

WKE  
PROJECT ID: 2265-03-76  
WITH:

JULY 2013  
ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 78



DESIGN DESIGNATION

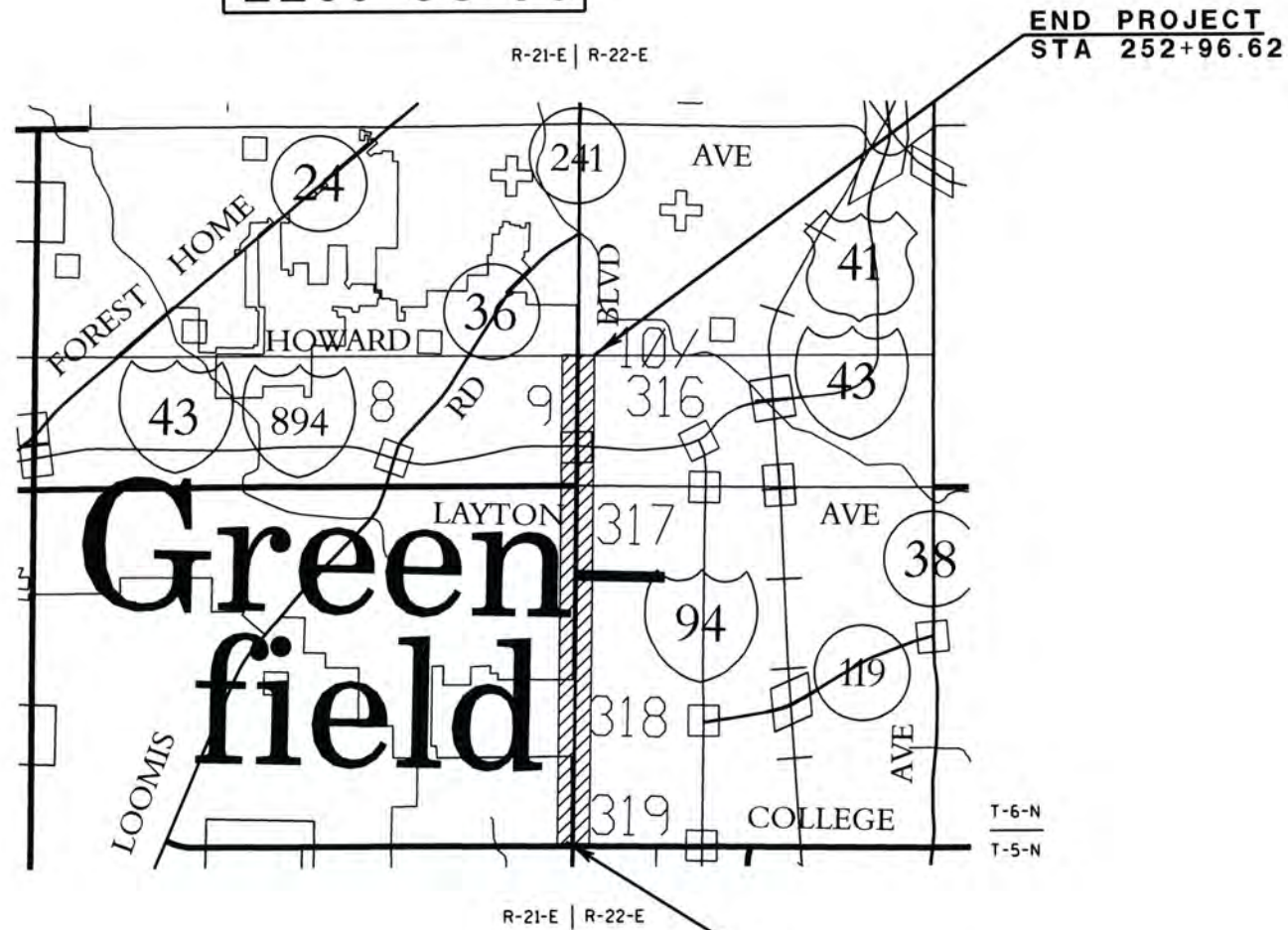
A.A.D.T. (2010)	= 37,350
A.A.D.T.	= N/A
D.H.V.	= N/A
D.D.	= N/A
T.	= 4%
DESIGN SPEED	= 45 MPH
ESALS	= N/A

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
**SOUTH 27TH STREET**  
COLLEGE AVE TO HOWARD AVE (W SIDE)  
STH 241  
MILWAUKEE COUNTY

STATE PROJECT NUMBER  
**2265-03-76**



END PROJECT  
STA 252+96.62

BEGIN PROJECT  
STA 94+16.45

LAYOUT  
SCALE 0 1.0 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY, NAD83 (97).

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD88 (2007).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2265-03-76	WISC 2013338	1

ACCEPTED FOR

CITY of GREENFIELD

4/19/13 *Richard [Signature]*

(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

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FAX: (414) 727-0933



4/18/2013  
(Date) (Signature)

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DEPARTMENT OF TRANSPORTATION

PREPARED BY  
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Designer: SINGH  
Project Manager: TOM LAZCANO  
Regional Examiner:  
Regional Supervisor:  
C.O. Examiner:

APPROVED FOR THE DEPARTMENT  
DATE: 4/19/13 *Tom Lazcano*  
(Signature)

E

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DH2572@ATT.COM

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(920) 338-6582  
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(262) 521-5356

OTHER CONTACTS

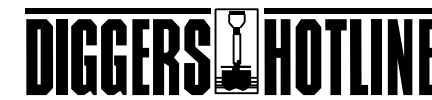
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DZIAREK@MCTS.ORG

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Call 811 3 Work Days Before You Dig  
or Toll Free (800) 242-8511  
Hearing Impaired TDD (800) 542-2289  
www.DiggersHotline.com

GENERAL NOTES

ACCESS TO LOCAL RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED. TOPSOIL, WHERE REQUIRED, SHALL BE PLACED TO A DEPTH OF 6 INCHES. DISTURBED AREAS SHALL HAVE FINISHING ITEMS APPLIED WITHIN 10 WORKING DAYS AFTER GRADING WORK IS COMPLETED.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. NO WORK MAY BEGIN UNTIL PROPER TRAFFIC CONTROL DEVICES ARE PLACED AND APPROVED BY THE ENGINEER.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED PER SITE CONDITIONS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NEEDED.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY OR PUBLIC AGENCY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

A SAWED JOINT IS REQUIRED WHERE NEW PAVEMENT OR SIDEWALK MEETS EXISTING PAVEMENT OR SIDEWALK.

IN AREAS WHERE CONCRETE SIDEWALK OR CURB AND GUTTER ARE REMOVED AND REPLACED, CONTRACTOR SHALL PLACE 6-INCHES OF BASE AGGREGATE DENSE GRADED 3/4-INCH FOR CURB AND GUTTER AND 4-INCHES BASE AGGREGATE DENSE GADED 3/4-INCH FOR CONCRETE SIDEWALKS

THE CONTRACTOR SHALL CONTACT DENNIS CAULEY, (414) 266-1162 / (414) 750-1443 WISDOT FIELD ELECTRICAL UNIT FOR ACCESS TO WISDOT SIGNAL/ LIGHTING CABINETS AND FOR COORDINATION OF LIGHT UNIT BEING RETURNED TO THE DEPARTMENT AND DURING WORK INVOLVING WISDOT ELECTRICAL SYSTEMS.

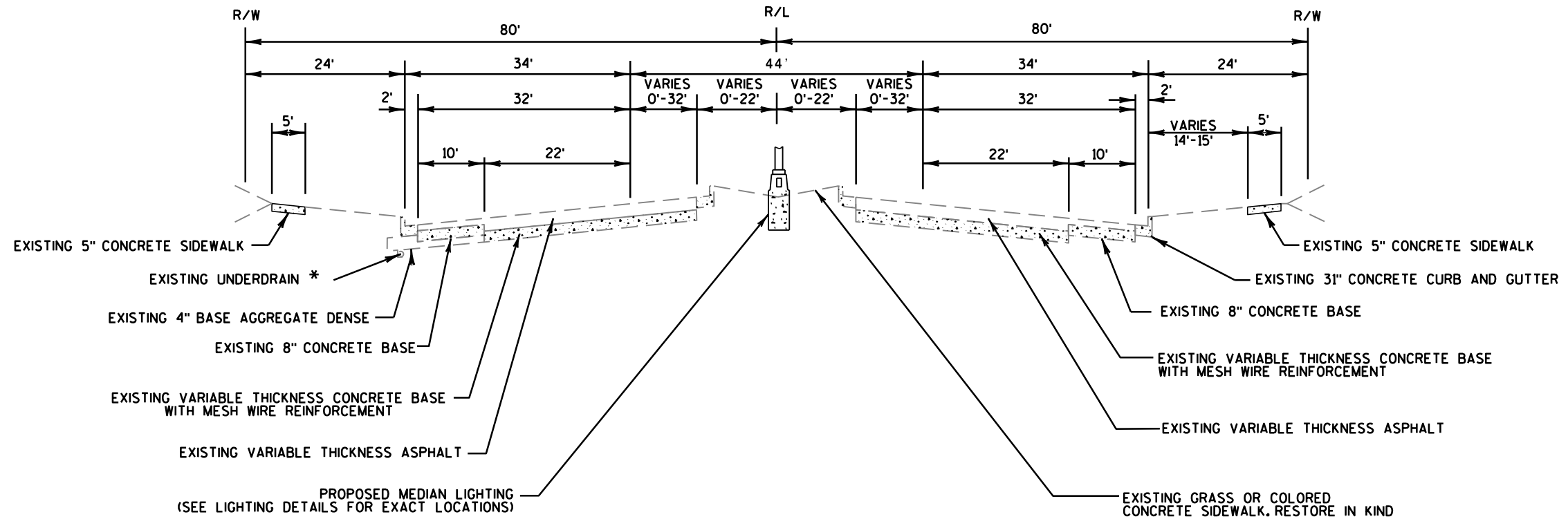
THE CONTRACTOR SHALL COORDINATE WITH MILWAUKEE COUNTY TRANSIT SYSTEM FOR THE LOCATION/LAYOUT OF THE PROPOSED BUS SHELTER AND WORK AROUND THE FACILITIES.

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
AADT	ANNUAL AVERAGE DAILY TRAFFIC
AVG	AVERAGE
BM	BENCH MARK
CB	CATCH BASIN
CL	CENTER LINE
CC	CENTER TO CENTER
CE	COMMERCIAL ENTRANCE
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR	CRUSHED
CABC	CRUSHED AGGREGATE BASE COURSE
CY	CUBIC YARD
CPRC	CULVERT PIPE REINFORCED CONCRETE
C&G	CURB AND GUTTER
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
DWY	DRIVEWAY
X	EAST COORDINATE
EB	EASTBOUND
EL	ELEVATION
ELEV	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXIST	EXISTING
FE	FIELD ENTRANCE
FG	FINISHED GRADE
FT	FOOT
INL	INLET
INV	INVERT
LT	LEFT
MH	MANHOLE
ML	MATCH LINE
Y	NORTH GRID COORDINATE
NB	NORTHBOUND
PAVT	PAVEMENT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
PE	PRIVATE ENTRANCE
R	RADIUS
REQD	REQUIRED
RT	RIGHT
R/W	RIGHT OF WAY
RD	ROAD
RDWY	ROADWAY
SHLDR	SHOULDER
SW	SIDEWALK
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SQ	SQUARE
SF	SQUARE FOOT
SY	SQUARE YARD
STD	STANDARD
SDD	STANDARD DETAIL DRAWINGS
STA	STATION
TEMP	TEMPORARY
TC	TOP OF CURB
TRANS	TRANSITION
TYP	TYPICAL
USH	UNITED STATES HIGHWAY
VAR	VARIABLE
WB	WESTBOUND
YD	YARD

CITY OF GREENFIELD  
(CITY OF MILWAUKEE  
STA 119+18 TO STA 148+16)

CITY OF MILWAUKEE



**TYPICAL SECTION  
SOUTH 27TH STREET  
(LOOKING NORTH)**

\* UNDERDRAIN ONLY WITHIN CITY OF GREENFIELD

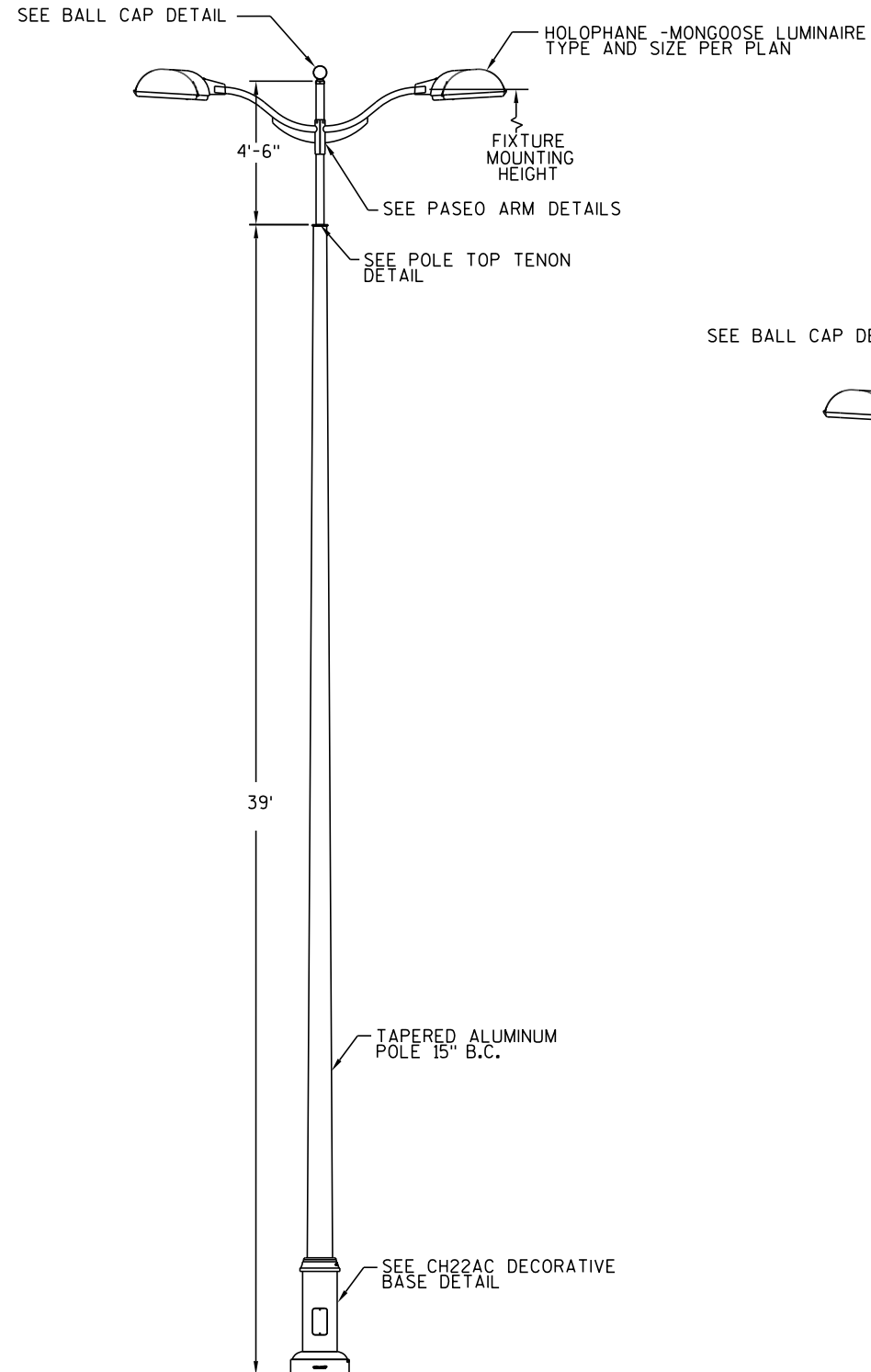
- STA 98+46 - 117+80
- STA 122+14 - 129+79
- STA 137+16 - 142+52
- STA 150+95 - 169+49
- STA 177+98 - 197+71
- STA 219+26 - 222+43
- STA 230+40 - 249+97

GENERAL NOTES:

FREEWAY LIGHTING SHALL BE INSTALLED IN COMPLIANCE WITH WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTIONS 652 TO 657 AND 659 EXCEPT:

1. DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THESE DRAWINGS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
2. LOCATIONS OF THE PVC CONDUITS ARE IDENTIFIED IN THE PLANS WHERE THEY ARE REQUIRED. HOWEVER, INSTALLATION WILL REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. UNDER THE APPROVAL OF THE ENGINEER, APPROPRIATE ADJUSTMENT OF CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. FIELD MARK EACH CONDUIT LOCATION IN RED TO ILLUSTRATE AS BUILT CONDITIONS.
3. THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION ON THE CONDUIT.
4. ALL OPEN AND UN-TERMINATED CONDUITS SHALL BE CAPPED OR PLUGGED WITH ENGINEER APPROVED FITTINGS IMMEDIATELY AFTER INSTALLATION.
5. BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR IMMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.
6. ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS.
7. PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT THAT CAN BE EASILY REMOVED. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.
8. CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX-TO-PULL BOX, JUNCTION BOX OR BASE-TO-BASE, ETC.) UNLESS OTHERWISE NOTED ON PLANS.
9. PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUITS.
10. CONTRACTOR SHALL SUPPLY AS-BUILT DRAWINGS (.PDF FORMAT) FOR ALL THE WORK BEING DONE.
11. CONDUIT LATERALS SHALL BE TRENCHED UNDER PAVEMENT BEFORE PAVEMENT CONSTRUCTION.
12. UNDERGROUND WIRE & CONDUIT SHOWN ON REMOVAL PLANS FOR REMOVAL SHALL BE ABANDONED IN PLACE UNLESS DIRECTED BY THE ENGINEER. CONTRACTOR MAY CHOOSE TO REMOVE CONDUCTOR AT THEIR OWN EXPENSE.
13. PROVIDE MINIMUM CABLE SLACK AS MENTIONED BELOW:
 

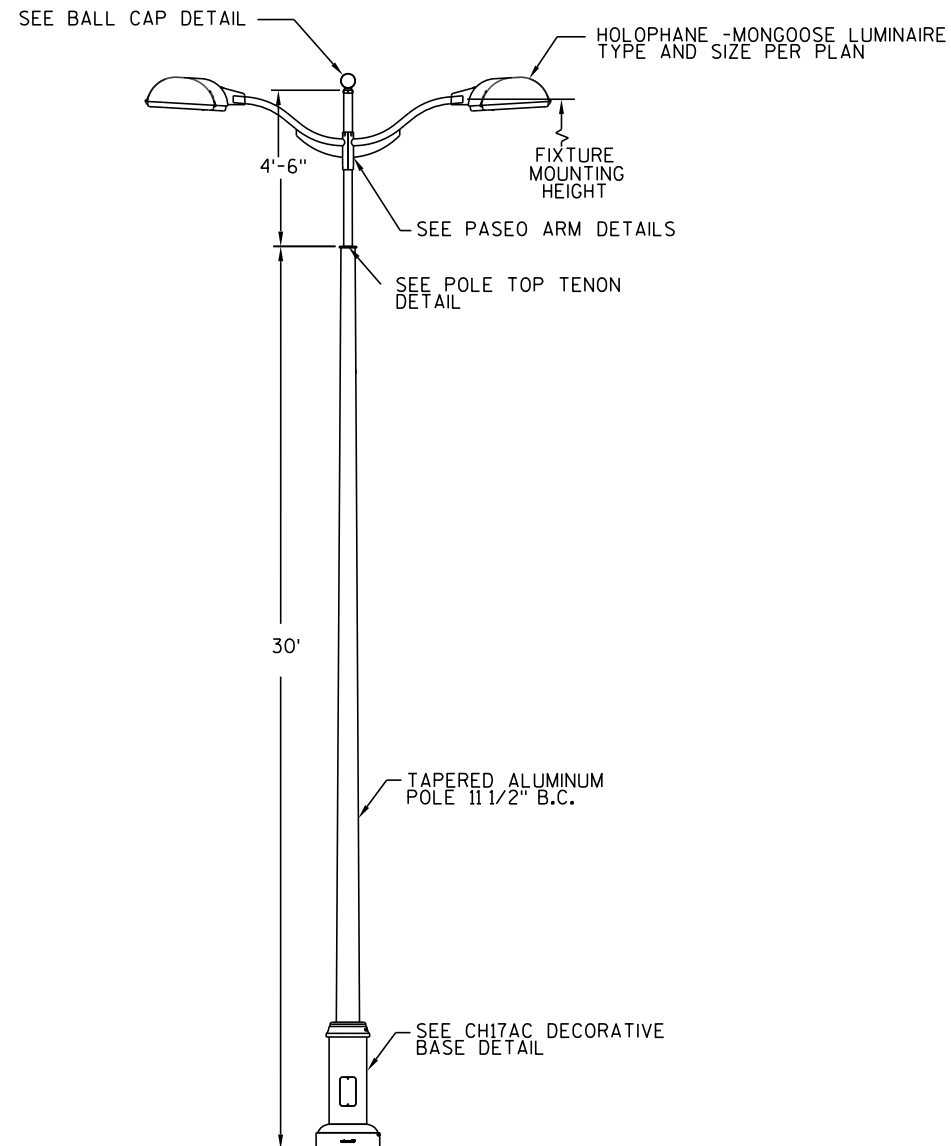
PULL BOXES:	3-FT
EMBEDDED JUNCTION BOXES:	3-FT
DISTRIBUTION CENTER/LOAD CENTER:	10-FT
POLES	5-FT IN AND 5-FT OUT



**LIGHTING UNIT - 40-FT/TWIN DECORATIVE ARMS  
DECORATIVE BASE**

**UNIT DESCRIPTION:**

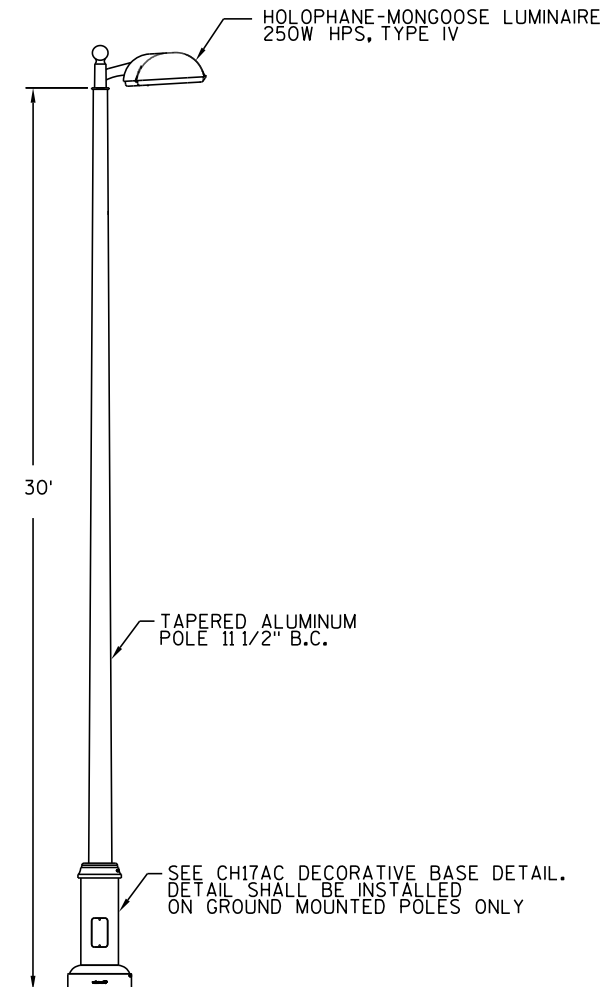
- 1. NOMINAL 43' MOUNTING HEIGHT
- 2. POLE SHAFT IS NOMINAL 39'
- 3. TWO MONGOOSE ON DECORATIVE FLAG MAST ARMS
- 4. DECORATIVE SMOOTH BASE COVER
- 5. BALL FINIAL TOP OF MAST ASSEMBLY



**LIGHTING UNIT - 30-FT/TWIN DECORATIVE ARMS  
DECORATIVE BASE**

**UNIT DESCRIPTION:**

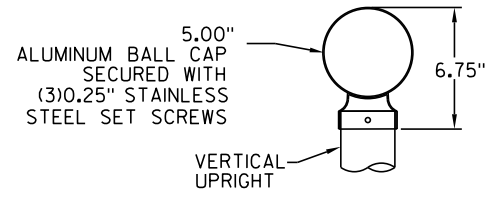
- 1. NOMINAL 34' MOUNTING HEIGHT
- 2. POLE SHAFT IS NOMINAL 30'
- 3. TWO MONGOOSE ON DECORATIVE FLAG MAST ARMS
- 4. DECORATIVE SMOOTH BASE COVER
- 5. BALL FINIAL TOP OF MAST ASSEMBLY



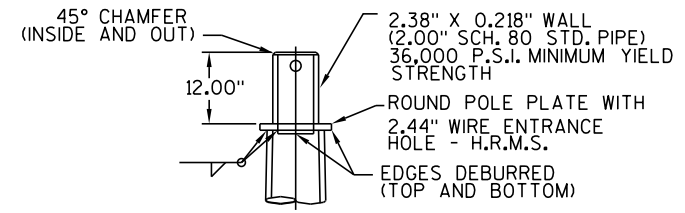
**LIGHTING UNIT - 30-FT/SINGLE TENON  
WITHOUT DECORATIVE BASE**

**UNIT DESCRIPTION:**

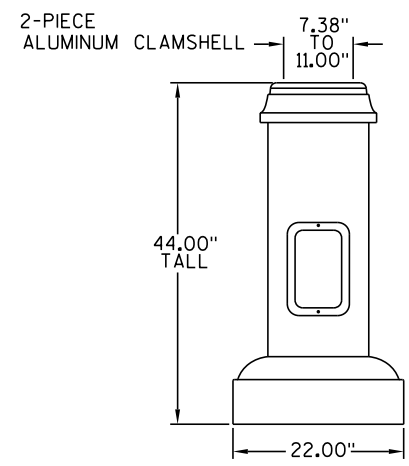
- 1. NOMINAL 30' MOUNTING HEIGHT
- 2. POLE SHAFT IS NOMINAL 30'
- 3. ONE MONGOOSE ON ARCHITECTURAL CURVED ARM
- 4. DECORATIVE SMOOTH BASE COVER
- 5. BALL FINIAL TOP OF MAST ASSEMBLY



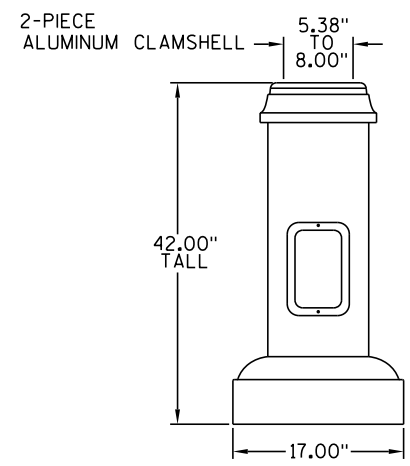
**BALL CAP FINAL**



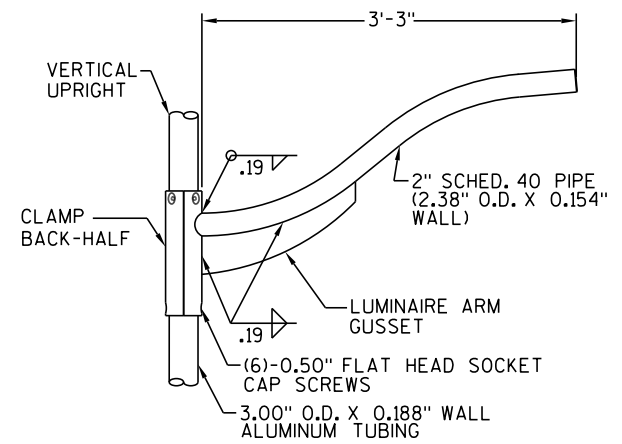
**POLE TOP TENON**



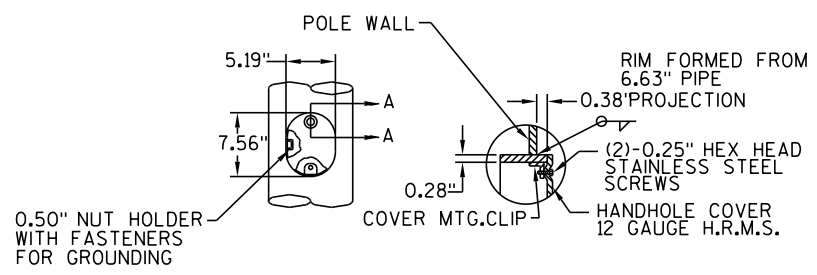
**CH22AC DECORATIVE BASE**



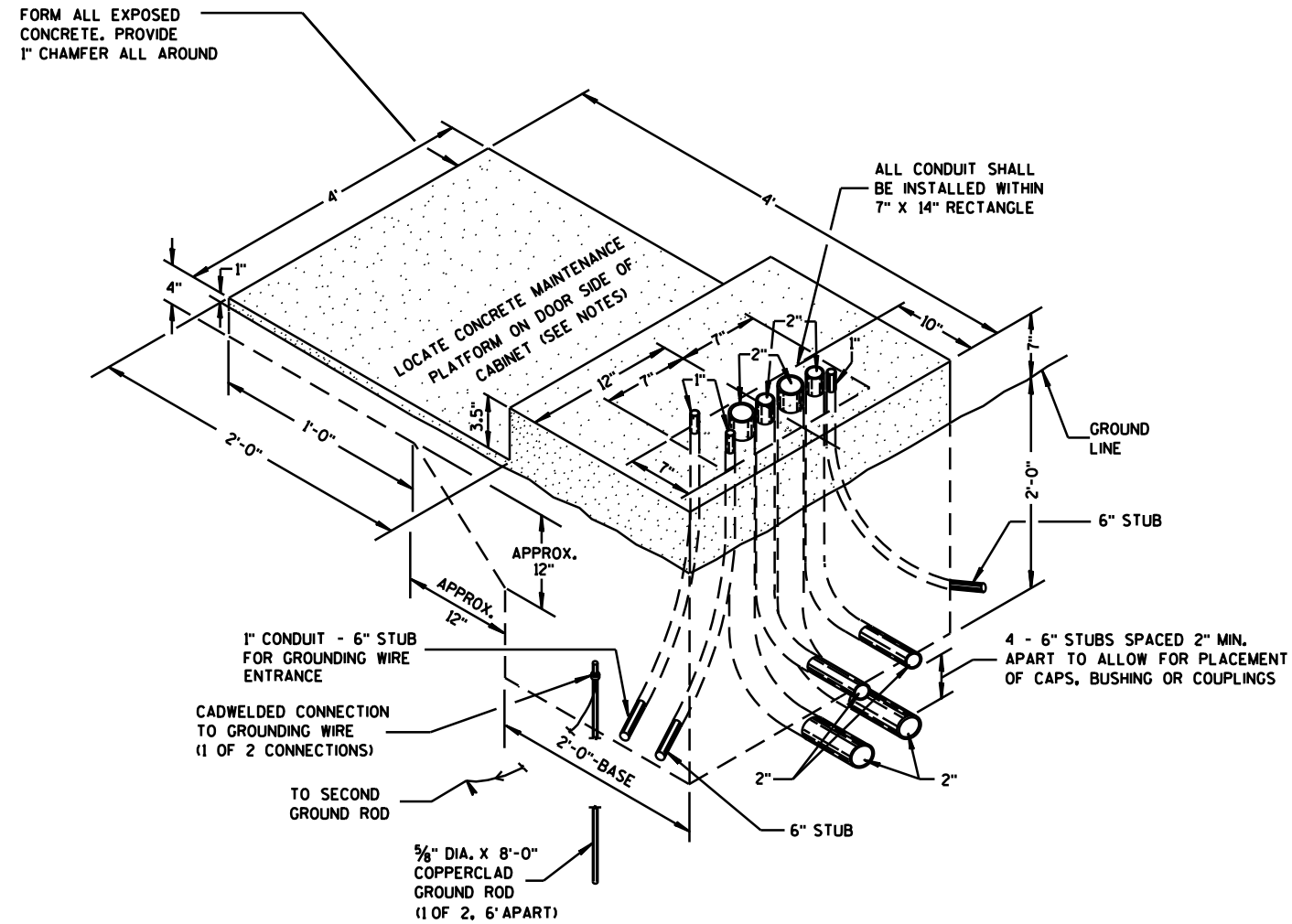
**CH17AC DECORATIVE BASE**



**PASEO ARM DETAIL**



**4" X 6.5" BASE HANDHOLE**



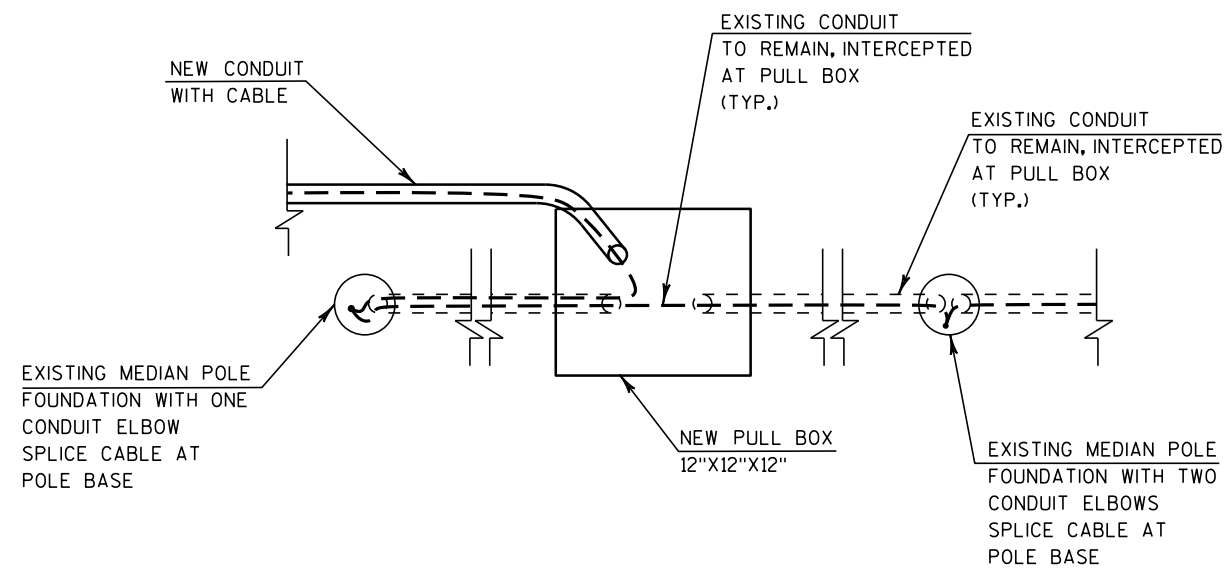
ISOMETRIC VIEW

CITY OF GREENFIELD CONCRETE CONTROL CABINET BASES

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO THE BASES. THE ANCHOR BOLTS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.
- WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.
- CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.
- 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.
- CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED AND LEVEL.
- MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.
- MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.
- ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS Poured. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.
- CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.
- ALL CONDUITS SHALL BE NON-METALLIC SCHEDULE 40.

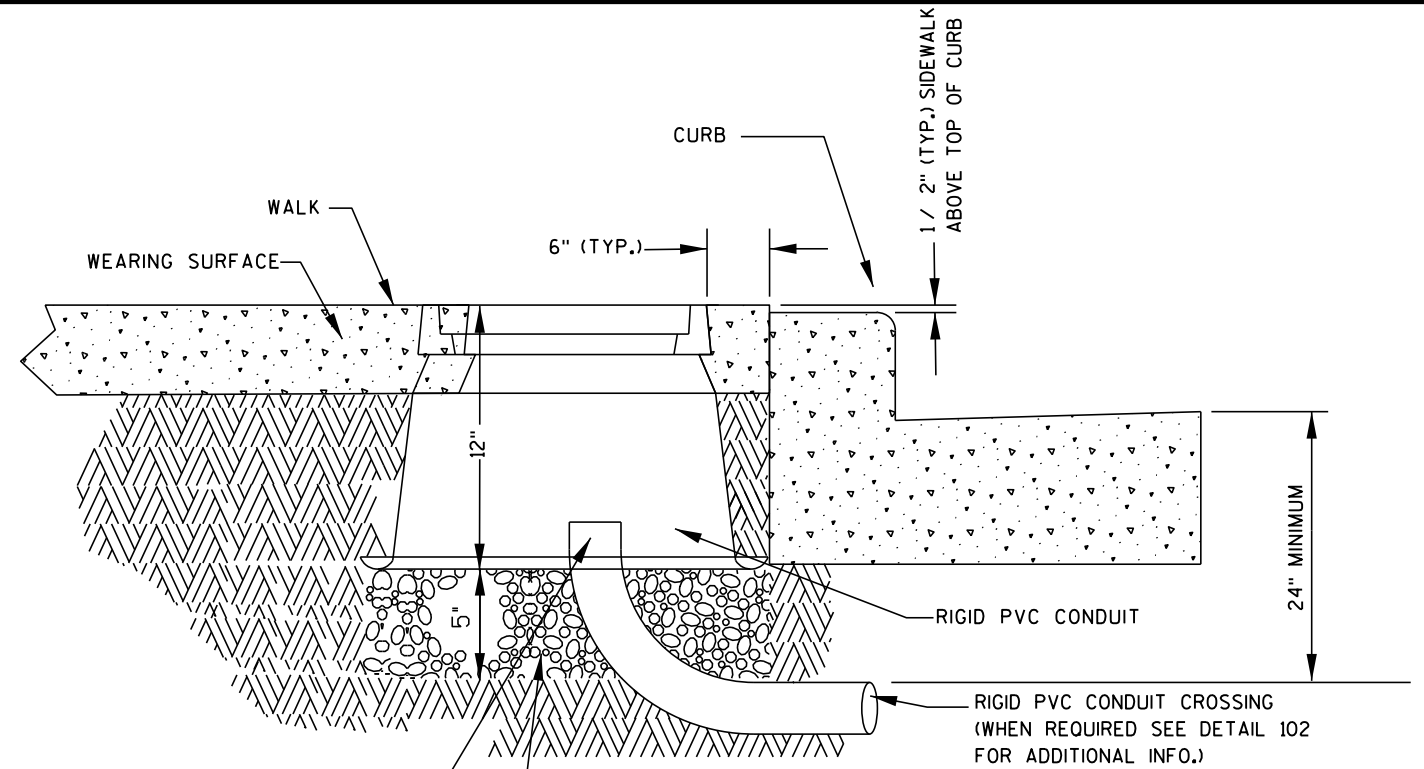




**TYPICAL CONDUIT TRANSITION DETAILS**

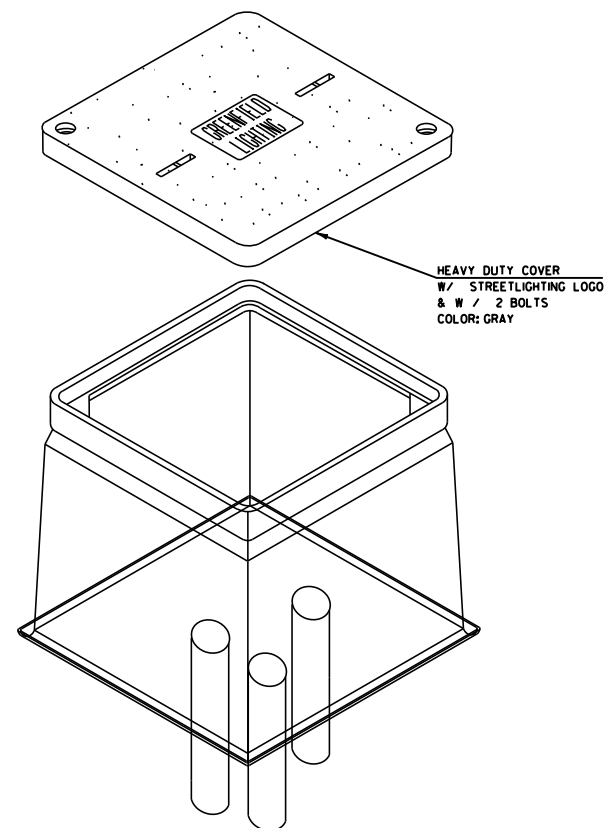
- NOTES:
1. PULL BOX SHALL GRAY COLOR, HAVE FLARED WALL BOX WITH NO BASE
  2. PLUG OR CAP FITTINGS ON ALL UNUSED CONDUITS IN PULL BOX

**PULL BOXES POLYMER CONCRETE - 12\"/>**

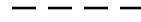
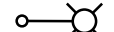
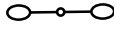





TOP OF CONDUIT SHOULD EXTEND UP 2 INCHES MAX. FROM BOTTOM OF VAULT.

PREPARE THE EXCAVATION APPROXIMATELY 4 TO 5 INCHES DEEPER THAN THE DEPTH OF THE BOX, THEN ADD 4 TO 5 INCHES OF NO.2 COARSE AGGREGATE FILL FOR DRAINAGE.

