

City Of Canton MARKET AVENUE SOUTH STREETScape

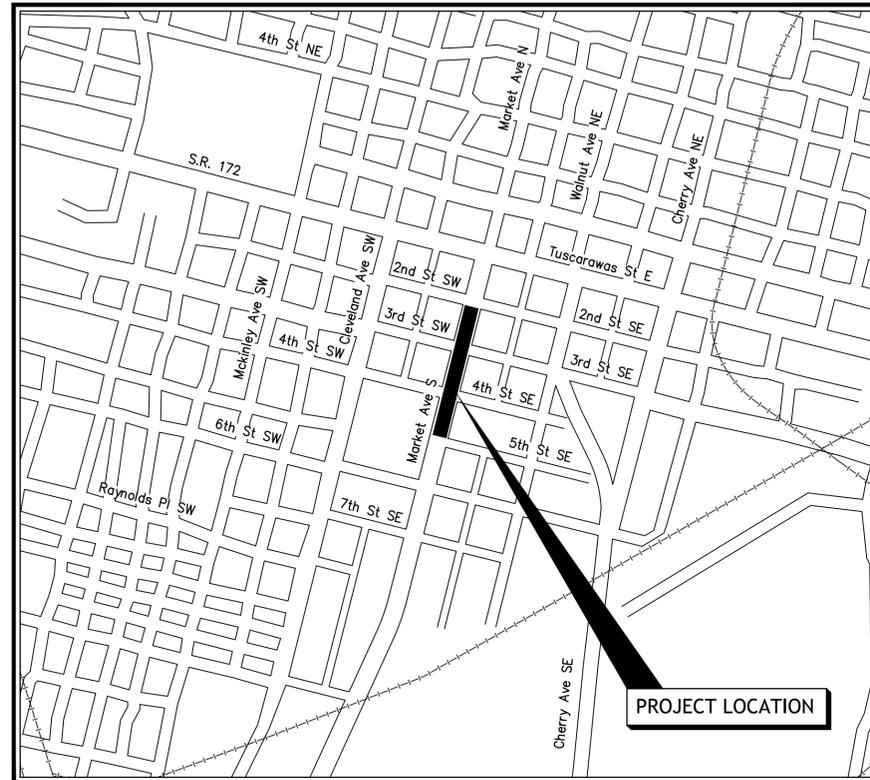
STARK COUNTY, OHIO
City Of Canton - GP 1319
ISSUED: 2/14/2020

SITE PLAN LEGEND

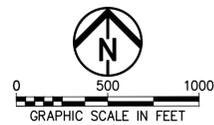
EXISTING	PROPOSED	
---	--- --- ---	CENTERLINE/BASELINE CONSTRUCTION
---	---	PROPERTY LINE
--- Ex R/W ---	--- R/W ---	RIGHT OF WAY
---	---	EASEMENT
---	---TMP---	TEMPORARY RIGHT OF WAY
---1000---	---1000---	CONTOUR
---	---	SWALE (EDGE OF WATER)
---X---X---X---	---X---X---X---	FENCELINE
---	---	GUARDRAIL
---	---	RAILROAD TRACKS
---ST---X" STM---ST---	---ST---X" STM---ST---	STORM SEWER
---SA---X" SAN---SA---	---SA---X" SAN---SA---	SANITARY SEWER
---FM---X" SAN---FM---	---FM---X" SAN---FM---	SANITARY SEWER FORCEMAIN
---W---X" WTR---W---	---W---X" WTR---W---	WATER LINE
---G---X" GAS---G---	---G---X" GAS---G---	GAS LINE
---COM---	---COM---	GENERIC COMMUNICATIONS LINE
---CTV---	---CTV---	CABLE TV LINE
---E---	---E---	ELECTRIC LINE
---FO---	---FO---	FIBER OPTIC LINE
---STE---	---STE---	STEAM LINE
---T---	---T---	TELEPHONE LINE (UNDERGROUND)
---TR---	---TR---	TRAFFIC SIGNAL CONDUIT
---TIC---	---TIC---	TRAFFIC INTERCONNECT CONDUIT
		STORM MANHOLES, CATCH BASINS, CURB INLETS
		SANITARY MANHOLE, CLEANOUT, MARKER, VENT PIPE, SEPTIC TANK LID
		FIRE HYDRANT, HYDRANT ASSEMBLY, WATER VALVE, METER, SERVICE BOX
		GAS METER, VALVE, MANHOLE, MARKER, VENT PIPE
		GROUND MOUNTED TRANSFORMER, ELECTRIC PULL BOX, METER, MANHOLE, VAULT, LIGHTING PULL BOX
		SIGNAL POLE, TRAFFIC PULL BOX, MANHOLE, CONTROLLER CABINET, PAD MOUNTED CABINET
		CABLE TV BOX, TELEPHONE BOX, AIR CONDITIONER, SATELLITE DISH, CELLPHONE TOWER, GROUND LITE
		MONITORING WELL, GAS WELL, OIL WELL, CISTERN, SOIL BORING
		TELEPHONE BOX, TELEPHONE MANHOLE, UNKNOWN UTILITY BOX, UNKNOWN MANHOLE
		POWER POLE, TELEPHONE POLE, LIGHT POLE, COMBINATION POLES, GENERIC/GUY POLE, GUY WIRE
		STREET SIGNS, STREE NAME SIGN, POST, MAILBOX, FLAG POLE, FLAG, PARKING METER
		DECIDUOUS TREE, EVERGREEN, SHRUB, STUMP, ROCK, TREE REMOVED/PRUNED
		MONUMENT BOX, IRON PIN/PIPE

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THESE PLAN BID DOCUMENTS SHALL GOVERN THIS IMPROVEMENT. FOR PURPOSES OF THIS PLAN, REFERENCES TO DIRECTOR OR ENGINEER SHALL BE CONSTRUED TO MEAN THE CITY ENGINEER AND/OR HIS REPRESENTATIVES.



LOCATION MAP



Know what's below.
Call before you dig.

ODOT STANDARD DRAWING INDEX

STD. DWG. NO.	DATE	STD. DWG. NO.	DATE
BP-3.1	1/17/2020	MT-97.10	4/19/2019
TC-22.20	1/17/2014	MT-97.11	1/20/2017
TC-42.20	10/18/2013	MT-110.10	7/19/2013
TC-52.10	10/18/2013		
TC-52.20	7/20/2018		
TC-71.10	1/19/2018		

CITY OF CANTON STANDARD DRAWING INDEX

STD. DWG. NO.	DATE	STD. DWG. NO.	DATE	STD. DWG. NO.	DATE
1	03/2012	23	03/2012	33	01/2015
4	03/2012	27	8/15/17	34	11/20/19
10	01/2012	28	8/15/17	40	2/26/19
12	12/8/2015	29	11/20/19	41	2/26/19
13	04/2015	30	11/20/19	42	2/26/19
18	01/2012	31	11/20/19	43	12/2017
19	6/10/2013	32	11/20/19	61-65	7/6/18

INDEX OF DRAWINGS

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GRADING AND LAYOUT PLANS	11-13
INTERSECTION DETAILS	14-15
TRAFFIC SIGNAL NOTES, PLANS, AND DETAILS	16-20
LIGHTING NOTES, PLANS AND DETAILS	21-25
PAVEMENT MARKING & SIGNAGE PLANS	26-27
STREETSCAPE PLANS AND DETAILS	28-31

APPROVALS:

City Of Canton

MAYOR _____

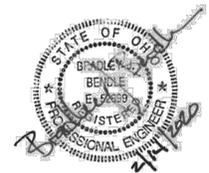
Date _____

CITY ENGINEER _____

Date _____

PLANS PREPARED AND RECOMMENDED BY:

Environmental Design Group
AKRON / CLEVELAND / COLUMBUS
HQ 450 GRANT ST., AKRON, OH 44311
P 330.375.1390 / TF 800.835.1390
W ENVDESIGNGROUP.COM



REVISED:

SET NO. _____

PROJ. NUMBER	19-00432-010	SHEET	
DESIGNED BY:	SAC / RMS	TITLE SHEET	1 of 31
DRAWN BY:	MSD / RMS		
FILE NO.	ZTITL 19-00432-010.dwg		

CNPT-B
PK NAIL IN SIDEWALK
STA. 992+51.60, 558.10' RT
N 413477.27, E 2280389.47
EL. 1034.27
APPROX. 12' EAST OF UTIL POLE
© NORTHEAST CORNER OF 4TH ST
AND WALNUT AVE SE.

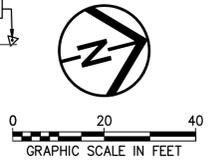
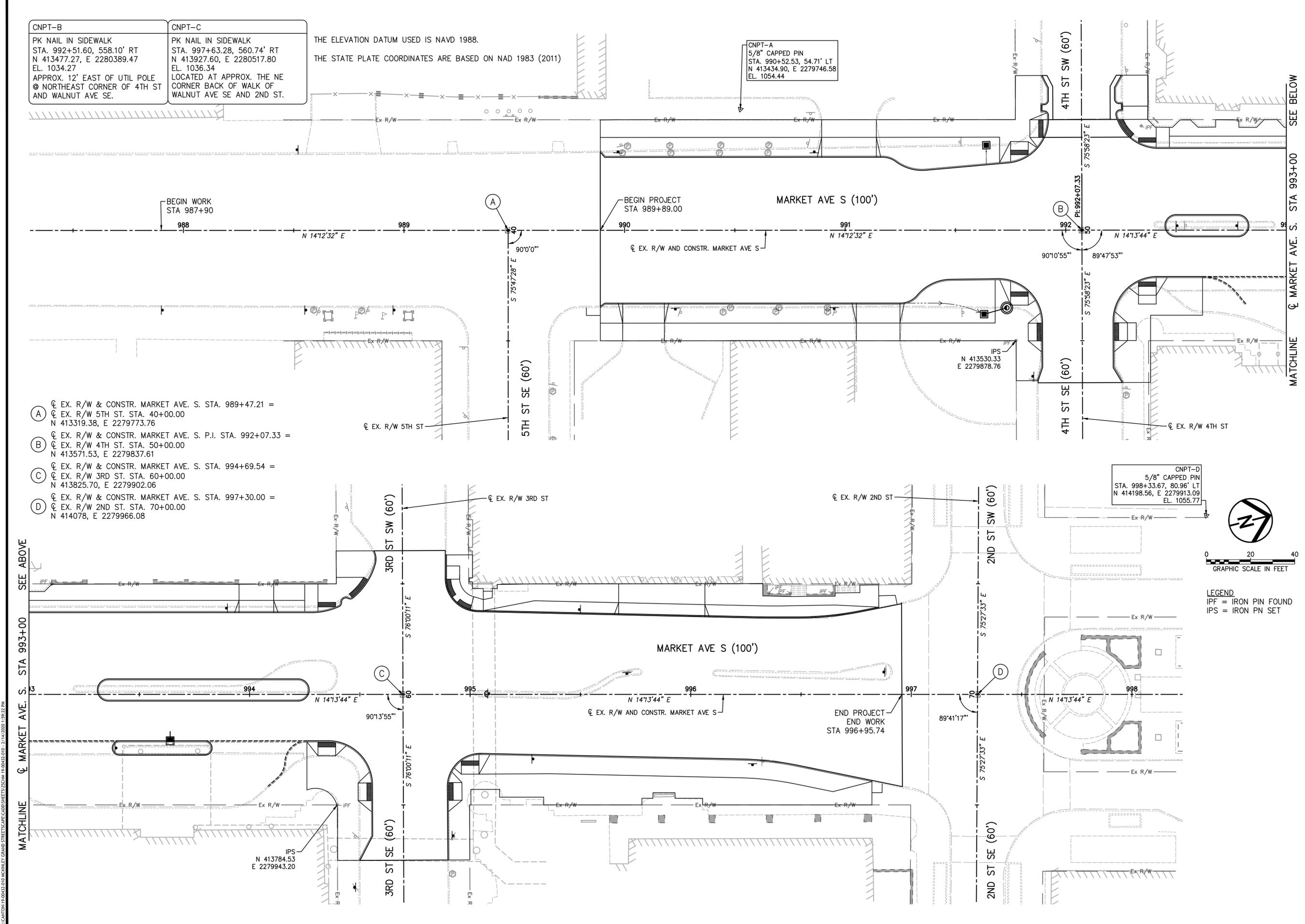
CNPT-C
PK NAIL IN SIDEWALK
STA. 997+63.28, 560.74' RT
N 413927.60, E 2280517.80
EL. 1036.34
LOCATED AT APPROX. THE NE
CORNER BACK OF WALK OF
WALNUT AVE SE AND 2ND ST.

THE ELEVATION DATUM USED IS NAVD 1988.
THE STATE PLATE COORDINATES ARE BASED ON NAD 1983 (2011)

CNPT-A
5/8" CAPPED PIN
STA. 990+52.53, 54.71' LT
N 413434.90, E 2279746.58
EL. 1054.44

CNPT-D
5/8" CAPPED PIN
STA. 998+33.67, 80.96' LT
N 414198.56, E 2279913.09
EL. 1055.77

- (A) EX. R/W & CONSTR. MARKET AVE. S. STA. 989+47.21 =
EX. R/W 5TH ST. STA. 40+00.00
N 413319.38, E 2279773.76
- (B) EX. R/W & CONSTR. MARKET AVE. S. P.I. STA. 992+07.33 =
EX. R/W 4TH ST. STA. 50+00.00
N 413571.53, E 2279837.61
- (C) EX. R/W & CONSTR. MARKET AVE. S. STA. 994+69.54 =
EX. R/W 3RD ST. STA. 60+00.00
N 413825.70, E 2279902.06
- (D) EX. R/W & CONSTR. MARKET AVE. S. STA. 997+30.00 =
EX. R/W 2ND ST. STA. 70+00.00
N 414078, E 2279966.08



LEGEND
IPF = IRON PIN FOUND
IPS = IRON PN SET

Environmental Design Group
AKRON / CLEVELAND / COLUMBUS
1450 GRANT ST., AKRON, OH 44317
P. 330.575.1590 / F. 800.835.1590
W. ENVDESIGNGROUP.COM

811 Know what's below. Call before you dig.

**MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON**



ISSUED FOR BID

DATE: _____

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT NO.: 19-00432-010
DRAWN BY: RMS
CHECKED BY: SAC
DATE ISSUED: 2020/02/14

SCHEMATIC PLAN

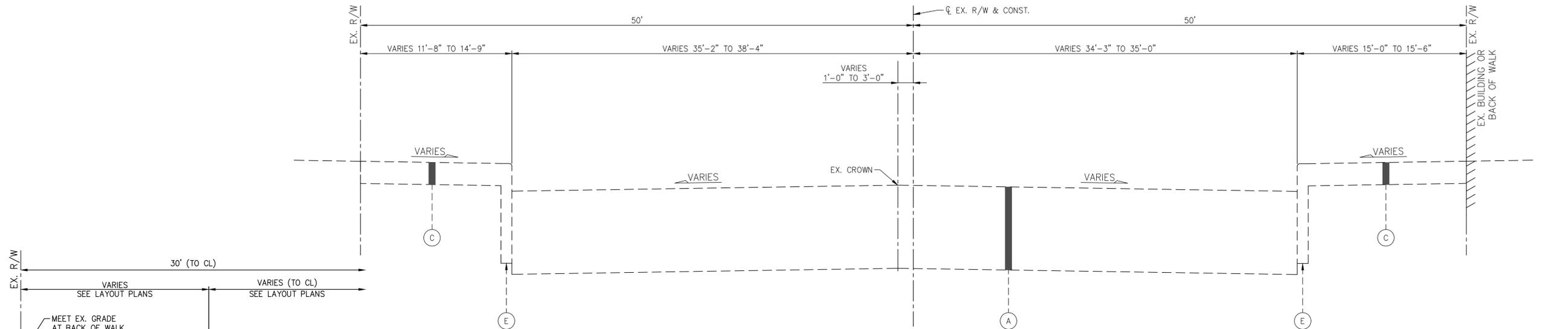
TYPICAL SECTION LEGEND

- ① ITEM 202 - PAVEMENT REMOVED
- ② ITEM 203 - EXCAVATION AND EMBANKMENT (SEE NOTE 5)
- ③ ITEM 204 - SUBGRADE COMPACTION
- ④ ITEM 254 - PAVEMENT PLANING, 2"
- ⑤ ITEM 301 - 4" ASPHALT CONCRETE BASE COURSE
- ⑥ ITEM 304 - 4" AGGREGATE BASE
- ⑦ ITEM 304 - 6" AGGREGATE BASE
- ⑧ ITEM 304 - FILL VOID TO BOTTOM OF EXISTING PAVEMENT SUBGRADE WITH AGGREGATE BASE, THICKNESS VARIES
- ⑨ ITEM 407 - TACK COAT, AS PER PLAN
- ⑩ ITEM 408 - PRIME COAT (0.4 GAL/SY)
- ⑪ ITEM 424 - 3/4" FINE GRADED POLYMER ASPHALT CONCRETE SURFACE COURSE, TYPE A
- ⑫ ITEM 448 - 1 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
- ⑬ ITEM 605 - 4" PIPE UNDERDRAIN (SEE STD. DWG. #32)
- ⑭ ITEM 608 - 5" CONCRETE WALK (SEE STD. DWG. #29)
- ⑮ ITEM 609 - CONCRETE CURB (SEE STD. DWG. #30)
- ⑯ ITEM 652 - 4" SCREENED TOPSOIL
- ⑰ ITEM 659 - SEEDING AND MULCHING
- ⑱ ITEM SPEC - NOT USED
- ⑲ ITEM SPEC - CITY OF CANTON STREETSCAPE (SEE STD. DWG. #40)
- ⑳ ITEM SPEC - PAVEMENT REPAIR (SEE STD. DWG. #31)

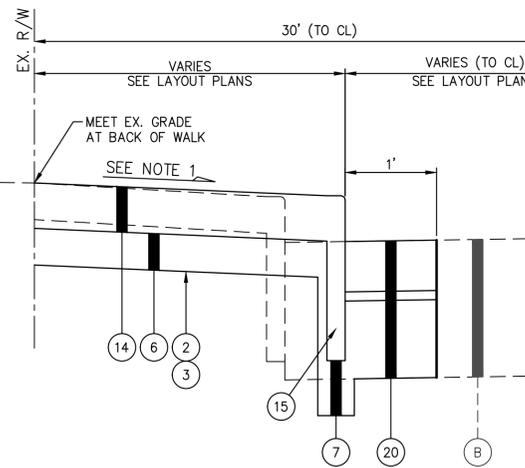
- Ⓐ EXISTING PAVEMENT, UNKNOWN THICKNESS AND COMPOSITION (SEE NOTE 4)
- Ⓑ EXISTING BRICK PAVERS, UNKNOWN THICKNESS AND COMPOSITION
- Ⓒ EXISTING CONCRETE WALK, UNKNOWN THICKNESS
- Ⓓ EXISTING CONCRETE CURB
- Ⓔ EXISTING CONCRETE CURB, INTEGRAL WITH WALK

NOTES:

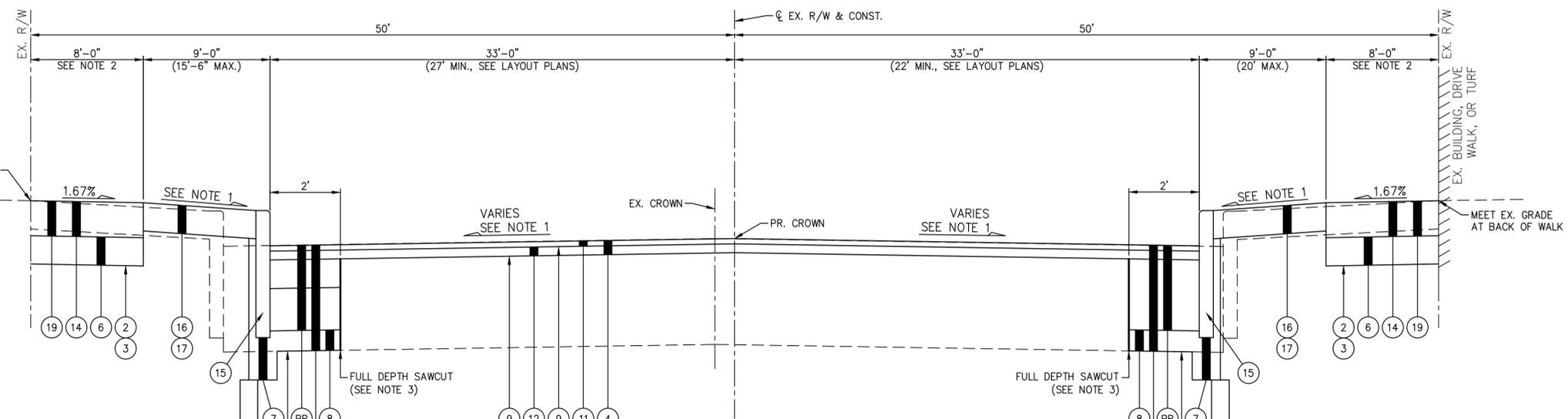
1. CROSS SLOPE VARIES. SEE LAYOUT PLANS, SHEETS 11-13, FOR GRADING AND ELEVATIONS.
2. PAVEMENT BUILDUP IN THIS AREA SHALL CONSIST OF STANDARD CONCRETE WALK AND CITY OF CANTON STREETSCAPE BRICK PAVERS. SEE CANTON STD. DWG NO. 40 FOR BUILDUP OF PAVER SECTION AND LAYOUT PLANS FOR LOCATIONS.
3. COST FOR SAWCUTTING SHALL BE INCLUDED IN THE BID PRICE FOR PAVEMENT REMOVAL.
4. PER CITY RECORDS, EXISTING PAVEMENT BUILDUP CONSISTS OF THE FOLLOWING:
 5TH ST TO 4TH ST
 ASPHALT OF UNKNOWN THICKNESS
 6" CONCRETE
 4TH ST TO 3RD ST
 ASPHALT OF UNKNOWN THICKNESS
 BRICK PAVEMENT
 6" CONCRETE
 3RD ST TO 2ND ST
 ASPHALT OF UNKNOWN THICKNESS
 BRICK PAVEMENT
 8" GRAVEL
 CONTRACTOR SHALL VERIFY PAVEMENT BUILDUP PRIOR TO MOBILIZING EQUIPMENT NECESSARY TO COMPLETE THE WORK INCLUDED IN THIS PROJECT.
5. COST FOR EXCAVATION AND EMBANKMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE OTHER ITEMS NECESSITATING THE WORK.



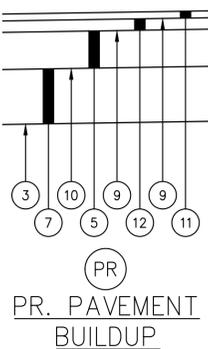
EXISTING SECTION - MARKET AVE S
5th ST TO 4th ST
NOT TO SCALE



4th ST. SW - PR. CURB & WALK
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)



PROPOSED SECTION - MARKET AVE S
5th ST TO 4th ST
NOT TO SCALE



MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON



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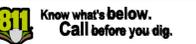
TYPICAL SECTIONS

TYPICAL SECTION LEGEND

- | | | |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------|
| ① ITEM 202 - PAVEMENT REMOVED | ⑪ ITEM 424 - 3/4" FINE GRADED POLYMER ASPHALT CONCRETE SURFACE COURSE, TYPE A | Ⓐ EXISTING PAVEMENT, UNKNOWN THICKNESS AND COMPOSITION (SEE NOTE 6) |
| ② ITEM 203 - EXCAVATION AND EMBANKMENT (SEE NOTE 7) | ⑫ ITEM 448 - 1 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22 | Ⓑ EXISTING BRICK PAVERS, UNKNOWN THICKNESS AND COMPOSITION |
| ③ ITEM 204 - SUBGRADE COMPACTION | ⑬ ITEM 605 - 4" PIPE UNDERDRAIN (SEE STD. DWG. #32) | Ⓒ EXISTING CONCRETE WALK, UNKNOWN THICKNESS |
| ④ ITEM 254 - PAVEMENT PLANING, 2" | ⑭ ITEM 608 - 5" CONCRETE WALK (SEE STD. DWG. #29) | Ⓓ EXISTING CONCRETE CURB |
| ⑤ ITEM 301 - 4" ASPHALT CONCRETE BASE COURSE | ⑮ ITEM 609 - CONCRETE CURB (SEE STD. DWG. #30) | Ⓔ EXISTING CONCRETE CURB, INTEGRAL WITH WALK |
| ⑥ ITEM 304 - 4" AGGREGATE BASE | ⑯ ITEM 652 - 4" SCREENED TOPSOIL | |
| ⑦ ITEM 304 - 6" AGGREGATE BASE | ⑰ ITEM 659 - SEEDING AND MULCHING | |
| ⑧ ITEM 304 - FILL VOID TO BOTTOM OF EXISTING PAVEMENT SUBGRADE WITH AGGREGATE BASE, THICKNESS VARIES | ⑱ ITEM SPEC - NOT USED | |
| ⑨ ITEM 407 - TACK COAT, AS PER PLAN | ⑲ ITEM SPEC - CITY OF CANTON STREETSCAPE (SEE STD. DWG. #40) | |
| ⑩ ITEM 408 - PRIME COAT (0.4 GAL/SY) | ⑳ ITEM SPEC - PAVEMENT REPAIR (SEE STD. DWG. #31) | |

NOTES:

- CROSS SLOPE VARIES. SEE LAYOUT PLANS, SHEETS 11-13, FOR GRADING AND ELEVATIONS.
- PAVEMENT BUILDUP IN THIS AREA SHALL CONSIST OF STANDARD CONCRETE WALK AND CITY OF CANTON STREETSCAPE BRICK PAVERS. SEE CANTON STD. DWG. NO. 40 FOR BUILDUP OF PAVER SECTION AND LAYOUT PLANS FOR LOCATIONS.
- REMOVE BRICK AND PAVEMENT BUILDUP TO CONSTRUCT NEW CURB. WIDTH OF BRICK REMOVAL SHALL BE AS SHOWN. EXISTING BRICK PAVER BUILDUP IS UNKNOWN. BACKFILL VOID CREATED WITH 304 LIMESTONE TO MATCH GRADE OF PAVEMENT TO REMAIN. ENSURE POSITIVE DRAINAGE.
- COST FOR SAWCUTTING SHALL BE INCLUDED IN THE BID PRICE FOR PAVEMENT REMOVAL.
- DO NOT PLACE SEEDING IN CURBED ISLANDS.
- PER CITY RECORDS, EXISTING PAVEMENT BUILDUP CONSISTS OF THE FOLLOWING:
 5TH ST TO 4TH ST
 ASPHALT OF UNKNOWN THICKNESS
 6" CONCRETE
 4TH ST TO 3RD ST
 ASPHALT OF UNKNOWN THICKNESS
 BRICK PAVEMENT
 6" CONCRETE
 3RD ST TO 2ND ST
 ASPHALT OF UNKNOWN THICKNESS
 BRICK PAVEMENT
 8" GRAVEL
 CONTRACTOR SHALL VERIFY PAVEMENT BUILDUP PRIOR TO MOBILIZING EQUIPMENT NECESSARY TO COMPLETE THE WORK INCLUDED IN THIS PROJECT.
- COST FOR EXCAVATION AND EMBANKMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE OTHER ITEMS NECESSITATING THE WORK.



**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**



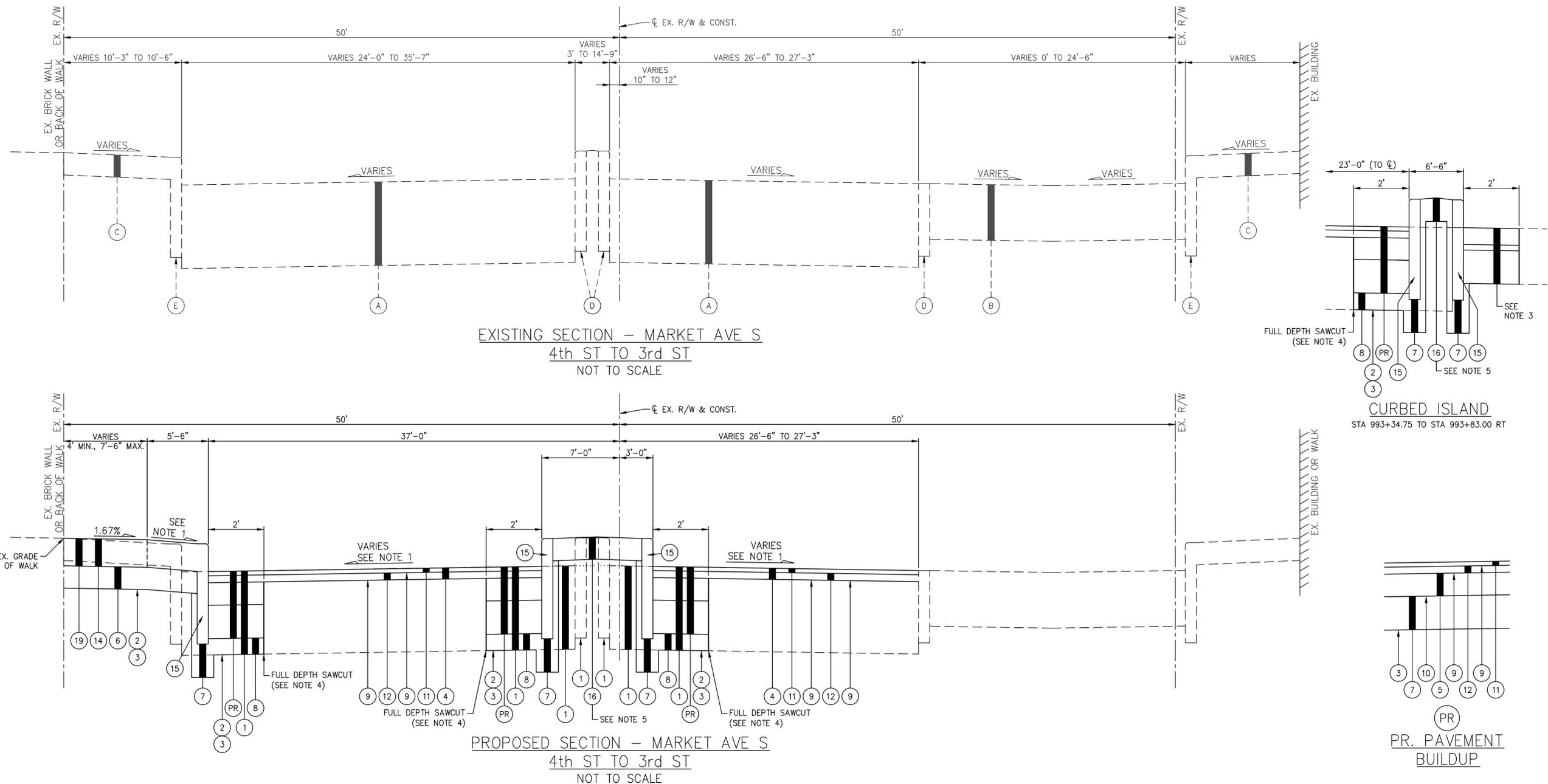
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TYPICAL SECTIONS



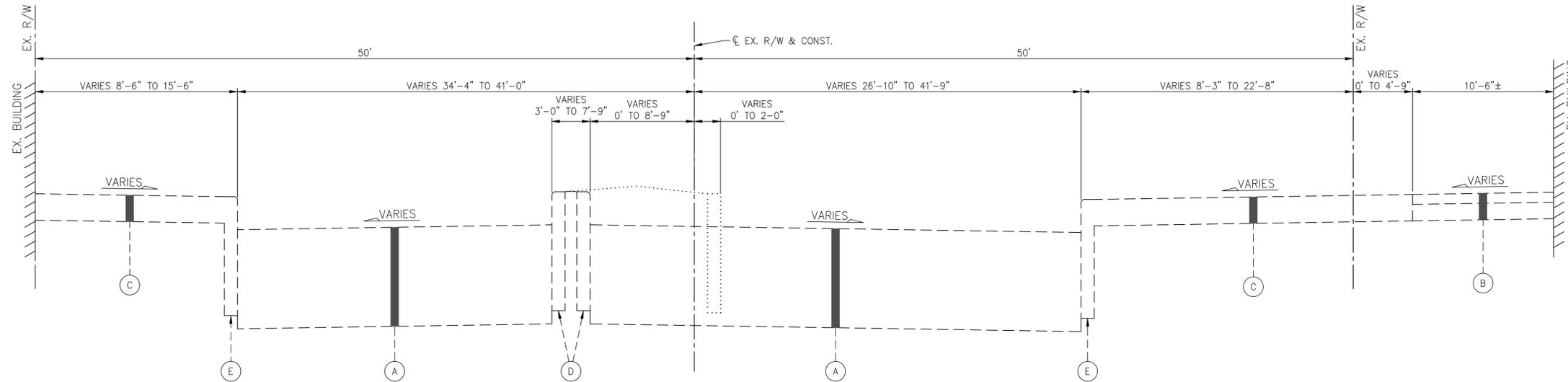
E:\CANTON\19-00432-010\AKRON\16\ROAD\STREETSCAPE\DWG\19-00432-010-21472020-135933.PLT

TYPICAL SECTION LEGEND

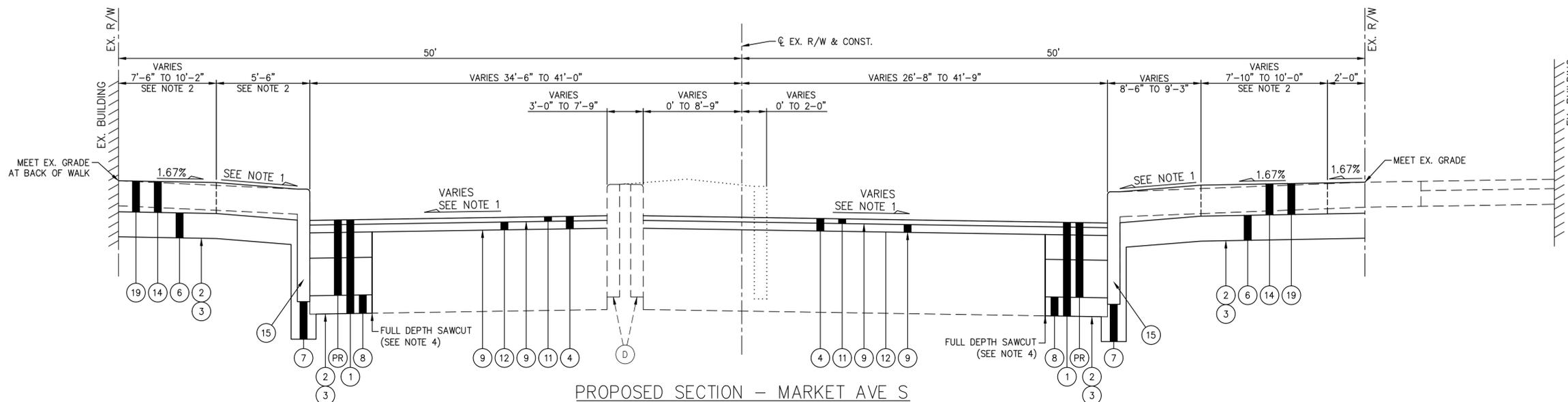
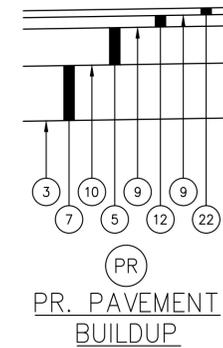
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- ⑰ ITEM 659 - SEEDING AND MULCHING
- ⑱ ITEM SPEC - NOT USED
- ⑲ ITEM SPEC - CITY OF CANTON STREETSCAPE (SEE STD. DWG. #40)
- ⑳ ITEM SPEC - PAVEMENT REPAIR (SEE STD. DWG. #31)
- Ⓐ EXISTING PAVEMENT, UNKNOWN THICKNESS AND COMPOSITION (SEE NOTE 4)
- Ⓑ EXISTING BRICK PAVERS, UNKNOWN THICKNESS AND COMPOSITION
- Ⓒ EXISTING CONCRETE WALK, UNKNOWN THICKNESS
- Ⓓ EXISTING CONCRETE CURB
- Ⓔ EXISTING CONCRETE CURB, INTEGRAL WITH WALK

NOTES:

1. CROSS SLOPE VARIES. SEE LAYOUT PLANS, SHEETS 11-13, FOR GRADING AND ELEVATIONS.
2. PAVEMENT BUILDUP IN THIS AREA SHALL CONSIST OF STANDARD CONCRETE WALK AND CITY OF CANTON STREETSCAPE BRICK PAVERS. SEE CANTON STD. DWG NO. 40 FOR BUILDUP OF PAVER SECTION AND LAYOUT PLANS FOR LOCATIONS.
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 BRICK PAVEMENT
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5. COST FOR EXCAVATION AND EMBANKMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE OTHER ITEMS NECESSITATING THE WORK.



EXISTING SECTION - MARKET AVE S
3rd ST TO 2nd ST
NOT TO SCALE



PROPOSED SECTION - MARKET AVE S
3rd ST TO 2nd ST
NOT TO SCALE



ISSUED FOR BID

DATE: _____

REVISIONS		
Δ	DATE	DESCRIPTION

PROJECT NO.: 19-00432-010
DRAWN BY: RMS
CHECKED BY: SAC
DATE ISSUED: 2020/02/14

TYPICAL SECTIONS

PRECONSTRUCTION INCIDENTALS

PROJECT SPECIFICATIONS/REQUIREMENTS:

ALL WORK REQUIRED TO COMPLETE THIS IMPROVEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS/REQUIREMENTS OF THE CITY OF CANTON AND THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS HEREIN AMENDED. IN THE CASE OF A CONFLICT BETWEEN THE CITY OF CANTON AND THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS/REQUIREMENTS, THE CITY OF CANTON REQUIREMENTS WILL TAKE PRECEDENCE, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

THE CONTRACTOR SHALL COMPLY WITH THE CITY OF CANTON SUPPLEMENTAL SPECIFICATION 01--00 PROJECT DOCUMENTATION AND SUBMITTAL REQUIREMENTS.

ADMINISTRATIVE REQUIREMENTS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY COMPLYING WITH ALL THE ADMINISTRATIVE DUTIES HEREIN CONTAINED.

THE CONTRACTOR SHALL DESIGNATE TO THE CITY AN EMPLOYEE RESPONSIBLE FOR CORRESPONDENCE, NOTIFICATIONS, AND SUBMITTALS PERTINENT TO THE PROJECT.

PRECONSTRUCTION MEETING:

A PRECONSTRUCTION MEETING WITH THE CONTRACTOR, REPRESENTATIVES OF ALL UTILITY COMPANIES, THE CITY OF CANTON ENGINEERING DEPARTMENT AND THE CITY OF CANTON WATER DEPARTMENT IS REQUIRED FOR THIS PROJECT PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.

FOR CITY GENERAL PROJECTS, THE CITY ENGINEER WILL CONTACT THE CONTRACTOR TO ARRANGE A MEETING DATE. THE CITY ENGINEER WILL CONTACT THE ABOVE AGENCIES TO CONFIRM THE MEETING DATE.

PROJECT SAFETY:

THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT THE PROJECT SITE AT ALL TIMES. THE CONTRACTOR SHALL PROPERLY SUPPORT AND/OR MAINTAIN ALL EXCAVATIONS PER APPLICABLE SAFETY REQUIREMENTS AND COMPLY WITH ALL O.S.H.A. REGULATIONS. APPROPRIATE BARRICADES, WARNING LIGHTS, SIGNS, FENCING, ETC. SHALL BE ERCTED AROUND THE CONSTRUCTION AREA DURING ALL NON--WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL TO THE CONSTRUCTION SITE/AREA. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL. PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE OF DEBRIS (MUD, STONE, ETC.) AT ALL TIMES. THE CONTRACTOR SHALL ALERT ALL LOCAL EMERGENCY AGENCIES (FIRE, POLICE, AMBULANCE, ETC.) OF THE NATURE OF THE PROPOSED PROJECT PRIOR TO BEGINNING AND CONSTRUCTION ACTIVITY. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.

UNDERGROUND UTILITIES:

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED BY FIELD OBSERVATIONS, FROM EXISTING RECORDS, AND/OR FROM THE OWNERS OF THE RESPECTIVE UTILITIES. THE INFORMATION AS SHOWN IS BELIEVED TO BE CORRECT; HOWEVER, THE COMPLETENESS AND ACCURACY OF THIS INFORMATION CANNOT BE GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL THE VARIOUS UTILITY COMPANIES (PUBLIC AND PRIVATE) TO VERIFY THE EXISTENCE, LIMITS AND/OR LOCATION OF ANY UTILITIES WHICH MAY BE ALONG THE ROUTE OR WITHIN THE VICINITY OF THIS IMPROVEMENT.

UTILITY NOTIFICATION:

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING OPERATIONS ON THIS PROJECT, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER, THE REGISTERED UTILITY PROTECTION AGENCY/SERVICE, AND THE OWNERS OF ANY OTHER UTILITIES (PUBLIC AND/OR PRIVATE) THAT MAY HAVE UTILITY LINES OR FACILITIES WITHIN THE VICINITY OF THIS PROJECT BUT WHO ARE NOT MEMBERS OF THE REGISTERED UTILITY PROTECTION SERVICE. THE OWNERS OF ANY UNDERGROUND UTILITY FACILITY SHALL, WITHIN 48 HOURS AFTER NOTICE IS RECEIVED, EXCLUDING SATURDAYS, SUNDAYS AND OTHER LEGAL HOLIDAYS; STAKE, MARK OR OTHERWISE DESIGNATE THE EXISTENCE AND/OR LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING AND/OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO WORKING DAYS AHEAD OF THE PLANNED CONSTRUCTION.

OHIO UTILITIES PROTECTION SERVICE: 1-800-362-2764 (CONTACT NON-- MEMBERS DIRECTLY).

THE PRIMARY UTILITIES WITHIN THE CITY OF CANTON AREA:

NATURAL GAS DIST./TRANS.
DOMINION EAST OHIO GAS
320 SPRINGSIDE DR.
AKRON, OHIO 44333
330-664-2541
ATTN: MICAH RISACHER
relocation@dominionenergy.com
EMERGENCY NO. -- 24 HRS
EMERGENCY NO.
1-800-521-2600

TELEPHONE
AT&T
50 WEST BOWERY STREET
AKRON, OHIO 44308
ATTN: STEVE HYLTON
330-384-3055
EMERGENCY NO. -- 24 HRS
1-800-572-4545 OPTION#4
1-800-521-2600

COMMUNICATIONS CABLE
CHARTER (SPECTRUM)
5520 WHIPPLE AVE N.W.
NORTH CANTON, OHIO 44720
330-633-9203
ext. 216-555-4261
ATTN: MIKE MEYER
216-618-2528(CELL)
ATTN: KEITH SCHALMO

ELECTRIC
AMERICAN ELECTRIC POWER
301 CLEVELAND AVE. S.W.
P.O. BOX 24400
CANTON, OHIO 44701-4400
330-438-7739
ATTN: MICHAEL ALLMAN
330-312-6981 (CELL)
330-438-7720
EMERGENCY NO.
1-800-672-2017
cantondistrictppr@aep.com

SANITARY AND STORM SEWER
CITY ENGINEER'S OFFICE
2436-30TH ST. N.E.
CANTON, OHIO 44705
ATTN: DAN MOEGLIN
330-489-3381

WATER
CANTON WATER DEPT
2664 HARRISBURG RD. N.E.
CANTON, OHIO 44708
ATTN: BRENT BURRIER OR
LEW MILLER
330-489-3310

TRAFFIC INTERCONNECT
CITY ENGINEER'S OFFICE
2436-30TH ST. N.E.
CANTON, OHIO 44705
ATTN: NICK LOUKAS
330-489-3381

THE CITY ENGINEER'S OFFICE IS TO BE CONTACTED DIRECTLY FOR SANITARY AND STORM SEWER AND TRAFFIC INTERCONNECT FACILITIES LOCATION: 330-489-3381. [UTILITY CONTACTS LAST UPDATED 2/12/2020]

EXPLORATORY BORINGS:

EXPLORATORY SOIL BORING INFORMATION IS NOT THE RESPONSIBILITY OF THE CITY OF CANTON. IT IS THE CONTRACTOR RESPONSIBILITY TO REVIEW ANY AND ALL INFORMATION AVAILABLE. IF CONTRACTOR REQUESTS TO DRILL AND OR EXCAVATE WITHIN THE CITY'S R/W, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AT LEAST 3 WORKING DAYS PRIOR TO THIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY NOTIFICATION, AS SPECIFIED, ALL TRAFFIC CONTROL, PREMIUM BACKFILL, AND COMPACTION AND RESTORATION, AS NECESSARY.

CONTINGENCY QUANTITIES:

WHEN SPECIFIED ON PLANS OR SPECIFICATIONS, CONTINGENCY QUANTITIES ARE TO BE PERFORMED ONLY UNDER DIRECTION OF THE CITY ENGINEER. THE CONTRACTOR SHALL NOT ORDER ANY CONTINGENCY MATERIAL OR PERFORM ANY WORK UNTIL DIRECTED BY THE ENGINEER. THE ACTUAL WORK LOCATION AND QUANTITIES FOR SUCH ITEMS SHALL BE DOCUMENTED BY THE CONTRACTOR AND THE ENGINEER.

CONSTRUCTION INCIDENTALS

PLAN DISCREPANCIES:

ANY DISCREPANCIES FROM THE PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT THE APPROPRIATE ADJUSTMENTS IN ALIGNMENT AND/OR GRADE MAY BE MADE PRIOR TO THE START OF CONSTRUCTION OR THE CONTINUATION OF THE SAME.

FAILURE BY THE CONTRACTOR TO VERIFY AND/OR DETERMINE EXISTING INFORMATION AS INDICATED WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.

VERIFICATION OF UNDERGROUND UTILITIES:

THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES/FACILITIES WITHIN AND/OR ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THIS MAY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME THAT EXISTING UTILITIES/CONDUITS WERE INSTALLED AT TYPICAL/STANDARD DEPTHS OR AT UNIFORM SLOPES/GRADES/DEPTHS BETWEEN ACCESS POINTS (CATCH BASINS, MANHOLES, JUNCTION CHAMBERS, ETC.)

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO INSTALL THE PROPOSED CONDUIT.

PROTECTION OF UTILITIES:

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS AS APPROVED BY THE OWNERS OF THE UTILITY AND THE CITY ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE TO CLOSELY COORDINATE THEIR WORK WITH ALL UTILITY COMPANIES; ANY POTENTIAL DELAYS WILL NOT BE THE RESPONSIBILITY OF THE CITY.

THE CONTRACTOR SHOULD EXPECT AT A MINIMUM ONE SANITARY SEWER LATERAL, ONE ROOF DRAIN, ONE WATER SERVICE, AND ONE GAS SERVICE FOR EACH LOT. ANY OF THE ABOVE UTILITIES DAMAGED DUE TO THE CONTRACTOR'S WORK SHALL BE RESTORED TO THE UTILITY OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

MAINTENANCE OF UTILITY SERVICES:

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UTILITY SERVICES AT ALL TIMES.

WATER SERVICE MAY BE INTERRUPTED FOR LIMITED PERIODS (4 HOURS MAXIMUM) DURING CONNECTION BETWEEN EXISTING WATER LINES AND RELOCATED/NEW WATER MAINS WHICH CANNOT BE COMPLETED OTHERWISE. NO SHUT DOWN SHALL OCCUR WITHOUT WRITTEN PERMISSION OF THE CITY OF CANTON WATER DEPARTMENT. PROPERTY OWNERS AFFECTED BY APPROVED INTERRUPTED SERVICE SHALL BE NOTIFIED 48 HOURS IN ADVANCE BY THE CONTRACTOR.

STORM SEWER AND SANITARY SEWER SERVICES SHALL BE MAINTAINED WITHOUT INTERRUPTION, UNLESS APPROVED BY THE CITY ENGINEER.

IN THE EVENT THAT CONSTRUCTION DISRUPTS THE FLOW OF A SANITARY SEWER, THE CONTRACTOR SHALL IMMEDIATELY RECTIFY THE DISRUPTED SEWER BY EITHER TEMPORARILY FLUMING WITH MATERIALS ACCEPTABLE TO THE ENGINEER OR BYPASSING WITH PUMPS. COST OF MAINTAINING AND REPAIR OF SANITARY SEWERS DISTURBED BY CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

CONSTRUCTION NOISE:

CONSTRUCTION NOISE ASSOCIATED WITH ANY IMPROVEMENT PROJECT SHALL BE LIMITED TO LEVELS COMMENSURABLE WITH ADJOINING LAND AND THEIR ASSOCIATED USAGE AS DETERMINED BY THE CITY ENGINEER. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER--OPERATED CONSTRUCTION--TYPE DEVICES SHALL NOT BE OPERATED BETWEEN THE HOURS OF 7:00 P.M. AND 7:00 A.M. UNLESS AUTHORIZED BY THE CITY ENGINEER.

OPEN TRENCH CONSTRUCTION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION/TRENCHING PRACTICES FOR THE PROPOSED IMPROVEMENT, OR AS FURTHER SHOWN ON THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE LOCAL AND STATE SAFETY REGULATIONS, INCLUDING CODE OF FEDERAL REGULATIONS, PART 1926 (SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION), SUBPART P (EXCAVATIONS), FOR ALL APPLICABLE REQUIREMENTS AND RESPONSIBILITIES.

PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER OF THE PROJECT'S ASSIGNED "COMPETENT PERSON" IN OSHA EXCAVATION STANDARDS.

TRENCH CLOSING AND TEMPORARY TOPPING:

THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE NECESSARY LEVELS OF PROTECTION AND SAFEGUARDING OF ALL OPEN TRENCHES, WHEN WORK IS EITHER COMPLETED AT THE END OF THE DAY OR SUSPENDED FOR ANY OTHER REASON.

FOR TRENCH SURFACE REQUIREMENTS, REFER TO NOTE 4 ON CITY STANDARD DRAWING NO. 19.

DUST CONTROL:

THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL.

WORK LIMITS:

THE WORK LIMITS SHOWN ON THESE PLANS FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

MATERIAL STORAGE/EQUIPMENT STORAGE:

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE APPROPRIATE EQUIPMENT AND MATERIAL STORAGE AREA TO SUIT HIS NEEDS.

REMOVAL OF DEBRIS AND SITE CLEANUP:

THE PROJECT SITE MUST BE KEPT FREE OF CONSTRUCTION DEBRIS, TRASH, PAPER AND OTHER WASTE ITEMS. COLLECT AND REMOVE THESE ITEMS AT THE END OR EACH WORK DAY.

CLEARING AND GRUBBING:

ALL TREES, STUMPS, ROOTS, SHRUBS AND DEBRIS REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE AT A LOCATION LICENSED TO ACCEPT SUCH MATERIAL. REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE WORK LIMITS OR AS NOTED ON THE PLANS SHALL BE PAID FOR UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. FOR TREES, REMOVAL INCLUDES THE ROOT MASS. NO ROOT MASS IS PERMITTED WITHIN THE FOOTPRINT OF ANY PAVEMENT (ASPHALT, CONCRETE, AGGREGATE).

PRESERVATION AND RESTORATION OF DISTURBED FEATURES:

EXISTING DRIVES, BERMS, LAWNS, PAVEMENTS, CURBS, SIDEWALKS, SIGNS, MAILBOXES, FENCES, RETAINING WALLS, LANDSCAPING ITEMS, OR OTHER APPURTENANCES DISTURBED DURING CONSTRUCTION BUT NOT SPECIFICALLY DESIGNATED FOR REMOVAL/REPLACEMENT SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO DISTURBANCE AND TO THE COMPLETE SATISFACTION OF THE CITY ENGINEER.

RESTORATION OF EXISTING ROADWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY, TOWNSHIP, COUNTY, AND/OR OTHER AGENCIES HAVING AUTHORITY. COST FOR THE RESTORATION OF THESE ITEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIFICATIONS. NO PUBLIC ROADWAY SHALL BE DISTURBED WITHOUT PRIOR WRITTEN APPROVAL FROM THE GOVERNING AGENCY AND ACQUISITION OF NECESSARY PERMITS.

SALVAGED CASTINGS:

WHEN DIRECTED BY THE CITY ENGINEER, ALL METAL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED ON SITE OR DELIVERED TO A LOCATION DESIGNATED BY THE CITY ENGINEER.

CONSTRUCTION LAYOUT:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT UTILIZING PERTINENT PLAN DATA. THE CITY ENGINEER WILL NOT BE RESPONSIBLE FOR STAKING HORIZONTAL OR VERTICAL CONTROL. CONSTRUCTION LAYOUT SHALL BE IN ACCORDANCE WITH ODOT 623 CONSTRUCTION LAYOUT STAKES.

AT THE CITY ENGINEER'S REQUEST, THE CONTRACTOR SHALL MAKE AVAILABLE ALL SURVEY FIELD NOTES FOR REVIEW.

EXISTING MONUMENTATION:

THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, CONCRETE MONUMENTS AND/OR ANY TYPE OF LAND MONUMENT. THE CONTRACTOR SHALL HAVE ALL MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED. THE CONTRACTOR SHALL REPLACE/RESET ANY DISTURBED OR DAMAGED MONUMENTS AND SHALL FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THAT THE MONUMENTS HAVE BEEN RESTORED.

ELEVATION DATUM:

ALL ELEVATIONS ARE BASED ON THE NAVD 1988 DATUM.

INSPECTION:

FOLLOWING THE PRE--CONSTRUCTION MEETING(S) AND ESTABLISHMENT OF AN APPROVED SCHEDULE, THE CONTRACTOR SHALL GIVE A MINIMUM 48 HOUR NOTICE BEFORE STARTING ANY WORK ON THIS PROJECT AND SHALL KEEP THE CITY INFORMED OF HIS/HER CONSTRUCTION SCHEDULE. ALL WORK REQUIRED FOR THIS IMPROVEMENT SHALL BE SUBJECT TO INSPECTION BY THE CITY OF CANTON OR THEIR DESIGNATED REPRESENTATIVE. NO WORK SHALL BE PERFORMED WITHOUT AN AUTHORIZED INSPECTOR PRESENT, UNLESS OTHERWISE APPROVED.

EARTHWORK / SITE WORK

EASEMENTS AND RIGHT--OF WAY:

THE CONTRACTOR SHALL STAY WITHIN THE DESIGNATED PROPERTIES, EASEMENTS, AND/OR RIGHT--OF--WAY PROVIDED FOR THE PROJECT AT ALL TIMES. NO MATERIAL SHALL BE STORED NOR ANY WORK PERFORMED ON PRIVATE PROPERTY UNLESS OTHERWISE APPROVED. DISTURBANCE OF EXISTING FEATURES AND/OR IMPROVEMENTS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND AS APPROVED BY THE CITY ENGINEER/PROPERTY OWNER.

SUITABILITY OF SITE:

THE CITY OF CANTON SHALL NOT BE RESPONSIBLE FOR THE TYPE AND/OR SUITABILITY OF THE MATERIAL UNDERLYING THE PROJECT SITE. THE CONTRACTOR MUST APPRAISE THEMSELVES OF ANY EXISTING SITE CONDITIONS WHICH MAY AFFECT THEIR BID OR THE PERFORMANCE OF THE REQUIRED WORK. THE CONTRACTOR SHALL PERFORM ANY INVESTIGATIONS AND/OR TESTING NECESSARY TO ADEQUATELY DETERMINE/ESTIMATE TO THEIR SATISFACTION ALL SITE CONDITIONS WHICH COULD AFFECT THE PERFORMANCE OF THE PROPOSED IMPROVEMENTS. THIS COULD INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE AND/OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE), SPRINGS, ETC.

REFER TO CITY STANDARD DRAWING NO. 19 FOR ADDITIONAL DETAILS.

REMOVAL/REPLACEMENT OF UNSUITABLE MATERIAL:

THE CONTRACTOR SHALL UNDERCUT AND REPLACE UNSUITABLE MATERIAL ENCOUNTERED DURING INSTALLATION OF THE PROPOSED UTILITIES AND ROADWAY IN ACCORDANCE WITH CITY STANDARD DRAWING NO. 19.

SEEDING AND MULCHING:

THE FOLLOWING ITEMS ARE PROVIDED IN THE BID SCHEDULE TO BE USED FOR RESTORATION OF DISTURBED GRASS AREAS AND OTHER AREAS AS DIRECTED BY THE ENGINEER:

- ITEM 659 -- TOPSOIL, FURNISHED AND PLACED
- ITEM 659 -- SEEDING AND MULCHING
- ITEM 659 -- WATER

ROADWAY / DRIVE APPROACHES / WALK / CURB

PAVEMENT STANDARDS:

PAVEMENTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE CITY STANDARD DRAWINGS AND SPECIFICATIONS (LISTED BELOW) AND ODOT SPECIFICATIONS, UNLESS SPECIFIED OTHERWISE ON THE PLANS.

CITY STANDARD DRAWING NO.:

- DRIVEWAYS, CURBS, AND PAVEMENT
- 27 "DRIVE APPROACH WITH LAWNSTRIP BETWEEN SIDEWALK & CURB"
- 28 "DRIVE APPROACH WITH SIDEWALK AGAINST CURB"
- 29 "COMBINED CURB & WALK"
- 30 "CONCRETE CURB AND COMBINED CURB & GUTTER"
- 31 "BRICK PAVEMENT REPAIR & REPLACEMENT OVER TRENCHES/ALONG CURB"
- 32 "TYPICAL SECTION -- LOCAL STREET"
- 33 "WHEELCHAIR RAMP"
- 34 "PAVEMENT TRANSITION, BRICK--ASPHALT"

- CITY STREETScape
- 40 "TYPICAL STREETScape CORRIDOR"
- 41 "ROADWAY BRICK & CROSSWALK PAVEMENT DETAILS"
- 42 "STREETScape CONCRETE WALK PAVEMENT DETAILS"
- 44 "CONCRETE WALK OVER VAULT CONSTRUCTION DETAILS"
- 45 "BRICK WALK OVER VAULT CONSTRUCTION DETAILS"

CITY SPECIFICATIONS:

"CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS"

RESTRICTED WORK SCHEDULE:

NO CONCRETE FINISH WORK OR PERMANENT ASPHALT SHALL BE PLACED FROM NOVEMBER 15TH TO APRIL 15TH UNLESS WRITTEN APPROVAL IS GRANTED BY THE CITY ENGINEER.

ASPHALT/CONCRETE:

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE OF BEGINNING WORK WHICH REQUIRES COMPACTION TESTING AND/OR PRE--POUR INSPECTION PRIOR TO PLACEMENT OF ASPHALT OR CONCRETE. WORK SHALL NOT PROCEED UNTIL TESTING AND/OR INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE CITY ENGINEER.

ITEM 253 -- PAVEMENT REPAIR, AS PER PLAN:

BRICK PAVEMENT IN AREAS NOTED IN PLANS SHALL BE REPAIRED AS PER CITY OF CANTON STANDARD DRAWING NO. 31. THIS ITEM INCLUDES ALL WORK SHOWN ON THE STANDARD DRAWING INCLUDING SUBBASE MATERIAL, CONCRETE BASE, SAND, AND RESETTING BRICKS.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH SQUARE YARD OF PAVEMENT TO BE REPAIRED AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 407 -- TACK COAT, AS PER PLAN:

TACK COAT SHALL BE ODOT C&MS, ITEM 407 EXCEPT AS MODIFIED BELOW:

PAVEMENT THROUGHOUT THE PROJECT CONSISTS OF AN ASPHALT LAYER OF UNKNOWN THICKNESS ON TOP OF BRICK OR CONCRETE PAVEMENT. IN THE EVENT THAT PAVEMENT PLANING RESULTS IN EXPOSURE OF BRICK OR CONCRETE PAVEMENT BENEATH THE EXISTING ASPHALT LAYER, RUBBERIZED TACK COAT AS PER 702.13 AT AN APPLICATION RATE OF 0.08 GAL/SY SHALL BE APPLIED AS THE INITIAL LAYER BELOW THE INTERMEDIATE ASPHALT COURSE FOR THE ENTIRE PROJECT. IN THE EVENT THAT NO BRICK OR CONCRETE PAVEMENT IS EXPOSED DURING PAVEMENT PLANING, TACK COAT PER 702.04 AT AN APPLICATION RATE OF 0.08 GAL/SY SHALL BE APPLIED AS THE INITIAL LAYER BELOW THE INTERMEDIATE ASPHALT COURSE FOR THE ENTIRE PROJECT.

ITEM 608 -- CURB RAMP, AS PER PLAN:

CURB RAMPS SHALL BE CONSTRUCTED PER CITY OF CANTON STANDARD DRAWING NO. 33. DETECTABLE WARNINGS SHALL MEET ALL REQUIREMENTS AS SHOWN ON THE STANDARD CONSTRUCTION DRAWING.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH SQUARE FOOT OF CURB RAMP INSTALLED AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 608 -- WALKWAY MISC.: CONCRETE CROSSWALK:

CONCRETE CROSSWALK SHALL BE CONSTRUCTED AS PER CITY OF CANTON STANDARD DRAWING NO. 34.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH SQUARE FOOT OF CONCRETE CROSSWALK INSTALLED AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER. BRICK SURFACE AND ASPHALT SURFACE RESTORATION / TRANSITION AS SHOWN IN THE STANDARD DRAWING SHALL BE PAID UNDER THIS ITEM.

ITEM 202 -- REMOVAL, MISC.: PARKING METER POST REMOVED:

EXISTING PARKING METER HEADS SHALL BE REMOVED BY THE CITY OF CANTON. AFTER THE METER HEADS HAVE BEEN REMOVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF THE EXISTING POST, BASE PLATE, FOUNDATION, AND ASSOCIATED HARDWARE. PAYMENT FOR ALL WORK FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH PARKING METER POST REMOVED.

ITEM 690 -- ROADWAY, MISC.: PARKING METER POST INSTALLED:

PARKING METER HEADS SHALL BE FURNISHED AND INSTALLED BY THE CITY OF CANTON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE POSTS TO SUPPORT THE METER HEADS.

THE SUPPORT POST SHALL BE 2 1/2" O.D GALVANIZED PIPE, SCHEDULE 40, WITH 1/2" WEEP HOLES LOCATED 6" ABOVE THE FINISHED GRADE. THE TOP OF THE METER POST SHALL BE 36" ABOVE THE FINISH GRADE. THE TOP OF THE POST SHALL BE ABLE TO FACILITATE THE ATTACHMENT OF A PARKING METER. THE CONTRACTOR SHALL VERIFY WITH THE CITY THE POST MATERIALS AND DIMENSIONS.

THE POST SHALL BE EMBEDDED A MINIMUM OF 36" INTO THE GROUND. THE PORTION OF THE POST BELOW FINISHED GRADE SHALL BE ENCASED IN CONCRETE WITH A MINIMUM WIDTH OF 12". THE DEPTH OF THE CONCRETE SHALL EXTEND FROM THE FINISHED GRADE TO A DEPTH OF 6" MINIMUM BELOW THE BOTTOM OF THE POST. THE INSTALLATION METHOD AND THE FINAL LOCATION OF THE METER POST SHALL BE AT THE APPROVAL OF THE ENGINEER.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH POST INSTALLED AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.



MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON



ISSUED FOR BID

DATE: _____

REVISIONS		
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PROJECT NO.: 19-00432-010

DRAWN BY: RMS

CHECKED BY: SAC

DATE ISSUED: 2020/02/14

GENERAL NOTES

6 OF 31

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SANITARY SEWERS / STORM SEWERS

SEWER STANDARDS:

ALL SANITARY/STORM SEWER CONDUITS AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO APPLICABLE CITY STANDARD DRAWINGS AND SPECIFICATIONS (LISTED BELOW) AND ODOT SPECIFICATIONS EFFECTIVE AT THE TIME OF CONSTRUCTION, UNLESS SPECIFIED OTHERWISE ON THE PLANS.

CITY STANDARD DRAWING NO.:

- CATCH BASINS**
 1 "CURB INLET CATCH BASIN"
 2 "CURB INLET WATER QUALITY CATCH BASIN"
 3 "HILLSIDE CURB INLET CATCH BASIN"
 4 "SQUARE-TOP CATCH BASIN"
 5 "SQUARE-TOP WATER QUALITY CATCH BASIN"

- MANHOLES**
 10 "PRECAST STORM OR SANITARY MANHOLE"
 11 "OUTSIDE DROP CONNECTION FOR SANITARY MANHOLE"
 12 "MANHOLE COVER"
 13 "MANHOLE ADJUSTMENTS"

- CONDUITS AND TRENCHES**
 18 "HOUSE CONNECTION STACK"
 19 "UTILITY TRENCH REQUIREMENTS"
 20 "SANITARY SEWERS AND LATERALS"
 21 "CONCRETE ENCASEMENT DETAIL"
 22 "DOWNSPOUT OUTLET (NON-CURBED STREET)"
 23 "DOWNSPOUT OUTLET (CURBED STREET)"
 24 "GROUNDWATER DRAIN LINE CONNECTION"

ITEM 605 - 4" UNCLASSIFIED PIPE UNDERDRAINS, AS PER PLAN:

UNDERDRAINS SHALL BE CONSTRUCTED AS PER CITY OF CANTON STANDARD DRAWING NO. 32.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH LINEAR FOOT OF UNDERDRAIN INSTALLED AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 611 - MANHOLE, ADJUSTED TO GRADE, AS PER PLAN:

SANITARY AND STORM MANHOLE ADJUSTMENTS TO GRADE SHALL BE MADE PER CITY OF CANTON STANDARD DRAWING NO. 13.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH MANHOLE ADJUSTED TO GRADE AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ELECTRICAL MANHOLES SHALL BE ADJUSTED BY AEP. AEP SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THIS WORK. CONTRACTOR SHALL COORDINATE WITH AEP TO HAVE THIS WORK COMPLETED.

ITEM 611 - CATCH BASIN, ADJUSTED TO GRADE (CONTINGENCY ITEM):

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH CATCH BASIN ADJUSTED TO GRADE AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER. THIS ITEM SHALL ONLY BE PERFORMED AT THE DIRECTION OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE BID TAB FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 611 - CATCH BASIN, ADJUSTED TO GRADE 6 EACH

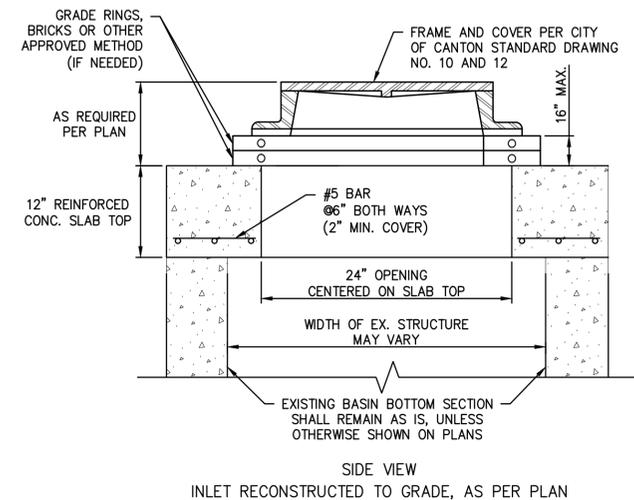
ITEM 611 - CATCH BASIN, MISC.: SQUARE-TOP CATCH BASIN:

SQUARE-TOP CATCH BASIN SHALL BE PER CITY OF CANTON STANDARD DRAWING NO. 4.

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH SQUARE-TOP CATCH BASIN INSTALLED AND SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

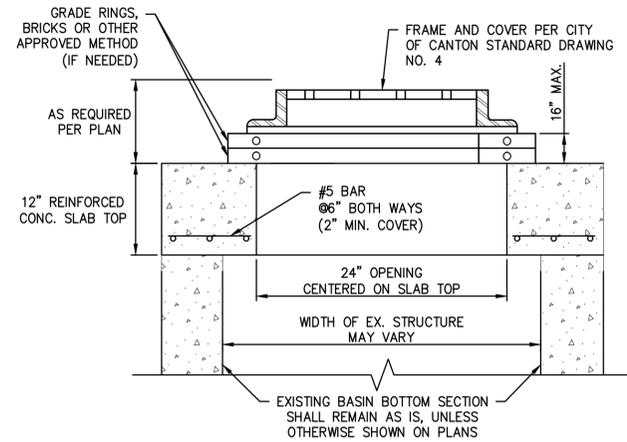
ITEM 611 - INLET RECONSTRUCTED TO GRADE, AS PER PLAN:

REMOVE THE EXISTING INLET GRATE AND LID FROM THE EXISTING STRUCTURE. PROVIDE NEW SLAB TOP LID CONSTRUCTED AS SHOWN BELOW THAT MEETS REQUIREMENTS OF ODOT C&MS 706.12. PROVIDE A MANHOLE FRAME AND COVER THAT MEETS REQUIREMENTS OF CITY OF CANTON STANDARD DRAWINGS NO. 10 AND 12. NO BRICK OR CONCRETE BLOCK CONSTRUCTION SHALL BE PERMITTED. NO CONCRETE BLOCKOUT SHALL BE PROVIDED. CASTING, GRADE RINGS, AND REINFORCED CONCRETE SLAB TOP SHALL BE SET ON TWO 1/2" TO 1" BEADS OF CONSEAL, BUTYL RUBBER SEALANT, OR APPROVED EQUAL.



ITEM 611 - CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN:

REMOVE THE EXISTING INLET GRATE AND LID FROM THE EXISTING STRUCTURE. PROVIDE NEW SLAB TOP LID CONSTRUCTED AS SHOWN BELOW THAT MEETS REQUIREMENTS OF ODOT C&MS 706.12. PROVIDE A FRAME AND GRATE THAT MEETS REQUIREMENTS OF CITY OF CANTON STANDARD DRAWINGS NO. 4. NO BRICK OR CONCRETE BLOCK CONSTRUCTION SHALL BE PERMITTED. NO CONCRETE BLOCKOUT SHALL BE PROVIDED. CASTING, GRADE RINGS, AND REINFORCED CONCRETE SLAB TOP SHALL BE SET ON TWO 1/2" TO 1" BEADS OF CONSEAL, BUTYL RUBBER SEALANT, OR APPROVED EQUAL.



SIDE VIEW
INLET RECONSTRUCTED TO GRADE, AS PER PLAN

ITEM 611 SPECIAL - CATCH BASIN, RECONSTRUCT TO GRADE (CONTINGENCY ITEM):

PAYMENT FOR THIS ITEM SHALL BE USED IN THE EVENT THE CONTRACTOR IS DIRECTED BY THE ENGINEER TO RECONSTRUCT BRICK OR MASONRY UNIT CATCH BASINS ON THE PROJECT. PAYMENT WILL BE BASED ON THE VERTICAL FOOT OF CATCH BASIN RECONSTRUCTED, MEASURED FROM THE LOWEST POINT OF RECONSTRUCTION TO THE HIGHEST POINT OF THE FINISHED CASTING FRAME/COVER. THE UNIT PRICE BID PER VERTICAL FOOT OF CATCH BASIN RECONSTRUCTED TO GRADE SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER. THIS ITEM WILL INCLUDE, BUT NOT LIMITED TO, SAWCUTTING OF PAVEMENTS, EXCAVATIONS, BACKFILLING AND REPLACING ROAD BASE DISTURBED/REMOVED AS A RESULT OF THE CATCH BASIN RECONSTRUCTION. THIS ITEM SHALL ONLY BE PERFORMED AT THE DIRECTION OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE BID TAB FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 611 SPECIAL, CATCH BASIN, RECONSTRUCT TO GRADE (CONTINGENCY) 10 VERTICAL FOOT

ITEM 611 SPECIAL - MANHOLE, RECONSTRUCT TO GRADE (CONTINGENCY ITEM):

PAYMENT FOR THIS ITEM SHALL BE USED IN THE EVENT THE CONTRACTOR IS DIRECTED BY THE ENGINEER TO RECONSTRUCT BRICK OR MASONRY UNIT MANHOLES ON THE PROJECT. PAYMENT WILL BE BASED ON THE VERTICAL FOOT OF MANHOLE RECONSTRUCTED, MEASURED FROM THE LOWEST POINT OF RECONSTRUCTION TO THE HIGHEST POINT OF THE FINISHED CASTING FRAME/COVER. THE UNIT PRICE BID PER VERTICAL FOOT OF MANHOLE RECONSTRUCTED TO GRADE SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, COORDINATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER. THIS ITEM WILL INCLUDE, BUT NOT LIMITED TO, SAWCUTTING OF PAVEMENTS, EXCAVATIONS, BACKFILLING AND REPLACING ROAD BASE DISTURBED/REMOVED AS A RESULT OF THE MANHOLE RECONSTRUCTION. THIS ITEM SHALL ONLY BE PERFORMED AT THE DIRECTION OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE BID TAB FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 611 SPECIAL, CATCH BASIN, RECONSTRUCT TO GRADE (CONTINGENCY) 20 VERTICAL FOOT

ITEM 611 - CONDUIT, TYPE B, BY SIZE (CONTINGENCY ITEM):

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED IN THE BID SCHEDULE TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 611 - 12" CONDUIT, TYPE B, 707.33	100 FT
ITEM 611 - 15" CONDUIT, TYPE B, 707.33	135 FT
ITEM 611 - 18" CONDUIT, TYPE B, 707.33	35 FT

HOUSE CONNECTION:

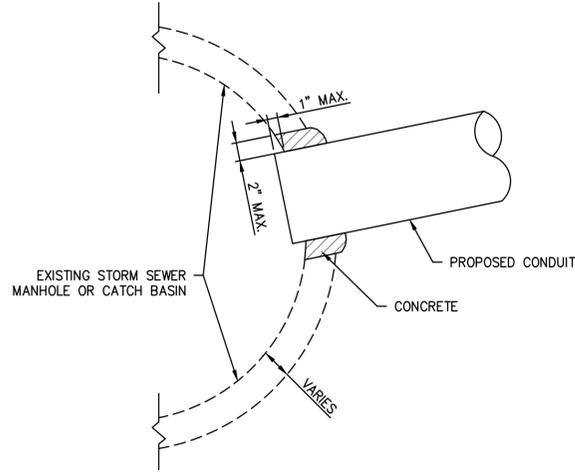
- EXISTING ROOF DRAINS, OR YARD DRAINS DISTURBED BY THE PROPOSED WORK SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTION TO STORM SEWER MANHOLE, CATCH BASIN, OR AS DIRECTED BY THE ENGINEER. PROVIDE FITTINGS AND CONNECTORS AS REQUIRED FOR ALL CONNECTIONS. THE COST OF WHICH WILL BE INCLUDED IN THE PRICE BID FOR PIPE.
- THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. QUANTITIES OF 4" AND 6" CONDUIT HAVE BEEN INCLUDED IN THE BID SCHEDULE FOR RECONNECTING EXISTING DRAINS. THESE ITEM SHALL NOT BE ORDERED UNTIL AUTHORIZED BY THE ENGINEER.

THE FOLLOWING QUANTITIES ARE PROVIDED IN THE BID SCHEDULE TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 611 - 4" CONDUIT, TYPE E	50 FT
ITEM 611 - 6" CONDUIT, TYPE E	50 FT

PIPE CONNECTION TO EXISTING MANHOLE OR CATCH BASIN:

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY LOCATION OF EXISTING STORM SEWER MANHOLE/CATCH BASIN AND COORDINATE ALL DISCREPANCIES WITH THE PLANS WITH THE ENGINEER. THE CONTRACTOR SHALL CAREFULLY REMOVE A SECTION OF THE EXISTING STORM SEWER MANHOLE/CATCH BASIN TO MAKE AN OPENING SO THE PROPOSED PIPES CAN DRAIN. THE OPENING SHALL BE REMOVED WITHOUT DISTURBING OR DAMAGING THE REMAINING PORTIONS OF THE MANHOLE/CATCH BASIN. THE OPENING SHALL BE NO MORE THAN 4 INCHES LARGER THAN THE OUTER DIAMETER OF THE PIPE TO BE CONNECTED TO THE MANHOLE/CATCH BASIN. THE OPENING SHALL BE NEATLY CUT IN THE STORM SEWER MANHOLE/CATCH BASIN BY THE USING A CORE DRILL OR BY DRILLING A SERIES OF HOLES IN A CIRCLE AND REMOVING THE CENTER, AIR HAMMERS ARE NOT PERMITTED. ALTERNATE MEANS OF MAKING THE OPENING SHALL REQUIRE THE APPROVAL OF THE ENGINEER. THE NEW PIPE SLEEVE WILL BE INSTALLED AND SECURED IN PLACE USING CONCRETE. THE PIPE SHALL NOT EXTEND INTO THE MANHOLE/CATCH BASIN OPENING MORE THAN 1 INCH. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE PERTINENT 611 CONDUIT ITEMS.



NOTES:

- REMOVE ALL CONSTRUCTION DEBRIS.
- ALL OTHER PROVISIONS OF C.M.S. ITEM 611 SHALL APPLY.

