

Addendum 1

City of Canton, Ohio

Purchasing Department
218 Cleveland Ave. SW, 4th floor
Canton, Ohio 44702

STA-Colonial Boulevard NE, Phase 1, PID 111059, GP 1206
Item/Project

Engineering Department

Responsible Department

2:00:00 PM, 5/18/2022

Bids Due On or Before

Bid Proposal Submitted By:

Company Name

Street Address

City

State

Zip

Contact Person

Phone No.

Email Address

GP1206 STA-Colonial Boulevard NE, Phase 1, PID 111059
Engineering Department

Change of Information:

Sheet 10 – Changes to the Speed Table Detail to modify detail for Item 608 – Detectable Warning, As Per Plan.

Sheet 14 – Quantities adjusted for Item 608 Detectable Warning and Item 608 Detectable Warning, As Per Plan.

Sheet 16 –Item 608 Detectable Warning, As Per Plan added.

Sheet 17 – Item 608 Detectable Warning, As Per Plan and quantity added.

Sheet 18 – Item 608 Detectable Warning quantities modified.

Sheet 141 – Modification made to Item 625 – Light Pole, Decorative, As Per Plan (Nostalgia) and note regarding pole painting removed. Poles shall be powder coated as per City SCD No. 63.

Applicable City of Canton Standard Construction Drawings have been provided.

This addendum includes a revised Bidder's Sheet, which reflects changes in quantity for Ref. No. 62 - Item 608 Detectable Warning and the addition of Ref. No. 62a – Item 608 Detectable Warning, As Per Plan with associated quantity.

The revised Bidder's Sheet is attached. Please replace the Bidder's Sheet in the original Invitation to Bid with the sheet attached.

Engineer's Estimate has been revised to \$3,828,121.60.

X. MISCELLANEOUS GENERAL NOTES

ROUNDING:

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN.

WORK LIMITS:

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

ITEM SPECIAL - MISCELLANEOUS METAL:

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE, AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 611 OF THE SPECIFICATIONS AND THE CITY OF CANTON STANDARD DRAWINGS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL - MISCELLANEOUS METAL 10,000 POUNDS.

THE CONTRACTOR IS CAUTIONED TO USE 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.

ITEM 201 - CLEARING AND GRUBBING:

REMOVE ALL TREES, STUMPS, AND SHRUBS/BUSHES SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID ITEM 201 - CLEARING AND GRUBBING. SOME TREES MARKED FOR REMOVAL MAY HAVE ALREADY BEEN CUT DOWN, IN WHICH CASE THE CONTRACTOR SHALL REMOVE THE REMAINING STUMP.

DRINKING WATER PROTECTION:

THIS PROJECT IS LOCATED WITHIN A PUBLIC DRINKING WATER PROTECTION AREA, FROM ST. ELMO AVENUE NE TO MAPLE AVENUE NE. USE PROPER CONTAINMENT AND DIKING IN REFUELING AREAS. DO NOT STORE FUELS, TOXIC/HAZARDOUS MATERIALS, AND CHEMICALS NEAR DRAINAGE WAYS, DITCHES, OR STREAMS. MAINTAIN A SPILL KIT ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. IMMEDIATELY MITIGATE ANY EVENT, SUCH AS A SPILL OF FUELS, OILS, OR CHEMICALS, THAT COULD THREATEN TO CONTAMINATE THE DRINKING WATER SUPPLY. REPORT ALL SPILLS OR EVENTS TO THE CITY OF CANTON WATER SUPERINTENDENT, TYLER CONVERSE AT 330-498-3315. IF THE SPILL IS A REPORTABLE AMOUNT (PER OHIO EPA'S RELEASE REPORTING REQUIREMENTS), CONTACT THE STARK COUNTY EMERGENCY MANAGEMENT (330-451-3911 OR SCLEPC@STARKCOUNTYOHIO.GOV) AND THE OHIO EPA'S SPILLS HOTLINE (800-282-9378) FOR CLEANUP OF THE SPILL.

ITEM 608 - CONCRETE STEPS, BY TYPE, AS PER PLAN

AT LOCATIONS WHERE EXISTING PRIVATE CONCRETE STEPS ARE ADJACENT TO THE PROPOSED SIDEWALK, THE CONTRACTOR SHALL FORM THE SIDEWALK UP TO THE STEPS. REMAINING STAIR RISERS SHALL CONFORM TO ODOT STANDARD CONSTRUCTION DRAWING RM-2.1, MAINTAINING A MINIMUM RISER HEIGHT OF 4" AND A MAXIMUM RISER HEIGHT OF 7". IF IT IS DETERMINED BY THE ENGINEER THAT THE REMAINING STAIR RISERS DO NOT CONFORM TO SCD RM-2.1, THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN PROVIDED, IF NECESSARY, TO REMOVE AND RECONSTRUCT THE EXISTING CONCRETE STEPS.

THE EXISTING CONCRETE STEPS AND RAILINGS SHALL BE REMOVED PRIOR TO PLACING THE PROPOSED. THE EXCAVATION, FORM PLACEMENT, CONCRETE, FINISHING FOR THE CONCRETE STEPS AND RAILING INSTALLATION SHALL BE AS PER THE 2019 CONSTRUCTION MATERIALS SPECIFICATIONS SECTION 202 FOR THE STEP REMOVALS AND SECTION 608 FOR THE CONCRETE STEPS. PAYMENT FOR THE STEPS SHALL BE FULL COMPENSATION FOR STEP REMOVAL, RAILING REMOVAL, EXCAVATION, BACKFILL, CONCRETE, CUTTING/SAWING, BASE COURSE MATERIAL, EXPANSION JOINT MATERIALS, REINFORCING STEEL, HAND RAILING AND ANY INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION AS SPECIFIED. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LINEAR FOOT PRICE OF ITEM 608 - CONCRETE STEPS, BY TYPE, AS PER PLAN.

ITEM 608 - CONCRETE STEPS, TYPE A, AS PER PLAN 20 FT
 ITEM 608 - CONCRETE STEPS, TYPE B, AS PER PLAN 20 FT

ITEM 202 - REMOVAL MISC.: LANDSCAPING ITEMS

THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE PRIVATE LANDSCAPING ITEMS LABELED AS "TAKE" AS SHOWN ON THE PLANS AND DISPOSE OF ALL MATERIALS PROPERLY. THE FOLLOWING LOCATIONS HAVE BEEN ESTABLISHED AS REQUIRING LANDSCAPING ITEM REMOVAL:

LOCATION	DESCRIPTION
COLONIAL BLVD./MARKET AVE. MEDIAN	LANDSCAPE AREA W/ SEG. RET. WALL, FLOWERS, SHRUBS, LARGE PRIVATE SIGN "COLONIAL HEIGHTS ESTABLISHED 1916"
703 COLONIAL BLVD. NE	LANDSCAPE BLOCKS
705 COLONIAL BLVD. NE	LANDSCAPE TIMBER WALL ALONG EAST SIDE DRIVE & LANDSCAPE AREA W/ GRAVEL PATH, FLOWERS, BUSHES, ROCKS, MISC. ITEMS
710 COLONIAL BLVD. NE	LANDSCAPE AREA W/ FLOWERS, ROCKS, MISC. ITEMS
909 COLONIAL BLVD. NE	LANDSCAPE AREA W/ BLOCKS AROUND TREE
1012 COLONIAL BLVD. NE	LANDSCAPE AREA W/ 2 BUSHES, ADDRESS STONE, SPOTLIGHT, MISC. ITEMS
2612 GIBBS AVE. NE / 2618 GIBBS AVE. NE	BOULDER
COLONIAL BLVD./GIBBS AVE. MEDIAN	LANDSCAPE AREA W/ SEG. RET. WALL, FLOWERS, SHRUBS, LARGE PRIVATE SIGN "COLONIAL HEIGHTS ESTABLISHED 1916"

A LUMP SUM QUANTITY FOR ITEM 202- REMOVAL MISC.: LANDSCAPING ITEMS HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE REMOVAL OF THE EXISTING LANDSCAPING ITEMS LISTED ABOVE.

ITEM 202 - REMOVAL MISC.: STEPS AND RAILING

THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE 2 STEPS AND 3' OF RAILING ON EACH SIDE OF THE STEPS LOCATED AT 803 COLONIAL BLVD. NE AND DISPOSE OF ALL MATERIALS PROPERLY. CARE SHALL BE TAKEN SO AS TO NOT DAMAGE THE REMAINING STEPS AND REMAINING PORTION OF THE RAILING.

A LUMP SUM QUANTITY FOR ITEM 202 - REMOVAL MISC.: STEPS AND RAILING HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 644 - PAVEMENT MARKING, MISC.: SPEED TABLE MARKING

THIS ITEM SHALL INCLUDE INSTALLING SPEED TABLE MARKINGS AT THE LOCATIONS SHOWN IN THE PLANS. SPEED TABLE MARKINGS SHALL BE IN COMPLIANCE WITH THE DETAILS SHOWN IN SECTION 3B.25 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), FIGURE 3B-29 AND FIGURE 3B-30.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 644 PAVEMENT MARKING, MISC.: SPEED TABLE MARKING INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED.

SURVEYING PARAMETERS:

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 2 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
 MONUMENT TYPE: (B)

VERTICAL POSITIONING

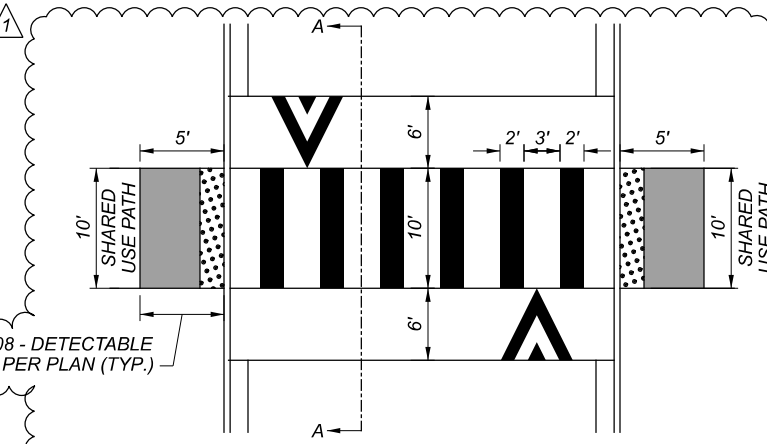
ORTHOMETRIC HEIGHT DATUM: NAVD88
 GEOID: GEOID 12A

HORIZONTAL POSITIONING

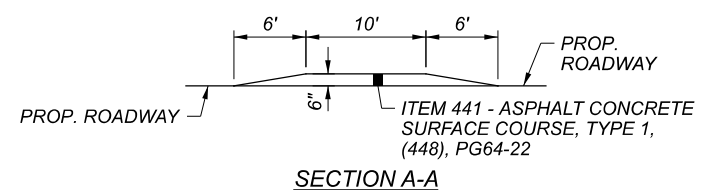
REFERENCE FRAME: NAD83 (2011)
 ELLIPSOID: GRS80
 MAP PROJECTION: LAMBERT CONFORMAL CONIC
 COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE (3401)
 COMBINED SCALE FACTOR: 0.99989863
 PROJECT ADJUSTMENT FACTOR: 1.00010138
 (PROJECT ADJUSTMENT FACTOR = 1 / COMBINED SCALE FACTOR)
 ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.



SPEED TABLE DETAIL



SECTION A-A

NOTES:
 1.) INLETS ARE REQUIRED ON THE UPHILL SIDE OF A SPEED TABLE.
 2.) ALL SIGNING AND STRIPING SHALL CONFORM TO THE LATEST EDITION OF THE OMUTCD.

ITEM 608 - DETECTABLE WARNING, AS PER PLAN

THIS ITEM SHALL INCLUDE THE INSTALLATION OF A 4" CONCRETE PAD (ITEM 608 - 4" CONCRETE WALK) AND A 2'x10' DETECTABLE WARNING PANEL (ITEM 608 - DETECTABLE WARNING) AT EACH LOCATION WHERE THE ASPHALT SHARED USE PATH TERMINATES AT A SPEED TABLE. THE CONCRETE PAD SHALL INCLUDE THE AREA BETWEEN THE BACK OF THE CURB EXTENDING TO 5' BEHIND THE FRONT EDGE OF THE DETECTABLE WARNING PANEL AND SHALL BE THE FULL WIDTH OF THE SHARED USE PATH.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR ITEM 608 DETECTABLE WARNING, AS PER PLAN INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED.

ABBREVIATION LEGEND:

- BL = BASELINE
- CL = CENTERLINE
- FL = FLOW LINE
- PL = PROPERTY LINE
- PI = POINT OF INTERSECTION
- Δ = ANGLE OF INTERSECTION
- Dc = DEGREE OF CURVATURE
- R = RADIUS
- T = TANGENT LENGTH
- L = LENGTH OF CURVE
- E = EXTERNAL DISTANCE
- eMAX = MAXIMUM SUPERELEVATION
- PC = PT OF CURVATURE
- PT = PT OF TANGENCY
- PRC = PT OF REV. CURVATURE
- PCC = PT OF COMP. CURVATURE
- NC = NORMAL CROWN
- PVI = PT OF VERT. INTERSECTION
- V.C. = VERTICAL CURVE
- SSD = STOPPING SIGHT DISTANCE
- GR. BRK = GRADE BREAK
- PVMT = PAVEMENT
- SHLD = SHOULDER
- ASPH. = ASPHALT
- CONC. = CONCRETE
- E/P = EDGE OF PAVEMENT
- E/S = EDGE OF SHOULDER
- F/C = FACE OF CURB
- B/C = BACK OF CURB
- C/G = CURB AND GUTTER
- INV. = INVERT
- ELEV. = ELEVATION
- T/G = TOP OF GRATE
- T/C = TOP OF COVER
- CB = CATCH BASIN
- MH = MANHOLE
- UD = UNDERDRAIN
- CMP = CORRUGATED METAL PIPE
- RCP = REINFORCED CONCRETE PIPE
- DND = DO NOT DISTURB
- TBR = TO BE REMOVED
- TBRBO = TO BE REMOVED BY OTHERS
- ATG = ADJUST TO GRADE
- RTG = RECONSTRUCT TO GRADE
- REL = TO BE RELOCATED
- TYP. = TYPICAL
- VAR. = VARIES
- MIN. = MINIMUM
- MAX. = MAXIMUM
- LB = POUNDS
- SY = SQUARE YARDS
- CY = CUBIC YARDS
- FT = FEET

△ DETAIL REVISED AND NOTE ADDED

CONVENTIONAL SYMBOLS

County Line	-----	Edge of Shoulder (Ex)	-----
Township Line	-----	Edge of Shoulder (Pr)	-----
Section Line	-----	Ditch / Creek (Ex)	-----
Corporation Line	----- or -----	Ditch / Creek (Pr)	-----
Fence Line (Ex)	----- (Pr) -----	Tree Line (Ex)	-----
Center Line	-----	Ownership Hook Symbol	Example
Right of Way (Ex)	----- Ex R/W -----	Property Line Symbol	Example
Right of Way (Pr)	----- R/W -----	Break Line Symbol	Example
Standard Highway Ease.(Ex)	----- Ex SH -----	Tree (Pr) ☼, Tree (Ex) ☼, Shrub (Ex) ☼	
Standard Highway Ease.(Pr)	----- SH -----	Tree (Remove) ✕, Shrub (Remove) ✕	
Temporary Right of Way	----- TMP -----	Evergreen (Ex) ☼, Stump ☼	
Channel Ease. (Pr)	----- CH -----	Evergreen (Remove) ✕, Stump (Remove) ✕	
Utility Ease. (Ex)	----- Ex U -----	Wetland (Pr) ☼, Grass (Pr) ☼, Aerial Target △	
Railroad	+++++ or -----	Post (Ex) ○, Mailbox (Ex) ☼, Mailbox (Pr) ☼	
Guardrail (Ex)	○ ○ ○ ○ ○ (Pr) ● ● ● ● ●	Light (Ex) ☼, Telephone Marker (Ex) +TEL	
Construction Limits	-----	Fire Hydrant (Ex) ☼, Water Meter (Ex) ☼	
Edge of Pavement (Ex)	-----	Water Valve (Ex) ☼, Utility Valve Unknown (Ex.) ☼	
Edge of Pavement (Pr)	-----	Telephone Pole (Ex) ☼, Power Pole (Ex) ☼	
		Light Pole (Ex) ☼	

SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
8	10C	10D	17	18	20	20A	93	116	144		01/MPO/PV							
PAVEMENT (CONT.)																		
			313				1					314	441	50000	314	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
			601									601	441	50200	601	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)	
							284					284	452	10010	284	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			1,485									1,485	452	13010	1,485	SY	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			784									784	452	19200	784	SY	NON-REINFORCED CONCRETE PAVEMENT, MISC.: 5.5" NON-REINFORCED CONCRETE PAVEMENT	
			663									663	452	19200	663	SY	NON-REINFORCED CONCRETE PAVEMENT, MISC.: ROADWAY BRICK PAVERS	8
			122									122	452	19200	122	SY	NON-REINFORCED CONCRETE PAVEMENT, MISC.: SIDEWALK BRICK PAVERS	8
				4,208								4,208	608	52000	4,208	SF	CURB RAMP	
				40								40	608	53020	40	SF	DETECTABLE WARNING	
			408									408	608	53021	408	SF	DETECTABLE WARNING, AS PER PLAN	10
				9,099								9,099	609	12001	9,099	FT	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	4
				233								233	609	22001	233	FT	CURB, TYPE 3-B, AS PER PLAN	5
WATER WORK																		
								32				32	638	98000	32	EACH	WATER WORK, MISC.: 1" WATER SERVICE CONNECTION, COMPLETE, SHORT SIDE	9
								17				17	638	98000	17	EACH	WATER WORK, MISC.: 1" WATER SERVICE CONNECTION, COMPLETE, LONG SIDE	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 1.5" WATER SERVICE CONNECTION, COMPLETE, LONG SIDE	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 2" CURB STOP, COMPLETE	9
								11				11	638	98000	11	EACH	WATER WORK, MISC.: 6" GATE VALVE	9
								4				4	638	98000	4	EACH	WATER WORK, MISC.: 8" GATE VALVE	9
								2				2	638	98000	2	EACH	WATER WORK, MISC.: 12" GATE VALVE	9
								15				15	638	98000	15	EACH	WATER WORK, MISC.: 6" 11.25 DEGREE BEND	9
								4				4	638	98000	4	EACH	WATER WORK, MISC.: 6" 22.5 DEGREE BEND	9
								25				25	638	98000	25	EACH	WATER WORK, MISC.: 6" 45 DEGREE BEND	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 8" 11.25 DEGREE BEND	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 8" 22.5 DEGREE BEND	9
								11				11	638	98000	11	EACH	WATER WORK, MISC.: 8" 45 DEGREE BEND	9
								4				4	638	98000	4	EACH	WATER WORK, MISC.: 12" 45 DEGREE BEND	9
								2				2	638	98000	2	EACH	WATER WORK, MISC.: 6" X 6" X 6" TEE	9
								2				2	638	98000	2	EACH	WATER WORK, MISC.: 6" X 6" X 8" TEE	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 8" X 8" X 8" TEE	9
								3				3	638	98000	3	EACH	WATER WORK, MISC.: 12" X 12" X 6" TEE	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 6" X 4" REDUCER	9
								1				1	638	98000	1	EACH	WATER WORK, MISC.: 4" CUT-IN SLEEVE	9
								3				3	638	98000	3	EACH	WATER WORK, MISC.: 6" CUT-IN SLEEVE	9
								3				3	638	98000	3	EACH	WATER WORK, MISC.: 8" CUT-IN SLEEVE	9
								2				2	638	98000	2	EACH	WATER WORK, MISC.: 12" CUT-IN SLEEVE	9
								3				3	638	98000	3	EACH	WATER WORK, MISC.: 4" PLUG	9
								5				5	638	98000	5	EACH	WATER WORK, MISC.: 6" PLUG	9
								3				3	638	98000	3	EACH	WATER WORK, MISC.: 8" PLUG	9
								2				2	638	98000	2	EACH	WATER WORK, MISC.: 12" PLUG	9
								7				7	638	98000	7	EACH	WATER WORK, MISC.: FIRE HYDRANT ASSEMBLY	9
								4				4	638	98000	4	EACH	WATER WORK, MISC.: FIRE HYDRANT REMOVED	9
								16				16	638	98000	16	EACH	WATER WORK, MISC.: EXISTING VALVE ABANDONED	9
								100				100	638	98600	100	FT	WATER WORK, MISC.: 2" WATER MAIN HIGH DENSITY POLYETHYLENE PIPE CTS SDR 9	9
								5				5	638	98600	5	FT	WATER WORK, MISC.: 4" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	9
								2,665				2,665	638	98600	2,665	FT	WATER WORK, MISC.: 6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	9
								236				236	638	98600	236	FT	WATER WORK, MISC.: 8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	9
								391				391	638	98600	391	FT	WATER WORK, MISC.: 12" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 53, PUSH-ON JOINTS AND FITTINGS	9
								80				80	638	98600	80	FT	WATER WORK, MISC.: INSULATING FILL	9
SANITARY SEWER																		
								2				2	202	58000	2	EACH	MANHOLE REMOVED	
								264				264	202	98700	264	FT	ABANDON MISC.: GROUT AND ABANDON 8" SANITARY SEWER	8
100								100				100	611	00100	100	FT	4" CONDUIT, TYPE B, 707.33	
100								100				100	611	00900	100	FT	6" CONDUIT, TYPE B, 707.33	
100								100				100	611	01800	100	FT	8" CONDUIT, TYPE B, 707.33	

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER
JMK

REVIEWER
KMK 02-10-22

PROJECT ID
111059

SHEET TOTAL
P.14 168

ITEM ADDED AND QUANTITIES REVISED

STA-COLONIAL BOULEVARD NE - PHASE 1

MODEL: Sheet PAPER: 17x11 (in.) DATE: 2022-05-12 TIME: 9:30:05 AM USER: jennifer.kelley
 \\10.120.112.51\share\121798_STA-Colonial\7_0_Production\Worksets\111059\400-Engineering\Roadway\Sheets\111059_GC001.dgn


PAVEMENT CALCULATIONS

STATION RANGE	ROUTE	SIDE	LENGTH L (FT)	AVERAGE WIDTH W (FT)	SURFACE AREA A (SF) A=LxW	EDGE COURSE AREAS		202	204	204	254	301	304	407	408	441	441	452	452	452	452	608
						4" BEYOND	10" BEYOND	PAVEMENT REMOVED	SUBGRADE COMPACTION	PROOF ROLLING	PAVEMENT PLANING, ASPHALT CONCRETE (3")	ASPHALT CONCRETE BASE, PG64-22 (6")	AGGREGATE BASE (4")	NON-TRACKING TACK COAT	PRIME COAT	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22 (0.75" OR 1.5")	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448) (2.25")	NON-REINFORCED CONCRETE PAVEMENT, MISC.: 5.5" NON- REINFORCED CONCRETE PAVEMENT	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS GC 1P	NON-REINFORCED CONCRETE PAVEMENT, MISC.: ROADWAY BRICK PAVERS	NON-REINFORCED CONCRETE PAVEMENT, MISC.: SIDEWALK BRICK PAVERS	DETECTABLE WARNING, AS PER PLAN
						SF	SF	SY	SY	HOUR	SY	CY	CY	GAL	GAL	CY	CY	SY	SY	SY	SY	SY
100+45.50	TO	111+56.23	COLONIAL WB (FULL DEPTH)	LT	1110.73	9.50	10551.94		1172.44	0.59		195.41	130.27	140.69	468.97	24.43	73.28					
100+45.50	TO	112+31.48	COLONIAL EB (FULL DEPTH)	RT	1185.98	9.50	11266.81		1251.87	0.63		208.64	139.10	150.22	500.75	26.08	78.24					
111+56.23	TO	113+34.90	COLONIAL WB (FULL DEPTH)	LT			2220.34		246.70	0.12		41.12	27.41	29.60	98.68	5.14	15.42					
112+31.48	TO	113+21.04	COLONIAL EB (FULL DEPTH)	RT			1177.16		130.80	0.07		21.80	14.53	15.70	52.32	2.72	8.17					
115+08.94	TO	116+66.35	COLONIAL WB (FULL DEPTH)	LT			1801.19		200.13	0.10		33.36	22.24	24.02	80.05	4.17	12.51					
115+01.80	TO	116+45.22	COLONIAL EB (FULL DEPTH)	RT			1680.92		186.77	0.09		31.13	20.75	22.41	74.71	3.89	11.67					
116+66.35	TO	121+40.12	COLONIAL WB (FULL DEPTH)	LT	473.77	9.50	4500.82		500.09	0.25		83.35	55.57	60.01	200.04	10.42	31.26					
116+45.22	TO	121+44.50	COLONIAL EB (FULL DEPTH)	RT	499.28	9.50	4743.16		527.02	0.26		87.84	58.56	63.24	210.81	10.98	32.94					
121+40.12	TO	122+48.19	COLONIAL EB/WB (FULL DEPTH)	LT/RT			3373.22		374.80	0.19		62.47	41.64	44.98	149.92	7.81	23.43					
100+59.00	TO	100+86.50	COLONIAL U-TURN AREA	LT/RT			648.57		72.06	0.04		12.01	8.01	8.65	28.83	1.50	4.50					
104+95.50	TO	105+58.51	COLONIAL U-TURN AREA	LT/RT			1263.14		140.35	0.07		23.39	15.59	16.84	56.14	2.92	8.77					
108+20.50	TO	109+04.50	COLONIAL U-TURN AREA	LT/RT			2104.61		233.85	0.12		38.97	25.98	28.06	93.54	4.87	14.62					
111+71.50	TO	112+55.62	COLONIAL U-TURN AREA	LT/RT			1509.85		167.76	0.08		27.96	18.64	20.13	67.10	3.50	10.49					
118+14.31	TO	118+80.49	COLONIAL U-TURN AREA	LT/RT			1372.03		152.45	0.08		25.41	16.94	18.29	60.98	3.18	9.53					
100+25.50	TO	100+59.00	COLONIAL WB CONC. HEADER	LT			119.36		13.26	0.01			1.47					13.26				
100+25.50	TO	100+59.00	COLONIAL EB CONC. HEADER	RT			119.36		13.26	0.01			1.47					13.26				
100+68.17	TO	105+11.98	COLONIAL WB CONC. HEADER	LT			1784.34		198.26	0.10			22.03					198.26				
100+72.22	TO	105+12.45	COLONIAL EB CONC. HEADER	RT			1783.21		198.13	0.10			22.01					198.13				
105+42.02	TO	108+40.50	COLONIAL WB CONC. HEADER	LT			1201.52		133.50	0.07			14.83					133.50				
105+41.57	TO	108+40.50	COLONIAL EB CONC. HEADER	RT			1277.35		141.93	0.07			15.77					141.93				
108+84.49	TO	111+91.50	COLONIAL WB CONC. HEADER	LT			1224.05		136.01	0.07			15.11					136.01				
108+84.49	TO	111+91.50	COLONIAL EB CONC. HEADER	RT			1312.84		145.87	0.07			16.21					145.87				
116+04.24	TO	118+30.41	COLONIAL WB CONC. HEADER	LT			932.43		103.60	0.05			11.51					103.60				
115+65.07	TO	118+31.26	COLONIAL EB CONC. HEADER	RT			1077.23		119.69	0.06			13.30					119.69				
118+64.23	TO	121+67.50	COLONIAL WB CONC. HEADER	LT			1270.75		141.19	0.07			15.69					141.19				
118+63.72	TO	121+67.50	COLONIAL EB CONC. HEADER	RT			1019.06		113.23	0.06			12.58					113.23				
101+07.11	TO	101+29.89	COLONIAL WB PARKING AREA	LT	22.78	6.00	136.66		15.18	0.01			1.69					15.18		15.18		
102+06.11	TO	102+51.89	COLONIAL EB PARKING AREA	RT	45.78	6.00	274.66		30.52	0.02			3.39					30.52		30.52		
102+79.10	TO	103+62.91	COLONIAL WB PARKING AREA	LT	87.02	6.00	522.14		58.02	0.03			6.45					58.02		58.02		
103+25.14	TO	103+49.86	COLONIAL EB PARKING AREA	RT	23.78	6.00	142.67		15.85	0.01			1.76					15.85		15.85		
103+98.14	TO	104+22.86	COLONIAL EB PARKING AREA	RT	23.78	6.00	142.67		15.85	0.01			1.76					15.85		15.85		
105+79.11	TO	106+01.89	COLONIAL WB PARKING AREA	LT	22.78	6.00	136.66		15.18	0.01			1.69					15.18		15.18		
105+88.11	TO	106+10.89	COLONIAL EB PARKING AREA	RT	22.78	6.00	136.66		15.18	0.01			1.69					15.18		15.18		
106+77.11	TO	107+22.89	COLONIAL WB PARKING AREA	LT	45.78	6.00	274.66		30.52	0.02			3.39					30.52		30.52		
109+47.06	TO	109+69.94	COLONIAL EB PARKING AREA	RT	24.98	6.00	149.85		16.65	0.01			1.85					16.65		16.65		
110+38.06	TO	110+83.92	COLONIAL EB PARKING AREA	RT	50.05	6.00	300.28		33.36	0.02			3.71					33.36		33.36		
115+85.13	TO	116+09.47	COLONIAL EB PARKING AREA	RT	23.85	6.00	143.07		15.90	0.01			1.77					15.90		15.90		
116+79.00	TO	117+70.89	COLONIAL WB PARKING AREA	LT	94.67	6.00	568.02		63.11	0.03			7.01					63.11		63.11		
119+31.13	TO	119+79.87	COLONIAL EB PARKING AREA	RT	47.11	6.00	282.67		31.41	0.02			3.49					31.41		31.41		
120+26.09	TO	120+71.91	COLONIAL WB PARKING AREA	LT	47.34	6.00	284.05		31.56	0.02			3.51					31.56		31.56		
120+47.13	TO	121+19.87	COLONIAL EB PARKING AREA	RT	70.31	6.00	421.87		46.87	0.02			5.21					46.87		46.87		

