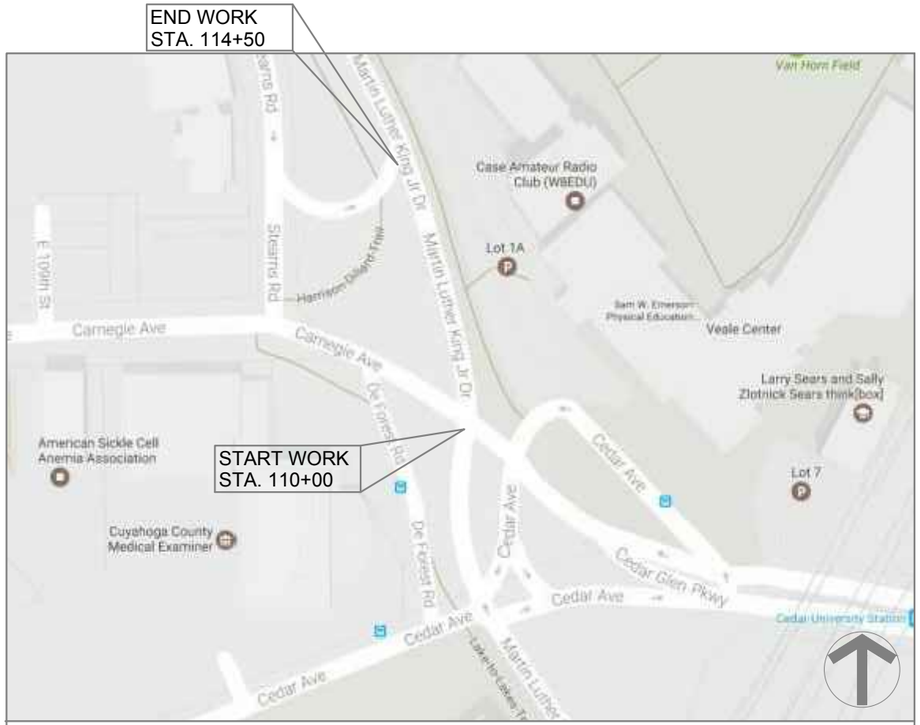
GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
100% BID SUBMITTAL
08 MARCH 2017

UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOUR DIG
CALL .. 800-362-2764 (TOLL FREE)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PROJECT No.

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS



LOCATION MAP **SCALE: N.T.S.**

PREPARED BY:

Michael Baker
INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

APPROVALS:

_____ DATE _____
MICHAEL SCHIPPER
DEPUTY GENERAL MANAGER - ENGINEERING
AND PROJECT MANAGEMENT - GCRTA

_____ DATE _____
JOSEPH SHAFFER
DIRECTOR OF ENGINEERING AND PROJECT DEVELOPMENT - GCRTA

ENGINEER:

Michael Baker International, Inc.
1228 Euclid Avenue, Suite 1050
Cleveland, Ohio 44115
Tel: (216) 664-6493
Fax: (216) 664-6532

REVISIONS
NO. | DESCRIPTION | DATE

Checked By: KNB | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO — MARY KATHERINE BOEHM — E-80174 — REGISTERED PROFESSIONAL ENGINEER

COVER SHEET

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X | BID PAC: X

SHEET: G0001

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REVISIONS

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Michael Baker INTERNATIONAL
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GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

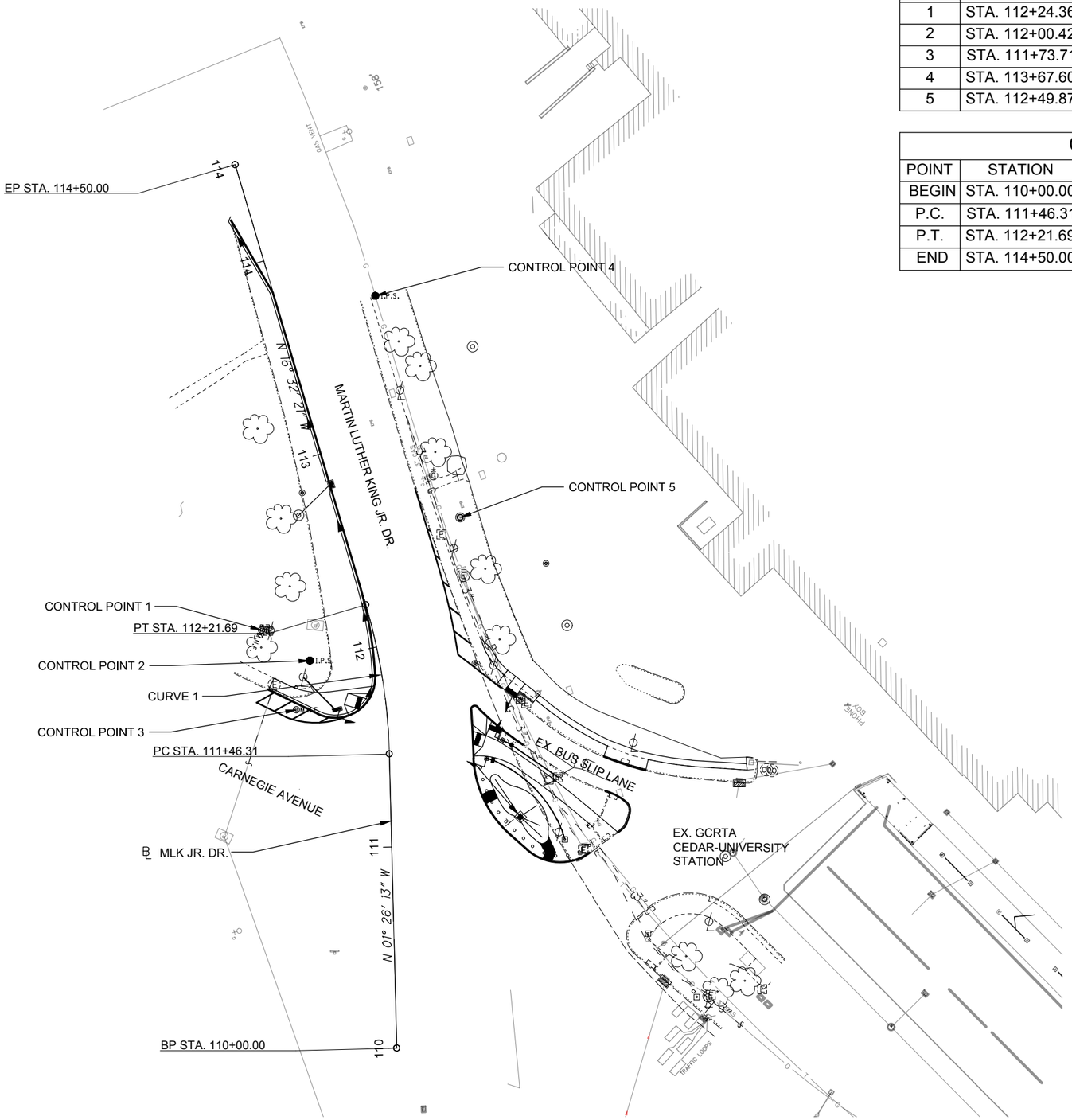
STATE OF OHIO · MARY KATHERINE KOVACS · E-80148 · REGISTERED PROFESSIONAL ENGINEER

DRAWING INDEX

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X | BID PAC: X

SHEET: G0002



CONTROL POINTS

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	STA. 112+24.36	53.32' LT	N 669516.1500	E 2212823.8700	680.84	MAGNETIC NAIL
2	STA. 112+00.42	33.88' LT	N 669500.9700	E 2212847.9400	681.07	5/8" IRON PIN SET
3	STA. 111+73.71	44.54' LT	N 669476.4700	E 2212841.2800	681.17	MAGNETIC NAIL
4	STA. 113+67.60	48.24' RT	N 669682.3700	E 2212880.4600	679.10	5/8" IRON PIN SET
5	STA. 112+49.87	57.38' RT	N 669572.1100	E 2212922.7300	681.86	CWRU MONUMENT

GEOMETRY POINTS

POINT	STATION	OFFSET	NORTHING	EASTING
BEGIN	STA. 110+00.00	℄ MLK JR. DR.	N 669308.2645	E 2212891.1600
P.C.	STA. 111+46.31	℄ MLK JR. DR.	N 669454.5271	E 2212887.4912
P.T.	STA. 112+21.69	℄ MLK JR. DR.	N 669528.7712	E 2212875.7481
END	STA. 114+50.00	℄ MLK JR. DR.	N 669747.6314	E 2212810.7560

CURVE DATA

CURVE 1
P.I.= STA. 111+84.22
D = 15° 06' 08"
Dc = 20° 02' 01"
R = 286.00'
T = 37.91'
L = 75.39'
E = 2.50
C = 75.17
C. B. = N 8° 59' 17" W

ABBREVIATIONS

BP	BEGIN POINT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
EP	END POINT

NO. | DESCRIPTION | REVISIONS | DATE

PLAN AND HORIZONTAL SCALE IN FEET
0 30' 60'

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO
MARY KATHERINE DOTTA
E-29018
REGISTERED PROFESSIONAL ENGINEER

SCHEMATIC PLAN

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X
BID PAC: X

SHEET
C0100

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GENERAL

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND INCOMPLETE AS INFORMATION IS FROM UTILITY RECORDS AND PREVIOUS CONSTRUCTION PLANS. LIMITED FIELD LOCATION HAS BEEN PERFORMED. UNDERGROUND UTILITIES INCLUDING WATER, GAS, TELEPHONE, ELECTRIC, STORM SEWERS AND SANITARY SEWERS ARE DEPICTED ON THE PLAN SHEETS FROM INFORMATION GATHERED IN THE FIELD AND FROM RECORD PLANS. THE ACCURACY OF UNDERGROUND IMPROVEMENTS IS NOT GUARANTEED. FIELD LOCATION OF ANY AND ALL UTILITIES THAT MAY IMPACT THE WORK LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

SEWER
CITY OF CLEVELAND
DIVISION OF WATER POLLUTION CONTROL
ATTN.: ELIE RAMY
12302 KIRBY ROAD
CLEVELAND, OHIO 44108
PHONE: (216) 664–2756

NORTHEAST OHIO REGIONAL SEWER DISTRICT
ATTN.: MARY MACIEJOWSKI
3900 EUCLID AVENUE
CLEVELAND, OHIO 44115
PHONE: (216) 881–6600 EXT. 6466

WATER
CITY OF CLEVELAND
DIVISION OF WATER
ATTN.: FRED ROBERTS
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
PHONE: (216) 664–2444 EXT. 5590

TRAFFIC
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF TRAFFIC ENGINEERING
ATTN.: ROBERT MAVEC
601 LAKESIDE AVENUE, ROOM 518
CLEVELAND, OHIO 44114–1067
PHONE: (216) 664–3194

GAS
DOMINION EAST OHIO GAS COMAPNY
ATTN.: BRYAN DAYTON
320 SPRINGSIDE DR, SUITE 320
AKRON, OH 44333
PHONE: (330) 664–2409

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
ATTN.: PAUL BURLIJ
1240 WEST 6TH STREET
CLEVELAND, OHIO 44113–1331
PHONE: (216) 566–5217

STREET LIGHTING (CPP)
ATTN.: JAMES FERGUSON
PHONE: (216) 664–4245 EXT. 183

TELEPHONE
AT&T
ATTN.: JAMES JANIS
13630 LORAIN AVENUE, ROOM 350
CLEVELAND, OHIO 44111–3436
PHONE: (216) 476–6142

ELECTRIC
CITY OF CLEVELAND
DIVISION OF CLEVELAND PUBLIC POWER (MELP)
ATTN.: CHRIS HIRZEL
1300 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
PHONE: (216) 664–3922 EXT. 115

ILLUMINATING COMPANY (CEI)
ATTN.: TED RADER,
ENGINEERING SUPERVISOR
6896 MILLER ROAD, SUITE 110
BRECKSVILLE, OHIO 44141
PHONE: (440) 546–8738

FIBER OPTIC
TIME WARNER CABLE
ATTN.: PAUL SILVESTRO
8150 DOW CIRCLE
STRONGSVILLE, OHIO 44136
PHONE: (440) 826–2940

VERIZON BUISNESS/MCI – WORLDCOM
ATTN.: AL GUEST
120 RAVINE STREET
AKRON, OHIO 44303
PHONE: (330) 253–8267

SPRINT
ATTN.: JOSEPH THOMAS
11370 ENTERPRISE PARK DRIVE
SHARONVILLE, OHIO 45241
PHONE: (440) 447–6163

WINDSTREAM
ATTN.: GEOFFREY HAMM
560 TERNES AVE.
ELYRIA, OHIO 44035
PHONE: (330) 256–6133

LEVEL 3
ATTN.: MARVIN MUNCY
1025 ELDORADO BLVD
BROOMFIELD, CO 80021
PHONE: (419) 304–5190

CENTURY LINK
ATTN.: CHRIS STRAYER
4650 LAKEHURST COURT. 1ST FLOOR
DUBLIN, OH 43016
PHONE: (303)886–1299

–AND–

CALL OHIO UTILITIES PROTECTION SERVICE TWO (2) WORKING DAYS BEFORE YOU DIG TOLL FREE NO. 1–800–362–2764 (NON–MEMBERS MUST BE CALLED DIRECTLY)

CALL OHIO OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE (OGPUPS), TOLL FREE NO. 1–800–925–0988

ELEVATIONS AND DIMENSIONS

ELEVATIONS ON THE PLANS ARE BASED ON VERTICAL DATUM OF 1988 (NAVD 88). CALCULATED DIMENSIONS SHALL TAKE PRECEDENCE OVER MEASUREMENTS BY SCALE. PAVEMENT THICKNESS AND ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO ACTUAL FIELD VERIFICATION BY THE CONTRACTOR. THE RTA IS NOT LIABLE FOR UTILITIES SHOWN OR NOT SHOWN ON THE DRAWINGS OR ABANDONED LINES. THE CONTRACTOR SHALL CUT OUT ANY ABANDONED LINES. ALL COSTS INCURRED SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY 1, 2016, ONLY PART 200, EARTHWORK, THROUGH PART 700, MATERIAL DETAILS, INCLUSIVE, AS MAY BE MODIFIED ON THE CONSTRUCTION PLANS OR IN THESE SPECIFICATIONS, SHALL GOVERN THIS PROJECT. ALL OF THESE MODIFICATIONS ARE IN THESE SPECIFICATIONS OR ARE SHOWN ON THE PLANS. NO OTHER PORTION OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY.

COPIES OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE AVAILABLE, COST INVOLVED, FROM THE:

OHIO DEPARTMENT OF TRANSPORTATION
BUREAU OF CONTRACT SALES
P.O. BOX 899
COLUMBUS, OHIO 43216–0899
TELEPHONE: (614) 466–3778 OR (614) 466–3200

IN ADDITION TO THE 2016 STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE REQUIREMENTS OF THE CITY OF CLEVELAND SHALL ALSO BE FOLLOWED. THE BELOW LISTED STANDARD CONSTRUCTION DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS SHALL BE USED IN ADDITION TO THE "C" SERIES PLAN SHEETS.

CITY OF CLEVELAND	
CONC–1	07/08/08
PR–1	04/14/08
CR–1	12/08/09
CD–1	04/14/08
146–ME	07/08/08
CB–1	07/08/08
A–695	07/08/08

ODOT	
BP–5.1	07/19/13
MT–95.30	07/15/16
MT–101.60	01/20/17
MT–101.70	01/17/14
MT–110.10	07/19/13
TC–21.20	07/15/16
TC–41.20	10/18/13
TC–41.30	10/18/13
TC–41.40	10/18/13
TC–42.20	10/18/13
TC–52.10	10/18/13
TC–52.20	07/15/16
TC–85.10	07/15/16
TC–85.20	01/15/16

SUPPLEMENTAL SPECIFICATIONS
ODOT
800

LUMP SUM CONSTRUCTION BID

THIS IS A LUMP SUM BID PROJECT. ITEMIZED COSTS WILL NOT BE PAID ON THIS PROJECT. ALL COSTS, INCLUDING BUT NOT LIMITED TO, LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION , AND OVERHEAD SHALL BE INCLUDED IN THE CONTRACTOR'S LUMP SUM BID PRICE FOR THE PROJECT. THIS IS A LUMP SUM CONTRACT AND ANY REFERENCE TO UNIT BID PRICE OR OTHER PAYMENT/MEASUREMENT IN THE PLANS, SPECIFICATIONS OR ANY OTHER CONTRACT DOCUMENT DO NOT APPLY.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL SUBSIDIARY AGREEMENT GOVERNING THIS PROJECT.

COOPERATION BETWEEN CONTRACTORS

OTHER CONTRACTORS MAY BE WORKING ON PROJECTS ADJACENT TO OR WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS OPERATIONS, INCLUDING PROVISIONS FOR THE MAINTENANCE OF TRAFFIC, WITH THE CONTRACTORS OF OTHER PROJECTS THAT MAY BE IN FORCE DURING THE LIFE OF THIS CONTRACT.

CONSTRUCTION LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. IN ADDITION TO THE REQUIREMENTS OF SECTION 614.05, THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, AND SUBSEQUENTLY REMOVE ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES, INCLUDING SUCH ADDITIONAL TRAFFIC CONTROL DEVICES LOCATED OUTSIDE THE LIMITS OF CONSTRUCTION AS ARE REQUIRED ON HIGHWAYS WHICH ARE USED AS DETOURS, INCLUDING THE "ROAD CLOSED" SIGNS UPON THE BARRICADES AT THE POINT WHERE THE HIGHWAY IS CLOSED TO THROUGH TRAFFIC.

INCONVENIENCE TO THE PUBLIC

IT IS INTENDED THAT THE PUBLIC BE PUT TO A MINIMUM OF INCONVENIENCE DUE TO THE CONSTRUCTION WORK. THE CONTRACTOR MUST THEREFORE COMPLETE THE WORK AS RAPIDLY AS POSSIBLE, ONCE IT IS BEGUN IN ANY/ALL PARTICULAR AREAS. THE ENGINEER WILL PAY PARTICULAR ATTENTION TO THE SCHEDULING AND SEQUENCING OF THE WORK.

WORK PERMITS

THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL APPLICABLE FEES TO THE CITY OF CLEVELAND AND/OR RESPECTIVE MUNICIPALITY (IES). THE COST OF SAID FEES SHALL BE INCLUDED IN THE BID BY THE CONTRACTOR.

IN THE CITY OF CLEVELAND, ALL PERMITS MUST BE OBTAINED FROM THE DIVISION OF ASSESSMENTS AND LICENSES PRIOR TO BEGINNING ANY WORK. PERMITS INCLUDE BUT ARE NOT LIMITED TO: STREET OPENING PERMIT, OVERLOAD PERMIT, OBSTRUCTION PERMIT, AND/OR SIDEWALK PERMIT AND MAY BE OBTAINED THROUGH THE FOLLOWING CONTACT:

TRAVIS EVANS
DEPARTMENT OF FINANCE
DIVISION OF ASSESSMENTS AND LICENSES
601 LAKESIDE AVENUE, ROOM 122
CLEVELAND, OHIO 44114
PHONE: (216) 664–2174
E–MAIL: DALPERMITS@CITY.CLEVELAND.OH.US

ALL STREET OPENING REPAIRS, CURB REPAIRS AND/OR SIDEWALK REPAIRS EITHER INCIDENTAL TO THE PROJECT OR PART OF THE PROJECT MUST BE PERFORMED IN ACCORDANCE WITH CITY OF CLEVELAND STANDARDS. A COPY OF THE STANDARDS CAN BE OBTAINED FROM THE DIVISION OF ENGINEERING AND CONSTRUCTION BY CALLING (216) 664–2381.

ALL PERMITS, FEES AND CHARGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THIS INCLUDES BUT IS NOT LIMITED TO CITY PERMITS, WATER DEPARTMENT FEES, AND OTHER THIRD PARTY PERMITS, FEES AND APPROVALS. FOR BIDDING PURPOSES, FEES AND CHARGES MAY BE OBTAINED FROM THE DIVISION OF ASSESSMENTS AND LICENSES AT (216) 664–2174 OR FROM OTHER AGENCIES.

