMENT MARKING FOR BIKE LANES                         |
| 15C33-01  | STOP LINE AND CROSSWALK PAVEMENT MARKING                |

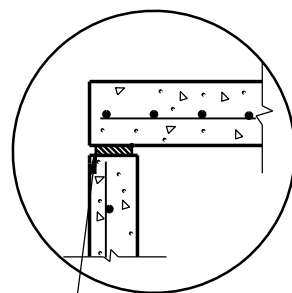


PLAN VIEW CIRCULAR OPENING

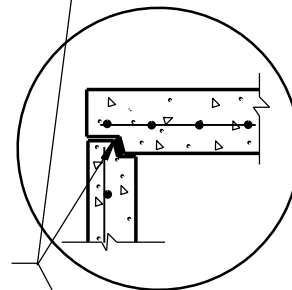


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

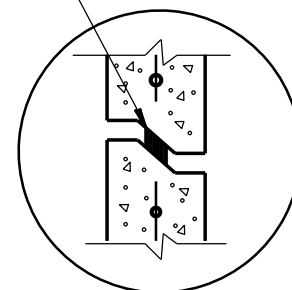
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT



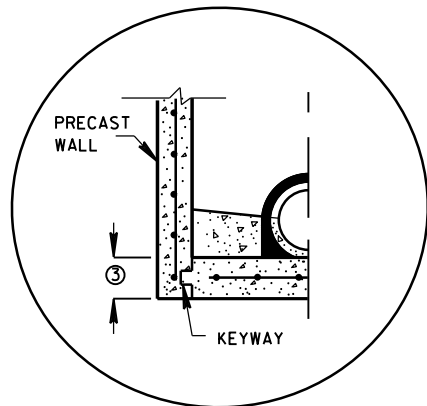
TOP WITH TONGUE AND GROOVE JOINT



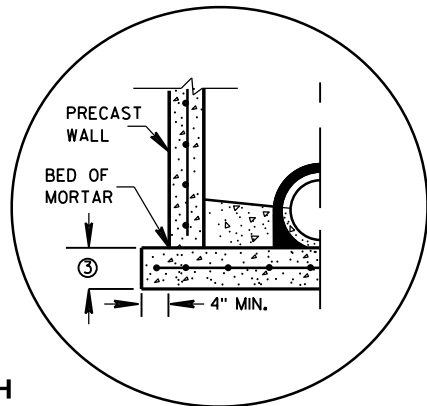
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

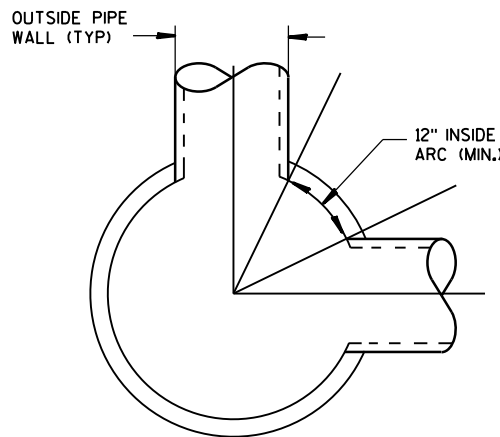


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

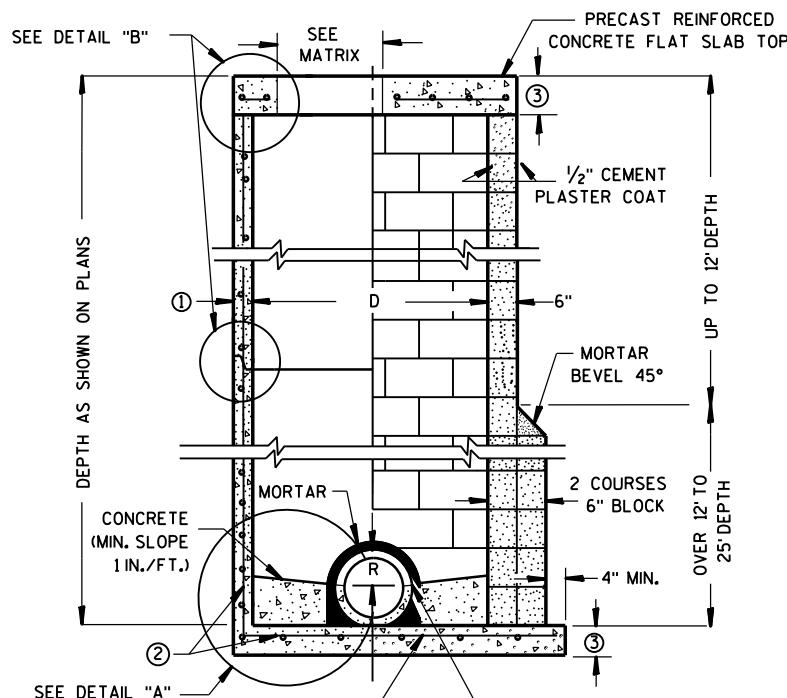


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES

PRECAST REINFORCED CONCRETE BLOCK WITH CONCRETE WITH MONOLITHIC BASE CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- ② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

| MANHOLE COVER TYPE | C | ALL J'S | K | L | M |
|--------------------|---|---------|---|---|---|
| OPENING SIZE (FT)  |   |         |   |   |   |
| 2 DIA.             | X | X       |   | X |   |
| 3 DIA.             |   |         | X |   | X |

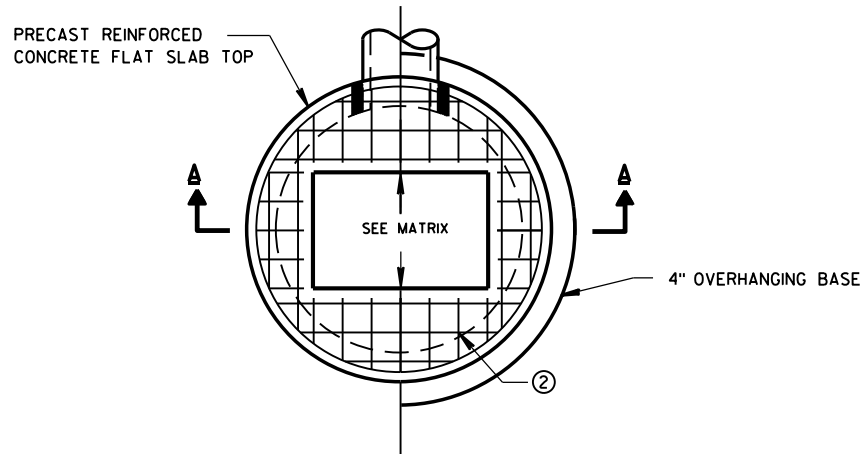
PIPE MATRIX

| MANHOLE SIZE | MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES |                     |
|--------------|--------------------------------------------|---------------------|
|              | 180° SEPARATION (IN)                       | 90° SEPARATION (IN) |
| 3-FT         | 15                                         | 12                  |
| 4-FT         | 24                                         | 18                  |
| 5-FT         | 36                                         | 24                  |
| 6-FT         | 42                                         | 36                  |
| 7-FT         | 48                                         | 36                  |
| 8-FT         | 60                                         | 42                  |

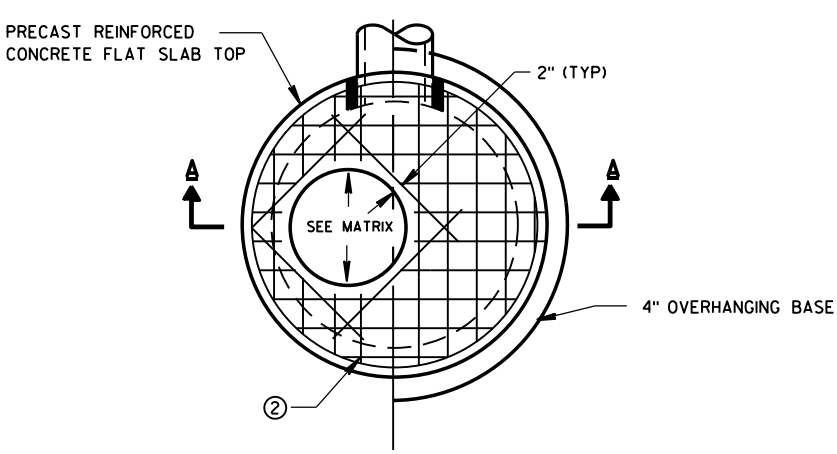
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/5/2012 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA ENGINEER

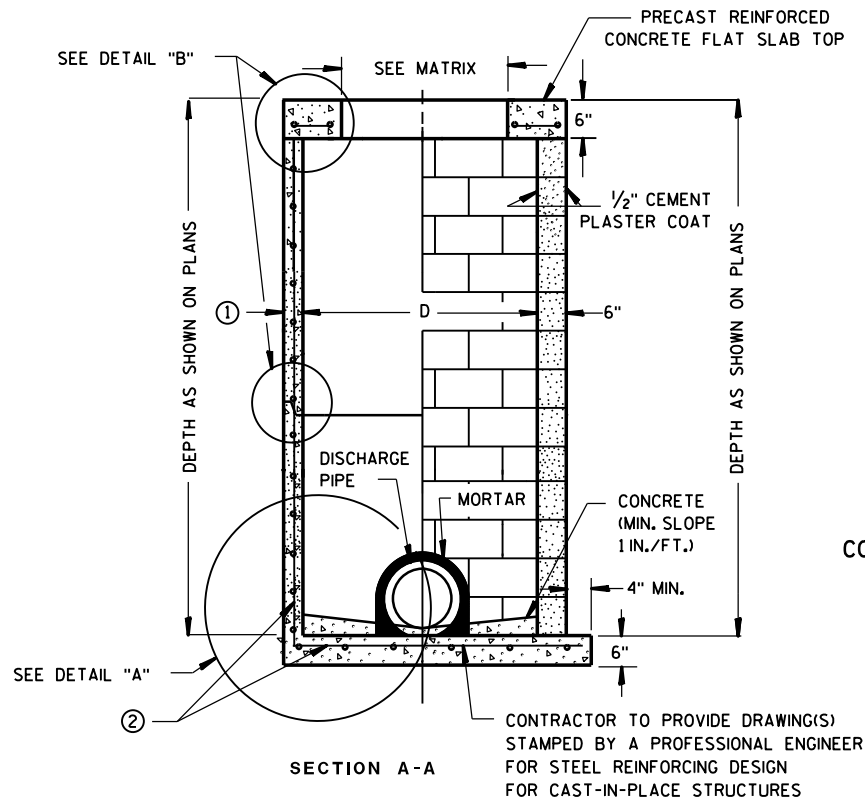


PLAN VIEW RECTANGULAR OPENING



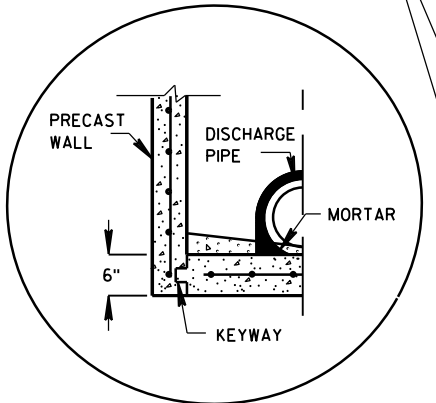
PLAN VIEW CIRCULAR OPENING

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

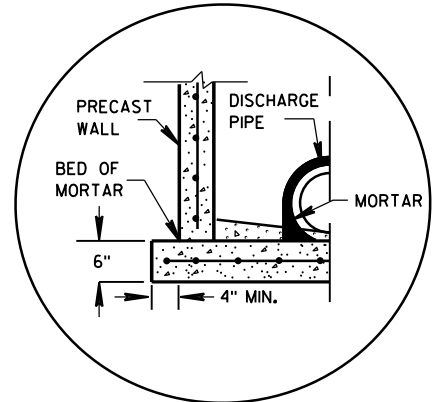


**PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE**      **CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②**

CIRCULAR INLETS W/ FLAT TOP

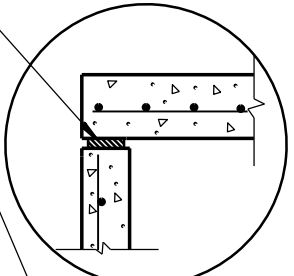


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

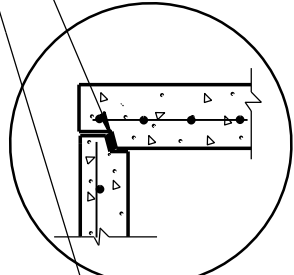


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

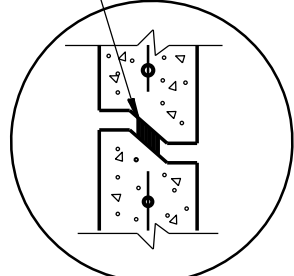
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER

GENERAL NOTES

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

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

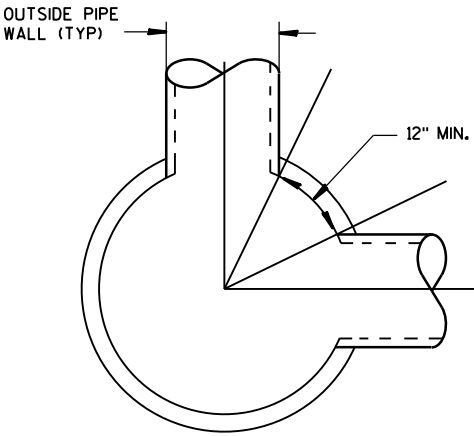
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

|            | INLET COVER TYPE  | ALL A'S | ALL B'S | BW | C | F | ALL H'S | S | T | V | WM | Z |
|------------|-------------------|---------|---------|----|---|---|---------|---|---|---|----|---|
| INLET SIZE | OPENING SIZE (FT) |         |         |    |   |   |         |   |   |   |    |   |
| 3-FT       | 2 DIA.            |         |         |    | X |   |         |   |   |   |    | X |
|            | 2X2               | X       | X       |    |   |   |         | X |   | X |    |   |
| 4-FT       | 2 DIA.            |         |         |    | X |   |         |   |   |   |    | X |
|            | 2X2               | X       | X       |    |   |   |         | X | X | X | X  |   |
|            | 2X2.5             |         |         | X  |   |   |         |   |   |   |    |   |
|            | 2X3               |         |         |    |   |   | X       |   |   |   |    |   |
|            | 2.5X3             |         |         |    |   | X |         |   |   |   |    |   |



DETAIL "C"

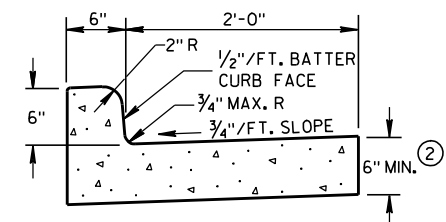
PIPE MATRIX

| INLET SIZE | MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES |                     |
|------------|--------------------------------------------|---------------------|
|            | 180° SEPARATION (IN)                       | 90° SEPARATION (IN) |
| 3-FT       | 15                                         | 12                  |
| 4-FT       | 24                                         | 18                  |

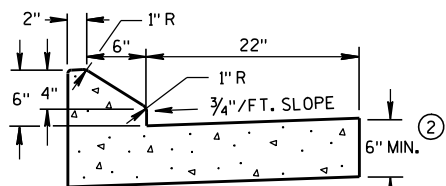
INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

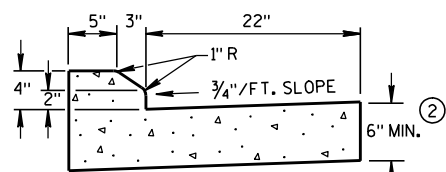
APPROVED  
6/5/2012 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



TYPES A &amp; D ①



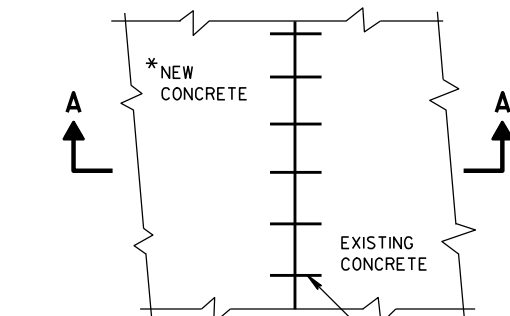
6" SLOPED CURB TYPES G &amp; J ①



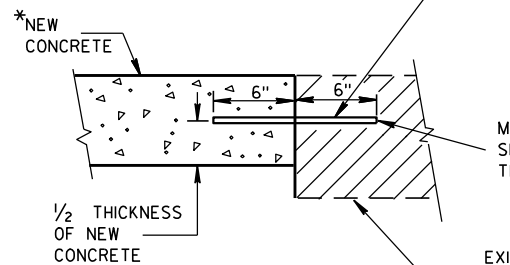
4" SLOPED CURB TYPES G &amp; J ①

CONCRETE CURB &amp; GUTTER 30"

\* NEW CURB & GUTTER,  
SURFACE DRAINS,  
CONCRETE PAVEMENT  
OR OTHER NEW CONCRETE.



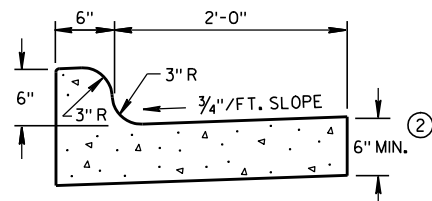
PLAN VIEW

SECTION A-A  
TIE BARS DRILLED  
INTO EXISTING PAVEMENT

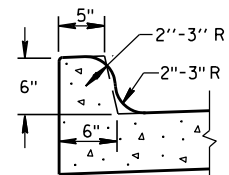
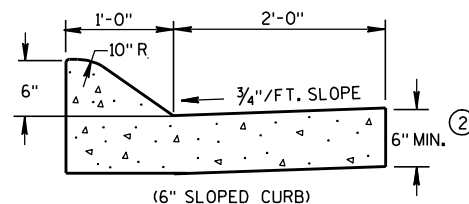
NO. 6 TIE BARS SPACED 2'-6" C-C,  
INSTALLED PERPENDICULAR  
TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE  
SIZE IS 1/8" GREATER  
THAN TIE BAR DIAMETER

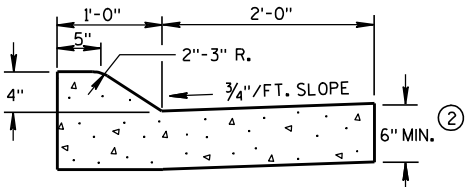
EXISTING  
CONCRETE



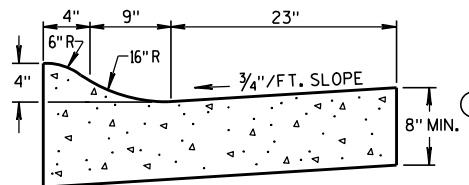
TYPES K &amp; L ①

OPTIONAL CURB SHAPE  
FOR TYPES K & L ①

(6" SLOPED CURB)

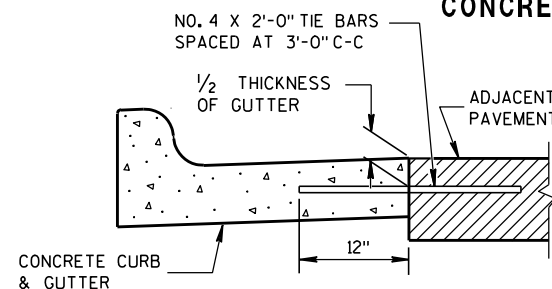


TYPES A &amp; D ①

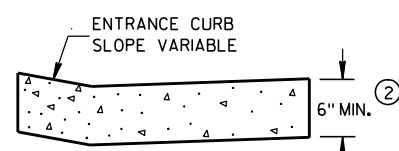


4" SLOPED CURB TYPES R &amp; T ① ④

CONCRETE CURB &amp; GUTTER 36"

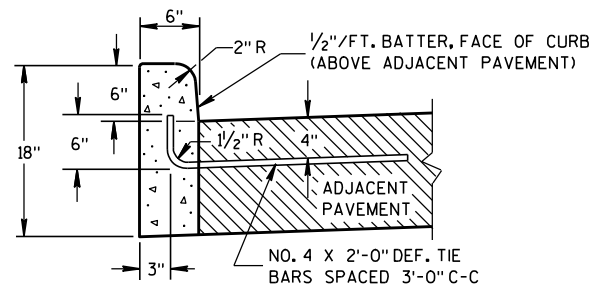


TYPICAL TIE BAR LOCATION ①



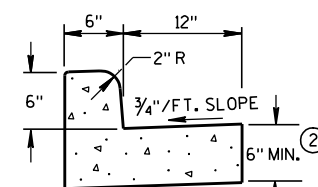
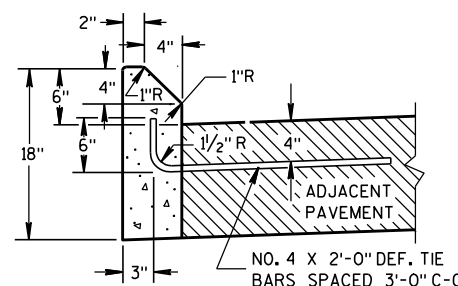
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



TYPES A &amp; D ①

CONCRETE CURB

TYPES A & D  
CONCRETE CURB & GUTTER 18"

TYPES G &amp; J ①

## GENERAL NOTES

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

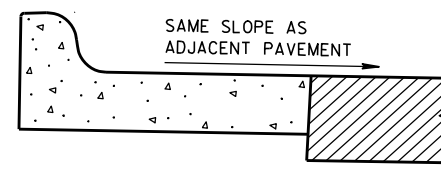
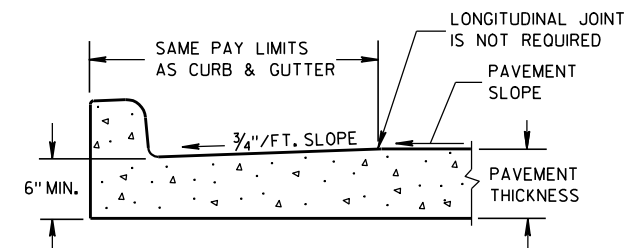
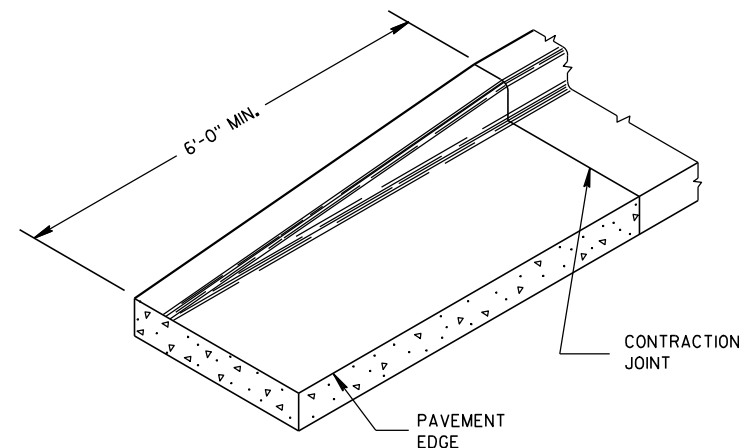
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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 AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

REVERSE SLOPE GUTTER ⑤  
(TYPICAL FOR ALL CURB & GUTTER TYPES)PARTIAL SECTION OF PAVEMENT  
WITH INTEGRAL CURB & GUTTER

END SECTION CURB &amp; GUTTER

CONCRETE CURB, CONCRETE  
CURB & GUTTER AND TIES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

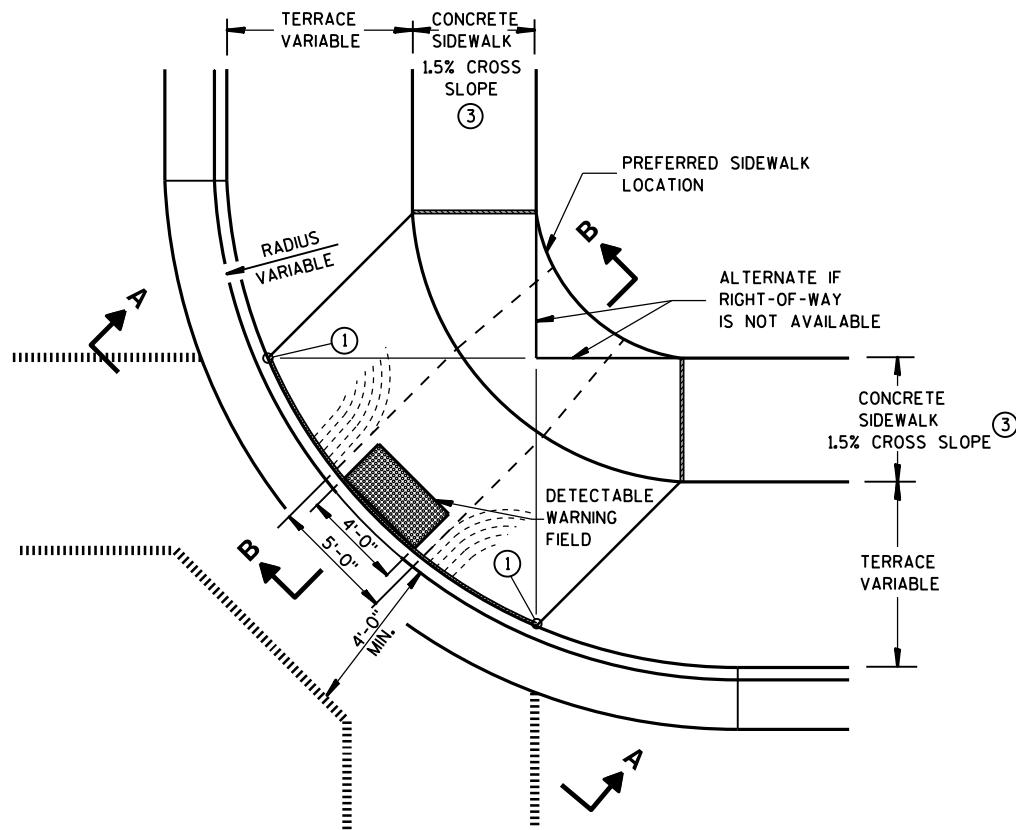
APPROVED

9/4/08

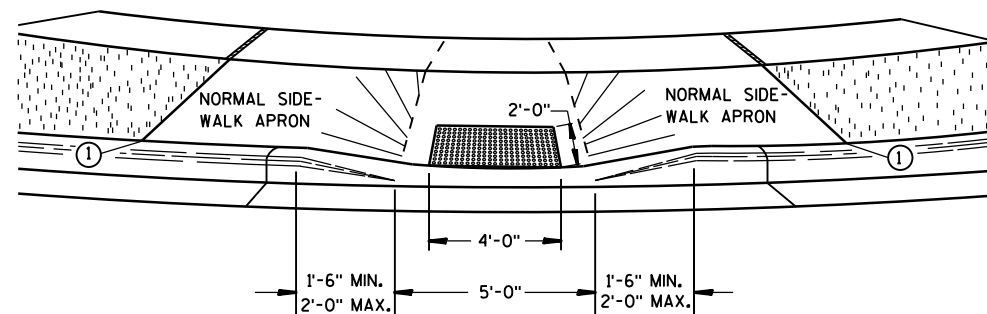
DATE

FHWA

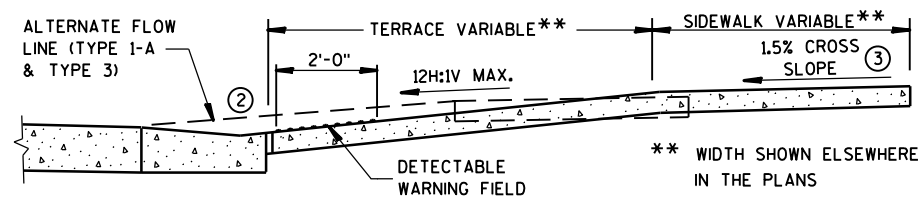
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



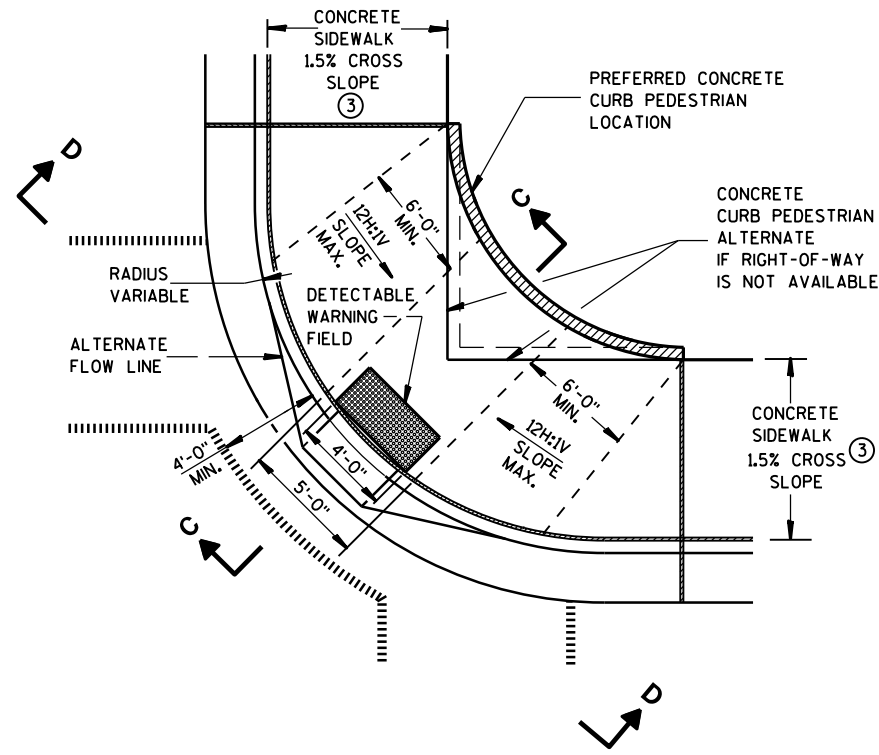
**PLAN VIEW  
TYPE 1 RAMP**  
(CENTER OF CORNER RADIUS)