ITEM REVISED

TOTALS CARRIED TO SHEET 17

0	7,251	4	0	893	806	643	2,143	112	335	436	1,458	436	0	0
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DESIGN AGENCY

 DESIGNER: JMK
 REVIEWER: KMK 02-10-22
 PROJECT ID: 111059
 SHEET TOTAL: P.16 | 168

PAVEMENT QUANTITIES

STA-COLONIAL BOULEVARD NE - PHASE 1

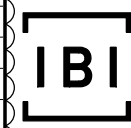
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PAVEMENT CALCULATIONS

STATION RANGE	ROUTE	SIDE	LENGTH L (FT)	AVERAGE WIDTH, W (FT)	SURFACE AREA, A (SF) A=LxW	EDGE COURSE AREAS		202	204	204	254	301	304	407	408	441	441	452	452	452	452	608				
						4" BEYOND	10" BEYOND	PAVEMENT REMOVED	SUBGRADE COMPACTION	PROOF ROLLING	PAVEMENT PLANING, ASPHALT CONCRETE (3")	ASPHALT CONCRETE BASE, PG64-22 (6")	AGGREGATE BASE (4")	NON-TRACKING TACK COAT	PRIME COAT	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22 (0.75" OR 1.5")	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448) (2.25")	NON-REINFORCED CONCRETE PAVEMENT, MISC.: 5.5" NON-REINFORCED CONCRETE PAVEMENT	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	NON-REINFORCED CONCRETE PAVEMENT, MISC.: ROADWAY BRICK PAVERS	NON-REINFORCED CONCRETE PAVEMENT, MISC.: SIDEWALK BRICK PAVERS	DETECTABLE WARNING, AS PER PLAN				
						SF	SF	SY	SY	HOUR	SY	CY	CY	GAL	GAL	CY	CY	SY	SY	SY	SY	SY	SY	SF		
4+19.32	TO	5+61.99	N. ROUNDABOUT CIRC. ROADWAY		2269.02				252.11	0.13		42.02	28.01	30.25	100.85	5.25	15.76									
1+66.46	TO	3+09.99	S. ROUNDABOUT CIRC. ROADWAY		2269.02				252.11	0.13		42.02	28.01	30.25	100.85	5.25	15.76									
3+09.99	TO	4+19.32	NB ROUNDABOUT CONN. ROADWAY		1023.68				113.74	0.06		18.96	12.64	13.65	45.50	2.37	7.11									
1+66.46	TO	5+61.99	SB ROUNDABOUT CONN. ROADWAY		1071.56				119.06	0.06		19.84	13.23	14.29	47.62	2.48	7.44									
1+11.22	TO	1+38.32	ROUNDABOUT CONN. ROADWAY ISLAND		184.17				20.46	0.01			2.27					20.46				20.46				
3+66.98	TO	3+94.76	ROUNDABOUT CONN. ROADWAY ISLAND		192.98				21.44	0.01			2.38					21.44				21.44				
			N. ROUNDABOUT CENTRAL ISLAND		1017.88				113.10	0.06			12.57					113.10			113.10					
			S. ROUNDABOUT CENTRAL ISLAND		1017.88				113.10	0.06			12.57					113.10			113.10					
3+14.12	TO	3+56.98	ROUNDABOUT BORDER BRICKS		161.50				17.94	0.01			1.99					17.94				17.94				
3+66.98	TO	4+34.97	ROUNDABOUT BORDER BRICKS		292.27				32.47	0.02			3.61					32.47				32.47				
5+50.91	TO	1+01.22	ROUNDABOUT BORDER BRICKS		261.92				29.10	0.01			3.23					29.10				29.10				
100+16.84	TO	100+45.50	MARKET AVE. (INT. AREA)	LT/RT	1468.78				163.20	0.08		27.20	18.13	19.58	65.28	3.40	10.20									
12+50.00	TO	13+30.34	26TH ST. (INT. AREA)	LT/RT	3140.72				348.97	0.17		58.16	38.77	41.88	139.59	7.27	21.81									
3+70.00	TO	4+32.25	BEVERLY AVE. (INT. AREA)	LT/RT	1929.44				214.38	0.11		35.73	23.82	25.73	85.75	4.47	13.40									
30+08.77	TO	30+60.00	HAVANA PL. (INT. AREA)	LT/RT	1296.06				144.01	0.07		24.00	16.00	17.28	57.60	3.00	9.00									
30+10.89	TO	30+29.89	HAVANA PL. (TRAFFIC DIVIDER)	LT	92.33				10.26	0.01			1.14						10.26							
12+00.00	TO	12+90.15	GIBBS AVE. N. (INT. AREA)	LT/RT	1942.99				215.89	0.11		35.98	23.99	25.91	86.36	4.50	13.49									
12+72.86	TO	12+88.65	GIBBS AVE. N. (TRAFFIC DIVIDER)	CL	73.50				8.17	0.01			0.91						8.17							
14+88.81	TO	15+90.00	GIBBS AVE. S. (INT. AREA)	LT/RT	2521.82				280.20	0.14		46.70	31.13	33.62	112.08	5.84	17.51									
14+90.33	TO	15+05.88	GIBBS AVE. S. (TRAFFIC DIVIDER)	CL	71.37				7.93	0.01			0.88						7.93							
12+30.00	TO	12+50.00	26TH ST. (RESURFACING)	LT/RT	20.00	29.60	592.08				65.79			11.84		1.37	4.11									
3+40.00	TO	3+70.00	BEVERLY AVE. (RESURFACING)	LT/RT	30.00	29.72	891.66				99.07			17.83		2.06	6.19									
30+60.00	TO	30+94.00	HAVANA PL. (RESURFACING)	LT/RT	34.00	24.08	818.77				90.97			16.38		1.90	5.69									
122+00.00	TO	123+25.00	COLONIAL/ROWLAND (RESURFACING)	LT/RT			16984.87				1887.21			339.70		39.32	117.95									
100+34.00	TO	100+50.50	SHARED USE PATH	LT/RT	196.27	9.64	24.10		24.49	0.02		4.08	2.54	1.37	9.79	0.91						56.40				
100+68.50	TO	105+13.51	SHARED USE PATH	LT/RT	4509.35	431.05	1077.63		620.78	0.32		103.46	60.99	32.94	248.31	20.88						129.18				
105+40.50	TO	108+26.04	SHARED USE PATH	LT/RT	2924.95	289.82	724.56		405.50	0.21		67.58	39.69	21.43	162.20	13.54						56.45				
109+01.72	TO	111+75.00	SHARED USE PATH	LT/RT	2715.37	285.63	714.08		381.05	0.20		63.51	37.05	20.01	152.42	12.57										
115+28.87	TO	118+35.50	SHARED USE PATH	LT/RT	3072.31	205.37	513.43		398.42	0.20		66.40	40.47	21.85	159.37	14.22						83.07				
118+59.49	TO	121+49.00	SHARED USE PATH	LT/RT	2987.19	264.53	661.32		405.39	0.21		67.56	40.14	21.68	162.16	13.83						81.91				
100+51.00	TO	100+68.00	SPEED TABLE	LT/RT	410.89											5.42										
105+14.00	TO	105+40.00	SPEED TABLE	LT/RT	643.06											8.42										
114+06.54	TO	114+21.32	SPEED TABLE	LT/RT	633.66											8.83										
118+36.00	TO	118+59.00	SPEED TABLE	LT/RT	933.40											13.29										
100+00.00	TO	122+50.00	COLONIAL MAINLINE & SIDE ROADS	LT/RT					12719.17																	
TOTALS CARRIED FROM THIS SHEET								12,720	4,714	3	2,144	724	497	758	1,736	201	266	348	27	227	122	408				
TOTALS CARRIED FROM SHEET 16								0	7,251	4	0	893	806	643	2,143	112	335	436	1,458	436	0	0				
TOTALS CARRIED TO GENERAL SUMMARY								12,720	11,965	7	2,144	1,617	1,303	1,401	3,879	313	601	784	1,485	663	122	408				

PAVEMENT QUANTITIES

DESIGN AGENCY



DESIGNER JMK

REVIEWER KMK 02-10-22

PROJECT ID 111059

SHEET TOTAL P.17 168

ITEM AND QUANTITY REVISED

ITEM 625 - LIGHT POLE FOUNDATION, AS PER PLAN (NOSTALGIA):

LIGHT POLE FOUNDATIONS SHALL BE CONSTRUCTED AS PER THE CITY OF CANTON STANDARD DRAWING NO. 65.

ITEM 625 - LIGHT POLE, DECORATIVE, AS PER PLAN (NOSTALGIA):

NOSTALGIA PEDESTALS/LIGHT POLES SHALL BE PACIFIC FAMILY SERIES (VERIFY WITH CITY FOR CURRENT STANDARD DESIGN) MANUFACTURED BY:

UNION METAL CORPORATION
 1432 MAPLE AVENUE N.E.
 P.O. BOX 9920
 CANTON, OH 44711
 PHONE: 330-456-7653

THE CONTRACTOR SHALL FURNISH AND INSTALL DECORATIVE LIGHT POLES, AS PER PLANS. POLES SHALL INCLUDE HANDHOLE, CHAIN, AND COVER. ALL HARDWARE INCLUDING BRACKET ARMS AND RELATED EQUIPMENT SHALL BE INCLUDED WITH THIS ITEM. THE ENTIRE ASSEMBLY SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF AASHTO. THE ORNAMENTAL BASE SHALL BE UNION METAL CORPORATION BASE NO. 54 AND SHALL BE LEVEL IN ORDER TO ACCEPT THE BASE ASSEMBLY AND SHALL BE AT LEAST AS LARGE AS THE BOTTOM DIMENSION OF THE ORNAMENTAL BASE CASTING. ALL PROPOSED EXTERIOR CONNECTIONS (PEDESTRIAN SIGNAL HEADS, SIGNS, ETC.) TO DECORATIVE LIGHT POLES SHALL BE FIELD DRILLED. BANDING OR STRAPPING ON THE DECORATIVE LIGHT POLES SHALL NOT BE PERMITTED. A PERMANENT LEGIBLE MARKING INDICATION SHALL BE INCLUDED ON EACH DECORATIVE LUMINAIRE SUPPORT. THE FOLLOWING INDICATION SHALL BE REQUIRED AS A MINIMUM:

A. POLE INDICATIONS: MONTH/DATE OF FABRICATION; POLE GAUGE; BOTTOM DIAMETER; POLE HEIGHT; BOLT CIRCLE; ANCHOR BOLT DIAMETER; FLANGE BOLT DIAMETER; AND INTERSECTION LOCATION INCLUDING CORNER QUADRANT.

EACH POLE SHALL INCLUDE AN OUTLET FRAME INTEGRALLY WELDED INTO THE TOP OF THE SHAFT TO ACCOMMODATE A DUPLEX 20A-125V, GFI RECEPTACLE PROVIDED WITH THE POLE. A WEATHERPROOF COVER PAINTED TO MATCH THE POLE SHALL ALSO BE PROVIDED.

LIGHT POLE SHALL BE CONSTRUCTED SO THAT LUMINAIRE ARMS ARE PARALLEL TO THE ROADWAY CENTERLINE.

BASIS OF PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH ITEM 625 - LIGHT POLE, DECORATIVE, AS PER PLAN, WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, INSTALLATION, ANCHOR BOLTS, COVER BASE, PAINTING, AND INCIDENTALS.

ITEM 625 - CONDUIT, 725.051, 2", AS PER PLAN:

ALL CONDUITS AND FITTINGS SHALL BE TYPE EB, SCHEDULE 40 PVC. ALL CONDUITS SHALL HAVE PULL WIRE. ALL CONDUITS ENTERING A PULL BOX, POLE, ETC. SHALL NOT EXTEND MORE THAN 1" BEYOND ENTERING THE PULL BOX, POLE, ETC.

ITEM 625 - TRENCH IN PAVED AREAS, AS PER PLAN:

IN ADDITION TO THE REQUIREMENTS OF 625.13, THIS ITEM SHALL INCLUDE FULL PAVEMENT REPLACEMENT WHEN TRENCHING IN THE ROADWAY. BORING OR JACKING THE CONDUIT UNDER THE PAVEMENT CAN BE PERFORMED IN LIEU OF TRENCHING. IF BORING OR JACKING IS PERFORMED IN LIEU OF TRENCHING, THE CONDUIT PLACED SHALL BE 725.04 ANY EXTRA COST FOR THE 725.04 CONDUIT SHALL BE INCLUDED IN THIS ITEM.

ITEM 625 - POWER SERVICE, AS PER PLAN:

POWER SERVICE SHALL BE AS PER ODOT SPECIFICATION 625 AND ODOT STANDARD CONSTRUCTION DRAWING TC-83.10. ELECTRIC POWER SHALL BE SUPPLIED BY AMERICAN ELECTRIC POWER (AEP). POWER SERVICE IS TO BE METERED. THE BREAKER SHALL BE MILBANK MODEL#CP3B51115AAOSP10. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE VOLTAGE SUPPLIED SHALL BE NOMINALLY 240 VOLTS, EXCEPT WHERE DECORATIVE SIGNAL SUPPORTS WITH ORNAMENTAL LUMINAIRE WHICH REQUIRES 240V OR 208V. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE LIGHTING IS ACCEPTED BY THE CITY OF CANTON.

NOSTALGIA SIGNAL SUPPORT AND PEDESTAL AND DECORATIVE LIGHT POLE PAINTING:

LUMINAIRE POLE AND BRACKETS SHALL BE PAINTED (SURFACE PREPARATION, PRIMER APPLICATION, AND FINISH COATING OF GALVANIZED SUBSTRATES). THE FOLLOWING SHALL APPLY:

- A. SURFACE PREPARATION:
 PRE CLEAN SUBSTRATES TO SSPC-SP-1 SOLVENT CLEANING SPECIFICATION. PREPARE GALVANIZED SUBSTRATES BY ABRASIVE BLASTING TO SSPC-SP-7 BRUSH-OFF BLAST CLEANING SPECIFICATION.
- B. COLOR
 THE COLOR OF THE POLES SHALL BE CBD GREEN (COLOR AND FORMULA IS ON FILE AT THE MIDWEST TANK SERVICES CO., INC., CANTON, OH).
- C. MATERIALS:
 PRIMER-APPLY ONE (1) COAT OF POLYAMIDE UNIVERSAL EPOXY PRIMER-LIGHT GRAY AT A DRY FILM THICKNESS OF 2.0-4.0 MILS. 1ST INTERMEDIATE-APPLY ONE (1) COAT OF HIGH BUILD EPOXY-BUFF COLOR AT A DRY FILM THICKNESS OF 4.0-8.0 MILS. 2ND INTERMEDIATE-APPLY ONE (1) COAT OF ALIPHATIC ACRYLIC URETHANE-CBD GREEN AT A DRY FILM THICKNESS OF 2.0-3.0 MILS. FINISH-APPLY ONE (1) COAT OF ALIPHATIC URETHANE-CLEAR AT A DRY FILM THICKNESS OF 2.0-3.0 MILS.
- D. APPLICATION:
 APPLICATION(S) OF COATING(S) SHALL BE BY SPRAY METHOD ONLY BY INDUSTRY STANDARDS OF GOOD WORKMANSHIP AND PRACTICES.
- E. INSPECTION:
 INSPECTION OF APPLIED COATINGS SHALL BE IN ACCORDANCE WITH THE SOCIETY FOR PROTECTIVE COATINGS (SSPC) PAINT APPLICATION STANDARD NO.2: MEASUREMENT OF DRY COATING THICKNESS WITH MAGNETIC GAGES (SSPC-PA2).
- F. WARRANTY:
 COATINGS MANUFACTURER SHALL PROVIDE A TEN YEAR (10 YEAR) MATERIALS PERFORMANCE GUARANTEE.

THE COST FOR NOSTALGIA DECORATIVE LIGHT POLE PAINTING SHALL BE INCLUDED IN AND INCIDENTAL TO ITEM 625 - LIGHT POLE, DECORATIVE, AS PER PLAN.

ITEM 625 - LUMINAIRE, POST TOP, TYPE III, 55 WATT, LED, 240 VOLT, AS PER PLAN (NOSTALGIA):

THE LUMINAIRES ON THE LIGHT POLES SHALL BE UNION METAL DESIGN (#NL318R-3) AND SHALL BE FURNISHED PREWIRED AND MANUFACTURED AS DETAILED ON THE CITY OF CANTON STANDARD CONSTRUCTION DRAWING NO. 63. THE CONTRACTOR SHALL VERIFY WITH THE CITY FOR THE CURRENT CITY STANDARD FOR THIS ITEM. THIS ITEM SHALL INCLUDE THE LED LAMP AS DETAILED ON THE STANDARD DRAWINGS.

LIGHT POLE SHALL BE CONSTRUCTED SO THAT LUMINAIRE ARMS ARE PARALLEL TO THE ROADWAY CENTERLINE.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT BID PRICE PER EACH ITEM 625 - LUMINAIRE, DECORATIVE, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, INSTALLATION AND INCIDENTALS FOR EACH LUMINAIRE.

GROUNDING AND BONDING:

THE REQUIREMENTS OFF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
 - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUIT (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
 - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDINGS CONDUCTOR IN ADDITION TO SPECIFIED CONDUCTORS.
 - C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
 - D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
 - E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
 - F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.
2. CONDUITS
 - A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH THE COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
 - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
 - C. BOTH ENDS OF METALLIC CONDUITS SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
 - D. METALLIC CONDUIT MAY BE BONDED TO THE METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
3. WIRE FOR GROUNDING AND BONDING
 - A. USE INSULATED, STRANDED COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
 - I. USE #4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER, OR FLASHER CABINETS.
 - II. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR #4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
4. GROUND ROD
 - A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUND WIRE.
 - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE #4 AWG INSULATED, STRANDED COPPER.
5. POWER SERVICE AND MAIN PEDESTAL
 - A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE MAIN PEDESTAL NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
 - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT.
 - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
 - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
6. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO OTHER CONDUCTORS INSTALLED BY CONTRACT.

DESIGN AGENCY



DESIGNER
JAW

REVIEWER
KMK 02-10-22

PROJECT ID
111059

SHEET TOTAL
P.141 168

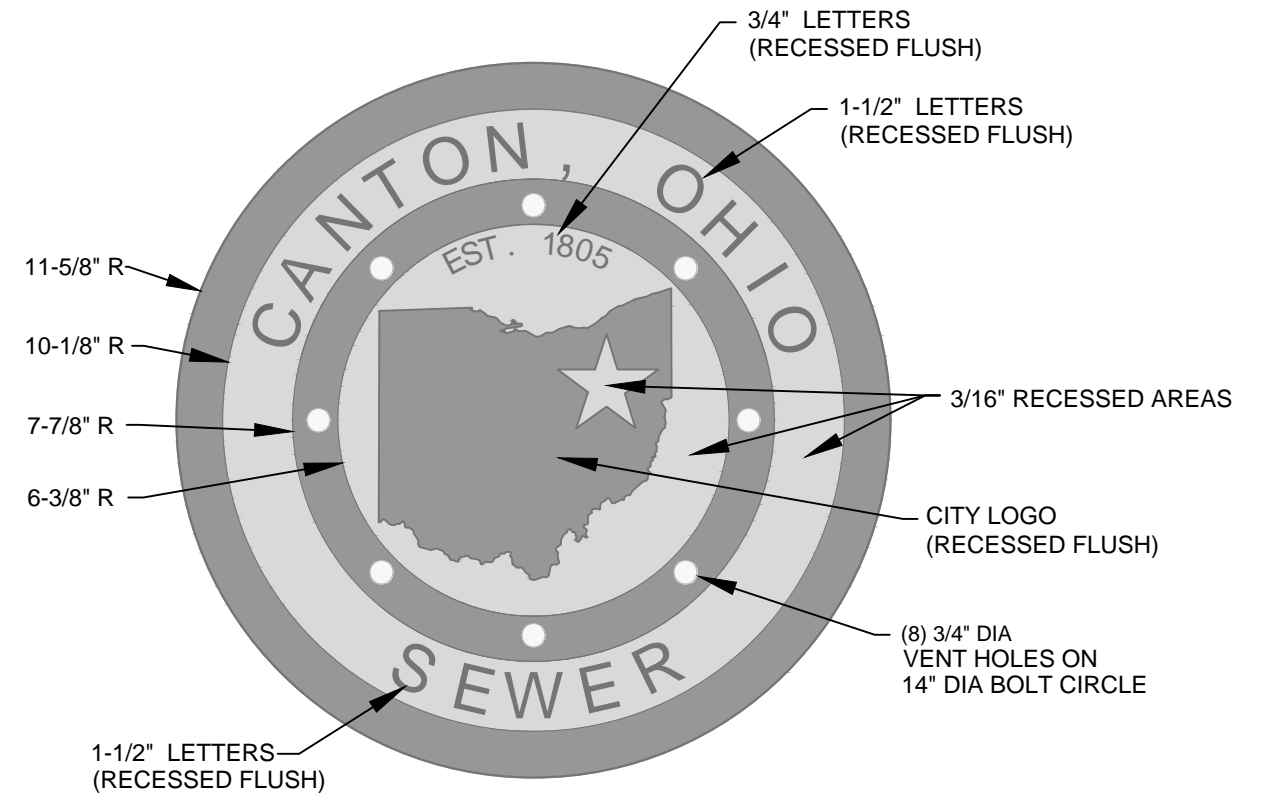
NOTE REVISED

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)



DESCRIPTION

DATE

BY

CAD DRAWING	JAN 2012	CDB
MH COVER CITY LOGO	02/28/2014	RMB
NOTE 2 REVISED, ADD GRATED COVER	01/17/2015	RMB
REMOVED OLD CITY LOGO COVER	12/08/2017	RMB
TITLE BLOCK REVISION	02/26/2021	GML

STANDARD DRAWING NO. 12
MANHOLE COVER

CE_12_20210226.DWG



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

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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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)

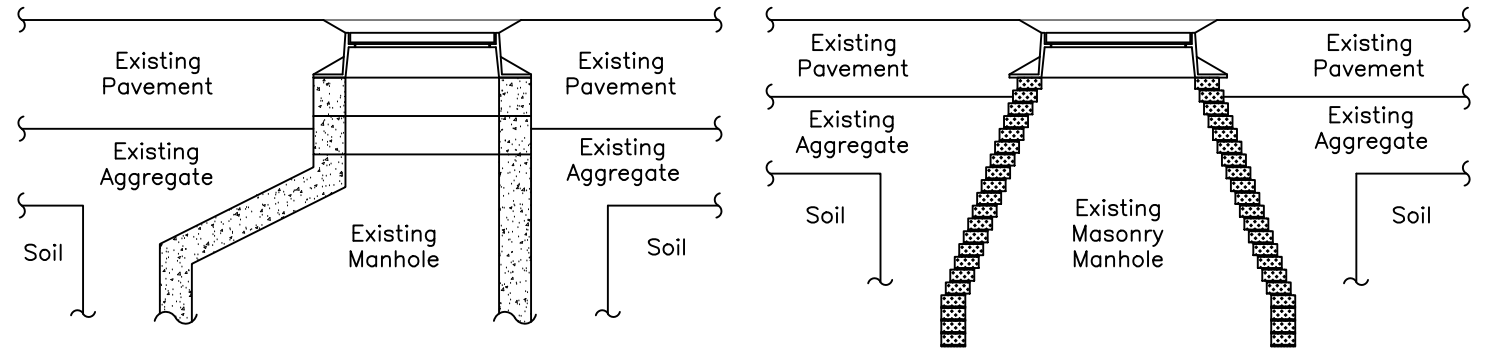




FIG. 1.C

FIG. 1.M

Legend

-  = Concrete
-  = Masonry

Chimney Removed (Sectional View)

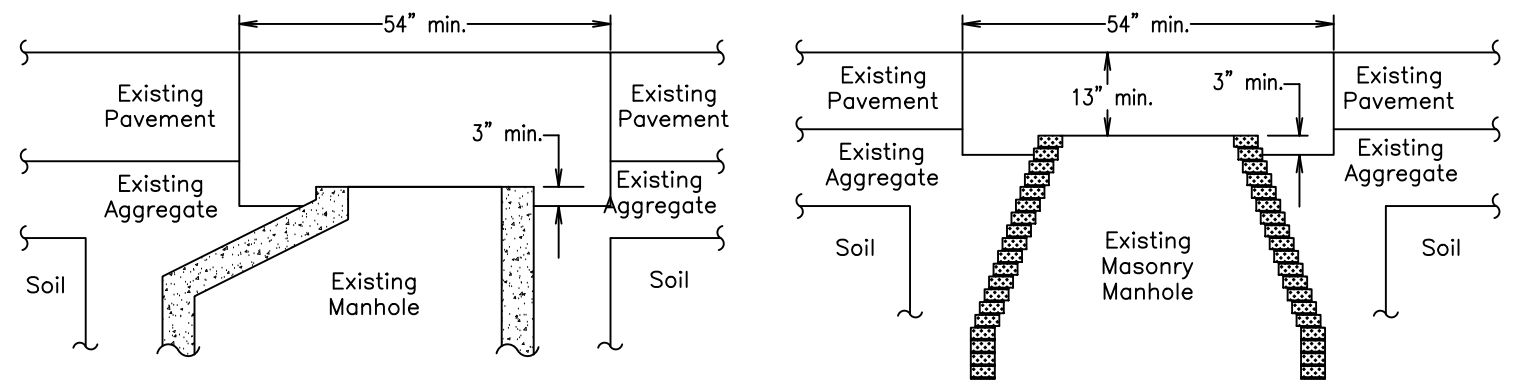


FIG. 2.C

FIG. 2.M



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DESCRIPTION	DATE	BY
CAD DRAWING	APRIL 2015	RMB
TITLE BLOCK REVISION	02/26/2021	RMB

STANDARD DRAWING NO. 13
MANHOLE ADJUSTMENTS

CE_13_20210226.DWG

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)

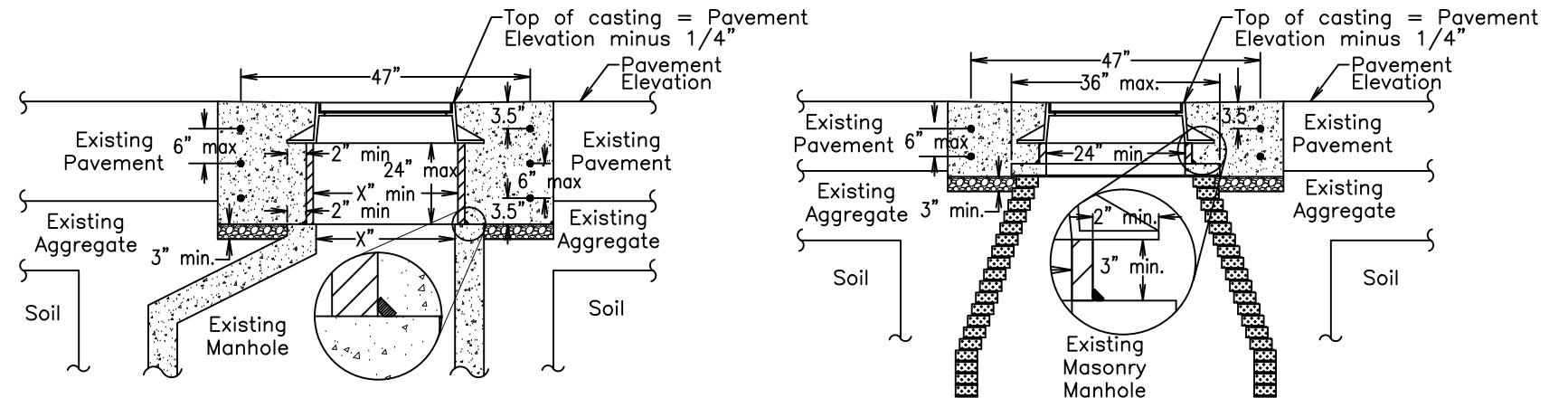


FIG. 3.C

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 IMMERSED 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.