NEW MATERIAL SPECIFIED

ALL MATERIALS FOR THE BID ITEMS SPECIFIED ARE TO BE CONSIDERED ALL NEW MATERIAL UNLESS CLEARLY AND DISTINCTLY INDICATED ON THE PLANS OR IN THESE SPECIFICATIONS AS RECYCLED, RESET OR USED. THE USE OF ANY OTHER MATERIAL IS PROHIBITED.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS NEEDED OR DIRECTED BY THE ENGINEER.

PUBLIC RIGHT OF WAY WORK

PRIOR TO CONSTRUCTION OR MOBILIZATION OF WORK WITHIN THE PUBLIC RIGHT OF WAY THE CONTRACTOR SHALL CONTACT KHALIL EWAIS, CHIEF OF ENGINEERING AND CONSTRUCTION, DIVISION OF ENGINEERING AND CONSTRUCTION AT 216–664–7422 TO COORDINATE A PRE–CONSTRUCTION MEETING WITH GCRTA AND THE DIVISION OF ENGINEERING AND CONSTRUCTION. THE CONTRACTOR WILL ALSO BE REQUIRED TO OBTAIN A STREET OPENING PERMIT FROM THE CITY OF CLEVELAND.

STAGING AREA

CONTRACTOR MAY COORDINATE WITH CASE WESTERN RESERVE UNIVERSITY TO REQUEST THE USE OF A PORTION OF LOT 1A AS A STAGING AREA FOR THE PROJECT. SITE SHALL BE RESTORED TO PRE–CONSTRUCTION CONDITION BY CONTRACTOR PRIOR TO AUGUST 1, 2017. CONTACT INFORMATION PROVIDED UPON REQUEST.

REVISIONS
NO | DESCRIPTION | DATE

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

RTA
GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET
C0200

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GENERAL CONTINUED

WATER SUPPLY

WATER WILL BE SUPPLIED TO THE CONTRACTOR AT THE NEAREST HYDRANT. THE COST OF THE WATER SUPPLY SHALL BE BORNE BY THE CONTRACTOR. NO SEPARATE PAYMENT SHALL BE MADE. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMIT FROM THE CITY OF CLEVELAND WATER DEPARTMENT AND PAY ALL FEES. SEE CITY OF CLEVELAND ORDINANCE NO. 1303-15 (WWW.CLEVELANDCITYCOUNCIL.ORG/MEDIA/DOCUMENTS/LEGIS-FOR-PASSAGE/UTILITIES-12-7-15.PDF)

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE APPROVED STANDARD TIGHT HOSE AND FITTINGS WITH WHICH TO MAKE CONNECTIONS TO HYDRANTS AND OUTLETS. NO IMPROPER, WASTEFUL OR UNDUE USE OF WATER WILL BE PERMITTED.

MATERIAL DISPOSAL

THE CONTRACTOR SHALL NOT DUMP ANY WASTE MATERIALS (INCLUDING CLEANOUT OF CONCRETE TRUCKS) ON ANY CITY PROPERTY WITHOUT THE WRITTEN PERMISSION OF THE DEPARTMENT OF PUBLIC SERVICE, OR ON OTHER PROPERTY WITHOUT THE WRITTEN PERMISSION OF THE OWNER OR LESSEE THEREOF, AND THE DEPARTMENT OF PUBLIC SERVICE. WHEN SUCH PERMISSION IS GRANTED, DUMPING SHALL BE SUBJECT TO REGULATIONS SPECIFIED BY THE DEPARTMENT OF PUBLIC SERVICE.

COORDINATION BETWEEN PLAN SHEETS

CONTRACTOR SHALL COORDINATE CONSTRUCTION OF ALL IMPROVEMENTS DEPICTED IN THESE PLAN SHEETS. COORDINATION BETWEEN GENERAL, ROADWAY, DRAINAGE, LANDSCAPE, TRAFFIC CONTROL, AND SIGNAL PLAN SHEETS IS REQUIRED BY THE CONTRACTOR TO SUCCESSFULLY COMPLETE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL PLAN SHEETS PRIOR TO CONSTRUCTION

ROADWAY

ITEM 202 – REMOVAL ITEMS

GENERAL

REMOVE ALL ITEMS INDICATED ON THE PLANS FOR REMOVAL PER CMS 202.

THE COST OF REMOVING AND DISPOSING OF ITEMS PURSUANT TO ITEM 202.05 INCLUDING BUT NOT LIMITED TO PAVEMENT/BASE COURSE/WEARING COURSE REMOVALS, SHALL INCLUDE THE COST FOR SAW CUTTING.

THE CITY OF CLEVELAND SHALL RECEIVE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED INCLUDING SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, PEDESTRIAN SIGNAL HEADS AND CABINETS, PEDESTRIAN POLES, LUMINAIRES, AND SPAN WIRE/MAST ARM MOUNTED SIGNS, EXCEPT SIGNAL POLES, MESSENGER WIRE AND SIGNAL CABLES. THE ITEMS SHALL BE REMOVED IN ACCORDANCE WITH CMS 632.26 AND AS INDICATED ON THE PLANS. IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

REMOVAL OF EXISTING PAVEMENT

APPROVED REMOVAL METHODS SHALL SATISFACTORILY ESTABLISH A NEAT VERTICAL FACE ALONG THE ENTIRE PERIMETER OF THE REMOVAL AREA. IF ENCOUNTERED IN THE RIGID BASE, PARTIALLY EMBEDDED STEEL MESH EXPOSED SHALL BE WIRE-BRUSHED OR OTHERWISE CLEANED TO REMOVE ALL LOOSE RUST. LOOSENED OR TOTALLY EXPOSED WIRE MESH REINFORCING SHALL BE CUT AND REMOVED AS REQUIRED WITHOUT DISPLACEMENT OR DISRUPTION TO THE REINFORCEMENT AND/OR PAVEMENT TO REMAIN.

DISPOSAL OF CASTINGS

ALL MUNICIPALLY OWNED CASTINGS ARE TO REMAIN THE PROPERTY OF THE RESPECTIVE DEPARTMENTS OF THE CITY OF CLEVELAND. THESE CASTINGS SHALL BE STOCKPILED ON SITE AND PROVIDED BY THE CONTRACTOR TO THE OWNING DEPARTMENT.

REMOVAL OF PORTABLE CONCRETE BARRIERS

CONTRACTOR TO REMOVE EXISTING PORTABLE CONCRETE BARRIERS AND DELIVER TO A LOCATION WITHIN THE CITY OF CLEVELAND AS DIRECTED BY THE ENGINEER.

ITEM 608 – WALK
ITEM 608 – CURB RAMP
ITEM 609 – CURB, TYPE 6, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 608 AND 609, ALL WALK, CURB RAMPS, AND CURB ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE CITY OF CLEVELAND. SEE CITY OF CLEVELAND STANDARD DRAWINGS AND CITY OF CLEVELAND SPECIFICATION D-23 ON SHEET C0207.

UNLESS NOTED OTHERWISE ITEM 304 AGGREGATE BASE SHALL BE PLACED IN THE FOLLOWING THICKNESSES UNDER EACH ITEM:
SIDEWALKS – 4 INCHES
CURB RAMPS – 4 INCHES

ITEM 608 – WALK (CONTINUED)
ITEM 608 – CURB RAMP (CONTINUED)
ITEM 609 – CURB, TYPE 6, AS PER PLAN (CONTINUED)

UNLESS NOTED OTHERWISE EACH ITEM SHALL BE THE FOLLOWING THICKNESS OF NON-REINFORCED CONCRETE:
SIDEWALKS – 6 INCHES
CURB RAMPS – 6 INCHES

IN ADDITION, THE FOLLOWING GCRTA REQUIREMENTS SHALL BE MET:

1.1 SUBGRADE PREPARATION

A. TEST COMPLETED SUBGRADE FOR GRADE AND CROSS SECTION WITH A TEMPLATE. MAINTAIN THE SUBGRADE IN A SMOOTH, COMPACTED CONDITION, IN CONFORMANCE WITH THE REQUIRED SECTION AND ESTABLISHED GRADE UNTIL THE SUCCEEDING OPERATION HAS BEEN ACCOMPLISHED.

1.2 FORM CONSTRUCTION

A. FORMS SHALL EXTEND FULL DEPTH OF THE CONCRETE.

B. SET AND BRACE FORMS TO MAINTAIN STRAIGHT AND PLUMB LINES ON SIDES.

C. SET FORMS TO THE FOLLOWING GRADE AND ALIGNMENT TOLERANCES:

1. GRADE: PLUS OR MINUS 1/8 INCH.
2. ALIGNMENT: PLUS OR MINUS 1/4 INCH AT ANY POINT AND NO MORE THAN 1/8 INCH DEVIATION FROM A 10-FOOT STRAIGHTEDGE.

D. THE SURFACE OF THE WALK SHALL HAVE A TRANSVERSE SLOPE OF 1/4 INCH PER FOOT, WITH THE LOW SIDE ADJACENT TO THE ROADWAY.

1.3 JOINTS

A. GENERAL

1. CONSTRUCT EXPANSION, ISOLATION, AND CONTRACTION JOINTS TRUE-TO-LINE WITH FACE PERPENDICULAR TO SURFACE OF THE WALKS.
2. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO THE PAVEMENT CENTERLINE.
3. WHEN THE WALKWAY IS ABUTTING EXISTING WALKS, PLACE TRANSVERSE JOINTS TO ALIGN WITH PREVIOUSLY PAVED JOINTS.
4. THE SURFACE OF THE WALKS SHALL BE DIVIDED INTO EQUALLY SPACED BLOCKS AT APPROXIMATELY 5-FOOT INTERVALS, TO FORM RECTANGULAR BLOCKS. TRANSVERSE JOINTS IN CONCRETE WALKS SHALL BE SAWED OR FORMED TO A DEPTH OF NOT LESS THAN ONE-FOURTH THE THICKNESS OF THE SLAB AND SHALL BE APPROXIMATELY 1/8 INCH WIDE.

B. CONTRACTION JOINTS

1. PROVIDE CONTRACTION JOINTS TO SECTION THE WALKWAY INTO AREAS TO MATCH PATTERN AND CONSTRUCTION OF EXISTING JOINTS.

C. CONSTRUCTION JOINTS

1. PLACE CONSTRUCTION JOINTS AT THE END OF POURS AND AT LOCATIONS WHERE PLACEMENT OPERATIONS ARE STOPPED FOR A PERIOD OF MORE THAN 1/2 HOUR, EXCEPT WHERE SUCH POURS TERMINATE AT EXPANSION JOINTS.
2. CONSTRUCT JOINTS AS SHOWN ON THE CONTRACT DRAWINGS OR, IF NOT SHOWN, USE STANDARD METAL KEYWAY- SECTION FORMS.

D. EXPANSION AND ISOLATION JOINTS

1. PROVIDE PREMOLDED JOINT FILLER FOR EXPANSION JOINTS AND ISOLATION JOINTS ABUTTING CONCRETE PAVING AND CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, AND OTHER FIXED OBJECTS.
2. EXPANSION JOINTS SHALL BE PLACED AT INTERVALS NOT MORE THAN 15 FEET.
3. EXTEND JOINT FILLER FULL WIDTH AND DEPTH OF THE JOINT, AND NOT LESS THAN 1/2 INCH NOR MORE THAN 1 INCH BELOW THE FINISHED PAVEMENT SURFACE WHERE JOINT SEALER IS INDICATED. IF NO JOINT SEALER IS SHOWN ON CONTRACT DRAWINGS, PLACE TOP OF JOINT FILLER FLUSH WITH FINISHED CONCRETE SURFACE.
4. USE JOINT FILLERS IN ONE-PIECE LENGTHS FOR THE FULL WIDTH BEING PLACED. WHERE MORE THAN ONE LENGTH IS REQUIRED, LACE OR CLIP JOINT FILLER SECTIONS TOGETHER.
5. PROTECT TOP EDGE OF THE JOINT FILLER DURING CONCRETE PLACEMENT WITH A METAL CAP OR OTHER TEMPORARY MATERIAL. REMOVE PROTECTION AFTER BOTH SIDES OF JOINT ARE PLACED.

ITEM 608 – WALK (CONTINUED)
ITEM 608 – CURB RAMP (CONTINUED)
ITEM 609 – CURB, TYPE 6, AS PER PLAN (CONTINUED)

E. PROVIDE JOINTS IN CURB RAMPS AS EXTENSIONS OF WALK JOINTS. PROVIDE 1/2" EXPANSION JOINT FILLER AROUND THE EDGE OF RAMPS BUILT IN EXISTING CONCRETE WALK.

F. WHERE THE SIDEWALK IS CONSTRUCTED IN CONJUNCTION WITH ADJACENT CURB, THE EXPANSION JOINTS IN THE CURB AND SIDEWALK SHALL COINCIDE. WHERE SUCH CONSTRUCTION IS ADJACENT TO EXISTING CURB, THE EXPANSION JOINT SHALL, IF PRACTICABLE, COINCIDE. THE EXPANSION JOINT FILLER SHALL BE 1 INCH THICK WHERE WALK IS INSTALLED AGAINST THE BACK OF A CURB WHICH IS ON A 250-FOOT OR SMALLER RADIUS.

G. WHERE EXISTING OR PROPOSED STRUCTURES, SUCH AS LIGHT STANDARDS, POLES, OR FIRE HYDRANTS ARE WITHIN THE LIMITS OF THE SIDEWALK, SCORE THE CONCRETE AROUND SUCH STRUCTURES IN A BLOCK APPROXIMATELY 8 INCHES WIDER THAN THE MAXIMUM DIMENSION OF THE STRUCTURE AT THE SIDEWALK ELEVATION.

1.4 CONCRETE PLACEMENT

A MOISTEN SUBGRADE TO PROVIDE A UNIFORM DAMPENED CONDITION AT THE TIME CONCRETE IS PLACED. DO NOT PLACE CONCRETE AROUND STRUCTURES OR FRAMES UNTIL THEY HAVE BEEN BROUGHT TO THE REQUIRED GRADE AND ALIGNMENT.

B. PLACE CONCRETE IN ONE COURSE MONOLITHIC CONSTRUCTION FOR THE FULL WIDTH AND DEPTH OF WALKS.

C. SPREAD CONCRETE AS SOON AS IT IS DEPOSITED ON THE SUBGRADE USING METHODS WHICH PREVENT SEGREGATION OF THE MIX. CONSOLIDATE CONCRETE ALONG THE FACE OF THE FORMS AND ADJACENT TO TRANSVERSE JOINTS. USE ONLY SQUARE FACED SHOVELS FOR HAND SPREADING AND CONSOLIDATION. CONSOLIDATE WITH CARE TO PREVENT DISLOCATION OF JOINT MATERIALS.

D. POUR SIDEWALK CONCRETE IN ALTERNATE SECTIONS BETWEEN EXPANSION JOINTS AND ALLOW TO SET AND CURE FOR A MINIMUM OF 24 HOURS BEFORE POURING ADJACENT PANELS OR SECTIONS.

1.5 CONCRETE FINISHING

A. PERFORM CONCRETE FINISHING USING MACHINE OR HAND METHODS AS REQUIRED.

B. AFTER STRIKING OFF AND CONSOLIDATING CONCRETE, SMOOTH THE SURFACE BY SCREEDING AND FLOATING. ADJUST THE FLOATING TO COMPACT THE SURFACE AND PRODUCE A UNIFORM TEXTURE.

C. AFTER FLOATING, TEST SURFACE FOR TRUENESS WITH A 10-FOOT STRAIGHT EDGE. DISTRIBUTE CONCRETE AS REQUIRED TO REMOVE SURFACE IRREGULARITIES, AND REFLOAT REPAIRED AREAS TO PROVIDE A CONTINUOUS, BROOM FINISH ON ALL WALKS.

D. WORK EDGES OF SLABS AND JOINTS WITH A 1/4 INCH RADIUS EDGING TOOL.

E. CURB RAMPS: SURFACE TEXTURE SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AND SHALL BE ROUGHER THAN ADJACENT WALK.

F. LEAVE FORMS IN PLACE FOR AT LEAST 24 HOURS AFTER CONCRETE HAS BEEN PLACED. AFTER FORM REMOVAL, CLEAN ENDS OF JOINTS AND POINT-UP ANY MINOR HONEYCOMBED AREAS. REMOVE AND REPLACE AREAS OR SECTIONS OF MAJOR HONEYCOMBING.

1.6 CURING

A. APPLY MEMBRANE CURE AT A RATE OF NOT LESS THAN 1 GALLON PER 200 SQUARE FEET OF SURFACE. CURE SHALL COMPLETELY PAINT THE SURFACE. STIPPLED, SPLATTERED OR OTHERWISE PARTIALLY CURED AREAS MUST BE RESPRAYED OR PAYMENT WILL NOT BE MADE FOR UNDERLYING CONCRETE. ALL EXPOSED SURFACES, INCLUDING THOSE REVEALED BY FORM STRIPPING SHALL BE CURED.

1.7 REPAIR AND PROTECTION

A. REPAIR OR REPLACE BROKEN OR DEFECTIVE WALKS (DEFECTS INCLUDE GRAFFITI).

B. PROTECT THE WALKS FROM DAMAGE UNTIL ACCEPTANCE OF THE WORK. EXCLUDE PEDESTRIANS FROM WALKS FOR AT LEAST 3 DAYS AFTER PLACEMENT.

C. SWEEP CONCRETE WALKS AND WASH FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIALS.

D. PROVIDE NECESSARY WATCHMEN TO PREVENT VANDALISM TO FRESHLY POURED CONCRETE WALKS. CONCRETE SURFACES DEFACED BY FOOTPRINTS OR OTHER MARKS OF VANDALISM WILL HAVE TO BE REMOVED AND REPLACED AT NO COST TO THE GCRTA.

NO	DESCRIPTION	REVISIONS	DATE

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

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GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO – MARY KATHERINE BOBAK E-90734 – REGISTERED PROFESSIONAL ENGINEER

GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0201

ROADWAY CONTINUED

TACTILE WARNING SURFACE

TACTILE WARNING STRIPS SHALL BE INSTALLED A MINIMUM OF 2' IN LENGTH FOR THE FULL WIDTH OF EACH PROPOSED CURB RAMP. TACTILE WARNING SURFACE SHALL MEET THE FOLLOWING GCRTA REQUIREMENTS:

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION I SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING:

1. CAST IN PLACE TACTILE WARNING SURFACE AND ACCESSORIES.

B. RELATED SECTIONS INCLUDE THE FOLLOWING:

1. DIVISION 3 SECTION 03 4100 "STRUCTURAL PRECAST CONCRETE."

1.3 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S STANDARD LITERATURE DESCRIBING PRODUCTS, INSTALLATION PROCEDURES, AND ROUTINE MAINTENANCE PROCEDURES.

B. SAMPLES: SUBMIT ONE SAMPLE, 8"X 8"MIN. OF THE FULL SIZE TACTILE WARNING PANEL.

C. SHOP DRAWINGS: SUBMIT STANDARD MANUFACTURE'S DRAWINGS WHICH SHOW THE TECHNICAL DETAILS RELATED TO APPEARANCE OF THE TACTILE PANEL, PLACEMENT OF THE TACTILE PANEL INCLUDING JOINTS AT BOTH STRAIGHT AND CURVED PLATFORMS, AND A CROSS SECTION SHOWING ALL PERTINENT INSTALLATION DETAILS INCLUDING BUTT JOINTS FROM PANEL TO PANEL.

D. MATERIAL TEST REPORTS: SUBMIT TEST REPORTS FROM QUALIFIED INDEPENDENT TESTING LABORATORY INDICATING THAT MATERIALS PROPOSED FOR USE ARE IN COMPLIANCE WITH REQUIREMENTS AND MEET OR EXCEED THE PROPERTIES INDICATED.

E. MAINTENANCE GUIDELINES: SUBMIT MANUFACTURER'S MAINTENANCE MANUAL FOR THE TACTILE WARNING SURFACE AND RELATED ACCESSORIES.