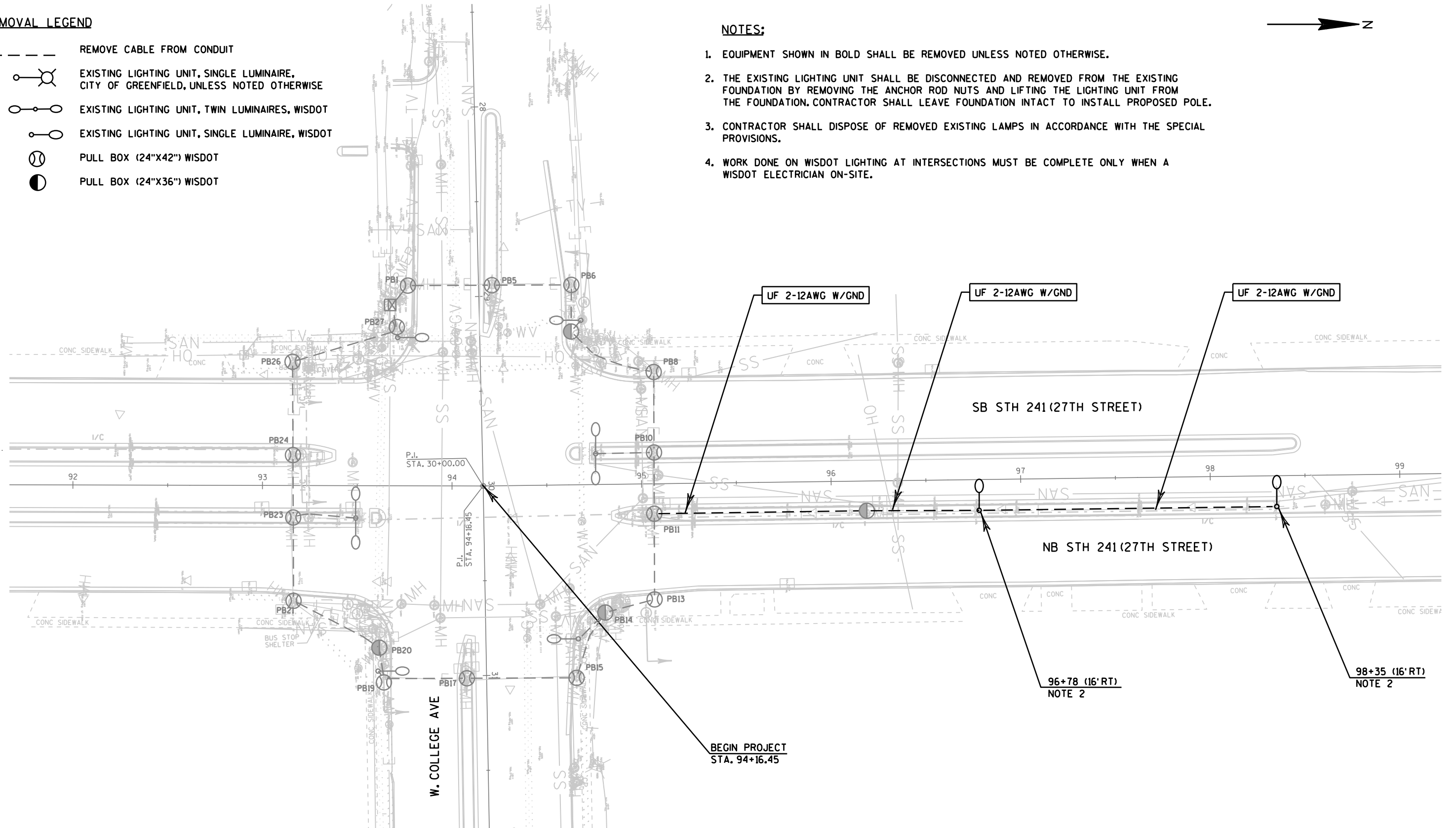
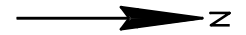


REMOVAL LEGEND

-  REMOVE CABLE FROM CONDUIT
-  EXISTING LIGHTING UNIT, SINGLE LUMINAIRE, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
-  EXISTING LIGHTING UNIT, TWIN LUMINAIRES, WISDOT
-  EXISTING LIGHTING UNIT, SINGLE LUMINAIRE, WISDOT
-  PULL BOX (24"x42") WISDOT
-  PULL BOX (24"x36") WISDOT

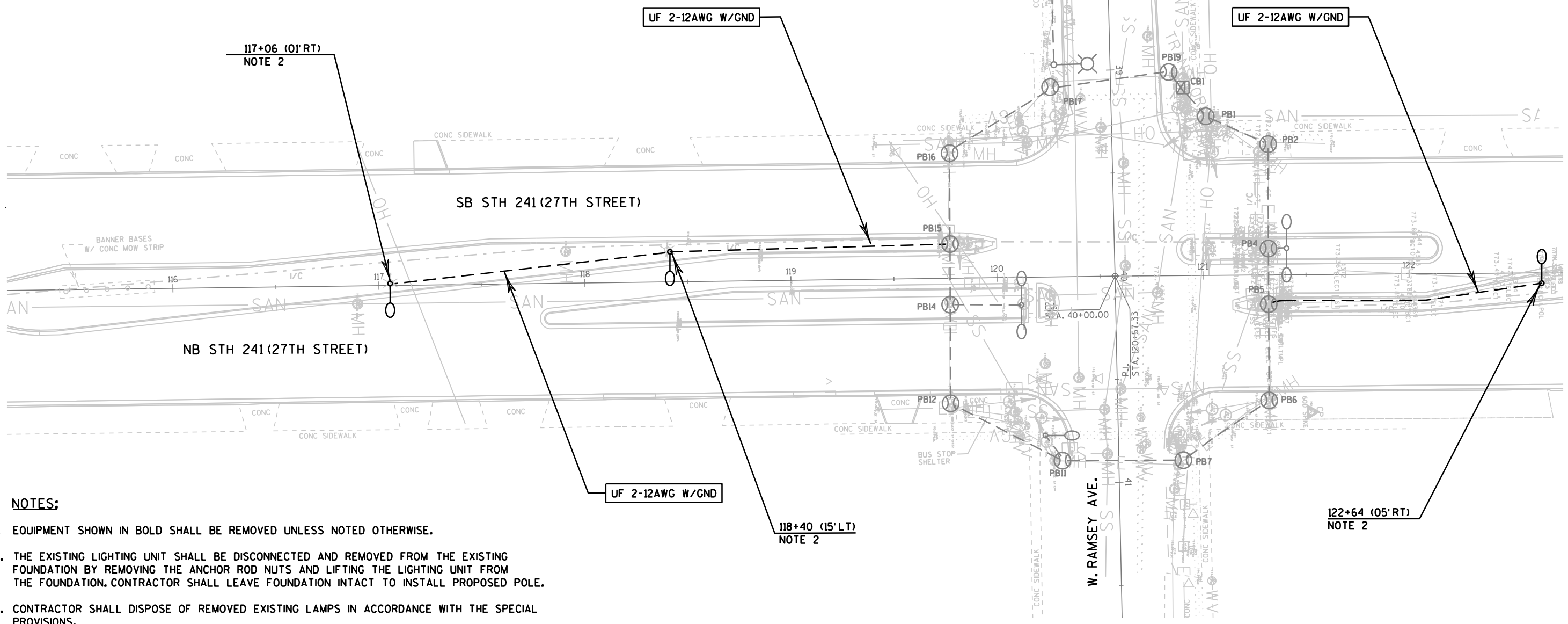
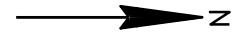
NOTES:

1. EQUIPMENT SHOWN IN BOLD SHALL BE REMOVED UNLESS NOTED OTHERWISE.
2. THE EXISTING LIGHTING UNIT SHALL BE DISCONNECTED AND REMOVED FROM THE EXISTING FOUNDATION BY REMOVING THE ANCHOR ROD NUTS AND LIFTING THE LIGHTING UNIT FROM THE FOUNDATION. CONTRACTOR SHALL LEAVE FOUNDATION INTACT TO INSTALL PROPOSED POLE.
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REMOVAL LEGEND







- REMOVE CABLE FROM CONDUIT
- EXISTING LIGHTING UNIT, SINGLE LUMINAIRE, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
- EXISTING LIGHTING UNIT, TWIN LUMINAIRES, WISDOT
- EXISTING LIGHTING UNIT, SINGLE LUMINAIRE, WISDOT
- ⊗ PULL BOX (24"X42") WISDOT
- ⊙ PULL BOX (24"X36") WISDOT

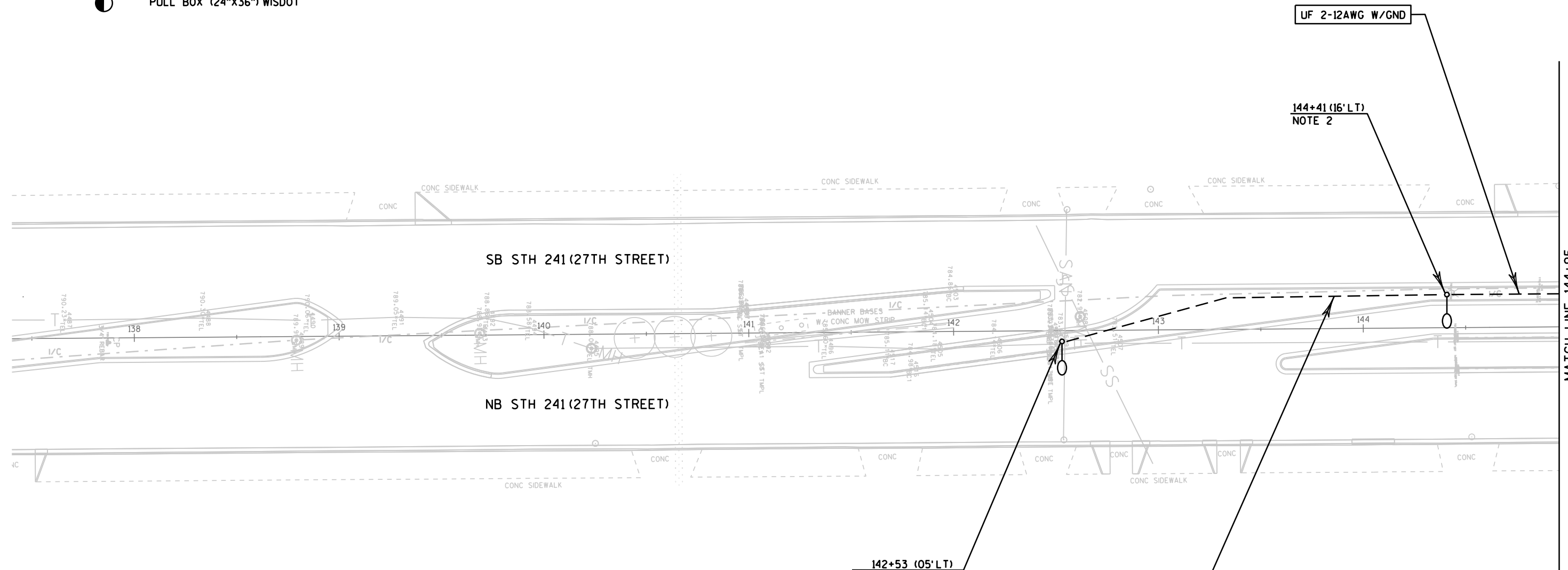
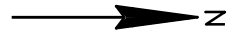


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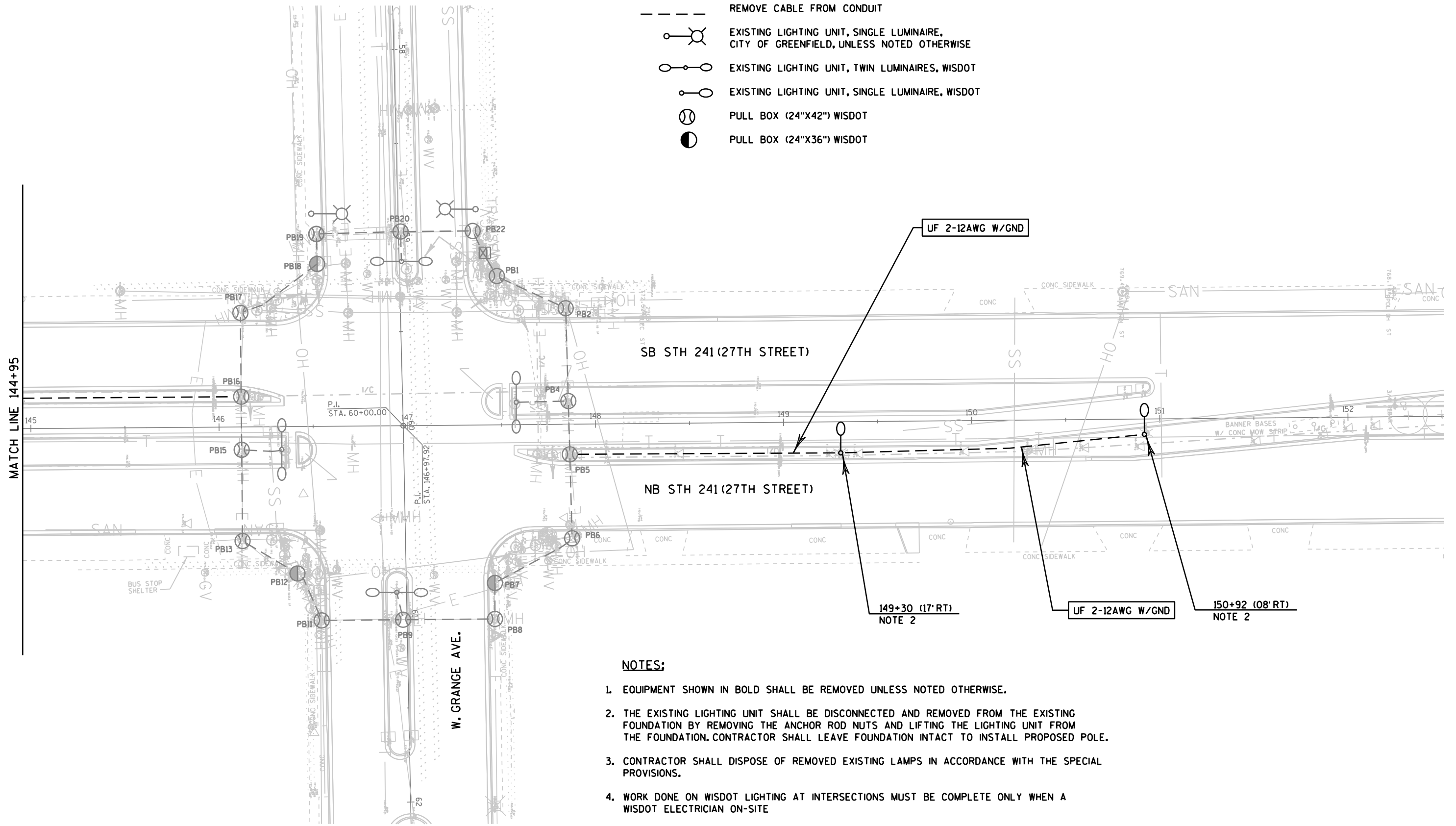
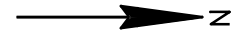


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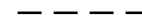





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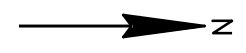
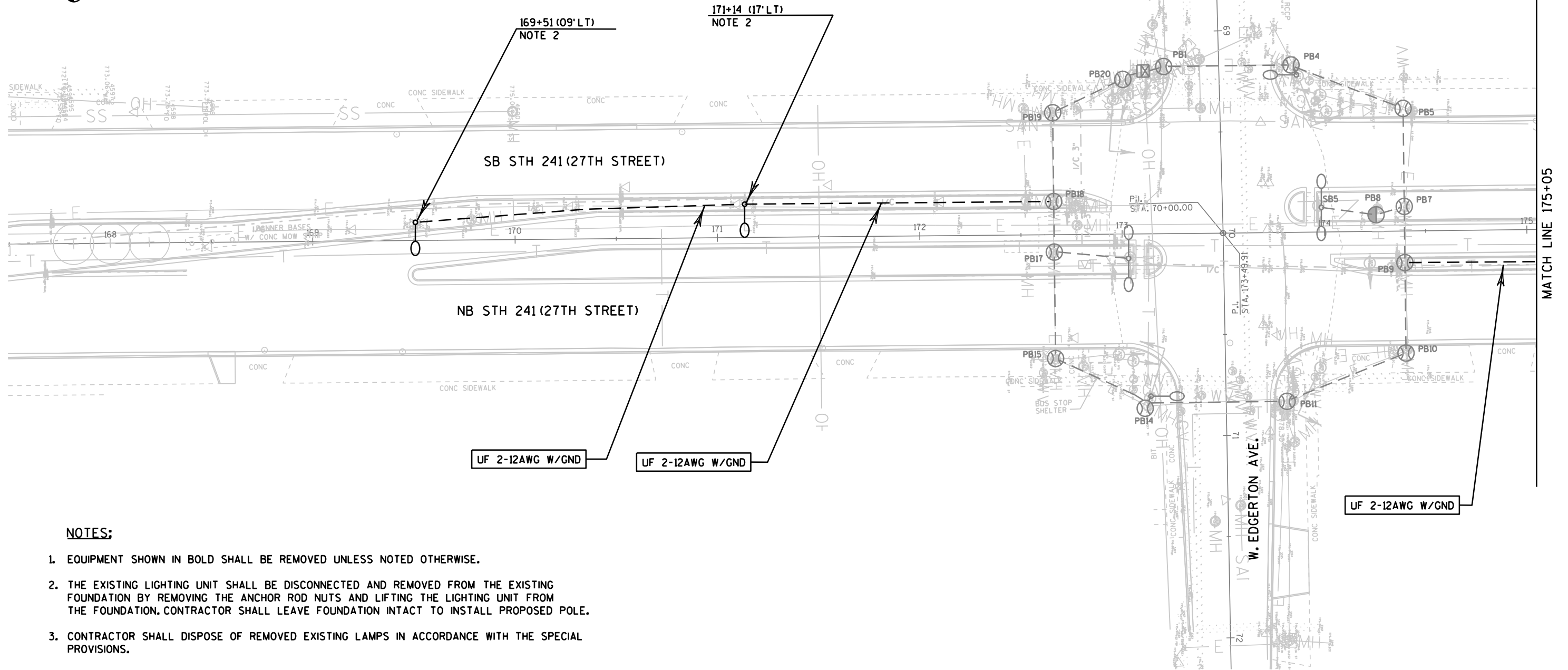


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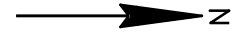
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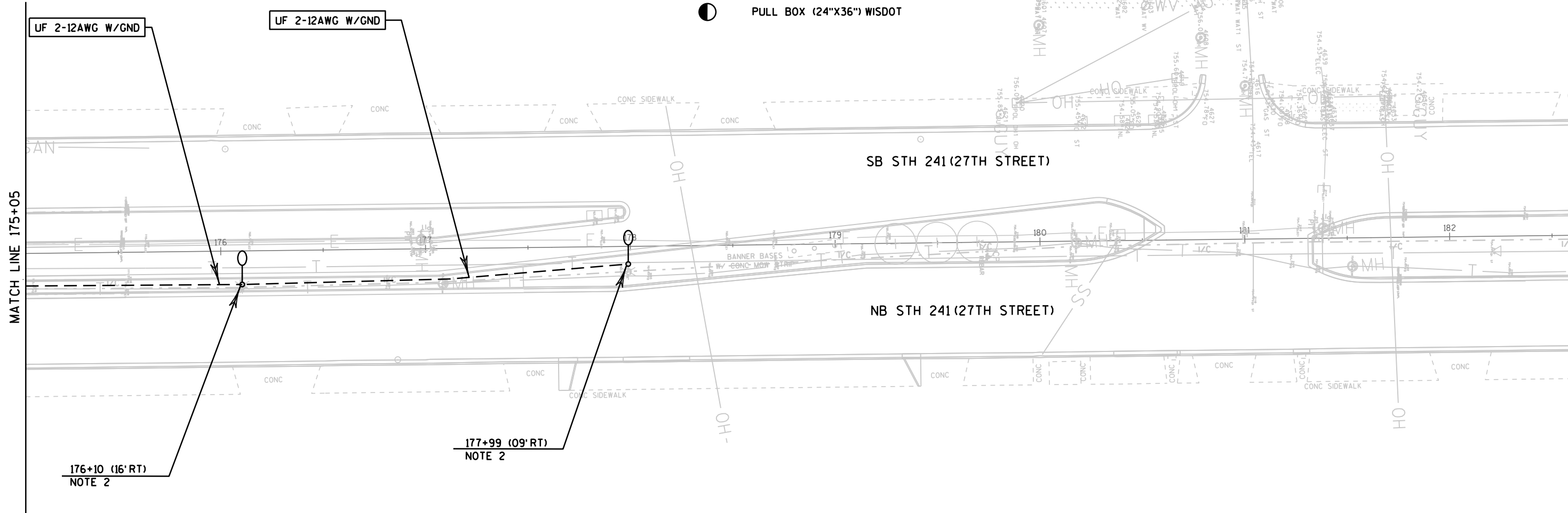
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




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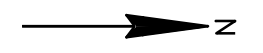


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UF 2-12AWG W/GND

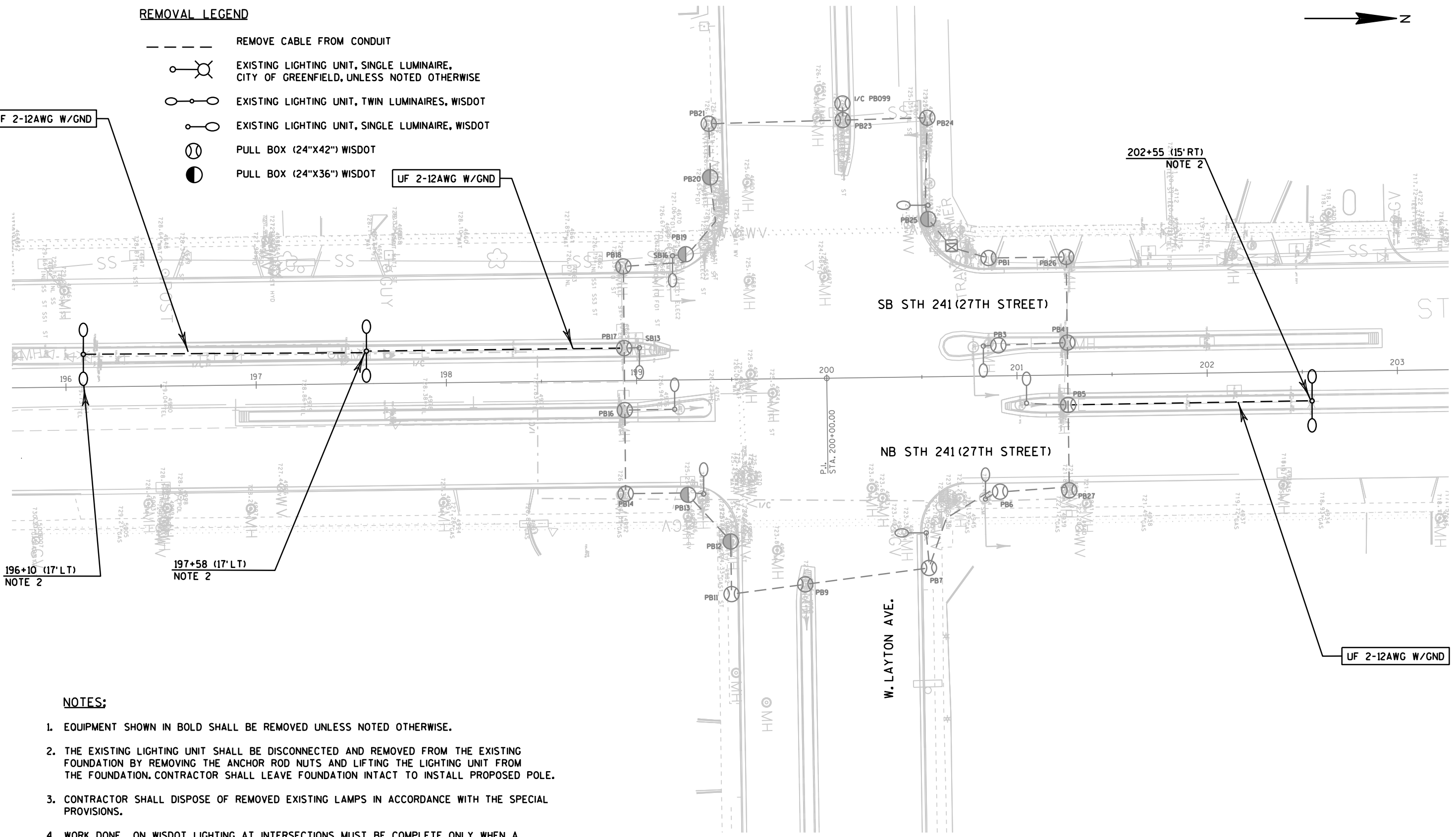
UF 2-12AWG W/GND

202+55 (15' RT)  
NOTE 2

196+10 (17' LT)  
NOTE 2

197+58 (17' LT)  
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WE ENERGIES  
EXISTING WIRES  
NOTE 6

211+96 (70' LT)  
NOTE 6

NOTE 6  
WE ENERGIES  
EXISTING WIRES

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NOTE 6

210+74 (70' LT)  
NOTE 6

209+42 (74' LT)  
NOTE 6

WE ENERGIES  
EXISTING WIRES  
NOTE 6

NB STH 241 (27TH STREET)

209+35 (C/L)  
NOTE 5

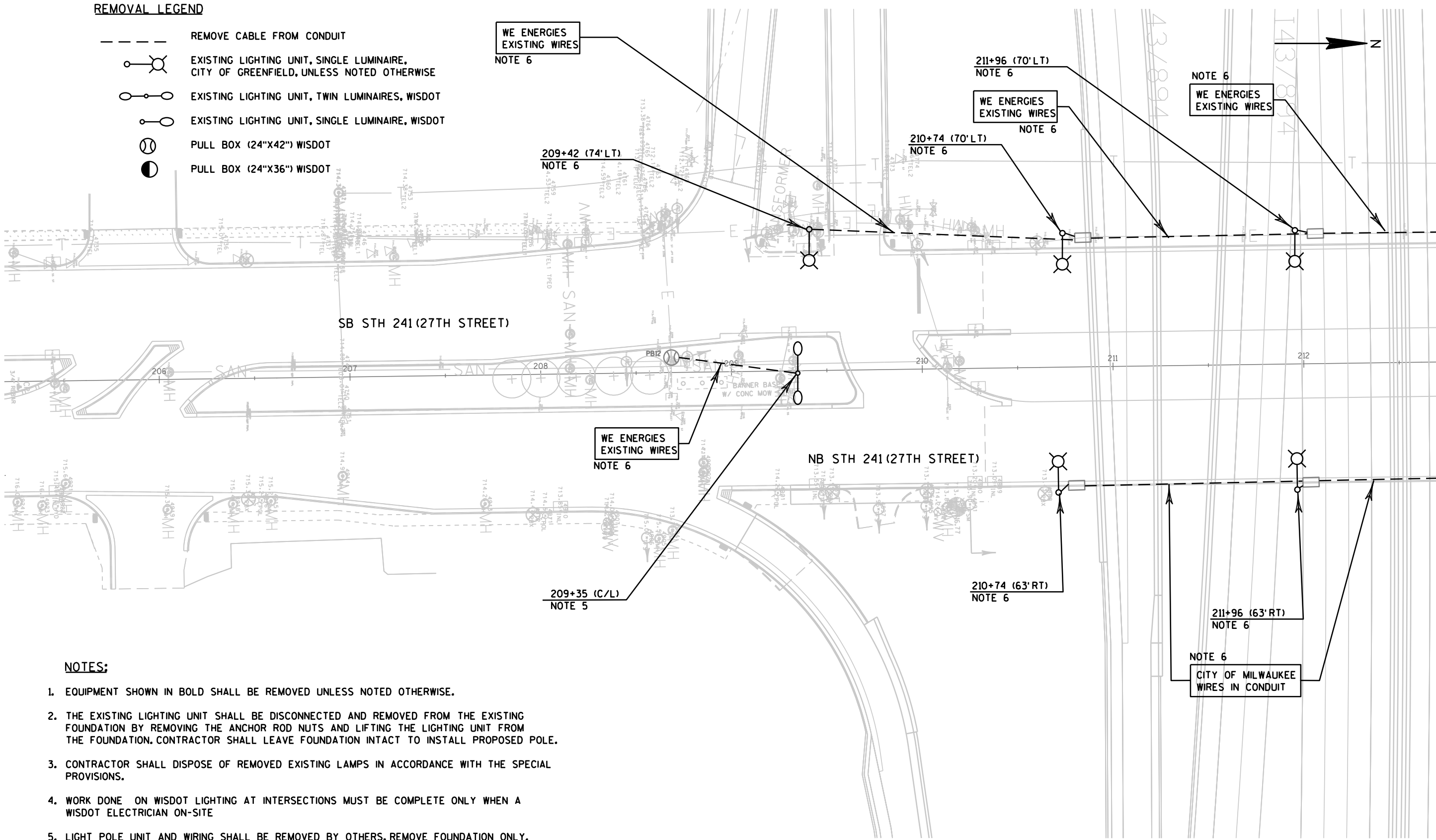
210+74 (63' RT)  
NOTE 6

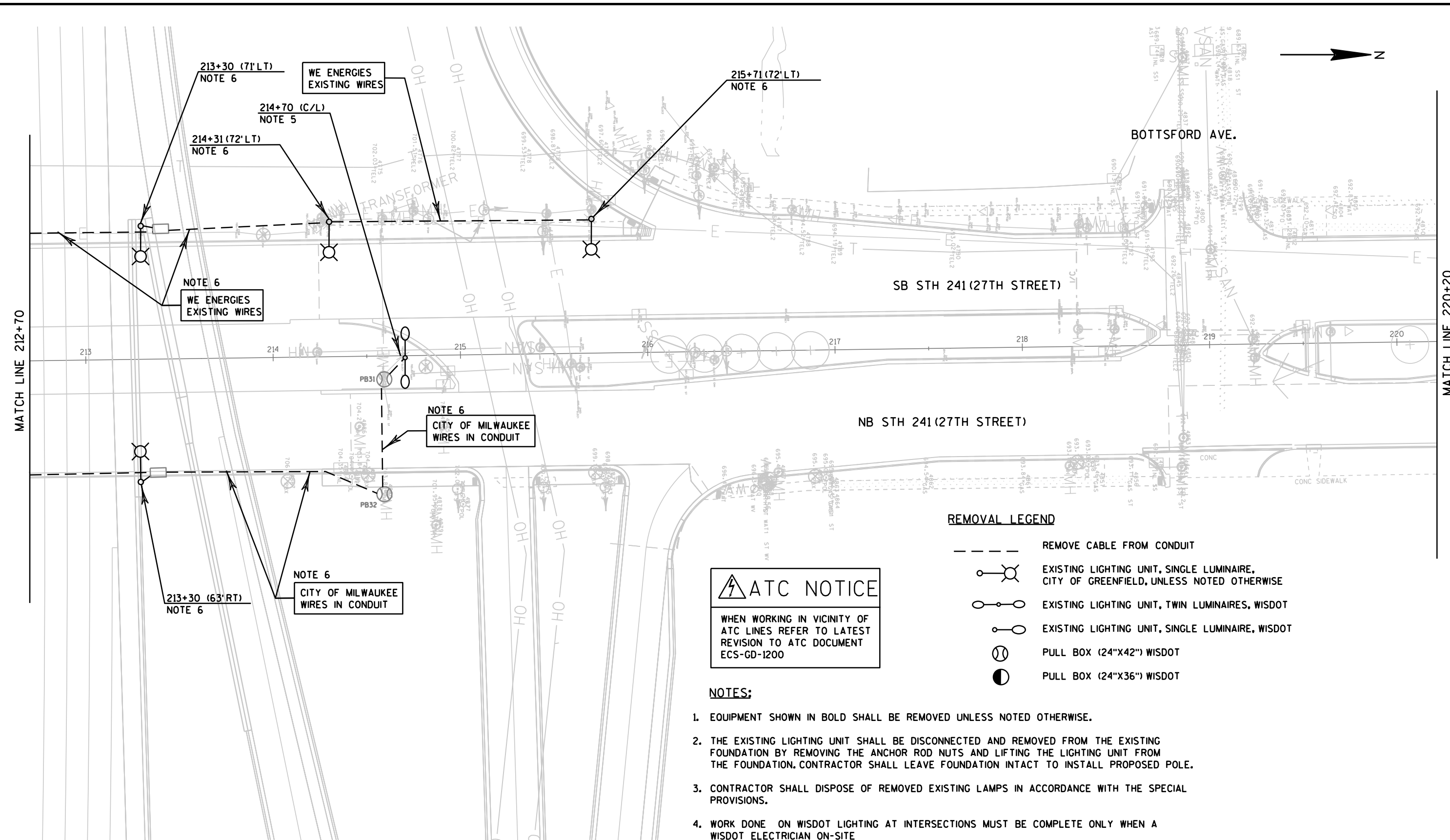
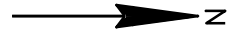
211+96 (63' RT)  
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NOTE 6  
CITY OF MILWAUKEE  
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6. LIGHT POLE UNIT AND WIRING SHALL BE REMOVED BY OTHERS, FOUNDATION SHALL REMAIN IN PLACE.





**ATC NOTICE**

WHEN WORKING IN VICINITY OF ATC LINES REFER TO LATEST REVISION TO ATC DOCUMENT ECS-GD-1200







**REMOVAL LEGEND**

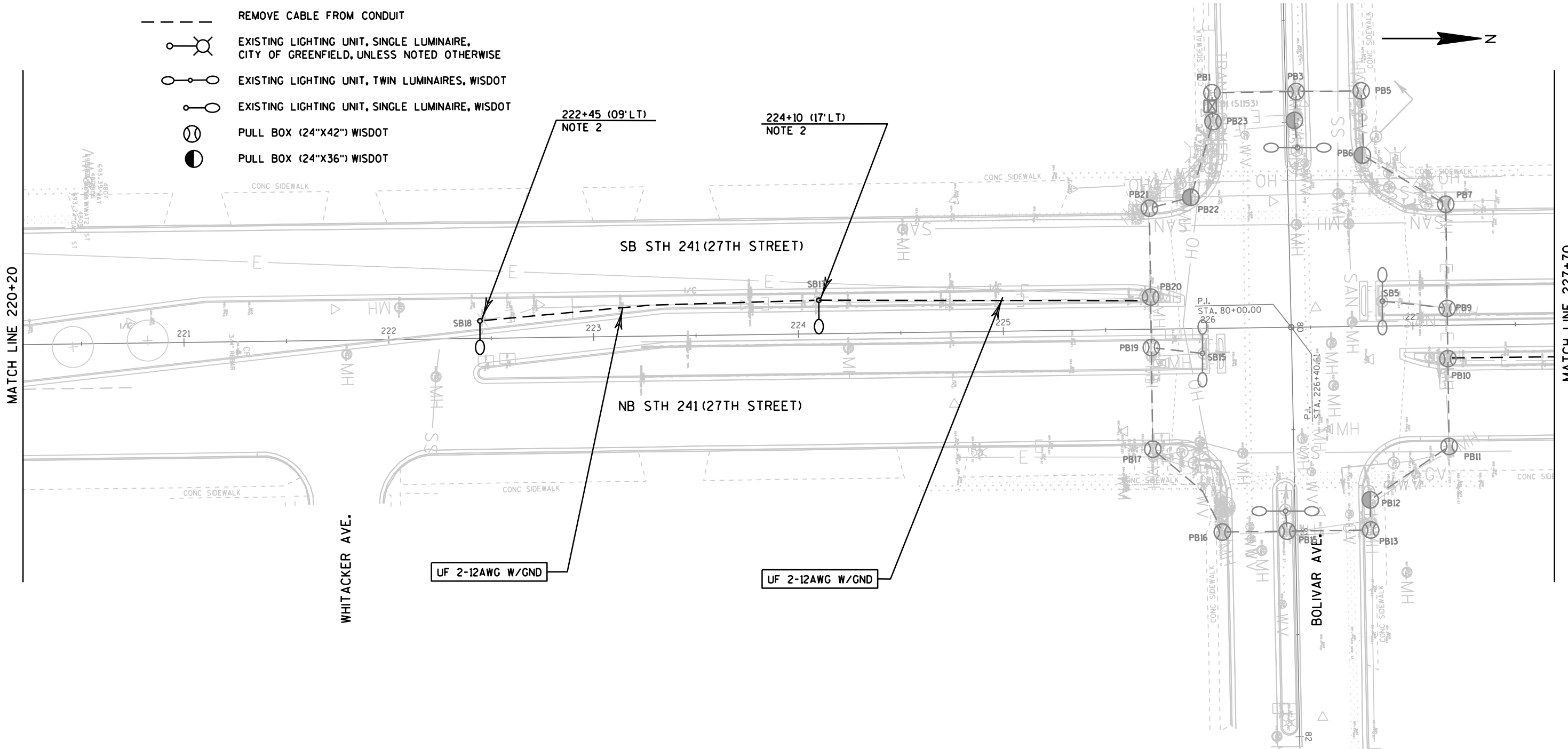
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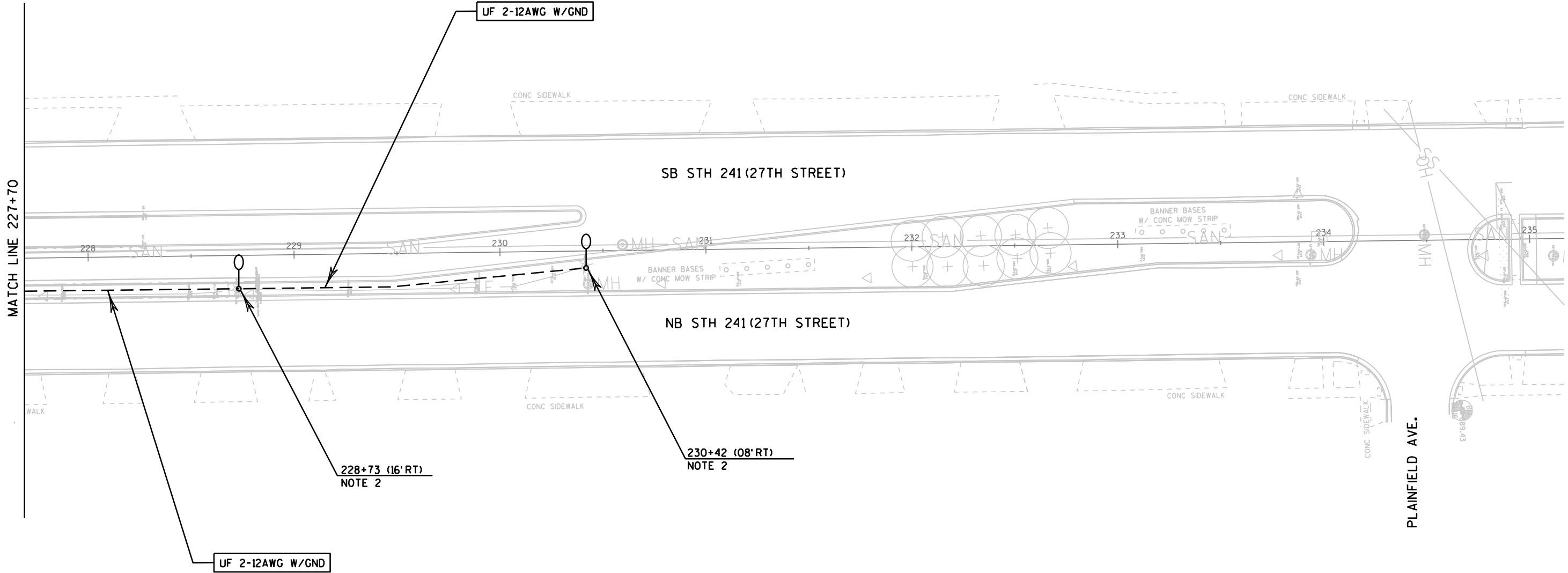
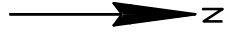
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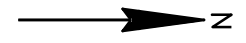
KEYED NOTES :

- ① INTERCEPT EXISTING CONDUIT
- ② REMOVE AND REPLACE CONCRETE SIDEWALK IN-KIND

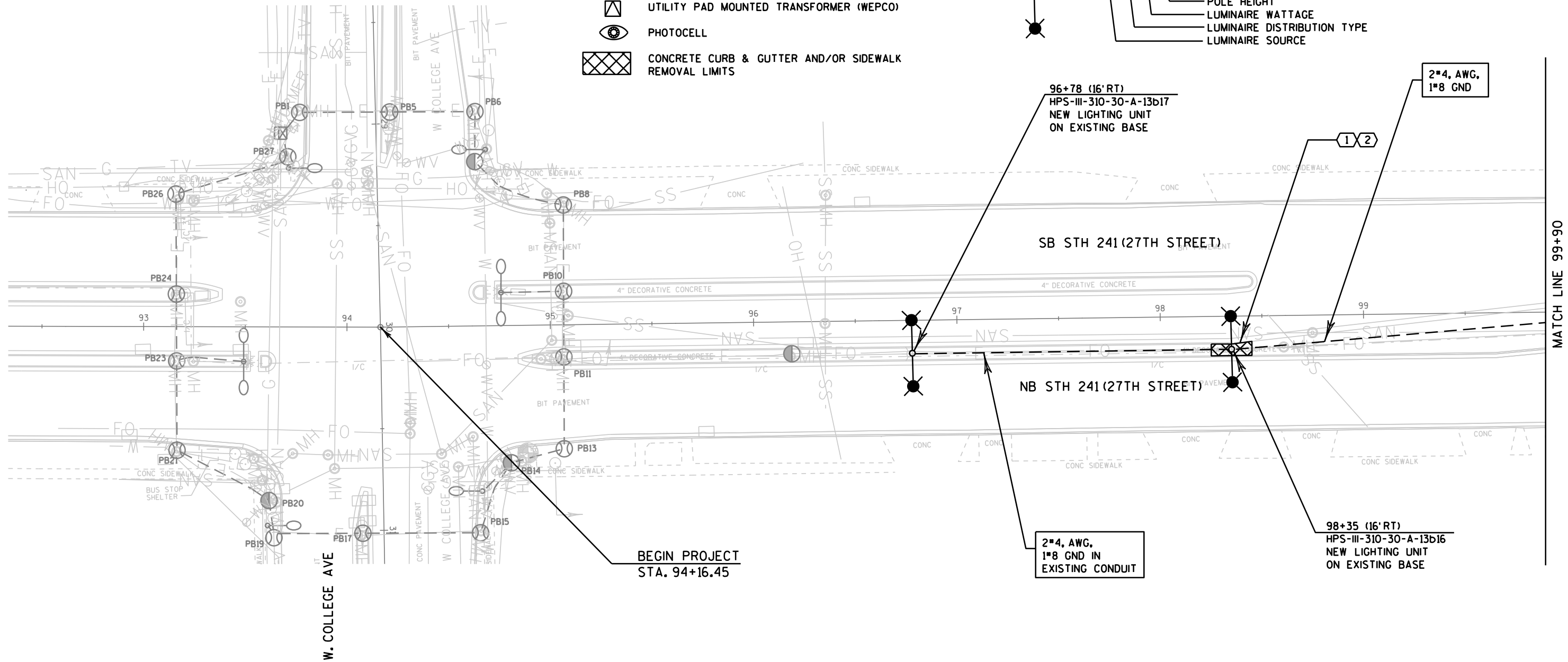
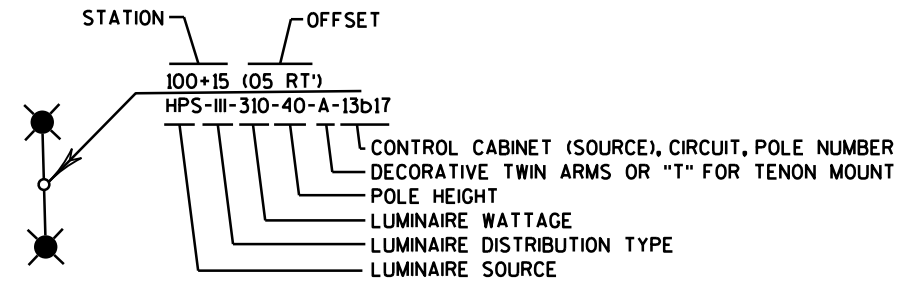
LIGHTING PLAN LEGEND

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- - - - - CID (CABLE IN DUCT), SIZE AS NOTED
- ≡ CONDUIT STUBOUT
- ⊠ LIGHTING DISTRIBUTION CENTER 240/480 VAC 3W, CITY OF GREENFIELD
- PULL BOX POLYMER CONCRETE, CITY OF GREENFIELD
- ⊗ PROPOSED LIGHTING UNIT, TWIN LUMINAIRES, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
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- ▣ UTILITY PAD MOUNTED TRANSFORMER (WEPCO)
- ⊙ PHOTOCELL
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CALLOUT LEGEND



MATCH LINE 99+90

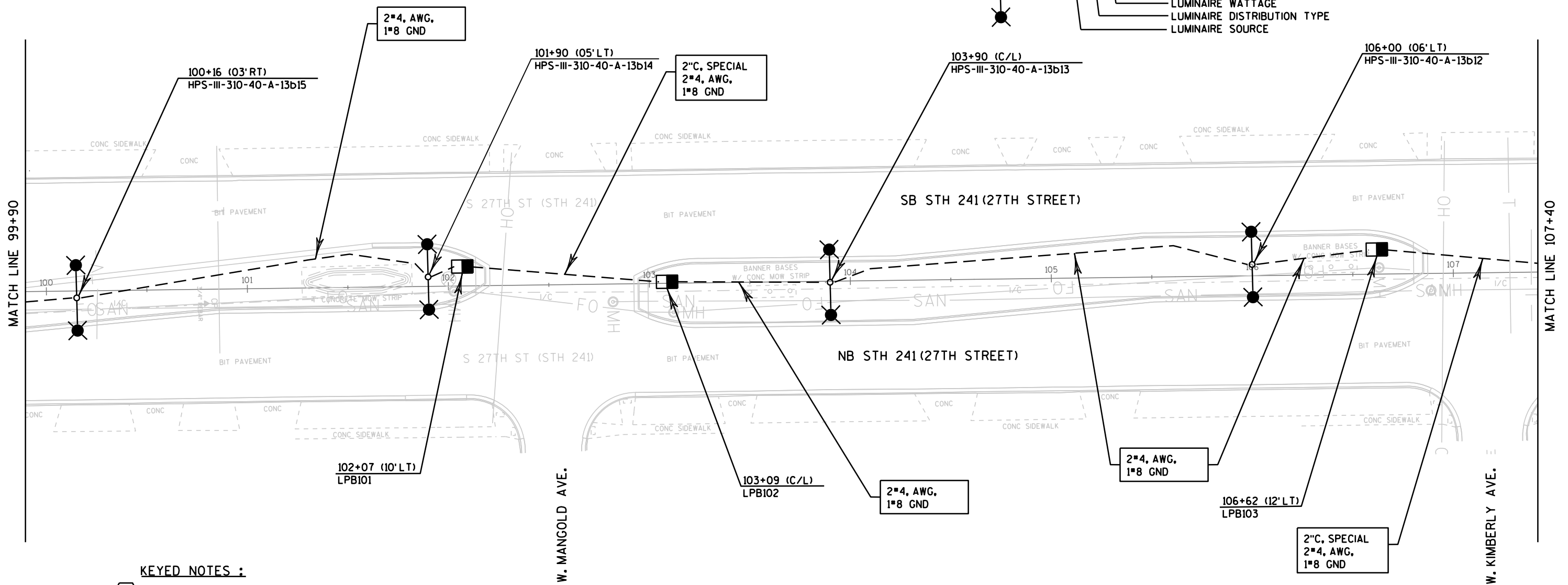
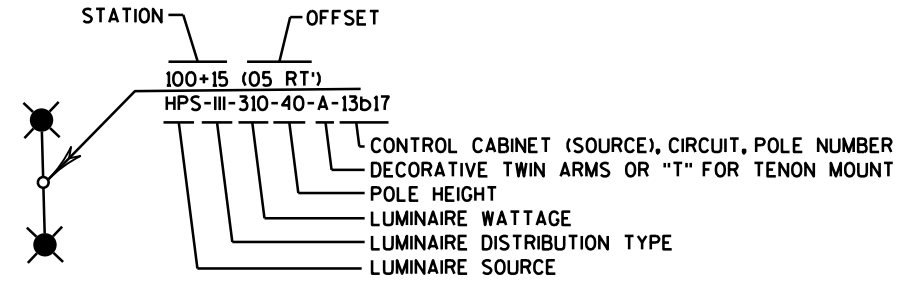
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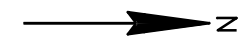
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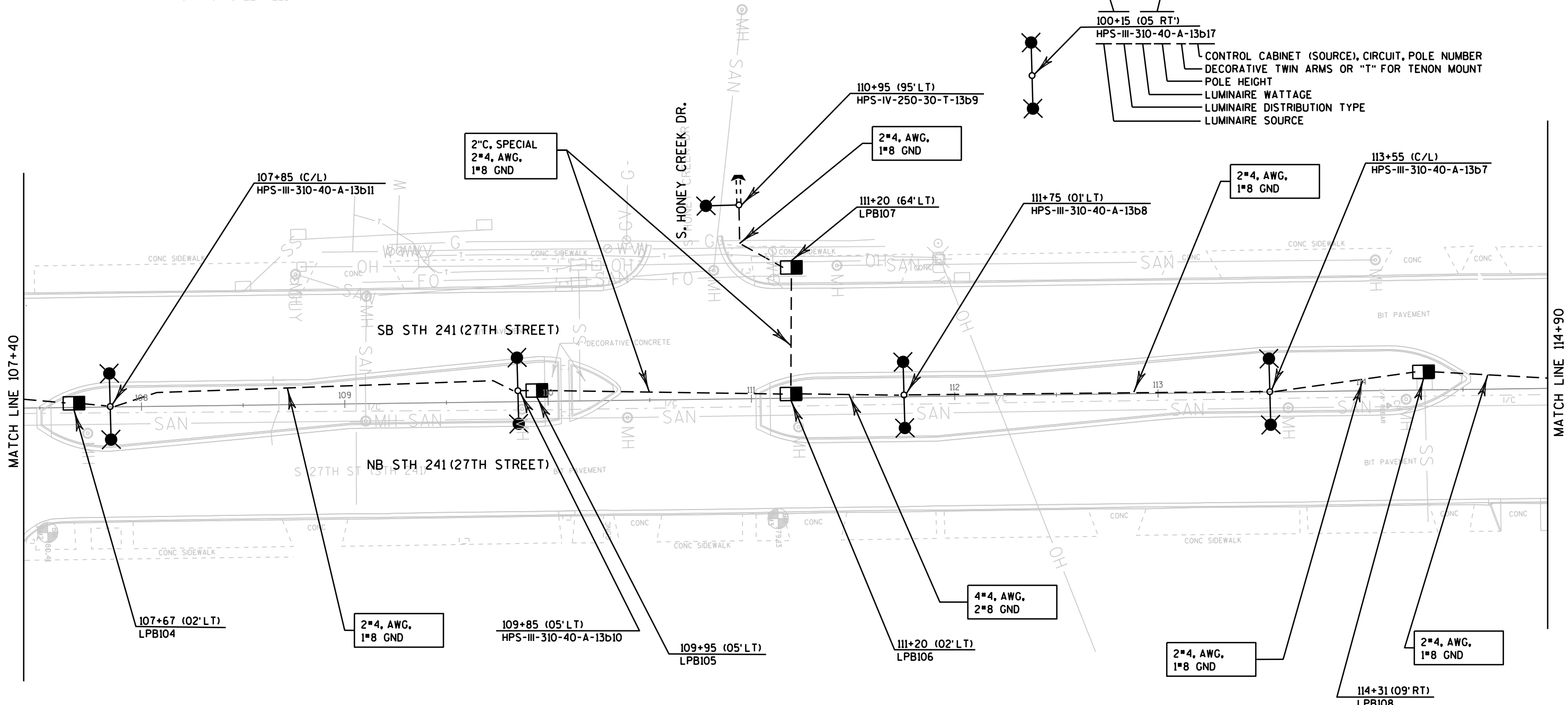
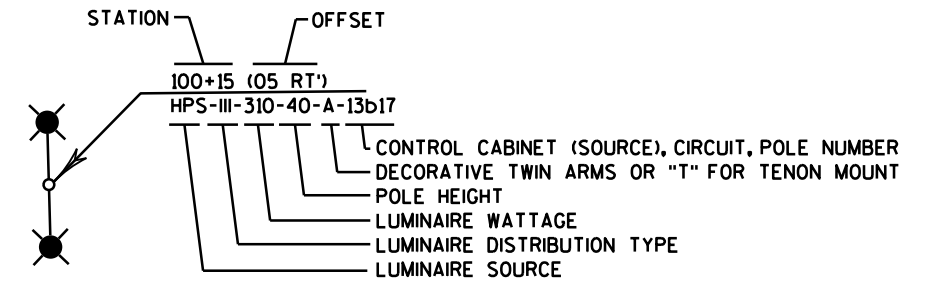
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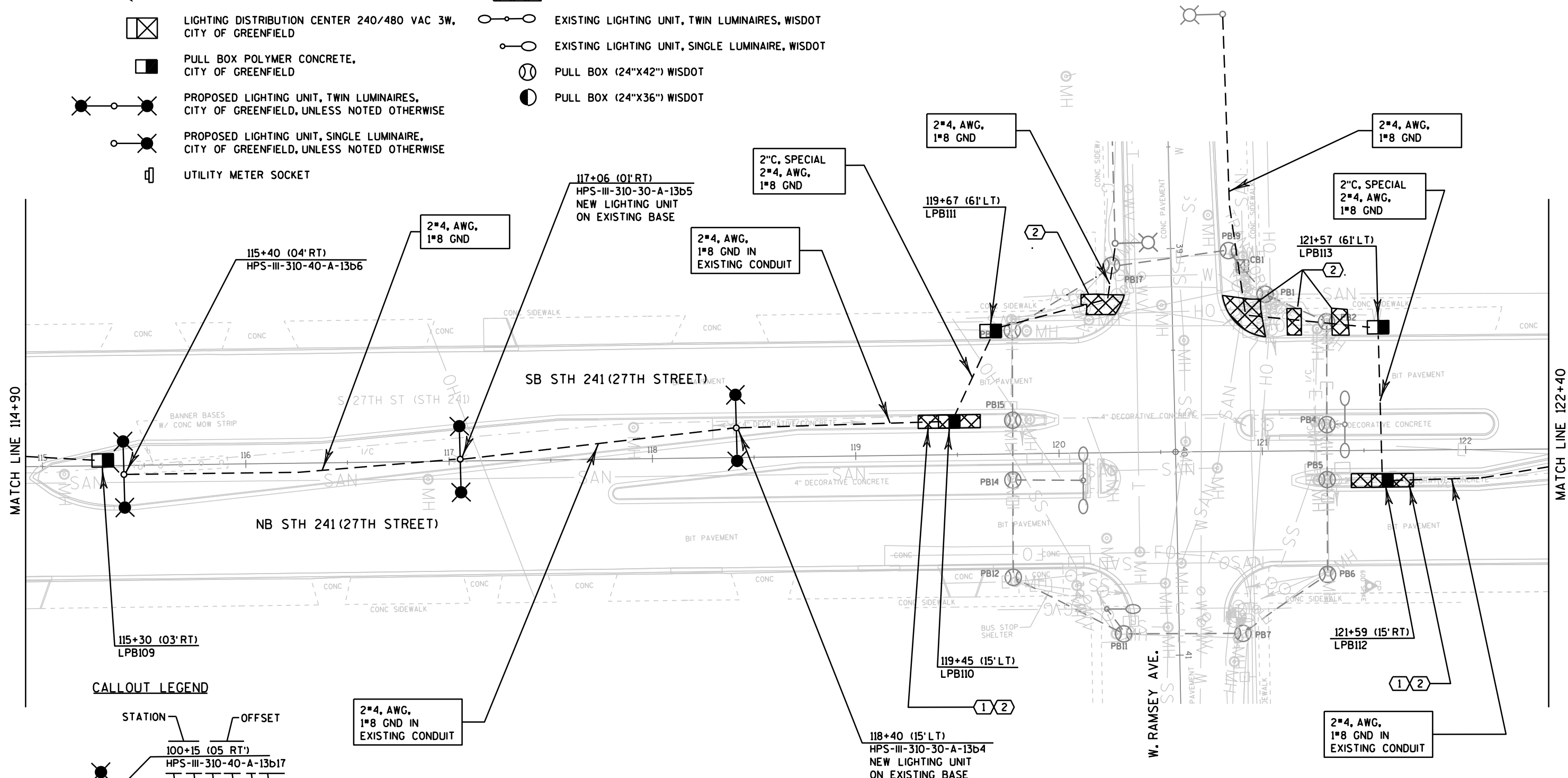
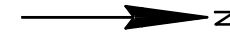
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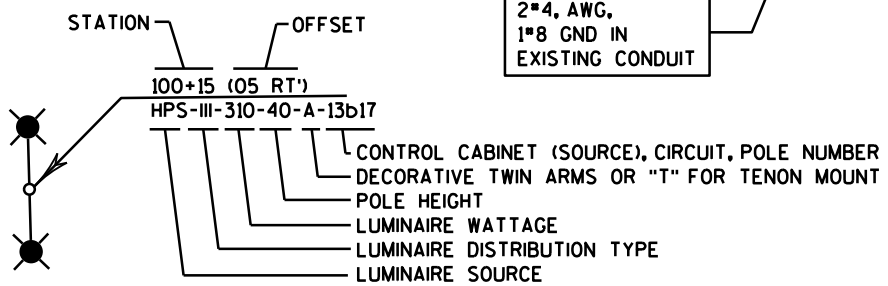
- KEYED NOTES :**
- ① INTERCEPT EXISTING CONDUIT
  - ② REMOVE AND REPLACE CONCRETE SIDEWALK IN-KIND