ITEM SPECIAL - MISCELLANEOUS METAL (CONTINGENCY ITEM):

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 611 OF THE SPECIFICATIONS, CANTON CITY STANDARD DRAWINGS, AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE CONTRACTOR IS CAUTIONED TO USED EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE BID TAB FOR USE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL - MISCELLANEOUS METAL 11000 POUNDS

STORM WATER POLLUTION PREVENTION

FOR PROJECTS LESS THAN ONE (1) ACRE OF TOTAL LAND-DISTURBANCE:

AN EPA NPDES CONSTRUCTION STORM WATER PERMIT AND SWP3 IS NOT REQUIRED. HOWEVER, THE DEVELOPER/ CONTRACTOR SHALL STILL ENSURE THAT APPROPRIATE PRACTICES ARE IN PLACE TO PROVIDE CONSTRUCTION RUNOFF AND EROSION AND SEDIMENT CONTROLS WITHIN THE PROJECT LIMITS. SUCH PRACTICES MAY INCLUDE THE USE OF SILT FENCE, STORM DRAIN INLET PROTECTION, JUTE MATTING, TEMPORARY SEEDING, MULCHING, CHECK DAMS, CONSTRUCTION ENTRANCES, CONCRETE WASHOUT AREAS, ETC. ALL PRACTICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL, AS APPLICABLE.

EROSION AND SEDIMENT CONTROL PRACTICES MUST BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL PRACTICES AND WILL BE HELD RESPONSIBLE FOR ADDRESSING ANY ON- OR OFF-SITE EROSION/SEDIMENT ISSUES RELATED TO THE PROJECT. THE OWNER/CONTRACTOR SHALL ABIDE BY ALL ORDERS ISSUED BY THE CITY PURSUANT TO INSPECTION OF THE PROJECT SITE.

TRAFFIC

MAINTAINING TRAFFIC:

THE CONTRACTOR SHALL MAINTAIN TRAFFIC ADJACENT TO AND THROUGH THE PROJECT AS DESCRIBED BELOW AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO DEPARTMENT OF TRANSPORTATION MANUAL OF CONSTRUCTION AND MATERIALS SPECIFICATIONS ITEM 614 MAINTAINING TRAFFIC. THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND REMOVE ALL SIGNS, FLAGS, FLAGMEN, WATCHMEN, BARRICADES, SIGN SUPPORTS, CONES, BARRELS, AND INCIDENTALS IN CONFORMANCE WITH THE MOST RECENT REVISIONS OF THE CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. INTERFERENCE WITH VEHICULAR TRAFFIC SHALL BE KEPT TO A MINIMUM AT ALL TIMES. ALL OPEN TRENCHES AND EXCAVATIONS SHALL BE PROTECTED WITH DRUMS, BARRICADES, OR BARRIERS. ACCESS SHALL BE MAINTAINED AT ALL TIMES FOR EMERGENCY AND FIRE DEPARTMENT VEHICLES.

ANY TEMPORARY ROADWAY CLOSING MUST BE APPROVED IN WRITING BY THE CITY TRAFFIC ENGINEER AND ANY OTHER PUBLIC AGENCY HAVING JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEER AT LEAST 72 HOURS IN ADVANCE OF ANY SUCH CLOSINGS FOR PUBLICATION AND EMERGENCY AGENCY NOTIFICATION.

RESIDENTIAL AND BUSINESS AREAS:

THE CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL RESIDENCES AND BUSINESSES DURING CONSTRUCTION. IN THE EVENT A DRIVE ACCESS NEEDS TO BE CLOSED, THE CONTRACTOR SHALL GIVE NOTICE OF CLOSURE AND DURATION TO THE PROPERTY OWNER 24 HOURS IN ADVANCE. CONTRACTOR SHALL ARRANGE FOR ALTERNATE PARKING AND REASONABLE ACCESS FOR THOSE PROPERTY OWNERS AFFECTED BY DRIVE CLOSURES.

EXISTING STREET NAME & TRAFFIC CONTROL SIGNS:

WHERE WORK REQUIRES THE MOVEMENT OF EXISTING SIGNS (STOP SIGNS, SPEED LIMIT SIGNS, NO PARKING SIGNS, ETC.), THE CONTRACTOR IS REQUIRED TO MAINTAIN THE FUNCTION OF ALL TRAFFIC CONTROL SIGNS. ALL SIGNS REMOVED BY THE CONTRACTOR SHALL BE STORED ON SITE AND REINSTALLED BY THE CONTRACTOR.

NEW STREET NAME & TRAFFIC CONTROL SIGNS:

ALL STREET NAME AND TRAFFIC CONTROL SIGNS SHALL COME COMPLETE AND BE MADE IN ACCORDANCE WITH THE CITY OF CANTON SIGN AND PAINT DEPARTMENT SPECIFICATIONS. GENERALLY, ALL SIGNS SHALL HAVE HI-INTENSITY SHEETING AND BE MADE WITH .080 50/52 ALUMINUM. STREET NAME SIGNS SHALL BE MADE WITH WHITE UPPER AND LOWER CASE LETTERING ON GREEN BACKGROUND USING 9" BLANKS, BE DOUBLED SIDED W/RADIUS CORNERS AND HAVE 6" NAME AND 3" SUFFIXES. ALL SIGN RELATED HARDWARE IS TO BE INCLUDED, SUCH AS 6" HEAVY DUTY U-CHANNEL CAPS AND STREET NAME CROSSES.

EXISTING TRAFFIC SIGNALS:

WHERE WORK REQUIRES INTERFERENCE WITH EXISTING SIGNALIZATION IN THE INTERSECTIONS, ALL WORK SHALL BE COORDINATED THROUGH THE CITY ENGINEER. THE CONTRACTOR SHALL NOT ALTER ANY SIGNALIZATION WITHOUT THE CITY ENGINEER'S AUTHORIZATION.

NEW TRAFFIC SIGNALIZATION:

ALL NEW OR MODIFIED TRAFFIC SIGNALIZATION AT INTERSECTIONS SHALL BE IN ACCORDANCE WITH CITY TRAFFIC ENGINEERING TRAFFIC CONTROL GENERAL NOTES AND ODOT SPECIFICATIONS; WITH SPECIAL EMPHASIS ON ODOT ITEMS 625, 632, 633, 732, AND 733 WHICH DEALS WITH TRAFFIC CONTROL.

TRAFFIC CONTROL PLAN:

THE CONTRACTOR SHALL SUBMIT TO THE CITY ENGINEER A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH CITY SUPPLEMENTAL SPECIFICATION 01-00. DETOURS, IF NECESSARY, SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PLAN SUBMISSION.

ITEM 630 - SIGN, FLAT SHEET, AS PER PLAN:

NEW STREET SIGNS AND TRAFFIC CONTROL SIGNS SHALL COMPLY WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE CITY OF CANTON SIGN AND PAINT DEPARTMENT. SEE TRAFFIC NOTE "NEW STREET NAME & TRAFFIC CONTROL SIGNS" IN THIS SECTION FOR FURTHER DETAILS.

SIGN PLACEMENT:

THE EXACT LOCATIONS OF SIGNS ARE TO BE STAKED. THE ENGINEER WILL REVIEW THE LOCATIONS PRIOR TO POST FABRICATION TO INSURE CLEARANCE OF DRIVES, ROADWAYS, AND OTHER OBSTACLES. IF THERE ARE ANY CONFLICTS, THEY WILL BE ADJUSTED AS DIRECTED BY THE ENGINEER. UPON ACCEPTANCE OF THE LOCATIONS BY THE ENGINEER AND PRIOR TO POST FABRICATION, THE CONTRACTOR WILL VERIFY THE REQUIRED LENGTH OF THE SIGN POSTS. PAYMENT FOR THIS IS INCIDENTAL TO ALL 630 ITEMS.

WATER MAIN / SERVICES

WATER MAINS/SERVICES:

ALL WATER MAINS, SERVICES AND APPURTENANCES SHALL BE DESIGNED AND CONSTRUCTED ACCORDING TO THE CITY OF CANTON WATER DEPARTMENT REQUIREMENTS AND SPECIFICATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. ANY DEVIATION FROM THE PLANS AFFECTING THE WATER SYSTEM MUST BE APPROVED BY THE CANTON WATER DEPARTMENT.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY PRECAUTIONS TO PROTECT AND MAINTAIN IN SERVICE, ANY EXISTING WATER MAINS EXPOSED DURING CONSTRUCTION.

ANY WATER SERVICE LINE THAT IS BROKEN, CUT OR OTHERWISE DAMAGED, SHALL BE REPLACED FROM THE CORPORATION STOP TO THE CURB STOP WITH A SINGLE PIECE OF PLASTIC SERVICE LINE (DRISCOPEX). NO SPLICING OF THE SERVICE LINE WILL BE PERMITTED.

SERVICE BRANCHES WILL BE INSTALLED AS PER O.D.O.T ITEM 638.16 WITH THE FOLLOWING EXCEPTIONS:

- WHEN A SERVICE BRANCH IS DISTURBED FOR LOWERING, RAISING, EXTENDING OR SHORTENING ON THE PROPERTY SIDE ON THE SERVICE STOP, IT SHALL BE REPLACED WITH NEW MATERIALS FROM THE CORPORATION STOP TO THE SERVICE STOP.

WHEN AN EXISTING WATER MAIN MUST BE SHUT DOWN TO PERFORM REQUIRED WORK, THE PROPERTIES TO BE EFFECTED SHALL BE GIVEN A MINIMUM 24 HOUR NOTICE OF SAID SHUT DOWN. THE WORK WILL BE SCHEDULED AND COORDINATED TO MINIMIZE THE TIME THE MAIN IS OUT OF SERVICE.

THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS IN ADVANCE OF ANY SHUT DOWN OF AN EXISTING WATER MAIN. THE CONTRACTOR WILL NOT OPERATE ANY VALVES. VALVES WILL BE OPERATED BY CANTON WATER DEPARTMENT PERSONNEL ONLY. VALVES DAMAGED BY THE CONTRACTOR'S OPERATION WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ALL VALVE BOXES WILL BE ADJUSTED TO FINAL GRADE OF THE PAVEMENT WHEN THE PROJECT IS COMPLETED.

POST CONSTRUCTION INCIDENTALS

RELEASE OF RETAINER/BONDS:

PRIOR TO THE RELEASE OF RETAINER/CONSTRUCTION BOND BY THE CITY OF CANTON, THE CONTRACTOR SHALL HAVE COMPLETED THE ENGINEER'S PROJECT PUNCHLIST AND SUBMIT FINAL WAIVER OF LIEN, IN ACCORDANCE WITH CITY SS 01-00.



MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON



ISSUED FOR BID

DATE:

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT NO.:	19-00432-010
DRAWN BY:	RMS
CHECKED BY:	SAC
DATE ISSUED:	2020/02/14

GENERAL NOTES

ITEM 614 – MAINTAINING TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS, AND THE FOLLOWING:

1. THE CONTRACTOR SHALL INFORM THE CANTON CITY ENGINEER, (330) 489-3381, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.
2. CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION ONE-HALF HOUR AFTER SUNSET OR ONE-HALF HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF TEN (10) FEET. WEIGHTED CHANNELIZERS MAY BE USED IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DRAWINGS.
3. THE CONTACTOR SHALL FURNISH ERECT, MAINTAIN, AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS, AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS, AND INCIDENTALS RELATED THERETO.
4. SIGNS FURNISHED SHALL BE IN NEW OR LIKE NEW CONDITIONS. LIKE NEW SIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR PROVIDING AND MAINTAINING LIGHTS, SIGNS, AND BARRICADES FOR THE MAINTENANCE OF TRAFFIC AND SAFETY OF HIS/HER WORK AT THE LOCATIONS SHOWN ON THESE PLANS OR AS DIRECTED BY THE ENGINEER.
5. ONLY DURING OFF PEAK PERIODS (I.E. ANY PERIOD OTHER THAN 6-8 AM AND 3-6 PM) SHALL THE CONTACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.
6. A MINIMUM OF ONE (1) LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
7. TRAFFIC ON THE SIDE STREETS SHALL BE MAINTAINED SAFELY THROUGH THE CONSTRUCTION ZONE FOR ALL PHASES AT ALL TIMES. NO DETOUR OF SIDE STREET TRAFFIC IS INTENDED WITHIN THESE PLANS. IF THE CONTRACTOR PROPOSES TO CLOSE ANY OF THE SIDE STREETS DURING CONSTRUCTION, THE CONTRACTOR SHALL DEVELOP AN APPROPRIATE DETOUR PLAN AND SUBMIT FOR REVIEW AND APPROVAL OF THE ENGINEER. THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC.
8. THE CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO ALL PROPERTIES WITHIN THE PROJECT LIMITS AT ALL TIMES. DRIVEWAY ACCESS MAY BE MAINTAINED BY USING PARTIAL WIDTH CONSTRUCTION IF OTHER SUITABLE ACCESS TO THE PROPERTY IS NOT AVAILABLE.
9. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH ODOT SCD MT-110.10.
10. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.
11. NO STOPPAGE OF TRAFFIC SHALL OCCUR FOR THE ERECTION OF SIGNAL SUPPORTS OR HANGING SIGNAL HEADS WITHOUT A LAW ENFORCEMENT OFFICER WITH A PATROL CAR AT THE SITE FOR ASSISTANCE IN CONTROLLING TRAFFIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE SERVICES AND SCHEDULING OF SAID LAW ENFORCEMENT OFFICER WITH PATROL CAR.
12. IN ADDITION TO THE REQUIREMENTS OF ODOT CMS 614 WORK ZONE PAVEMENT MARKINGS (614.11) AT THE END OF EACH DAY OF WORK THE CONTRACTOR SHALL REPLACE (WITH WORK ZONE MARKINGS) ALL LANE, CENTER, STOP, OR CHANNELIZING LINES THAT WERE REMOVED OR COVERED DURING THE PAVEMENT REMOVAL OR PLACEMENT OPERATIONS.

THE FOLLOWING ITEMS HAVE BEEN INCLUDED IN THE BID SCHEDULE FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

- 410 TRAFFIC COMPACTED SURFACE, TYPE C

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE THE ODOT CMS ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT, SIGNING, AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 – MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLANS.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN THREE (3) INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

- ITEM 616, WATER 2 M. GAL.
- ITEM 616, CALCIUM CHLORIDE 0.2 TON

MAINTAINING TRAFFIC – TRAFFIC CONTROL

AT THE 3RD STREET AND 4TH STREET INTERSECTIONS WHERE THE TRAFFIC SIGNALS ARE INDICATED TO BE REMOVED, VEHICULAR TRAFFIC SHALL BE MAINTAINED BY USING STOP SIGNS AT ALL APPROACHES. STOP SIGNS MAY BE USED AT THE 2ND STREET INTERSECTION FOR CONTROLLING VEHICULAR TRAFFIC IF APPROVED BY THE ENGINEER. STOP SIGNS SHALL BE IN PLACE PRIOR TO TAKING THE EXISTING TRAFFIC SIGNALS OUT OF SERVICE. THE CONTRACTOR SHALL NOTIFY THE CANTON CITY ENGINEER A MINIMUM OF SEVEN (7) DAYS BEFORE ERECTING THE STOP SIGNS. THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 – LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

1. DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
2. DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

1. FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN A NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 16 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

SEQUENCE OF CONSTRUCTION

THE CONTRACTOR SHALL USE THE FOLLOWING SEQUENCE OF PHASES FOR THE CONSTRUCTION OF THE AREAS INDICATED:

PHASE 1: PAVEMENT PLANING AND UTILITY CROSSINGS
THIS PHASE SHALL CONSIST OF PLANING THE EXISTING PAVEMENT FOR THE ENTIRE LENGTH OF THE PROJECT. TRAFFIC SHALL BE MAINTAINED DURING THE PLANING OPERATIONS USING FLAGGERS AS PER ODOT SCD MT-97.11. THE EXISTING "QUICK CURB" DELINEATORS SOUTH OF 2ND STREET SHALL BE REMOVED AS PART OF THIS PHASE. UTILITY CROSSINGS FOR STREET LIGHTING AND TRAFFIC SIGNALS SHALL ALSO BE CONSTRUCTED IN THIS PHASE. TRAFFIC SHALL BE MAINTAINED DURING CROSSING INSTALLATIONS USING FLAGGERS AS PER ODOT SCD MT-97.10.

PHASE 2: WEST SIDE CONSTRUCTION
THIS PHASE SHALL CONSIST OF CONSTRUCTING THE PROPOSED PAVEMENT, CURBS, CURB RAMPS, SIDEWALKS, DRIVE APRONS, LIGHT POLE AND SIGNAL POLE FOUNDATIONS AND CONDUITS ON THE WEST (SOUTHBOUND) SIDE OF MARKET AVENUE FOR THE ENTIRE LENGTH OF THE PROJECT. THE PROPOSED PAVEMENT SHALL BE CONSTRUCTED UP TO AND INCLUDING THE INTERMEDIATE AND LEVELING COURSES. TWO-LANE, TWO-WAY TRAFFIC SHALL BE MAINTAINED ON THE EAST (NORTHBOUND) SIDE OF MARKET AVENUE.

PHASE 3: EAST SIDE CONSTRUCTION
THIS PHASE SHALL CONSIST OF CONSTRUCTING THE PROPOSED PAVEMENT, CURBS, CURB RAMPS, SIDEWALKS, DRIVE APRONS, LIGHT POLE AND SIGNAL POLE FOUNDATIONS AND CONDUITS ON THE EAST (NORTHBOUND) SIDE OF MARKET AVENUE FOR THE ENTIRE LENGTH OF THE PROJECT. THE PROPOSED PAVEMENT SHALL BE CONSTRUCTED UP TO AND INCLUDING THE INTERMEDIATE AND LEVELING COURSES. TWO-LANE, TWO-WAY TRAFFIC SHALL BE MAINTAINED ON THE WEST (SOUTHBOUND) SIDE OF MARKET AVENUE.

PHASE 4: SURFACE COURSE
THIS PHASE SHALL CONSIST OF CONSTRUCTING THE SURFACE COURSE THROUGHOUT THE ENTIRE PROJECT. TRAFFIC SHALL BE MAINTAINED USING FLAGGERS AS PER SCD MT-97.11.



MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON



ISSUED FOR BID

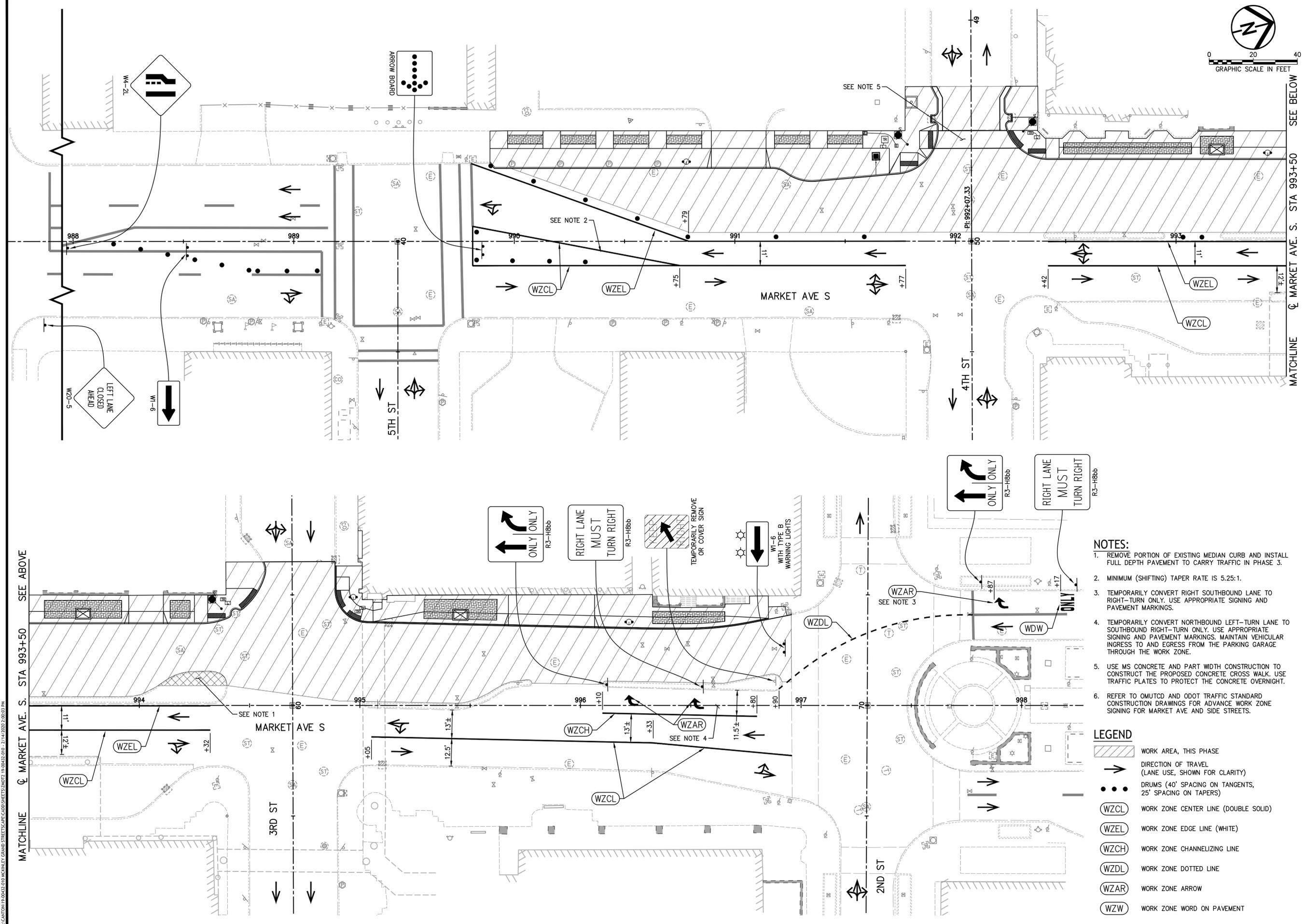
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PROJECT NO.: 19-00432-010
 DRAWN BY: RMS
 CHECKED BY: SAC
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MAINTENANCE OF TRAFFIC NOTES

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**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**

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- NOTES:**
1. REMOVE PORTION OF EXISTING MEDIAN CURB AND INSTALL FULL DEPTH PAVEMENT TO CARRY TRAFFIC IN PHASE 3.
 2. MINIMUM (SHIFTING) TAPER RATE IS 5.25:1.
 3. TEMPORARILY CONVERT RIGHT SOUTHBOUND LANE TO RIGHT-TURN ONLY. USE APPROPRIATE SIGNING AND PAVEMENT MARKINGS.
 4. TEMPORARILY CONVERT NORTHBOUND LEFT-TURN LANE TO SOUTHBOUND RIGHT-TURN ONLY. USE APPROPRIATE SIGNING AND PAVEMENT MARKINGS. MAINTAIN VEHICULAR INGRESS TO AND EGRESS FROM THE PARKING GARAGE THROUGH THE WORK ZONE.
 5. USE MS CONCRETE AND PART WIDTH CONSTRUCTION TO CONSTRUCT THE PROPOSED CONCRETE CROSS WALK. USE TRAFFIC PLATES TO PROTECT THE CONCRETE OVERNIGHT.
 6. REFER TO ODOT AND ODOT TRAFFIC STANDARD CONSTRUCTION DRAWINGS FOR ADVANCE WORK ZONE SIGNING FOR MARKET AVE AND SIDE STREETS.

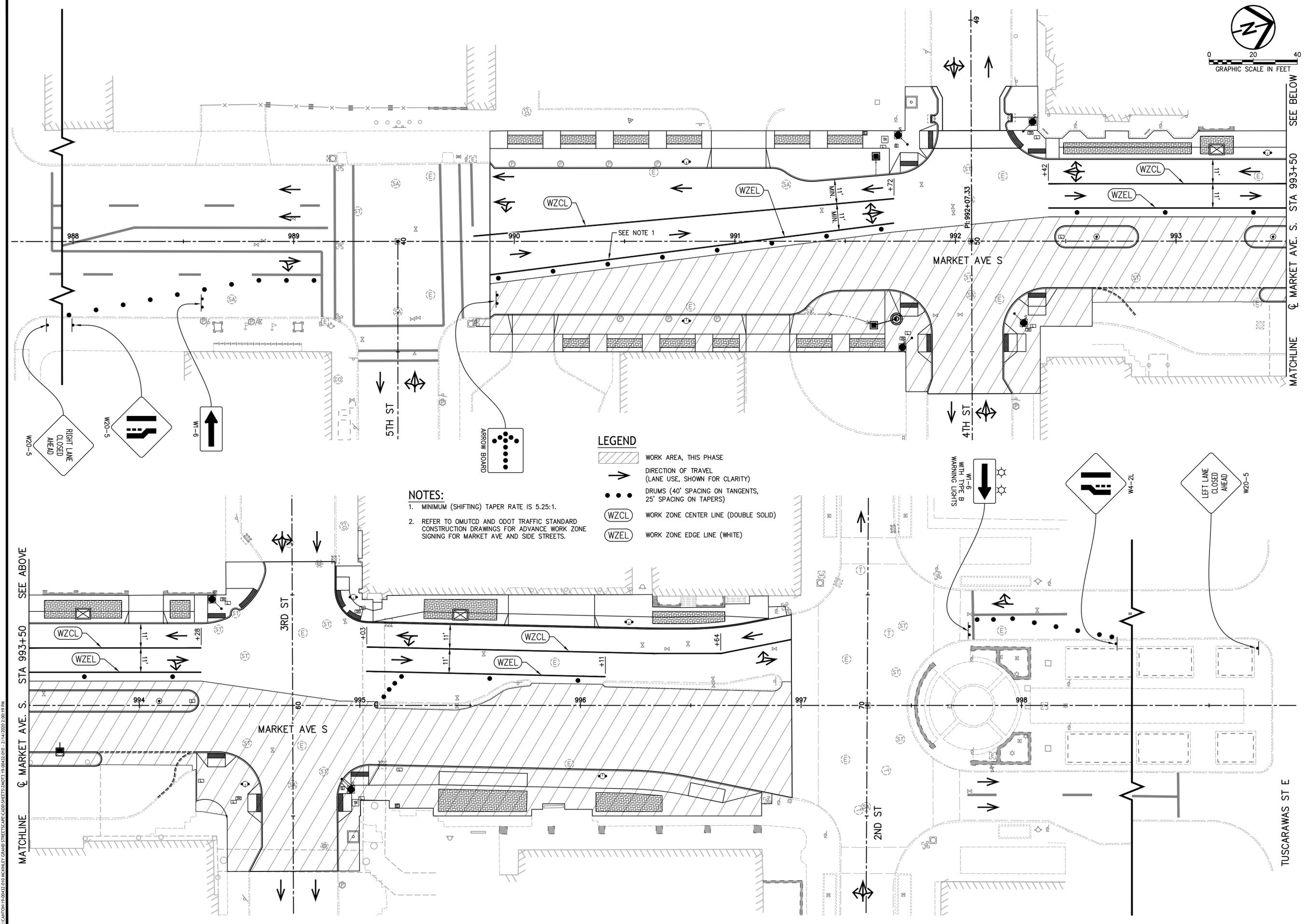
LEGEND

- WORK AREA, THIS PHASE
- DIRECTION OF TRAVEL (LANE USE, SHOWN FOR CLARITY)
- DRUMS (40' SPACING ON TANGENTS, 25' SPACING ON TAPERS)
- WORK ZONE CENTER LINE (DOUBLE SOLID)
- WORK ZONE EDGE LINE (WHITE)
- WORK ZONE CHANNELIZING LINE
- WORK ZONE DOTTED LINE
- WORK ZONE ARROW
- WORK ZONE WORD ON PAVEMENT

REVISIONS		
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 CHECKED BY: SAC
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© CANTON, OH 44303-0101 AKRON, OH 44303-0101 COLUMBUS, OH 43260-0101
 MARKET AVENUE SOUTH STREETSCAPE PHASE 2 - 2/14/2020 2:00:03 PM



- NOTES:**
1. MINIMUM (SHIFTING) TAPER RATE IS 5.25:1.
 2. REFER TO ODOT AND ODOT TRAFFIC STANDARD CONSTRUCTION DRAWINGS FOR ADVANCE WORK ZONE SIGNING FOR MARKET AVE AND SIDE STREETS.

- LEGEND**
- WORK AREA, THIS PHASE
 - DIRECTION OF TRAVEL (LANE USE, SHOWN FOR CLARITY)
 - DRUMS (40' SPACING ON TANGENTS, 25' SPACING ON TAPERS)
 - WZCL WORK ZONE CENTER LINE (DOUBLE SOLID)
 - WZEL WORK ZONE EDGE LINE (WHITE)

**MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON**



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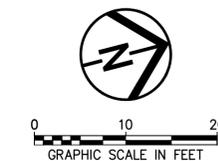
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**MAINTENANCE OF
TRAFFIC PLAN -
PHASE 3**

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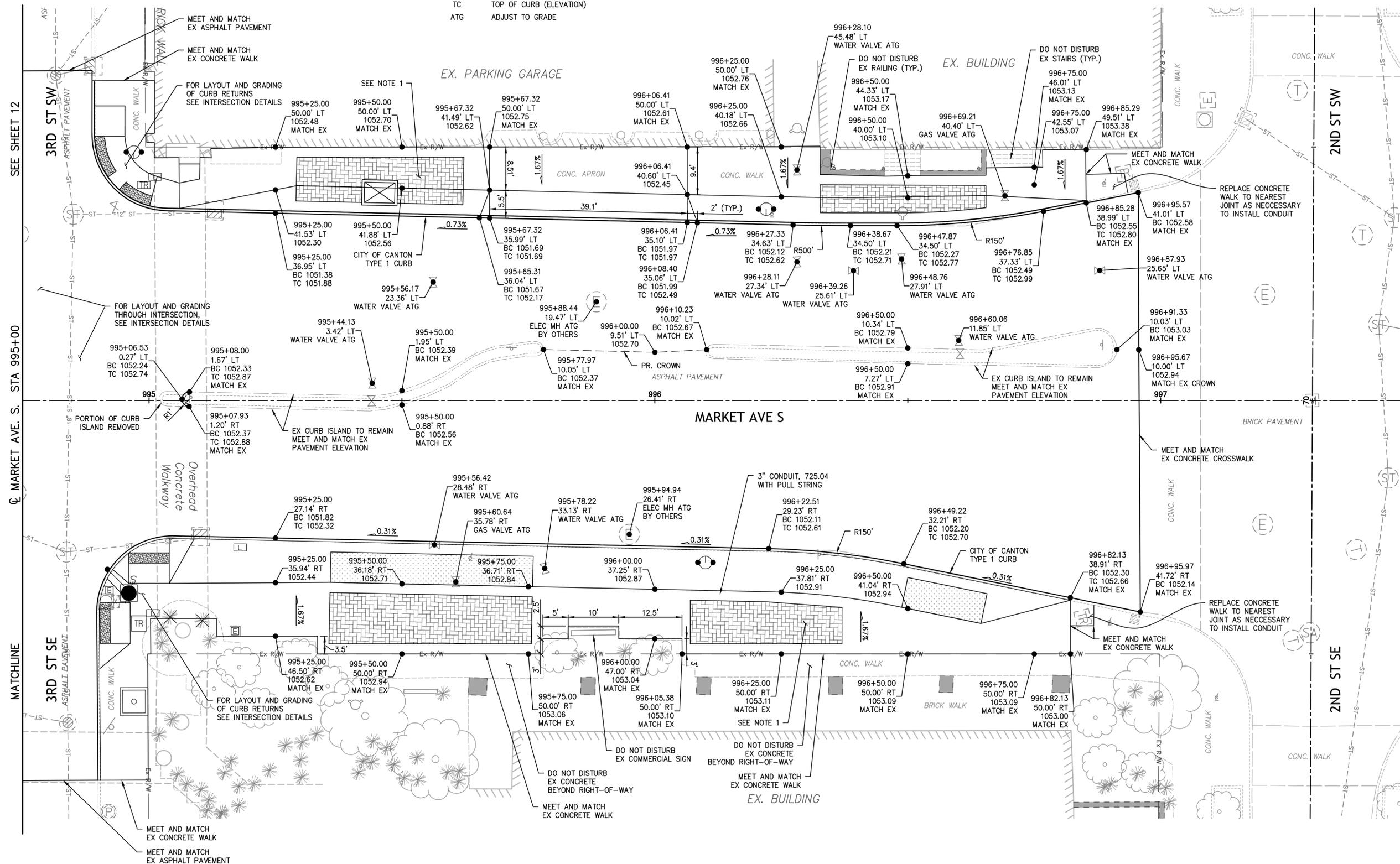


LEGEND

- SEEDING AND MULCHING
- LANDSCAPING BRICK
SEE STREETScape PLAN, SHEETS 28-31
- LANDSCAPE BED
SEE STREETScape PLAN, SHEETS 28-31
- BC BOTTOM OF CURB (ELEVATION)
- TC TOP OF CURB (ELEVATION)
- ATG ADJUST TO GRADE

NOTES:

1. FOR LAYOUT OF STREETScape AND LANDSCAPING ELEMENTS, SEE SHEETS 28-31.
2. ALL DRIVE APRONS SHALL FOLLOW REQUIREMENTS OF CITY OF CANTON STANDARD DRAWINGS NO. 27 AND 28; WITH DIMENSIONS AND ELEVATIONS AS SHOWN IN THESE PLANS.



**MARKET AVENUE SOUTH
 STREETScape
 CITY OF CANTON**



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**GRADING AND
 LAYOUT PLAN**

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**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**



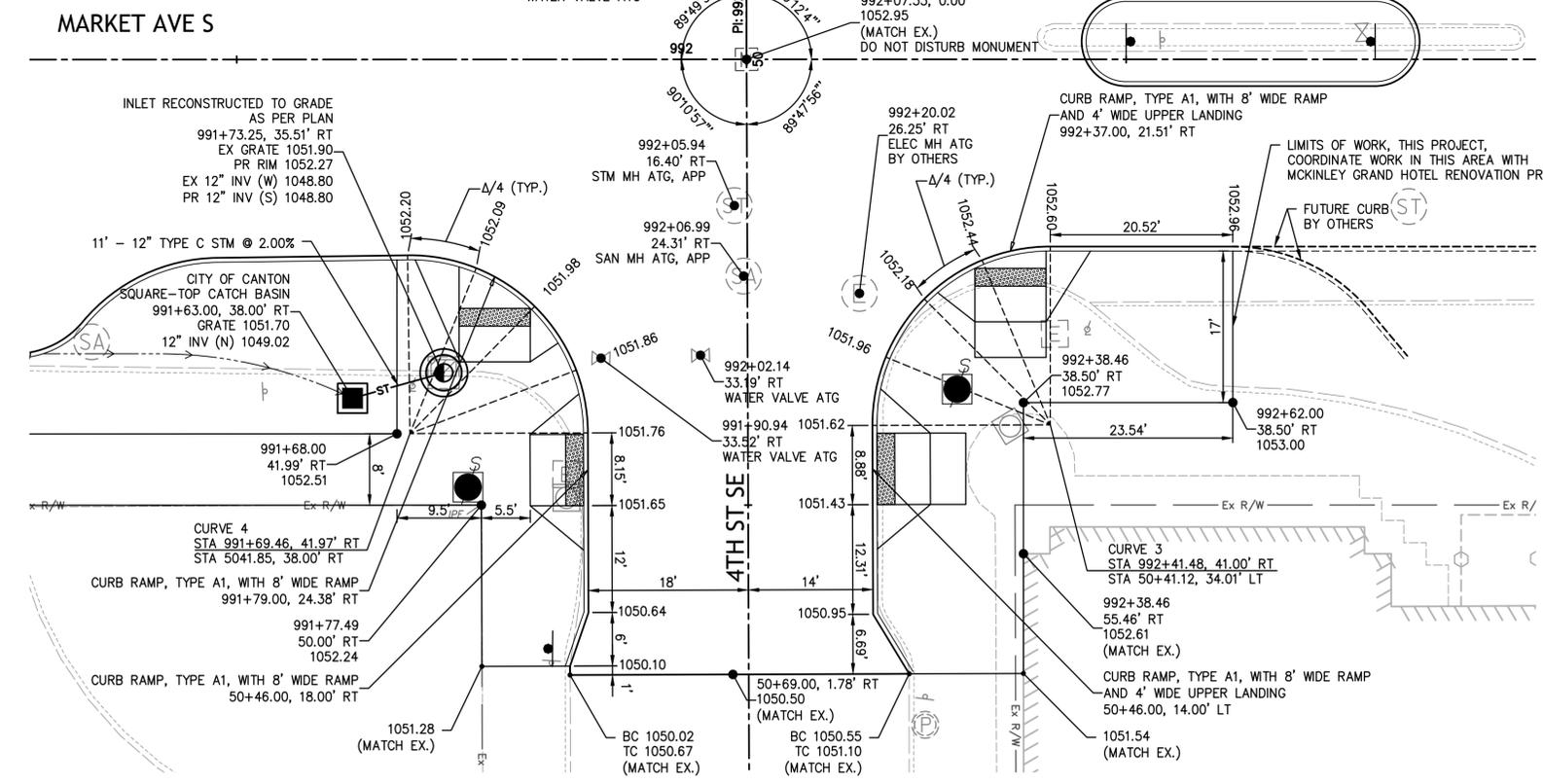
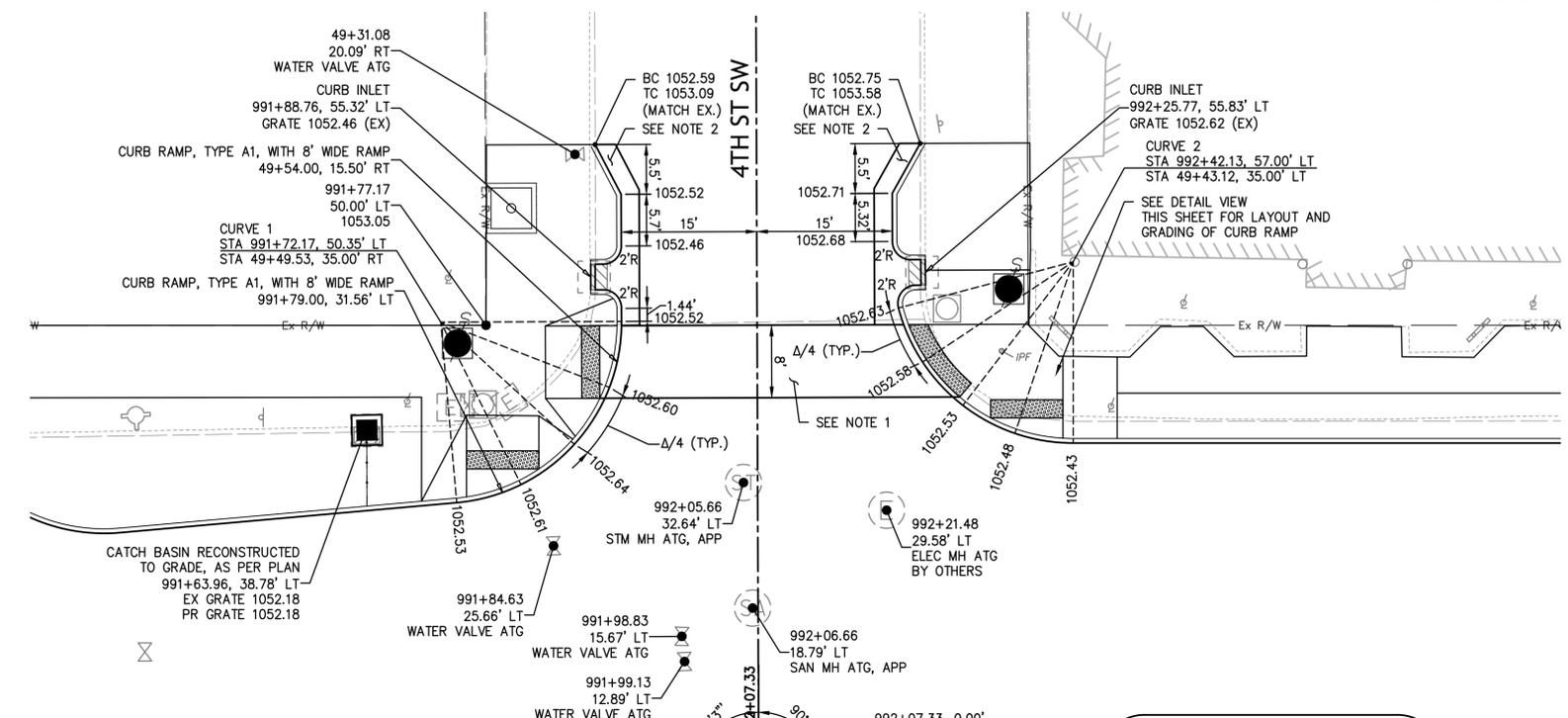
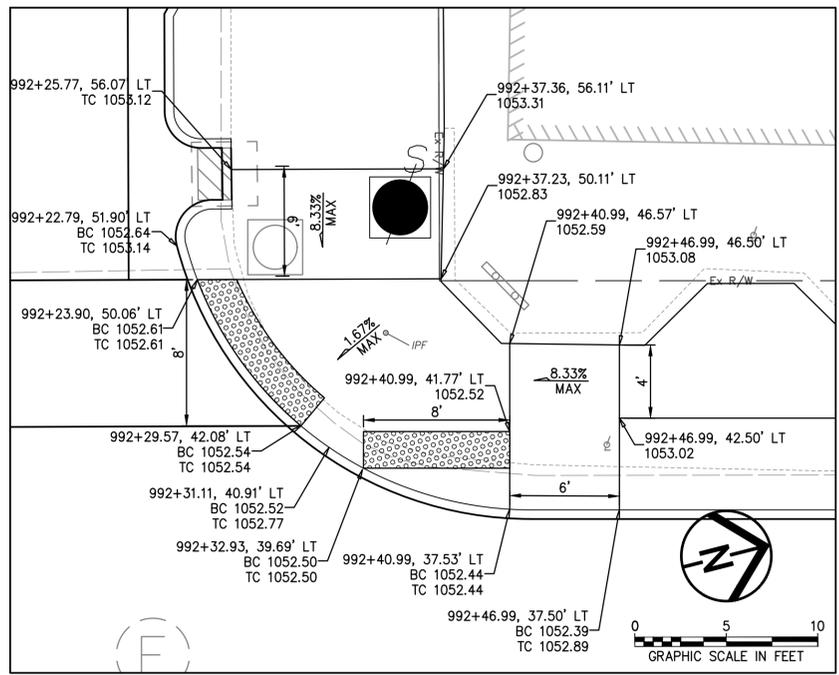
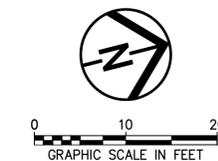
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**INTERSECTION
 DETAILS - 4TH ST**



LEGEND

- DETECTABLE WARNINGS
- BC BOTTOM OF CURB (ELEVATION)
- TC TOP OF CURB (ELEVATION)
- ATG ADJUST TO GRADE

NOTES:

1. CONCRETE CROSSWALK AND PAVEMENT TRANSITION PER STANDARD DRAWING NO. 34. CROSSWALK EDGES TO ALIGN WITH LIMITS OF CURB RAMP DETECTABLE WARNINGS.
2. REMOVE BRICK PAVEMENT AS NECESSARY TO INSTALL PROPOSED CURB. REPAIR BRICK PAVEMENT PER CITY OF CANTON STANDARD DRAWING NO. 31.
3. ALL ELEVATIONS GIVEN ALONG CURB RETURNS ARE BOTTOM OF CURB UNLESS OTHERWISE NOTED.

CURVE DATA FOR RADIUS RETURNS			
CURVE NO.	RADIUS	INTERIOR ANGLE	LENGTH OF CURVE
1	20.00'	86° 32' 03"	30.21'
2	20.00'	85° 07' 34"	29.71'
3	20.00'	90° 12' 07"	31.49'
4	20.00'	90° 33' 36"	28.42'

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COORDINATION WITH CITY OF CANTON

THE FOLLOWING ITEMS WILL BE FURNISHED AND FULLY INSTALLED BY THE CITY OF CANTON FORCES: NOSTALGIA SIGNAL SUPPORTS, VEHICULAR SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, PREEMPTION, PREEMPTION RECEIVING UNIT, PREEMPTION PHASE SELECTOR, CONTROLLER UNIT, UNINTERRUPTIBLE POWER SUPPLY, ALL SIGNAL AND PREEMPTION CABLES FROM CONTROLLER BOX TO SIGNALS.

THE FOLLOWING ITEMS WILL BE FURNISHED BY THE CITY OF CANTON TO BE INSTALLED BY THE CONTRACTOR: CONTROLLER BOX TO BE INSTALLED IN GATEWAY COLUMN, ANCHOR BOLTS TO BE INSTALLED IN SIGNAL POLE FOUNDATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OTHER ITEMS AND MATERIALS NECESSARY TO COMPLETE THE SIGNAL INSTALLATION.

ITEM 625 - GROUND ROD, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT C&MS 625.16 AND 725.16, THE PROVIDED GROUND RODS SHALL BE CONSTRUCTED OF COPPER CLAD STEEL.

ITEM 625 - PULL BOX, MISC.: 725.06 (BY SIZE)

PULL BOXES SHALL BE MANUFACTURED BY CARSON BROOKS, QUAZITE OF SYNERTECH OR APPROVED EQUAL. ALL PULL BOXES SHALL INCLUDE A POLYMER CONCRETE RING AND COVER TYPE, OR EQUAL, AND SHALL BE MARKED "TRAFFIC". THE PULL BOX SHALL BE FIBERGLASS REINFORCED POLYESTER, OR EQUAL, WITH INSERTS AND SHALL BE 18" IN DEPTH. EACH PULL BOX SHALL INCLUDE TWO (2) STAINLESS STEEL HEX BOLTS. EACH PULL BOX AND COVER SHALL HAVE A MINIMUM LOAD RATING OF 20,000 POUNDS CAPACITY IN ACCORDANCE WITH THE WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. UNDERDRAINS SHALL NOT BE INSTALLED IN PULL BOXES.

ITEM 625 - CONDUIT, 4", 725.051, AS PER PLAN

ALL CONDUITS AND FITTINGS SHALL BE SCHEDULE 40 PVC. ALL CONDUITS SHALL HAVE PULL WIRE. ALL CONDUITS ENTERING A PULL BOX, POLE, ETC., SHALL NOT EXTEND MORE THAN ONE (1) INCH BEYOND ENTERING THE PULL BOX, POLE, ETC. TRENCHING FOR THE INSTALLATION OF TRAFFIC SIGNAL CONDUIT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE PAYMENT FOR THE CONDUIT.

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

THE REMOVAL SHALL CONSIST OF VEHICULAR SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, CONTROLLER WITH CABINET, TRAFFIC POLES AND PEDESTALS, FOUNDATIONS, PULL BOXES, MAST ARMS, SIGNAL CABLE, CONDUIT RISER, MISCELLANEOUS ATTACHMENTS, POLE AND MAST ARM MOUNTED SIGNS, AND ALL OTHER PORTIONS OF A TRAFFIC SIGNAL INSTALLATION PER SECTION 632.26. UNLESS OTHERWISE DESIGNATED, ALL TRAFFIC POLES AND ARMS REMOVED SHALL BE DELIVERED TO THE CITY OF CANTON TRAFFIC SIGN AND PAINT DIVISION AT 2506 CLEVELAND AVENUE S.W., CANTON, OHIO. IN ADDITION UNLESS OTHERWISE DESIGNATED, ALL OTHER ITEMS REMOVED EXCEPT SIGNAL CABLES SHALL BE DELIVERED TO THE CITY OF CANTON TRAFFIC SIGNAL DIVISION AT 2436-30TH STREET N.E., CANTON, OHIO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF SIGNAL CABLES, AND ANY OTHER TRAFFIC SIGNAL ITEMS DESIGNATED BY THE ENGINEER.

THE EXISTING SIGNAL AT THE INTERSECTION OF MARKET AVENUE S. WITH 5TH STREET S.E. AND THE EXISTING SIGNAL AT THE INTERSECTION OF MARKET AVENUE S. WITH 2ND STREET SHALL NOT BE REMOVED.

ITEM 632 - SIGNALIZATION, MISC.: TEST HOLE PERFORMED

IT IS ANTICIPATED THAT THE CONTRACTOR WILL ENCOUNTER UNDERGROUND UTILITIES WHILE EXCAVATING FOR SIGNAL SUPPORT FOUNDATIONS. IF, AFTER ACCURATELY IDENTIFYING THE PROPOSED LOCATION OF THE FOUNDATION, AS SHOWN IN THE PLAN, AND AFTER MODIFYING THAT LOCATION, IF NECESSARY, BASED ON THE FIELD MARKING OF UNDERGROUND UTILITY LOCATION, THE CONTRACTOR DISCOVERS A UTILITY CONFLICT DURING HIS EXCAVATION OPERATION, HE WILL BE COMPENSATED FOR THE LABOR AND EQUIPMENT COST ASSOCIATED FOR EACH PARTIAL FOUNDATION EXCAVATION ACCORDING TO HIS BID PRICE.

BEFORE THE CONTRACTOR BEGINS THE EXCAVATION AT THE MODIFIED LOCATION, HE SHALL VERIFY THAT THERE WILL BE NO OVERHEAD UTILITY CONFLICTS RESULTING FROM THE NEW SIGNAL SUPPORT LOCATION. NEW SUPPORT LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.

THE CONTRACTORS' WORK UNDER THIS BID ITEM SHALL INCLUDE BACKFILLING, COMPACTING, AND RESTORATION FOR THE EXCAVATION TO ITS ORIGINAL CONDITION.

EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID PER EACH ITEM 632, SIGNALIZATION, MISC.: TEST HOLE PERFORMED. A QUANTITY OF Z HAS BEEN PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 632 - POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.24 THE CONTRACTOR SHALL PROVIDE POWER SERVICE CABLE, CONDUIT AND PULL BOXES AS NECESSARY TO PROVIDE POWER TO THE PROPOSED CONTROLLER CABINET. THE POWER SOURCE SHALL BE THE SAME MILBANK PEDESTAL UTILIZED FOR POWER SERVICE FOR THE LIGHTING INCLUDED IN THIS PROJECT. THE CONTRACTOR SHALL COORDINATE RELATED WORK WITH AMERICAN ELECTRIC POWER WHO WILL MAKE THE ELECTRICAL SERVICE CONNECTION TO THE MILBANK. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE THE POWER CABLE INTO AMERICAN ELECTRIC POWER'S CIRCUITRY. ANY FEES ASSOCIATED WITH OBTAINING POWER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. POWER SUPPLIED SHALL BE 120 VOLTS.

THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNAL IS ACCEPTED BY THE CITY OF CANTON.

THE COST FOR ALL NECESSARY ITEMS AND ASSOCIATED LABOR SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 632, POWER SERVICE, AS PER PLAN.

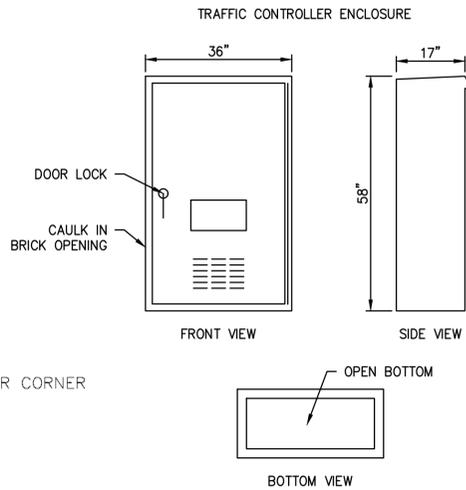
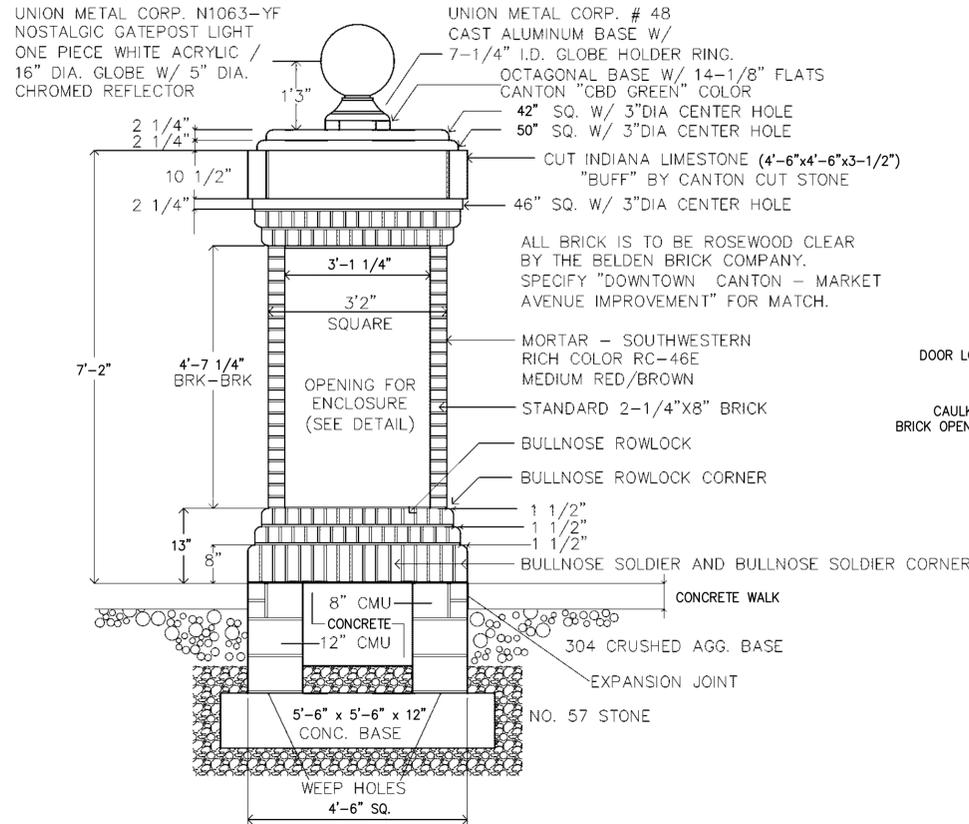
ITEM 633 - CONTROLLER ITEM, MISC.: GATEWAY COLUMN

GATEWAY COLUMN SHALL BE INSTALLED AS DETAILED IN THE PLANS. THE CITY SHALL PROVIDE THE CONTROLLER CABINET AND RISER TO BE INSTALLED BY THE CONTRACTOR WITHIN THE GATEWAY COLUMN.

THE COST FOR ALL NECESSARY ITEMS AND ASSOCIATED LABOR SHALL BE INCLUDED IN THE CONTRACT BID PRICE PER EACH ITEM 633, CONTROLLER ITEM, MISC.: GATEWAY COLUMN.

ITEM 633 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN

SIGNAL POLE FOUNDATIONS SHALL BE CONSTRUCTED AS PER CITY OF CANTON STANDARD DRAWINGS NO. 61, 62, 63, AND 65. THE CONTRACTOR SHALL CONTACT THE CITY TO OBTAIN THE ANCHOR BOLTS. ALL OTHER REQUIREMENTS OF CMS SECTION 625 AND THE STANDARD DRAWINGS SHALL STILL BE APPLICABLE. PAYMENT FOR THIS ITEM SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, EXCAVATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.



- NOTES:**
1. TRAFFIC CONTROLLER RISER SHALL BE INSTALLED INTERNAL TO THE GATEWAY COLUMN. RISER SHALL BE SECURED TO FOUNDATION USING BOLTS PER MANUFACTURER'S RECOMMENDATION. TRAFFIC CONTROLLER ENCLOSURE SHALL BE BOLTED TO RISER PER MANUFACTURER'S RECOMMENDATION.
 2. TRAFFIC CONTROLLER ENCLOSURE AND RISER TO BE PROVIDED BY THE CITY TO CONTRACTOR FOR INSTALLATION IN GATEWAY COLUMN.

1 GATEWAY COLUMN
16 NOT TO SCALE

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**MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON**



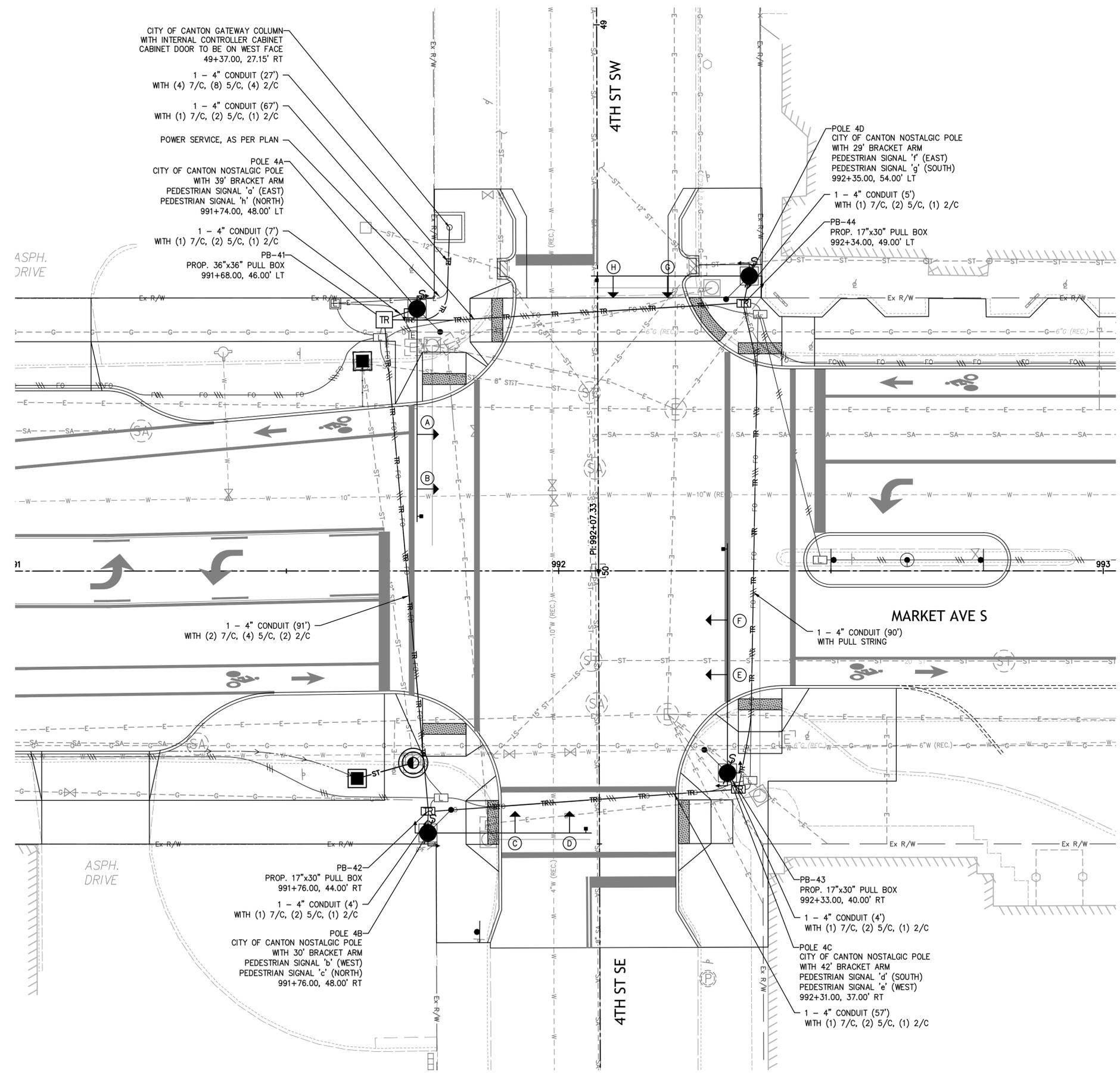
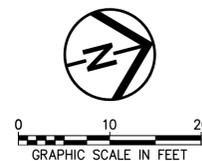
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PROJECT NO.: 19-00432-010
DRAWN BY: RMS
CHECKED BY: SAC
DATE ISSUED: 2020/02/14

TRAFFIC SIGNAL NOTES



- NOTES:**
1. THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS FOR POTENTIAL UTILITY CONFLICTS. FINAL POLE LOCATIONS TO BE ADJUSTED AS NECESSARY AND AS DIRECTED BY THE ENGINEER.
 2. CONDUITS FOR LIGHTING AND COMMUNICATIONS ARE NOT ANNOTATED IN THE TRAFFIC SIGNAL PLANS AND MAY BE LOCATED IN THE SAME TRENCH AS TRAFFIC SIGNAL CONDUITS. REFER TO LIGHTING PLANS FOR LOCATIONS OF CONDUITS RELATED TO LIGHTING AND COMMUNICATIONS.
 3. WIRING FOR TRAFFIC SIGNAL INSTALLATION FROM CONTROLLER TO SIGNALS SHALL BE PERFORMED BY CITY OF CANTON FORCES. WIRING SHOWN IN CONDUITS IS FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE PULL WIRE IN ALL CONDUITS TO FACILITATE INSTALLATION OF WIRING BY CITY FORCES.

**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**



ISSUED FOR BID

DATE: _____

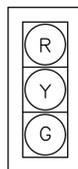
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**TRAFFIC SIGNAL PLAN
 MARKET AVE S & 4TH
 STREET SE**

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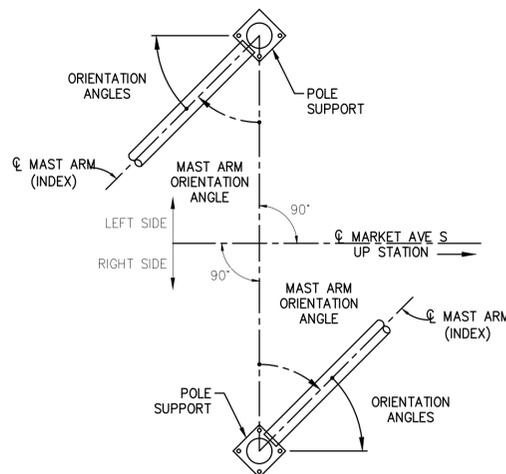
12" LENS 1-WAY WITH BACKPLATE



ALL PEDESTRIAN SIGNALS TYPE D2-COUNTDOWN

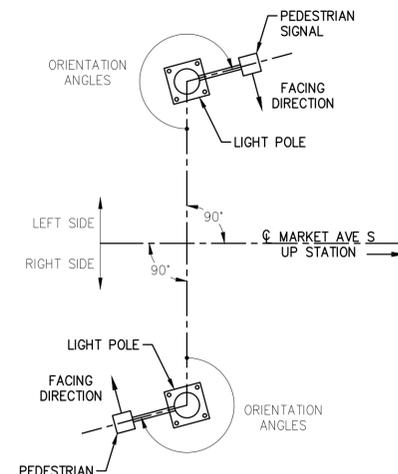
LED SIGNAL HEAD CONFIGURATION

SIGNAL POLE ORIENTATION CHART												
SUPPORT NO.	SIGNAL SUPPORT							MAST ARM ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM			
	L (FT.)	L1 (FT.)	L2 (FT.)	L3 (FT.)	L4 (FT.)	L5 (FT.)	ELEVATION 'A'		ELEVATION 'B'	PEDESTRIAN SIGNAL	HAND HOLE	LUMINAIRE
4A	39	10	23	36	33	38	1052.78	1053.00	0	90/180	180	315
4B	30	10	16	-	26	29	1051.66	1052.30	90	180/270	90	45
4C	42	10	18	-	28	41	1052.90	1052.35	0	90/180	180	315
4D	29	10	15	-	25	28	1052.25	1053.25	90	180/270	0	45

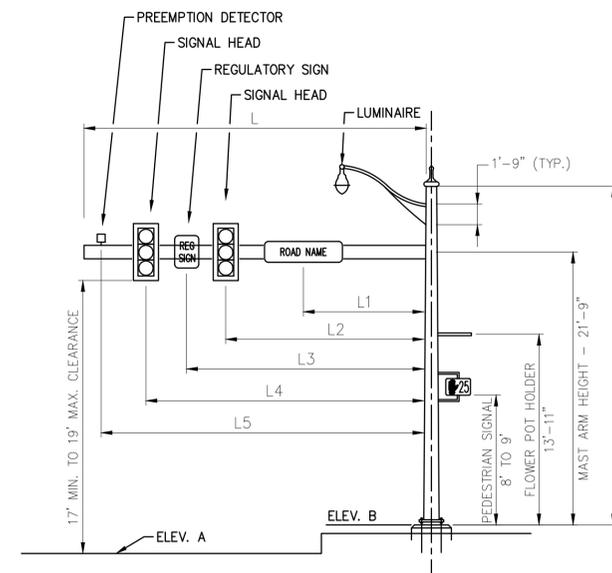


MAST ARM ORIENTATION DETAIL

- NOTES:**
 1. ALL ANGLES ARE MEASURED CLOCKWISE.
 2. SIGNAL POLE AND PEDESTAL FOUNDATION ORIENTATIONS AS SHOWN ON THE TRAFFIC SIGNAL PLAN SHEET.



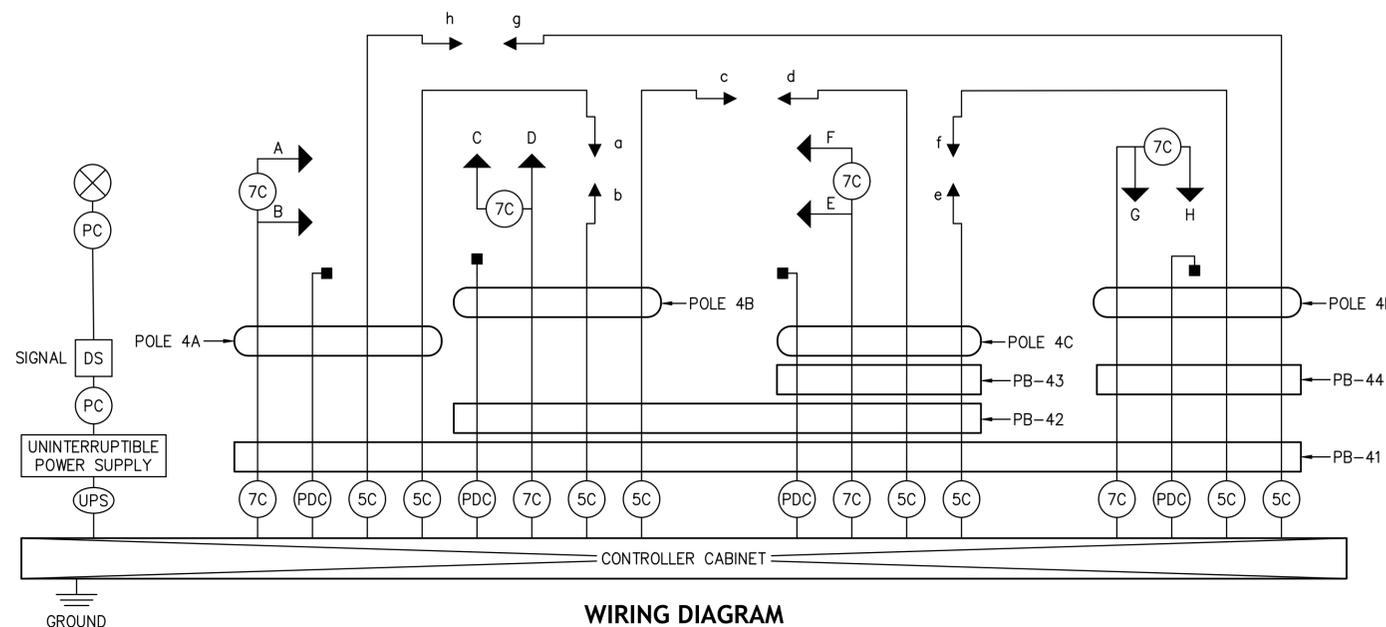
LIGHTING ORIENTATION DETAIL



ELEVATION DETAILS

NOTES:

1. WIRING FOR TRAFFIC SIGNAL INSTALLATION FROM CONTROLLER TO SIGNALS SHALL BE PERFORMED BY CITY OF CANTON FORCES. WIRING DIAGRAM IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE PULL WIRE IN ALL CONDUITS TO FACILITATE INSTALLATION OF WIRING BY CITY FORCES.



WIRING DIAGRAM

LEGEND

- ⊗ POWER SOURCE
- DS DISCONNECT SWITCH
- PC POWER CABLE, 2 CONDUCTOR, NO. 4 AWG
- UPS UNINTERRUPTIBLE POWER SUPPLY CABLE
- 5C SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
- 7C SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- PDC PREEMPTION DETECTION CABLE
- ➡ PEDESTRIAN SIGNAL HEAD
- ➡ 3 SECTION VEHICULAR SIGNAL HEAD, 12" LENS, 1-WAY
- PREEMPTION RECEIVING UNIT

**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**



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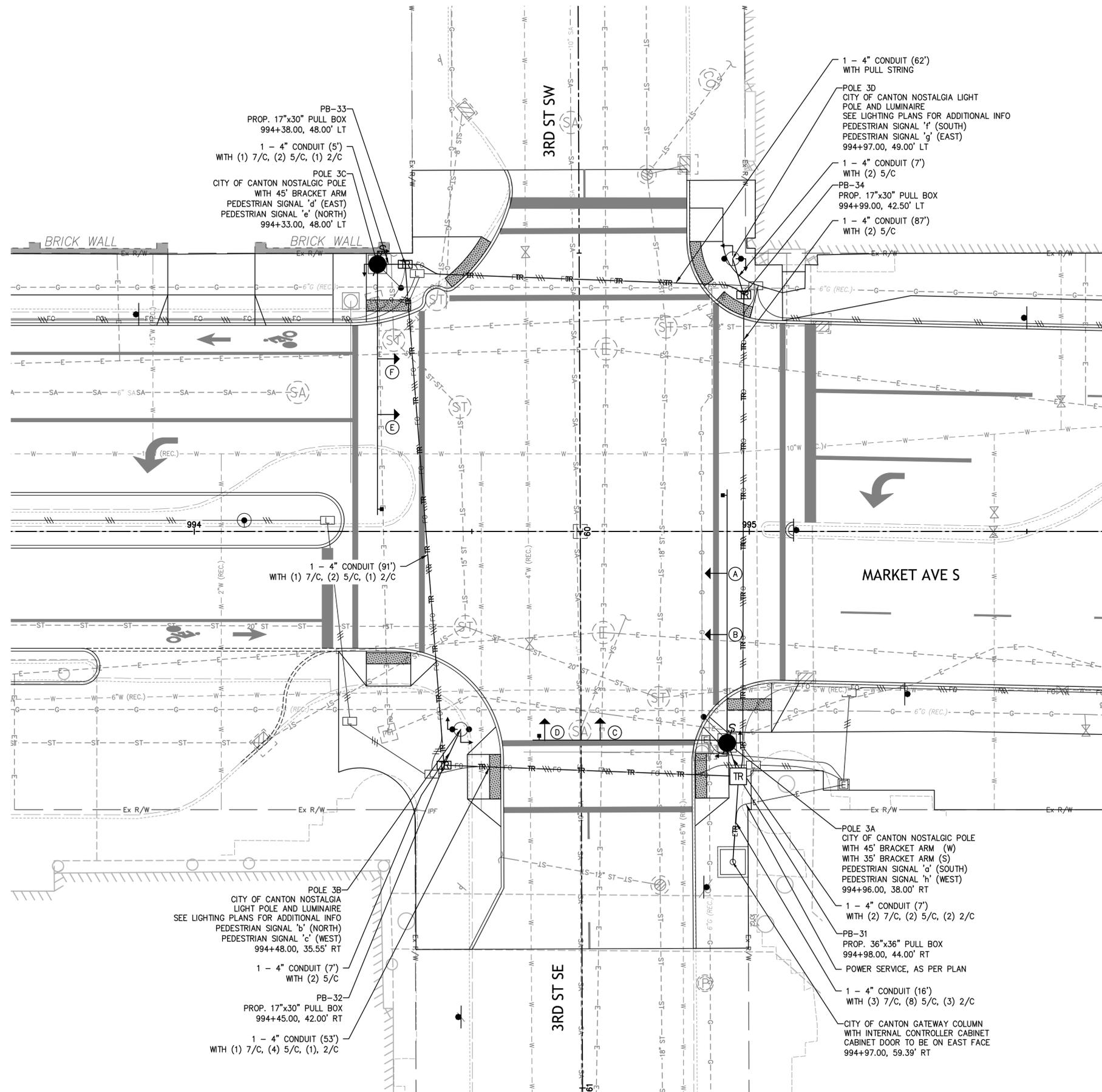
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**TRAFFIC SIGNAL
 DETAILS MARKET AVE
 S & 4TH STREET SE**



811 Know what's below.
 Call before you dig.



NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS FOR POTENTIAL UTILITY CONFLICTS. FINAL POLE LOCATIONS TO BE ADJUSTED AS NECESSARY AND AS DIRECTED BY THE ENGINEER.
2. CONDUITS FOR LIGHTING AND COMMUNICATIONS ARE NOT ANNOTATED IN THE TRAFFIC SIGNAL PLANS AND MAY BE LOCATED IN THE SAME TRENCH AS TRAFFIC SIGNAL CONDUITS. REFER TO LIGHTING PLANS FOR LOCATIONS OF CONDUITS RELATED TO LIGHTING AND COMMUNICATIONS.
3. WIRING FOR TRAFFIC SIGNAL INSTALLATION FROM CONTROLLER TO SIGNALS SHALL BE PERFORMED BY CITY OF CANTON FORCES. WIRING SHOWN IN CONDUITS IS FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE PULL WIRE IN ALL CONDUITS TO FACILITATE INSTALLATION OF WIRING BY CITY FORCES.

**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**



ISSUED FOR BID

DATE: _____

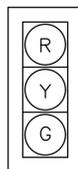
REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT NO.: 19-00432-010
 DRAWN BY: RMS
 CHECKED BY: SAC
 DATE ISSUED: 2020/02/14

**TRAFFIC SIGNAL PLAN
 MARKET AVE S & 3RD
 STREET SE**

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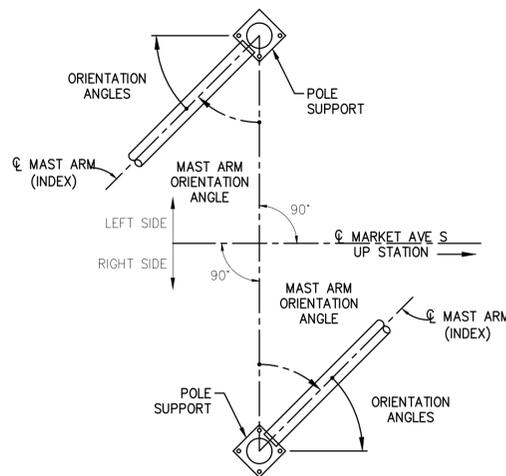
12" LENS 1-WAY WITH BACKPLATE



ALL PEDESTRIAN SIGNALS TYPE D2-COUNTDOWN

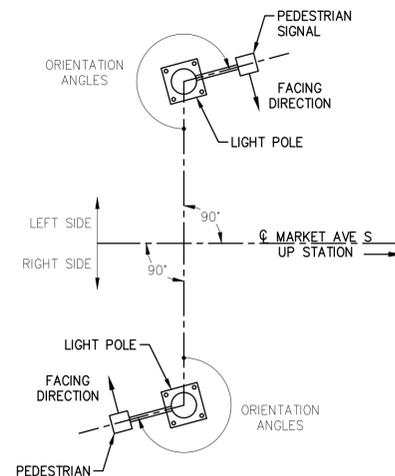
LED SIGNAL HEAD CONFIGURATION

SIGNAL POLE ORIENTATION CHART												
SUPPORT NO.	SIGNAL SUPPORT								MAST ARM ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM		
	L (FT.)	L1 (FT.)	L2 (FT.)	L3 (FT.)	L4 (FT.)	L5 (FT.)	ELEVATION 'A'	ELEVATION 'B'		PEDESTRIAN SIGNAL	HAND HOLE	LUMINAIRE
3A (E-W)	45	10	19	22 / 26	30	44	1052.10	1052.00	0	90/180	180	315
3A (N-S)	35	18	23	-	33	34	1051.00	-	270	-	-	-
3B	-	-	-	-	-	-	-	1051.75	-	180/270	90	-
3C	45	10	17	30	27	44	1051.83	1051.60	0	90/180	180	315
3D	-	-	-	-	-	-	-	1051.80	-	180/270	0	-

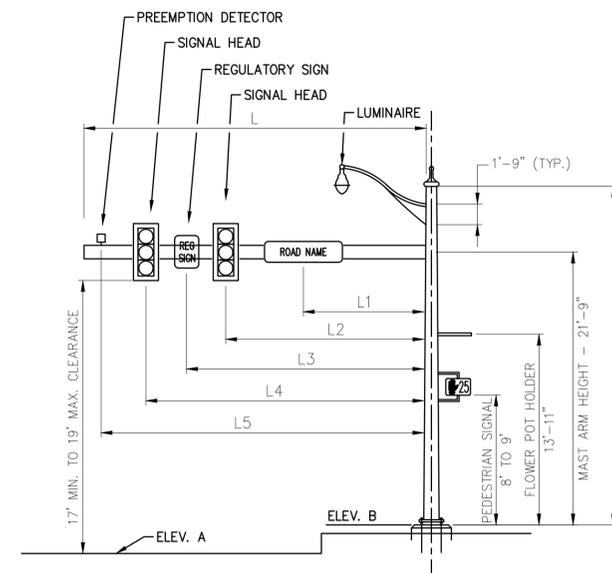


MAST ARM ORIENTATION DETAIL

NOTES:
 1. ALL ANGLES ARE MEASURED CLOCKWISE.
 2. SIGNAL POLE AND PEDESTAL FOUNDATION ORIENTATIONS AS SHOWN ON THE TRAFFIC SIGNAL PLAN SHEET.