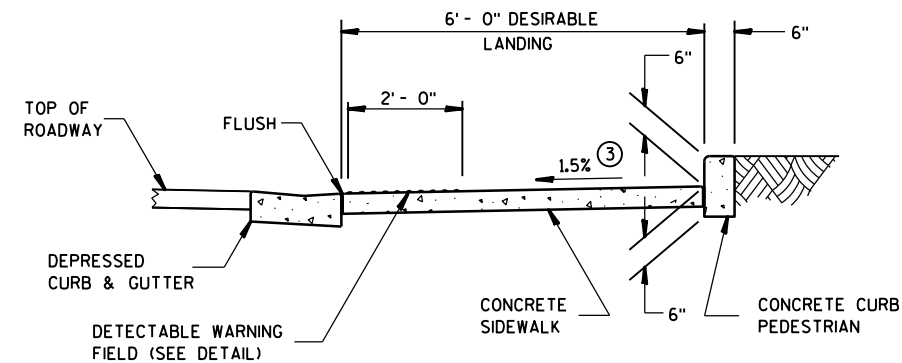
**VIEW A-A**



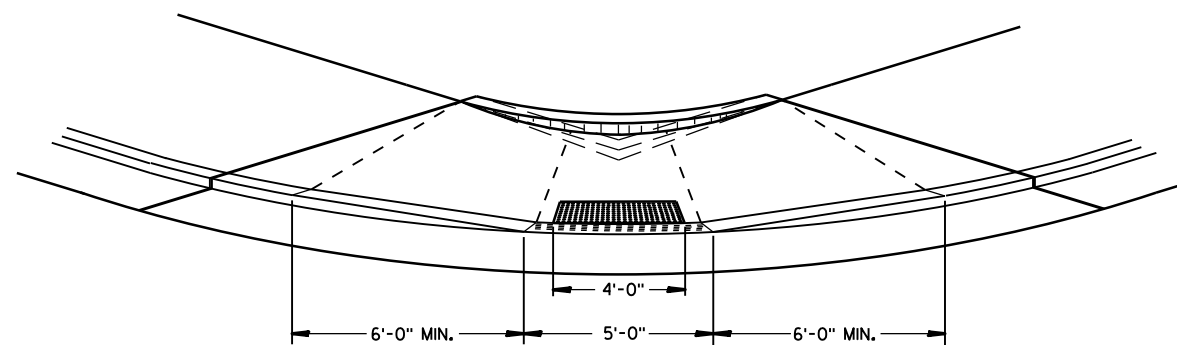
**SECTION B-B**



**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.

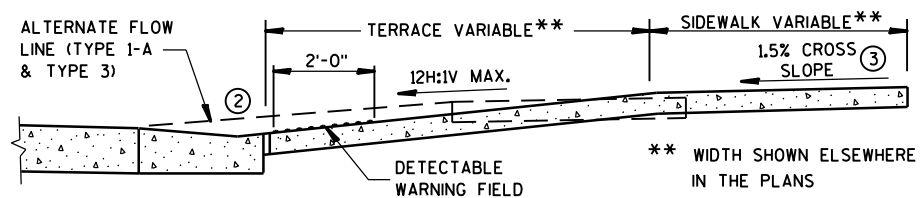
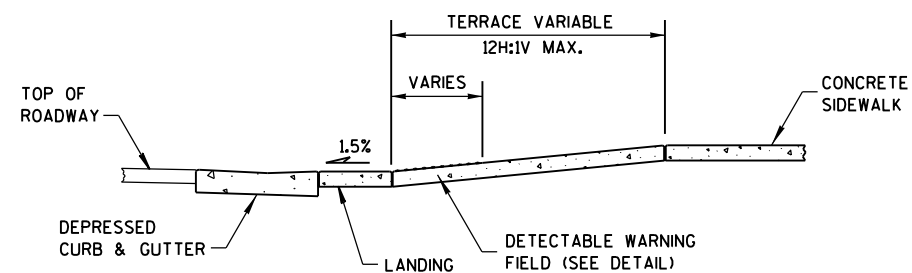
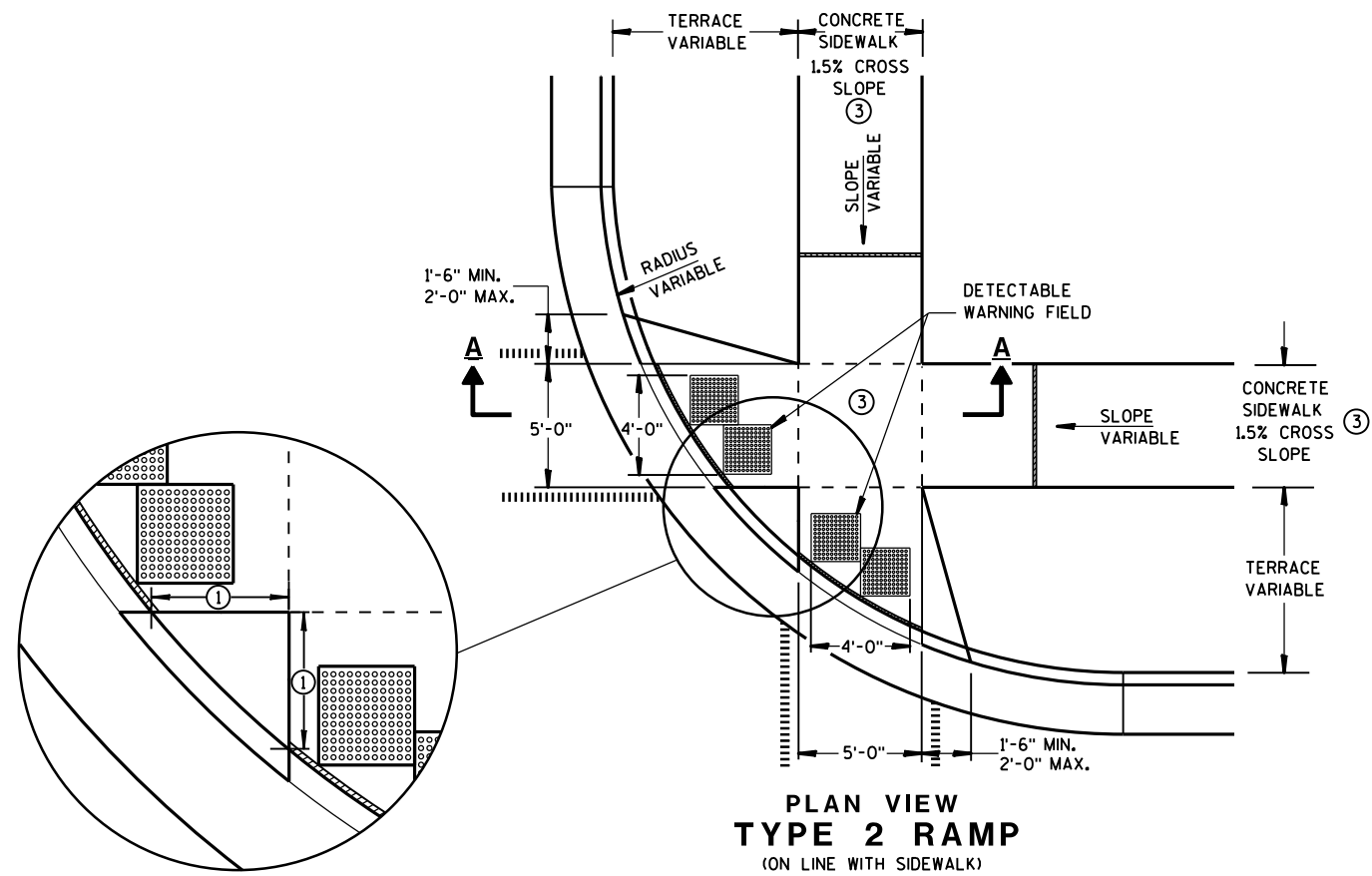
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③  $\pm 0.5\%$  CONSTRUCTION TOLERANCE 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



## GENERAL NOTES

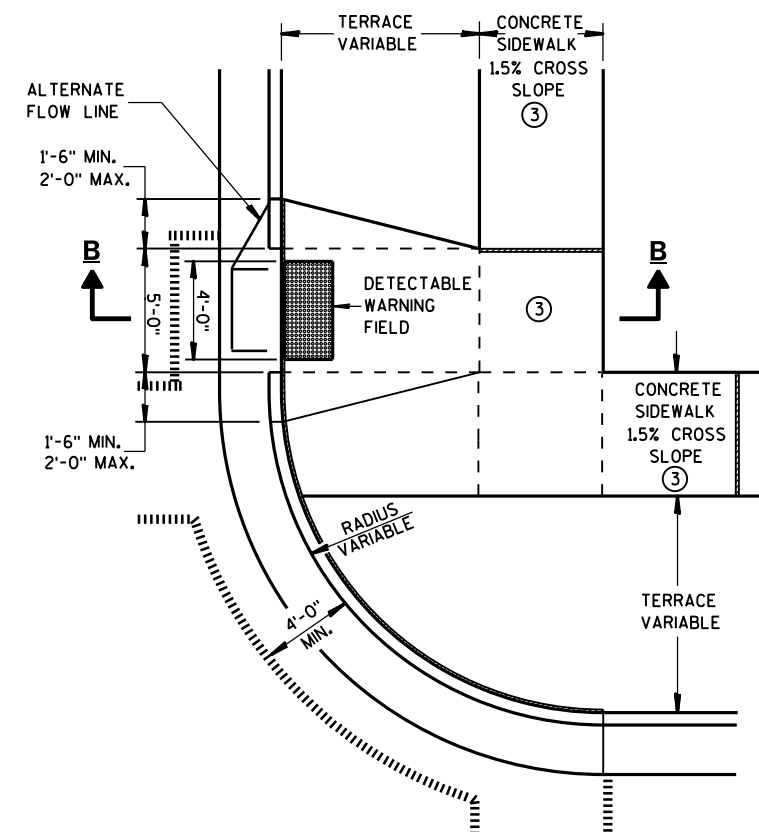
USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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

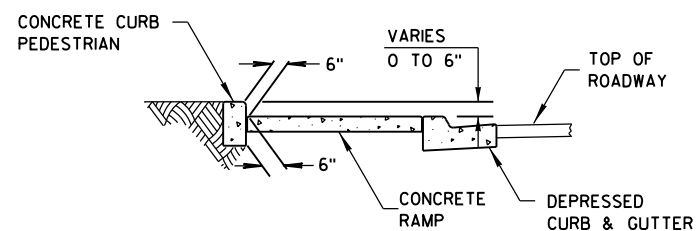


**CURB RAMPS  
TYPES 2 AND 3**

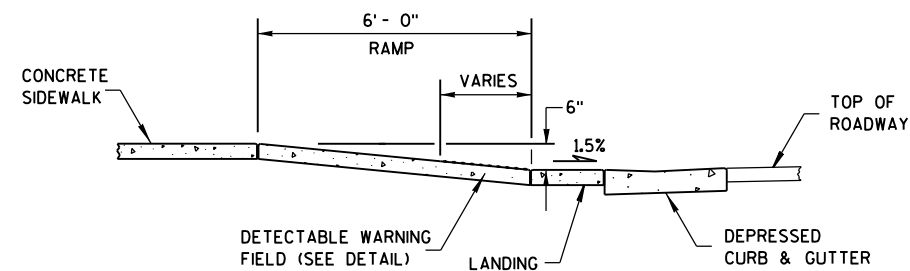
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CURB RAMP TYPE 4A**  
**PLAN VIEW**



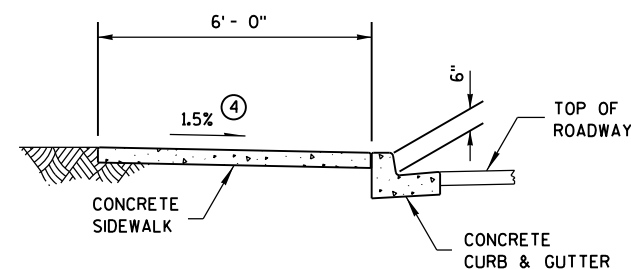
**SECTION C-C FOR TYPE 4A**



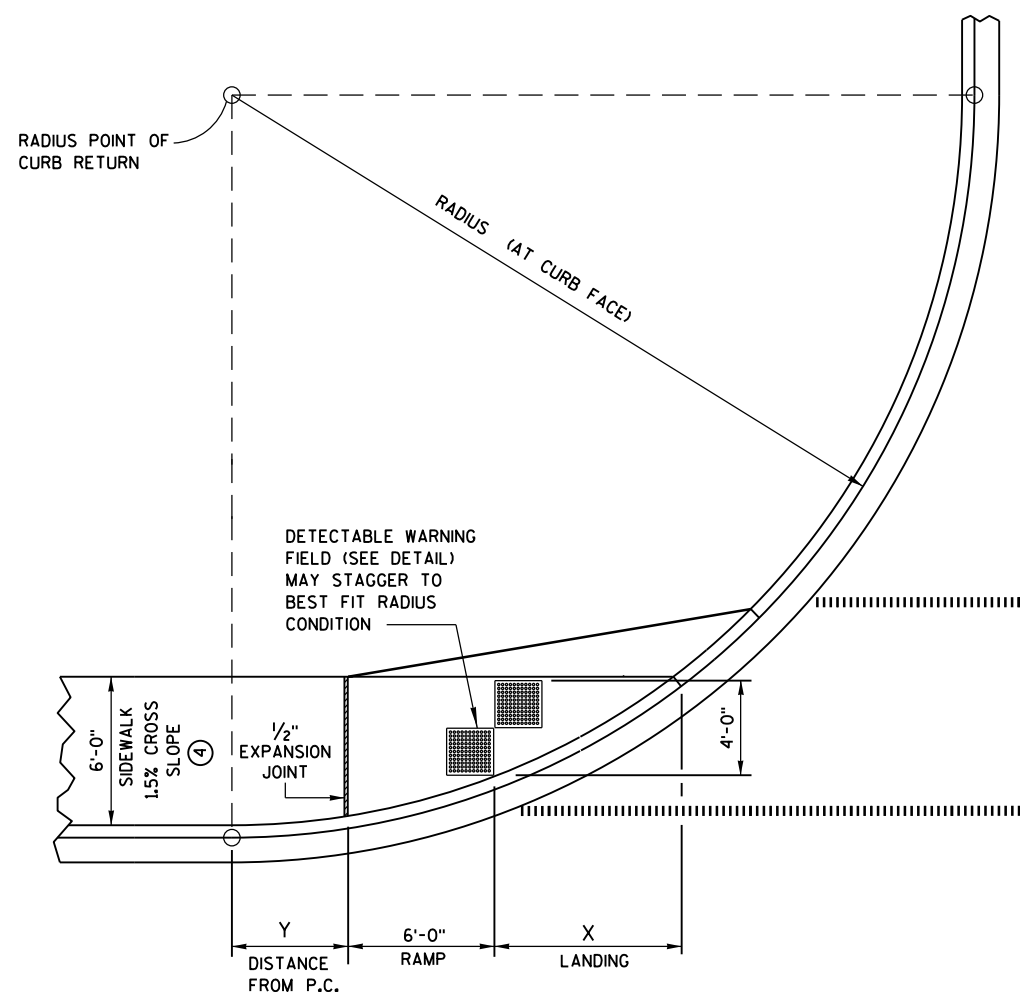
**SECTION B-B FOR TYPE 4A**

| <b>RADIUS<br/>(AT CURB FACE)</b> | <b>X</b>               | <b>Y</b>              |
|----------------------------------|------------------------|-----------------------|
| <b>20 FEET</b>                   | 6'-1 $\frac{3}{4}$ "   | 2'-7 $\frac{1}{4}$ "  |
| <b>30 FEET</b>                   | 7'-11 $\frac{3}{4}$ "  | 4'-8 $\frac{1}{4}$ "  |
| <b>40 FEET</b>                   | 9'-5 $\frac{1}{4}$ "   | 6'-5"                 |
| <b>50 FEET</b>                   | 10'-8 $\frac{3}{4}$ "  | 7'-11 $\frac{1}{4}$ " |
| <b>60 FEET</b>                   | 11'-10 $\frac{1}{4}$ " | 9'-3 $\frac{1}{2}$ "  |

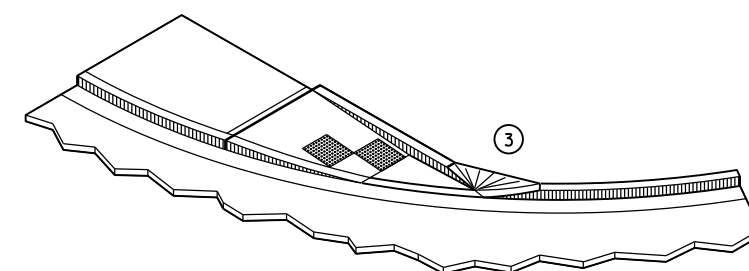
### INTERMEDIATE RADII CAN BE INTERPOLATED



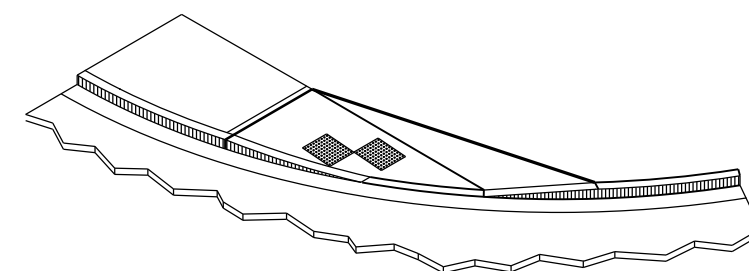
**SECTION A-A FOR TYPE 4A**



**CURB RAMP TYPE 4A1**  
**PLAN VIEW**



ISOMETRIC VIEW FOR TYPE 4A



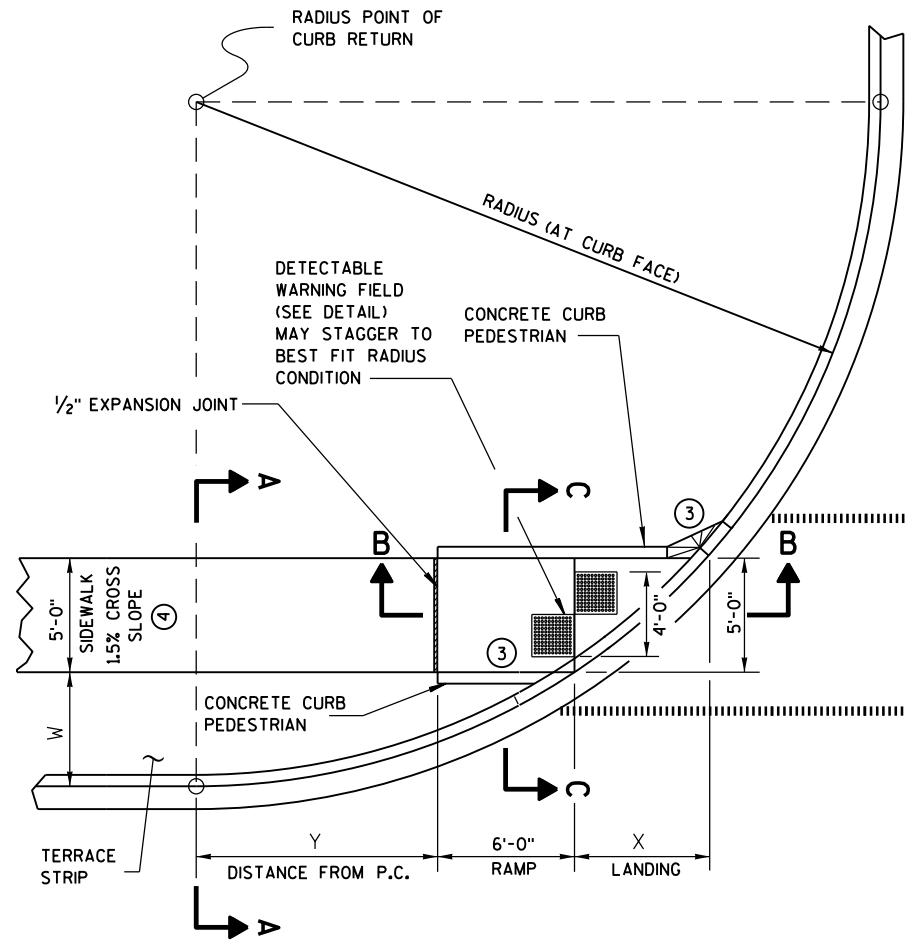
**ISOMETRIC VIEW FOR TYPE 4A1**

## LEGEND

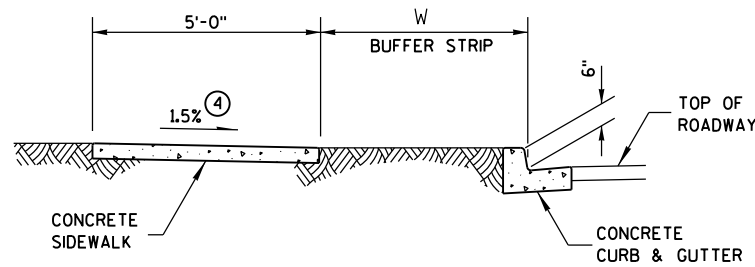
- |                                                                                       |                                    |
|---------------------------------------------------------------------------------------|------------------------------------|
|  | 1/2" EXPANSION JOINT-SIDEWALK      |
| 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

## CURB RAMPS TYPES 4A AND 4A1

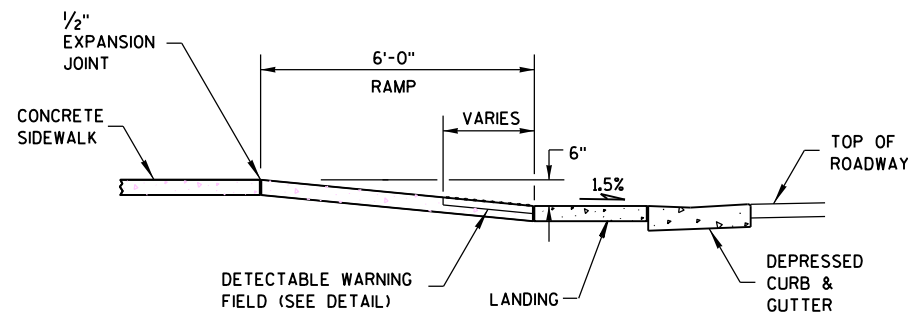
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CURB RAMP TYPE 4B  
PLAN VIEW**



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

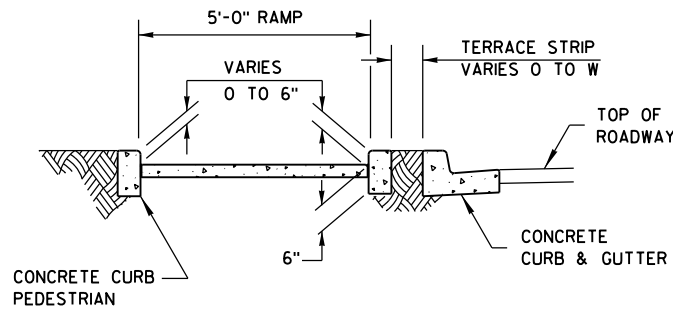


**SECTION B-B FOR TYPE 4B**

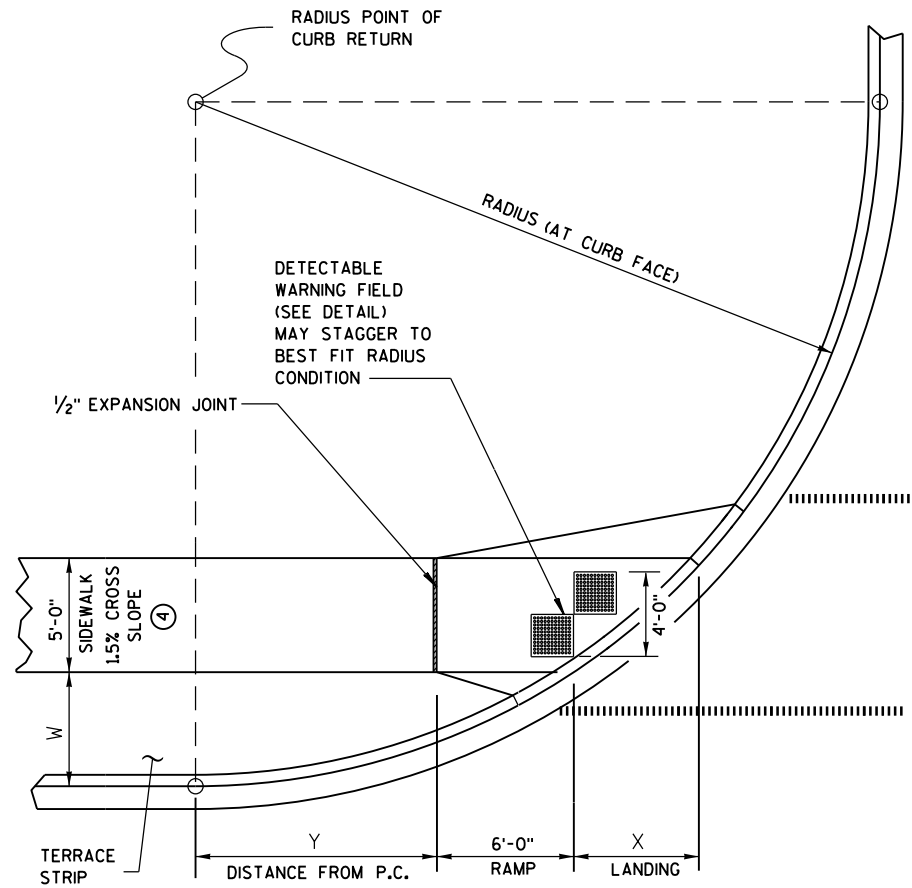
- LEGEND**
- 1/2" EXPANSION JOINT-SIDEWALK
  - - - CONTRACTION JOINT FIELD LOCATED
  - ===== PAVEMENT MARKING CROSSWALK (WHITE)

| RADIUS<br>(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**

**GENERAL NOTES**

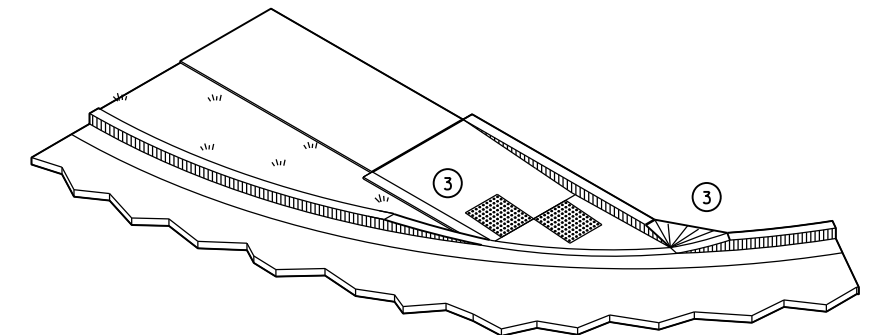
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

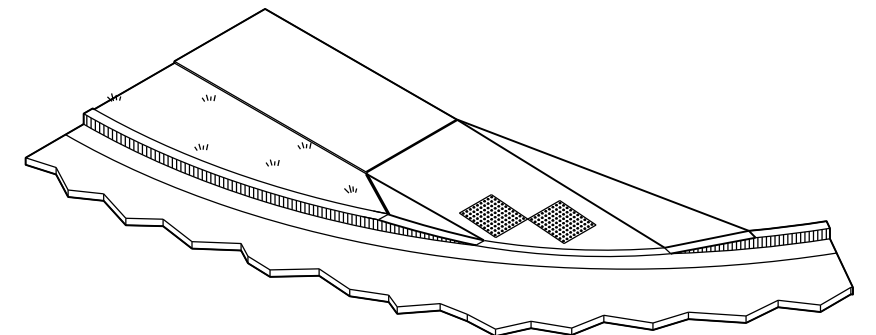
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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.