DESCRIPTION	DATE	BY
CAD DRAWING	APRIL 2015	RMB
TITLE BLOCK REVISION	02 26/2021	RMB

STANDARD DRAWING NO. 13 MANHOLE ADJUSTMENTS

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DANIEL J. MOEGLIN, P.E., CITY ENGINEER
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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 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 304, 703.11, TYPE '1' GRANULAR MATERIAL OR TYPE '2' GRANULAR MATERIAL. ODOT 613, LOW STRENGTH MORTAR OR ALTERNATE GRANULAR MATERIAL ONLY IF APPROVED BY THE CITY ENGINEER (ALSO, SEE NOTE 5). DEVIATIONS FROM SPECIFIED MATERIALS 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.

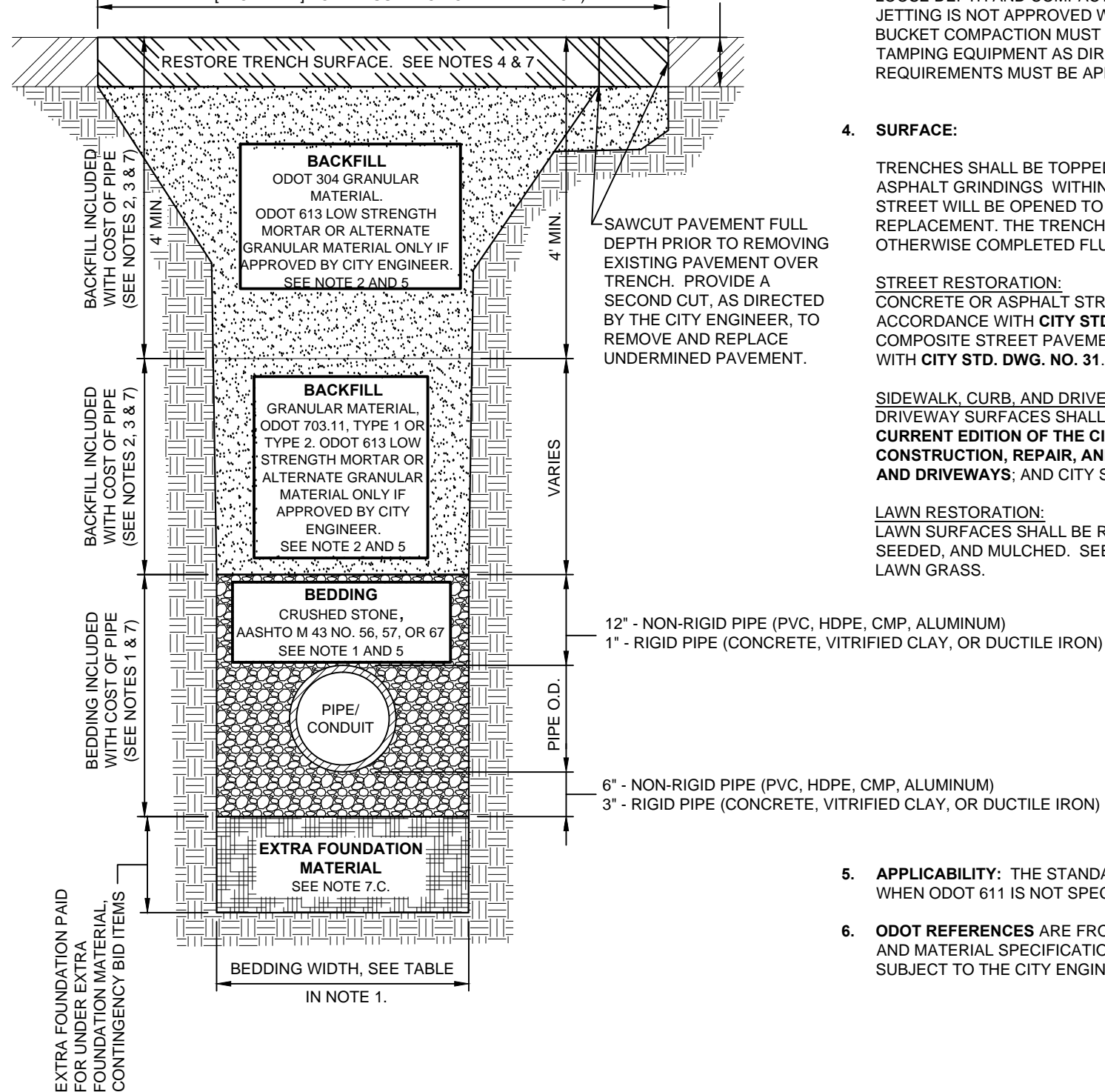
THE CITY ENGINEER FURTHER RESERVES THE RIGHT TO REFUSE ANY ALTERNATE BACKFILL MATERIAL THE CITY FINDS NOT CONSISTENT WITH THE APPROVED SOURCE, GRADATION REPORT, PROCTOR REPORT, OR COMPACTION METHOD.

- 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:

MATERIAL MAY BE NON-CONTAMINATED IN-SITU OR EXCAVATED MATERIAL; UNLESS, SPECIFIED OTHERWISE BY PROPERTY OWNER OR PIPE/CONDUIT OWNER.

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. **APPLICABILITY:** THE STANDARD DRAWING HEREIN IS APPLICABLE WHEN ODOT 611 IS NOT SPECIFIED FOR CONDUIT INSTALLATION.

- 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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DESCRIPTION	DATE	BY
REVISION TO NOTES 7 & 8	06/04/2012	CDB
REVISION TO NOTES 7	06/10/2013	CDB
REVISION TO NOTES 2, 3, 5	09/23/2020	RMB
TITLE BLOCK REVISION	02/26/2021	GML
REVISION TO BACKFILL NOTES	3/2/2021	RMB

STANDARD DRAWING NO. 19

UTILITY TRENCH REQUIREMENTS

CE_19_20210226.DWG

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

NOTES: (CONTINUED)

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

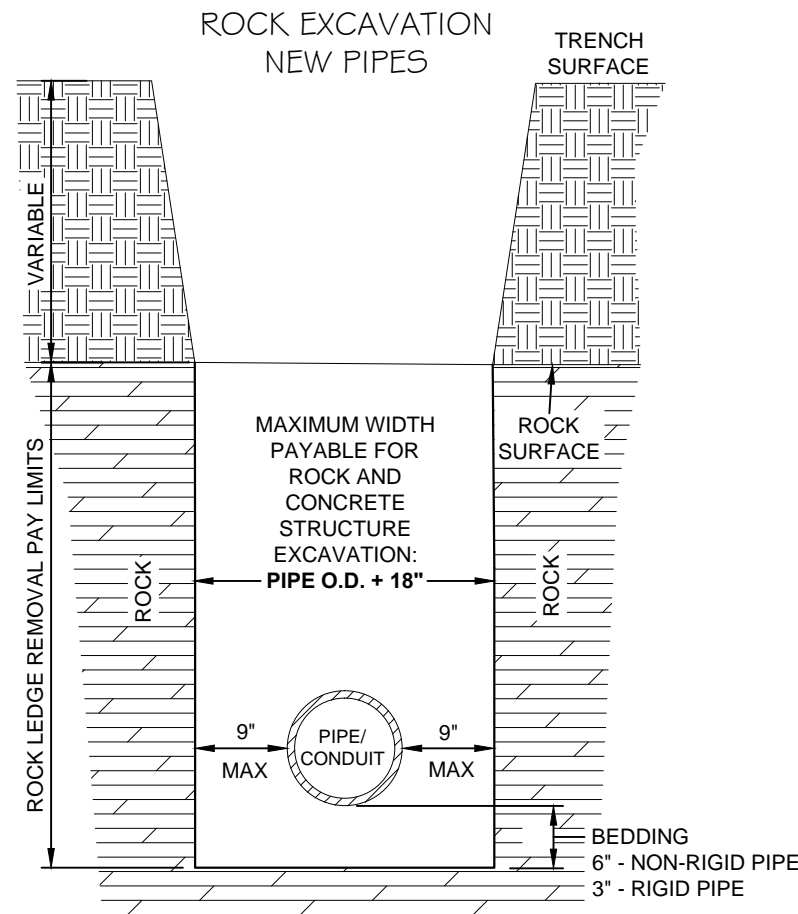
EXCAVATION FOR NEW MANHOLES AND CATCH BASINS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON CONSTRUCTION PLANS, SHALL BE MEASURED BETWEEN VERTICAL PLANES ONE (1) FOOT BEYOND THE OUTSIDE EDGE OF THE FOUNDATION OF THE STRUCTURES ON ALL SIDES, AND PARALLEL THERETO, AND FROM THE SURFACE OF THE ROCK TO THE BOTTOM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

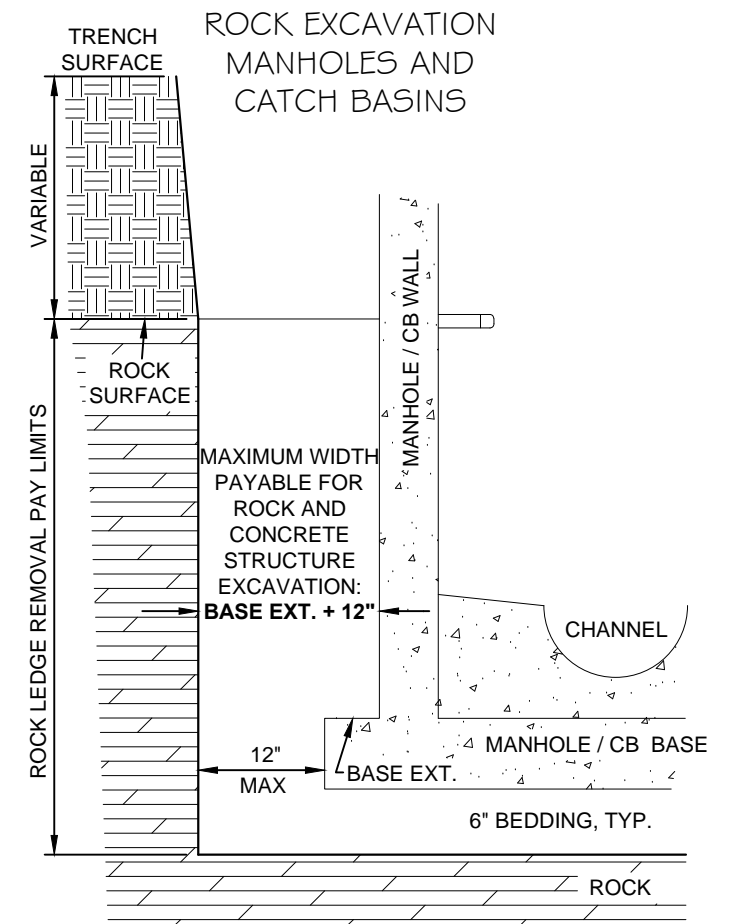
FOR CITY PROJECTS, THE CONTRACTOR SHALL BE PAID FOR ROCK REMOVAL AND CONCRETE STRUCTURE REMOVAL UNDER THE CONTINGENCY BID ITEMS FOR ROCK OR CONCRETE STRUCTURE REMOVAL. IF A CONTINGENCY BID ITEM IS NOT INCLUDED IN THE BID PROPOSAL, THE CONTACTOR MAY SUBMIT A PROPOSAL (PRIOR TO WORK BEING STARTED) TO THE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



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STANDARD DRAWING NO. 19

UTILITY TRENCH REQUIREMENTS

CE_19_20210226.DWG

CLASS "F" CONCRETE ENCASEMENT - 3,000 PSI TYP.
NOT TO SCALE

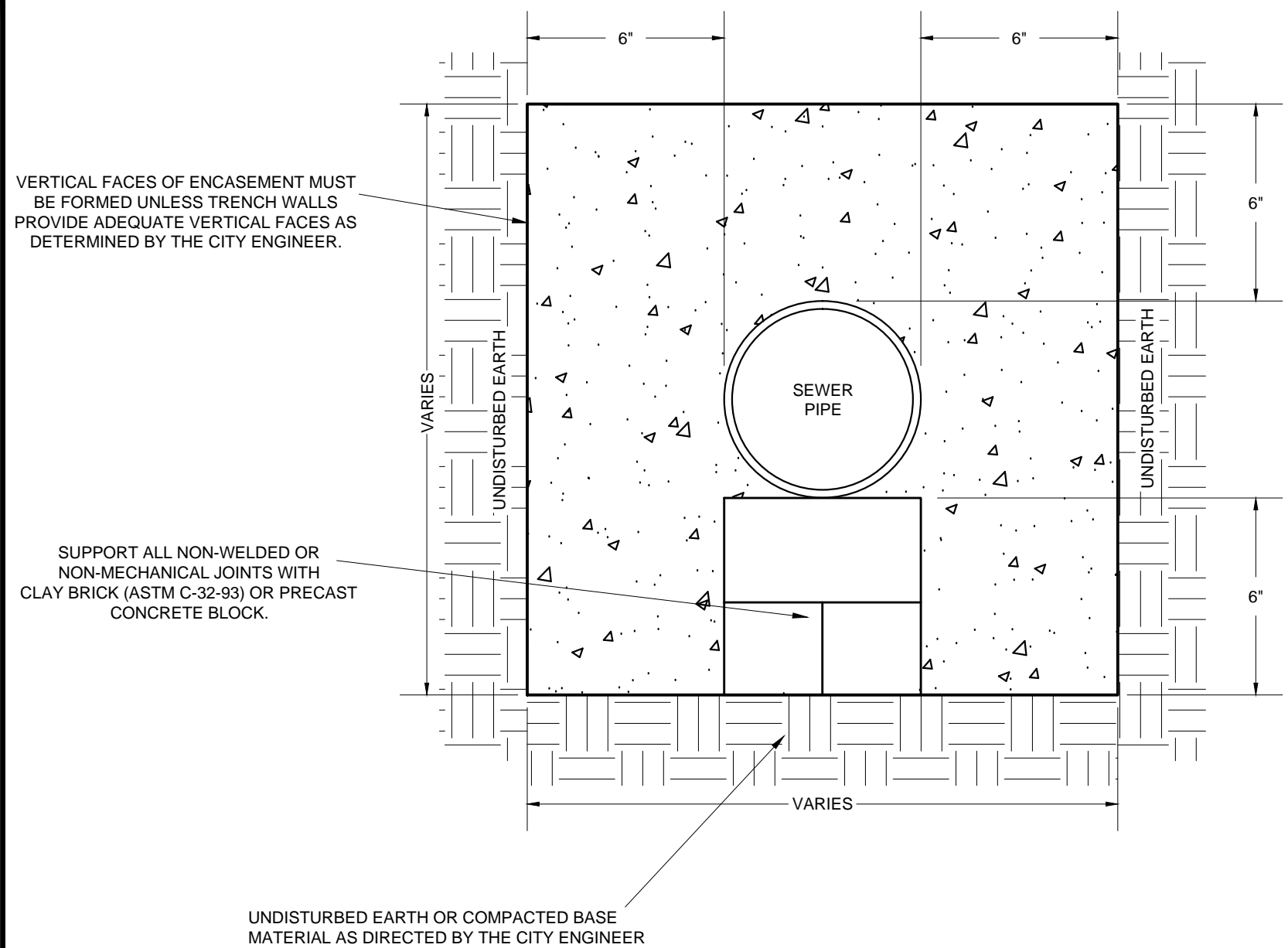


TABLE SHOWS QUANTITIES TYPICAL FOR COMPLETE ENCASEMENT AS SHOWN IN DRAWING.

PIPE DIAMETER (INCHES)	CONCRETE PER LINEAR FOOT OF ENCASEMENT (CUBIC YARDS)
6	0.08
8	0.10
10	0.12
12	0.13
15	0.16
18	0.19
21	0.22
24	0.25
27	0.29

NOTES:

1. CONCRETE ENCASEMENT SHALL APPLY AS SPECIFIED IN APPLICABLE PLANS OR AS OTHERWISE DIRECTED BY THE CITY ENGINEER.
2. SANITARY SEWER MAINS AND LATERALS ARE TO BE ENCASED IF THEY ARE WITHIN 18" VERTICALLY OF WATER LINES.
3. STORM SEWER MAINS AND LATERALS ARE TO BE ENCASED IF THEY ARE WITHIN 12" VERTICALLY OF WATER LINES.
4. ALL CONCRETE SHALL CONFORM TO ODOT ITEM 499 CLASS F (3,000 psi).
5. BOTTOM OF TRENCH SHALL BE FREE OF STANDING WATER BEFORE PLACING CONCRETE.
6. ENCASEMENT OF STORM/SANITARY SEWER IS TO EXTEND FOR A LENGTH OF 2 FEET ON EACH SIDE OF THE WATER LINE. PROVIDE A BOND BREAK BARRIER BETWEEN ENCASEMENT AND OTHER PIPES OR CONDUITS AS DIRECTED BY THE ENGINEER.
7. ALTERNATIVE ENCASEMENT OPTIONS MAY BE ACCEPTED OR REQUIRED BY THE CITY ENGINEER.

OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
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DESCRIPTION	DATE	BY
CAD DRAWING	NOV 2011	CDB
TITLE BLOCK REVISION	02/26/2021	RMB

STANDARD DRAWING NO. 21
CONCRETE ENCASEMENT
DETAIL
CE_21_20210226.DWG

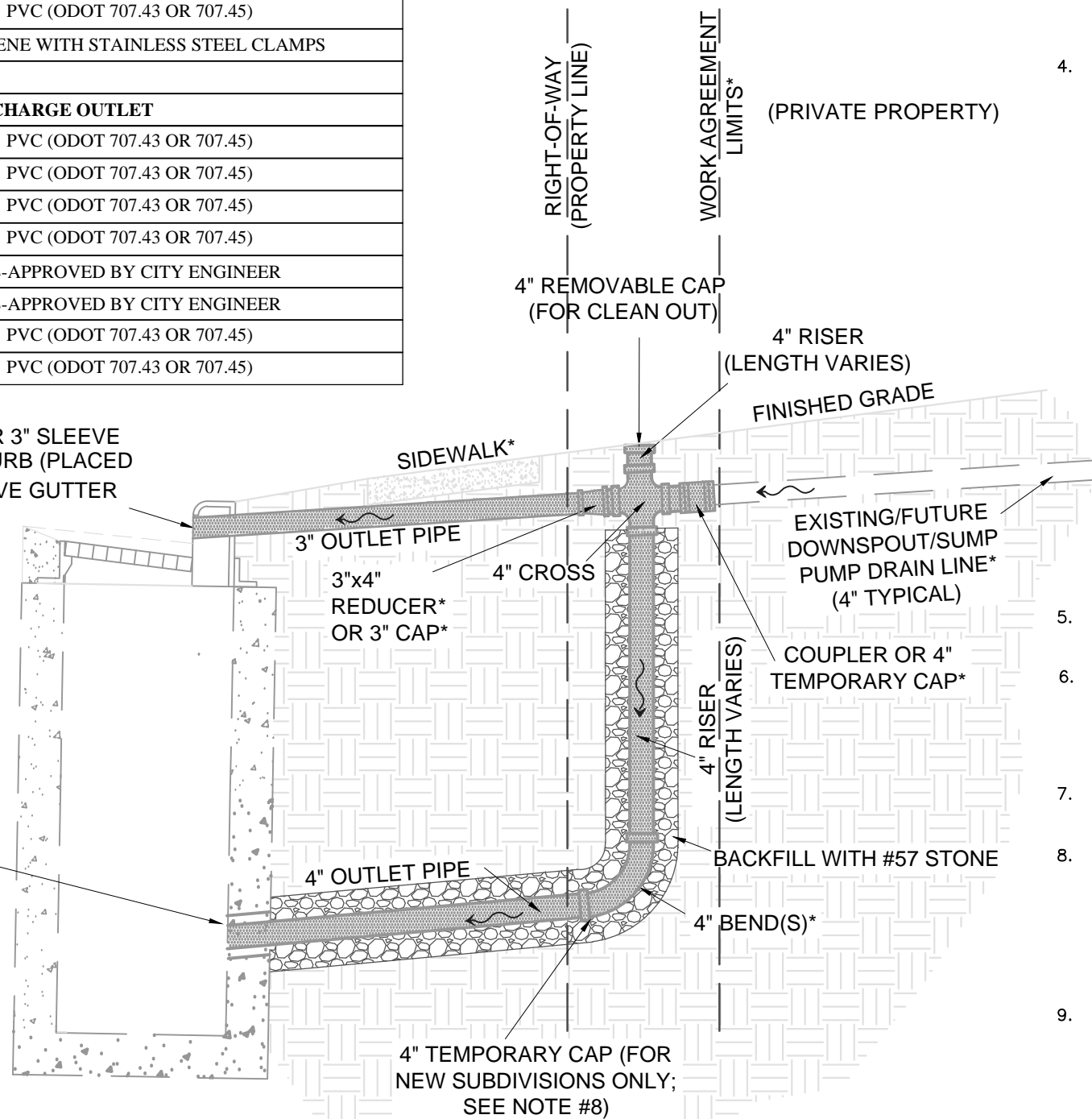
1 OF 1

COMPONENT	TYPICAL MATERIAL
DOWNSPOUT OUTLET	
3" OUTLET PIPE	PVC (ODOT 707.43 OR 707.45)
3" CAP*	PVC (ODOT 707.43 OR 707.45)
3" x 4" REDUCER*	PVC (ODOT 707.43 OR 707.45)
4" DOWNSPOUT*	PVC (ODOT 707.43 OR 707.45)
3" BEND(S)*	PVC (ODOT 707.43 OR 707.45)
COUPLER*	NEOPRENE WITH STAINLESS STEEL CLAMPS
SUMP PUMP DISCHARGE OUTLET	
4" CROSS	PVC (ODOT 707.43 OR 707.45)
4" RISER	PVC (ODOT 707.43 OR 707.45)
4" BEND(S)*	PVC (ODOT 707.43 OR 707.45)
4" OUTLET PIPE	PVC (ODOT 707.43 OR 707.45)
CORE-AND-SEAL BOOT*	AS-APPROVED BY CITY ENGINEER
SADDLE*	AS-APPROVED BY CITY ENGINEER
TEE OR WYE*	PVC (ODOT 707.43 OR 707.45)
4" CAP*	PVC (ODOT 707.43 OR 707.45)

* = AS NEEDED. SEE NOTES FOR MORE INFORMATION.

3 1/2" CORE OR 3" SLEEVE THROUGH CURB (PLACED 1/2" TO 1" ABOVE GUTTER LINE.)

SUMP PUMP DISCHARGE OUTLET* PREFERRED CONNECTION INTO CATCH BASIN OR MANHOLE



PROFILE VIEW NOT TO SCALE

NOTES:

- REGULATION OF DOWNSPOUTS:** DOWNSPOUT CONSTRUCTION IS GENERALLY REGULATED THROUGH THE CITY BUILDING DEPARTMENT. THE STANDARDS PROVIDED HEREIN APPLY ONLY TO DOWNSPOUT OUTLETS WITHIN CITY RIGHT-OF-WAY. THE CITY ENGINEERING DEPARTMENT DOES NOT REGULATE DOWNSPOUT AND SUMP PUMP DISCHARGE OUTLETS ON PRIVATE PROPERTY.
- OWNERSHIP OF DOWNSPOUTS:** DOWNSPOUT AND SUMP PUMP DISCHARGE OUTLETS AND ALL RELATED COMPONENTS ARE PRIVATELY OWNED AND ARE THE RESPONSIBILITY OF THE PROPERTY OWNER, NOT THE CITY.
- GENERAL RECOMMENDATIONS:** WHEN POSSIBLE, DOWNSPOUT AND SUMP PUMP DISCHARGE OUTLETS SHOULD BE DIRECTED TO DISCHARGE TOWARD A PUBLIC STREET. IN ANY CASE, THEY SHOULD COINCIDE WITH EXISTING DRAINAGE PATTERNS (OR IN ACCORDANCE WITH APPROVED GRADING PLANS), SHOULD ENSURE CONTINUOUS, POSITIVE FLOW AWAY FROM STRUCTURES, AND SHOULD NOT CAUSE ADVERSE FLOODING, EROSION, OR RELATED PUBLIC OR PRIVATE NUISANCE.
- THERE ARE VARIOUS OUTLET DISCHARGE SCENARIOS POSSIBLE:
 - TO A CURBED CITY STREET:** THE STANDARDS AND CONFIGURATIONS SHOWN IN THIS DRAWING APPLY ONLY TO DOWNSPOUT OUTLETS THAT DISCHARGE TO CURBED CITY STREETS. WHEN DOWNSPOUTS ALSO CONTAIN DISCHARGES FROM SUMP PUMPS OR OTHER DRAINAGE SYSTEMS, THE SEPARATE "SUMP PUMP DISCHARGE OUTLET" SHOWN IS REQUIRED AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING ORDER OF CONNECTION PREFERENCE:
 - INTO A CITY-OWNED STORM DRAIN/CATCH BASIN OR STORM MANHOLE (WHEN AVAILABLE ALONG FRONTAGE OF PROPERTY). CONNECTION INTO A CONCRETE STRUCTURE SHALL BE MADE BY AN APPROVED CORE-AND-SEAL BOOT. CONNECTION INTO A BRICKED STRUCTURE MAY BE MADE AS APPROVED BY THE CITY ENGINEER.
 - "BLIND-TIED" INTO A CITY-OWNED STORM SEWER (WHEN AVAILABLE ALONG FRONTAGE OF PROPERTY). THE CONNECTION SHALL BE ABOVE THE SPRINGLINE OF THE STORM SEWER USING A MANUFACTURED WYE OR TEE, A SADDLE, OR A CORE-AND-SEAL BOOT CONNECTION AS APPROVED BY THE CITY ENGINEER.
 - "BLIND-TIED" INTO A CITY STREET UNDERDRAIN (WHEN AVAILABLE ALONG FRONTAGE OF PROPERTY). THE UNDERDRAIN MUST BE MADE OF RIGID (NOT FLEXIBLE) PIPE. A MANUFACTURED WYE OR TEE SHALL BE INSTALLED ALONG THE UNDERDRAIN TO ACCOMMODATE THE 4" OUTLET PIPE. CONSULT THE CITY ENGINEER WHEN NONE OF THE ABOVE PREFERENCES ARE AVAILABLE.
 - TOWARD A NON-CURBED CITY STREET WITHOUT A ROADSIDE DITCH:** OUTLETS SHOULD DISCHARGE WITHIN THE YARD (PREFERABLY OUTSIDE OF THE PUBLIC RIGHT-OF-WAY) AND FAR ENOUGH AWAY FROM THE EDGE OF PAVEMENT TO ALLOW DISCHARGES TO SOAK INTO THE GROUND AS MUCH AS POSSIBLE.
 - TOWARD A NON-CURBED CITY STREET WITH A ROADSIDE DITCH:** OUTLETS SHOULD DISCHARGE TOWARD OR INTO THE DITCH.
 - TOWARD A CREEK OR OTHER NON-STREET DRAINAGE SYSTEM:** OUTLETS SHOULD DISCHARGE TOWARD OR INTO THE CREEK OR OTHER NON-STREET DRAINAGE SYSTEM. SPECIFIC CONNECTIONS SHOULD BE MADE IN ACCORDANCE WITH THE STANDARDS CONTAINED HEREIN.
- SIDEWALK IMPACTS:** WHEN THE 3" OUTLET PIPE WILL BE WITHIN THE CONCRETE OF A SIDEWALK, THE CONTRACTOR SHALL INSTALL A CONTROL JOINT IN THE SIDEWALK OVER SAID PIPE. THE THICKNESS OF THE CONCRETE SIDEWALK OVER THE PIPE SHALL NOT BE LESS THAN 2".
- PERMIT(S) REQUIRED FROM THE CITY ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION:**
 - A "STREET OPENING PERMIT" IS REQUIRED FOR ANY EXCAVATION WITHIN CITY RIGHT-OF-WAY OR OTHER CITY-OWNED PROPERTY.
 - A "SEWER CONNECTION PERMIT" IS REQUIRED FOR ANY DIRECT CONNECTION OF A DOWNSPOUT OR SUMP PUMP DISCHARGE OUTLET, STORM SEWER, OR OTHER STORM DRAINAGE PIPE TO A CITY-OWNED STORM DRAIN/CATCH BASIN, MANHOLE, STORM SEWER, OR CULVERT.
- FOR CITY PUBLIC WORKS PROJECTS:** PROVIDE DOWNSPOUT AND SUMP PUMP DISCHARGE OUTLET(S) ACCORDINGLY WHEN APPROPRIATE PAY ITEMS ARE PROVIDED IN THE CONSTRUCTION PLANS.
- FOR NEW RESIDENTIAL SUBDIVISIONS:** THE DEVELOPER'S CONTRACTOR SHALL PROVIDE ONE 4" OUTLET PIPE (FOR FUTURE SUMP PUMP DISCHARGES) WITH 4" TEMPORARY CAP FOR DESIGNATED LOTS IN ACCORDANCE WITH APPROVED PLANS. THE CONTRACTOR SHALL INDICATE THE LOCATION OF THE 4" TEMPORARY CAP BY PLACING A STAKE IN THE GROUND LOCATED VERTICALLY ABOVE THE CAP AND CLEARLY MARKING THE STAKE SHOWING THE DEPTH OF THE CAP. THE REMAINING COMPONENTS OF THE SUMP PUMP DISCHARGE OUTLET AS WELL AS THE DOWNSPOUT OUTLET SHALL BE CONSTRUCTED LATER (BY OTHERS) WHEN THE LOT IS BUILT UPON.
- PROHIBITIONS:** ONLY "CLEAN" WATER DISCHARGES ARE ALLOWED. "GREY" WATER, LAUNDRY DISCHARGES, SANITARY SEWER CONNECTIONS, AND OTHER ILLICIT DISCHARGES ARE PROHIBITED TO ANY STORM SEWER OR OTHER STORM WATER CONVEYANCE. CONNECTION OF DOWNSPOUT AND SUMP PUMP DISCHARGE OUTLETS TO SANITARY SEWERS OR SANITARY MANHOLES ARE PROHIBITED. OUTLETS SHALL NOT DISCHARGE DIRECTLY OVER A SIDEWALK.