F. LEED SUBMITTAL:

1. PROVIDE PRODUCT DATA AND DOCUMENTATION SUBMITTALS FOR MR CREDIT 5 FOR REGIONAL MATERIALS INDICATING LOCATION AND DISTANCE FROM PROJECT OF MATERIAL MANUFACTURER AND POINT OF EXTRACTION, HARVEST OR RECOVERY FOR EACH RAW MATERIAL. INCLUDE STATEMENT INDICATING COST FOR PRODUCT AND THE FRACTION BY WEIGHT THAT IS CONSIDERED REGIONAL.

1.4 REFERENCE/CITED STANDARDS

A. AMERICAN SOCIETY FOR TESTING & MATERIALS (ASTM)

B. AMERICAN WITH DISABILITIES ACT (ADA)

1. DOT'S ADA STANDARDS FOR TRANSPORTATION FACILITIES, EFFECTIVE NOVEMBER 29, 2006.
2. ADA STANDARDS FOR ACCESSIBLE DESIGN, EFFECTIVE SEPTEMBER 2010
3. ACCESSIBLE PUBLIC RIGHTS–OF–WAY REVISED DRAFT GUIDELINES (NOVEMBER 23, 2005)

C. ACI 308 – STANDARD PRACTICE FOR CURING CONCRETE

D. ACI 302.1R –GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION

1.5 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS:

1. PROVIDE TACTILE WARNING PANELS AND ACCESSORIES AS PRODUCED BY A SINGLE MANUFACTURER.
2. MANUFACTURER'S ORGANIZATION SHALL HAVE A MINIMUM OF FIVE YEARS OF EXPERIENCE IN THE MANUFACTURE OR COMPOSITE TACTILE WARNING PANELS COMPLYING WITH ADAAG GUIDELINES.

TACTILE WARNING SURFACE (CONTINUED)

B. INSTALLER QUALIFICATIONS:

1. IN THE INTEREST OF MAINTAINING A FULL AND COMPLETE WARRANTY AND IN THE INTEREST OF ASSURING UNIFORM QUALITY OF INSTALLATION WORKMANSHIP FOR THE COMPOSITE TACTILE WARNING PANELS, THE WORK OF THIS SECTION SHALL BE PERFORMED BY FIRMS WHOSE ORGANIZATION CAN DEMONSTRATE AT LEAST FIVE YEARS OF EXPERIENCE IN THE MANUFACTURE AND INSTALLATION OF TACTILE WARNING PANELS. THE TACTILE PANELS MUST BE MANUFACTURER INSTALLED. SUCH SINGLE SOURCE ACCOUNTABILITY FOR PRODUCT AND INSTALLATION IS DESIGNED TO INSURE EASE OF MAINTENANCE AND A UNIFORM QUALITY STANDARD THROUGHOUT THE SYSTEM.
2. ONLY PERSONS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE MANUFACTURE AND INSTALLATION OF TACTILE WARNING STRIPS SHALL BE USED.
3. MANUFACTURE'S SUPERVISOR SHALL BE PRESENT AT ALL TIMES DURING THE INSTALLATION OPERATION.
4. THE MANUFACTURER MAY CERTIFY IN WRITING OTHER FIRMS AS QUALIFIED INSTALLERS IF THEY CAN DEMONSTRATE A HISTORY OF SUCCESSFULLY COMPLETED INSTALLATIONS SIMILAR TO MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THE PROJECT. SUCH CERTIFICATION MUST BE OBTAINED PRIOR TO THE BID DAY FOR THE PROJECT.

1.6 DELIVERY, STORAGE AND HANDLING

A. TACTILE WARNING PANELS AND INCIDENTALS SHALL BE SUITABLY PACKAGED AND PLACED ON PALLETS SO TO PREVENT DAMAGE IN SHIPMENT OR HANDLING.

B. TRANSPORT AND HANDLE PRODUCTS IN ACCORDANCE WITH MANUFACTURE'S INSTRUCTIONS.

C. ENGINEER MAY REQUEST THAT TACTILE WARNING PANELS AND ACCESSORIES BE DELIVERED TO A SPECIFIED LOCATION FOR STORAGE PRIOR TO INSTALLATION.

D. PROMPTLY INSPECT SHIPMENT(S) TO ASSURE THAT PRODUCTS COMPLY WITH REQUIREMENTS, QUANTITIES ARE CORRECT, AND PRODUCTS ARE UNDAMAGED.

E. WHERE AND WHEN MATERIAL STORAGE IS REQUIRED, ALL MATERIALS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. INTERIOR STORAGE IS PREFERRED.

F. WHERE EXTERIOR STORAGE IS WARRANTED, MATERIALS SHALL BE COVERED TO PREVENT DETERIORATION TO PACKAGING DUE TO MOISTURE.

H. PERIODICALLY INSPECT ANY MATERIALS IN STORAGE TO ASSURE THAT PRODUCTS ARE UNDAMAGED AND ARE MAINTAINED UNDER SPECIFIED CONDITIONS.

1.7 JOB CONDITIONS

A. FIELD OPERATIONS MAY ONLY BE CONDUCTED WHEN ENVIRONMENTAL CONDITIONS FALL WITHIN THOSE RECOMMENDED BY THE MANUFACTURER. GENERALLY, DAYTIME TEMPERATURES MUST EXCEED 45 DEGREES FOR AT LEAST 3 HOURS.

B. WHERE PLATFORMS MUST REMAIN IN SERVICE, CARE SHALL BE TAKEN TO INSURE THE SAFETY OF PEDESTRIANS. PEDESTRIANS SHALL BE DIRECTED TO PROCEED TO ALTERNATE LOADING AREAS ON THE PLATFORMS AS WARRANTED.

C. CONDITION OF SUBSTRATE OVER WHICH TACTILE WARNING PANEL IS TO BE APPLIED:

1. PHYSICAL CHARACTERISTICS OF THE CONCRETE SHALL BE AS SPECIFIED IN SECTION 3 CAST IN PLACE CONCRETE WHILE MAINTAINING A SLUMP RANGE OF 4–7 TO PERMIT THE SOLID PLACEMENT OF THE TACTILE UNIT IN THE WET CEMENT.

1.8 TESTING SERVICE

A. TACTILE WARNING STRIPS ARE TO BE SUBJECTED TO ALL TESTS SPECIFIED UNDER THE PERFORMANCE TEST SECTION OF THIS DOCUMENT AND MUST MEET OR EXCEED THE REQUIREMENTS OF THIS SPECIFICATION AS VERIFIED BY AN INDEPENDENT TESTING AGENCY ACCREDITED BY THE U .S. NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST).

1.9 EXTRA STOCK

A. DELIVER AT LEAST 5% ADDITIONAL TACTILE WARNING PANELS AND FASTENERS SUITABLY PROTECTED AND PACKAGED TO A WAREHOUSE DESIGNATED BY THE ENGINEER.

1.10 GUARANTEE

A. TACTILE WARNING PANELS ARE TO BE GUARANTEED IN WRITING FOR A PERIOD OF FIVE YEARS FROM INSTALLATION. THE GUARANTEE INCLUDES DEFECTIVE WORK, BREAKAGE, DEFOLIATION, FADING OR CHALKING OF THE TACTILE WARNING SURFACE, AND LOOSENING OF THE TACTILE WARNING SURFACE.

TACTILE WARNING SURFACE (CONTINUED)

PART 2 – PRODUCTS

2.1 CAST IN PLACE TACTILE WARNING PANEL

A. TACTILE WARNING PANEL MATERIAL

1 THE TACTILE WARNING PANELS SHALL CONSIST OF A POLYESTER RESIN COLORFAST GLASS AND CARBON REINFORCED COPOLYMER MATERIAL. EPOXY POLYMER BASED COMPOSITES OR WET MAT SYSTEMS ARE UNACCEPTABLE FOR THE PROJECT.

B. TACTILE WARNING PANEL COLOR

1. THE COLOR OF THE TILE SHALL BE SAFETY YELLOW. THE COLOR SHALL BE HOMOGENEOUS THROUGHOUT THE BODY OF THE TACTILE PANEL INCLUDING THE EXPOSED WEARING SURFACE OF THE TACTILE PANEL. TACTILE SURFACES UTILIZING A COAT OF PAINT, A GEL COAT, AN IN–MOLD COATING OR ANY OTHER SUCH COATING ON THE WEARING SURFACE ARE UNACCEPTABLE FOR THE PROJECT. THE MANUFACTURER SHALL DEMONSTRATE THAT THE WEARING SURFACE AND THE UNDERLYING BODY OF THE TACTILE PANEL CONSIST OF THE SAME MATERIAL WITH THE SAME ANTI–FADING/COLOR RETENTION PROPERTIES AND ACTUAL COLOR THROUGHOUT.

C. TACTILE WARNING PANEL TRUNCATED DOME GEOMETRY

1. TACTILE WARNING PANEL SHALL BE IN FULL COMPLIANCE WITH ADAAG GUIDELINES, STANDARDS FOR ACCESSIBLE TRANSPORTATION FACILITIES, AND ACCESSIBLE PUBLIC RIGHTS–OF–WAY REVISED DRAFT GUIDELINES.
2. IN ORDER TO INSURE SYSTEM WIDE UNIFORMITY OF THE DETECTABLE WARNING SURFACE, EQUIVALENT FACILITATION FINDINGS OR ALTERNATE PATTERNS SHALL NOT BE ACCEPTABLE.
3. SPACING AND SIZE FOR TRUNCATED DOMES SHALL BE AS FOLLOWS: DIAMETER OF .9", HEIGHT OF .20", NOMINAL SPACING OF1.67"MIN AND 2.35"MAXIMUM IN A STAGGERED PATTERN.
4. TRUNCATED DOME PATTERN SHALL ALIGN PROPERLY FROM PANEL TO PANEL.

D. TACTILE WARNING PANEL DIMENSIONS

1. NOMINAL 2 FEET X 4 FEET X .25"THICK WITH A 1.375"DEEP FLANGE ALONG 4 SIDES AND EMBEDMENT FLANGES ALONG THE BOTTOM OF THE PANEL AT 3"O.C. EMBEDMENT FLANGES SHALL HAVE THREE, .625"DIA. HOLES PER FLANGE.
2. THE TACTILE WARNING PANEL SHALL FEATURE A BUTT JOINT DETAIL FROM TACTILE WARNING PANEL TO TACTILE WARNING PANEL.

F. PERFORMANCE PARAMETERS FOR THE TACTILE WARNING PANEL

1. RESULTS OF TESTS OF THE PROPERTIES OF THE TILES UNDER CONDITIONS SIMULATING THOSE OF THE ACTUAL INSTALLATION SHALL MEET OR EXCEED THE FOLLOWING CRITERIA:

PROPERTY	TEST METHOD	NOMINAL VALUE
ACCELERATED WEATHERING	ASTM G155	DELTA E<5.0 (2,000 HRS)
CHEMICAL RESISTANCE	ASTM 1308	NO REACTION
COMPRESSIVE STRENGTH	ASTM D695	28,900 PSI MIN.
TENSILE STRENGTH	ASTM D638	11,600 PSI MIN.
FREEZE/THAW/HEAT (5 CYCLES)	ASTM C1026	NO DISINTEGRATION
IMPACT RESISTANCE	ASTM D3029	NO CRACKS
FLAME SPREAD INDEX	ASTM E84	LESS THAN 20
SMOKE DEVELOPED INDEX	ASTM E84	LESS THAN 100
SLIP RESISTANCE	ASTM C1028	1.18 DRY, 1.05 WET
ABRASION RESISTANCE	ASTM C501	549
WATER ABSORPTION (2 WEEKS)	ASTM D570	.07%
LOAD BEARING @16,000 #	AASHTO–H20	NO DAMAGE
SALT & SPRAY PERFORMANCE	ASTM B117	NO CHANGE

G. MANUFACTURERS: BASIS OF DESIGN: PROVIDE CAST–IN–PLACE UNITS BY ADA SOLUTIONS, INC. OF NORTH BILLERICA, MA (PHONE: 800–372–0519, WWW.ADATILE.COM) OR APPROVED EQUIVALENT.

NO	DESCRIPTION	DATE
	REVISIONS	

Checked By: KNB | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

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GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO – MARY KATHERINE BOYLE – E-80748 – REGISTERED – PROFESSIONAL ENGINEER

GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0202

GENERAL CONTINUED

TACTILE WARNING SURFACE (CONTINUED)

PART 3 –EXECUTION

3.1 SURFACE PREPARATION

A. THE PHYSICAL CHARACTERISTICS OF THE CONCRETE SHALL BE CONSISTENT WITH SECTION 3 CAST–IN–PLACE– CONCRETE WHILE MAINTAINING A SLUMP RANGE OF 4–7 TO PERMIT SOLID PLACEMENT OF THE TACTILE UNIT. AN OVERLY WET MIX WILL CAUSE THE TACTILE UNIT TO FLOAT. UNDER THESE CONDITIONS SUITABLE WEIGHTS SUCH AS 2 CONCRETE BLOCKS OR SANDBAGS (25 POUNDS) SHALL BE PLACE ON EACH TACTILE UNIT.

B. THE CONCRETE SHALL BE POURED AND FINISHED, TRUE AND SMOOTH TO THE REQUIRED DIMENSIONS AND SLOPE PRIOR TO TACTILE WARNING SURFACE UNIT PLACEMENT.

3.2 LAYING OF THE TACTILE WARNING PANEL

A. INSTALL TACTILE UNITS IN ACCORDANCE WITH TACTILE WARNING PANEL MANUFACTURER'S INSTRUCTIONS AND AS FOLLOWS:

1. TO THE MAXIMUM EXTENT POSSIBLE, THE TACTILE UNITS SHALL BE ORIENTED SUCH THAT ROWS OF IN– LINE TRUNCATED DOMES ARE PARALLEL WITH THE EDGE OF PLATFORM.

2. TACTILE UNITS SHALL BE TAMPED OR VIBRATED INTO THE FRESH CONCRETE TO ENSURE THAT THERE ARE NO VOIDS OR AIR POCKETS, AND THE FIELD LEVEL OF THE UNIT IS FLUSH TO THE ADJACENT CONCRETE SURFACE OR AS THE DRAWINGS INDICATE TO PERMIT PROPER WATER DRAINAGE AND ELIMINATE TRIPPING HAZARDS BETWEEN ADJACENT FINISHES.

B. CUTTING THROUGH TACTILE WARNING PANEL DOMES SHALL BE KEPT TO A MINIMUM. WHERE LESS THAN HALF OF THE TRUNCATED DOME REMAINS, THE BALANCE OF THE DOME SHALL BE GROUND OFF, WHERE OVER HALF OF THE TRUNCATED DOME REMAINS, IT SHALL BE FEATHERED SO AS NOT TO PRESENT A TRIPPING HAZARD.

3.3 FIELD QUALITY CONTROL/INSPECTIONS

A. THE CONTRACTOR SHALL REQUEST ACCEPTANCE OF SURFACE PREPARATION FROM THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION OF THE TACTILE WARNING PANELS. THE SURFACE PREPARATION SHALL BE MUTUALLY APPROVED BY THE TACTILE PANEL MANUFACTURER AND THE CONSTRUCTION MANAGER.

B. ALL WORK NOT ACCEPTABLE TO THE CONSTRUCTION MANAGER MUST BE CORRECTED BEFORE CONSIDERATION OF FINAL ACCEPTANCE.

1. THE CONSTRUCTION MANAGER OR HIS REPRESENTATIVE SHALL ENDEAVOR TO GENERATE A PUNCH LIST AND LIST OF ANY CORRECTIVE WORK REQUIRED CONCURRENTLY WITH THE TACTILE WARNING PANEL INSTALLATION. THE INSTALLER SHALL CONCURRENTLY PERFORM ANY REMEDIAL WORK REQUESTED BY THE CONSTRUCTION MANAGER.

3.4 CLEANING

A. DURING AND AFTER INSTALLATION AND THE CONCRETE CURING STAGE, IT IS IMPERATIVE THAT THERE ARE NO WALKING, LEANING OR EXTERNAL FORCES PLACED ON THE TACTILE UNIT, POTENTIALLY CAUSING A VOID BETWEEN THE UNDERSIDE OF THE TACTILE UNIT AND THE CONCRETE.

B. AS NECESSARY, WHILE THE PROJECT REMAINS UNDER CONSTRUCTION, PROTECT TACTILE UNITS AGAINST DAMAGE FROM ROLLING LOADS BY COVERING WITH PLYWOOD OR HARDWOOD.

C. CLEAN TACTILE UNITS NOT MORE THAT FOUR DAYS PRIOR TO DATE SCHEDULED FOR INSPECTION INTENDED TO ESTABLISH DATE OF SUBSTANTIAL COMPLETION IN EACH AREA OF PROJECT. CLEAN TACTILE UNITS BY METHOD SPECIFIED BY TACTILE WARNING SURFACE MANUFACTURER.

RESTORATION OF ROADWAYS, DRIVEWAYS, SIDEWALKS, CURBING AND TREELAWNS

THE CONTRACTOR SHALL PROPERLY RESTORE ALL ROADWAYS, DRIVEWAYS, SIDEWALKS, CURBING TREE LAWNS INCLUDING THE AREA BEHIND THE SIDEWALK AND THE RIGHT–OF–WAY LINE NOT DESIGNATED FOR REMOVAL OR REPAIR THAT HAVE BEEN DAMAGED OR DISTURBED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE RTA. GENERALLY ANY DAMAGED SLAB SHALL BE TOTALLY REPLACED. PARTIAL REPLACEMENT WILL BE PERMITTED ONLY IF ADJACENT SLAB IS REPLACED & AS DIRECTED BY THE ENGINEERS.

UTILITY TEST HOLES

PRIOR TO BEGINNING WORK RELATED TO INSTALLATION OF BOLLARDS, ALL PROPOSED DRAINAGE FACILITIES AND THE INSTALLATION OF SIGNAL CONDUIT, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF THE EXISTING UTILITIES AND STORM SEWER PIPES AS DESCRIBED IN THE PLANS.

THE CONTRACTOR SHALL CAREFULLY EXCAVATE AND/OR PERFORM SUE LEVEL A LOCATIONS AS NEEDED TO DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES ALONG THE PROPOSED CONDUIT RUNS AND NOTIFY THE ENGINEER OF ANY CONFLICTS AT LEAST 15 DAYS PRIOR TO THE TIME THE CONTRACTOR PROPOSES TO COMMENCE WORK OR ORDER MATERIAL TO ALLOW FOR ANY DESIGN ADJUSTMENTS AND/OR UTILITY COORDINATION. THE COMPLETED LOCATION REPORTS AND IDENTIFIED CONFLICTS SHALL BE DELIVERED TO THE PROJECT ENGINEER.

BACKFILL AND COMPACT THE HOLES AND RESTORE THE SURFACE AS DESCRIBED UNDER RESTORATION OF DISTURBED AREAS WHEN DIRECTED BY THE ENGINEER.

THIS ITEM SHALL INCLUDE THE COST OF LABOR, MATERIALS, EQUIPMENT, TOOLS, AND OTHER INCIDENTALS INCLUDING BACKFILL, COMPACTING, AND SURFACE RESTORATION.

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

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

NO ADDITIONAL PAYMENT WILL BE MADE FOR WORK INITIATED ON CONDUIT RUNS WITHOUT PRIOR LOCATION OF THE EXISTING PIPES OR UTILITIES.

ITEM SPECIAL – MISC: INTERPRETIVE SIGNS

690.01 DESCRIPTION. THIS WORK CONSISTS OF FURNISHING AND CONSTRUCTION OF INTERPRETIVE SIGN SIZE LP–48X24 AS DETAILED IN THE NATIONAL PARK SERVICE'S VISITOR INFORMATION SIGN SYSTEM VIS AND WAYSIDE HARDWARE SPECIFICATION MANUAL, REVISION 1, DATED FEBRUARY 19, 2010, PAGES 6–9, 27–30, 74, 75, 162, 177, 183, AND 184.