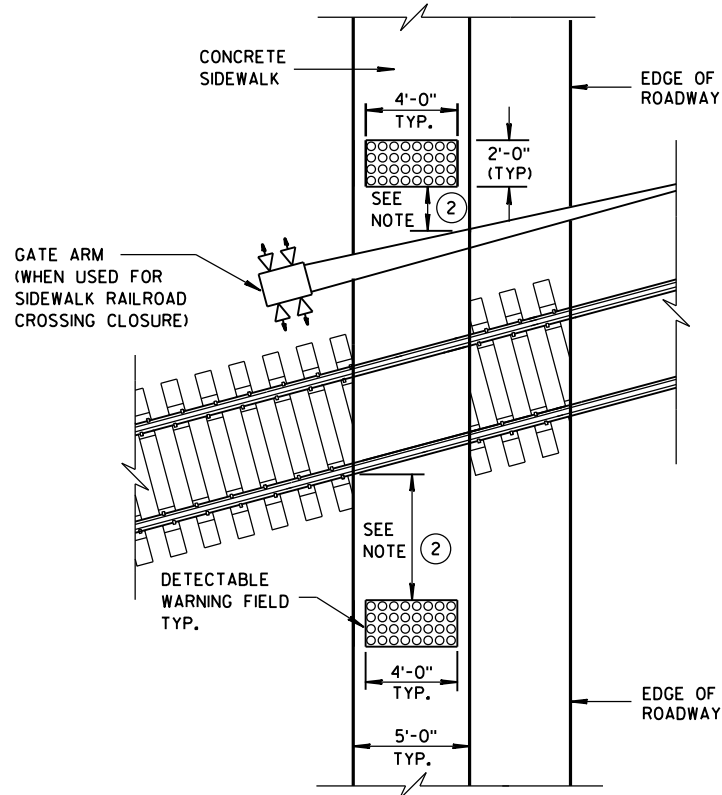
**ISOMETRIC VIEW FOR TYPE 4B**



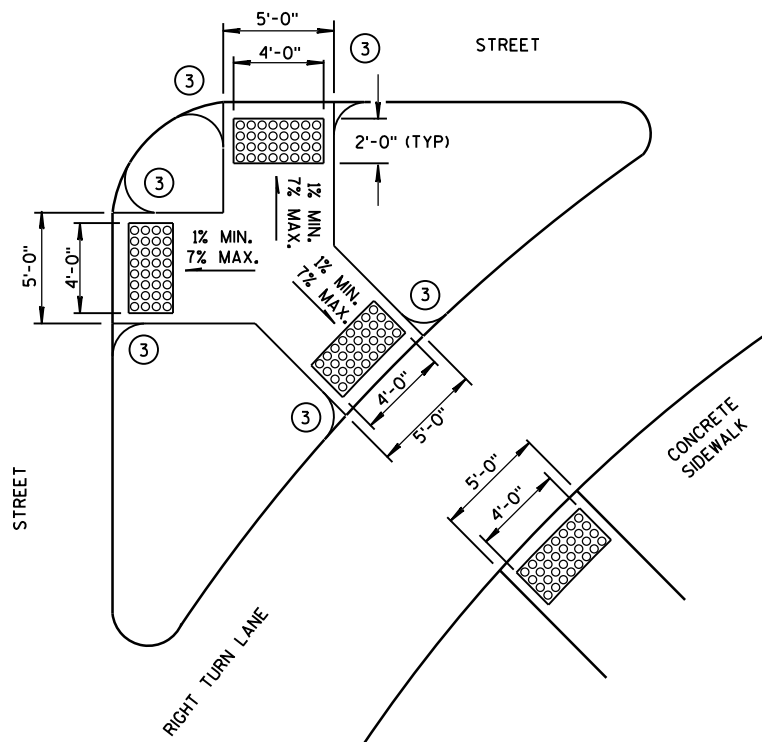
**ISOMETRIC VIEW FOR TYPE 4B1**

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

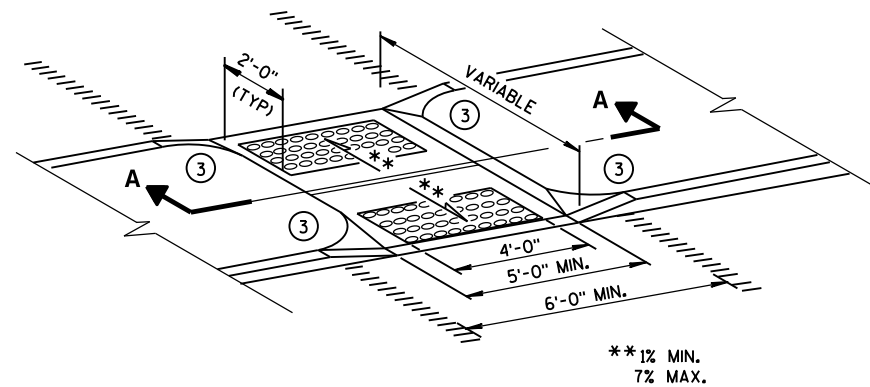
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



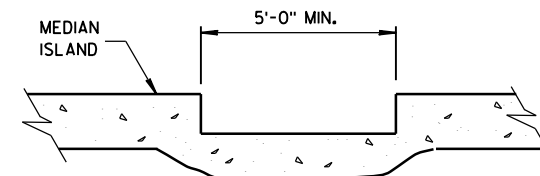
**TYPE 8**  
**DETECTABLE WARNINGS**  
**AT RAILROAD CROSSING**



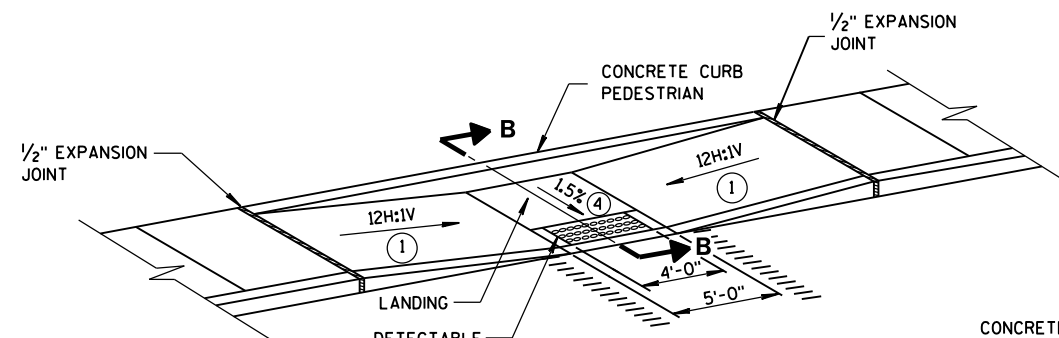
**TYPE 6**  
**DETECTABLE WARNING AT ISLANDS**



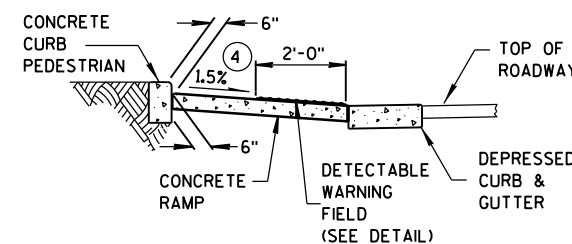
**MEDIAN ISLAND**  
**NON-ELEVATED CROSSING**  
**TYPE 5**



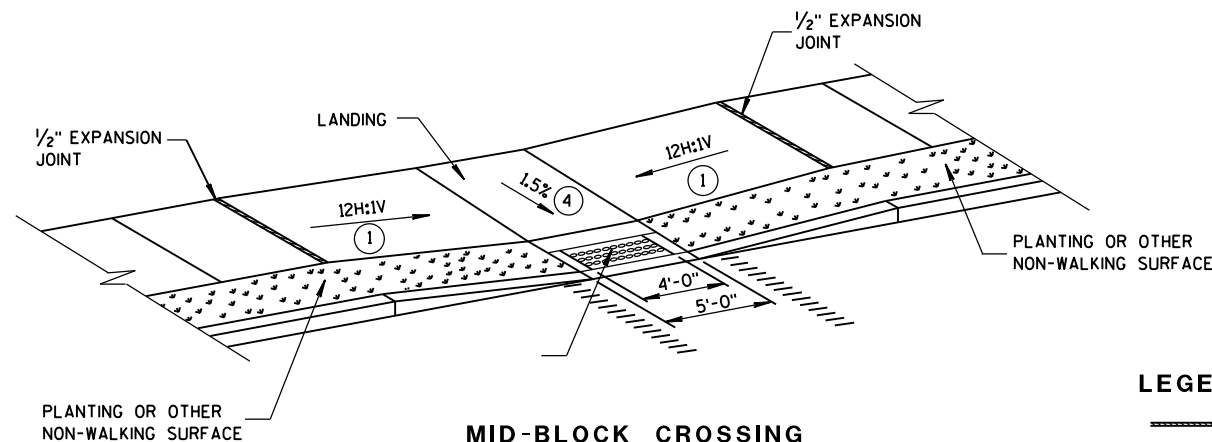
**SECTION A-A**



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



**SECTION B-B**



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

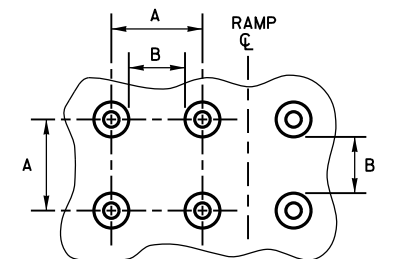
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

**GENERAL NOTES**

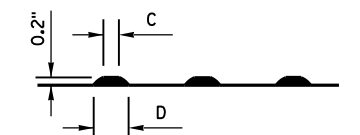
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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



**PLAN VIEW**

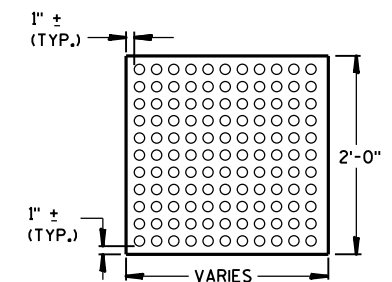


**ELEVATION VIEW**

|   | 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)**

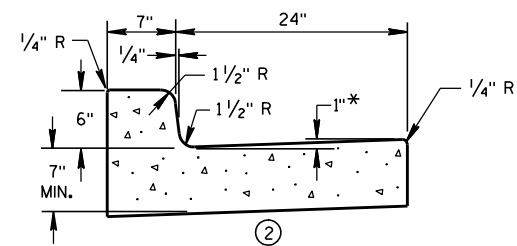
**LEGEND**

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

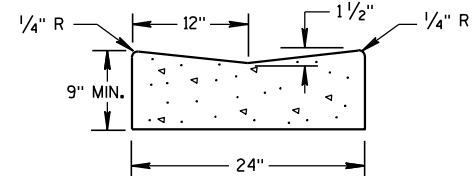
**CURB RAMPS**  
**TYPES 5, 6, 7A, 7B & 8**

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

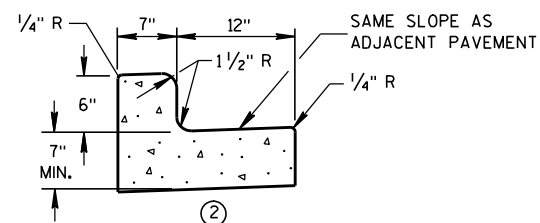
**APPROVED**  
2-6-2013 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



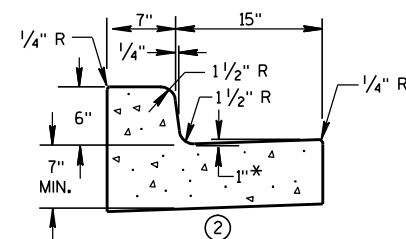
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

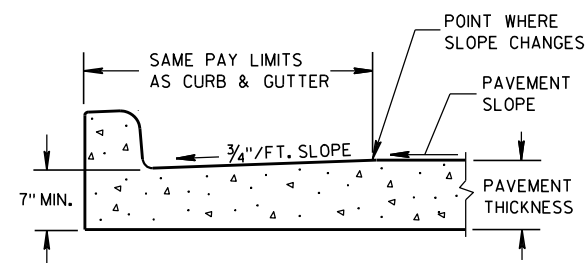


① CONCRETE CURB & GUTTER 19"

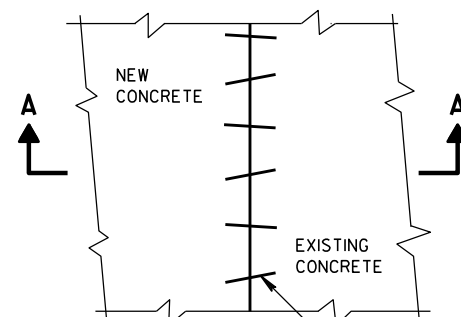


① CONCRETE CURB & GUTTER 22"

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



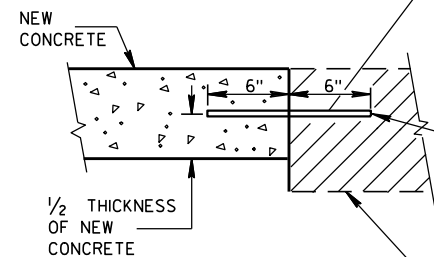
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



PLAN VIEW

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

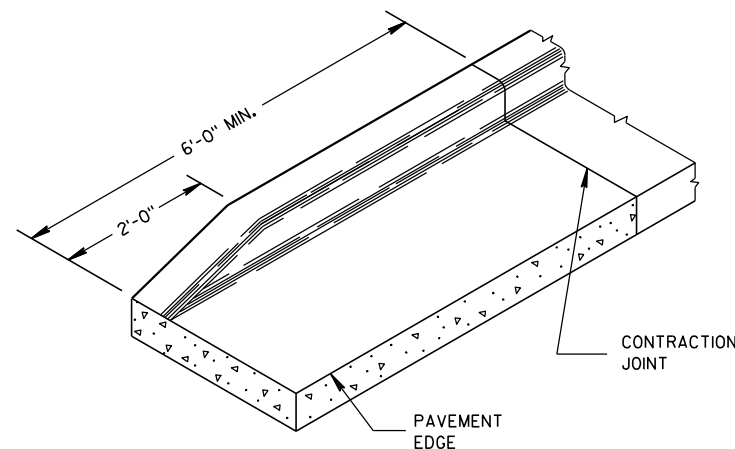
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



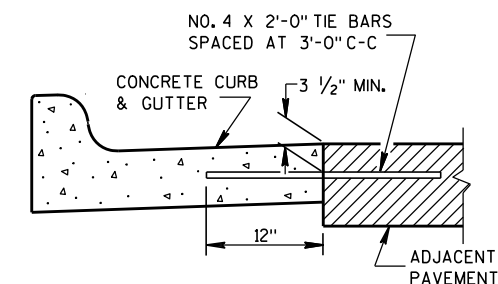
SECTION A-A  
PAVEMENT TIES

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

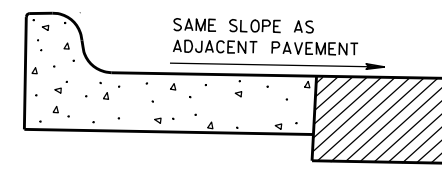
EXISTING CONCRETE



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

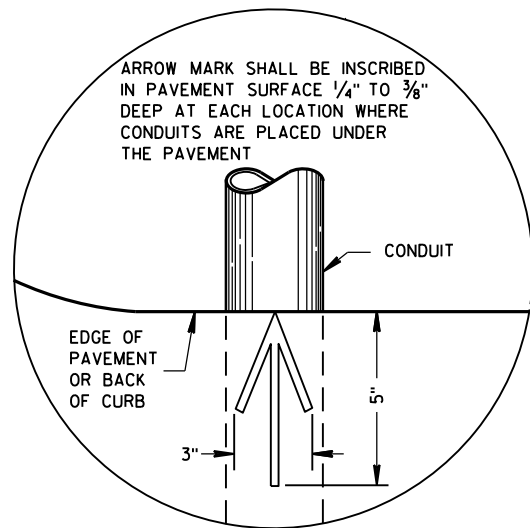
APPROVED

11/22/2010

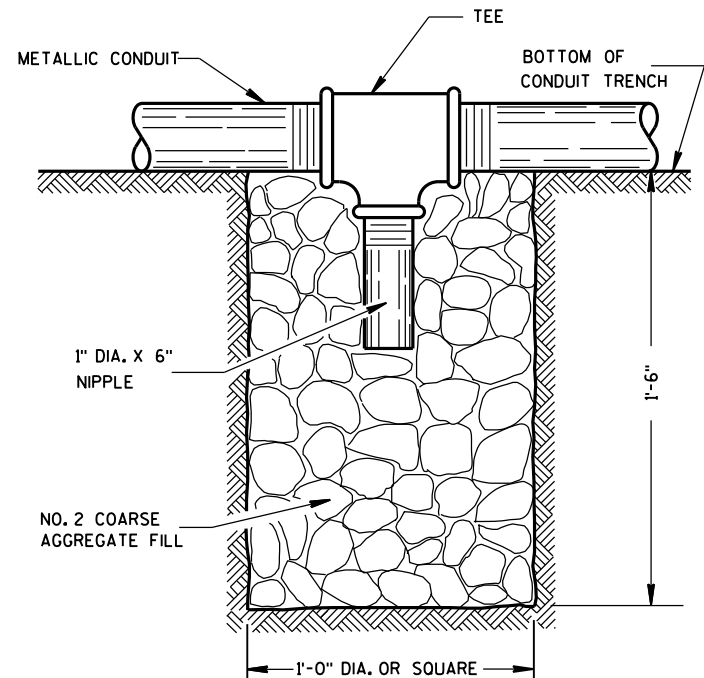
DATE

FHWA

/S/ Jerry Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

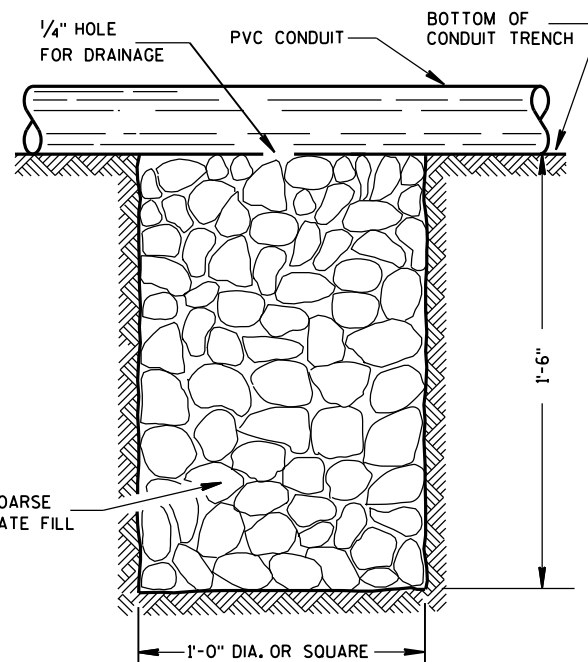


PLAN VIEW  
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

## GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

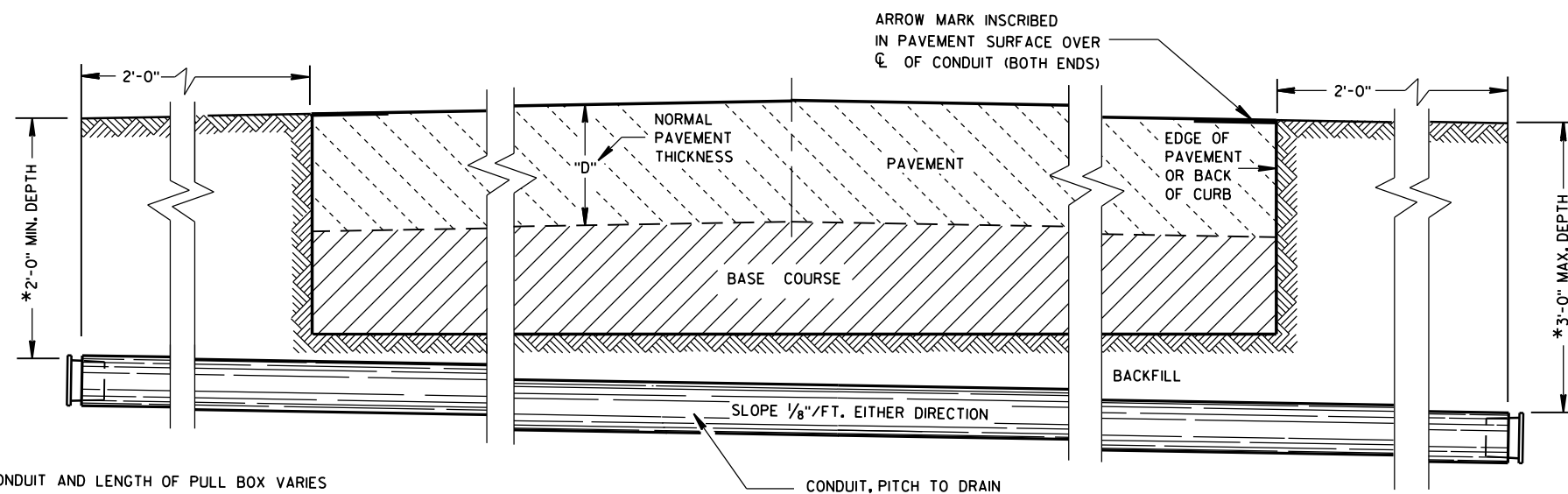
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



\*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

## CONDUIT UNDER PAVED HIGHWAYS

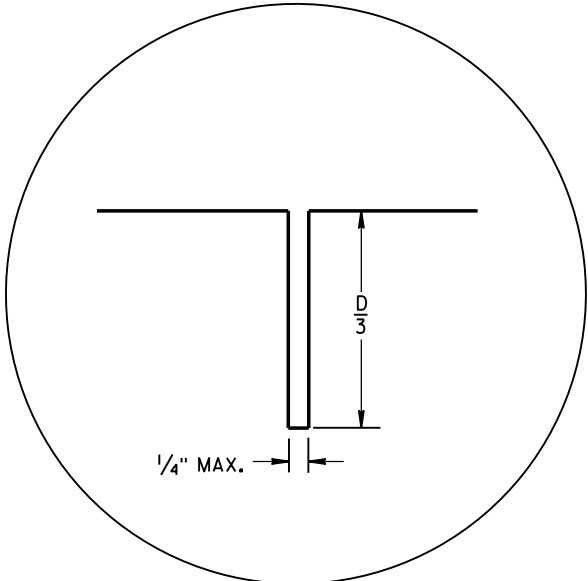
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014  
DATE

FHWA

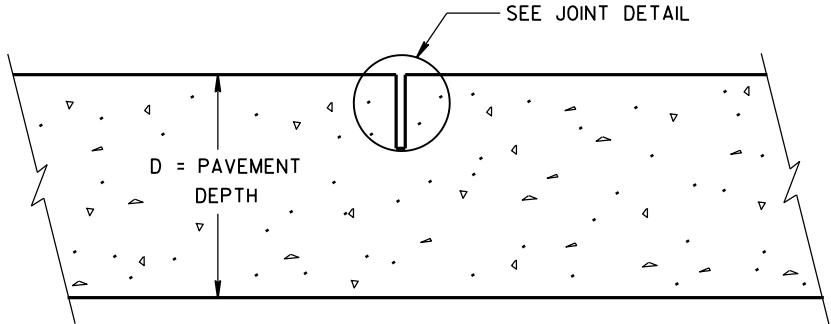
/S/ Ahmet Demirbilek  
STATE ELECTRICAL ENGINEER



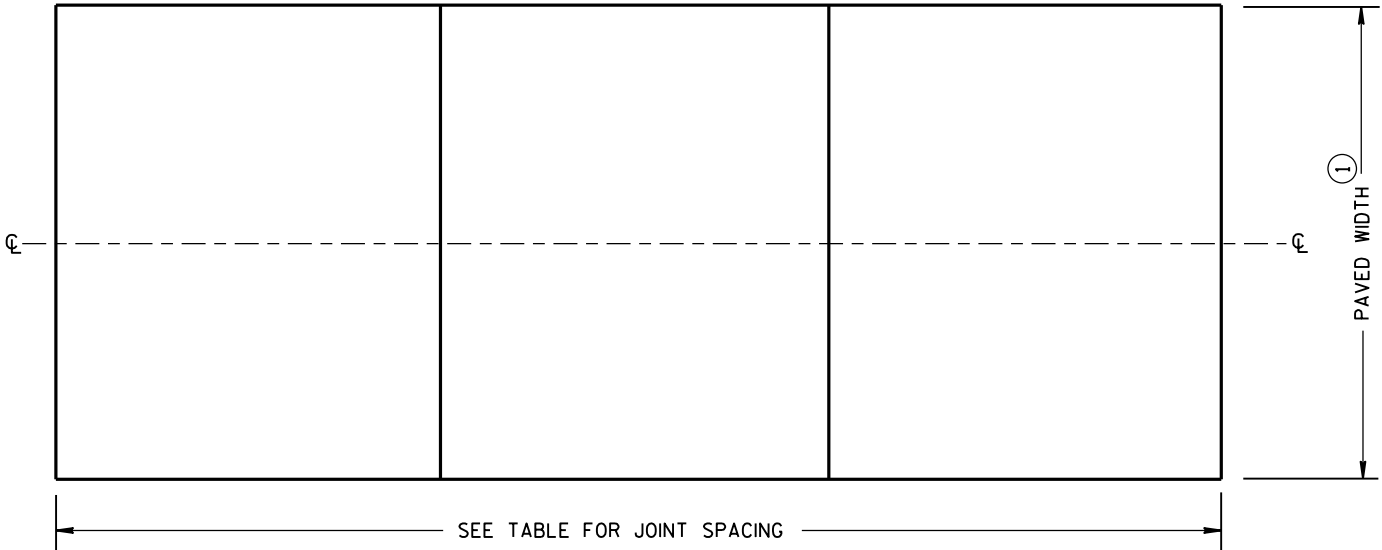
JOINT DETAIL

PAVEMENT DEPTH AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|--------------------|---------------------------|
| 6", 6 1/2"         | 12'                       |
| 7", 7 1/2"         | 14'                       |
| 8" & ABOVE         | 15'                       |



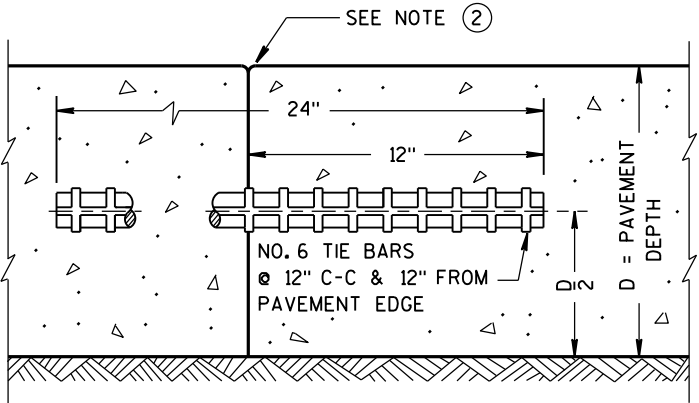
CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

- CONTRACTION JOINTS
- CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE.
- LOCATE AND ORIENT CONTRACTION JOINTS THROUGH INTERSECTIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- DO NOT SEAL OR FILL CONTRACTION JOINTS.
- CONSTRUCTION JOINTS
- LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.
- FORM OR SAW CONSTRUCTION JOINTS.
- THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.
- ① REFER TO TYPICAL CROSS SECTIONS FOR PAVED WIDTH AND LOCATION OF LONGITUDINAL JOINTS.
- ② PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

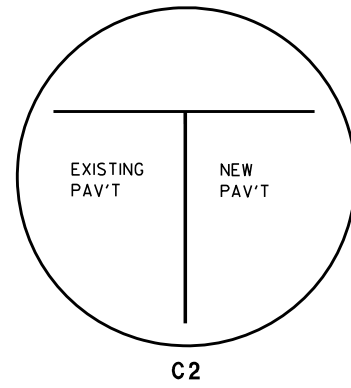


TIED TRANSVERSE CONSTRUCTION JOINT

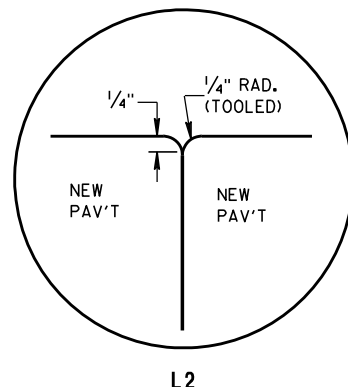
URBAN  
NON-DOWELED CONCRETE  
PAVEMENT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

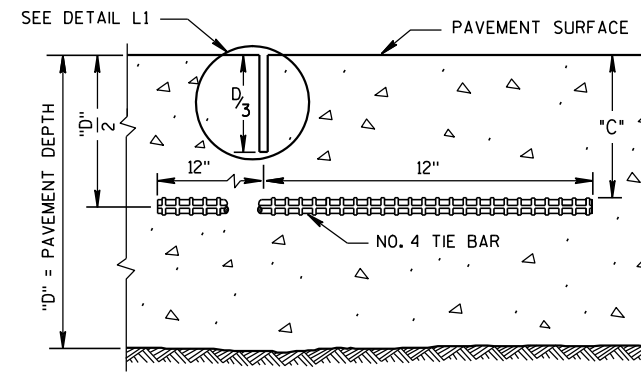
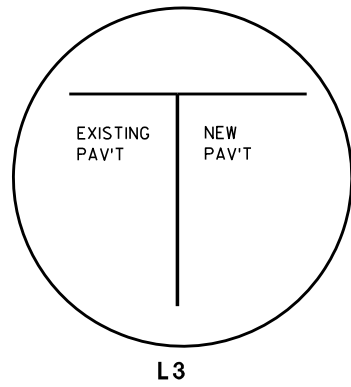
APPROVED  
5-3-2013 /S/ Deb Bischoff  
DATE PAVEMENT POLICY & DESIGN ENGINEER  
FHWA



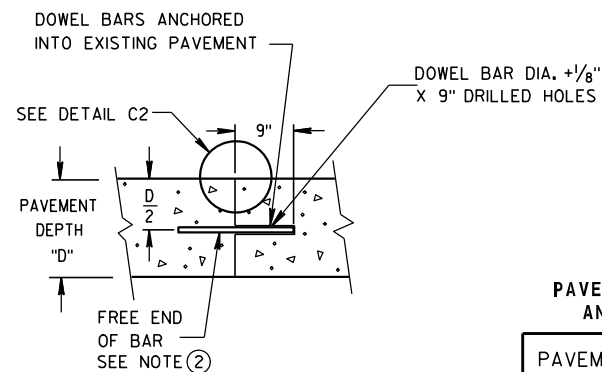
## TRANSVERSE JOINTS



## LONGITUDINAL JOINTS

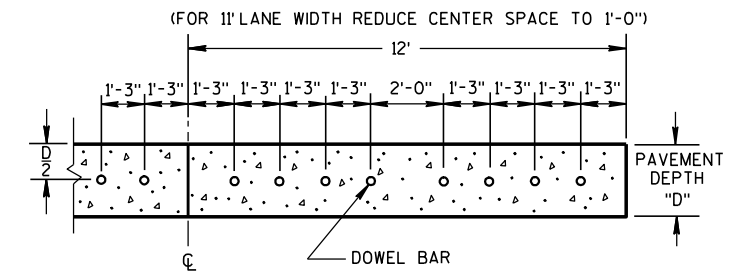


SECTION C-C  
SAWED JOINT



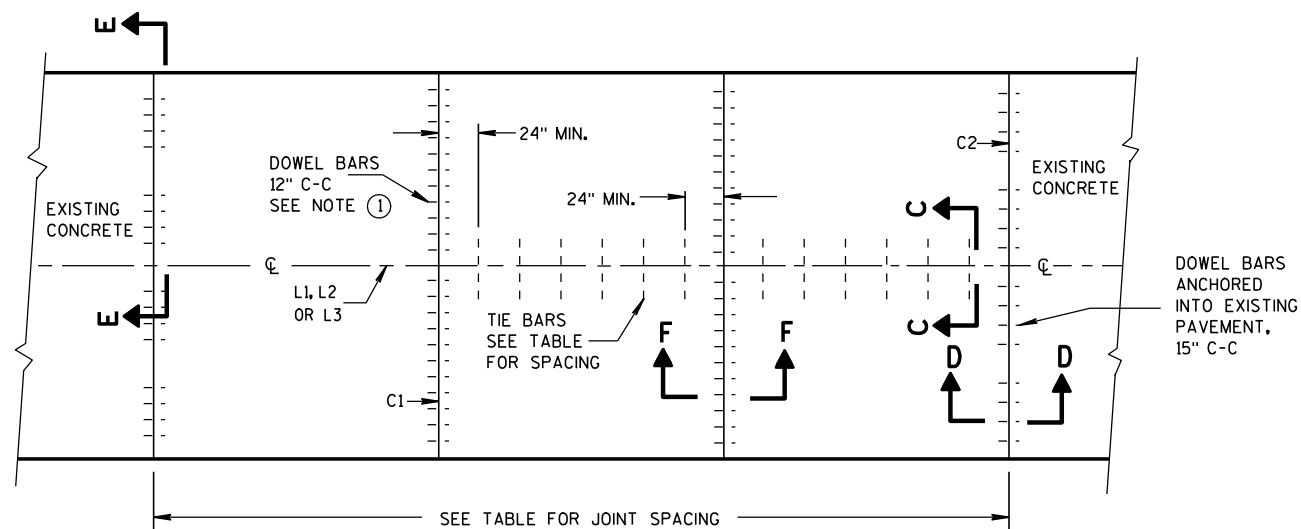
**SECTION D-D**

| PAVEMENT<br>DEPTH<br>"D" | DOWEL BAR<br>DIAMETER | CONTRACTION<br>JOINT<br>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'                             |



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

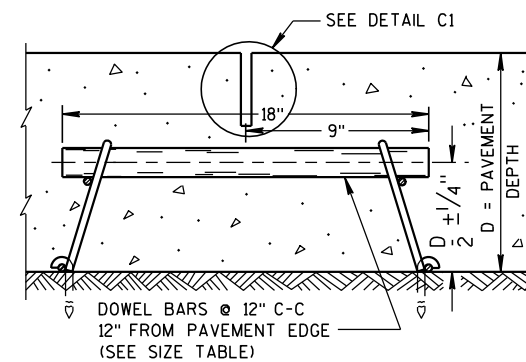
| PAVEMENT<br>DEPTH<br>"D" | CLEAR COVER<br>"C" | MAXIMUM TIE BAR<br>SPACING C-C |       |
|--------------------------|--------------------|--------------------------------|-------|
|                          |                    | PAVEMENT WIDTH                 |       |
|                          |                    | 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



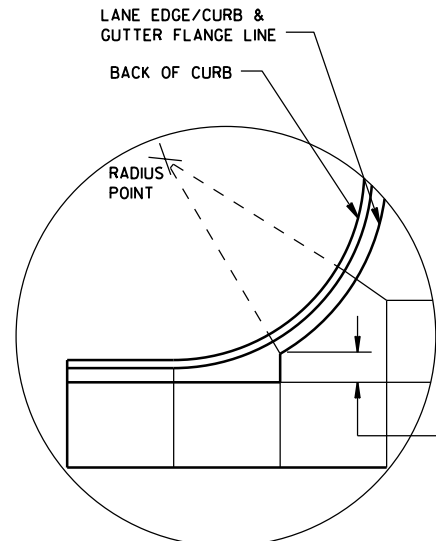
SECTION F-F  
CONTRACTION JOINT

## GENERAL NOTES

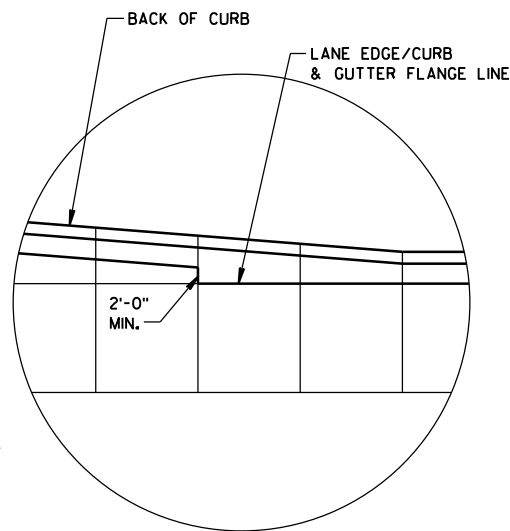
ANCHOR TIE BARS AND DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

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.