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CANTON, OHIO

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APPROVED DATE: MAR. 2012

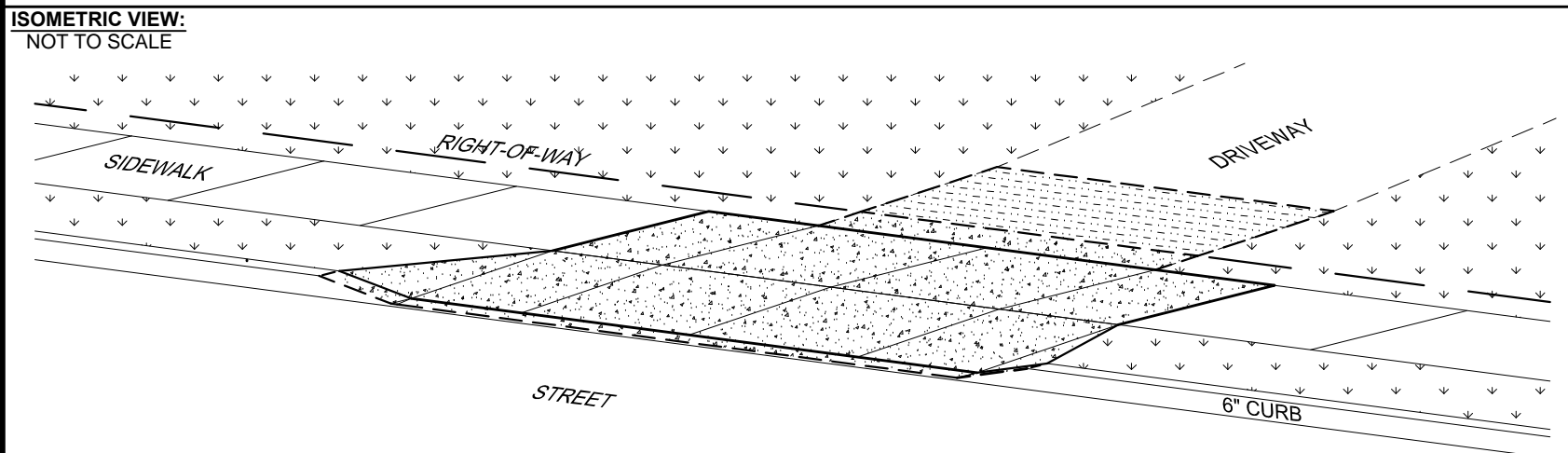
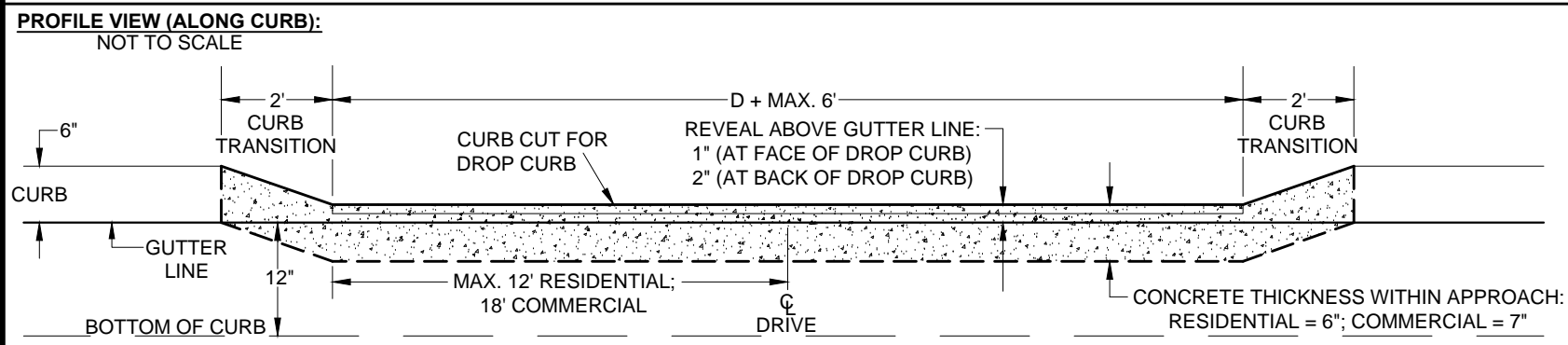
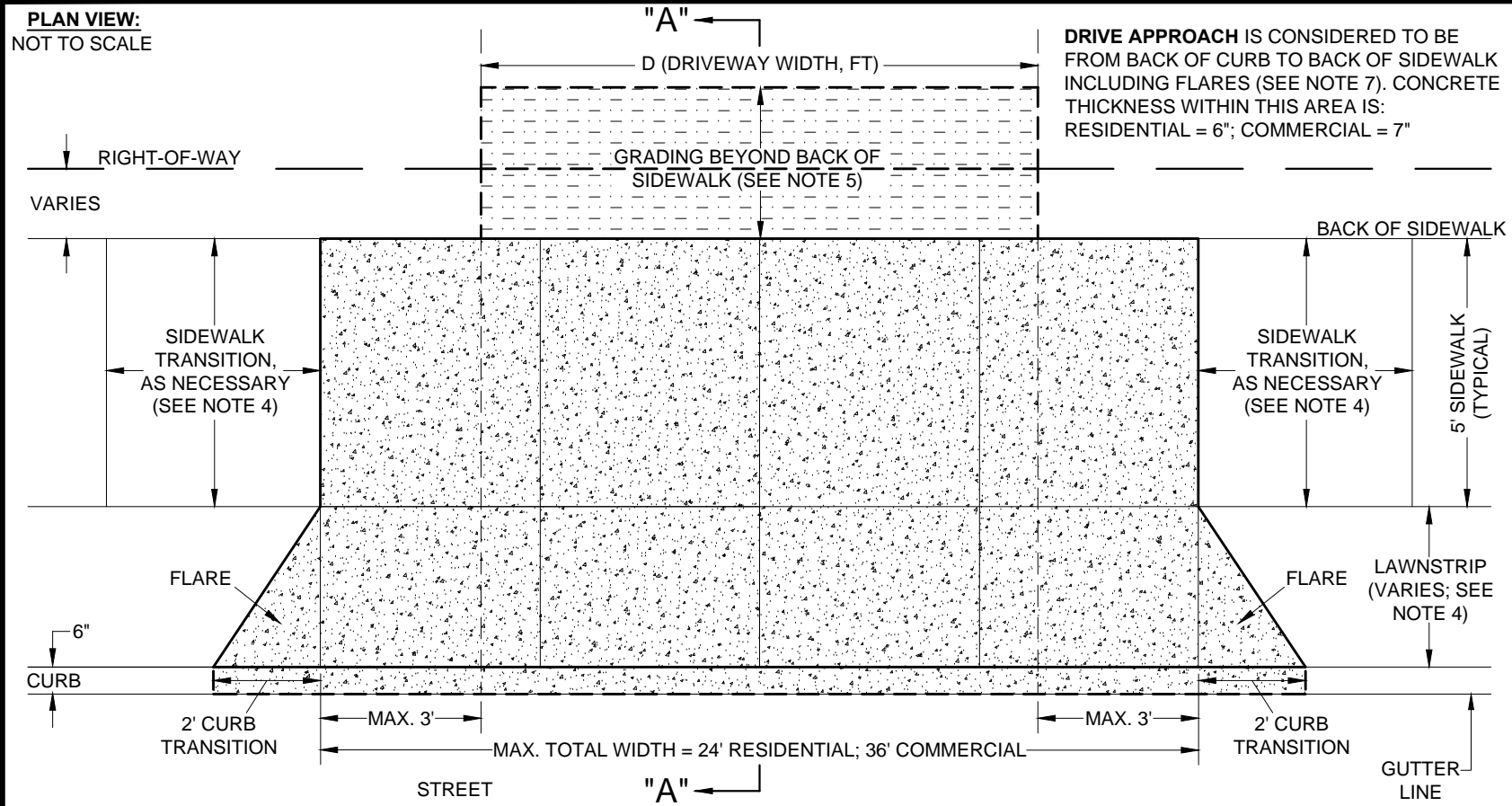
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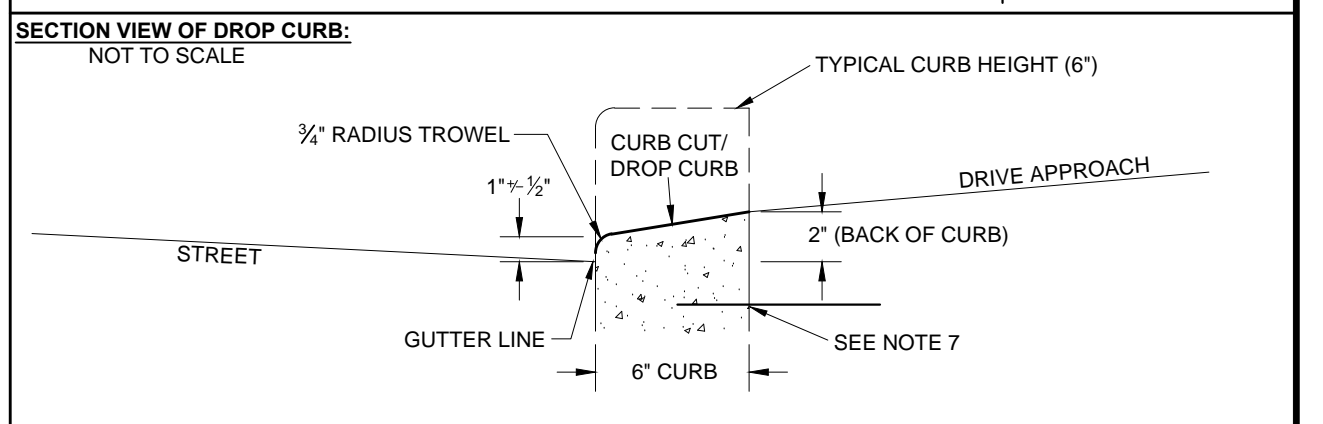
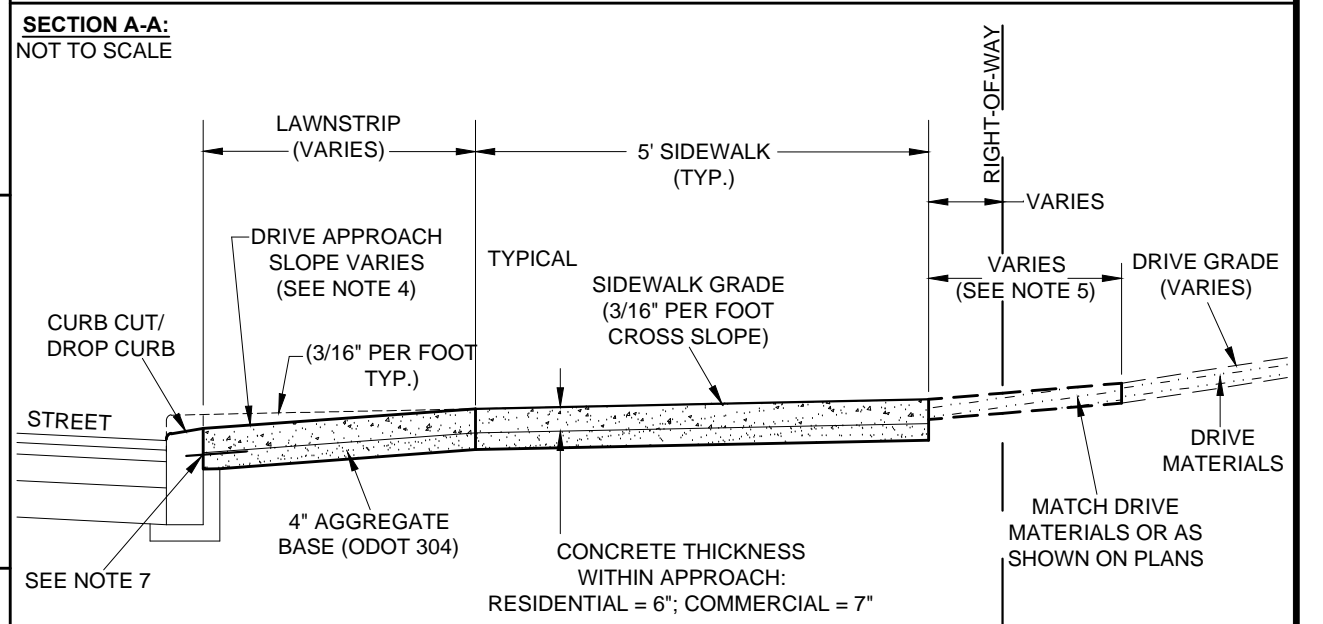
REVISIONS

DESCRIPTION	DATE	BY
REVISIONS	6/4/12	CDB
REVISIONS	7/24/12	CDB
REVISIONS	2/8/21	CDB

STANDARD DRAWING NO. 24
DOWNSPOUT & SUMP PUMP
DISCHARGE OUTLETS



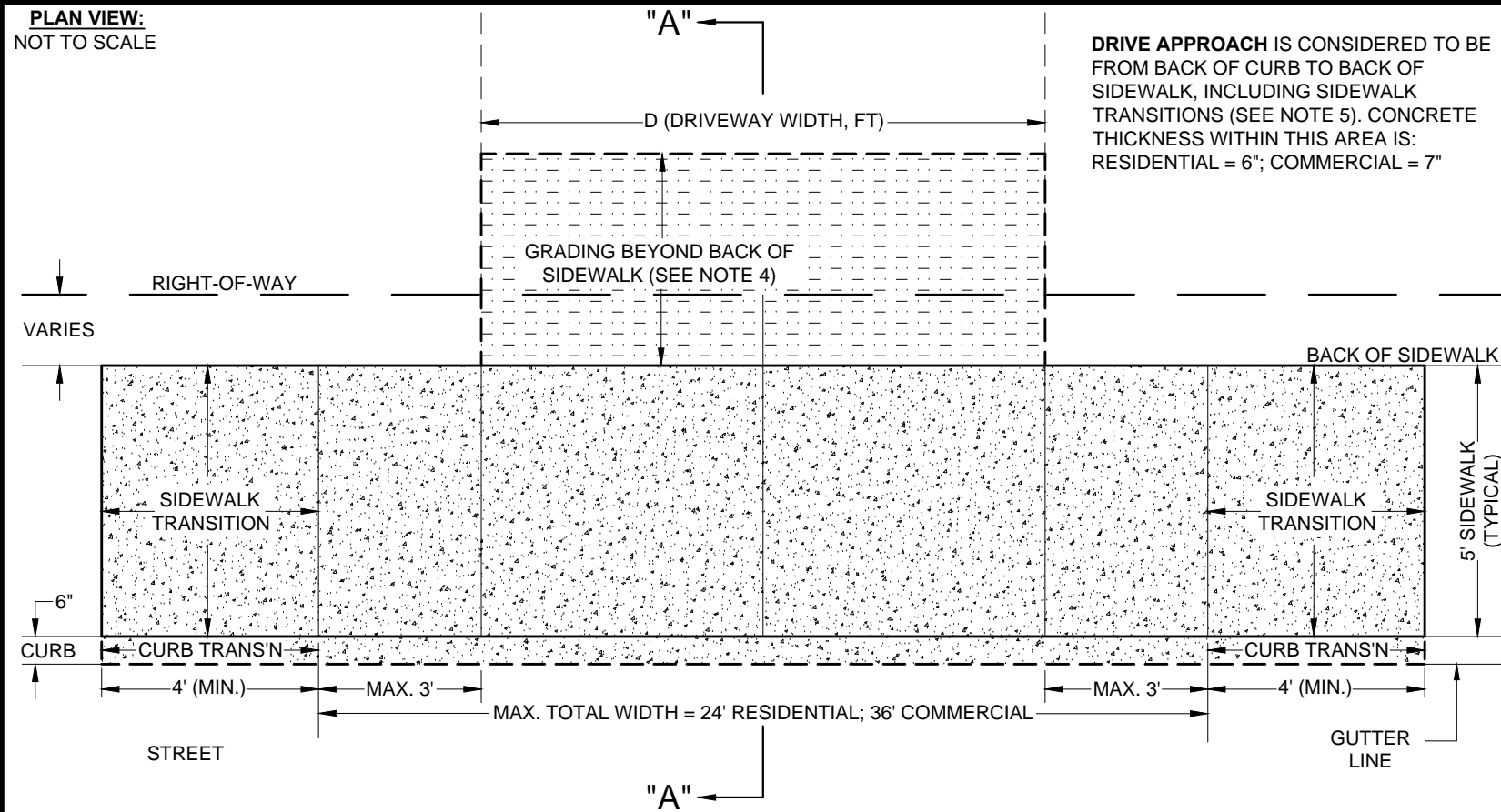
- NOTES:**
- SIDEWALKS, CURBS, AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS.
 - ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY'S ENGINEER'S DISCRETION.
 - ALTERNATIVE DESIGNS MAY BE APPROVED OR REQUIRED BY THE CITY ENGINEER FOR COMMERCIAL DRIVES.
 - WHEN LAWNSTRIP WIDTH IS LESS THAN 3 FEET, LOWER THE DRIVE APPROACH/SIDEWALK PROFILE SO THAT DRIVE APPROACH CROSS SLOPE IS CONSTANT 3/16" PER FOOT FROM BACK OF CURB TO BACK OF SIDEWALK. CONSTRUCT SIDEWALK TRANSITIONS WITH A MAXIMUM 12:1 LONGITUDINAL SLOPE (PARALLEL TO STREET).
 - 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.
 - 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.
 - CONNECT APRON TO CURB WITH DOWELS OR WIRE MESH. REFER TO CITY STANDARD DRAWING NO. 29 FOR DRIVE APPROACHES WITH SIDEWALK AGAINST CURB.
 - PLACE 1/2" EXPANSION JOINTS AGAINST EXISTING CONCRETE DRIVES AND WALKS, BUILDING WALLS, AND OTHER FIXED OBJECTS.
 - 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.
 - ANY MODIFICATIONS TO THESE STANDARDS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.



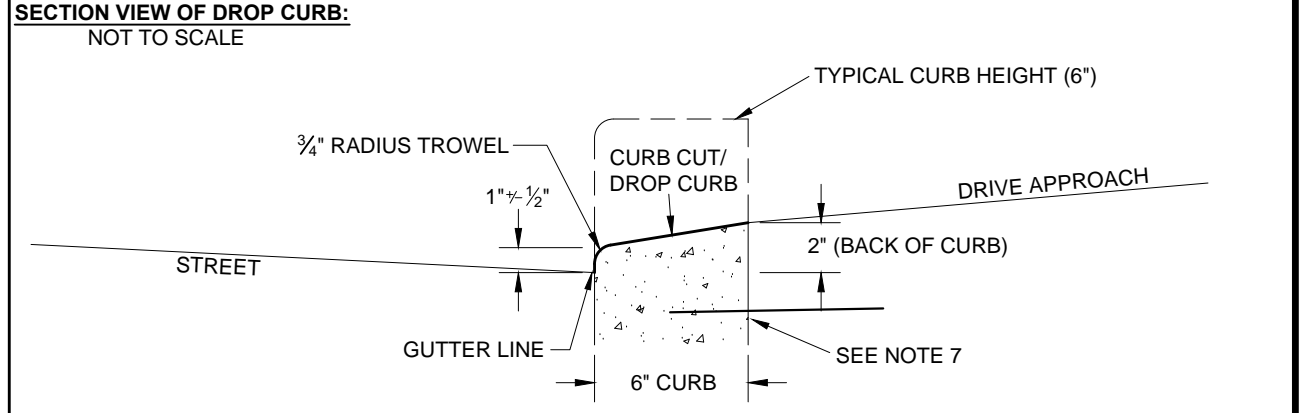
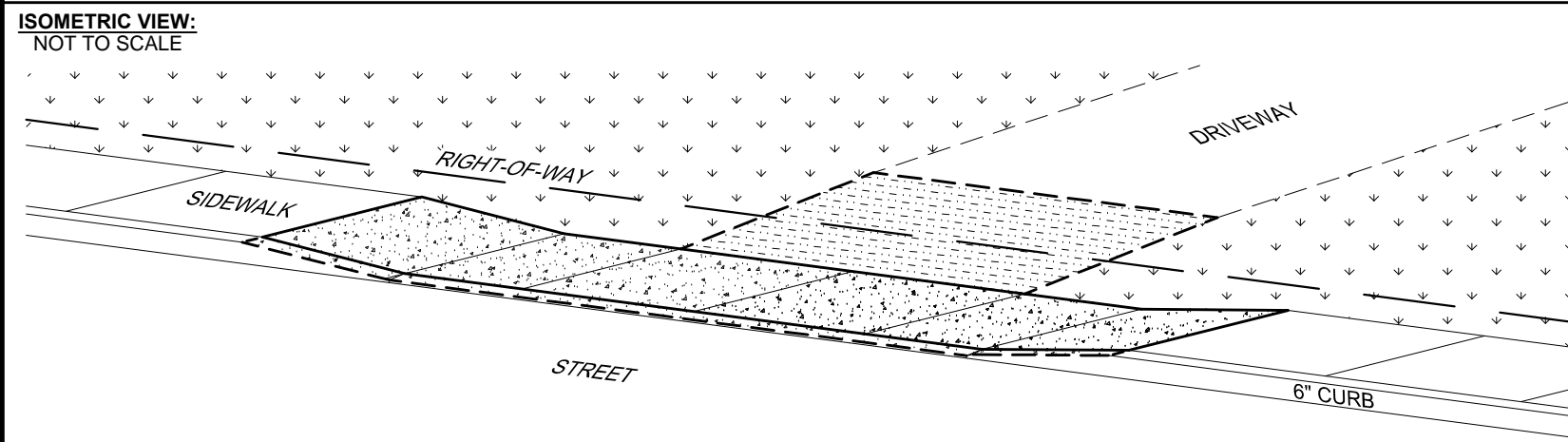
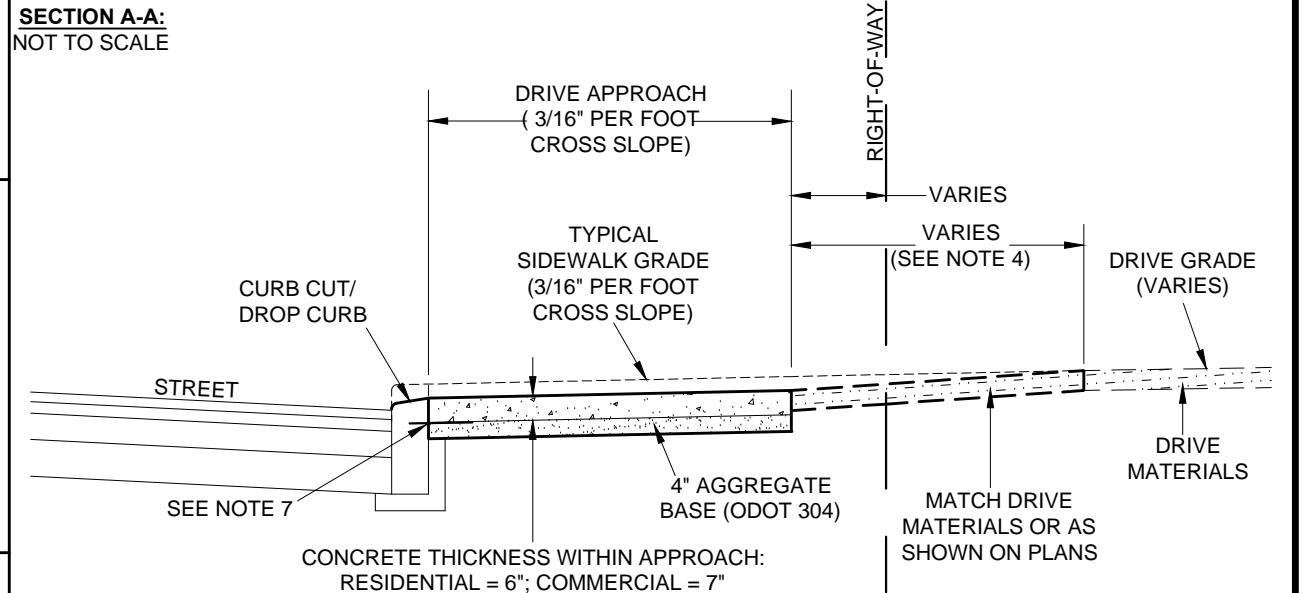
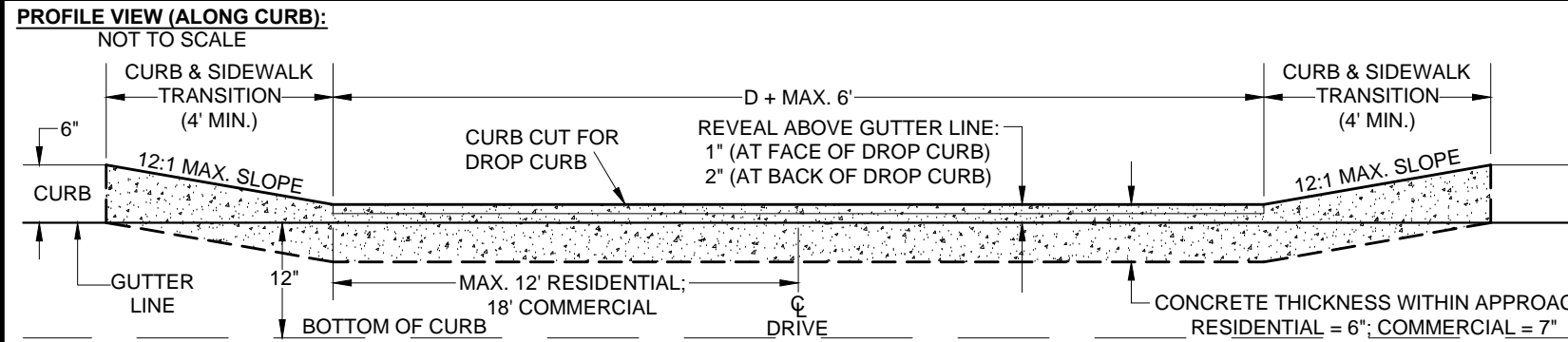
THE CITY OF CANTON, OHIO
THOMAS M. BERNABEI, MAYOR
OFFICE OF THE CITY ENGINEER
JAMES J. BENEKOS, P.E., P.S., CITY ENGINEER
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330-489-3381 : www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
CAD DRAWING	MAR 2012	CDB
NOTE MODIFICATIONS	04/10/2012	CDB
NOTE 7 MODIFICATIONS	08/15/2017	RMB
TITLE BLOCK REVISION	02/26/2021	GML
CROSS SLOPE SIDEWALK 3/16"/FT	05/13/2022	RMB

STANDARD DRAWING NO. 27
DRIVE APPROACH
WITH LAWNSTRIP BETWEEN SIDEWALK & CURB
CE_27_20210226.DWG



- 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 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 3/16" PER FOOT CROSS SLOPE, BACK OF TYPICAL 5' SIDEWALK WITHIN APPROACH IS ONLY 3" 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.