LIGHTING ORIENTATION DETAIL



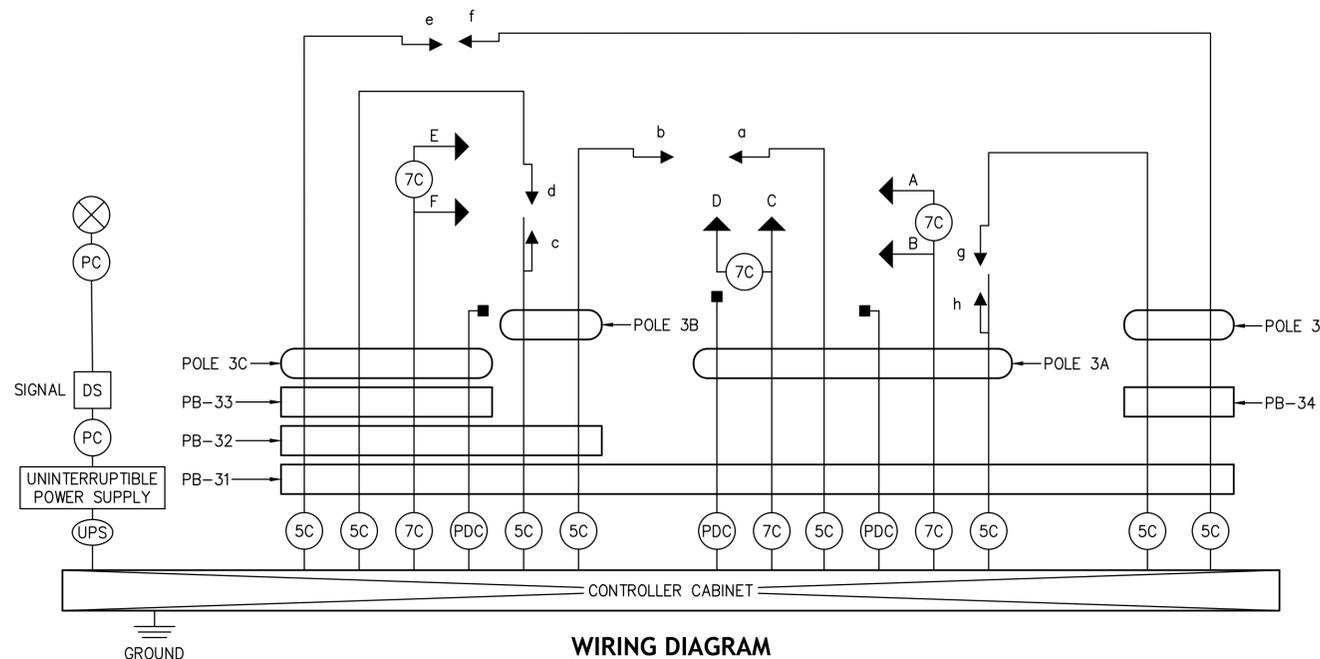
ELEVATION DETAILS

NOTES:

1. WIRING FOR TRAFFIC SIGNAL INSTALLATION FROM CONTROLLER TO SIGNALS SHALL BE PERFORMED BY CITY OF CANTON FORCES. WIRING DIAGRAM IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE PULL WIRE IN ALL CONDUITS TO FACILITATE INSTALLATION OF WIRING BY CITY FORCES.

LEGEND

- ⊗ POWER SOURCE
- DS DISCONNECT SWITCH
- PC POWER CABLE, 2 CONDUCTOR, NO 4. AWG
- UPS UNINTERRUPTIBLE POWER SUPPLY CABLE
- 5C SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
- 7C SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- PDC PREEMPTION DETECTION CABLE
- ➡ PEDESTRIAN SIGNAL HEAD
- ➡ 3 SECTION VEHICULAR SIGNAL HEAD, 12" LENS, 1-WAY
- PREEMPTION RECEIVING UNIT



WIRING DIAGRAM

**MARKET AVENUE SOUTH
 STREETSCAPE
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**TRAFFIC SIGNAL
 DETAILS MARKET AVE
 S & 3RD STREET SE**

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYPED IN ACCORDANCE WITH C&MS 631.06. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

DECORATIVE STREET LIGHT POLES

THE DECORATIVE STREET LIGHT POLES, LUMINAIRES, AND WIRING INTERIOR TO THE LIGHT POLES ARE TO BE FURNISHED AND INSTALLED BY THE CITY OF CANTON FORCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OTHER ITEMS AND MATERIALS NECESSARY TO COMPLETE THE LIGHT POLE INSTALLATION, UP TO AND INCLUDING THE LIGHT POLE FOUNDATION, CONDUITS, WIRING, AND CONNECTOR KITS.

ITEM 625 – POWER SERVICE (LIGHTING), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THE PROJECT IS:

AMERICAN ELECTRIC POWER
301 CLEVELAND AVENUE SW
CANTON, OHIO 44720
PHONE: 330-438-7061

POWER SERVICE: 120/240 OR 120/208 VOLT, 100 AMP, 3-WIRE, SINGLE PHASE, GROUNDED NEUTRAL. THIS PROJECT HAS BEEN DESIGNED ON A BASIS OF A MAXIMUM 5% VOLTAGE DROP.

THE CONTRACTOR SHALL PAY ALL ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED FOR THIS PROJECT. UPON COMPLETION OF THIS PROJECT AND AFTER WRITTEN AUTHORIZATION FROM THE CITY, THE POWER SERVICE ELECTRICAL ENERGY ACCOUNT SHALL BE TRANSFERRED TO THE CITY. THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

THE CONTRACTOR SHALL FURNISH AND INSTALL ONE MILBANK SWITCH LOAD CONTROLLER MODEL CP3B51215AA0SP10. THE CONTRACTOR SHALL ALSO PROVIDE THE WORK PAD, GROUND ROD, ALL NECESSARY CONDUIT, WIRING, HARDWARE, AND FITTINGS FOR EACH POWER SERVICE LOCATION FROM THE DESIGNATED POWER SOURCE TO THE PROPOSED CONTROLLER AT THE LOCATIONS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, POWER SERVICE (LIGHTING), AS PER PLAN WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 – NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN

ELECTRICAL CONDUCTORS SHALL BE TYPE XHHW STRANDED COPPER. ELECTRICAL CONDUCTORS IN CONDUIT SHALL BE ELECTRICALLY CONTINUOUS BETWEEN LIGHT POLES AND THE LIGHTING CONTROLLER. UNDERGROUND SPLICES SHALL NOT BE PERMITTED. ALL OTHER REQUIREMENTS OF CMS SECTION 625 SHALL STILL BE APPLICABLE.

ITEM 625 – NO. 6 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN

ELECTRICAL CONDUCTORS SHALL BE TYPE XHHW STRANDED COPPER. ELECTRICAL CONDUCTORS IN CONDUIT SHALL BE ELECTRICALLY CONTINUOUS BETWEEN LIGHT POLES AND THE LIGHTING CONTROLLER. UNDERGROUND SPLICES SHALL NOT BE PERMITTED. THE CONTRACTOR SHALL FURNISH THE CONNECTORS AT THE LIGHT POLE BASES AS PER CITY STANDARD DRAWING NO. 65. ALL OTHER REQUIREMENTS OF CMS SECTION 625 SHALL STILL BE APPLICABLE.

ITEM 625 – CONDUIT, 2", 725.051, AS PER PLAN

ALL CONDUITS AND FITTINGS SHALL BE SCHEDULE 40 PVC. ALL CONDUITS SHALL HAVE PULL WIRE. ALL CONDUITS ENTERING A PULL BOX, POLE, ETC., SHALL NOT EXTEND MORE THAN ONE (1) INCH BEYOND ENTERING THE PULL BOX, POLE, ETC. TRENCHING FOR THE INSTALLATION OF ELECTRICAL CONDUIT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE PAYMENT FOR THE CONDUIT. WHERE POSSIBLE, THE ELECTRICAL CONDUIT SHALL BE PLACED IN THE TRENCH BEHIND THE CURB.

ITEM 625 – CONDUIT, 3", 725.051, AS PER PLAN

ALL CONDUITS AND FITTINGS SHALL BE SCHEDULE 40 PVC. ALL CONDUITS SHALL HAVE PULL WIRE. ALL CONDUITS ENTERING A PULL BOX, POLE, ETC., SHALL NOT EXTEND MORE THAN ONE (1) INCH BEYOND ENTERING THE PULL BOX, POLE, ETC. TRENCHING FOR THE INSTALLATION OF ELECTRICAL CONDUIT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE PAYMENT FOR THE CONDUIT. WHERE POSSIBLE, THE ELECTRICAL CONDUIT SHALL BE PLACED IN THE TRENCH BEHIND THE CURB.

ITEM 625 – GROUND ROD, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT CMS 625.16 AND 725.16, THE PROVIDED GROUND ROD SHALL BE CONSTRUCTED OF COPPER CLAD STEEL.

ITEM 625 – PULL BOX, MISC.: LIGHTING, 725.06, (BY SIZE)

PULL BOXES SHALL BE MANUFACTURED BY CARSON BROOKS QUAZITE OR SYNERTech OR APPROVED EQUAL. ALL PULL BOXES SHALL INCLUDE A POLYMER CONCRETE RING AND COVER TYPE OR EQUAL. THE PULL BOX SHALL BE FIBERGLASS REINFORCED POLYESTER, OR EQUAL, WITH INSERTS AND SHALL BE 18 INCHES DEPTH. EACH PULL BOX SHALL INCLUDE TWO (2) STAINLESS STEEL HEX BOLTS. EACH PULL BOX AND COVER SHALL HAVE A MINIMUM LOAD RATING OF 20,000 POUNDS CAPACITY IN ACCORDANCE WITH THE WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. UNDERDRAINS SHALL NOT BE INSTALLED IN PULL BOXES.

ALL STREET LIGHT PULL BOXES SHALL BE MARKED "STREET LIGHTING" ON THE TIER 22 COVER AND SHALL MEET THE SPECIFICATIONS LISTED ABOVE, WITH DIMENSIONS 17"W x 30"L x 18"D.

ITEM 625 – LIGHT POLE FOUNDATION, AS PER PLAN

LIGHT POLE FOUNDATIONS SHALL BE CONSTRUCTED AS PER CITY OF CANTON STANDARD DRAWINGS NO. 61, 62, 63, AND 65. THE CONTRACTOR SHALL CONTACT THE CITY TO OBTAIN THE ANCHOR BOLTS. ALL OTHER REQUIREMENTS OF CMS SECTION 625 AND THE STANDARD DRAWINGS SHALL STILL BE APPLICABLE. PAYMENT FOR THIS ITEM SHALL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, EXCAVATION, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 – LIGHT POLE REMOVED, AS PER PLAN

THE EXISTING STREET LIGHT POLES AND LUMINAIRES SHALL BE REMOVED AND TURNED OVER TO AEP. THE CONTRACTOR SHALL TAKE CARE TO ENSURE THE POLES AND LIGHTS ARE NOT DAMAGED DURING THE REMOVAL PROCESS. THE CONTRACTOR SHALL COORDINATE WITH AEP REGARDING THE REMOVAL OF THE EXISTING POLES OFF OF THE PROJECT SITE.

ITEM 625 – LIGHTING MISC.: TEST HOLE PERFORMED

IT IS ANTICIPATED THAT THE CONTRACTOR WILL ENCOUNTER UNDERGROUND UTILITIES WHILE EXCAVATING FOR LIGHTING SUPPORT FOUNDATIONS. IF, AFTER ACCURATELY IDENTIFYING THE PROPOSED LOCATION OF THE FOUNDATION, AS SHOWN IN THE PLANS, AND AFTER MODIFYING THAT LOCATION, IF NECESSARY BASED ON THE FIELD MARKING OF THE UNDERGROUND UTILITY LOCATION THE CONTRACTOR DISCOVERS A UTILITY CONFLICT DURING HIS EXCAVATION OPERATION, HE WILL BE COMPENSATED FOR LABOR AND EQUIPMENT COSTS ASSOCIATED FOR EACH PARTIAL FOUNDATION EXCAVATION ACCORDING TO HIS BID PRICE.

BEFORE THE CONTRACTOR BEGINS THE EXCAVATION AT THE MODIFIED LOCATION, HE SHALL VERIFY THAT THERE WILL BE NO OVERHEAD UTILITY CONFLICTS RESULTING FROM THE NEW LIGHTING SUPPORT LOCATION. NEW SUPPORT LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.

THE CONTRACTOR'S WORK UNDER THIS BID ITEM SHALL INCLUDE BACKFILLING, COMPACTING, AND RESTORATION OF THE EXCAVATION TO ITS ORIGINAL CONDITION OR AS APPROVED BY THE ENGINEER.

EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID FOR EACH ITEM 632-LIGHTING, MISC.: TEST HOLE PERFORMED. THE QUANTITIES PROVIDED IN THE PLANS ARE TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 625 – PLASTIC CAUTION TAPE, AS PER PLAN

THE LOCATION OF UNDERGROUND CONDUIT AND BURIED ELECTRICAL CABLES SHALL BE MARKED BY THE USE OF A CONTINUOUS IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE LINE. THE IDENTIFYING TAPE SHALL BE OF INERT MATERIAL, APPROXIMATELY SIX (6) INCHES WIDE AND COMPOSED OF POLYETHYLENE PLASTIC, HIGHLY RESISTANT TO ALKALIS, ACIDS, OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE BRIGHT RED, WITH THE IDENTIFYING PRINTING "ELECTRICAL" IN BLACK LETTERS, ONE SIDE ONLY. TAPE SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED CONTINUOUSLY FOR THE FULL LENGTH OF THE TAPE. THE IDENTIFYING TAPE SHALL BE BURIED IN THE ELECTRIC LINES TRENCH WITH ONE STRIP APPROXIMATELY 6 INCHES TO 10 INCHES BELOW THE FINAL FINISHED GRADE. THE TAPE SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO ENSURE THAT THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILL.



MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON



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PROJECT NO.:	19-00432-010
DRAWN BY:	RMS
CHECKED BY:	SAC
DATE ISSUED:	2020/02/14

LIGHTING PLAN
NOTES

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LEGEND

-  PROPOSED LIGHTING/ELECTRICAL PULL BOX
-  PROPOSED LIGHTING/ELECTRICAL CONTROL CENTER
-  PROPOSED LIGHT POLE, SINGLE POST TOP
-  PROPOSED LIGHT POLE, TWIN POST TOP
-  PROPOSED TRAFFIC SIGNAL POLE WITH OVERHEAD LUMINAIRE AND SPAN ARM
-  PROPOSED 2" CONDUIT, 725.051, FOR LIGHTING
-  PROPOSED (2x) 3" CONDUIT, 725.051 WITH PULL STRING (FOR FUTURE FIBER OPTIC BY OTHERS)
-  CIRCUIT LABEL AND POLE NUMBER

NOTES:

1. CONTRACTOR TO COORDINATE WITH THE ELECTRIC UTILITY COMPANY FOR FINAL LOCATION OF POWER SOURCE.
2. THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS FOR POTENTIAL UTILITY CONFLICTS. FINAL POLE LOCATIONS TO BE ADJUSTED AS NECESSARY AND AS DIRECTED BY THE ENGINEER.
3. CONDUITS FOR TRAFFIC SIGNALS ARE NOT SHOWN IN THE LIGHTING PLANS AND MAY BE LOCATED IN THE SAME TRENCH AS LIGHTING AND/OR FIBER OPTIC CONDUITS AT INTERSECTIONS AND CROSSINGS. REFER TO TRAFFIC SIGNAL PLANS FOR LOCATIONS OF CONDUITS RELATED TO TRAFFIC SIGNALS.
4. LAYOUT FOR THE LIGHTING WIRING MAY BE FIELD ADJUSTED AT THE DIRECTION OF THE ENGINEER.

LIGHTING WIRING LEGEND

- (A) 3-#6 AWG AND 1-GROUND
- (B) 6-#6 AWG AND 1-GROUND
- (C) 12-#6 AWG AND 1-GROUND
- (D) 15-#6 AWG AND 1-GROUND



**MARKET AVENUE SOUTH
 STREETSCAPE
 CITY OF CANTON**



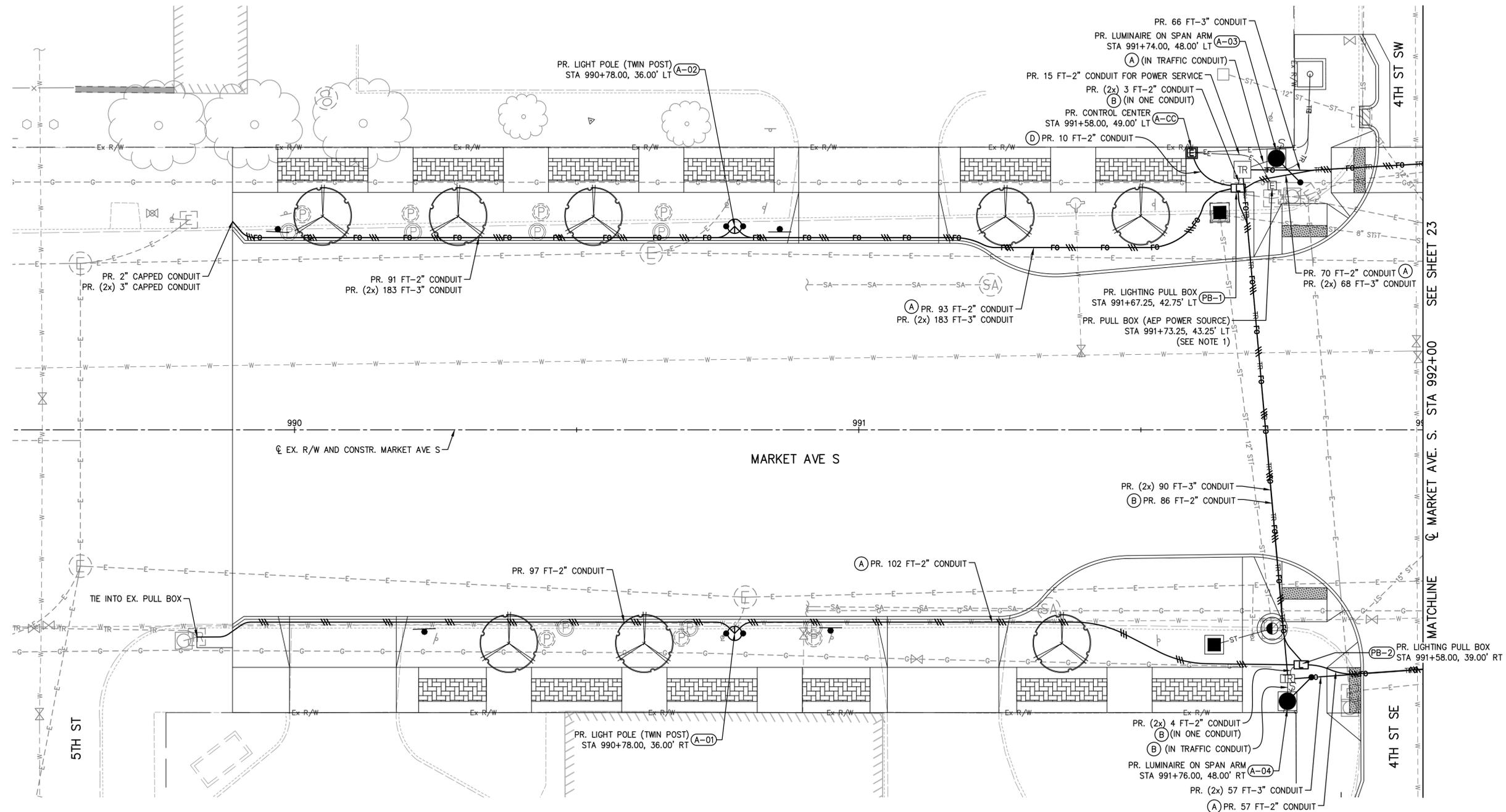
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LIGHTING PLAN



LEGEND

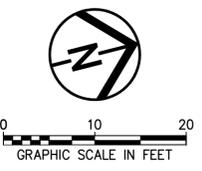
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- PROPOSED LIGHTING/ELECTRICAL CONTROL CENTER
- PROPOSED LIGHT POLE, SINGLE POST TOP
- PROPOSED LIGHT POLE, TWIN POST TOP
- PROPOSED TRAFFIC SIGNAL POLE WITH OVERHEAD LUMINAIRE AND SPAN ARM
- PROPOSED 2" CONDUIT, 725.051, FOR LIGHTING
- PROPOSED (2x) 3" CONDUIT, 725.051 WITH PULL STRING (FOR FUTURE FIBER OPTIC BY OTHERS)
- CIRCUIT LABEL AND POLE NUMBER

NOTES:

1. CONTRACTOR TO COORDINATE WITH THE ELECTRIC UTILITY COMPANY FOR FINAL LOCATION OF POWER SOURCE.
2. THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS FOR POTENTIAL UTILITY CONFLICTS. FINAL POLE LOCATIONS TO BE ADJUSTED AS NECESSARY AND AS DIRECTED BY THE ENGINEER.
3. POLE NUMBER (B-01) NOT USED.
4. LAYOUT FOR THE LIGHTING WIRING MAY BE FIELD ADJUSTED AT THE DIRECTION OF THE ENGINEER.

LIGHTING WIRING LEGEND

- (A) 3-#6 AWG AND 1-GROUND
- (B) 6-#6 AWG AND 1-GROUND
- (C) 12-#6 AWG AND 1-GROUND
- (D) 15-#6 AWG AND 1-GROUND



Environmental Design Group
 AKRON / CLEVELAND / COLUMBUS
 1450 GRANT ST., AKRON, OH 44317
 P. 330.275.1590 / F. 800.835.1590
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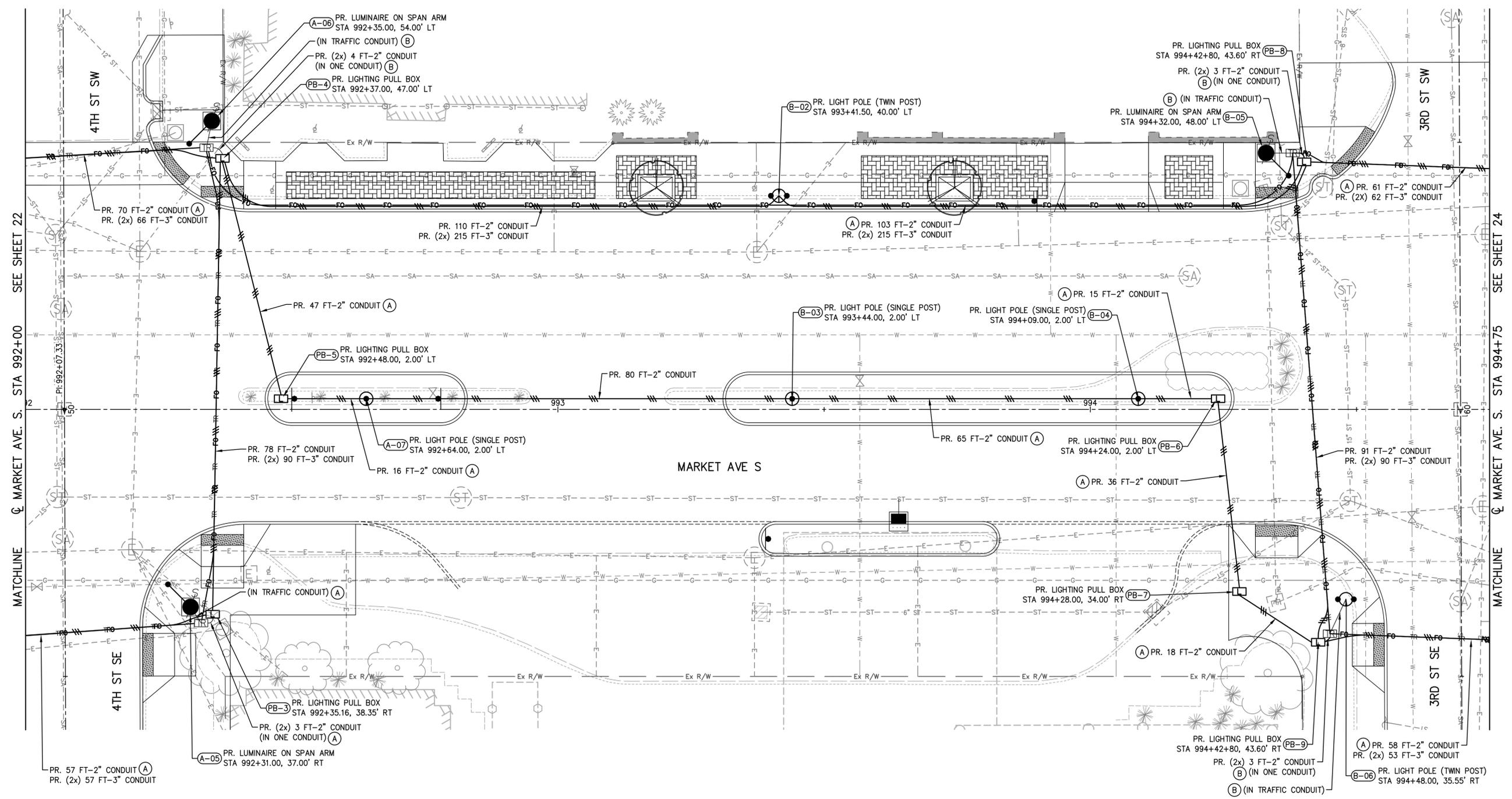
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LIGHTING PLAN

LEGEND

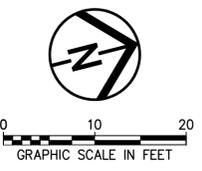
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NOTES:

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3. LAYOUT FOR THE LIGHTING WIRING MAY BE FIELD ADJUSTED AT THE DIRECTION OF THE ENGINEER.

LIGHTING WIRING LEGEND

- (A) 3-#6 AWG AND 1-GROUND
- (B) 6-#6 AWG AND 1-GROUND
- (C) 12-#6 AWG AND 1-GROUND
- (D) 15-#6 AWG AND 1-GROUND



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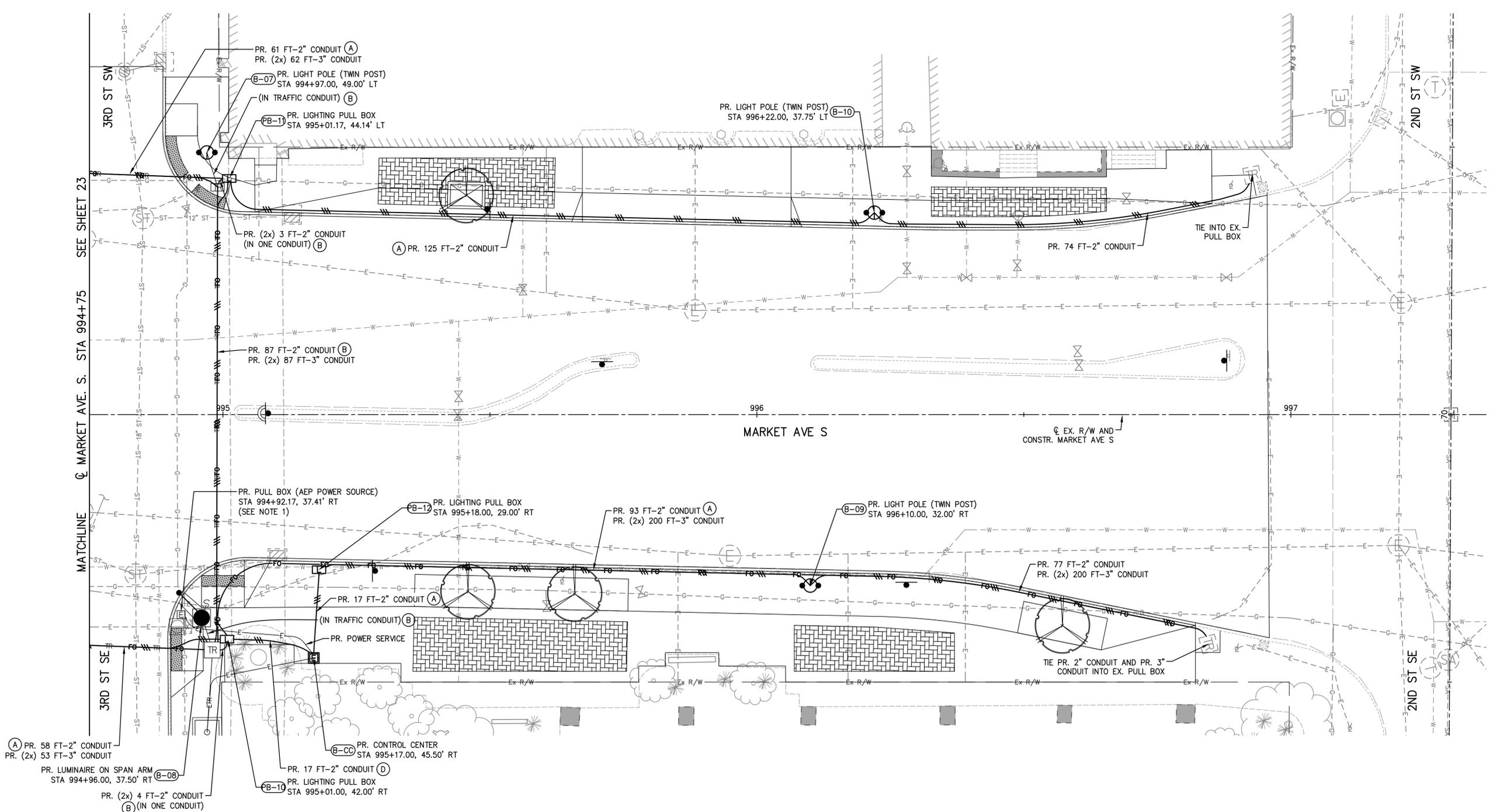
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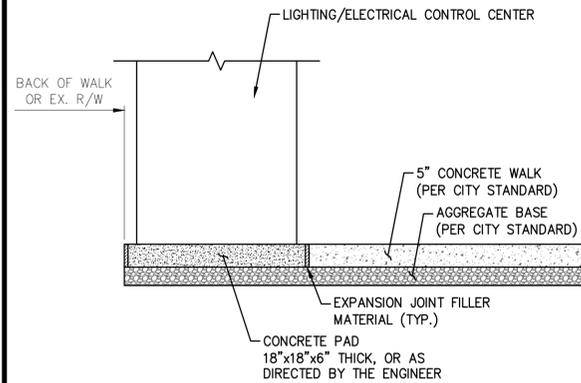
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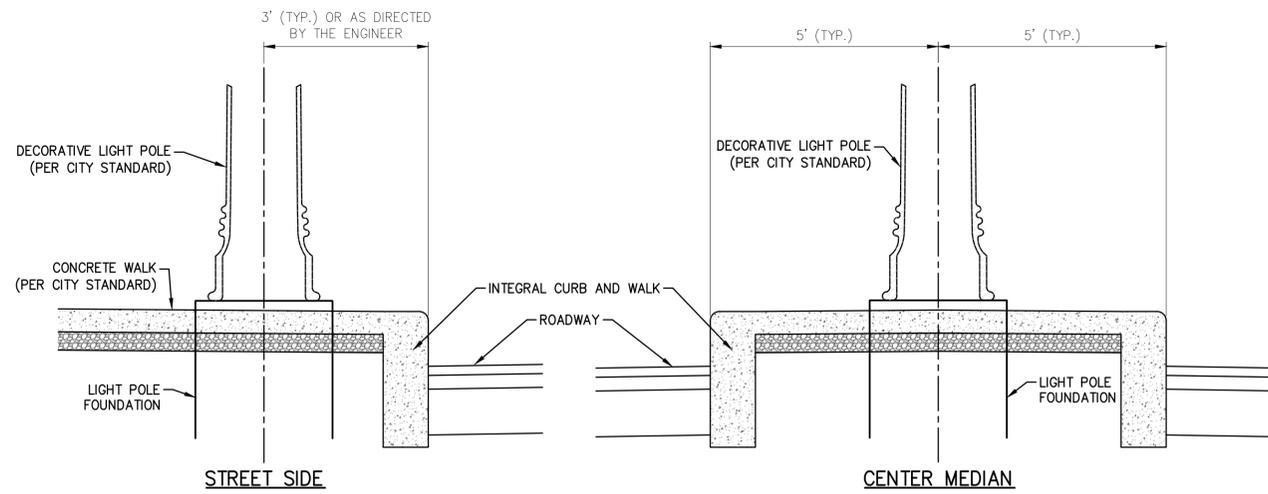
LIGHTING PLAN

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1 LIGHTING CONTROLLER CABINET PLACEMENT
25 NOT TO SCALE



2 DECORATIVE STREET LIGHT POLE PLACEMENT
25 NOT TO SCALE

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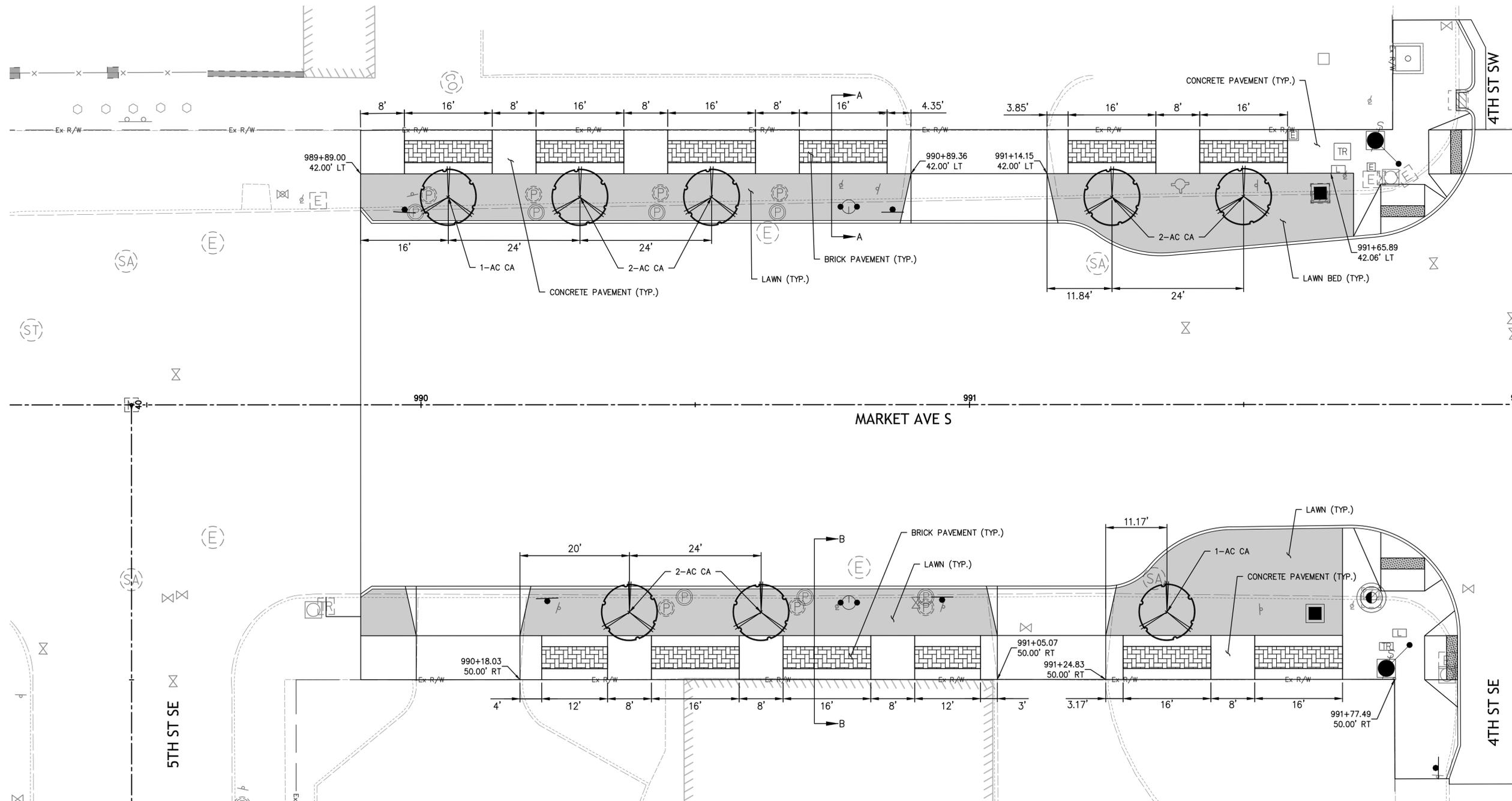
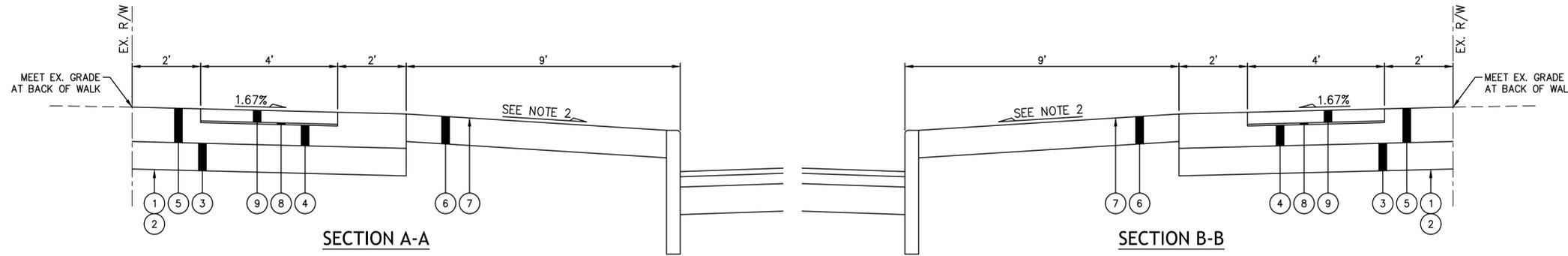
**LIGHTING PLAN
DETAILS**

- NOTES:**
- SEE CITY OF CANTON STANDARD DRAWINGS 40-43 FOR WALKWAY PAVER, CONCRETE WALKWAY, AND STREETSCAPE DETAILS.
 - CROSS SLOPE VARIES. SEE GRADING AND LAYOUT PLAN.

ABBR.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	CONDITION	QUANTITY	REMARKS
AC CA	ACER CAMPESTRE	HEDGE MAPLE	2.5"	AS SHOWN	B&B	8	SPECIMEN

TYPICAL SECTION LEGEND

- ITEM 203 - EXCAVATION AND EMBANKMENT
- ITEM 204 - SUBGRADE COMPACTION
- ITEM 304 - 4" AGGREGATE BASE
- ITEM 608 - 3" CONCRETE WALK (UNDER BRICK STREETSCAPE)
- ITEM 608 - 5" CONCRETE WALK (SEE STD. DWG. #29)
- ITEM 652 - 4" SCREENED TOPSOIL
- ITEM 659 - SEEDING AND MULCHING
- ITEM SPEC - 1" LEVELING SAND (703.02)
- ITEM SPEC - 2.25" LANDSCAPING BRICK



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STREETSCAPE PLAN

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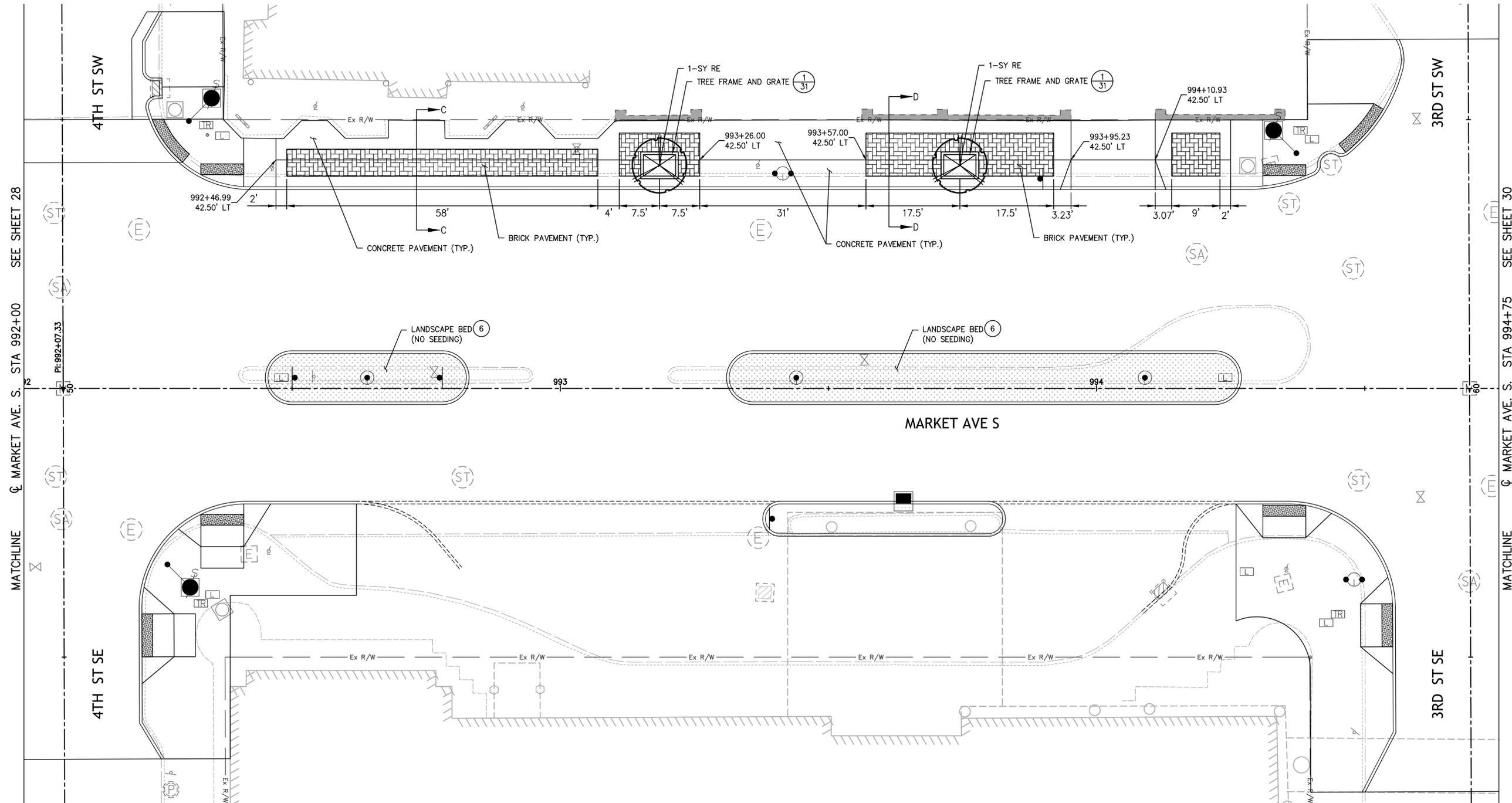
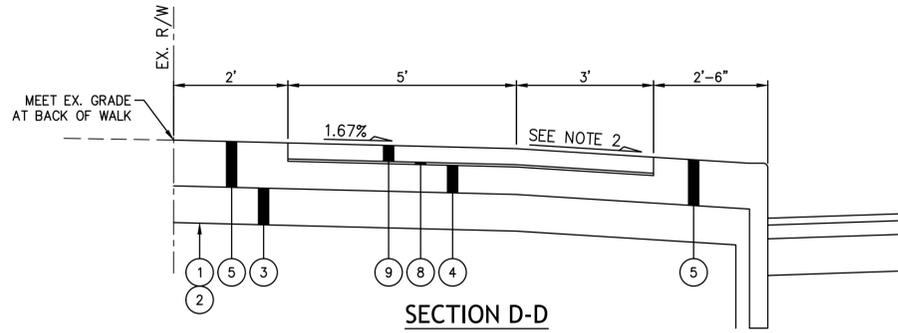
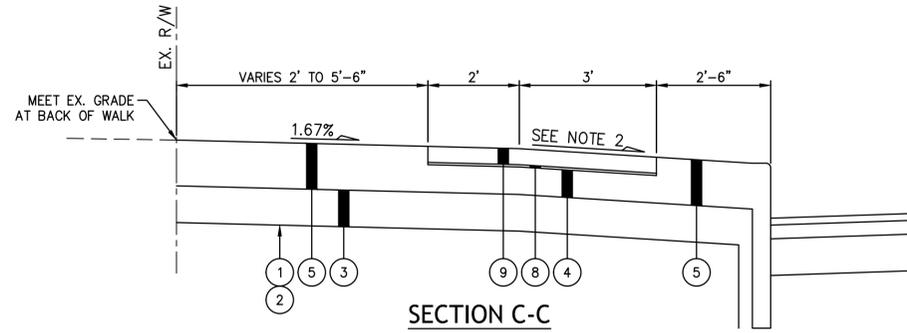
NOTES:

- SEE CITY OF CANTON STANDARD DRAWINGS 40-43 FOR WALKWAY PAVER, CONCRETE WALKWAY, AND STREETSCAPE DETAILS.
- CROSS SLOPE VARIES. SEE GRADING AND LAYOUT PLAN.

ABBR.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	CONDITION	QUANTITY	REMARKS
SY RE	SYRINGA RETICULATA	IVORY SILK	2.5"	AS SHOWN	B&B	2	SPECIMEN

TYPICAL SECTION LEGEND

- ITEM 203 - EXCAVATION AND EMBANKMENT
- ITEM 204 - SUBGRADE COMPACTION
- ITEM 304 - 4" AGGREGATE BASE
- ITEM 608 - 3" CONCRETE WALK (UNDER BRICK STREETSCAPE)
- ITEM 608 - 5" CONCRETE WALK (SEE STD. DWG. #29)
- ITEM 652 - 4" SCREENED TOPSOIL
- ITEM 659 - SEEDING AND MULCHING
- ITEM SPEC - 1" LEVELING SAND (703.02)
- ITEM SPEC - 2.25" LANDSCAPING BRICK



**MARKET AVENUE SOUTH
STREETSCAPE
CITY OF CANTON**



ISSUED FOR BID

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT NO.: 19-00432-010
DRAWN BY: RMS
CHECKED BY: SAC
DATE ISSUED: 2020/02/14

STREETSCAPE PLAN

E:\CANTON\19-00432-010\AKRON\16\GRAND STREETSCAPE\DWG\STREETSCAPE.DWG (SHEET 29) 19-00432-010 - 2/14/2020 2:05:19 PM

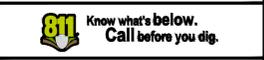
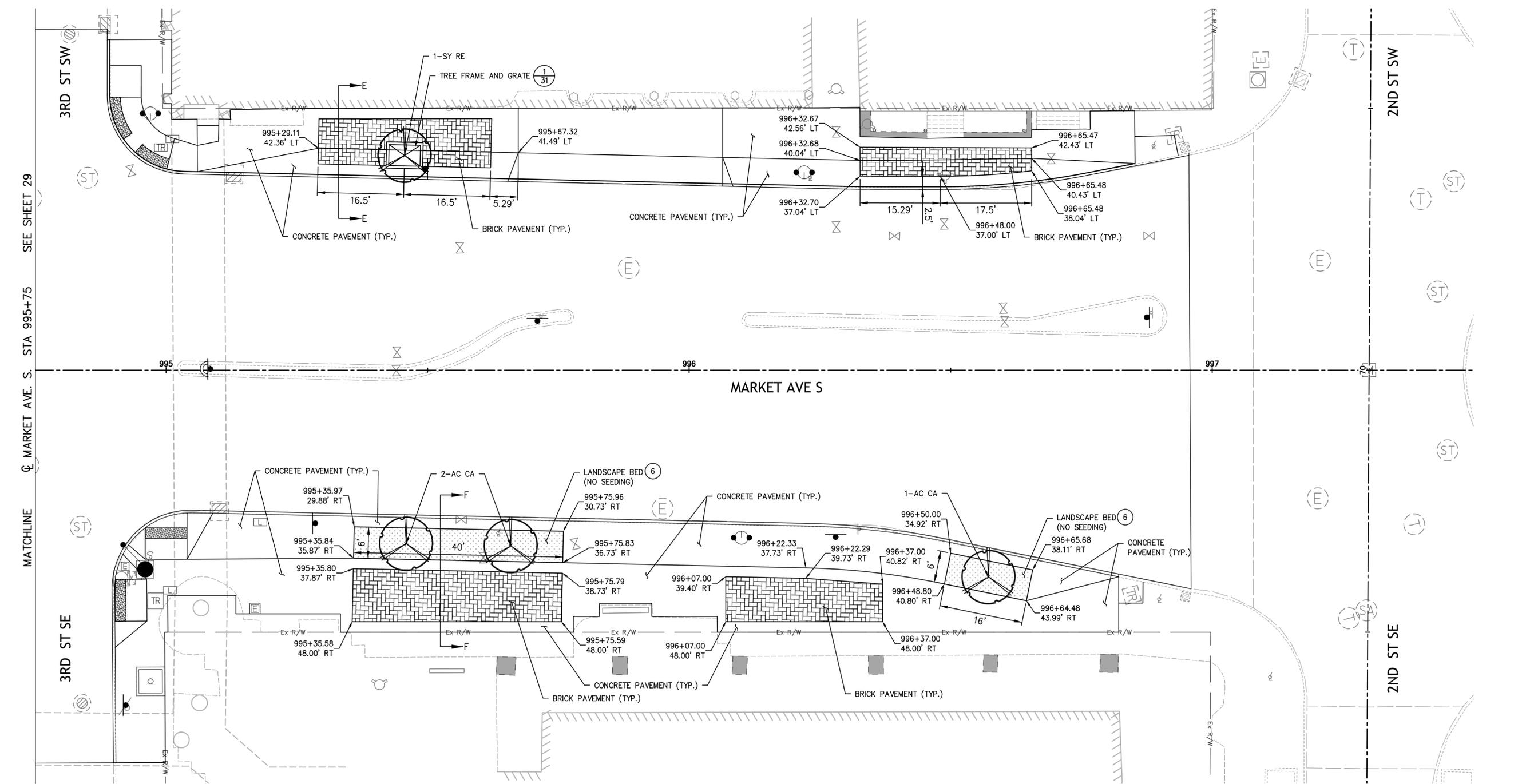
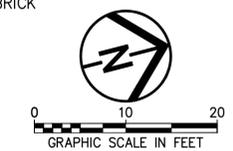
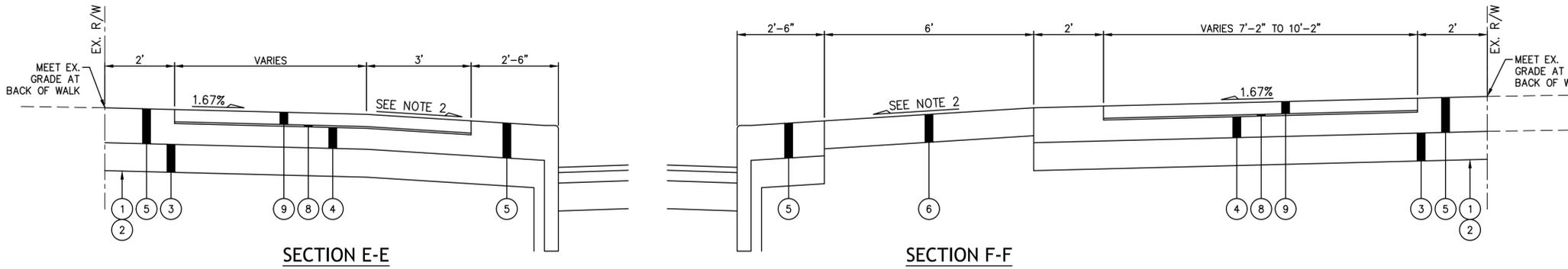
NOTES:

- SEE CITY OF CANTON STANDARD DRAWINGS 40-43 FOR WALKWAY PAVER, CONCRETE WALKWAY, AND STREETSCAPE DETAILS.
- CROSS SLOPE VARIES. SEE GRADING AND LAYOUT PLAN.

ABBR.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	CONDITION	QUANTITY	REMARKS
SY RE	SYRINGA RETICULATA	IVORY SILK	2.5"	AS SHOWN	B&B	1	SPECIMEN
AC CA	ACER CAMPESTRE	HEDGE MAPLE	2.5"	AS SHOWN	B&B	3	SPECIMEN

TYPICAL SECTION LEGEND

- ITEM 203 - EXCAVATION AND EMBANKMENT
- ITEM 204 - SUBGRADE COMPACTION
- ITEM 304 - 4" AGGREGATE BASE
- ITEM 608 - 3" CONCRETE WALK (UNDER BRICK STREETSCAPE)
- ITEM 608 - 5" CONCRETE WALK (SEE STD. DWG. #29)
- ITEM 652 - 4" SCREENED TOPSOIL
- ITEM 659 - SEEDING AND MULCHING
- ITEM SPEC - 1" LEVELING SAND (703.02)
- ITEM SPEC - 2.25" LANDSCAPING BRICK



MARKET AVENUE SOUTH STREETSCAPE
CITY OF CANTON



ISSUED FOR BID

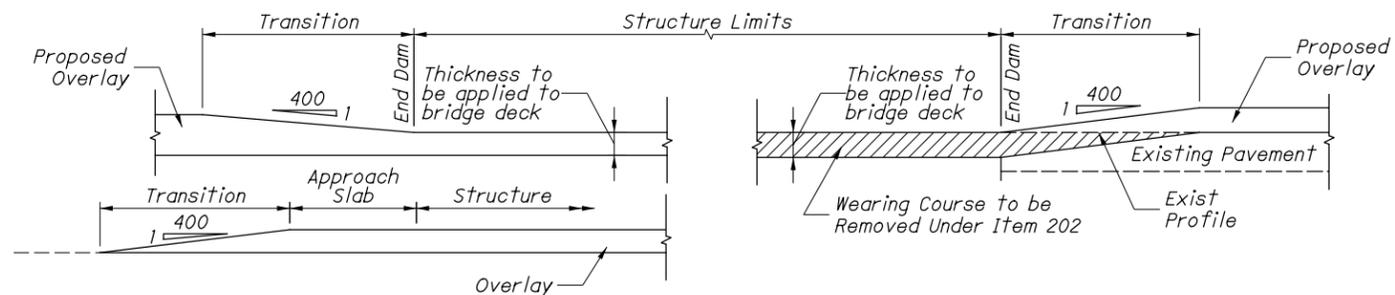
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REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT NO.: 19-00432-010
DRAWN BY: RMS
CHECKED BY: SAC
DATE ISSUED: 2020/02/14

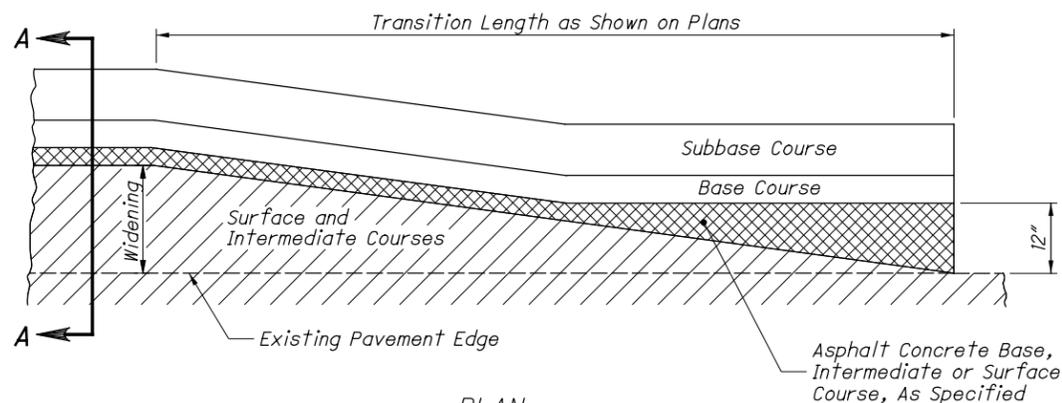
STREETSCAPE PLAN

E:\CANTON\19-00432-010\MARKET AVENUE SOUTH STREETSCAPE\DWG\STREETSCAPE.DWG 19-00432-010 - 2/14/2020 2:02:21 PM



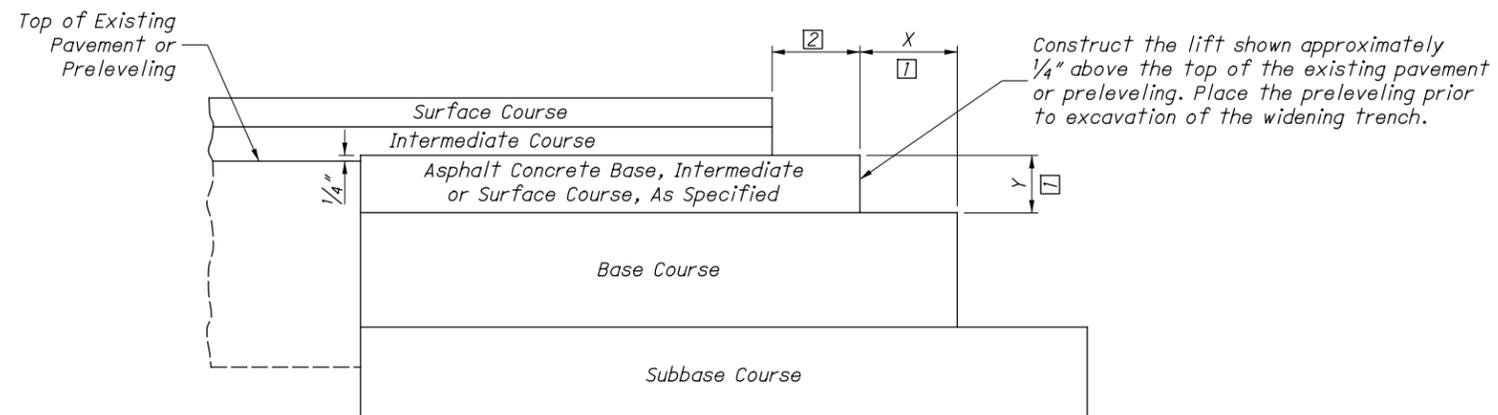
Details assume non-settled approach slabs. Smoothing of the profile for Settlement is required per plan grades or as directed by the Engineer.

TRANSITIONING AT STRUCTURES



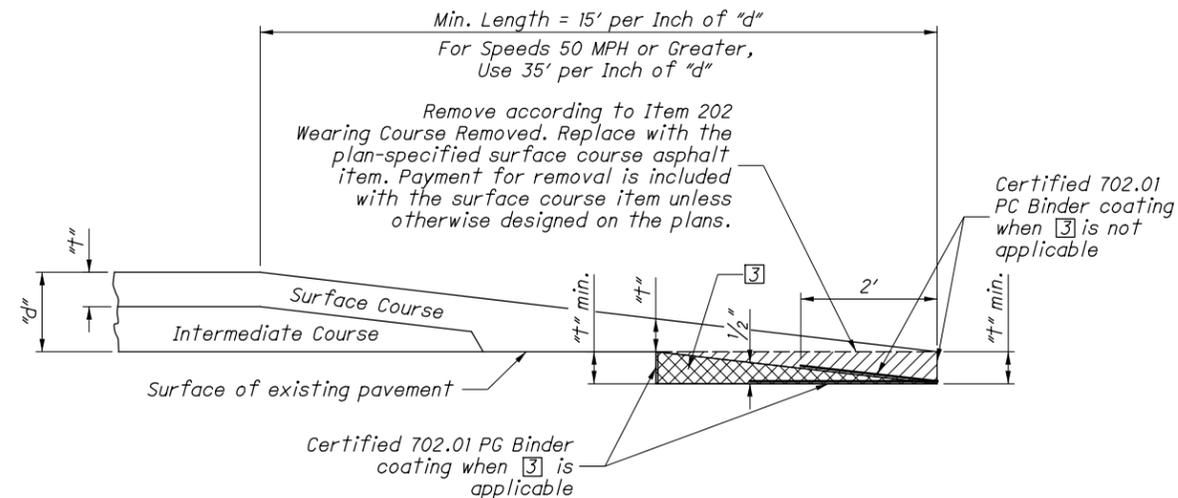
PLAN

MERGING EDGE OF PAVEMENT WIDENING WITH EDGE OF EXISTING PAVEMENT

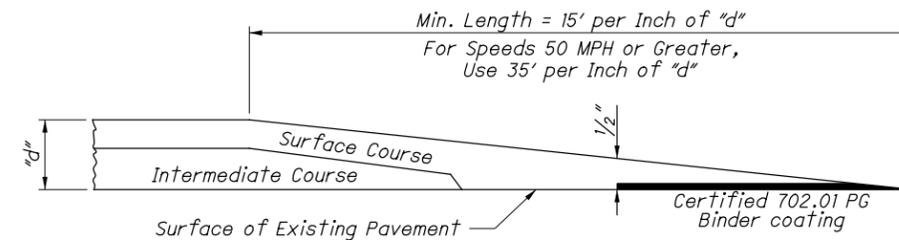


SECTION A-A

COURSE DETAIL FOR WIDENING



Butt Joint



Taper End

NOTE: Butt joint is required unless the taper end is specified in the plans or approved by the Engineer

BUTT JOINTS AND TAPER ENDS

Values for "t" and "d" are obtained from the plans.

LEGEND

- [1] The extended width (X) of a base or subbase lift shall be equal to the depth (Y) of the overlaying lift or 6", whichever is greater, or as shown on the plans.
- [2] The extended width shall be equal to the combined thickness of the surface and intermediate courses, or 4", whichever is greater.
- [3] Permissible removal and replacement

THIS DRAWING REPLACES BP-3.1 DATED 10-18-2019.

SD NUMBER

BP-3.1

STANDARD ROADWAY CONSTRUCTION DRAWING

ASPHALT PAVING

OFFICE OF PAVEMENT ENGINEERING

SEALS
ENGINEER

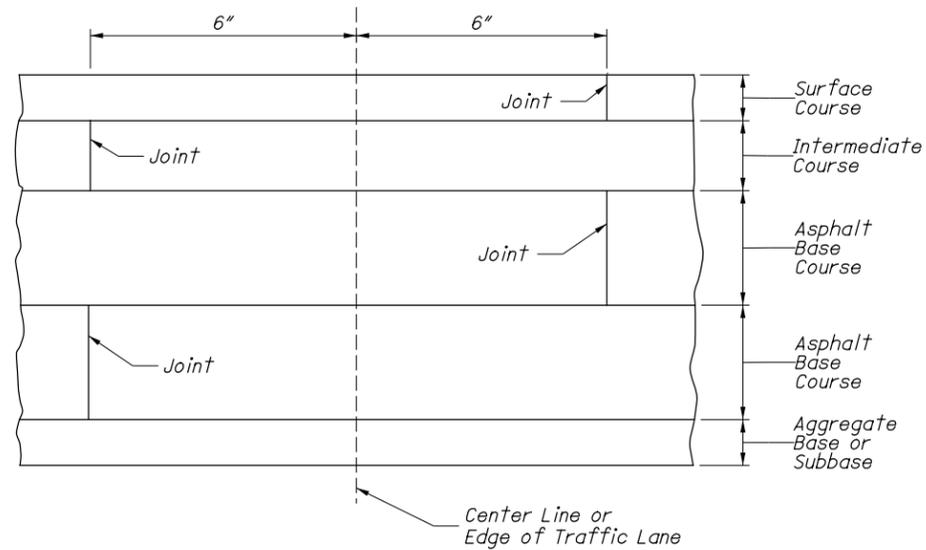
W. Feehan

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR

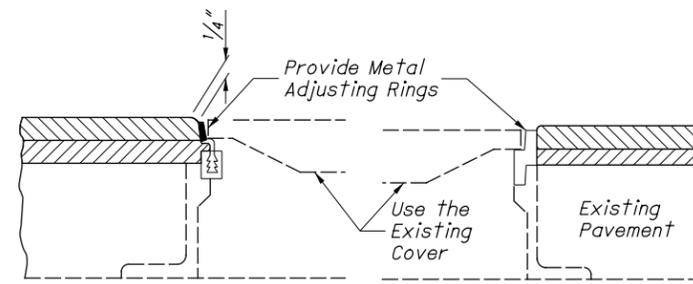
Craig E. Landefeld

REVISION DATE

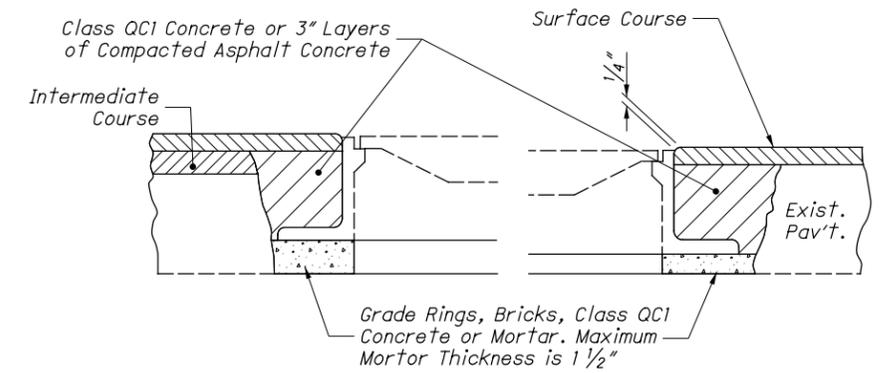
1-17-2020



LAPPING LONGITUDINAL JOINTS
(see notes)

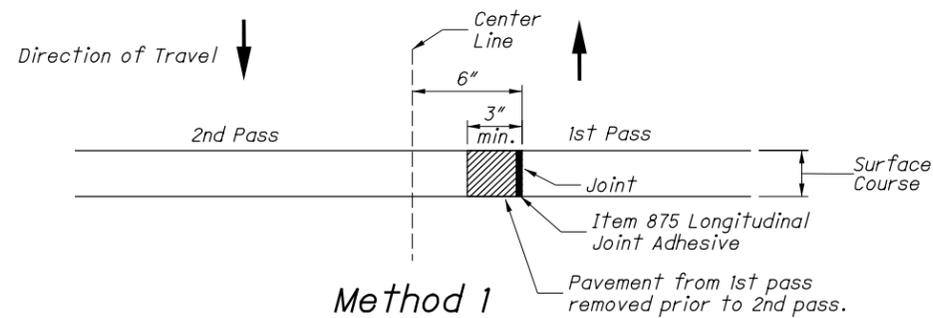


Using Metal Adjusting Rings

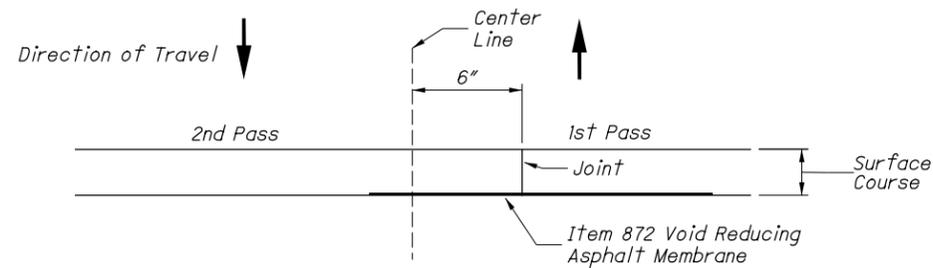


Using Concrete or Mortar

MANHOLES ADJUSTED TO GRADE

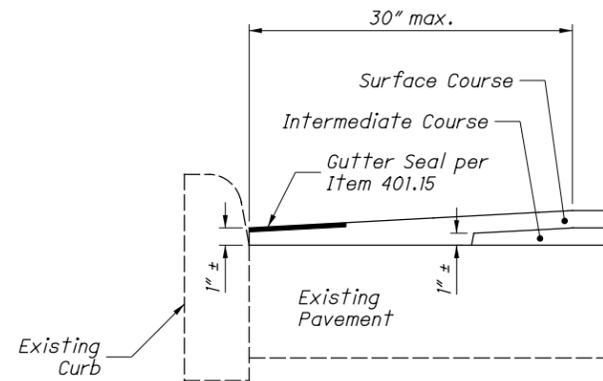


Method 1



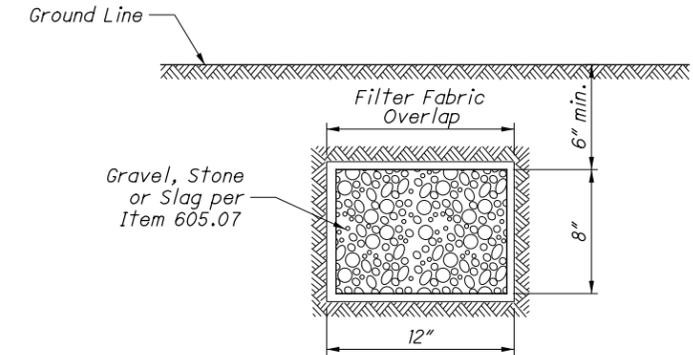
Method 2

LONGITUDINAL JOINT PREPARATION
(if specified)



Special care shall be taken during construction to obtain maximum compaction of asphalt concrete in gutters.

GUTTER FINISH



Aggregate drains to be placed where and as directed by Engineer. Provide Filter Fabric when specified as a separate pay item.

AGGREGATE DRAIN

NOTES

GENERAL: Lap all longitudinal joints as shown regardless of the number of courses being placed. Do not construct a longitudinal joint directly above and in line with the longitudinal joint of previously placed material.

METAL ADJUSTING RINGS:

Metal adjusting rings shall:

- (a) Attach securely to the existing frame by welding or mechanical devices;
- (b) Consist either of cast metal having an integral rim and seat, or be fabricated metal with a sturdy connection between the seat and rim; and
- (c) Provide an even seat for the manhole cover.

In addition, the adjusting ring type shall be a design acceptable to the local governmental agency responsible for street and sewer maintenance. Any installation unacceptable to the Engineer shall be replaced by the Contractor at his expense.

PAYMENT: The Department will pay for manholes adjusted to grade using Item 611 Manhole, Catch Basin, or Inlet Adjusted to Grade. The Department will pay for longitudinal joint preparation using Item 874 Longitudinal Joint Preparation.

THIS DRAWING REPLACES BP-3.1 DATED 10-18-2019.

SD NUMBER

BP-3.1

STANDARD ROADWAY CONSTRUCTION DRAWING

ASPHALT PAVING

OFFICE OF PAVEMENT ENGINEERING

ENGINEER
W. Feehan

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR

Craig E. Landefeld

REVISION DATE

1-17-2020

City of Canton
 Market Avenue South
 Lighting Voltage Drop Calculations
 EDG Project No. 19-00432-010
 Calc by: SAC 2/11/2020
 Check by:

VOLTAGE DROP CALCULATIONS												
CIRCUIT A: STA. 990+78 (SALVATION ARMY) to STA. 992+64 (SAXTON HOUSE)												
VOLTAGE:	120											
DECORATIVE LIGHT POLE (DLP) LUMINAIRE WATTAGE:	55	SEE CANTON STD. DWG. NO. 63										
OVERHEAD SIGNAL POLE (OSP) LUMINAIRE WATTAGE:	85	SEE CANTON STD. DWG. NO. 64										
POWER FACTOR, PF:	0.9	(assumed)										
NUMBER OF WIRES FOR CALCULATION:	3	PH A, PH B, & NEUTRAL WIRES. SEE CANTON STD. DWG. NO. 65										
WIRE FACTORS (PER WIRE) ⁽¹⁾ :	NO. 1/0 AWG WIRE	0.12 OHMS/MFT/1000										
	NO. 2 AWG WIRE	0.19 OHMS/MFT/1000										
	NO. 4 AWG WIRE	0.31 OHMS/MFT/1000										
	NO. 6 AWG WIRE	0.49 OHMS/MFT/1000										
	NO. 8 AWG WIRE	0.78 OHMS/MFT/1000										
***NOTE: LAYOUT OF WIRING RUNS TO BE ADJUSTED IN THE FIELD AS NEEDED.												

SECTION ⁽⁵⁾			LUMINAIRE	NO. OF	AMPERES ⁽³⁾		AMPERE-	AWG	VOLTAGE DROP		PERCENT	AT POINT
FROM	TO	FEET ⁽²⁾	TYPE	LUMINAIRES	AT POINT	ACCUM.	FEET		IN SECTION ⁽⁴⁾	ACCUM.	DROP	
A-02	PB-1	103	DLP	2	1.02	1.02	105	6	0.15	0.18	0.15	A-02
PB-1	A-CC	20	N/A		0.00	1.02	20	6	0.03	0.03	0.03	PB-1
A-01	PB-2	112	DLP	2	1.02	1.02	114	6	0.17	0.34	0.28	A-01
PB-2	PB-1	96	N/A		0.00	1.02	98	6	0.14	0.17	0.14	PB-2
PB-1	A-CC	20	N/A		0.00	1.02	20	6	0.03	0.03	0.03	PB-1
A-05	PB-43	14	OSP	1	0.51	0.51	7	6	0.01	0.30	0.25	A-05
PB-43	PB-3	13	N/A		0.00	0.51	7	6	0.01	0.29	0.24	PB-43
PB-3	PB-2	67	N/A		0.00	0.51	34	6	0.05	0.28	0.23	PB-3
PB-2	PB-42	14	N/A		0.00	0.51	7	6	0.01	0.23	0.19	PB-2
PB-42	A-04	14	N/A		0.00	0.51	7	6	0.01	0.22	0.18	PB-42
A-04	PB-42	14	OSP	1	0.51	1.02	14	6	0.02	0.21	0.18	A-04
PB-42	PB-2	14	N/A		0.00	1.02	14	6	0.02	0.19	0.16	PB-42
PB-2	PB-1	96	N/A		0.00	1.02	98	6	0.14	0.17	0.14	PB-2
PB-1	A-CC	20	N/A		0.00	1.02	20	6	0.03	0.03	0.03	PB-1
A-03	PB-41	17	OSP	1	0.51	0.51	9	6	0.01	0.03	0.03	A-03
PB-41	PB-1	13	N/A		0.00	0.51	7	6	0.01	0.02	0.02	PB-41
PB-1	A-CC	20	N/A		0.00	0.51	10	6	0.01	0.01	0.01	PB-1
A-07	PB-5	26	DLP	1	0.51	0.51	13	6	0.02	0.27	0.23	A-07
PB-5	PB-4	57	N/A		0.00	0.51	29	6	0.04	0.25	0.21	PB-5
PB-4	PB-44	14	N/A		0.00	0.51	7	6	0.01	0.21	0.18	PB-4
PB-44	A-06	15	N/A		0.00	0.51	8	6	0.01	0.20	0.17	PB-44
A-06	PB-44	15	OSP	1	0.51	1.02	15	6	0.02	0.19	0.16	A-06
PB-44	PB-4	14	N/A		0.00	1.02	14	6	0.02	0.17	0.14	PB-44
PB-4	PB-1	80	N/A		0.00	1.02	82	6	0.12	0.15	0.13	PB-4
PB-1	A-CC	20	N/A		0.00	1.02	20	6	0.03	0.03	0.03	PB-1

MAXIMUM CALCULATED DROP = 0.28% < 5% MAXIMUM ALLOWED, => OK

Notes:

- (1) See ODOT TEM Table 1198-12a, Note 3.
- (2) Section length = (conduit distance between points) + (5 feet of slack and/or tail at each end).
See ODOT TEM Table 1198-12a, Note 4.
- (3) Amperes = [(Watts per Luminaire) x (No. of Luminaires)] / [(Volts) x (Power Factor)]
Assume single phase. Assume power factor (PF) = 0.9.
See City of Canton Standard Drawings No. 63 and No. 64 for luminaire wattage specifications.
- (4) Voltage drop in section = [(amps in and beyond section) x (section length) x (wire factor) x (no. of wires)] / 1000
or
Voltage drop in section = [(Ampere-Ft) x (wire factor) x (no. of wires)] / 1000
- (5) For pull boxes PB-41 to PB-44, see traffic signals plans for details.