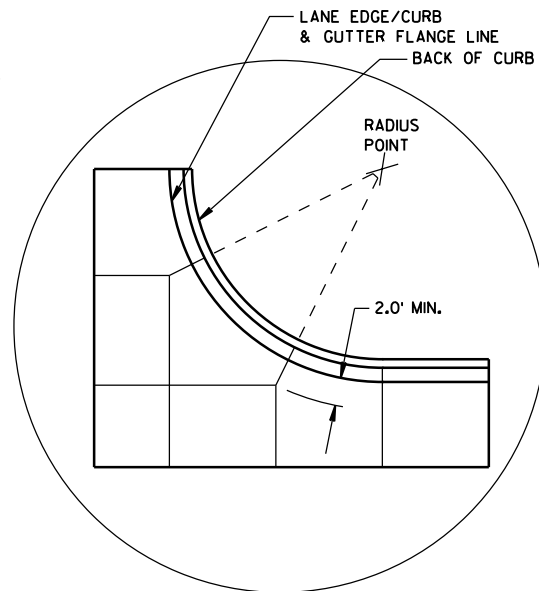
- ① INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.
- ② APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



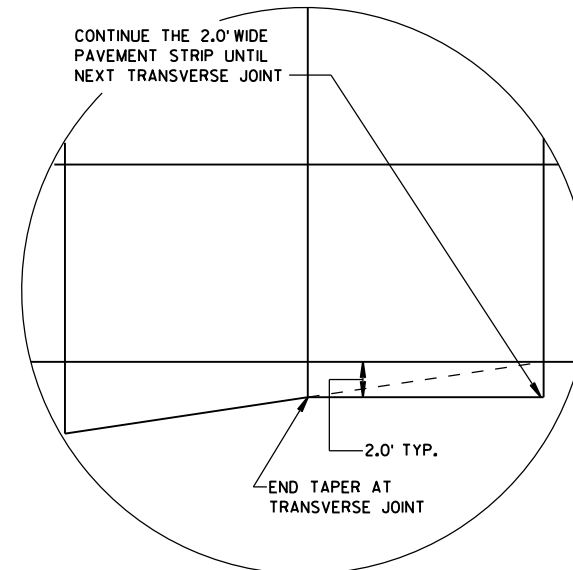
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

## GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

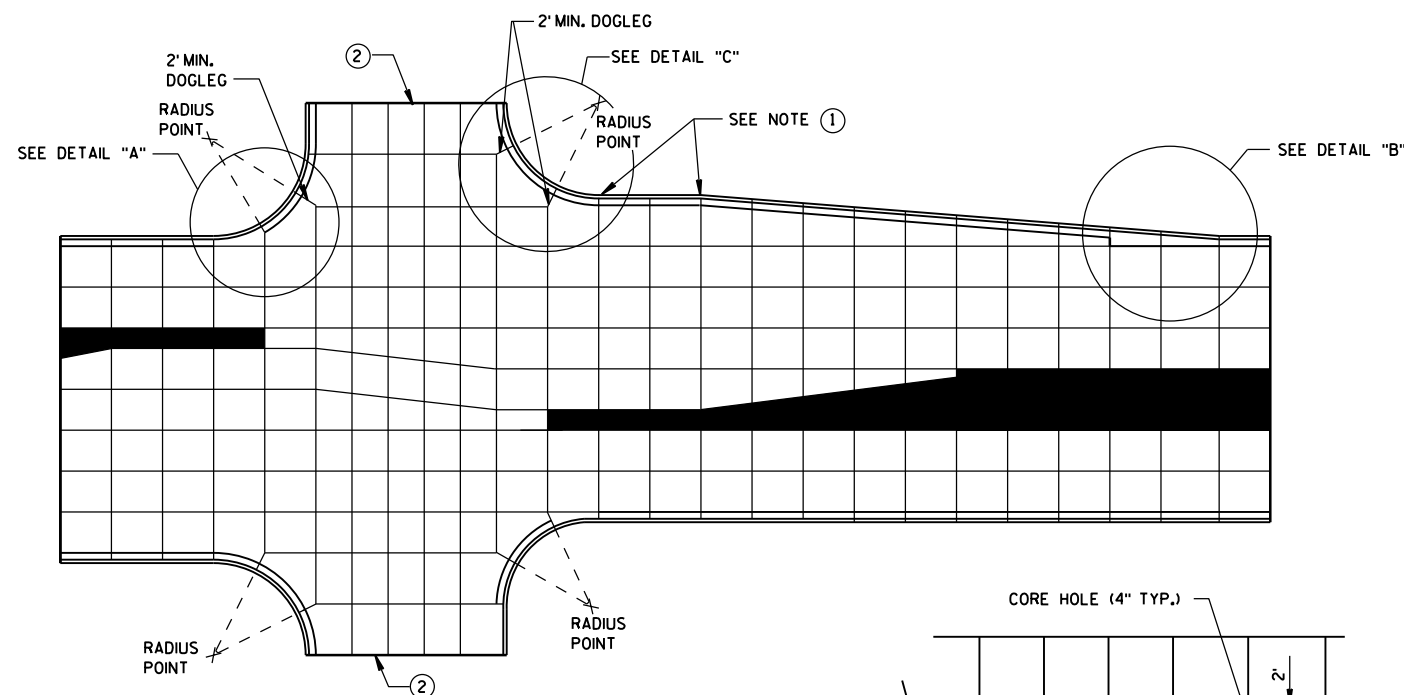
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

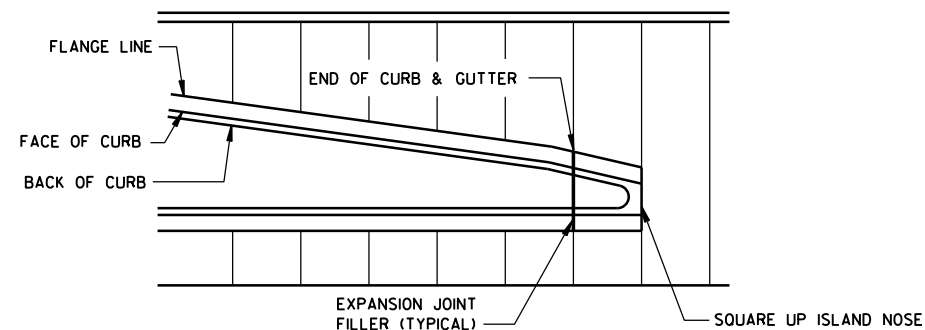
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

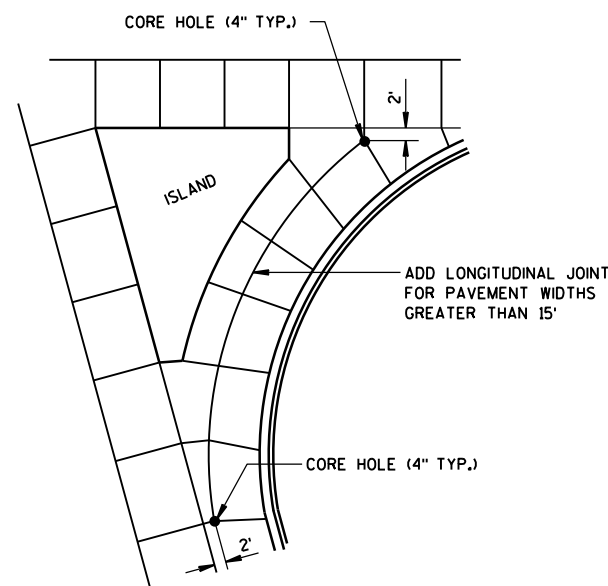
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



STANDARD INTERSECTION



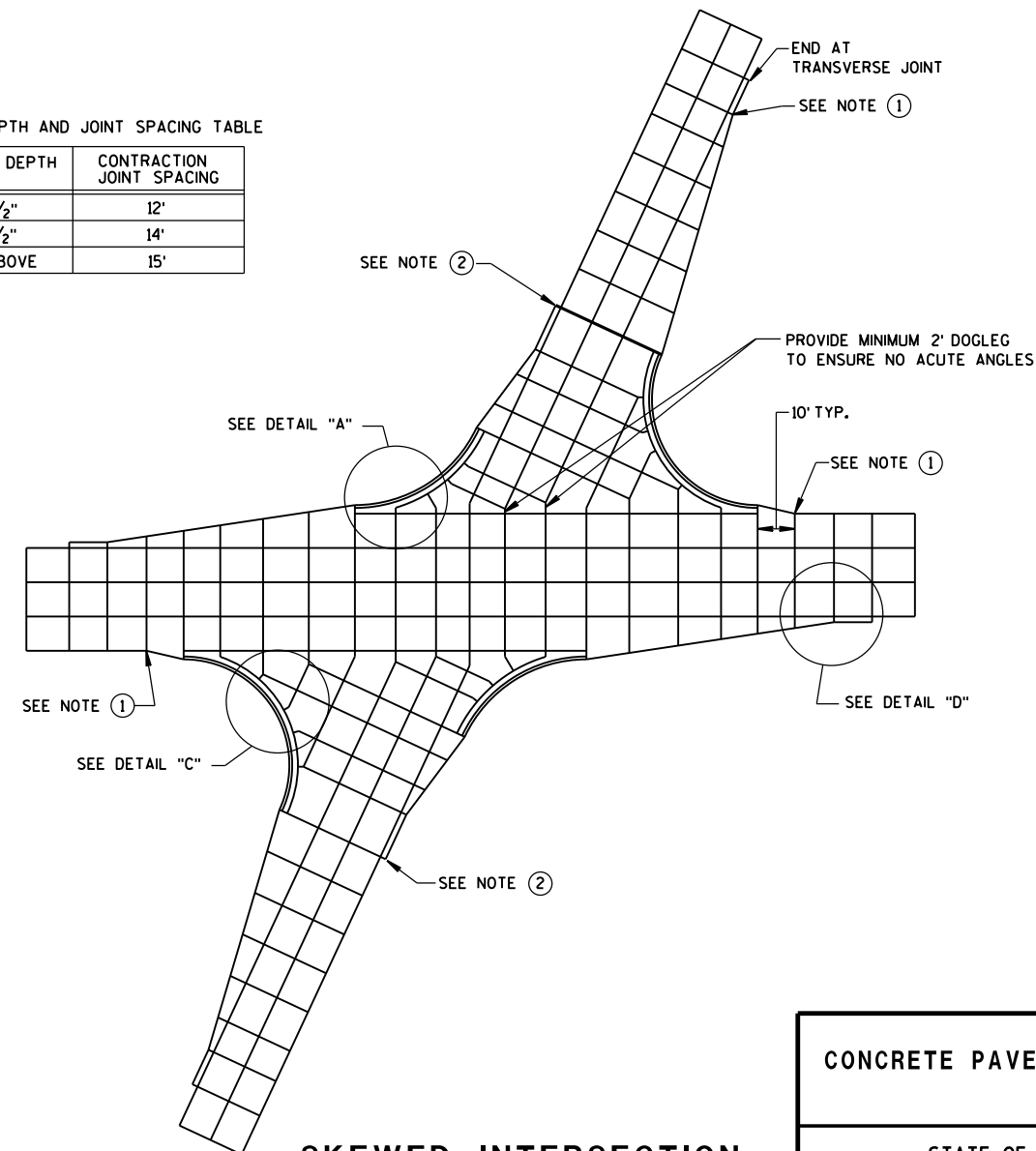
APPROACH TO MEDIAN



LARGE RIGHT TURN

PAVEMENT DEPTH AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|--------------------|---------------------------|
| 6", 6 1/2"         | 12'                       |
| 7", 7 1/2"         | 14'                       |
| 8" & ABOVE         | 15'                       |



SKewed INTERSECTION

CONCRETE PAVEMENT JOINTING

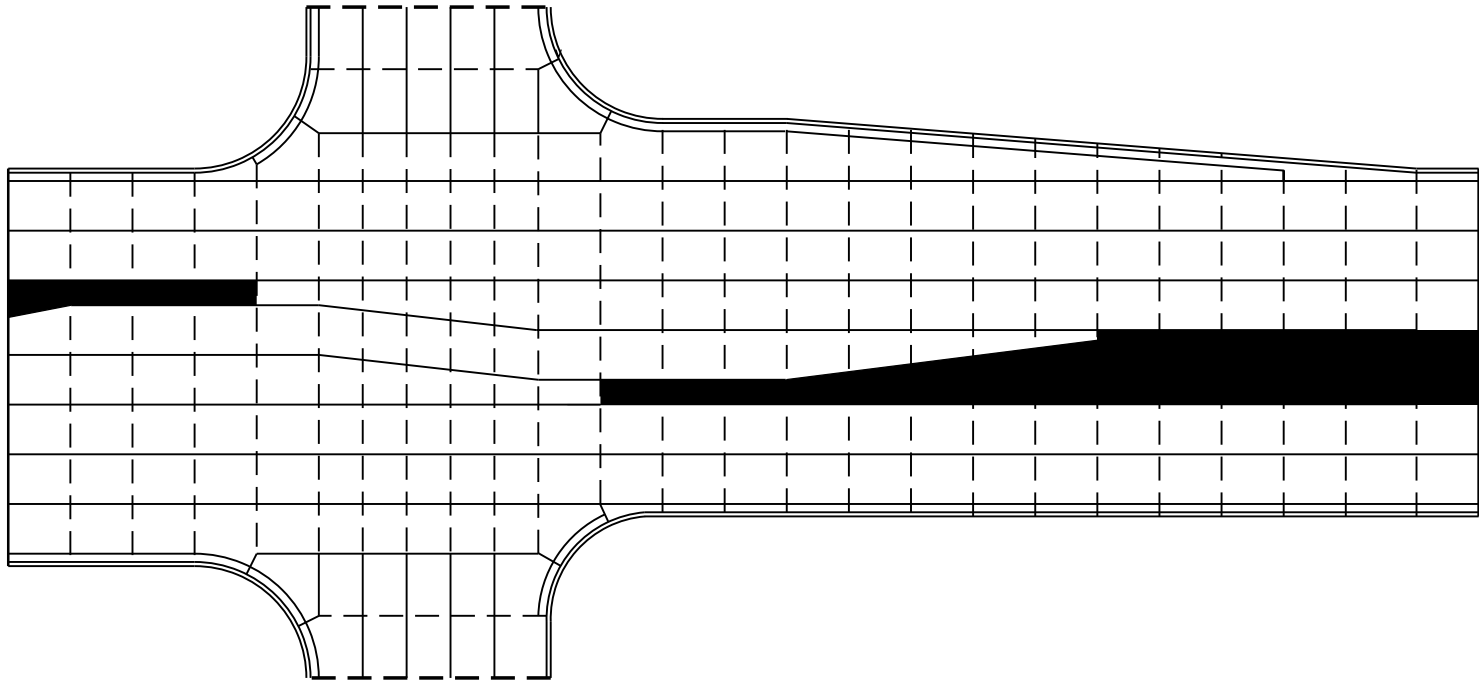
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND

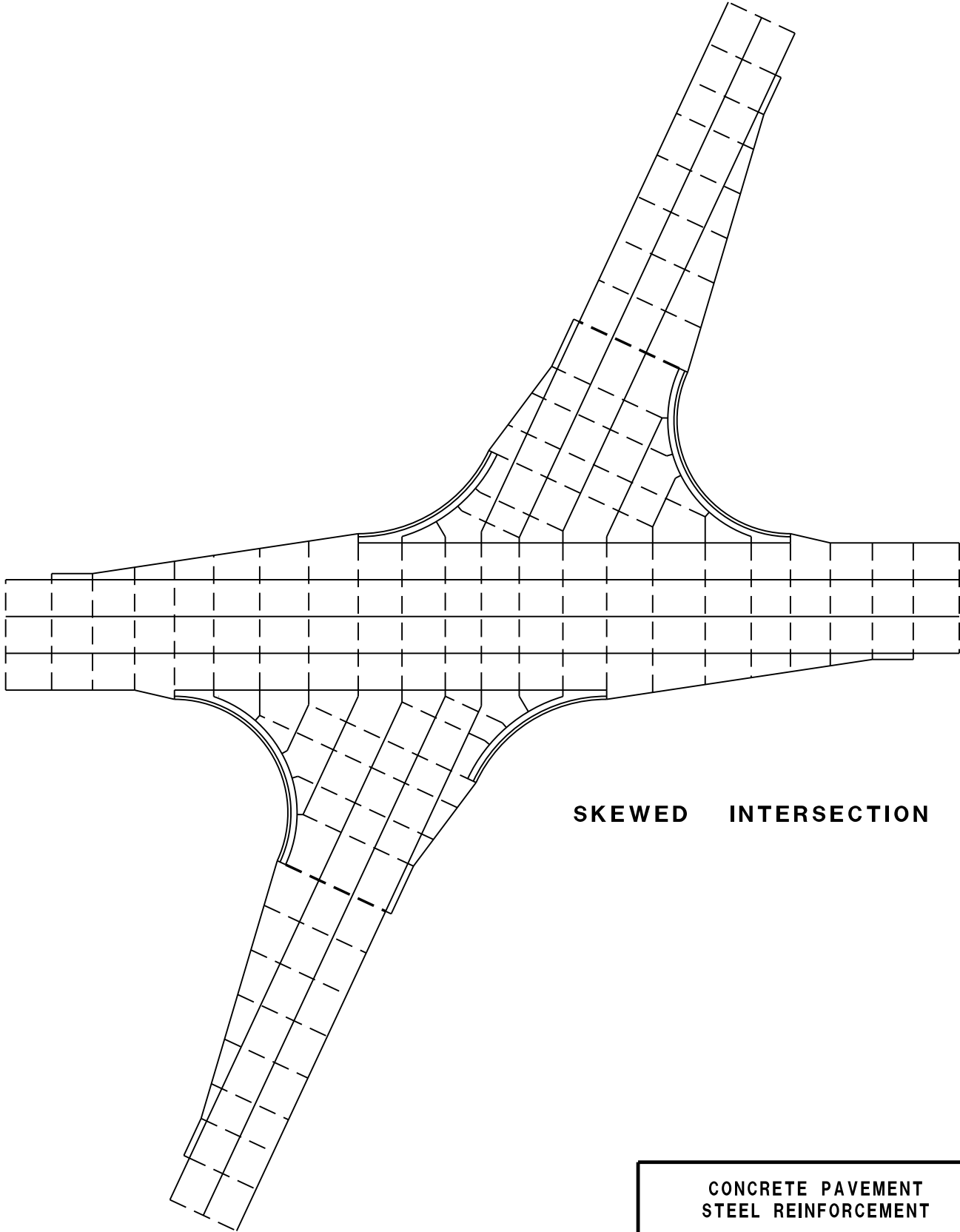
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



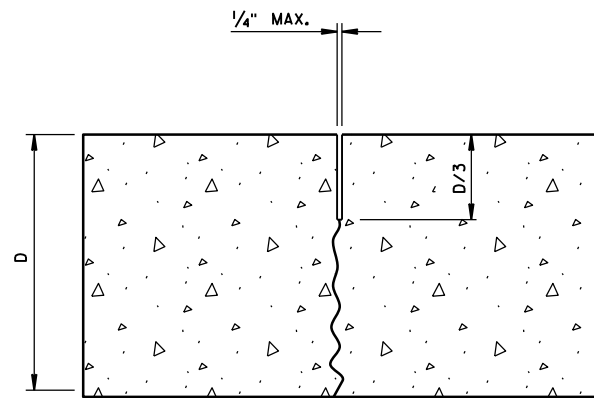
STANDARD INTERSECTION



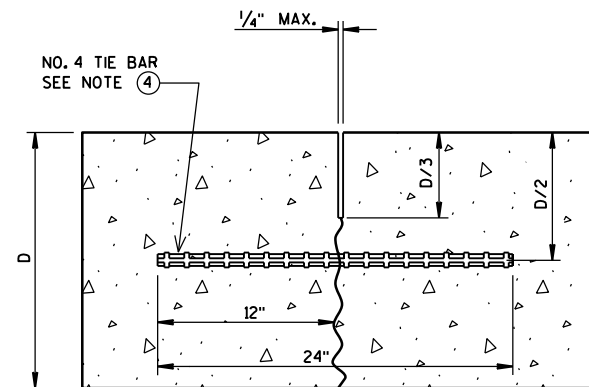
SKewed INTERSECTION

CONCRETE PAVEMENT  
STEEL REINFORCEMENT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

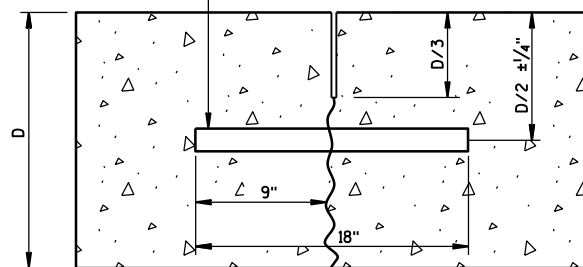


UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

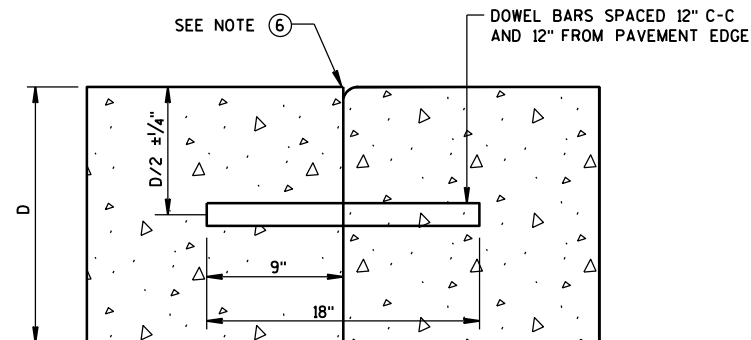
DOWEL BARS AT 12" C-C  
12" FROM PAVEMENT EDGE



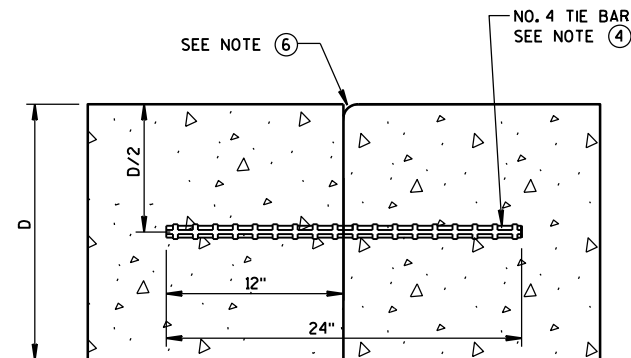
DOWELED-TRANSVERSE

## CONTRACTION JOINTS

SEE NOTE ②

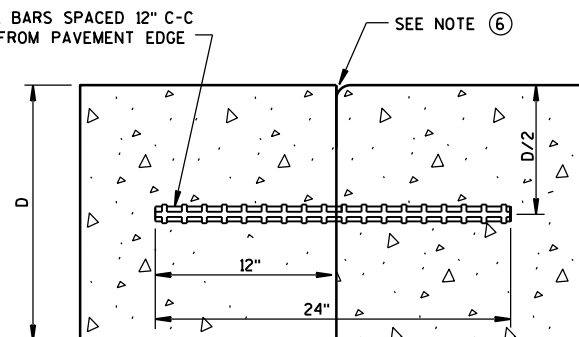
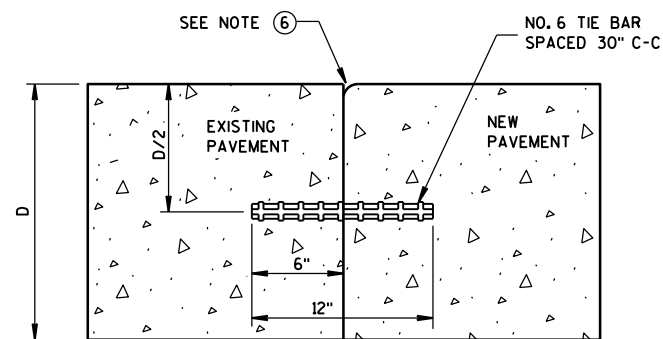


DOWELED TRANSVERSE



TIED LONGITUDINAL

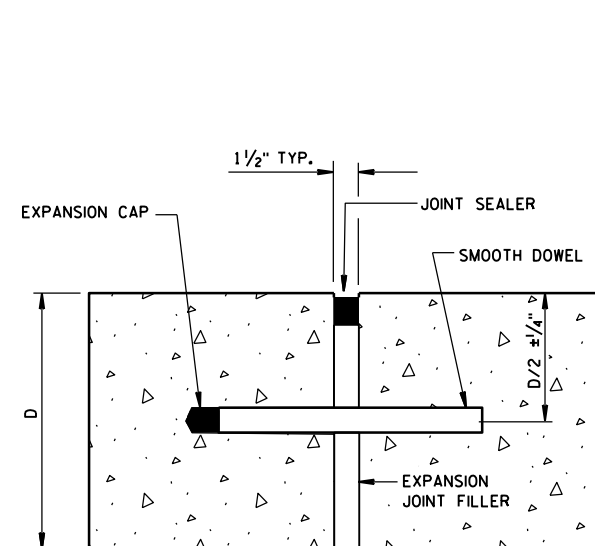
NO. 6 TIE BARS SPACED 12" C-C  
AND 12" FROM PAVEMENT EDGE

TIED TRANSVERSE  
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)

TIED LONGITUDINAL TO EXISTING

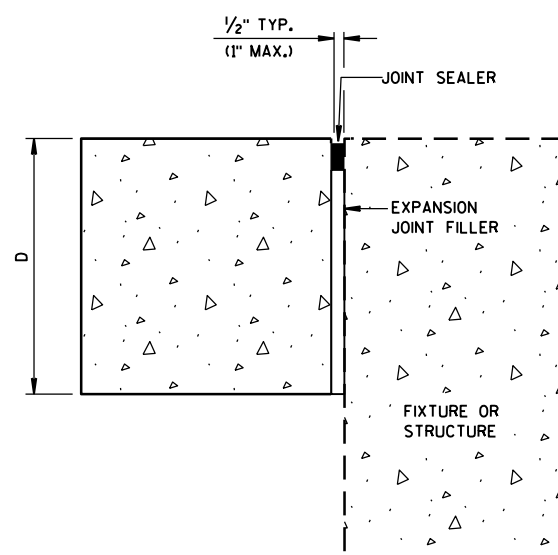
## CONSTRUCTION JOINTS

SEE NOTE ⑤



DOWELED-TRANSVERSE

SEE NOTE ①



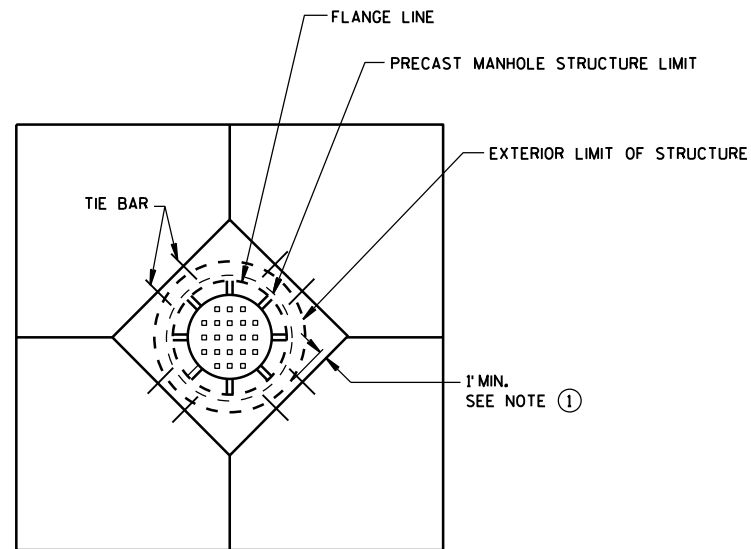
UNTIED-LONGITUDINAL

## EXPANSION JOINTS

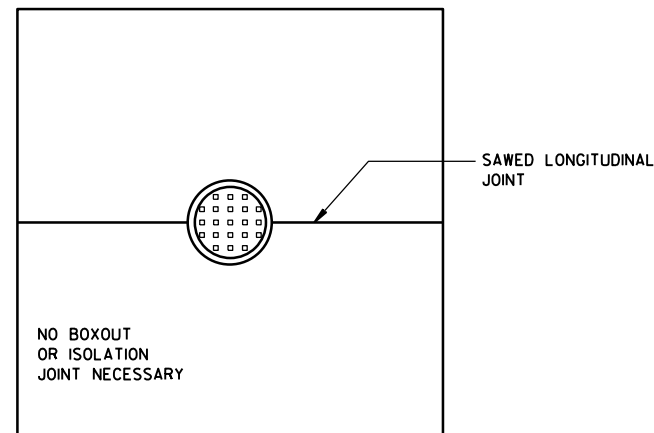
## GENERAL NOTES

1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.