690.02 MATERIALS. FURNISH MATERIALS CONFORMING TO THE NATIONAL PARK SERVICE'S VISITOR INFORMATION SIGN SYSTEM VIS AND WAYSIDE HARDWARE SPECIFICATION MANUAL, REVISION 1, DATED FEBRUARY 19, 2010.

FURNISH, FABRICATE, AND INSTALL WAYFINDING SIGNAGE IN ACCORDANCE WITH THE PLANS AND PER NATIONAL PARK SERVICE (NPS) STANDARDS FOR LOW PROFILE WAYFINDING BASE, WITH WEATHERING STEEL AND DIRECT IMBEDMENT.

REFER TO HTTPS://WWW.NPS.GOV/HFC/PRODUCTS/WAYSIDES/.

PROVIDE 1/4" THICK, HIGH–PRESSURE LAMINATE SIGNAGE PANELS, PRINTED IN FULL–COLOR, WITH 10–YEAR WARRANTY ON FADING, DEFECTS, DELAMINATION, AND DETERIORATION. HIGH–PRESSURE LAMINATE PRODUCT TO CONSIST OF INKJET PRINT SANDWHICHED PETWEEN MULTIPLE LAYERS OF MELAMINE AND PHENOLIC SHEETS, PRESSED AT HIGH PRESSURE AND HEAT TO FORM A SOLID CORE.

GRAPHIC RESOLUTION: 150 DPI

COLORSPACE: RATER GRAPHICS: RGB

VECTOR GRAPHICS: CMYK

ARTWORK TO BE PROVIDED BY THE OWNER, IN THE NATIVE FILE FORMAT BUILT INTO ADOBE PHOTOSHOP (PSD), ADOBE ILLUSTRATOR (AI, PDF) AND ADOBE INDESIGN (INDD), NOT JPG, PNG, SVG, BMP, GIF, OR OTHER INTERNET GRAPHIC FORMATS.

CONSTRUCTION LAYOUT STAKES

THIS ITEM OF WORK SHALL BE PERFORMED AS PER ODOT ITEM 623 AND AS MODIFIED BELOW:

A) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SURVEYING, CALCULATIONS AND/ OR LAYOUT NOT FURNISHED IN THE BID DOCUMENTS TO COMPLY WITH THE ENGINEER'S DIRECTION. CONTRACTOR SHALL PROVIDE CUT SHEETS, TEMPORARY BENCHMARKS, AND LAYOUT (INCLUDING STATIONING AND HUBS) AS DIRECTED BY THE ENGINEER OR HIS REPRESENTATIVE. ALL STATIONING AND REFERENCE MARKS SHALL BE MAINTAINED AS DIRECTED BY THE ENGINEER OR HIS REPRESENTATIVE.

B) THE CONTRACTOR SHALL USE COMPETENT PERSONNEL AND SUITABLE EQUIPMENT FOR THE LAYOUT WORK REQUIRED AND SHALL PROVIDE THAT IT BE DONE UNDER THE SUPERVISION OF A REGISTERED SURVEYOR, LICENSED TO PRACTICE IN THE STATE OF OHIO.

C) THE CONTRACTOR IS TO PROVIDE "AS–BUILT" DRAWINGS SHOWING ALL ELEVATIONS AND INVERTS, LOCATIONS OF ROADWAYS BOTH HORIZONTAL AND VERTICAL. THESE DRAWINGS AND/OR CAD DRAWINGS SHALL BE DRAWN ON MYLARS OR CAD FILES (IF AVAILABLE) PROVIDED BY THE ENGINEER. THE INSPECTOR SHALL SIGN THE SHEETS VERIFYING THAT ALL CHANGES HAVE BEEN SHOWN ON THE "AS–BUILT" DRAWINGS. THE INSPECTOR IS NOT RESPONSIBLE FOR THE ACCURACY OF THE LOCATIONS OR ELEVATIONS. ALL ELEVATIONS AND LOCATIONS ARE TO BE CERTIFIED BY THE REGISTERED SURVEYOR, LICENSED TO PRACTICE IN THE STATE OF OHIO.

D) FAILURE TO COMPLY WITH THESE PROVISIONS MAY INCUR A RETAINMENT IN FEE. UPON COMPLIANCE THAT RETAINMENT MAY BE RELEASED BY THE ENGINEER. FINAL CONTRACT PAYMENT WILL NOT BE PROCESSED UNTIL "AS–BUILT" DRAWINGS ARE SUBMITTED AND ACCEPTED BY THE ENGINEER.

ADJUSTING STREET CASTINGS

ALL MANHOLES, CATCH BASINS, WATER METER MANHOLES, VALVE BOXES AND CLEVELAND PUBLIC POWER CASTINGS SHALL BE BROUGHT TO PROPER GRADE BY THE CONTRACTOR BY ADJUSTING SAID CASTINGS WITH MORTAR, BRICK, OR STONE MASONRY AS MAY BE DIRECTED. NO ADJUSTING RINGS OR BANDS WILL BE PERMITTED.

THE CONTRACTOR SHALL USE EXTREME CARE IN THE REMOVAL AND ADJUSTMENT OF THE CASTINGS. THE CONTRACTOR SHALL REMOVE EXISTING PAVEMENT AS REQUIRED TO ADJUST THE CASTING AND SHALL REPLACE SAME WITH HIGH STRENGTH CONCRETE.

CASTINGS BELONGING TO PRIVATE UTILITIES SHALL BE ADJUSTED TO GRADE BY SUCH UTILITIES AND DOES NOT CONSTITUTE A PART OF THE CONTRACTOR'S OBLIGATIONS. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH WORK.

CARE SHALL BE EXERCISED IN MOVING THE CASTINGS SO AS NOT TO DAMAGE THE CASTING OR THE STRUCTURE. DAMAGED CASTINGS OR STRUCTURES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.

IF THE ENGINEER CHANGES THE STRUCTURE ELEVATION BY ONE FOOT IT SHALL BE RECONSTRUCTED TO GRADE. VALVE BOXES AND OTHER CASTINGS EXTENDING ONE FOOT BELOW GRADE THAT, IN THE JUDGMENT OF THE ENGINEER, REQUIRE REPLACEMENT, SHALL BE REPLACED WITH A NEW CASTING.

ALL WORK OUTLINED SHALL CONFORM WITH REQUIREMENTS SET FORTH IN THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIALS SPECIFICATIONS MANUAL FOR ITEM 604 – ADJUSTING STREET CASTINGS TO GRADE.

NO	DESCRIPTION	REVISIONS	DATE

Checked By: KNB | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO · MARY KATHERINE BOYLE · E-80748 · REGISTERED · PROFESSIONAL ENGINEER

GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0203

EROSION CONTROL

EROSION CONTROL

DUE TO THE PROJECT AREA BEING LESS THAN 1 ACRE TOTAL, A NOTICE OF INTENT (NOI) IS NOT REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL PERFORM EROSION AND SEDIMENT CONTROL BEST PRACTICES INCLUDING FILTER FABRIC FENCE, INLET PROTECTION AND SEEDING TO MINIMIZE EROSION AND SEDIMENT LEAVING THE PROJECT AREA. THESE PRACTICES SHALL BE IN PLACE AT ALL TIMES EARTH IS DISTURBED OR VEGETATED LESS THAN 70%.

ITEM 659 – SEEDING AND MULCHING, AS PER PLAN

659.17 WATERING. IN ADDITION TO THE REQUIREMENTS OF 659.17, THE SEED BED SHALL BE KEPT ACCEPTABLY MOIST UNTIL THE SEED HAS GERMINATED; ALL AT THE DIRECTION OR APPROVAL OF THE ENGINEER.

659.23 PERFORMANCE. THE CITY OF CLEVELAND WILL INSPECT ALL SEEDED AREAS NO EARLIER THAN ONE (1) MONTH AND NO LATER THAN NINE (9) MONTHS AFTER FINAL/COMPLETED SEEDING; ALL AT THE DISCRETION/DETERMINATION OF THE ENGINEER. RESEEDING SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER WHERE GRASS COVER IS DEEMED INADEQUATE AT NO ADDITIONAL COST TO THE PROJECT.

SPECIAL PROVISIONS FOR SEEDING AND MULCHING

SCHEDULING

A. SEED MIXTURES SHALL NOT BE PLANTED OUTSIDE OF THE LISTED TIME FRAMES WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

B. IF AREAS TO BE PLANTED WITH NATIVE SEED MIXTURES BECOME AVAILABLE FOR SEEDING OUTSIDE OF THE TIMEFRAME LISTED IN PLANTING RESTRICTIONS, A COVER CROP OF TRITICUM AESTIVUM X ELYMUS TRACHYCAULUS (HYBRID WHEAT) SHALL BE UTILIZED AND SEEDED AT A RATE OF 40 LBS PER ACRE AND MAINTAINED UNTIL THE ALLOWABLE PLANTING TIMEFRAME FOR THE NATIVE SEED IS REACHED. ONCE THE ALLOWABLE NATIVE SEED TIMEFRAME IS REACHED, THE HYBRID WHEAT SHALL TO BE MOWED AS NECESSARY PRIOR TO NATIVE SEED INSTALLATION. HYBRID WHEAT SHALL BE MOWN AS LOW TO THE GROUND AS POSSIBLE WITHOUT DISTURBING THE SOIL SURFACE, APPROXIMATELY ONE WEEK PRIOR TO NATIVE SEED INSTALLATION. ANY EXCESS THATCH LEFT SHALL BE RAKED AND REMOVED PRIOR TO NATIVE SEED INSTALLATION.

C. PLANTING RESTRICTIONS. PLANT DURING THE FOLLOWING PERIOD:

1. FOR TYPE 5 SEED MIXTURES:
   (1) SPRING PLANTING – APRIL 20 TO JUNE 15;
   (2) SUMMER PLANTING (ONLY WITH WATERING OF ONE INCH OF WATER PER WEEK) – JUNE 15 TO AUGUST 15;
   (3) FALL PLANTING – SEPTEMBER 15 TO OCTOBER 31; OR
   (4) WINTER PLANTING – NOVEMBER 1 TO END OF FEBRUARY.
2. FOR TYPE 1 AND 10 SEED MIXTURES:
   (1) SPRING PLANTING: MAY 1 TO JUNE 15;
   (2) FALL PLANTING: OCTOBER 1 TO OCTOBER 31; OR
   (3) SUMMER PLANTING: JUNE 15 THROUGH SEPTEMBER 1 (ONLY WITH WATERING OF ONE INCH OF WATER PER WEEK).

D. WEATHER LIMITATIONS. PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT.

PRODUCTS

GENERAL

A. SEED: SEED MIXTURES SHALL BE AS SPECIFIED FOR TYPES 1 AND 5 SEED MIXTURES:

1. ALL NATIVE SEED MUST BE OF WILD ECOTYPE. NO HYBRIDS OR CULTIVARS MAY BE INCLUDED. LOCAL GENOTYPE SEED SHALL BE USED WHENEVER POSSIBLE DUE TO THEIR ADAPTATION TO LOCAL SOIL AND CLIMATE. THESE REQUIREMENTS DO NOT APPLY TO THE COVER CROP. SEED MIXTURES MUST BE DELIVERED IN ORIGINAL SEALED, LABELED, AND UNDAMAGED CONTAINERS.

B. MULCH: STRAW MULCH SHALL NOT BE APPLIED TO TYPE 5 SEED MIXTURES, ONLY WOOD FIBER OR COMPOST MULCH IS ACCEPTABLE FOR THOSE SEED TYPES.

SPECIAL PROVISIONS FOR SEEDING AND MULCHING

EXECUTION

SITE PREPARATION AND EXAMINATION.

A. CONTRACTOR AND ENGINEER SHALL INSPECT AREAS JUST PRIOR TO SEEDING OPERATIONS. RESTORE AREAS IF ERODED OR OTHERWISE DISTURBED.

B. FOR TYPE 5 SEED MIXTURE AREAS, CONTRACTOR SHALL LEAVE IN PLACE THE GROUSER MARKS AND/OR TIRE RUTS FROM EARTH MOVING EQUIPMENT.

C. DO NOT APPLY FERTILIZER TO TYPE 5 SEED MIXTURES.

SEEDING

A. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.

B. FOR TYPE 5 SEED MIXTURES, SOW SEED AT THE SPECIFIED APPLICATION RATE BY EITHER SEED DRILL OR BROADCAST. HYDROSEEDING IS NOT ACCEPTABLE.

1. DRILL: EVENLY DISTRIBUTE SEED BY SOWING IN ONE DIRECTION. INSTALL SEED WHEN SOIL IS SUFFICIENTLY DRY SO THAT SOIL DOES NOT STICK TO THE PACKER WHEELS ON THE SEED DRILL. ENSURE THE SEED DRILL IS PROPERLY CALIBRATED TO SOW SEED TO A MAXIMUM SOIL DEPTH OF 1/4" OVER THE SPECIFIED AREA(S). ENSURE COMPLETE COVERAGE OF THE SPECIFIED AREA(S).
2. BROADCAST: EVENLY DISTRIBUTE SEED BY SPREADING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER. ENSURE COMPLETE COVERAGE OF THE SPECIFIED AREA(S).

C. DO NOT APPLY FERTILIZER TO TYPE 5 SEED MIXTURES.

MAINTENANCE OF SEEDED AREAS

A. FOR TYPE 1 SEED MIXTURE AREAS, CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS SEEDED BY WATERING, MOWING, REMULCHING, AND REPLANTING AS NECESSARY UNTIL THE THIRD CUTTING AND AS MUCH LONGER AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF SPECIFIED SPECIES AND UNTIL ACCEPTED. MAKE THE FIRST CUTTING WHEN PLANTS HAVE REACHED THE HEIGHT OF 3-INCHES, CUT TO 2 1/2-INCHES. CONTRACTOR SHALL MAINTAIN SEEDED AREAS FOR THE FOLLOWING PERIOD: ONE FULL GROWING SEASON FROM DATE OF ACCEPTANCE OF INITIAL INSTALLATION OR PROJECT SUBSTANTIAL COMPLETION, WHICH EVER IS LATER.

B. FOR TYPE 5 SEED MIXTURE AREAS, CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS SEEDED BY WATERING, REMULCHING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF SPECIFIED SPECIES AND UNTIL ACCEPTED. DO NOT MOW THESE AREAS.

C. WATERING OF PLANTING AREAS IS REQUIRED FOR SUMMER PLANTING AND WITHIN THE FIRST FULL GROWING SEASON WHEN RAINFALL IS INSUFFICIENT TO PROVIDE ONE INCH OF WATER PER WEEK. CONTRACTOR SHALL APPLY ONE INCH PER WEEK UNLESS RAINFALL IS ADEQUATE. APPLICATION SHALL BE IN TWO EQUAL HALVES EQUALLY SPACED WITHIN THE WEEK. WATERING IS REQUIRED IF ONE INCH OF RAINFALL DOES NOT OCCUR IN THE PRIOR WEEK. IF LESS THAN ONE INCH OF RAIN OCCURS IN THE PRIOR WEEK, THE CONTRACTOR SHALL SUPPLEMENT THE RAINFALL TO ATTAIN ONE INCH PER WEEK. CONTRACTOR SHALL INSTALL A RAIN GAUGE AT THE SITE. RAIN GAUGE SHALL INCLUDED IN LUMP SUM BID PRICE. RAIN GAUGE TO DETERMINE IF AND HOW MUCH WATERING IS REQUIRED EACH WEEK.

D. ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEEDED, REFERTILIZED AND REMULCHED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. RESEEDING SHALL CONFORM IN ALL RESPECTS TO 659 AND THESE SPECIAL PROVISIONS FOR SEEDING AND MULCHING. DO NOT APPLY FERTILIZER TO TYPE 5 SEED MIXTURES.

E. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE WORK AREAS RESULTING FROM EROSION AND/OR EQUIPMENT. NO ADDITIONAL PAYMENT SHALL BE MADE FOR EROSION AND/OR EQUIPMENT MAINTENANCE. THE CONTRACTOR SHALL REPAIR DAMAGE, INCLUDING REGRADING, RESEEDING, ETC., AS NECESSARY, BEFORE SIGNIFICANT DAMAGE OCCURS.

SPECIAL PROVISIONS FOR SEEDING AND MULCHING

MAINTENANCE OF SEEDED AREAS (CONT'D)

F. ERADICATE NOXIOUS WEEDS OR INVASIVE SPECIES FOUND INVADING THE PLANTING AREAS BY HAND WEEDING OR APPLYING A BROAD SPECTRUM, WATER-SAFE, NON-PERSISTENT, GLYPHOSATE- BASED HERBICIDE. HERBICIDE IS NOT PERMITTED FOR TYPE 5 SEED MIXTURES. HAND WEEDING SHALL BE USED FOR AREAS TO BE SEEDED WITH TYPE 5 SEED MIXTURE. THE CONTRACTOR SHALL POSSESS A COMMERCIAL APPLICATOR'S LICENSE WITH THE STATE OF OHIO AND APPLY HERBICIDE CHEMICALS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AS NECESSARY TO ERADICATE NOXIOUS WEEDS AND INVASIVE SPECIES. CONTRACTOR SHALL TAKE GREAT CARE NOT TO APPLY HERBICIDE TO NEWLY PLANTED AND SEEDED SPECIES. CONTRACTOR SHALL REPLACE OR RESEED SPECIES AT CONTRACTOR'S OWN EXPENSE IF SPECIES ARE ERADICATED FOR ANY REASON. CONTRACTOR SHALL PLAN ACCORDINGLY TO ALLOW ENOUGH TIME FOR MULTIPLE HERBICIDE APPLICATIONS IF NECESSARY. NO SOONER THAN SIX (6) WEEKS AFTER HERBICIDE APPLICATION, THE ENGINEER SHALL REVIEW AND APPROVE NOXIOUS WEEDS AND INVASIVE SPECIES COVERAGE TO ENSURE COVERAGE IS WITHIN ALLOWABLE LIMITS. IF COVERAGE OF NOXIOUS WEEDS AND INVASIVE SPECIES IS NOT WITHIN ALLOWABLE LIMITS, THE CONTRACTOR SHALL APPLY HERBICIDE AGAIN AND THE ENGINEER SHALL REVIEW IN THE SAME MANNER TO ENSURE NOXIOUS WEEDS AND INVASIVE SPECIES COVERAGE IS WITHIN ALLOWABLE LIMITS.

THE FOLLOWING ESTIMATED QUANTITIES SHALL BE INCLUDED IN THE LUMP SUM BID TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, COMMERCIAL FERTILIZER	0.2 TON (TYPE 1 SEED MIXTURE ONLY)
659, LIME	0.3 ACRES (TYPE 1 SEED MIXTURE ONLY)
659, WATER	AS NEEDED

FOR ACCEPTANCE OF TYPE 1 SEED MIXTURES:

A. FOR ACCEPTANCE PRIOR TO THE END OF THE FIRST FULL GROWING SEASON, SCATTERED BARE SPOTS, SMALLER THAN ONE SQUARE FOOT WILL BE ALLOWED UP TO FIVE (5%) PERCENT OF THE SEEDED AREAS.

B. ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEEDED, REFERTILIZED AND REMULCHED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. RESEEDING SHALL CONFORM IN ALL RESPECTS TO 659 AND THESE SPECIAL PROVISIONS FOR SEEDING AND MULCHING.

FOR ACCEPTANCE OF TYPE 5 SEED MIXTURES:

A. FOR ACCEPTANCE PRIOR TO THE END OF THE FIRST FULL GROWING SEASON, THE FOLLOWING CONDITIONS SHALL BE MET:

1. COVERAGE – MINIMUM 75% OF EACH PLANT COMMUNITY SHALL BE COVERED WITH VEGETATION (MAXIMUM 5% NOXIOUS WEEDS AND INVASIVE SPECIES);
2. PRESENCE – MINIMUM 50% OF THE SPECIES PLANTED SHOULD BE ALIVE AND PRESENT;

B. THE CONTRACTOR SHALL REESTABLISH SEEDED AREAS AND CORRECT DEFICIENCIES IN AREAS THAT DO NOT COMPLY WITH THE REQUIREMENTS STATED ABOVE AND SHALL CONTINUE MAINTENANCE UNTIL AREAS MEET THE COVERAGE AND PRESENCE REQUIREMENTS.