LIGHTING PLAN LEGEND

- NON-METALLIC UNDERGROUND CONDUIT TRENCHED, 2-INCH, UNLESS NOTED OTHERWISE
- - - CID (CABLE IN DUCT), SIZE AS NOTED
- ≡ CONDUIT STUBOUT
- ⊠ LIGHTING DISTRIBUTION CENTER 240/480 VAC 3W, CITY OF GREENFIELD
- PULL BOX POLYMER CONCRETE, CITY OF GREENFIELD
- ⊗ PROPOSED LIGHTING UNIT, TWIN LUMINAIRES, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
- ⊙ PROPOSED LIGHTING UNIT, SINGLE LUMINAIRE, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
- UTILITY METER SOCKET
- ⊠ UTILITY PAD MOUNTED TRANSFORMER (WEPCO)
- ⊙ PHOTOCELL
- ⊠ CONCRETE CURB & GUTTER AND/OR SIDEWALK REMOVAL LIMITS
- ⊙ EXISTING LIGHTING UNIT, TWIN LUMINAIRES, WISDOT
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CALLOUT LEGEND



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LIGHTING PLAN LEGEND

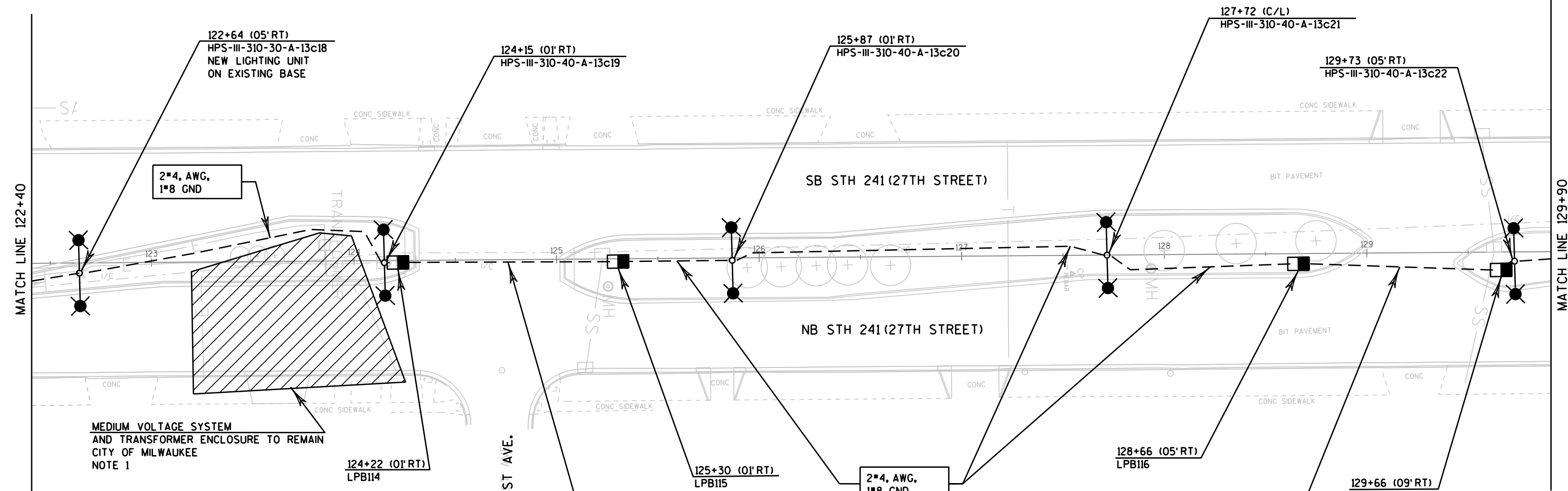
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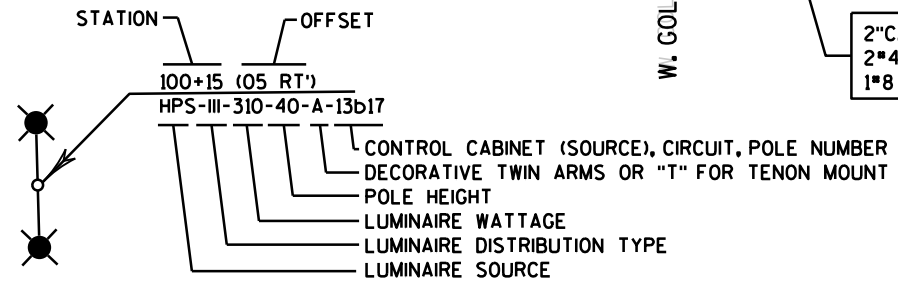
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NOTES:  
 1. CONTRACTOR SHALL BE RESPONSIBLE TO AVOID ANY CONFLICTS WITH MEDIUM VOLTAGE UNDERGROUND FEEDER AND TRANSFORMER ENCLOSURE LOCATED IN MEDIAN. CONTRACTOR SHALL TAKE EXTRA PRECAUTION MEASURES WORKING AROUND THIS SYSTEMS.



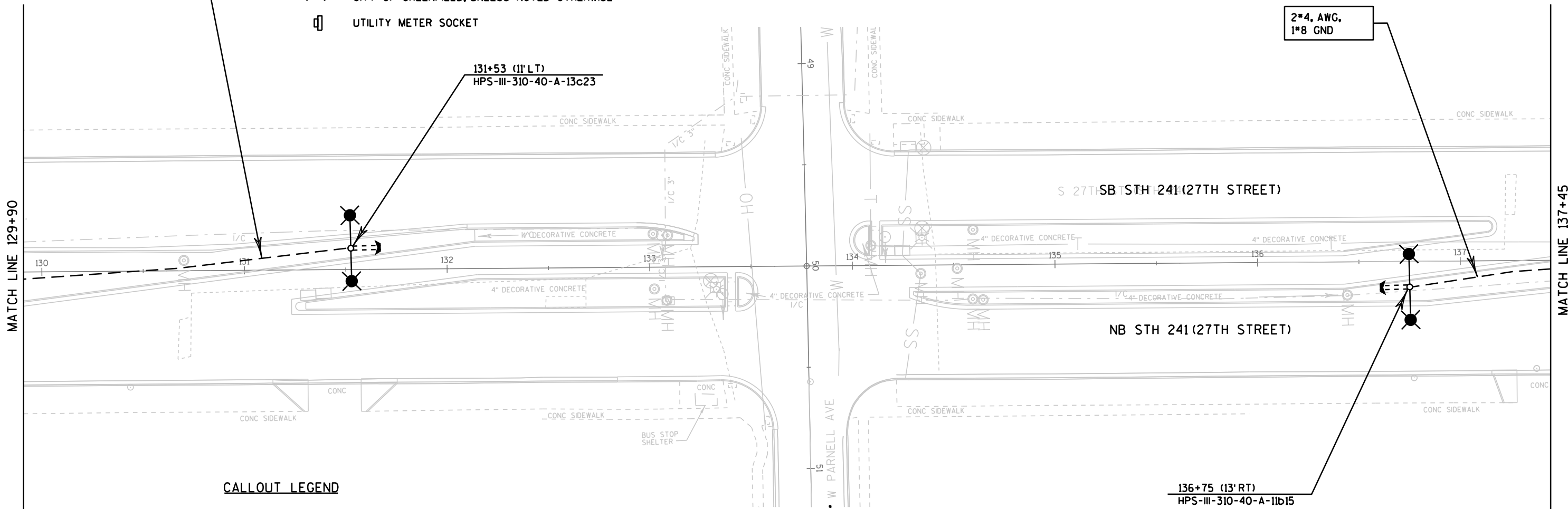
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CALLOUT LEGEND

- STATION
- OFFSET
- 100+15 (05 RT') HPS-III-310-40-A-13b17
- CONTROL CABINET (SOURCE), CIRCUIT, POLE NUMBER
- DECORATIVE TWIN ARMS OR "T" FOR TENON MOUNT
- POLE HEIGHT
- LUMINAIRE WATTAGE
- LUMINAIRE DISTRIBUTION TYPE
- LUMINAIRE SOURCE

KEYED NOTES :

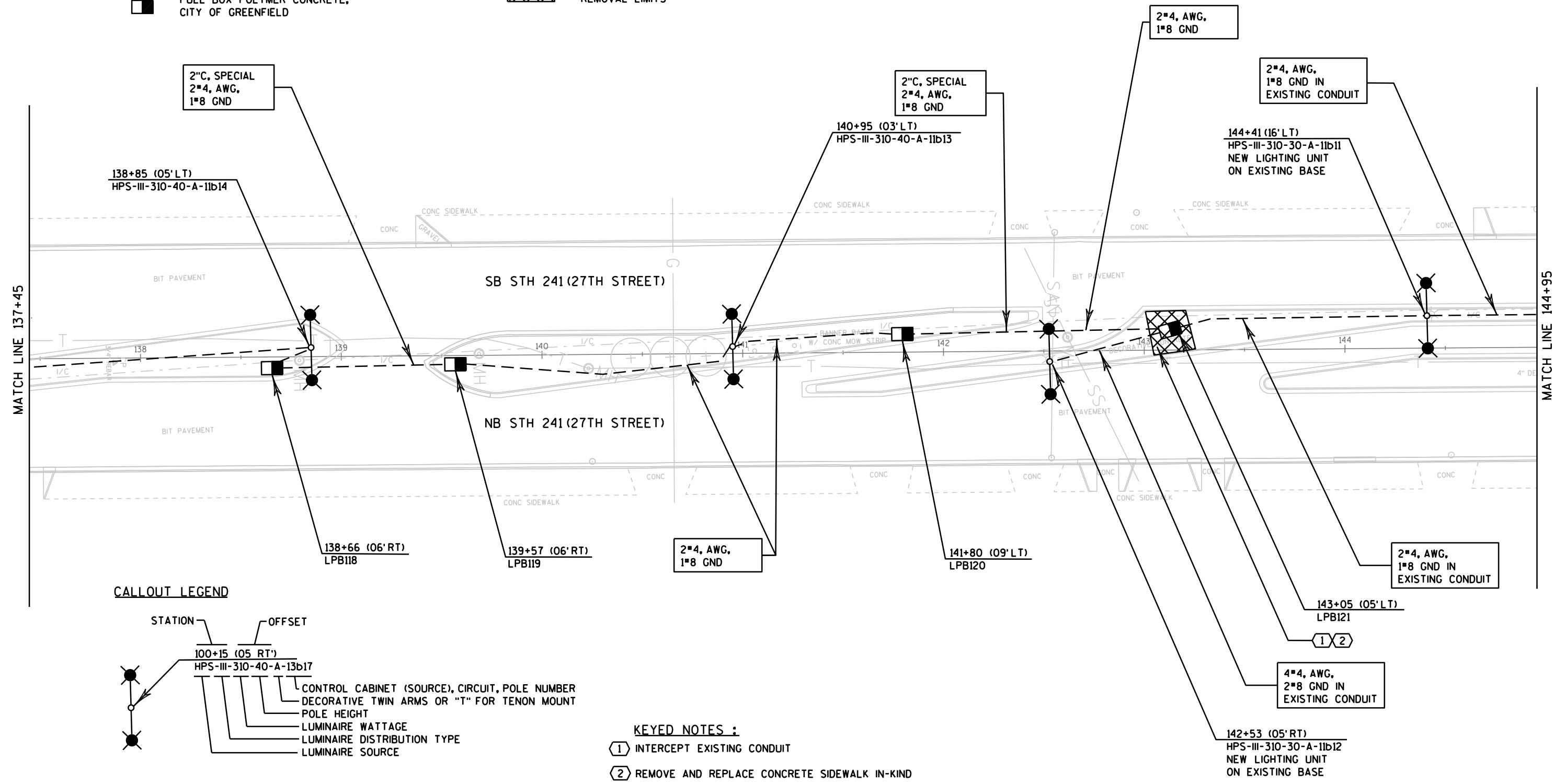
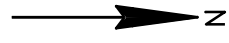
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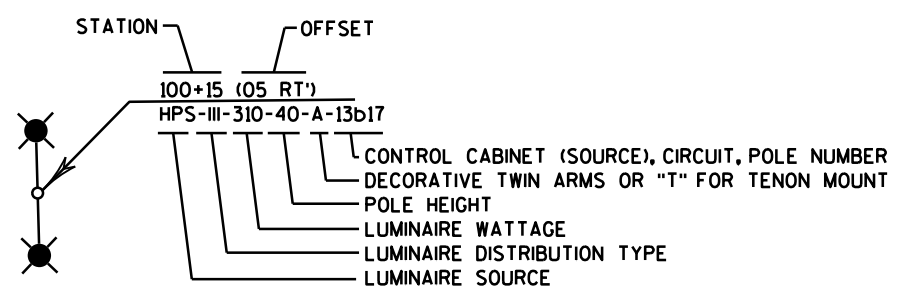
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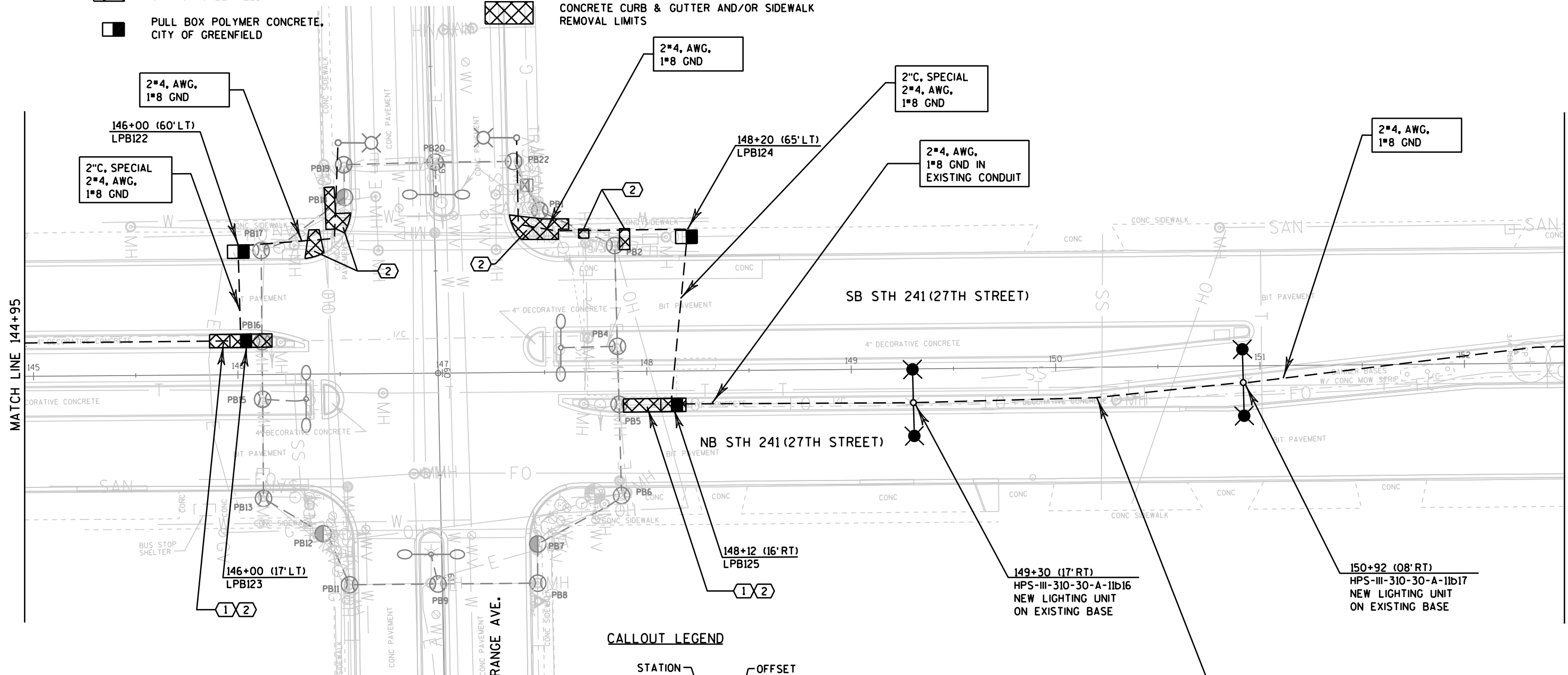
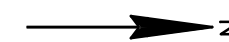
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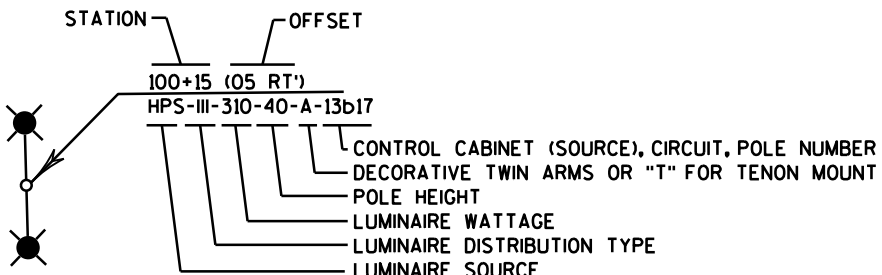
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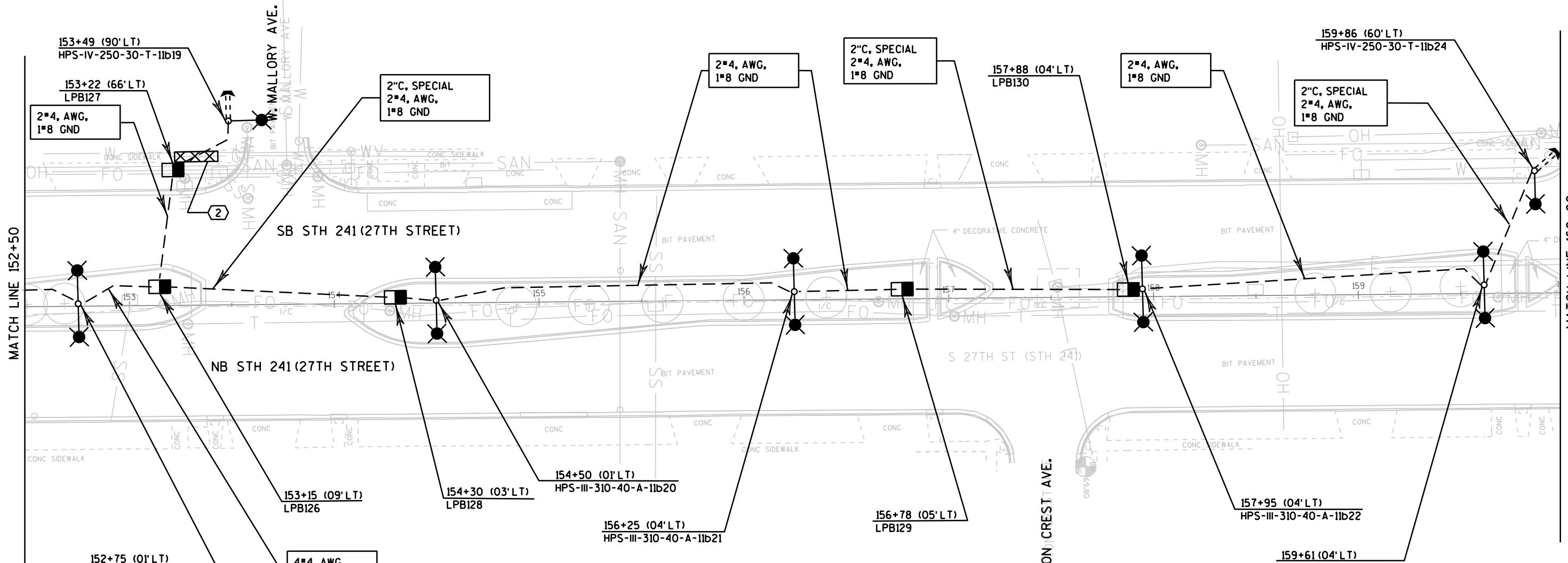
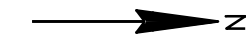
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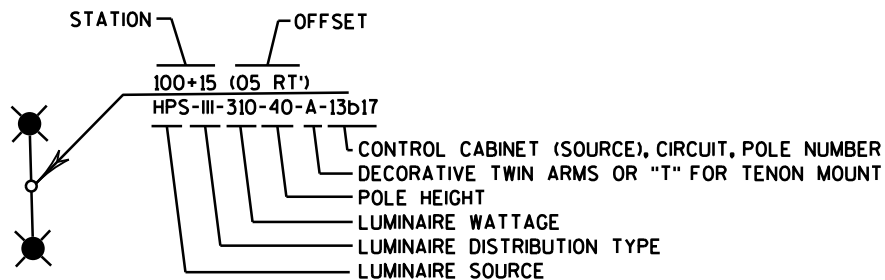
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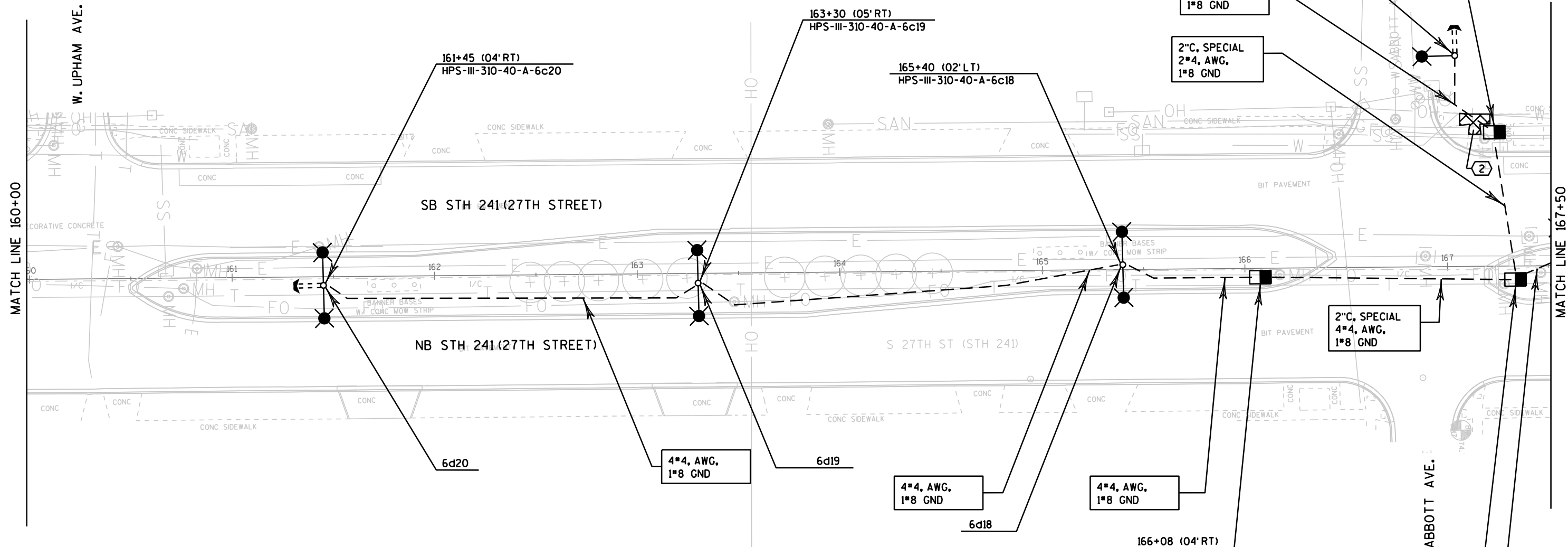
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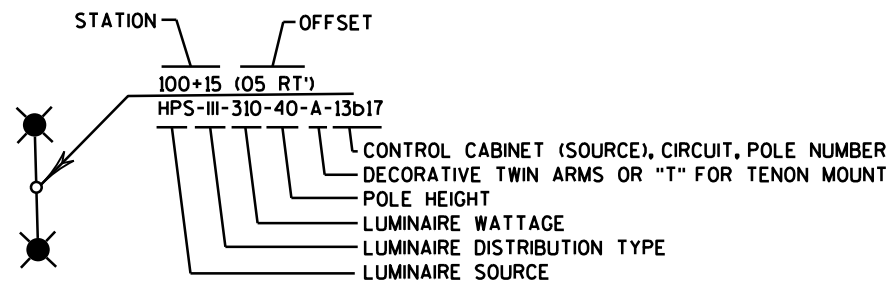
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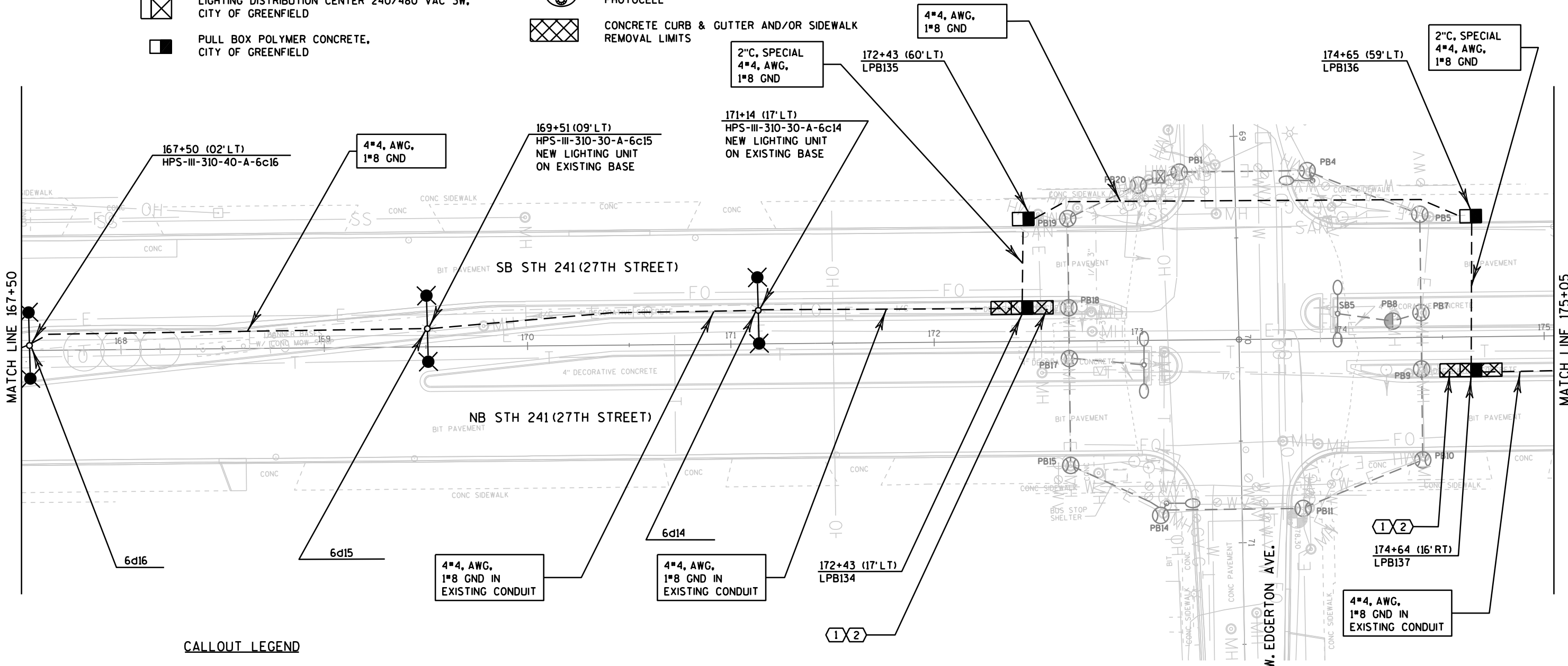
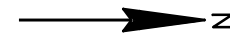
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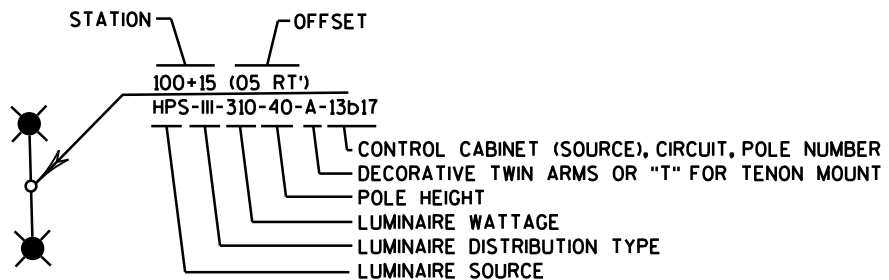
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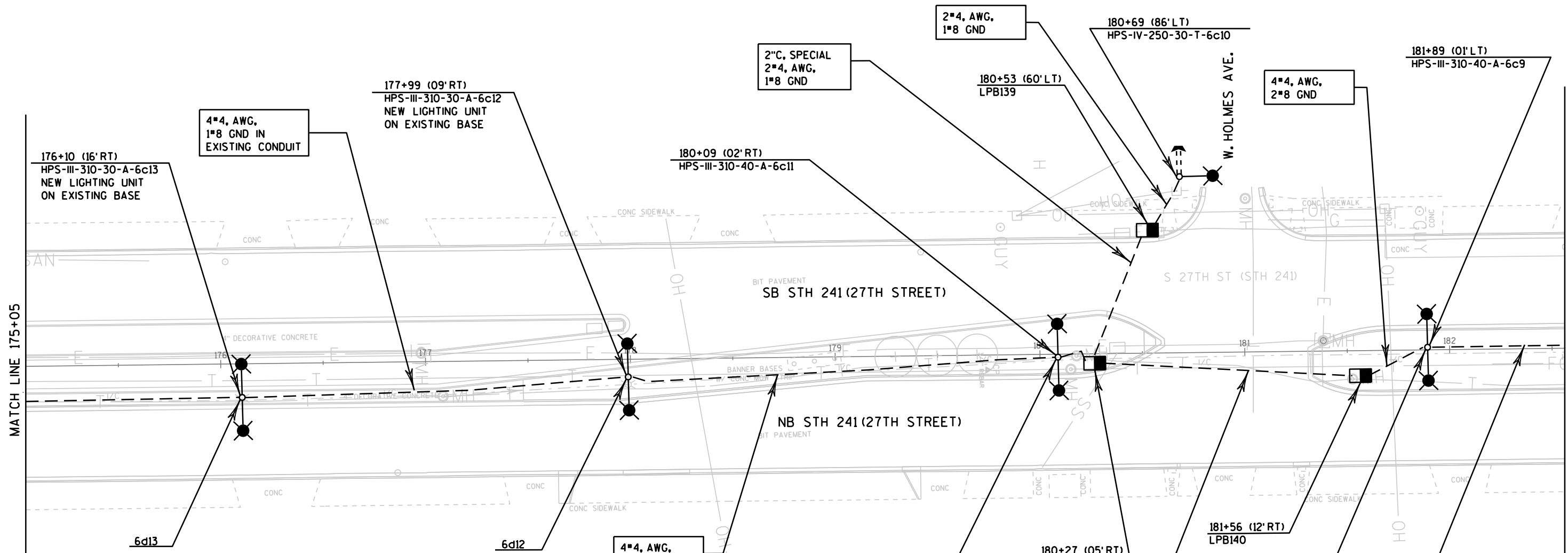


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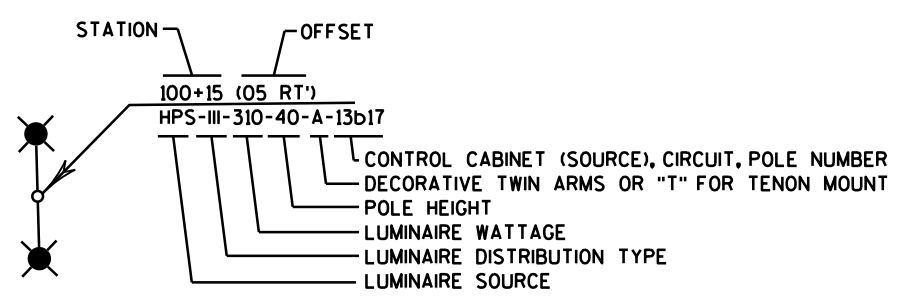
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LIGHTING PLAN LEGEND

- |         |  |  |   |
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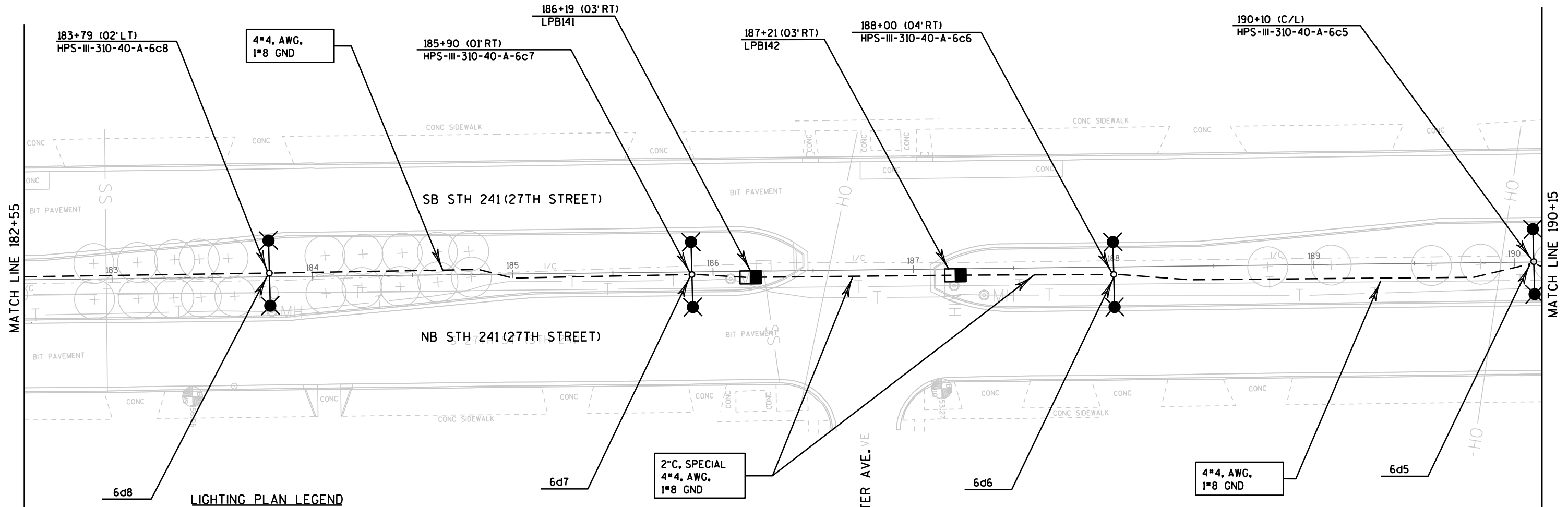
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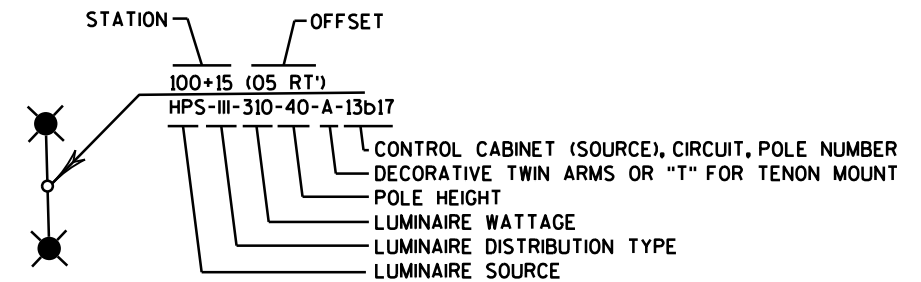
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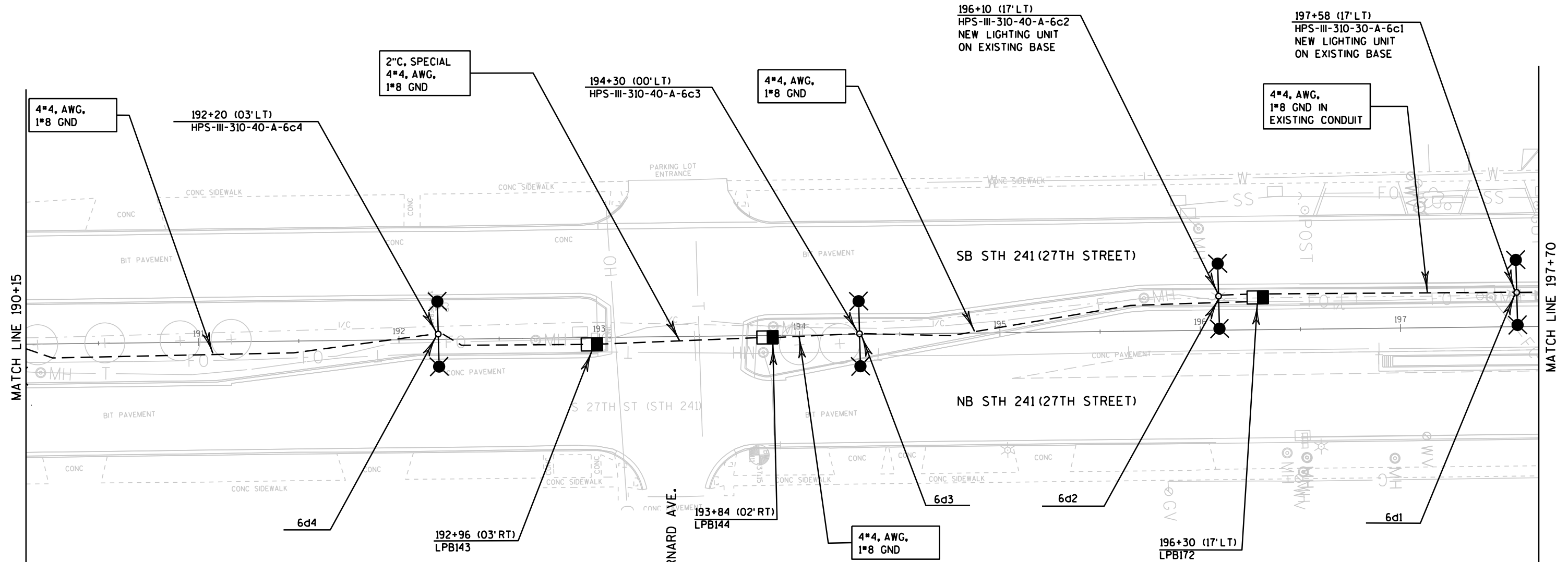
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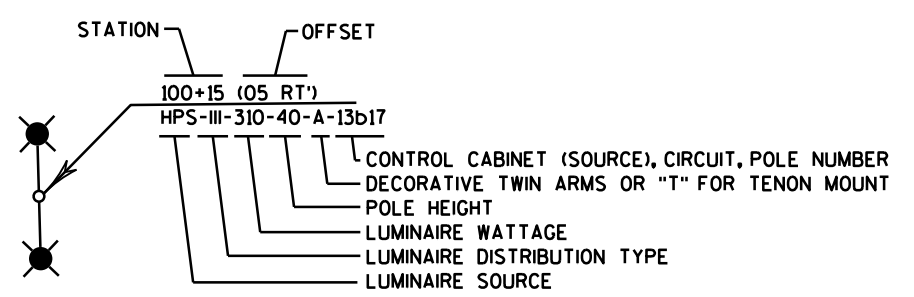
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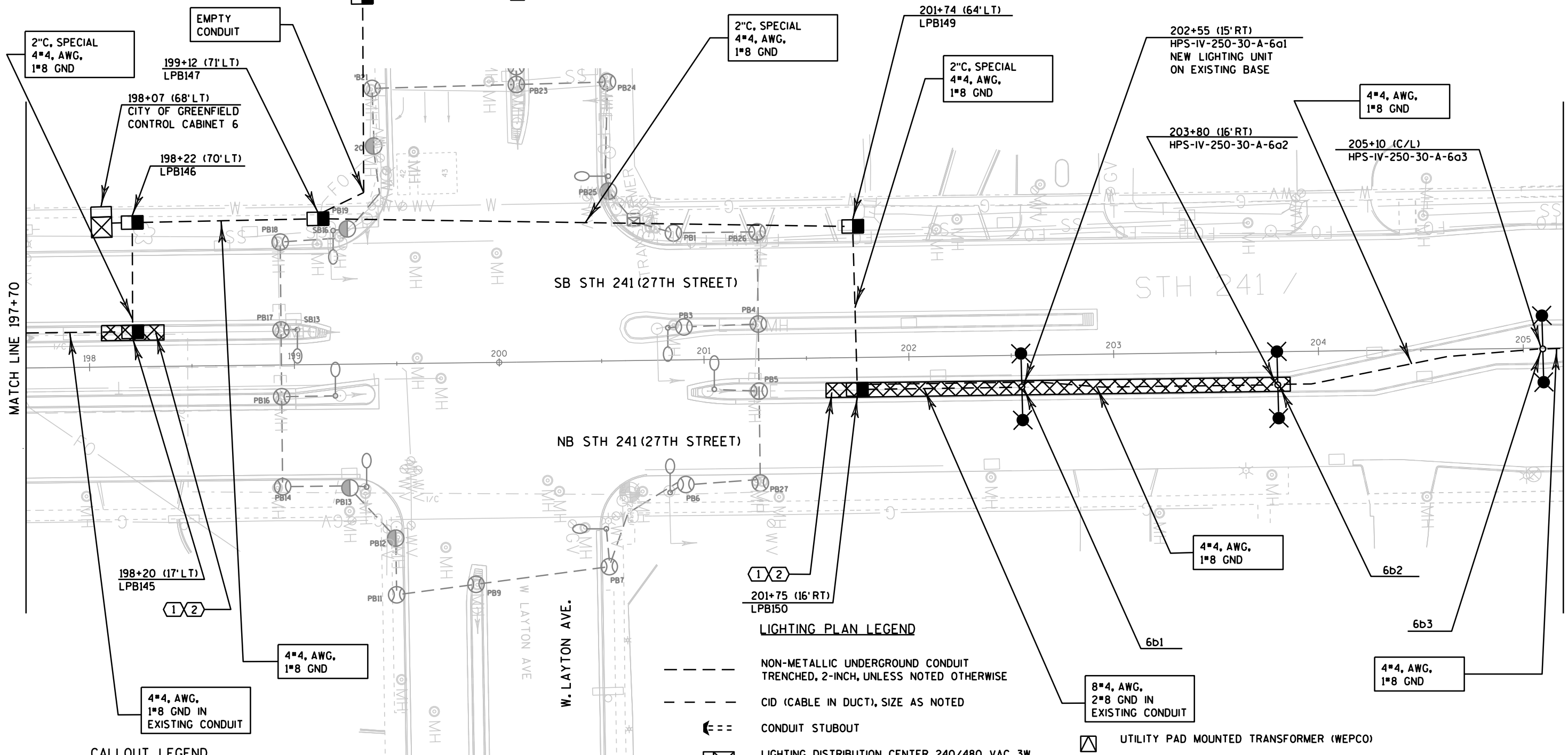
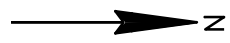
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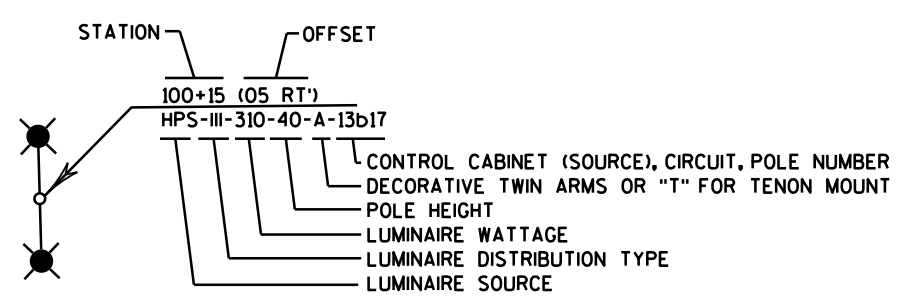