City of Canton
 Market Avenue South
 Lighting Voltage Drop Calculations
 EDG Project No. 19-00432-010
 Calc by: SAC 2/11/2020
 Check by:

VOLTAGE DROP CALCULATIONS

CIRCUIT B: STA. 993+32 (GRAND HOTEL) to STA. 996+22 (PARKING GARAGE)

VOLTAGE: 120
 DECORATIVE LIGHT POLE (DLP) LUMINAIRE WATTAGE: 55 SEE CANTON STD. DWG. NO. 63
 OVERHEAD SIGNAL POLE (OSP) LUMINAIRE WATTAGE: 85 SEE CANTON STD. DWG. NO. 64
 POWER FACTOR, PF: 0.9 (assumed)
 NUMBER OF WIRES FOR CALCULATION: 3 PH A, PH B, & NEUTRAL WIRES. SEE CANTON STD. DWG. NO. 65
 WIRE FACTORS (PER WIRE) ⁽¹⁾:
 NO. 1/0 AWG WIRE 0.12 OHMS/MFT/1000
 NO. 2 AWG WIRE 0.19 OHMS/MFT/1000
 NO. 4 AWG WIRE 0.31 OHMS/MFT/1000
 NO. 6 AWG WIRE 0.49 OHMS/MFT/1000
 NO. 8 AWG WIRE 0.78 OHMS/MFT/1000

**NOTE: LAYOUT OF WIRING RUNS TO BE ADJUSTED IN THE FIELD AS NEEDED.

SECTION ⁽⁵⁾			LUMINAIRE	NO. OF	AMPERES ⁽³⁾		AMPERE-	AWG	VOLTAGE DROP		PERCENT	AT POINT
FROM	TO	FEET ⁽²⁾	TYPE	LUMINAIRES	AT POINT	ACCUM.	FEET		IN SECTION ⁽⁴⁾	ACCUM.	DROP	
B-09	PB-12	103	DLP	2	1.02	1.02	105	6	0.15	0.19	0.16	B-09
PB-12	B-CC	27	N/A		0.00	1.02	28	6	0.04	0.04	0.03	PB-12
B-10	PB-11	134	DLP	2	1.02	1.02	137	6	0.20	0.39	0.33	B-10
PB-11	PB-10	97	N/A		0.00	1.02	99	6	0.15	0.19	0.16	PB-11
PB-10	B-CC	27	N/A		0.00	1.02	28	6	0.04	0.04	0.03	PB-10
B-02	PB-8	113	DLP	2	1.02	1.02	115	6	0.17	1.07	0.89	B-02
PB-8	PB-33	13	N/A		0.00	1.02	13	6	0.02	0.90	0.75	PB-8
PB-33	B-05	15	N/A		0.00	1.02	15	6	0.02	0.88	0.73	PB-33
B-05	PB-33	15	OSP	1	0.51	1.53	23	6	0.03	0.86	0.72	B-05
PB-33	PB-8	13	N/A		0.00	1.53	20	6	0.03	0.83	0.69	PB-33
PB-8	PB-11	71	N/A		0.00	1.53	109	6	0.16	0.80	0.67	PB-8
PB-11	PB-34	13	N/A		0.00	1.53	20	6	0.03	0.64	0.53	PB-11
PB-34	B-07	17	N/A		0.00	1.53	26	6	0.04	0.61	0.51	PB-34
B-07	PB-34	17	DLP	2	1.02	2.55	43	6	0.06	0.57	0.48	B-07
PB-34	PB-11	13	N/A		0.00	2.55	33	6	0.05	0.51	0.43	PB-34
PB-11	PB-10	97	N/A		0.00	2.55	247	6	0.36	0.46	0.38	PB-11
PB-10	B-CC	27	N/A		0.00	2.55	69	6	0.10	0.10	0.08	PB-10
B-08	PB-31	17	OSP	1	0.51	0.51	9	6	0.01	0.04	0.03	B-08
PB-31	PB-10	14	N/A		0.00	0.51	7	6	0.01	0.03	0.03	PB-31
PB-10	B-CC	27	N/A		0.00	0.51	14	6	0.02	0.02	0.02	PB-10
B-03	B-04	75	DLP	1	0.51	0.51	38	6	0.06	0.63	0.53	B-03
PB-04	PB-6	25	DLP	1	0.51	1.02	26	6	0.04	0.57	0.48	B-04
PB-6	PB-7	46	N/A		0.00	1.02	47	6	0.07	0.53	0.44	PB-6
PB-7	PB-9	28	N/A		0.00	1.02	29	6	0.04	0.46	0.38	PB-7
PB-9	PB-32	13	N/A		0.00	1.02	13	6	0.02	0.42	0.35	PB-9
PB-32	B-06	17	N/A		0.00	1.02	17	6	0.03	0.40	0.33	PB-32
B-06	PB-32	17	DLP	2	1.02	2.04	35	6	0.05	0.37	0.31	B-06
PB-32	PB-9	13	N/A		0.00	2.04	27	6	0.04	0.32	0.27	PB-32
PB-9	PB-10	68	N/A		0.00	2.04	139	6	0.20	0.28	0.23	PB-9
PB-10	B-CC	27	N/A		0.00	2.04	55	6	0.08	0.08	0.07	PB-10

MAXIMUM CALCULATED DROP = 0.89% < 5% MAXIMUM ALLOWED, => OK

Notes:

- (1) See ODOT TEM Table 1198-12a, Note 3.
- (2) Section length = (conduit distance between points) + (5 feet of slack and/or tail at each end).
See ODOT TEM Table 1198-12a, Note 4.
- (3) Amperes = [(Watts per Luminaire) x (No. of Luminaires)] / [(Volts) x (Power Factor)]
Assume single phase. Assume power factor (PF) = 0.9.
See City of Canton Standard Drawings No. 63 and No. 64 for luminaire wattage specifications.
- (4) Voltage drop in section = [(amps in and beyond section) x (section length) x (wire factor) x (no. of wires)] / 1000
or
Voltage drop in section = [(Ampere-Ft) x (wire factor) x (no. of wires)] / 1000
- (5) For pull boxes PB-31 to PB-34, see traffic signals plans for details.



INDEX FOR CITY STANDARD DRAWINGS

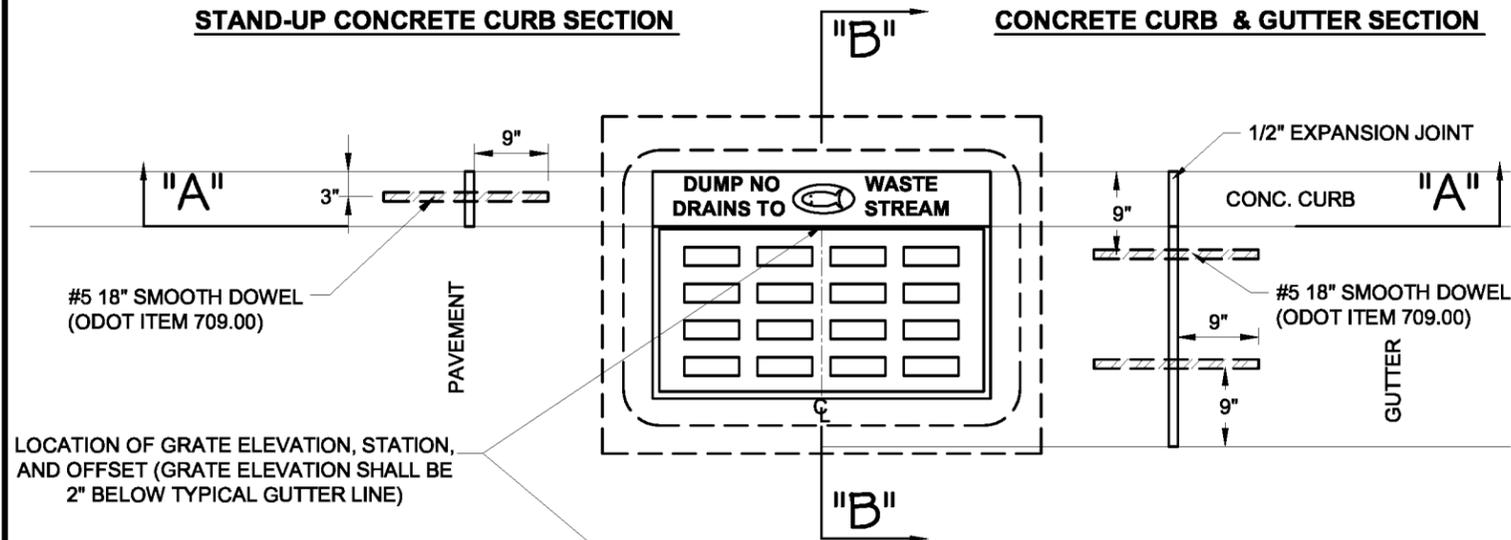
CITY ENGINEERING DEPT. CANTON, OHIO



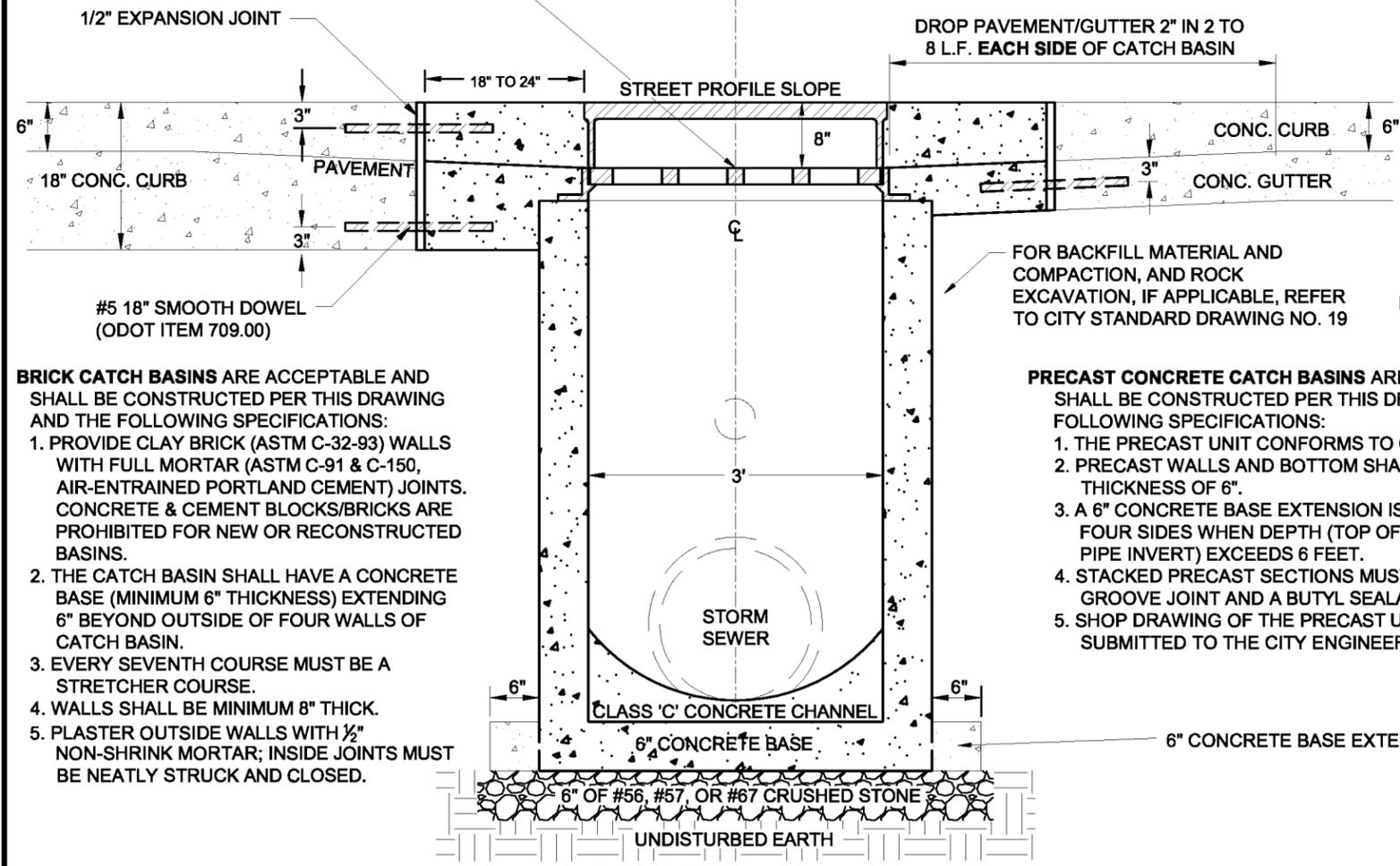
DWG. NO.	SHEETS		DATE
CATCH BASINS			
1	1	CURB INLET CATCH BASIN	MAR. 2012
2	1	CURB INLET INFILTRATION CATCH BASIN	8/16/17
4	1	SQUARE-TOP CATCH BASIN	MAR. 2012
5	1	SQUARE-TOP INFILTRATION CATCH BASIN	8/16/17
MANHOLES			
10	3	PRECAST STORM OR SANITARY MANHOLE	JAN 2012
11	1	OUTSIDE DROP CONNECTION FOR SANITARY MANHOLE	JAN. 2012
12	1	MANHOLE COVER	12/8/2017
13	2	MANHOLE ADJUSTMENTS	APR. 2015
CONDUITS AND TRENCHES			
18	1	HOUSE CONNECTION STACK	JAN. 2012
19	2	UTILITY TRENCH REQUIREMENTS	6/10/13
20	1	SANITARY SEWERS AND LATERALS	MAR. 2014
21	1	CONCRETE ENCASEMENT DETAIL	NOV. 2011
22	1	DOWNSPOUT OUTLET (NON-CURBED STREET)	MAR. 2012
23	1	DOWNSPOUT OUTLET (CURBED STREET)	MAR. 2012
24	1	GROUNDWATER DRAIN LINE CONNECTION	7/24/12

DWG. NO.	SHEETS		DATE
DRIVEWAYS, CURBS, AND PAVEMENT			
27	1	DRIVE APPROACH WITH LAWNSTRIP BETWEEN SIDEWALK & CURB	8/15/17
28	1	DRIVE APPROACH WITH SIDEWALK AGAINST CURB	8/15/17
29	1	COMBINED CURB & WALK	11/20/19
30	1	CONCRETE CURB AND COMBINED CURB & GUTTER	11/20/19
31	2	PAVEMENT REPAIR	11/20/19
32	1	TYPICAL SECTION – LOCAL STREET	11/20/19
33	4	WHEELCHAIR RAMP	JAN 2015
34	1	CROSSWALK AND PAVEMENT TRANSITION	11/20/19
CITY STREETScape			
40	1	TYPICAL STREETScape CORRIDOR	2/26/19
41	1	ROADWAY BRICK & CROSSWALK PAVEMENT DETAILS	2/26/19
42	1	STREETScape CONCRETE WALK PAVEMENT DETAILS	2/26/19
43	2	TREE FRAME & GRATE CONSTRUCTION DETAILS	DEC 2017
44	1	CONCRETE WALK OVER VAULT CONSTRUCTION DETAILS	FEB. 2012
45	1	BRICK WALK OVER VAULT CONSTRUCTION DETAILS	FEB. 2012
46	1	BASEMENT/VAULT ABANDONMENT CONSTRUCTION DETAILS	FEB. 2012
47	1	GATEWAY COLUMN (4FT X 4FT) DETAILS	FEB. 2012
48	1	TREE & GRATE ABANDONMENT	FEB. 2015
61-65	5	NOSTALGIC POLE, FOUNDATION AND WIRING DIAGRAM	7/6/2018

PLAN VIEW
NOT TO SCALE



LOCATION OF GRATE ELEVATION, STATION, AND OFFSET (GRATE ELEVATION SHALL BE 2" BELOW TYPICAL GUTTER LINE)



SECTION A-A
NOT TO SCALE

(PRECAST CONCRETE CATCH BASIN SHOWN)

NOTES:

1. ALL WORK SHALL CONFORM TO ODOT ITEM 604 EXCEPT AS OTHERWISE NOTED HEREIN.
2. PRECAST CONCRETE OR BRICK CATCH BASINS ARE ALLOWED AS NOTED HEREIN.
3. ALL CONCRETE SHALL CONFORM TO ODOT ITEM 499 CLASS C (4000 psi).
4. WHEN STREET PROFILE SLOPE IS 5% OR STEEPER, CONSTRUCT CATCH BASIN IN ACCORDANCE WITH CITY STD. DWG. NO. 3.
5. A CONCRETE CHANNEL SHALL BE POURED INTO THE BOTTOM OF THE CATCH BASIN USING CLASS 'C' CONCRETE. THE CHANNEL SHALL TAPER FROM 9" THICKNESS TO 2" MIN. THICKNESS AT THE LOWEST SEWER INVERT AND SHALL BE FINISHED WITH A SMOOTH SURFACE.
6. THE EXCAVATED AREA AROUND THE CATCH BASIN SHALL BE BACKFILLED WITH ODOT ITEM 703.11, TYPE 1 (304, 411, OR 617) COMPACTED IN 8" LIFTS OR ODOT ITEM 613. NO FOUNDRY SAND OR SLAG PERMITTED.
7. EXPANSION JOINT MATERIAL SHALL CONFORM TO ODOT ITEM 705.03. 1" OF JOINT SEALER (705.04) SHALL BE PLACED OVER EXPANSION JOINTS.
8. CASTINGS SHALL BE EAST JORDAN 7030 CURB INLET WITH TYPE T1 BACK AND TYPE M6 VANE GRATE, NEENAH R-3067-L, OR EQUAL APPROVED BY CITY ENGINEER (GRATE USED SHALL NOT BE SPECIFICALLY IDENTIFIED BY MANUFACTURER AS NOT SUITABLE FOR BICYCLE TRAFFIC). THE CASTING BACK (HOOD) MUST INCLUDE "ECO-SENSITIVE" MARKINGS SUCH AS: "DUMP NO WASTE; DRAINS TO STREAM" AND AN AQUATIC LIFE LOGO. THE LETTERING AND LOGO SHALL BE RAISED OR RECESSED AND INTEGRAL WITH THE CASTING OF THE BACK. ALTERNATE NOTATION OR LOGO IS SUBJECT TO THE CITY ENGINEER'S APPROVAL.
9. ALL OPENINGS AND KNOCKOUTS FOR INLET AND OUTLET PIPING SHALL BE FASHIONED NEATLY. ALL ANNULAR SPACE SHALL BE FILLED WITH CEMENT GROUT, BRICK AND MORTAR, OR CLASS 'C' CONCRETE.
10. ONE 4" DIAMETER INLET PIPE SHALL BE INSTALLED ON THE SIDE OF THE CATCH BASIN OPPOSITE THE STREET (AS SHOWN).
11. KNOCK-OUT PANELS ARE NOT ALLOWED UNLESS PRE-APPROVED BY THE CITY ENGINEER.
12. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

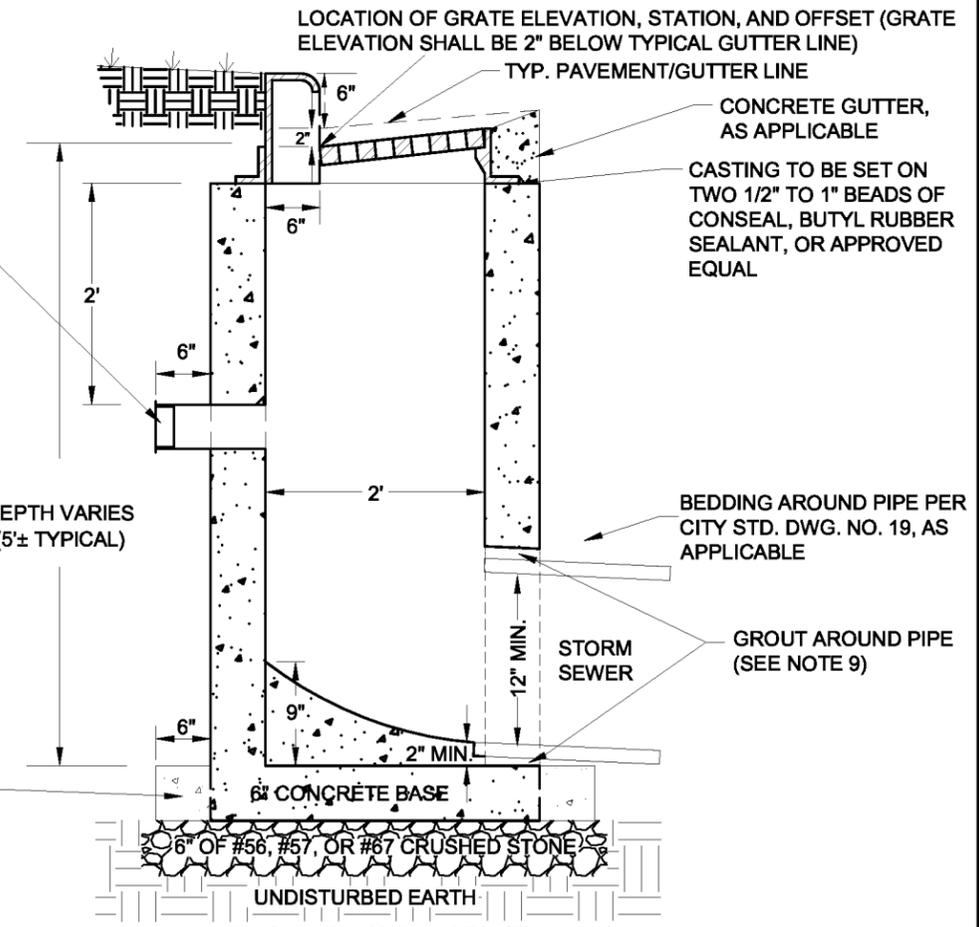
BRICK CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:

1. PROVIDE CLAY BRICK (ASTM C-32-93) WALLS WITH FULL MORTAR (ASTM C-91 & C-150, AIR-ENTRAINED PORTLAND CEMENT) JOINTS. CONCRETE & CEMENT BLOCKS/BRICKS ARE PROHIBITED FOR NEW OR RECONSTRUCTED BASINS.
2. THE CATCH BASIN SHALL HAVE A CONCRETE BASE (MINIMUM 6" THICKNESS) EXTENDING 6" BEYOND OUTSIDE OF FOUR WALLS OF CATCH BASIN.
3. EVERY SEVENTH COURSE MUST BE A STRETCHER COURSE.
4. WALLS SHALL BE MINIMUM 8" THICK.
5. PLASTER OUTSIDE WALLS WITH 1/2" NON-SHRINK MORTAR; INSIDE JOINTS MUST BE NEATLY STRUCK AND CLOSED.

PRECAST CONCRETE CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:

1. THE PRECAST UNIT CONFORMS TO ODOT ITEM 706.13.
2. PRECAST WALLS AND BOTTOM SHALL HAVE A MINIMUM THICKNESS OF 6".
3. A 6" CONCRETE BASE EXTENSION IS REQUIRED ON ALL FOUR SIDES WHEN DEPTH (TOP OF GRATE TO LOWEST PIPE INVERT) EXCEEDS 6 FEET.
4. STACKED PRECAST SECTIONS MUST HAVE A TONGUE/GROOVE JOINT AND A BUTYL SEALANT.
5. SHOP DRAWING OF THE PRECAST UNIT SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.

4" PIPE (ODOT ITEM 707.33) STUB WITH WATERTIGHT PLUG OR CAP (SEE NOTE 10)



SECTION B-B
NOT TO SCALE



OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
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APPROVED DATE: MAR. 2012
APPROVED BY: CDB, RMB, SLH
DRAWING FILE NAME: ce_01.dwg

REVISIONS		
DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 1
CURB INLET CATCH BASIN

NOTES:

1. ALL WORK SHALL CONFORM TO ODOT ITEM 604 EXCEPT AS OTHERWISE NOTED HEREIN.
2. PRECAST CONCRETE OR BRICK CATCH BASINS ARE ALLOWED AS NOTED HEREIN.
3. IF THE CATCH BASIN WILL BE USED IN A TRAFFIC-BEARING APPLICATION, THE PRECAST CONCRETE PORTION OF AN ODOT 2-2B CATCH BASIN MAY BE USED. HOWEVER, THE INLET FRAME AND GRATE AS SPECIFIED HEREIN SHALL BE USED IN LIEU OF THE ODOT 2-2 "LAY-IN" GRATE. ALL ANNULAR SPACE REMAINING BETWEEN THE BOTTOM OF THE INLET FRAME AND THE TOP OF THE PRECAST SECTION SHALL BE FILLED WITH CEMENT GROUT OR CLASS 'C' CONCRETE. IF THE CATCH BASIN WILL BE USED IN A NON-TRAFFIC-BEARING APPLICATION, AN ODOT 2-2 CATCH BASIN MAY BE USED WITH THE STANDARD "LAY-IN" GRATE.
4. ALL CONCRETE SHALL CONFORM TO ODOT ITEM 499 CLASS C (4000 psi).
5. A CONCRETE CHANNEL SHALL BE POURED INTO THE BOTTOM OF THE CATCH BASIN USING CLASS 'C' CONCRETE. THE CHANNEL SHALL TAPER FROM 9" THICKNESS TO 2" MIN. THICKNESS AT THE LOWEST SEWER INVERT AND SHALL BE FINISHED WITH A SMOOTH SURFACE.
6. THE EXCAVATED AREA AROUND THE CATCH BASIN SHALL BE BACKFILLED WITH ODOT ITEM 703.11, TYPE 1 (304, 411, OR 617) COMPACTED IN 8" LIFTS. NO FOUNDRY SAND OR SLAG PERMITTED.
7. WHERE CATCH BASIN WILL BE LOCATED WITHIN CROSSWALK, AT ADA RAMP, OR IN DESIGNATED BIKE LANE, CASTING SHALL BE EAST JORDAN IRON WORKS (EJIW) 5250 INLET WITH V-5622080 ADA GRATE OR NEENAH R-3405-A INLET WITH TYPE 'L' GRATE, OR EQUAL APPROVED BY CITY ENGINEER. AS APPLICABLE, GRATE SHALL BE ORIENTED SUCH THAT THE LONG OPENINGS ARE PERPENDICULAR TO NORMAL DIRECTION OF BICYCLE TRAFFIC FLOW. IN OTHER LOCATIONS, CASTING SHALL BE EJIW 5250 OR NEENAH R-3405 INLET AND STANDARD GRATE MAY BE USED. IN ALL LOCATIONS, GRATE MUST INCLUDE "ECO-SENSITIVE" MARKINGS SUCH AS: "DUMP NO WASTE; DRAINS TO STREAM" AND AN AQUATIC LIFE LOGO. THE LETTERING AND LOGO SHALL BE RAISED OR RECESSED AND INTEGRAL WITH THE CASTING. ALTERNATE NOTATION OR LOGO IS SUBJECT TO THE CITY ENGINEER'S APPROVAL
8. ALL OPENINGS AND KNOCKOUTS FOR INLET AND OUTLET PIPING SHALL BE FASHIONED NEATLY. ALL ANNULAR SPACE SHALL BE FILLED WITH CEMENT GROUT, BRICK AND MORTAR, OR CLASS 'C' CONCRETE.
9. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

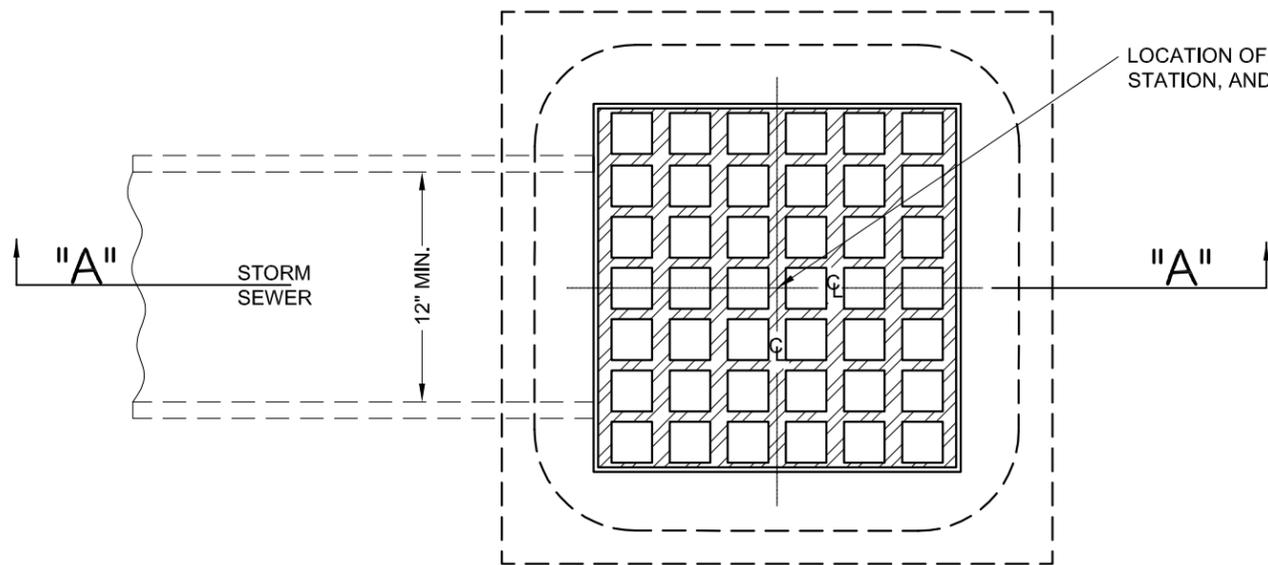
BRICK CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:

1. PROVIDE CLAY BRICK (ASTM C-32-93) WALLS WITH FULL MORTAR (ASTM C-91 & C-150, AIR-ENTRAINED PORTLAND CEMENT) JOINTS. CONCRETE & CEMENT BLOCKS/BRICKS ARE PROHIBITED FOR NEW OR RECONSTRUCTED BASINS.
2. THE CATCH BASIN SHALL HAVE A CONCRETE BASE (MINIMUM 6" THICKNESS) EXTENDING 6" BEYOND OUTSIDE OF FOUR WALLS OF CATCH BASIN.
3. EVERY SEVENTH COURSE MUST BE A STRETCHER COURSE.
4. WALL SHALL BE MINIMUM 8" THICK.
5. PLASTER OUTSIDE WALLS WITH 1/2" NON-SHRINK MORTAR; INSIDE JOINTS MUST BE NEATLY STRUCK AND CLOSED.

PRECAST CONCRETE CATCH BASINS ARE ACCEPTABLE AND SHALL BE CONSTRUCTED PER THIS DRAWING AND THE FOLLOWING SPECIFICATIONS:

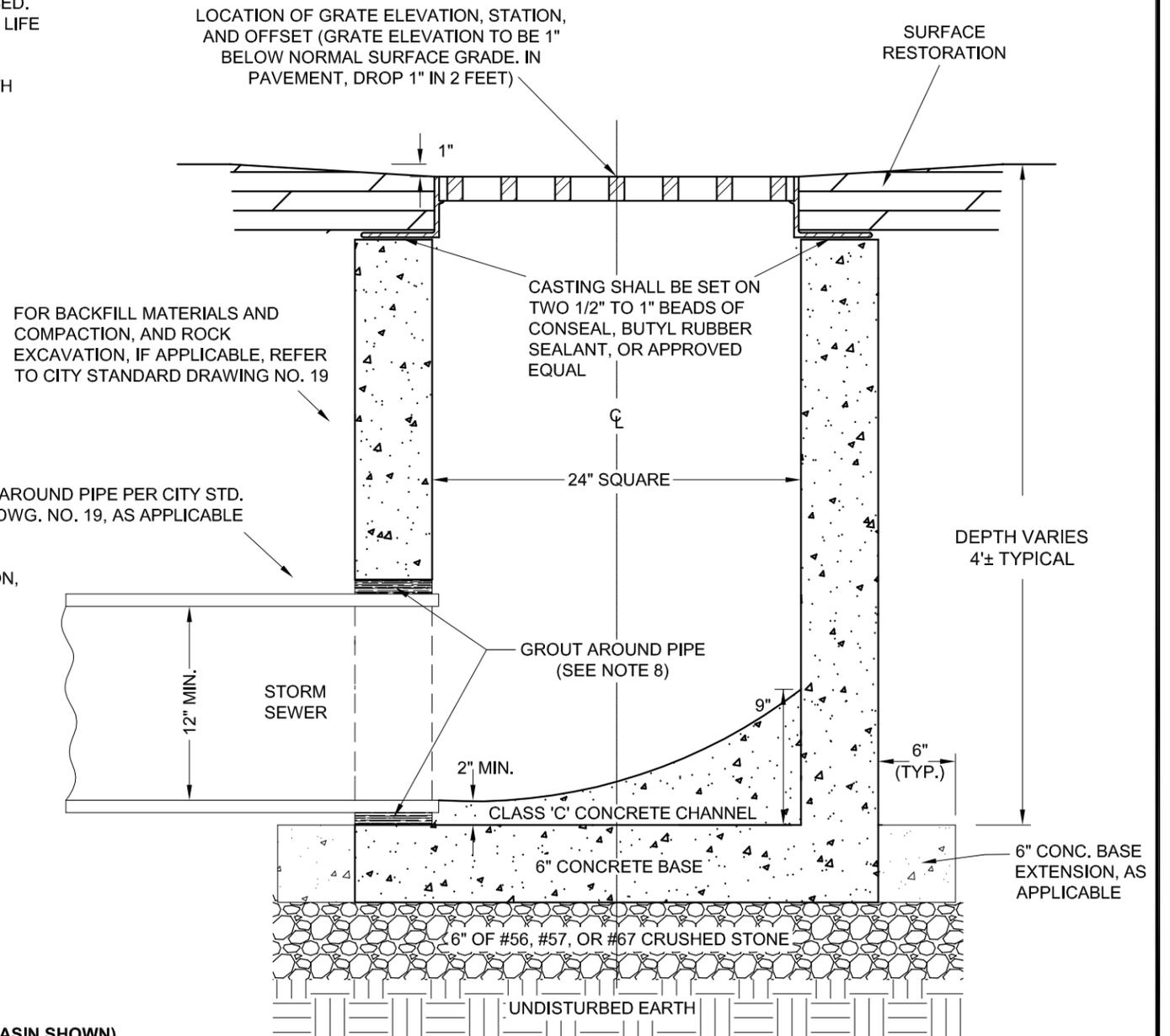
1. THE PRECAST UNIT SHALL CONFORM TO ODOT ITEM 706.13.
2. PRECAST WALLS AND BOTTOM SHALL HAVE A MINIMUM THICKNESS OF 6".
3. A 6" CONCRETE BASE EXTENSION IS REQUIRED ON ALL FOUR SIDES WHEN DEPTH (TOP OF GRATE TO LOWEST PIPE INVERT) EXCEEDS 6 FEET.
4. STACKED PRECAST SECTIONS MUST HAVE A TONGUE/ GROOVE JOINT AND A BUTYL SEALANT.
5. SHOP DRAWING OF THE PRECAST UNIT SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.

PLAN VIEW
NOT TO SCALE



(PRECAST CONCRETE CATCH BASIN SHOWN)

SECTION A-A
NOT TO SCALE



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APPROVED DATE: MAR. 2012

APPROVED BY: CDB, RMB, SLH

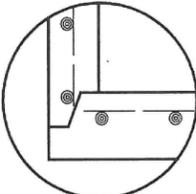
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REVISIONS

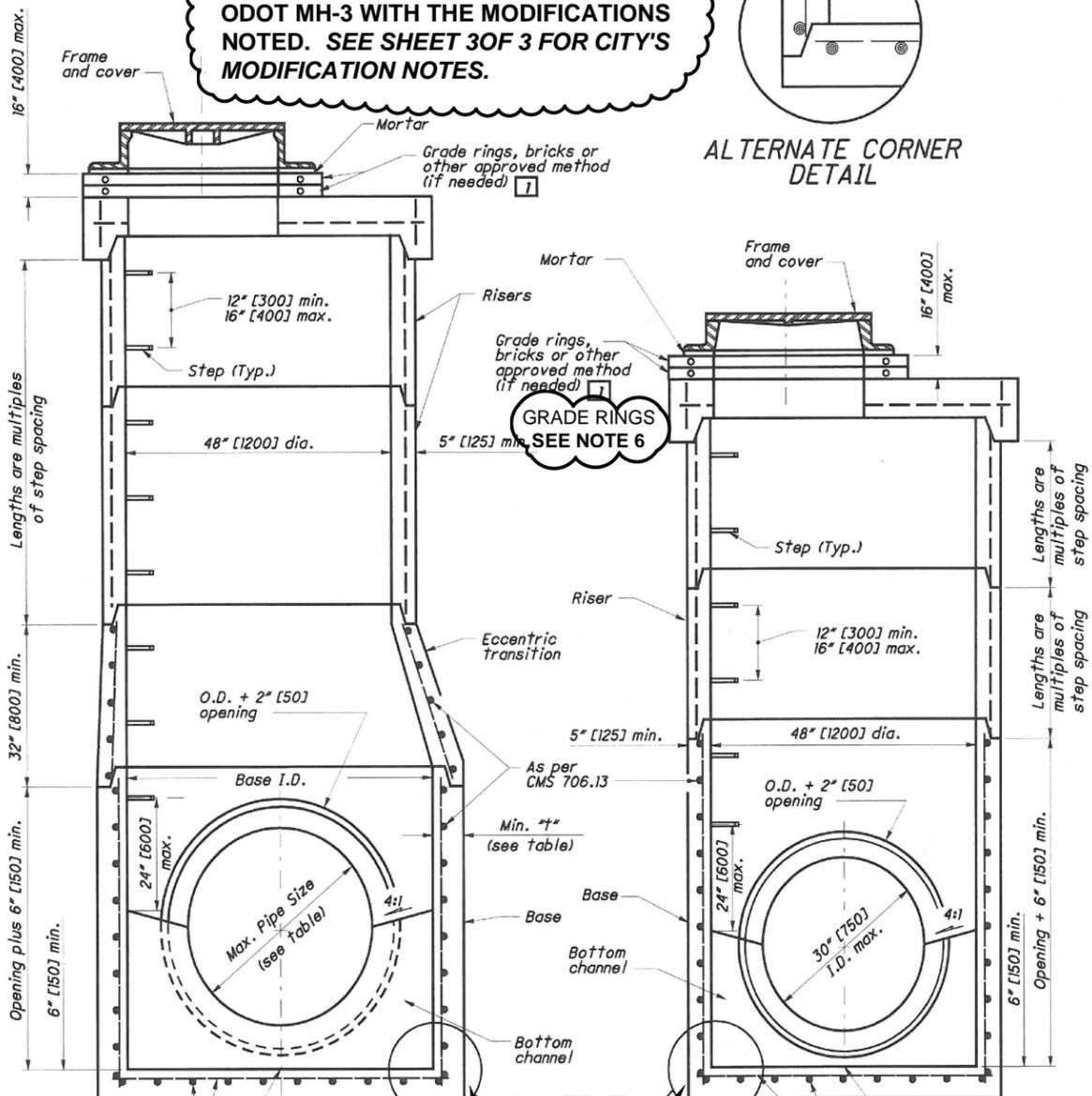
DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 4
SQUARE-TOP CATCH BASIN

THE CITY'S STANDARD MANHOLE FOR SANITARY AND STORM SEWERS IS THE ODOT MH-3 WITH THE MODIFICATIONS NOTED. SEE SHEET 30F 3 FOR CITY'S MODIFICATION NOTES.



ALTERNATE CORNER DETAIL



SET MANHOLE STRUCTURES ON 6" OF AASHTO M 43 NO. 56,57, OR 67 CRUSHED STONE SET ON UNDISTURBED EARTH.

60" to 108" [1500 to 2750] PRECAST BASE
SEE TABLE FOR MAXIMUM PIPE SIZES

6" BASE EXTENSION SEE NOTE 3

48" [1200] PRECAST BASE
FOR 30" [750] AND SMALLER PIPE

SECTION VIEWS OF REINFORCED PRECAST MANHOLES

NOTES

- GENERAL: With normal soil and site conditions, this standard precast manhole may be used for any required manhole depth. Sections of the precast manhole shall be cast and assembled with either all tongue or all groove ends up. Lift holes may be provided in each section for handling. Handling device for the flat slab shall be left in place.
- TOP: This section shall be a flat slab, unless an eccentric cone is specified.
- TRANSITION (OR REDUCER): This section can be either eccentric cone or flat slab.
- BASE: Manhole No. 3 is shown with a monolithic floor and riser which may be cast in one or two operations. A permissible alternate is to cast and ship the floor and barrel separately. Openings for inlet and outlet pipes shall be provided, either when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete, precast in the base or field constructed as shown on SCD MH-1.1 and MH-3.1.
- RISER SECTIONS: Openings for 18" [450] and smaller inlet pipes may be either prefabricated, or cut in the field provided the sides of the pipe at the springline do not project into the manhole.
- CONNECTIONS: Connections between precast manhole sections, and pipes on sanitary sewers, may be sealed with resilient connectors conforming to ASTM C 923.
- JOINT SEAL: Seal between precast manhole sections on sanitary sewers shall be resilient and flexible gasket joints per CMS 706.11.
- OPENINGS: The maximum pipe opening shall be the O.D. of the pipe being supplied plus 2" [50] when fabricated or field cuts. Fill any voids per CMS 601.
- MATERIALS: Materials for bases and other precast sections, including reinforcement not specified hereon, shall comply with the requirements of CMS 706.13.
- DROP PIPE: When specified on the plans, drop pipe shall be constructed as shown on SCD MH 3.1.
- STEPS, FRAMES AND COVERS: Shall comply with the requirements set forth on SCD MH-1.1.
- TOP SLAB REBAR: Reinforcing steel used within the top slab shall be epoxy coated.

- SEE NOTE 1
- SEE NOTE 2
- SEE NOTE 2
- SEE NOTE 3
- SEE NOTE 4
- SEE NOTE 4
- SEE NOTE 4
- SEE NOTE 4
- SEE NOTE 5

LEGEND

1 Reconstruction to grade only. Approved materials are kept on file by the Office of Materials Management.

MAXIMUM PIPE SIZES		
BASE I.D.	MIN. #"	MAX. PIPE SIZE
60" [1500]	5" [125]	36" [900]
72" [1800]	6" [150]	48" [1200]
84" [2100]	7" [175]	54" [1350]
90" [2250]	7 1/2" [190]	60" [1500]
96" [2400]	8" [200]	66" [1650]
108" [2750]	9" [230]	72" [1800]

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
 REVISIONS
 7-20-01
 7-19-02
 7-15-05
 1-20-06
 ROADWAY HYDRAULIC ENGINEER
 J. Stojan
 ALL METRIC DIMENSIONS (IN BRACKETS) ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
 OFFICE OF STRUCTURAL ENGINEERING
 MANHOLE No. 3
 SCD NUMBER
 MH-1.2
 1/2

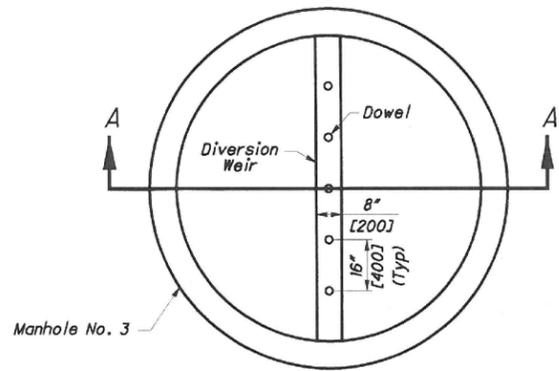


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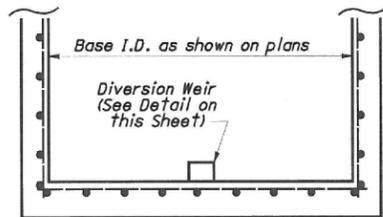
APPROVED DATE: JAN 2012
 APPROVED BY: CDB, RMB, SLH
 DRAWING FILE NAME: ce_10.dwg

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DESCRIPTION	DATE	BY

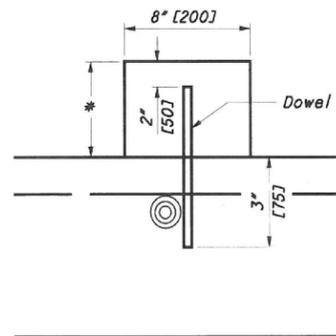
STANDARD DRAWING NO. 10
 PRECAST STORM OR
 SANITARY MANHOLE
 SHEET 1 OF 3



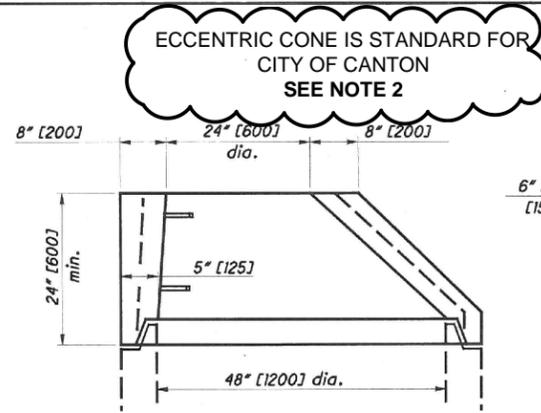
MANHOLE NO. 3 W/
 " BASE I.D. AND " WEIR
 (NTS)



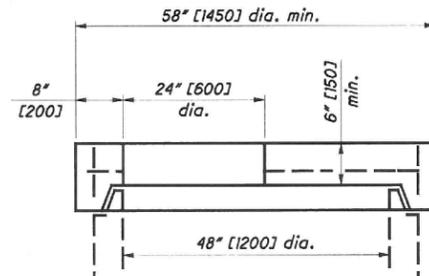
SECTION A-A
 (NTS)



* Furnish weir height as shown in plans.
 DIVERSION WEIR DETAIL
 (NTS)

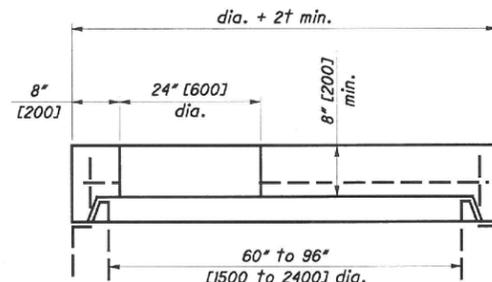


ALTERNATE
 ECCENTRIC CONE TOP
 (Only if specified)



FLAT SLAB TOP

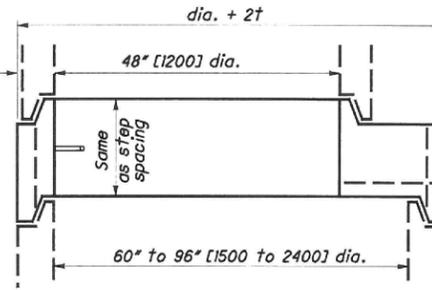
ONLY IF SPECIFIED
 SEE NOTE 2



FLAT SLAB TOP

ONLY IF SPECIFIED
 SEE NOTE 2

ECCENTRIC CONE IS STANDARD FOR
 CITY OF CANTON
 SEE NOTE 2



FLAT SLAB TRANSITION

ONLY IF SPECIFIED
 SEE NOTE 2

NOTES

MANHOLE NO. 3 W/ " BASE I.D. AND " DIVERSION WEIR:
 Furnish manhole base with precast diversion weir or con-
 struct diversion weir from Structure Concrete, Class C
 or Brick and Masonry Units conforming to CMS 604. A bot-
 tom channel section for the manhole is not required when
 a diversion weir is specified on the plans.

Place diversion weir perpendicular to flow of inflowing
 trunk sewer. Dowel concrete or masonry units into the
 base of the manhole to a depth of 3" [75] using epoxy
 coated #4 reinforcing bars. Start dowels at the center
 of the diversion weir and space 16" [400] on center across
 the entire weir.

All materials and labor, including excavation and backfill,
 shall be paid for at the contract price for ITEM 604 -
 MANHOLE NO. 3 WITH " BASE I.D. AND " DIVERSION WEIR.

THE CITY'S STANDARD MANHOLE FOR
 SANITARY AND STORM SEWERS IS THE
 ODOT MH-3 WITH THE MODIFICATIONS
 NOTED. SEE SHEET 30F 3 FOR CITY'S
 MODIFICATION NOTES.

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STATE OF OHIO DEPARTMENT OF TRANSPORTATION	STATE INDRUALIC ENGINEER
REVISIONS	J. Stains
7-20-01	
7-19-02	
7-15-06	
7-20-06	
ALL METRIC DIMENSIONS (IN BRACKETS) ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.	OFFICE OF STRUCTURAL ENGINEERING
STANDARD HYDRAULIC CONSTRUCTION DRAWING	MANHOLE No. 3
SCD NUMBER	MH-1.2
	2 / 2



OFFICE OF THE CITY ENGINEER
 CANTON, OHIO

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APPROVED DATE: JAN 2012

APPROVED BY: CDB, RMB, SLH

DRAWING FILE NAME: ce_10.dwg

REVISIONS

DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 10
 PRECAST STORM OR
 SANITARY MANHOLE
 SHEET 2 OF 3

CANTON CONSTRUCTION STANDARDS NOTES FOR MODIFIED ODOT MANHOLE 3 (SCD MH-1.2)

NOTE 1. LIFT HOLES INSIDE THE MANHOLES MUST BE SEALED WITH GROUT.

NOTE 2. TOP AND TRANSITION SECTIONS MUST BE ECCENTRIC CONE ONLY. USE FLAT SLAB FOR SHALLOW MANHOLE APPLICATIONS OR SPECIAL CIRCUMSTANCES AS DIRECTED BY THE CITY.

NOTE 3. 6" EXTENDED BASE IS STANDARD FOR ALL SANITARY AND STORM MANHOLES. SET MANHOLE BASE ON 6" OF AASHTO M 43 NO. 56, 57, OR 62 CRUSHED STONE SET ON UNDISTURBED EARTH.

NOTE 4. PIPE CONNECTIONS INTO THE MANHOLES MUST NOT EXTEND INTO THE MANHOLE MORE THAN 2" AT THE SIDES OF THE PIPE AT THE SPRING-LINE OF SAID PIPE.

SANITARY CONNECTIONS
 SANITARY SEWER PIPE INLETS, WITH FLOWLINES MORE THAN 2" HIGHER THAN THE CHANNEL BENCH MUST BE OUTSIDE DROP CONNECTIONS. DROP CONNECTIONS MUST BE FABRICATED AND CAST INTEGRALLY WITH THE MANHOLE SECTIONS OR INSTALLED PER CITY STANDARD DWG. 11, OUTSIDE DROP CONNECTION FOR SANITARY MANHOLES. NO INSIDE DROPS PERMITTED FOR PRIVATE SEWER CONNECTIONS. INSIDE DROP FOR CITY-OWNED SEWERS ARE SUBJECT TO THE CITY ENGINEER'S APPROVAL.

SANITARY PIPE INLETS MUST BE FLUMED OVER THE BENCH, DIRECTING FLOW INTO THE CHANNEL, USING CONCRETE AND/OR CLAY SEWER BRICK AND MORTAR.

CAST OPENINGS MUST BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 2 INCHES WITH A BUTYL RUBBER A-LOK, X-CEL GASKET, OR APPROVED EQUAL.

CORED OPENINGS MUST BE MACHINE CORED, THE OPENING SHALL BE PER PIPE-TO-MANHOLE CONNECTOR SPECS. USE "KOR-N-SEAL" FLEXIBLE PIPE-TO-MANHOLE CONNECTOR WITH STAINLESS WEDGE ASSEMBLY OR APPROVED EQUAL CONFORMING TO ASTM C-930 OR ASTM C-923.

STORM CONNECTION
 OPENINGS FOR STORM PIPE INLETS MAY BE CAST OR MACHINE CORED. OPENINGS SHALL NOT EXCEED THE O.D. OF PIPE + 2". MAKE WATER-TIGHT JOINTS WITH NON-SHRINK CEMENT OR CLASS 'C' CONCRETE APPLIED FROM INSIDE AND OUTSIDE OF MANHOLE.

NOTE 5. STEPS SHALL BE 1/2" STEEL REINFORCED POLYPROPYLENE STEPS 12" W X 5-3/4" BY AMERICAN STEP CO., INC. OR APPROVED EQUAL, MEETING ASTM 478.

FRAMES AND COVER SHALL CONFORM WITH CITY OF CANTON STD. DWG. NO. 12.

NOTE 6. GRADE RINGS FOR NEW MANHOLES MAY BE PRECAST CONCRETE, RUBBER COMPOSITE, OR CLAY BRICK AND MORTAR. CONCRETE BRICK IS NOT PERMITTED.

HEIGHT OF GRADE RINGS COLLECTIVELY SHALL NOT EXCEED 12".

PRECAST CONCRETE GRADE RINGS MUST BE REINFORCED CLASS 'C' CONCRETE AND CONNECTED USING TWO CONCENTRIC RINGS OF 1/2" TO 1" BEADS OF BUTYL RUBBER SEALANT CON-SEAL OR APPROVED EQUAL. SEAL OUTSIDE JOINTS WITH 1/2" NON SHRINK CEMENT PLASTER.

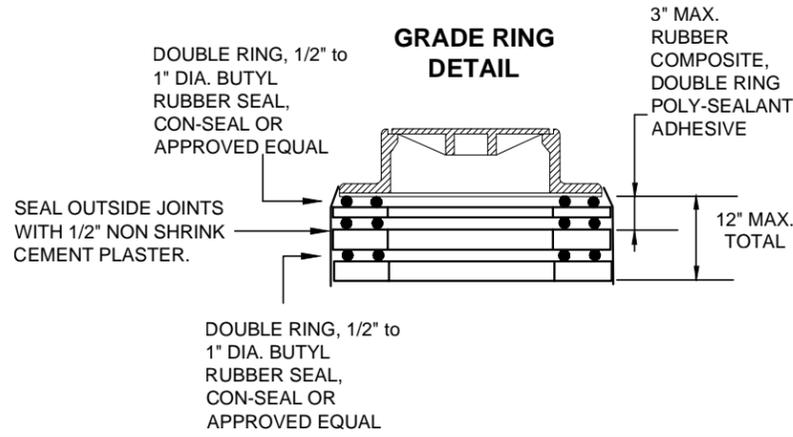
RUBBER COMPOSITE GRADE RINGS MUST BE "INFRA-RISER" BY EJIW OR APPROVED EQUAL, AND CONNECTED USING TWO PARALLEL BEADS OF POLY-SEALANT ADHESIVE PER MANUFACTURER RECOMMENDATION. RUBBER COMPOSITE GRADE RINGS HEIGHT MUST NOT EXCEED 3" AND MUST BE PLACED DIRECTLY UNDER MANHOLE FRAME.

BRICK AND MORTAR RINGS MUST BE BELDEN BRICK, FINE GRIND, ASTM C32-90, OR APPROVED EQUAL WITH HIGH STRENGTH, AIR ENTRAINED, MORTAR. SEAL OUTSIDE JOINTS WITH 1/2" NON SHRINK CEMENT PLASTER.

USE TWO PARALLEL 3/4" BEADS OF BUTYL RUBBER SEALANT CON-SEAL OR APPROVED EQUAL, BETWEEN GRADE RINGS OF DIFFERENT MATERIAL AND BETWEEN GRADE RINGS AND MANHOLE FRAME.

NOTE 7. FOR BACKFILL MATERIAL AND COMPACTION, AND ROCK EXCAVATION, IF APPLICABLE, REFER TO CITY STD. DWG. NO. 19.

NOTE 8. SANITARY MANHOLES TO BE TESTED ACCORDING TO CITY ENGINEER'S SPECIFICATION 04-01 (NEGATIVE AIR PRESSURE TEST).



OPTIONAL MANHOLE BID ITEMS

ITEM	QTY.	UNIT	DESCRIPTION OPTION "A"
604		V.F.	MH WATERPROOFING, COAL TAR, A.P.P.

IF REQUESTED BY THE CITY ENGINEER, OR SPECIFIED IN THE PLAN, THE CONTRACTOR SHALL PROVIDE UNIT PRICE FOR WATERPROOFING THE EXTERIOR OF DESIGNATED MANHOLES. THIS ITEM IS "CITY OPTIONAL" AND THE PRICE IS PAID PER VERTICAL FOOT OF EACH MANHOLE WATERPROOFED AS DIRECTED BY THE ENGINEER. THIS OPTION IS A CONTINGENCY BID ITEM UNLESS SPECIFIED OTHERWISE.

APPLY IN THE FIELD A COAL TAR EPOXY TO THE OUTSIDE OF THE MANHOLE PER MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS FROM THE TOP OF THE EXTENDED BASE TO THE BOTTOM OF THE MANHOLE COVER CASTING.

ITEM	QTY.	UNIT	DESCRIPTION OPTION "B"
604		EACH	NEW MH, POLYMER LINING, A.P.P.
604		V.F.	EXISTING MH, POLYMER LINING, A.P.P.

IF REQUESTED BY THE CITY ENGINEER, OR SPECIFIED IN THE PLAN, THE CONTRACTOR SHALL PROVIDE UNIT PRICE FOR CORROSION RESISTANT POLYMER LININGS AS DESIGNATED. THIS ITEM IS "CITY OPTIONAL" AND THE PRICE IS PAID PER VERTICAL FOOT OR PER EACH MANHOLE LINED AS DIRECTED BY THE ENGINEER. THE UNIT COST FOR THIS ITEM INCLUDES ALL COSTS FOR LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR SUPPLYING AND INSTALLING THE LININGS INCLUDING THE COST FOR BYPASSING EXISTING SEWER FLOWS FOR THE DURATION OF THE INSTALLATION AND CURING TIME AS SPECIFIED. THIS OPTION IS INCLUDED AS A CONTINGENCY BID ITEM. UNLESS SPECIFIED OTHERWISE.

APPLY IN THE FIELD A CORROSION RESISTANT POLYMER LINING (PLASITE 5371 BY CARBOLINE OR APPROVED EQUAL) TO THE INSIDE OF THE NEW OR EXISTING MANHOLE PER MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS. APPLY FROM THE TOP OF THE BENCH TO THE BOTTOM OF THE MANHOLE COVER CASTING.

FOR EXISTING MANHOLES, PRIOR TO POLYMER LINING APPLICATION, RESTORE INSIDE WALLS AS PER LINING MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE CITY ENGINEER.

THE CITY'S STANDARD MANHOLE FOR SANITARY AND STORM SEWERS IS THE ODOT MH-3 WITH THE MODIFICATIONS NOTED.



OFFICE OF THE CITY ENGINEER
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APPROVED DATE: JAN 2012

APPROVED BY: CDB, RMB, SLH

DRAWING FILE NAME: ce_10.dwg

REVISIONS		
DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 10
PRECAST STORM OR
SANITARY MANHOLE
 SHEET 3 OF 3

TOP OF SANITARY SEWER MANHOLE COVER
(SEE NOTE 2 FOR STORM SEWER COVER)

NOTES:

1. COVER AND FRAME TO BE CAST OF GRAY IRON IN COMPLIANCE WITH ASTM SPEC. ASTM A-48 CLASS 35 AND AASHTO M 306. CASTINGS SHALL BE OF THE HEAVY DUTY RATING.

2. SANITARY MANHOLE COVER/FRAME

- EAST JORDAN 1850 B VENTED COVER (PRODUCT NO. 185026) AND 1850 FRAME.
- NEENAH R-1654 FRAME AND VENTED COVER.
- OR EQUAL APPROVED BY CITY ENGINEER.

STORM MANHOLE COVER/FRAME

- EAST JORDAN 1850 M GRATED COVER AND 1850 FRAME.
- NEENAH R-1654 FRAME AND GRATED COVER.
- USE THE VENTED COVER WITH CITY LOGO WITHIN CROSSWALKS.**

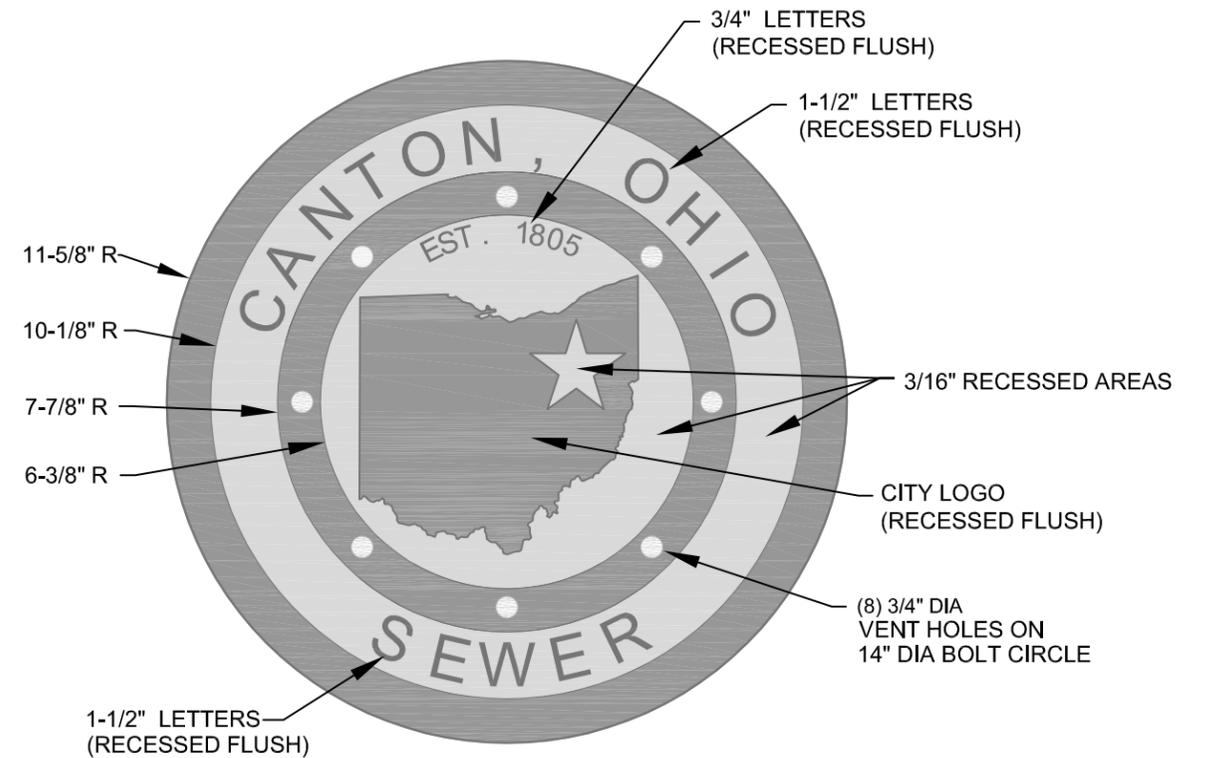
3. MACHINE BEARING SURFACES BETWEEN LID AND FRAME.

4. CONTACT CITY ENGINEER FOR CAD DRAWING OF CITY LOGO.

5. CASTINGS ARE NOT REQUIRED TO BE PAINTED.

6. **ALTERNATE FRAMES**, SUITABLE WITH EJ 1850 COVER, FOR USE AS DIRECTED BY THE CITY ENGINEER:

- EAST JORDAN 2015 (10-1/2" FRAME HEIGHT)
- EAST JORDAN 1622 (5" FRAME HEIGHT, OR FLAT IF FRAME IS INVERTED)



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CANTON, OHIO

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APPROVED DATE: JAN 2012

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REVISIONS

DESCRIPTION	DATE	BY
MH COVER CITYLOGO	2/28/2014	RMB
NOTE 2 REVISED, ADD GRATED COVER	1/17/2015	RMB
REMOVED OLD CITY LOGO COVER	12/8/2015	RMB

STANDARD DRAWING NO. 12

MANHOLE COVER

SHEET 1 OF 1

- CUT AND REMOVE THE ASPHALT PAVEMENT, AROUND THE EXISTING MANHOLE CASTING, IN A CIRCULAR FASHION WITH A MINIMUM DIAMETER OF 54" AND CENTERED ABOUT THE FRAME. DISPOSE OF ALL ASPHALT, CONCRETE, BRICK AND ROAD DEBRIS.
- REMOVE THE CASTING (MANHOLE RIM AND COVER) FROM THE TOP OF THE MANHOLE. INSPECT THE RIM AND COVER FOR DEFECTS. IF DEFECTS ARE PRESENT, REPLACE WITH NEW RIM/COVER AS NEEDED. IF DEFECTS ARE NOT PRESENT, CLEAN & RETAIN FOR USE IN RECONSTRUCTION.
- CONCRETE MANHOLE
REMOVE ALL ADJUSTING RINGS TO THE TOP OF THE CONCRETE CONE. DISPOSE OF THIS MATERIAL.
MASONRY MANHOLE
REMOVE MASONRY TO THE LEVEL SPECIFIED IN FIG. 2.M. DISPOSE OF THIS MATERIAL.
- REMOVE ALL AGGREGATE AROUND THE MANHOLE THAT HAS BEEN EXPOSED BY THE ASPHALT REMOVAL AND DISPOSE OF THIS AGGREGATE. THE AGGREGATE MUST BE REMOVED TO A MINIMUM OF 3" BELOW THE LEVEL OF THE TOP OF THE CONCRETE CONE/REMAINING MASONRY.
- CONCRETE MANHOLE
CLEAN AND INSPECT THE TOP SURFACE OF THE CONCRETE CONE SECTION. THE SURFACE SHOULD BE SMOOTH AND FREE OF BUMPS AND PITS THAT MAY PREVENT A GOOD WATER TIGHT SEAL. GRIND THE SURFACE AS NEEDED TO REMOVE PROTRUSIONS. UTILIZE COMPRESSED AIR TO BLOW DUST AND DEBRIS FROM THE SURFACE AFTER GRINDING. UTILIZE A HYDRAULIC CEMENT, ACCORDING TO MANUFACTURERS RECOMMENDATIONS, TO FILL IN DEPRESSIONS.
MASONRY MANHOLE
CLEAN AND INSPECT THE TOP SURFACE OF THE MASONRY. THE SURFACE MUST BE STRUCTURALLY SOUND. UTILIZE COMPRESSED AIR TO BLOW DUST AND DEBRIS FROM THE SURFACE. THE ENGINEER SHALL INSPECT THE MASONRY MANHOLE FOR STRUCTURAL INTEGRITY.
- BRING THE AREA AROUND THE CONE/MASONRY BACK TO FLUSH WITH THE TOP OF THE MASONRY USING ODOT 703.01 #57 AGGREGATE.

Existing Manhole (Sectional View)

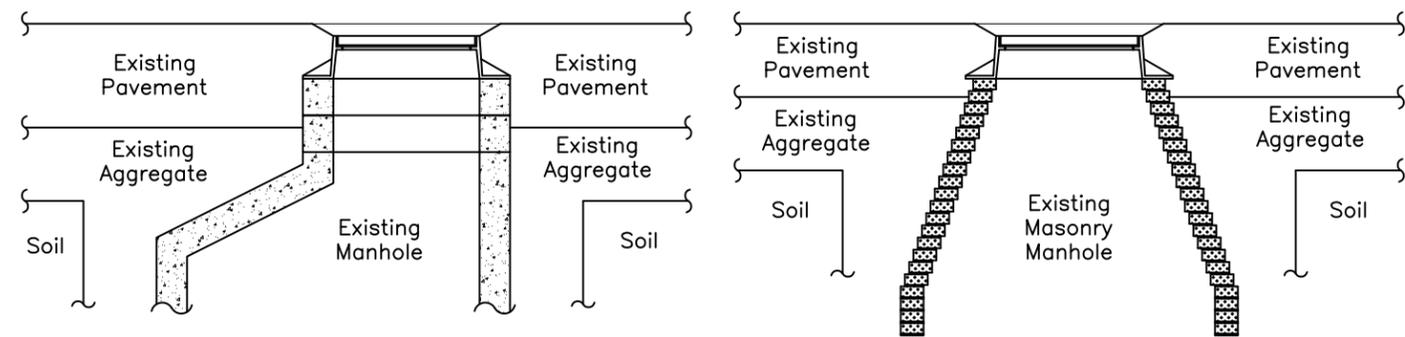


FIG. 1.C

FIG. 1.M

Legend

-  = Concrete
-  = Masonry

Chimney Removed (Sectional View)

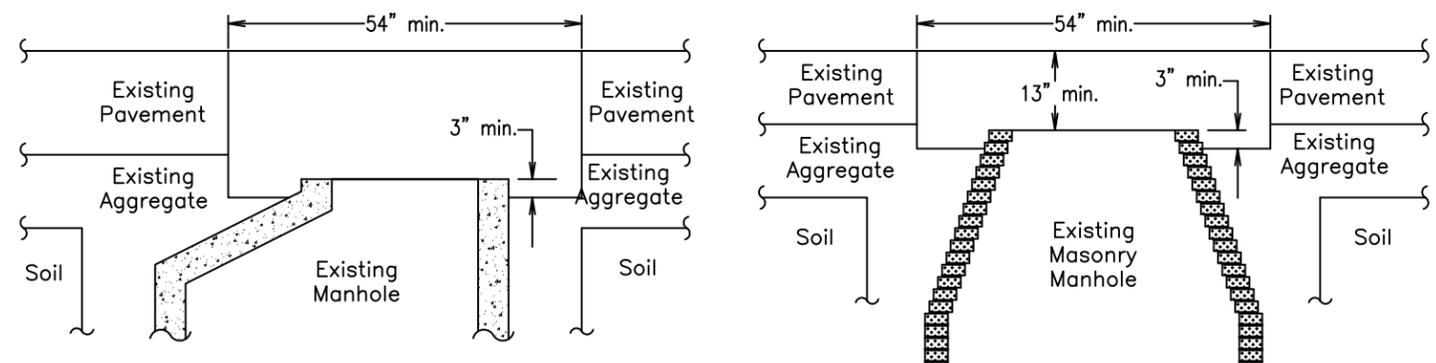


FIG. 2.C

FIG. 2.M



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REVISIONS

DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 13

MANHOLE ADJUSTMENTS

SHEET 1 OF 2

7. APPLY MORTAR TO THE TOP OF THE MASONRY AND IMMEDIATELY INSTALL A CONCRETE COLLAR/ADJUSTING RING (2" MIN. THICKNESS) ON TOP OF THE MORTAR. THE CONCRETE COLLAR/ADJUSTING RING MUST HAVE AN INSIDE DIAMETER OF 24 INCHES. THE OUTSIDE DIAMETER MUST BE SUCH THAT THERE IS A MINIMUM OF 3 INCHES OF THE CONCRETE COLLAR/ADJUSTING RING BEARING ON MASONRY ALL THE WAY AROUND THE MANHOLE. (MASONRY MANHOLES ONLY)
8. A PVC PIPE SHALL BE USED AS A CHIMNEY LINER (SEE CHIMNEY LINER SPECIFICATIONS) AND MUST BE CUT TO THE EXACT PROFILE OF THE ROAD IN ALL DIRECTIONS SUCH THAT WHEN THE MANHOLE RIM AND COVER ARE RESTING ON TOP OF THE LINER, THE TOP OF THE CASTING SHALL BE EXACTLY 0.25" BELOW FLUSH WITH THE PAVEMENT SURFACE IN ALL DIRECTIONS.
9. THE LINER SHALL BE MARKED IN SUCH A WAY, UPON COMPLETION OF THE CUTTING PROCESS, THAT ROTATION DOES NOT OCCUR, WHICH COULD BE DETRIMENTAL TO THE END PRODUCT. THE TOP AND/OR BOTTOM OF THE LINER SHALL ALSO BE MARKED TO PREVENT THE LINER FROM BEING INSTALLED UP SIDE DOWN, WHICH COULD BE DETRIMENTAL TO THE END PRODUCT.
10. APPLY A LIBERAL AMOUNT OF SEALANT TO THE BOTTOM OF THE LINER AND SET IN PLACE ON TOP OF THE CONCRETE COLLAR/ADJUSTING RING WHILE MAKING SURE IT IS PROPERLY ALIGNED. THIS WILL CREATE A WATER TIGHT SEAL BETWEEN THE LINER AND THE CONCRETE COLLAR/ADJUSTING RING.
11. APPLY A LIBERAL AMOUNT OF SEALANT TO THE TOP OF THE LINER. SET THE MANHOLE RIM CASTING ON THE LINER WHILE MAKING SURE IT IS PROPERLY ALIGNED. THIS WILL CREATE A WATER TIGHT SEAL BETWEEN THE LINER AND THE MANHOLE RIM CASTING.
12. PLACE THE MANHOLE LID ON THE RIM CASTING TO LESSEN THE POSSIBILITY OF DEBRIS ENTERING THE MANHOLE.
13. PLACE EPOXY COATED #3 REBARS AS SHOWN IN FIG. 3.C & 3.M. THE CIRCULAR SHAPED REBARS SHALL HAVE A 6" MINIMUM OVERLAP.
14. APPLY WATERSTOP AS SHOWN IN FIG. 3.C & 3.M AND SPECIFIED IN THIS STANDARD DRAWING. THIS WILL ADD AN ADDITIONAL WATER TIGHT SEAL WHERE THE LINER MEETS THE CONCRETE COLLAR/ADJUSTING RING.
15. UTILIZE ODOT-CLASS C CONCRETE WITH BLACK DYE TO CAST A CONCRETE COLLAR AROUND THE RIM CASTING AND LINER. THE SURFACE OF THE CONCRETE SHALL BE FINISHED FROM FLUSH WITH THE PAVEMENT TO FLUSH WITH THE RIM CASTING. THE EDGE OF THE CONCRETE SHALL BE ROUNDED (1/4" RADIUS) WHERE IT MEETS THE ASPHALT. THIS WILL CREATE A SMALL GROOVE FOR A JOINT SEALER AT THIS LOCATION.
16. FILL THE GROOVE WITH A COLD POUR CRACK SEALER. THIS WILL PREVENT WATER FROM ENTERING THE CIRCULAR SEAM WHERE THE CONCRETE COLLAR MEETS THE ASPHALT.
17. APPLY AN ACRYLIC POLYMER CONCRETE CURING AND SEALING COMPOUND TO THE SURFACE OF THE CONCRETE COLLAR.
18. BARRICADE THE AREA AROUND THE CONCRETE TO PROTECT IT UNTIL THE CONCRETE ATTAINS A MODULUS OF RUPTURE OF 400 POUNDS PER SQUARE INCH. A CHEMICAL ADMIXTURE THAT ACTS AS A CONCRETE ACCELERATOR MAY BE USED TO SPEED UP THE PROCESS IF THE ROADWAY NEEDS TO BE OPENED SOONER.
19. IN ORDER TO MINIMIZE INCONVENIENCE TO MOTORISTS, THE CONTRACTOR PERFORMING THE WORK DESCRIBED IN THIS SPECIFICATION MUST BE CAPABLE OF PERFORMING ALL OF BOTH STEPS OF THIS SPECIFICATION IN 1.5 HOURS OR LESS.
20. THE CONTRACTOR SHALL WARRANT THE RECONSTRUCTED MANHOLE CHIMNEY TO BE LEAK FREE AND STRUCTURALLY SOUND FOR A MINIMUM OF 5 YEARS FROM THE DATE OF RECONSTRUCTION.

Chimney Reconstruction (Sectional View)

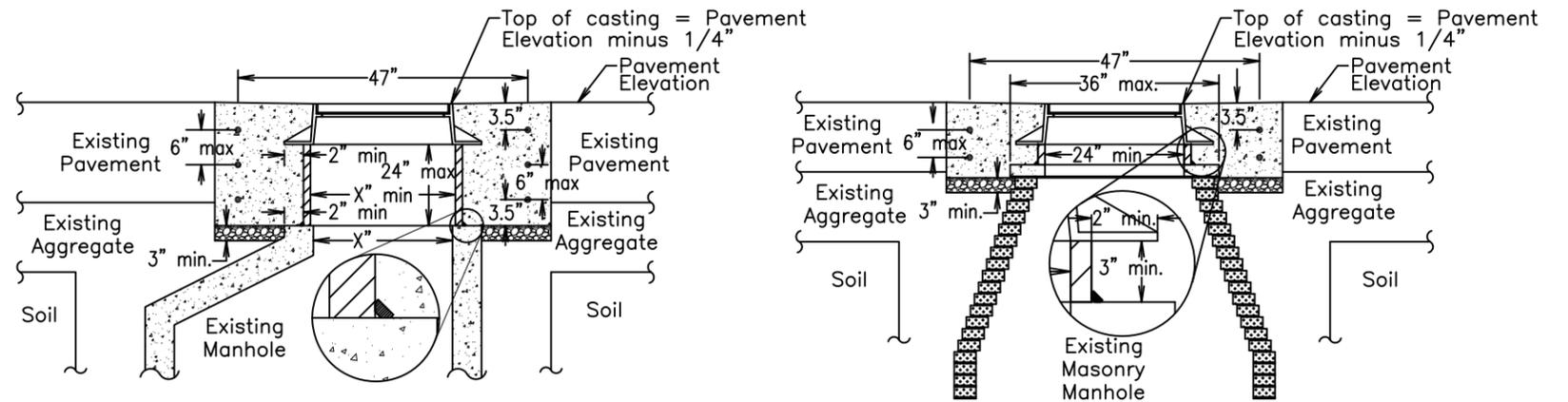


FIG. 3.C

FIG. 3.M

Legend

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> = Concrete = Epoxy Coated #3 Rebar = PVC pipe | <ul style="list-style-type: none"> = ODOT #57 Aggregate = Waterstop = Masonry |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

CHIMNEY LINER SPECIFICATIONS:

THE CHIMNEY LINER MUST BE MADE FROM POLYVINYL CHLORIDE COMPOUNDS WHICH COMPLY WITH THE REQUIREMENTS FOR A MINIMUM CELL CLASSIFICATION OF 12364 AS DEFINED BY ASTM D-1784.

THE CHIMNEY LINER MUST ALSO MEET ALL THE FOLLOWING PHYSICAL REQUIREMENTS:

PIPE STIFFNESS – MINIMUM PIPE STIFFNESS SHALL BE 46 PSI WHEN TESTED IN ACCORDANCE WITH ASTM D-2412

IMPACT RESISTANCE – NO VISUAL CRACKING OR SPLITTING OF THE WATERWAY WALL SHALL BE EVIDENCED WHEN TESTED IN ACCORDANCE WITH ASTM D-2444 WITH A 20 LB. WEIGHT, TUP B, FLAT PLATE HOLDER B TO A LEVEL OF 220 FT. LBS.

FUSION QUALITY – THERE SHALL BE NO SIGN OF FLAKING OR DISINTEGRATION WHEN IMMERSSED IN ANHYDROUS ACETONE FOR 20 MINUTES AS DESCRIBED IN ASTM D-2152.

DUCTILITY – THERE SHALL BE NO EVIDENCE OF CRACKING OR SPLITTING WHEN PIPE IS FLATTENED IN A CIRCUMFERENTIAL ORIENTATION BETWEEN TWO FLAT PLATES BY SIXTY PERCENT (60%) OF THE ORIGINAL DIAMETER.

AIR TIGHTNESS – EACH LENGTH OF PIPE SHALL PASS A FACTORY 3.5 PSI AIR TEST AS DESCRIBED IN ASTM F-1803.

WATERSTOP SPECIFICATIONS:

THE WATERSTOP MUST MEET ALL OF THE FOLLOWING PHYSICAL REQUIREMENTS:

SPECIFIC GRAVITY – SHALL BE 1.55 +/- 5% WHEN TESTED IN ACCORDANCE WITH ASTM D-71.

VOLATILE MATTER – SHALL NOT EXCEED 1% WHEN TESTED IN ACCORDANCE WITH ASTM D-6.