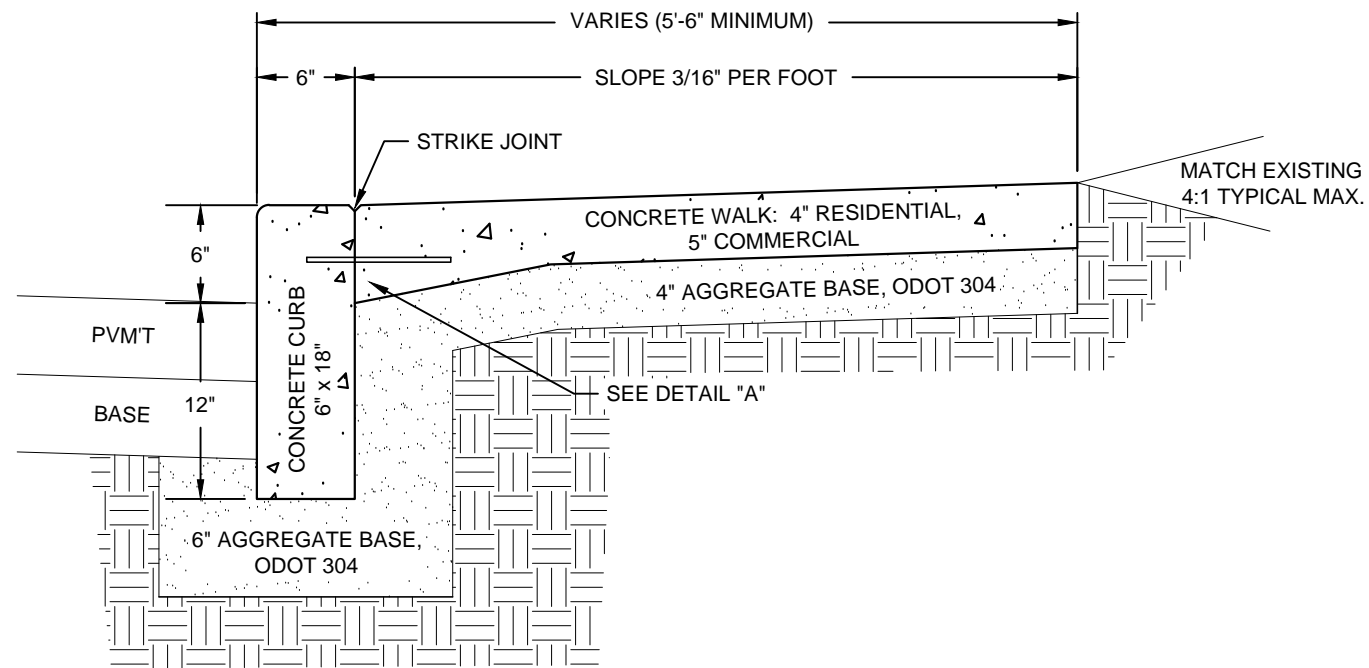
THE CITY OF CANTON, OHIO
 THOMAS M. BERNABEI, MAYOR
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 JAMES J. BENEKOS, P.E., P.S., CITY ENGINEER
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DESCRIPTION	DATE	BY
NOTE MODIFICATIONS & MINOR FORMAT EDIT	MAR/JUN 12	CDB
NOTE MODIFICATIONS	07/23/2012	CDB
NOTE 7 MODIFICATIONS	08/15/2017	CDB
TITLE BLOCK REVISION	12/29/2020	GML
CROSS SLOPE SIDEWALK 3/16"/FT	05/13/2022	RMB

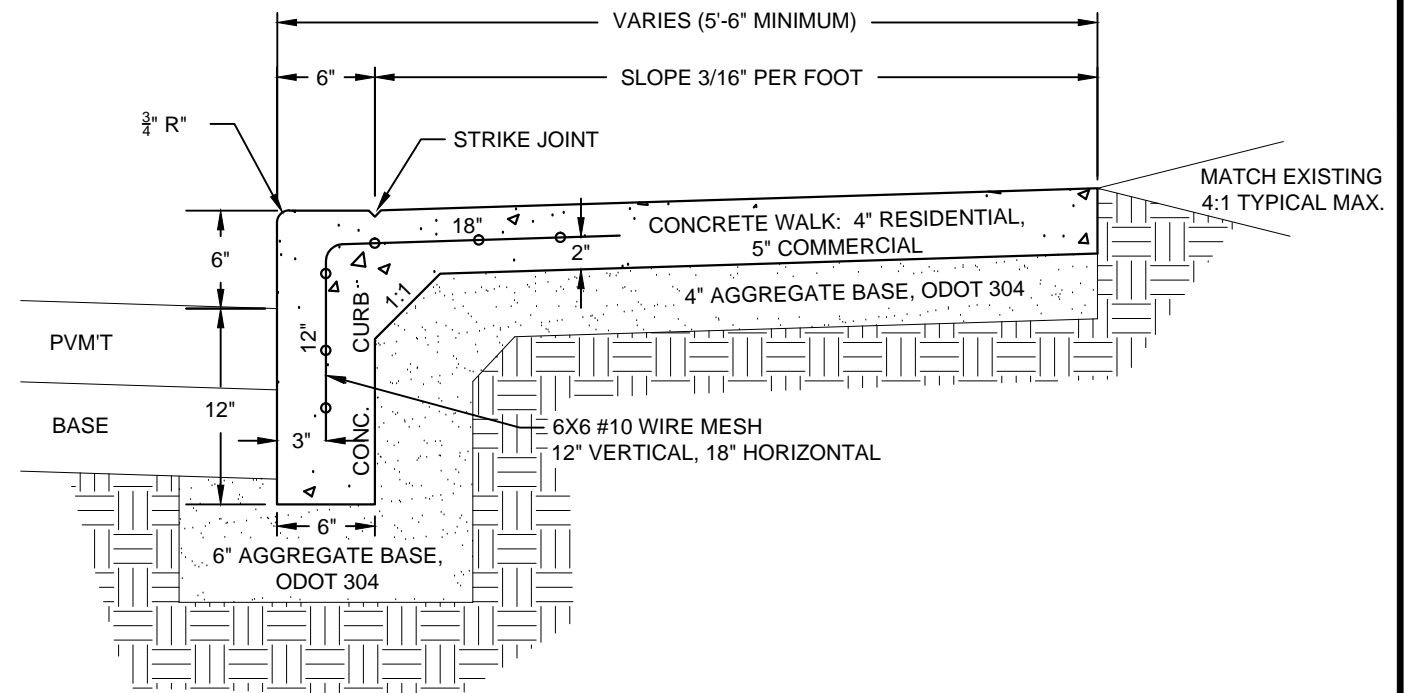
STANDARD DRAWING NO. 28
DRIVE APPROACH
WITH SIDEWALK AGAINST CURB

CE_28_20210226.DWG

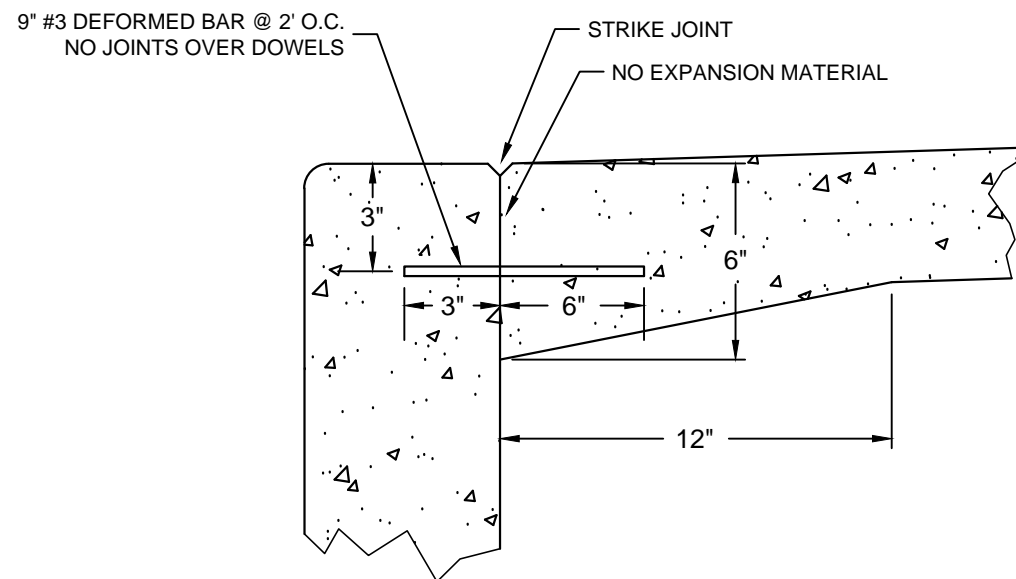
TYPE A
CONCRETE WALK
ADJACENT TO CURB



TYPE B
INTEGRAL CONCRETE WALK
AND CURB



DETAIL "A"



NOTES:

- 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.
- CONCRETE MATERIAL FOR CURB AND WALK MUST BE ODOT 499 CLASS 'QC' CONCRETE .
- NO FOUNDRY SAND OR SLAG PERMITTED IN AGGREGATE BASE, ODOT 304.
- CONCRETE WALK REPLACED OR INSTALLED ADJACENT TO EXISTING CONCRETE CURB MUST BE DOWELED TO THE EXISTING CURB, UNLESS DETERMINED OTHERWISE BY THE CITY ENGINEER.
- 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.
- ODOT REFERENCES ARE FROM THE CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. ANY DISCREPANCIES SHALL BE SUBJECT TO THE CITY ENGINEER'S DISCRETION.



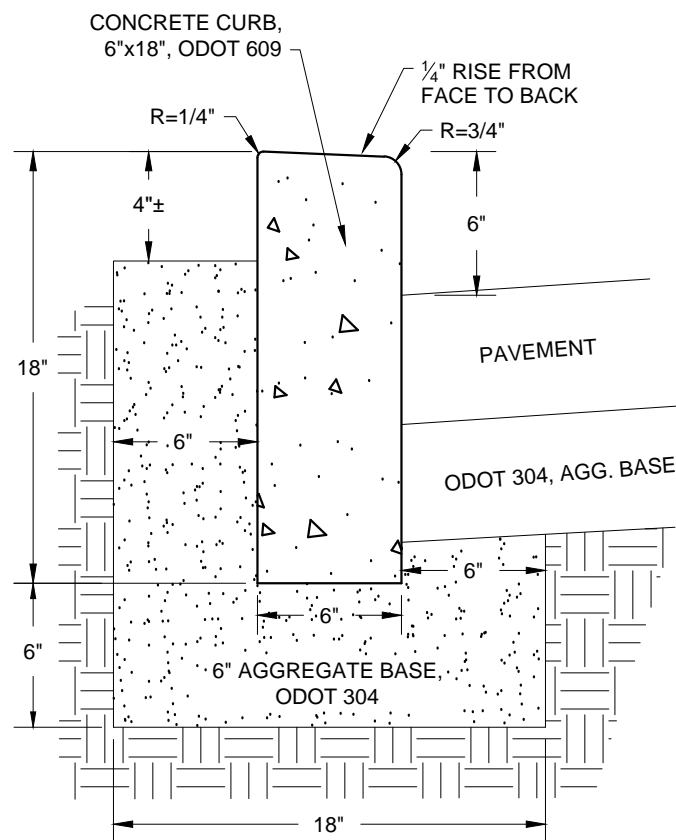
THE CITY OF CANTON, OHIO
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DESCRIPTION	DATE	BY
CAD DRAWING	MAR 2012	CDB
ODOT CONCRETE SPEC. UPDATE	11/20/2019	RMB
TITLE BLOCK REVISION	03/01/2021	GML
CROSS SLOPE SIDEWALK 3/16"/FT	05/13/2022	RMB

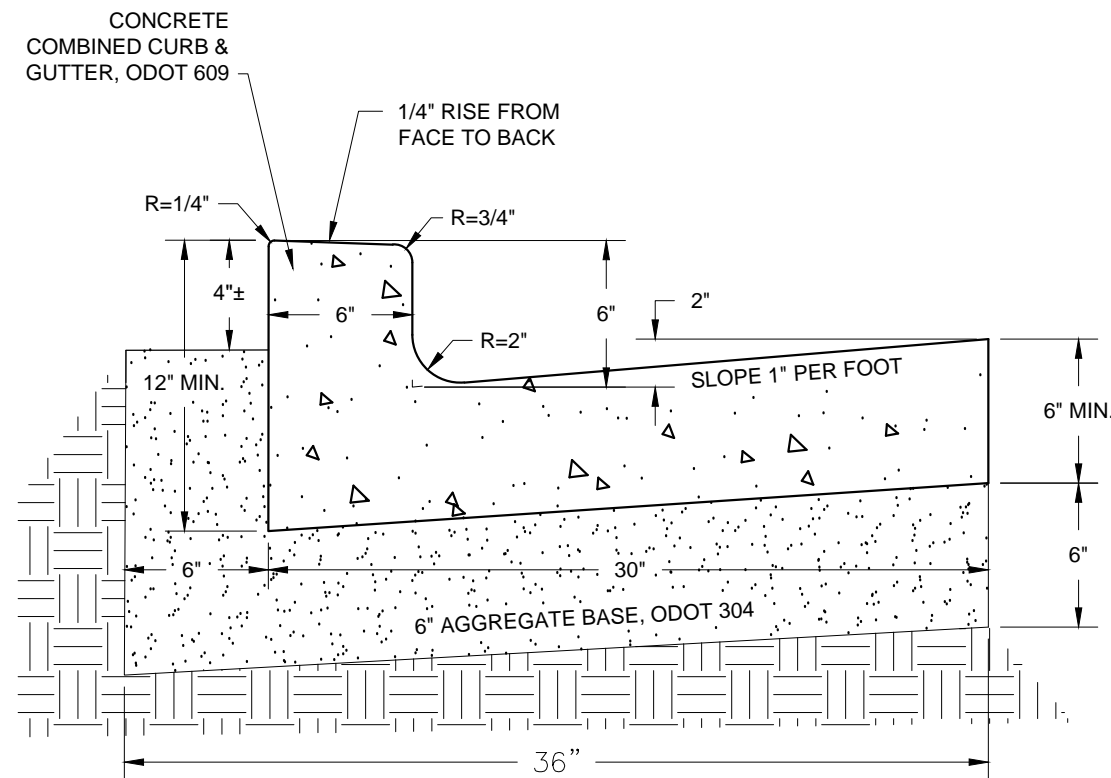
STANDARD DRAWING NO. 29
COMBINED CURB & WALK

CE_29_20210301.DWG

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.



OFFICE OF THE CITY ENGINEER
CANTON, OHIO

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DESCRIPTION	DATE	BY
CAD DRAWING	MAR 2012	RMB
ODOT CONCRETE SPEC. UPDATE	11/20/2019	RMB
TITLE BLOCK REVISION	03/01/2021	GML

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

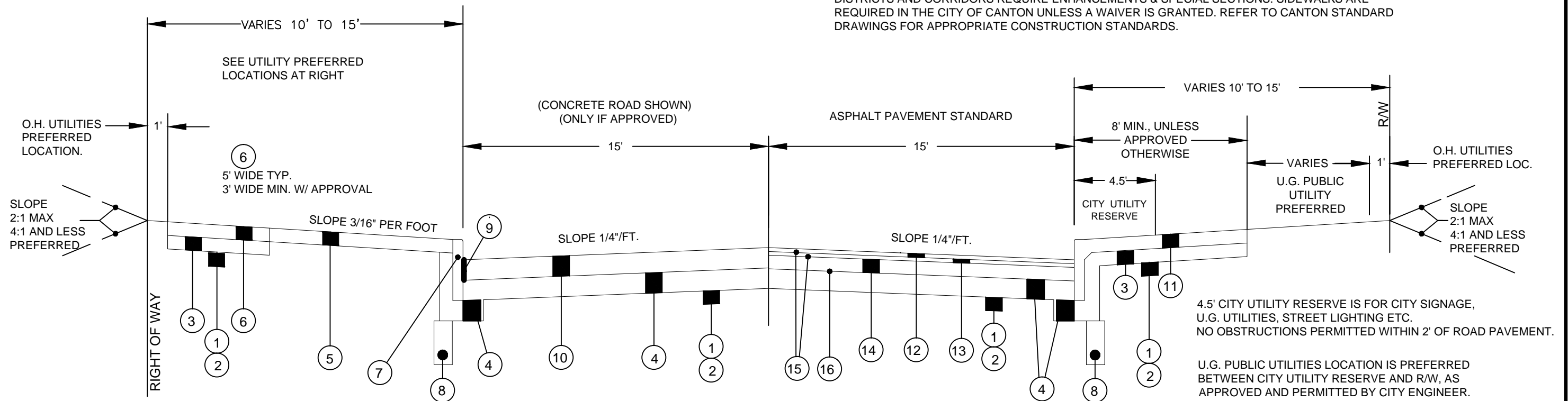
CE_30_20210301.DWG

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.

GENERAL CRITERIA

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 ASPHALT 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.



THE CITY OF CANTON, OHIO

THOMAS M. BERNABEI, MAYOR

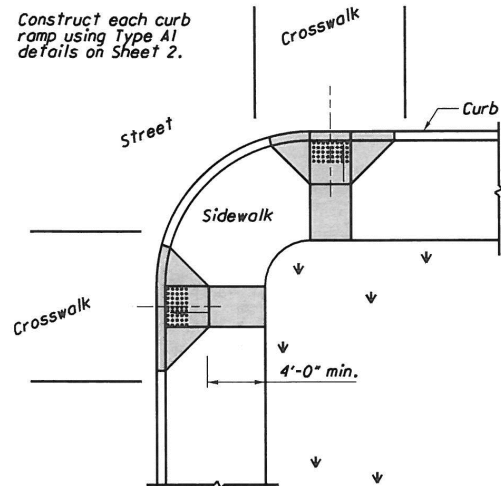
OFFICE OF THE CITY ENGINEER
JAMES J. BENEKOS, P.E., P.S., CITY ENGINEER
2436 30TH ST. NE CANTON OH 44705
330-489-3381 : www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
CAD DRAWING	OCT 2014	RMB
ASPHALT SPEC. UPDATE	02/26/2019	RMB
CONCRETE SPEC. UPDATE	11/20/2019	RMB
TITLE BLOCK REVISION	03/01/2021	GML
CROSS SLOPE SIDEWALK 3/16"/FT	05/13/2022	RMB

STANDARD DRAWING NO. 32

MINIMUM PAVEMENT STANDARDS FOR LOCAL STREETS

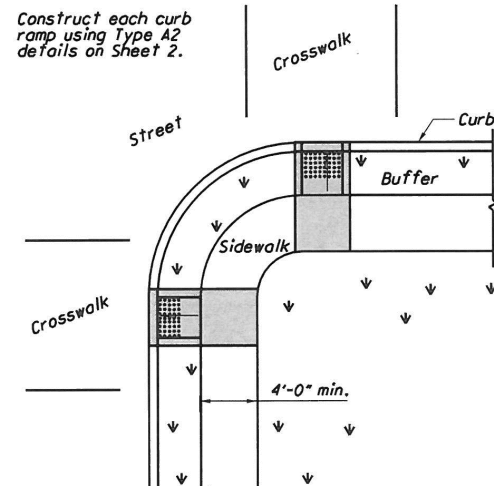
CE_32_20210301.DWG



Construct each curb ramp using Type A1 details on Sheet 2.

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

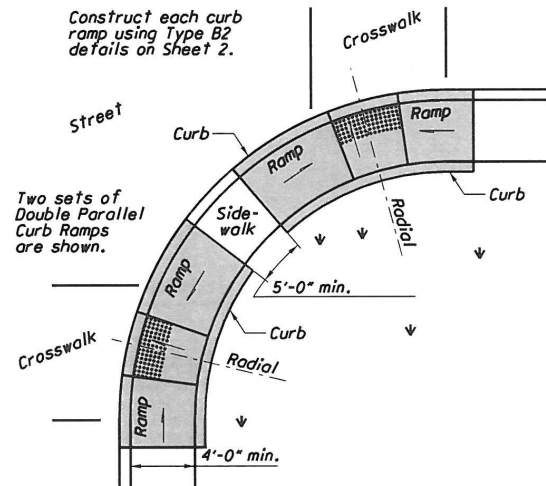
PERPENDICULAR CURB RAMPS



Construct each curb ramp using Type A2 details on Sheet 2.

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

PREFERRED CONSTRUCTION PLACEMENT

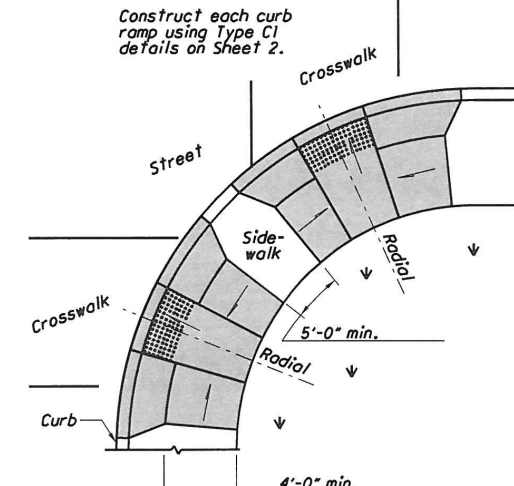


Construct each curb ramp using Type B2 details on Sheet 2.

Two sets of Double Parallel Curb Ramps are shown.

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

PARALLEL CURB RAMPS



Construct each curb ramp using Type C1 details on Sheet 2.

Curb ramp placement where streets have wide turning radius, and sufficient sidewalk 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 1) 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.

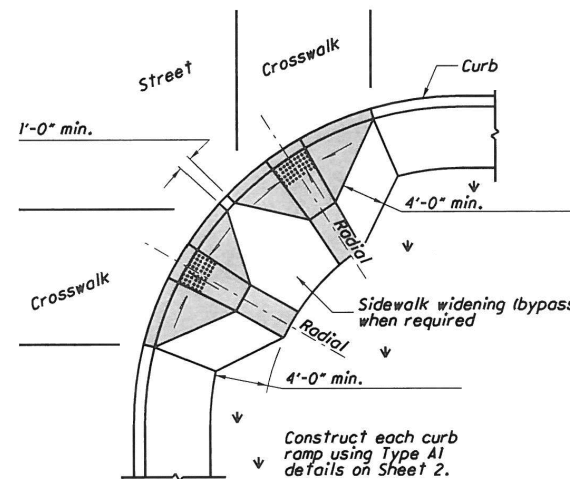
JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp 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.

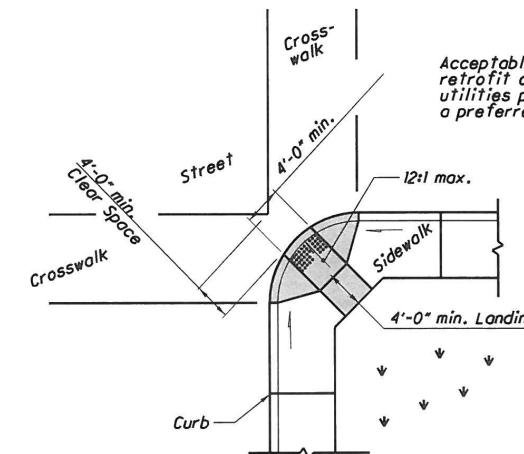
For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the strip of detectable warnings as Item 608 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) 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

Acceptable design for retrofit only where utilities prevent using a preferred layout.



DIAGONAL RAMP (Type D)

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".

ACCEPTABLE CONSTRUCTION PLACEMENT

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

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF ROADWAY ENGINEERING
NEW CURB RAMPS
(with Detectable Warnings)

SD NUMBER
BP-7.1

1 / 3

DATE
10-15-10
ADMINISTRATOR
M. Blume

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.



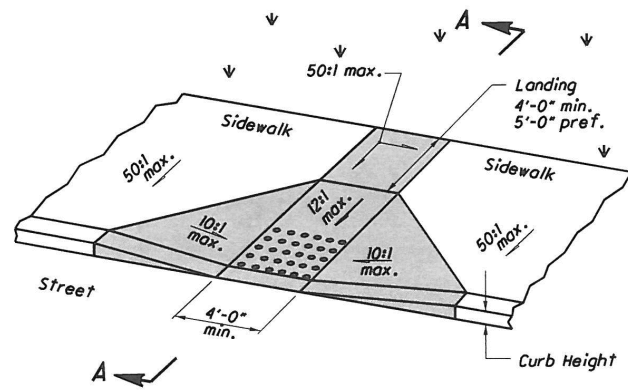
OFFICE OF THE CITY ENGINEER
CANTON, OHIO

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

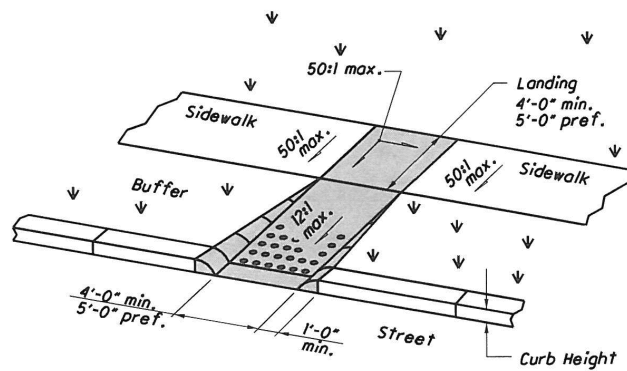
DESCRIPTION	DATE	BY
CAD DRAWING	MAY 2012	RMB
REVISIONS	06/29/2012	RMB
TITLE BLOCK REVISION	03/02/2021	GML

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP

CE_33_20210302.DWG

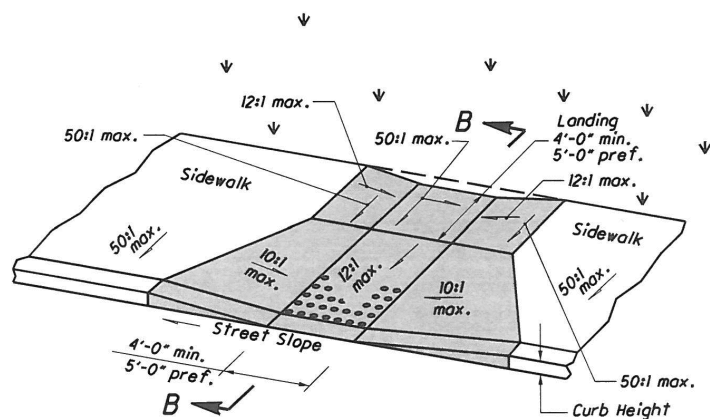


Type A1 (Perpendicular with flared sides)

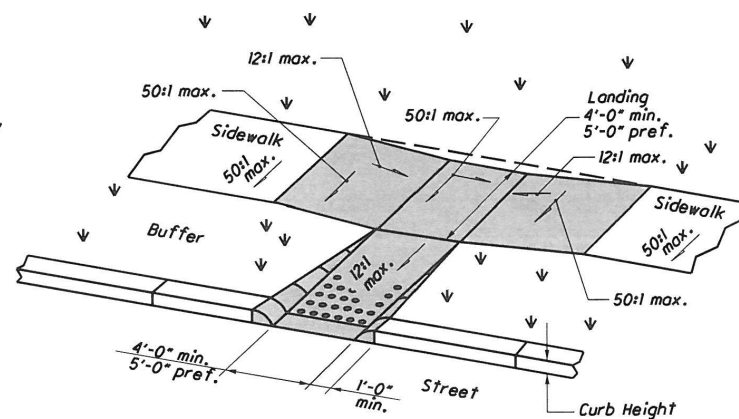


Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

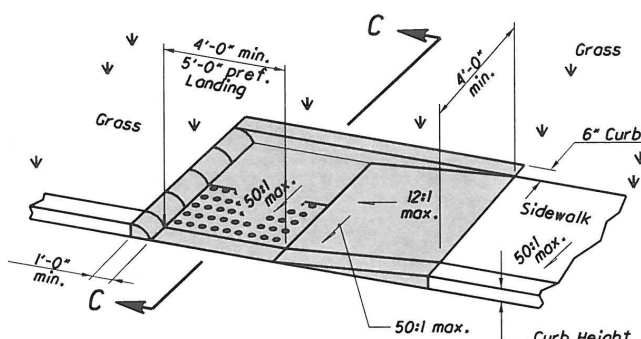


Type C1 (Combined with flared sides)

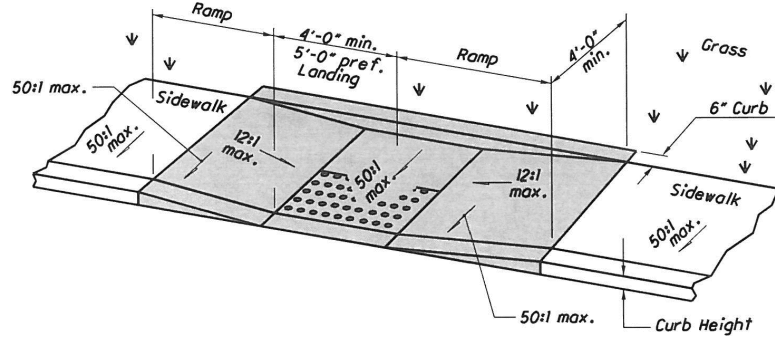


Type C2 (Combined with returned curb)

COMBINED CURB RAMP DETAILS

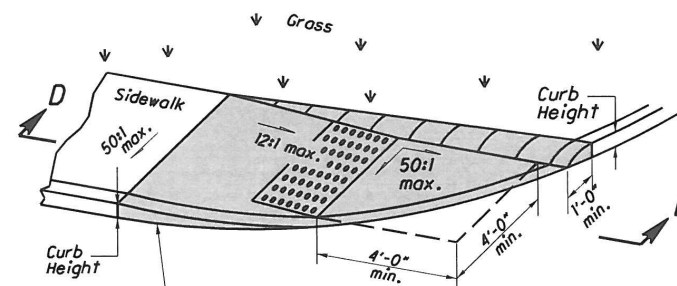


Type B1 (Single sided Parallel)



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.