C. THE ENGINEER WILL MAKE OBSERVATION OF THE WORK TO DETERMINE COMPLETION OF CONTRACT WORK AT CONCLUSION OF THE MAINTENANCE PERIOD, UPON WRITTEN NOTICE REQUESTING SUCH OBSERVATION SUBMITTED.

NO | DESCRIPTION | REVISIONS | DATE

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

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RTA GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO · MARY KATHERINE DOOLAN E-80748 · REGISTERED PROFESSIONAL ENGINEER

GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X
BID PAC: X

SHEET C0204

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EROSION CONTROL CONTINUED

ITEM 659 – SEEDING AND MULCHING, AS PER PLAN, CLASS 1 TYPE 1 (STANDARD LAWN MIX)

CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF ITEM 659 AND THE SPECIAL PROVISIONS FOR SEEDING AND MULCHING CONTAINED WITHIN THESE NOTES. ALL SEEDING NOT OTHERWISE SPECIFIED IN THE PLANS SHALL BE ODOT SEEDING AND MULCHING, CLASS 1 INCLUDING APPLYING SEEDING TO ALL EARTH DISTURBED AREAS.

ITEM 659 – SEEDING AND MULCHING, AS PER PLAN, TYPE 5 (EMERGENT WETLAND MIX)

CONTRACTOR SHALL FOLLOW AND ALL REQUIREMENTS OF ITEM 659 AND THE SPECIAL PROVISIONS FOR SEEDING AND MULCHING CONTAINED WITH THESE NOTES, USING THE SEED MIX SPECIFIED HEREIN:

A. SEED SPECIES: SEED OF GRASS SPECIES AS FOLLOWS, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 98 PERCENT PURE SEED, AND NOT MORE THAN 0.05 PERCENT WEED SEED.

B. APPLICATION RATE: SHALL INCLUDE THE FOLLOWING GRASSES, GRASS–LIKE AND WILDFLOWERS AT A MINIMUM PLS RATE OF 20 LBS/AC BROADCAST OR 15 LBS/AC DRILLED:

1. GRASSES & GRASS–LIKE:		PROPORTION BY WEIGHT
ELYMUS RIPARIUS	RIVERBANK WILD RYE	19.88%
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	13.75%
SPARTINA PECTINATA	PRAIRIE CORGRASS	6.50%
CAREX FRANKII	FRANKS SEDGE	3.38%
CAREX SHORTIANA	SHORT'S SEDGE	3.38%
PANICUM VIRGATUM	SWITCH GRASS	3.25%
LEERSIA ORYZOIDES	RICE CUT GRASS	1.75%
CAREX VULPINOIDEA	BROWN FOX SEDGE	0.94%
GLYCERIA GRANDIS	REED MANNA GRASS	0.69%

2. WILDFLOWERS:		PROPORTION BY WEIGHT
SENNA HEBECARPA	WILD SENNA	24.75%
SILPHIUM PERFOLIATUM	CUP PLANT	8.19%
ASCLEPIAS INCARNATA	ROSE MILKWEED	7.75%
VERNONIA FASCICULATA	WESTERN IRONWEED	2.06%
ALISMA SUBCORDATUM	WATER PLANTAIN	0.56%
ASTER PUNICEUS	PURPLE STEMMED ASTER	0.56%
VERBENA HASTATA	BLUE VERVAIN	0.56%
PENSTEMON DIGITALIS	FOXGLOVE BEARDTONGUE	0.44%
SOLIDAGO RIDDELLII	RIDDELL'S GOLDENROD	0.44%
EUPATORIUM MACULATUM	SPOTTED JOE PYE	0.44%
ASTER NOVAE–ANGLIAE	NEW ENGLAND ASTER	0.37%
EUPATORIUM PERFOLIATUM	COMMON BONESET	0.25%
HELENIUM ATUMNAL	SNEEZEWEED/HELEN'S FLOWER	0.10%
MIMULUS RINGENS	MONKEY FLOWER	0.02%

C. COVER CROP (APPLICATION RATE 30 PLS LBS/AC): TRITICUM AESTIVUM X ELYMUS TRACHYCAULUS – HYBRID WHEAT

ITEM 661 – MULCH, AS PER PLAN

THIS ITEM INCLUDES ALL LABOR, EQUIPMENT, TOOLS, SUBMITTALS, INCIDENTALS AND MATERIALS REQUIRED TO COMPLETE A 3–INCH LAYER OF DOUBLE–SHREDDED HARDWOOD BARK MULCH OVER ALL LANDSCAPE AREAS NOT RECEIVING SEED MIXES. MULCH SHALL BE FREE OF SOIL, ROCKS, AND WEEDS. THE MULCH MUST BE AGED FOR A LEAST ONE YEAR BEFORE INSTALLATION. CONTRACTOR SHALL SUBMIT PRODUCT DATA TO ENGINEER FOR APPROVAL.

DRAINAGE

CONSTRUCTION STANDARDS FOR SEWERS

1. ALL SEWER CONSTRUCTION AND MATERIALS INCLUDED ON THIS PROJECT SHALL BE IN ACCORDANCE TO THE STANDARDS OF THE CITY OF CLEVELAND DIVISION OF WATER POLLUTION CONTROL.

2. ALL SEWER CONSTRUCTION SHALL CONFORM TO ODOT ITEM 611, AND WITH THE SPECIFIC PROVISIONS INCLUDED HEREIN:

   A. ALL PIPES 18" IN DIAMETER AND SMALLER SHALL BE VCP, C–700 EXTRA STRENGTH WITH PREMIUM JOINTS AS PER ODOT 706.08.

   B. ALL PIPES 18" IN DIAMETER AND LARGER SHALL BE RCP. CLASS 3 WITH PREMIUM JOINTS AS PER ODOT 706.02.

   C. ALL PIPES WITH LESS THAN 3' OF COVER SHALL BE DUCTILE IRON PIPE ANSI CLASS 52, PUSH–ON JOINTS AND FITTINGS PER ODOT 748.01.

   D. ALL STORM SEWERS SHALL HAVE A MINIMUM SLOPE OF 1.00% UNLESS OTHERWISE NOTED ON THE PLANS.

   E. ALL PROPOSED CATCH BASINS SHALL HAVE A 24" SUMP AND TRAP.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY, REPRESENTATIVES OF THE CITY AND THE CONTRACTOR SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE CITY.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT AND ALL EXISTING INFRASTRUCTURE SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE CITY.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

CLEVELAND WATER POLLUTION CONTROL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE DIVISION OF WATER POLLUTION CONTROL (WPC) PRIOR TO THE START OF CONSTRUCTION. THE PHONE NUMBER IS 216–664–2756.

2. THE CONTRACTOR IS REQUIRED TO SUBMIT SEWER SHOP DRAWINGS TO WPC AND ENGINEER PRIOR TO THE SEWER INSTALLATION. THE DRAWINGS SHOULD INCLUDE THE SEWER PIPES, MANHOLES, CATCH BASINS AND OTHER SEWER APPURTENANCES.

3. WPC WILL INSPECT THE CITY SEWER INSTALLATION. THE COST OF THE FULL TIME INSPECTION SHALL BE PAID FOR BY THE CONTRACTOR. AN INSPECTION DEPOSIT SHALL BE SUBMITTED TO WPC PRIOR TO THE START OF CONSTRUCTION.

4. THE PROPOSED SEWERS SHOULD BE CONSTRUCTED IN ACCORDANCE TO THE PLANS AN SPECIFICATIONS APPROVED BY WPC. ANY DEVIATIONS FROM THE APPROVED PLANS OR SPECIFICATIONS REQUIRE A NEW SUBMITTAL REFLECTING THE CHANGES. UPON REVIEW OF THE REVISED ITEMS, WPS REISSUES A NEW APPROVAL. IT IS STRICTLY PROHIBITED TO CONSTRUCT ANY SEWERS UNLESS THEY ARE APPROVED BY WPC.

5. UPON COMPLETION OF THE SEWER INSTALLATION, THE CONTRACTOR IS REQUIRED TO SUBMIT AS–BUILT PLANS AND A VIDEO TAPED COPY OF THE NEW CITY SEWERS. WPC RESERVES THE RIGHT NOT TO APPROVE ANY SEWER THAT DOES NOT MEET THE CITY REQUIREMENTS.

6. THE CONTRACTOR IS RESPONSIBLE FOR THE PLAN REVIEW FEES OF THE NEW CITY MAIN SEWERS.

7. THE CONTRACTOR IS REQUIRED TO OBTAIN PERMITS FOR ALL PROPOSED SEWER CONNECTIONS THAT WILL SERVICE ANY PROPERTY.

8. ALL EXISTING CITY CATCH BASIN CONNECTIONS SHOULD BE TELEVISED, AND INSPECTED AND APPROVED BY WPC INSPECTOR PRIOR TO THEIR REUSE.

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 DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 604 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

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.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR INFORMATION FOR THE ABOVE NOTED WORK AND ARE INCLUDED IN THE LUMP SUM PRICE BID:

SPECIAL, MISCELLANEOUS METAL 1340 LB

EXISTING TEST TEES

STORM WATER DRAINAGE, TREATED NON–STORM WATER DRAINAGE AND/OR ACTIVE SANITARY SEWER CONNECTION TEST TEES ENCOUNTERED WITHIN THE CONSTRUCTION LIMITS SHALL BE ADJUSTED TO GRADE, RECONSTRUCTED TO GRADE, ABANDONED WITH NEW TEST TEES INSTALLED AT ALTERNATE LOCATIONS, OR SIMPLY REPLACED, AS REQUIRED AT THE LOCATION SHOWN IN THE PLANS AND/OR DIRECTED BY THE ENGINEER; ALL IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF ITEM 604 AND PROVISIONS OF THIS NOTE. WHEN IT BECOMES NECESSARY TO PLACE OR REPLACE TEST TEES WITHIN PAVED AREAS SUCH AS DRIVEWAYS, SIDEWALKS, ETC. (RELOCATE OUTSIDE PAVED AREAS WHERE POSSIBLE), THEY SHALL BE SET TO FINISHED PAVED SURFACE GRADE.

WHEN ADJUSTING/RECONSTRUCTING TEST TEES TO GRADE, NEW PIPE MATERIALS SHALL, TO THE EXTENT POSSIBLE, MATCH EXISTING IN–KIND MATERIAL (PVC FOR PVC; DUCTILE IRON FOR DUCTILE IRON; ETC.). MATERIAL SPECIFICATIONS ARE INDICATED ON MD–6C. SEWER JOINTS SHALL CONFORM TO ASTM C–425 FOR CLAY PIPE, ASTM D–3212 FOR PLASTIC PIPE, AWWA C–111 FOR CAST IRON PIPE, AWWA C–111 FOR DUCTILE IRON PIPE. JOINTS FOR PVC PIPE SHALL BE ELASTOMERIC O–RING. SOLVENT CEMENT JOINTS FOR PIPES SIX (6) INCHES OR UNDER IS ACCEPTABLE. IF THE JOINT IS OF THE SOLVENT CEMENT TYPE, IT SHALL BE INSTALLED PER ASTM D–2235 AND THE MANUFACTURER'S RECOMMENDATIONS. ADDITIONALLY, ALL EXPOSED ENDS OF THE ABS COMPOSITE PIPE SHALL BE FULLY SEALED WITH SOLVENT CEMENT. ELASTOMERIC QUALITIES OF JOINT GASKETS OR O–RINGS SHALL MEET ASTM F–477. SOLVENT CEMENT FOR PVC PIPING AND FITTINGS SHALL CONFORM TO ASTM D–2564. WELDED JOINTS SHALL BE AIR TESTED 24 HOURS AFTER INSTALLATION.

ITEM SPECIAL – PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER ODOT CMS 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR INFORMATION FOR THE ABOVE NOTED WORK AND ARE INCLUDED IN THE LUMP SUM PRICE BID:

SPECIAL, PIPE CLEANOUT 50 FT

6" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP, AS PER PLAN

IN ADDITION TO THE APPLICABLE WORK AND MATERIALS DESCRIBED UNDER ITEM 605 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, THE WORK INCLUDED IN THIS ITEM SHALL ALSO INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

A. ALL LABOR AND MATERIALS REQUIRED TO CONNECT THE EXISTING UNDERDRAIN TO THE PROPOSED UNDERDRAIN.

B. ALL LABOR AND MATERIALS REQUIRED TO OUTLET THE UNDERDRAIN INTO THE CATCH BASINS, IN CONFORMANCE WITH 605.06.

C. FURNISHING AND INSTALLATION OF FILTER FABRIC, IN CONFORMANCE WITH 605.02.

UNDERDRAIN DEPTH VARIES AS NEEDED TO PROVIDE POSITIVE DRAINAGE AND TIES TO EXISTING UNDERDRAIN AND OUTLETS.

PROPOSED UNDERDRAIN SHALL BE INSTALLED AT ALL NEW CURB LOCATIONS. SEE SHEET C0400 FOR LOCATIONS.

NO | DESCRIPTION | REVISIONS | DATE

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

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RTA GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO MARY KATHERINE DOKLEN E-80748 REGISTERED PROFESSIONAL ENGINEER

GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0205

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DRAINAGE CONTINUED

STORM SEWER STRUCTURES ADJUSTED TO GRADE, RECONSTRUCTED TO GRADE OR REPLACED

ALL ADJUSTMENT, RECONSTRUCTION OR REPLACED WORK SHALL BE PERFORMED BY THE
CONTRACTOR. WHERE APPLICABLE, THE TIME BETWEEN RESETTING THE CASTINGS AND RESURFACING SHALL BE KEPT TO AN ABSOLUTE MINIMUM.

CASTINGS SHALL BE ADJUSTED OR RECONSTRUCTED TO GRADE IN ACCORDANCE WITH 604.03 USING CLAY BRICKS (704.01), CLASS C CONCRETE AND/OR CONCRETE MORTAR. NO GRADE RINGS OR METAL ADJUSTING RINGS (CASTINGS) ARE PERMITTED. MAXIMUM CONCRETE MORTAR THICKNESS IS 1–1/2".

ADJUST TO GRADE, RECONSTRUCT TO GRADE OR TOTAL REPLACEMENT WORK SHALL, WHERE REQUIRED, INCLUDE THE REMOVAL AND REPLACEMENT OF ANY EXISTING
CONCRETE BLOCKOUT CURB AND/OR PAVEMENT USING MODERATE – SETTING CONCRETE (CLASS MS) OR, IF APPROVED/DIRECTED BY THE ENGINEER, FAST–SETTING CONCRETE (CLASS FS) PER 499.05 OF THE SPECIFICATIONS. TO FACILITATE REMOVAL, THE
BLOCKOUT PAVEMENTS SHALL BE SAWED FULL DEPTH (PER 255.03) ALONG THE LIMITS
OF THEIR REMOVAL UNLESS OTHERWISE DESIGNATED/DIRECTED BY THE ENGINEER. UNLESS OTHERWISE APPROVED/DIRECTED BY THE ENGINEER, BLOCKOUT PAVEMENT, REINFORCING STEEL, JOINT MATERIAL AND LOAD TRANSFER DEVICES SHALL BE REPLACED / INSTALLED IN ACCORDANCE WITH THE CITY OF CLEVELAND'S CONSTRUCTION DRAWING MH–1 (MANHOLES) AND CB–1 OR OTHER APPROPRIATE CATCH BASIN DRAWING(S). ALL COSTS ASSOCIATED WITH THE BLOCKOUT REMOVALS/REPLACEMENTS SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

ALL EXISTING CASTINGS FOR STRUCTURES TO BE ADJUSTED OR RECONSTRUCTED TO GRADE SHALL BE FIELD CHECKED AT THE TIME OF CONSTRUCTION AND MARKED
SUITABLE FOR SALVAGE AND REUSE OR REPLACED AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE INDICATED ON THE PLAN.

THE ENGINEER WILL DETERMINE THE ITEM 604 WORK REQUIRED BASED ON THE GUIDELINES STIPULATED BELOW:

1. "ADJUST TO GRADE, AS PER PLAN" SHALL INCLUDE ALL WORK SPECIFIED IN 604.03 (B) AS NECESSARY TO RAISE THE EXISTING/NEW CASTING NO MORE THAN ONE (1) FOOT FROM ITS EXISTING ELEVATION OR TO LOWER THE EXISTING/NEW CASTING NO MORE THAN SIX (6) INCHES FROM ITS EXISTING ELEVATION. IN ADDITION, THIS ITEM WILL INCLUDE ANY SUPPORTING WALL REPAIR WORK NECESSARY, UP TO SIX (6) INCHES BELOW THE TOP OF THE EXISTING SUPPORTING WALL.

2. "RECONSTRUCT TO GRADE, AS PER PLAN" SHALL INCLUDE ALL WORK SPECIFIED IN 604.03 (A) AND SHALL ALSO INCLUDE EXISTING/NEW CASTINGS RAISED MORE THAN ONE (1) FOOT FROM THEIR EXISTING ELEVATION OR LOWERED MORE THAN SIX (6) INCHES FROM THEIR EXISTING ELEVATION.

"RECONSTRUCT TO GRADE, AS PER PLAN" WORK SHALL NOT BE PERFORMED UNLESS SPECIFICALLY INDICATED IN THE PLANS OR OTHERWISE ORDERED BY THE ENGINEER. ANY SUCH WORK MADE NECESSARY DUE TO THE CONTRACTOR'S NEGLIGENT OPERATIONS, AS DETERMINED BY THE ENGINEER, SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

PAVEMENT

PAVEMENT RESTORATION

FOR ALL PAVEMENT AREAS DISTURBED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO PAVEMENT ADJACENT TO PROPOSED CURB LINES AND PAVEMENT DISTURBED BY THE INSTALLATION OF DRAINAGE STRUCTURES, DRAINAGE CONDUIT, WIRING, OR TRAFFIC CONTROL DEVICES, CONTRACTOR SHALL REMOVE AND REPLACE PAVEMENT AS DESCRIBED ON SHEETS C0700 AND C0701.

REVISIONS

NO	DESCRIPTION	DATE

Checked By: KNB | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

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GENERAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

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D-23 CONSTRUCTION OF CONCRETE BASE, PAVEMENT, SIDEWALKS, DRIVEWAYS AND CURB
(ODOT ITEMS 305, 451, 452, 608 & 609, SPECIAL)

1. WORK INCLUDED

The Contractor under this section of the specifications shall construct concrete base, pavement, sidewalk, driveway aprons, curb, curb and gutter sections, handicap ramps, and integral radius curb and walk. This includes the restoration of all adjacent surfaces which are disturbed by this construction and not scheduled to be restored under a separate item of payment.

2. MATERIALS

The concrete used shall be the concrete design mix as per D-24, D-25, and D-26, as appropriate, of these specifications.

3. GRADING

Grading shall include all excavation, fill, and embankment required to permit the construction of the proposed pavement, sidewalk, driveway aprons, and curb to the designated lines and grades.

a. Excavation

i. The cost of all excavation for proposed work shall be included in the price bid for the various items of work including removal and disposal. Excavation shall include the removal of all concrete, stone, earth, roots, and other material of every description within the limits of the proposed work.

ii. Except as otherwise ordered, excavation at the elevation of the finished grade of the construction shall extend one (1) foot beyond each edge and then on a slope of one (1) vertical to one and one-half (1-1/2) horizontal and shall be paid for as excavation at the price per cubic yard for such work as it appears on the price sheet of the contract. When so ordered, excavation shall extend to a sufficient width to permit proper drainage with the cost of excavating beyond the limit stated above paid for as excavation.

iii. The cost of excavation for a depth in excess of the thickness of the concrete base/pavement slab shall be paid for as excavation at the lump sum or unit price bid for Item 203 - Excavation.

iv. The Contractor shall use extreme care, by whatever methods and procedures are necessary, in the removal of pavement, sidewalk,

driveway aprons, and curb, to ensure that no adjacent slabs beyond those marked for removal by the City Inspector will be disturbed, removed or damaged. Should any pavement, walk, driveway apron or curb be damaged, either in whole or in part, other than that which is marked for removal by the City Inspector, the Contractor shall remove and replace said damaged slabs, in whole, without cost to the City.

b. Fill or Embankment

i. Fill or embankment shall be ODOT Item 203-Embankment as per plan notes and meet the following two (2) requirements:

ii. It shall be substantially free from vegetable or organic matter and shall contain not more than ten (10) percent of loam or clay.

iii. It shall weight not less than ninety (90) pounds per cubic foot, dry compacted weight.

iv. The upper six (6) inches of embankment outside of the edge of the sidewalk, driveway apron or curb shall be topsoil or excavated material approved by the engineer (No sand).

v. Fill shall extend at least one and one-half (1-1/2) feet beyond each side of the construction unless otherwise ordered or permitted. Side slopes shall be trimmed to a slop of one (1) vertical to one and one-half (1-1/2) horizontal, except as otherwise ordered by the City.

vi. Fill shall be in place in advance of construction to allow for settlement. The fill material shall be thoroughly compacted by tamping or rolling, or both, so as to produce a solid dense sub-grade.

vii. It shall be the Contractor's responsibility to raise all municipally owned utility castings to finished grade of new work. Adjusting these castings to new grade shall constitute a separate item of work and payment.

viii. Non-municipally owned castings are the responsibility of their respective owners to adjust to the proper grade, but coordinating the work is the responsibility of the Contractor. Adjusting these castings to the new grade shall not be paid for under this contract.