APPLICATION TEMPERATURE – MUST BE ABLE TO BE APPLIED FROM -10 DEGREES F TO 125 DEGREES F AS A MINIMUM.

SERVICE TEMPERATURE – MUST BE ABLE TO FUNCTION PROPERLY IN SERVICE FROM -30 DEGREES F TO 180 DEGREES F AS A MINIMUM.



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APPROVED BY: NJL

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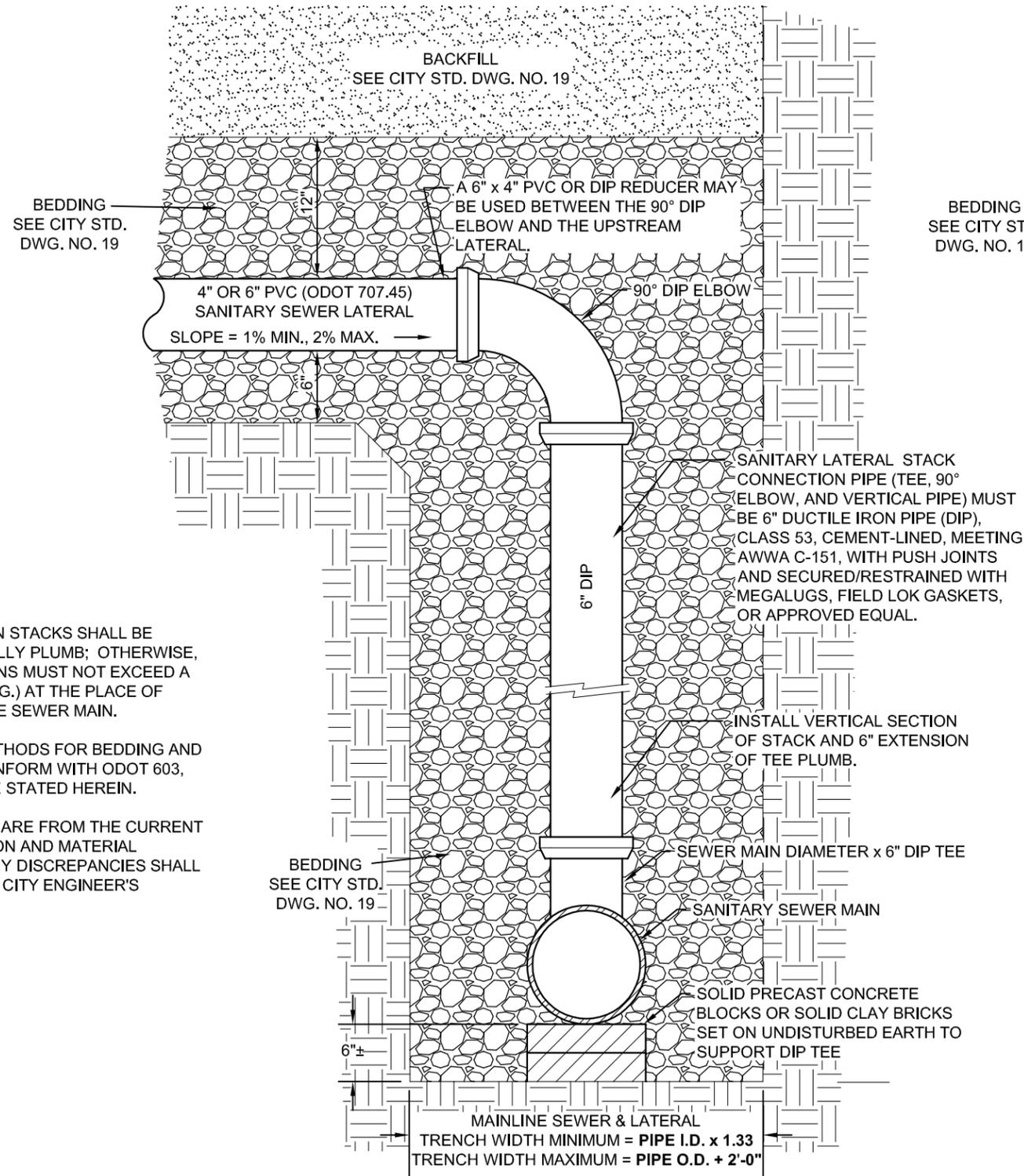
DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 13

MANHOLE ADJUSTMENTS

SHEET 2 OF 2

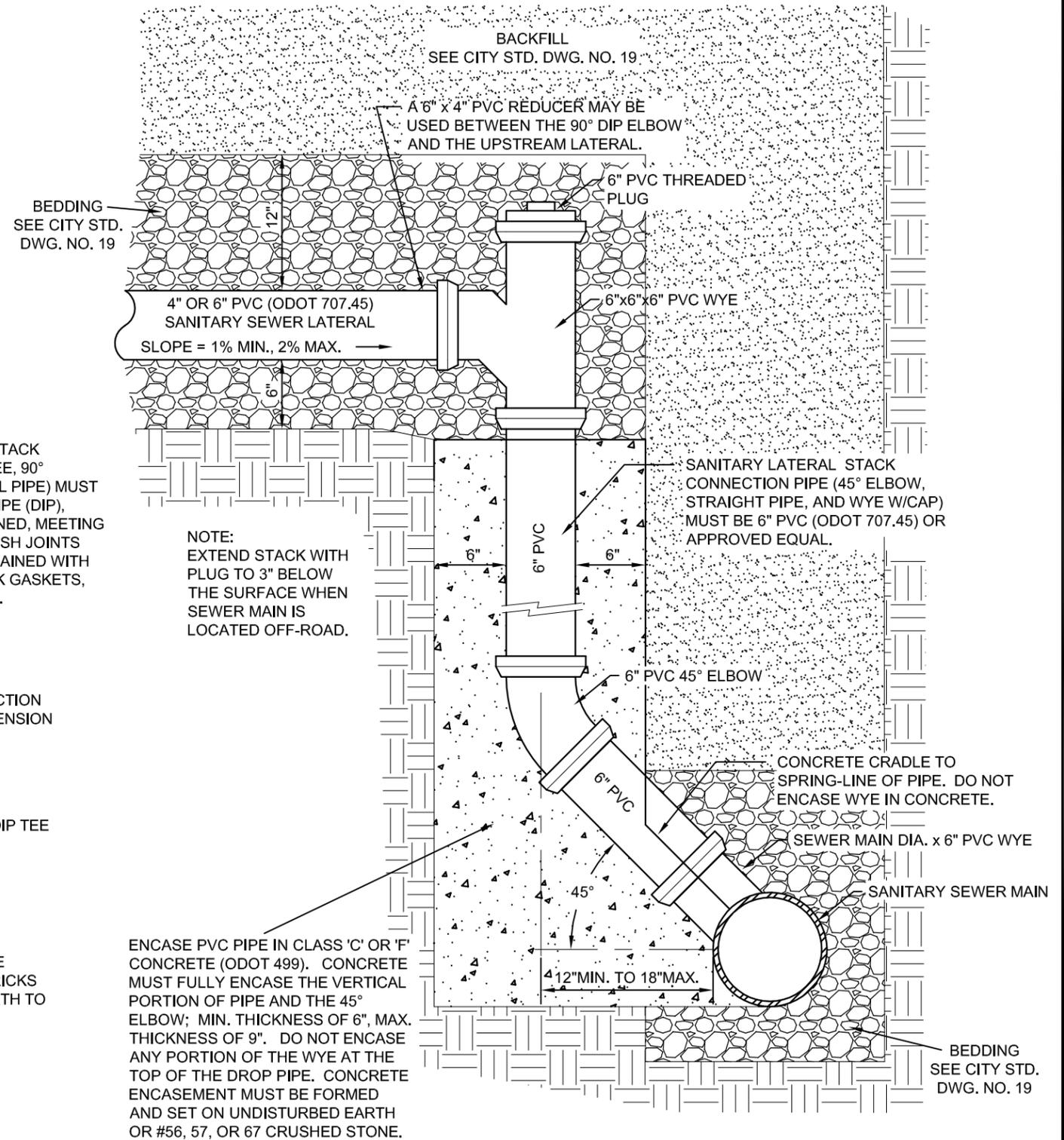
HOUSE CONNECTION STACK, OPTION 1



NOTES:

1. HOUSE CONNECTION STACKS SHALL BE INSTALLED VERTICALLY PLUMB; OTHERWISE, SEWER CONNECTIONS MUST NOT EXCEED A SLOPE OF 1:1 (45 DEG.) AT THE PLACE OF CONNECTION TO THE SEWER MAIN.
2. CONSTRUCTION METHODS FOR BEDDING AND BACKFILL SHALL CONFORM WITH ODOT 603, UNLESS OTHERWISE STATED HEREIN.
3. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

HOUSE CONNECTION STACK, OPTION 2



NOTE:
EXTEND STACK WITH
PLUG TO 3" BELOW
THE SURFACE WHEN
SEWER MAIN IS
LOCATED OFF-ROAD.

ENCASE PVC PIPE IN CLASS 'C' OR 'F' CONCRETE (ODOT 499). CONCRETE MUST FULLY ENCASE THE VERTICAL PORTION OF PIPE AND THE 45° ELBOW; MIN. THICKNESS OF 6", MAX. THICKNESS OF 9". DO NOT ENCASE ANY PORTION OF THE WYE AT THE TOP OF THE DROP PIPE. CONCRETE ENCASUREMENT MUST BE FORMED AND SET ON UNDISTURBED EARTH OR #56, 57, OR 67 CRUSHED STONE.



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DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 18
HOUSE CONNECTION STACK

NOTES:

1. BEDDING:

MATERIALS SHALL BE AASHTO M 43 NO. 56, 57, OR 67 CRUSHED STONE. NO ALTERNATES UNLESS APPROVED BY THE CITY ENGINEER. PRIVATE UTILITIES MAY TYPICALLY PROVIDE ALTERNATIVE BEDDING MATERIAL AS APPROVED BY THE CITY ENGINEER.

BEDDING WIDTH TABLE

PIPE TYPE	MIN. WIDTH, TYP.	MAX. WIDTH, TYP.
NON-RIGID PIPE (PVC, HDPE, CMP, ALUMINUM)	PIPE I.D. x 1.25 + 1'-0"	PIPE O.D. + 2'-0"
RIGID PIPE (CONC., VIT. CLAY, DUCTILE IRON)	PIPE I.D. x 1.33	PIPE O.D. + 2'-0"

CENTER PIPE HORIZONTALLY WITHIN BEDDING AREA. ANY DEVIATION TO TYPICAL BEDDING REQUIREMENTS ARE SUBJECT TO THE DISCRETION OF THE CITY ENGINEER.

THE BEDDING LIMITS SHOWN APPLY IN ALL CASES EXCEPT FOR WHEN PIPE MANUFACTURER SPECIFIES A BEDDING WIDTH DIFFERENT FROM THAT SHOWN AND THE CITY ENGINEER PERMITS SAME.

2. BACKFILL:

BACKFILL WITHIN THE PUBLIC STREET R/W:

MATERIALS SHALL BE ODOT 703.11, TYPE '1' GRANULAR MATERIAL (304, 411, or 617 AGGREGATE GRADATION) OR TYPE '2' GRANULAR MATERIAL, OR ODOT 613, LOW STRENGTH MORTAR; DEVIATIONS FROM THIS ARE AS FOLLOWS:

- A) NO FOUNDRY SAND OR SLAG IS PERMITTED.
- B) ALTERNATE GRANULAR MATERIAL SHALL BE PERMITTED ONLY WITH THE SUPPLEMENTAL APPROVAL OF THE CITY ENGINEER. TO PETITION FOR SUCH SUPPLEMENTAL APPROVAL, THE DEVELOPER/CONTRACTOR SHALL SUBMIT IN WRITING THE FOLLOWING:
 - * SOURCE OF THE ALTERNATE BACKFILL MATERIAL.
 - * GRADATION REPORT IN ACCORDANCE WITH AASHTO T II AND T 27.
 - * PROCTOR CURVE ANALYSIS IN ACCORDANCE WITH ASTM D 698.
 - * PROPOSED COMPACTION METHOD.

THE CITY ENGINEER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL, REGARDLESS OF APPROVAL OF SIMILAR MATERIAL ON A PREVIOUS PROJECT.

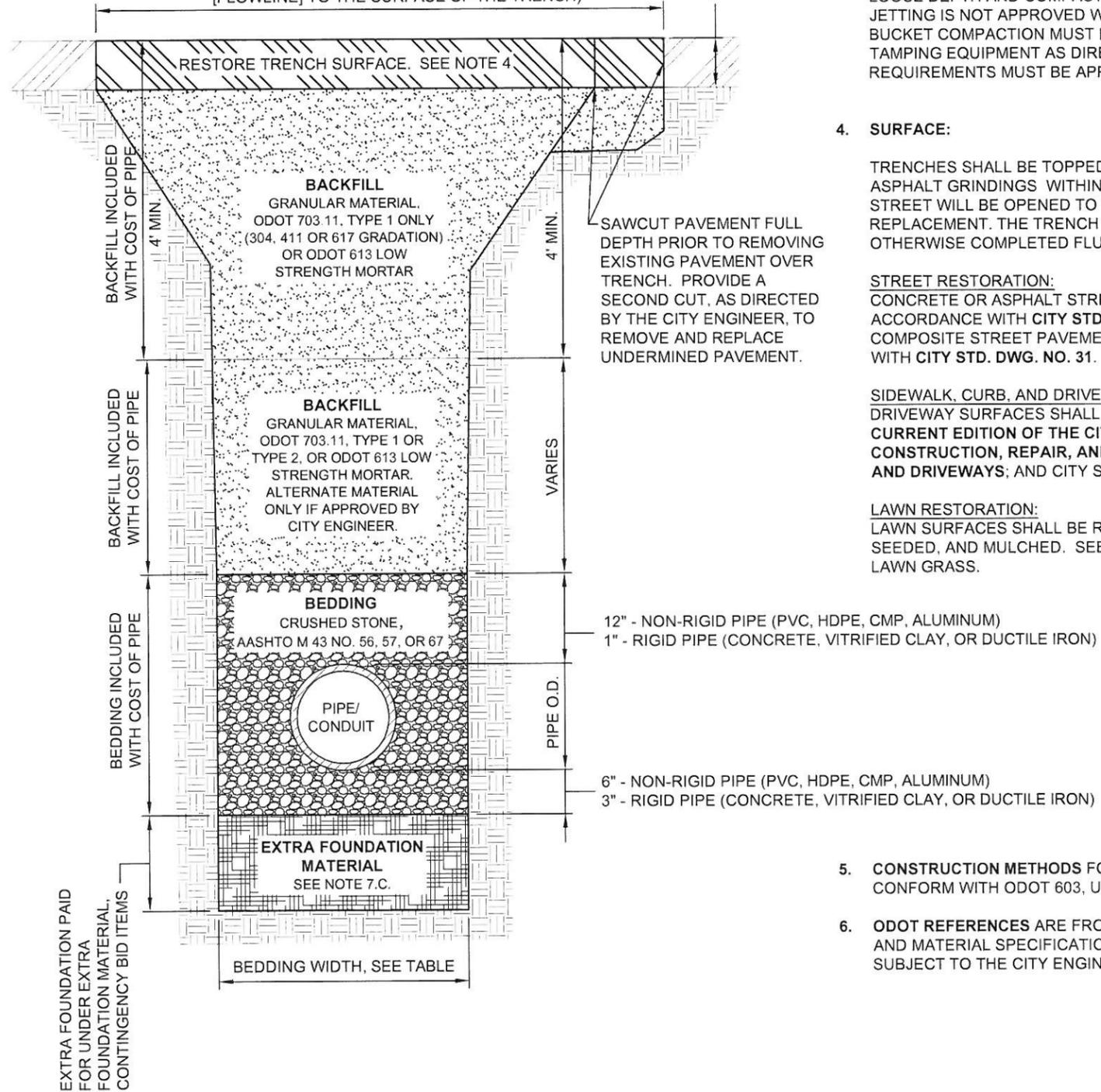
THE CITY ENGINEER FURTHER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL THE CITY FINDS NOT CONSISTENT WITH THE APPROVED SOURCE, GRADATION REPORT, PROCTOR REPORT, OR COMPACTION METHOD.

- C) ODOT 703.11, TYPE 2, OR ALTERNATE MATERIALS ARE NOT PERMITTED WITHIN 4 FEET OF THE TRENCH SURFACE, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

BACKFILL OUTSIDE OF THE PUBLIC STREET R/W:

FOLLOW MATERIAL AND METHODS FOR BACKFILL IN ACCORDANCE WITH ODOT 603.

PAVEMENT OR SURFACE REPLACEMENT MAXIMUM PAY LIMITS
 PIPE DEPTH OF 4' OR LESS = O.D. OF PIPE + 4'-0"
 PIPE DEPTH BETWEEN 4' TO 8' = O.D. OF PIPE + 5'-0"
 PIPE DEPTH GREATER THAN 8' = O.D. OF PIPE + 6'-0"
 (PIPE DEPTH BEING MEASURED FROM THE PIPE INVERT [FLOWLINE] TO THE SURFACE OF THE TRENCH)



NOTES: (CONTINUED)

3. COMPACTION:

ALL BACKFILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 12-INCHES LOOSE DEPTH AND COMPACTED BY APPROVED MECHANICAL MEANS. JETTING IS NOT APPROVED WITHOUT THE CITY ENGINEER'S APPROVAL. BUCKET COMPACTION MUST BE SUPPLEMENTED WITH VIBRATION OR TAMPING EQUIPMENT AS DIRECTED. ANY MODIFICATIONS TO THESE REQUIREMENTS MUST BE APPROVED BY THE CITY ENGINEER.

4. SURFACE:

TRENCHES SHALL BE TOPPED WITH 4" OF ODOT 304 LIMESTONE OR ASPHALT GRINDINGS WITHIN EXISTING STREET PAVEMENTS WHEN THE STREET WILL BE OPENED TO VEHICULAR TRAFFIC PRIOR TO PAVEMENT REPLACEMENT. THE TRENCH TOPPING MATERIAL SHALL BE ROLLED OR OTHERWISE COMPLETED FLUSH WITH THE ADJOINING PAVEMENT.

STREET RESTORATION:
 CONCRETE OR ASPHALT STREET PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH CITY STD. DWG. NO. 32. BRICK OR ASPHALT-BRICK COMPOSITE STREET PAVEMENT SHALL BE REPLACED IN ACCORDANCE WITH CITY STD. DWG. NO. 31.

SIDEWALK, CURB, AND DRIVEWAY RESTORATION:
 DRIVEWAY SURFACES SHALL BE REPLACED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS; AND CITY STD. DWG. NOS. 28 THRU 33.

LAWN RESTORATION:
 LAWN SURFACES SHALL BE REPLACED WITH A MINIMUM OF 4" TOPSOIL, SEEDED, AND MULCHED. SEED MIX SHALL CONFORM TO ADJOINING LAWN GRASS.

- 5. **CONSTRUCTION METHODS** FOR BEDDING AND BACKFILL SHALL CONFORM WITH ODOT 603, UNLESS STATED OTHERWISE HEREIN.
- 6. **ODOT REFERENCES** ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.



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REVISIONS		
DESCRIPTION	DATE	BY
REVISIONS TO NOTES 7 & 8	6/4/2012	CDB
REVISIONS TO NOTES 7	6/10/2013	CDB

STANDARD DRAWING NO. 19
UTILITY TRENCH REQUIREMENTS
 SHEET 1 OF 2

NOTES: (CONTINUED)

7. PAY LIMITS FOR CITY PROJECTS

- A) **BEDDING AND BACKFILL** IS INCLUDED WITH THE COST OF PIPE UNLESS DIRECTED TO BID OTHERWISE.
- B) **PAVEMENT RESTORATION** IS INCLUDED WITH THE COST OF PIPE UNLESS A SEPARATE PAY ITEM IS PROVIDED, WHEREBY THE WIDTH MEASUREMENT OVER THE TRENCH FOR PAVEMENT RESTORATION SHALL NOT EXCEED THE OUTSIDE DIAMETER (O.D.) OF PIPE PLUS A SET MEASUREMENT DEPENDENT ON DEPTH OF PIPE. AREA MEASUREMENTS AT MANHOLE AND CATCH BASIN STRUCTURES SHALL NOT EXCEED THE AREA OF THE BASE OF THE STRUCTURE + 3'-0" OFFSET AREA AROUND THE STRUCTURE'S BASE.
- C) **EXTRA FOUNDATION MATERIAL:** THE CONTRACTOR SHALL BE PAID FOR OVER-EXCAVATION AND BEDDING FOUNDATION MATERIAL UNDER THE CONTINGENCY BID ITEMS FOR EXTRA FOUNDATION MATERIAL.

WHEN IN THE OPINION OF THE CITY ENGINEER, SOFT/UNSTABLE MATERIALS ARE ENCOUNTERED WHICH ARE UNSUITABLE FOR BEDDING FOUNDATION, SAID MATERIAL SHALL BE REMOVED BY THE CONTRACTOR TO THE DEPTH DIRECTED BY THE ENGINEER AND REPLACED WITH SUITABLE MATERIAL.

FOR CITY PROJECTS, THE PAYABLE WIDTH OF THE EXTRA FOUNDATION MATERIAL SHALL NOT EXCEED THE LESSER OF THE APPLICABLE MINIMUM OR MAXIMUM TYPICAL BEDDING WIDTH, AS NOTED ON SHEET 1 OF STD. DWG. NO. 19.

FOR PRIVATE WORK, ALL COSTS ARE AT THE OWNER'S EXPENSE.

EXTRA FOUNDATION MATERIAL, OPTION A, B, C, & D, MAY BE USED IN ANY COMBINATION AS DIRECTED BY THE CITY ENGINEER:

- OPTION A: CRUSHED STONE, AASHTO M 43 NO. 1 AND/OR 2
- OPTION B: CRUSHED STONE, AASHTO M 43 NO. 56, 57, OR 67
- OPTION C: ODOT 703.11, TYPE 1 (304, 411 OR 617 GRADATION)
- OPTION D: TENSAR GEOGRID T1100, OR APPROVED EQUAL

EXTRA FOUNDATION MATERIAL, CONTINGENCY BID ITEMS

ITEM	QTY.	UNIT	DESCRIPTION
603		C.Y.	EXTRA FOUNDATION, OPTION A (#1,#2 STONE)
603		C.Y.	EXTRA FOUNDATION, OPTION B (#56,57,67 STONE)
603		C.Y.	EXTRA FOUNDATION, OPTION C (304,411,617)
603		S.F.	EXTRA FOUNDATION, OPTION D (GEOGRID)

NOTES: (CONTINUED)

8. EXCAVATION OF ROCK OR BURIED/ABANDONED CONCRETE STRUCTURE REMOVAL

EXCAVATION FOR NEW MANHOLES AND CATCH BASINS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN VERTICAL PLANES ONE (1) FOOT BEYOND THE OUTSIDE EDGE OF THE FOUNDATION OF THE STRUCTURES ON ALL SIDES, AND PARALLEL THERETO, AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM OF THE ROCK OR THE NEAT LINES OF THE BOTTOM OF THE STRUCTURES PLUS THE DEPTH OF THE BASE MATERIAL. USE THE MEASUREMENT WHICH IS LESSER.

EXCAVATION FOR NEW PIPES, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN TRENCH WALLS (NOT TO EXCEED PIPE O.D. + 18", AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM OF THE ROCK OR THE BOTTOM OF THE PIPE BEDDING, USE THE MEASUREMENT WHICH IS LESSER.

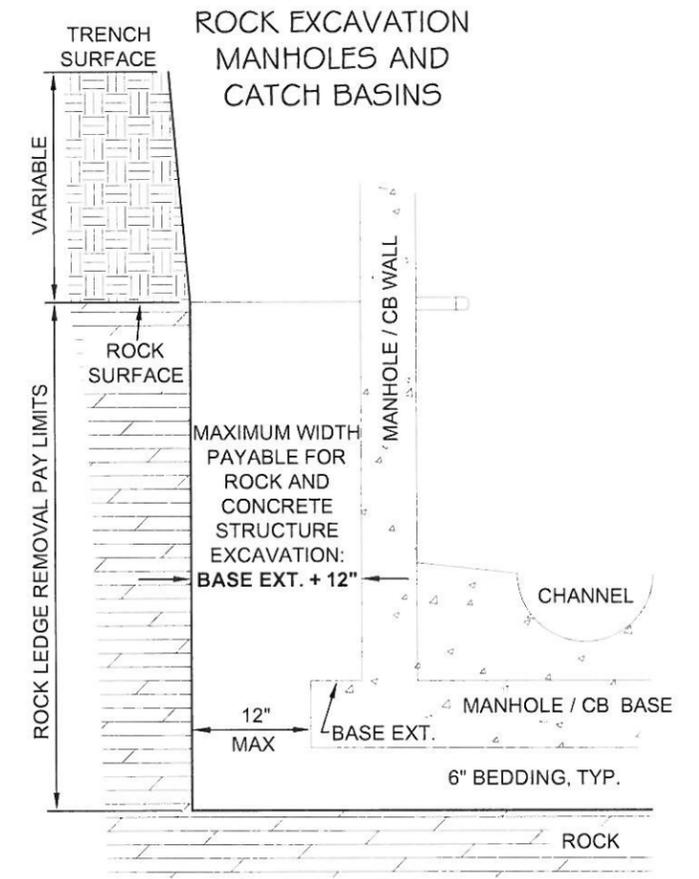
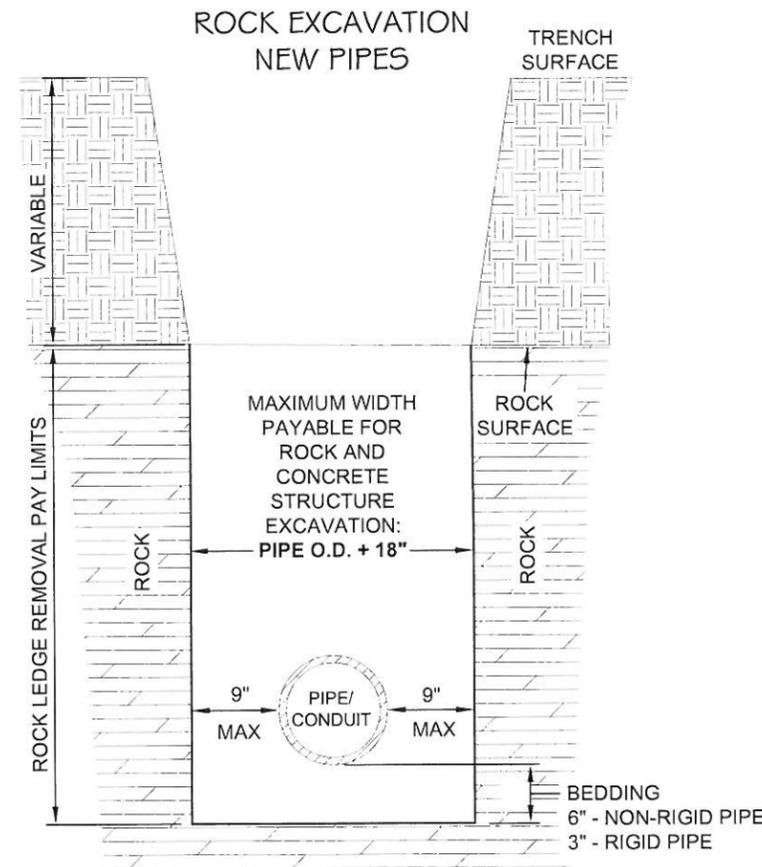
EXCAVATION OF BURIED AND ABANDONED CONCRETE STRUCTURES SHALL BE MEASURED IN THE SAME MANNER AS ROCK REMOVAL.

FOR CITY PROJECTS, THE CONTRACTOR SHALL BE PAID FOR ROCK REMOVAL AND CONCRETE STRUCTURE REMOVAL UNDER THE CONTINGENCY BID ITEMS FOR ROCK OR CONCRETE STRUCTURE REMOVAL. IF A CONTINGENCY BID ITEM IS NOT INCLUDED IN THE BID PROPOSAL, THE CONTRACTOR MAY SUBMIT A PROPOSAL (PRIOR TO WORK BEING STARTED) TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.

FOR PRIVATE WORK, ALL COSTS ARE AT THE OWNER'S EXPENSE.

ROCK AND BURIED & ABANDONED CONCRETE STRUCTURE REMOVAL, CONTINGENCY BID ITEMS

ITEM	QTY.	UNIT	DESCRIPTION
603		C.Y.	ROCK REMOVAL
603		C.Y.	CONCRETE STRUCTURE REMOVAL



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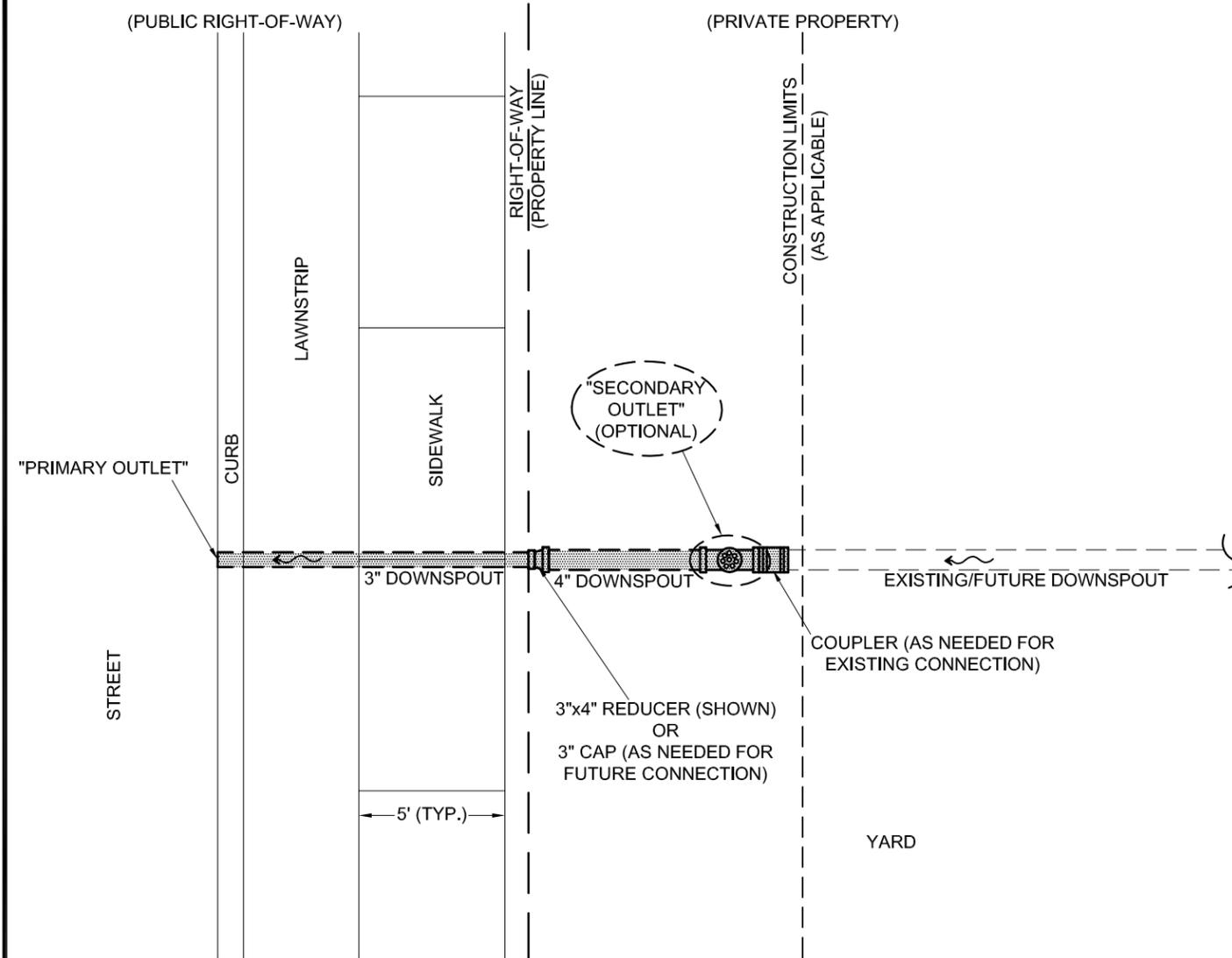
DESCRIPTION	DATE	BY
REVISIONS TO NOTES 7 & 8	6/4/2012	CDB
REVISIONS TO NOTES 7	6/10/2013	CDB

STANDARD DRAWING NO. 19

UTILITY TRENCH REQUIREMENTS

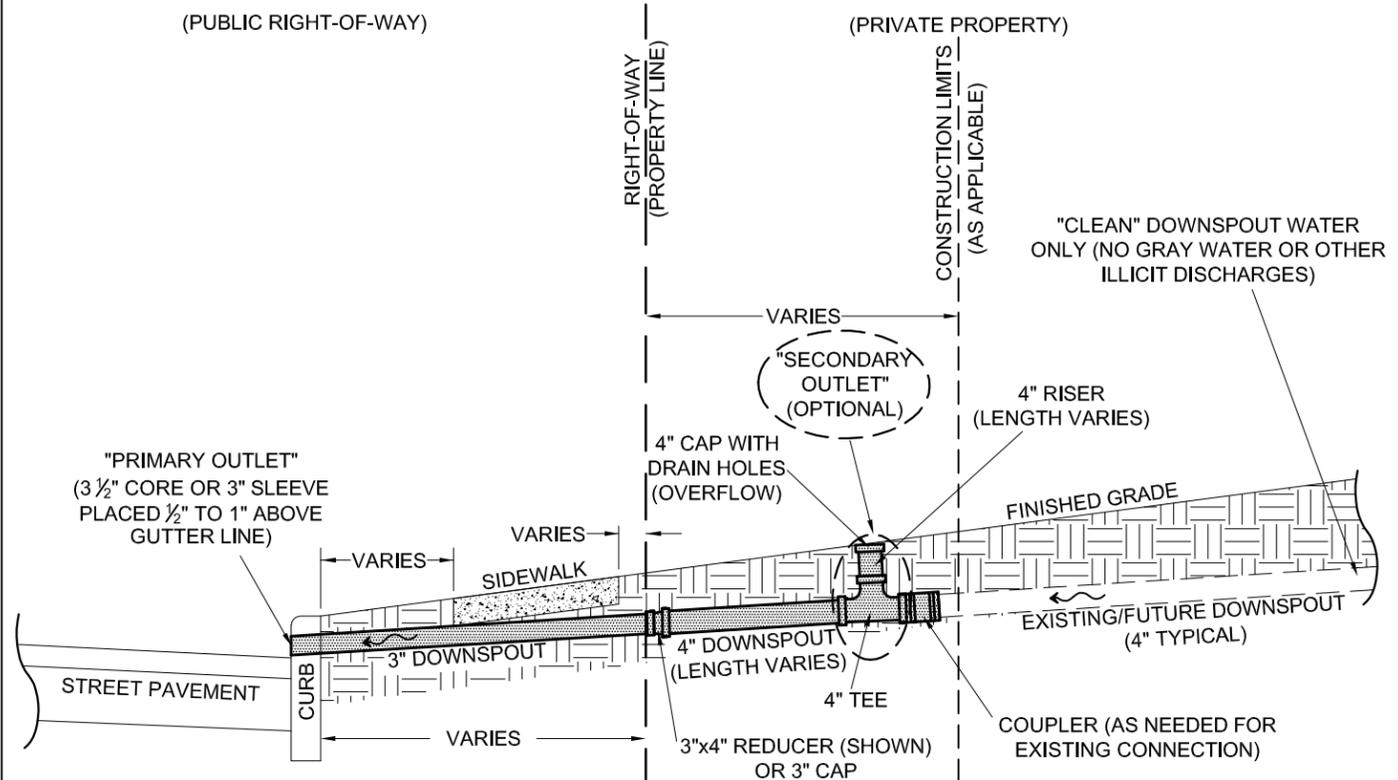
PLAN VIEW

NOT TO SCALE



PROFILE VIEW

NOT TO SCALE



ITEMS, MATERIALS, AND QUANTITIES PER RESIDENTIAL DOWNSPOUT OUTLET			
ITEM	MATERIAL TYPE	QUANTITY	UNIT
3" DOWNSPOUT	PVC SCH. 40 (707.43 OR 707.45)	VARIES	FT.
3" CAP (AS NEEDED)	PVC (707.43 OR 707.45) OR HDPE (707.32 OR 707.33)	1	EACH
3"x4" REDUCER (AS NEEDED)	PVC (707.43 OR 707.45) OR HDPE (707.32 OR 707.33)	1	EACH
4" DOWNSPOUT (AS NEEDED)	PVC (707.43 OR 707.45) OR HDPE (707.32 OR 707.33)	VARIES	FT.
4" TEE (OPTIONAL), CONTINGENCY	PVC (707.43 OR 707.45) OR HDPE (707.32 OR 707.33)	1	EACH
4" RISER (OPTIONAL), CONTINGENCY	PVC (707.43 OR 707.45) OR HDPE (707.32 OR 707.33)	VARIES	FT.
4" CAP WITH DRAIN HOLES (OPTIONAL), CONTINGENCY	PVC (707.43 OR 707.45) OR HDPE (707.32 OR 707.33)	1	EACH
COUPLER (AS NEEDED)	NEOPRENE WITH STAINLESS STEEL CLAMPS	1	EACH

NOTES:

- FOR CITY PROJECTS: WHERE THERE ARE EXISTING DOWNSPOUTS WITHIN CONSTRUCTION LIMITS, CONTRACTOR SHALL INSTALL 3" DOWNSPOUT WITHIN PUBLIC RIGHT-OF-WAY AS DIRECTED OR AS INDICATED ON PLANS. AS NEEDED, CONTRACTOR SHALL INSTALL A 3"x4" REDUCER, 4" DOWNSPOUT, AND COUPLER TO CONNECT TO EXISTING DOWNSPOUTS. THE SECONDARY OUTLET (TEE, RISER, 4" CAP WITH HOLES) IS OPTIONAL AND SHALL BE CONSTRUCTED ONLY AS DIRECTED. IF DOWNSPOUT CONTAINS GROUNDWATER FLOWS, SEE NOTE 11. APPROPRIATE QUANTITIES, PAY ITEMS, AND NOTES SHALL BE PROVIDED ON THE CONSTRUCTION PLANS.
- FOR NEW SUBDIVISIONS AND PRIVATE WORK: HOMEOWNER/BUILDER IS RESPONSIBLE FOR CONSTRUCTING DOWNSPOUT OUTLET. THE 3" DOWNSPOUT WITHIN PUBLIC RIGHT-OF-WAY IS REQUIRED WHERE APPLICABLE. THE CONFIGURATION, ITEMS, AND MATERIALS SHOWN OUTSIDE OF THE RIGHT-OF-WAY ARE RECOMMENDED UNLESS OTHERWISE REQUIRED BY THE CITY ENGINEER AS A CONDITION FOR ISSUING APPLICABLE PERMITS. IF DOWNSPOUT CONTAINS GROUNDWATER FLOWS, SEE NOTE 11.
- ALL ITEMS EXCEPT THE 3" DOWNSPOUT SHALL BE LOCATED OUTSIDE OF THE PUBLIC RIGHT-OF-WAY.
- WHEN SIDEWALK IS PRESENT/PROPOSED AND WHEN THE 3" PVC DOWNSPOUT WILL BE WITHIN THE CONCRETE OF THE SIDEWALK, THE CONTRACTOR SHALL INSTALL A CONTROL JOINT IN THE SIDEWALK OVER THE DOWNSPOUT. THE THICKNESS OF THE CONCRETE SIDEWALK OVER THE DOWNSPOUT SHALL NOT BE LESS THAN 2", OR A STEEL TROUGH OR TRENCH DRAIN MAY BE USED AS APPROVED BY THE CITY ENGINEER.
- ALL PIPE AND COMPONENTS OF DOWNSPOUT SYSTEM ARE PRIVATELY OWNED AND MAINTAINED.
- THE FOLLOWING DISCHARGE CONDITIONS APPLY:
 - DOWNSPOUT SHALL NOT DIRECTLY DISCHARGE OVER ANY PUBLIC SIDEWALK OF THE CITY (REF. CODIFIED ORDINANCE 1335.01)

- OR ONTO A SIDEWALK, STREET, OR PUBLIC GROUND WITHIN THE CITY, WHEN IN THE OPINION OF THE CITY ENGINEER A PUBLIC NUISANCE IS CAUSED BY DOING SO (REF. CODIFIED ORDINANCE 903.02).
 - DOWNSPOUT DISCHARGES SHALL NOT CONTAIN ANY GRAY WATER OR OTHER ILLICIT DISCHARGES.
 - DOWNSPOUTS SHALL NOT BE CONNECTED TO A SANITARY SEWER.
- A "STREET OPENING PERMIT" IS REQUIRED FROM THE ENGINEERING DEPARTMENT FOR ANY EXCAVATION WITHIN CITY RIGHT-OF-WAY OR OTHER CITY-OWNED PROPERTY (REF. CODIFIED ORDINANCE CHAPTER 909).
 - A "SEWER CONNECTION PERMIT" IS REQUIRED FROM THE ENGINEERING DEPARTMENT FOR ANY DIRECT OR INDIRECT CONNECTION OF A PIPE TO A CITY-OWNED STORM SEWER, CATCH BASIN, OR MANHOLE.
 - MODIFICATIONS TO THE CONFIGURATION, ITEMS, AND MATERIALS SHOWN MAY BE ALLOWED OR REQUIRED BY THE CITY ENGINEER.
 - FOR DOWNSPOUTS THAT ARE DIRECTED TO DISCHARGE TOWARD A CITY STREET WITHOUT CURB, SEE CITY STD. DWG. NO. 22.
 - FOR DOWNSPOUTS THAT CONTAIN GROUNDWATER DISCHARGES (FROM SUMP PUMPS OR GRAVITY FLOW):
 - PRIMARY OUTLET SHOULD BE DIRECTLY CONNECTED TO CATCH BASIN OR MANHOLE, IF POSSIBLE, IN LIEU OF CURB OUTLET SHOWN. DIRECT CONNECTION TO CATCH BASIN OR MANHOLE SHALL BE BY AN APPROVED CORE-AND-SEAL BOOT. APPROPRIATE PERMITS MUST BE OBTAINED FROM THE CITY ENGINEERING DEPARTMENT AND THE WORK MUST BE INSPECTED.
 - IF CATCH BASIN OR MANHOLE IS UNAVAILABLE BUT STORM SEWER IS AVAILABLE FOR DOWNSPOUT PRIMARY OUTLET DIRECT CONNECTION, CONSTRUCT DOWNSPOUT OUTLET PER CITY STANDARD DRAWING NO. 24.
 - IF NO STORM SEWER, CATCH BASIN, OR MANHOLE IS AVAILABLE FOR DIRECT CONNECTION, DOWNSPOUT OUTLET MAY BE CONSTRUCTED PER THIS DRAWING CONTINGENT UPON SATISFYING ALL STATED DISCHARGE CONDITIONS.



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APPROVED DATE: MAR. 2012

APPROVED BY: CDB, RMB, SLH

DRAWING FILE NAME: ce_23.dwg

REVISIONS

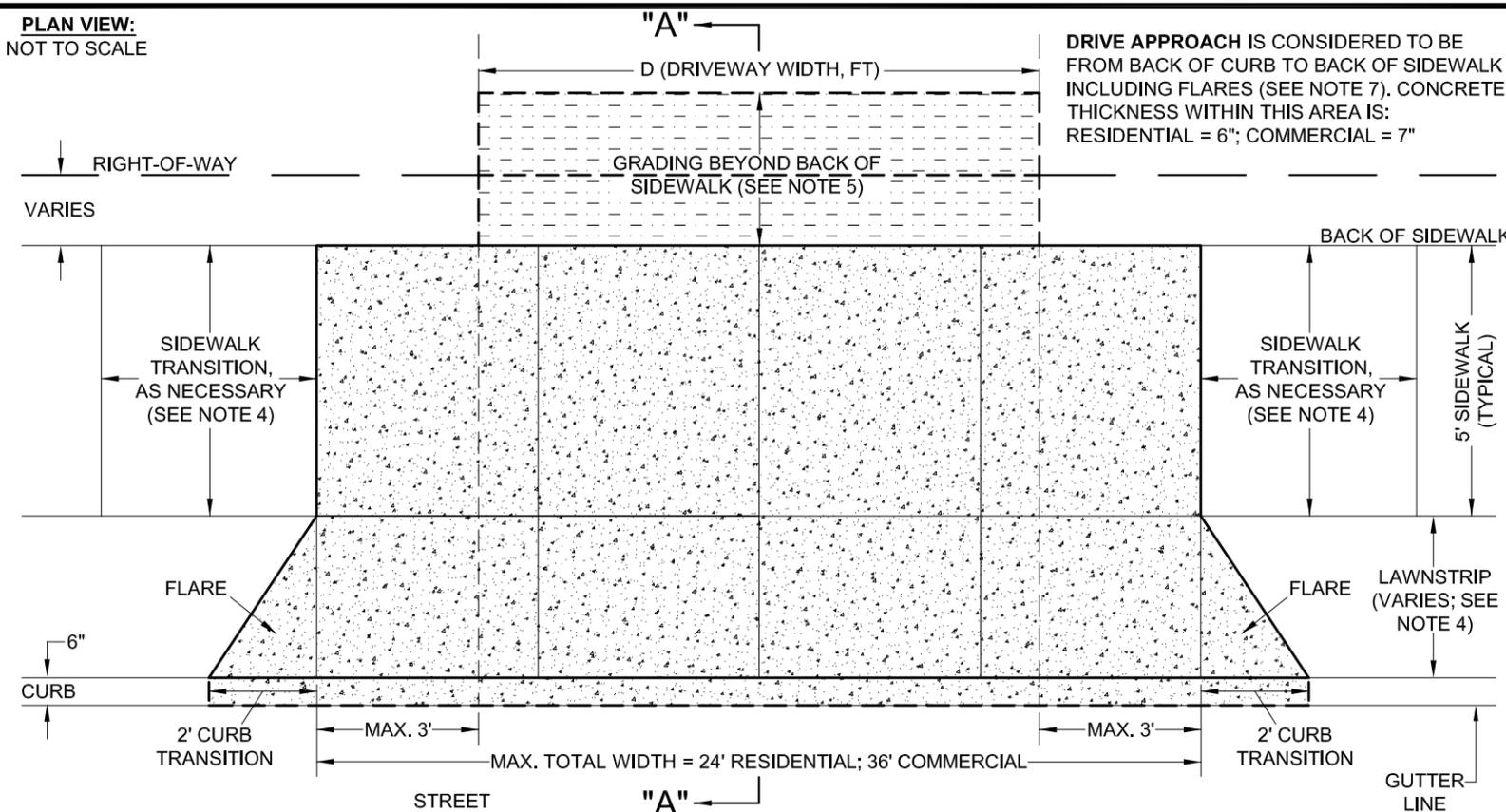
DESCRIPTION	DATE	BY

STANDARD DRAWING NO. 23

DOWNSPOUT OUTLET
(CURBED STREET)

SHEET 1 OF 1

PLAN VIEW:
NOT TO SCALE

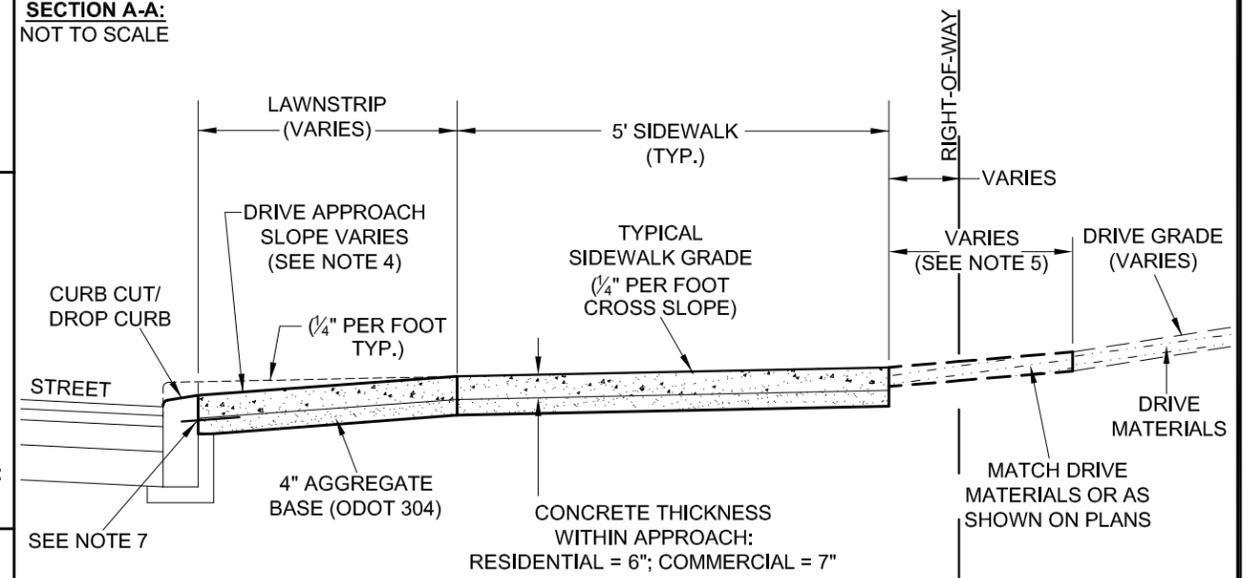


DRIVE APPROACH IS CONSIDERED TO BE FROM BACK OF CURB TO BACK OF SIDEWALK INCLUDING FLARES (SEE NOTE 7). CONCRETE THICKNESS WITHIN THIS AREA IS: RESIDENTIAL = 6"; COMMERCIAL = 7"

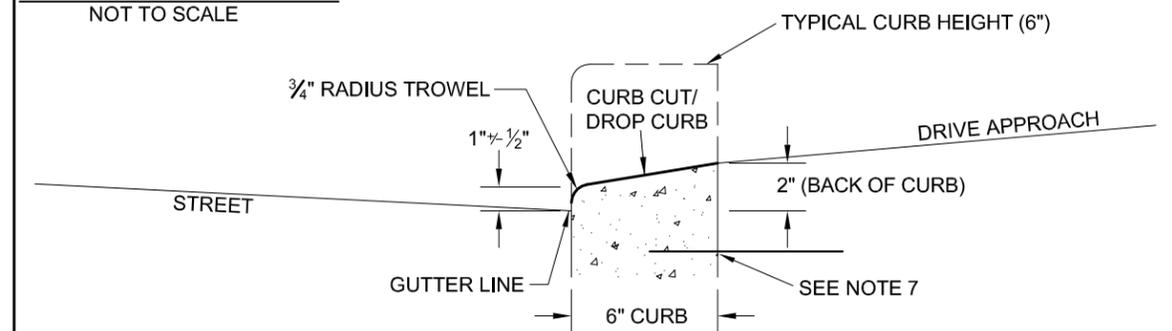
NOTES:

1. SIDEWALKS, CURBS, AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS.
2. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY'S ENGINEER'S DISCRETION.
3. ALTERNATIVE DESIGNS MAY BE APPROVED OR REQUIRED BY THE CITY ENGINEER FOR COMMERCIAL DRIVES.
4. WHEN LAWNSTRIP WIDTH IS LESS THAN 3 FEET, LOWER THE DRIVE APPROACH/SIDEWALK PROFILE SO THAT DRIVE APPROACH CROSS SLOPE IS CONSTANT 1/4" PER FOOT FROM BACK OF CURB TO BACK OF SIDEWALK. CONSTRUCT SIDEWALK TRANSITIONS WITH A MAXIMUM 12:1 LONGITUDINAL SLOPE (PARALLEL TO STREET).
5. GRADE AS APPROPRIATE OR IN ACCORDANCE WITH PLANS TO PROVIDE ADEQUATE TRANSITION TO DRIVEWAY AND YARD. FOR CITY PROJECTS, DRIVE MATERIALS AND BUILDUP SHALL MATCH EXISTING. GRADING AND MATERIALS SHALL BE PAID UNDER APPROPRIATE DRIVE RESTORATION ITEMS, ETC.
6. FOR CITY PROJECTS AND REIMBURSEMENT PROGRAM, DRIVE APPROACH PAY LIMITS SHALL CORRESPOND WITH DRIVE APPROACH LIMITS AS INDICATED HEREIN. IF SIDEWALK TRANSITIONS ARE CONSTRUCTED (SEE NOTE 5), PAY LIMITS SHALL BE EXTENDED TO INCLUDE THE COST OF THE SIDEWALK TRANSITIONS. DRIVE APPROACHES AND PAY LIMITS DO NOT INCLUDE ANY CONCRETE PORTIONS OF DRIVE BEYOND BACK OF SIDEWALK OR ANY OTHER WORK NOT DIRECTLY RELATED TO THE CONSTRUCTION OF THE DRIVE APPROACH. THE COSTS ASSOCIATED WITH EXCAVATION, FORMING, GRADING, AND RESTORATION DIRECTLY RELATED TO THE DRIVE APPROACH AS WELL AS THE COSTS FOR THE CURB CUT/DROP CURB ARE INCIDENTAL TO THE COST OF THE DRIVE APPROACH.
7. CONNECT APRON TO CURB WITH DOWELS OR WIRE MESH. REFER TO CITY STANDARD DRAWING NO. 29 FOR DRIVE APPROACHES WITH SIDEWALK AGAINST CURB.
8. PLACE 1/2" EXPANSION JOINTS AGAINST EXISTING CONCRETE DRIVES AND WALKS, BUILDING WALLS, AND OTHER FIXED OBJECTS.
9. WHEN THE LOCATION OF THE DRIVE APPROACH IS UNKNOWN AT THE TIME OF CURB CONSTRUCTION, THE DROP MAY BE SAW-CUT WITH THE CITY ENGINEER'S APPROVAL.
10. ANY MODIFICATIONS TO THESE STANDARDS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.

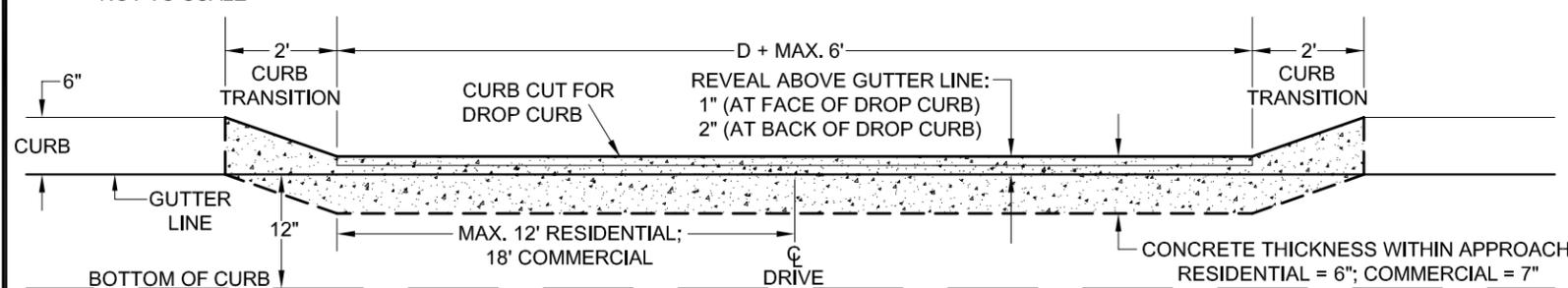
SECTION A-A:
NOT TO SCALE



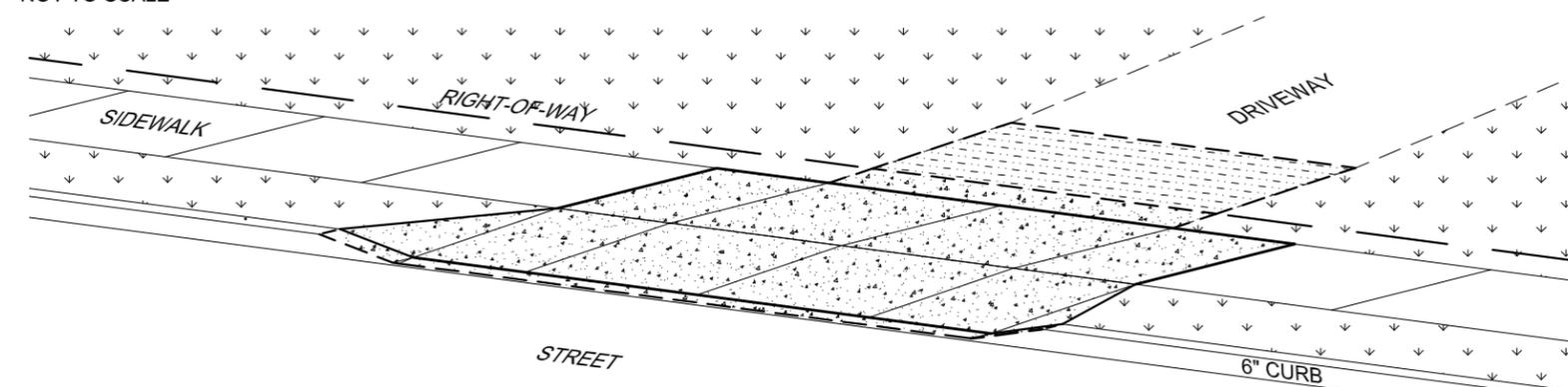
SECTION VIEW OF DROP CURB:
NOT TO SCALE



PROFILE VIEW (ALONG CURB):
NOT TO SCALE



ISOMETRIC VIEW:
NOT TO SCALE



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APPROVED DATE: MAR. 2012

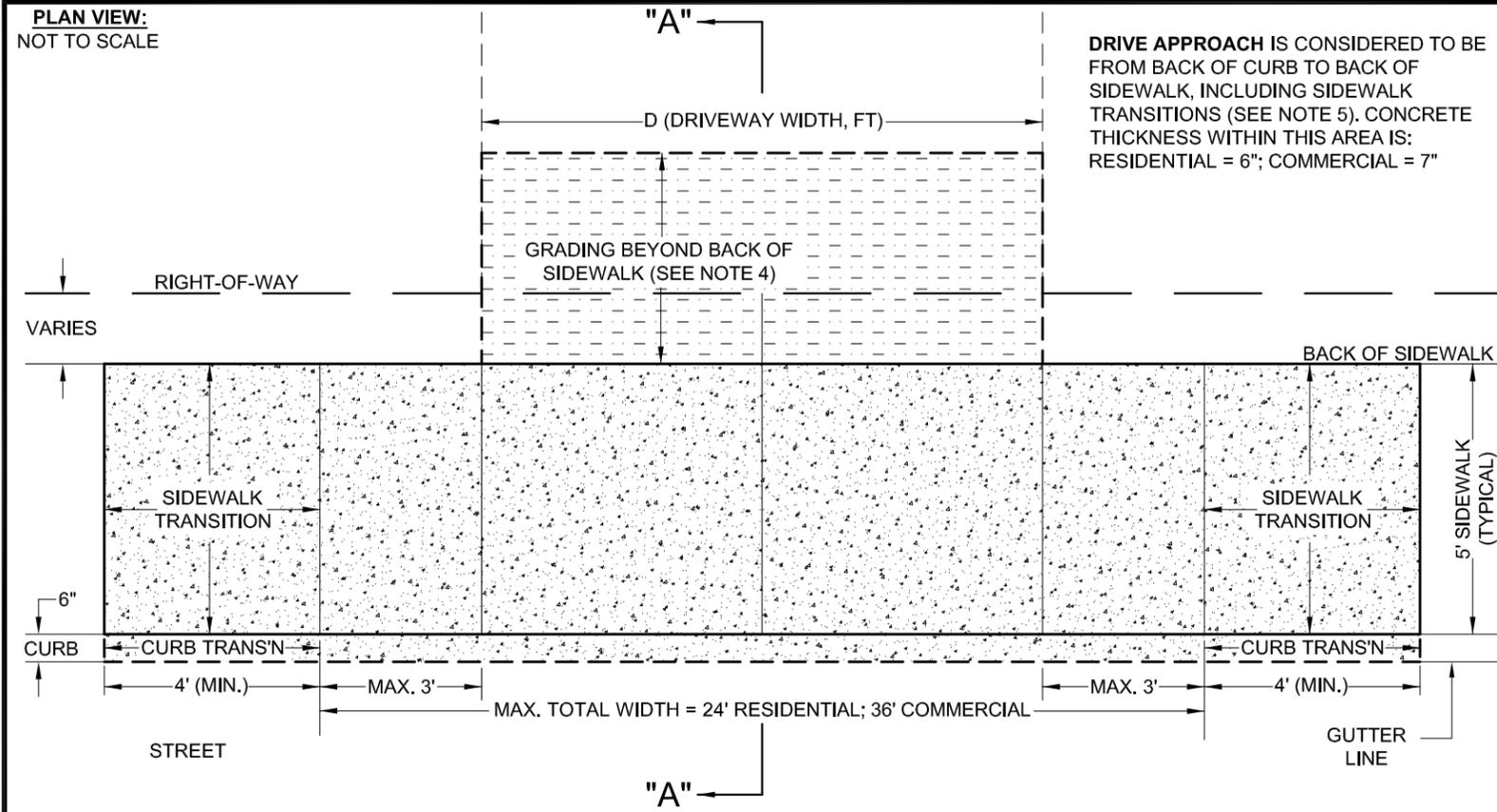
APPROVED BY: CDB, RMB

DRAWING FILE NAME: ce_28.dwg

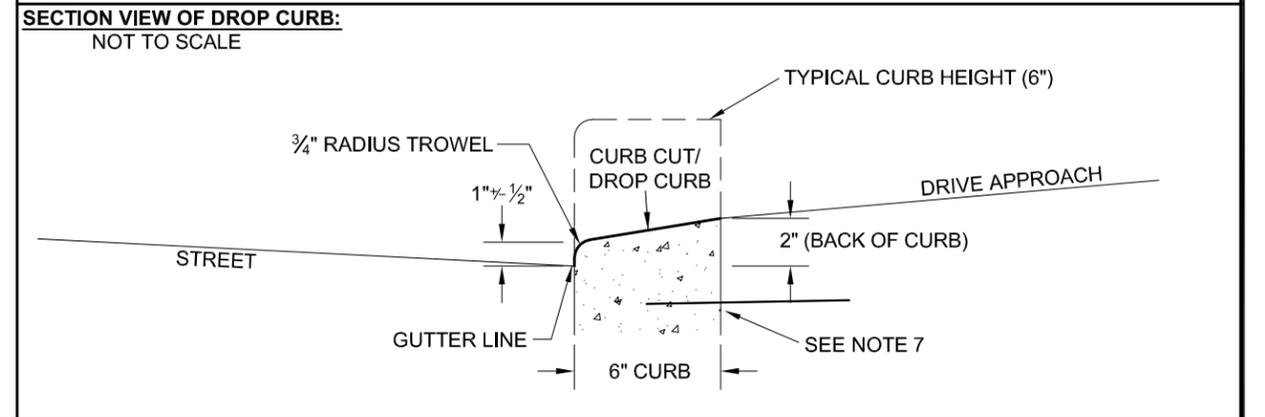
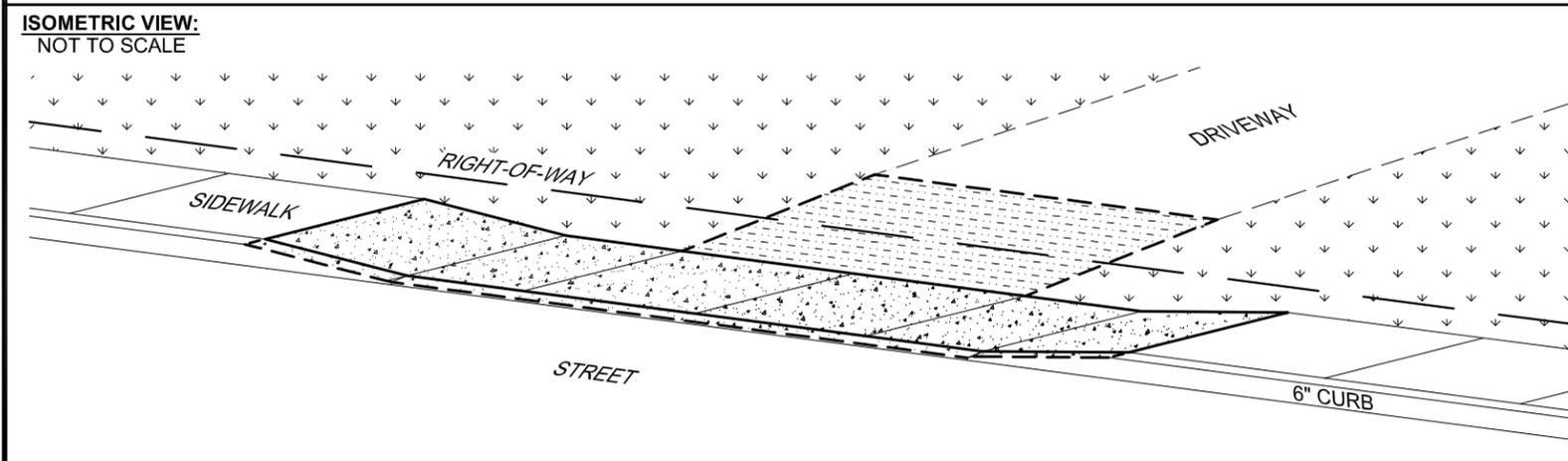
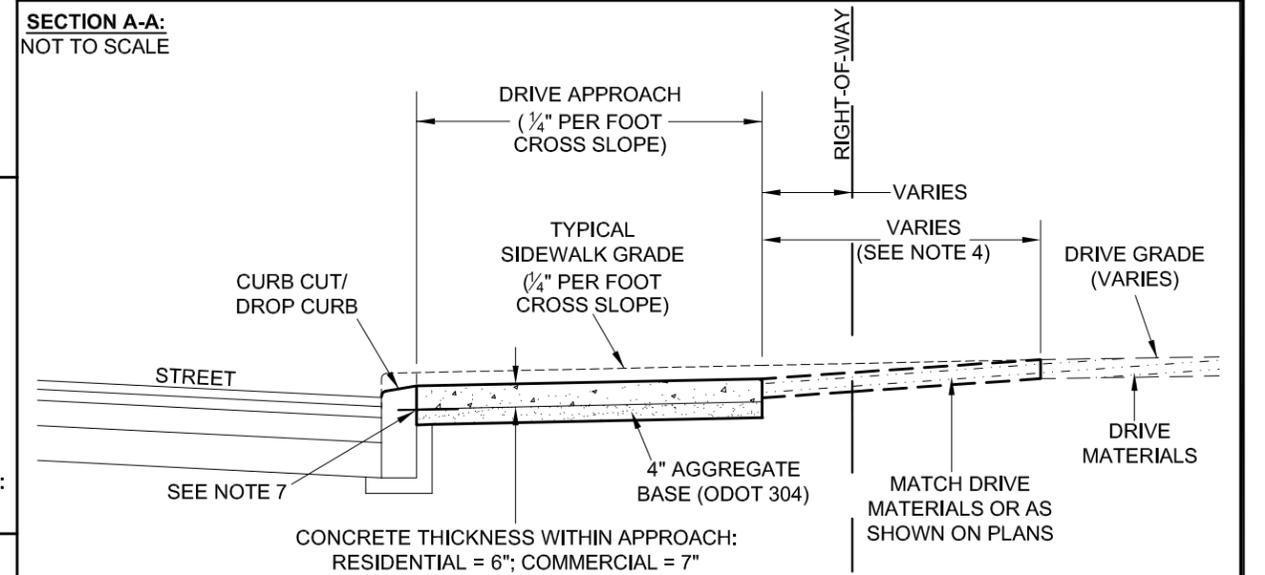
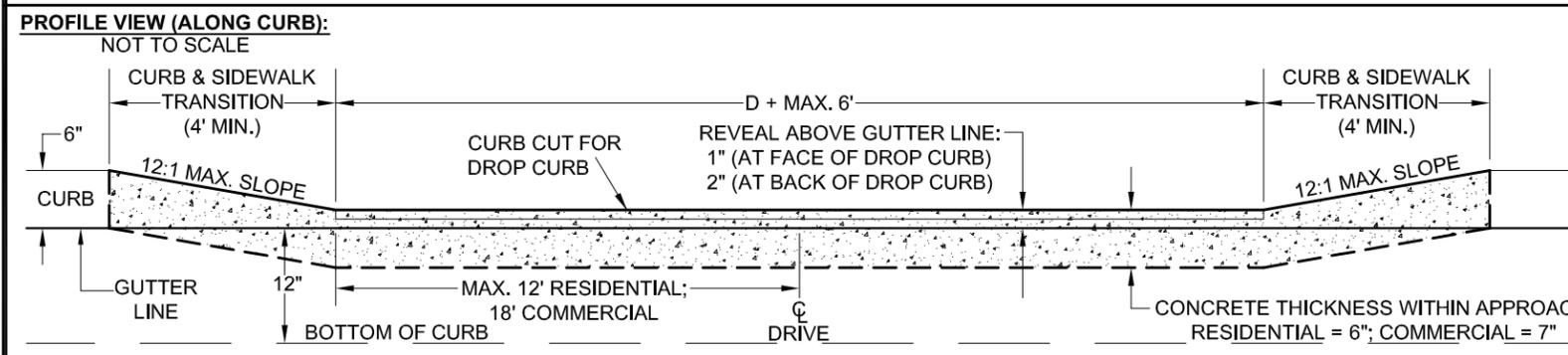
REVISIONS

DESCRIPTION	DATE	BY
NOTE MODIFICATIONS	4/10/12	CDB
NOTE 7 MODIFICATIONS	8/15/2017	RMB

STANDARD DRAWING NO. 27
DRIVE APPROACH
WITH LAWNSTRIP BETWEEN SIDEWALK & CURB
SHEET 1 OF 1



- NOTES:**
1. SIDEWALKS, CURBS, AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS.
 2. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY'S ENGINEER'S DISCRETION.
 3. ALTERNATIVE DESIGNS MAY BE APPROVED OR REQUIRED BY THE CITY ENGINEER FOR COMMERCIAL DRIVES.
 4. GRADE AS APPROPRIATE OR IN ACCORDANCE WITH PLANS TO PROVIDE ADEQUATE TRANSITION TO DRIVEWAY AND YARD. FOR CITY PROJECTS, GRADING AND MATERIALS SHALL BE PAID UNDER APPROPRIATE DRIVE RESTORATION ITEMS, ETC.
 5. FOR CITY PROJECTS AND REIMBURSEMENT PROGRAM, DRIVE APPROACH PAY LIMITS SHALL CORRESPOND WITH DRIVE APPROACH LIMITS AS INDICATED HEREIN. DRIVE APPROACHES AND PAY LIMITS DO NOT INCLUDE ANY CONCRETE PORTION OF DRIVE BEYOND BACK OF SIDEWALK, OR ANY OTHER WORK NOT DIRECTLY RELATED TO THE CONSTRUCTION OF THE DRIVE APPROACH. THE COSTS ASSOCIATED WITH EXCAVATION, FORMING, GRADING, AND RESTORATION DIRECTLY RELATED TO THE DRIVE APPROACH AS WELL AS THE COSTS FOR THE CURB CUT/DROP CURB ARE INCIDENTAL TO THE COST OF THE DRIVE APPROACH.
 6. DUE TO 1/4" PER FOOT CROSS SLOPE, BACK OF TYPICAL 5' SIDEWALK WITHIN APPROACH IS ONLY 3 1/4" ABOVE GUTTER LINE (EXCLUDING SIDEWALK TRANSITIONS). ALTERNATIVE DRIVE APPROACH OPTIONS MAY BE APPROVED OR REQUIRED WHEN DEPTH OF STORM WATER RUNOFF ALONG THE CURB IS ANTICIPATED TO RESULT IN EXCESSIVE PONDING WITHIN THE DRIVE APPROACH AREA OR CAUSE OTHER DRAINAGE PROBLEMS IN THE VICINITY.
 7. CONNECT APRON TO CURB WITH DOWELS OR WIRE MESH. REFER TO CITY STANDARD DRAWING NO. 29 FOR COMBINED CURB AND SIDEWALK DETAILS.
 8. PLACE 1/2" EXPANSION JOINTS AGAINST EXISTING CONCRETE DRIVES AND WALKS, BUILDING WALLS AND OTHER FIXED OBJECTS.
 9. WHEN THE LOCATION OF THE DRIVE APPROACH IS UNKNOWN AT THE TIME OF CURB CONSTRUCTION, THE DROP MAY BE SAW-CUT WITH THE CITY ENGINEER'S APPROVAL.
 10. ANY MODIFICATIONS TO THESE STANDARDS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.



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APPROVED DATE: MAR. 2012

APPROVED BY: CDB, RMB, SLH

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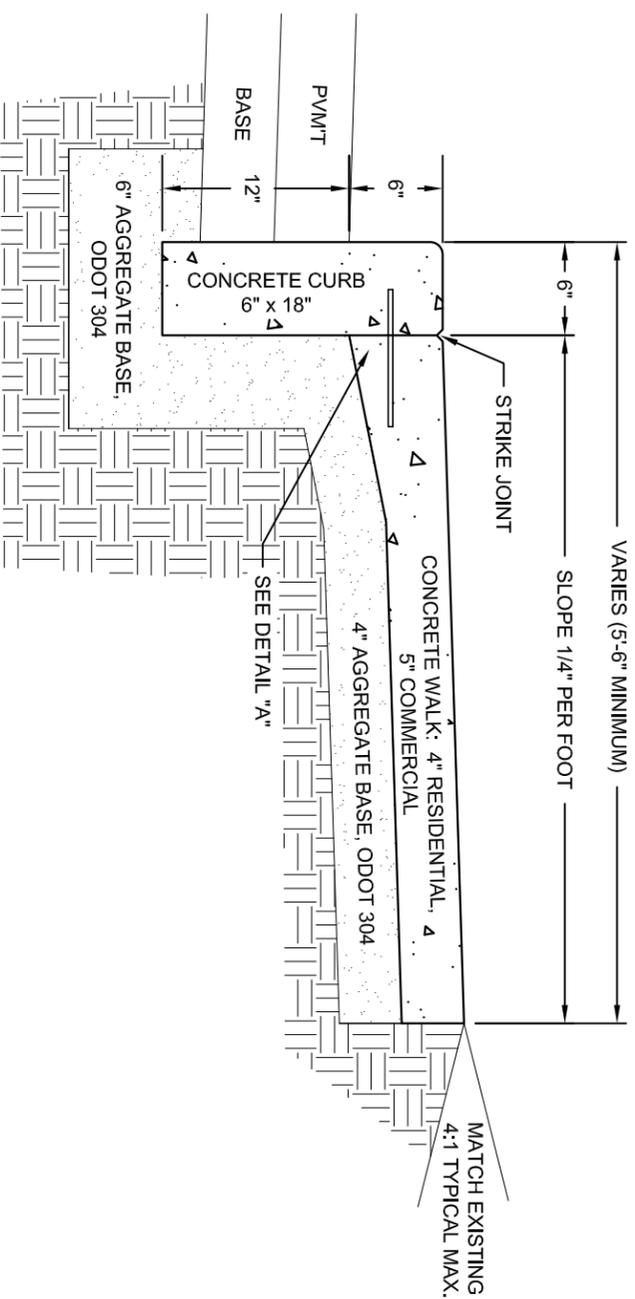
REVISIONS

DESCRIPTION	DATE	BY
NOTE MODIFICATIONS	4/10/12	CDB
MINOR FORMAT EDIT	6/4/12	CDB
NOTE MODIFICATIONS	7/23/12	CDB
NOTE 7 MODIFICATIONS	8/15/2017	RMB

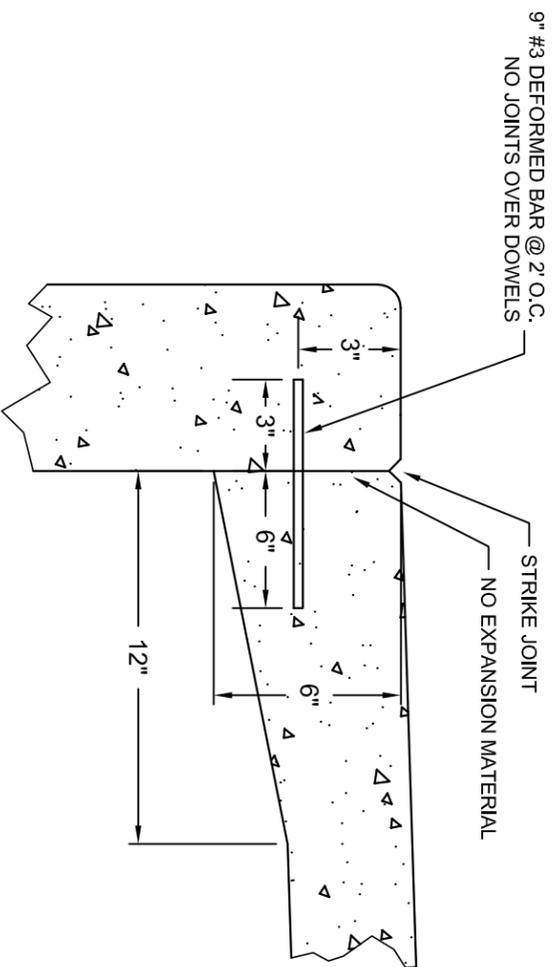
STANDARD DRAWING NO. 28

DRIVE APPROACH WITH SIDEWALK AGAINST CURB

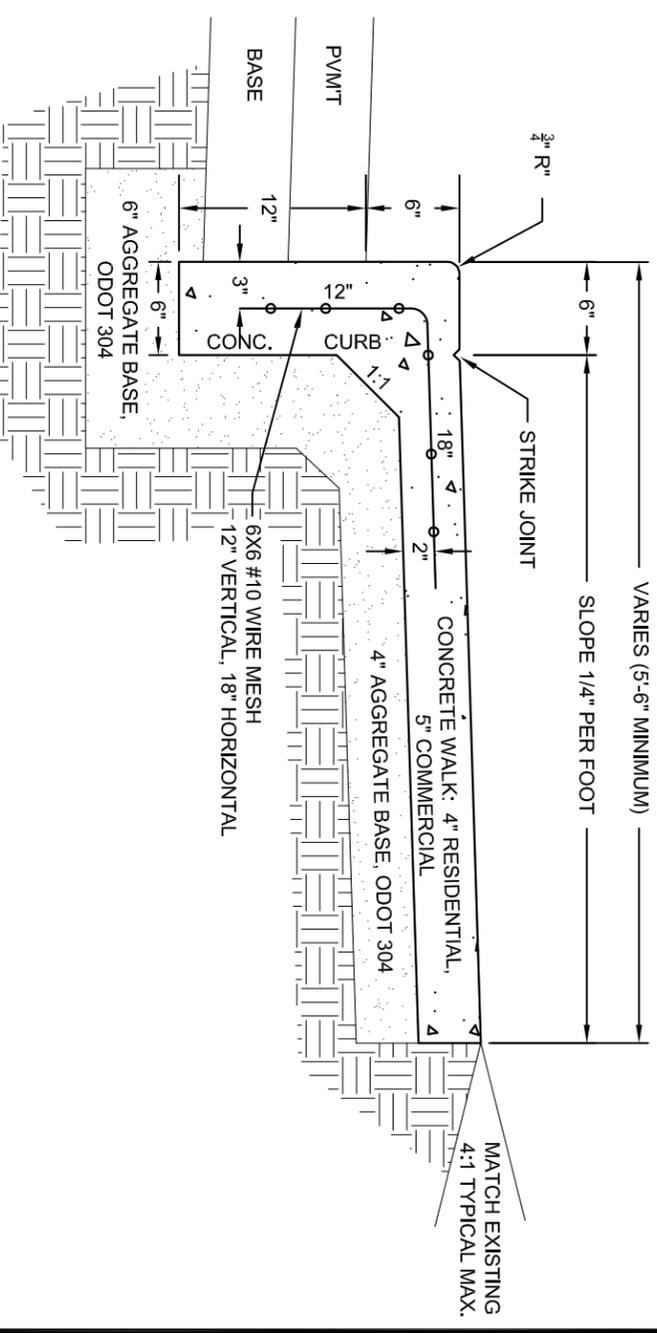
TYPE A
CONCRETE WALK
ADJACENT TO CURB



DETAIL "A"



TYPE B
INTEGRAL CONCRETE WALK
AND CURB



NOTES:

1. CURB AND WALK CONSTRUCTION MUST TO CONFORM TO ODOT 609 AND 608, CITY STANDARD DRAWING 30, AND THE CURRENT CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS.
2. CONCRETE MATERIAL FOR CURB AND WALK MUST BE ODOT 499 CLASS 'OC' CONCRETE.
3. NO FOUNDRY SAND OR SLAG PERMITTED IN AGGREGATE BASE, ODOT 304.
4. CONCRETE WALK REPLACED OR INSTALLED ADJACENT TO EXISTING CONCRETE CURB MUST BE DOWELED TO THE EXISTING CURB, UNLESS DETERMINED OTHERWISE BY THE CITY ENGINEER.
5. CURB CONTRACTION JOINT MUST BE SPACED 10 FEET TYPICALLY; WALK CONTRACTION JOINTS MUST BE SPACED 5 FEET TYPICALLY, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. CURB EXPANSION JOINTS MUST BE INSTALLED AT CURB INLET CATCH BASIN AND AT ANY OTHER RIGID STRUCTURES. CURB EXPANSION AND CONSTRUCTION JOINTS MUST BE DOWELED WITH TWO (2) #5 THRU #8 SMOOTH BARS, 18" LONG, EXTENDING 9" INTO EACH CURB.
6. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS, ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.