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

STANDARD TROWAY CONSTRUCTION DRAWING
NEW CURB RAMP
(with Detectable Warnings)

SCD NUMBER
BP-7.1

2 / 3

OFFICE OF
ROADWAY
ENGINEERING

STATE ENGINEER
M. Blane

ADMINISTRATOR
D. B. Swann

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.

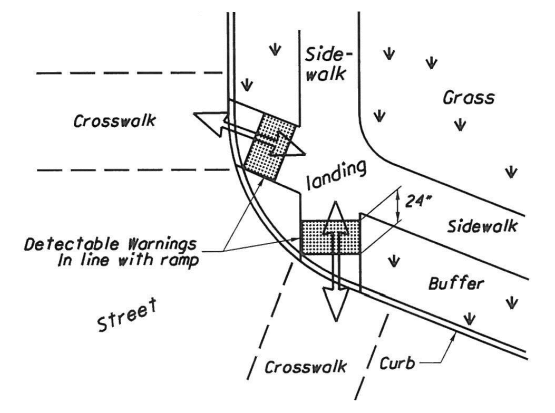
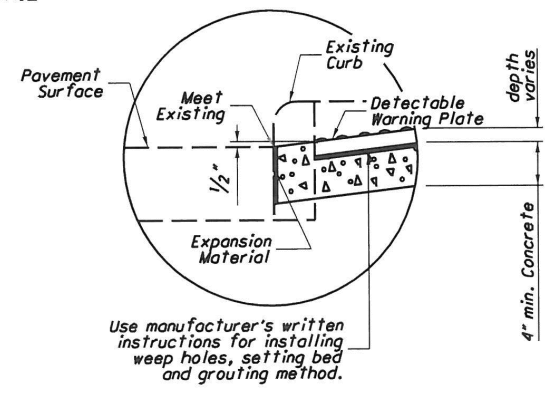
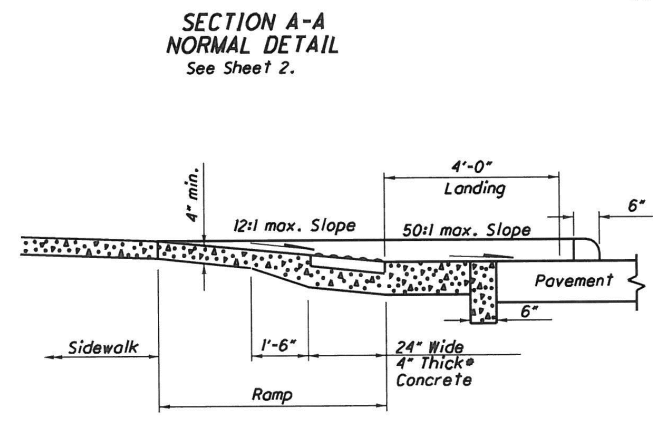
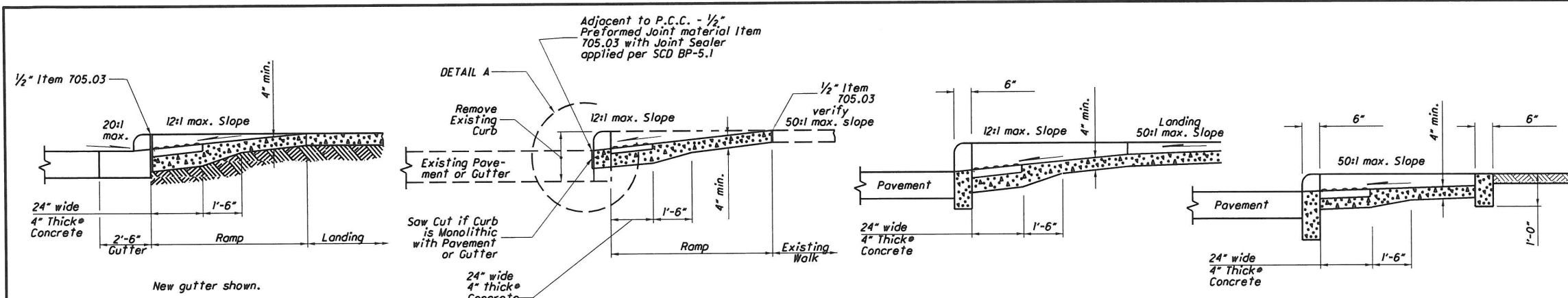


OFFICE OF THE CITY ENGINEER
CANTON, OHIO
DANIEL J. MOEGLIN, P.E., CITY ENGINEER
2436 30th St. NE 44705 : 330-489-3381 : www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
CAD DRAWING	MAY 2012	RMB
REVISIONS	06/29/2012	RMB
TITLE BLOCK REVISION	03/02/2021	GML

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP

CE_33_20210302.DWG



SECTION D-D
See Sheet 2.

*Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.

DETECTABLE WARNINGS NOTES

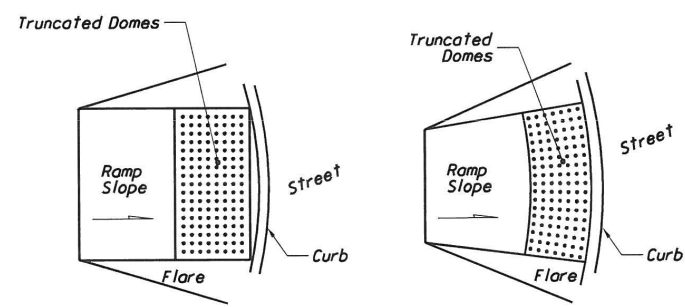
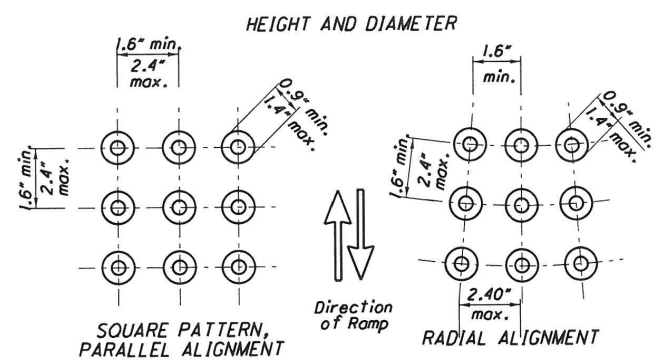
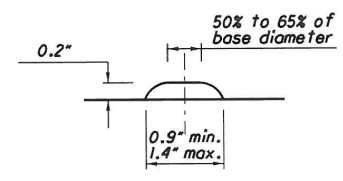
GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

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
 OFFICE OF ROADWAY ENGINEERING
 STANDARD ROADWAY CONSTRUCTION DRAWING
 NEW CURB RAMPS
 (with Detectable Warnings)
 THIS DRAWING REPLACES BP-7.1 DATED 1-19-07.
 SCD NUMBER BP-7.1
 3 / 3

DATE 10-15-10
 ADMINISTRATOR
 M. Blime

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

DESCRIPTION	DATE	BY
CAD DRAWING	MAY 2012	RMB
REVISIONS	06/29/2012	RMB
TITLE BLOCK REVISION	03/02/2021	GML

STANDARD DRAWING NO. 33
WHEEL CHAIR RAMP

CE_33_20210302.DWG

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

DESCRIPTION

DESCRIPTION	DATE	BY
CAD DRAWING	MAY 2012	RMB
REVISIONS	06/29/2012	RMB
WET PANELS PRIMARY DOME MAT	JAN 2015	RMB
TITLE BLOCK REVISION	03/02/2021	GML

STANDARD DRAWING NO. 33

WHEEL CHAIR RAMP

CE_33_20210302.DWG

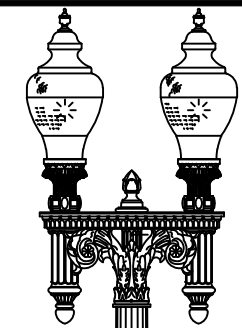


OFFICE OF THE CITY ENGINEER
CANTON, OHIO

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

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 (ASTM C 33) SETTING BED.

USE INTERIOR FORMING PINS FOR WEEP HOLES ON DOWNSLOPE SIDES AND INTERIOR CORNERS. MAX 4 FT. CENTERS. – 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.

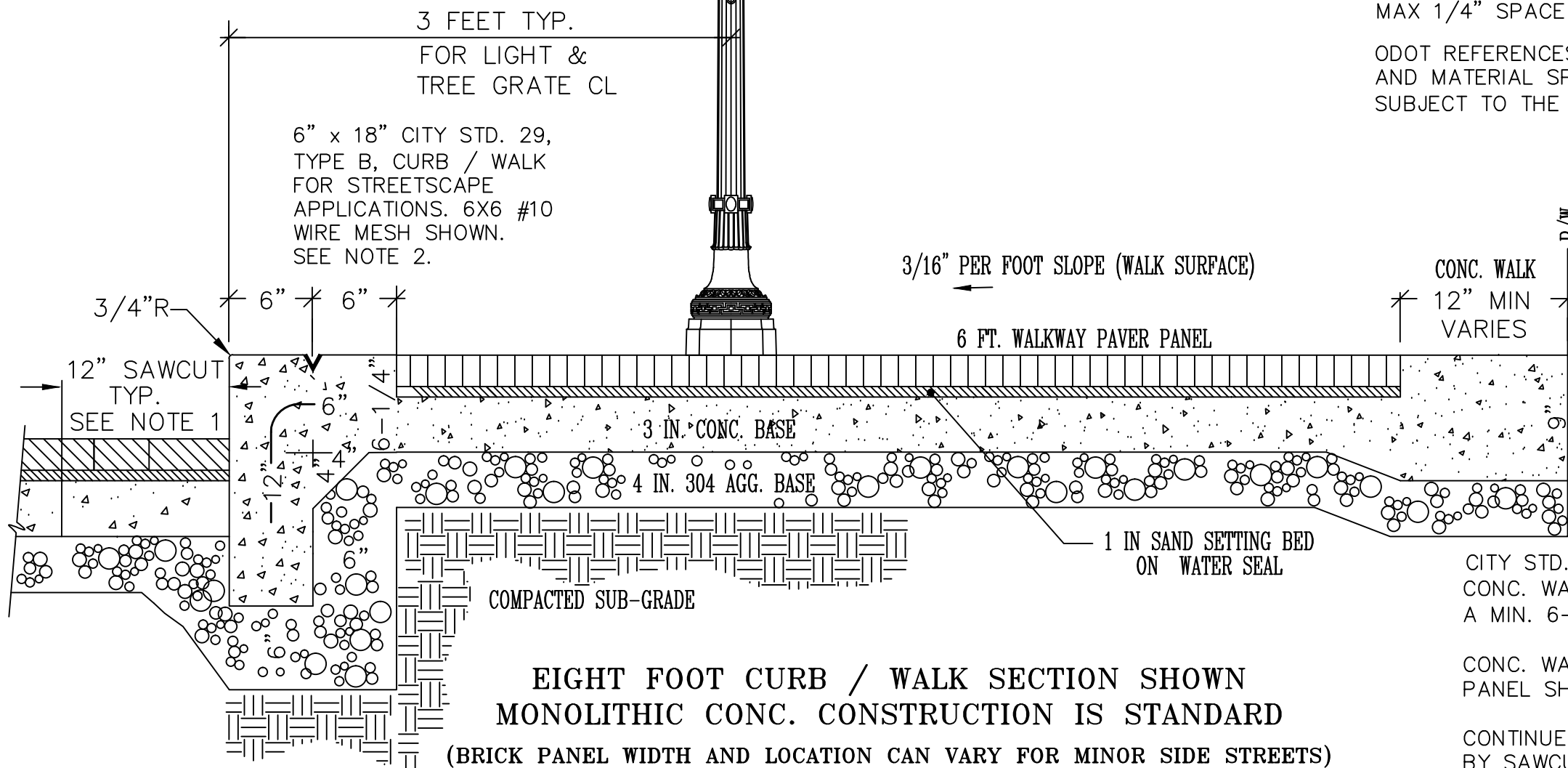
CONCRETE WALK EXPANSION JOINT – 1/2" CLOSED CELL EXPANSION JOINT FILLER TO BE SEALTIGHT CERAMAR WITH 1/2" PEEL STRIP OR EQUAL. PLACE EXP. JOINTS AGAINST BUILDINGS, STRUCTURAL FOUNDATIONS, AND 60FT O.C. IN WALK, TYP. SEAL EXPANSION JOINTS WITH POLYURETHANE ELASTOMERIC SEALANT TREMCO THC 900/901 OR EQUAL.

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.



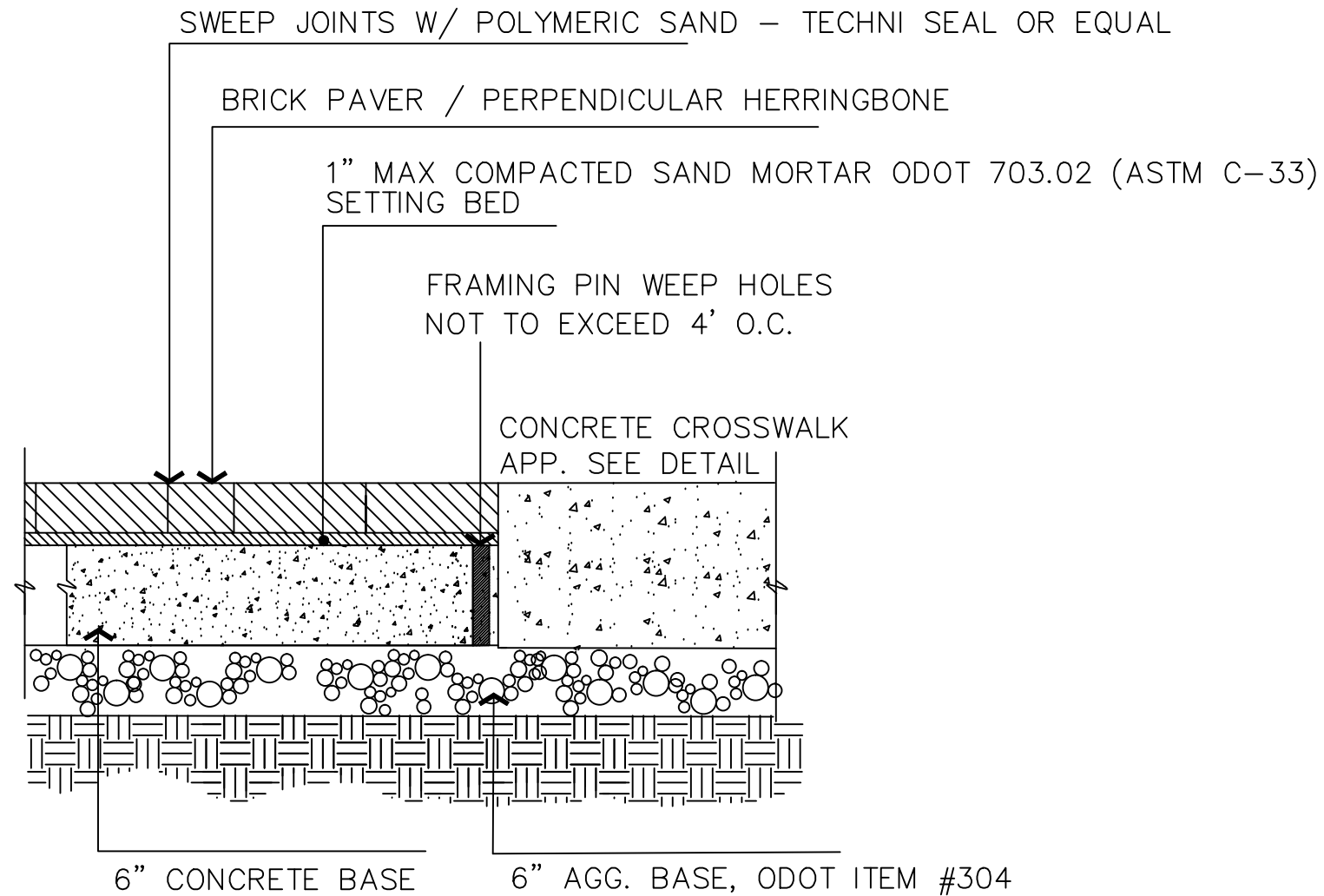
EIGHT FOOT CURB / WALK SECTION SHOWN
MONOLITHIC CONC. CONSTRUCTION IS STANDARD
 (BRICK PANEL WIDTH AND LOCATION CAN VARY FOR MINOR SIDE STREETS)



THE CITY OF CANTON, OHIO
 THOMAS M. BERNABEI, MAYOR
 OFFICE OF THE CITY ENGINEER
 JAMES J. BENEKOS, P.E., P.S., CITY ENGINEER
 2436 30TH ST. NE CANTON OH 44705
 330-489-3381 : www.cantonohio.gov/engineering

DESCRIPTION	DATE	BY
CAD DRAWING	FEB 2012	JTD
REVISED JOINT NO TIES AND BRICK BOX	02/26/2019	RMB
TITLE BLOCK REVISION	03/02/2021	GML
CROSS SLOPE SIDEWALK 3/16"/FT	05/13/2022	RMB

STANDARD DRAWING NO. 40
TYPICAL STREETScape
CORRIDOR
 CE_40_20220513.DWG



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.

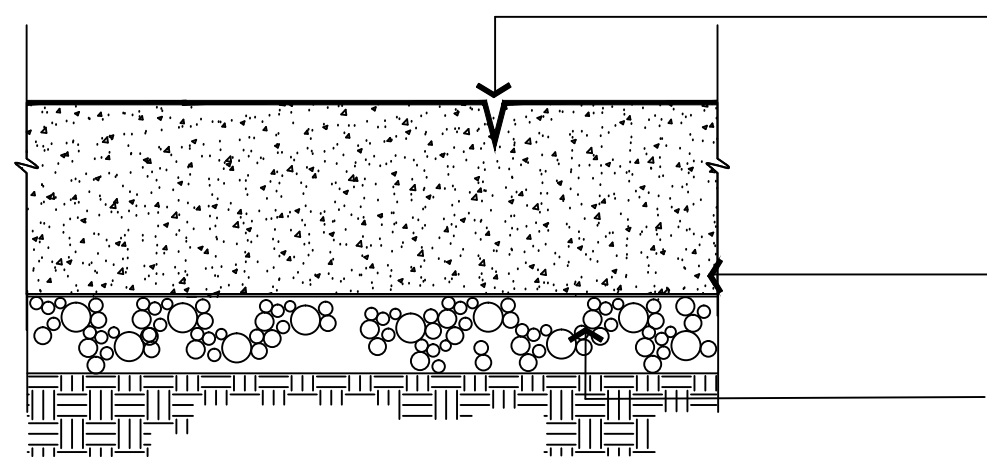
MAX 1/4" SPACE BETWEEN BRICK AND CONCRETE. PROVIDE 1/4" RADIUS ON ALL SLAB EDGES.

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.

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.

DESCRIPTION

DATE

BY

CAD DRAWING	FEB 2012	JTD
REVISED JOINT NOTES	02/26/2019	RMB
TITLE BLOCK REVISION	03/03/2021	GML

STANDARD DRAWING NO. 41

ROADWAY BRICK & CROSSWALK PAVEMENT DETAILS

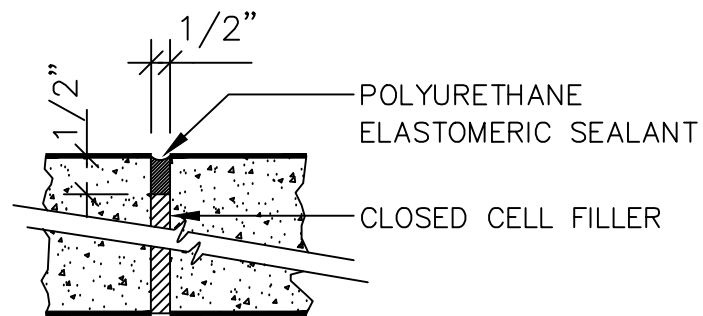
CE_41_20210303.DWG



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2436 30th St. NE 44705 330-489-3381 www.cantonohio.gov/engineering

1 OF 1



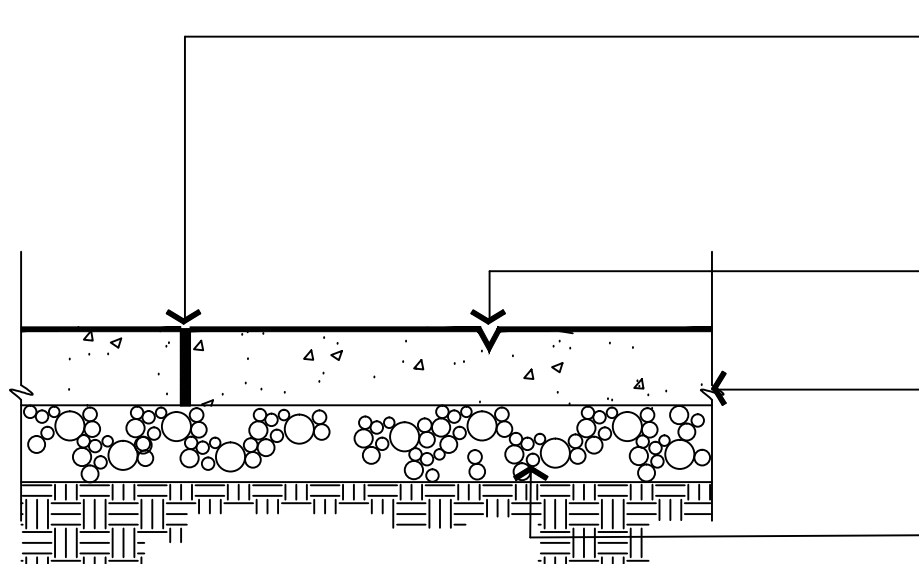
EXPANSION JOINT DETAIL
NOT TO SCALE

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 PAVER 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 THC 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.