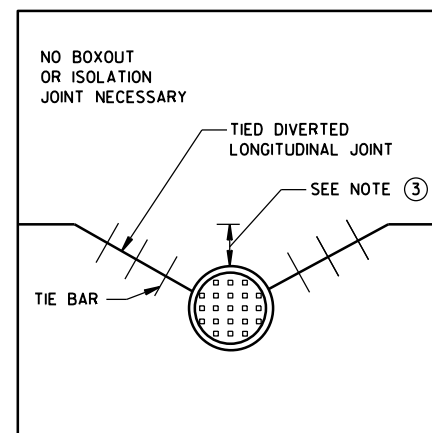
CONCRETE PAVEMENT  
JOINT TYPESSTATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



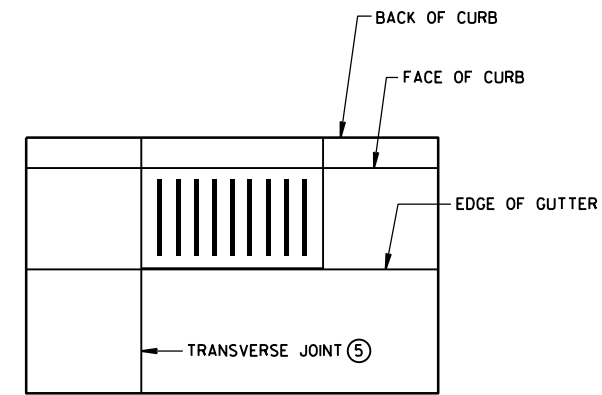
**DIAGONAL MANHOLE BOXOUT  
FOR CONSTRUCTION JOINTS**



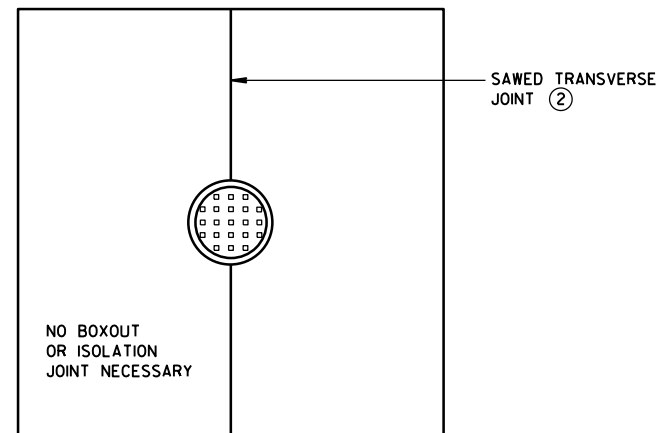
**MANHOLE WITH  
LONGITUDINAL JOINT**



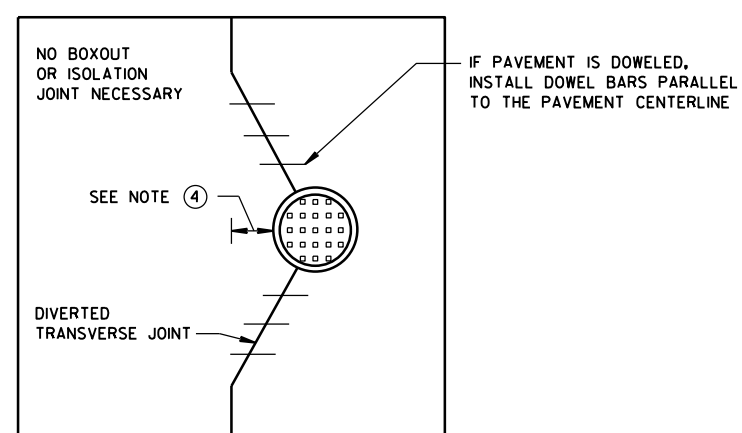
**MANHOLE WITH DIVERTED  
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH  
TRANSVERSE JOINT**



**MANHOLE WITH  
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED  
TRANSVERSE CONTRACTION JOINT**

**GENERAL NOTES**

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ④ IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

**CONCRETE PAVEMENT  
JOINTING AT UTILITY FIXTURES**

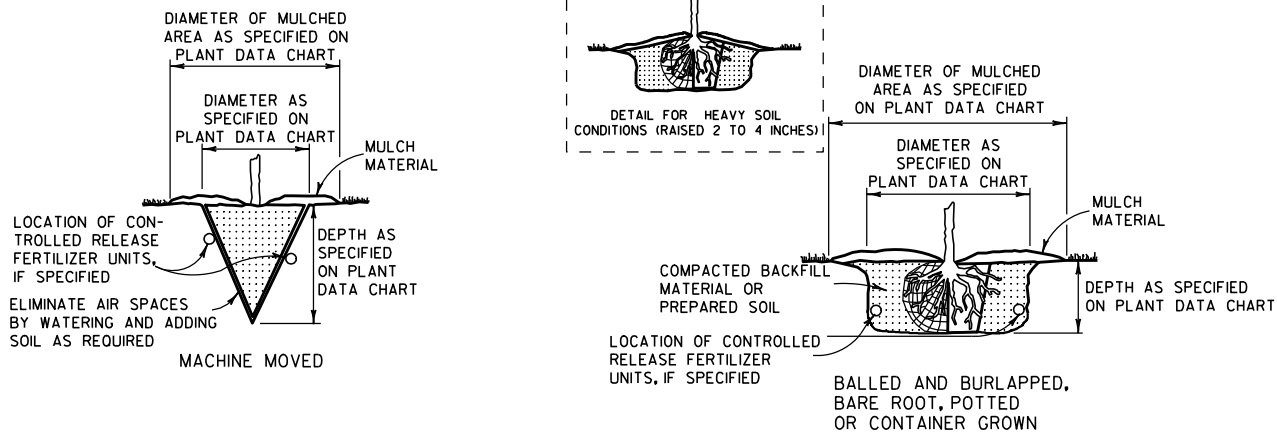
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

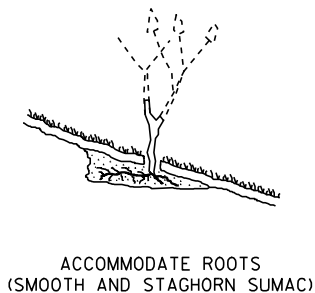
5-3-2013  
DATE

FHWA

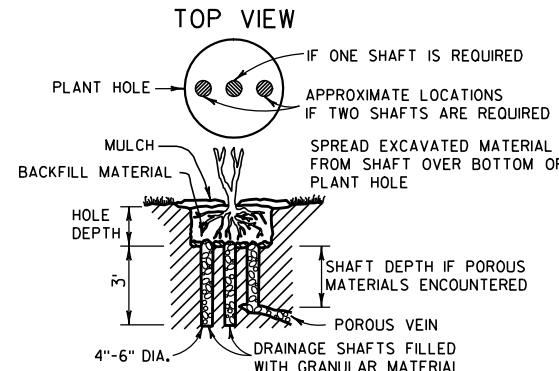
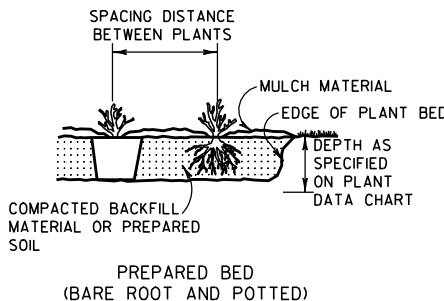
/S/ Deb Bischoff  
PAVEMENT POLICY & DESIGN ENGINEER



PLANTING

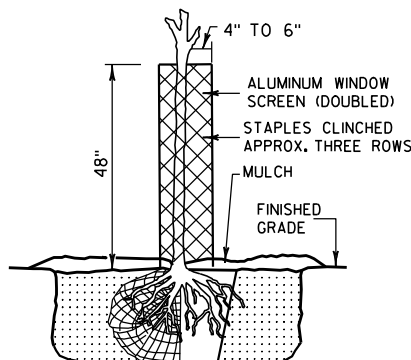
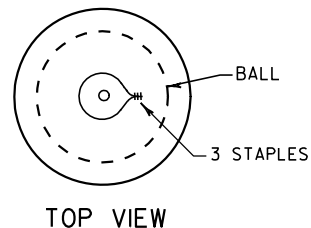
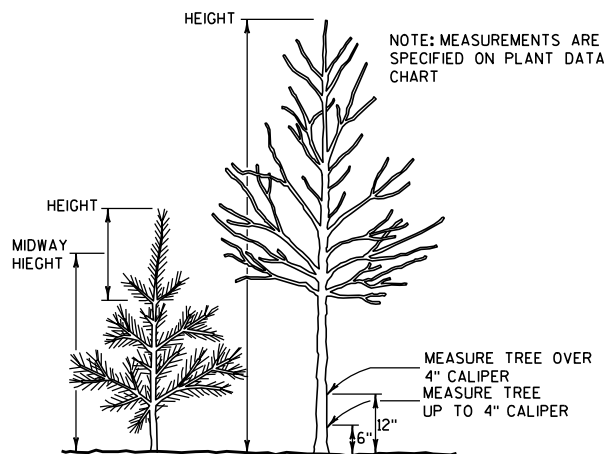


- NOTE:
- 1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
  - 2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING

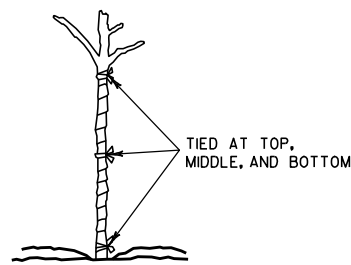


NOTE: DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

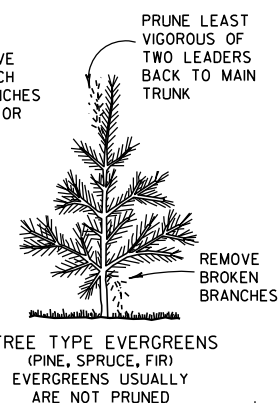
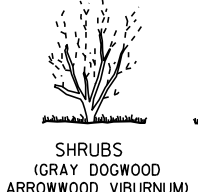
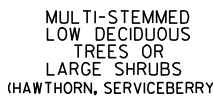
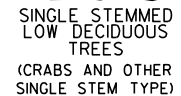
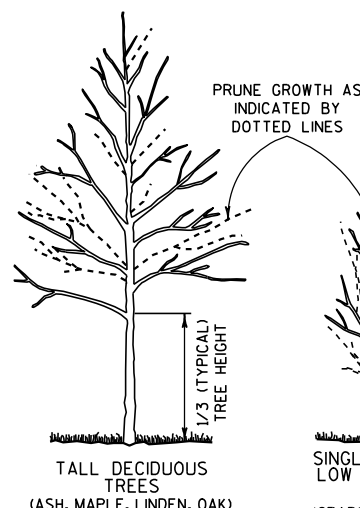
DRAINING



RODENT PROTECTION

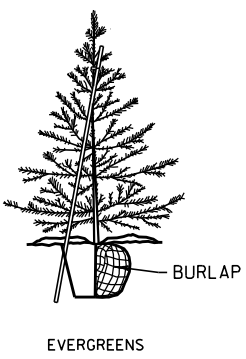
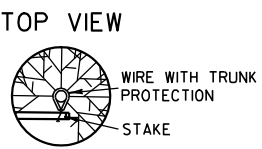
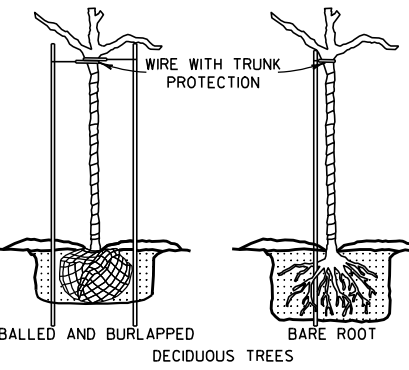
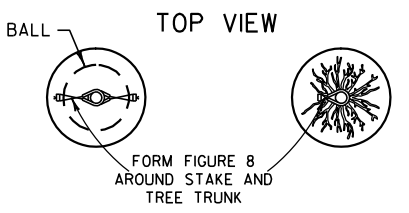


WRAPPING



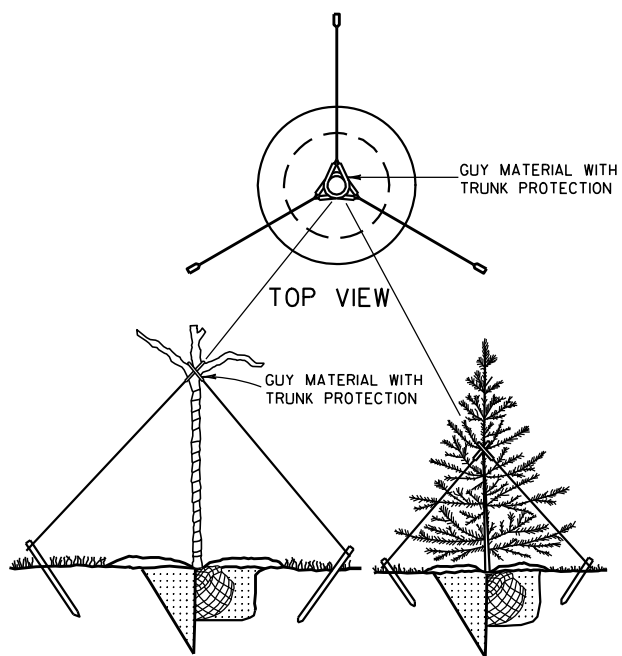
PRUNING

- NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
- 1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
  - 2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES



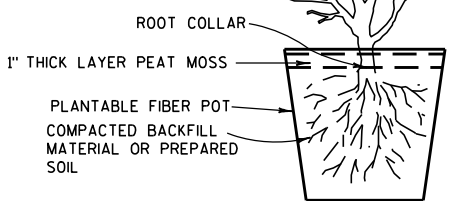
- NOTE: BRACING STAKE
- 1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
  - 2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
  - 3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
  - 4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

BRACING



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

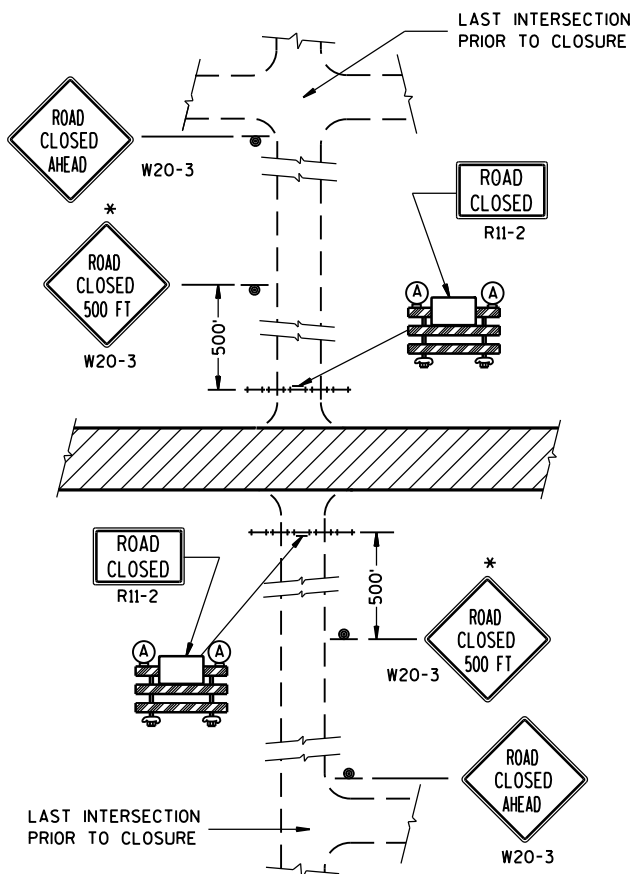
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

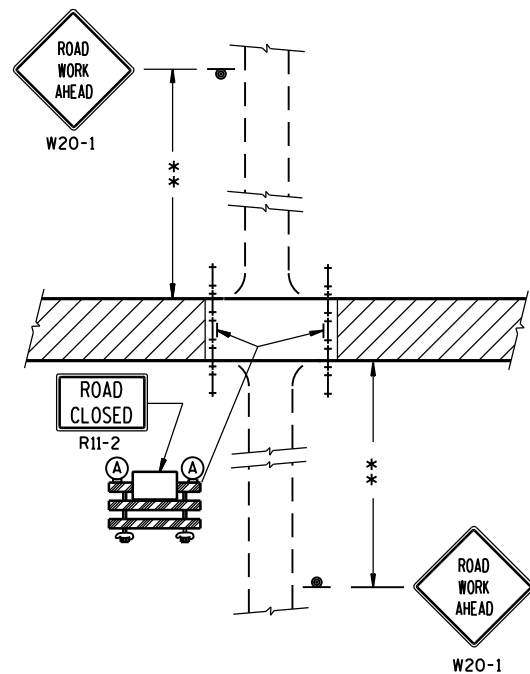
TREE PLANTING DETAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

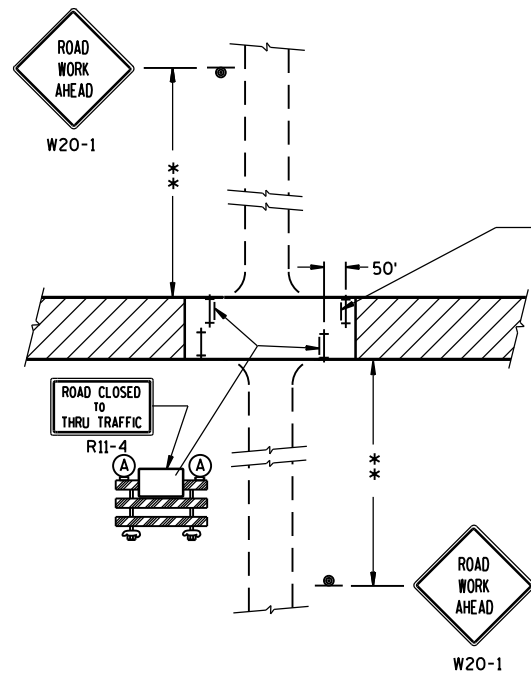
APPROVED  
4/11/94  
DATE /S/ Rory L. Rhinesmith  
CHIEF METHODS DEVELOPMENT ENGINEER  
FHWA



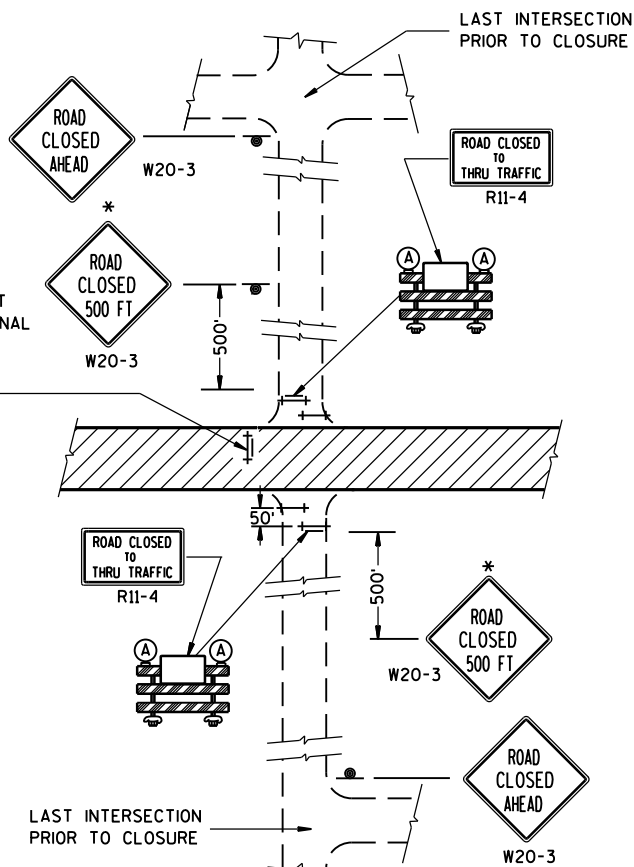
**DETAIL 1**  
(NO ACCESS TO PROJECT)



**DETAIL 2**  
(PUBLIC CROSS-TRAFFIC MAINTAINED.  
NO ACCESS TO PROJECT).



**DETAIL 3**  
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,  
LOCAL BUSINESS AND RESIDENT ACCESS).



**DETAIL 4**  
(CONTRACTOR, LOCAL BUSINESS AND  
RESIDENT ACCESS TO PROJECT)

## GENERAL NOTES

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

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.

THE SPACING BETWEEN TRAFFIC CONTROL 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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

BARRICADES 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.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

\*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

\*\*500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

## LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ TYPE III BARRICADE
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

## BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

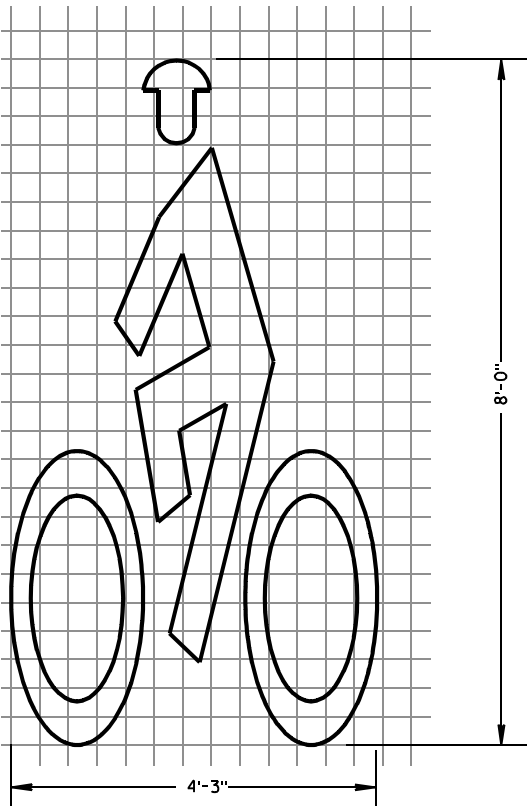
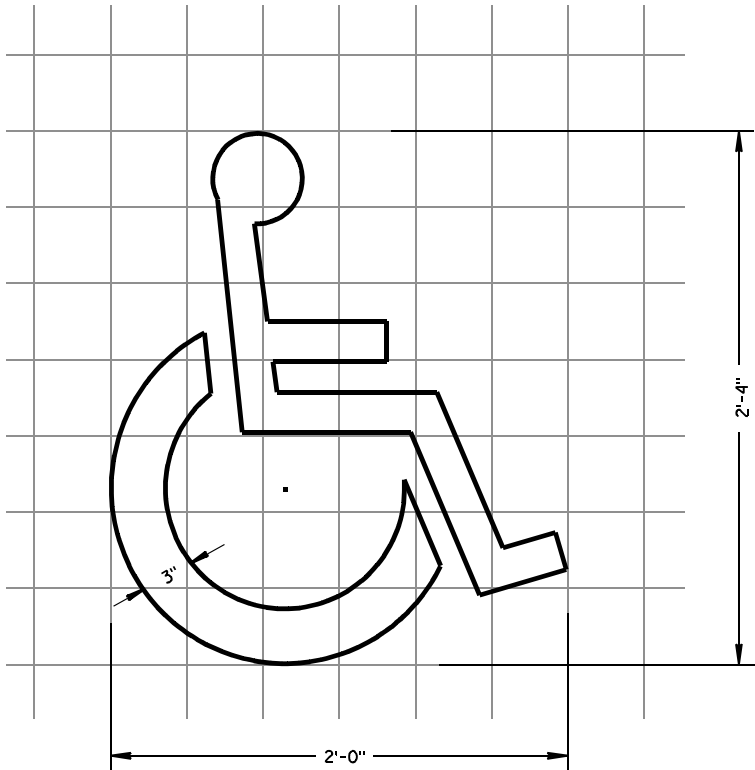
8/2013

DATE

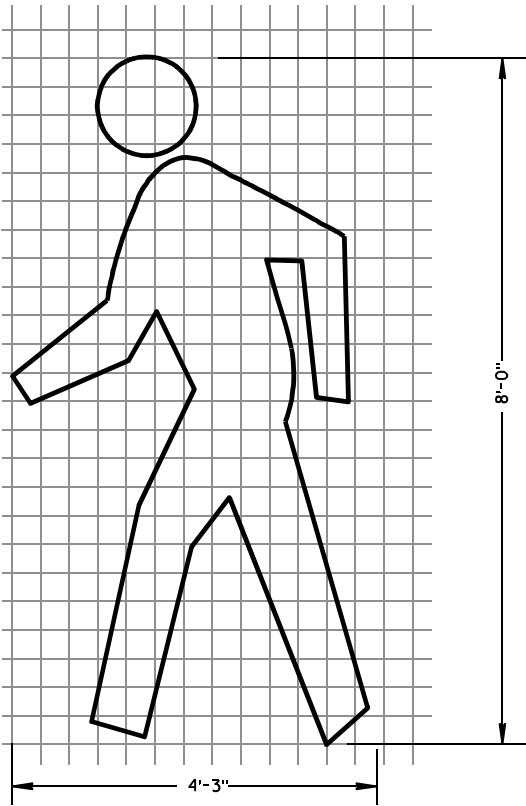
FHWA

/S/ Travis Feltes

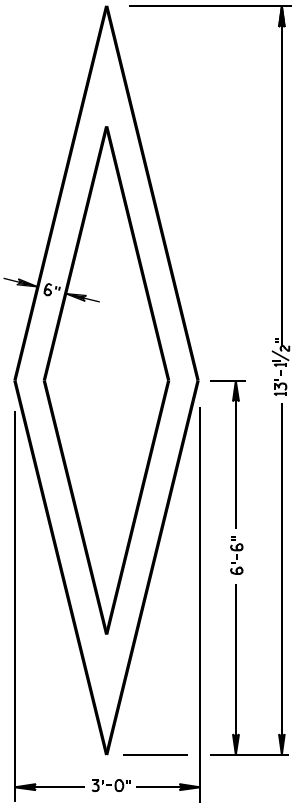
STATE TRAFFIC ENGINEER OF DESIGN



BIKE CROSSING SYMBOL



PEDESTRIAN SYMBOL



PREFERENTIAL  
LANE SYMBOL

GENERAL NOTES

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

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

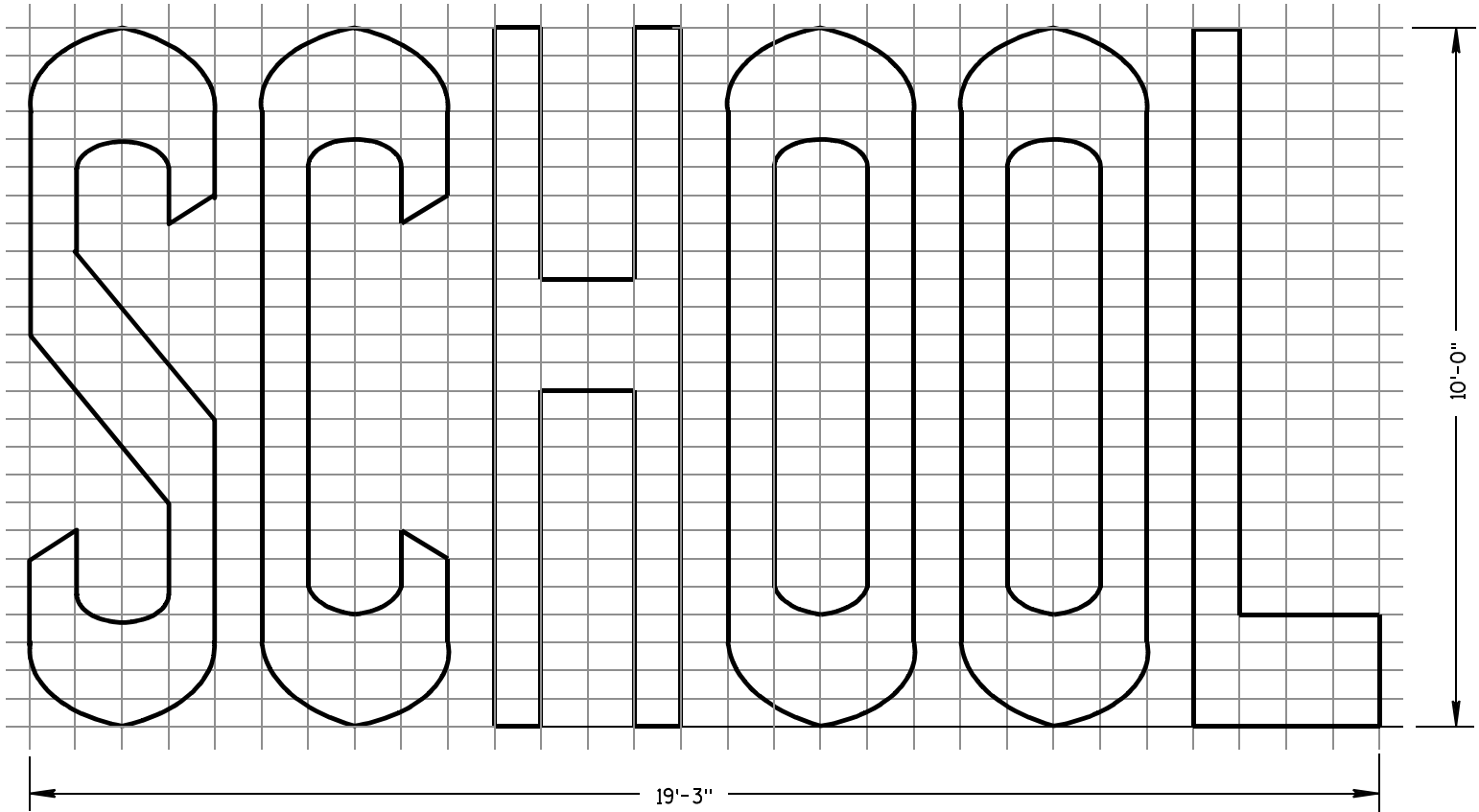
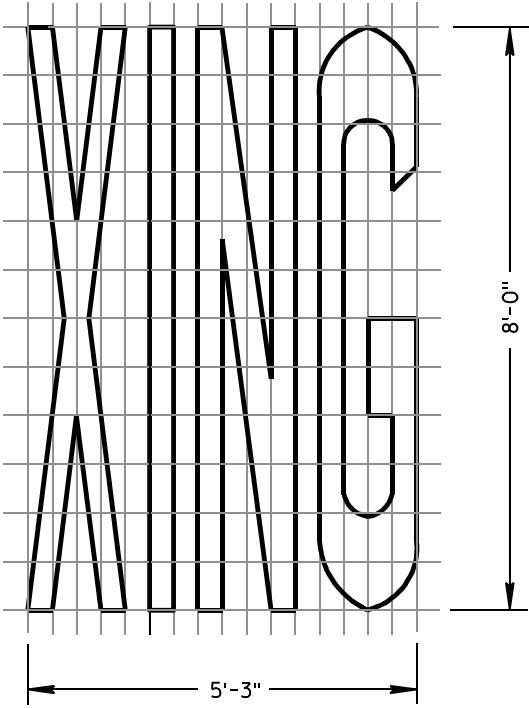
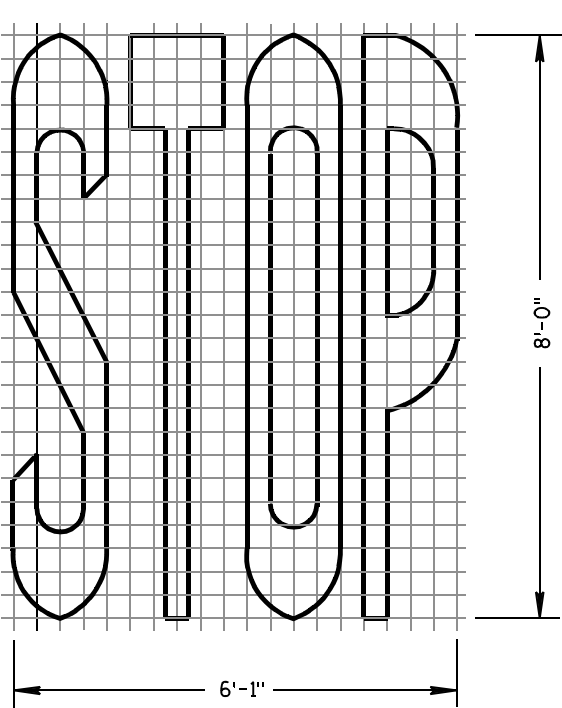
A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.