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DRAWING FILE NAME: ce_29.dwg

REVISIONS

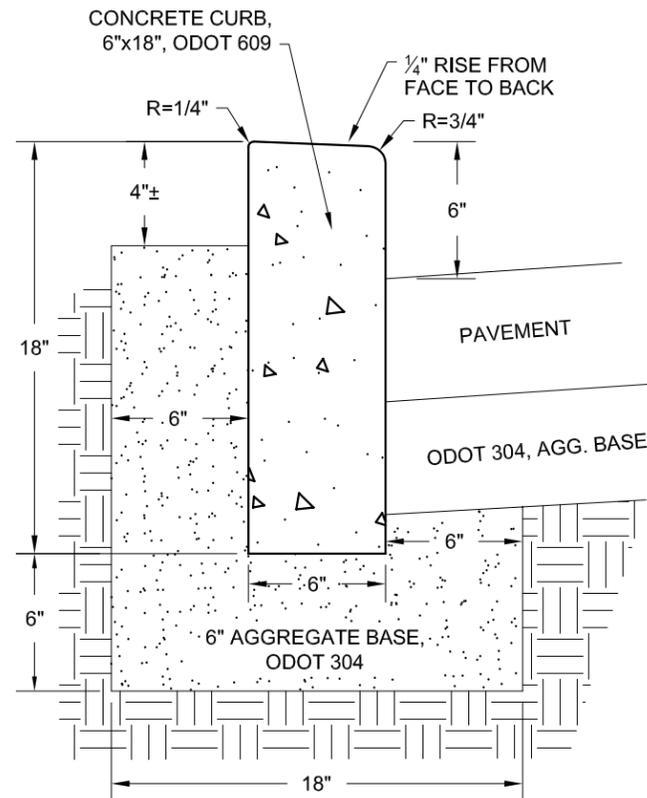
DESCRIPTION	DATE	BY
ODOT CONCRETE SPEC. UPDATE	11/20/2019	RMB

STANDARD DRAWING NO. 29

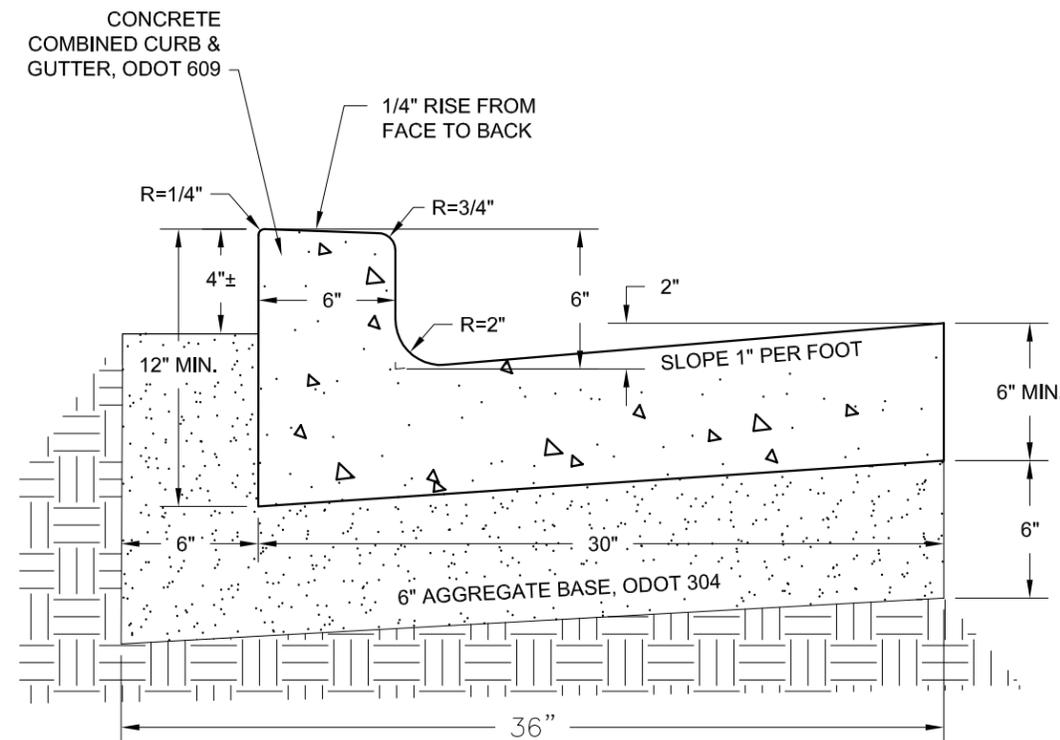
COMBINED CURB & WALK

SHEET 1 OF 1

CANTON TYPE 1
STANDARD CONCRETE CURB



CANTON TYPE 2
STANDARD CONCRETE COMBINED
CURB & GUTTER



NOTES:

1. CURB CONSTRUCTION MUST TO CONFORM TO ODOT 609 AND THE CURRENT CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS.
2. CONCRETE MATERIAL FOR CURB AND WALK MUST BE ODOT 499 CLASS 'QC' CONCRETE WITH LIMESTONE AGGREGATE.
3. NO FOUNDRY SAND OR SLAG PERMITTED IN AGGREGATE BASE, ODOT 304.
4. CURB CONTRACTION JOINT MUST BE SPACED 10 FEET TYPICALLY; WALK CONTRACTION JOINTS MUST BE SPACED 5 FEET TYPICALLY, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. CURB EXPANSION JOINTS MUST BE INSTALLED AT CURB INLET CATCH BASIN AND AT ANY OTHER RIGID STRUCTURES. CURB EXPANSION AND CONSTRUCTION JOINTS MUST BE DOWELED WITH TWO (2) #5 THRU #8 SMOOTH BARS, 18" LONG, EXTENDING 9" INTO EACH CURB.
5. CONCRETE WALK REPLACED OR INSTALLED ADJACENT TO EXISTING CONCRETE CURB MUST BE DOWELED TO THE EXISTING CURB, UNLESS DETERMINED OTHERWISE BY THE CITY ENGINEER (SEE CITY STD. DWG. 29).
6. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.
7. ODOT CURB TYPE 6 AND TYPE 2 (ODOT STD CONST. DWG. BP-5.1) ARE ACCEPTABLE OPTIONS RESPECTIVELY TO CITY STANDARD CURB TYPE 1 AND 2 FOR NEW ROADWAY OR CITY PROJECTS, AS APPROVED BY THE CITY ENGINEER. WHEN A CANTON CURB TYPE ABUTS AN ODOT CURB TYPE, THE CONTACTOR MUST TRANSITION THE CURB FACE AND TOP TO MATCH THE EXISTING CURB FACE AND TOP WITHIN A 4' LENGTH, BUT NOT LESS THAN 1' LENGTH.



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APPROVED DATE: MAR 2012

APPROVED BY: RMB

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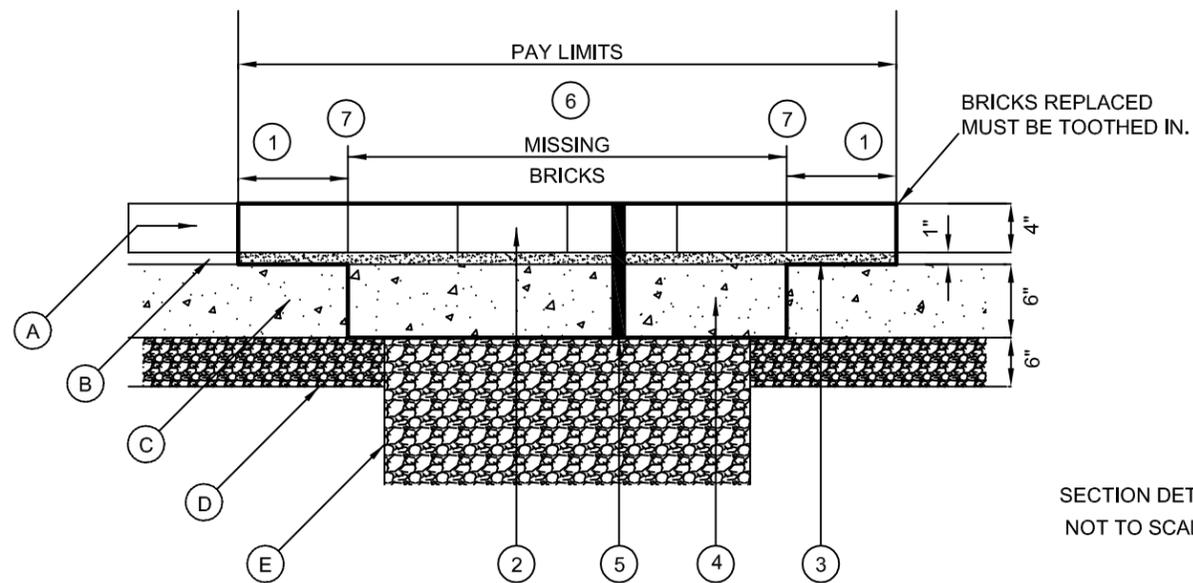
REVISIONS

DESCRIPTION	DATE	BY
ODOT CONCRETE SPEC. UPDATE	11/20/2019	RMB

STANDARD DRAWING NO. 30
CONCRETE CURB AND
COMBINED CURB & GUTTER

SHEET 1 OF 1

EXISTING BRICK SURFACE PAVEMENT REPAIR



SECTION DETAIL
NOT TO SCALE

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(A) EXISTING BRICK PAVERS</p> <p>(B) EXISTING SAND BEDDING LAYER</p> <p>(C) EXISTING CONCRETE BASE - DEPTH AND TYPE VARIES</p> <p>(D) EXISTING AGGREGATE BASE</p> <p>(E) EX. SUB-BASE MATERIAL OR FOR NEW TRENCH USE COMPACTED BACKFILL PER CITY STD. DWG 19 - ODOT 703.11, TYPE 1 OR ODOT 613 LOW STRENGTH MORTAR.</p> | <p>(1) VARIES, 0" TO 12" MAX - EX. BRICK TO BE REMOVED AND RESET AS NEEDED, TO ACCESS EX. CONC. BASE. DO NOT SAW CUT BRICK.</p> <p>(2) REPLACE/RESET 4" X 8" BRICK PAVERS, SEE NOTE SHT. 2/2 FOR CITY PROVIDED BRICK.</p> <p>(3) SAND SETTING BED, 1" MAX. AND 1/2" MIN. CONCRETE SAND, ODOT 703.02, ASTM C-33.</p> <p>(4) 6" CONCRETE BASE, CLASS "QC", ODOT ITEM 305</p> <p>(5) BRICK PAVEMENT REPLACEMENT SECTION PAYMENT ONLY FOR REPAIR AREAS, PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.</p> <p>(6) SAND FILLED JOINTS 3/16" MAX. AND 1/16" MIN., CONCRETE SAND, ODOT 703.02, ASTM C-33. BROOM SURFACE WITH ABOVE SAID SAND AND PLATE TAMP W/ MAT PROTECTION.</p> <p>(7) FOR BRICK PAVEMENT REPAIR SAW CUT A CLEAN EDGE FULL DEPTH TO REMOVE FAILED CONC. BASE AND/OR FAILED AGG. BASE AS DIRECTED .</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

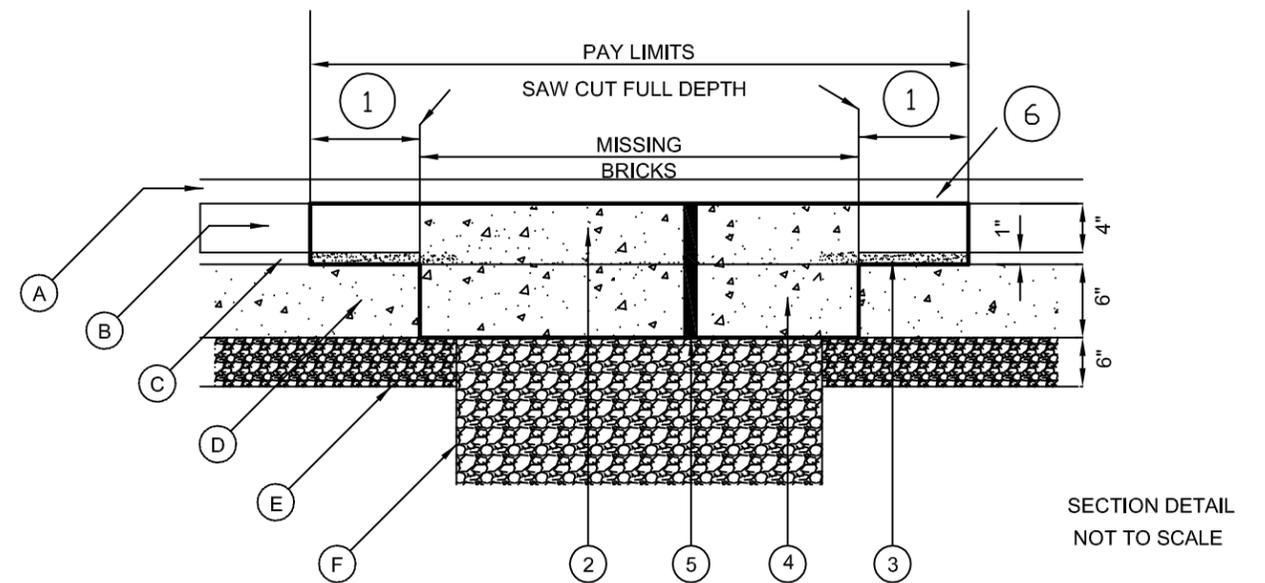
ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

NO FOUNDRY SAND OR SLAG PERMITTED IN AGGREGATE BASE, ODOT ITEM 304, OR LOW STRENGTH MORTAR BACKFILL, ODOT ITEM 613.

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS, PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.

FOR NEW TRENCH PER STD. DWG 19, SAW CUT FULL DEPTH TO THE LIMITS SHOWN.

EXISTING ASPHALT OVER BRICK PAVEMENT SURFACE REPAIR



SECTION DETAIL
NOT TO SCALE

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(A) EXISTING ASPHALT SURFACE</p> <p>(B) EXISTING BRICK PAVERS</p> <p>(C) EXISTING SAND BEDDING LAYER</p> <p>(D) EXISTING CONCRETE BASE - DEPTH AND TYPE VARIES</p> <p>(E) EX. AGGREGATE BASE</p> <p>(F) EX. SUB-BASE MATERIAL OR FOR NEW TRENCH USE COMPACTED BACKFILL PER CITY STD. DWG 19 - ODOT 703.11, TYPE 1 OR ODOT 613 LOW STRENGTH MORTAR.</p> | <p>(1) VARIES, 0" TO 12" MAX - EX. BRICK TO BE REMOVED AND RESET AS NEEDED, TO TOOTH IN & ACCESS EX. CONC. BASE. SAW CUT BRICK IF NEEDED.</p> <p>(2) CONCRETE BASE, CLASS "QC", ODOT ITEM 305 TO TOP OF BRICK</p> <p>(3) REMOVE EXISTING SAND BED BETWEEN BRICK</p> <p>(4) EXCAVATE FOR MINIMUM 6" CONCRETE BASE</p> <p>(5) CONCRETE BASE, CLASS "QC", ODOT ITEM 305, REPLACEMENT SECTION</p> <p>(6) ASPHALT REPLACEMENT (IN KIND DEPTH) MAXIMUM 2" SURFACE COURSE, ODOT 448 TYPE I, OVER INTERMEDIATE COURSE, ODOT 448 TYPE I, AS NEEDED FOR IN KIND ASPHALT SECTION (ASPHALT SURFACE MUST BE "IN KIND" - OTHER THAN 448 MAY BE REQUIRED) ASPHALT TO EXTEND TO A NEAT SAW-CUT LINE. SEAL EDGES WITH ASTM D-3405 HOT OR ASTM C-90 COLD ASPHALT CEMENT.</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS, PAYMENT INCLUDED IN COST OF PIPE FOR NEW TRENCH.

ALL RESTORATION/REPLACEMENT WORK TO BE AS DIRECTED AND APPROVED BY THE ENGINEER



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APPROVED DATE: JAN 2012

APPROVED BY: CDB, RMB, SLH

DRAWING FILE NAME: ce_31.dwg

REVISIONS

DESCRIPTION	DATE	BY
CONSISTENCY REVIEW	2/1/13	JTD
CONCRETE AND SAND SPEC UPDATE	11/20/19	RMB

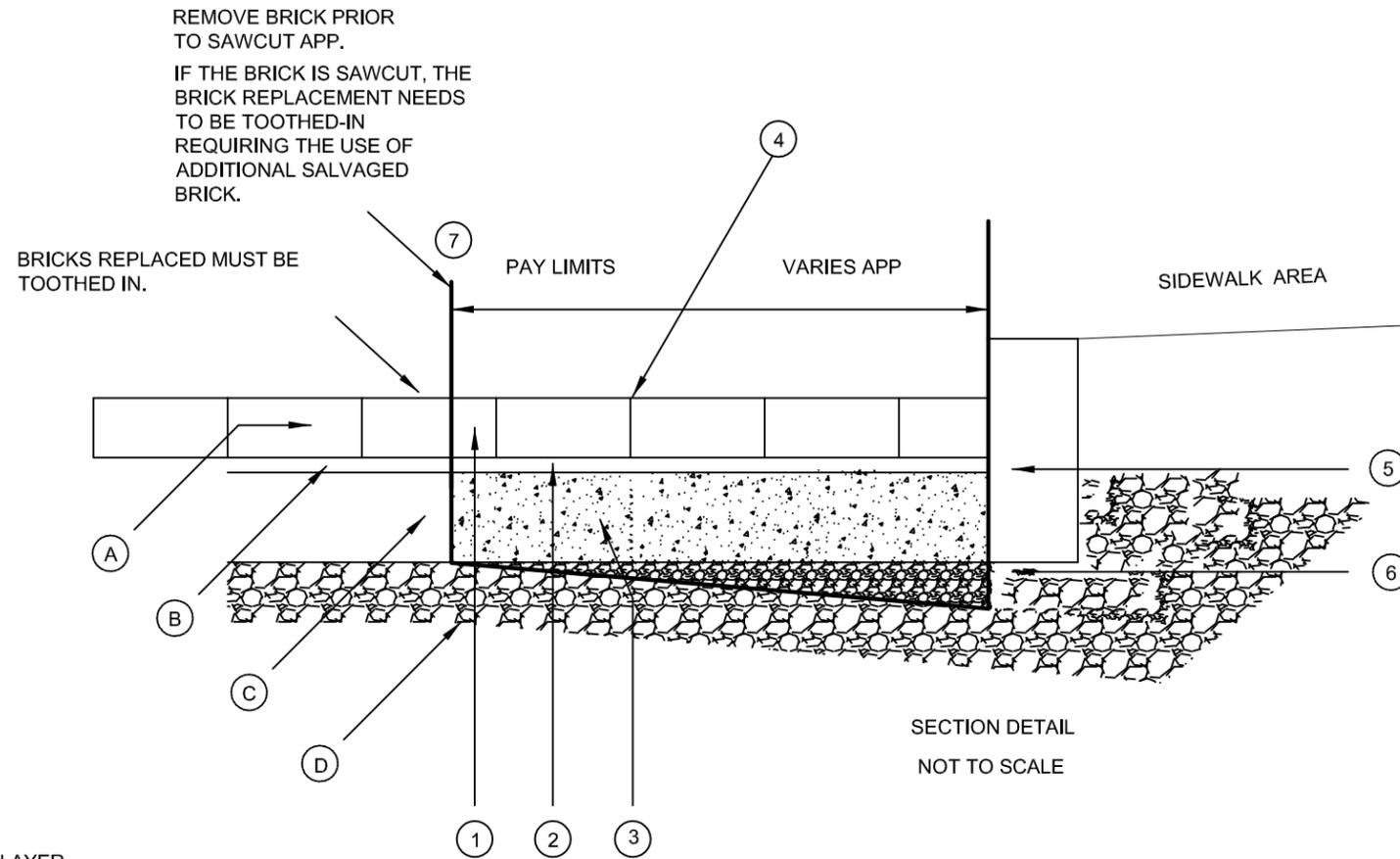
STANDARD DRAWING NO. 31

PAVEMENT REPAIR

SHEET 1 OF 2

ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

NO FOUNDRY SAND, ACBFS, GRANULATED SLAG OR OTHER SLAG PERMITTED IN ODOT 304, OR LOW STRENGTH MORTAR BACKFILL, ODOT 613



- (A) EX. BRICK PAVERS
- (B) EX. SAND BEDDING LAYER
- (C) EX. CONCRETE BASE - DEPTH AND TYPE VARIES
- (D) EX. AGGREGATE OR RANDOM MATERIAL SUB-GRADE

PAVEMENT REPLACEMENT SECTION PAYMENT IS FOR CITY PROJ. REPAIR AREAS, PAYMENT FOR CONC. BASE INCLUDED IN COST OF NEW CURB.

COST FOR ITEMS 1-2-3-4-6-7 ABOVE ARE CONSIDERED AS 1 PAY ITEM UNDER ROAD PAVEMENT REPLACEMENT QTY.

- (1) RE-SET BRICK PAVERS, TOOTH IN BRICK TO MATCH EXISTING BRICK PAVEMENT. JOINTS 3/16" MAX. AND 1/16" MIN.
- (2) SAND SETTING BED, 1" MAX. AND 1/2" MIN. CONCRETE SAND, ODOT 703.02, ASTM C-33.
- (3) PROPOSED 6" CONCRETE BASE, ODOT 305 CLASS "QC"
- (4) SAND FILLED JOINTS 3/16" MAX. AND 1/16" MIN., CONCRETE SAND, ODOT 703.02, ASTM C-33. BROOM SURFACE WITH ABOVE SAID SAND AND PLATE TAMP W/ MAT PROTECTION.
- (5) NEW OR EXIST. CURB - IF NEW SEE STD. DW'G. 29 & 30
- (6) REPAIR/REPLACE FAILED BASE WITH 304 CRUSHED AGGREGATE, 411 LIMESTONE OR 613 LSM IF APPROVED BY THE ENGINEER. CONCRETE AND AGGREGATE BASE TO BE REPAIRED AS DIRECTED BY THE ENGINEER INCLUDING CONCRETE REPLACEMENT AS NEEDED.
- (7) FOR BRICK PAVEMENT REPAIR SAW CUT A CLEAN EDGE FULL DEPTH TO REMOVE FAILED CONC. BASE AND/OR FAILED AGG. BASE AS DIRECTED.

THIS EXHIBIT IS FOR BRICK PAVEMENT REPLACEMENT ALONG CURB OR GUTTER PLATE

BRICKS REMOVED ARE TO BE STORED FOR RE-USE – CITY WILL PROVIDE BRICKS AS NEEDED
 CONTRACTOR IS TO PICK UP BRICK AT CITY SERVICE CENTER YARD
 CONTRACTOR SHOULD BE PREPARED TO SORT BRICK FROM EXISTING STOCKPILES IF NECESSARY



OFFICE OF THE CITY ENGINEER
CANTON, OHIO

DANIEL J. MOEGLIN, P.E., CITY ENGINEER
 2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering

APPROVED DATE: JAN 2012

APPROVED BY: CDB, RMB, SLH

DRAWING FILE NAME: ce_31.dwg

REVISIONS

DESCRIPTION	DATE	BY
CONSISTENCY REVIEW	2/1/13	JTD
CONCRETE AND SAND SPEC UPDATE	11/20/19	RMB

STANDARD DRAWING NO. 31

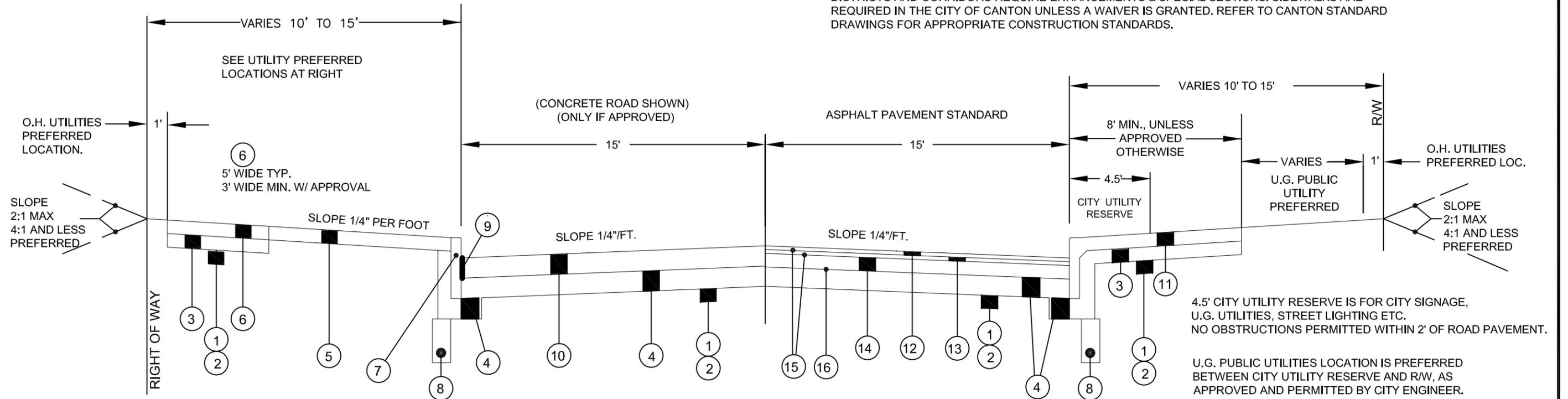
PAVEMENT REPAIR

GENERAL CRITERIA

ODOT REFERENCES ARE 2019 CMS -
CROSS REFERENCE TO CURRENT CMS
AT TIME OF CONSTRUCTION.

ALL CURB AND WALK CONSTRUCTION TO
CONFORM TO CURRENT CITY OF CANTON
SPECIFICATIONS FOR THE CONSTRUCTION,
REPAIR AND REPLACEMENT OF SIDEWALKS,
CURBS AND DRIVEWAYS.

PAVEMENT WIDTHS ARE TRADITIONALLY AND TYPICALLY 3/5THS THE RIGHT OF WAY WIDTH. LANE WIDTHS ARE 12 FT. TYP., AND PARKING WIDTHS ARE 8 FT. TYPICAL (2' - 3' APRON EA. SIDE). BY ORD. - MIN. 28 FT. PAVEMENT REQUIRED FOR PARKING I-SIDE - 32 FT. PREFERRED. BUSINESS/COMMERCIAL DISTRICTS AND MAJOR STREET CORRIDORS REQUIRE SPECIAL SECTIONS. SPECIAL IMPROVEMENT DISTRICTS AND CORRIDORS REQUIRE ENHANCEMENTS & SPECIAL SECTIONS. SIDEWALKS ARE REQUIRED IN THE CITY OF CANTON UNLESS A WAIVER IS GRANTED. REFER TO CANTON STANDARD DRAWINGS FOR APPROPRIATE CONSTRUCTION STANDARDS.



- ① 203 - EXCAVATION & EMBANKMENT
- ② 204 - SUBGRADE COMPACTION
- ③ 304 - 4" AGGREGATE BASE
- ④ 304 - 6" AGGREGATE BASE
NO FOUNDRY SAND, ACBFS,
GRANULATED SLAG OR OTHER SLAG
PERMITTED IN ODOT 304 BASE
- ⑤ 659 - LAWNSTRIP; 4" TOPSOIL / SEED / MULCH
CLASS 1 LAWN MIX
SEE NOTE 5a.
- ⑥ 608 - CONCRETE WALK
4" THICK - RESIDENTIAL
5" THICK - COMMERCIAL
ODOT 499 CLASS "QC" CONCRETE; SEE CURRENT
CITY SPECS FOR CURB / WALK CONSTRUCTION.
- ⑦ 609 - CONC. CURB - CITY STD. 30 OR ODOT TYPE 6.
ODOT 499 CLASS "QC" CONCRETE; SEE CURRENT
CITY SPECS FOR CURB / WALK CONSTRUCTION.
- ⑧ 605 - 4" PIPE UNDERDRAIN - (M) TYP. - NO. 8 STONE
BEDDING (NO ACBFS) - FILTER SLEEVE.
- ⑨ 705.03 - 1/2" PREFORMED JOINT W/ SEALER
- ⑩ 452 - 6" PLAIN PORTLAND CEMENT CONC. PAVEMENT,
ODOT 499 CLASS "QC" CONCRETE
- ⑪ 608 - CONCRETE WALK - CITY STD. 29, TYPE III.
ODOT 499 CLASS "QC" CONCRETE; SEE CURRENT
CITY SPECS FOR CURB / WALK CONSTRUCTION.
- ⑫ 441 - 1-1/2" ASPHALT CONC. SURFACE COURSE, TYPE I
- ⑬ 441 - 1-1/2" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I
- ⑭ 301 - 4" ASPHALT CONC. BASE
- ⑮ 407 - TACK COAT (USE RUBBERIZED TACK FOR APSHALT OVERLAY ON
PORTLAND CEMENT CONCRETE OR BRICK PAVEMENT)
- ⑯ 408 - PRIME COAT
- ⑤a LAWN STRIPS LESS THAN 3.5' WIDE ARE
NOT PERMITTED UNLESS APPROVED BY THE
ENGINEER. COMBINED CURB/WALK IS STANDARD
IN THIS INSTANCE, USE CITY STD DWG NO. 29.

READ FOR ALL NEW STREET CONSTRUCTION AND IMPROVEMENT THE
OWNER/DEVELOPER SHALL PROVIDE A TYPICAL SECTION
PREPARED BY A PROFESSIONAL ENGINEER TO BE
REVIEWED AND APPROVED BY THE CITY ENGINEER.

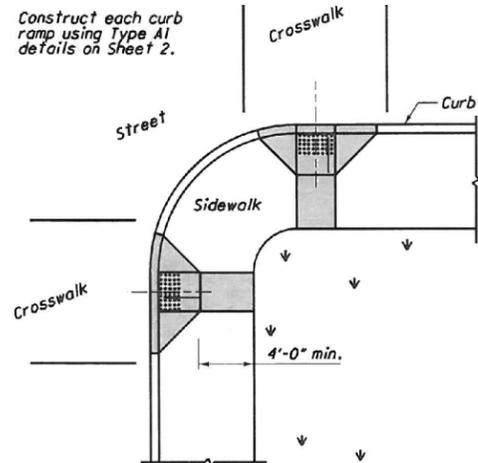


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APPROVED DATE: OCT 2014
APPROVED BY: RMB
DRAWING FILE NAME: ce_32.dwg

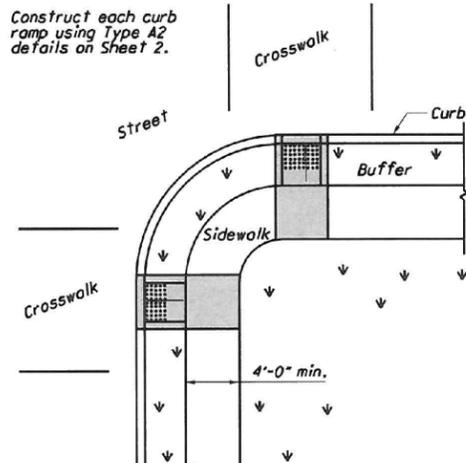
REVISIONS		
DESCRIPTION	DATE	BY
ASPHALT SPEC. UPDATE	2/26/2019	RMB
CONCRETE SPEC. UPDATE	11/20/2019	RMB

STANDARD DRAWING NO. 32
MINIMUM PAVEMENT STANDARDS
FOR LOCAL STREETS
SHEET 1 OF 1



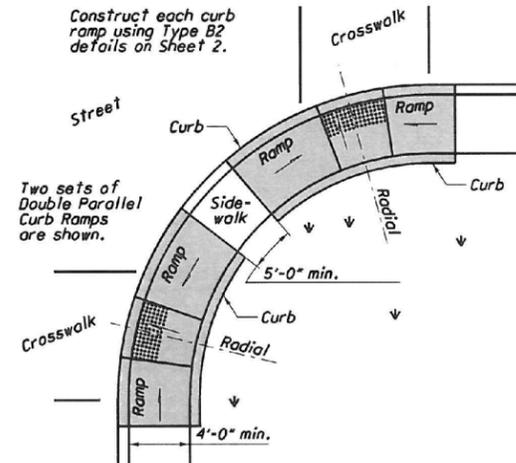
Use curb ramps with flared sides at locations with wide sidewalks.

PERPENDICULAR CURB RAMPS



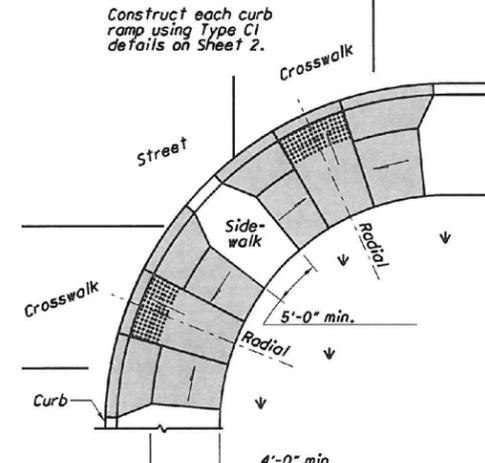
Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.

PREFERRED CONSTRUCTION PLACEMENT



Place on streets having wide turning radius and where sidewalks are narrow.

PARALLEL CURB RAMPS



Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

COMBINATION CURB RAMPS

NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to assure that the design is appropriate for site constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

DETECTABLE WARNINGS: Install Detectable Warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/8" between the pavement and gutter, and 2" gutter and ramp, are not allowed.

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

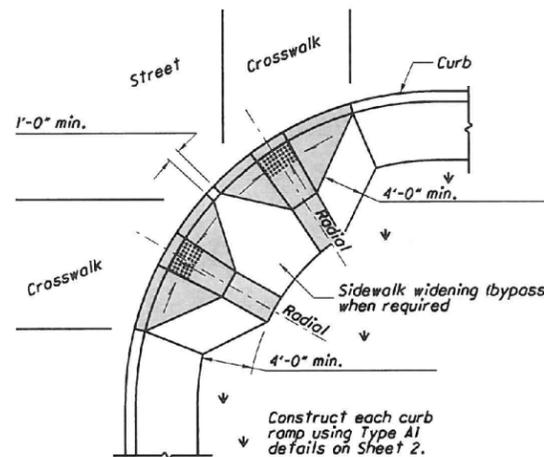
JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp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

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as Item 608 Curb Ramp, Square Foot. This includes the cost of the ramp curbing, detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

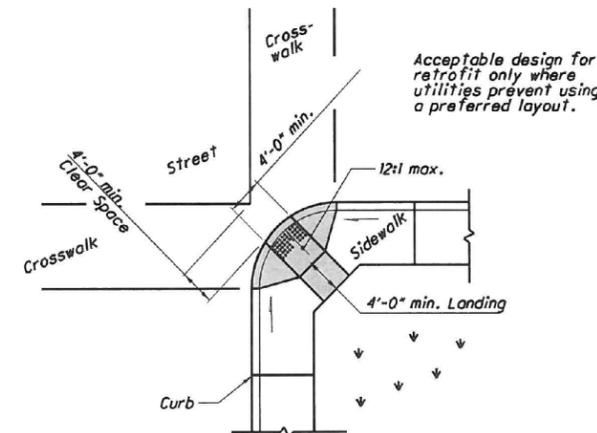
Work beyond the shaded ramp/landing area is paid for as curb (609) and walk (608). Removal of existing curb, walk (or existing curb ramps) are paid under Item 202.

For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the strip of detectable warnings as Item 608 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

Acceptable design on corners with wide turning radius where user is able to maneuver within crosswalk limits so as not to encroach into adjacent traveled lanes.



PERPENDICULAR RAMPS



Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0".

DIAGONAL RAMP (Type D)

ACCEPTABLE CONSTRUCTION PLACEMENT

THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.

STANDARD ROADWAY CONSTRUCTION DRAWING
NEW CURB RAMPS
(with Detectable Warnings)

SD NUMBER
BP-7.1

1 / 3

OFFICE OF
ROADWAY
ENGINEERING

STATUS:
ENGINEER
M. Blime

ADMINISTRATOR
David B. Brown

DATE
10-15-10

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED.
SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.



OFFICE OF THE CITY ENGINEER
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APPROVED DATE: MAY 2012

APPROVED BY: RMB

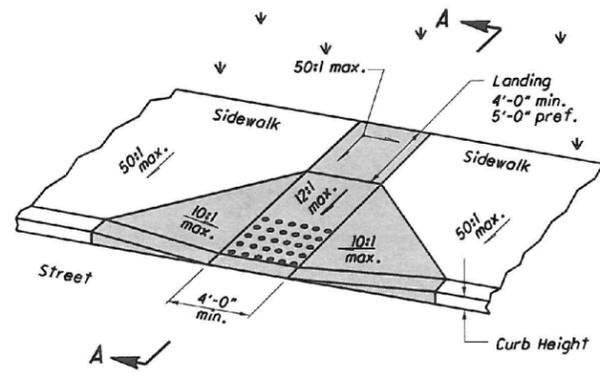
DRAWING FILE NAME: ce_33.dwg

REVISIONS

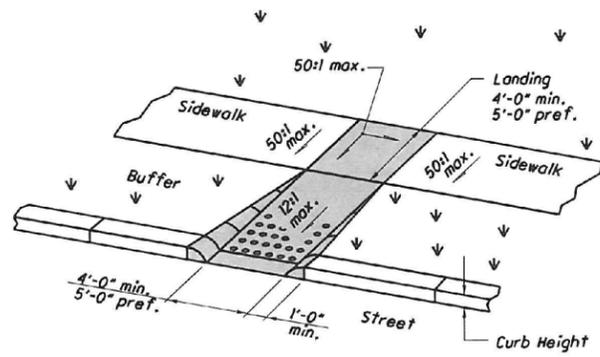
DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB
WET PANELS PRIMARY DOME MAT	JAN 2015	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

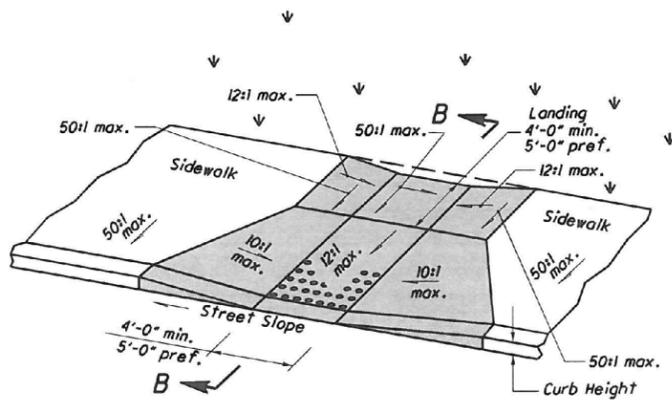


Type A1 (Perpendicular with flared sides)

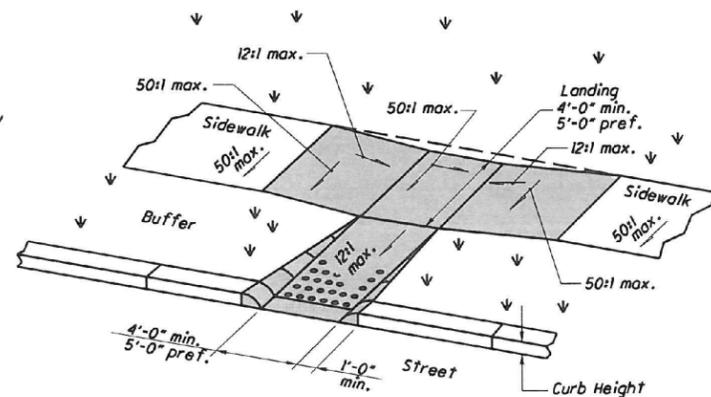


Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

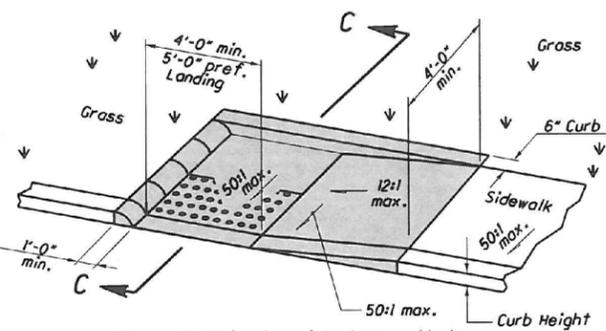


Type C1 (Combined with flared sides)

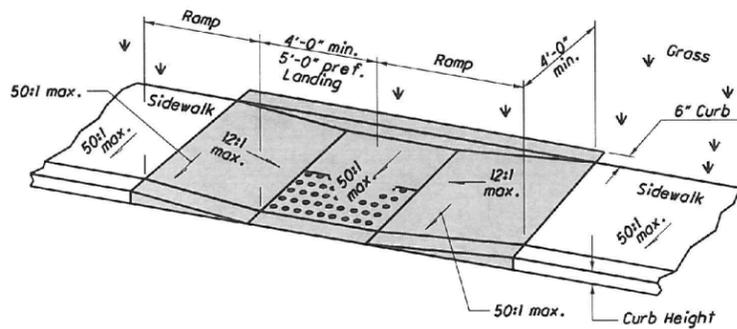


Type C2 (Combined with returned curb)

COMBINED CURB RAMP DETAILS

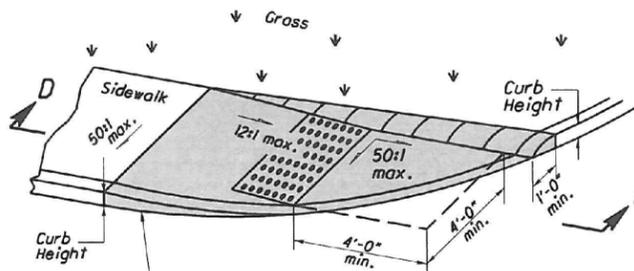


Type B1 (Single sided Parallel)



Type B2 (Double sided Parallel)

PARALLEL CURB RAMP DETAILS



Type B3 (Single sided Parallel)

NOTES

The running slope of the ramp is preferred to be 12:1 or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limits) it may be reduced as follows:

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

To prevent chasing the grade indefinitely, the transition from existing sidewalk to the shaded curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the cross walk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope.

See Sheet 3 for Sections.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
 10-15-10 DATE
 ADMINISTRATOR
 M. Blaine
 ENGINEER
 OFFICE OF ROADWAY ENGINEERING
 STANDARD ROADWAY CONSTRUCTION DRAWING
 NEW CURB RAMPS (with Detectable Warnings)
 BP-7.1
 THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.
 2 / 3

THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED.
 SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.



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APPROVED DATE: MAY 2012

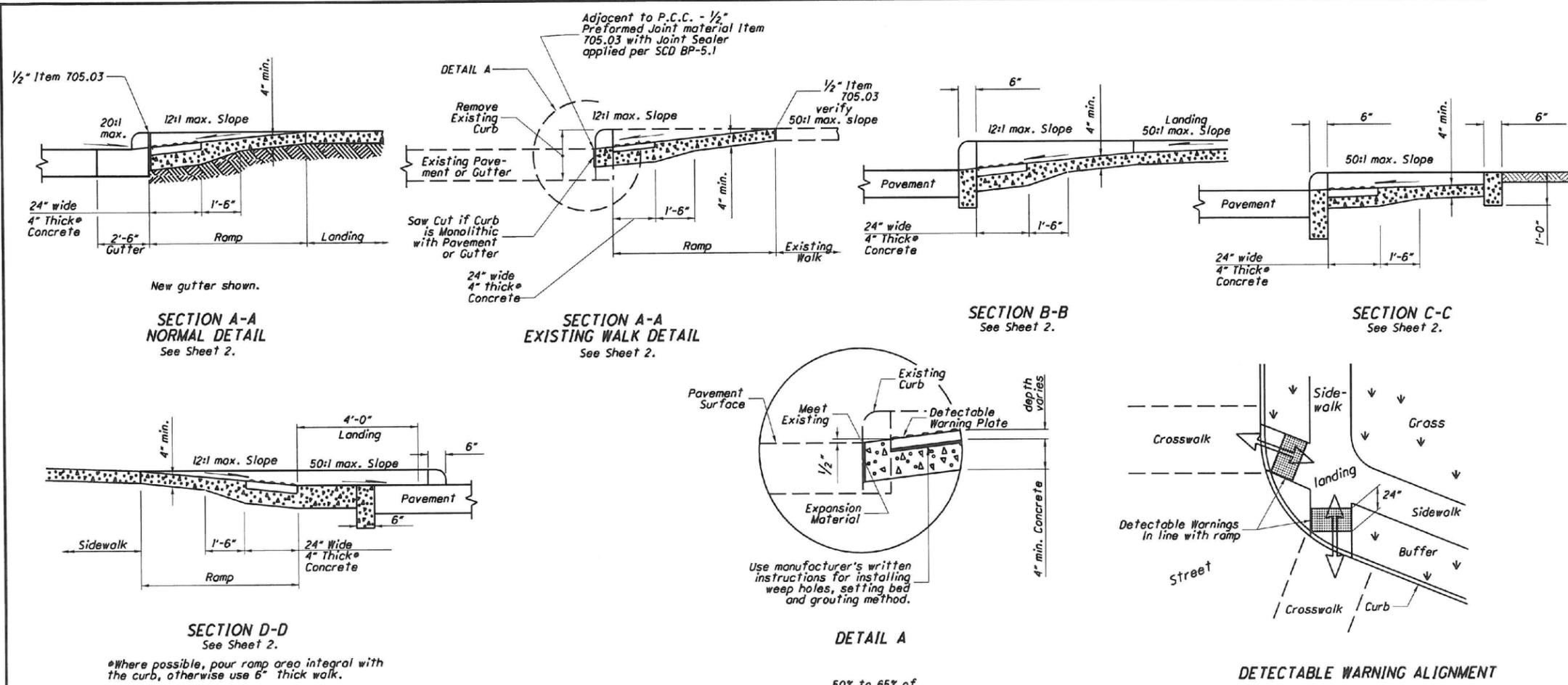
APPROVED BY: RMB

DRAWING FILE NAME: ce_33.dwg

REVISIONS		
DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP



DETECTABLE WARNINGS NOTES

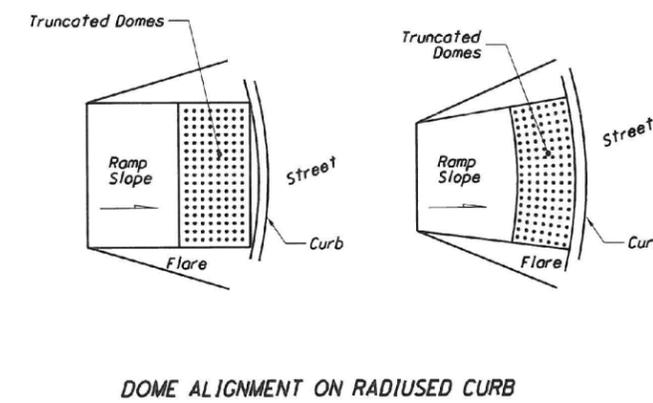
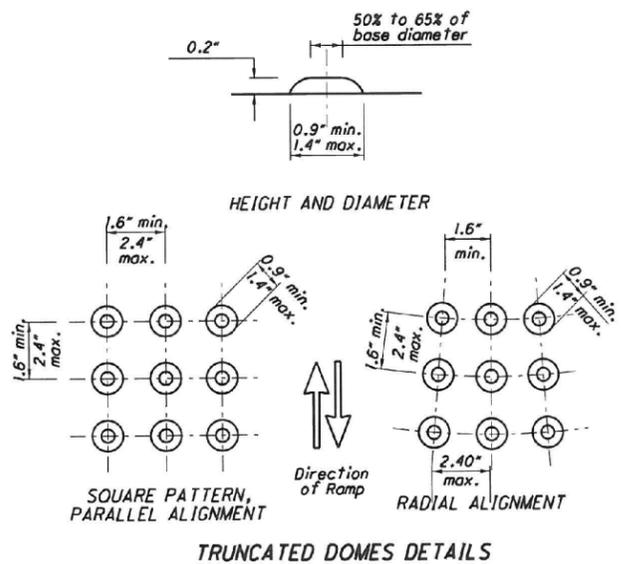
GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

PLACEMENT: Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 1.

The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

ALIGNMENT: Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but in skewed conditions at least one corner of the 24" strip should be adjacent to the back of curb. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

PRODUCTS & COLORS: Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.



SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
 10-15-10 DATE
 M. Blime ADMINISTRATOR
 OFFICE OF ROADWAY ENGINEERING
 STANDARD ROADWAY CONSTRUCTION DRAWING
 NEW CURB RAMPS (with Detectable Warnings)
 THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.
 3/3

THE CITY'S STANDARD WHEEL CHAIR RAMP IS THE ODOT BP-7.1 WITH THE MODIFICATIONS NOTED. SEE SHEET 4 OF 4 FOR CITY'S APPROVED TRUNCATED DOME PRODUCTS.



OFFICE OF THE CITY ENGINEER
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APPROVED DATE: MAY 2012
 APPROVED BY: RMB
 DRAWING FILE NAME: ce_33.dwg

REVISIONS		
DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP
 SHEET 3 OF 4

DETECTABLE WARNING DOMES

PANELS, WET SET

REPLACEABLE TRUNCATED DOME PANELS SET IN WET CONCRETE MUST BE USED IN RAMPS WITHIN THE CITY OF CANTON, UNLESS APPROVED OTHERWISE BY THE CITY ENGINEER.

Acceptable manufacturers and products are:

- 1) Armorcast Products Company
North Hollywood, CA 818-982-3800
Armorcast Detectable Warning Panels (Wet Set Panels)
24"x24", 24"x36", 24"x48"; also 6'-15' Radius
Polymer Concrete, Red Brick color
- 2) ADA Solutions, Inc.
N. Billerica, MA 01862
Cast-in-Place Replaceable Tactile (Wet Set)
2'x3', 2'x4', 2'x5', and 2' w/radius
Glass and Carbon Composite, Brick Red color

OR APPROVED EQUAL

BRICK PAVERS

TRUNCATED DOME BRICK PAVERS ARE ONLY TO BE USED/INSTALLED AT THE DISCRETION OR APPROVAL OF THE CITY ENGINEER.

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

Acceptable manufacturers and products are:

- 1) Whitacre-Greer Fireproofing Company,
1400 S. Mahoning Ave, Alliance, OH, 44601, (800) WG PAVER
ADA Paver, 4"x8"x2-1/4", Clear Red (Rustic) #30.
- 2) The Belden Brick Company
PO Box 20910, Canton, OH 44701 330-456-0031
City Line ADA Paver, Regimental Red 2-1/4"x4"x8" or 2-1/4"x8"x8"

OR APPROVED EQUAL.

Pavers will be laid on top of a 4" unreinforced concrete base. Setting bed to be mortared in accordance with manufacturer's instruction, or with a maximum 1/2" thick bed of latex modified cement mortar. SWEEP POLYMERIC SAND (TECHNI SEAL OR APPROVED EQUAL) INTO JOINTS. Joint width must not exceed 1/8" or be less than 1/16" wide.

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

The surface of any two adjacent units should not differ by more than 1/8" [3] in height. Bricks shall be placed in a running bond pattern. Face of all brick shall be clean of cement and protected so as to avoid chipping during construction.

ADHESIVE MATS

REPLACEABLE TRUNCATED DOME MATS THAT SET ON CONCRETE RAMPS BY ADHESIVE WILL ONLY BE CONSIDERED IN THE EVENT AN EXISTING WHEEL CHAIR RAMP NEEDS DETECTABLE WARNING DOMES INSTALLED AND THE RAMP REQUIRES NO OTHER MODIFICATIONS. USE OR INSTALLATION OF ADHESIVE MATS IS SUBJECT TO THE CITY ENGINEER'S DISCRETION OR APPROVAL.

Acceptable manufacturers and products are:

- 1) Submit product specification, color and sample for review/approval by the City Engineer



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APPROVED DATE: MAY 2012

APPROVED BY: RMB

DRAWING FILE NAME: **ce_33.dwg**

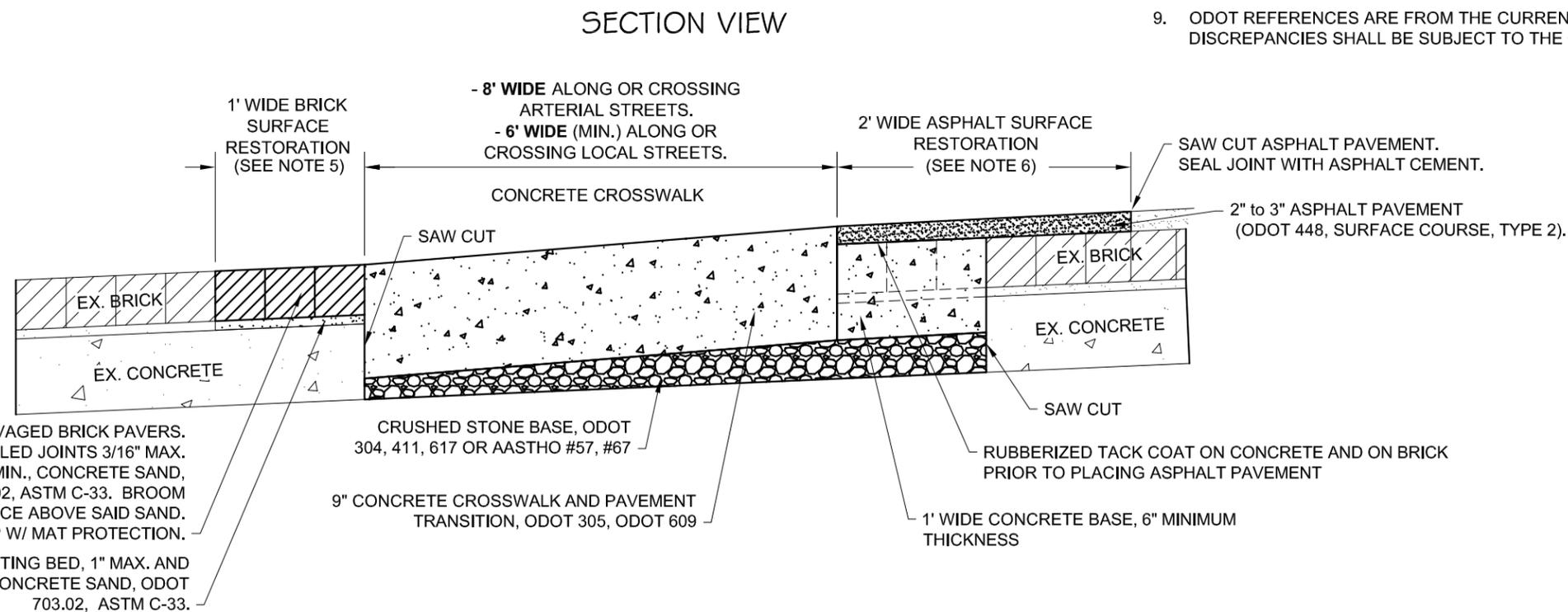
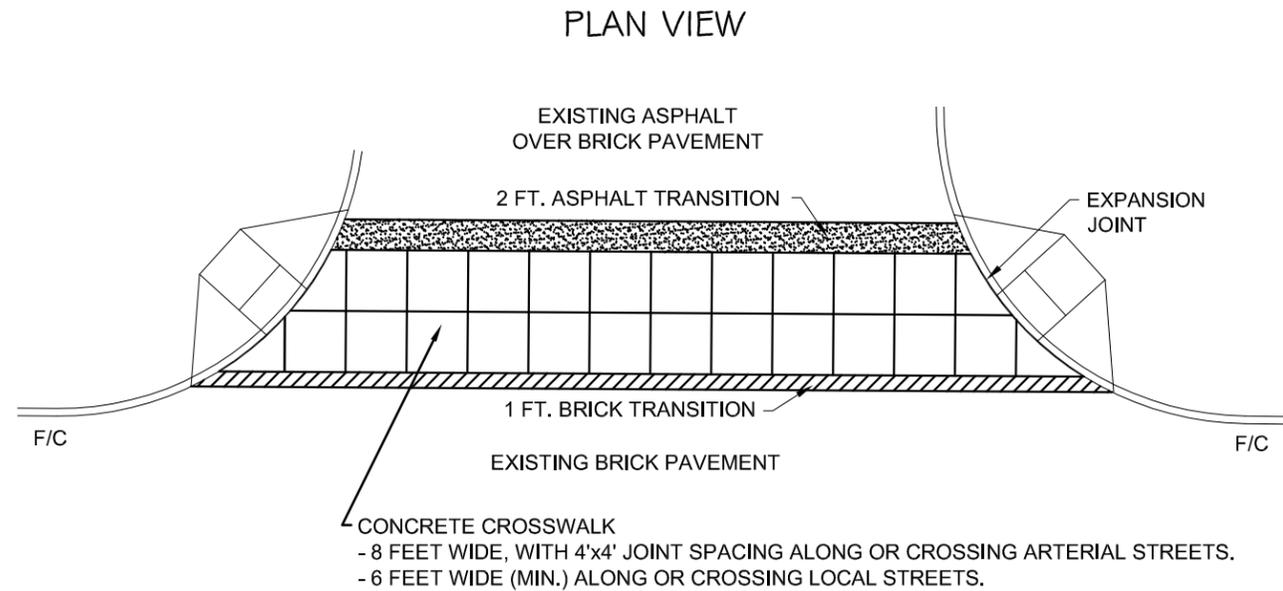
REVISIONS

DESCRIPTION	DATE	BY
REVISIONS	6/29/12	RMB
WET PANELS PRIMARY DOME MAT	JAN 2015	RMB

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

SHEET 4 OF 4



NOTES:

1. CONCRETE CROSS WALKS MUST BE CONSTRUCTED IN THE ROADWAY WHEN EXISTING PAVEMENT IS DISTURBED WHERE BRICK ROADS TRANSITION TO ASPHALT ROADS BY OVERLAY OF ASPHALT ON BRICK PAVERS; UNLESS DETERMINED OTHERWISE BY THE CITY ENGINEER.
2. CROSS WALK CONSTRUCTION MUST CONFORM TO ODOT 608 AND THE CURRENT CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS.
3. SECTION PROFILE OF CROSS WALK TO BE FIELD DETERMINED BASED ON EXISTING ASPHALT AND BRICK PAVEMENT ELEVATIONS. PROFILE OF THE CROSSWALK MUST BE SET IN A MANNER THAT DOES NOT IMPEDE THE STORMWATER DRAINAGE.
4. DURING REMOVAL OF PAVEMENT FOR INSTALLATION OF NEW CONCRETE CROSS WALK, CONTRACTOR MUST STABILIZE BRICK PAVERS AND PREVENT BRICKS, THAT ARE TO REMAIN IN PLACE, FROM COMING LOOSE.
5. CONTRACTOR TO REPLACE BRICK PAVEMENT WITH SALVAGED BRICK SET ON A 6" CONCRETE BASE AND 1" SAND/MORTAR SETTING BED. REUSE OF EXISTING CONCRETE BASE UNDER BRICK IS ACCEPTABLE IF CITY ENGINEER DEEMS EXISTING CONCRETE BASE IS IN SATISFACTORY CONDITION; OTHERWISE NEW CONCRETE BASE MAY BE REQUIRED. SAND SETTING BED, 1" MAX. AND 1/2" MIN. CONCRETE SAND, ODOT 703.02, ASTM C-33. SAND FILL BRICK JOINTS 3/16" MAX. AND 1/16" MIN., CONCRETE SAND, ODOT 703.02, ASTM C-33. BROOM SURFACE WITH ABOVE SAID SAND AND PLATE TAMP W/MAT PROTECTION. ALL BRICK PAVERS RESET MUST MEET THE GRADES ESTABLISHED BY THE ENGINEER. SURFACE ELEVATION FROM BRICK TO BRICK, OR BRICK TO CONCRETE MUST NOT EXCEED 1/8".
6. CONTRACTOR MUST PLACE TRANSITIONAL ASPHALT PAVEMENT (ODOT 448, SURFACE COURSE, TYPE 2) MATCHING THE SURFACE OF THE NEW CONCRETE CROSS WALK AND EXISTING ASPHALT PAVEMENT. ASPHALT PAVEMENT THICKNESS MUST NOT BE LESS THAN 2", OR GREATER THAN 3". ASPHALT PAVEMENT MUST BE SET ON A CONCRETE BASE WITH A MINIMUM THICKNESS OF 6". THE CONCRETE BASE MUST LOCK-IN THE EXISTING BRICK PAVERS. APPLY RUBBERIZED TACK COAT ON CONCRETE BASE AND BRICK BASE PRIOR TO INSTALLING ASPHALT PAVEMENT.
7. CONCRETE MATERIAL FOR CROSS WALK AND BASE MUST BE ODOT 499 CLASS 'QC' CONCRETE.
8. NO FOUNDRY SAND OR SLAG PERMITTED IN AGGREGATE BASE.
9. ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.



**OFFICE OF THE CITY ENGINEER
CANTON, OHIO**

DANIEL J. MOEGLIN, P.E., CITY ENGINEER

2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering
SAND SETTING BED, 1" MAX. AND 1/2" MIN. CONCRETE SAND,
ODOT 703.02, ASTM C-33

APPROVED DATE: MAY 2012

APPROVED BY: RMB

DRAWING FILE NAME: **ce_34.dwg**

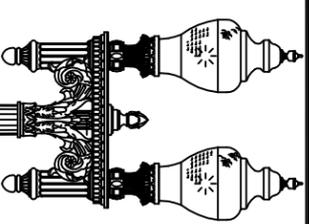
REVISIONS

DESCRIPTION	DATE	BY
REVISIONS	7/20/12	RMB
CONCRETE AND SAND SPEC UPDATE	11/20/19	RMB

**STANDARD DRAWING NO. 34
CONCRETE CROSSWALK
AND PAVEMENT TRANSITION**

NOTE 1: WHEN ASPHALT OVERLAYS BRICK, REPLACE CONCRETE BASE COURSE TO THE TOP OF THE EX. BRICK. FINISH FACE OF CURB TO THE TOP OF BRICK ELEVATION. PLACE EXPANSION JOINT BETWEEN CONC. ROAD BASE AND CURB. CITY REPLACES ASPHALT SURFACE ON PERMITTED PRIVATE PROJECTS ONLY.

NOTE 2: FOR SLIP FORM CONSTRUCTION USING CITY STD. 30 OR ODOT TYPE 6 CURB, USE 9 IN. #3 DOWELS 3 IN INTO CURB AND EXTENDING 6 IN. INTO CONC. WALK, SPACED 2 FT ON CENTER IN LIEU OF MESH. SEE CITY STANDARD DRAWING 29, TYPE A, FOR DETAIL.



INSTALL POLE WITH FLAGPOLE HOLDER FACING AND PERPENDICULAR TO THE ROADWAY AND THE LUMINAIRES IN-LINE WITH AND PARALLEL TO THE ROADWAY. POLE AND LUMINAIRES ARE SHOWN IN THIS DRAWING 90° FROM TYPICAL POSITION.

4X8 BRICK PAVER, 2 1/4" THICK - PAWNEE PAVER BY BELDEN BRICK - TERRA COTTA RANGE EXCLUDED. USE PERPENDICULAR HERRINGBONE PATTERN.

SWEEP JOINTS WITH DRY MIXTURE OF POLYMERIC SAND Techni-Seal OR APPROVED EQUAL. USE PLATE TAMPER WITH RUBBER MAT OR OTHER PROTECTION FOR BRICK. REMOVE EXCESS AND MOISTEN TO SET JOINT SEALANT SAND.

1" MAX COMPACTED CONCRETE SAND ODOT 703.02

USE INTERIOR FORMING PINS FOR WEEP HOLES ON DOWNSLOPE SIDES AND INTERIOR CORNERS. ~~ASTM C1329~~ ~~CONCRETE SAND~~ ~~COVER W/ FILTER FABRIC.~~

CONCRETE WALKS AND PAVER BASE IS TO BE CLASS "C" ODOT 608. NO EXPANSION JOINTS ARE TO BE PLACED AGAINST BRICK PAVER SECTIONS. MAX 1/4" SPACE BETWEEN BRICK AND CONCRETE.

ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

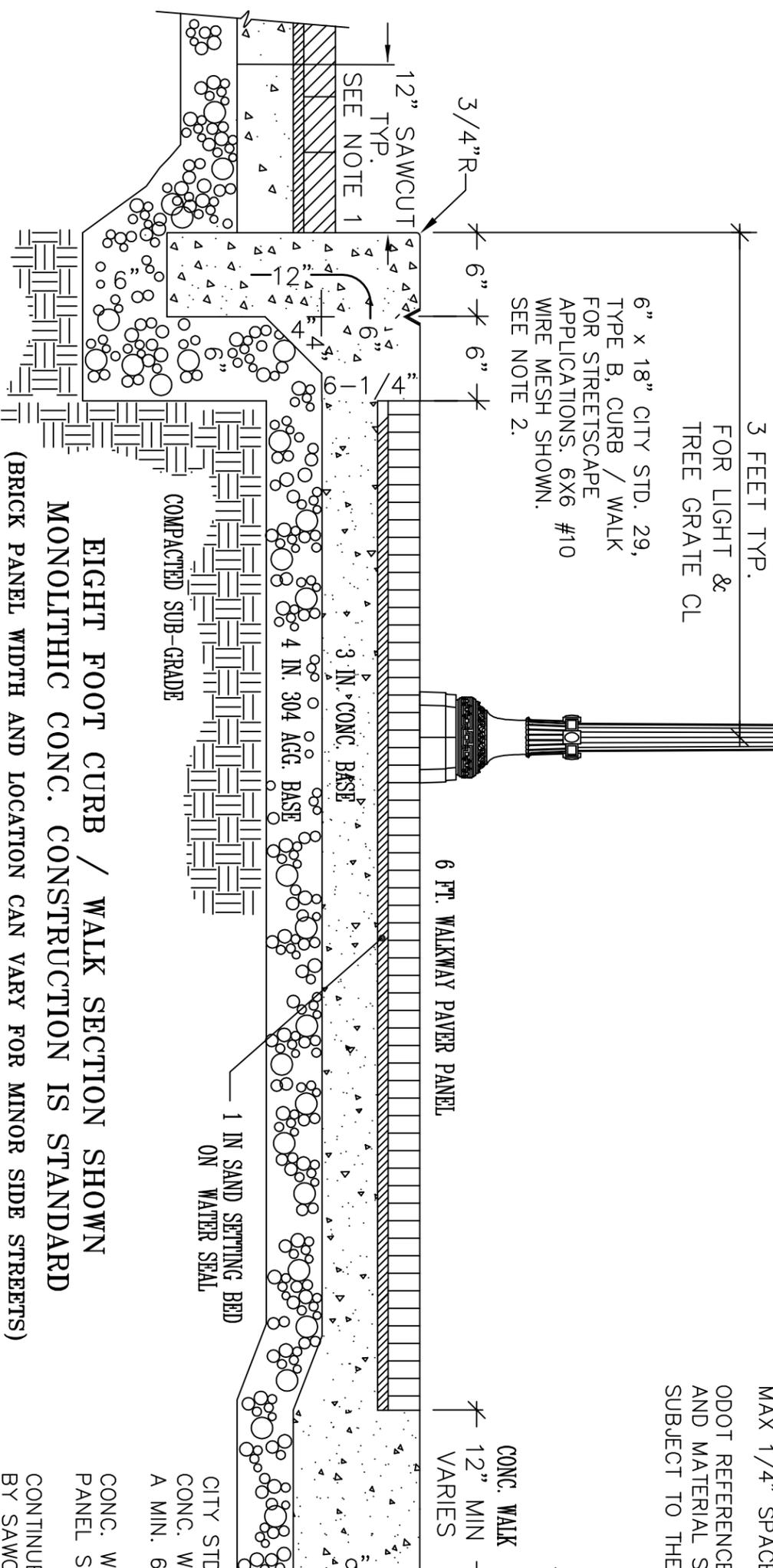
CONCRETE WALK EXPANSION JOINT - 1/2" CLOSED CELL EXPANSION JOINT FILLER TO BE SEALTIGHT CERAMAR WITH 1/2" PEEL STRIP OR EQUAL. PLACE EXP. JOINTS AGAINST BUILDINGS, STRUCTURAL FOUNDATIONS, AND 60FT O.C. IN WALK, TYP. SEAL EXPANSION JOINTS WITH POLYURETHANE ELASTOMERIC SEALANT TREMCO THC 900/901 OR EQUAL.

TYPICAL TOOLED AND CUT CONTROL JOINT, 1/4 DEPTH OF SLAB

CITY STD. CONC. WALK (COMMERCIAL) IS 5 IN. THICK. CONC. WALK WITHIN 6 IN. OF BRICK PANEL SHALL BE A MIN. 6-1/4" THICK.

CONC. WALK WITHIN 12 IN. OF R/W AND NEXT TO BRICK PANEL SHALL BE A MIN. 9 IN. THICK.

CONTINUE TRANSVERSE WALK CONTROL JOINTS BY SAWCUTTING ACROSS BRICK CONC. BASE.



6" x 18" CITY STD. 29, TYPE B, CURB / WALK FOR STREETSCAPE APPLICATIONS. 6X6 #10 WIRE MESH SHOWN. SEE NOTE 2.

3 FEET TYP. FOR LIGHT & TREE GRATE CL

6 FT. WALKWAY PAVER PANEL

CONC. WALK 12" MIN VARIES

COMPACTED SUB-GRADE

1 IN SAND SETTING BED ON WATER SEAL

EIGHT FOOT CURB / WALK SECTION SHOWN
MONOLITHIC CONC. CONSTRUCTION IS STANDARD
(BRICK PANEL WIDTH AND LOCATION CAN VARY FOR MINOR SIDE STREETS)



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APPROVED DATE: FEB. 2012

APPROVED BY: JTD

DRAWING FILE NAME:
ce_40-47_STREETSCAPE.dwg

REVISIONS

DESCRIPTION	DATE	BY
REVISED JOINT NOTES AND BRICK BOX.	2/26/2019	RMB

STANDARD DRAWING NO. 40

TYPICAL STREETSCAPE
CORRIDOR

SHEET 1 OF 1

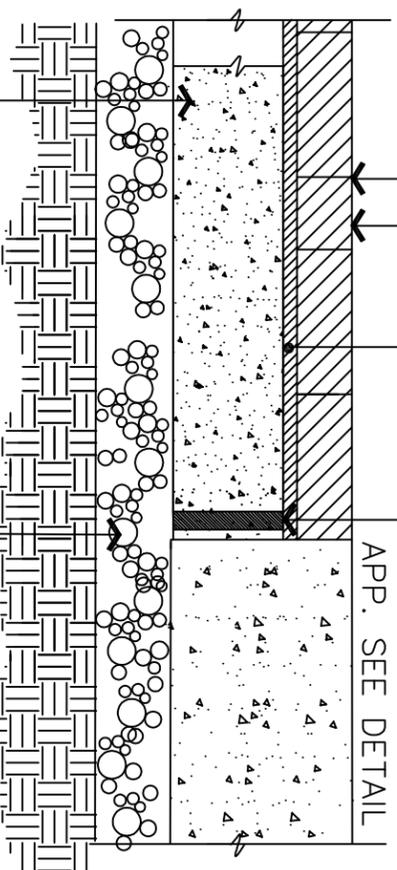
SWEEP JOINTS W/ POLYMERIC SAND – TECHNI SEAL OR EQUAL

BRICK PAVER / PERPENDICULAR HERRINGBONE

1" MAX COMPACTED SAND MORTAR ODOT 703.02 (ASTM C-33)
SETTING BED

FRAMING PIN WEEP HOLES
NOT TO EXCEED 4' O.C.

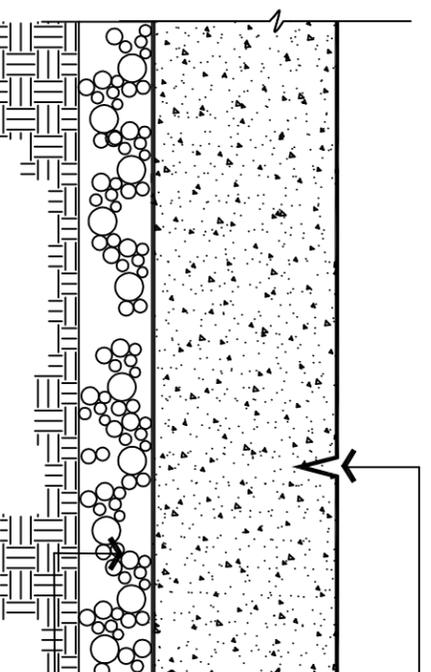
CONCRETE CROSSWALK
APP. SEE DETAIL



6" CONCRETE BASE 6" AGG. BASE, ODOT ITEM #304

NOTE: NO FOUNDRY SAND OR SLAG IS PERMITTED IN AGGREGATE BASE (304).

CROSSWALK DETAIL



TYPICAL TOOLED AND CUT CONTROL JOINT 1/4 DEPTH OF SLAB – SPACING OF JOINTS TO BE 4' O.C.
ALIGN CONCRETE CROSSWALK AND CONCRETE WALK JOINTS.

EXPANSION JOINTS – 1/2" CLOSED CELL EXPANSION JOINT FILLER TO BE SEALTIGHT CERAMAR OR
EQUAL – 60FT O.C. TYPICAL. SEAL EXPANSION JOINTS WITH POLYURETHANE ELASTOMERIC SEALANT
TYP. TREMCO THC 900/901 OR EQUAL.

10" ITEM 452 PLAIN PORTLAND CEMENT CLASS C (LIMESTONE)
CONCRETE PAVEMENT
COMPACTED AGGREGATE BASE
ODOT ITEM 304, 6" TYP.