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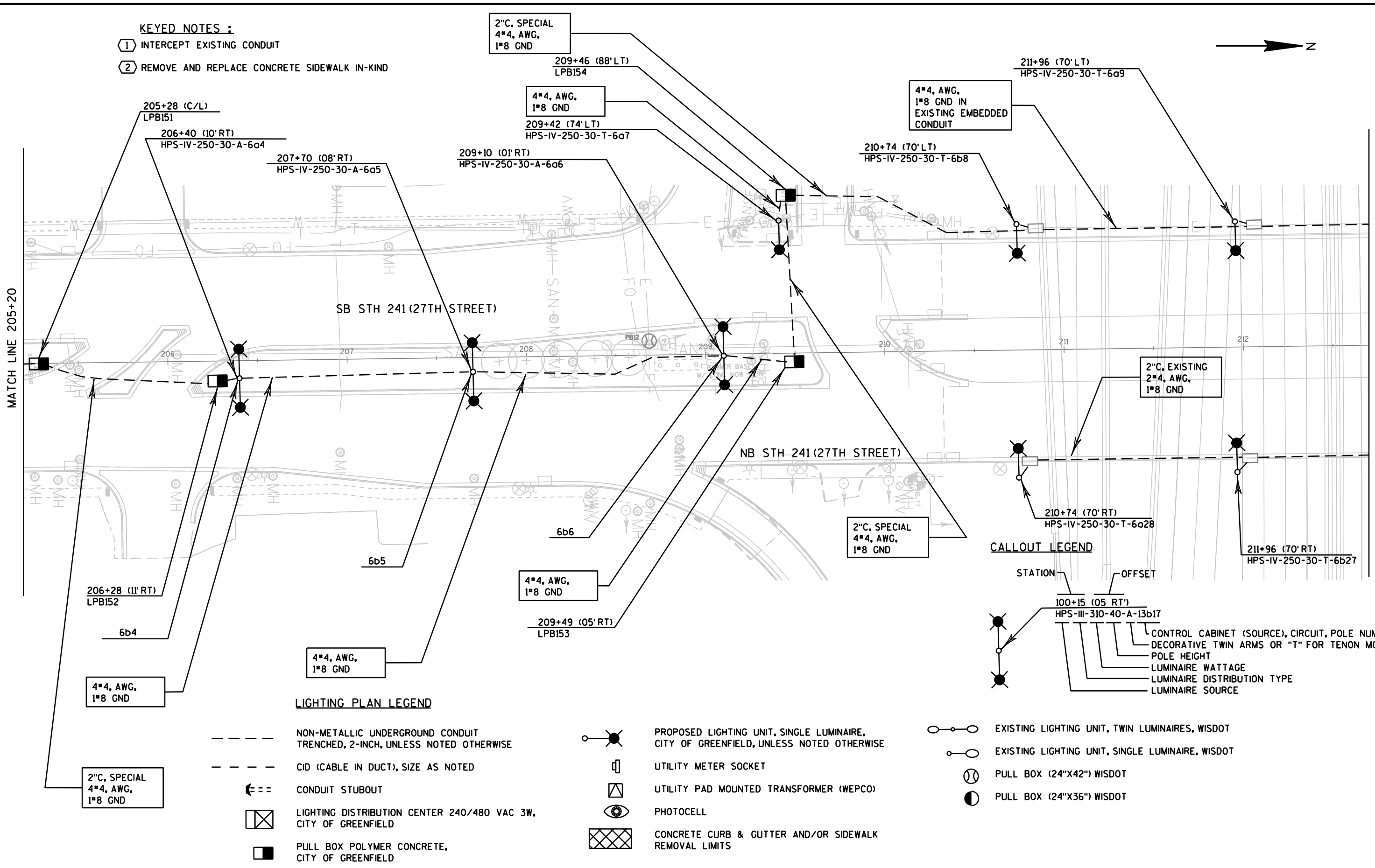


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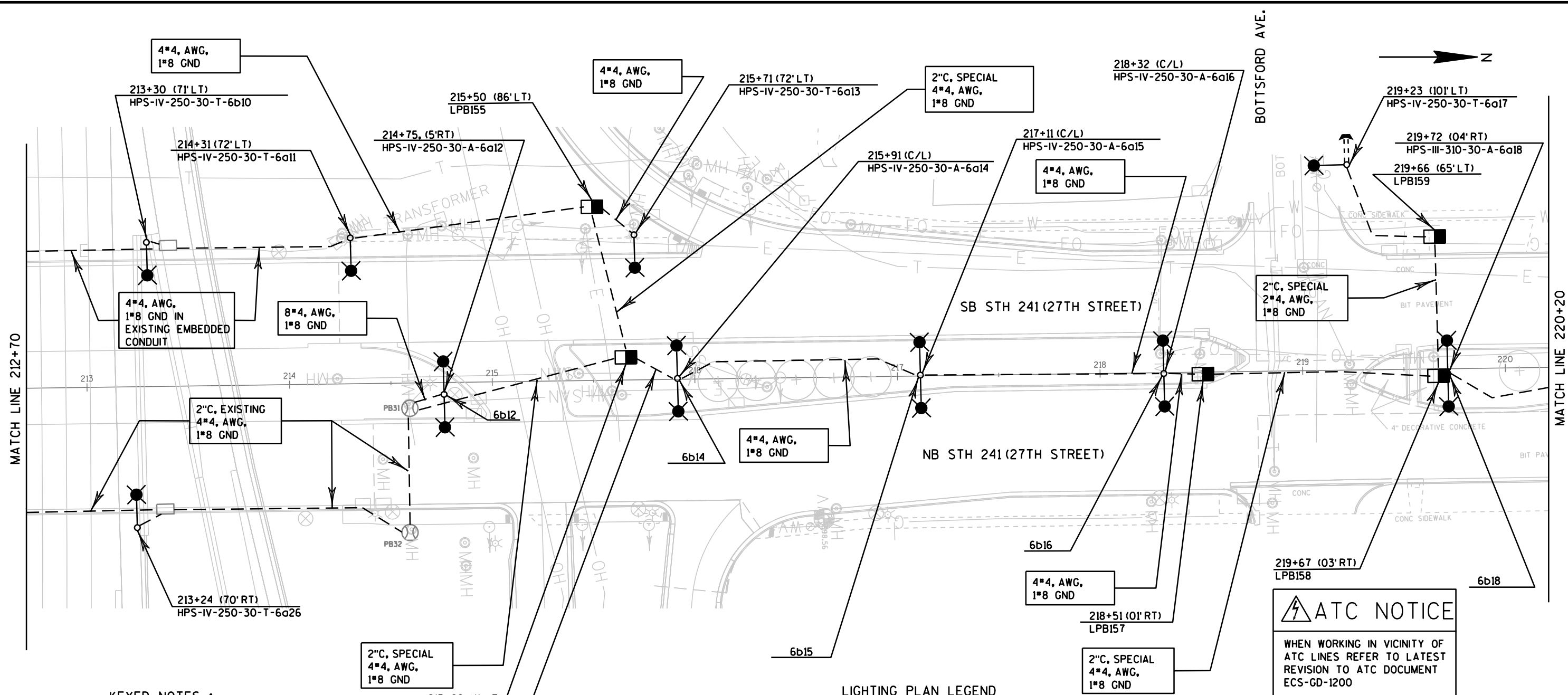
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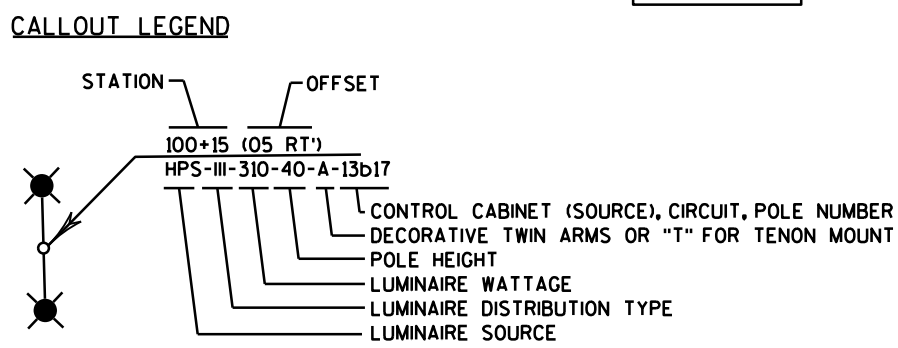
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  - LUMINAIRE SOURCE



**⚠ ATC NOTICE**

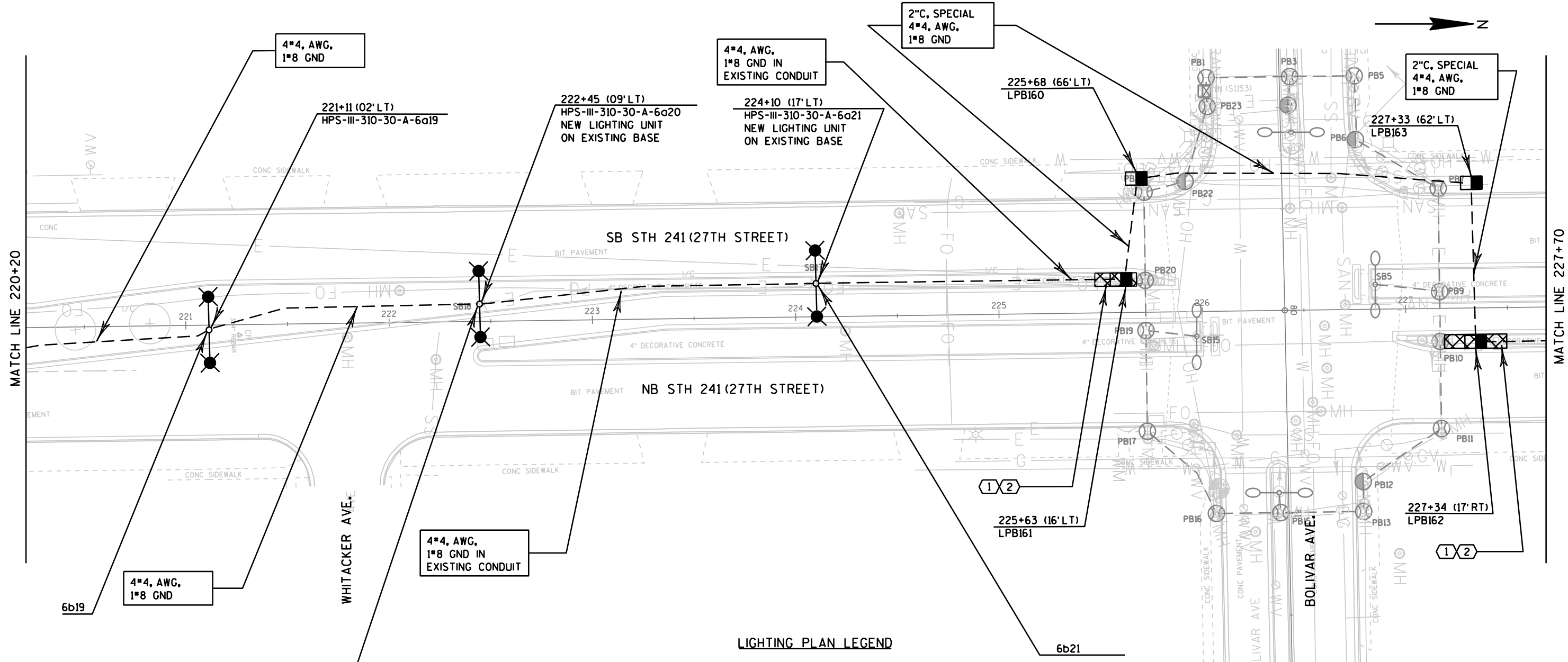
WHEN WORKING IN VICINITY OF ATC LINES REFER TO LATEST REVISION TO ATC DOCUMENT ECS-GD-1200

- KEYED NOTES :**
- ① INTERCEPT EXISTING CONDUIT
  - ② REMOVE AND REPLACE CONCRETE SIDEWALK IN-KIND



**LIGHTING PLAN LEGEND**

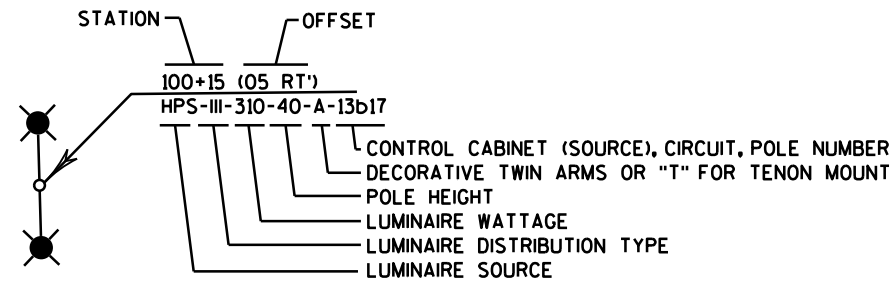
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- - - - - CID (CABLE IN DUCT), SIZE AS NOTED
- ⊥ = CONDUIT STUBOUT
- ⊠ LIGHTING DISTRIBUTION CENTER 240/480 VAC 3W, CITY OF GREENFIELD
- ▣ PULL BOX POLYMER CONCRETE, CITY OF GREENFIELD
- ⊙ PROPOSED LIGHTING UNIT, TWIN LUMINAIRES, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
- PROPOSED LIGHTING UNIT, SINGLE LUMINAIRE, CITY OF GREENFIELD, UNLESS NOTED OTHERWISE
- ⊡ UTILITY METER SOCKET
- ⊠ UTILITY PAD MOUNTED TRANSFORMER (WEPCO)
- 👁 PHOTOCELL
- ⊠ CONCRETE CURB & GUTTER AND/OR SIDEWALK REMOVAL LIMITS
- ⊙ EXISTING LIGHTING UNIT, TWIN LUMINAIRES, WISDOT
- EXISTING LIGHTING UNIT, SINGLE LUMINAIRE, WISDOT
- ⊙ PULL BOX (24"x42") WISDOT
- PULL BOX (24"x36") WISDOT



**KEYED NOTES :**

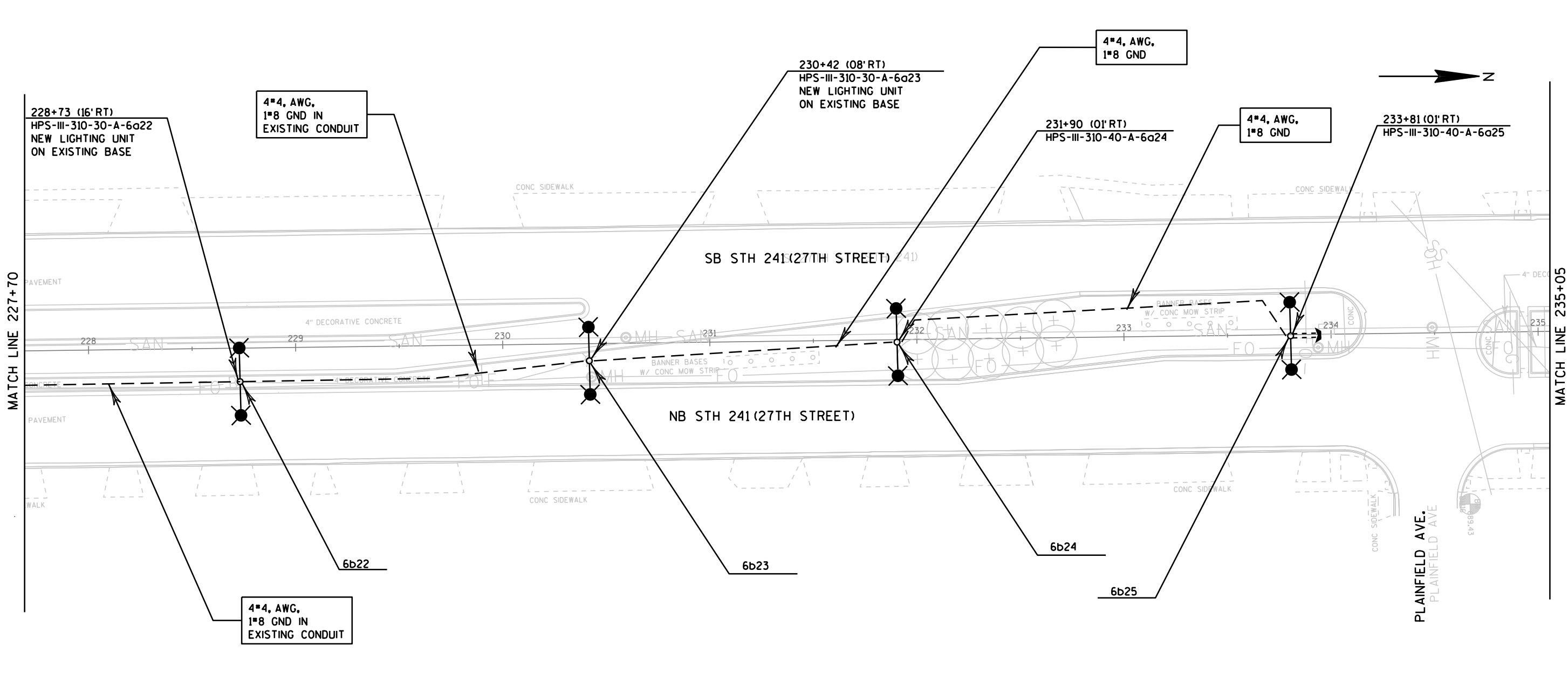
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**CALLOUT LEGEND**



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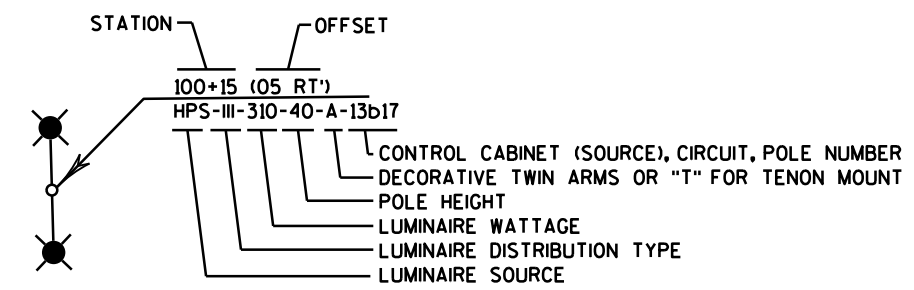
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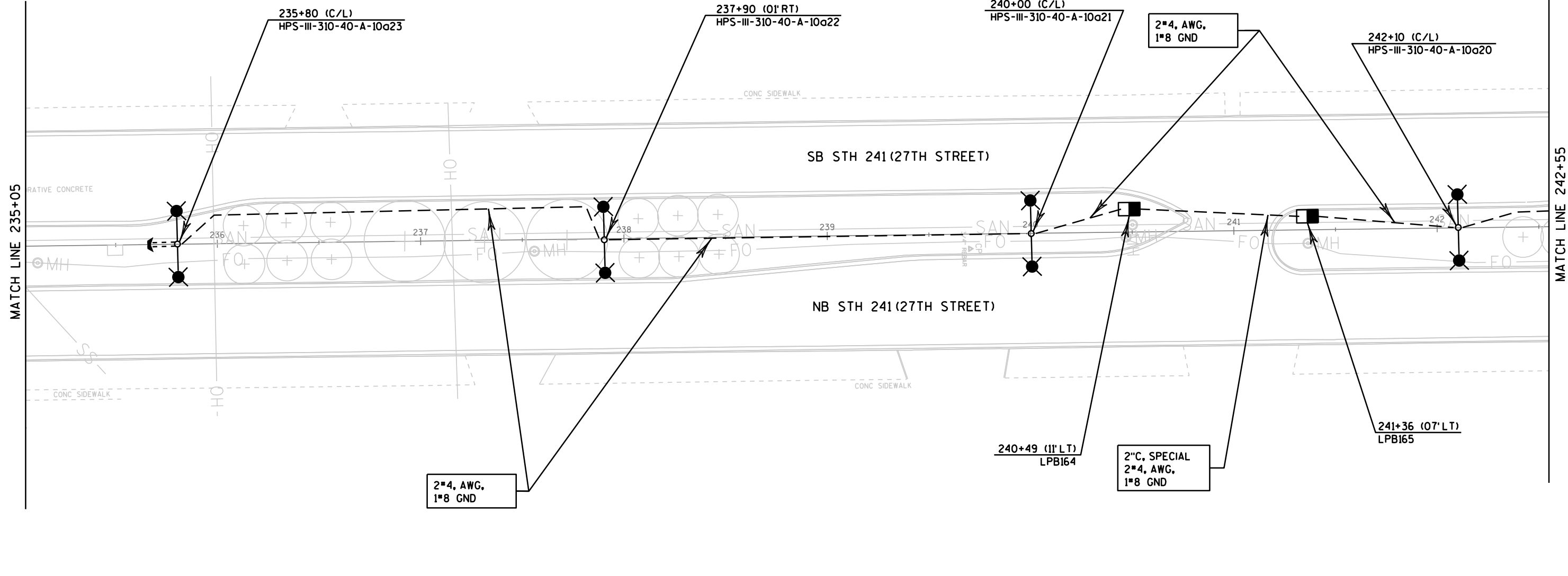
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- ② REMOVE AND REPLACE CONCRETE SIDEWALK IN-KIND

**CALLOUT LEGEND**





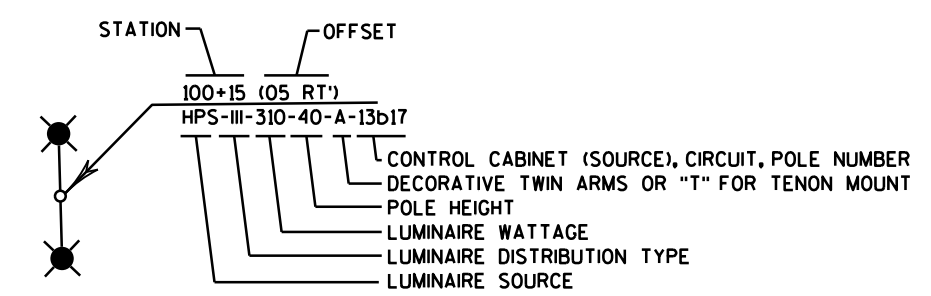
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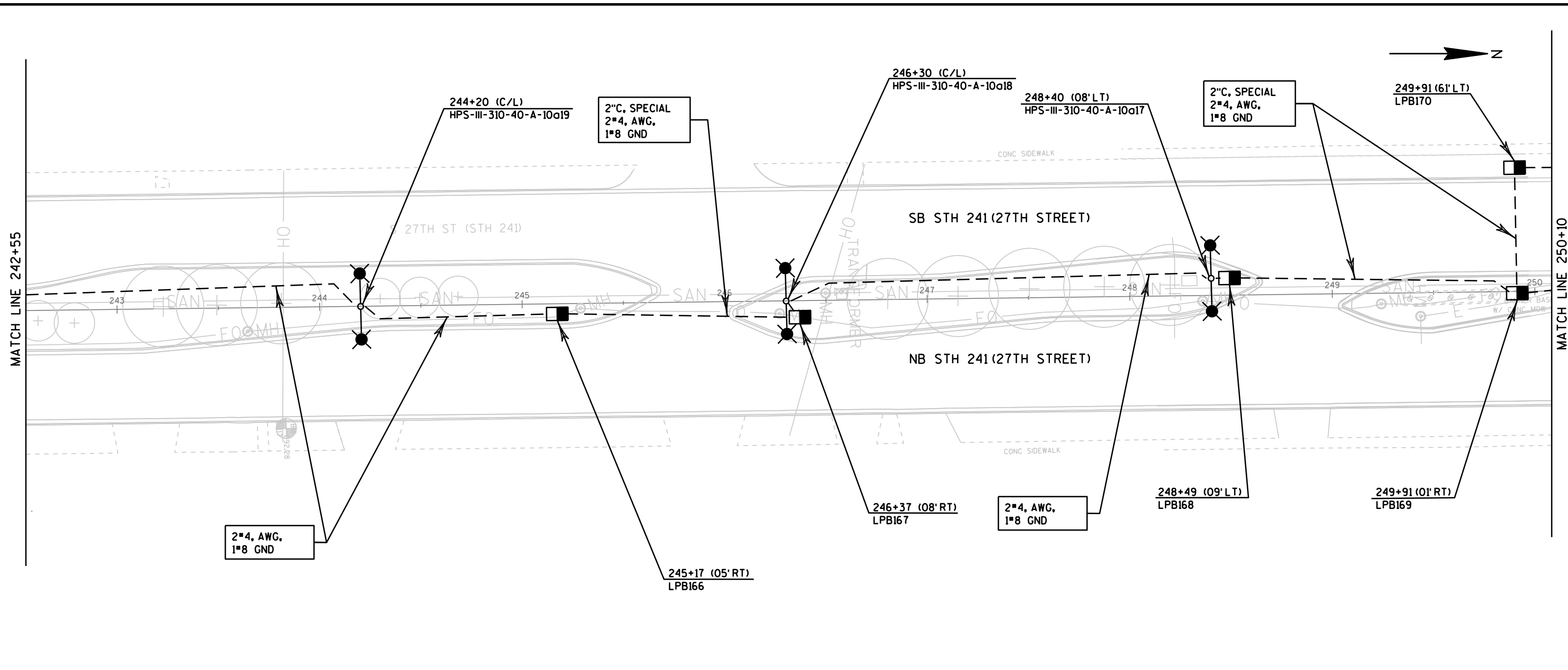
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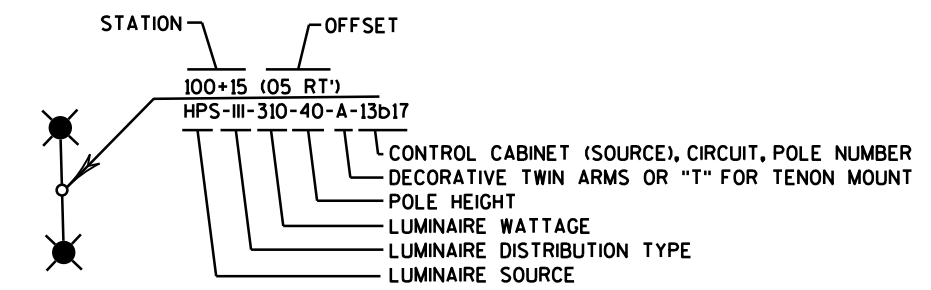
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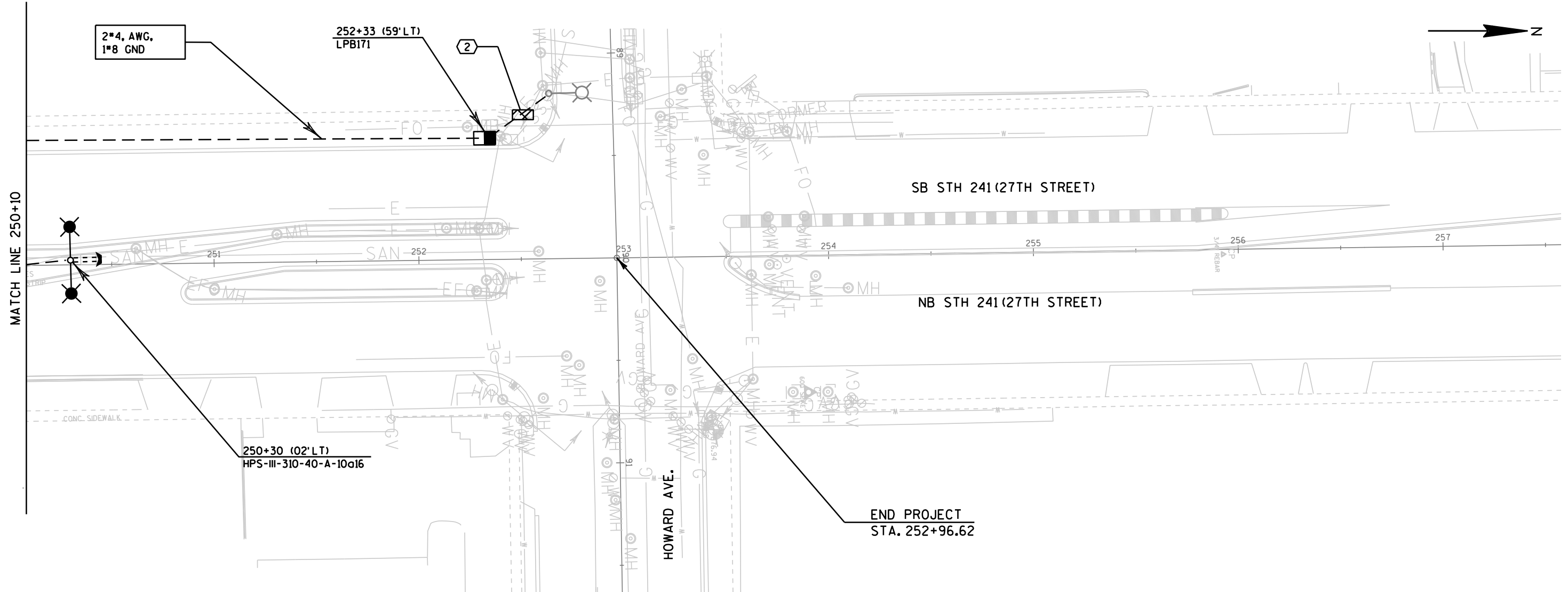
- |         |   |  |  |
|---------|---|--|--|
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| - - - - | CID (CABLE IN DUCT), SIZE AS NOTED  |  | PHOTOCELL  |
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|         | PULL BOX POLYMER CONCRETE,<br>CITY OF GREENFIELD  |  | EXISTING LIGHTING UNIT, SINGLE LUMINAIRE, WISDOT         |
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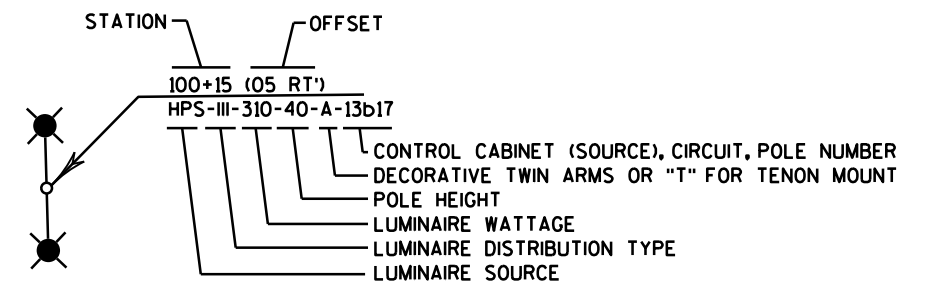
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













**CALLOUT LEGEND**



### GENERAL NOTES FOR CONSTRUCTION STAGING AND TRAFFIC CONTROL

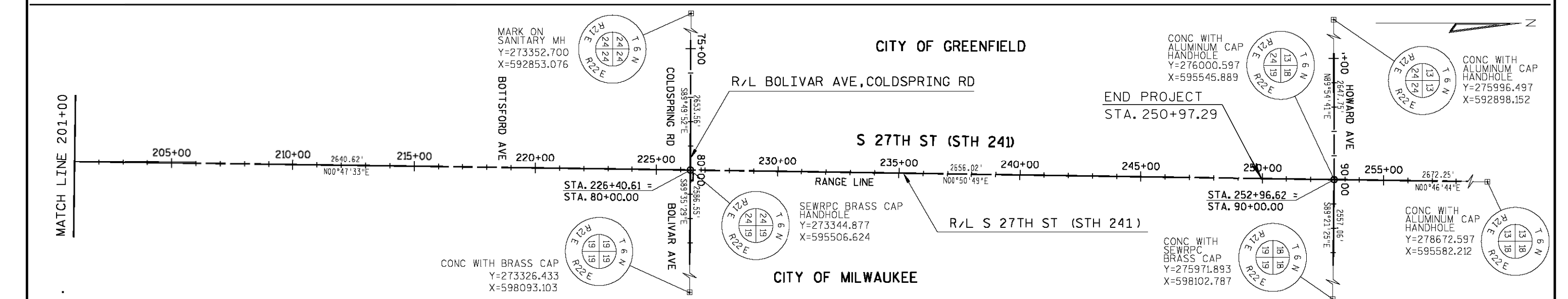
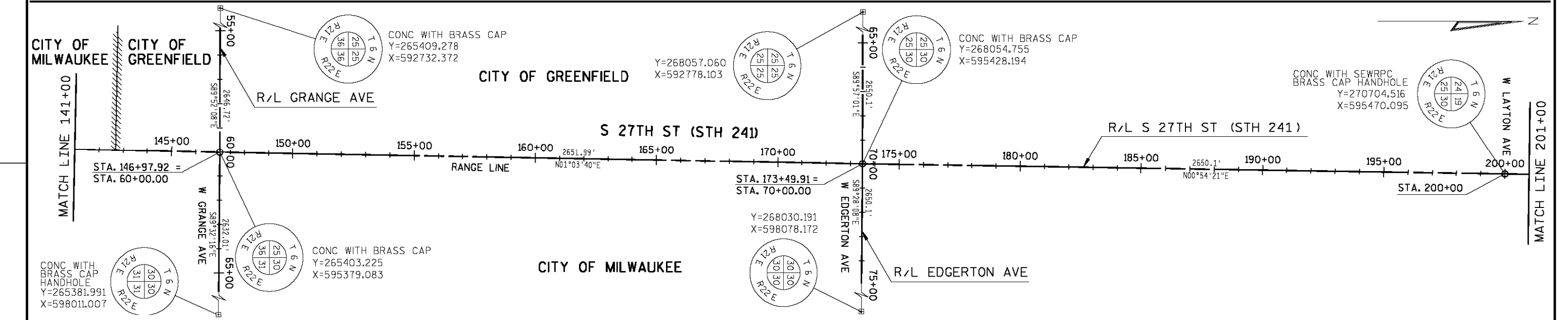
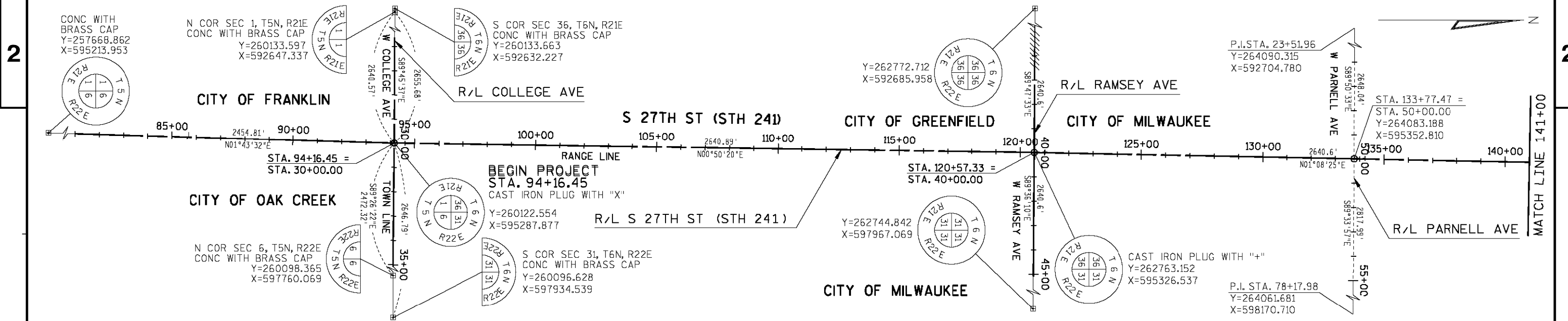
- 1) ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.
- 2) "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.
- 3) TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH TRAFFIC CONTROL WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY, UNLESS OTHERWISE SHOWN, DRUMS SHALL BE SPACED AT 25 FT OC IN TAPERS AND 50 FT OC ON TANGENTS OR AS OTHERWISE SHOWN.
- 4) SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
- 5) ALL SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED OR REMOVED AS NEEDED AND/OR AS DIRECTED BY THE ENGINEER.

#### LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  DELINEATOR FLEXIBLE/TUBULAR MARKER
-  TYPE A WARNING LIGHT (FLASHING)
-  TYPE B WARNING LIGHT (HIGH INTENSITY FLASHING)
-  TYPE C WARNING LIGHT (STEADY BURN)
-  CONCRETE BARRIER TEMPORARY PRECAST
-  WORK AREA
-  TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
-  TEMPORARY RAISED PAVEMENT MARKER (TWO WAY REFLECTOR)
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
-  DIRECTION OF TRAFFIC
-  PORTABLE CHANGEABLE MESSAGE BOARD

### STAGING

CONTRACTOR SHALL CLOSE MEDIAN IN EITHER THE NORTHBOUND OR SOUTHBOUND LANE DURING NON-PEAK DAYTIME HOURS AS IDENTIFIED IN THE SPECIAL PROVISIONS. ALL LANES OF TRAFFIC SHALL BE OPEN DURING PEAK HOURS AND OVERNIGHT. IF AN OUTSIDE SOUTHBOUND LANE NEEDS TO BE CLOSED FOR CONTRACTOR'S OPERATION THE SOUTHBOUND MEDIAN AND MIDDLE LANE SHALL REMAIN OPEN TO TRAFFIC. CLOSURE OF THE NORTHBOUND MEDIAN LANE WILL BE ALLOWED. CONTRACTOR SHALL ONLY CLOSE THE NECESSARY LENGTH OF LANE AS NEEDED TO COMPLETE HIS OPERATIONS FOR THAT PARTICULAR DAY OR AS APPROVED BY THE ENGINEER.