4. CONCRETE DELIVERABLES

a. All concrete delivered shall be subjected to any or all tests described in the "Testing of Construction Materials" section of these Detail Specifications. All concrete failing any of these tests shall be removed and replaced as

many times as necessary, until it passes all required tests. The removal and replacement shall be at no cost to the City.

b. All concrete delivered to the construction site shall be accompanied by dray slips. Dray slips shall contain all of the information required by ASTM C-94, Paragraph #16, and Batch Ticket Information. Any concrete truck without a dray slip or with an incomplete dray slip shall be rejected.

c. Trucks shall conform to AASHTO M 157 - 10.1, 10.2, 11.5, 11.6, 11.7, & 11.8.

d. The slump and percent of air entrainment shall conform to the limits shown in section D-24 (Concrete Design Mix) of these specifications.

e. All concrete shall be discharged from the truck within ninety (90) minutes of the batching time as indicated on the dray slip.

f. The temperature of the concrete at the time of placement shall be between minimum concrete temperatures as per AASHTO M157-1997 section 11.1.1. Minimum concrete temperature table as shown below and ninety (90) degrees Fahrenheit as per the American Concrete Institute (ACI) recommendations for hot weather concrete.

Air Temperature	Thin Sections and Uniformed Slabs	Heavy Sections and Mass Concrete
Fahrenheit	Degrees	Degrees
30 to 45 degrees	60	50
0 to 30 degrees	65	55
Below 0 degrees	70	60
Centigrade		
-1 to 7 degrees	16	10
-18 to -1 degrees	18	13
Below -18 degrees	21	16

g. Rejected Trucks and Loads - Any truck and its load of concrete rejected for failure to meet all the requirements of paragraph's 4c and 4d as stated above shall have the following condition imposed:

Any truck rejected from any construction site covered by this section of the specifications shall also be banned from all construction sites covered by this section of the specifications.

h. Any concrete which fails to meet all of the requirements of paragraph's 4e, 4f, and 4g as stated above, or the requirements of the job mix, shall not be

used on this or any other construction project where the specifications have been prepared by the Division of Engineering & Construction.

5. CONSTRUCTION

All of the various types of pavement, sidewalk, driveway aprons, curb or any combination thereof shall be constructed as per these specifications, plans, details and the respective Standard Drawings.

Except as otherwise directed, all concrete for pavement, sidewalk, driveways aprons, curb, handicap ramps and integral radius curb and walk shall be of one (1) course. Sidewalk shall be a minimum of four inches (4") thick. Driveway aprons shall be a minimum of six inches (6") thick for residential and eight inches (8") thick for commercial driveways. The minimum thickness for integral concrete radius curb and walk shall be eight inches (8") and as also shown on City of Cleveland Standard Drawing #244ME.

The thickness of the pavement, sidewalk and/or driveway aprons shall be increased as indicated on the plans or as directed by the Engineer. Sidewalk through the driveway and driveway aprons of the same thickness may be combined into one item of work and payment.

5.1 Forms

a. Forms for pavement, sidewalk, and integral concrete radius curb and walk, and driveway apron construction shall be made of steel.

b. Where standard lengths of steel forms cannot properly be used, a wooden form will be permitted for closure. Said wooden form shall not be less than one and five-eighths inches (1-5/8") in thickness. The minimum depth shall be as shown below:

Sidewalk	4", 6" or 8"
Driveway Apron	6" or 8"
Integral Concrete Radius	8"
Curb and Walk	8"
Base, Plain and Reinforced Pavement	9", 10" or 12"

5.2 Saw Cutting and Concrete Removal

When existing concrete pavement, drive aprons, curb or sidewalk necessitates cutting into the existing slab for removal, the cutting shall be accomplished by using a suitable concrete power saw which will produce a straight and smooth finish along the sawed edge. The depth of cutting or scoring shall be such that no damage will result to the remaining slab after removal of the designated section.

CITY OF CLEVELAND SPECIFICATIONS

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0208

The location of all saw cuts shall be determined by the Engineer. Any damage to the slab not designated for removal shall be replaced at no expense to the City.

5.3 Affidavit

An affidavit shall be secured from each company supplying the concrete stating that only the concrete design mix as per City of Cleveland specifications will be supplied. This affidavit shall also state that the material supplier has read the specifications relative to the concrete being supplied. It shall be signed by an officer of the supplying company and notarized.

5.4 Placing Concrete

a. No concrete shall be poured until the inspector has approved the preparation of the foundation bed.

b. No concrete shall be poured unless the inspector is on the jobsite observing the work.

c. If any concrete is poured without the observation by the inspector or without the prior approval of the foundation bed, the concrete poured shall not be accepted by the City for payment.

d. Foundation beds shall be sprinkled immediately prior to depositing of concrete during hot or dry weather conditions.

e. All welded steel wire fabric for concrete reinforcement, as per construction plans, shall meet the requirements of Section 709.10 of ODOT Construction and Material Specifications.

f. Concrete shall be continuously deposited between bulkheads to a uniform thickness and to the full depth and width. The concrete, after being placed, shall be thoroughly compacted and brought to the proper pitch and grade with a template or straightedge.

g. No concrete showing segregation or clumps of material shall be deposited in the work.

h. Immediately prior to the finishing of the surface, the concrete shall be cut into slabs not longer than six feet (6') on any one side for walks and driveways. Pavements shall be cut as per plan details and Standard Construction Drawings. The joints shall be formed by a cutting tool or some other means satisfactory to the City and shall not be less than one-quarter (1/4) of the depth of the slab. All edges shall be rounded, with an approved edging tool, to a radius of one-quarter inch (1/4").

5.5 Surface Finish

a. The finishing of the concrete shall immediately follow the placing and compacting of the concrete. Unless otherwise ordered, a broom finish shall be required. Rubbing with floats or other acceptable method shall be done only at the direction of the Engineer. All concrete slabs shall be edged around the entire perimeter unless otherwise directed by the Engineer. The surface shall be free from depressions and inequalities.

b. The application of dry cement to hasten drying of the surface is prohibited.

5.6 White Liquid Film Method

a. All concrete pavement, sidewalk, driveway aprons, curb, curb and gutter sections, handicap ramps, and integral radius curb and walk shall be cured by the use of white liquid film. This white liquid film shall have twenty-five (25%) to thirty percent (30%) effective solids and meet the requirements of ODOT Construction Materials Specifications Item 705.07 Type 2.

b. The white liquid film may be used for curing all concrete placed except for concrete which is to be bonded to future concrete placement.

c. The curing materials shall be applied uniformly by means of an approved pressure spray distributor at the rate of one (1) gallon to each two hundred (200) square feet of surface, and it shall be so applied that the concrete surface is completely coated and sealed in one (1) application. The curing material shall be applied immediately after the concrete surface to be cured has been finished and before any marked dehydration has occurred. After the surface has been coated, it shall be protected from all traffic or abrasive action from any source.

d. When this method of curing is used, a complete duplicate spraying system shall be on the site before starting the placement of the concrete.

e. Final curing by the white liquid film method shall be considered to extend for two (2) complete days from the time the material is placed. During this period, the surface of the concrete shall be protected by barricades from all traffic or work operations.

f. A transparent liquid film may be substituted with the prior written approval of the Engineer.

5.7 Expansion Joints

a. Prepared strips of preformed expansion joint material meeting the requirements of 705.03 of the ODOT Construction and Material

Specifications shall be one-half inch (1/2") in thickness and of sufficient width to extend the entire depth of the concrete. They shall be placed in such a manner that the joint will be filled to within one-half inch (1/2") of the finished surface of the walk. Joints shall be constructed at intervals no greater than fifty feet (50') in all sidewalks, driveway aprons, curb and gutter section, cast-in-place curb and integral curb and walk unless otherwise ordered. Pavement expansion joints shall be placed as per plan details.

b. Joints shall be placed where the walk abuts curbing or other lateral walks and along the building line where the walk is placed full width from the curb to the building or other structures or as otherwise directed by the Inspector in the field. The edges of all joints so placed shall be rounded as herein before specified. The cost for expansion joints shall be included in the unit price bid for the respective items of work.

c. Where new concrete curb or the curb portion of integral concrete radius curb and walk abuts existing pavement, a three-quarter inch (3/4") thick preformed expansion strip as called for in 705.03 of the ODOT Construction and Material Specifications shall be placed to separate the pavement and curb. The upper one-half inch (1/2") of the joint shall be hot sealed.

5.8 Contraction Joints

All concrete for ADA ramps, sidewalks, and driveways shall have retraced picture frame tooled edge joints.

5.9 ODOT Item 305-Portland Cement Concrete Base

ODOT Item 305 – Portland Cement Concrete Base shall meet all requirements for Item 452 – Non-Reinforced Portland Cement Concrete Pavement. All jointing and transfer devices are to be installed. The concrete shall have a broom finish.

5.10 Payment

The quantity as provided shall be paid for at the applicable contract price per unit of measurement, which price and payment shall be full compensation for all materials, labor, equipment, tools, and incidentals necessary to complete the work required by this section of the specifications.

D-24 CONCRETE DESIGN MIX

All applicable work items specified in D-23 shall be bid using the concrete mix design specified in this section. Under this section of specification the Contractor is required to submit a separate mix design for each combination of cement type, aggregate type and concrete supplier for use under this contract. Each mix shall be designed in accordance with ASTM-C94-04 Option C and as herein modified.

1. MINIMUM COMPRESSIVE STRENGTH

   4,000 PSI strength for 28-day test. Four cylinders will be taken and tested as per ASTM C-39-04. One to be tested at seven days and the remaining three will be tested at twenty-eight days. Acceptance will be based on the average results of the three cylinders.

2. MINIMUM CEMENT CONTENT

   650 lbs. per cubic yard. The cement shall conform to ASTM C-150-04 or C-595-04. The use of limestone may be used with prior approval of the Engineer upon review of the submittal.

3. WATER CEMENT RATIO

   0.45 maximum.

4. SLUMP

   Nominal three inches (3") as per ASTM C-94-04 (2"- 4" actual). The use of chemical admixtures meeting ASTM C-494, to increase the slump to a maximum of 7", may be used with prior approval of the Engineer upon review of the admixture and resultant maximum slump.

5. AIR CONTENT

   Four percent (4%) to seven and one half percent (7-1/2%) ASTM C-173-04 or C-231-04.

6. AGGREGATE

   Aggregate Size No. 57 for course aggregate shall be limestone, gravel or crushed air-cooled blast furnace slag. Both course & fine aggregate as per ASTM C-33-04.

   If crushed air-cooled blast furnace slag is used it shall meet all of the requirements of ODOT 703.01 and 703.02. Copies of all tests and certifications for the crushed air-cooled blast furnace slag, if used, shall be submitted as a part of the concrete mix design.

   Steel Slag Aggregate (703.01E) is not permitted for use in Cleveland 650 Concrete Mix.

   When high early strength is required, ASTM C-150-04 Type III A cements or admixtures in accordance with ASTM C-494-04 shall be used.

The Contractor is required to furnish a signed affidavit, in triplicate, from each concrete supplier to the Engineer giving dry weight and type of cement, saturated surface-dry weight and the type of fine and course aggregate, quantity, type and name of each admixture and weight of water per cubic yard of concrete. The contractor shall also furnish twenty-eight (28) day cylinder tests (per testing section) as verification that the materials used and the proportions selected will produce concrete of the quality specified.

Hot and cold weather projection (Blankets, heaters, ice, etc.) shall be included in the unit bid price.

The Contractor is required to comply with all the above requirements. The contractor shall require that all of the sub-contractors placing concrete under this contract also comply with all of the above requirements.

D-25 CONCRETE DESIGN MIX (CLASS MS-ITEM SPECIAL)

All applicable work items shall be bid using the concrete mix design specified in this section. Under this section of specification the Contractor is required to submit a separate mix design for Class MS Concrete with D-24 Concrete Mix Design and as herein modified.

1. MINIMUM COMPRESSIVE STRENGTH

   400 PSI Modulus of Rupture as per ASTM C-78 in 24 hours. The results of the 24-hour beam test shall be furnished in addition to the results of the twenty-eight (28) day cylinder tests.

2. MINIMUM CEMENT CONTENT

   800 lbs. per cubic yard. Fly ash or additional aggregate shall not be used as a substitute for cement.

3. WATER CEMENT RATIO

   0.43 maximum.

   Calcium chloride is not permitted for use in Class MS concrete mix.

   The Engineer will mark in the field the areas that require construction using Class MS Concrete. These marks will be limits of the payment for the various bid items using Class MS Concrete.

   If the Contractor chooses to place Class MS Concrete outside of the Engineers marks for the Contractor's own convenience, then it will be measured and

paid for as concrete which only meets the requirements of D-24 Concrete Mix Design.

Payment for Class MS Concrete shall be a surcharge to the unit bid price per cubic yard as per D-23 and D-24.

D-26 CONCRETE DESIGN MIX (CLASS FS-ITEM SPECIAL)

All applicable work items shall be bid using the concrete mix design specified in this section. Under this section of specification the Contractor is required to submit a separate mix design for Class MS Concrete with D-24 Concrete Mix Design and as herein modified.

1. MINIMUM COMPRESSIVE STRENGTH

   400 PSI Modulus of Rupture as per ASTM C-78 in 4 hours. The results of the 4-hour beam test shall be furnished in addition to the results of the twenty-eight (28) day cylinder tests.

2. MINIMUM CEMENT CONTENT

   900 lbs. per cubic yard. Fly ash or additional aggregate shall not be used as a substitute for cement.

3. WATER CEMENT RATIO

   0.40 maximum.

4. CALCIUM CHLORIDE

   1.6% by weight of cement for 94-97% purity.
   2.0% by weight of cement for 70-80% purity.

The source, purity, and amount of calcium chloride shall be in each mix design for review and approval by the Engineer. For any alteration in the mix design, the Contractor shall resubmit the revised mix design for review and approval noting the proposed changes.

The Engineer will mark in the field the areas that require construction using Class FS Concrete. These marks will be limits of the payment for the various bid items using Class FS Concrete.

If the Contractor chooses to place Class FS Concrete outside of the Engineers marks for the Contractor's own convenience, then it will be measured and paid for as concrete which only meets the requirements of D-24 Concrete Mix Design.

REVISIONS
NO. | DESCRIPTION | DATE

Checked By: KNB
Drawn By: MKS
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Date: 2017-03-08

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STATE OF OHIO MARY KATHERINE BOYLE E-80748 REGISTERED PROFESSIONAL ENGINEER

CITY OF CLEVELAND
SPECIFICATIONS

CARNEGIE AVENUE/MLK JR. DRIVE
INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0211

MAINTENANCE OF TRAFFIC GENERAL NOTES

1. PHASE 1 WORK ASSOCIATED WITH THE TRAFFIC ISLAND INCLUDING BUS SLIP RAMP CLOSURE AND CURB RAMPS, SHALL BE COMPLETED DURING THE SUMMER BREAK/VACATION/SESSION ON THE ACADEMIC CALENDARS OF JOHN HAY HIGH SCHOOL, CLEVELAND SCHOOL OF THE ARTS AND CASE WESTERN RESERVE UNIVERSITY.

2. THE GCRTA BUS SLIP RAMP TO NORTHBOUND MLK MAY BE CLOSED ONE CLOSURE OF A MAXIMUM OF 45 CALENDAR DAYS. CONTRACTOR IS REQUIRED TO NOTIFY GCRTA OF SLIP RAMP CLOSURE OR ANY OTHER PROPOSED IMPACTS REQUIRING ROUTE DETOURS A MINIMUM OF SEVEN (7) DAYS PRIOR TO BEGINNING WORK.

3. FOR CLOSURE OF THE RTA BUS NORTHBOUND SLIP RAMP TO MLK, TEMPORARY PAVEMENT MARKINGS DESIGNATING THE RIGHT LANE TO BE A THRU/RIGHT LANE SHALL BE ADDED. THE PHASING OF THE EXISTING VEHICULAR SIGNALS SHALL BE MODIFIED. THE TEMPORARY MODIFIED SIGNAL PHASING DIAGRAM HAS BEEN PROVIDED ON THIS SHEET. CONTRACTOR TO COORDINATE THE TEMPORARY MODIFICATION OF PHASING WITH THE CITY OF CLEVELAND DIVISION OF TRAFFIC ENGINEERING PRIOR TO INSTALLATION OR COMMENCING WORK THAT WOULD CLOSE THE BUS SLIP RAMP. ALL CONFLICTING SIGNAGE SHALL BE TEMPORARILY COVERED OR REMOVED AND REINSTALLED AFTER BUS SLIP RAMP IS REOPENED.

4. NO LONG-TERM (DEFINED AS LONGER THAN 6 HOURS) REDUCTION OF LANES ON MARTIN LUTHER KING JR. DRIVE, CARNEGIE AVENUE OR CEDAR AVENUE WILL BE PERMITTED. ANY SHORT-TERM LANE CLOSURES WITH FLAGGERS SHALL BE OUTSIDE OF RUSH OUR TIMES (6AM-9AM AND 3PM-6PM).

5. LANE WIDTHS MAY BE REDUCED TO 11 FT. DURING CONSTRUCTION.

6. TEMPORARY PAVEMENT MARKINGS SHALL BE USED TO DESIGNATE PEDESTRIAN DETOUR CROSS WALKS, AND LANE ASSIGNMENTS. DASHED LANE MARKINGS SHALL BE EXTENDED ACROSS INTERSECTIONS IF LANE SHIFTS ARE REQUIRED TO LINE TRAFFIC UP, OR IF EXISTING MARKINGS ARE EMPLOYED. ANY EXISTING MARKINGS CONFLICTING WITH TEMPORARY PAVEMENT MARKINGS SHALL BE ERADICATED. TEMPORARY PAVEMENT MARKINGS SHALL AND SIGNING SHALL COMPLY WITH PHASE DIAGRAMS IN THE CONTRACT PLANS.

7. PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. PEDESTRIAN DETOUR MAY NOT INCREASE THE DISTANCE TRAVELED BY MORE THAN 300 FT. OVER THE EXISTING CONDITION.

8. ALL PEDESTRIAN DETOURS SHALL BE ADA ACCESSIBLE WITH A MINIMUM WIDTH OF 5'.

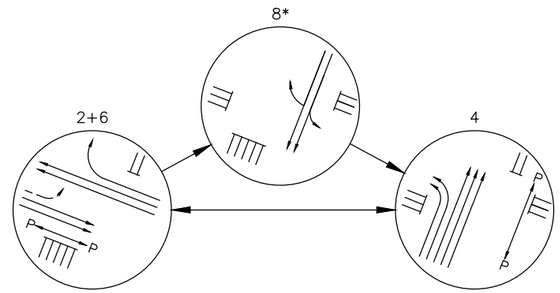
9. ALL PEDESTRIAN DETOURS SHALL HAVE PEDESTRIAN SIGNALS CONTROLLING PEDESTRIAN MOVEMENTS ACROSS THE INTERSECTION. PEDESTRIAN DETOURS INCLUDING ANY CLOSURES OR DETOURS OF EXISTING PUBLIC SIDEWALKS SHALL BE MARKED WITH SIGNS AT THE DIRECTION OF THE ENGINEER. SIGNAGE TO BE INCLUDED IN THE LUMP SUM PRICE BID.