4X8 BRICK PAVER, 2 3/4" THICK – ROADWAY PAVER BY
BELDEN BRICK – ASTM C1272 TRAFFIC TYPE F APPL. PX
WEATHER SX – 10,000 PSI – COLOR JUMBO REGIMENTAL
BRICK ALTERNATE – WHITACRE GREER 4 X 8-1/2 X 3-1/2
WEATHER CLASS SX, TRAFFIC F, APPLICATION PX – COLOR 33
DARK ANTIQUE – 10,000 PSI ASTM C1272
BRICK TO HAVE BEVELED EDGE AND LUGS.

USE PERPENDICULAR HERRINGBONE PATTERN IN INTERSECTION.

SWEEP JOINTS WITH DRY MIXTURE OF POLYMERIC SAND
Techni-Seal OR APPROVED EQUAL. USE PLATE TAMPER
WITH RUBBER MAT OR OTHER PROTECTION FOR BRICK.
REMOVE EXCESS AND MOISTEN TO SET JOINT SEALANT SAND.

1" MAX COMPACTED CONCRETE SAND ODOT 703.02
(ASTM C 33) SETTING BED W/ MORTAR.

USE INTERIOR FORMING PINS FOR WEEP HOLES ON
DOWNSLOPE SIDES AND INTERIOR CORNERS.

MAX 4 FT. CENTERS. – COVER W/ FILTER FABRIC.

CONCRETE CROSSWALK AND PAVER BASE IS TO BE CLASS "C"
ODOT 499.03 – HIGH EARLY. NO EXPANSION JOINTS ARE TO
BE PLACED AGAINST BRICK PAVER SECTIONS.

MAX 1/4" SPACE BETWEEN BRICK AND CONCRETE.
PROVIDE 1/4" RADIUS ON ALL SLAB EDGES.

ODOT REFERENCES ARE FROM THE CURRENT ODOT
CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY
DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S
DISCRETION.

ALL CONCRETE CONSTRUCTION TO CONFORM TO CURRENT CITY
OF CANTON SPECIFICATIONS FOR CONSTRUCTION, REPAIR AND
REPLACEMENT OF SIDEWALKS, CURBS AND DRIVEWAYS.

APPROVED DATE: FEB. 2012

APPROVED BY: JTD

DRAWING FILE NAME:
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REVISIONS

DESCRIPTION	DATE	BY
REVISED JOINT NOTES	2/26/2019	RMB

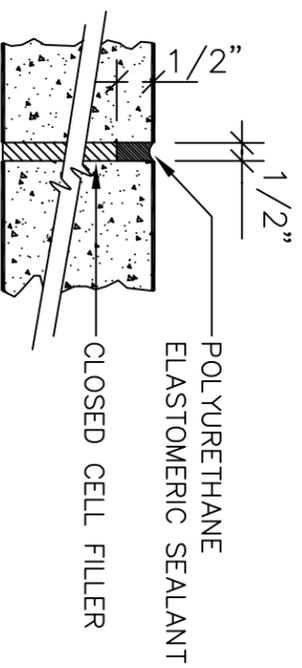
STANDARD DRAWING NO. 41

**ROADWAY BRICK &
CROSSWALK PAVEMENT**

**DETAILS
SHEET 1 OF 1**



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EXPANSION JOINT DETAIL
NOT TO SCALE

NOTES:

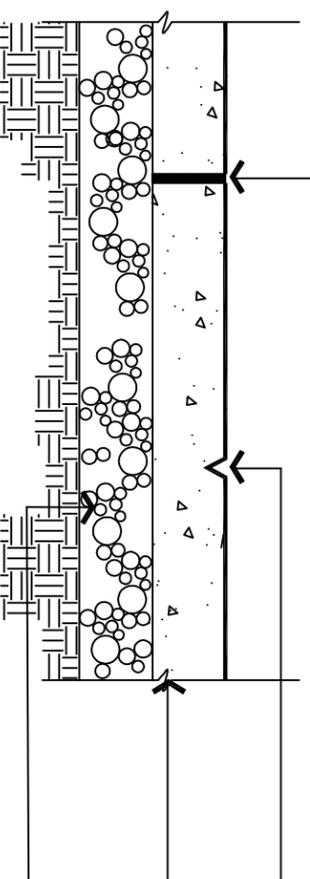
- EXPANSION JOINTS TO BE 60' MAX. O.C. CONTROL JOINTS TO BE @ 4' O.C. OR AS SHOWN ON PLAN OR DIRECTED BY ENGINEER.
- PROVIDE LIGHT BROOM FINISH ON ALL CONCRETE SURFACES AFTER JOINT & EDGE TOOLING. PROVIDE 1/4" RADIUS ON ALL SLAB EDGES.
- SAWCUT CONTROL JOINTS MAY BE PERMITTED IN STREETSCAPE AREAS IF APPROVED BY THE PROJECT ARCHITECT/ENGINEER AND THE CITY ENGINEER PRIOR TO BID AND CONSTRUCTION.
- CONCRETE WALK TO BE CLASS "C" ODOT 499 NO. 57 OR 67 LIMESTONE (SEE BELOW) NO EXPANSION JOINTS ARE TO BE PLACED AGAINST BRICK PAVEMENT SECTIONS

EXPANSION JOINT - 1/2" CLOSED CELL EXPANSION JOINT FILLER TO BE SEALTIGHT CERAMAR WITH 1/2" PEEL STRIP OR EQUAL. PLACE EXP. JOINTS AGAINST BUILDINGS, STRUCTURAL FOUNDATIONS, AND 60FT O.C. IN WALK, TYP. SEAL EXPANSION JOINTS WITH POLYURETHANE ELASTOMERIC SEALANT TREMCO TH 900/901 OR EQUAL.

TYPICAL TOOLED AND CUT CONTROL JOINT, 1/4 DEPTH OF SLAB

5" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT, ODOT ITEM 608 AND 499, AS PER PLAN.

4" COMPACTED THICKNESS AGGREGATE BASE COURSE, ODOT ITEM #304.



NOTE: NO FOUNDRY SAND OR SLAG IS PERMITTED IN AGGREGATE BASE (304). AGGREGATE IN SURFACE CONCRETE SHALL BE AASHTO M NO. 57 OR 67 LIMESTONE ONLY. ALL CONCRETE FOR CURB AND WALKS SHALL BE ODOT 499, CLASS C. CLASS C OPTION 1 MAY BE USED BETWEEN MAY 1 AND OCTOBER 15. AGGREGATE IN SURFACE CONCRETE SHALL BE NO. 57 OR 67 LIMESTONE ONLY.

ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.

ALL CONCRETE CONSTRUCTION TO CONFORM TO CURRENT CITY OF CANTON SPECIFICATIONS FOR CONSTRUCTION, REPAIR AND REPLACEMENT OF SIDEWALKS, CURBS AND DRIVEWAYS.



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DESCRIPTION	DATE	BY
REVISED JOINT NOTES	2/26/2019	RMB

STANDARD DRAWING NO. 42
STREETSCAPE CONCRETE
WALK PAVEMENT DETAILS

CONCRETE WALKWAY
PAVEMENT (SEE CITY STD. DWG. 29)

CONCRETE CONTRACTOR TO INSTALL 4' x 6' TREE GRATE AND FRAME, NEENAH R 8811 OR EJIW 8691, WITH CITY LOGO (SEE DETAIL ON SHEET 2). CITY PROVIDES GRATE AND FRAME ON PERMITTED PRIVATE PROJECTS ONLY.

1 INCH AASHTO M NO. 8 OR 9 WASHED GRAVEL ON WEED CONTROL FABRIC

TREE CONTRACTOR IS TO INSURE THAT TREE BALL IS PROPERLY SITUATED IN BOX SEE NOTE BELOW

CONCRETE COLLAR SUPPORTING FRAME/GRATE BY CONC. CONTRACTOR SEE FRAME SPECS.

BRICK WALKWAY PAVEMENT (SEE CITY STD. DW'G 40)
NO EXPANSION AGAINST BRICK

#3 REBARS INSTALLED THROUGH FRAME LUGS FOR NEENAH R-8811 FRAME

4" COMPACTED THICKNESS AGGREGATE ODOT #304(M)

TREE CONTRACTOR TO PROVIDE AND PLACE PLANTING SOIL MIX/TREE PIT TOPSOIL PER INDUSTRY STANDARDS FOR TREES AND SHRUBS.

REMOVE ALL CORDING FROM AROUND TREE TRUNK AND ROOT BALL. BURLAP WRAP AND WIRE RETAINER IS TO BE REMOVED ENTIRELY, UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER OR THE CITY ARBORIST. ROOT FLARE IS TO BE EXPOSED FOR INSPECTION TO ENSURE NO GIRDLING AND PROPER PLANTING DEPTH.

NOTES:

- CONCRETE COLLAR TO BE FORMED USING 2 X 6 (FRAME SUPPORTED METHOD) OR 2 X 8 (INSIDE FORM METHOD)
- ASSURE THAT CONCRETE COMPLETELY FILLS FORMS W/ NO VOIDS. AFTER FORM REMOVAL GROUT ALL HONEYCOMB VOIDS.
- TREE BOX TO BE CLEARED TO LIMIT SHOWN BY CONCRETE CONTRACTOR. CONTRACTOR TO SET GRATE AND INSURE PROPER FIT WITH NO ROCKING OR BINDING. COVER OPENING TO PREVENT PEDESTRIAN TRIP HAZARD.
- CONTRACTOR MUST THOROUGHLY SATURATE ROOT BALL AND SURROUNDING SOILS WITH WATER UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER OR CITY ARBORIST.
- PRE-EMERGENT (PREEN OR APPROVED EQUAL) IS TO BE PLACED OR INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- STAKING OF TREE IS REQUIRED WHEN ROOT BALL IS UNSTABLE OR AS DIRECTED BY CITY ARBORIST OR CITY ENGINEER
- TREE TO BE GUARANTEED FOR TWO GROWING SEASONS.

- CONCRETE CONTRACTOR IS TO PROVIDE A UNIT LUMP SUM PRICE FOR THE FORMING AND PLACING OF THE CONCRETE COLLAR COMPLETE WITH THE SETTING OF THE FRAME AND GRATE, INCLUDING REMOVAL OF ALL CONSTRUCTION DEBRIS FROM TREE VAULT.

- TREE CONTRACTOR TO PROVIDE AND PLANT TREES, INCLUDING EXCAVATION FOR TREE ROOT BALLS AND ALL MATERIALS SPECIFIED IN PROPOSAL.

304 (M) - NO FOUNDRY SAND, ACBFS, GS OR OTHER SLAG PERMITTED



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APPROVED DATE: FEB. 2012

APPROVED BY: JTD

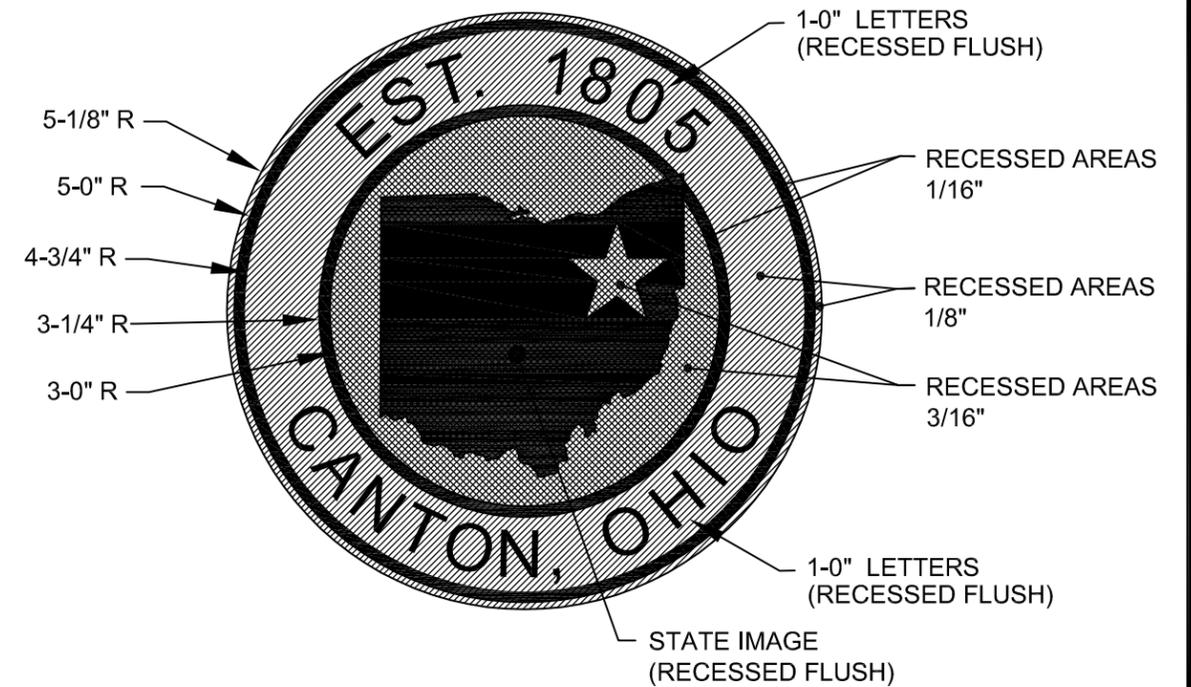
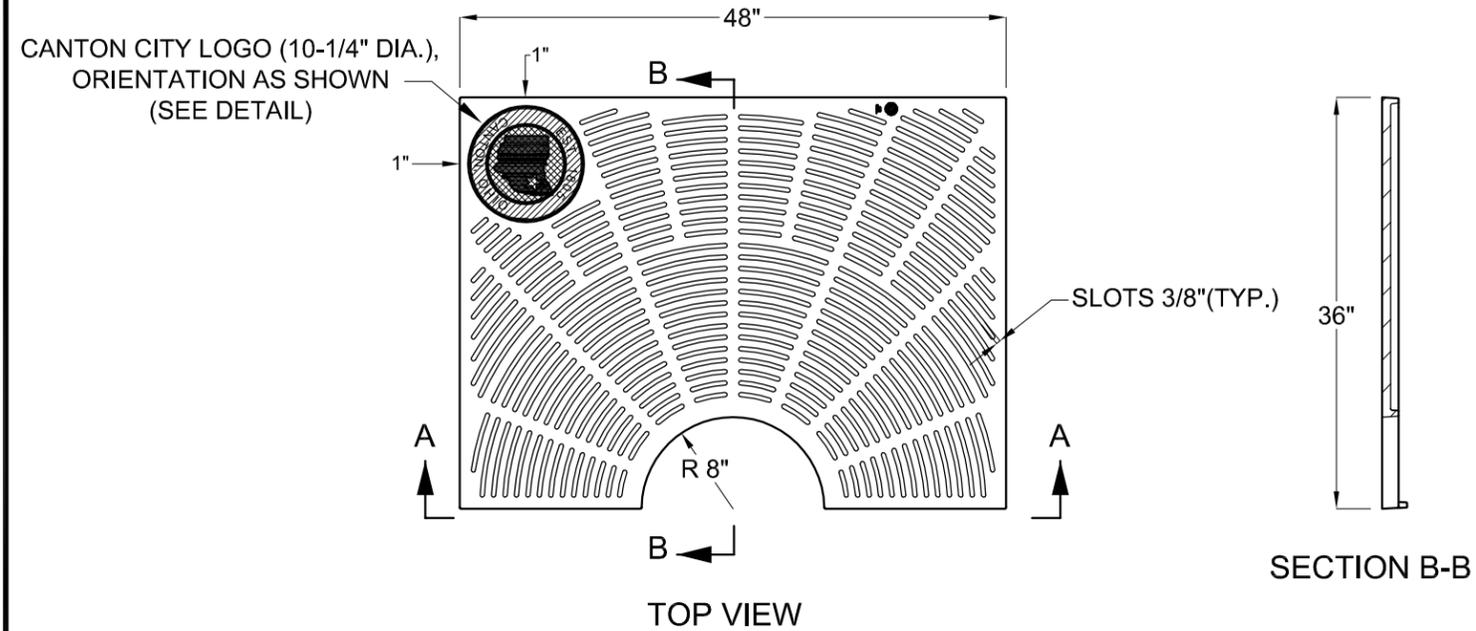
DRAWING FILE NAME:
ce_40-47_STREETSCAPE.dwg

REVISIONS

DESCRIPTION	DATE	BY
REVISED TREE GRATE, ADD CITY LOGO	APRIL 2014	RMB
PLANTING NOTES, EDITED	DEC 2017	KEG

STANDARD DRAWING NO. 43

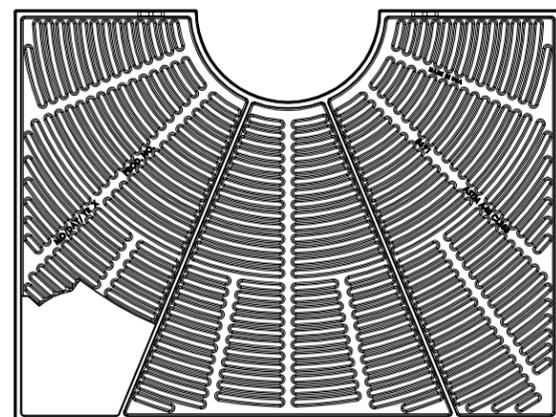
TREE FRAME & GRATE
CONSTRUCTION DETAILS



CITY LOGO, TREE GRATES
DETAIL

NOTES:

1. TREE GRATES TO BE CAST OF GRAY IRON IN COMPLIANCE WITH ASTM SPEC. ASTM A-48 CLASS 35. GRATES MUST INCLUDE CANTON CITY LOGO AS SHOWN.
2. FRAMES FOR TREE GRATES TO BE MANUFACTURED OF STEEL DESIGNED FOR HEAVY LOADS. ENTIRE FRAMES MUST BE COATED WITH ONE COAT OF BLACK PAINT SUITABLE FOR FABRICATED STEEL.
3. APPROVED TREE GRATE AND FRAME PRODUCTS:
 - EAST JORDAN 8691
 - NEENAH R 8811
 - OR APPROVED EQUAL.
4. CONTACT CITY ENGINEER FOR CAD DRAWING OF CITY LOGO.



BOTTOM VIEW



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APPROVED DATE: MAY 2014

APPROVED BY: RMB

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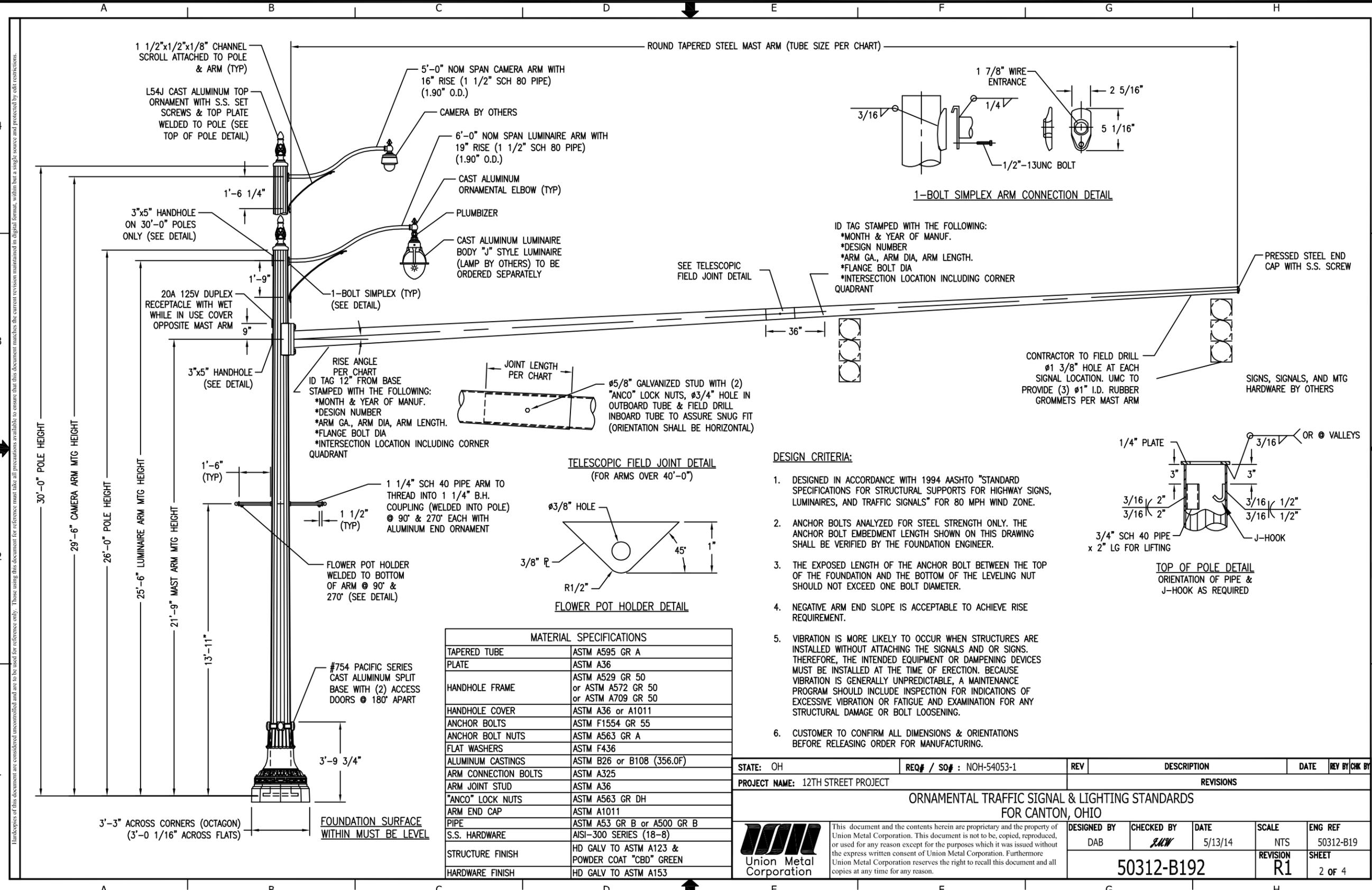
REVISIONS

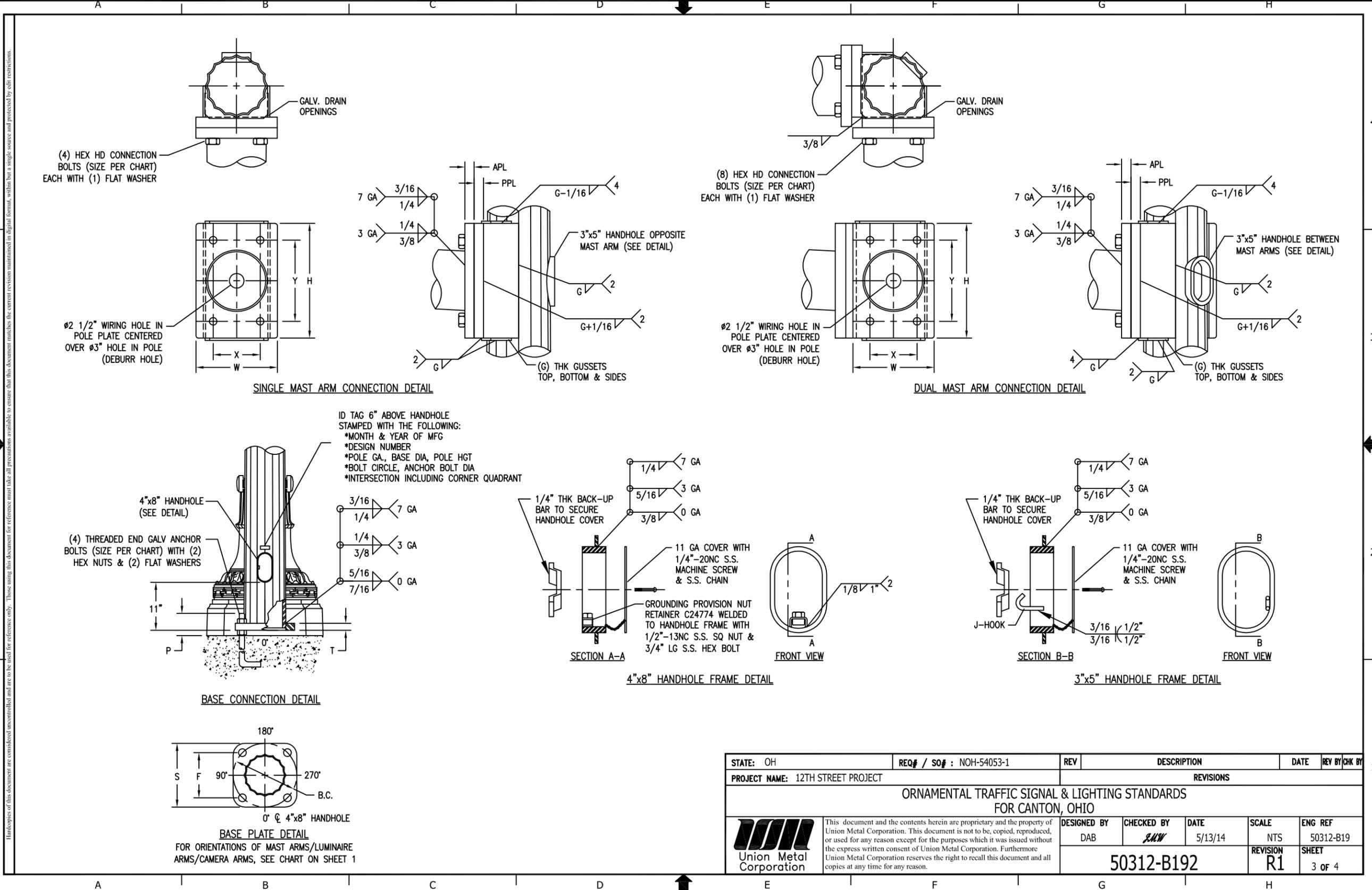
DESCRIPTION	DATE	BY
REVISED TREE GRATE, ADD CITY LOGO	MAY 2014	RMB

STANDARD DRAWING NO. 43

TREE FRAME & GRATE
CONSTRUCTION DETAILS

SHEET 2 OF 2





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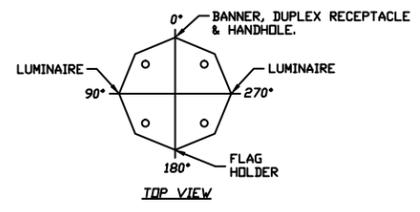
APPROVED BY: EEM

DRAWING FILE NAME:
 ce_61-65_LIGHTPOLES.dwg

REVISIONS		
DESCRIPTION	DATE	BY
INSERTED UM DRAWING 50312-B192	4/17/15	EGM

STANDARD DRAWING NO. 62
NOSTALGIC POLE FOUNDATION & WIRING DIAGRAM
 SHEET 2 OF 5

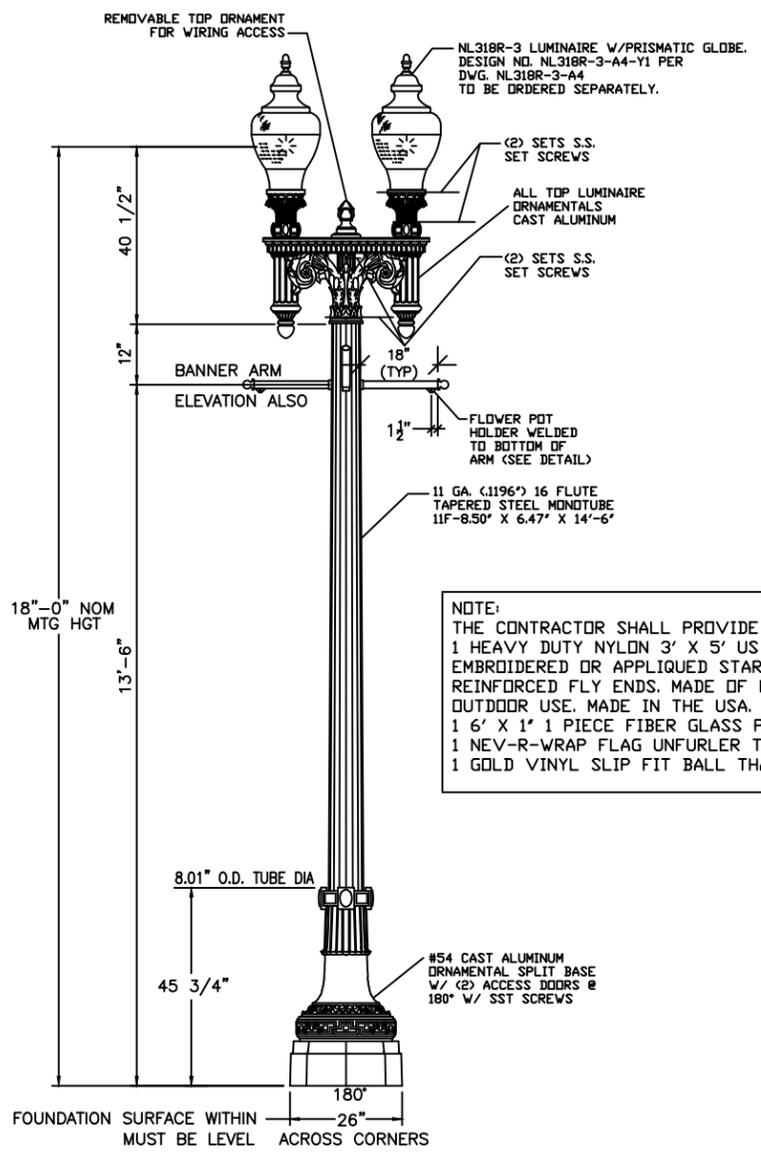
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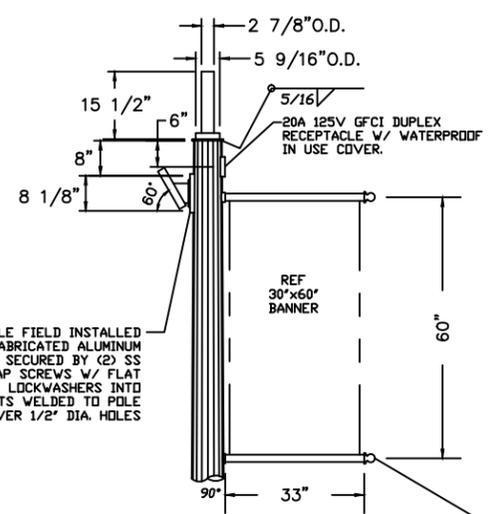
MATERIAL SPECIFICATIONS

MONOTUBE	EQUAL TO ASTM-A595 GR A
PLATES	ASTM-A36
TUBING	ASTM-A513
PIPE	ASTM-A53 GRB, A501
ALUM CASTINGS	ASTM B26 356.0
HANDLE FRAME	ASTM-A509 GR50/A709 GR50
HANDLE COVER	C1010 STEEL
ALUM PLATE, PIPE	ASTM B209, 210, 221, 241 6061, 6063
ANCHOR BOLTS	ASTM-F1554 GR55
ANCHOR BOLT NUTS	ASTM-A563 GRA
FLAT WASHERS	ASTM-F436
SST HARDWARE	A193-300 SERIES (18-8)
HARDWARE FINISH	GALVANIZED ASTM-A153
STRUCTURE FINISH	GALVANIZED ASTM-A123
FINISH	POWDER OVER GALV. CANTON CBD GREEN

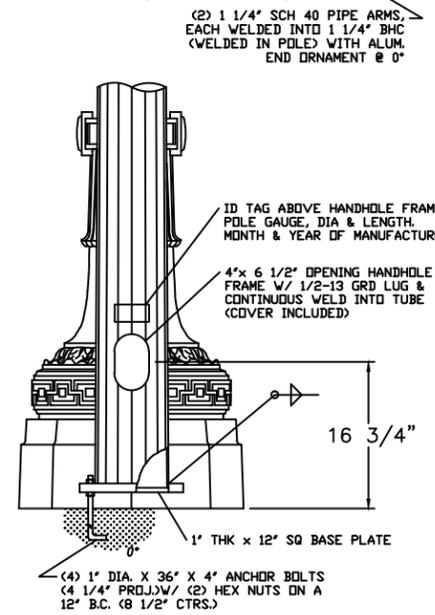
STRUCTURE DESIGNED IN ACCORDANCE WITH 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY TRAFFIC SIGNS, LUMINAIRES & TRAFFIC SIGNALS FOR 90 MPH WIND ZONE.



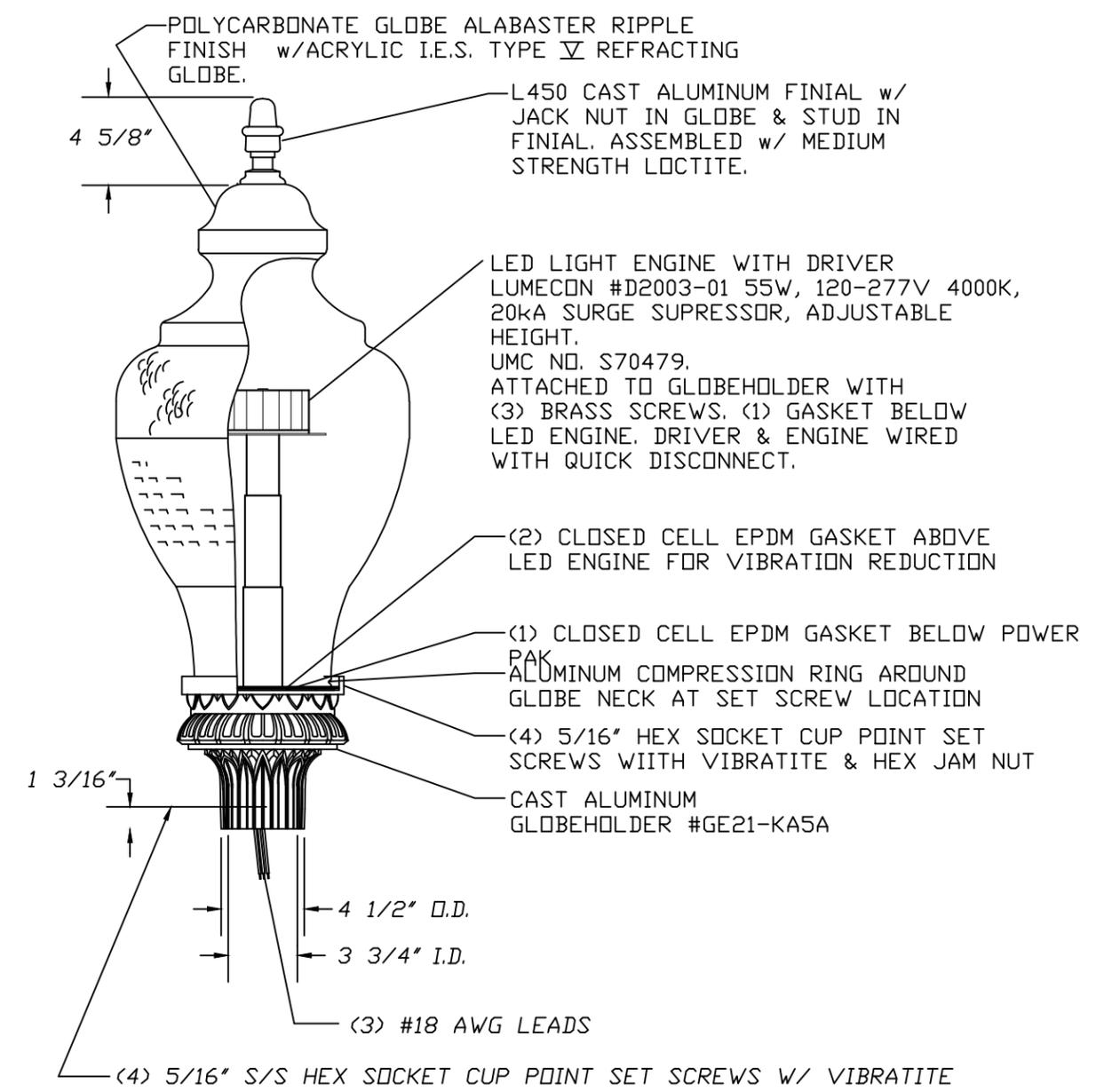
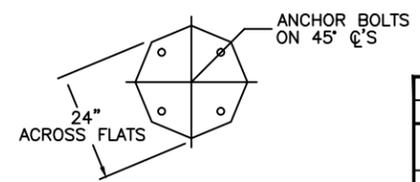
NOTE:
 THE CONTRACTOR SHALL PROVIDE PER LIGHT POLE:
 1 HEAVY DUTY NYLON 3' X 5' US FLAG CONSTRUCTED WITH EMBROIDERED OR APPLIED STARS, SEWN STRIPS AND REINFORCED FLY ENDS. MADE OF NYLON, MANUFACTURED FOR OUTDOOR USE. MADE IN THE USA.
 1 6' X 1' 1 PIECE FIBER GLASS POLE.
 1 NEV-R-WRAP FLAG UNFURLER THAT FITS 1' POLE DIAMETER.
 1 GOLD VINYL SLIP FIT BALL THAT FITS 1' POLE DIAMETER.



REMOVABLE FIELD INSTALLED CAST & FABRICATED ALUMINUM FLAGHOLDER SECURED BY (2) SS 3/8" DIA. CAP SCREWS W/ FLAT WASHER & LOCKWASHERS INTO HEX NUTS WELDED TO POLE CENTERED OVER 1/2" DIA. HOLES



NOTES:
 1. HD GALV & POWDER COATED FINISH, CITY OF CANTON CBD GREEN.



NOTES:
 1. GLOBEHOLDER & FINIAL POWDER COATED CITY OF CANTON CBD GREEN.
 2. GLOBE STREET SIDE POSITIONED BETWEEN TWO LED BARS. STREET SIDE OF LUMINAIRE MARKED ON OUTSIDE OF GLOBEHOLDER.

STATE: OHIO	REQ# / SO# : NOH54053	REV	DESCRIPTION	DATE	REV BY/CHK BY
PROJECT NAME: NOSTALGIA_LUMINAIRE_NL318R_WITH_LED_&_GE21_KA5A_GLOBEHOLDER					
DESIGN NUMBER B2473-54-B37-Y1					
DESIGNED BY: DGNR		CHECKED BY: [Signature]	DATE: [Blank]	SCALE: NONE	ENG REF: N2473-54-B35
N2473-54-B37		REVISION: REV	DATE: [Blank]	SHEET: [Blank]	SHT OF SHTS: [Blank]

STATE: OHIO	REQ# / SO# : NOH54508	REV	DESCRIPTION	DATE	REV BY/CHK BY
PROJECT NAME: NOSTALGIA_LUMINAIRE_NL318R_WITH_LED_&_GE21_KA5A_GLOBEHOLDER					
DESIGN NUMBER NL318R-3-A4-Y1					
REVISIONS					
R1	5/16" SET SCREWS WAS 1/4". VIBRATITE WAS NYLOCK	3/10/15	MB	MB	
DESIGNED BY: [Blank]					
CHECKED BY: [Blank]					
DATE: [Blank]					
SCALE: NONE					
ENG REF: NL318R-3-A3					
NL318R-3-A4					
REVISION: [Blank]					
SHEET: [Blank]					
- OF -					

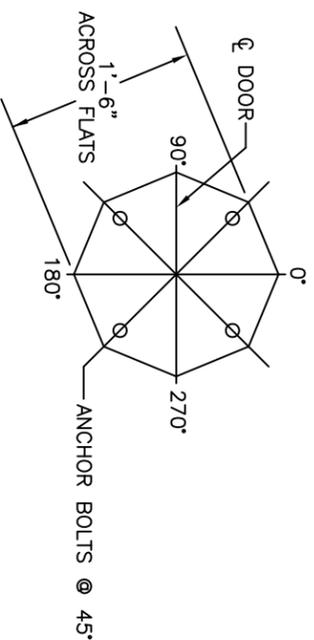
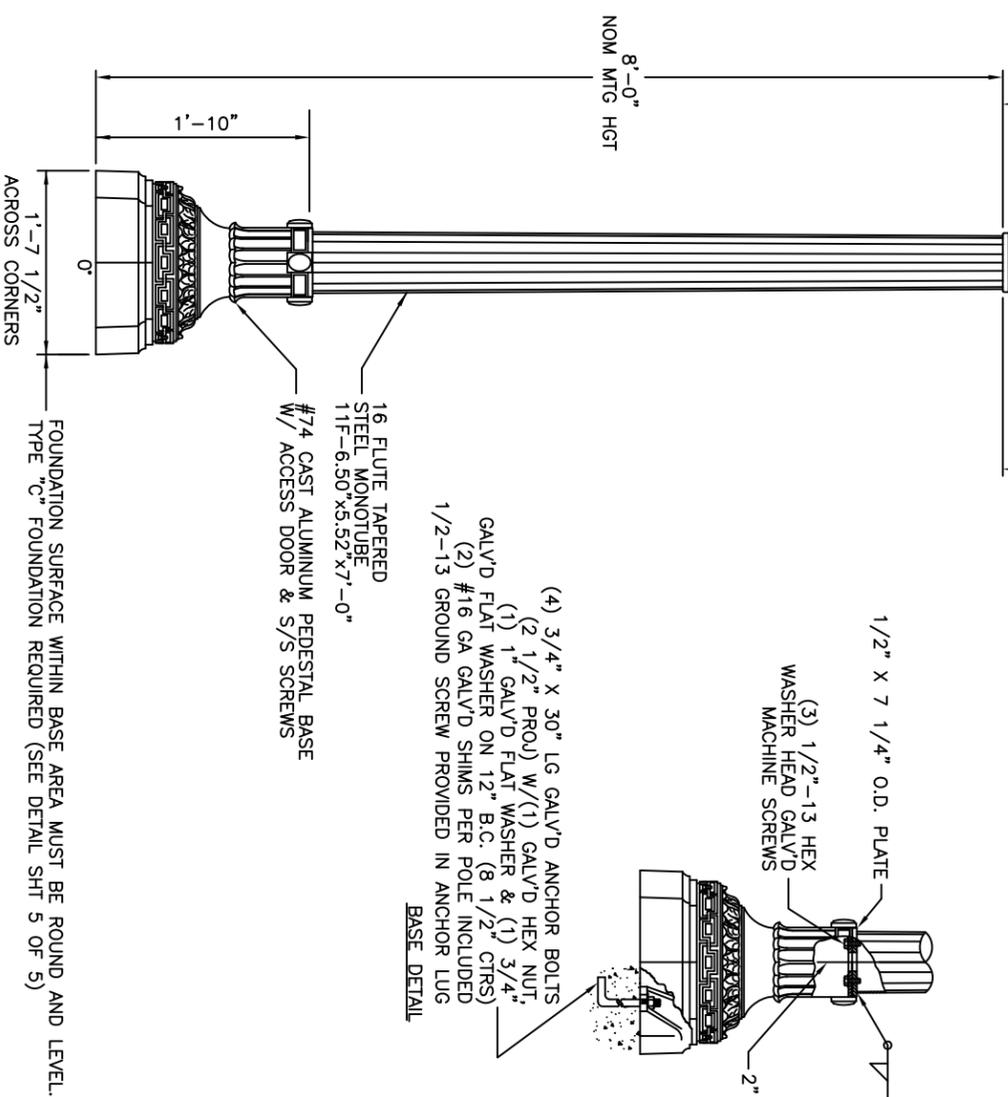
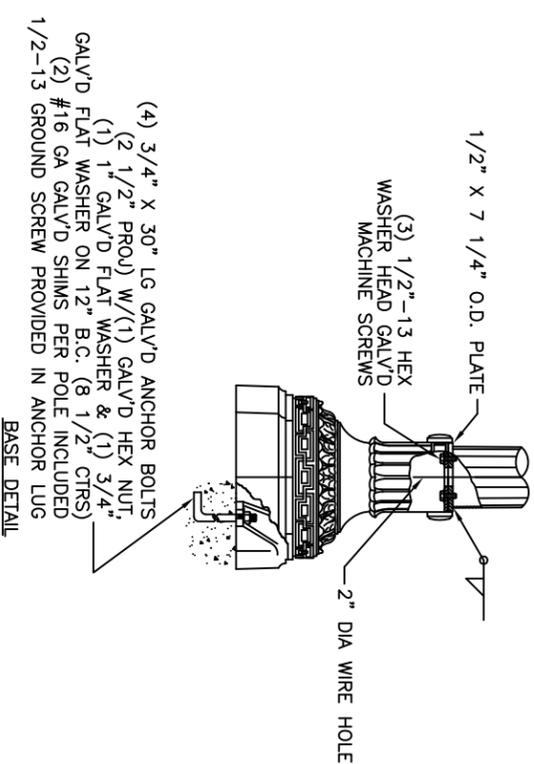
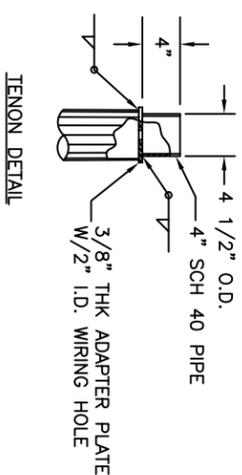
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APPROVED DATE: MARCH 2014
 APPROVED BY: EEM
 DRAWING FILE NAME: ce_61-65_LIGHTPOLES.dwg

REVISIONS		
DESCRIPTION	DATE	BY
INSERTED UM DRAWINGS	4/17/15	EGM
N2473-54-B37 & NL318R-3-A4		
FLOWER POT HOLDERS ADDED	8/23/16	EGM
LED ENGINE UPDATE	7/6/2018	RMB

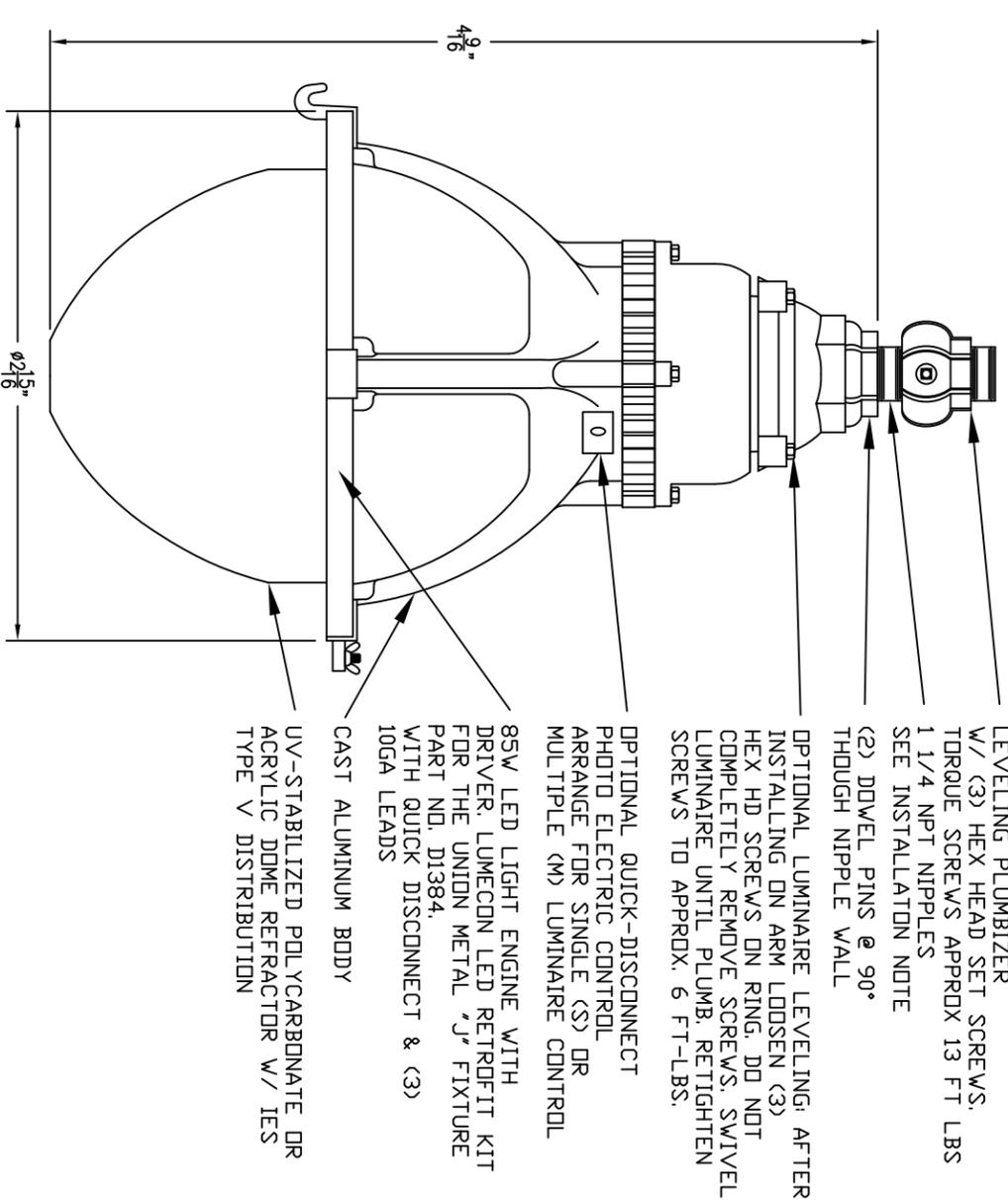
STANDARD DRAWING NO. 63
NOSTALGIA LIGHT POLE & LUMINAIRE
 SHEET 3 OF 5

SIGNAL BY OTHERS



ORNAIMENTAL PEDESTRIAN POLE DESIGNED FOR CANTON, OHIO	
U.M.C. DESIGN NO. P2000-74-B9-Y1	
LOF _____	S.O.# _____
REQ.# 0329-40-98	ENG. REF.# _____
Union Metal CORPORATION	
DRAWN WUC	DRAWING NO. N2000-74-B9
DATE 4/24/98	
CHECKED GMP	

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INSTALLATION NOTE:
 USE PIPE SEALANT ON ALL PIPE THREADS BEFORE ASS'Y. THE THREADS SHOULD ENGAGE 3-4
 TURNS BY HAND AND AN ADDITIONAL 2-4 TURNS WITH A WRENCH TO ENSURE A SECURE
 CONNECTION. TORQUE SHOULD INCREASE GRADUALLY WHILE TIGHTENING WITH A WRENCH. DO
 NOT OVER TIGHTEN, A MINIMUM OF 2 THREADS SHOULD BE VISIBLE AFTER TIGHTENING. IF
 TORQUE INCREASES SUDDENLY OR BOTTOMS OUT WHILE TIGHTENING, IF
 DO NOT INSTALL LUMINAIRE. CONSULT FACTORY BEFORE PROCEEDING.

DESIGN NUMBER	PEC OPTION
NLJ1-110-A14-Y1	MULTIPLE
NLJ1-110-A14-Y2	NONE
NLJ1-110-A14-Y3	SINGLE

WEIGHT 40 LBS. MAX. EPA 1/2 SQ. FT.

STATE: OHIO	REQ# / SOF : NOH54508	REV	DESCRIPTION	DATE	REV BY/CHK BY
PROJECT NAME: CITY OF CANTON STANDARD LED					
"J" STYLE LUMINAIRE WITH 110 TYPE GLOBE AND LUMECON LED PENDANT					
		DESIGNED BY	CHECKED BY	DATE	SCALE
		MB	MB	7/15/14	1:5
		NLJ1-110-A14	REVISION	SHEET	ENG REF
			R0	1 OF 1	NLJ1-110-A2

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REVISIONS

DESCRIPTION	DATE	BY
INSERTED UM DRAWING NLJ1-110-A14	4/17/15	EEM
NEW LED RETROFIT KIT SPEC.	8/26/16	EEM

STANDARD DRAWING NO. 64
 NOSTALGIC POLE FOUNDATION &
 WIRING DIAGRAM
 SHEET 4 OF 5



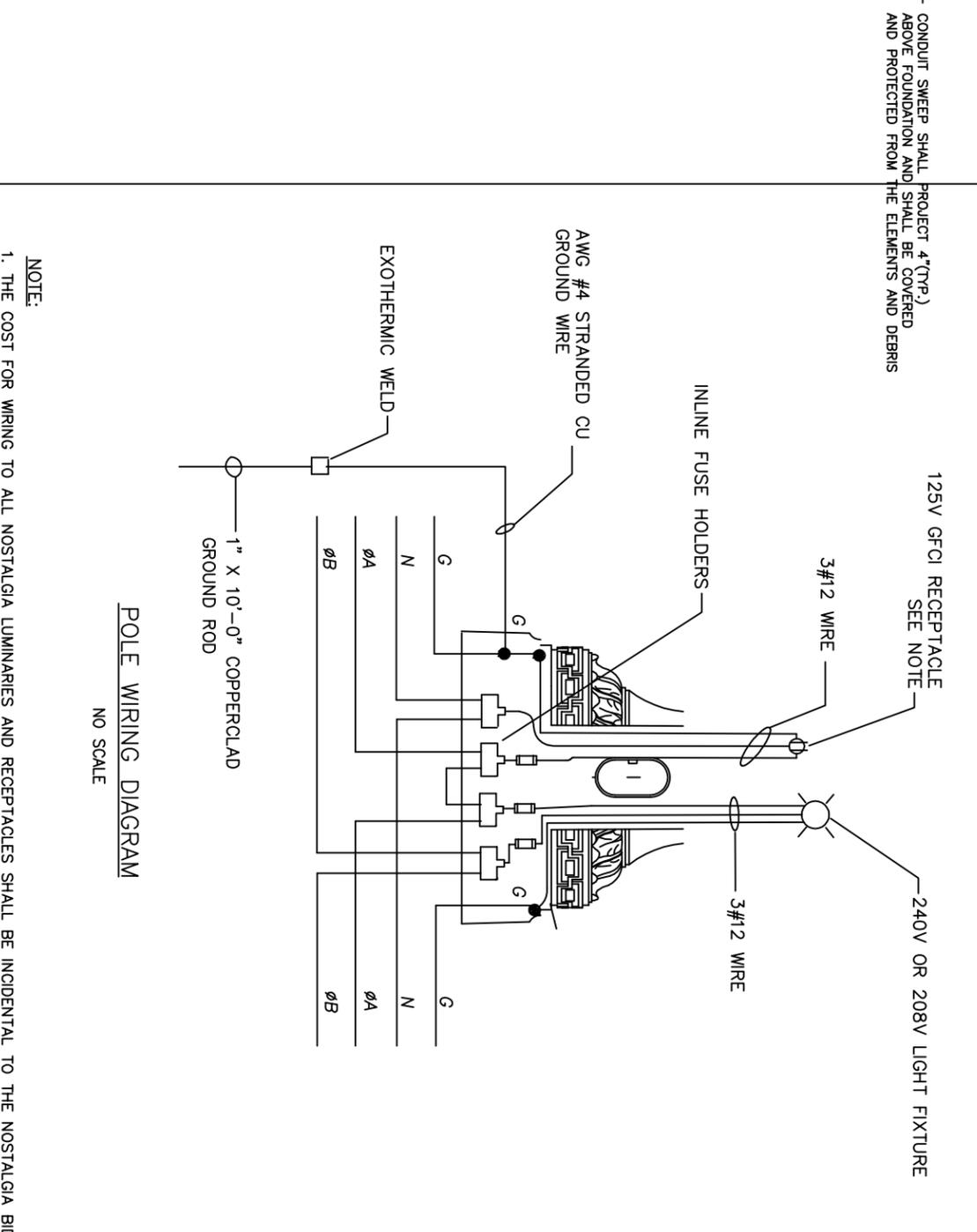
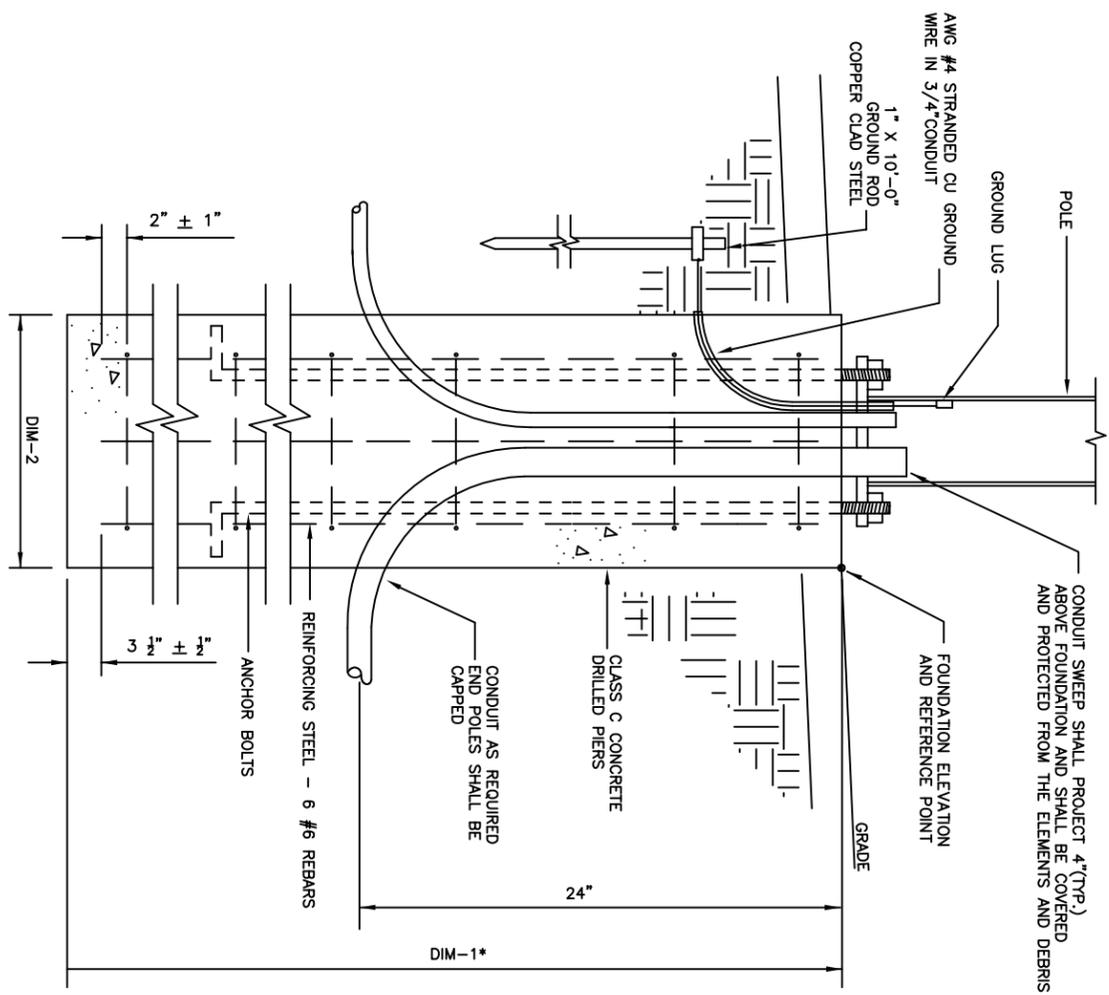
OFFICE OF THE CITY ENGINEER
CANTON, OHIO

DANIEL J. MOEGLIN, P.E., CITY ENGINEER
 2436 30th St. NE 44705 : 330-409-3381 : www.cantonohio.gov/engineering

APPROVED DATE: APRIL 2012

APPROVED BY: EEM

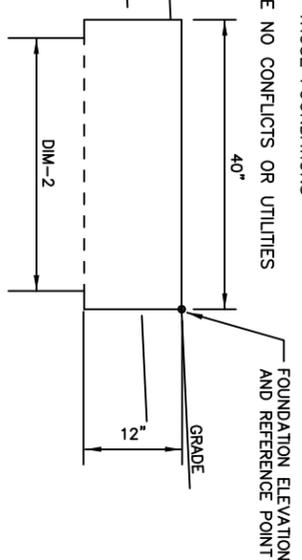
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 ce_61-65_LIGHTPOLES.dwg



- NOTES:**
1. ALL FOUNDATIONS SHALL BE DRILLED PIERS TO AVOID DISTURBING SURROUNDING SOIL. A TEMPORARY STEEL CASING MAY BE REQUIRED. IF UTILITIES OR ANOTHER CONFLICT IS IN CLOSE PROXIMITY TO THE FOUNDATION, THEN THOSE FOUNDATIONS MAY HAVE TO BE EXCAVATED BY HAND.
 2. PRE-CAST LIGHT POLE FOUNDATIONS, 30" X 72", WILL BE PERMITTED AT LOCATIONS WHERE THERE ARE NO CONFLICTS OR UTILITIES PROHIBITING PLACEMENT.
 3. ANCHOR BOLT PATTERN SHALL BE PROVIDED BY POLE MANUFACTURER (U.M.C.).
 4. REINFORCING STEEL SHALL BE ASSEMBLED IN CAGES USING #4 TIES AT 24" (MAX.) CENTER.
 5. FOUNDATION TOP SHALL BE ROUND AND LEVEL TO ACCOMMODATE DECORATIVE BASE.
 6. TOP OF FOUNDATION SHALL BE AT LEAST 1" ABOVE PROJECTED FINISHED SIDEWALK GRADE.

FOUNDATION	DIM-1*	DIM-2
SIGNAL (16" BOLT CIRCLE)	9'-0"	36"
SIGNAL (>16" BOLT CIRCLE)	11'-0"	36"
LUMINARIES	6'-0"	30"
PEDESTRIAN	4'-0"	24"

* MINIMUM DEPTH MAY VARY BASED ON SOIL CONDITION.



CAP FOR SIGNAL POLE WITH >16" BOLT CIRCLE. CAP IS NECESSARY TO ACCOMMODATE DECORATIVE BASE.

- NOTE:**
1. THE COST FOR WIRING TO ALL NOSTALGIA LUMINARIES AND RECEPTACLES SHALL BE INCIDENTAL TO THE NOSTALGIA BID ITEMS. ALL WIRING IN POLES AND CONDUITS TO LIGHTS AND RECEPTACLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 2. ALL WIRING INTO EACH NOSTALGIA POLE BASE SHALL BE NO. 6 AWG WIRE AND CONNECTED TO IN-LINE FUSE HOLDERS. THE COST FOR THIS WIRE SHALL BE INCIDENTAL TO THE NOSTALGIA BID ITEMS.
 3. IN-LINE FUSE HOLDERS SHALL BE BUSSMAN (HEB-AW-RYC). INSTALL FUSES IN PHASE LINES AND SOLID LINK IN NEUTRAL (HET-AW-RYC) FOR GROUND USE SPLIT BOLT CONNECTOR. COPPER GROUND CABLE SHALL BE EXOTHERMICALLY WELDED TO THE GROUND ROD. RUN CABLE FREE END THROUGH 3/4" EMT AND CONNECTED AS SHOWN IN THE POLE WIRING DIAGRAM. THE COST FOR THE IN-LINE FUSE HOLDERS AND ALL RELATED ITEMS SHALL BE INCIDENTAL TO THE NOSTALGIA BID ITEMS.
 4. THE POLE RECEPTACLE SHALL BE ALTERNATELY WIRED TO PHASE A AND PHASE B AS SHOWN IN THE POLE WIRING DIAGRAM.
 5. FOR LIGHTS, USE 5 AMP FUSES. FOR RECEPTACLES, USE 10 AMP FUSES. AMP RATINGS SHALL BE BASED UPON 75 DEGREE C RATINGS.
 6. UNLESS OTHERWISE NOTED IN THESE PLANS, ALL WIRING SHALL BE MINIMUM NO. 12 AWG, COPPER, 600 VOLT RATED WITH THE EXCEPTION OF NO. 14 AWG, COPPER SHALL BE PERMISSIBLE FOR CONTROL CIRCUITRY. THE FOLLOWING SHALL APPLY TO ALL WIRING:
 - A. ALL WIRING SHALL BE STRANDED "XHNN/XHWN".
 - B. UNDERGROUND BRANCH CIRCUIT WIRING SHALL BE "XHHW".
 7. CONDUCTORS SHALL BE PULLED FROM LIGHT POLE TO LIGHT POLE AND FROM LIGHTING CONTROL PANEL TO LIGHT POLE WITHOUT SPLICES.



OFFICE OF THE CITY ENGINEER
CANTON, OHIO

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 2436 30th St. NE 44705 : 330-409-3381 : www.cantonohio.gov/engineering

APPROVED DATE: MARCH 2014
APPROVED BY: EEM
DRAWING FILE NAME: ce_61-65_LIGHTPOLES.dwg

REVISIONS	DESCRIPTION	DATE	BY
	MODIFIED DIMS AND OTHER CHANGES	4/29/14	NJL
	MODIFIED FOUNDATION NOTES	2/21/17	EGM

STANDARD DRAWING NO. 65

NOSTALGIC POLE FOUNDATION & WIRING DIAGRAM

SHEET 5 OF 5

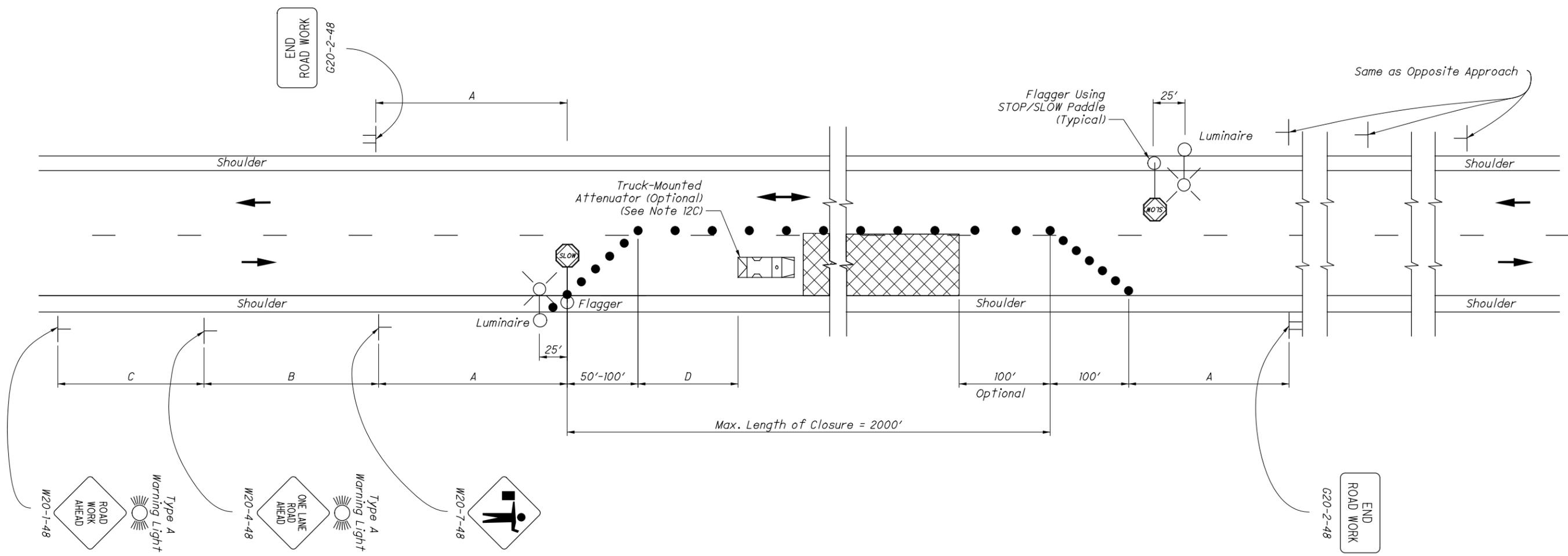
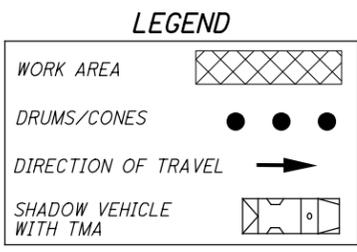


TABLE I (SIGN SPACING)

ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
Two-Lane (≤ 40 MPH)	100	100	100
Two-Lane (45-50 MPH)	350	350	350
Two-Lane (55-60 MPH)	500	500	500

TABLE II

SPEED LIMIT (MPH)	BUFFER (D) (FT) MIN.
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570



THIS DRAWING REPLACES MT-97.10 DATED 07-18-2014.

STANDARD ROADWAY CONSTRUCTION DRAWING

FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY - STATIONARY OPERATION

MT-97.10

STATE ENGINEER

Soisson

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR

David L. Holstein

REVISION DATE

04-19-2019

NOTES:

FLAGGERS

- 1. *Flaggers, one for each direction, shall be used to control traffic continuously for as long as a one lane operation is in effect. The flaggers shall be able to communicate with each other at all times.*

LENGTH OF CLOSURE

- 2. *Several small work areas close together should be combined into one work zone. However, the closure shall not be more than 2000' long unless approved by the Engineer. The minimum length between closures shall be 2000'. Only one side of the road shall be closed in any one work zone.*

SIGN LOCATION AND SPACING

- 3A. *The minimum spacing between work zone signs is shown in Table 1. Maximum spacing should not be greater than 1.5 times the distances shown in Table 1.*
- 3B. *Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200' for speeds of 45 mph or less and a minimum of 400' for speeds of 50 mph or greater.*
- 3C. *The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

ADJUSTMENTS FOR SIGHT DISTANCE

- 4. *The location of the flagger station and the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

BASIC SIGNING

- 5A. *ROAD WORK AHEAD (W20-1) signs shall be provided on entrance ramps or roadways entering the work limits.*
- 5B. *END ROAD WORK (G20-2) signs are only required for lane closures of more than 1 day. If it is intended that these signs be placed on the mainline, on all exit ramps, and on roadways exiting the work limits.*
- 5C. *Overlapping of signing for adjacent projects should be avoided where the messages could be confusing. Any ROAD WORK AHEAD (W20-1) or END ROAD WORK (G20-2) sign which falls within the limits of another traffic control zone shall be omitted or covered during the period when both projects are active.*

SIGNING DETAILS

- 6A. *The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.*
- 6B. *36" warning signs may be used when the approach speed limit is 40 mph or less.*

FLASHING WARNING LIGHTS

- 7. *Type A flashing warning lights shown on the ROAD WORK AHEAD (W20-1) signs and on the LANE CLOSED AHEAD (W20-5) signs are required whenever a night lane closure is necessary.*

DRUMS / CONES

- 8A. *Drum spacing shall be as follows:*
 - a) *Spacing along the closure shall be 40' center-to-center.*
 - b) *Spacing along the approach taper shall be 10' center-to-center.*
- 8B. *Cones may be substituted for drums as follows:*
 - a) *Cones used for daytime traffic control shall have a minimum height of 28".*
 - b) *Cones used for nighttime traffic control shall have a minimum height of 42".*
 - c) *Use of cones at night shall be prohibited along tapers.*
- 8C. *Provisions shall be made to stabilize the cones and drums to prevent them from blowing over.*
- 8D. *A minimum of two drums shall be used to close the paved shoulder.*

(RESERVED FOR FUTURE USE)

- 9A. *(intentionally blank)*

AREA ILLUMINATION

- 10A. *Adequate area illumination of each flagger station shall be provided at night. Use of portable flood lighting is acceptable. Luminaires shall be located adjacent to each flagger station.*
- 10B. *To ensure the adequacy of floodlight placement and the elimination of glare, the Contractor and the Engineer shall drive through the worksite each night when the lighting is in place. Light placement and shielding shall be adjusted to the satisfaction of the Engineer.*

INTERSECTION / DRIVEWAY ACCESS

- 11. *Within the length of closure, provision shall be made to control traffic entering from intersecting streets and major drives as necessary to prevent wrong-way movements and to keep vehicles off of new pavement not ready for traffic. The Contractor shall:*
 - a) *Place across the closed lane, either three drums (cones) or barricades, and/or*
 - b) *Provide an additional flagger at every public street intersection and major driveway.*
- Drums (cones) placed across the closed lane shall be located 25' beyond the projected pavement edges of the driveway or cross highway, as shown in Standard Construction Drawings (SCDs) MT-97.11 or MT-97.12. For barricades, see SCD MT-101.60.*

Existing STOP signs shall be relocated as necessary to assure proper location for the traffic conditions.

The method of control shall be subject to the approval of the Engineer.

SHADOW VEHICLE

- 12A. *The shadow vehicle shall be in place and unoccupied whenever workers are in the work area. This vehicle shall be removed from the pavement whenever workers are not in the work area.*
- 12B. *The shadow vehicle shall be equipped with a high-intensity yellow rotating, flashing, oscillating, or strobe light(s).*
- 12C. *The shadow vehicle shall be equipped with a truck-mounted or trailer attenuator (TMA) in accordance with CMS 614.03 when called for in the plans.*

CHIP SEAL OPERATIONS

- 13. *For chip seal operations, additional signing shall be incorporated in the advanced warning area.*
 - a) *The LOOSE GRAVEL (W8-7) and FRESH TAR (W21-2) signs shall both be used in advance of the chip seal operation.*
 - b) *Repeat the LOOSE GRAVEL sign with a 35 mph Advisory Speed (W13-1) plaque every half mile per CMS 422.09.*
 - c) *The FRESH TAR and the LOOSE GRAVEL signs shall both be used for signing of side roads intersecting the work area.*

THIS DRAWING REPLACES MT-97.10 DATED 07-18-2014.

STANDARD ROADWAY CONSTRUCTION DRAWING

FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY - STATIONARY OPERATION

SCD NUMBER
MT - 97.10

OFFICE OF
ROADWAY
ENGINEERING

STATE ENGINEER
Soisson

STATE OF OHIO DEPARTMENT OF
TRANSPORTATION ADMINISTRATOR
David L. Holstein

REVISION DATE
04-19-2019

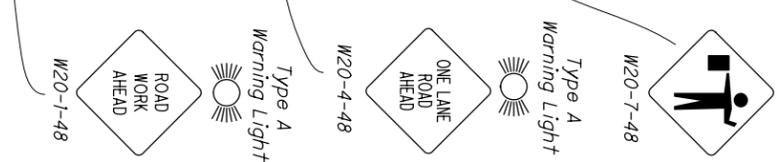
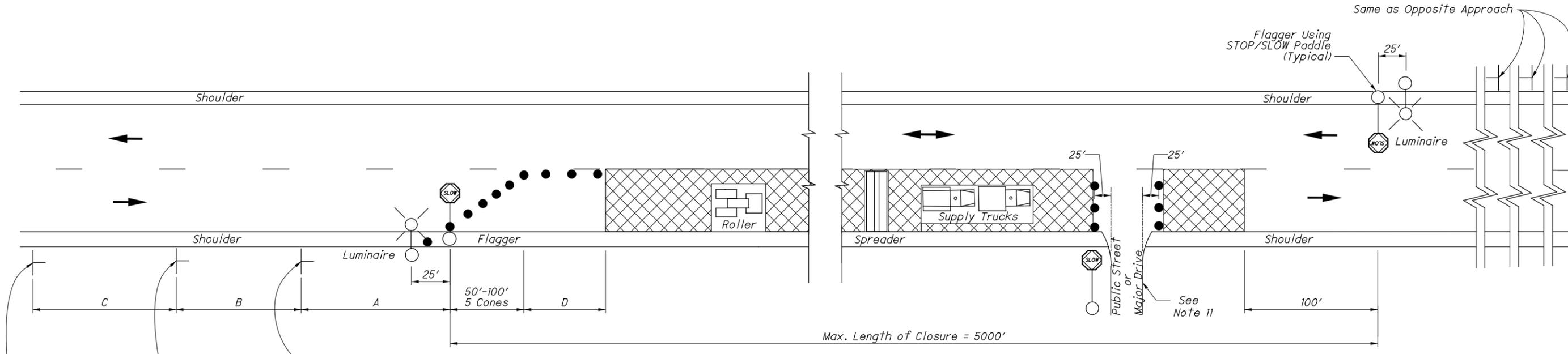
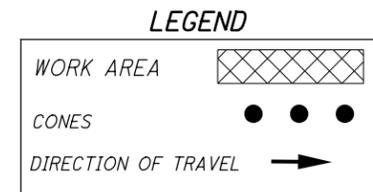


TABLE I (SIGN SPACING)

ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
Two Lane ≤ 40 MPH	100	100	100
Two Lane 45-50 MPH	350	350	350
Two Lane 55-60 MPH	500	500	500

TABLE II

SPEED LIMIT (MPH)	BUFFER (D) (FT) MIN.
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570



THIS DRAWING REPLACES MT-97.11 DATED 07-18-2014.

STANDARD ROADWAY CONSTRUCTION DRAWING

FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY FOR PAVING OPERATIONS (NON-FED ONLY)

SD NUMBER
MT-97.11

OFFICE OF ROADWAY ENGINEERING

SESS ENGINEER
Soisson

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR
David L. Holstein

REVISION DATE
01-20-2017

NOTES:

FLAGGERS

- 1. *Flaggers, one for each direction, shall be used to control traffic continuously for as long as a one lane operation is in effect. The flaggers shall be able to communicate with each other at all times.*

LENGTH OF CLOSURE

- 2. *It is required that the length of closure be kept to a minimum at all times, as directed by the Engineer, with a maximum allowable length of 5000'.*

When the ambient temperature exceeds 80 degrees Fahrenheit the Engineer may increase the maximum allowable length of closure to allow for sufficient cooling of new pavement.

The Engineer may shorten the maximum allowable length of closure to relieve excessive traffic backups or to improve traffic operation.