|                                                    |                                                           |
|----------------------------------------------------|-----------------------------------------------------------|
| PAVEMENT MARKING SYMBOLS                           |                                                           |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                           |
| APPROVED<br>7/1/11<br>DATE                         | /S/ Thomas N. Notbohm<br>STATE TRAFFIC ENGINEER OF DESIGN |
| FHWA                                               |                                                           |

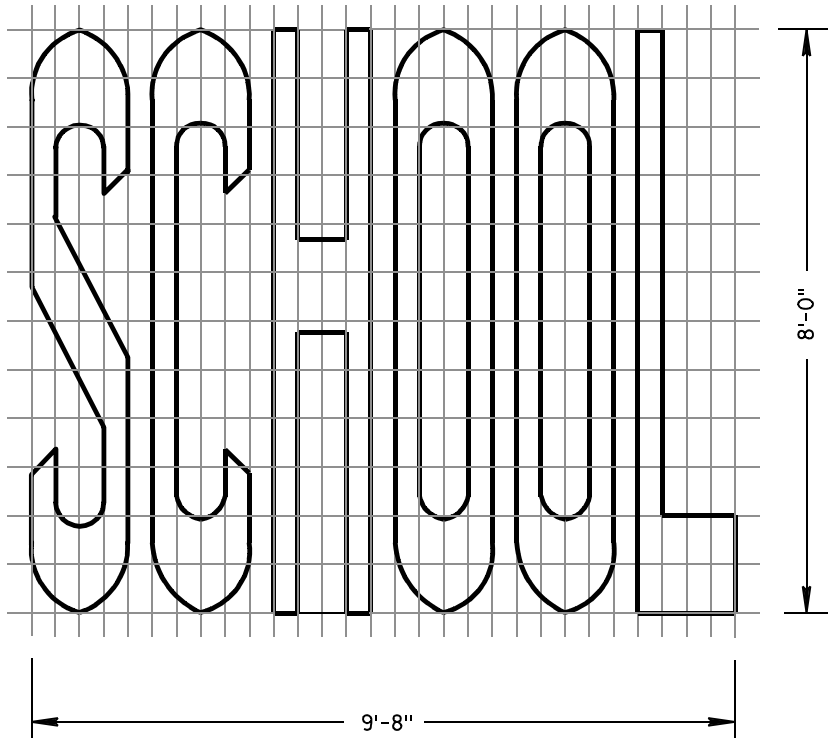
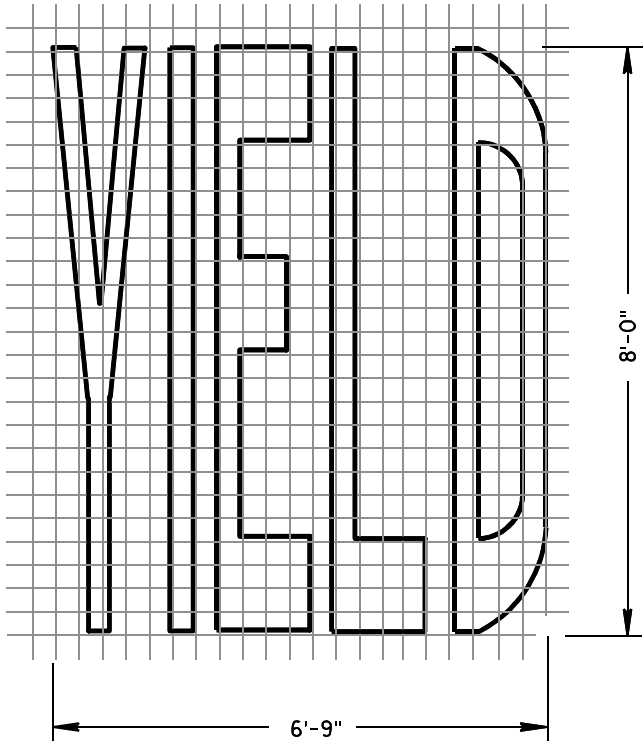
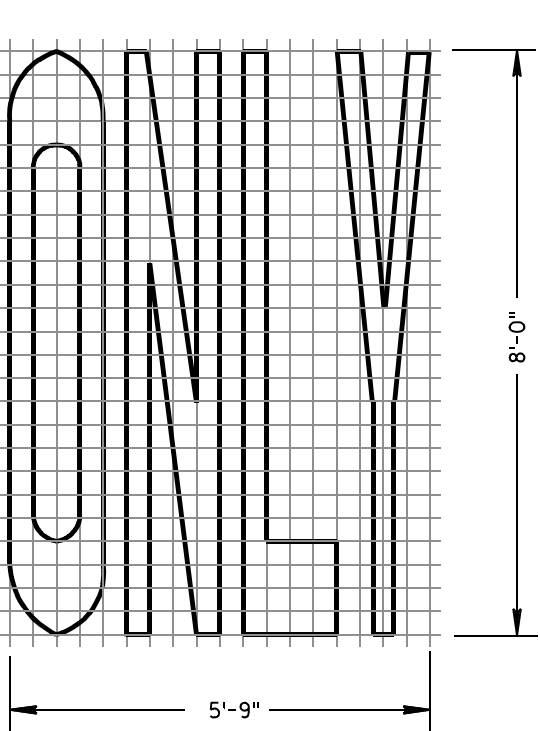
GENERAL NOTES

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

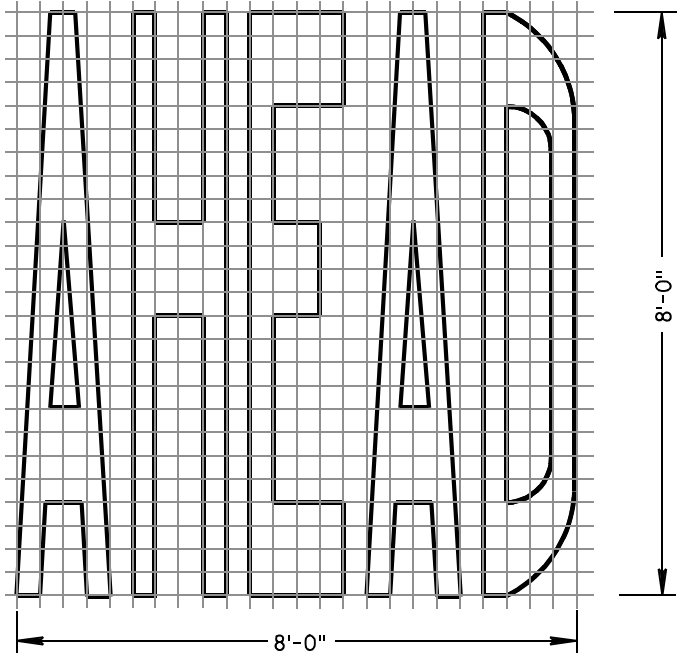
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

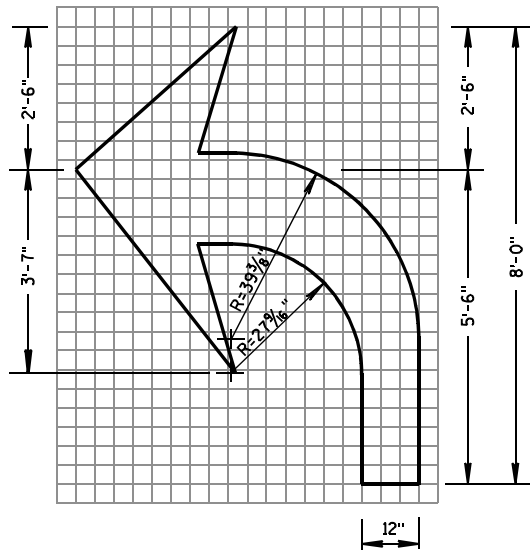
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

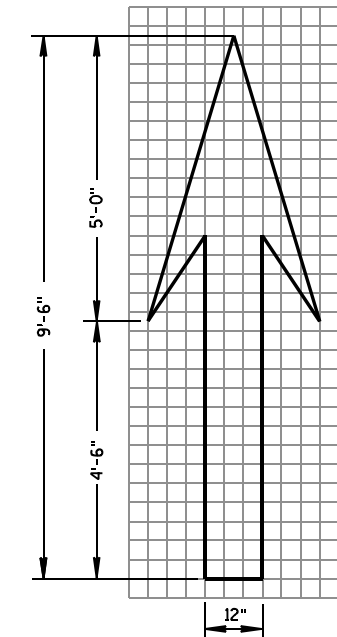
7-1-11  
DATE

/S/ Thomas N. Notbohm  
STATE TRAFFIC ENGINEER OF DESIGN

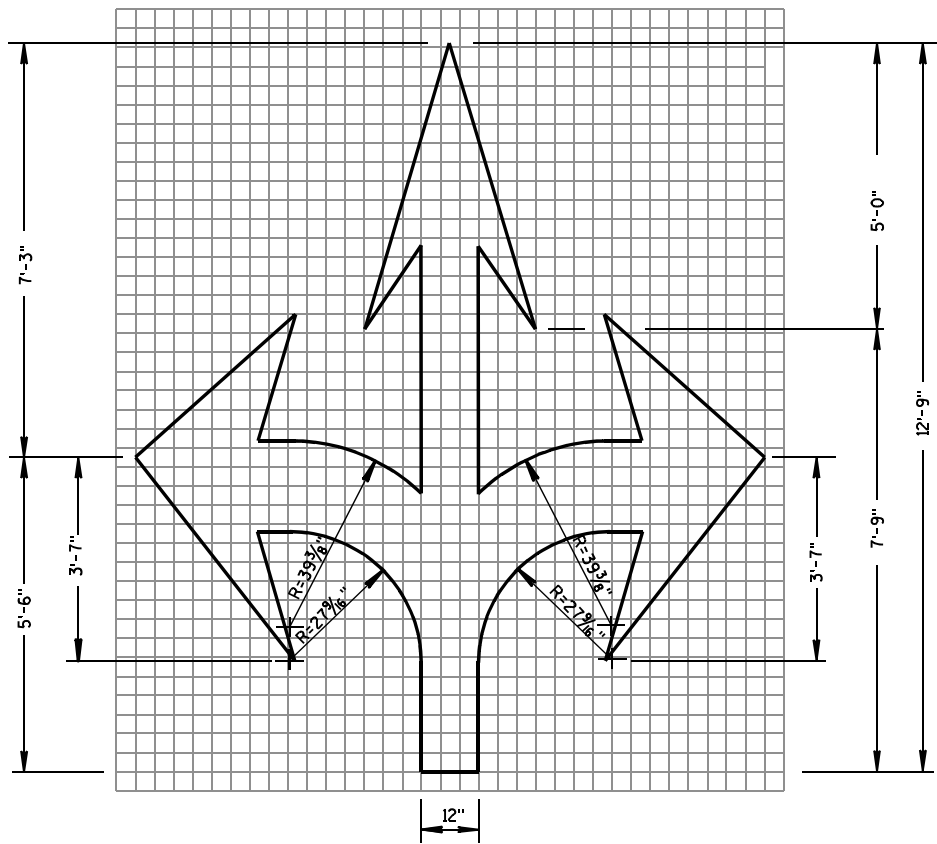
FHWA



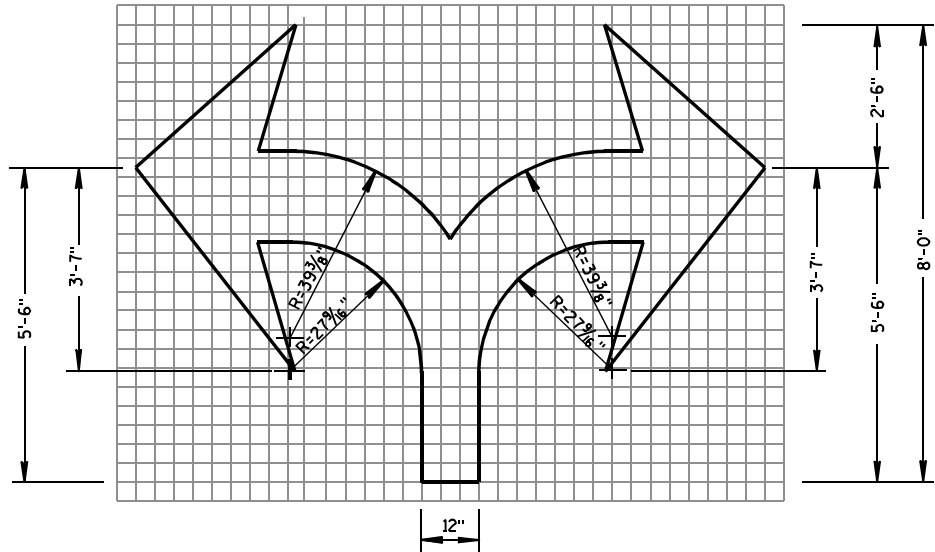
TYPE 2



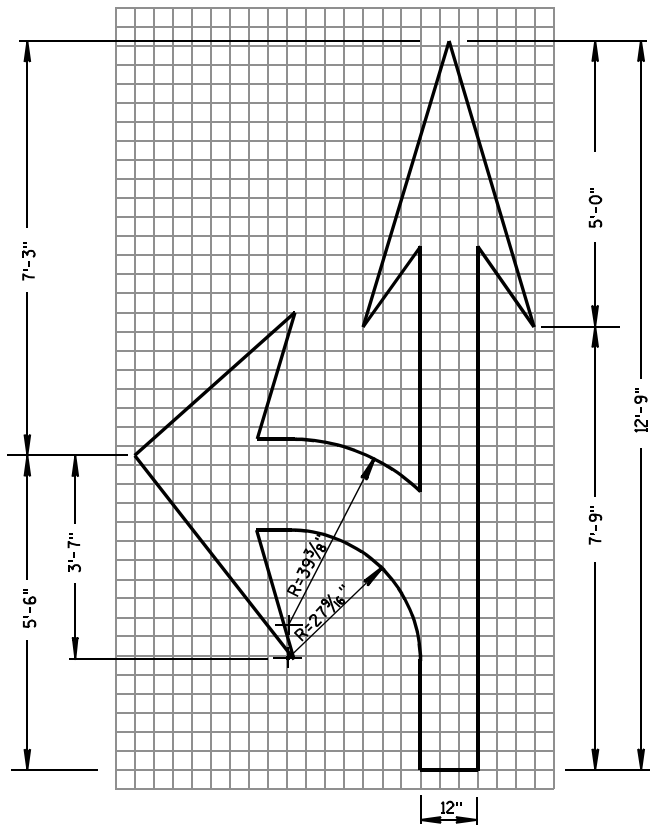
TYPE 1



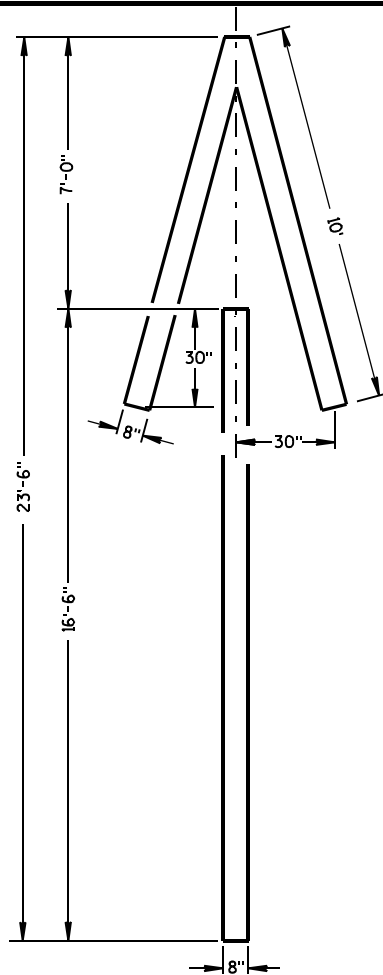
TYPE 6



TYPE 7



TYPE 3

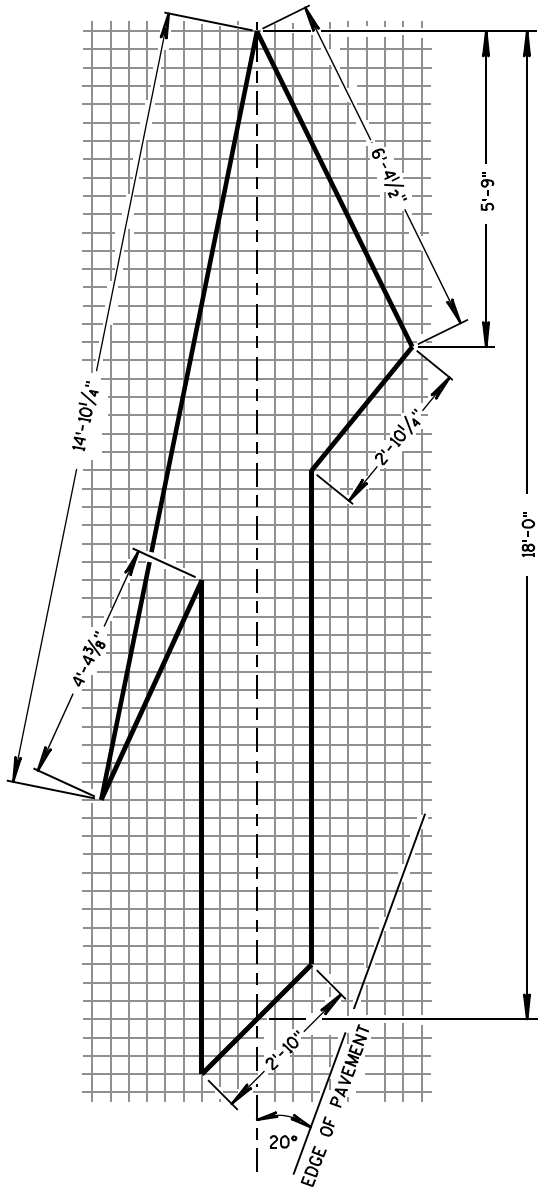


TYPE 4

GENERAL NOTES

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

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



TYPE 5 LANE DROP ARROW

PAVEMENT MARKING ARROWS

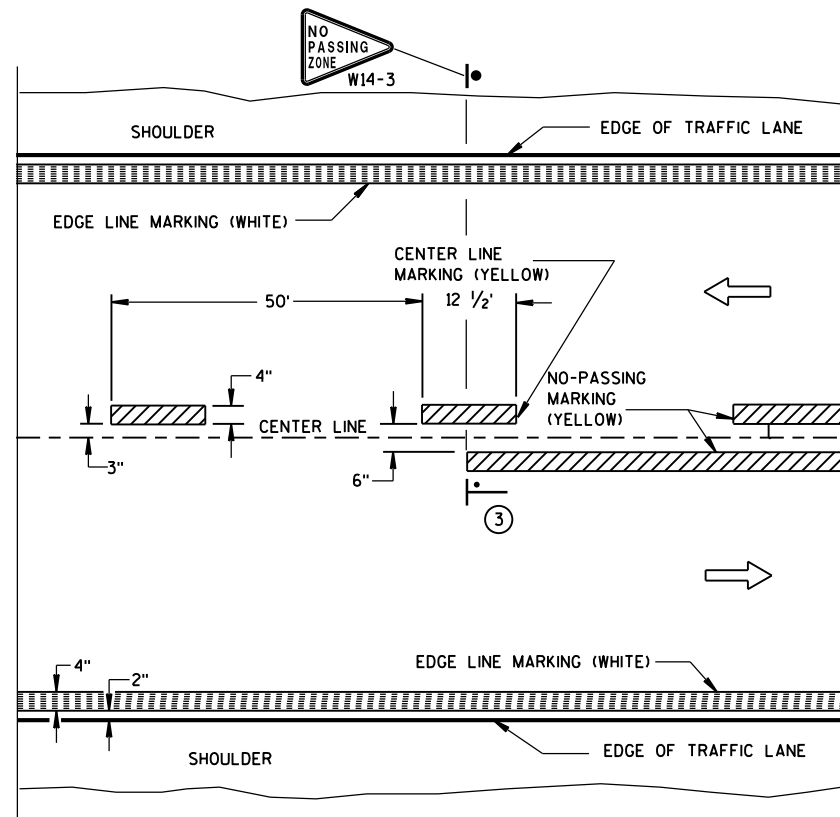
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

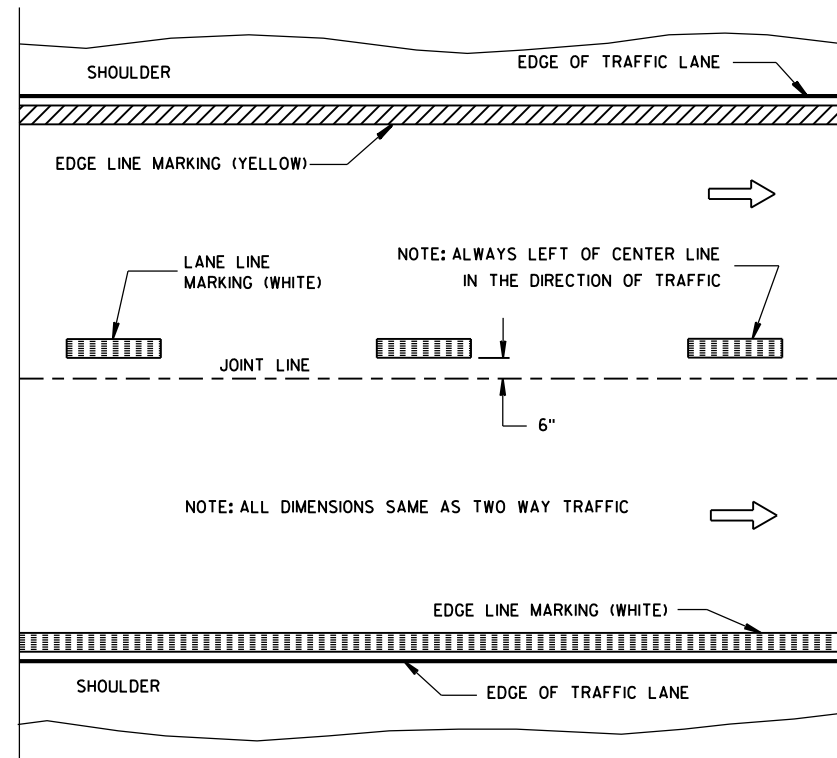
7/1/11  
DATE

/S/ Thomas N. Notbohm  
STATE TRAFFIC ENGINEER OF DESIGN

FHWA

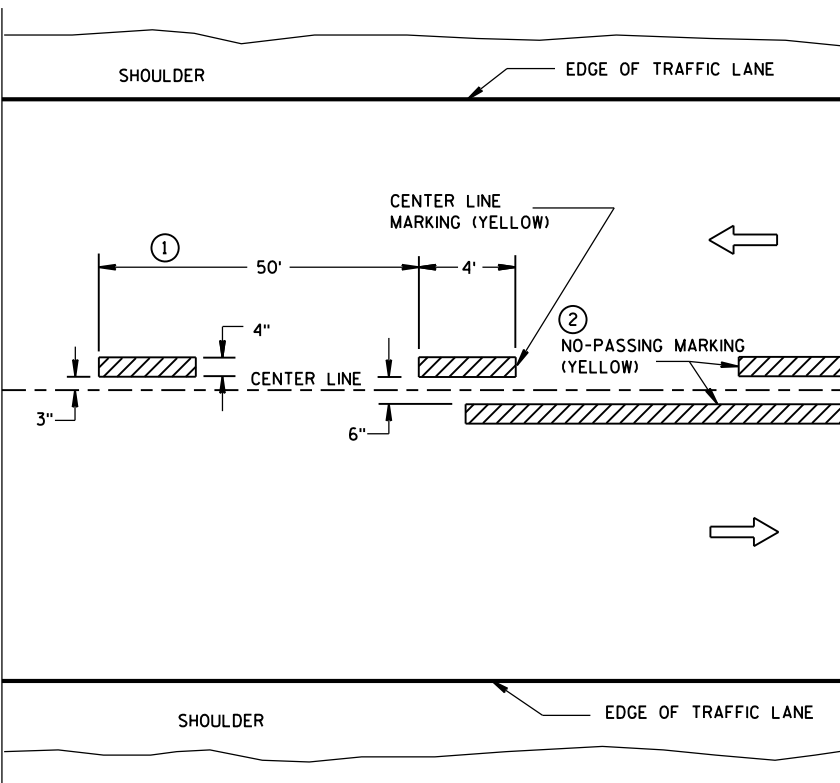


TWO WAY TRAFFIC

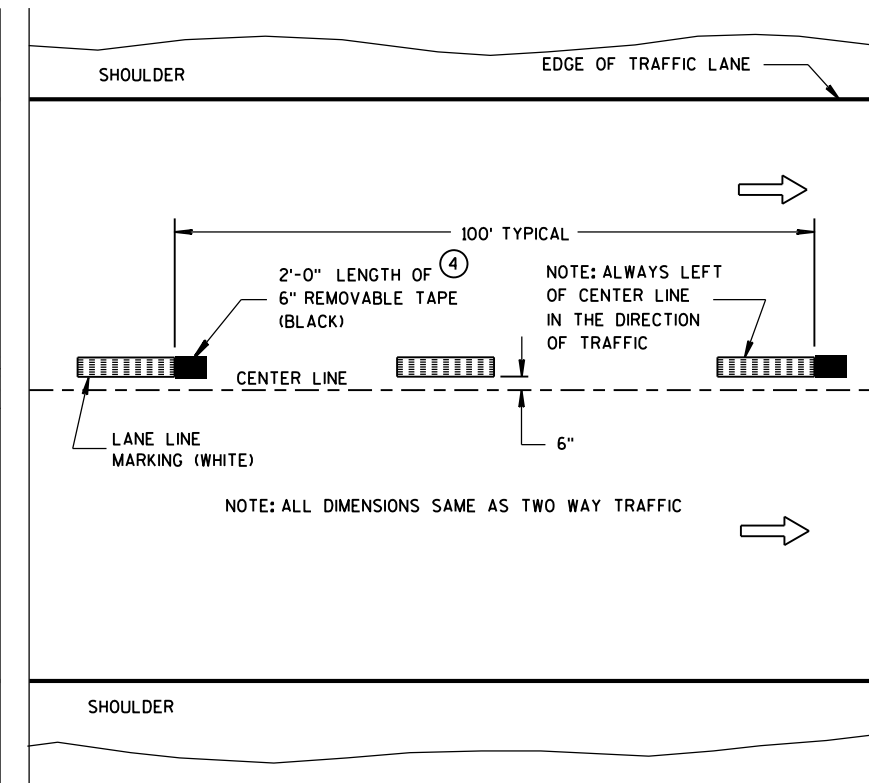


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING  
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

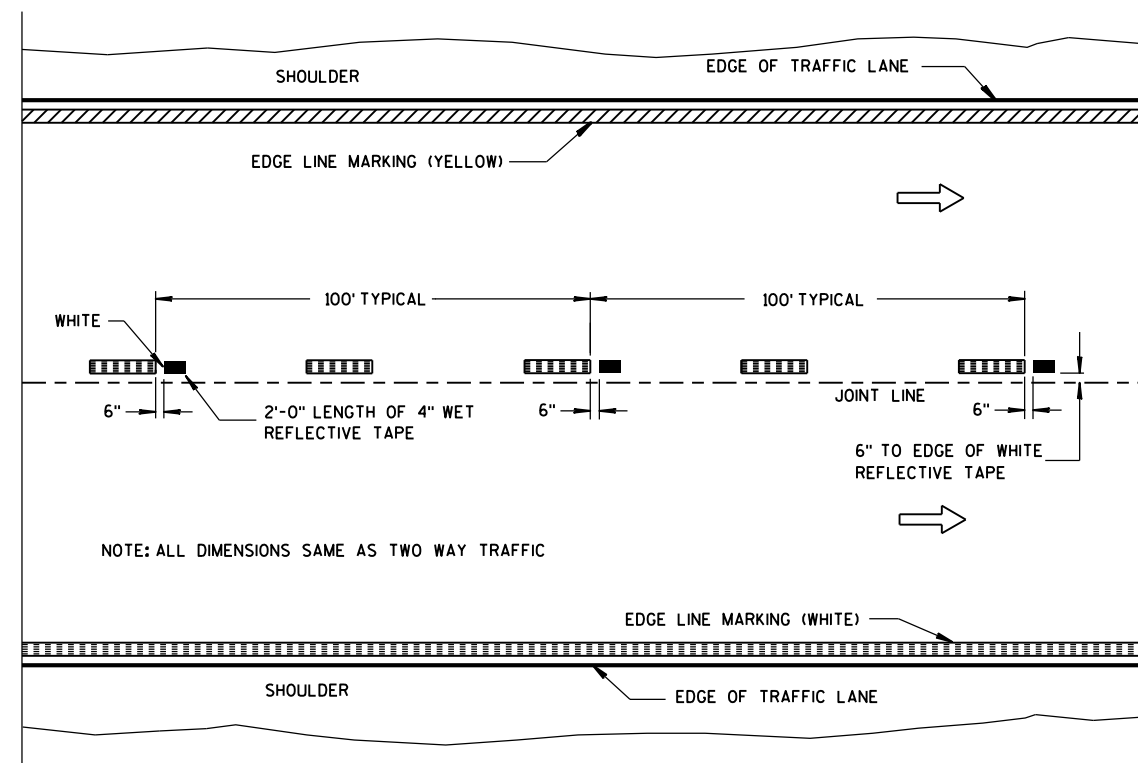
## GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

## NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO  
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

## LEGEND

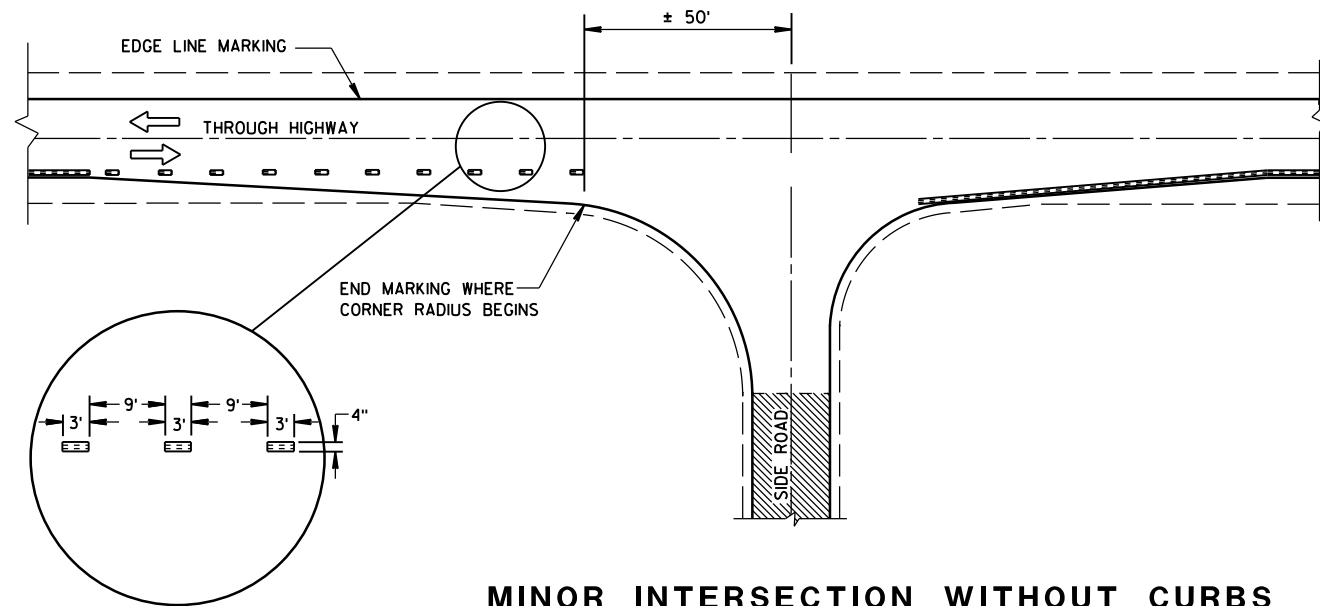
- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
5-13-2013  
DATE  
FHWA

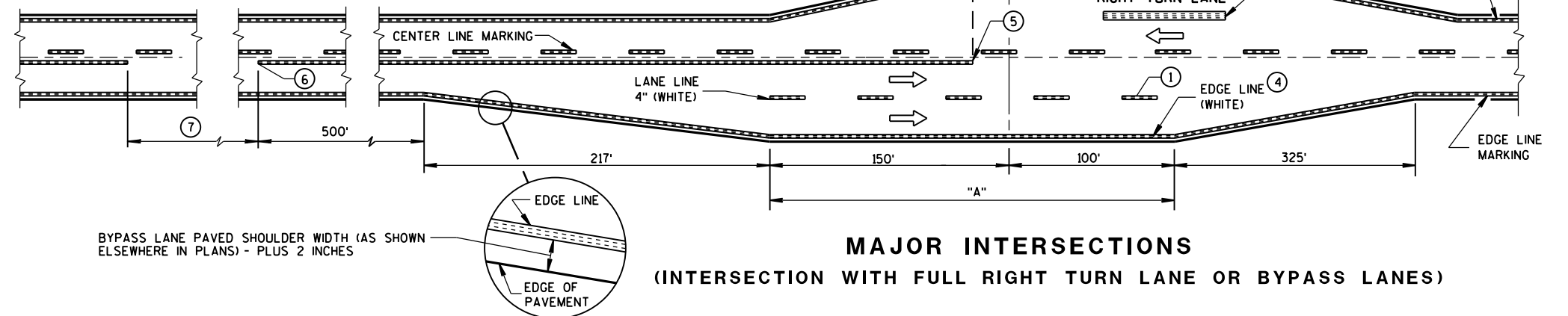
/S/ Travis Feltes  
STATE TRAFFIC ENGINEER



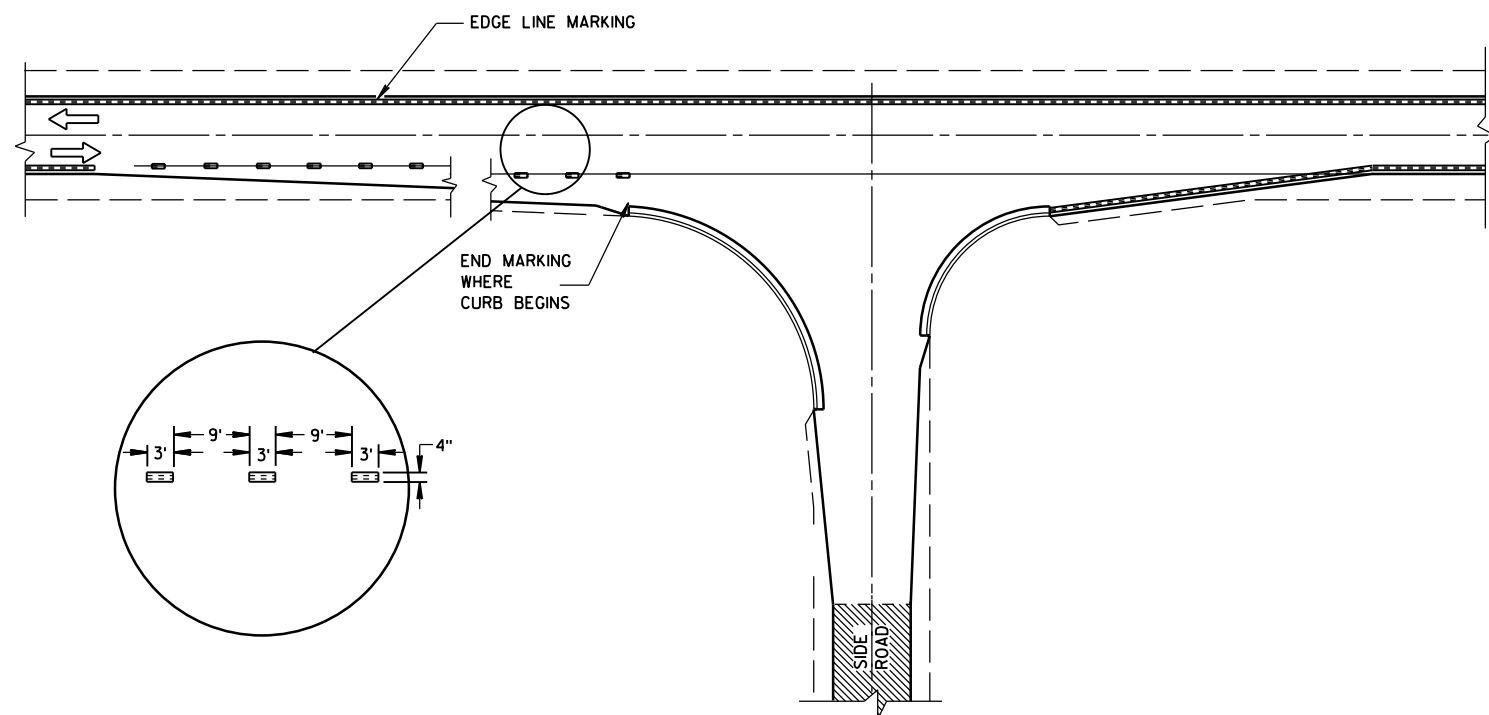
**MINOR INTERSECTION WITHOUT CURBS**

⑦

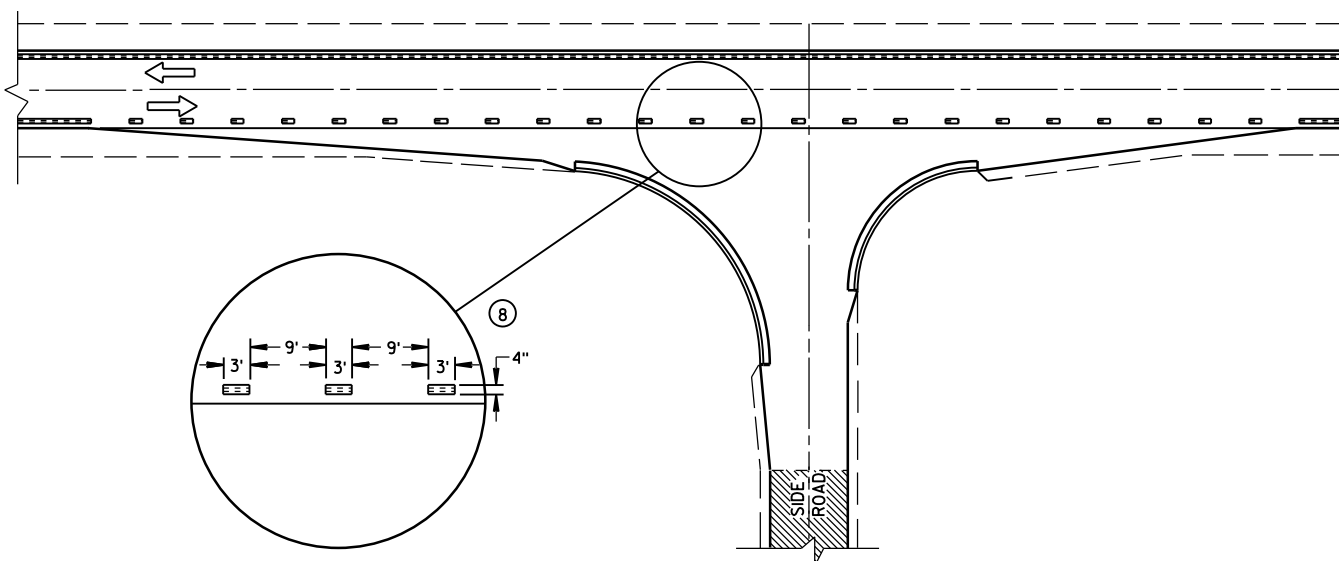
| POSTED SPEED (MPH) | MINIMUM DISTANCE BETWEEN ZONES (FEET) |
|--------------------|---------------------------------------|
| 25 - 30            | 528                                   |
| 35 - 40            | 528                                   |
| 45 - 50            | 686                                   |
| 55                 | 792                                   |



**MAJOR INTERSECTIONS**  
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



**MINOR INTERSECTION WITH CURBS**  
(TYPICAL MARKING)



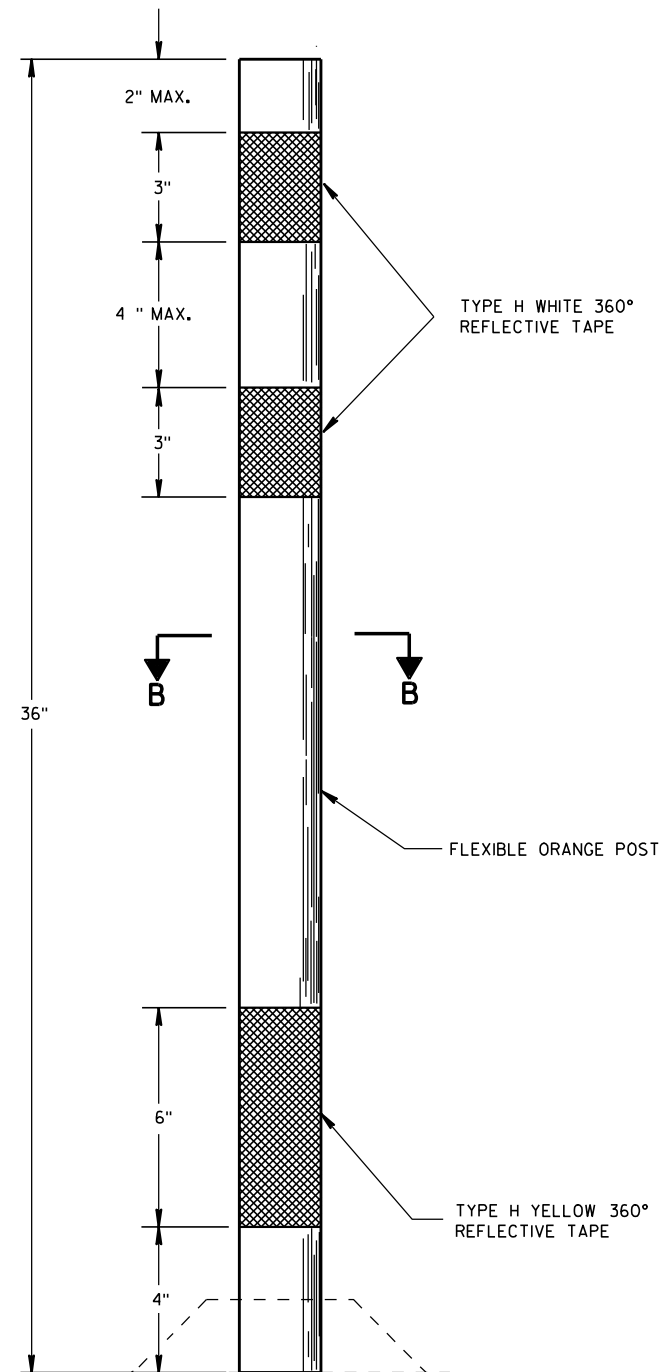
**MINOR INTERSECTION WITH CURBS**  
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

## GENERAL NOTES

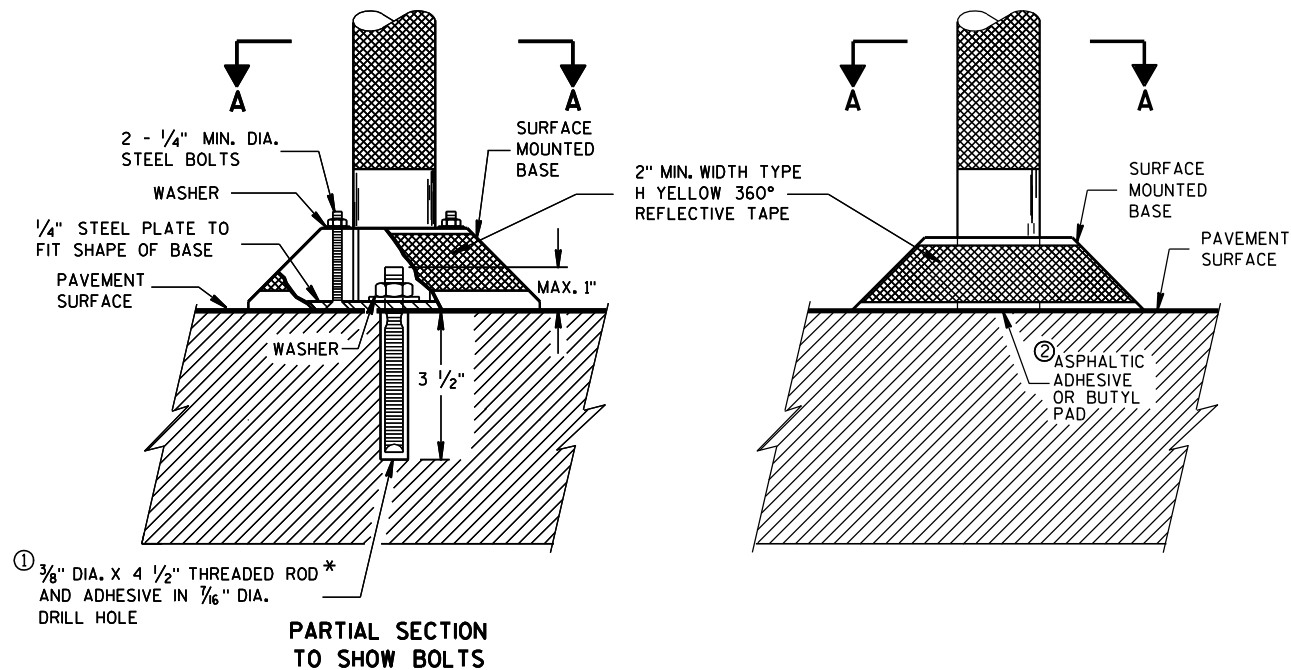
- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
  - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
  - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
  - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
  - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
  - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
  - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
  - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL ( → ) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING  
(INTERSECTIONS)

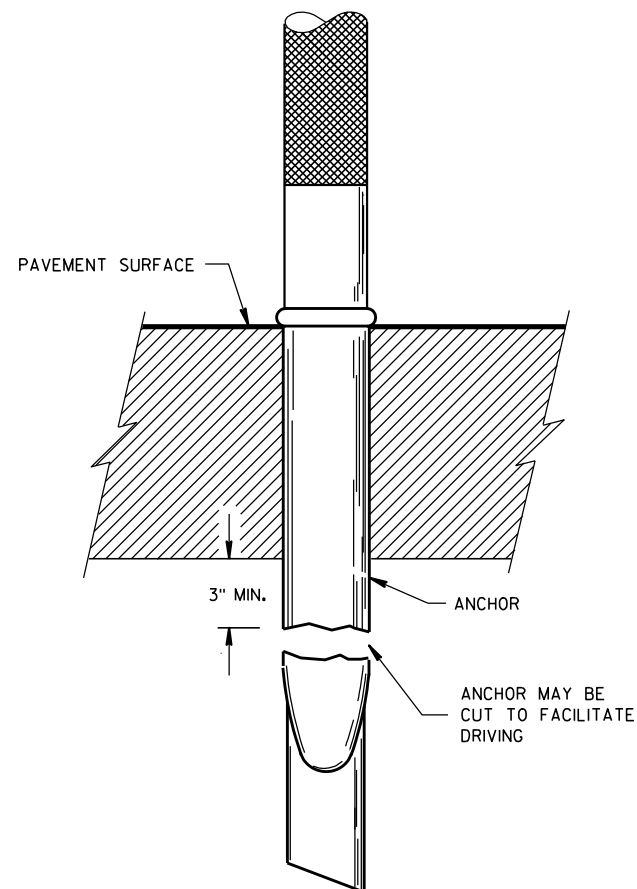
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



FLEXIBLE TUBULAR MARKER POST

PARTIAL SECTION  
TO SHOW BOLTS

POST BASES ON NEW OR EXISTING PAVEMENT



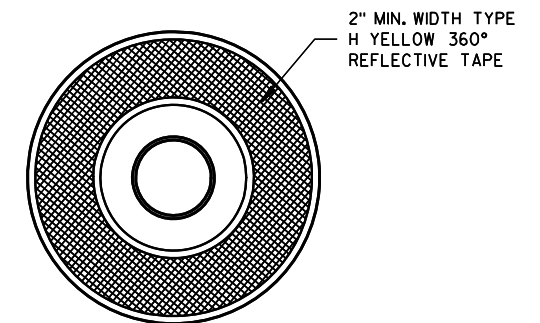
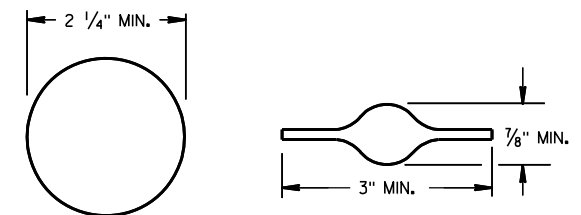
POST ANCHOR AND BASE ON PAVEMENT WHICH WILL BE REMOVED

## GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

- ① THREADED ROD SHALL BE MACHINED DOWN TO 0.280 INCH DIA. 1 1/4 INCHES FROM THE TOP.
- ② THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

SECTION A-A  
SURFACE MOUNTED BASESECTION B-B  
ALTERNATIVE SHAPES

FLEXIBLE TUBULAR MARKER  
POST, ANCHOR & BASES

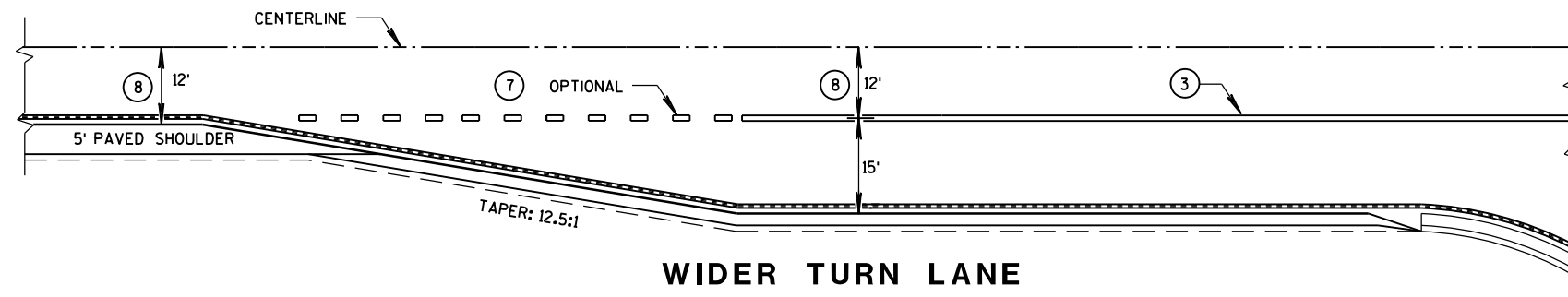
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

2/17/94  
DATE

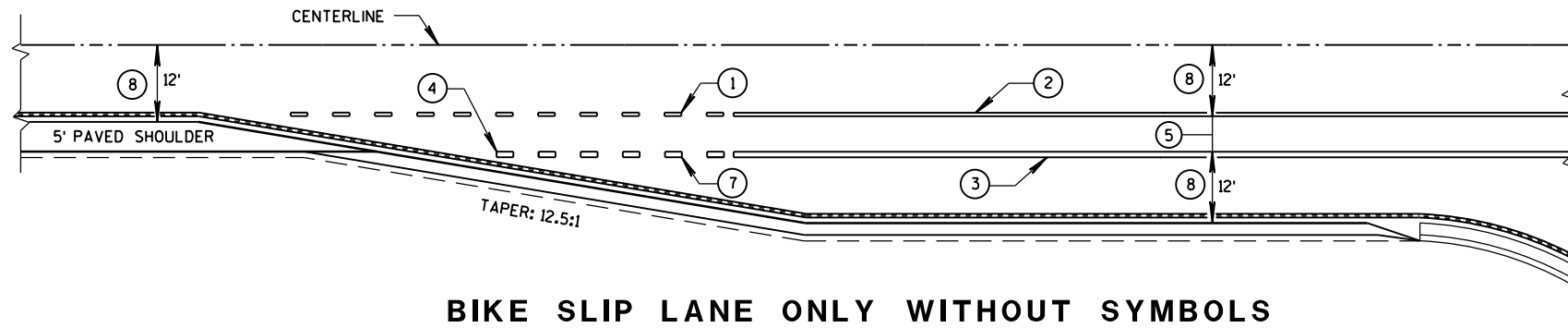
FHWA

/S/ Chester J. Spang  
DIRECTOR, OFFICE OF TRAFFIC

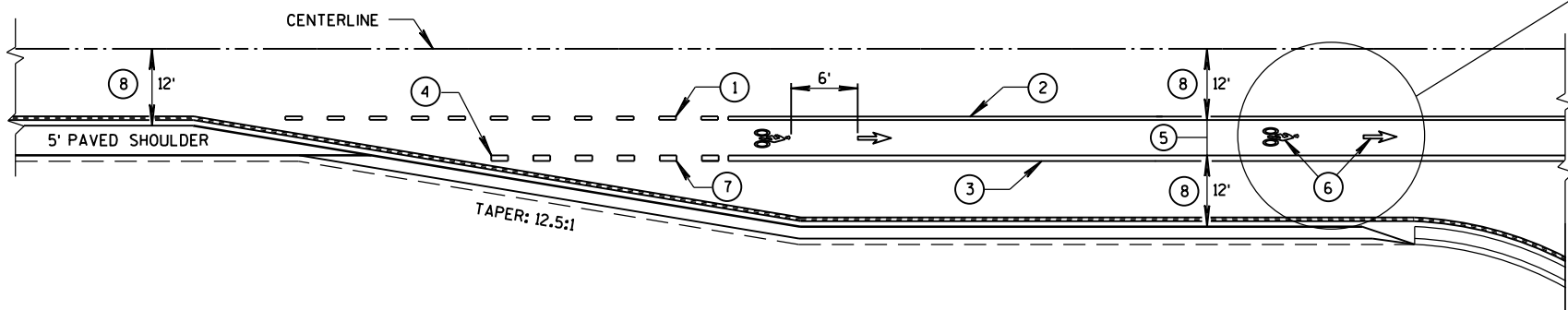


## GENERAL NOTES

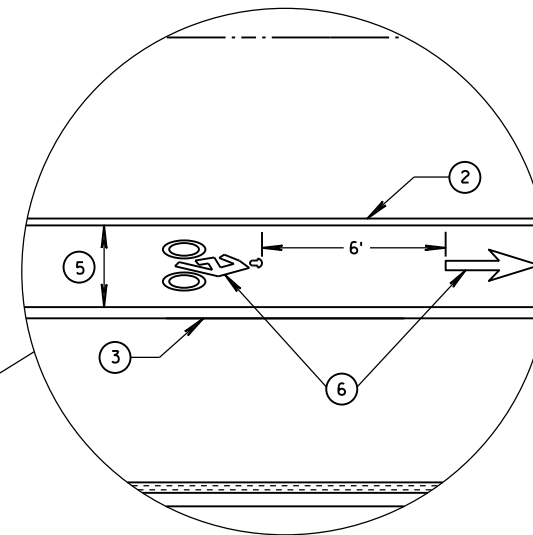
- ① 3' LINE, 9' GAP - 4-INCH WIDE, WHITE.
- ② 4-INCH, WHITE.
- ③ 8-INCH, WHITE.
- ④ IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
- ⑤ BIKE ACCOMMODATION FOR CONCRETE PAVEMENT IS 5' WIDE. BIKE ACCOMMODATION FOR ASPHALT PAVEMENT IS A MINIMUM OF 4', 5' AT  $\geq 45$  MPH.
- ⑥ REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- ⑦ 3' LINE, 9' GAP - 8-INCH WIDE, WHITE.
- ⑧ REFER TO CONTRACT PLANS.



**BIKE SLIP LANE ONLY WITHOUT SYMBOLS**



**BIKE LANE WITH SYMBOLS**



## BICYCLE LANE MARKING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013  
DATE

FHWA

/S/ Travis Feltz  
STATE TRAFFIC ENGINEER

GENERAL NOTES

- ① 3' LINE, 9' GAP - 4-INCH WIDE, WHITE.

② 4-INCH, WHITE.

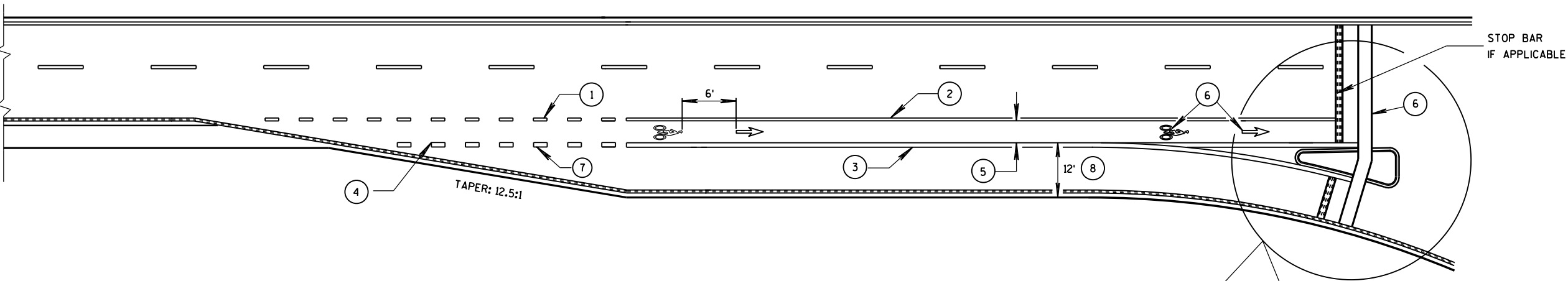
③ 8-INCH, WHITE.

④ IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
- ⑤ 5' TYPICAL.

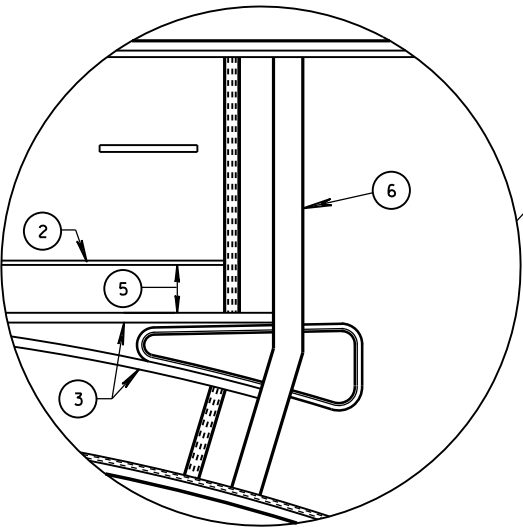
⑥ REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

⑦ 3' LINE, 9' GAP - 8-INCH WIDE, WHITE.

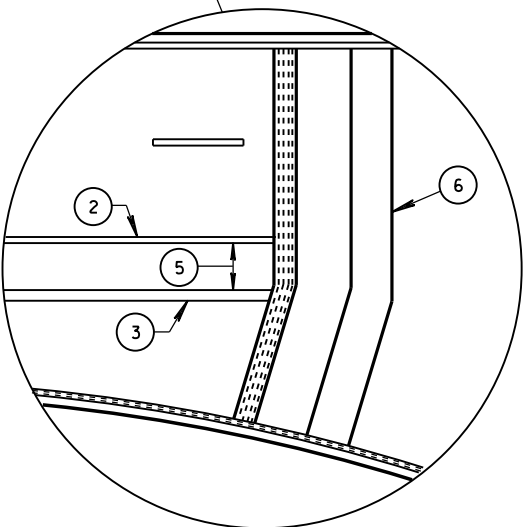
⑧ REFER TO CONTRACT PLANS.