10. PEDESTRIAN DETOURS NOT BEHIND CURB SHALL BE DESIGNATED WITH GRABBER CONES OR BARRELS WITH SPACING NO GREATER THAN 5 FT. ON CENTER EXCLUDING CROSS WALKS.

11. GRABBER CONES AND BARRELS SHALL BE CLEAN AND ALL REFLECTIVE MATERIAL SHALL BE FUNCTIONAL AND UNDAMAGED.

12. ALL LABOR, MATERIALS, AND INCIDENTALS FOR THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID.

PROPOSED PHASING DIAGRAM WITH TEMPORARY SIGNAL



* – INCLUDES TEMPORARY SIGNAL

NO	DESCRIPTION	DATE
	REVISIONS	

Checked By: KNB
Drawn By: BGL
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MAINTENANCE OF TRAFFIC NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X
BID PAC: X

SHEET
C0300

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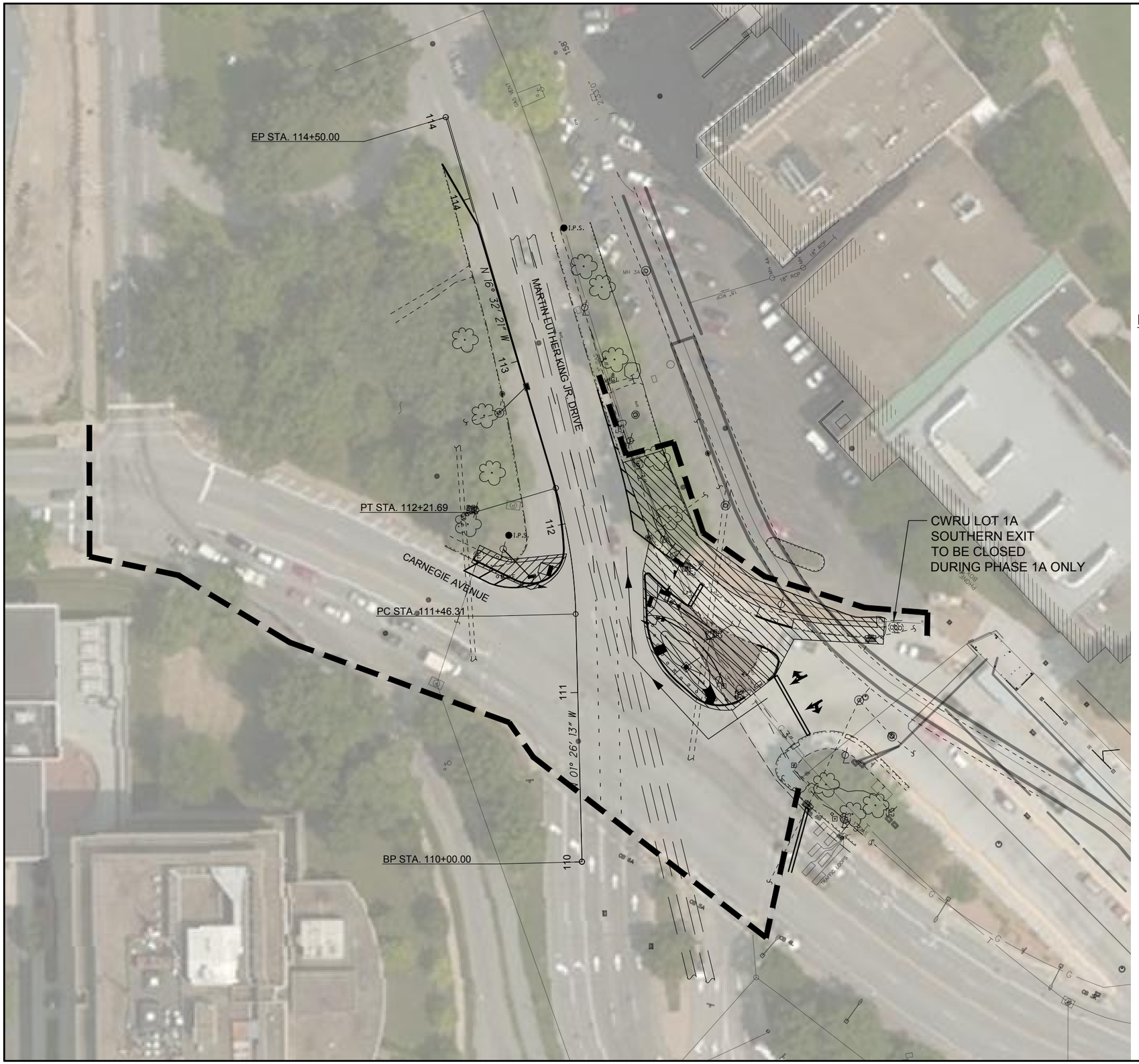

PHASE 1

CONSTRUCTION OF ISLAND AND PEDESTRIAN ROUTE. ALL WORK IN PHASE 1 (PHASE 1A AND PHASE 1B COMBINED) TO BE COMPLETED DURING ONE 45 DAY OUTAGE CONCURRENT WITH SUMMER BREAK/SESSION FOR CMSD JOHN HAY HIGH SCHOOL, CMSD SCHOOL FOR THE ARTS AND CASE WESTERN RESERVE UNIVERSITY.

3 LANES OF MLK NB SHALL BE MAINTAINED AT ALL TIMES. MINIMUM LANE WIDTH IS 11'.

SEE SHEET C0300 FOR ADDITIONAL REQUIREMENTS.

LEGEND

- GCRTA BUS ROUTE DETOUR
- PEDESTRIAN DETOUR
- PHASE 1A WORK ZONE
- PHASE 1B WORK ZONE

NO.	DESCRIPTION	DATE
	REVISIONS	

PLAN AND HORIZONTAL SCALE IN FEET
0 30' 60'

Checked By: DAB | Drawn By: MKS | Approved By: KNB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

RTA GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO
MARY KATHERINE BOSLEY
E-69748
REGISTERED PROFESSIONAL ENGINEER

MAINTENANCE OF TRAFFICE - PHASE 1

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0301

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PHASE 2

CONSTRUCTION OF WEST SIDE RELOCATED CURB LINE, PAVEMENT REMOVAL, AND DRAINAGE STRUCTURE.

3 LANES OF MLK NB SHALL BE MAINTAINED AT ALL TIMES. MINIMUM LANE WIDTH IS 11'.

SEE SHEET C0300 FOR ADDITIONAL REQUIREMENTS.

LEGEND

PHASE 2 WORK ZONE

NO.	DESCRIPTION	DATE
	REVISIONS	

PLAN AND HORIZONTAL SCALE IN FEET
0 30' 60'

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO
MARY KATHERINE BOSTIC E-80748
REGISTERED PROFESSIONAL ENGINEER

MAINTENANCE OF TRAFFIC - PHASE 2

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ	BID PAC
XX-X	X

SHEET
C0302

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END PR. CURB
STA. 114+24.12', 9.79' LT
MATCH EX. CURB

5:1 TAPER

STA. 113+83.80, ℄ MLK JR. DR

REMOVE EX. CONCRETE WALK
FROM BACK OF CURB TO
ASPHALT BIKE PATH

PR. CITY OF CLEVELAND CB-1
STA. 112+84.01, ℄ MLK JR. DR.
(SEE SHEET C0600)

PR. 12" TYPE C,
CITY OF CLEVELAND VCP (706.08)

EX. CATCH BASIN (RECONSTRUCT TO GRADE
REPLACE TOP WITH PARK STYLE GRATE AND FRAME)
STA. 112+84.01, 14.46' LT
EX. T/G = 678.87
PR. T/G = 679.50
EX. 12" INV. (S) = 675.72

EX. MANHOLE (TO REMAIN)
STA. 112+73.72, 19.38' LT
(SEE SHEET C0600)

EX. CURB
(TO BE REMOVED)

PT STA. 112+21.69

PR. CURB RAMP

PR. WALK

EX. STRAIN POLE (TO REMAIN)

EX. WALK (TO BE REMOVED)

BEGIN PR. CURB
STA. 111+88.07, 57.00' LT

CARNEGIE AVENUE

CURVE 1

PC STA. 111+46.31

BP STA. 110+00.00

N 16° 32' 21" W

113

112

111

110

N 01° 26' 13" W

MARTIN LUTHER KING JR. DRIVE

I.P.S.

DOAN BROOK CULVERT

40.0'

42.1'

VARIES
7.0' TO 0'

EX. 60" RAW WATER MAINS

EX. CATCH BASIN (FILLED WITH CONCRETE)
STA. 111+84.24, 46.62' RT
INVERT INFORMATION UNKNOWN

EX. 12" STM. (FROM RECORD)

EX. POLE (TO REMAIN)

PR. WALK EXTENSION

EX. MANHOLE (TO REMAIN)
STA. 111+92.85, 95.03' RT
T/C = 681.38
EX. 48" INV. (NE) = 667.68
EX. 48" INV. (SW) = 667.88

PR. CURB RAMP, WALK, AND CURB
EX. WALK (TO BE REMOVED)

PR. WALK EXTENSION

END PR. CURB
STA. 111+48.77, 66.74' RT

PR. BIORETENTION CELL

END PR. CURB
STA. 111+42.21, 106.46 RT

EX. LIGHT POLE (TO REMAIN)

PR. WALK AND CURB
EX. CURB RAMP (TO BE REMOVED)

PR. MODIFIED CITY OF CLEVELAND CATCH BASIN CB-1
(SEE SHEETS C0600 - C0601)
STA. 111+13.36, 64.34' RT

BEGIN PR. CURB
STA. 111+34.77, 127.34' RT

END PR. CURB
STA. 111+25.33, 106.91' RT

EX. UNDERGROUND ELECTRICAL (TO REMAIN)

EX. CURB RAMP AND SIDEWALK
(TO BE REMOVED)

PR. 12" TYPE C,
CITY OF CLEVELAND VCP (706.08)

EX. TELECOM. DUCTBANK (TO REMAIN)

EX. 3" GAS (TO REMAIN)

BEGIN PR. CURB
STA. 110+04.27, 112.70' RT

EX. CURB RAMP (TO REMAIN)

EX. LIGHT POLE (TO REMAIN)

EX. SIGNAL POLE (TO REMAIN)

BEGIN PR. CURB
STA. 110+94.69', 98.57' RT

EX. CURB (TO BE REMOVED)

TIE PR. UNDERDRAIN TO
PR. CATCH BASIN USING
6" TYPE F CONDUIT
@ MIN. 1.00% SLOPE

PR. FORMED CURB CUT
WITH RIVER ROCK RCP

PR. BOLLARD (TYP.)
SEE DETAIL SHEET C0800

PR. FORMED CURB CUT
WITH RIVER ROCK RCP

CURVE 1
P.I.= STA. 111+84.22
D = 15° 06' 08"
Dc = 20° 02' 01"
R = 286.00'
T = 37.91'
L = 75.39'
E = 2.50
C = 75.17
C. B. = N 8° 59' 17" W

NOTES

1. AT EACH LOCATION WHERE PROPOSED CURB MEETS EXISTING CURB, TIE EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN.

NO	REVISIONS DESCRIPTION	DATE

0 20' 40'
PLAN AND HORIZONTAL SCALE IN FEET

Checked By: KNB | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO · MARY KATHERINE BOLAND · E-80748 · REGISTERED PROFESSIONAL ENGINEER

SITE PLAN

CARNEGIE AVENUE/MLK JR. DRIVE
INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0400

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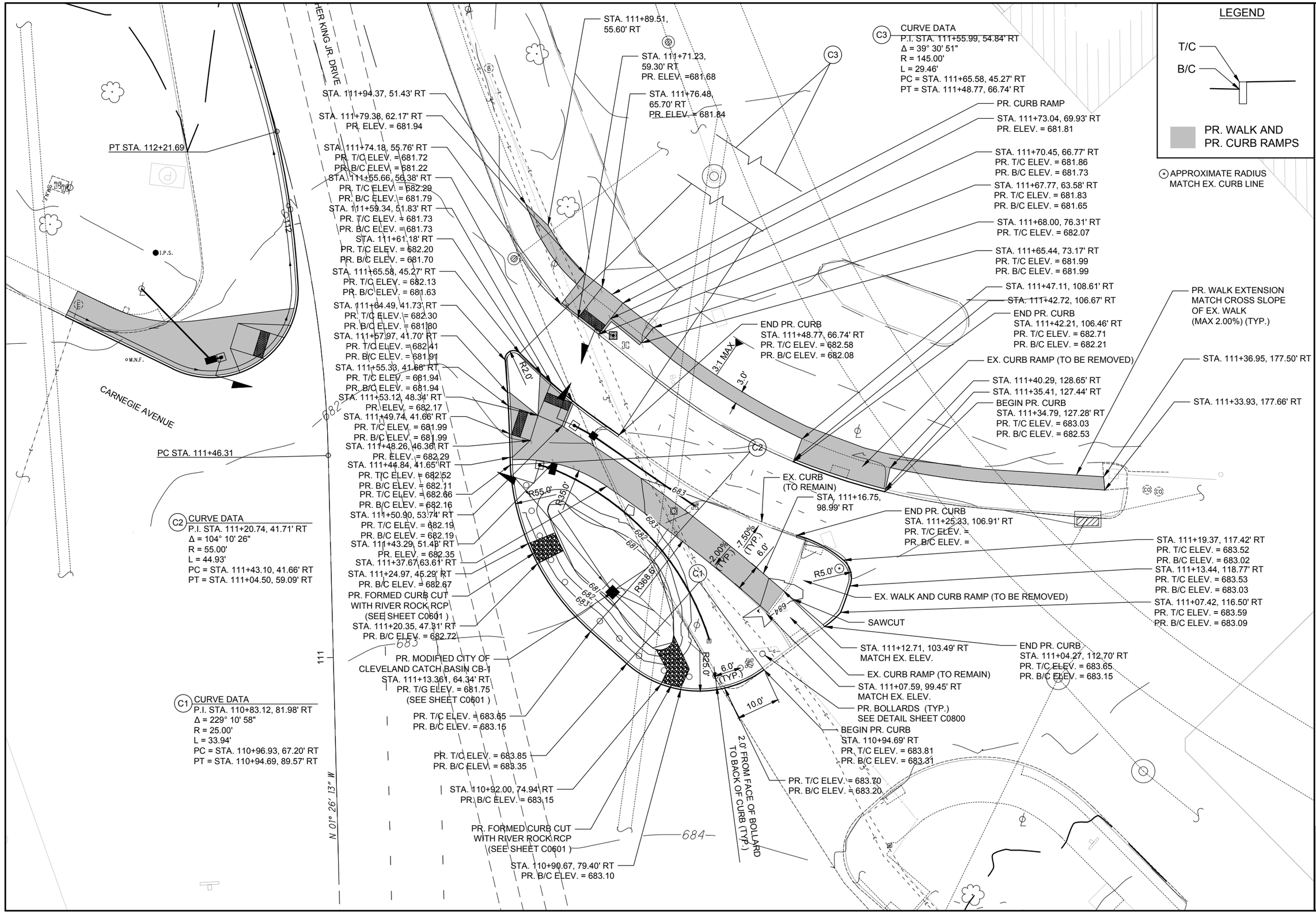

NO	DESCRIPTION	REVISIONS	DATE

PLAN AND HORIZONTAL SCALE IN FEET
0 10' 20'

Checked By: KNB | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO — MARY KATHERINE BOWLIN — E-80748 — REGISTERED PROFESSIONAL ENGINEER

INTERSECTION DETAIL

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0500

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LEGEND

T/C

B/C

PR. WALK AND
PR. CURB RAMPS

MATCH LINE THIS SHEET

PR. CITY OF CLEVELAND CB-1
STA. 112+84.01, ℄ MLK JR. DR.
PR. T/G = 679.39
12" INV. (SW) = 674.56

EX. CATCH BASIN (RECONSTRUCT TO GRADE
REPLACE TOP WITH PARK STYLE GRATE AND FRAME)
EX. 112+84.01, 14.46' LT
PR. T/G = 679.50
EX. T/G = 678.87
EX. 12" INV. (S) = 675.72

EX. MANHOLE (TO REMAIN)
STA. 112+73.72, 19.38' LT
PR. T/C = 679.69
EX. T/C = 679.69
EX. 12" INV. (N) = 675.74
EX. 12" INV. (W) = 674.34
PR. 12" INV. (NE) = 674.34

PR. T/C ELEV. = 679.42
PR. B/C ELEV. = 678.92

PR. T/C ELEV. = 679.59
PR. B/C ELEV. = 679.09

PR. T/C ELEV. = 679.75
PR. B/C ELEV. = 679.25

PR. T/C ELEV. = 679.91
PR. B/C ELEV. = 679.41

PR. T/C ELEV. = 680.08
PR. B/C ELEV. = 679.58

PR. T/C ELEV. = 680.25
PR. B/C ELEV. = 679.75

PR. T/C ELEV. = 680.42
PR. B/C ELEV. = 679.92

PR. T/C ELEV. = 680.58
PR. B/C ELEV. = 680.08

PR. T/C ELEV. = 680.75
PR. B/C ELEV. = 680.25

PR. T/C ELEV. = 680.92
PR. B/C ELEV. = 680.42

PR. T/C ELEV. = 681.05
PR. B/C ELEV. = 680.55

PR. T/C ELEV. = 681.26
PR. B/C ELEV. = 680.76

PR. T/C ELEV. = 681.46
PR. B/C ELEV. = 680.96

PR. T/C ELEV. = 681.65
PR. B/C ELEV. = 681.15

PR. T/C ELEV. = 681.84
PR. B/C ELEV. = 681.34

STA. 111+79.25, 18.13' LT
PR. ELEV. = 682.19

STA. 111+80.94, 4.91' LT
PR. T/C ELEV. = 681.95
PR. B/C ELEV. = 681.45

STA. 111+76.93, 6.28' LT
PR. T/C ELEV. = 681.97
PR. B/C ELEV. = 681.47

STA. 111+74.41, 8.05' LT
PR. T/C ELEV. = 681.64
PR. B/C ELEV. = 681.64

STA. 111+69.89, 13.05' LT
PR. T/C ELEV. = 681.52
PR. B/C ELEV. = 681.52

C5 CURVE DATA
P.I. STA. 112+09.30, 0.27' RT
Δ = 28° 38' 36"
R = 200.00'
L = 46.65'
PC = STA. 111+86.00, 3.22' LT
PT = STA. 112+32.73, ℄ MLK JR. DR.

PT STA. 112+21.69

R200.0'

10.0' (TYP)

STA. 111+88.41, 46.24' LT

STA. 111+94.55, 53.13' LT

I.P.S.

R35.0'

C4

C5

BEGIN CURB
STA. 111+88.07, 57.00' LT
PR. T/C ELEV. = 681.35
PR. B/C ELEV. = 680.85

PR. T/C ELEV. = 681.41
PR. B/C ELEV. = 680.91
STA. 111+81.40, 27.61' LT

PR. T/C ELEV. = 681.67
PR. B/C ELEV. = 681.17

PR. T/C ELEV. = 681.79
PR. B/C ELEV. = 681.29

STA. 111+73.40, 20.62' LT
PR. ELEV. = 682.07

PR. T/C ELEV. = 681.91
PR. B/C ELEV. =681.41

STA. 111+67.19, 19.05' LT
PR. T/C ELEV. = 681.98
PR. B/C ELEV. = 681.48

C4 CURVE DATA
P.I. STA. 111+51.54, 4.86' LT
Δ = 286° 28' 43"
R = 20.00'
L = 41.46'
PC = STA. 111+69.91, 34.25' LT
PT = STA. 111+86.00, 3.22' LT

PC STA. 111+46.31

CARNEGIE AVENUE

MARTIN LUTHER KING JR. DRIVE

EX. GCRTA CEDAR-UNIVERSITY STATION
BUS SLIP LANE

STA. 114+24.12, 9.79' LT
MATCH EX. T/C AND EX. B/C ELEVATIONS

5:1 TAPER

STA. 113+83.80, ℄ MLK JR. DR.
MATCH EX. B/C ELEVATION
WITH 6" CURB

I.P.S.