SIGN LOCATION AND SPACING

- 3A. *The minimum spacing between work zone signs is shown in Table I. Maximum spacing should not be greater than 1.5 times the distances shown in Table I.*
- 3B. *Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200' for speeds of 45 mph or less and a minimum of 400' for speeds of 50 mph or greater.*
- 3C. *The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

ADJUSTMENTS FOR SIGHT DISTANCE

- 4. *The location of the flagger station and the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

BASIC SIGNING

- 5A. *ROAD WORK AHEAD (W20-1) signs shall be provided on entrance ramps or roadways entering the work limits.*
- 5B. *END ROAD WORK (G20-2) signs are only required for lane closures of more than 1 day. If is intended that these signs be placed on the mainline, on all exit ramps, and on roadways exiting the work limits.*
- 5C. *Overlapping of signing for adjacent projects should be avoided where the messages could be confusing. Any ROAD WORK AHEAD or END ROAD WORK sign which falls within the limits of another traffic control zone shall be omitted or covered during the period when both projects are active.*

SIGNING DETAILS

- 6A. *The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.*
- 6B. *36" warning signs may be used when the approach speed limit is 40 mph or less.*

FLASHING WARNING LIGHTS

- 7. *Type A flashing warning lights shown on the ROAD WORK AHEAD (W20-1) signs and on the LANE CLOSED AHEAD (W20-5) signs are required whenever a night lane closure is necessary.*

CONES

- 8A. *Cone spacing shall be as follows:*
 - a) *Spacing along the buffer shall be 40' center-to-center.*
 - b) *Spacing along the approach taper shall be 10' center-to-center.*
- 8B. *Cone sizes shall be as follows:*
 - a) *Cones used for daytime traffic control shall have a minimum height of 28".*
 - b) *Cones used for nighttime traffic control shall have a minimum height of 42".*
- 8C. *Provisions shall be made to stabilize the cones to prevent them from blowing over.*
- 8D. *A minimum of two cones shall be used to close the paved shoulder.*

(RESERVED FOR FUTURE USE)

- 9A. *(intentionally blank)*

AREA ILLUMINATION

- 10A. *Adequate area illumination of each flagger station shall be provided at night. Use of portable flood lighting is acceptable.*
- 10B. *To ensure the adequacy of floodlight placement and the elimination of glare, the Contractor and the Engineer shall drive through the worksite each night when the lighting is in place. Light placement and shielding shall be adjusted to the satisfaction of the Engineer.*

INTERSECTION / DRIVEWAY ACCESS

- 11. *Within the length of closure, provision shall be made to control traffic entering from intersecting streets and major drives as necessary to prevent wrong-way movements and to keep vehicles off of new pavement not ready for traffic. The Contractor shall:*
 - a) *Place across the closed lane, either three cones or barricades, and/or*
 - b) *Provide an additional flagger at every public street intersection and major driveway.*
- Cones placed across the closed lane shall be located 25' beyond the projected pavement edges of the driveway or cross highway. For barricades, see Standard Construction Drawing MT-101.60.*

Existing STOP signs shall be relocated as necessary to assure proper location for the traffic conditions.

The method of control shall be subject to the approval of the Engineer.

CHIP SEAL OPERATION

- 12. *For chip seal operations, additional signing shall be incorporated in accordance with CMS 422.09.*

THIS DRAWING REPLACES MT-97.11 DATED 07-18-2014.

STANDARD ROADWAY CONSTRUCTION DRAWING

FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY FOR PAVING OPERATIONS (NON-FED ONLY)

OFFICE OF ROADWAY ENGINEERING

STATE ENGINEER

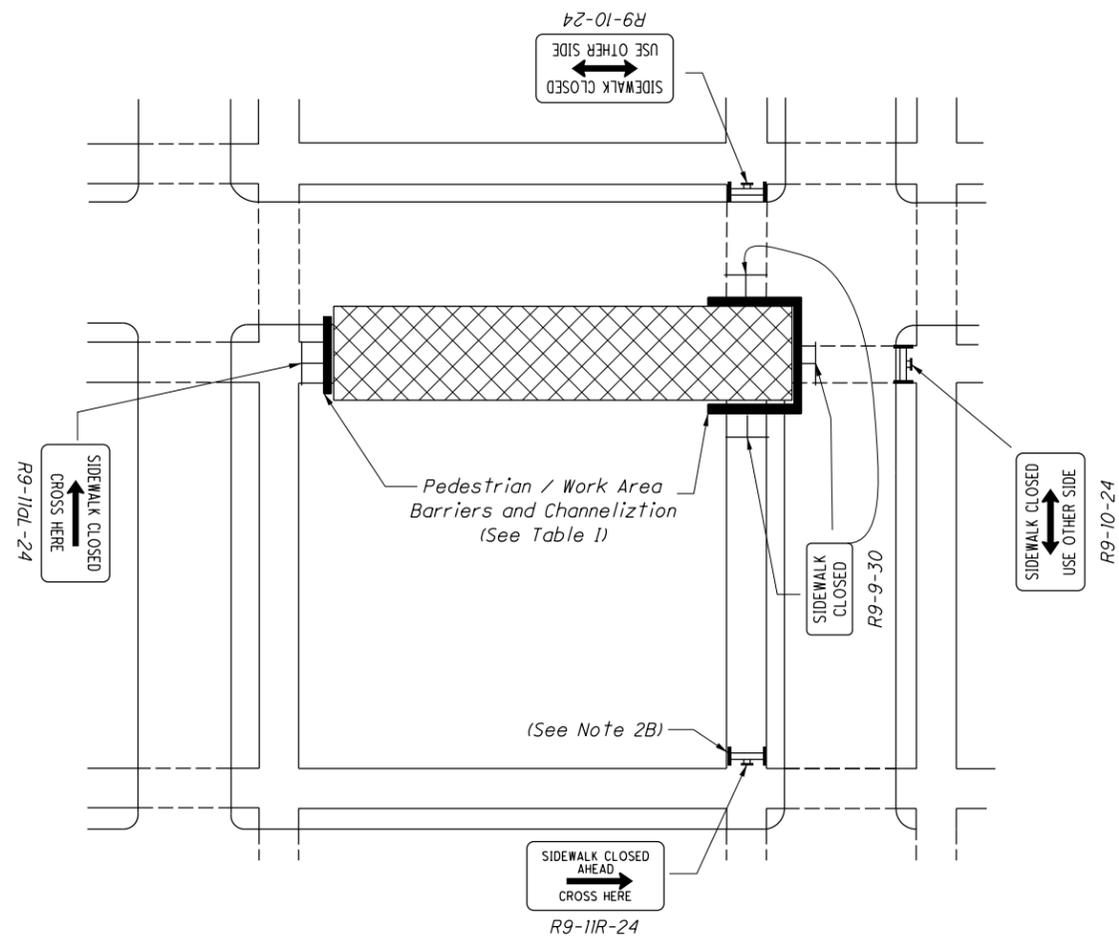
David L. Holstein

REVISION DATE

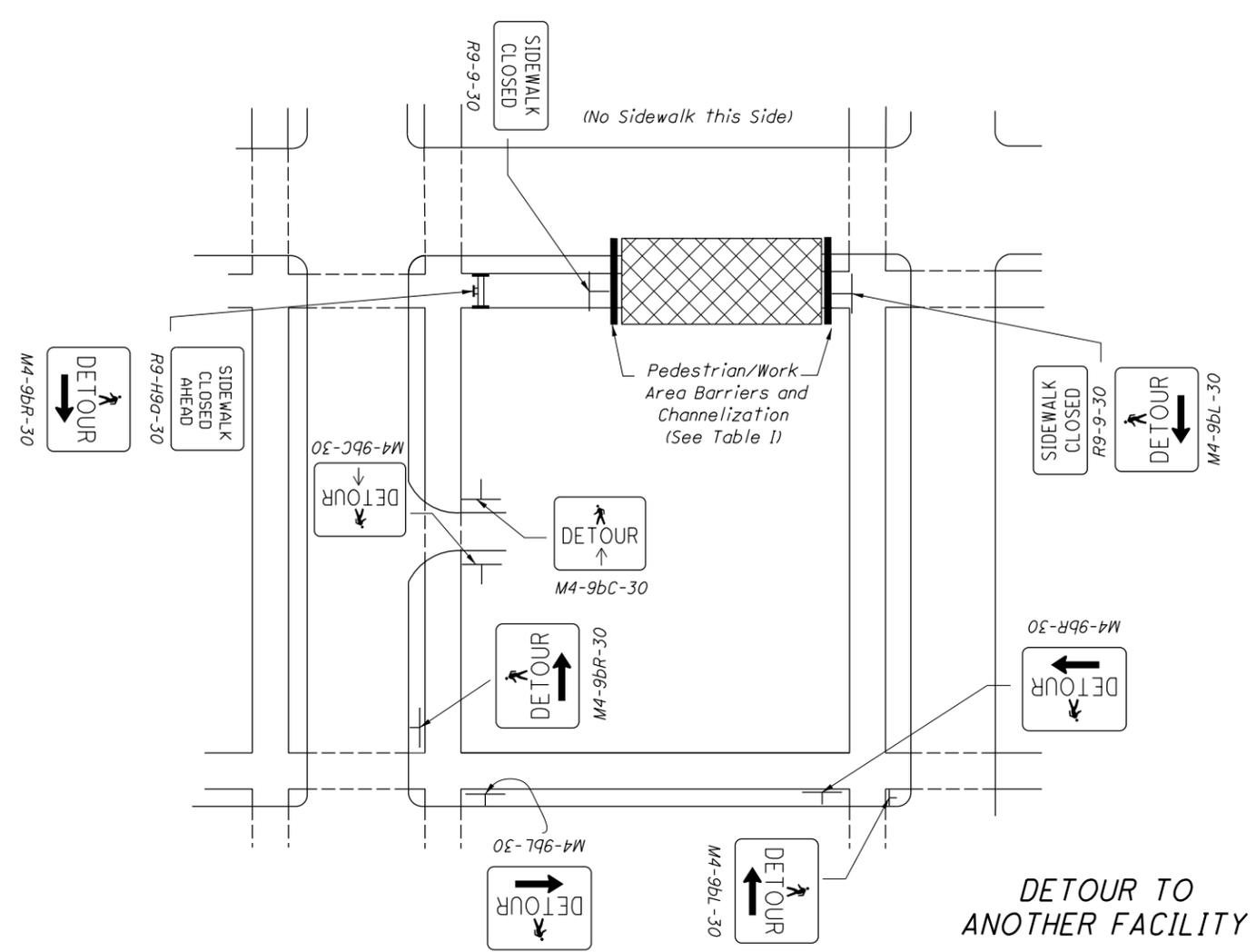
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MT-97.11

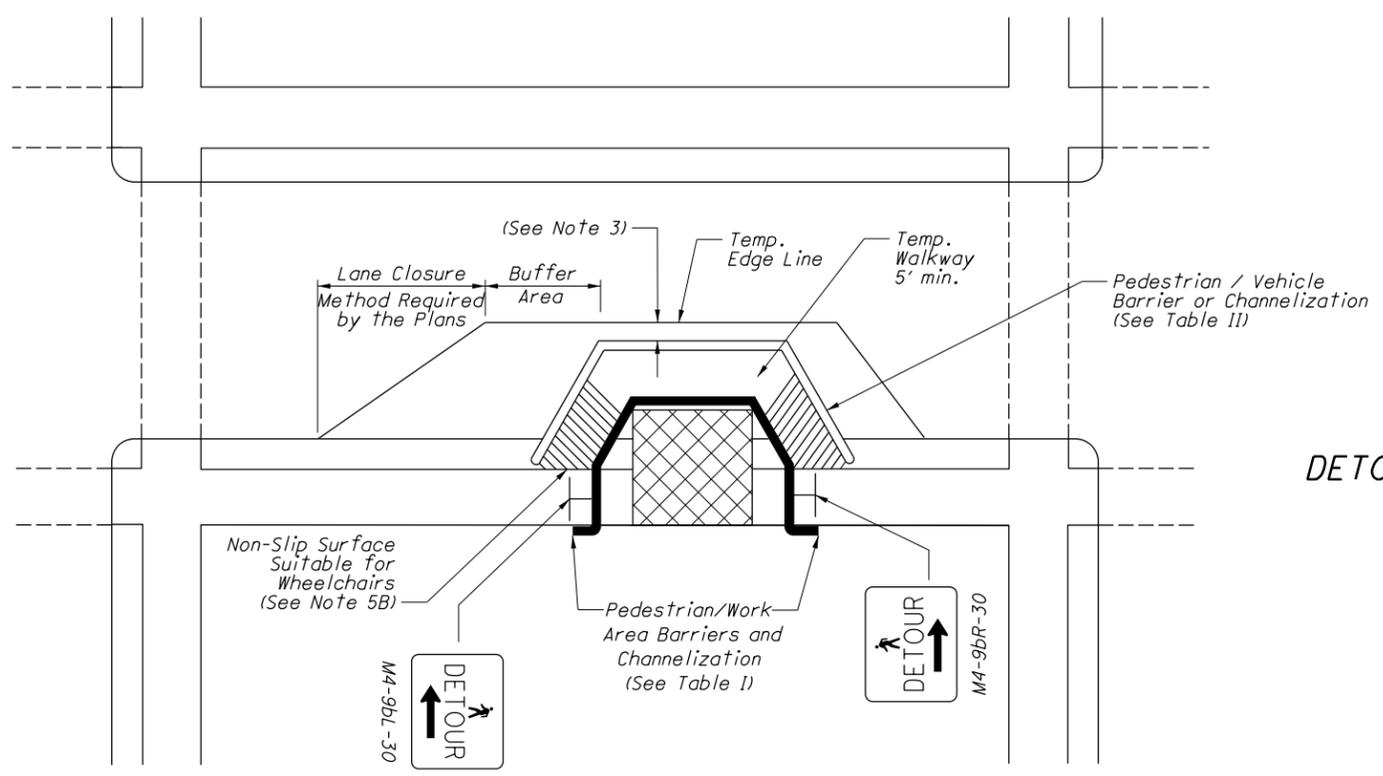
2 / 2



DETOUR TO OTHER SIDE OF STREET



DETOUR TO ANOTHER FACILITY



DETOUR TO TEMPORARY WALKWAY ("RUNAROUND") ON ROADWAY

LEGEND

WORK AREA 

TYPE I BARRICADE WITH SIGN 

NOTES:

GENERAL

- 1A. This drawing presents traffic controls only for pedestrian traffic. Vehicular traffic control shall be provided as required.
- 1B. The purpose of the traffic control devices provided herein is to divert and guide pedestrians whose path would otherwise enter the work area. The Contractor must take additional precautions as appropriate to protect other pedestrians or residents (including children) from exposure to hazards resulting from construction operations.

SIGNS AND BARRICADES

- 2A. All signs and barricades shall be placed so that they do not cause a hazard for pedestrians. All signs, not on barricades or channelizing devices, near or over active sidewalks shall have a minimum 7' vertical clearance. Signs mounted on barricades or channelizing devices shall have a minimum 1' clearance above the sidewalk.
- 2B. Advance signing for sidewalk closure shall be mounted on Type I Barricade, placed such that they will not block more than one-half the sidewalk.

PAVEMENT MARKING

- 3. Maintain 2' minimum when possible, between the work zone edge line and the barrier or channelizing device separating the pedestrian path from the vehicle path.

STAGED WORK

- 4. For repair or reconstruction work involving sidewalks on both sides of the street, the work shall be staged so that one side is rebuilt before the other is disrupted.

TEMPORARY WALKWAYS

- 5A. Pedestrian walkways constructed by the Contractor shall be kept free of any obstructions or hazards including holes, debris and mud. Other walkways damaged or dirtied by the Contractor shall be immediately repaired or cleaned.
- 5B. For construction of temporary walkway the maximum grade shall be 5 percent unless specified otherwise in the plans. The maximum cross slope shall be 2 percent.

LIGHTING AND DELINEATION

- 6A. At night, in otherwise unlighted areas, pedestrian-channelizing devices and barricades and pedestrian detour signs shall be provided with lighting as follows:
 - a) Illumination shall provide a minimum of 1.2 foot-candles on temporary walkways.
 - b) Illumination shall be controlled by photocells.
 - c) Illumination fixtures may consist of floodlights or other protected fixtures mounted at least 10' above ground.
 - d) Illumination supports may be standard highway lighting poles, 4" x 4" wood posts or other supports approved by the Engineer.
- 6B. For barricades and channelizing devices located between the pedestrian way and the vehicle travel lane in unlighted areas, the devices shall be delineated or lighted at night as follows:
 - a) Delineation of the portable barrier (PB) located between the vehicle lane and the pedestrian path shall be by barrier reflectors on the vehicle side of the PB and by object markers as per Standard Construction Drawing (SCD) MT-101.70.

b) Channelizing devices other than PB shall be provided with Type C steady burning lights on the vehicle side of the channelizer.

CHANNELIZATION REQUIREMENTS

- 7A. All channelization devices used to separate pedestrians from the work area or from the vehicular lane shall be as determined from the adjacent tables.
- 7B. Wood railing shall be a min. of a 2" x 4" rail at 32" above ground. It shall be secured to 2" x 4" posts at not more than 6' spacing with secure attachment hardware. It shall be installed and braced to be essentially rigid and able to support the following loads:
 - a) A horizontal transverse load of 100 pounds at each post top.
 - b) A vertical load of 250 pounds at midpoint between each post.
- 7C. Wood snow fence shall be nominally 42" high, securely supported by wood or steel posts at 6' maximum spacing. Plastic/nylon construction fence shall be bright orange. It shall be securely fastened to wood or metal posts at not more than 6' spacing. It shall be nominally 42" high and the top edge shall not sag below 30" (12" max. sag). Either of the fence sections with extensive broken slots or holes greater than 12" x 12" shall be repaired or replaced.
- 7D. Chain link fence, Type CLT shall conform to CMS 607 and appropriate details on Roadway Standard Construction Drawings F-1.1, F-3.1 and F-3.2, except that materials need not be new nor shall certification and tests be required.
- 7E. Plywood walls shall be a minimum of 5/8" exterior plywood, supported by a 2" x 4" or heavier framing securely anchored and buttressed to resist wind load and/or persons. They shall be designed for a minimum wind loading of 30 pounds per square foot (or larger if local codes require). Height of the wall shall be not less than 7' above the walkway and if within range of thrown objects, shall be of sufficient height to screen pedestrians and passing cars.
- 7F. When PB is provided, it shall be 32" PB as per CMS 622. Delineation of PB shall be as per SCD MT-101.70.
- 7G. Barrier located along a "runaround" within the roadway pavement shall meet the following requirements:
 - a) Be a minimum of 36" in height and continuous with the ground surface.
 - b) Extend along the entire length of the runaround.
 - c) Have no breaks or gaps along the full length of the barrier.
 - d) Have a solid, continuous bottom rail between 4" and 12" in height.
 - e) Be of high contrast color and material.
 - f) Provide temporary ramps and boardwalks as required to ensure a smooth and continuous surface that complies with Americans with Disabilities Act Accessibility Guidelines.

BARRIER AND CHANNELIZING DEVICE SELECTION TABLES

TABLE I - CHANNELIZATION TYPE WHEN USED BETWEEN THE PEDESTRIAN WALKWAY AND THE WORK AREA

DISTANCE FROM WORK ACTIVITY TO CHANNELIZATION	WORK CHARACTERISTICS *					
	< 2 FT DROPOFF	2 - 5 FT DROPOFF	> 5 FT DROPOFF	DIRT/MUD SPLASHED	EQUIPMENT WHICH MOVES OR HAS EXPOSED MOVING PARTS	OPERATION WHICH THROWS STONE/ETC.
< 5 ft.	A-E	B-E	C-D	D	D-E	D
5 - 10 ft.	A-E	B-E	B-E	D	B-E	D
> 10 - 30 ft.	A-E	A-E	B-E	N/A	A-E	D
> 30 ft.	N/A	A-E	B-E	N/A	A-E	D

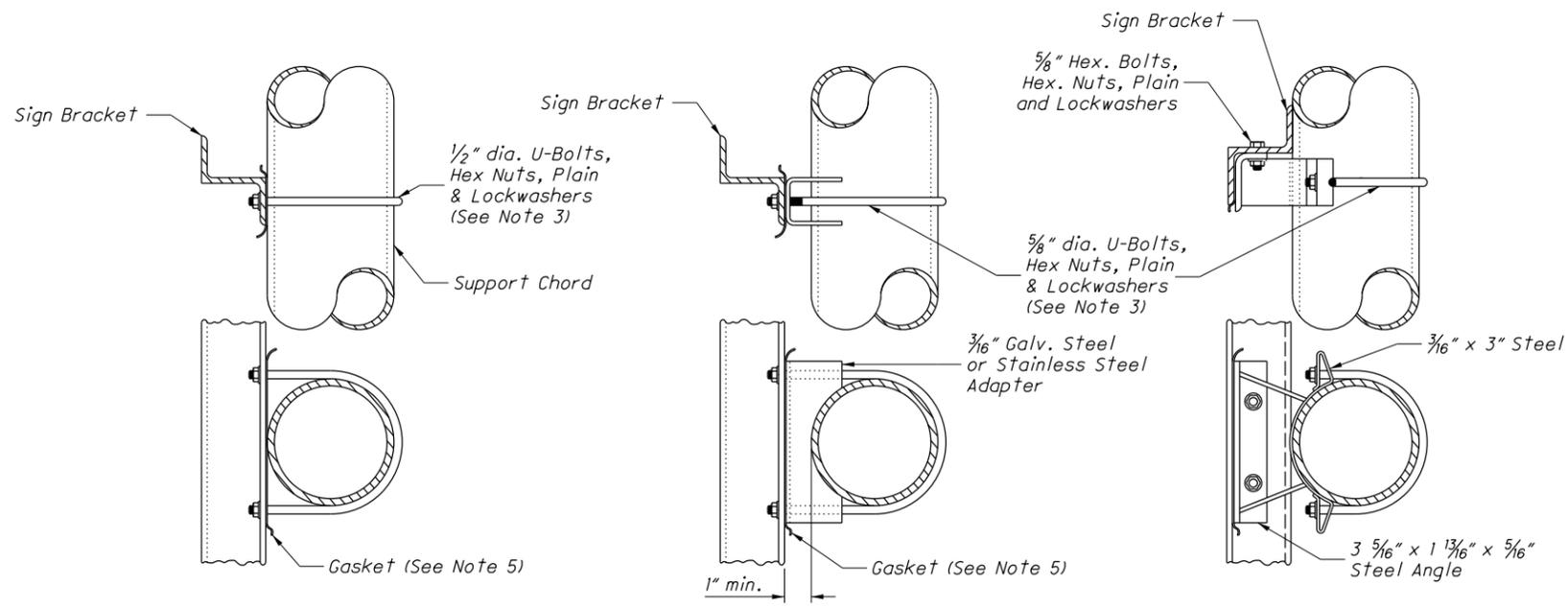
* These requirements shall not apply to paving, grinding or other similar operations.

TABLE II - CHANNELIZATION TYPE WHEN USED BETWEEN THE PEDESTRIAN WALKWAY AND THE VEHICULAR LANE

DISTANCE FROM EDGE OF TRAFFIC LANE TO FACE OF CHANNELIZATION	SPEED LIMIT (MPH)		
	25	30 - 40	> 40
0 - 2 ft.	E	E	E
> 2-6 ft.	B-E	E	E
> 6 ft.	B-E	B-E	E

SELECTION LIST

- A. Wood Railing
- B. Snow Fence, Wood or Orange Plastic Construction Fence.
- C. Chain Link Fence, Type CLT
- D. Plywood Wall
- E. Portable Barrier



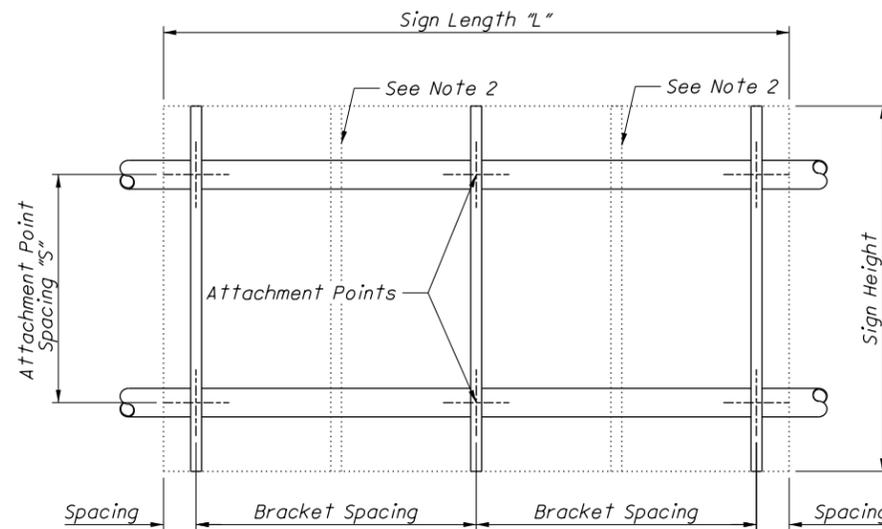
DOUBLE CHORDS

SINGLE ARM

ALTERNATE CLAMP

ATTACHMENT POINT SPACING

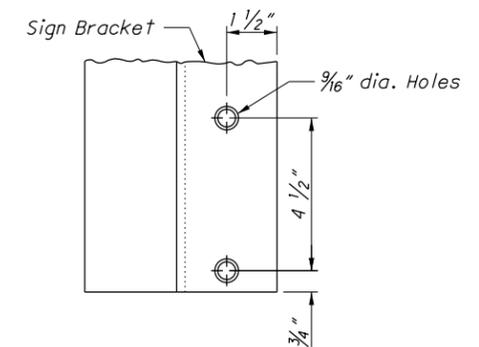
SUPPORT TYPE	DESIGN	S
7.2	1	2'-4"
	2	3'
	3	4'
7.3	1 & 2	3'
	3 & 4	4'
7.4	1	3'
7.5	2 & 3	4'
7.6	4	5'
7.65	6 & 6 Alt.	3'
	8 & 8 Alt.	5'
9.12	Single Arm	
9.24	1 Thru 4	4'
10.48	1 Thru 5	4'
	6 Thru 8	6'
11.08	Single Arm	
12.24	1 Thru 4	4'
	5 Thru 8	6'
12.30	1 - 4 Alt.	4'
	5 - 12 Alt.	6'
15.8	All	3'
15.115	All	5'
16.10	Single Arm	



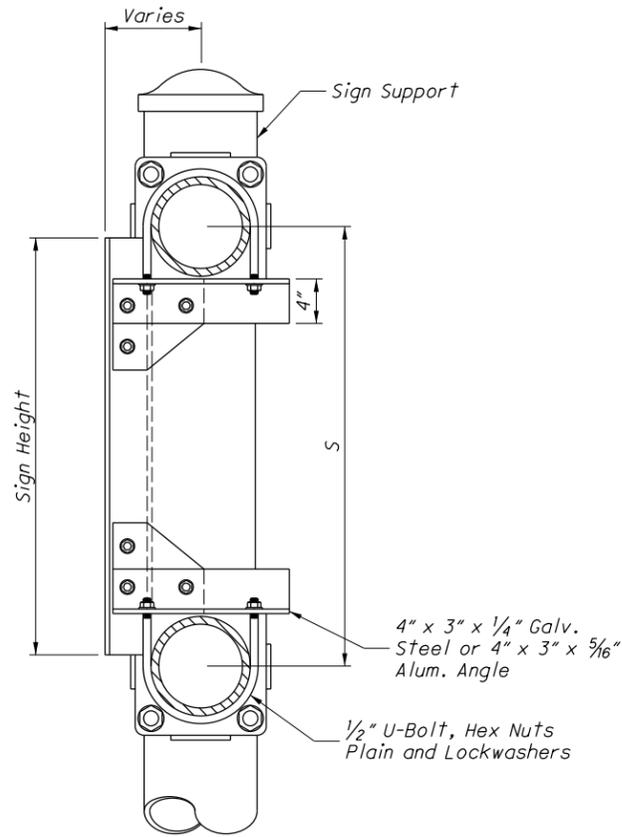
NOTES:

1. Sign brackets shall be a 4" x 3" x 1/4" aluminum zee at 2.85 lb/ft.
2. Provide intermediate sign brackets if the sign extends more than 4' above or below an attachment point.
3. U-bolts, other bolts, nuts and washers shall be stainless steel for use with aluminum chords. When used with galvanized sign structures the U-bolts only may be galvanized steel.

The inside diameter of U-bolts used to attach the sign attachment assembly aluminum zee brackets to the overhead sign support horizontal member shall have a tolerance of +0.5, -0.0" relative to the outside diameter of the overhead sign support horizontal member at the attachment point.
4. The outer flange of the sign attachment assembly aluminum zee brackets may be oriented in either direction. However, at least one zee bracket per each individual sign shall be oriented with the outer flange in the opposite direction of the others.
5. Prevent contact between aluminum and galvanized parts with a minimum 1/16" thick chloroprene gasket or approved equal.
6. Type A shall be for supports where the sign height is less than 1' greater than the attachment point spacing.
7. Type B shall be for back-to-back mounted signs.
8. Detail "C" - fixture support arm mounting for lighted signs complying with Plan Insert Sheet 203121.
9. Attach gusset plates by bolting or welding.

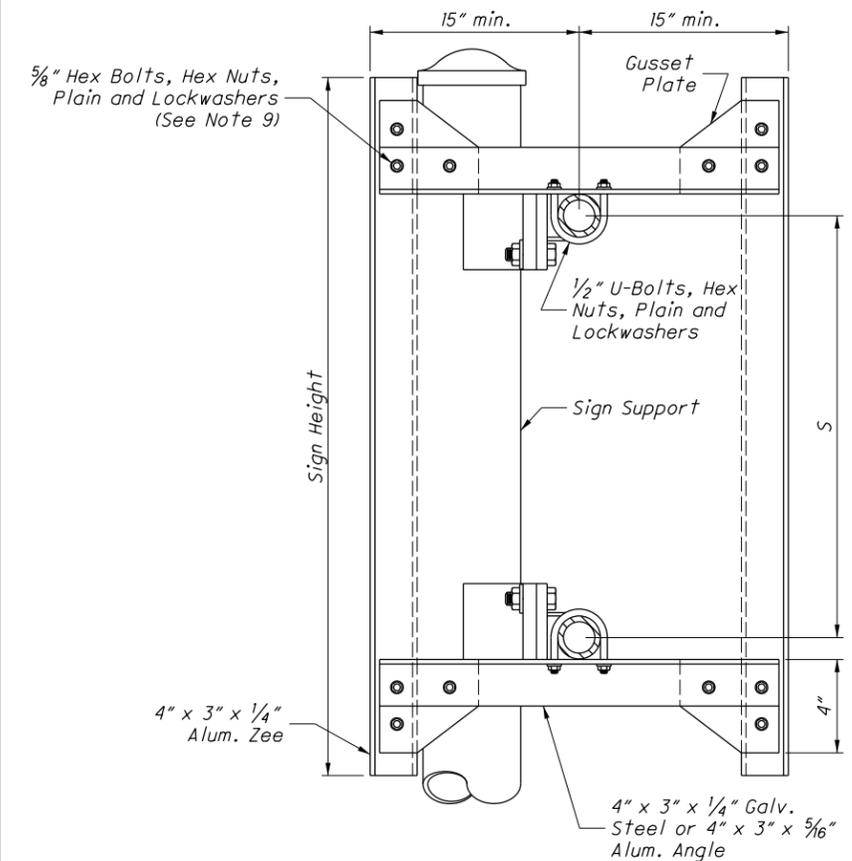


DETAIL "C"
(See Note 8)

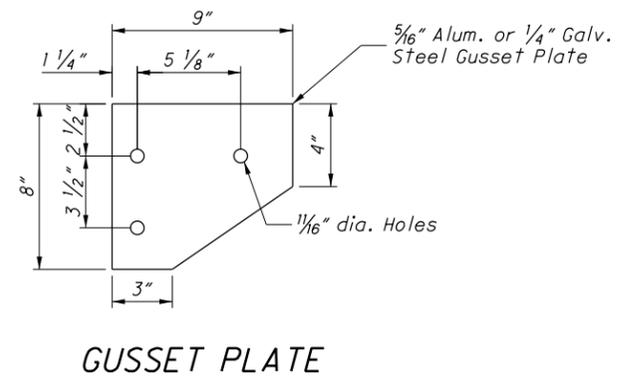


TYPE A
(See Note 6)

SIGN BRACKET									
L (FEET)	NUMBER OF BRACKETS	BRACKET SPACING (INCHES)							
		6	36	6					
4	2	6	36	6					
5		6	48	6					
6		6	60	6					
7		6	72	6					
8		12	72	12					
9		12	84	12					
10	3	12	96	12					
11		18	96	18					
12		6	66	66	6				
13		6	72	72	6				
14		12	72	72	12				
15		18	72	72	18				
16	12	84	84	12					
17	18	84	84	18					
18	12	96	96	12					
19	18	96	96	18					
20	4	12	72	72	72	12			
21		18	72	72	72	18			
22		6	84	84	84	6			
23		12	84	84	84	12			
24		18	84	84	84	18			
25		6	96	96	96	6			
26	12	96	96	96	12				
27	18	96	96	96	18				
28	5	12	78	78	78	78	12		
29		6	84	84	84	84	6		
30		12	84	84	84	84	12		
31		18	84	84	84	84	18		
32		12	90	90	90	90	12		
33		18	90	90	90	90	18		
34	12	96	96	96	96	12			
35	18	96	96	96	96	18			
36	6	6	84	84	84	84	84	6	
37		12	84	84	84	84	84	12	
38		18	84	84	84	84	84	18	
39		9	90	90	90	90	90	9	
40		15	90	90	90	90	90	15	
41		6	96	96	96	96	96	6	
42	12	96	96	96	96	96	12		
43	18	96	96	96	96	96	18		
44	7	12	84	84	84	84	84	84	12
45		18	84	84	84	84	84	84	18
46		6	90	90	90	90	90	90	6
47		12	90	90	90	90	90	90	12
48		18	90	90	90	90	90	90	18
49		6	96	96	96	96	96	96	6
50	12	96	96	96	96	96	96	12	
51	18	96	96	96	96	96	96	18	
52	8	18	84	84	84	84	84	84	18
53		24	84	84	84	84	84	84	24
54		9	90	90	90	90	90	90	9
55		15	90	90	90	90	90	90	15
56		21	90	90	90	90	90	90	21
57		6	96	96	96	96	96	96	6
58	12	96	96	96	96	96	96	12	
59	18	96	96	96	96	96	96	18	



TYPE B
(See Note 7)



GUSSET PLATE

THIS DRAWING REPLACES TC-22.20 DATED 10-18-2013.

SD NUMBER

TC-22.20

STANDARD ROADWAY CONSTRUCTION DRAWING

SIGN ATTACHMENT ASSEMBLIES

OFFICE OF
ROADWAY
ENGINEERING

STATE ENGINEER

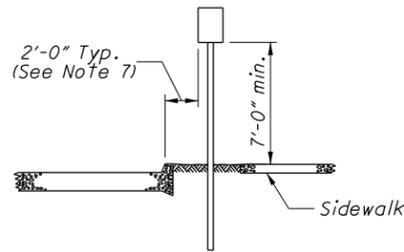
H. Suter

STATE OF OHIO DEPARTMENT OF
TRANSPORTATION ADMINISTRATOR

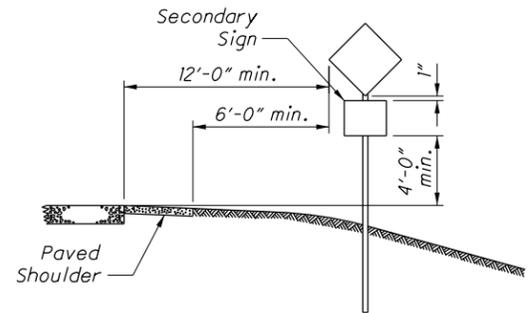
Reynaldo Stargell

REVISION DATE

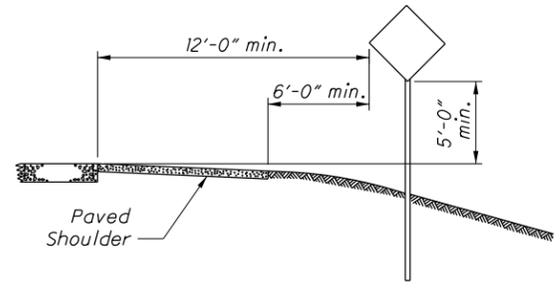
01-17-2014



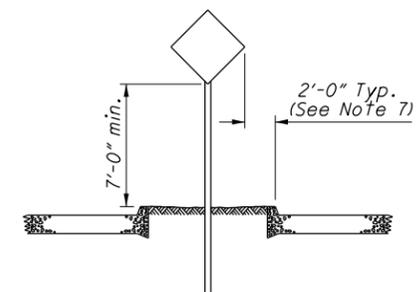
URBAN-RESIDENTIAL AND BUSINESS
AND ALL AREAS WITH SIDEWALKS



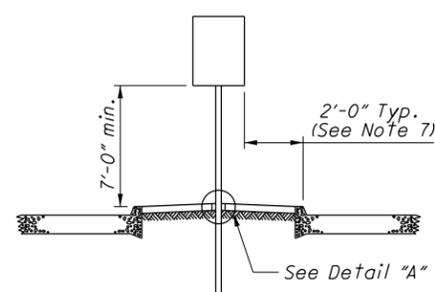
RURAL
WITH SECONDARY SIGN



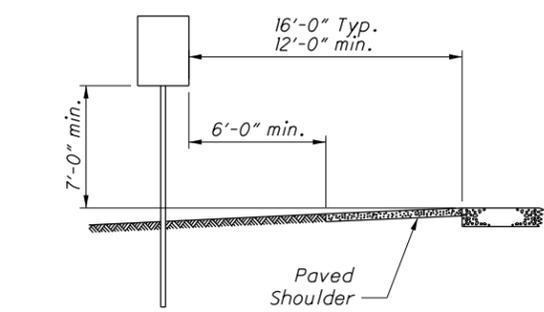
RURAL



MEDIAN



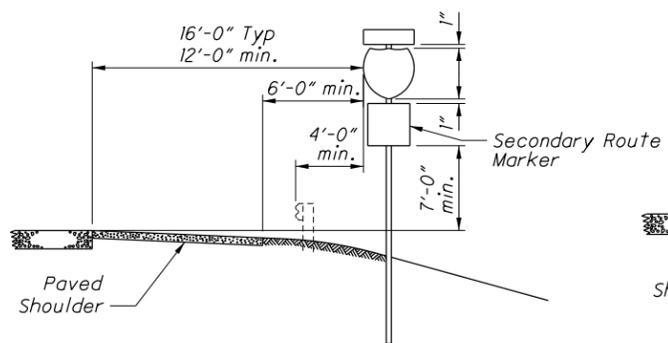
PAVED MEDIAN



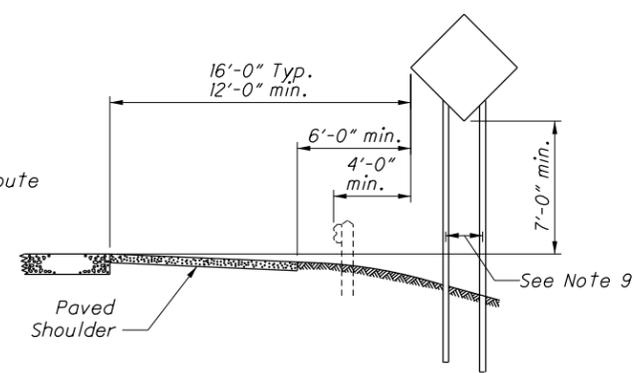
MEDIAN - EXPRESSWAY OR FREEWAY

NOTES:

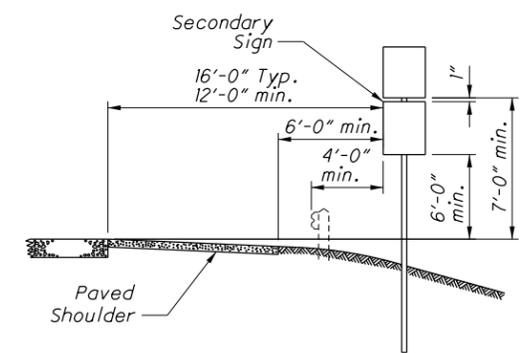
1. See Standard Construction Drawing (SCD) TC-41.20 for details on yielding supports.
2. All signs shall be placed 90° to the roadway, except as described in notes 3 and 4 below.
3. Install chevron alignment and one-direction large arrow signs on the outside of a turn or curve in line with and at approximately 90° to approaching traffic flow.
4. Install parking signs with arrows at an angle of not less than 30° nor more than 45° with the line of traffic flow.
5. Install chevron alignment signs at a minimum mounting height of 4' above the near edge of the traveled way.
6. Install object markers at a minimum mounting height of 4' above the near edge of the traveled way for obstructions 8' or less from the edge of shoulder or curb. Install object markers at a minimum mounting height of 4' above the ground for obstructions more than 8' from the edge of the shoulder or curb.
7. Install signs with a minimum lateral offset of 1' from the face of curb where sidewalk width is limited or where existing poles are close to the curb.
8. On conventional roads where it is impractical to locate a sign with the lateral offsets shown, install signs with a minimum lateral offset of 2'.
9. See SCDs TC-52.10 and TC-52.20 for dimensions between supports.



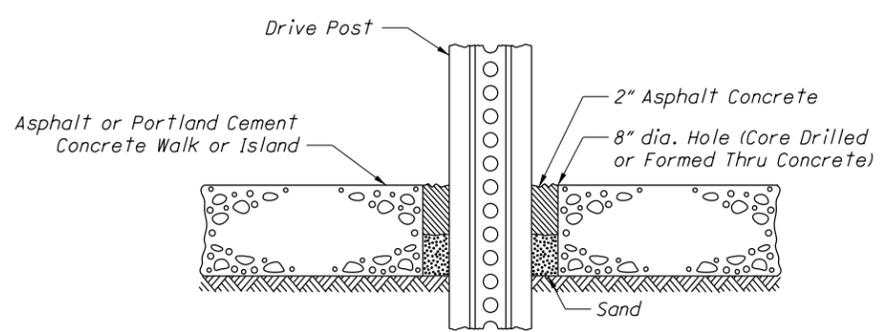
EXPRESSWAY OR FREEWAY
WITH SECONDARY SIGN



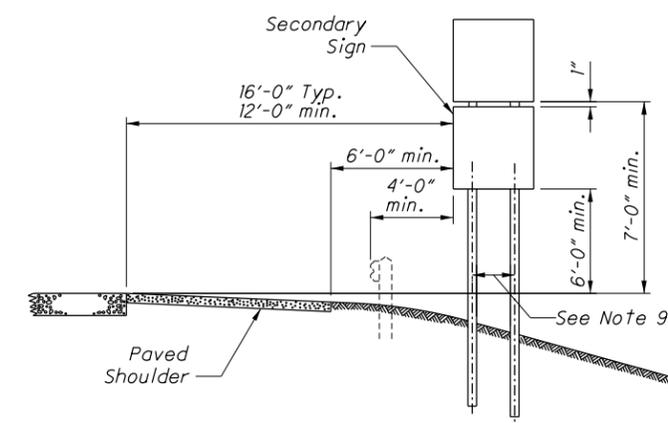
EXPRESSWAY OR FREEWAY



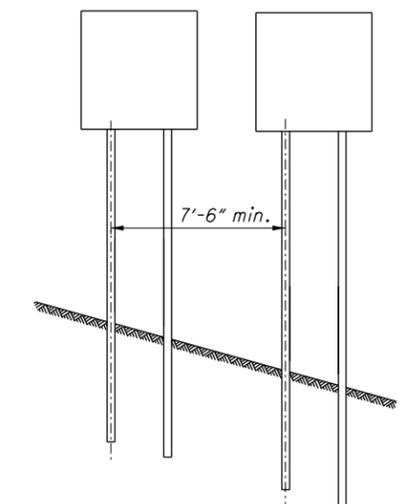
EXPRESSWAY OR FREEWAY
WITH SECONDARY SIGN



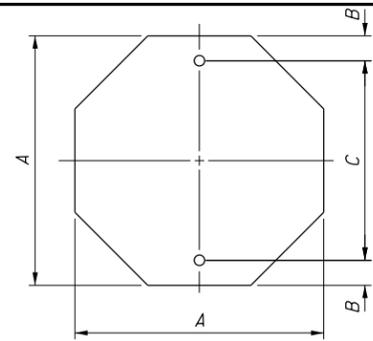
DETAIL "A"



EXPRESSWAY OR FREEWAY
WITH SECONDARY SIGN

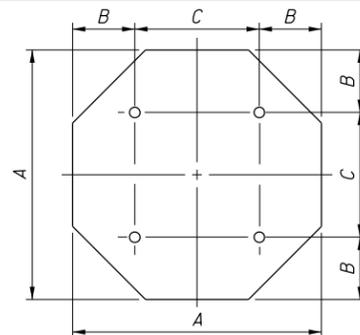


ADJACENT SIGN INSTALLATION
FOR NO. 2 AND NO. 3 YIELDING POST SUPPORTS IN EXPOSED LOCATIONS



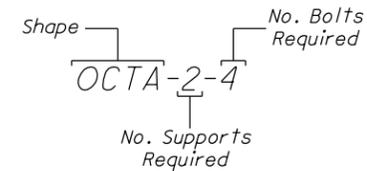
OCTA-1-2

A	B	C	THICKNESS	AREA (FT ²)
18	3	12	0.080	2.25
24	3	18	0.080	4.00
30	3	24	0.080	6.25
36	3	30	0.080	9.00



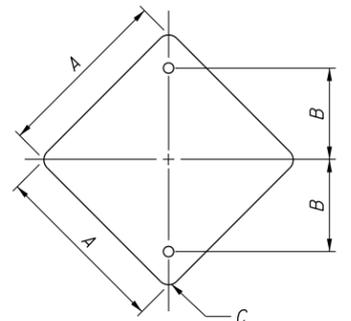
OCTA-2-4

A	B	C	THICKNESS	AREA (FT ²)
48	9	30	0.100	16.00



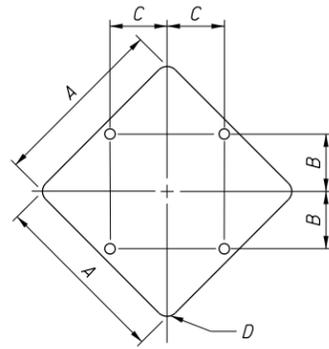
NOTES:

1. All bolt holes shall be $\frac{3}{8}$ " in diameter, and may be drilled or punched to finished size.
2. Dimensions between bolt holes shall be to tolerance of $\pm \frac{1}{32}$ ".
3. All route shields shall be 0.080" thick and attached to extrusheet signs with aluminum blind rivets.
4. For back-to-back mounting of STOP (RI-1) and DO NOT ENTER (R5-1) sign, follow details shown on Standard Construction Drawing TC-41.50.



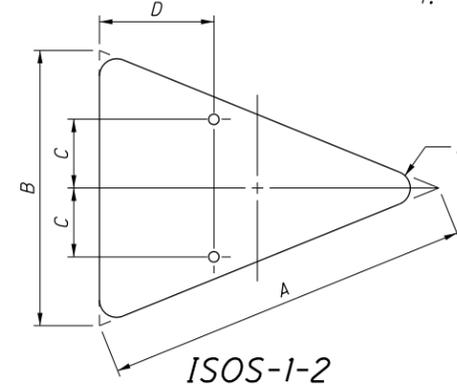
DIA-1-2

A	B	C	THICKNESS	AREA (FT ²)
18	9	1.5	0.080	2.25
24	12	1.5	0.080	4.00
30	15	1.875	0.080	6.25
36	18	2.25	0.080	9.00



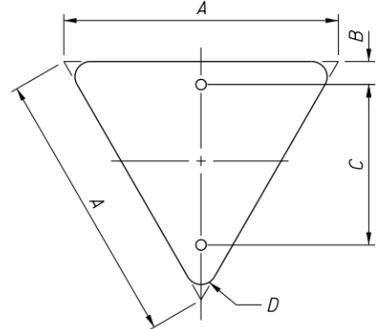
DIA-2-4

A	B	C	D	THICKNESS	AREA (FT ²)
48	15	15	3	0.100	16.00
60	18	18	3.75	0.100	25.00



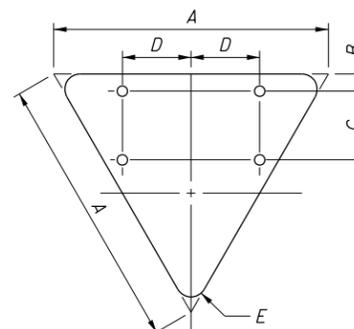
ISOS-1-2

A	B	C	D	E	THICKNESS	AREA (FT ²)
40	30	7.5	12	1.875	0.080	3.86
48	36	9	15	2.25	0.100	5.56



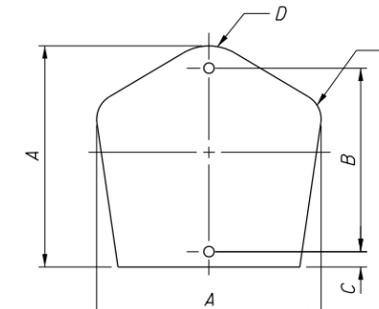
TRI-1-2

A	B	C	D	THICKNESS	AREA (FT ²)
24	2	14	1.5	0.080	1.73
30	3	18	1.5	0.080	2.71
36	3	21	2	0.080	3.90



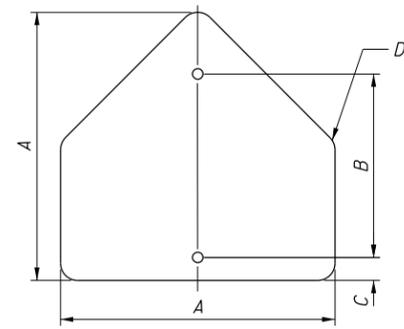
TRI-2-4

A	B	C	D	E	THICKNESS	AREA (FT ²)
48	3	12	12	3	0.100	6.93
60	3	18	15	4	0.100	10.83



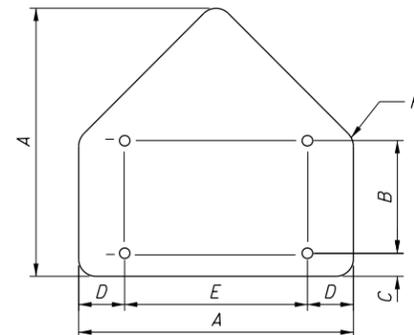
CO-1-2

A	B	C	D	E	THICKNESS	AREA (FT ²)
18	15	1	5	2	0.080	2.25
24	18	2	5.313	2.688	0.080	4.00
30	24	2	6.625	3.375	0.080	6.25



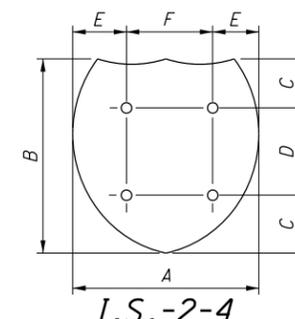
PENT-1-2

A	B	C	D	THICKNESS	AREA (FT ²)
30	21	3	1.875	0.080	6.25
36	24	3	2.25	0.080	9.00



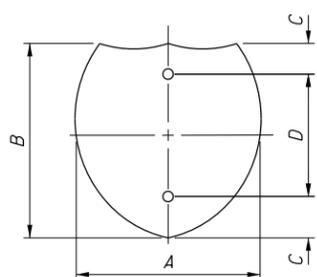
PENT-2-4

A	B	C	D	E	F	THICKNESS	AREA (FT ²)
48	18	6	9	30	3	0.100	16.00



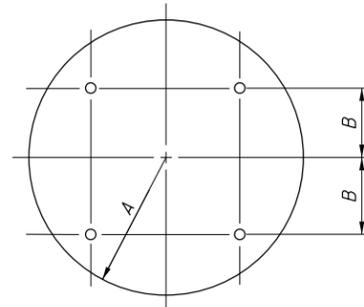
I.S.-2-4

A	B	C	D	E	F	THICKNESS	AREA (FT ²)
48	48	9	30	9	30	0.100	16.00
60	48	9	30	12	36	0.100	20.00



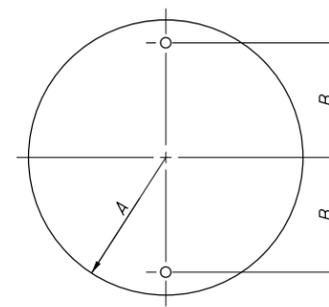
I.S.-1-2

A	B	C	D	THICKNESS	AREA (FT ²)
24	24	3	18	0.080	4.00
24	30	3	18	0.080	5.00
30	30	3	24	0.080	6.25
37.5	30	3	24	0.080	7.81
36	36	6	24	0.080	9.00
45	36	6	24	0.080	11.25



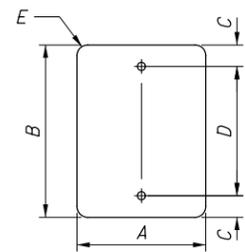
CIR-2-4

A	B	THICKNESS	AREA (FT ²)
24	15	0.100	16.00

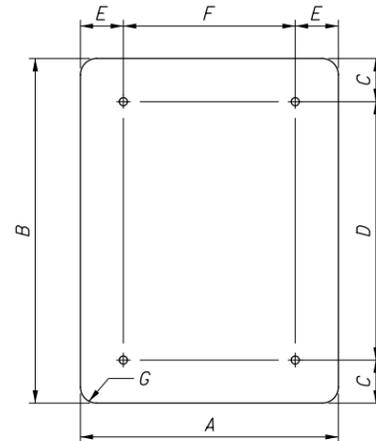


CIR-1-2

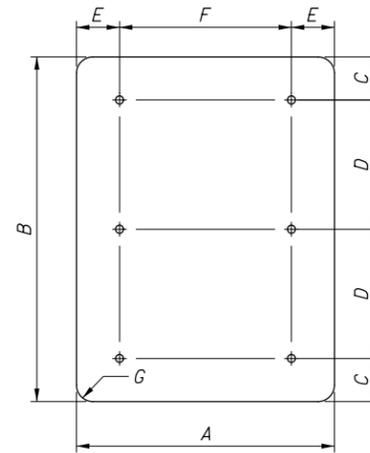
A	B	THICKNESS	AREA (FT ²)
9	6	0.080	2.25
12	9	0.080	4.00
15	12	0.080	6.25
18	15	0.080	9.00



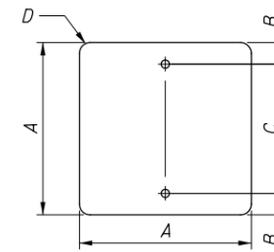
V-REC-1-2



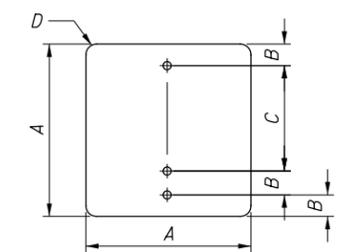
V-REC-2-4



V-REC-2-6



SQ-1-2



SQ-1-3
(MAINTENANCE MARKER)

A	B	C	D	E	THICKNESS	AREA (FT ²)
6	54	9	36	1.5	0.080	2.25
9	12	1.5	9	1.5	0.080	0.75
10	12	1.5	10	1.5	0.080	0.83
12	15	1.5	12	1.5	0.080	1.25
12	16	1.5	13	1.5	0.080	1.33
12	18	1.5	15	1.5	0.080	1.50
12	24	3	18	1.5	0.080	2.00
12	30	3	24	1.5	0.080	2.50
12	36	3	30	1.5	0.080	3.00
12	48	6	36	1.5	0.080	4.00
12	60	6	48	1.5	0.080	5.00
14	48	6	36	1.5	0.080	4.67
18	24	3	18	1.5	0.080	3.00
18	60	6	48	1.5	0.100	7.50
24	30	3	24	1.5	0.080	5.00
24	36	3	30	1.5	0.080	6.00
24	38	3	32	1.5	0.080	6.33
24	42	6	30	1.5	0.080	7.00
24	48	6	36	1.5	0.100	8.00
30	36	3	30	1.875	0.080	7.50
30	42	6	30	1.875	0.080	8.75
30	48	6	36	1.875	0.100	10.00
30	60	6	48	1.875	0.100	12.50

A	B	C	D	E	F	G	THICKNESS	AREA (FT ²)
36	42	6	30	6	24	2.25	0.080	10.50
36	48	6	36	6	24	2.25	0.100	12.00
36	54	6	42	6	24	2.25	0.100	13.50
36	60	6	48	6	24	2.25	0.100	15.00
36	72	12	48	6	24	2.25	0.100	18.00
36	75	13.5	48	6	24	2.25	0.100	18.75
42	60	6	48	9	24	2.25	0.100	17.50
48	60	6	48	9	30	3	0.100	20.00

A	B	C	D	E	F	G	THICKNESS	AREA (FT ²)
48	72	6	30	9	30	3	0.100	24.00
48	76	8	30	9	30	3	0.100	25.33
48	84	12	30	9	30	3	0.100	28.00
48	96	12	36	9	30	3	0.100	32.00

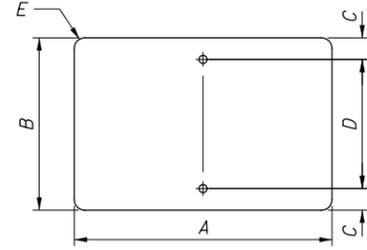
A	B	C	D	THICKNESS	AREA (FT ²)
6	1.0	4	1.0	0.080	0.25
9	1.0	7	1.0	0.080	0.56
12	1.5	9	1.5	0.080	1.00
15	1.5	12	1.5	0.080	1.56
16	1.5	13	1.5	0.080	1.78
18	3	12	1.5	0.080	2.25
24	3	18	1.5	0.080	4.00
30	3	24	1.875	0.080	6.25
36	3	30	2.25	0.080	9.00

A	B	C	D	THICKNESS	AREA (FT ²)
12	1	9	1.5	0.08	1



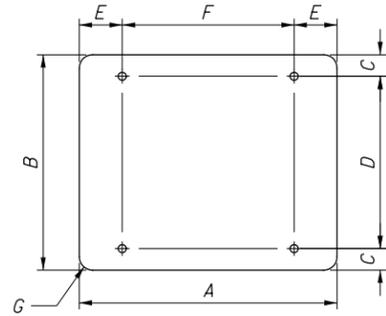
NOTES:

- All bolt holes shall be $\frac{3}{8}$ " in diameter and may be drilled or punched to finished size.
- Dimensions between bolt holes shall be to tolerance of $\pm \frac{1}{32}$ ".
- For back-to-back mounting of STOP (R1-1) and DO NOT ENTER (R5-1) sign, follow details shown on Standard Construction Drawing TC-41.50.



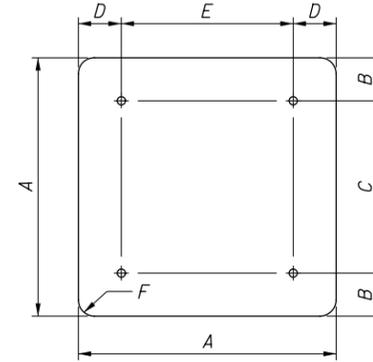
H-REC-1-2

A	B	C	D	E	THICKNESS	AREA (FT ²)
12	4	1	2	1.5	0.080	0.33
12	6	1	4	1.5	0.080	0.50
12	6.5	1	4.5	1.5	0.080	0.54
12	9	1.5	6	1.5	0.080	0.75
15	8	1.5	5	1.5	0.080	0.83
15	12	1.5	9	1.5	0.080	1.25
18	6	1	4	1.5	0.080	0.75
18	9	1.5	6	1.5	0.080	1.12
18	12	1.5	9	1.5	0.080	1.50
20	15	1.5	12	1.5	0.080	2.08
20	18	3	12	1.5	0.080	2.50
21	15	1.5	12	1.5	0.080	2.19
24	6	1	4	1.5	0.080	1.00
24	8	1.5	5	1.5	0.080	1.33
24	9	1.5	6	1.5	0.080	1.50
24	10	1.5	7	1.5	0.080	1.67
24	12	1.5	9	1.5	0.080	2.00
24	18	3	12	1.5	0.080	3.00
30	8	1.5	5	1.5	0.080	1.67
30	9	1.5	6	1.5	0.080	1.88
30	12	1.5	9	1.5	0.080	2.50
30	15	1.5	12	1.5	0.080	3.12
30	16	1.5	13	1.5	0.080	3.33
30	18	3	12	1.5	0.080	3.75
30	21	3	15	1.5	0.080	4.38
30	24	3	18	1.5	0.080	5.00
36	6	1	4	1.5	0.080	1.50
36	8	1.5	5	1.5	0.080	2.00
36	9	1.5	6	1.5	0.080	2.25
36	12	1.5	9	1.5	0.080	3.00
36	14	1.5	11	1.5	0.080	3.50
36	15	1.5	12	1.5	0.080	3.75
36	18	3	12	1.5	0.080	4.50
36	20	3	14	1.5	0.080	5.00
36	24	3	18	1.5	0.080	6.00
36	30	3	24	1.875	0.080	7.50
37.5	30	3	24	1.875	0.080	7.81
48	8	1.5	5	1.5	0.125	2.67
48	10	1.5	7	1.5	0.125	3.33
48	12	1.5	9	1.5	0.125	4.00
48	14	1.5	11	1.5	0.125	4.67
48	16	1.5	13	1.5	0.125	5.33
48	18	3	12	1.5	0.125	6.00



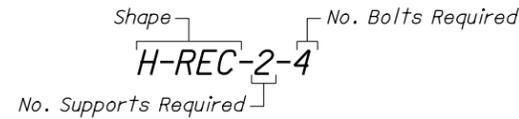
H-REC-2-4

A	B	C	D	E	F	G	THICKNESS	AREA (FT ²)
40	20	3	14	6	28	1.5	0.080	5.56
42	24	3	18	9	24	1.5	0.080	7.00
42	30	3	24	9	24	1.875	0.080	8.75
42	36	6	24	9	24	2.25	0.080	10.50
45	36	6	24	9	27	2.25	0.080	11.25
48	8	1.5	5	9	30	1.5	0.125	2.66
48	10	1.5	7	9	30	1.5	0.125	3.33
48	12	1.5	9	9	30	1.5	0.125	4.00
48	14	1.5	11	9	30	1.5	0.125	4.66
48	16	1.5	13	9	30	1.5	0.125	5.33
48	18	3	12	9	30	1.5	0.125	6.00
48	20	3	14	9	30	1.5	0.100	6.67
48	24	3	18	9	30	1.5	0.100	8.00
48	30	3	24	9	30	1.875	0.100	10.00
48	36	6	24	9	30	2.25	0.100	12.00
48	42	6	30	9	30	2.25	0.100	14.00
54	18	3	12	9	36	1.5	0.100	6.75
54	30	3	24	9	36	1.875	0.100	11.25
54	36	6	24	9	36	2.25	0.100	13.50
60	12	1.5	9	12	36	1.5	0.100	5.00
60	18	3	12	12	36	1.5	0.100	7.50
60	24	3	18	12	36	1.5	0.100	10.00
60	30	3	24	12	36	1.875	0.100	12.50
60	36	6	24	12	36	2.25	0.100	15.00
60	48	6	36	12	36	3	0.100	20.00
66	24	3	18	12	42	1.5	0.100	11.00
66	36	6	24	12	42	2.25	0.100	16.50
72	12	1.5	9	12	48	1.5	0.125	6.00
72	15	1.5	12	12	48	1.5	0.125	7.50
72	18	3	12	12	48	1.5	0.125	9.00
72	24	3	18	12	48	1.5	0.100	12.00
72	30	3	24	12	48	1.875	0.100	15.00
72	36	6	24	12	48	2.25	0.100	18.00
72	48	6	36	12	48	3	0.100	24.00
78	24	3	18	12	54	1.5	0.125	13.00
96	24	3	18	12	72	1.5	0.125	16.00



SQ-2-4

A	B	C	D	E	F	THICKNESS	AREA (FT ²)
36	6	24	6	24	2.25	0.080	9.00
42	6	30	9	24	2.25	0.080	12.25
48	6	36	9	30	3	0.100	16.00



No. Supports Required

NOTES:

1. All bolt holes shall be 3/8" in diameter and may be drilled or punched to finished size.
2. Dimensions between bolt holes shall be to tolerance of ± 1/32".
3. For back-to-back mounting of STOP (R1-1) and DO NOT ENTER (R5-1) sign, follow details shown on Standard Construction Drawing TC-41.50.

NOTES:

SCHOOL Marking

- 1A. The SCHOOL markings shall be installed on all paved approaches in advance of all School Zones.
- 1B. The SCHOOL markings should be placed at least 100' in advance of the School Zone. The preferred placement of the SCHOOL marking is adjacent to the School Zone Advance sign.
- 1C. On two-way, two-lane highways the following shall apply:
 - 1.) When the approach lane to the School Zone is 11' or more in width -
 - a.) The SCHOOL word marking and transverse lines shall be contained in, and centered in, the lane.
 - b.) The character height shall be 6' for urban areas and 8' for rural areas.
 - 2.) When the approach lane to the School Zone is less than 11' in width -
 - a.) One installation of the SCHOOL word marking and transverse lines shall extend across both lanes of traffic.
 - b.) The characters shall be 10' in height.
- 1D. On multi-lane approaches the following shall apply -
 - 1.) When the approach lanes to the School Zone are 11' or more in width -
 - a.) The SCHOOL word marking and transverse lines shall be contained in, and centered in, each lane.
 - b.) The character height shall be 6' for urban areas and 8' for rural areas.
 - 2.) When the approach lanes to the School Zone are less than 11' in width -
 - a.) One installation of the SCHOOL word marking shall extend to the width of two approach lanes.
 - b.) Transverse lines shall extend across all approach lanes of traffic.
 - c.) The characters shall be 10' in height.
- 1E. Center or lane lines shall not pass through the SCHOOL word marking.
- 1F. 6' and 8' high SCHOOL word marking shall be marked with 4" strokes.

10' high SCHOOL word marking shall be marked with 8" strokes.
- 1G. The area of the transverse lines varies with the width of the pavement; therefore, the area must be added to the value in Table 3 (sheet 2).

Railroad Crossing Markings

- 2A. On multi-lane approaches, markings shall be as follows -
 - a.) The RXR symbol shall be placed in each approach lane.
 - b.) Transverse lines used with the railroad symbols shall extend across all approach lanes.
- 2B. The railroad symbol should be located so that the Railroad Advance Warning (W10-1) sign is within the two transverse boundary lines of the railroad symbol.
- 2C. The stop line shall be located for best sight distance between 15' - 50' of the near edge of the tracks.
- 2D. The stop line shall be approximately 8' from a gate (if present).
- 2E. Width (W) of the "X" will vary according to the lane width.
- 2F. The height of the "R" shall be 6'.
- 2G. The area of the transverse lines and stop lines varies with the width of the pavement; therefore the area must be added to the value in Table 5 (sheet 2).

Stop Line Marking

- 3A. Except as specified in Notes 3B and 3C, the stop line should be placed as follows:
 - a.) The stop line should be placed where cross-corner vision is maximum.
 - b.) In no case shall the stop line be placed more than 30' or less than 4' from the nearest edge of the intersecting roadway.
 - c.) For normal intersections the maximum distance should be 10'.
- 3B. If a marked crosswalk is present the stop line should be placed 4' in advance of, and parallel to, the nearest crosswalk line.
- 3C. For signalized intersections the stop line should be placed at a minimum distance of 40' from the nearest signal head.

ONLY Word Marking

- 4A. The ONLY word marking is optional.
- 4B. Where used, the spacing between ONLY and arrow markings should be based on Table 4 (sheet 2).
- 4C. When lane-use arrow markings are used and the ONLY marking is not, an additional lane-use arrow should be used in its place to retain the spacing as shown in Table 4 (sheet 2).

Lane-Use Arrow Markings

- 5A. Lane-use arrow markings are optional except where a through traffic lane(s) approaching an intersection becomes a mandatory turn lane(s).
- 5B. Where used, the spacing between markings should be based on Table 4 (sheet 2). However, based on the turn lane length, the spacing between the markings may be adjusted.

Two-Way Left-Turn Only (TWLTO) Arrows

- 6A. Arrow sets should be longitudinally spaced at intervals of:
 - a.) 500' - 1000' for speeds less than or equal to 40 mph,
 - b.) 1000' - 1500' for speeds over 40 mph
- 6B. In addition, an arrow set should be placed:
 - a.) 100' - 200' from the near edge of an intersecting roadway, or
 - b.) Inside both ends of TWLTO lanes.

Shared Lane Marking

- 7A. When chevron markings are used, its area must be added to the value of the bike symbol markings (see Table 2 on sheet 1).
- 7B. When used, the shared lane marking should be placed immediately after an intersection and spaced at intervals not greater than 250' thereafter.

Lane-Reduction Arrow Markings

- 8A. Lane-reduction arrow markings should be placed where a lane reduction transition occurs on a roadway as follows:
 - a.) Lane-reduction arrow markings may be placed for speeds of less than 45 mph, if determined to be appropriate based on engineering judgement.
 - b.) Lane-reduction arrow markings should be placed for speeds of 45 mph or over.
 - c.) Lane-reduction arrow markings may be placed in long acceleration lanes.
 - d.) Where lane-reduction arrows are used, they should be placed as follows:
 - i.) First lane-reduction arrow 100' in advance of the 'Begin Taper' point.
 - ii.) Second lane-reduction arrow placed at the 3/4d point.

**Aultman Cancer Center Public Utilities Relocation
Project, GP 1324**

Contractor's Bid

REF	ITEM	Item Quantity	Item Unit	Item Description	Material Unit Price	Labor Unit Price	Total Unit Price	Total Item Price
1	201	1.00	LS	CLEARING AND GRUBBING				
2	202	917.00	SY	PAVEMENT REMOVED				
3	202	15850.00	SF	WALK REMOVED				
4	202	1811.00	FT	CURB REMOVED				
5	202	7.00	EA	ROADWAY, MISC.: PARKING METER POST REMOVED				
6	204	2029.00	SY	SUBGRADE COMPACTION				
7	690	7.00	EA	ROADWAY, MISC.: PARKING METER POST INSTALLED				
8	659	63.00	CY	TOPSOIL, FURNISHED AND PLACED				
9	659	134.00	SY	SEEDING AND MULCHING				
10	659	1.00	MGAL	WATER				
11	617	20.00	SY	EROSION CONTROL MAT, TYPE G				
12	832	1.00	LS	STORMWATER POLLUTION PREVENTION PLAN				
13	832	5000.00	EA	EROSION CONTROL				
14	605	486.00	FT	4" UNCLASSIFIED PIPE UNDERDRAINS, AS PER PLAN				
15	611	14.00	EA	MANHOLE ADJUSTED TO GRADE, AS PER PLAN				
16	611	50.00	FT	4" CONDUIT, TYPE E				

17	611	4.00	FT	6" CONDUIT, TYPE B				
18	611	50.00	FT	6" CONDUIT, TYPE E				
19	611	100.00	FT	12" CONDUIT, TYPE B				
20	611	11.00	FT	12" CONDUIT, TYPE C				
21	611	135.00	FT	15" CONDUIT, TYPE B				
22	611	35.00	FT	18" CONDUIT, TYPE B				
23	611	1.00	EA	CATCH BASIN, MISC.: CITY OF CANTON SQUARE TOP CATCH BASIN				
24	611	1.00	EA	CATCH BASIN, MISC.: CITY OF CANTON CURB INLET CATCH BASIN				
25	611	6.00	EA	CATCH BASIN ADJUSTED TO GRADE				
26	611	1.00	EA	CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN				
27	611	1.00	EA	INLET RECONSTRUCTED TO GRADE, AS PER PLAN				
28	SPEC	10.00	VERT. FT.	CATCH BASIN, RECONSTRUCTED TO GRADE (CONTINGENCY)				
29	SPEC	20.00	VERT. FT.	MANHOLE, RECONSTRUCTED TO GRADE (CONTINGENCY)				
30	SPEC	11000.00	LB	MISCELLANEOUS METAL				
31	253	11.00	SY	PAVEMENT REPAIR, AS PER PLAN				
32	254	4832.00	SY	PAVEMENT PLANING, ASPHALT CONCRETE				
33	301	49.00	CY	ASPHALT CONCRETE BASE, PG 64-22				
34	304	330.00	CY	AGGREGATE BASE				
35	407	729.00	GAL	TACK COAT, AS PER PLAN				
36	408	176.00	GAL	PRIME COAT				

37	424	110.00	CY	FINE GRADED POLYMER ASPHALT CONCRETE SURFACE COURSE, TYPE A				
38	441	183.00	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), PG 64-22				
39	452	105.00	SY	7" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1P				
40	608	2536.00	SF	3" CONCRETE WALK				
41	608	9730.00	SF	5" CONCRETE WALK				
42	608	974.00	SF	7" CONCRETE WALK				
43	608	273.00	SF	WALKWAY MISC.: CONCRETE CROSSWALK				
44	608	1778.00	SF	CURB RAMP, AS PER PLAN				
45	609	1759.00	FT	CURB, MISC.: CITY OF CANTON TYPE 1 CURB				
46	SPEC	282.00	SY	1" LEVELING SAND (703.02)				
47	SPEC	282.00	SY	2.25" LANDSCAPING BRICK				
48	638	12.00	EA	VALVE BOX ADJUSTED TO GRADE				
49	410	40.00	CY	TRAFFIC COMPACTED SURFACE, TYPE C				
50	614	16.00	HR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE				
51	614	0.42	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT				
52	614	0.41	MILE	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT				
53	614	96.00	FT	WORK ZONE DOTTED LINE, CLASS III, 6", 642 PAINT				
54	614	3.00	EA	WORK ZONE ARROW, CLASS III, 642 PAINT				
55	614	1.00	EA	WORK ZONE WORD ON PAVEMENT, 72" CLASS III, 642 PAINT				
56	616	2.00	MGAL	WATER				

57	616	0.20	TON	CALCIUM CHLORIDE				
58	625	10.00	EA	LIGHT POLE FOUNDATION, AS PER PLAN				
59	625	122.00	FT	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN				
60	625	8026.00	FT	NO. 6 AWG 2400 VOLT DISTRIBUTION CABLE, AS PER PLAN				
61	625	12.00	EA	PULL BOX, MISC.: LIGHTING, 725.06, 17" x 30"				
62	625	1969.00	FT	CONDUIT, 2", 725.051 AS PER PLAN				
63	625	2386.00	FT	CONDUIT, 3", 725.051, AS PER PLAN				
64	625	10.00	EA	GROUND ROD, AS PER PLAN				
65	625	2.00	EA	POWER SERVICE (LIGHTING), AS PER PLAN				
66	625	3162.00	FT	PLASTIC CAUTION TAPE, AS PER PLAN				
67	625	9.00	EA	LIGHT POLE REMOVED, AS PER PLAN				
68	625	9.00	EA	LIGHT POLE FOUNDATION REMOVED				
69	625	10.00	EA	LIGHTING, MISC.: TEST HOLE PERFORMED				
70	620	9.00	EA	DELINEATOR REMOVED AND REERECTED				
71	630	294.00	FT	GROUND MOUNTED SUPPORT, NO. 3 POST				
72	630	11.00	EA	SIGN SUPPORT ASSEMBLY, POLE MOUNTED				
73	630	164.00	SF	SIGN, FLAT SHEET, AS PER PLAN				
74	630	12.00	EA	SIGN HANGER ASSEMBLY, MAST ARM				
75	630	15.00	EA	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				
76	630	2.00	EA	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION				

77	630	15.00	EA	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL				
78	630	10.00	EA	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL				
79	630	3.00	EA	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL				
80	630	5.00	EA	REMOVAL OF POLE MOUNTED SIGN AND REERECTION				
81	644	0.20	MILE	EDGE LINE, 6"				
82	644	0.06	MILE	LANE LINE, 6"				
83	644	0.08	MILE	CENTER LINE				
84	644	587.00	FT	CHANNELIZING LINE, 8"				
85	644	353.00	FT	STOP LINE				
86	644	665.00	FT	CROSSWALK LINE				
87	644	30.00	FT	CHEVRON MARKING				
88	644	89.00	FT	PARKING LOT STALL MARKING				
89	644	13.00	EA	LANE ARROW				
90	644	8.00	EA	BIKE LANE SYMBOL MARKING				
91	625	537.00	FT	CONDUIT,4", 725.051, AS PER PLAN				
92	625	6.00	EA	PULL BOX, 725.06, 17" x 30"				
93	625	2.00	EA	PULL BOX, 725.06, 36"x 36"				
94	625	10.00	EA	GROUND ROD, AS PER PLAN				
95	625	537.00	FT	PLASTIC CAUTION TAPE				
96	632	1.00	LS	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN				

97	632	7.00	EA	SIGNALIZATION, MISC.: TEST HOLE PERFORMED					
98	632	138.00	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG					
99	632	2.00	EA	POWER SERVICE, AS PER PLAN					
100	633	2.00	EA	CONTROLLER ITEM, MISC.: GATEWAY COLUMN					
101	633	6.00	EA	SIGNAL SUPPORT FOUNDATION, AS PER PLAN					
102	661	11.00	EA	SHADE TREE, ACER CAMPESTRE, 'HEDGE MAPLE', 2.5" CAL					
103	661	3.00	EA	SHADE TREE, SYRINGA RETICULATA, 'IVORY SILK', 2.5" CAL					
104	SPEC	14.00	EA	TREE FRAME/GRATE					
105	614	1.00	LS	MAINTAINING TRAFFIC					
106	623	1.00	LS	CONSTRUCTION LAYOUT, STAKES, AND SURVEYING					
107	624	1.00	LS	MOBILIZATION					
								TOTAL	