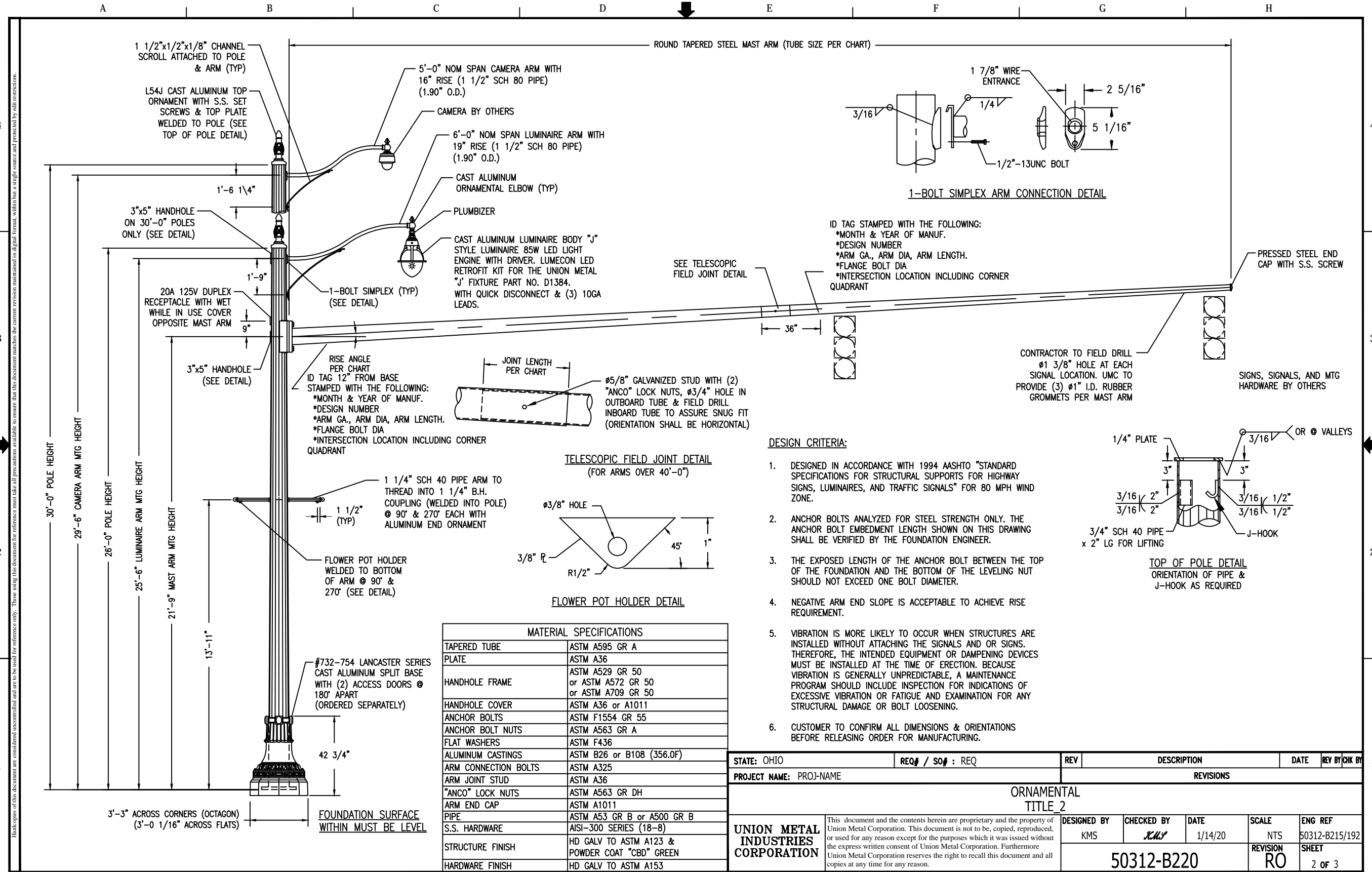
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DESCRIPTION	DATE	BY
CAD DRAWING	FEB 2012	JTD
REVISED JOINT NOTES	02/26/2019	RMB
TITLE BLOCK REVISION	03/03/2021	GML

STANDARD DRAWING NO. 42
STREETScape CONCRETE
WALK PAVEMENT DETAILS

CE_42_20210303.DWG



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MATERIAL SPECIFICATIONS	
TAPERED TUBE	ASTM A595 GR A
PLATE	ASTM A36
HANDHOLE FRAME	ASTM A529 GR 50 or ASTM A572 GR 50 or ASTM A709 GR 50
HANDHOLE COVER	ASTM A36 or A1011
ANCHOR BOLTS	ASTM F1554 GR 55
ANCHOR BOLT NUTS	ASTM A563 GR A
FLAT WASHERS	ASTM F436
ALUMINUM CASTINGS	ASTM B26 or B108 (356.0F)
ARM CONNECTION BOLTS	ASTM A325
ARM JOINT STUD	ASTM A36
"ANCO" LOCK NUTS	ASTM A563 GR DH
ARM END CAP	ASTM A1011
PIPE	ASTM A53 GR B or A500 GR B
S.S. HARDWARE	AISI-300 SERIES (18-8)
STRUCTURE FINISH	HD GALV TO ASTM A123 & POWDER COAT "CBD" GREEN
HARDWARE FINISH	HD GALV TO ASTM A153

STATE: OHIO	REQ# / SO# : REQ	REV	DESCRIPTION	DATE	REV BY/CHK BY
PROJECT NAME: PROJ-NAME		REVISIONS			
ORNAMENTAL TITLE 2					
UNION METAL INDUSTRIES CORPORATION	DESIGNED BY KMS	CHECKED BY KMS	DATE 1/14/20	SCALE NTS	ENG REF 50312-B215/192
			50312-B220	REVISION RO	SHEET 2 of 3



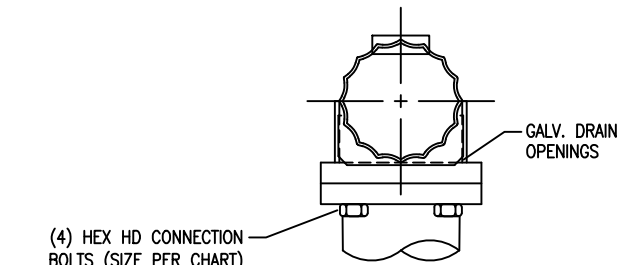
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DESCRIPTION	DATE	BY
CAD DRAWING	APRIL 2012	EEM
INSERTED UM DRAWING 50312-B192	04/17/2015	EGM
UPDATED UM DRAWING 50312-B220	04/22/2020	EGM
TITLE BLOCK REVISION	03/04/2021	RMB

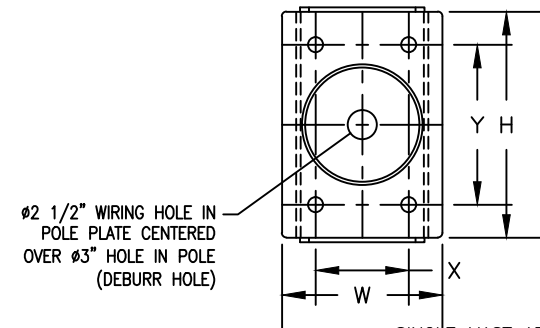
STANDARD DRAWING NO. 61
NOSTALGIC TRAFFIC SIGNAL
POLE & LIGHTING STANDARDS
 CE_61_20210304.DWG

1 OF 1

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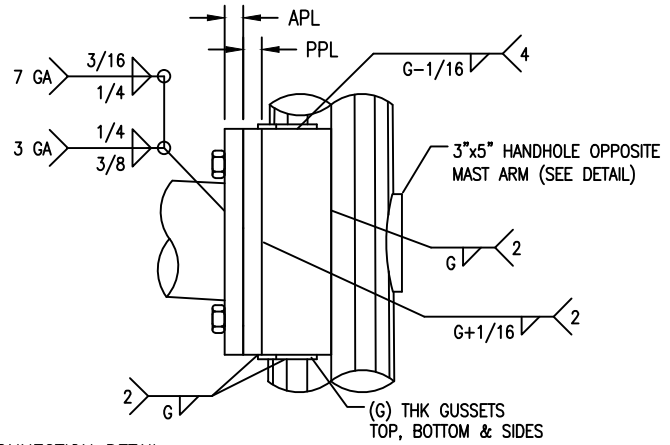


(4) HEX HD CONNECTION BOLTS (SIZE PER CHART) EACH WITH (1) FLAT WASHER

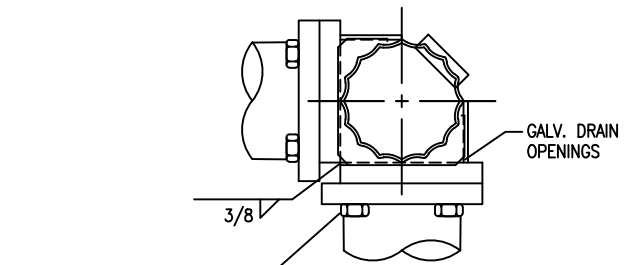


Ø2 1/2" WIRING HOLE IN POLE PLATE CENTERED OVER Ø3" HOLE IN POLE (DEBURR HOLE)

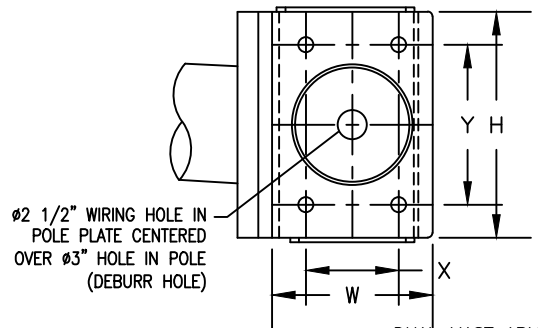
SINGLE MAST ARM CONNECTION DETAIL



(G) THK GUSSETS TOP, BOTTOM & SIDES

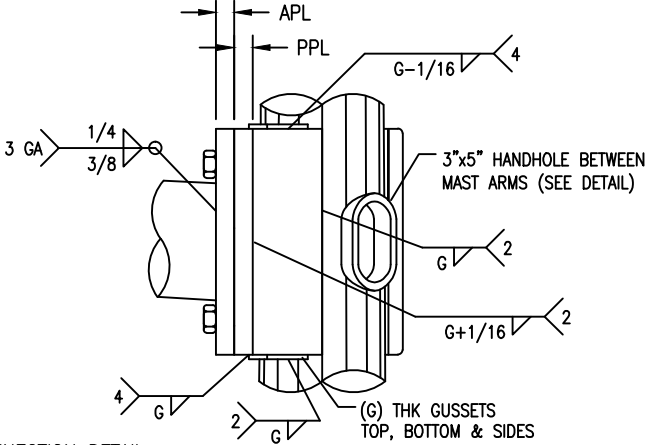


(8) HEX HD CONNECTION BOLTS (SIZE PER CHART) EACH WITH (1) FLAT WASHER

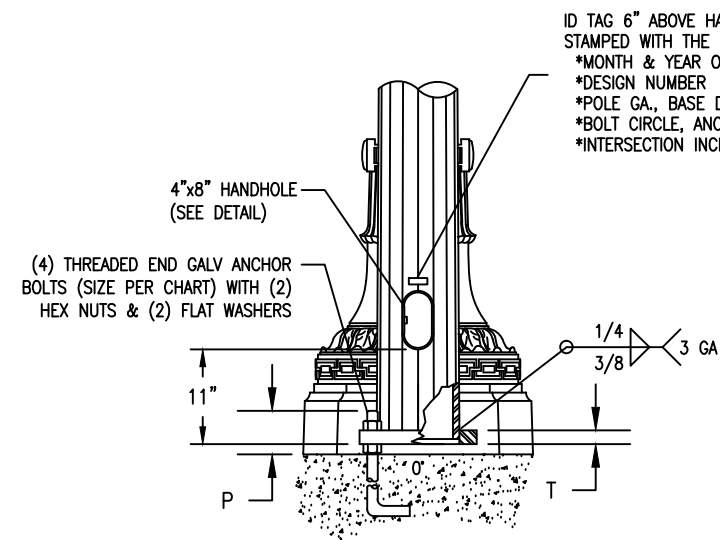


Ø2 1/2" WIRING HOLE IN POLE PLATE CENTERED OVER Ø3" HOLE IN POLE (DEBURR HOLE)

DUAL MAST ARM CONNECTION DETAIL



(G) THK GUSSETS TOP, BOTTOM & SIDES

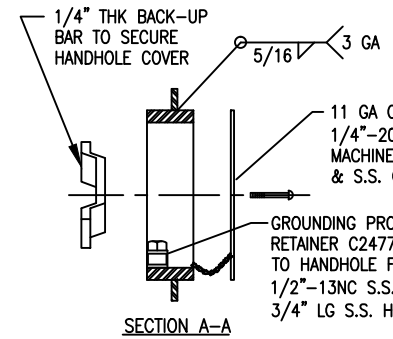


(4) THREADED END GALV ANCHOR BOLTS (SIZE PER CHART) WITH (2) HEX NUTS & (2) FLAT WASHERS

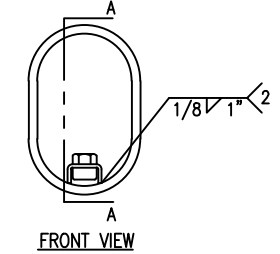
4"x8" HANDHOLE (SEE DETAIL)

BASE CONNECTION DETAIL

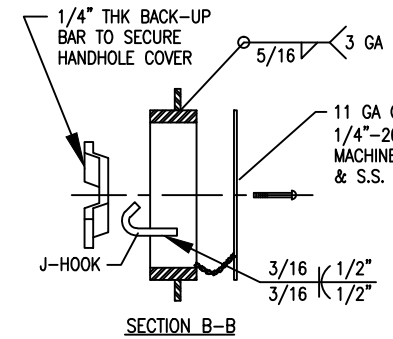
ID TAG 6" ABOVE HANDHOLE STAMPED WITH THE FOLLOWING:
 *MONTH & YEAR OF MFG
 *DESIGN NUMBER
 *POLE GA., BASE DIA, POLE HGT
 *BOLT CIRCLE, ANCHOR BOLT DIA
 *INTERSECTION INCLUDING CORNER QUADRANT



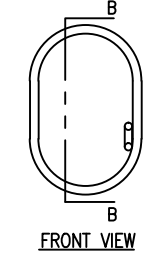
4"x8" HANDHOLE FRAME DETAIL



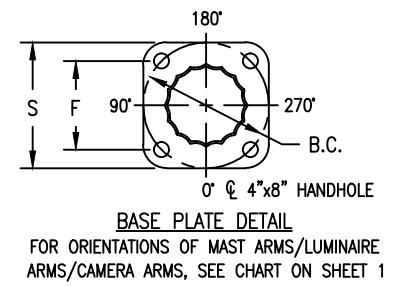
FRONT VIEW



3"x5" HANDHOLE FRAME DETAIL



FRONT VIEW



BASE PLATE DETAIL
 FOR ORIENTATIONS OF MAST ARMS/LUMINAIRE ARMS/CAMERA ARMS, SEE CHART ON SHEET 1

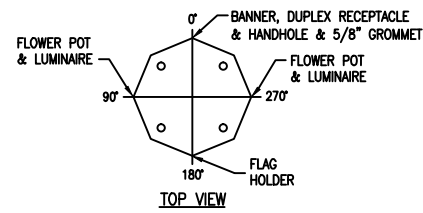
STATE: OHIO	REQ# / SO# : NOH-64474-1	REV	DESCRIPTION	DATE	REV BY/CHK BY
PROJECT NAME: PROJ-NAME		REVISIONS			
ORNAMENTAL_TRAFFIC_SIGNAL & LIGHTING STANDARDS FOR CANTON, OHIO					
UNION METAL INDUSTRIES CORPORATION	DESIGNED BY	CHECKED BY	DATE	SCALE	ENG REF
	KMS	RMS	1/14/20	NTS	50312-B215/192
	50312-B220			REVISION	SHEET
				R0	3 OF 3

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DESCRIPTION	DATE	BY
CAD DRAWING	ARPIL 2012	EEM
INSERTED UM DRAWING 50312-B192	04/17/2015	EGM
UPDATED UM DRAWING 50312-B220	04/22/2020	EGM
TITLE BLOCK REVISION	03/04/2021	GML

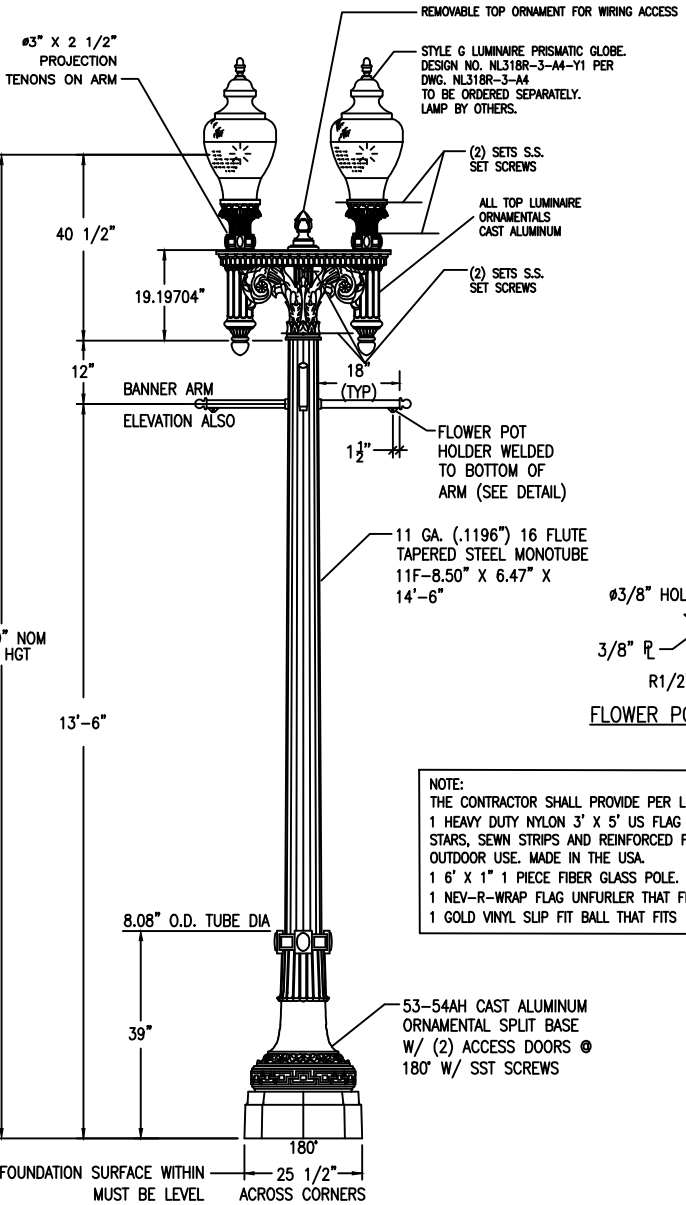
STANDARD DRAWING NO. 62
NOSTALGIC TRAFFIC SIGNAL POLE & LIGHTING STANDARDS
 CE_62_20210304.DWG

1 OF 1



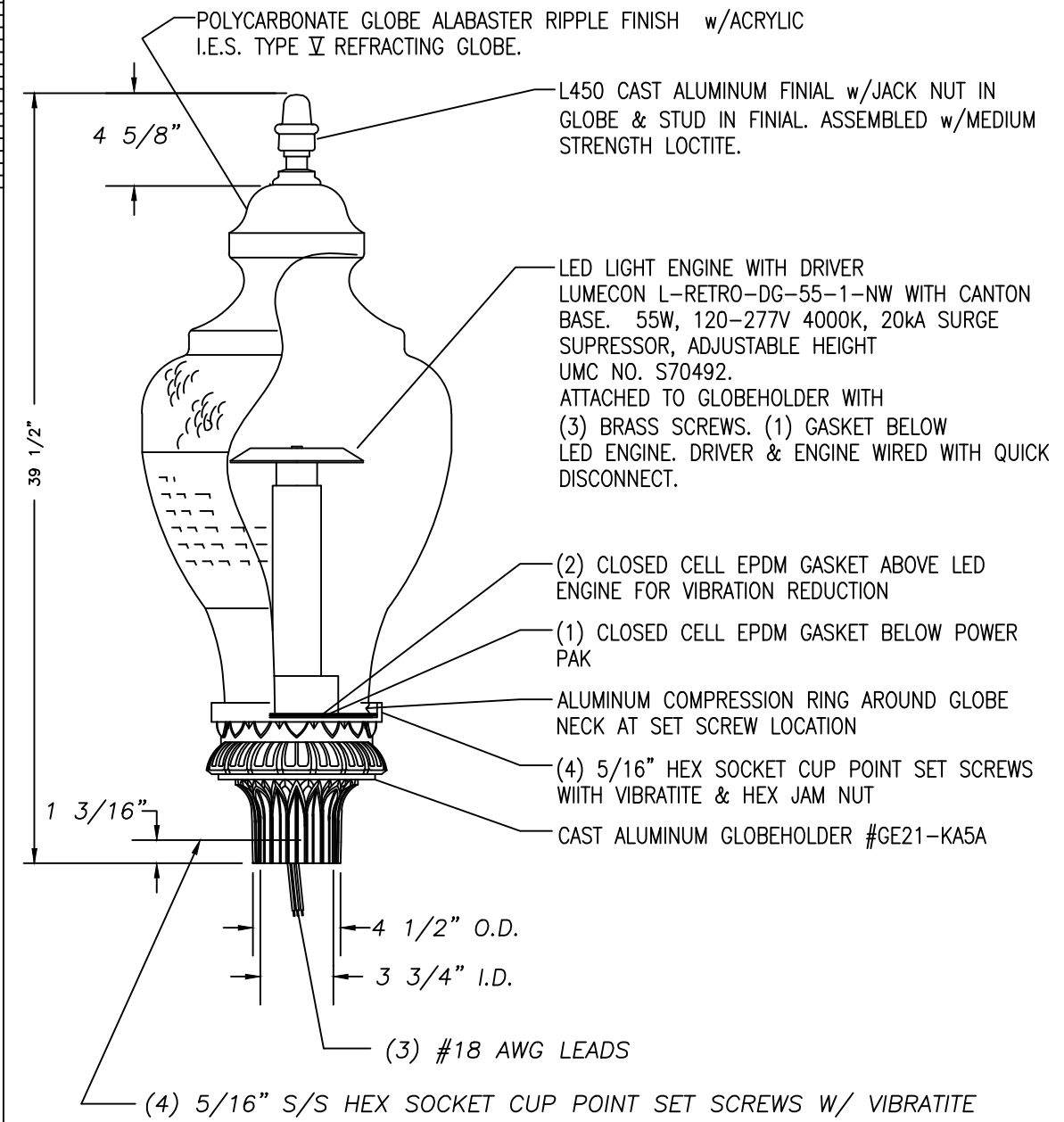
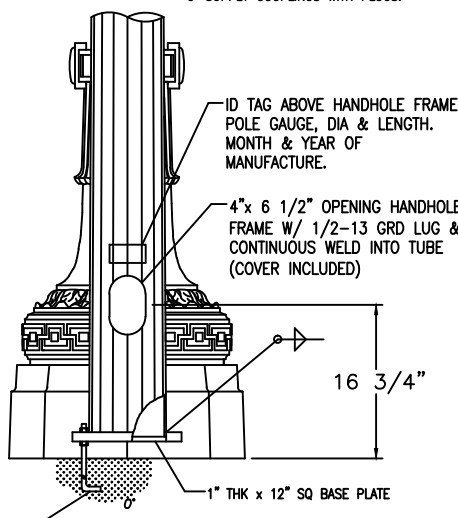
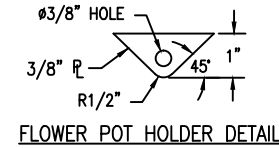
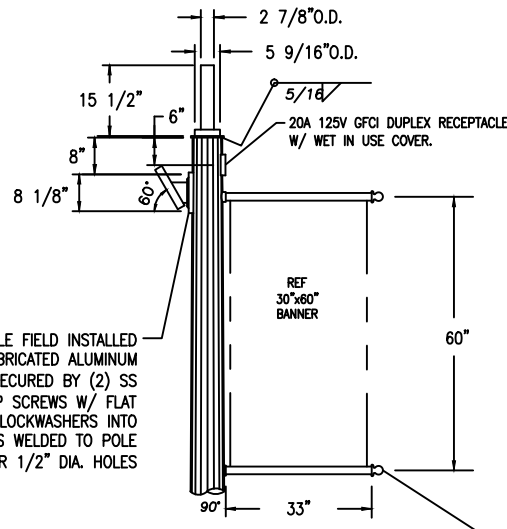
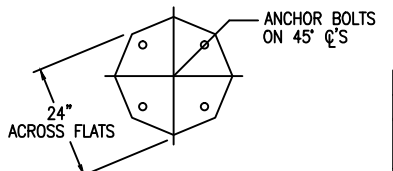
MATERIAL SPECIFICATIONS	
MONOTUBE	EQUAL TO ASTM-A595 GR A
PLATES	ASTM-A36
TUBING	ASTM-A513
PIPE	ASTM-A53 GRB, A501
ALUM CASTINGS	ASTM B26 356.0
HANDHOLE FRAME	ASTM-A529 GR50/A709 GR50
HANDHOLE COVER	C1010 STEEL
ALUM PLATE PIPE	ASTM B209, 210, 221, 241 6061, 6063
ANCHOR BOLTS	ASTM-F1554 GR55
ANCHOR BOLT NUTS	ASTM-A563 GRA
FLAT WASHERS	ASTM-F436
SST HARDWARE	AISI-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.

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 PER LUMICON INSTRUCTIONS. STREET SIDE OF LUMINAIRE MARKED ON OUTSIDE OF GLOBEHOLDER.

BOM 038401-4-1

REV	DESCRIPTION	DATE	REV BY	CHK BY
R3	LED UNIT WAS: S70497 #02003-01 55W, 120-277V, 4000K	12/22/19	MB	MB
R2	LED UNIT WAS: LUMECON UAG2-D48-D5-NW-UL-X UMC NO. S70435 FIRST FOR 34511 & 34316	7/17/17	MB	MB
R1	5/16\"/>			

STATE	REQ# / SO#	REV	DESCRIPTION	DATE	REV BY	CHK BY
OHIO	NOH54053					
PROJECT NAME: NAME						
ORNAMENTAL TWIN LIGHTING STANDARD WITH LANCASTER BASE						
FLAG HOLDER, FLOWER POT ARMS & BANNER. DESIGN NO. B2473-53/54-B43-Y1						
UNION METAL INDUSTRIES CORPORATION	DESIGNED BY	CHECKED BY	DATE	SCALE	ENG REF	
	MRB	MRB	10/14/19	NONE	N2473-54-B14	
	N2473-53/54-B43			REVISION	SHEET	
				RO.1		

STATE	REQ# / SO#	REV	DESCRIPTION	DATE	REV BY	CHK BY
OHIO	NOH-54508					
PROJECT NAME: CITY OF CANTON STANDARD LED						
NOSTALGIA_LUMINAIRE_NL318R_WITH_LED_&_GE21_KA5A_GLOBEHOLDER						
DESIGN_NUMBER_NL318R-3-A4-Y1						
UNION METAL INDUSTRIES CORPORATION	DESIGNED BY	CHECKED BY	DATE	SCALE	ENG REF	
	MRB	MRB	7/15/14	NONE	NL318R-3-A3	
	NL318R-3-A4			REVISION	SHEET	
				-		

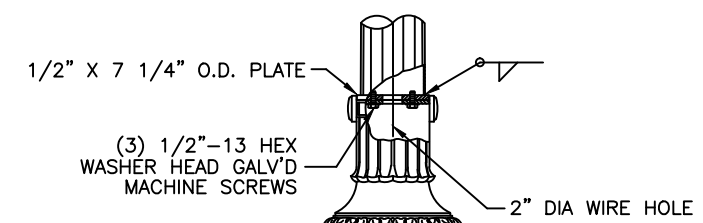
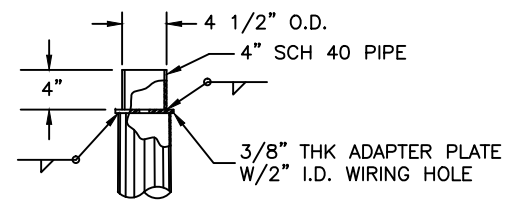
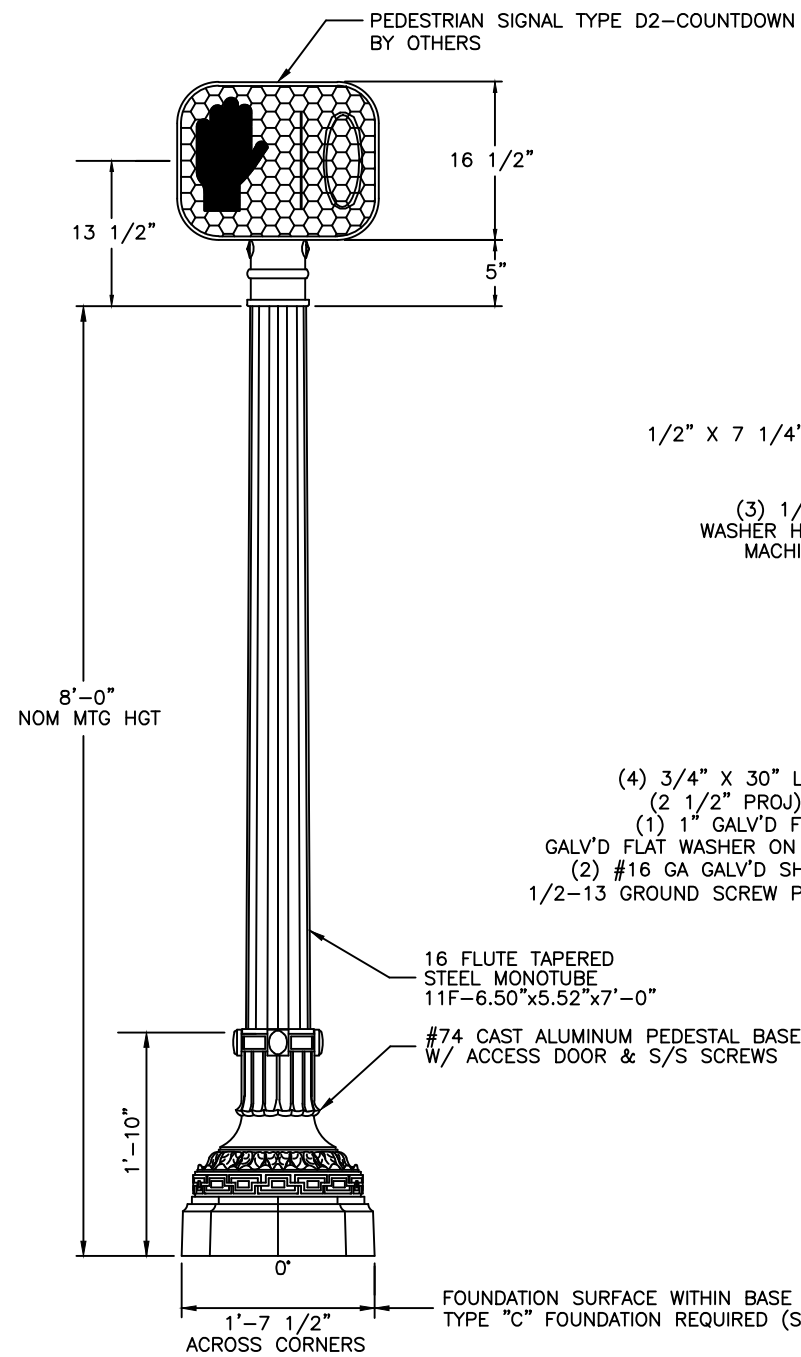