BIKE LANE - 4-LANE DIVIDED WITH RIGHT TURN LANE



4 LANE DIVIDED WITH ISLAND



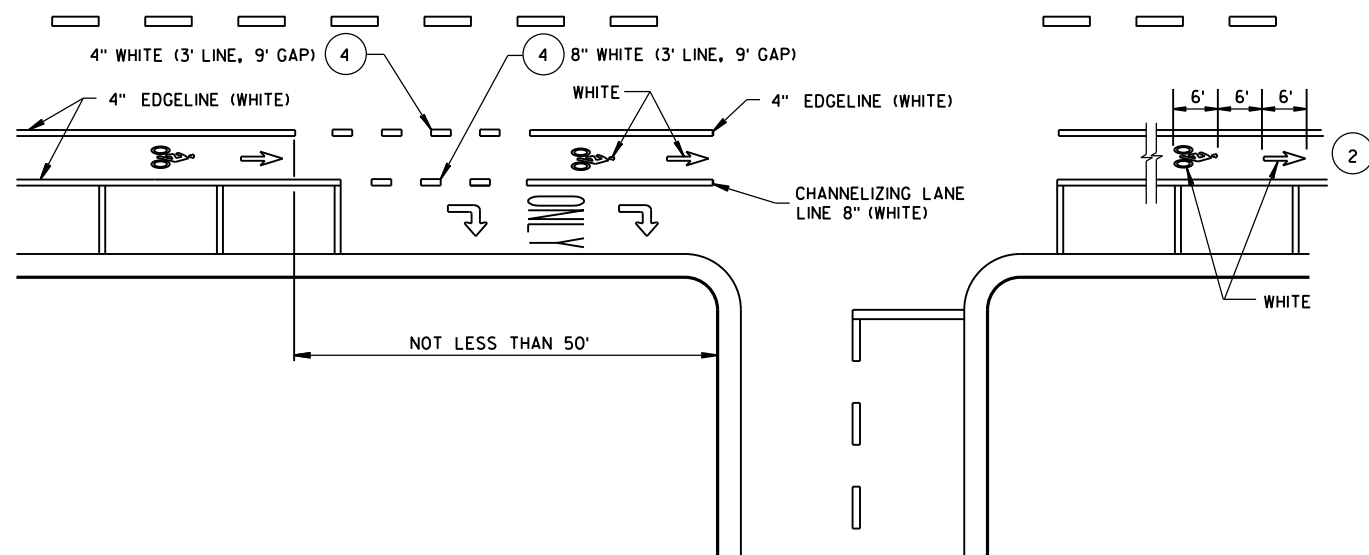
4 LANE DIVIDED WITHOUT ISLAND

BICYCLE LANE MARKING

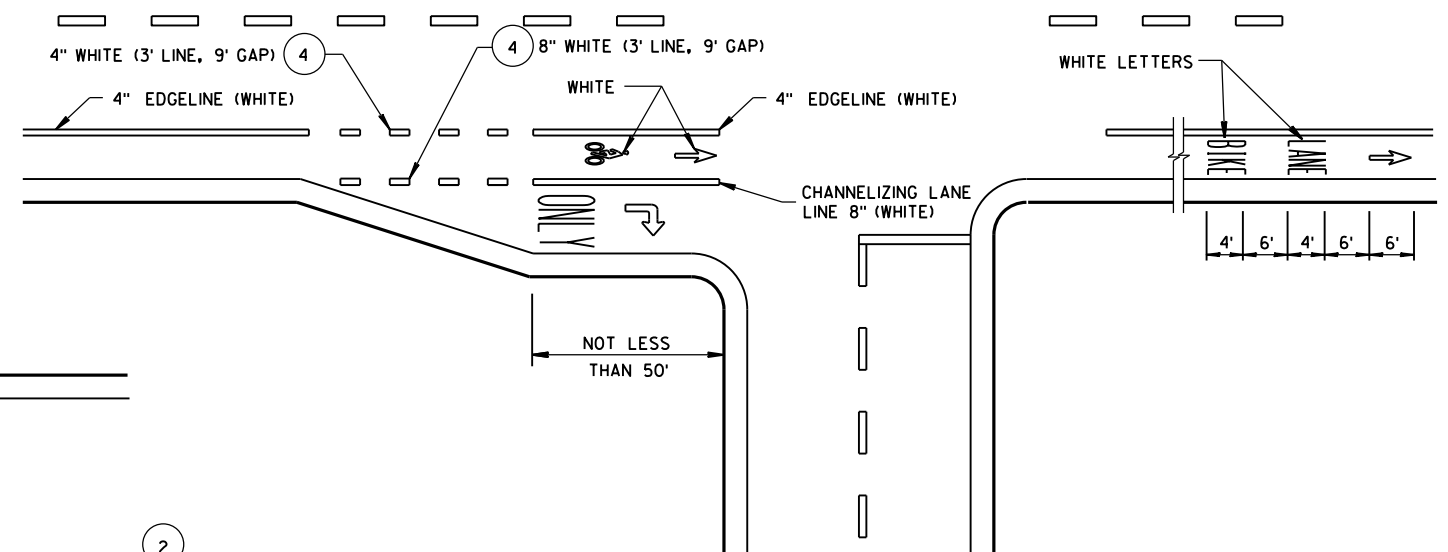
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
4/30/2013  
DATE  
FHWA

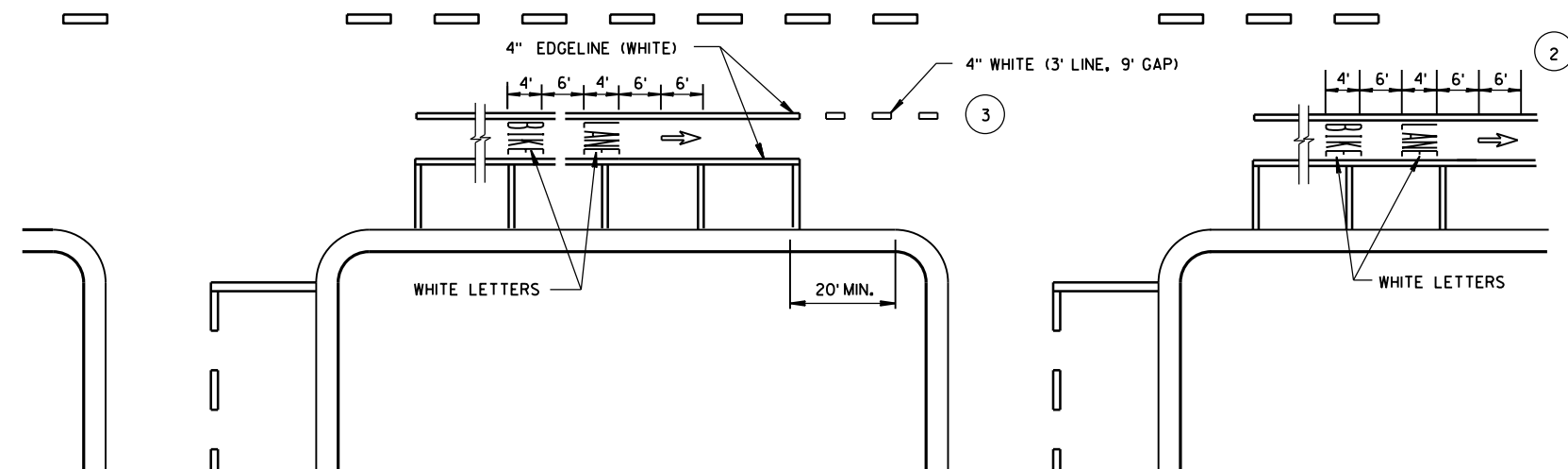
/S/ Travis Feltz  
STATE TRAFFIC ENGINEER



**DESIGNATED BICYCLE LANE**



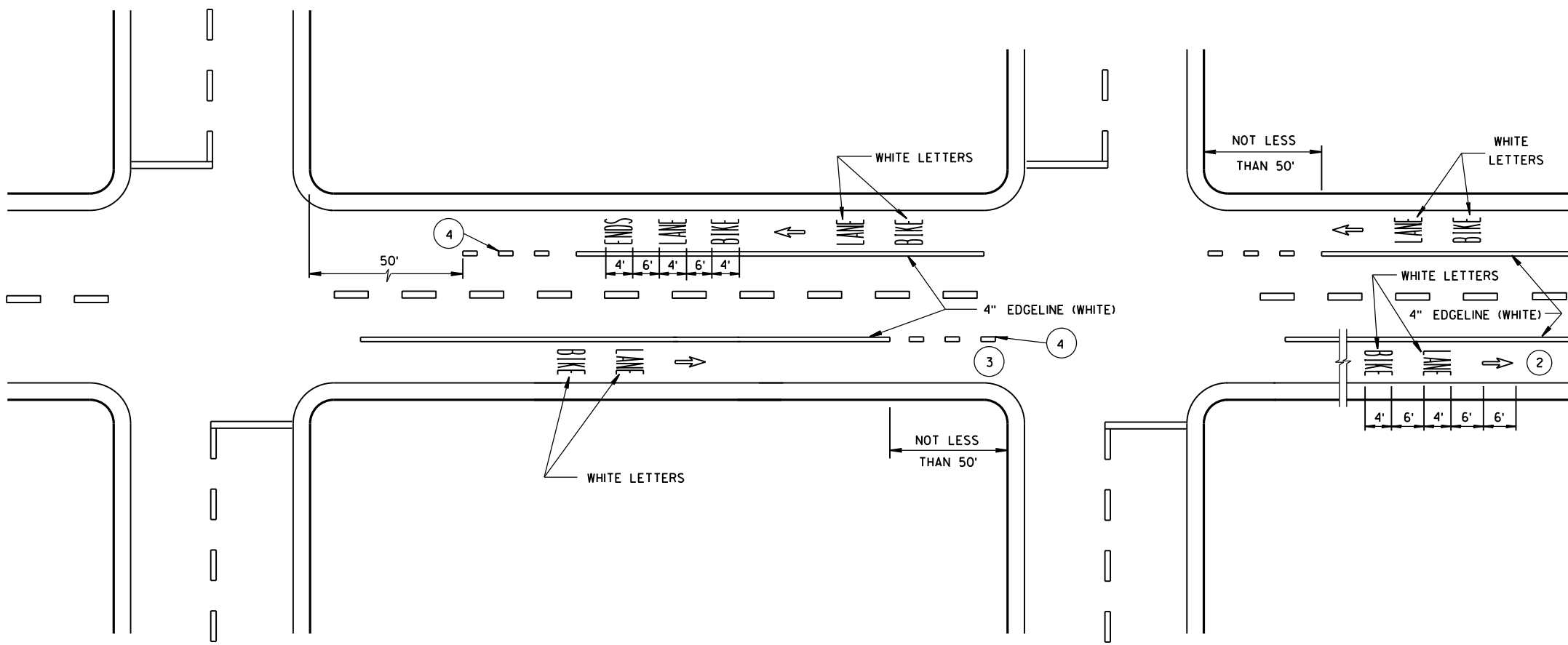
DESIGNATED BICYCLE LANE  
NO PARKING, RIGHT TURN LANE



**DESIGNATED BICYCLE LANE  
WITH PARKING, NO RIGHT TURN LANE**

## GENERAL NOTES

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. THE SERIES OF PAVEMENT MARKING SYMBOLS SHALL BE REPEATED AFTER INTERSECTIONS AND SPACED A MAXIMUM OF 250'. NO PAVEMENT MARKING WILL TAKE PLACE IN THE CROSSWALK.
3. DOTTED LINES SHOULD BE USED 50' TO 200' IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
4. WHEN SPECIFIED IN THE CONTRACT.



DESIGNATED BICYCLE LANE  
NO PARKING

### GENERAL NOTES

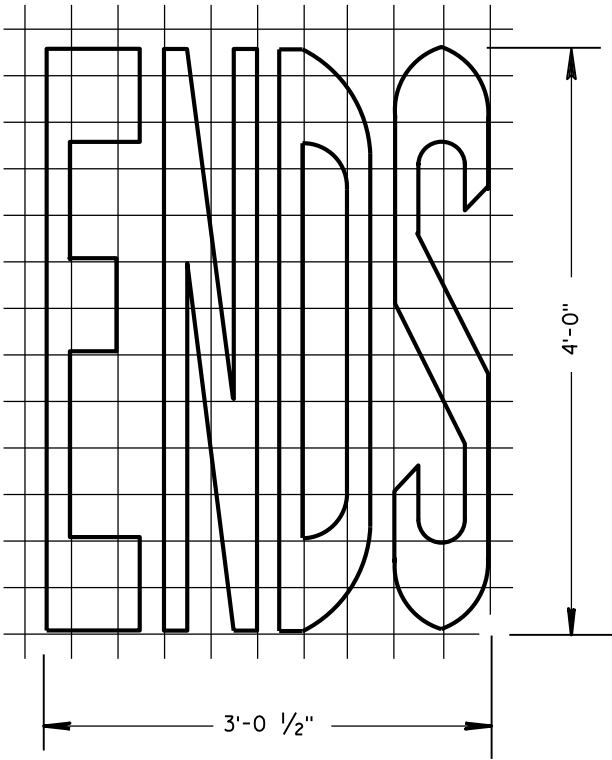
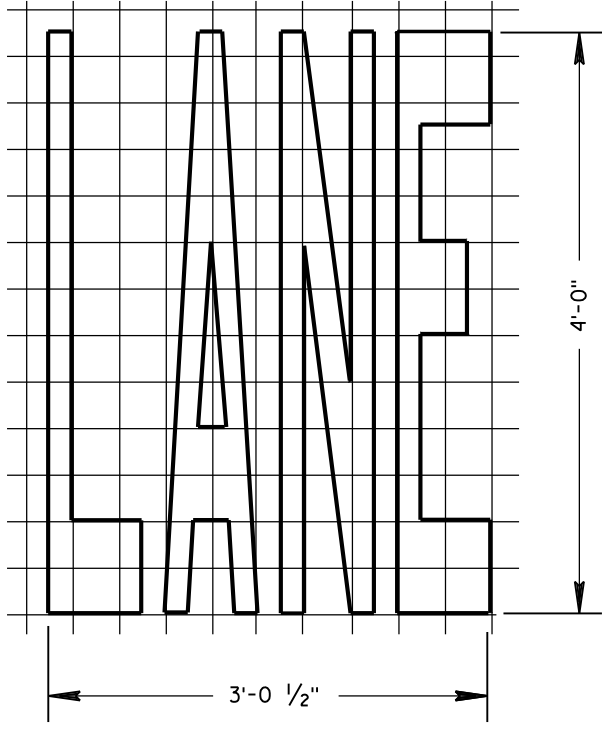
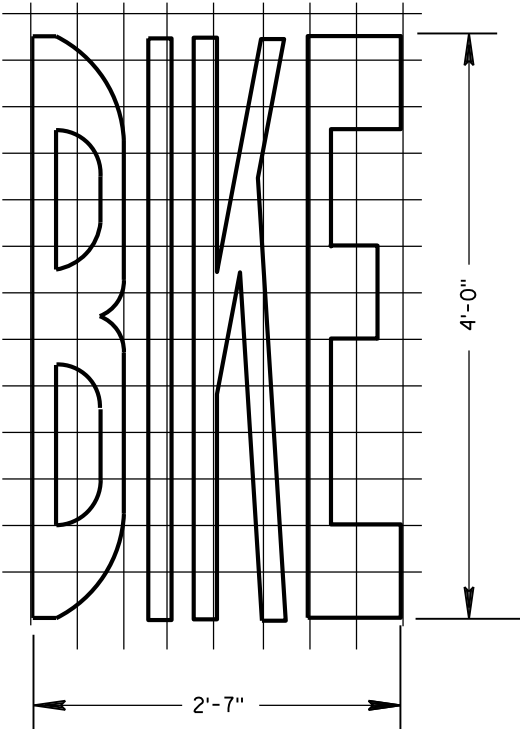
- 1 DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
- 2 THE SERIES OF PAVEMENT MARKING SYMBOLS SHALL BE REPEATED AFTER INTERSECTIONS AND SPACED A MAXIMUM OF 250'. NO PAVEMENT MARKING WILL TAKE PLACE IN THE CROSSWALK.
- 3 DOTTED LINES SHOULD BE USED 50' TO 200' IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
- 4 3' LINE, 9' GAP - 4" WIDE, WHITE.

|                                                    |                                             |
|----------------------------------------------------|---------------------------------------------|
| URBAN BICYCLE LANE MARKING                         |                                             |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                             |
| APPROVED<br>4/30/2013<br>DATE                      | /S/ Travis Fettes<br>STATE TRAFFIC ENGINEER |
| FHWA                                               |                                             |

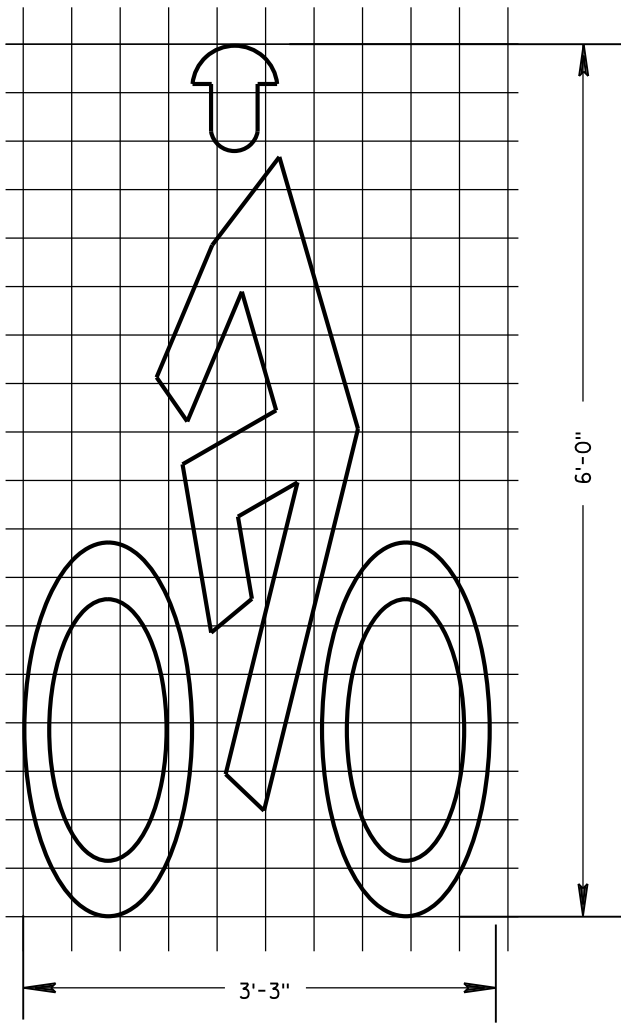
GENERAL NOTES

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

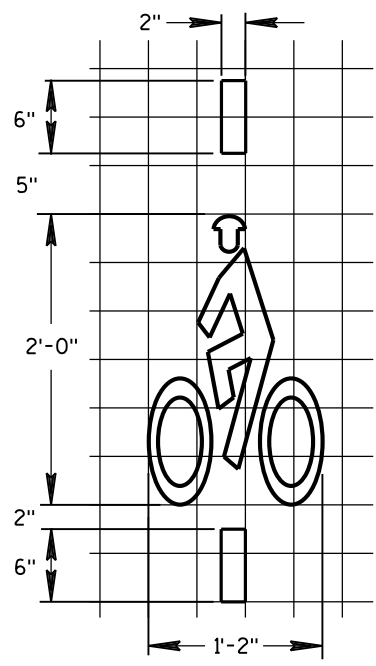
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



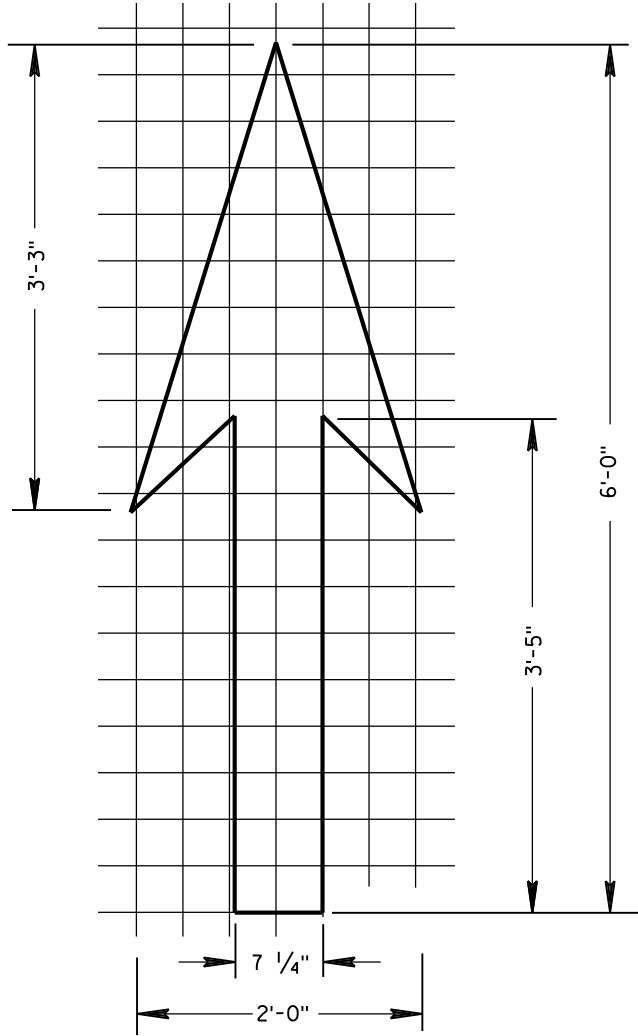
BIKE LANE WORDS



BIKE LANE SYMBOL

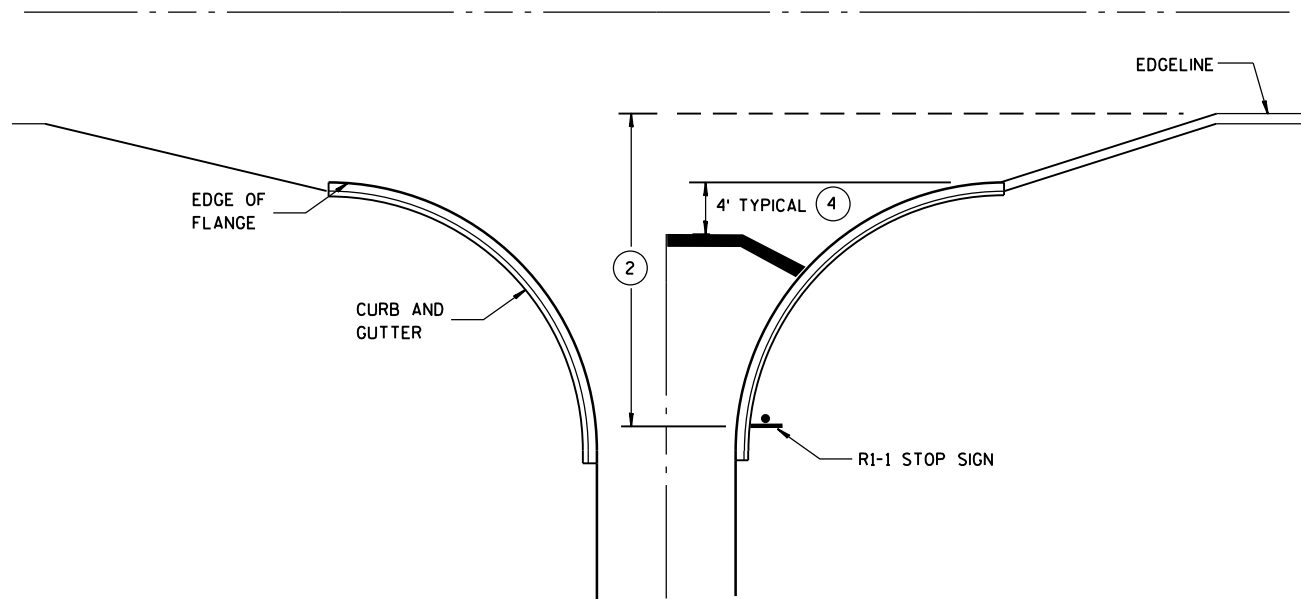


BICYCLE DETECTOR PAVEMENT MARKING

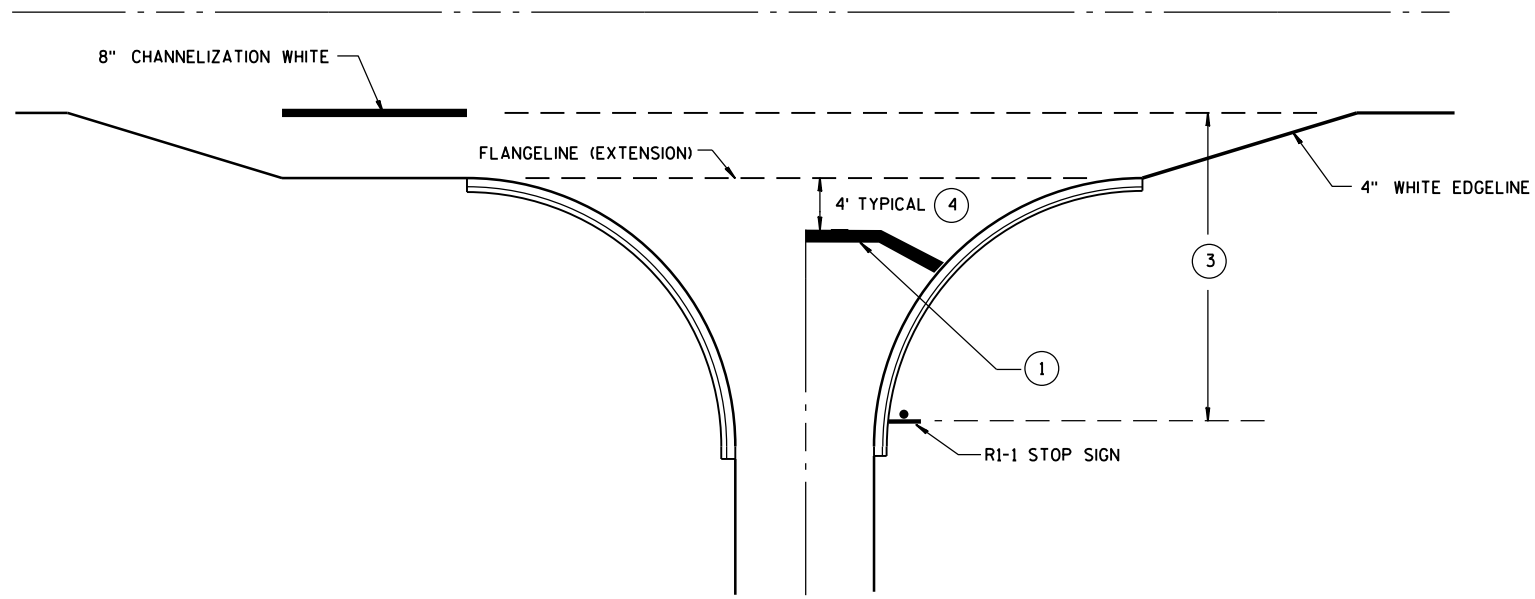


BIKE LANE ARROW

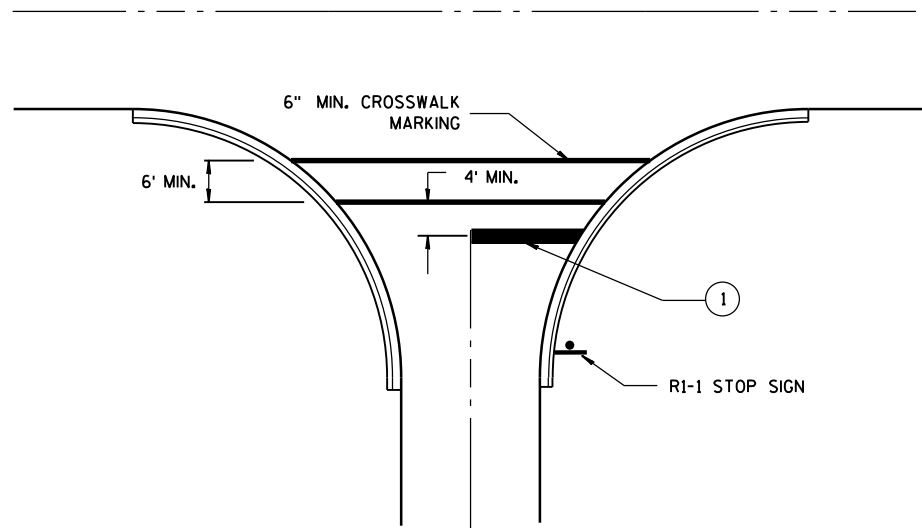
|                                                    |                                             |
|----------------------------------------------------|---------------------------------------------|
| PAVEMENT MARKING FOR BIKE LANES                    |                                             |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                             |
| APPROVED<br>4-30-2013<br>DATE                      | /S/ Travis Feltes<br>STATE TRAFFIC ENGINEER |
| FHWA                                               |                                             |



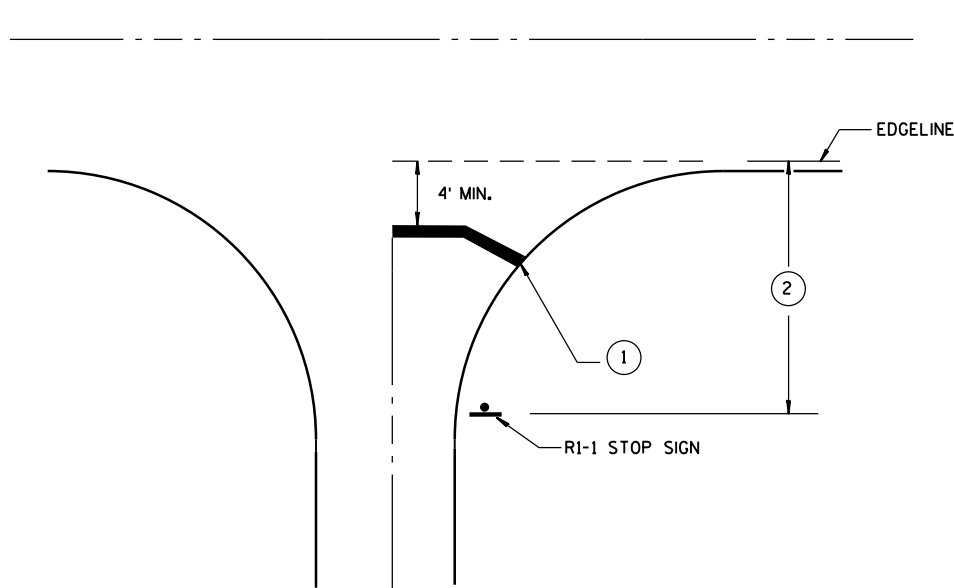
TYPICAL STOP LINE PAVEMENT MARKING  
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING  
WITHOUT CURB AND GUTTER

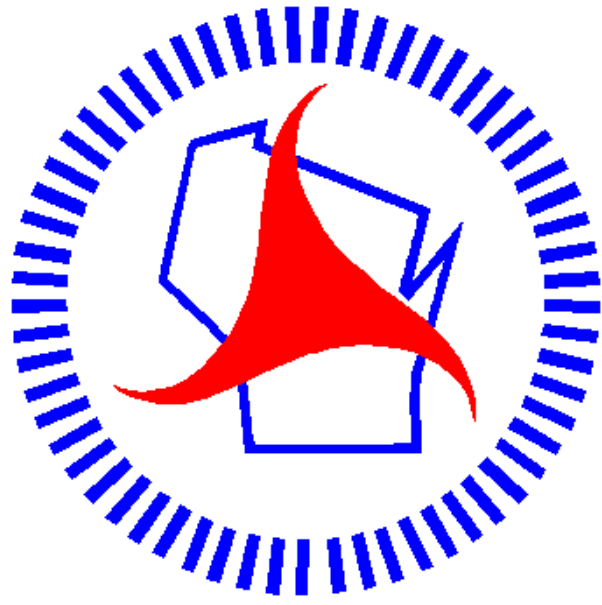
GENERAL NOTES

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- ④ MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK  
PAVEMENT MARKING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
4/30/2013 DATE /S/ Travis Feltz  
STATE TRAFFIC ENGINEER  
FHWA



## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions  
through innovation and exceptional service.

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