PROJECT NO: 2265-03-76	HWY: STH 241, S. 27th STR.	COUNTY: MILWAUKEE	ALIGNMENT DIAGRAM	SHEET E
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DATE 01MAY13

## ESTIMATE OF QUANTITIES

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2265-03-76 QUANTITY
0010	204.0150	REMOVING CURB & GUTTER	LF	50.000	50.000
0020	204.0155	REMOVING CONCRETE SIDEWALK	SY	557.000	557.000
0030	204.0195	REMOVING CONCRETE BASES	EACH	1.000	1.000
0040	213.0100	FINISHING ROADWAY (PROJECT) 001. 2265-03-76	EACH	1.000	1.000
0050	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	143.000	143.000
0060	601.0331	CONCRETE CURB & GUTTER 31-INCH	LF	50.000	50.000
0070	602.0410	CONCRETE SIDEWALK 5-INCH	SF	1,622.000	1,622.000
0080	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	48.000	48.000
0090	616.0700.S	FENCE SAFETY	LF	100.000	100.000
0100	619.1000	MOBILIZATION	EACH	1.000	1.000
0110	625.0100	TOPSOIL	SY	3,460.000	3,460.000
0120	627.0200	MULCHING	SY	3,460.000	3,460.000
0130	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0140	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0150	628.7010	INLET PROTECTION TYPE B	EACH	10.000	10.000
0160	628.7015	INLET PROTECTION TYPE C	EACH	10.000	10.000
0170	629.0210	FERTILIZER TYPE B	CWT	2.000	2.000
0180	630.0130	SEEDING MIXTURE NO. 30	LB	62.000	62.000
0190	638.2102	MOVING SIGNS TYPE II	EACH	10.000	10.000
0200	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0210	643.0100	TRAFFIC CONTROL (PROJECT) 001. 2265-03-76	EACH	1.000	1.000
0220	643.0300	TRAFFIC CONTROL DRUMS	DAY	14,700.000	14,700.000
0230	643.0410	TRAFFIC CONTROL BARRICADES TYPE II	DAY	1,480.000	1,480.000
0240	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,290.000	1,290.000
0250	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,130.000	2,130.000
0260	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	2,090.000	2,090.000
0270	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	495.000	495.000
0280	643.0900	TRAFFIC CONTROL SIGNS	DAY	2,170.000	2,170.000
0290	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 001. 2265-03-76	LS	1.000	1.000
0300	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 001. 2265-03-76	LS	1.000	1.000
0310	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	9,859.000	9,859.000
0320	652.0605	CONDUIT SPECIAL 2-INCH	LF	4,426.000	4,426.000
0330	654.0105	CONCRETE BASES TYPE 5	EACH	15.000	15.000
0340	654.0107	CONCRETE BASES TYPE 7	EACH	45.000	45.000
0350	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	20,820.000	20,820.000
0360	655.0620	ELECTRICAL WIRE LIGHTING 8 AWG	LF	19,198.000	19,198.000
0370	655.0630	ELECTRICAL WIRE LIGHTING 4 AWG	LF	56,837.000	56,837.000
0380	690.0250	SAWING CONCRETE	LF	367.000	367.000
0390	ASP.1TOA	ON-THE-JOB TRAINING APPRENTICE AT \$5. 00/HR	HRS	500.000	500.000
0400	ASP.1TOG	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	500.000	500.000
0410	SPV.0060	SPECIAL 101. LAMP DISPOSAL HIGH INTENSITY DISCH	EACH	23.000	23.000
0420	SPV.0060	SPECIAL 102. REMOVING LIGHTING UNITS	EACH	20.000	20.000
0430	SPV.0060	SPECIAL 103. PULL BOXES POLYMER CONCRETE	EACH	72.000	72.000
0440	SPV.0060	SPECIAL 104. LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 30-FOOT 250W HPS	EACH	10.000	10.000

DATE 01MAY13

E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2265-03-76 QUANTITY
0450	SPV.0060	SPECIAL 105. LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 30-FOOT 310W HPS	EACH	20.000	20.000
0460	SPV.0060	SPECIAL 106. LIGHT POLES SINGLE TENON ALUMINUM BLACK COMPLETE UNITS 30-FOOT 250W HPS	EACH	15.000	15.000
0470	SPV.0060	SPECIAL 107. LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 40-FOOT 310W HPS	EACH	45.000	45.000
0480	SPV.0060	SPECIAL 108. FURNISHING LIGHT POLES TWIN ARMS AL BLACK COMPLETE UNITS 30-FT 250W HPS	EACH	2.000	2.000
0490	SPV.0060	SPECIAL 109. FURNISHING LIGHT POLES TWIN ARMS AL BLACK COMPLETE UNITS 40-FT 310W HPS	EACH	3.000	3.000
0500	SPV.0060	SPECIAL 110. DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES	EACH	39.000	39.000
0510	SPV.0060	SPECIAL 111. DECORATIVE BASE COLLARS FOR 40FT LIGHT POLES	EACH	45.000	45.000
0520	SPV.0060	SPECIAL 112. FURNISHING DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES	EACH	2.000	2.000
0530	SPV.0060	SPECIAL 113. FURNISHING DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES	EACH	3.000	3.000
0540	SPV.0060	SPECIAL 114. CONCRETE CONTROL CABINET BASES CITY OF GREENFIELD	EACH	1.000	1.000
0550	SPV.0090	SPECIAL 101. REMOVING ELECTRICAL WIRES FROM CONDUIT	LF	3,766.000	3,766.000
0560	SPV.0165	SPECIAL 101. CONCRETE 4-INCH DECORATIVE	SF	3,910.000	3,910.000

3

3

LIGHTING REMOVAL ITEMS

204.0195 REMOVING CONCRETE BASES  
 SPV.0060.101 LAMP DISPOSAL HIGH INTENSITY DISCHARGE  
 SPV.0060.102 REMOVING LIGHTING UNITS  
 SPV.0090.101 REMOVING ELECTRICAL WIRE FROM CONDUIT

LOCATION	CATEGORY ITEM	0010 204.0195 REMOVING CONCRETE BASES	0010 SPV.0060.101 LAMP DISPOSAL H. I. D.	0010 SPV.0060.102 REMOVING LIGHTING UNITS	0010 SPV.0090.101 REMOVING ELECTRICAL WIRE FROM CONDUIT	LF	COMMENTS
95+10 - 98+35	ELECTRICAL WIRE	--	--	--	--	325	--
96+78, 16' RIGHT	LIGHT POLE	--	1	1	--	--	--
98+35, 16' RIGHT	LIGHT POLE	--	1	1	--	--	--
117+06 - 119+75	ELECTRICAL WIRE	--	--	--	--	270	--
117+06, 01' LEFT	LIGHT POLE	--	1	1	--	--	--
118+40, 15' LEFT	LIGHT POLE	--	1	1	--	--	--
121+30 - 122+64	ELECTRICAL WIRE	--	--	--	--	135	--
122+64, 05' RIGHT	LIGHT POLE	--	1	1	--	--	--
142+53 - 146+10	ELECTRICAL WIRE	--	--	--	--	360	--
142+53, 05' LEFT	LIGHT POLE	--	1	1	--	--	--
144+41, 16' LEFT	LIGHT POLE	--	1	1	--	--	--
147+85 - 150+90	ELECTRICAL WIRE	--	--	--	--	305	--
149+30, 17' RIGHT	LIGHT POLE	--	1	1	--	--	--
150+90, 10' RIGHT	LIGHT POLE	--	1	1	--	--	--
169+51 - 172+65	ELECTRICAL WIRE	--	--	--	--	315	--
169+51, 09' LEFT	LIGHT POLE	--	1	1	--	--	--
171+14, 17' LEFT	LIGHT POLE	--	1	1	--	--	--
174+40 - 177+99	ELECTRICAL WIRE	--	--	--	--	360	--
176+10, 16' RIGHT	LIGHT POLE	--	1	1	--	--	--
177+99, 09' RIGHT	LIGHT POLE	--	1	1	--	--	--
196+08 - 198+90	ELECTRICAL WIRE	--	--	--	--	285	--
196+10, 17' LEFT	LIGHT POLE	--	2	1	--	--	--
197+58, 17' LEFT	LIGHT POLE	--	2	1	--	--	--
201+25 - 202+55	ELECTRICAL WIRE	--	--	--	--	130	--
202+55, 15' RIGHT	LIGHT POLE	--	2	1	--	--	--
208+65 - 209+35	ELECTRICAL WIRE	--	--	--	--	--	WE-ENERGIES
209+35, C/L	LIGHT POLE	1	--	--	--	--	--
209+42 - 215+71	ELECTRICAL WIRE	--	--	--	--	629	WE-ENERGIES
209+42, 74' LEFT	LIGHT POLE	--	--	--	--	--	WE-ENERGIES
210+74, 70' LEFT	LIGHT POLE	--	--	--	--	--	WE-ENERGIES
211+96, 70' LEFT	LIGHT POLE	--	--	--	--	--	WE-ENERGIES
213+30, 71' LEFT	LIGHT POLE	--	--	--	--	--	WE-ENERGIES
214+31, 72' LEFT	LIGHT POLE	--	--	--	--	--	WE-ENERGIES
215+71, 72' LEFT	LIGHT POLE	--	--	--	--	--	WE-ENERGIES
214+55 - 214+70	ELECTRICAL WIRE	--	--	--	--	--	CITY OF MILWAUKEE
214+70, C/L	LIGHT POLE	--	--	--	--	--	CITY OF MILWAUKEE
210+74, 63' RIGHT	LIGHT POLE	--	--	--	--	--	CITY OF MILWAUKEE
211+96, 63' RIGHT	LIGHT POLE	--	--	--	--	--	CITY OF MILWAUKEE
213+30, 63' RIGHT	LIGHT POLE	--	--	--	--	--	CITY OF MILWAUKEE
210+74 - 214+70	ELECTRICAL WIRE	--	--	--	--	--	CITY OF MILWAUKEE
222+45 - 225+70	ELECTRICAL WIRE	--	--	--	--	325	--
222+45, 09' LEFT	LIGHT POLE	--	1	1	--	--	--
224+10, 17' LEFT	LIGHT POLE	--	1	1	--	--	--
227+15 - 230+42	ELECTRICAL WIRE	--	--	--	--	327	--
228+73, 16' RIGHT	LIGHT POLE	--	1	1	--	--	--
230+42, 08' RIGHT	LIGHT POLE	--	1	1	--	--	--
PROJECT TOTAL		1	23	20		3,766	

LIGHTING DISTRIBUTION CENTERS - CITY OF GREENFIELD

SPV.0060.114 CONCRETE CONTROL CABINET BASES CITY OF GREENFIELD

CABINET	CATEGORY LOCATION	0020 SPV.0060.114 CONCRETE CONTROL CABINET BASES CITY OF GREENFIELD EACH
6	198+07, 68' LEFT PROJEC TOTAL	1 1

LIGHT POLE QUANTITIES

SPV.0060.108 FURNISHING LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 30-FOOT 250W HPS  
 SPV.0060.109 FURNISHING LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 40-FOOT 310W HPS  
 SPV.0060.112 FURNISHING DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES  
 SPV.0060.113 FURNISHING DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES

CATEGORY SYSTEM/ CABINET	0030 SPV.0060.108 FURNISHING LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 30-FT 250W HPS EACH	0030 SPV.0060.109 FURNISHING LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNITS 40-FT 310W HPS EACH	0030 SPV. 0060.112 FURNISHING DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES EACH	0030 SPV 0060.113 FURNISHING DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES EACH
UNDISTRIBUTED	2	3	2	3
PROJECT TOTAL	2	3	2	3

LIGHT POLE QUANTITIES

654.0105	CONCRETE BASES TYPE 5
654.0107	CONCRETE BASES TYPE 7
655.0610	ELECTRICAL WIRE LIGHTING 12 AWG (POLE WIRE)
SPV.0060.104	LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS
SPV.0060.105	LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 310W HPS
SPV.0060.106	LIGHT POLES SINGLE TENON ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS
SPV.0060.107	LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 40-FT 310W HPS
SPV.0060.110	DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES
SPV.0060.111	DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES

SYSTEM / CABINET	SEQUENCE I. D.	STATION	CATEGORY	OFFSET	BOLT PROJECTION	0010	0010	0010	0020	0020	0020	0020	0020	0020	COMMENTS
						654.0105 CONCRETE BASES TYPE 5	654.0107 CONCRETE BASES TYPE 7	655.0610 WIRE NO. 12	SPV.0060.104 LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS	SPV.0060.105 LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 310W HPS	SPV.0060.106 LIGHT POLES SINGLE TENON ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS	SPV.0060.107 LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 40-FT 310W HPS	SPV.0060.110 DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES	SPV.0060.111 DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES	
						EACH	EACH	L.F.	EACH	EACH	EACH	EACH	EACH	EACH	
13	b17	96+78	16' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
13	b16	98+35	16' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
13	b15	100+16	03' RIGHT	3-INCH	---	1	260	---	---	---	1	---	---	---	
13	b14	101+90	05' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b13	103+90	C/L	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b12	106+00	06' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b11	107+85	C/L	3 INCH	---	1	260	---	---	---	1	---	1	---	
13	b10	109+85	05' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b9	110+95	95' LEFT	3-INCH	1	---	120	---	---	1	---	1	---	---	
13	b8	111+75	01' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b7	113+55	C/L	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b6	115+40	04' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	b5	117+06	01' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
13	b4	118+40	15' LEFT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
13	c18	122+64	05' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
13	c19	124+15	01' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	c20	125+87	01' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	c21	127+72	C/L	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	c22	129+73	05' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
13	c23	131+53	11' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b15	136+75	13' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b14	138+85	05' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b13	140+95	03' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b12	142+53	05' LEFT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
11	b11	144+41	16' LEFT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
11	b16	149+30	17' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
11	b17	150+92	08' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
11	b18	152+75	01' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b19	153+49	90' LEFT	3-INCH	1	---	240	---	---	1	---	1	---	---	
11	b20	154+50	01' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b21	156+25	04' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b22	157+95	04' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b23	159+61	04' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
11	b24	159+86	62' LEFT	3-INCH	1	---	120	---	---	1	---	1	---	---	
6	c20	161+45	04' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
6	c19	163+30	05' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
6	c18	165+40	02' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
6	c17	167+05	104' LEFT	3-INCH	1	---	120	---	---	1	---	1	---	---	
6	c16	167+50	02' LEFT	3-INCH	---	1	260	---	---	---	1	---	1	---	
6	c15	169+51	09' LEFT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
6	c14	171+14	17' LEFT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
6	c13	176+10	16' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
6	c12	177+99	09' RIGHT	3-INCH	---	---	240	---	1	---	---	1	---	EXISTING TYPE 5 BASE	
6	c11	180+09	02' RIGHT	3-INCH	---	1	260	---	---	---	1	---	1	---	
6	c10	180+69	86' LEFT	3-INCH	1	---	120	---	---	1	---	1	---	---	
SUBTOTAL						5	27	10.860	0	13	5	27	18	27	



LIGHT POLE QUANTITIES

654.0105	CONCRETE BASES TYPE 5
654.0107	CONCRETE BASES TYPE 7
655.0610	ELECTRICAL WIRE LIGHTING 12 AWG (POLE WIRE)
SPV.0060.104	LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS
SPV.0060.105	LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 310W HPS
SPV.0060.106	LIGHT POLES SINGLE TENON ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS
SPV.0060.107	LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 40-FT 310W HPS
SPV.0060.110	DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES
SPV.0060.111	DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES

SYSTEM / CABINET	SEQUENCE I. D.	STATION	OFFSET	BOLT PROJECTION	0010 654.0105 CONCRETE BASES TYPE 5	0010 654.0107 CONCRETE BASES TYPE 7	0010 655.0610 WIRE NO. 12	0020 SPV.0060.104 LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS	0200 SPV.0060.105 LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 30-FT 310W HPS	0020 SPV.0060.106 LIGHT POLES SINGLE TENON ALUMINUM BLACK COMPLETE UNIT 30-FT 250W HPS	0020 SPV.0060.107 LIGHT POLES TWIN ARMS ALUMINUM BLACK COMPLETE UNIT 40-FT 310W HPS	0020 SPV. 0060.110 DECORATIVE BASE COLLARS FOR 30-FT LIGHT POLES	0020 SPV. 0060.111 DECORATIVE BASE COLLARS FOR 40-FT LIGHT POLES	COMMENTS
					L.F.	EACH		EACH		EACH		EACH		
6	c9	181+89	01' LEFT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c8	183+79	02' RIGHT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c7	185+90	01' RIGHT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c6	188+00	04' RIGHT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c5	190+10	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c4	192+20	03' LEFT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c3	194+30	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
6	c2	196+03	17' LEFT	3-INCH	--	1	260	--	--	--	1	--	1	EXISTING TYPE 5 BASE
6	c1	197+58	17' LEFT	3-INCH	--	--	240	--	1	--	--	1	--	EXISTING TYPE 5 BASE
6	a1	202+55	15' RIGHT	3-INCH	--	--	240	1	--	--	--	1	--	EXISTING TYPE 5 BASE
6	a2	203+80	16' RIGHT	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a3	205+10	C/L	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a4	206+40	10' RIGHT	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a5	207+70	08' RIGHT	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a6	209+10	01' RIGHT	3-INCH	--	--	240	1	--	--	--	1	--	EXISTING TYPE 5 BASE
6	a7	209+42	74' LEFT	3-INCH	--	--	120	--	--	1	--	1	--	EXISTING TYPE 5 BASE
6	a8	210+74	70' LEFT	3-INCH	--	--	120	--	--	1	--	--	--	EXISTING BLISTER ON BRIDGE
6	a9	211+96	70' LEFT	3-INCH	--	--	120	--	--	1	--	--	--	EXISTING BLISTER ON BRIDGE
6	a10	213+30	71' LEFT	3-INCH	--	--	120	--	--	1	--	--	--	EXISTING BLISTER ON BRIDGE
6	a11	214+31	72' LEFT	3-INCH	--	--	120	--	--	1	--	1	--	EXISTING TYPE 5 BASE
6	a12	214+75	5' RIGHT	3-INCH	--	--	240	1	--	--	--	1	--	EXISTING TYPE 5 BASE
6	a13	215+71	72' LEFT	3-INCH	--	--	120	--	--	1	--	1	--	EXISTING TYPE 5 BASE
6	a14	215+91	C/L	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a15	217+11	C/L	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a16	218+32	C/L	3-INCH	1	--	240	1	--	--	--	1	--	--
6	a17	219+23	101' LEFT	3-INCH	1	--	120	--	--	1	--	1	--	--
6	a18	219+72	04' RIGHT	3-INCH	1	--	240	--	1	--	--	1	--	--
6	a19	221+11	02' LEFT	3-INCH	1	--	240	--	1	--	--	1	--	--
6	a20	222+45	09' LEFT	3-INCH	--	--	240	--	1	--	--	1	--	EXISTING TYPE 5 BASE
6	a21	224+10	17' LEFT	3-INCH	--	--	240	--	1	--	--	1	--	EXISTING TYPE 5 BASE
6	a22	228+73	16' RIGHT	3-INCH	--	--	240	--	1	--	--	1	--	EXISTING TYPE 5 BASE
6	a23	230+42	08' RIGHT	3-INCH	--	--	240	--	1	--	--	1	--	EXISTING TYPE 5 BASE
6	a24	231+90	01' RIGHT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	a25	233+81	01' RIGHT	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a23	235+80	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a22	237+90	01' RIGHT	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a21	240+00	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a20	242+10	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a19	244+20	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a18	246+30	C/L	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a17	248+40	08' LEFT	3-INCH	--	1	260	--	--	--	1	--	1	--
10	a16	250+30	02' LEFT	3-INCH	--	1	260	--	--	--	1	--	1	--
6	a26	213+24	70' RIGHT	3-INCH	--	--	120	--	--	1	--	--	--	EXISTING BLISTER ON BRIDGE
6	a27	211+96	70' RIGHT	3-INCH	--	--	120	--	--	1	--	--	--	EXISTING BLISTER ON BRIDGE
6	a28	210+74	70' RIGHT	3-INCH	--	--	120	--	--	1	--	--	--	EXISTING BLISTER ON BRIDGE
SUBTOTAL					10	18	9.960	10	7	10	18	21	18	
PROJECT TOTAL					15	45	20.820	10	20	15	45	39	45	

LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH  
 652.0605 CONDUIT SPECIAL 2-INCH

SYSTEM / CABINET	CATEGORY LOCATION TO LOCATION	0010 652.0225 CONDUIT 2-INCH SCHEDULE 40 LF	0010 652.0605 CONDUIT SPECIAL 2-INCH LF	COMMENTS
13	POLE 13b17 TO POLE 13b16	--	--	EXISTING CONDUIT
13	POLE 13b16 TO POLE 13b15	181	--	--
13	POLE 13b15 TO POLE 13b14	174	--	--
13	POLE 13b14 TO LPB101	17	--	--
13	LPB101 TO LPB102	--	102	--
13	LPB102 TO POLE 13b13	81	--	--
13	POLE 13b13 TO POLE 13b12	210	--	--
13	POLE 13b12 TO LPB103	62	--	--
13	LPB103 TO LPB 104	--	105	--
13	LPB104 TO POLE 13b11	18	--	--
13	POLE 13b11 TO POLE 13b10	200	--	--
13	POLE 13b10 TC LPB 105	10	--	--
13	LPB 105 TO LPB 106	--	125	--
13	LPB 106 TO LPB 107	--	62	--
13	LPB 107 TO POLE 13b9	56	--	--
13	POLE 13b9 TO STUBOUT WEST	15	--	--
13	LPB 106 TO POLE 13b8	55	--	--
13	POLE 13b8 TO POLE 13b7	180	--	--
13	POLE 13b7 TO LPB 108	76	--	--
13	LPB 108 TO LPB 109	--	99	--
13	LPB 109 TO POLE 13b6	10	--	--
13	POLE 13b6 TO POLE 13b5	166	--	--
13	POLE 13b5 TO POLE 13b4	--	--	EXISTING CONDUIT
13	POLE 13b4 TO LPB 110	--	--	EXISTING CONDUIT
13	LPB 110 TO LPB 111	--	68	--
13	LPB 111 TO EXISTING POLE 13b3	100	--	--
13	EXISTING POLE 13c:7 TO LPB 113	210	--	--
13	LPB 113 TO LPB 112	--	78	--
13	LPB 112 TO PCLE 13c18	105	--	--
13	POLE 13c18 TO POLE 13c19	151	--	--
13	POLE 13c19 TC LPB 114	7	--	--
13	LPB114 TO LPB115	--	108	--
13	LPB115 TO POLE 13c20	57	--	--
13	POLE 13c20 TO POLE 13c21	185	--	--
13	POLE 13c21 TC LPB 116	94	--	--
13	LPB 116 TO LPB 117	--	100	--
13	LPB117 TO POLE 13c22	9	--	--
13	POLE 13c22 TO POLE 13c23	178	--	--
13	POLE 13c23 TO STUBOUT NORTH	15	--	--
11	STUBOUT SOUTH TC POLE 11b15	15	--	--
11	POLE 11b15 TO POLE 11b14	210	--	--
11	POLE 11b14 TO LPB118	19	--	--
	SUBTOTAL	2,866	847	

LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH  
 652.0605 CONDUIT SPECIAL 2-INCH

SYSTEM / CABINET	CATEGORY LOCATION TO LOCATION	0010 652.0225 CONDUIT 2-INCH SCHEDULE 40 LF	0010 652.0605 CONDUIT SPECIAL 2-INCH LF	COMMENTS
11	LPB 118 TO LPB 119	--	91	--
11	LPB 119 TO POLE 11b13	138	--	--
11	POLE 11b13 TO LPB120	85	--	--
11	LPB 120 TO LPB 121	--	125	--
11	LPB 121 TO POLE 11b12	--	--	EXISTING CONDUIT
11	LPB121 TO POLE 11b11	--	--	EXISTING CONDUIT
11	POLE 11b11 TO LPB 123	--	--	EXISTING CONDUIT
11	LPB 123 TO LPB 122	--	43	--
11	LPB 122 TO EXISTING POLE 11b10	100	--	--
11	EXISTING POLE 11b9 TO LPB 124	100	--	--
11	LPB 124 TO LPB 125	--	81	--
11	LPB 125 TO POLE 11b16	--	--	EXISTING CONDUIT
11	POLE 11b16 TO POLE 11b17	--	--	EXISTING CONDUIT
11	POLE 11b17 TO POLE 11b18	183	--	--
11	POLE 11b18 TO LPB 126	40	--	--
11	LPB 126 TO LPB 127	--	57	--
11	LPB 127 TO POLE 11b19	40	--	--
11	POLE 11b19 TO STUBOUT WEST	15	--	--
11	LPB 126 TO LPB 128	--	115	--
11	LPB 128 TO POLE 11b20	20	--	--
11	POLE 11b20 TO POLE 11b21	175	--	--
11	POLE 11b21 TO LPB 129	53	--	--
11	LPB 129 TO LPB 130	--	110	--
11	LPB 130 TO POLE 11b22	7	--	--
11	POLE 11b22 TO POLE 11b23	166	--	--
11	POLE 11b23 TO POLE 11b24	--	83	--
11	POLE 11b24 TO STUBOUT NORTHWEST	15	--	--
6	STUBOUT SOUTH TO POLE 6c20	15	--	--
6	POLE 6c20 TO POLE 6c19	185	--	--
6	POLE 6c19 TO POLE 6c18	210	--	--
6	POLE 6c18 TO LPB 131	68	--	--
6	LPB 131 TO LPB 132	--	126	--
6	LPB 132 TO LPB 133	--	83	--
6	LPB 133 TO POLE 6c17	50	--	--
6	POLE 6c17 TO STUBOUT WEST	15	--	--
6	LPB 132 TO POLE 6c16	16	--	--
6	POLE 6c16 TO POLE 6c15	201	--	--
6	POLE 6c15 TO POLE 6c14	--	--	EXISTING CONDUIT
6	POLE 6c14 TO LPB 134	--	--	EXISTING CONDUIT
6	LPB 134 TO LPB 135	--	43	--
6	LPB 135 TO LPB 136	--	222	--
6	LPB 136 TO LPB 137	--	75	--
6	LPB 137 TO POLE 6c13	--	--	EXISTING CONDUIT
6	POLE 6c13 TO POLE 6c12	--	--	EXISTING CONDUIT
6	POLE 6c12 TO POLE 6c11	210	--	--
	SUBTOTAL	2,107	1,254	

LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH  
 652.0605 CONDUIT SPECIAL 2-INCH

SYSTEM / CABINET	LOCATION TO LOCATION	CATEGORY		COMMENTS
		0010	0010	
		652.0225	652.0605	
		CONDUIT	CONDUIT	
		2-INCH	SPECIAL	
		SCHEDULE 40	2-INCH	
		LF	LF	
6	POLE 6c11 TO LPB 138	18	--	--
6	LPB 138 TO LPB 139	--	91	--
6	LPB 139 TO POLE 6c10	42	--	--
6	POLE 6c10 TO STUBOUT WEST	15	--	--
6	LPB 138 TO LPB 140	--	129	--
6	LPB 140 TO POLE 6c9	33	--	--
6	POLE 6c9 TO POLE 6c8	190	--	--
6	POLE 6c8 TO POLE 6c7	211	--	--
6	POLE 6c7 TO LPB 141	29	--	--
6	LPB 141 TO LPB 142	--	102	--
6	LPB 142 TO POLE 6c6	79	--	--
6	POLE 6c6 TO POLE 6c5	210	--	--
6	POLE 6c5 TO POLE 6c4	210	--	--
6	POLE 6c4 TO LPB 143	76	--	--
6	LPB 143 TO LPB 144	--	88	--
6	LPB 144 TO POLE 6c3	46	--	--
6	POLE 6c3 TO LPB 172	190	--	--
6	POLE 6c2 TO LPB 172	--	--	EXISTING CONDUIT
6	LPB 172 TO POLE 6c1	--	--	EXISTING CONDUIT
6	POLE 6c1 TO LPB 145	--	--	EXISTING CONDUIT
6	LPB 145 TO LPB 146	--	55	--
6	LPB 146 TO LPB 147	90	--	--
6	LPB 147 TO LPB 148	130	--	--
6	LPB 148 TO STUBOUT WEST	15	--	--
6	LPB 146 TO CONTROL CABINET 6	10	--	--
6	LPB 147 TO LPB 149	--	262	--
6	LPB 149 TO LPB LPB 150	--	80	--
6	LPB 150 TO POLE 6a1	--	--	EXISTING CONDUIT
6	LPB150 TO POLE 6a2	205	--	--
6	POLE 6a2 TO POLE 6a3	130	--	--
6	POLE 6a3 TO LPB 151	18	--	--
6	LPB 151 TO LPB 152	--	100	--
6	LPB 152 TO POLE 6a4	12	--	--
6	POLE 6a4 TO POLE 6a5	130	--	--
6	POLE 6a5 TO POLE 6a6	140	--	--
6	POLE 6a6 TO LPB 153	39	--	--
6	LPB 153 TO LPB 154	--	93	--
6	LPB 154 TO POLE 6a7	10	--	--
6	LPB 154 TO EXISTING JB 1 (ON THE BRIDGE)	--	140	--
6	EXISTING JB 1 TO POLE 6a8	--	--	EXISTING EMBEDDED CONDUIT
6	POLE 6a8 TO EXISTING JB 2	--	--	EXISTING EMBEDDED CONDUIT
6	JB 2 TO POLE 6a9	--	--	EXISTING EMBEDDED CONDUIT
6	POLE 6a9 TO EXISTING JB 3	--	--	EXISTING EMBEDDED CONDUIT
6	EXISTING JB 3 TO POLE 6a10	--	--	EXISTING EMBEDDED CONDUIT
6	EXISTING JB 3 TO POLE 6a11	--	101	--
6	POLE 6a11 TO LPB 155	119	--	--
SUBTOTAL		2,397	1,241	

LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH  
 652.0605 CONDUIT SPECIAL 2-INCH

SYSTEM / CABINET	LOCATION TO LOCATION	CATEGORY		COMMENTS
		0010	0010	
		652.0225	652.0605	
		CONDUIT	CONDUIT	
		2-INCH	SPECIAL	
		SCHEDULE 40	2-INCH	
		LF	LF	
6	LPB 155 TO LPB 156	--	80	--
6	LPB 156 TO EXISTING PB 31	--	110	CONNECT TO EXIST. PB
6	EXISTING PB31 TO POLE 6a12	20	--	--
6	LPB 155 TO POLE 6a13	25	--	--
6	LPB 156 TO POLE 6a14	30	--	--
6	POLE 6a14 TO POLE 6a15	120	--	--
6	POLE 6a15 TO POLE 6a16	121	--	--
6	POLE 6a16 TO LPB 157	19	--	--
6	LPB 157 TO LPB 158	--	116	--
6	LPB 158 TO LPB 159	--	68	--
6	LPB 159 TO POLE 6a17	80	--	--
6	POLE 6a17 TO STUBOUT WEST	15	--	--
6	LPB 158 TO POLE 6a18	5	--	--
6	POLE 6a18 TO POLE 6a19	139	--	--
6	POLE 6a19 TO POLE 6a20	134	--	--
6	POLE 6a20 TO POLE 6a21	--	--	EXISTING CONDUIT
6	POLE 6a21 TO LPB 161	--	--	EXISTING CONDUIT
6	LPB 161 TO LPB 160	--	55	--
6	LPB 160 TO LPB 163	--	165	--
6	LPB 163 TO LPB 162	--	79	--
6	LPB 162 TO POLE 6a22	--	--	EXISTING CONDUIT
6	POLE 6a22 TO POLE 6a23	--	--	EXISTING CONDUIT
6	POLE 6a23 TO POLE 6a24	148	--	EXISTING CONDUIT
6	POLE 6a24 TO POLE 6a25	191	--	--
6	POLE 6a25 TO STUBOUT NORTH	15	--	--
10	STUBOUT SOUTH TO POLE 10a23	15	--	--
10	POLE 10a23 TO POLE 10a22	210	--	--
10	POLE 10a22 TO POLE 10a21	210	--	--
10	POLE 10a21 TO LPB 164	49	--	--
10	LPB 164 TO LPB 165	--	87	--
10	LPB 165 TO POLE 10a20	74	--	--
10	POLE 10a20 TO POLE 10a19	210	--	--
10	POLE 10a19 TO LPB 166	97	--	--
10	LPB 166 TO LPB 167	--	120	--
10	LPB 167 TO POLE 10a18	7	--	--
10	POLE 10a18 TO POLE 10a17	210	--	--
10	POLE 10a17 TO LPB 168	9	--	--
10	LPB 168 TO LPB 169	--	142	--
10	LPB 169 TO POLE 10a16	39	--	--
10	POLE 10a16 TO STUBOUT NORTH	15	--	--
10	LPB 169 TO LPB 170	--	62	--
10	LPB 170 TO LPB 171	242	--	--
10	LPB 171 TO EXISTING POLE 10a15	40	--	--
SUBTOTAL		2,489	1,084	
PROJECT TOTAL		9,859	4,426	

LIGHTING WIRE QUANTITIES

655.0620 ELECTRICAL WIRE LIGHTING 8 AWG  
 655.0630 ELECTRICAL WIRE LIGHTING 4 AWG

SYSTEM / CABINET	NETWORK	CATEGORY LOCATION TO LOCATION	DISTANCE	0010	0010
				655.0620 8 AWG	655.0630 4 AWG
			LF	LF	LF
13	b	EXISTING POLE 13b3 TO LPB 111 TO LPB 110 TO POLE 13b4	268	288	556
13	b	POLE 13b4 TO POLE 13b5	210	220	430
13	b	POLE 13b5 TO POLE 13b6	166	176	342
13	b	POLE 13b6 TO LPB 109 TO LPB 108 TO POLE 13b7	185	205	390
13	b	POLE 13b7 TO POLE 13b8	180	190	370
13	b	POLE 13b8 TO LPB 106 TO LPB 107 TO POLE 13b9	173	193	366
13	b	POLE 13b8 TO LPB 106 TO LPB 105 TO POLE 13b10	190	210	400
13	b	POLE 13b10 TO POLE 13b11	200	210	410
13	b	POLE 13b11 TO LPB 104 TO LPB 103 TO POLE 13b12	185	205	390
13	b	POLE 13b12 TO POLE 13b13	210	220	430
13	b	POLE 13b13 TO LPB 102 TO LPB 101 TO POLE 13b14	200	220	420
13	b	POLE 13b15 TO POLE 13b16	174	184	358
13	b	POLE 13b16 TO POLE 13b17	181	191	372
13	e	EXISTING POLE 13c17 TO LPB 113 TO LPB 112 TO POLE 13c18	393	413	806
13	e	POLE 13c18 TO POLE 13c19	151	161	312
13	e	POLE 13c19 TO LPB 114 TO LPB 115 TO POLE 13c20	172	192	364
13	e	POLE 13c20 TO POLE 13c21	185	195	380
13	e	POLE 13c21 TO LPB 116 TO LPB 117 TO POLE 13c22	203	223	426
13	e	POLE 13c22 TO POLE 13c23	178	188	366
11	b	EXISTING POLE 11b10 TO LPB 122 TO LPB 123 TO POLE 11b11	313	333	646
11	b	POLE 11b11 TO LPB 121 TO POLE 11b12	190	200	390
11	b	POLE 11b12 TO LPB 121 TO LPB 120 TO POLE 11b13	158	178	336
11	b	POLE 11b13 TO LPB 119 TO LPB 118 TO POLE 11b14	248	268	516
11	b	POLE 11b14 TO POLE 11b15	210	220	430
11	b	EXISTING POLE 11b9 TO LPB 124 TO LPB 125 TO POLE 11b16	316	336	642
11	b	POLE 11b16 TO POLE 11b17	160	170	330
11	b	POLE 11b17 TO POLE 11b18	183	193	376
11	b	POLE 11b18 TO LPB 126 TO LPB 127 TO POLE 11b19	137	157	294
11	b	POLE 11b18 TO LPB 126 TO LPB 128 TO POLE 11b20	175	195	370
11	b	POLE 11b20 TO POLE 11b21	175	185	360
11	b	POLE 11b21 TO LPB 129 TO LPB 130 TO POLE 11b22	170	190	360
11	b	POLE 11b22 TO POLE 11b23	166	176	342
11	b	POLE 11b23 TO POLE 11b24	83	93	176
6	c	CONTROL CABINET 6 TO LPB 146 TO LPB 145 TO POLE 6c1	125	145	540
6	c	POLE 6c1 TO LPB 172 TO POLE 6c2	160	170	660
6	c	POLE 6c2 TO LPB 172 TO POLE 6c3	173	183	712
6	c	POLE 6c3 TO LPB 144 TO LPB 143 TO POLE 6c4	210	230	880
6	c	POLE 6c4 TO POLE 6c5	210	220	860
6	c	POLE 6c5 TO POLE 6c6	210	220	860
SUBTOTAL				8.146	17.968

LIGHTING WIRE QUANTITIES

655.0620 ELECTRICAL WIRE LIGHTING 8 AWG  
 655.0630 ELECTRICAL WIRE LIGHTING 4 AWG

SYSTEM / CABINET	NETWORK	CATEGORY LOCATION TO LOCATION	DISTANCE	655.0620	655.0630
				8 AWG LF	4 AWG LF
6	c	POLE 6c6 TO LPB 142 TO LPB 141 TO POLE 6c7	210	230	880
6	c	POLE 6c7 TO POLE 6c8	211	221	864
6	c	POLE 6c8 TO POLE 6c9	190	200	780
6	c	POLE 6c9 TO LPB 140 TO LPB 138 TO LPB 139 TO POLE 6c10	295	320	1,230
6	c	POLE 6c9 TO LPB 140 TO POLE 6c11	180	200	760
6	c	POLE 6c11 TO POLE 6c12	210	220	860
6	c	POLE 6c12 TO POLE 6c13	190	200	780
6	c	POLE 6c13 TO LPB 137 TO LPB 136 TO LPB 135 TO LPB 134 TO POLE 6c14	610	640	2,500
6	c	POLE 6c14 TO POLE 6c15	160	170	660
6	c	POLE 6c15 TO POLE 6c16	201	211	824
6	c	POLE 6c16 TO LPB 132 TO LPB 133 TO POLE 6c17	149	169	636
6	c	POLE 6c16 TO LPB 132 TO LPB 131 TO POLE 6c18	210	230	880
6	c	POLE 6c18 TO POLE 6c19	210	220	860
6	c	POLE 6c19 TO POLE 6c20	185	195	760
6	c	CONTROL CABINET 6 TO LPB 146 TO LPB 148	230	250	960
6	a	CONTROL CABINET 6 TO LPB 146 TO LPB 147 TO LPB 149 TO LPB 150 TO POLE 6a1	522	552	2,148
6	a	POLE 6a1 TO LPB 150 TO POLE 6a2	125	135	520
6	a	POLE 6a2 TO POLE 6a3	130	140	540
6	a	POLE 6a3 TO LPB 151 TO LPB 152 TO POLE 6a4	130	150	560
6	a	POLE 6a4 TO POLE 6a5	130	140	540
6	a	POLE 6a5 TO POLE 6a6	140	150	580
6	a	POLE 6a6 TO LPB 153 TO LPB 154 TO POLE 6a7	142	162	608
6	a	POLE 6a7 TO LPB 154 TO POLE 6a8	150	170	640
6	a	POLE 6a8 TO POLE 6a9	130	140	540
6	a	POLE 6a9 TO POLE 6a10	150	160	620
6	a	POLE 6a10 TO POLE 6a11	100	110	420
6	a	POLE 6a10 TO LPB 155 TO LPB 156 TO EXISTING PB 31 TO POLE 6a12	320	340	1,320
6	a	POLE 6b12 TO EXISTING PB 31 TO EXISTING PB 32 TO POLE 6a26	220	230	900
6	a	POLE 6a26 TO POLE 6b27	130	140	540
6	a	POLE 6a27 TO POLE 6a28	130	140	540
6	a	POLE 6a10 TO LPB 155 TO POLE 6a13	144	164	616
6	a	POLE 6a12 TO LPB 156 POLE 6a14	126	146	544
6	a	POLE 6a14 TO POLE 6a15	120	130	500
6	a	POLE 6a15 TO POLE 6a16	121	131	504
6	a	POLE 6a16 TO LPB 157 TO LPB 158 TO POLE 6a18	140	160	600
6	a	POLE 6a18 TO LPB 158 TO LPB 159 TO POLE 6a17	153	173	652
6	a	POLE 6a18 TO POLE 6a19	139	149	576
6	a	POLE 6a19 TO POLE 6a20	134	144	556
6	a	POLE 6a20 TO POLE 6a21	165	175	680
6	a	POLE 6a21 TO LPB 161 TO LPB 160 TO LPB 163 TO LPB 162 TO POLE 6a22	599	629	2,456
6	a	POLE 6a22 TO POLE 6a23	175	185	720
6	a	POLE 6a23 TO POLE 6a24	148	158	612
6	a	POLE 6a24 TO POLE 6a25	191	201	784
10	a	EXISTING POLE 10a15 TO LPB 171 TO LPB 170 TO LPB 169 TO POLE 10a16	383	408	791
10	a	POLE 10a16 TO LPB 169 TO LPB 168 TO POLE 10a17	190	210	400
10	a	POLE 10a17 TO POLE 10a18	210	220	430
10	a	POLE 10a18 TO LPB 167 TO LPB 166 TO POLE 10a19	224	244	468
10	a	POLE 10a19 TO POLE 10a20	210	220	430
10	a	POLE 10a20 TO LPB 165 TO LPB 164 TO POLE 10a21	210	230	440
10	a	POLE 10a21 TO POLE 10a22	210	220	430
10	a	POLE 10a22 TO POLE 10a23	210	220	430
SUBTOTAL				11,052	38,869
PROJECT TOTAL				19,198	56,837

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LIGHTING PULL BOX QUANTITIES

SPV.0060.103 PULL BOXES POLYMER CONCRETE

SYSTEM / CABINET	STATION	CATEGORY OFFSET	LABEL	0020 SPV.0060.103 PULL BOXES POLYMER CONCRETE EACH
13	102+07	10' LEFT	LPB101	1
13	103+09	05' LEFT	LPB102	1
13	106+62	12' LEFT	LPB103	1
13	107+67	02' LEFT	LPB104	1
13	109+95	05' LEFT	LPB105	1
13	112+20	02' LEFT	LPB106	1
13	111+20	64' LEFT	LPB107	1
13	114+31	09' LEFT	LPB108	1
13	115+30	03' LEFT	LPB109	1
13	119+45	15' LEFT	LPB110	1
13	119+67	61' LEFT	LPB111	1
13	121+59	15' RIGHT	LPB112	1
13	121+57	61' LEFT	LPB113	1
13	124+22	01' RIGHT	LPB114	1
13	125+30	01' RIGHT	LPB115	1
13	128+66	05' RIGHT	LPB116	1
13	129+66	09' RIGHT	LPB117	1
11	138+66	06' RIGHT	LPB118	1
11	139+57	06' RIGHT	LPB119	1
11	141+80	09' LEFT	LPB120	1
11	142+36	08' RIGHT	LPB121	1
11	146+00	60' LEFT	LPB122	1
11	146+00	17' LEFT	LPB123	1
11	148+20	65' LEFT	LPB124	1
11	147+91	16' RIGHT	LPB125	1
11	153+15	09' LEFT	LPB126	1
11	153+22	66' LEFT	LPB127	1
11	154+30	03' LEFT	LPB128	1
11	156+78	05' LEFT	LPB129	1
11	157+95	04' LEFT	LPB130	1
6	166+04	04' RIGHT	LPB131	1
6	167+34	07' RIGHT	LPB132	1
6	164+24	66' LEFT	LPB133	1
6	172+43	17' LEFT	LPB134	1
6	172+43	60' LEFT	LPB135	1
6	174+65	59' LEFT	LPB136	1
6	174+64	16' RIGHT	LPB137	1
SUBTOTAL				37

SYSTEM / CABINET	STATION	CATEGORY OFFSET	LABEL	0020 SPV.0060.103 PULL BOXES POLYMER CONCRETE EACH
6	180+27	05' RIGHT	LPE138	1
6	180+53	60' LEFT	LPE139	1
6	181+56	12' RIGHT	LPE140	1
6	186+19	03' RIGHT	LPE141	1
6	187+21	03' RIGHT	LPE142	1
6	192+96	03' RIGHT	LPE143	1
6	193+84	02' RIGHT	LPE144	1
6	198+20	17' LEFT	LPE145	1
6	198+22	70' LEFT	LPE146	1
6	199+12	71' LEFT	LPE147	1
6	199+35	179' LEFT	LPE148	1
6	201+74	64' LEFT	LPE149	1
6	201+75	16' RIGHT	LPE150	1
6	205+28	00' CL	LPE151	1
6	206+28	11' RIGHT	LPE152	1
6	209+49	05' RIGHT	LPE153	1
6	209+46	88' LEFT	LPE154	1
6	215+50	86' LEFT	LPE155	1
6	215+66	11' LEFT	LPE156	1
6	218+51	01' RIGHT	LPE157	1
6	219+67	03' RIGHT	LPE158	1
6	219+66	65' LEFT	LPE159	1
6	225+68	66' LEFT	LPE160	1
6	225+63	16' LEFT	LPE161	1
6	227+34	17' RIGHT	LPE162	1
6	227+33	62' LEFT	LPE163	1
10	240+49	11' LEFT	LPE164	1
10	241+36	07' LEFT	LPE165	1
10	245+17	05' RIGHT	LPE166	1
10	246+37	08' RIGHT	LPE167	1
10	248+49	09' LEFT	LPE168	1
10	249+91	01' RIGHT	LPE169	1
10	249+91	61' LEFT	LPE170	1
10	252+33	59' LEFT	LPE171	1
6	196+10	17' LEFT	LPE172	1
SUBTOTAL				35
PROJECT TOTAL				72

CATEGORY 0010  
CONCRETE ITEMS

305.011 BASE AGGREGATE 3/4" DENSE  
601.0331 CONCRETE CURB & GUTTER 31-INCH  
602.041 CONCRETE SIDEWALK 5-INCH  
602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW  
SPV.0165.101 CONCRETE 4-INCH DECORATIVE

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LOCATION	STATION PROJECT TOTAL	305.0110 BASE AGGREGATE 3/4" DENSE TON	601.0331 CONCRETE CURB & GUTTER 31-INCH LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	SPV.0165.101 CONCRETE 4-INCH DECORATIVE SF
MEDIAN	98+35, 16' RT.	3	--	--	--	120
MEDIAN	119+45, 15' LT.	5	--	--	--	200
SW QUADRANT @ RAWSON AVE.	120+20, 70' LT.	5	--	178	8	--
NW QUADRANT @ RAWSON AVE.	120+90, 70' LT.	7	--	261	16	--
NW QUADRANT @ RAWSON AVE.	120+10, 60' LT.	2	--	91	--	--
NW QUADRANT @ RAWSON AVE.	121+40, 60' LT.	3	--	104	--	--
MEDIAN	121+59, 15' RT.	5	--	--	--	205
MEDIAN	143+05, 5' LT.	5	--	--	--	425
MEDIAN	146+00, 17' LT.	5	--	--	--	200
SW QUADRANT @ GRANGE AVE.	146+40, 63' LT.	2	--	94	8	--
SW QUADRANT @ GRANGE AVE.	146+50, 73' LT.	4	--	156	8	--
NW QUADRANT @ GRANGE AVE.	147+50, 70' LT.	6	--	255	8	--
NW QUADRANT @ GRANGE AVE.	147+70, 68' LT.	1	--	22	--	--
MEDIAN	147+91, 16' RT.	5	--	--	--	200
NW QUADRANT @ GRANGE AVE.	147+91, 65' LT.	1	--	52	--	--
SW QUADRANT @ MALLORY AVE.	153+34, 72' LT.	3	--	105	--	--
NW QUADRANT @ ABBOTT AVE.	167+18, 73' LT.	3	--	105	--	--
MEDIAN	172+43, 17' LT.	5	--	--	--	200
MEDIAN	174+64, 16' RT.	5	--	--	--	200
MEDIAN SOUTH OF LAYTON AVE.	198+20, 17' LT.	6	--	--	--	230
MEDIAN NORTH OF LAYTON AVE.	201+75 - 203+90, 16' RT	40	--	--	--	1580
MEDIAN SOUTH OF BOLIVAR AVE.	225+63, 16' LT.	3	--	--	--	135
MEDIAN NORTH OF BOLIVAR AVE.		5	--	--	--	215
SW QUADRANT @ HOWARD AVE.		1	--	49	--	--
UNDISTRIBUTED		9	50	150	--	--
PROJECT TOTAL		143	50	1622	48	3910

CATEGORY 0010  
LIGHTING TRAFFIC CONTROL QUANTITIES

643.0300	TRAFFIC CONTROL DRUMS
643.0410	TRAFFIC CONTROL BARRICADES TYPE II
643.0420	TRAFFIC CONTROL BARRICADES TYPE III
643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A
643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C
643.0800	TRAFFIC CONTROL ARROW BOARDS
643.0900	TRAFFIC CONTROL SIGNS

CATEGORY 0020  
EXISTING SIGNS ITEMS

638.2102 MOVING SIGNS TYPE II

CATEGORY	LOCATION	638.2102 MOVING SIGNS TYPE II EACH
0020	PROJECT LIMITS	10
	PROJECT TOTAL	10

LOCATION	642.0300 DRUMS		643.0410 BARRICADES TYPE II		643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS				643.0800 ARROW BOARDS		643.0900 SIGNS	
	EACH	DAY	EACH	DAY	EACH	DAY	TYPE A		TYPE C		EACH	DAY	EACH	DAY
							EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY
W. COLLEGE AVE. TO W. RAMSEY AVE. S. HONEY CREEK DRIVE	10	150	2	30	2	30	4	60	4	60	1	15	4	60
W. RAMSEY AVE. INTERSECTION	20	300	4	60	4	60	8	120	8	120	2	30	8	120
W. RAMSEY AVE. TO W. PARNEL AVE.	65	650	6	60	4	40	8	80	6	60	2	20	10	100
W. PARNEL AVE. TO W. GRANGE AVE. W. GRANGE AVE. INTERSECTION	20	200	4	40	4	40	8	80	8	80	2	20	8	80
W. GRANGE AVE. TO W. EDGERTON AVE.	135	2,025	10	150	8	120	10	150	10	150	2	30	10	150
W. EDGERTON AVENUE INTERSECTION W. MALLORY AVE.	10	150	2	30	2	30	4	60	4	60	1	15	4	60
W. UPHAM AVE. W. ABBOT AVE.	10	150	2	30	2	30	4	60	4	60	1	15	4	60
W. EDGERTON AVENUE TO W. LAYTON AVE.	135	2,025	10	150	8	120	10	150	10	150	2	30	10	150
W. HOLMES AVE.	10	150	2	30	2	30	4	60	4	60	1	15	4	60
W. LAYTON AVE. INTERSECTION	20	300	4	60	4	60	8	120	8	120	2	30	8	120
W. LAYTON AVE. TO W. BOLIVAR AVE.	135	2,025	10	150	8	120	10	150	10	150	2	30	10	150
I43/894 OF RAMP	10	150	2	30	2	30	4	60	4	60	1	15	4	60
I43/894 ON RAMP	20	300	4	60	4	60	8	120	8	120	2	30	8	120
BOTTSFORD AVE.	10	150	2	30	2	30	4	60	4	60	1	15	4	60
W. BOLIVAR AVE. INTERSECTION	20	300	4	60	4	60	8	120	8	120	2	30	8	120
W. BOLIVAR AVE. TO W. HOWARD AVE.	135	2,025	10	150	8	120	10	150	10	150	2	30	10	150
SOUTH OF W. HOWARD AVE. INTERSECTION	20	300	4	60	4	60	8	120	8	120	2	30	8	120
PROJECT TOTAL		14,700		1,480		1,290		2,130		2,090		495		2,170