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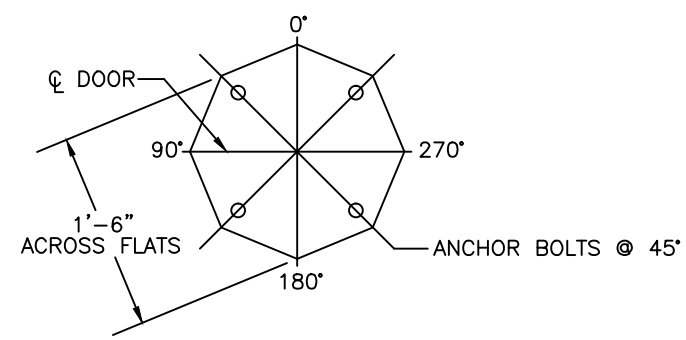
DESCRIPTION	DATE	BY
CAD DRAWING	MAR 2014	EEM
FLOWER POT HOLDERS ADDED	02/23/2016	EGM
LED ENGINE UPDATE	07/06/2018	RMB
UPDATED UM DRAWINGS	04/22/2020	EGM
TITLE BLOCK REVISION	03/04/2021	GML

STANDARD DRAWING NO. 63
NOSTALGIA LIGHT POLE &
LUMINAIRE
CE_63_20210304.DWG

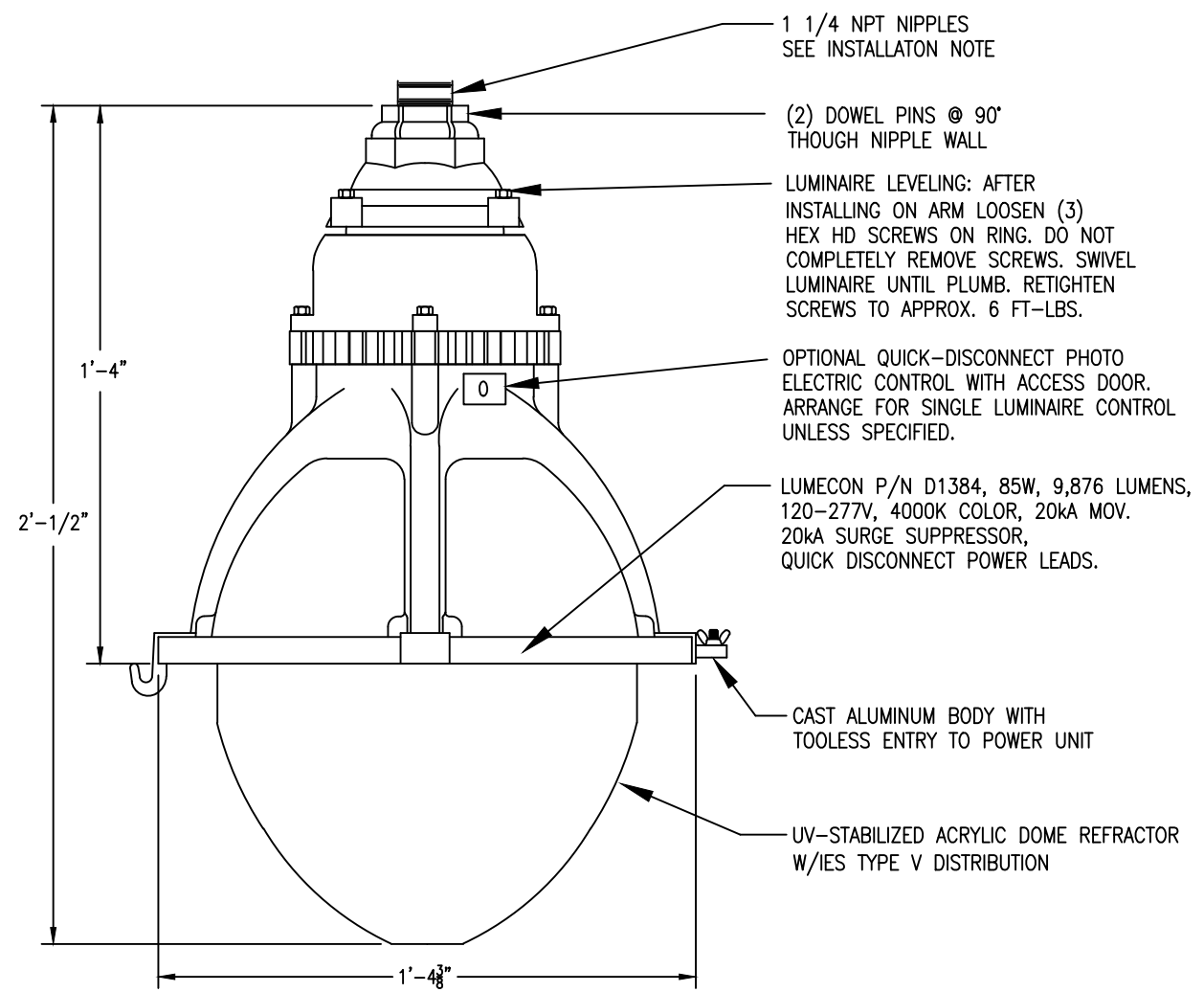
1 OF 1



- (4) 3/4" X 30" LG GALV'D ANCHOR BOLTS
- (2 1/2" PROJ) W/(1) GALV'D HEX NUT,
- (1) 1" GALV'D FLAT WASHER & (1) 3/4" GALV'D FLAT WASHER ON 12" B.C. (8 1/2" CTRS)
- (2) #16 GA GALV'D SHIMS PER POLE INCLUDED
- 1/2-13 GROUND SCREW PROVIDED IN ANCHOR LUG



ORNAMENTAL PEDESTRIAN POLE DESIGNED FOR CANTON, OHIO U.M.C. DESIGN NO. P2000-74-B9-Y1	
LOF _____	ENG. REF. # _____
REQ. # 0329-40-98	S.O. # _____ CAD# 0329C98
DRAWN <u>WJC</u>	DRAWING NO. <u>N2000-74-B9</u>
DATE <u>4/24/98</u>	
CHECKED <u>GMP</u>	



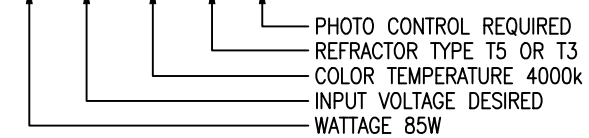
INSTALLATION NOTE:

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, DO NOT INSTALL LUMINAIRE. CONSULT FACTORY BEFORE PROCEEDING.

NOTES:

- STANDARD FINISH IS POLYESTER POWDER COAT. COLOR SPECIFIED PER SALES ORDER.
- SLIP-FIT ELBOWS AVAILABLE FOR INSTALLATION ON PIPE ARMS, CONSULT FACTORY FOR OPTIONS.

PART NUMBER
 NLJ1-110-A16-85W-120V-4000k-TY5-PEC



WEIGHT 40 LBS. MAX. EPA 1.2 SQ. FT.

"J" STYLE LUMINAIRE WITH 110 TYPE GLOBE AND LUMECON L-RETRO-T LED				
UNION METAL INDUSTRIES CORPORATION	DESIGNED BY	CHECKED BY	DATE	SCALE
	MRB	<i>WJC</i>	9/13/16	NTS
NLJ1-110-A16			REVISION	SHEET
			R0.1	SHT OF SHTS

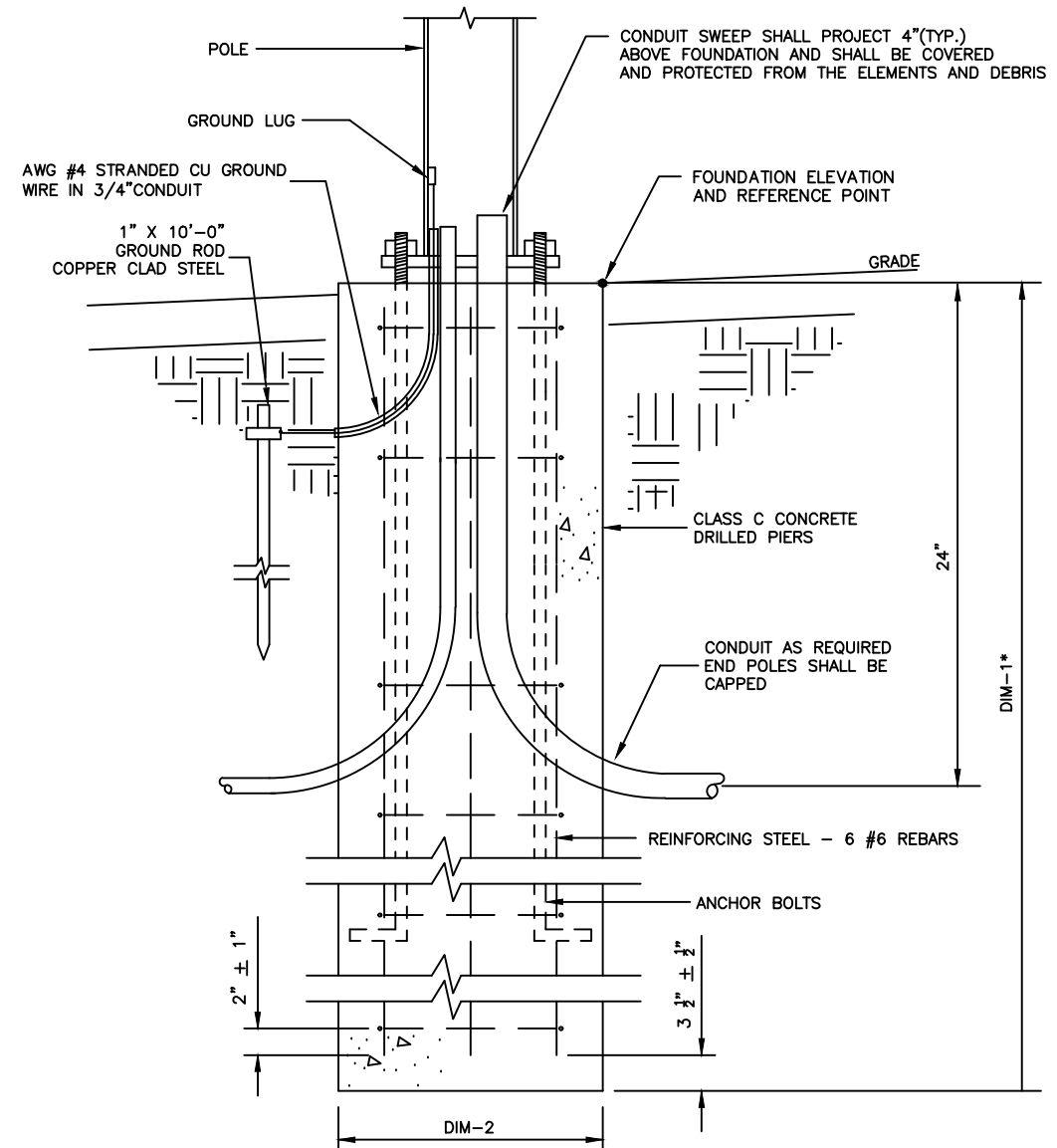


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DESCRIPTION	DATE	BY
CAD DRAWING	APRIL 2012	EEM
NEW LED RETROFIT KIT SPEC.	08/26/2016	EEM
CHANGED 55 WATT TO 85 WATT LED	09/13/2016	KS
UPDATED DRAWING NLJ1-110-A16	04/22/2020	EGM
TITLE BLOCK REVISION	03/04/2021	GML

STANDARD DRAWING NO. 64
NOSTALGIC PEDESRTIAN POLE
& TEARDROP
 CE_64_20210304.DWG

1 OF 1

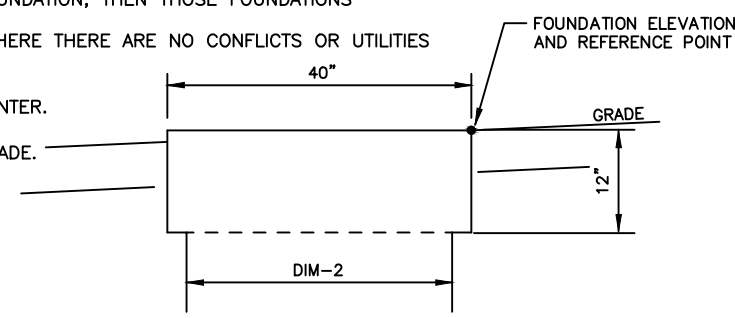


NOSTALGIC FOUNDATION DETAIL
NO SCALE

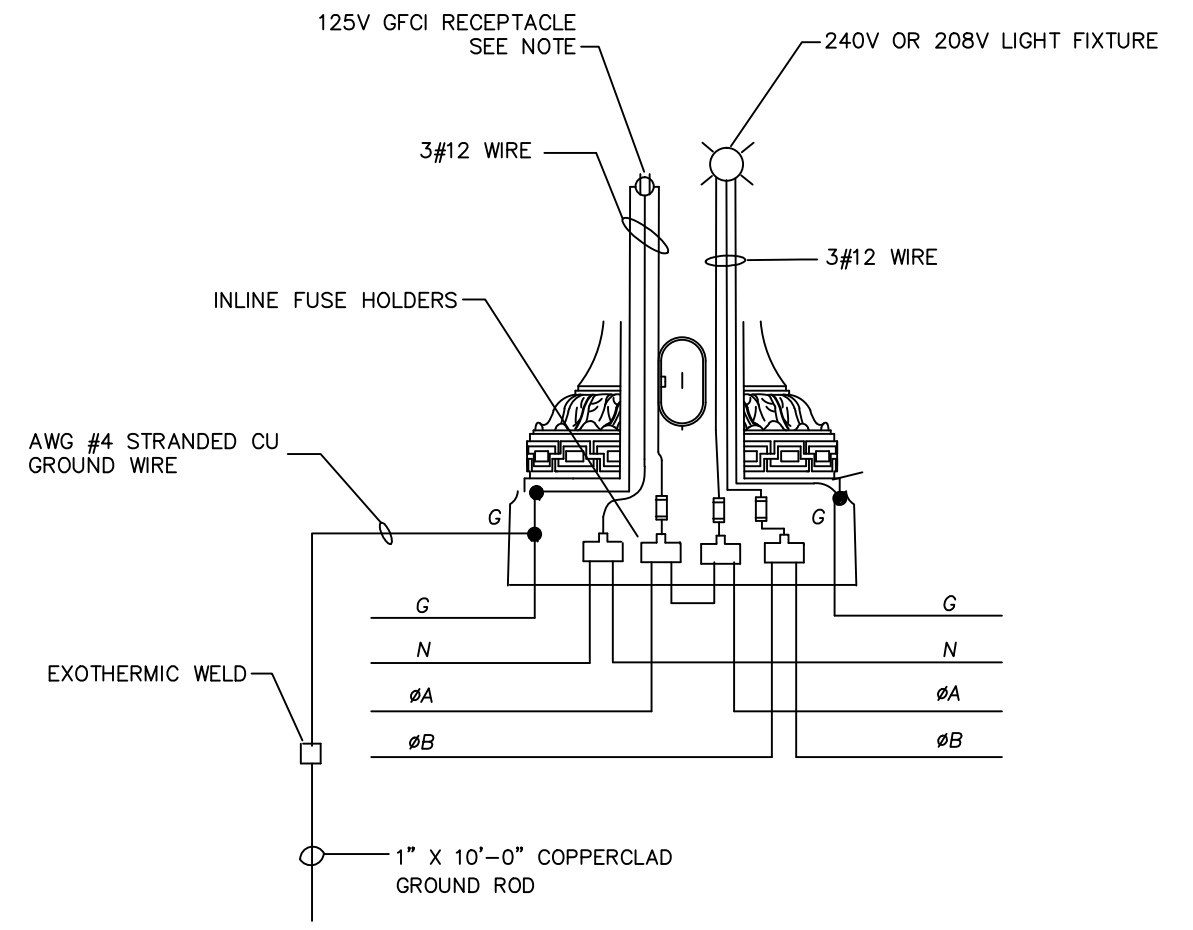
- NOTES:**
1. ALL FOUNDATIONS SHALL BE DRILLED PIERS TO AVOID DISTURBING SURROUNDING SOIL. A TEMPORARY STEEL CASING MAY BE REQUIRED. IF UTILITIES OR ANOTHER CONFLICT IS IN CLOSE PROXIMITY TO THE FOUNDATION, THEN THOSE FOUNDATIONS MAY HAVE TO BE EXCAVATED BY HAND.
 2. PRE-CAST LIGHT POLE FOUNDATIONS, 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.



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



POLE WIRING DIAGRAM
NO SCALE

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

DESCRIPTION	DATE	BY
CAD DRAWING	MAR 2014	EEM
MODIFIED DIMS AND OTHER CHANGES	04/29/2014	NJL
MODIFIED FOUNDATION NOTES	02/21/2017	EGM
TITLE BLOCK REVISION	03/04/2021	GML

STANDARD DRAWING NO.65
NOSTALGIC POLE FOUNDATION
& WIRING DIAGRAM

CE_65_20210304.DWG

Proposal Page
STA Colonial Blvd. NE, GP 1206, PID 111059

We (I), the above signed hereby propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications, and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

Ref. Num.	Item Num.	Item Description	Est. Qty.	Unit	Labor Unit Price	Material Unit Price	Total Price
1	201	Clearing and Grubbing	1	L.S.			
2	202	Pavement Removed	13,024	S.Y.			
3	202	Walk Removed	24,866	S.F.			
4	202	Curb Removed	8,901	Ft.			
5	202	Pipe Removed, 24" and Under	1,939	Ft.			
6	202	Manhole Removed	5	Each			
7	202	Catch Basin Rmved	25	Each			
8	202	Removal Misc.: Landscaping Items	1	L.S.			
9	202	Removal Misc.: Steps and Railing	1	L.S.			
10	203	Excavation	2,297	C.Y.			
11	203	Embankment	1,252	C.Y.			
12	204	Subgrade Compaction	15,611	S.Y.			
13	204	Proof Rolling	9	Hour			
14	608	4" Concrete Walk	19,167	S.F.			
15	608	6" Concrete Walk	6,525	S.F.			
16	608	Concrete Steps, Type A, As Per Plan	20	Ft.			
17	608	Concrete Steps, Type B, As Per Plan	20	Ft.			
18	623	Monument Assembly	32	Each			
19	659	Soil Analysis Test	2	Each			
20	659	Topsoil	568	C.Y.			
21	659	Seeding and Mulching	5,111	S.Y.			
22	659	Repair Seeding and Mulching	256	S.Y.			
23	659	Inter-Seeding	256	S.Y.			
24	659	Commercial Fertilizer	1	Tom			
25	659	Lime	1	Acre			
26	659	Water	29	MGal.			

27	832	Storm Water Pollution Prevention Plan	1	L.S.			
28	832	Erosion Control	36,000	Each			
29	605	4" Base Pipe Underdrains with Geotextile Fabric	4,353	Ft.			
30	611	4" Conduit, Type B, 707.33	108	Ft.			
31	611	4" Conduit, Type F for Underdrain Outlet	402	Ft.			
32	611	6" Conduit, Type B, 707.33	100	Ft.			
33	611	12" Conduit, Type B, 707.33	1,171	Ft.			
34	611	15" Conduit, Type B, 707.33	1,247	Ft.			
35	611	18" Conduit, Type B, 707.33	70	Ft.			
36	611	21" Conduit, Type B, 707.33	57	Ft.			
37	611	24" Conduit, Type B, 707.33	616	Ft.			
38	611	27" Conduit, Type B, 707.33	667	Ft.			
39	611	36" Conduit, Type B, 707.33	50	Ft.			
40	611	42" Conduit, Type B, 707.33	50	Ft.			
41	611	48" Conduit, Type B, 707.33	50	Ft.			
42	611	Catch Basin, Misc.: City of Canton SCD No. 1 - Curb Inlet Catch Basin NO. 3	3	Each			
43	611	Catch Basin, Misc.: City of Canton SCD No. 1 - Curb Inlet Catch Basin NO. 3A	38	Each			
44	611	Catch Basin, Misc.: City of Canton SCD No. 4 - Curb Inlet Catch Basin NO. 6	2	Each			
45	611	Manhole Adjusted to Grade, As Per Plan	7	Each			
46	611	Manhole, MISC.: City of Canton SCD No. 10 - Pre-Cast Storm Manhole	13	Each			
47	Special	Miscellaneous Metal	10,000	LB			
48	895	Manufactured Water Quality Structure, Type 4	1	Each			
49	254	Pavement Planing, Asphalt Concrete (3")	2,144	S.Y.			
50	301	Asphalt Concrete Base, PG64-22	1,667	C.Y.			
51	304	Aggregate Base	1,855	C.Y.			
52	407	Non-Tracking Tack Coat	1,403	Gal.			
53	408	Prime Coat	3,879	Gal.			
54	441	Asphalt Concrete Surface Course, Type 1, (448), PG64-22	314	C.Y.			
55	441	Asphalt Concrete Intermediate Course, Type 1, (448)	601	C.Y.			
56	452	6" Non-Reinforced Concrete Pavement, Class QC 1P	284	S.Y.			

57	452	9" Non-Reinforced Concrete Pavement, Class QC 1P	1,485	S.Y.			
58	452	Non-Reinforced Concrete Pavement, MISC.: 5.5" Non-Reinforced Concrete Pavement	784	S.Y.			
59	452	Non-Reinforced Concrete Pavement, MISC.: Roadway Brick Pavers	663	S.Y.			
60	452	Non-Reinforced Concrete Pavement, MISC.: Sidewalk Brick Pavers	122	S.Y.			
61	608	Curb Ramp	4,208	S.F.			
62	608	Detectable Warning	40	S.F.			
62a	608	Detectable Warning, As Per Plan	408	S.F.			
63	609	Combination Curb and Gutter, Type 2, As Per Plan	9,099	Ft.			
64	609	Curb, Typt 3-B, As Per Plan	233	Ft.			
65	638	Water Work, Misc.: 1" Water Service Connection, Complete, Short Side	32	Each			
66	638	Water Work, Misc.: 1" Water Service Connection, Complete, Long Side	17	Each			
67	638	Water Work, Misc.: 1.5" Water Service Connection, Complete, Long Side	1	Each			
68	638	Water Work, Misc.: 2" Curb Stop, Complete	1	Each			
69	638	Water Work, Misc.: 6" Gate Valve	11	Each			
70	638	Water Work, Misc.: 8" Gate Valve	4	Each			
71	638	Water Work, Misc.: 12" Gate Valve	2	Each			
72	638	Water Work, Misc.: 6" 11.25 Degree Bend	15	Each			
73	638	Water Work, Misc.: 6" 22.5 Degree Bend	4	Each			
74	638	Water Work, Misc.: 6" 45 Degree Bend	25	Each			
75	638	Water Work, Misc.: 8" 11.25 Degree Bend	1	Each			
76	638	Water Work, Misc.: 8" 22.5 Degree Bend	1	Each			
77	638	Water Work, Misc.: 8" 45 Degree Bend	11	Each			
78	638	Water Work, Misc.: 12" 45 Degree Bend	4	Each			
79	638	Water Work, Misc.: 6" X 6" X 6" Tee	2	Each			
80	638	Water Work, Misc.: 6" X 6" X 8" Tee	2	Each			
81	638	Water Work, Misc.: 8" X 8" X 8" Tee	1	Each			
82	638	Water Work, Misc.: 12" X 12" X 6" Tee	3	Each			
83	638	Water Work, Misc.: 6" X 4" Reducer	1	Each			
84	638	Water Work, Misc.: 4" Cut-In Sleeve	1	Each			
85	638	Water Work, Misc.: 6" Cut-In Sleeve	3	Each			

86	638	Water Work, Misc.: 8" Cut-In Sleeve	3	Each			
87	638	Water Work, Misc.: 12" Cut-In Sleeve	2	Each			
88	638	Water Work, Misc.: 4" Plug	3	Each			
89	638	Water Work, Misc.: 6" Plug	5	Each			
90	638	Water Work, Misc.: 8" Plug	3	Each			
91	638	Water Work, Misc.: 12" Plug	2	Each			
92	638	Water Work, Misc.: Fire Hydrant Assembly	7	Each			
93	638	Water Work, Misc.: Rive Hydrant Removed	4	Each			
94	638	Water Work, Misc.: Existing Valve Abandoned	16	Each			
95	638	Water Work, Misc.: 2" Water Main High Density Polyethylene Pipe CTS SDR 9	100	Ft.			
96	638	Water Work, Misc.: 4" Water Main Ductile Iron Pipe ANSI Class 52, Push-On Joints and Fittings	5	Ft.			
97	638	Water Work, Misc.: 6" Water Main Ductile Iron Pipe ANSI Class 52, Push-On Joints and Fittings	2,665	Ft.			
98	638	Water Work, Misc.: 8" Water Main Ductile Iron Pipe ANSI Class 52, Push-On Joints and Fittings	236	Ft.			
99	638	Water Work, Misc.: 12" Water Main Ductile Iron Pipe ANSI Class 53, Push-On Joints and Fittings	391	Ft.			
100	638	Water Work, Misc.: Insulating Fill	80	Ft.			
101	202	Manhole Removed	2	Each			
102	202	Abandon Misc.: Grout and Abandon 8" Sanitary Sewer	264	Ft.			
103	611	4" Conduit, Type B, 707.33	100	Ft.			
104	611	6" Conduit, Type B, 707.33	100	Ft.			
105	611	8" Conduit, Type B, 707.33	100	Ft.			
106	611	8" Conduit, Type B, As Per Plan	289	Ft.			
107	611	10" Conduit, Type B, 707.33	100	Ft.			
108	611	Conduit Misc.: Sanitary Lateral Reconnection	9	Each			
109	611	Conduit, Misc.: 8-Inch Sanitary Sewer Reconnection by the CIPP Process	510	Ft.			
110	611	Manhole Adjusted to Grade, As Per Plan	13	Each			
111	611	Manhole, MISC.: Manhole Rehabilitation	3	Each			
112	611	Manhole, MISC.: City of Canton SCD No. 10 - Pre-Cast Storm Manhole	2	Each			
113	611	Drainage Structure, Misc.: Sanitary Sewer Bypass Pumping	1	L.S.			
114	625	Connection, Fused Pull Apart	96	Each			
115	625	Light Pole, Decorative, As Per Plan (Nostalgia)	24	Each			

116	625	Light Pole Foundation, As Per Plan (Nostalgia)	24	Each			
117	625	No. 6 AWG 600 Volt Distribution Cable	7,758	Ft.			
118	625	No. 12 AWG Pole and Bracket Cable	3,312	Ft.			
119	625	Conduit, 2", 725.051, As Per Plan	4,977	Ft.			
120	625	Luminaire, Post Top, As Per Plan (Type III, 55 Watt, LED, 240 Volt) (Nostalgia)	48	Each			
121	625	Trench, 24" Deep	1,581	Ft.			
122	625	Trench in Paved Area	875	Ft.			
123	625	Underground Warning/Marking Tape	1,579	Ft.			
124	625	Pull Box, 725.08, 18"	19	Each			
125	625	Ground Rod	24	Each			
126	625	Power Service, As Per Plan	1	Each			
127	630	Ground Mounted Support, No. 2 Post	252	Ft.			
128	630	Ground Mounted Support, No. 3 Post	699	Ft.			
129	630	Street Name Sign Support, No. 3 Post	75	Ft.			
130	630	Sign Post Reflector	18	Each			
131	630	Sign, Flat Sheet	563	S.F.			
132	630	Sign, Double Faced, Street Name	7	Each			
133	630	Removal of Ground Mounted Sign and Disposal	44	Each			
134	630	Removal of Ground Mounted Post Support and Disposal	28	Each			
135	630	Removal of Pole Mounted Sign and Disposal	8	Each			
136	644	Center Line	0.04	Mile			
137	644	Stop Line	43	Ft.			
138	644	Crosswalk Line, 12", As Per Plan	512	Ft.			
139	644	Crosswalk Line, 24", As Per Plan	380	Ft.			
140	644	Dotted Line, 6"	125	Ft.			
141	644	Pavement Marking, Misc.: Speed Table Marking	8	Each			
142	646	Transverse/Diagonal Line	31	Ft.			
143	661	Deciduous Tree, 2" Caliper	4	Each			
144	662	Landscape Watering	100	Gal.			
145	410	Traffic Compacted Surface, Type B	200	C.Y.			

146	614	Detour Signing	1	L.S.				
147	616	Water	19	MGal.				
148	616	Calcium Chloride	36	Ton				
149	614	Maintaining Traffic	1	LS				
150	619	Field Office, Type B	18	Month				
151	623	Construction Layout Staking and Surveying	1	L.S.				
152	624	Mobilzation	1	L.S.				
							TOTAL:	

Base Bid Price in Figures

Base Bid Price in Words

**Base Bid Prices are for Informational Purposes Only.
Total Unit Prices will govern.**