FENCE SAFETY

616.0700.S FENCE SAFETY

CATEGORY	LOCATION	616.0700.S FENCE SAFETY LF
0010	UNDISTRIBUTED	100
	PROJECT TOTAL	100

CATEGORY 0010  
EROSION CONTROL ITEMS

628.7010	INLET PROTECTION TYPE B
628.7015	INLET PROTECTION TYPE C
628.1905	MOBILIZATIONS EROSION CONTROL
628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL

CATEGORY	LOCATION	628.7010 INLET PROTECTION TYPE B	628.7015 INLET PROTECTION TYPE C	628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL
		EACH	EACH	EACH	EACH
0010	PROJECT LIMITS	10	10	1	3
	PROJECT TOTAL	10	10	1	3

ROADWAY ITEMS

213.0100 FINISHING ROADWAY

CATEGORY	LOCATION	213.0100 FINISHING ROADWAY (I.D. 2265-03-76)
		EACH
	PROJECT LIMIT	1
	PROJEC TOTAL	



REMOVAL ITEMS

204.0150 REMOVING CURB & GUTTER  
 204.0155 REMOVING CONCRETE SIDEWALK  
 690.0250 SAWING CONCRETE

LOCATION	STATION	204.0150 REMOVING CURB & GUTTER	204.0155 REMOVING CONCRETE SIDEWALK	690.0250 SAWING CONCRETE
CATEGORY 0010 PROJECT TOTAL				
MEDIAN NORTH OF COLLEGE AVE.	98+35, 16' RT.	--	13	13
MEDIAN SOUTH OF RAMSEY AVE.	119+45, 15' LT.	--	22	13
SW QUADRANT @ RAWSON AVE.	120+20, 70' LT.	--	20	24
NW QUADRANT @ RAWSON AVE.	120+90, 70' LT.	--	29	10
NW QUADRANT @ RAWSON AVE.	120+10, 60' LT.	--	10	6
NW QUADRANT @ RAWSON AVE.	121+40, 60' LT.	--	12	6
MEDIAN NORTH OF RAMSEY AVE.	121+59, 15' RT.	--	23	13
MEDIAN	143+05, 05' LT.	--	44	40
MEDIAN SOUTH OF GRANGE AVE.	146+00, 17' LT.	--	22	13
SW QUADRANT @ GRANGE AVE.	146+40, 63' LT.	--	10	5
SW QUADRANT @ GRANGE AVE.	146+50, 73' LT.	--	17	16
NW QUADRANT @ GRANGE AVE.	147+50, 70' LT.	--	28	23
NW QUADRANT @ GRANGE AVE.	147+70, 68' LT.	--	2	10
MEDIAN NORTH OF GRANGE AVE.	147+91, 16' RT.	--	22	11
NW QUADRANT @ GRANGE AVE.	147+91, 65' LT.	--	6	10
SW QUADRANT @ MALLORY AVE.	153+34, 72' LT.	--	12	15
NW QUADRANT @ ABBOTT AVE.	167+18, 73' LT.	--	12	16
MEDIAN SOUTH OF EDGERTON AVE.	172+43, 17' LT.	--	22	12
MEDIAN NORTH OF EDGERTON AVE.	174+64, 16' RT.	--	22	12
MEDIAN SOUTH OF LAYTON AVE.	198+20, 17' LT.	--	25	16
MEDIAN NORTH OF LAYTON AVE.	201+75 - 203+90, 16' RT.	--	122	16
MEDIAN SOUTH OF BOLIVAR AVE.	225+63, 16' LT.	--	15	13
MEDIAN NORTH OF BOLIVAR AVE.	227+34, 17' RT.	--	24	14
SW QUADRANT @ HOWARD AVE.	252+50, 70' LT.	--	5	10
UNDISTRIBUTED		50.0	17	30
PROJECT TOTAL		50	557	367

CATEGORY 0010  
 RESTORATION ITEMS

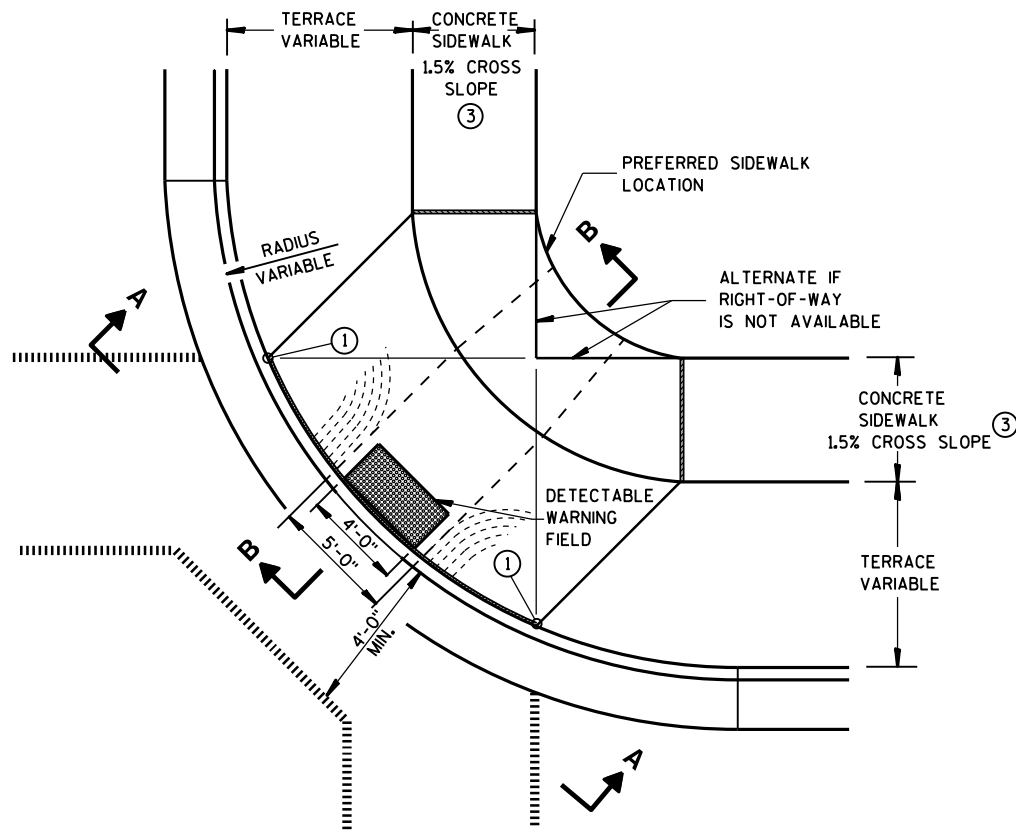
625.0100 TOPSOIL  
 627.0200 MULCHING  
 629.0210 FERTILIZER TYPE B  
 630.0130 SEEDING MIXTURE NO. 30

(QUANTITIES BASED ON 3' TRENCH WIDTH)

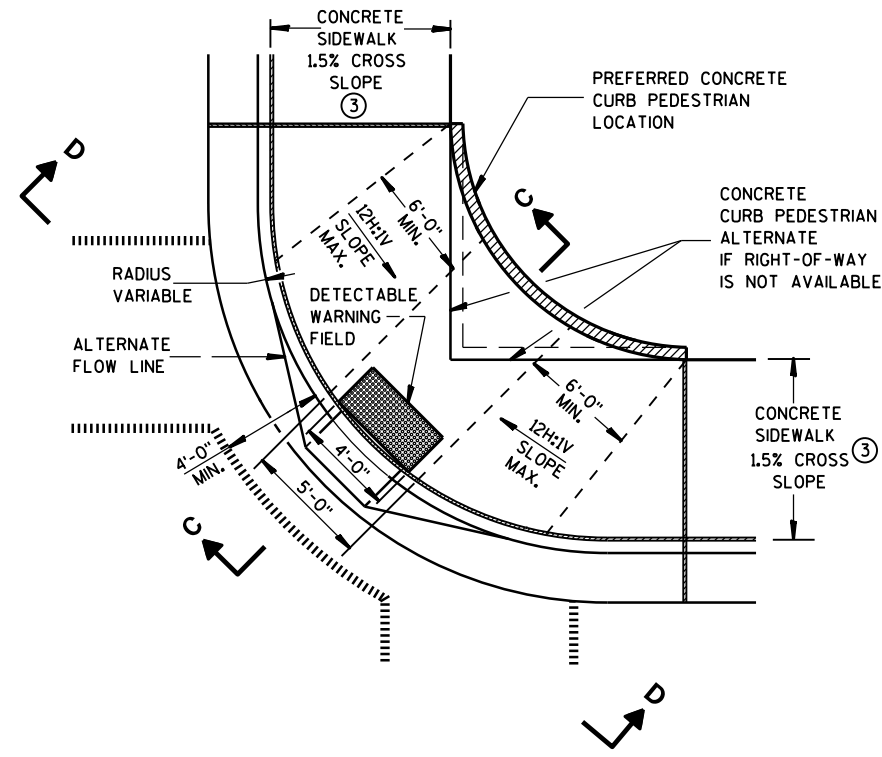
LOCATION	STATION TO STATION PROJECT TOTAL	625.0100 TOPSOIL	627.0200 MULCHING	629.0210 FERTILIZER TYPE B	630.0130 SEEDING MIXTURE NO. 30
		SY	SY	CWT	LB
COLLEGE AVE. TO MANGOLD AVE.	98+70 TO 102+14	115	115	--	--
MANGOLD AVE. TO KIMBERLY AVE.	103+00 TO 106+80	127	127	--	--
KIMBERLY AVE. TO S. HONEY CREEK DR.	107+55 TO 109+98	81	81	--	--
S. HONEY CREEK DR. TO RAMSEY AVE.	111+09 TO 114+48	113	113	--	--
" " " "	115+00 TO 117+06	69	69	--	--
RAMSEY AVE. SW QUADRANT	39+00 TO 39+50 RT.	48	48	--	--
RAMSEY AVE. NW QUADRANT	37+87 TO 39+50 LT.	47	47	--	--
RAMSEY AVE. TO GOLDCREST AVE.	122+47 TO 124+25	59	59	--	--
GOLDCREST AVE. TO PARNELL AVE.	125+09 TO 128+85	125	125	--	--
" " " "	129+52 TO 131+53	67	67	--	--
PARNELL AVE. TO GRANGE AVE.	136+75 TO 138+85	83	83	--	--
" " " "	139+46 TO 141+87	83	83	--	--
GRANGE AVE. SW QUADRANT	58+86 TO 59+50 RT.	42	42	--	--
GRANGE AVE. NW QUADRANT	58+86 TO 59+50 LT.	25	25	--	--
GRANGE AVE. TO MALLORY AVE.	150+92 TO 153+30	82	82	--	--
MALLORY AVE. SW QUADRANT	--	12	12	--	--
MALLORY AVE. TO W. CLAYTON CREST AVE.	154+18 TO 156+83	88	88	--	--
W. CLAYTON CREST AVE. TO UPHAM AVE.	157+85 TO 159+70	65	65	--	--
W. UPHAM AVE. TO W. ABBOTT AVE.	161+45 TO 166+29	161	161	--	--
W. ABBOTT AVE. NW QUADRANT	--	17	17	--	--
EDGERTON AVE. SW QUADRANT	--	26	26	--	--
EDGERTON AVE. NW QUADRANT	--	23	23	--	--
EDGERTON AVE. TO HOLMES AVE.	177+99 TO 180+44	89	89	--	--
HOLMES AVE. SW QUADRANT		9	9	--	--
HOLMES AVE. TO CARPENTER AVE.		167	167	--	--
CARPENTER AVE. TO BARNARD AVE.		194	194	--	--
BARNARD AVE. TO LAYTON AVE.		83	83	--	--
LAYTON AVE. SW QUADRANT		100	100	--	--
LAYTON AVE. NW QUADRANT		17	17	--	--
LAYTON AVE. TO IH-894		100	100	--	--
" " " "		118	118	--	--
EB OFFRAMP TO IH-894		48	48	--	--
WB ONRAMP TO IH-894		92	92	--	--
IH-894 TO BOTTSPORD AVE.		112	112	--	--
BOTTSPORD AVE. NW QUADRANT		16	16	--	--
BOTTSPORD AVE. TO BOLIVAR AVE.		93	93	--	--
COLDSRING ROAD SW & NW QUADRANTS		24	24	--	--
BOLIVAR AVE. TO PLAINFIELD AVE.		118	118	--	--
PLAINFIELD AVE. TO HOWARD AVE.		432	432	--	--
HOWARD AVE. SW QUADRANT		91	91	--	--
PROJECT 2265-03-76		--	--	2	62
PROJECT TOTAL		3460	3460	2	62

## Standard Detail Drawing List

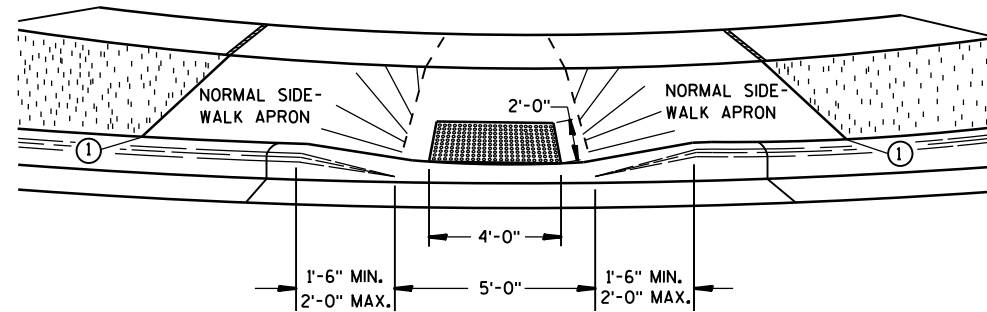
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPE 4A
08D05-15D	CURB RAMPS TYPE 4B
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-07	CONDUIT
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C08-04	CONCRETE BASE, TYPE 7
09D01-04	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09E03-04	NON-FREEWAY LIGHTING UNIT POLE WIRING
10A02-02	IDENTIFICATION PLAQUES LIGHT POLES
10A07-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES PHASE-TO-PHASE SYSTEMS
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D12-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-01	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE



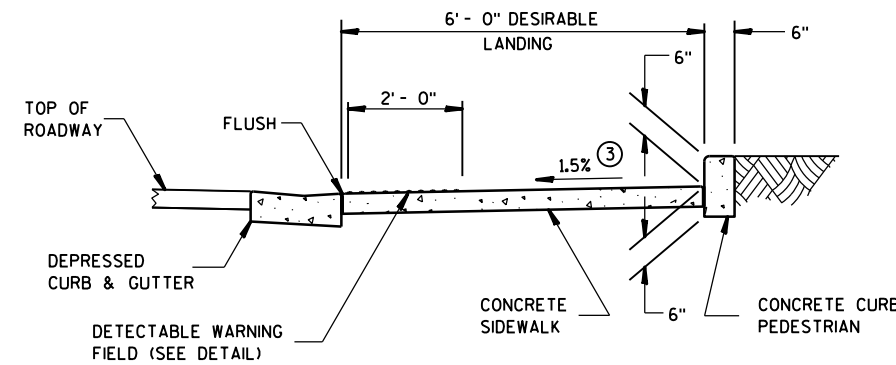
**PLAN VIEW  
TYPE 1 RAMP**  
(CENTER OF CORNER RADIUS)



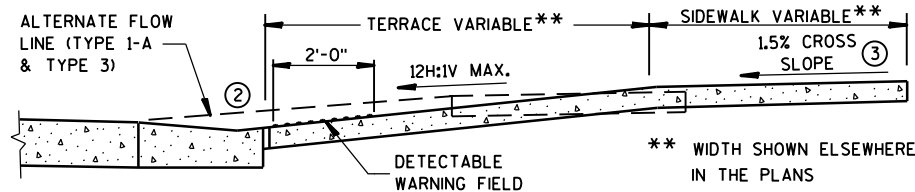
**PLAN VIEW  
TYPE 1-A RAMP**  
(NO TERRACE)



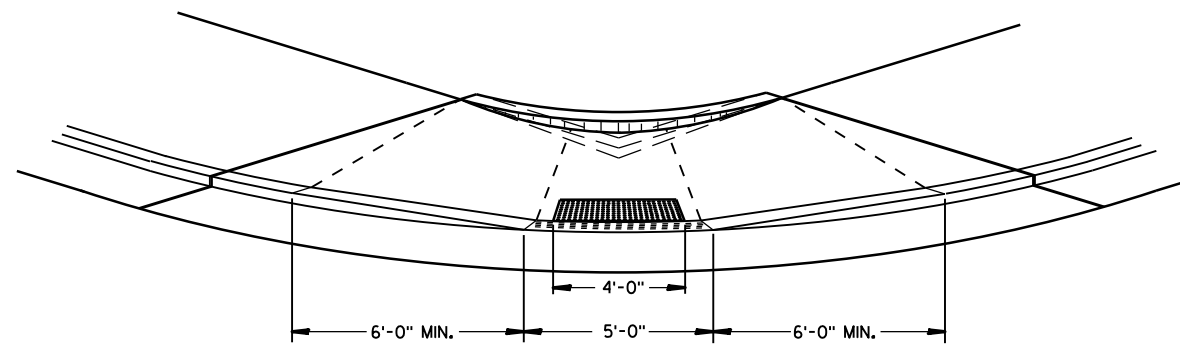
**VIEW A-A**



**SECTION C-C**



**SECTION B-B**



**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.

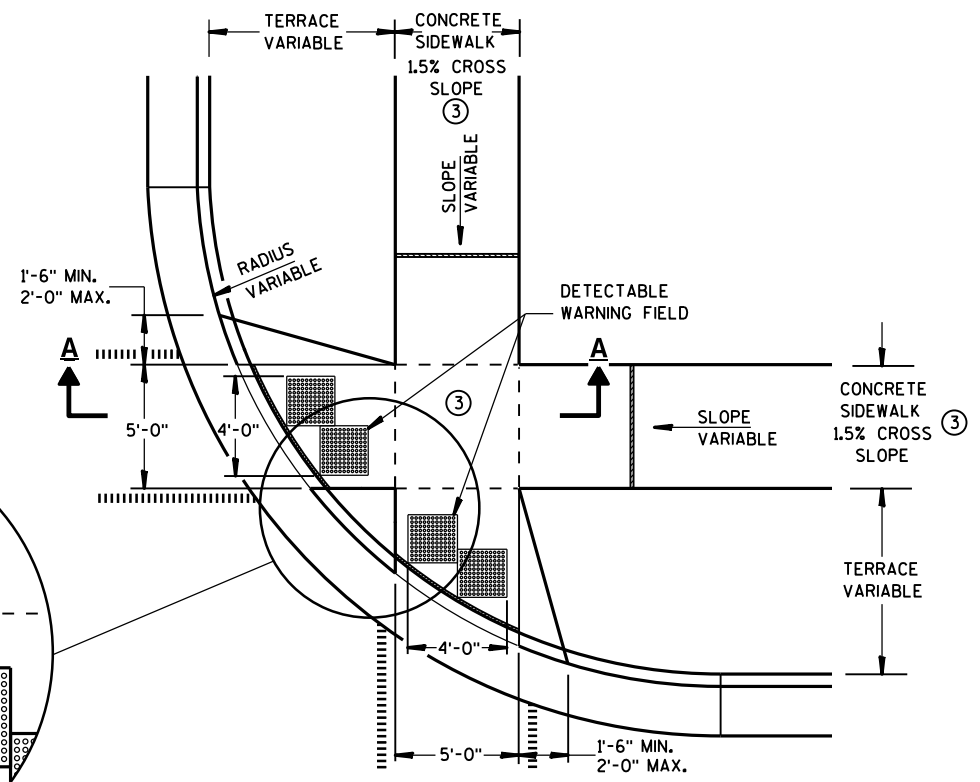
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③ ±0.5% CONSTRUCTION TOLERANCE IN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

**LEGEND**

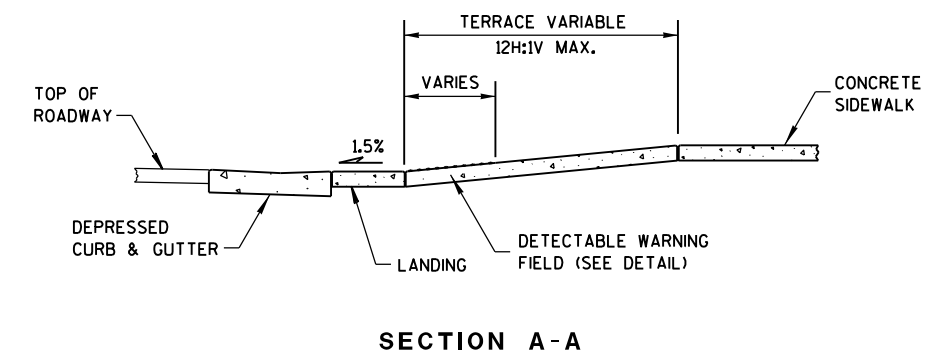
- 1/2" EXPANSION JOINT-SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

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

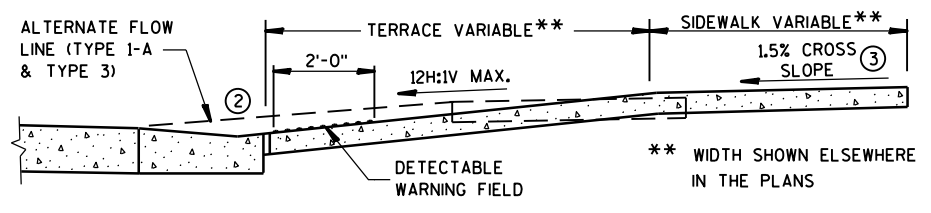
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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



**SECTION A-A**



**SECTION B-B**

**GENERAL NOTES**

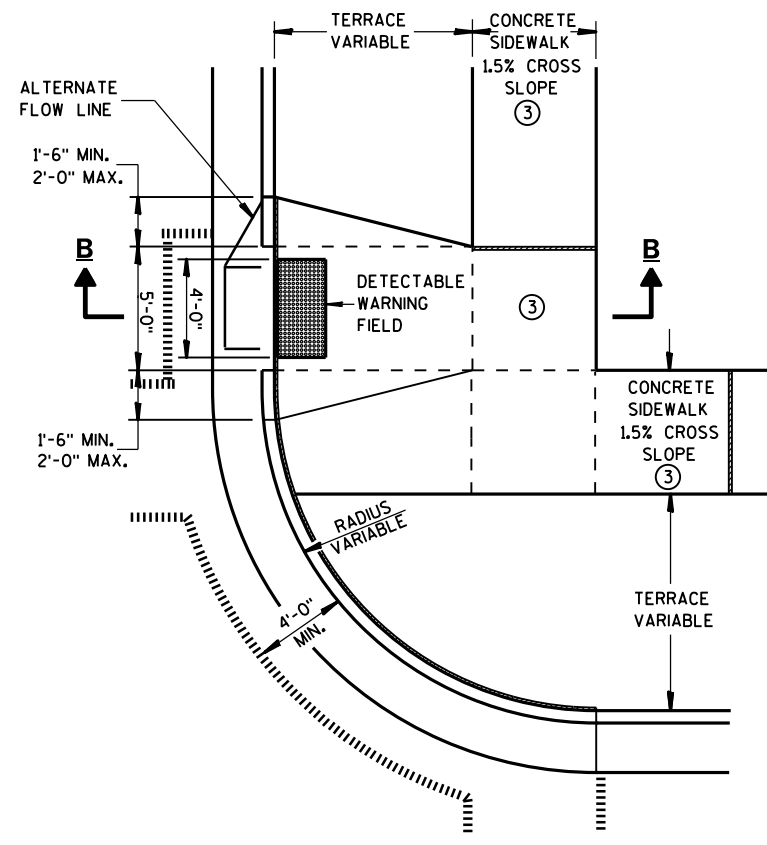
USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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

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

**LEGEND**

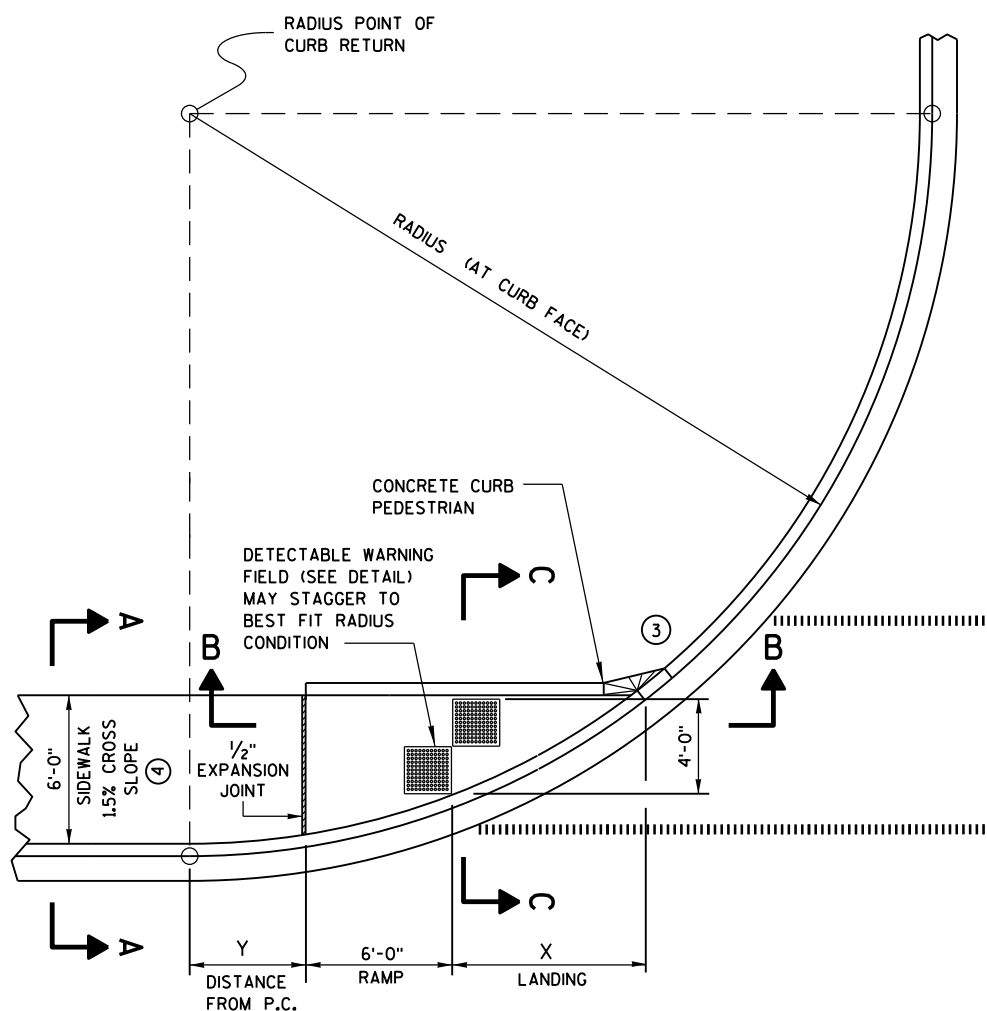
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



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

**CURB RAMPS  
TYPES 2 AND 3**

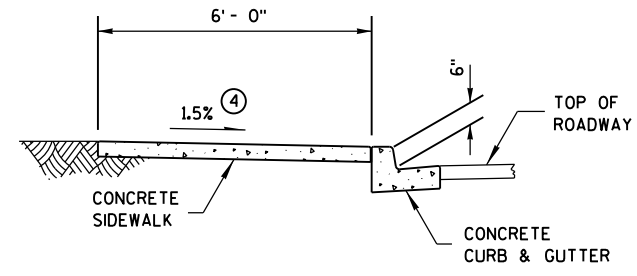
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



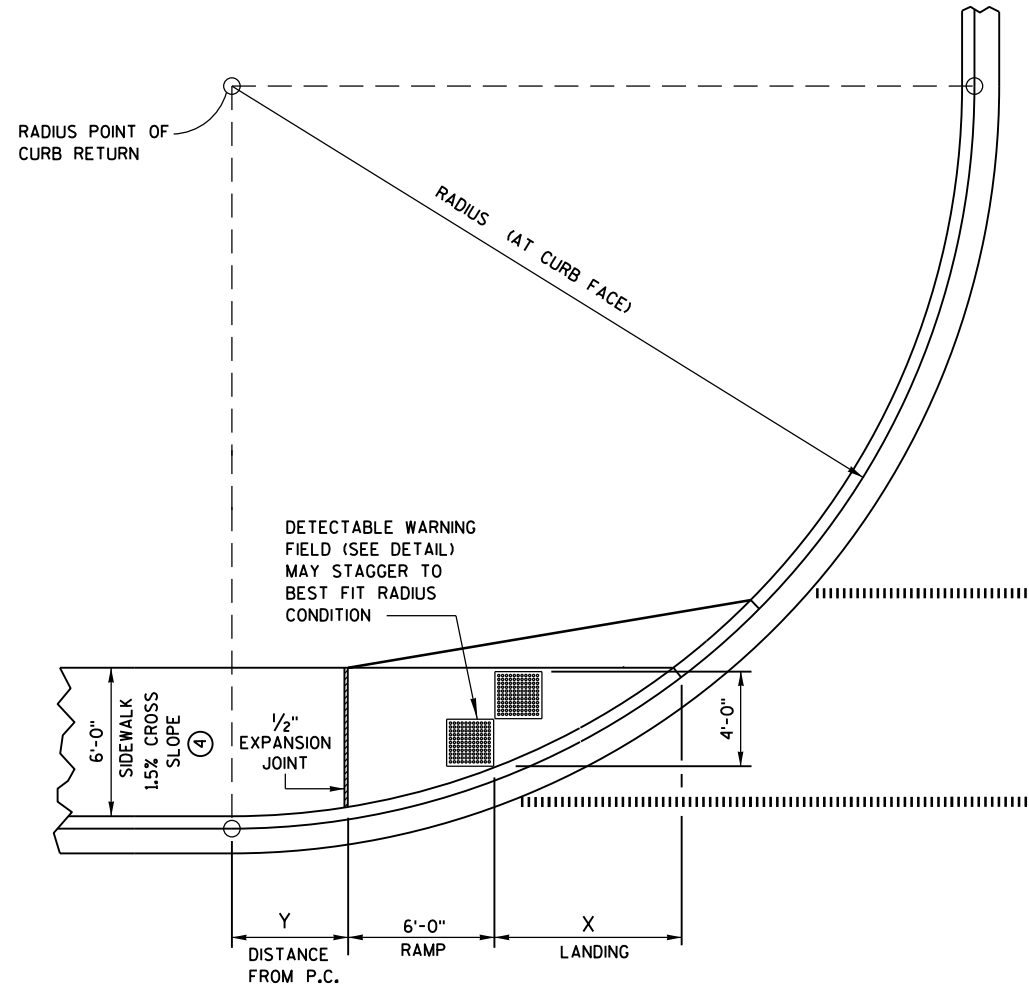
**CURB RAMP TYPE 4A  
PLAN VIEW**

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1 3/4"	2'-7 1/4"
30 FEET	7'-11 3/4"	4'-8 1/4"
40 FEET	9'-5 1/4"	6'-5"
50 FEET	10'-8 3/4"	7'-11 1/4"
60 FEET	11'-10 1/4"	9'-3 1/2"

INTERMEDIATE RADII CAN BE INTERPOLATED



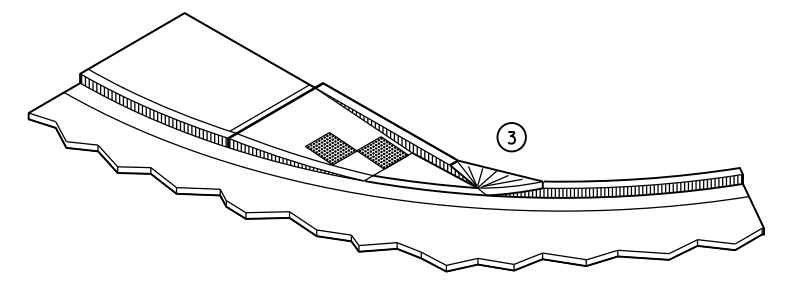
**SECTION A-A FOR TYPE 4A**



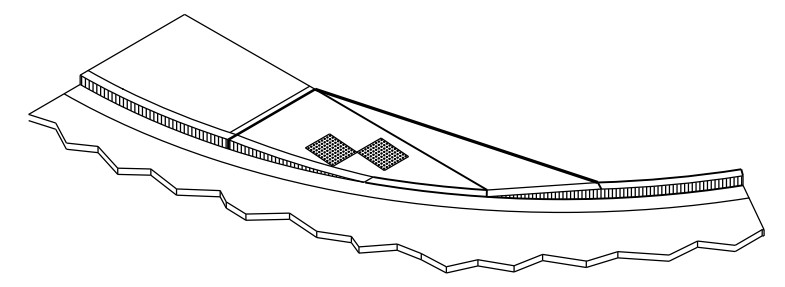
**CURB RAMP TYPE 4A1  
PLAN VIEW**

**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 4A**



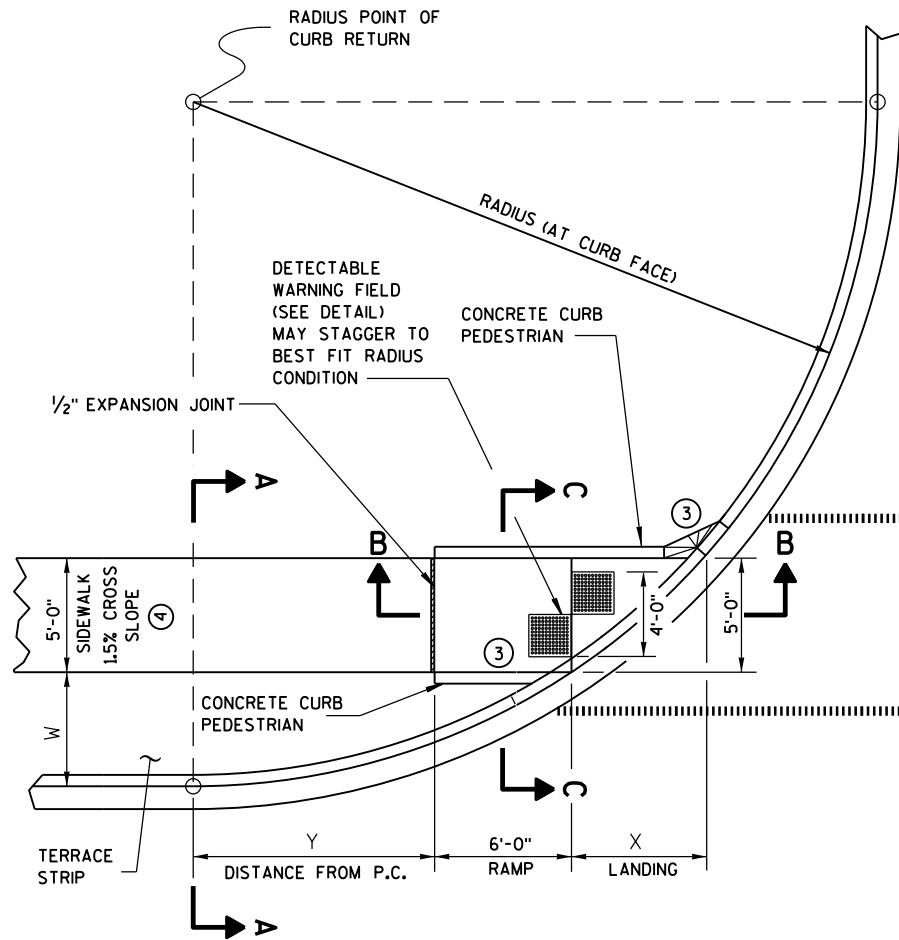
**ISOMETRIC VIEW FOR TYPE 4A1**

**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

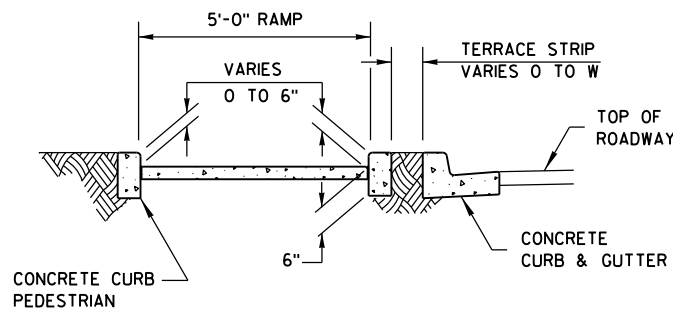


**LEGEND**

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

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

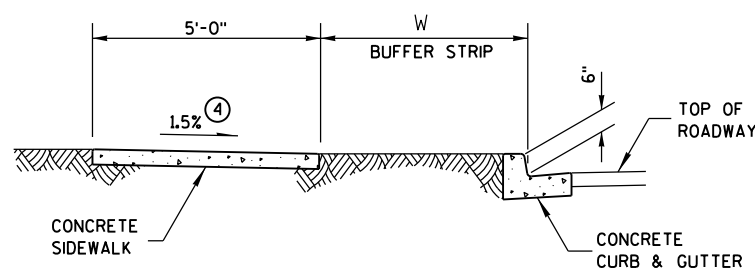
INTERMEDIATE RADII CAN BE INTERPOLATED



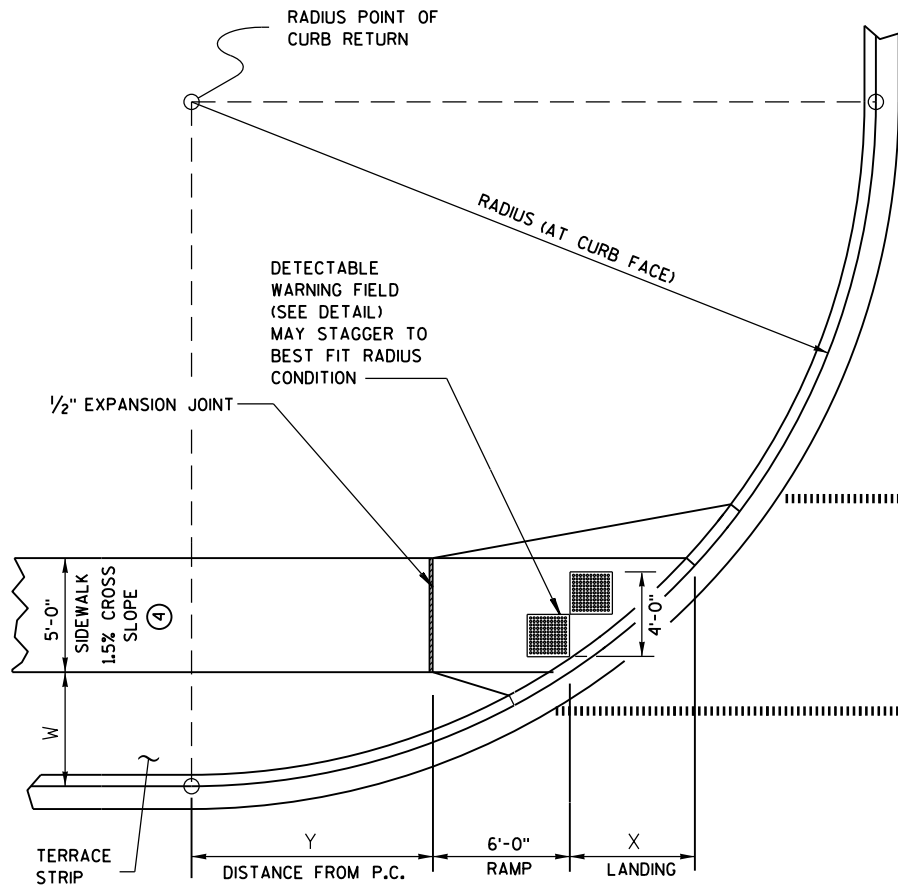
**SECTION C-C FOR TYPE 4B**

**GENERAL NOTES**

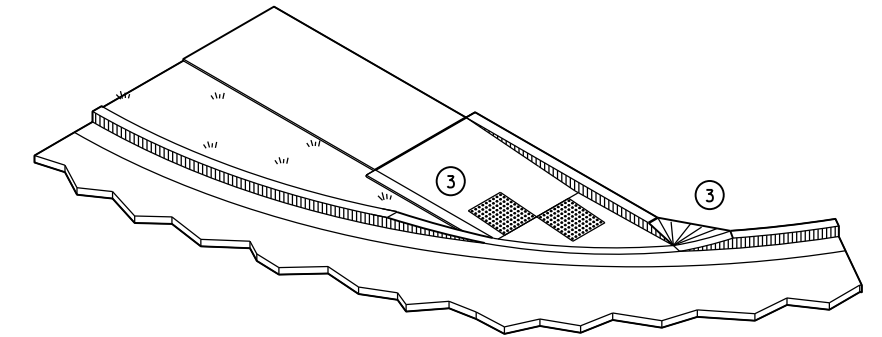
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ③ INSTALL TRANSITION NOSE. (INCIDENTAL 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.



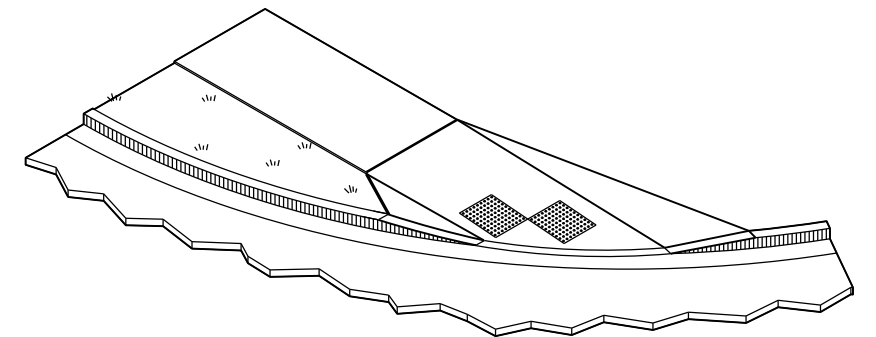
**SECTION A-A FOR TYPE 4B**



**CURB RAMP TYPE 4B1  
PLAN VIEW**



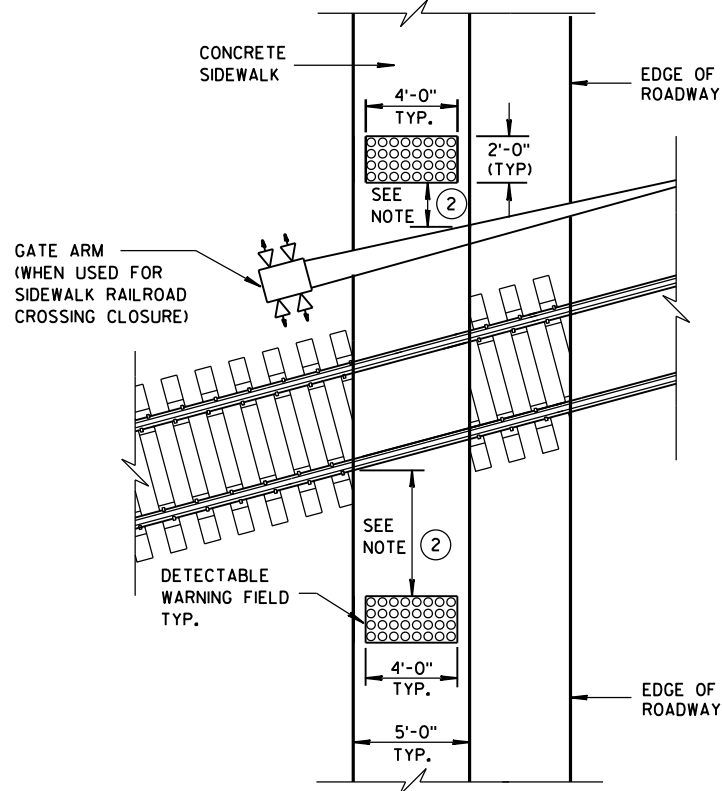
**ISOMETRIC VIEW FOR TYPE 4B**



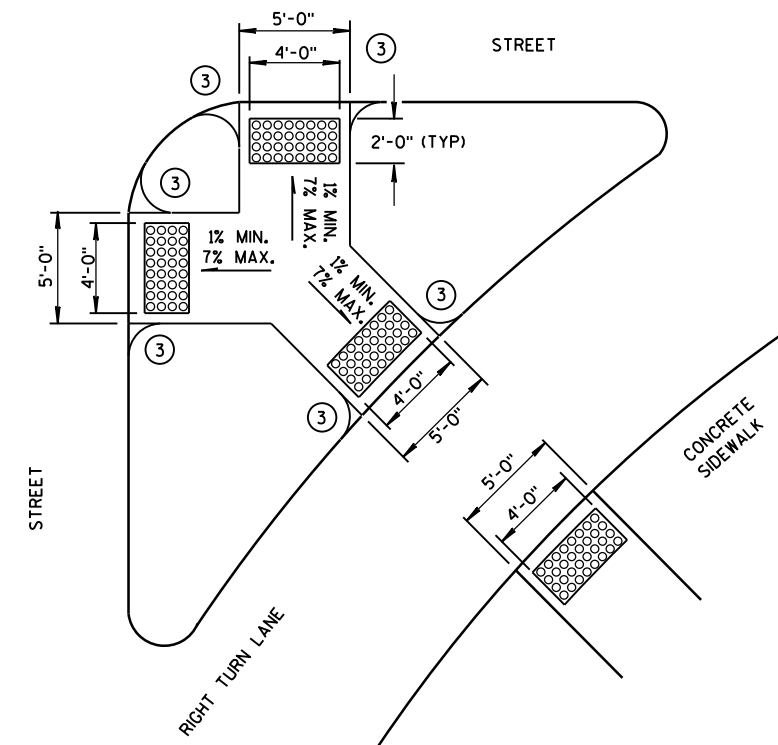
**ISOMETRIC VIEW FOR TYPE 4B1**

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

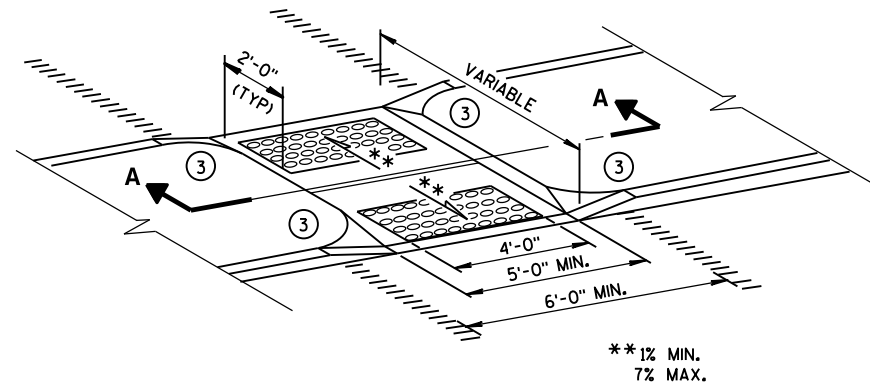
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



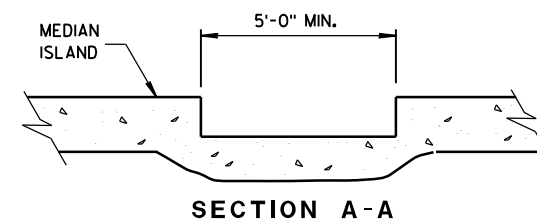
**TYPE 8  
DETECTABLE WARNINGS  
AT RAILROAD CROSSING**



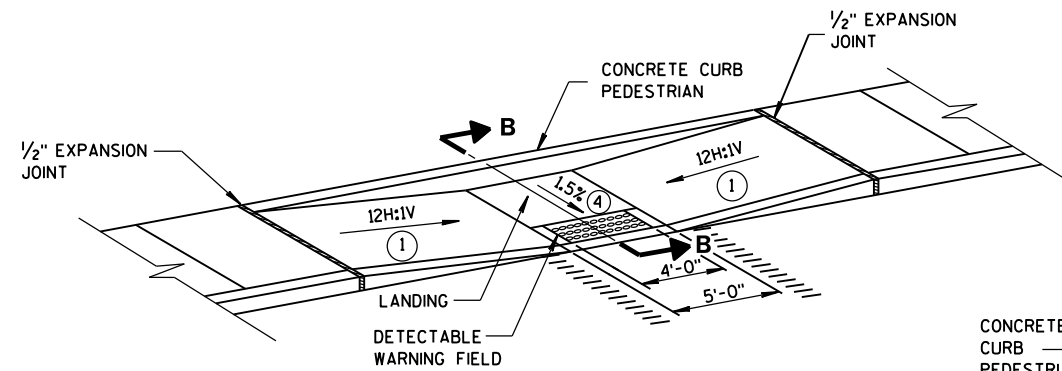
**TYPE 6  
DETECTABLE WARNING AT ISLANDS**



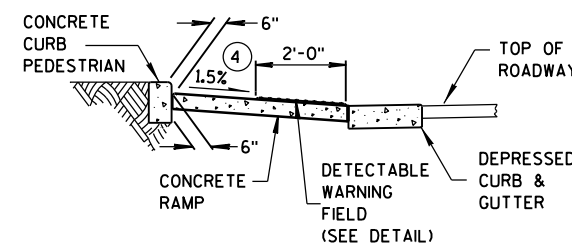
**MEDIAN ISLAND  
NON-ELEVATED CROSSING  
TYPE 5**



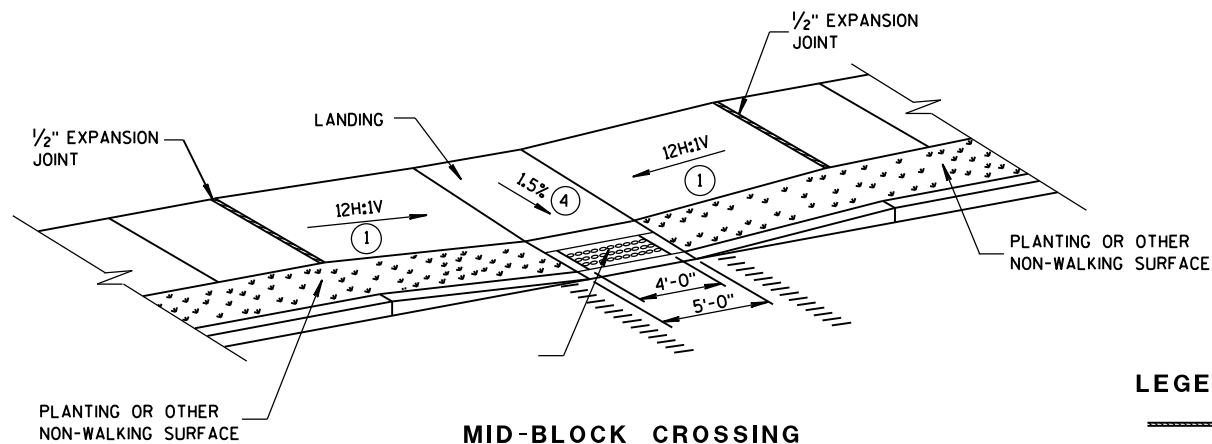
**SECTION A-A**



**MID-BLOCK CROSSING  
TYPE 7A**



**SECTION B-B**

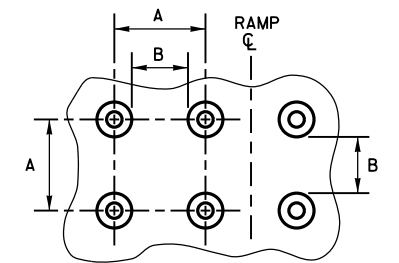


**MID-BLOCK CROSSING  
TYPE 7B**

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

**GENERAL NOTES**

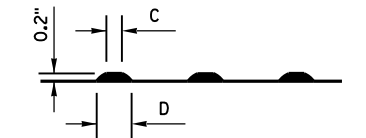
- SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ① SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ② THE EDGE OF THE DETECTABLE 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**

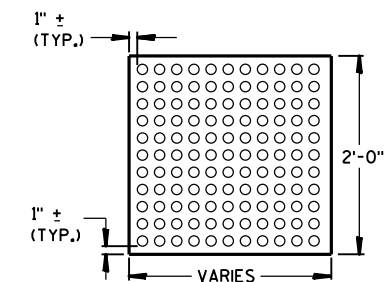
	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

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



**ELEVATION VIEW**

**TRUNCATED DOMES  
DETECTABLE WARNING  
PATTERN DETAIL**



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

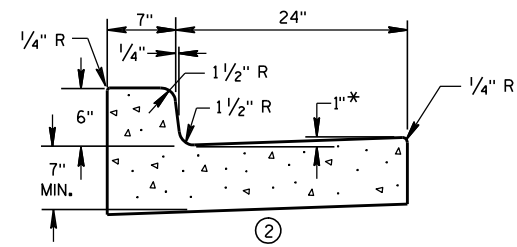
**LEGEND**

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

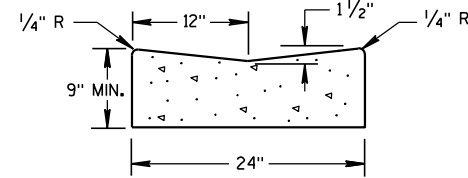
**CURB RAMPS  
TYPES 5, 6, 7A, 7B & 8**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

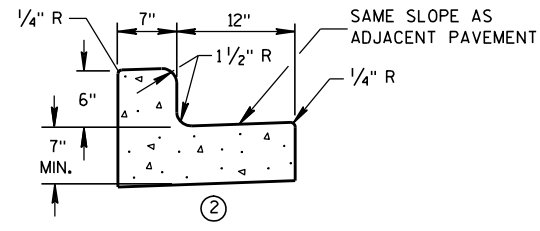
APPROVED  
2-6-2013 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



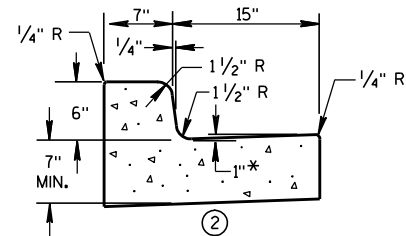
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

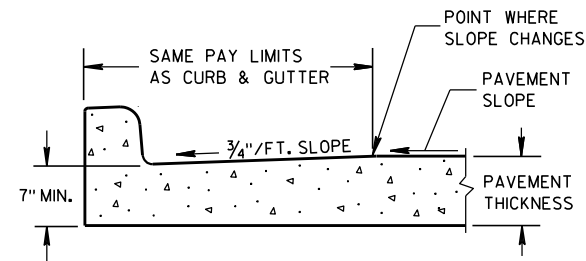


① CONCRETE CURB & GUTTER 19"

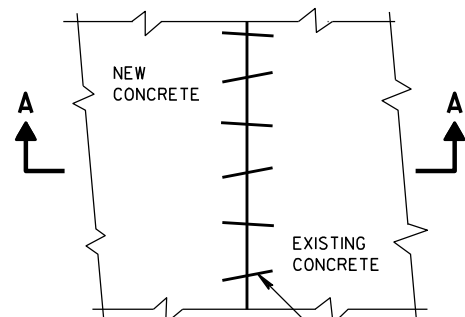


① CONCRETE CURB & GUTTER 22"

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



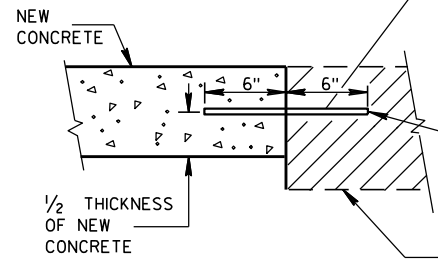
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



PLAN VIEW

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

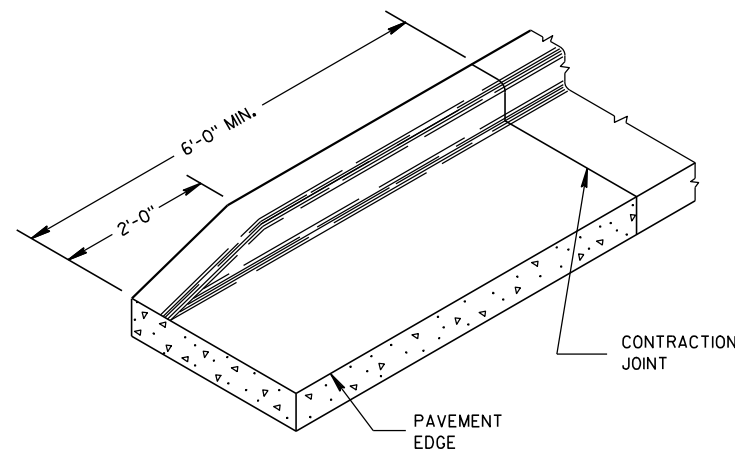
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



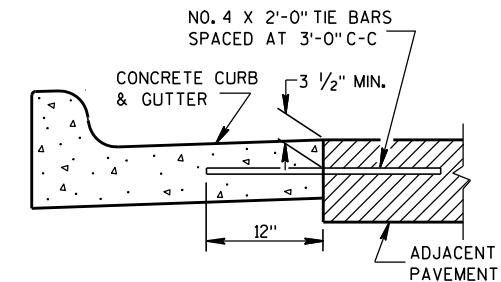
SECTION A-A PAVEMENT TIES

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

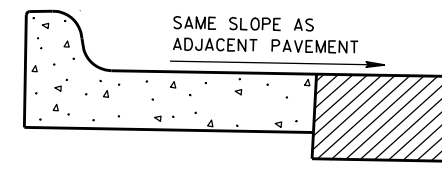
EXISTING CONCRETE



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.

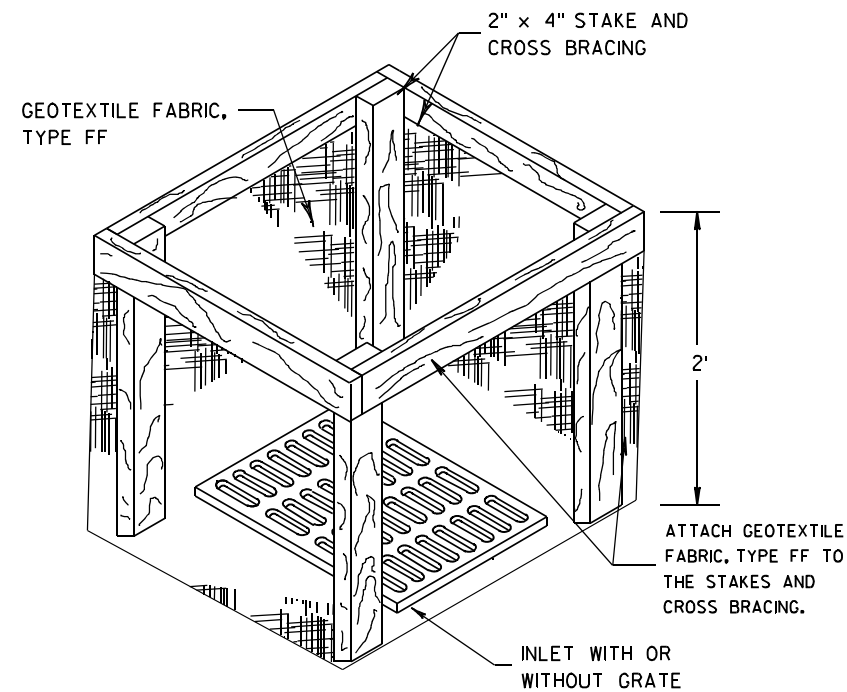
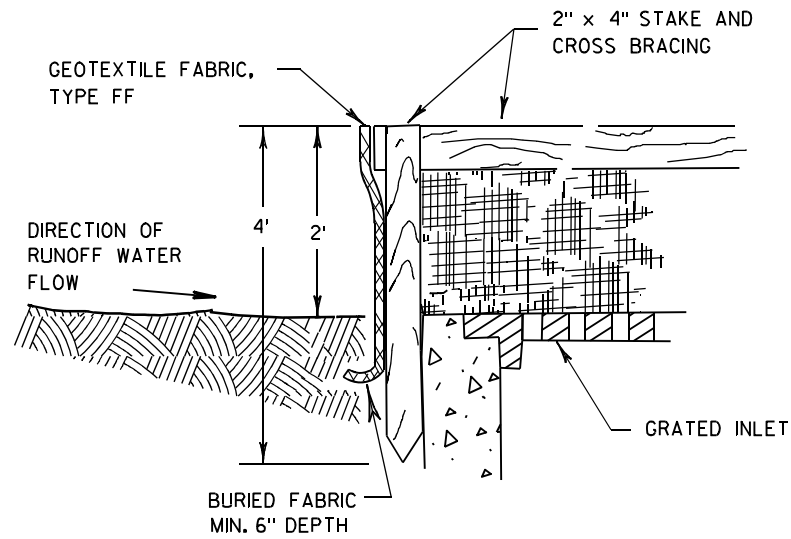
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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.

<b>CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES</b> (For Optional Use in Milwaukee Co. Only)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/2/2010 DATE	/s/ Jerry Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	





**INLET PROTECTION, TYPE A**

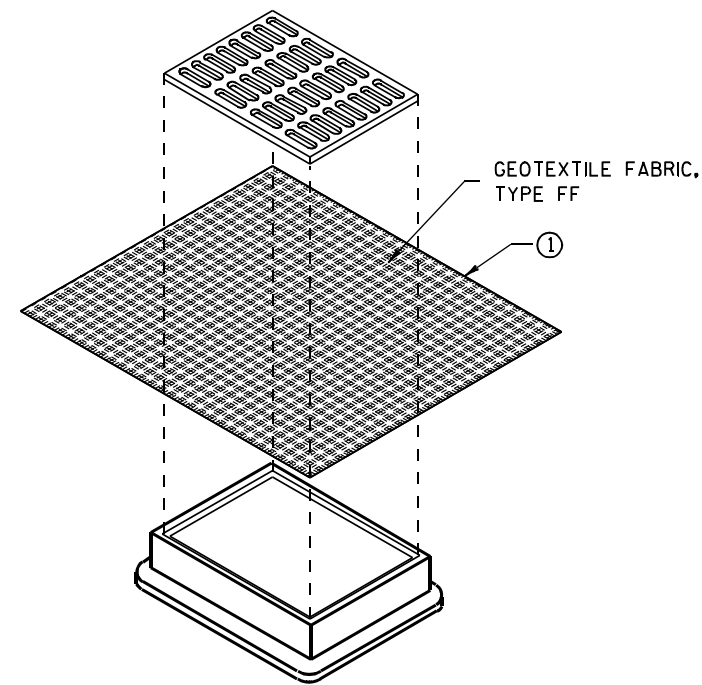
**GENERAL NOTES**

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

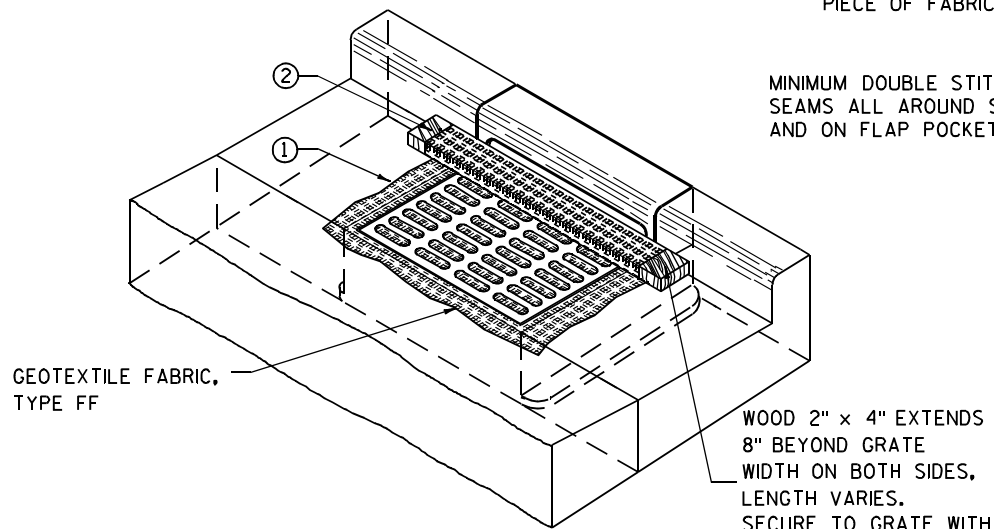
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B  
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



**INLET PROTECTION, TYPE C (WITH CURB BOX)**

**INSTALLATION NOTES**

**TYPE B & C**

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

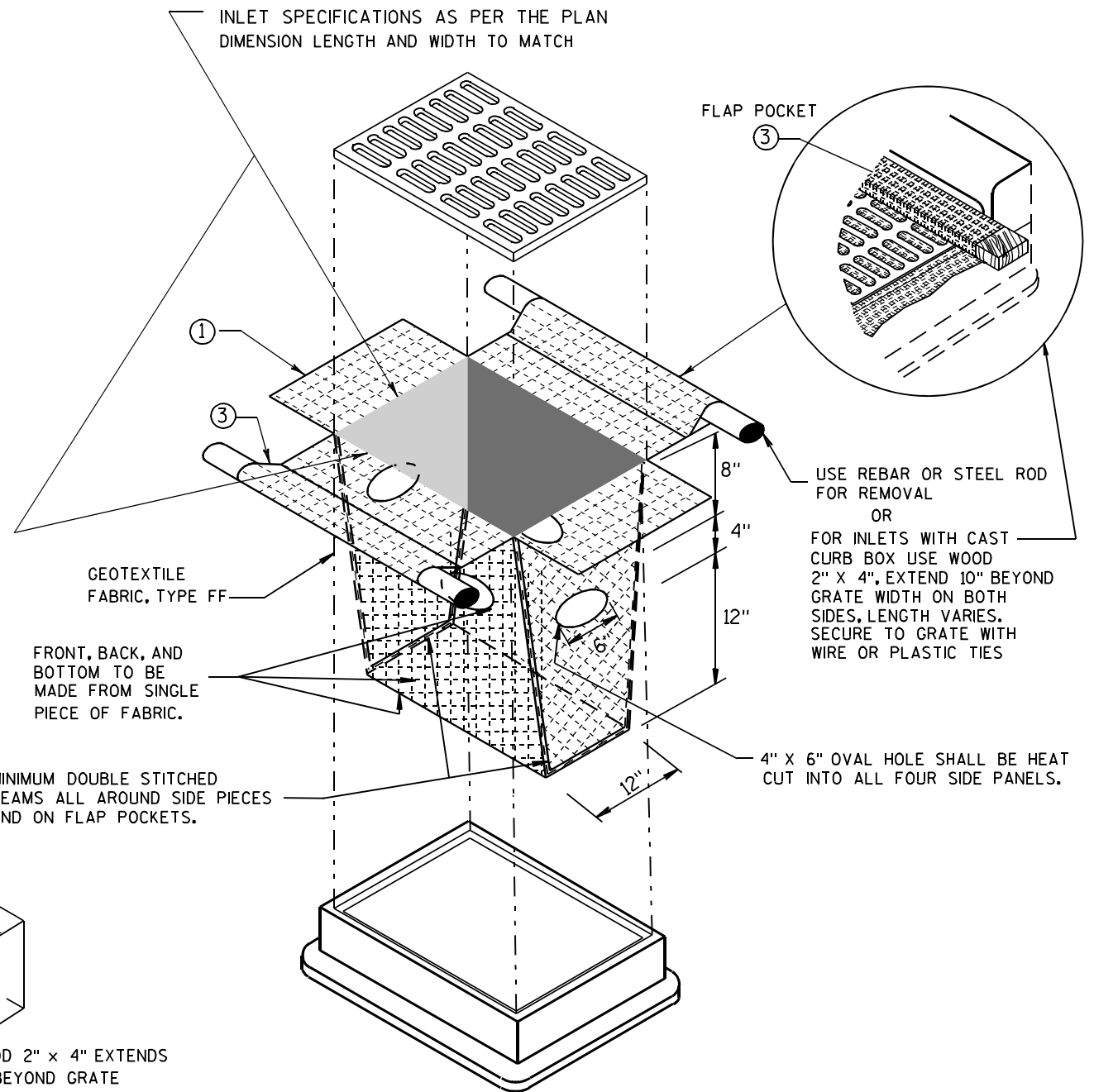
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



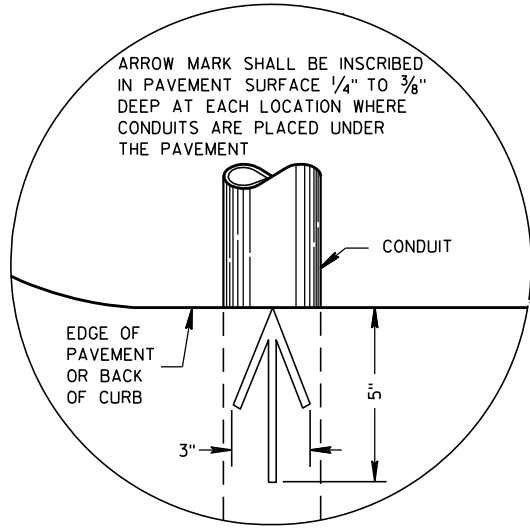
**INLET PROTECTION, TYPE D**

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

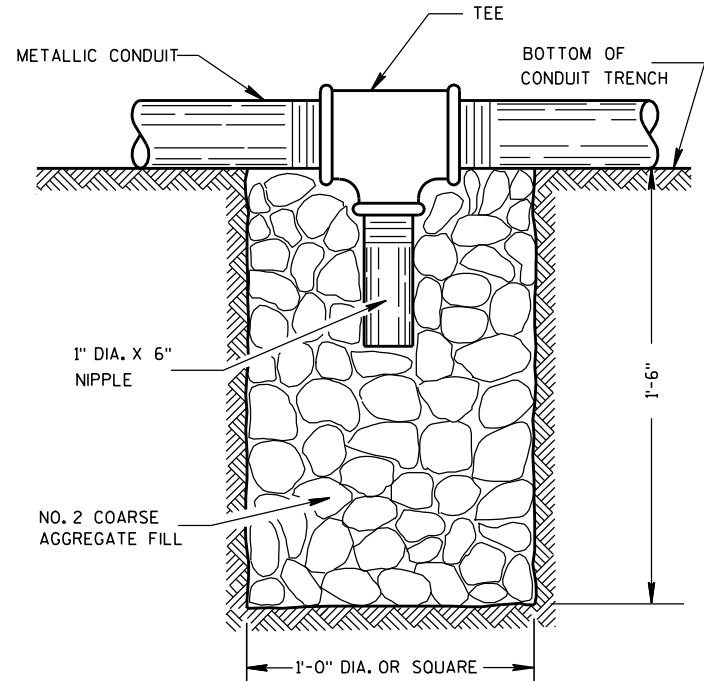
**INLET PROTECTION  
TYPE A, B, C, AND D**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/16/02 /S/ Beth Connestra  
DATE  
CHIEF ROADWAY DEVELOPMENT ENGINEER  
FHWA

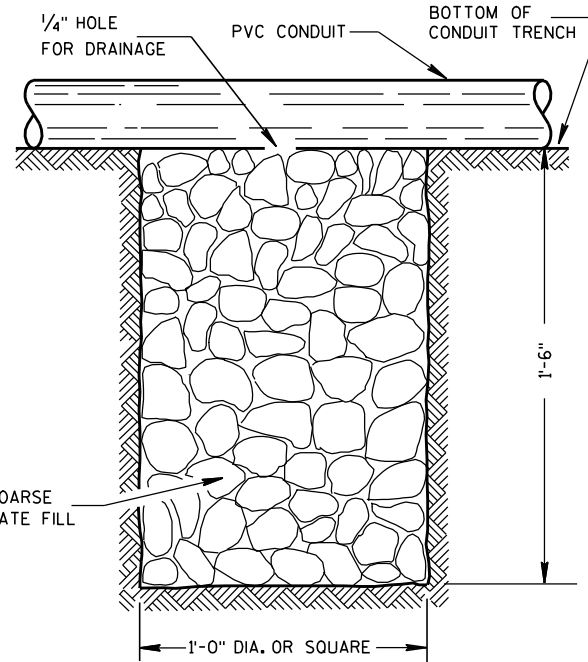


**PLAN VIEW  
ARROW MARK**



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 EMERSON 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.

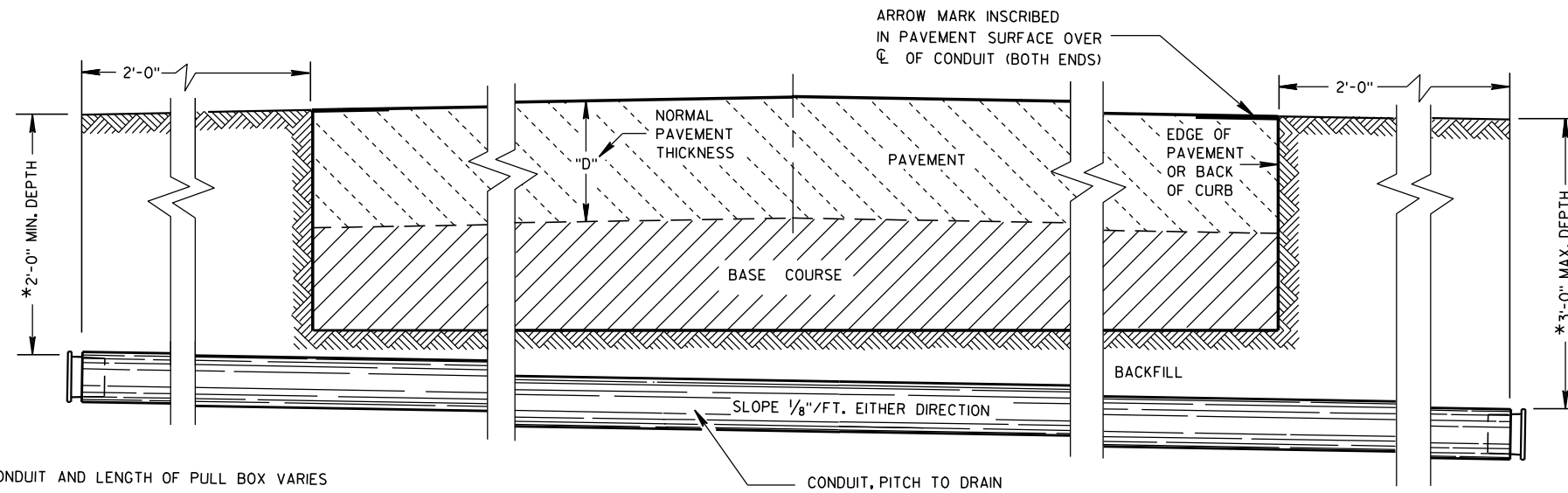
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

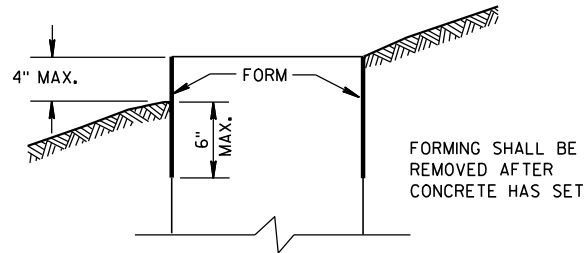
**SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS**

**CONDUIT**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/23/03 /S/ Balu Ananthanarayanan  
DATE STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



**FORMING DETAIL**

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

**GENERAL NOTES**

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

**GENERAL NOTES (CONTINUED)**

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

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

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD, ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

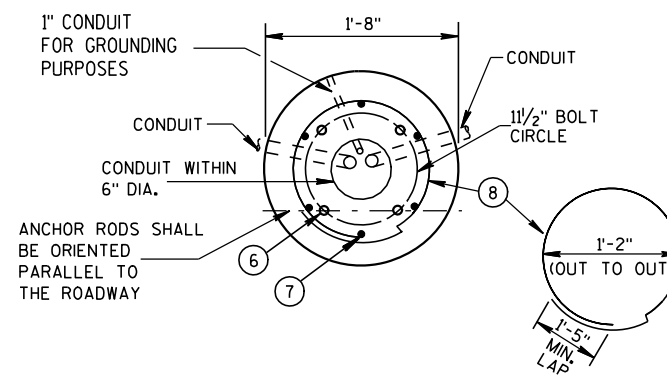
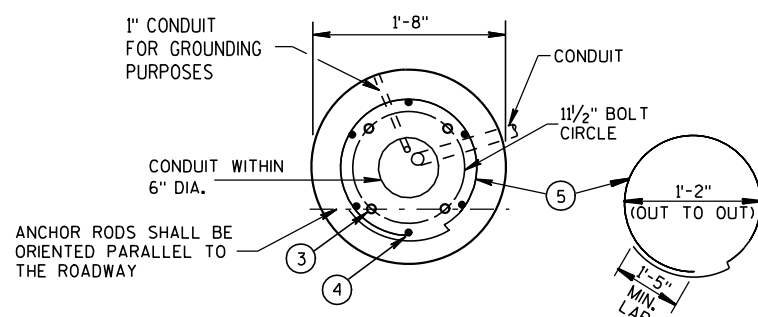
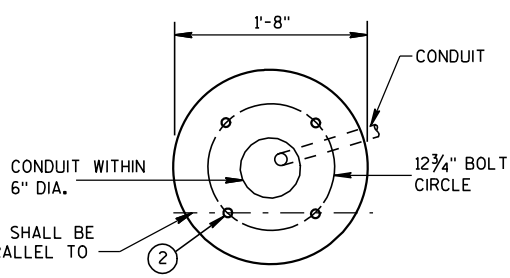
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

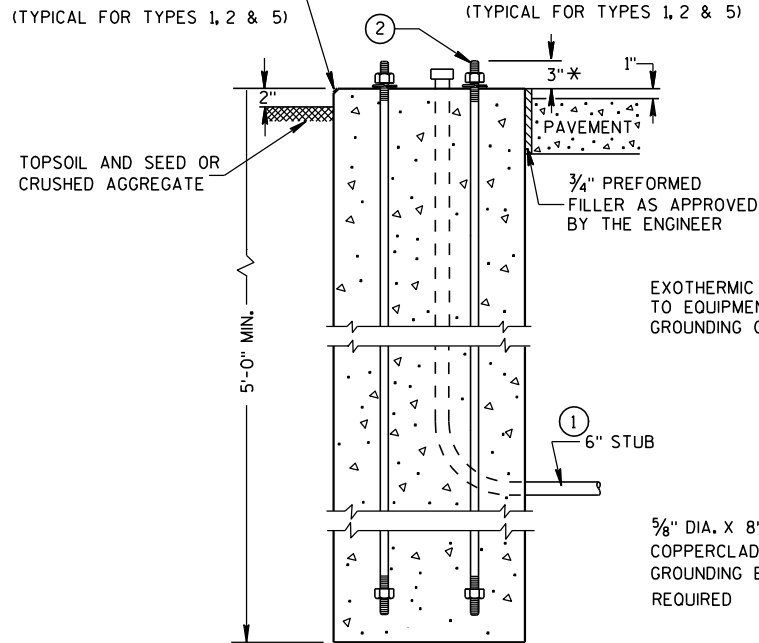
- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.
- ② (4) 1" DIA. X 3'-6" ANCHOR RODS.
- ③ (4) 1" DIA. X 5'-0" ANCHOR RODS.
- ④ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
- ⑤ (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
- ⑥ (4) 1" DIA. X 3'-6" ANCHOR RODS.
- ⑦ (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.
- ⑧ (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



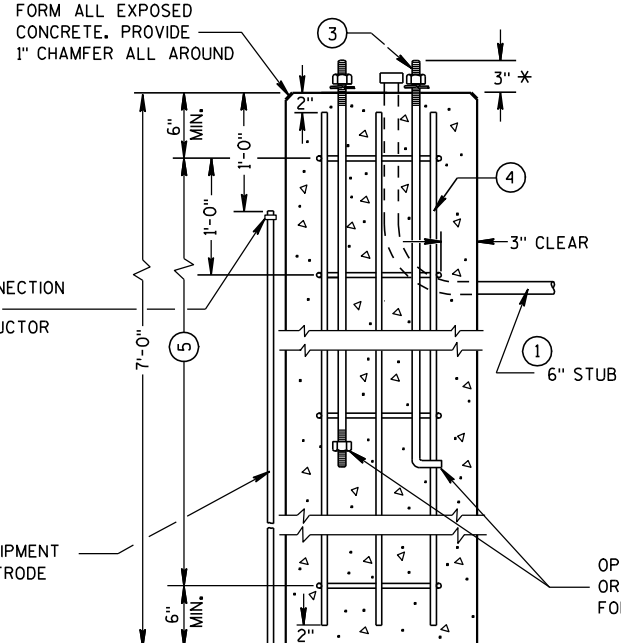
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

**HALF SECTION IN UNPAVED AREA**  
(TYPICAL FOR TYPES 1, 2 & 5)

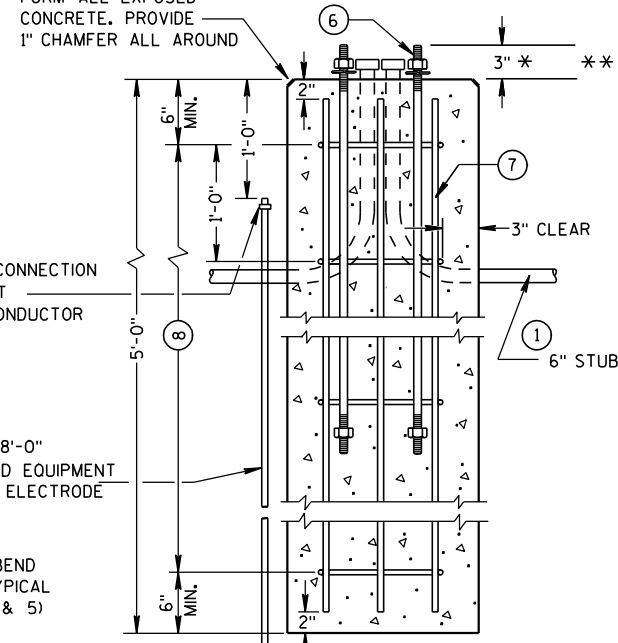
**HALF SECTION IN PAVEMENT**  
(TYPICAL FOR TYPES 1, 2 & 5)



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



**CONCRETE BASES**

\* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

\*\* FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

**CONCRETE BASES,  
TYPES 1, 2 & 5**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10  
DATE

FHWA

/s/ Joanna L. Bush  
STATE ELECTRICAL ENGINEER FOR HWYS

## GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

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

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE 1" X 60".

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

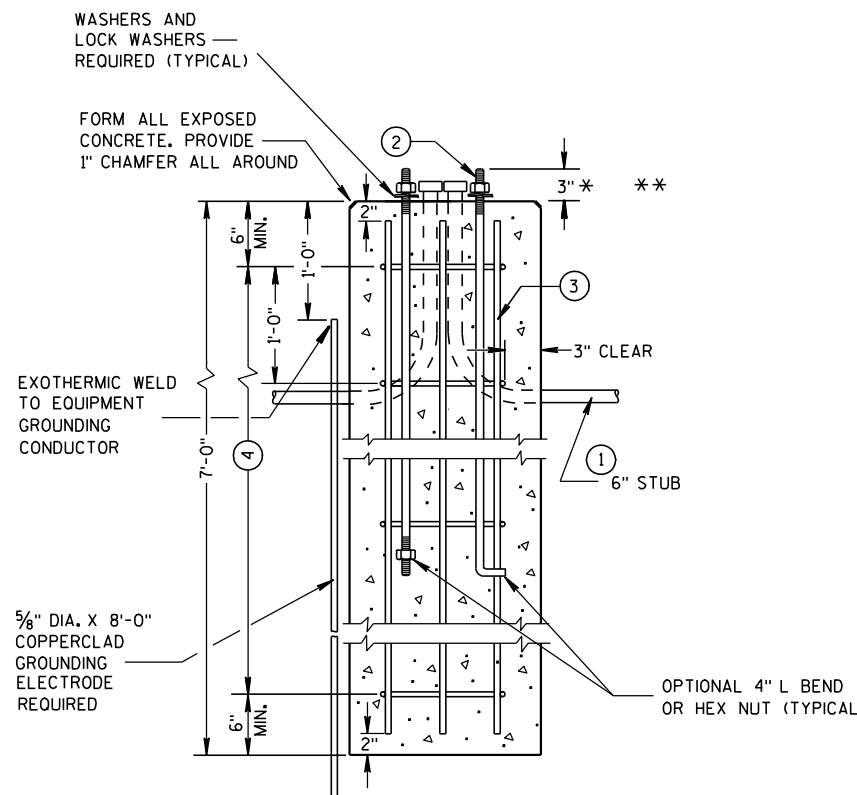
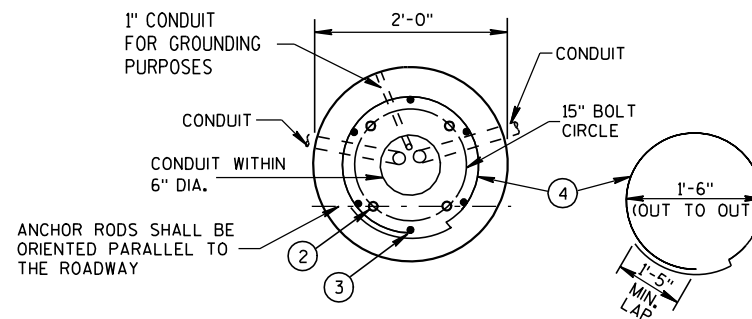
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

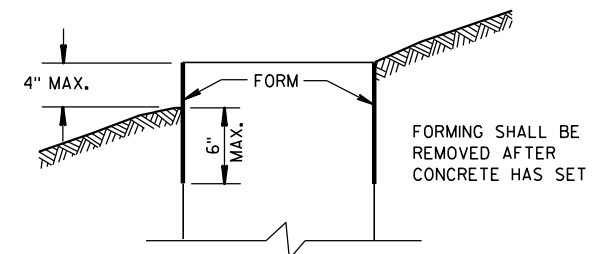
- ② (4) 1" DIA. X 5'-0" ANCHOR RODS  
 ③ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.  
 ④ (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



### CONCRETE BASE, TYPE 7 (FOR 40' LIGHT POLES)

- \* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.  
 \*\* FOR NONBREAKAWY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

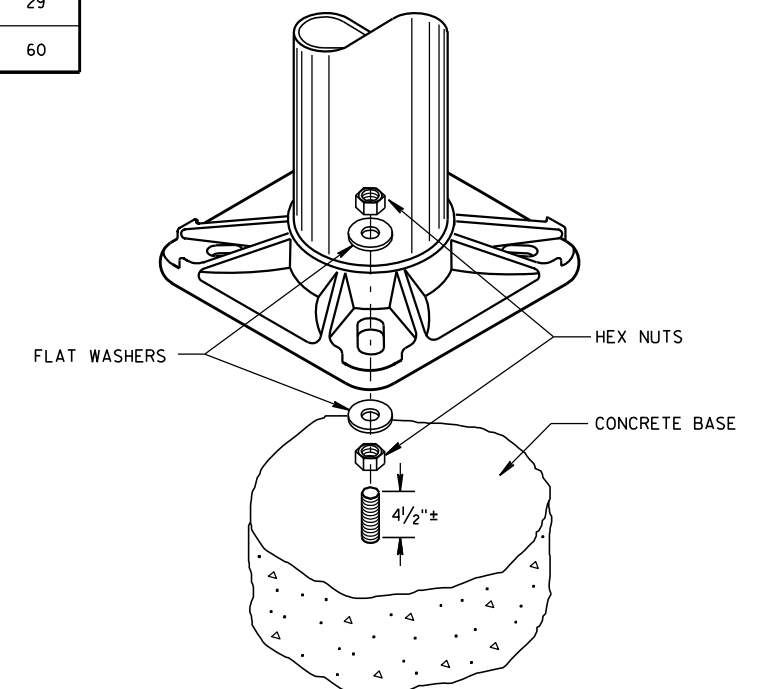
FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



### FORMING DETAIL

#### QUANTITY REQUIREMENTS

APPROX. CUBIC YARDS OF CONCRETE	0.8
LBS. OF HOOP BAR STEEL	29
LBS. OF VERTICAL BAR STEEL	60



### NON-BREAKAWY INSTALLATION (LEVELING NUT)

#### CONCRETE BASE, TYPE 7

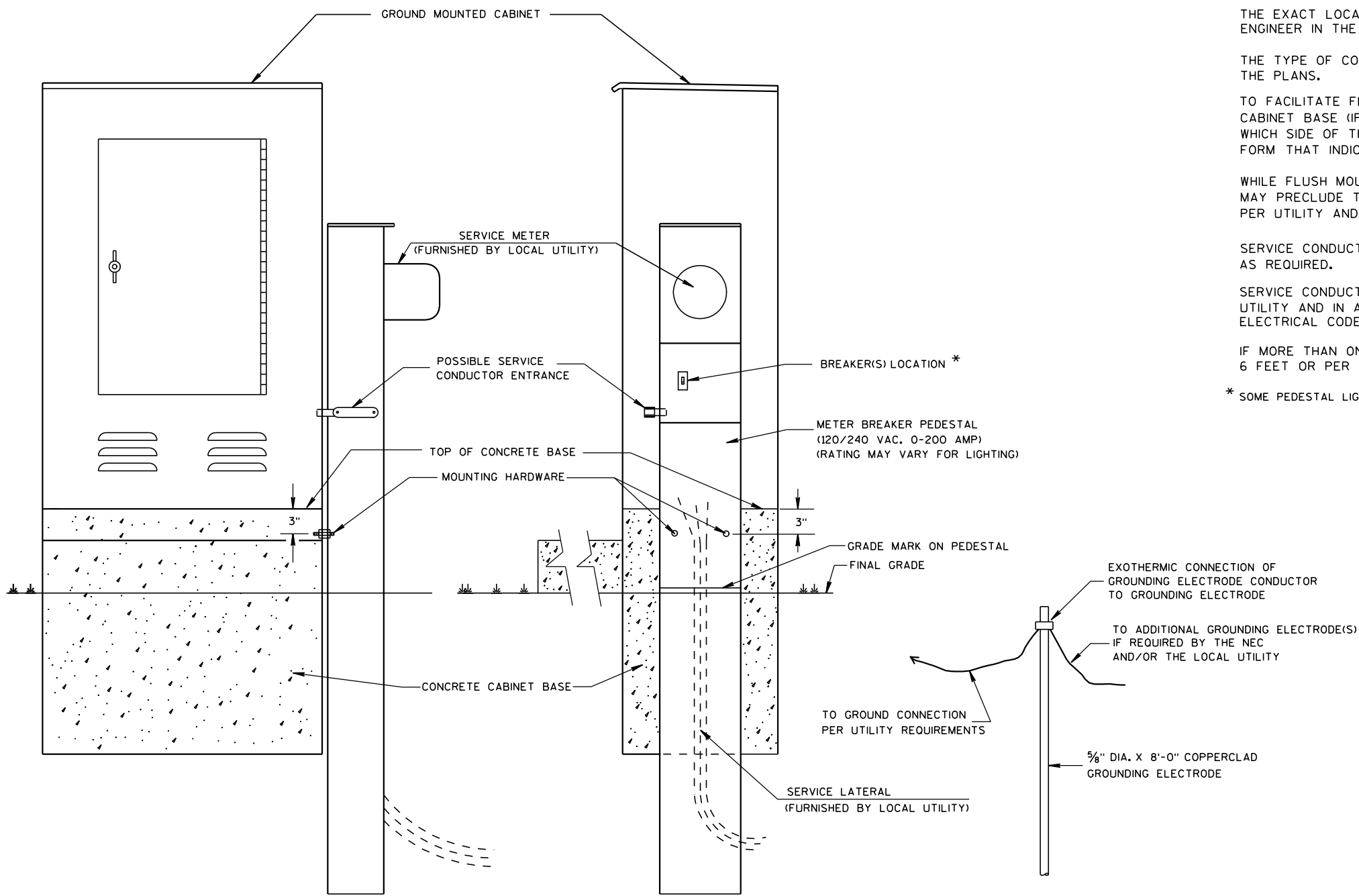
STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10  
 DATE

FHWA

/S/ Joanna L. Bush  
 STATE ELECTRICAL ENGINEER FOR HWYS



TYPICAL CABINET SERVICE INSTALLATION

**GENERAL NOTES**

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

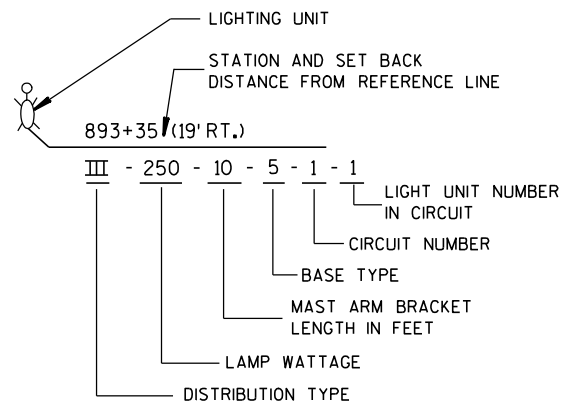
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

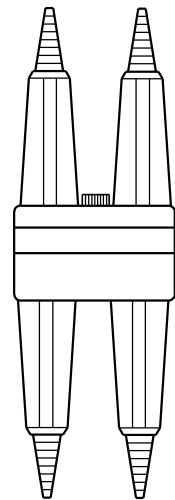
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

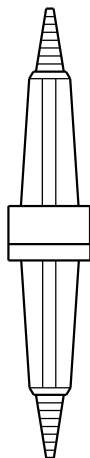
<b>CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/27/09 DATE	/S/ Joanna L. Bush STATE ELECTRICAL ENGINEER FOR HWYS
FHWA	



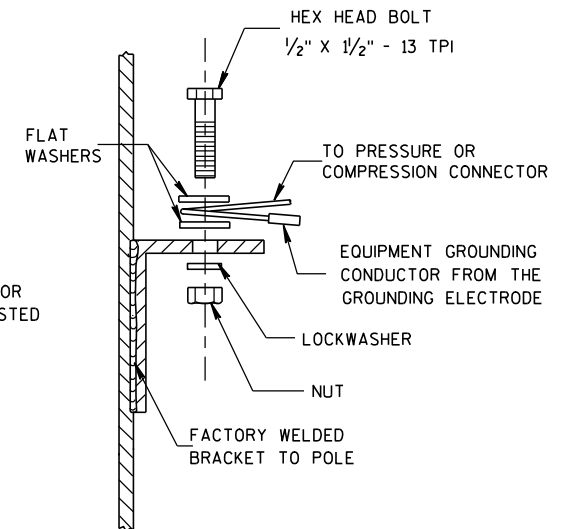
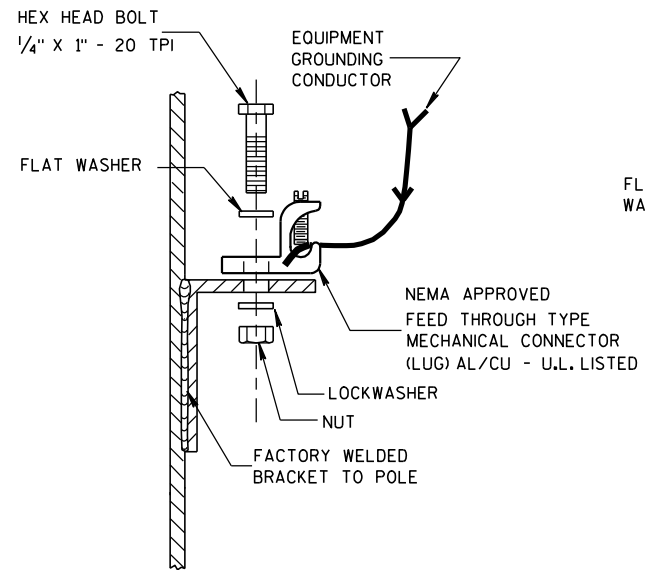
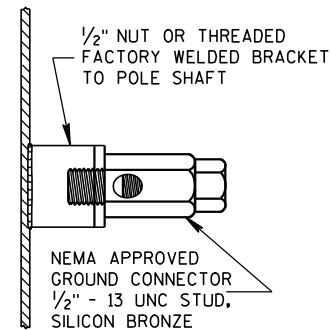
**LIGHTING UNIT CODE**  
(TYPICAL)



**DETAIL "A"**  
**BREAKAWAY**  
**DOUBLE POLE WITH**  
**WATERPROOF**  
**INSULATING BOOT**



**DETAIL "B"**  
**BREAKAWAY**  
**SINGLE POLE WITH**  
**WATERPROOF**  
**INSULATING BOOT**



**TYPICAL GROUNDING CONNECTIONS**  
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.  
THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.  
WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

UNGROUNDING CONDUCTORS TO LUMINAIRES SHALL BE #12 AWG, COPPER STRANDED, U.S.E. RATED, XLP INSULATED. SINGLE LIGHTING UNIT SHOWN

ADDITIONAL CONDUCTORS AND FUSE FOR TWIN LIGHTING UNITS

EQUIPMENT GROUNDING CONDUCTOR(S) TO LUMINAIRE(S)

APPROVED MECHANICAL TYPE CONNECTOR FOR EQUIPMENT GROUNDING CONDUCTORS. COMPRESSION, CRIMP OR WIRE NUT CONNECTORS ARE NOT ALLOWED.

TYPICAL GROUNDING CONNECTION - STAINLESS STEEL BOLT, NUT AND WASHERS 1/2" X 1/2" - 13 TPI

AWG #4 (MIN.) BARE EQUIPMENT GROUNDING CONDUCTOR. NOTE: THIS WIRE SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE TO THE EQUIPMENT GROUNDING CONDUCTOR SPLICE CONNECTOR.

INSULATED EQUIPMENT GROUNDING CONDUCTORS FROM SYSTEM RACEWAY

EXOTHERMICALLY WELDED TO GROUNDING ELECTRODE

CONDUCTORS TO LUMINAIRES SHALL BE #12 AWG, COPPER STRANDED, U.S.E. RATED, XLP INSULATED. SINGLE LIGHTING UNIT SHOWN

CIRCUIT TAGS, BOTH SIDES OF ALL FUSES (TYPICAL)

IN LINE SINGLE POLE FUSE ASSEMBLY. 600 VAC, WITH 5 AMP FNO FUSE (SEE DETAIL "B") TAPE AND VARNISH CRIMPED END FERRULES

HANDHOLE & COVER

18" PIGTAIL BETWEEN CONNECTOR AND FUSEHOLDER

APPROVED INSULATED MULTITAP TERMINAL BLOCK TYPE CONNECTORS. COMPRESSION, CRIMP OR WIRE NUT CONNECTORS ARE NOT ALLOWED.

INSULATED UNGROUNDED CIRCUIT CONDUCTORS FROM SYSTEM RACEWAY

ALTERNATE PHASE UNGROUNDED CIRCUIT CONDUCTOR PASSING THROUGH THIS POLE

TWIN LIGHTING UNITS REQUIRE INDIVIDUAL SETS OF UNGROUNDED CONDUCTORS AND FUSE ASSEMBLY.

AWG #4 (MIN.) BARE EQUIPMENT GROUNDING CONDUCTOR. NOTE: THIS WIRE SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE TO THE EQUIPMENT GROUNDING CONDUCTOR SPLICE CONNECTOR.

EQUIPMENT GROUNDING CONDUCTOR(S) TO LUMINAIRE(S)

TYPICAL GROUNDING CONNECTION - STAINLESS STEEL BOLT, NUT AND WASHERS 1/2" X 1/2" - 13 TPI

APPROVED MECHANICAL TYPE CONNECTOR FOR EQUIPMENT GROUNDING CONDUCTORS. COMPRESSION, CRIMP OR WIRE NUT CONNECTORS ARE NOT ALLOWED.

INSULATED EQUIPMENT GROUNDING CONDUCTORS FROM SYSTEM RACEWAY

EXOTHERMICALLY WELDED TO GROUNDING ELECTRODE

CIRCUIT TAGS, BOTH SIDES OF ALL FUSES (TYPICAL)

IN LINE FUSE ASSEMBLY TWO POLE, 600 VAC, WITH 5 AMP FNO FUSES (SEE DETAIL "A") TAPE AND VARNISH CRIMPED END FERRULES

HANDHOLE & COVER

18" PIGTAIL BETWEEN CONNECTORS AND FUSEHOLDERS

APPROVED INSULATED MULTITAP TERMINAL BLOCK TYPE CONNECTORS. COMPRESSION, CRIMP OR WIRE NUT CONNECTORS ARE NOT ALLOWED.

INSULATED UNGROUNDED CIRCUIT CONDUCTORS FROM SYSTEM RACEWAY

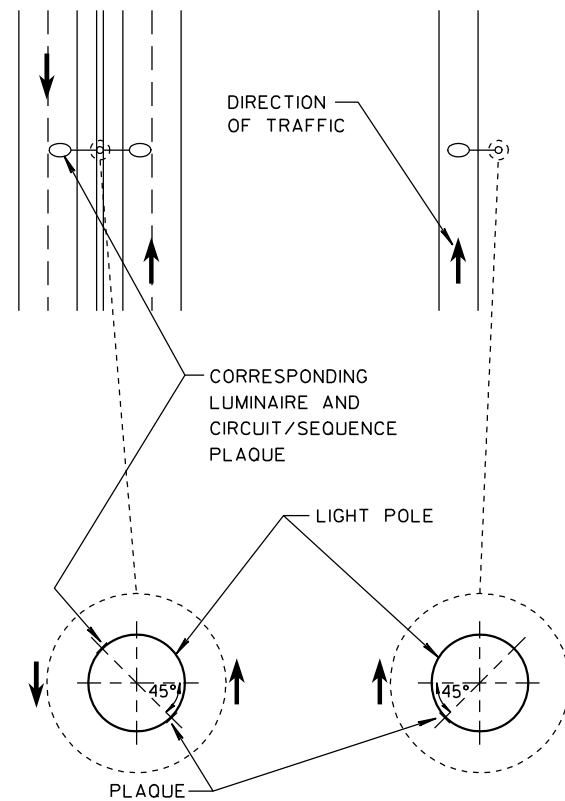
**3 WIRE - 120, 240 OR 480 VAC (UNGROUNDING CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR**

**2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR**

**NON-FREWAY LIGHTING UNIT POLE WIRING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
3/2/2011 /S/ Thomas J. Goring  
DATE STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA



**MEDIAN POLE      SINGLE ARM POLE**

**LOCATION OF LIGHT POLE  
CIRCUIT/SEQUENCE PLAQUE**

**GENERAL NOTES**

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS;  
FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

CHARACTERS - BLACK, SELF-ADHESIVE, SERIES "D", SIZE AS SHOWN

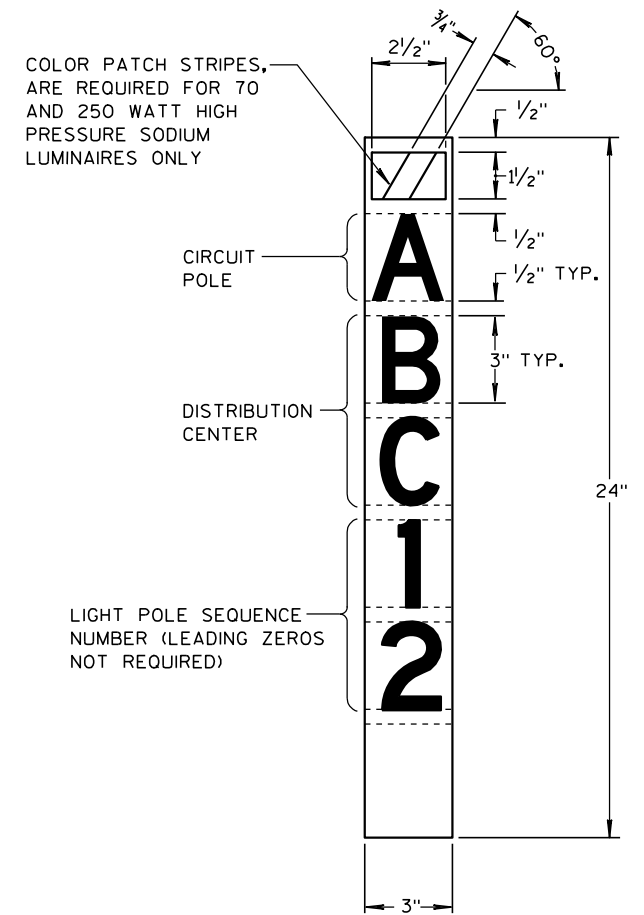
COLOR PATCHES - VARIOUS COLORS, SELF-ADHESIVE VINYL SHEETING

WITH THE APPROVAL OF THE ENGINEER, THE BASE MATERIAL MAY BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE SURFACE, IN CASES SUCH AS SMOOTH, CLEAN ALUMINUM POLES.

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.

COLOR PATCH CODE FOR HPS LUMINAIRES

- 1000 WATT - NO PATCH
- 400 WATT - ORANGE
- 310 WATT - BLUE
- 250 WATT - ORANGE WITH WHITE STRIPE
- 200 WATT - RED
- 150 WATT - GREEN
- 100 WATT - BROWN
- 70 WATT - BROWN WITH WHITE STRIPE



**LIGHT POLE CIRCUIT/SEQUENCE  
PLAQUE**

<b>IDENTIFICATION PLAQUES LIGHT POLES</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/25/2010 DATE	/S/ John Corbin STATE ELECTRICAL ENGINEER FOR HWYS
FHWA	

**GENERAL NOTES**

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

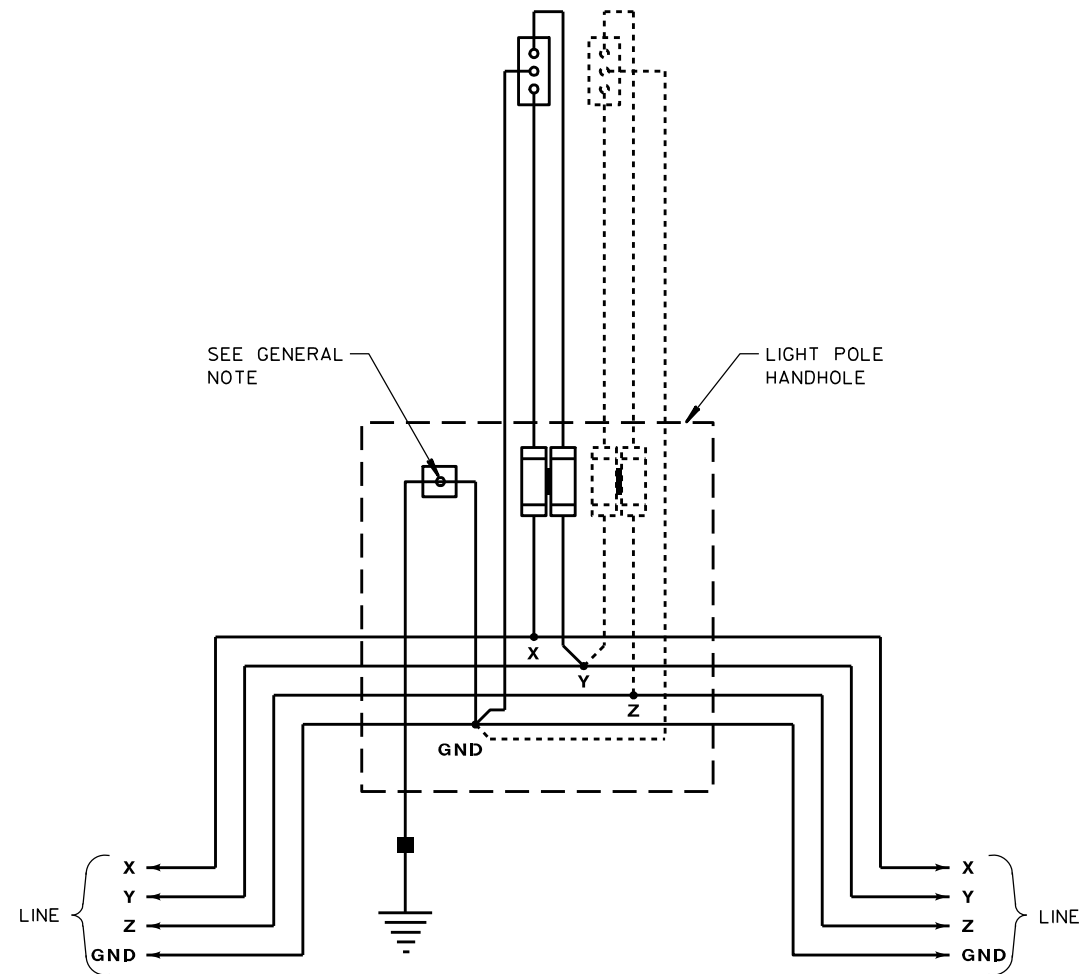
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

**HANDHOLE FUSE SCHEDULES**

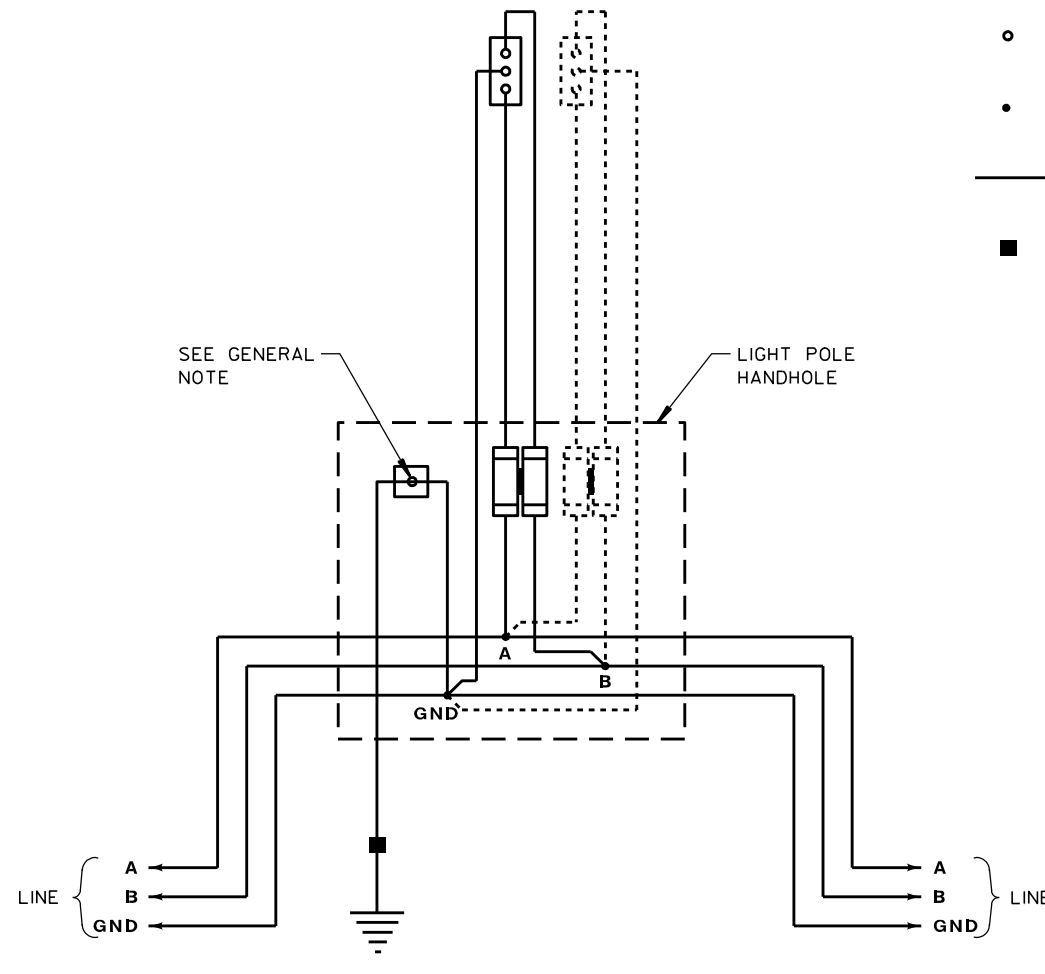
LINE VOLTAGE $\phi - \phi$	BALLAST WATTAGE	
	70-200 W	250-400 W
240 VAC	2P-5 A	2P-5 A
480 VAC	2P-5 A	2P-5 A

**LEGEND**

- A . B . X . Y . Z UNGROUNDED CIRCUIT CONDUCTORS
- N GROUNDED CIRCUIT CONDUCTORS
- GND EQUIPMENT GROUNDING CONDUCTOR
- P POLE (ELECTRICAL CIRCUIT)
- $\phi$  PHASE (ELECTRICAL CURRENT)
- [Symbol: Box with circle and line] HANDHOLE GROUND LUG
- [Symbol: Single pole fuse] SINGLE-POLE (1P) FUSE ASSEMBLY
- [Symbol: Two pole fuse] TWO-POLE (2P) FUSE ASSEMBLY
- [Symbol: Unfused luminaire] UNFUSED LUMINAIRE
- [Symbol: Grounding electrode symbol] EQUIPMENT GROUNDING ELECTRODE
- [Symbol: Terminal circle] TERMINAL
- [Symbol: Splice dot] SPLICE
- [Symbol: Solid line] CONDUCTOR
- [Symbol: Exothermic weld square] EXOTHERMIC WELD



**TYPICAL WIRING DIAGRAM**  
**PHASE-TO-PHASE DELTA SYSTEM**  
**3- $\phi$  480VAC 3 WIRE**



**TYPICAL WIRING DIAGRAM**  
**UNGROUNDING SYSTEM**  
**1- $\phi$  120-120VAC 2 WIRE**

**ELECTRICAL DETAILS**  
**GROUND MOUNT LIGHT POLES**  
**PHASE-TO-PHASE SYSTEMS**


STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION


APPROVED  
 10/25/2010 /S/ John Corbin  
 DATE STATE ELECTRICAL ENGINEER FOR HWYS  
 FHWA




TWO-LANE ROADWAY

**SYMBOLS**

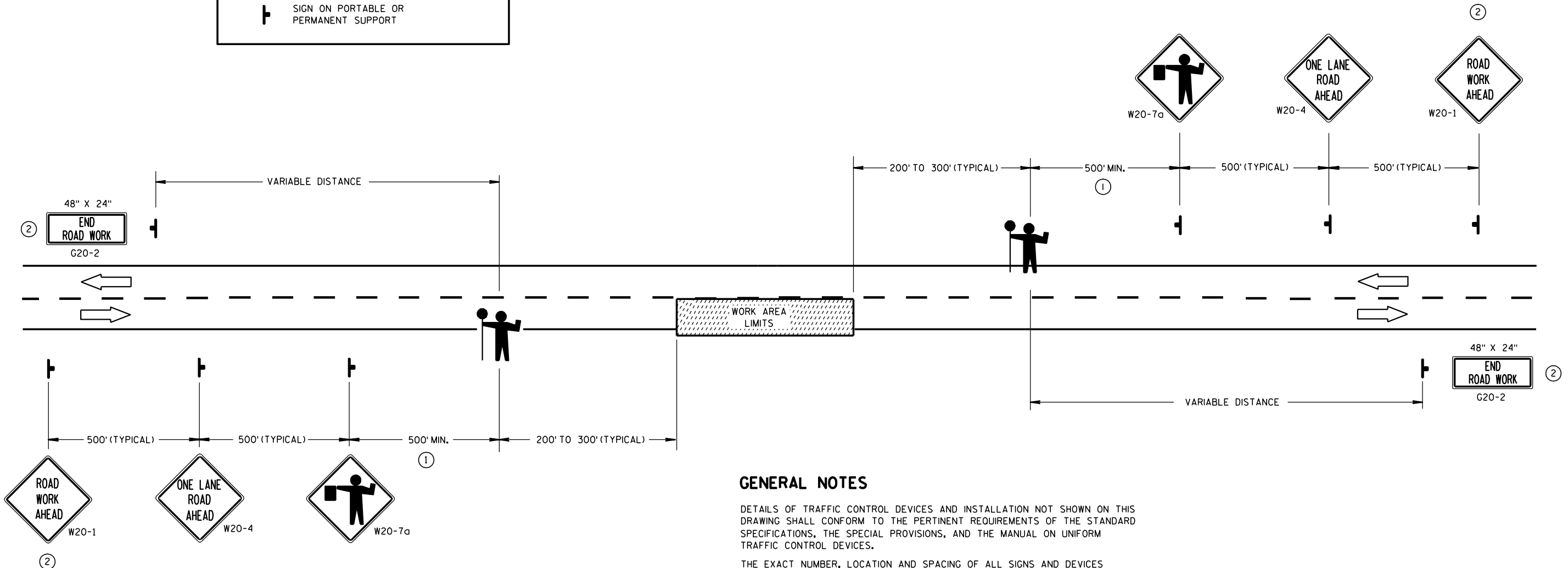
 WORK AREA

 FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

 SIGN ON PORTABLE OR PERMANENT SUPPORT



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



**GENERAL NOTES**

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

**TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
9/5/06 /S/ Thomas N. Notbohm  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA

**LEGEND**

- ⊣ POST WITH ATTACHED SIGN
- Ⓞ POST WITH ATTACHED SIGN IN DRUM
- ⚡ DRUM WITH WARNING LIGHT (TYPE C)
- DRUM
- ➔ ARROW BOARD
- 8' TYPE III BARRICADE
- \*-x-\* REMOVING PAVEMENT MARKING
- ➔ DIRECTION OF TRAFFIC

**GENERAL NOTES :**

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

- ① CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

**GENERAL NOTES CONTINUED:**

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

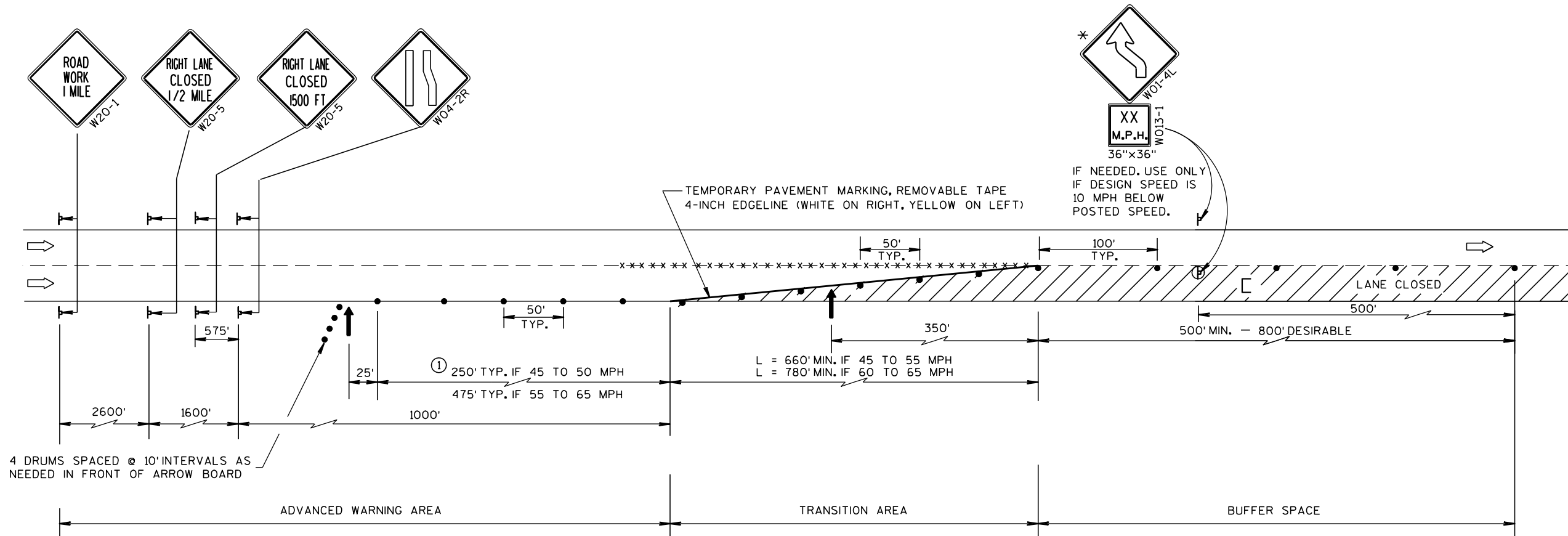
IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- \* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

6

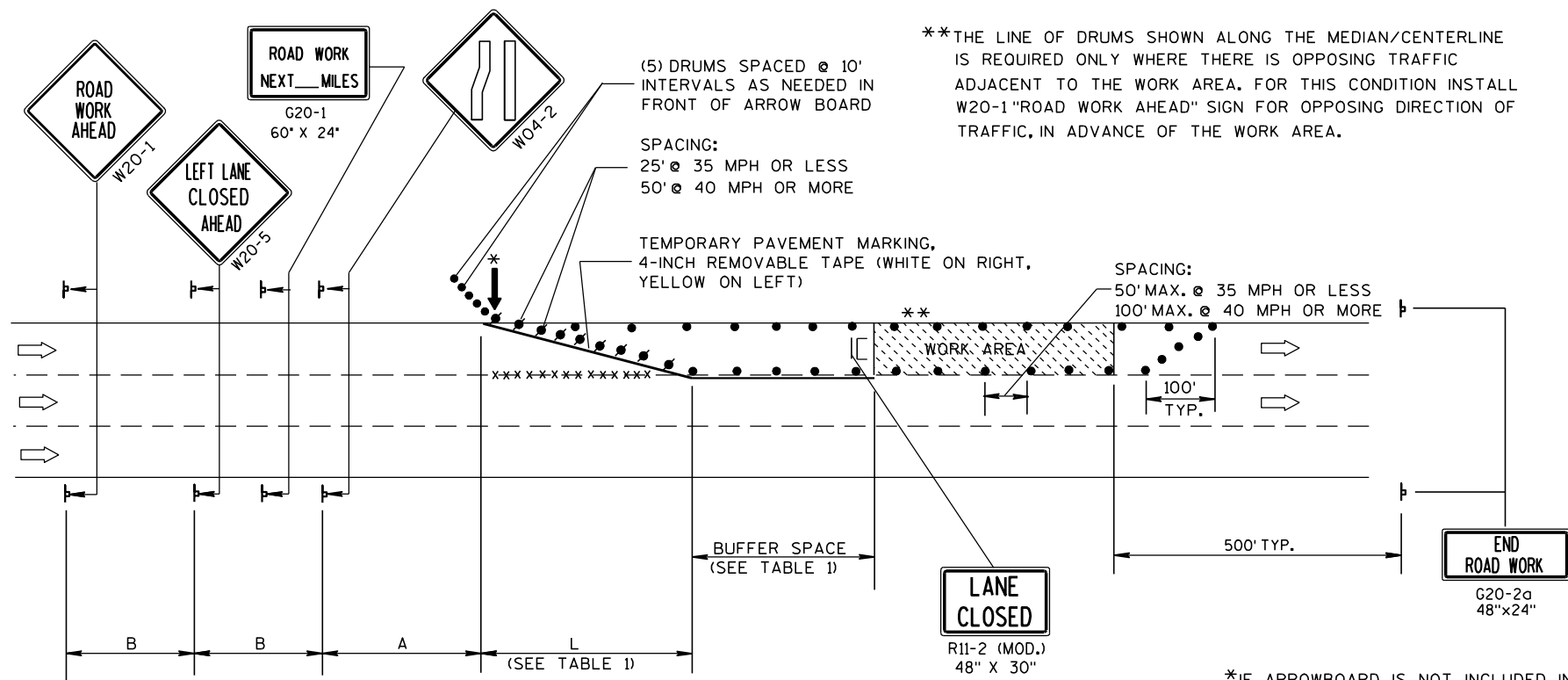
6



<b>TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8-7-95 DATE	/S/ Chester J. Spang DIRECTOR, OFFICE OF TRAFFIC
FHWA	

S.D.D. 15 D 12-2

S.D.D. 15 D 12-2



B=400' AT 25-30 MPH  
700' AT 35-40 MPH  
1000' AT 45-55 MPH

A=200' AT 25-30 MPH  
350' AT 35-40 MPH  
500' AT 45-55 MPH

TABLE 1  
TAPER AND BUFFER SPACE  
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':  
 L = WS AT 45 MPH OR GREATER  
 $L = \frac{WS^2}{60}$  AT 40 MPH OR LESS  
 L = TAPER LENGTH IN FEET  
 S = NON-CONSTRUCTION SPEED LIMIT (MPH)  
 W = WIDTH OF LANE CLOSURE

\*\*THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

(5) DRUMS SPACED @ 10' INTERVALS AS NEEDED IN FRONT OF ARROW BOARD

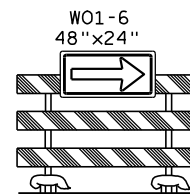
SPACING:  
25' @ 35 MPH OR LESS  
50' @ 40 MPH OR MORE

TEMPORARY PAVEMENT MARKING, 4-INCH REMOVABLE TAPE (WHITE ON RIGHT, YELLOW ON LEFT)

SPACING:  
50' MAX. @ 35 MPH OR LESS  
100' MAX. @ 40 MPH OR MORE

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

\*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.



LEGEND

- /● DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- ⌋ POST MOUNTED SIGN
- ↑ ARROW BOARD
- IC/C TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHTS, TYPE A (FLASHING) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW
- x x x x REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

THE SPACING BETWEEN 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.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

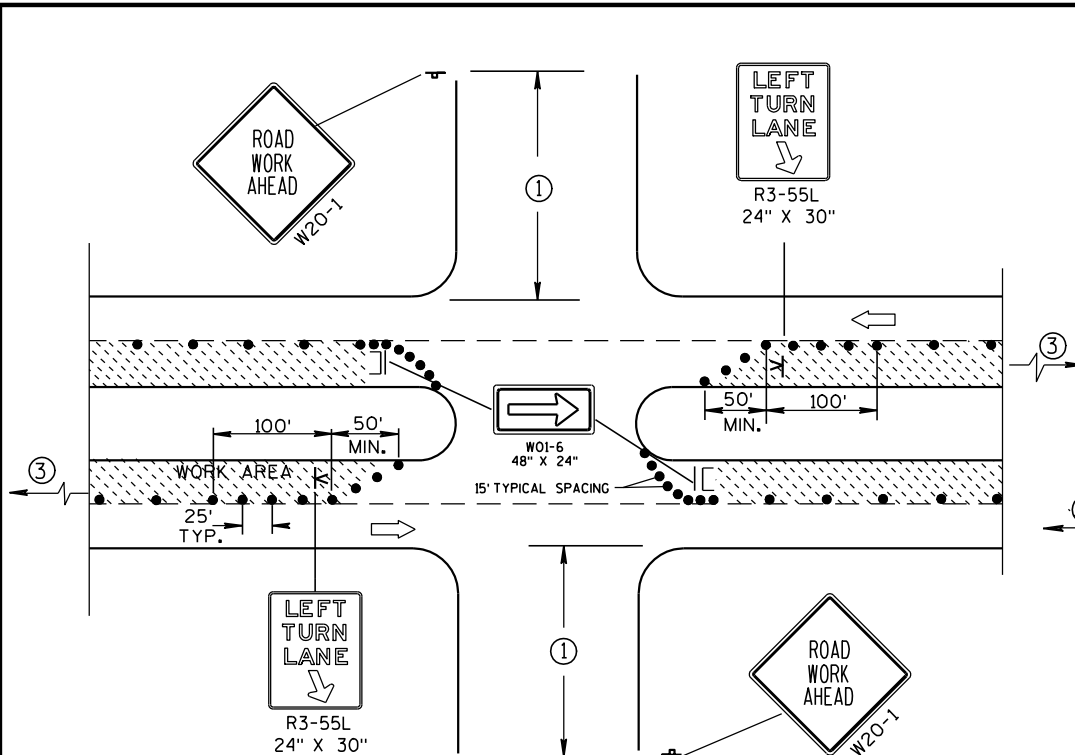
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL,  
SINGLE LANE CLOSURE,  
NON-FREEWAY/EXPRESSWAY

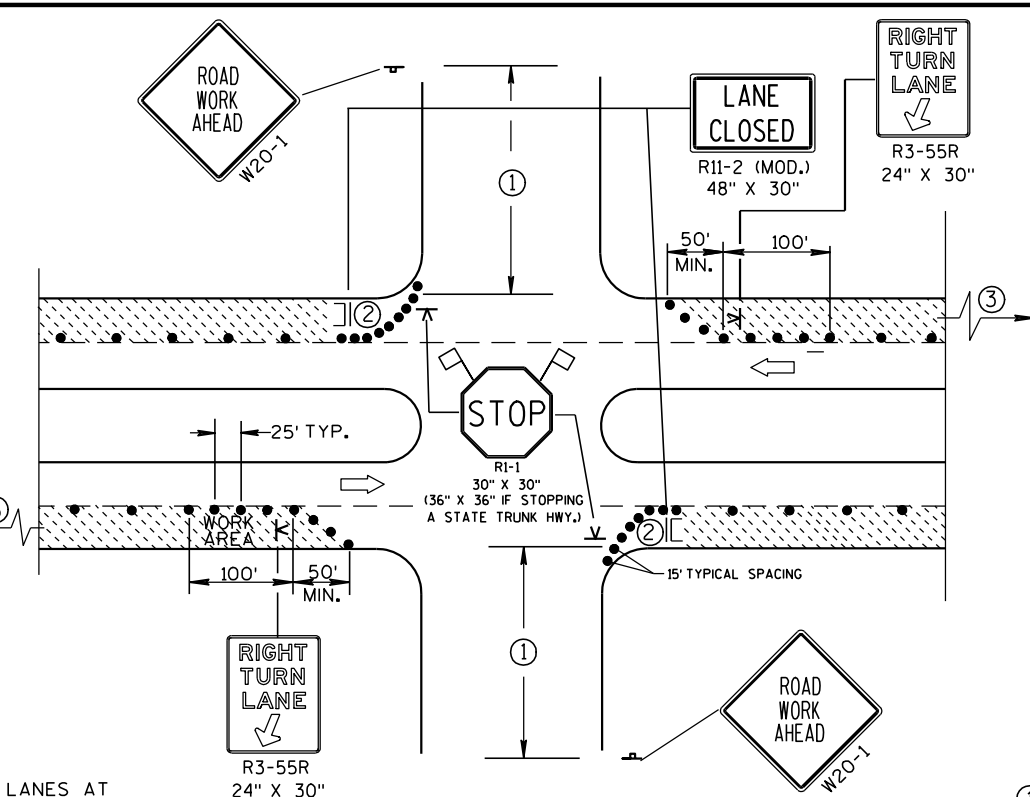
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
5/23/00 /S/ Chester J. Spang  
DATE CHIEF SIGNS AND MARKING ENGINEER  
FHWA



**DETAIL A**  
**FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING**

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



**DETAIL B**  
**FOR RIGHT LANE CLOSURE AT INTERSECTION**

**GENERAL NOTES**

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

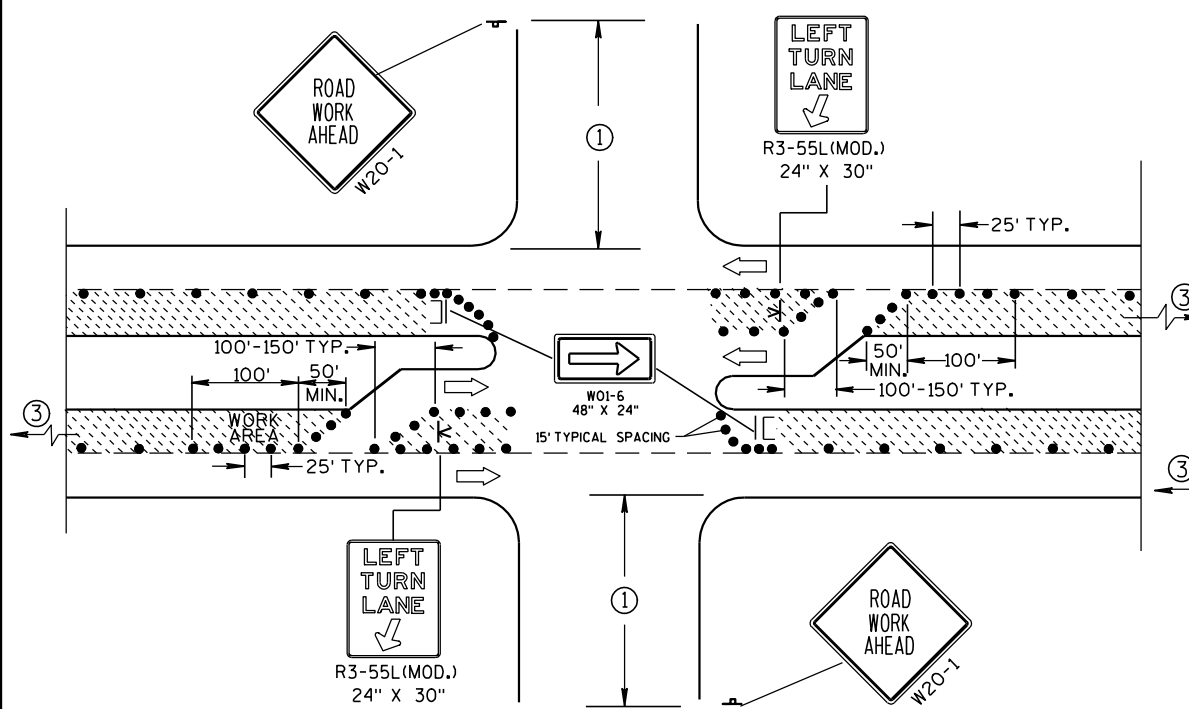
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

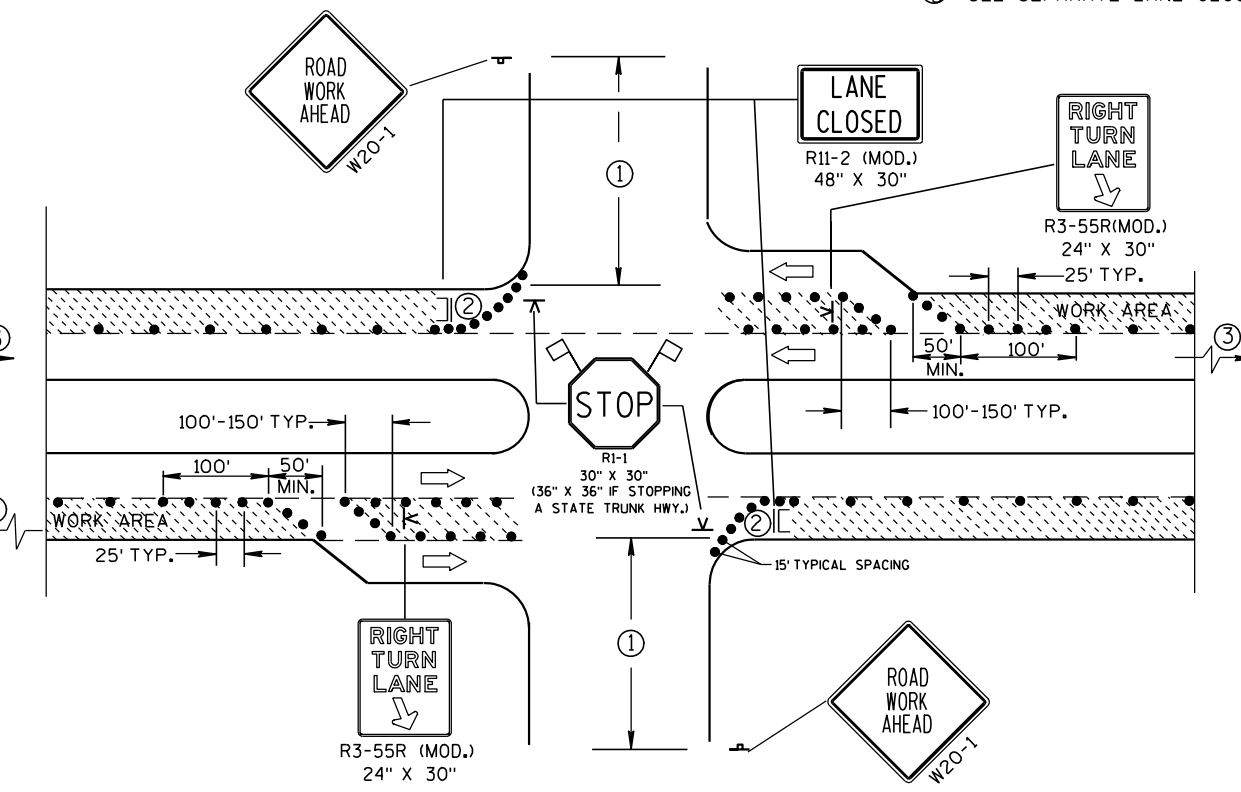
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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



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



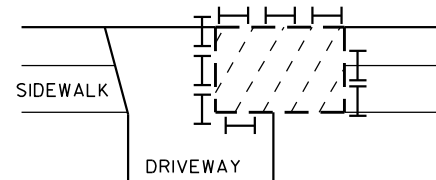
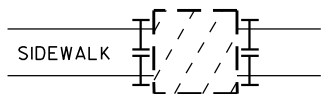
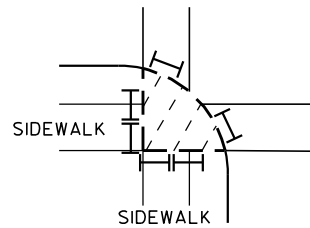
**DETAIL D**  
**FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)**

**LEGEND**

- DRUM
- ⊣ POST MOUNTED SIGN
- K SIGN ON PORTABLE SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⌈ TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHT, TYPE A (FLASHING) WITH SIGN
- ➡ DIRECTION OF TRAFFIC FLOW
- 🚩 FLAGS, 16" X 16" MIN., ORANGE

<b>TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/23/00 DATE	/S/ Chester J. Spang CHIEF SIGNS AND MARKING ENGINEER
FHWA	

WARNING OF LOCALIZED SIDEWALK WORK AREAS

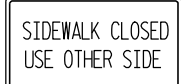
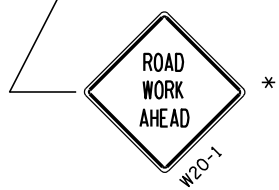


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200' TYP.

IF WORK AREA ENCROACHES INTO THE ROADWAY, SEE OTHER TRAFFIC CONTROL DETAILS FOR ADDITIONAL TRAFFIC CONTROL



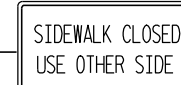
R5-8a  
24"x12"  
2 1/2" SERIES B  
BLACK LETTERS  
ON REFLECTIVE  
WHITE BACKGROUND



R5-8  
24"x12"  
3" SERIES C  
BLACK LETTERS  
ON REFLECTIVE  
WHITE BACKGROUND



R5-8  
24"x12"  
3" SERIES C  
BLACK LETTERS  
ON REFLECTIVE  
WHITE BACKGROUND



R5-8a  
24"x12"  
2 1/2" SERIES B  
BLACK LETTERS  
ON REFLECTIVE  
WHITE BACKGROUND

LEGEND

- POST MOUNTED SIGN
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS, IF APPROVED BY DISTRICT TRAFFIC UNIT.

THE EXACT LOCATION AND PLACEMENT OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

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

\* "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

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

TRAFFIC CONTROL, SIDEWALK CLOSURE

TRAFFIC CONTROL, SIDEWALK CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
5/23/2000 /S/ Chester J. Spang  
DATE CHIEF SIGNS AND MARKING ENGINEER  
FHWA

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S.D.D. 15 D 30-1



## *Wisconsin Department of Transportation*

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