PR. T/C ELEV. = 678.76
PR. B/C ELEV. = 678.26

PR. T/C ELEV. = 678.85
PR. B/C ELEV. = 678.35

PR. T/C ELEV. = 678.98
PR. B/C ELEV. = 678.48

PR. T/C ELEV. = 679.21
PR. B/C ELEV. = 678.71

MATCH LINE THIS SHEET

NO.	REVISIONS DESCRIPTION	DATE

PLAN AND HORIZONTAL SCALE IN FEET
0 10' 20'

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO
MARY KATHERINE BOLAS
E-90748
REGISTERED PROFESSIONAL ENGINEER

INTERSECTION DETAIL

CARNEGIE AVENUE/MLK JR. DRIVE
INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0501

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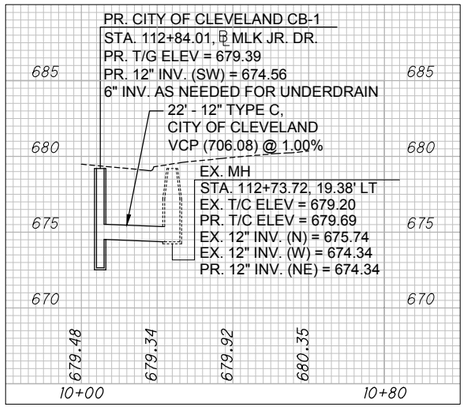

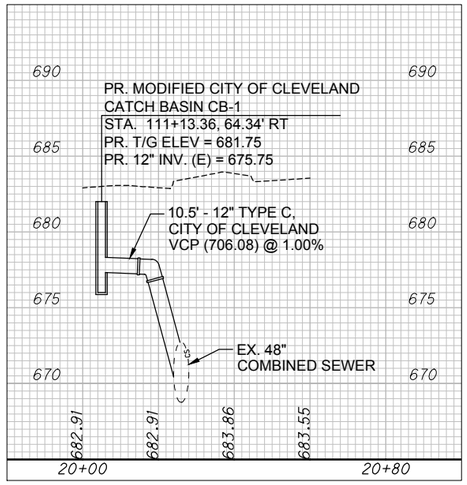

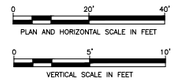

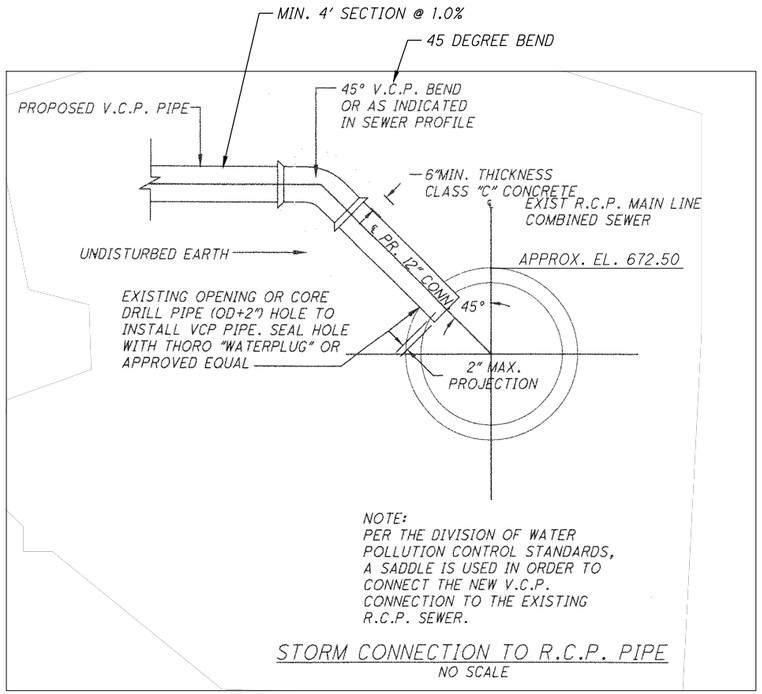

STORM CONNECTION TO R.C.P. PIPE
NO SCALE

NOTES:

THE CONTRACTOR SHALL CONNECT TO THE 48" MAIN AS DESCRIBED IN THE DETAIL ON THIS SHEET. THE REQUIREMENTS OF WPC AND THE CITY OF CLEVELAND D-SPECIFICATIONS SHALL APPLY TO THIS WORK. THE CONTRACTOR SHALL CONTACT ELIE RAMY AT 216-664-2756 A MINIMUM OF 10 WORKING DAYS PRIOR TO CONSTRUCTION OF THIS CONNECTION TO ALLOW WPC TO HAVE AN INSPECTOR PRESENT IF DESIRED.

ALL CONDUIT AND BENDS SHALL BE EXTRA STRENGTH VITRIFIED CLAY PIPE (VCP), ASTM C-700 ES, WITH PREMIUM JOINTS CONFORMING TO ODOT CM&S 706.08.

THE ORIGINAL CONSTRUCTION PLANS FOR THE EXISTING 48" SEWER HAVE BEEN PROVIDED. THE CONTRACTOR SHALL EXAMINE THE AVAILABLE PLANS TO DETERMINE THE MEANS AND METHODS NECESSARY TO MAKE THE CONNECTION.

NO.	DESCRIPTION	DATE
	REVISIONS	

Checked By: KNB
Drawn By: JSB
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO · MARY KATHERINE BOSLEY · E-80174 · REGISTERED PROFESSIONAL ENGINEER

STORM SEWER PROFILE AND DETAILS

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X
BID PAC: X

SHEET
C0600

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THIS PLAN UTILIZES A BIORETENTION CELL AS A BMP FOR POST-CONSTRUCTION STORMWATER TREATMENT. CONSTRUCT

CONSTRUCT BIORETENTION CELL AFTER ALL CONTRIBUTING DRAINAGE AREAS ARE AT LEAST 70% STABILIZED TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND TO THE SATISFACTION OF THE ENGINEER. DO NOT USE THE BIORETENTION CELL AS TEMPORARY SEDIMENT CONTROL FACILITIES DURING CONSTRUCTION ACTIVITIES.

DO NOT OPERATE HEAVY EQUIPMENT WITHIN THE PERIMETER OF BIORETENTION CELL FACILITY DURING EXCAVATION, UNDERDRAIN PLACEMENT, BACKFILLING, PLANTING OR MULCHING OF THE FACILITY.

NOTES:

CATCH BASIN: UNLESS NOTED OTHERWISE THE CATCH BASIN SHALL BE CONSTRUCTED PER ODOT STANDARD CONSTRUCTION DRAWING (SCD) NUMBER CB-1.2 FOR A NO. 2-3 CATCH BASIN WITHOUT SIDE INLETS OR STEPS. THE CONTRACTOR SHALL ALSO COMPLY WITH WPC AND CITY OF CLEVELAND D-SPECIFICATIONS THAT MODIFY ANY ODOT SPECIFICATIONS.

BIORETENTION CELL: CONSTRUCT THE BIORETENTION CELL ONLY AFTER ALL CONTRIBUTING DRAINAGE AREAS ARE STABILIZED AND VEGETATED. DO NOT USE THE BIORETENTION SOIL MIX OF THE ENHANCED DRY SWALES AS TEMPORARY SEDIMENT CONTROL FACILITIES DURING CONSTRUCTION. IF SEDIMENT OR OTHER FINE SOIL PARTICULATES INFILTRATE THE BIORETENTION SOIL MIX PRIOR TO SUBSTANTIAL COMPLETION, CONTRACTOR SHALL REMOVE AND REPLACE BIORETENTION SOIL MIX AT NO ADDITIONAL COST. DO NOT OPERATE HEAVY EQUIPMENT WITHIN THE BIORETENTION CELL DURING EXCAVATION, UNDERDRAIN PLACEMENT, BACKFILLING, PLANTING, OR MULCHING. USE ALL SUITABLE EXCAVATED MATERIAL IN THE WORK. .

EXCAVATE THE BIORETENTION CELL TO THE DIMENSIONS, SIDE SLOPES, AND ELEVATIONS SHOWN ON THE CONTRACT PLANS. MINIMIZE THE COMPACTION OF THE BOTTOM OF BIORETENTION CELL BY THE METHOD OF EXCAVATION.

THE BIORETENTION SOIL SHALL BE A UNIFORM MIX THAT IS FREE OF STONES, STUMPS, ROOTS, OR ANY OTHER OBJECT THAT IS LARGER THAN TWO INCHES. THE SOIL MAY CONSIST OF EXISTING SOIL, FURNISHED SOIL, OR A COMBINATION OF BOTH PROVIDED THAT IT MEETS THE FOLLOWING REQUIREMENTS:

TEXTURE CLASS: LOAMY SAND. HAVING NO LESS THAN 80% SAND AND NO GREATER THAN 10% CLAY CONSIDERING ONLY THE MINERAL FRACTION OF THE SOIL.

PH RANGE: 5.2 - 8.0

SOLUBLE SALTS: 500 PPM MAXIMUM

DECOMPOSED ORGANIC MATTER: 3-5% BY WEIGHT

PHOSPHORUS: 15 TO 60 MG/KG (PPM) AS DETERMINED BY THE MEHLICH III TEST

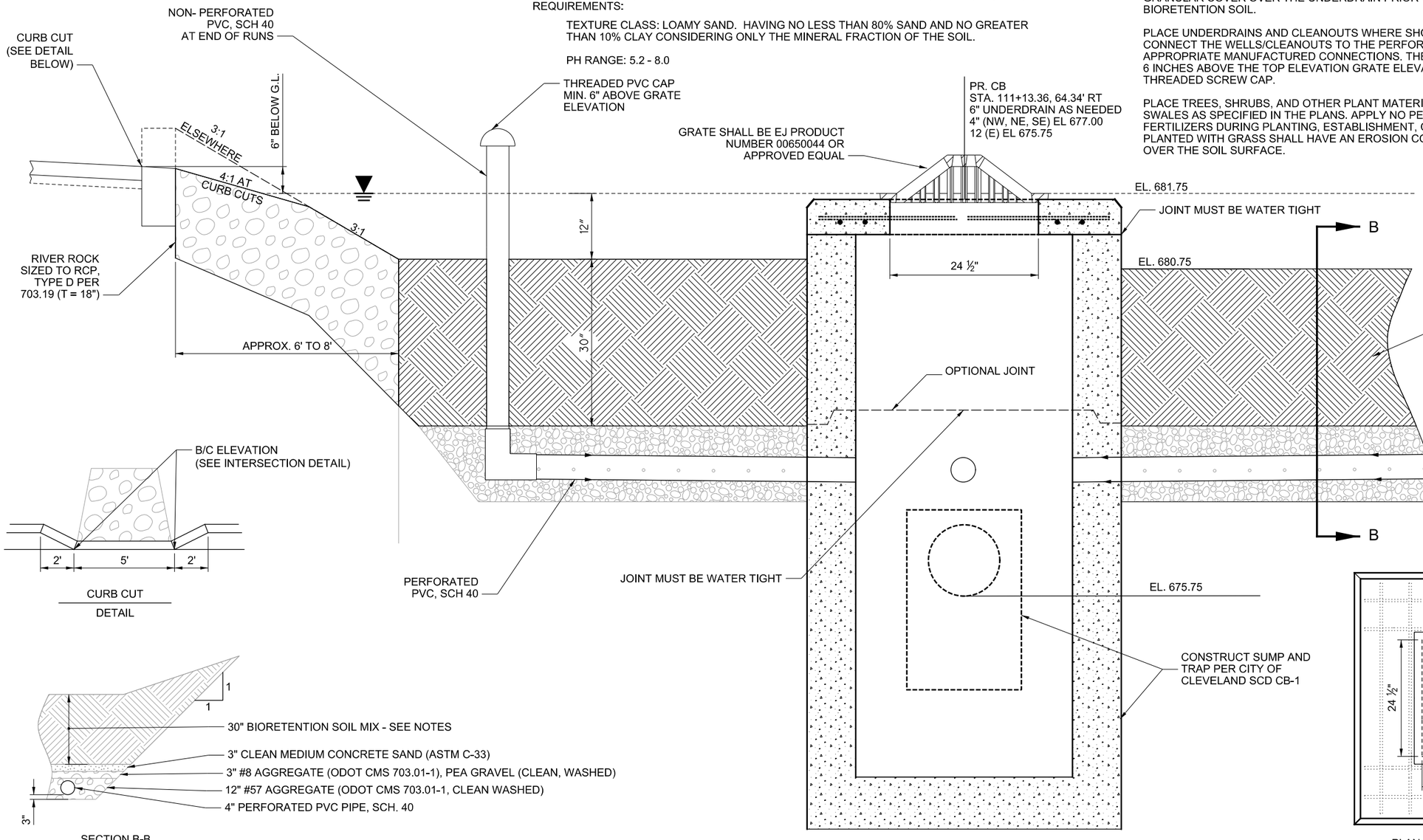
COMPOSITION BY VOLUME
7.5 PARTS SAND - CMS FINE AGGREGATE AS PER 703
1 PART COMPOST - CMS 659.06
1.5 PARTS TOPSOIL - CMS 659.05

THOROUGHLY MIX THE BIORETENTION SOIL PRIOR TOPLACEMENT. TEST AND ADJUST THE PH AS PER CMS 659.02.B. ALL SAND USED SHALL MEET CMS 203.02.H, NATURAL GRANULAR MATERIALS. PLACE THE SOIL IN 12 INCH LIFTS AND CONSOLIDATE BY WATERING UNTIL SATURATED. THE CONTRACTOR SHALL ANTICIPATE 10% OF ADDITIONAL VOLUME FOR ANTICIPATED SETTLEMENT OF SOIL MIX. ELEVATIONS SHOWN FOR TOP OF SOIL MIX ARE FINAL POST SETTLEMENT, AN ADDITIONAL 3 INCHES OF BIORETENTION SOIL MIX SHALL BE PLACED FOR ANTICIPATED SETTLEMENT.

CONSTRUCT THE UNDERDRAIN SYSTEM AS PER CMS 605 USING SCHEDULE 40 PVC PIPE. PLACE THE GRANULAR BACKFILL MATERIAL AS DETAILED IN SECTION B-B BELOW TO THE INVERT OF THE BIORETENTION SOIL. ENSURE A MINIMUM OF 2 INCHES OF GRANULAR COVER OVER THE UNDERDRAIN PRIOR TO PLACEMENT OF THE BIORETENTION SOIL.

PLACE UNDERDRAINS AND CLEANOUTS WHERE SHOWN IN THE LANDSCAPE PLANS. CONNECT THE WELLS/CLEANOUTS TO THE PERFORATED UNDERDRAIN WITH THE APPROPRIATE MANUFACTURED CONNECTIONS. THE WELLS/CLEANOUTS SHALL EXTEND 6 INCHES ABOVE THE TOP ELEVATION GRATE ELEVATION. CAP THE CLEANOUTS WITH A THREADED SCREW CAP.

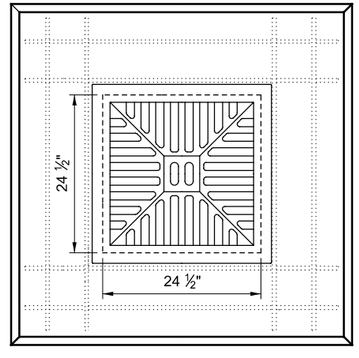
PLACE TREES, SHRUBS, AND OTHER PLANT MATERIALS SPECIFIED FOR ENHANCED DRY SWALES AS SPECIFIED IN THE PLANS. APPLY NO PESTICIDES, HERBICIDES, AND FERTILIZERS DURING PLANTING, ESTABLISHMENT, OR MAINTENANCE. AREAS IN CELL PLANTED WITH GRASS SHALL HAVE AN EROSION CONTROL MAT TYPE B PER CMS 671 OVER THE SOIL SURFACE.



CURB CUT
DETAIL

SECTION B-B
NOT TO SCALE

SECTION A-A
NOT TO SCALE



PLAN VIEW CATCH BASIN TOP
NOT TO SCALE

NO.	REVISIONS DESCRIPTION	DATE

Checked By: KNB
Drawn By: BGL
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO — MARY KATHERINE BOYLE — E-80748 — REGISTERED PROFESSIONAL ENGINEER

BIORETENTION CELL DETAIL

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0601

SHEET FOR REFERENCE ONLY

NEW 15" SANITARY SEWER AT STEARNS RD.

NEW 18" SANITARY SEWER AT EAST BLVD.

NOTE: REPAVE OVER SEWER TRENCH AS PER DWG. 449 M.

VITRIFIED PIPE AS PER SEC. O-5.1
REINFORCED CONCRETE PIPE AS PER A.S.T.M. SPEC'S. I CTG-6ST, CLASS III, WALL B.
NEW 48" REINF. CONC. PIPE SHALL HAVE "O-RING" RUBBER GASKET JOINTS.
ALL EXISTING SEWER CONNECTIONS ENCOUNTERED ARE TO BE RECONNECTED TO THE EXISTING SEWERS UNLESS OTHERWISE NOTED.

FOR DETAILS OF CEDAR AVE. WIDENING & PROPOSED BUS LANE, SEE CORRESPONDING PAVING PLANS.

EXISTING STREET CAR TRACKS NOT SHOWN IN BUS LANE, STEARNS RD. & CEDAR AVE.

APPROVED:

DIRECTOR OF COMMUNITY DEVELOPMENT — DATE

COMMISSIONER OF REDEVELOPMENT — DATE

DETAIL OF 48" CONC. SEWERS IN TUNNEL
NO SCALE

NOTE: IF TUNNEL LINER PLATES ARE USED, ALL VOIDS BETWEEN THE PLATES AND UNDISTURBED EARTH ARE TO BE COMPACTLY FILLED WITH 1:4 PORTLAND CEMENT GROUT.

NOTE CORRECTNESS OF UNDERGROUND INFORMATION HEREON SHOWN IS NOT GUARANTEED, AND MUST BE USED AT THE BIDDERS OWN RISK.

CITY OF CLEVELAND
ROBERT J. KELLY, DIRECTOR OF PUBLIC SERVICE
ENGINEERING DIVISION

CEDAR AVE. STORM SEWER-FAIRHILL RD. TO EAST BLVD. WITH OUTLET TO DOAN BROOK
DOAN VALLEY INTERCEPTING SEWER (SAN.) RELOCATION - EAST BLVD. TO STEARNS RD.

SCALE	HORIZ. 1" = 50' / VERT. 1" = 10'	DRAFTSMAN	LEG. J.C. / CONN. H. POWER	DATE	3/21/67

LEG. PLANS APPROVED BY		CONST. PLANS APPROVED BY	
ENG. OF SEWER DES.	DATE	ENG. OF SEWER DES.	DATE
CHIEF DRAFTSMAN	DATE	CHIEF DRAFTSMAN	DATE 4/5/67
ASST. CONN. OF ENG.	DATE	CONN. OF ENG.	DATE 5/11/67
CONN. OF ENG.	DATE	CONN. OF CONST.	DATE

REC.	SYMBOL	DATE	APPROVED

CONN. OF ENG. 7-28-67 DATE — FILE NO. A-968

SHEET 1 OF 2

PREL. LEV. NOTES—BK. 220 P. 1 — FRONTAGE MAP NO.
STAKING NOTES—BK. P. — UNDERGROUND DATE
FINAL LEVEL NOTES—BK. P. — CONNECTIONS DATE

REVISIONS		
NO.	DESCRIPTION	DATE

Checked By:
Drawn By: BGL
Approved By:
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

RTA GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO — MARY KATHERINE DOBLER — E-60748 — REGISTERED PROFESSIONAL ENGINEER

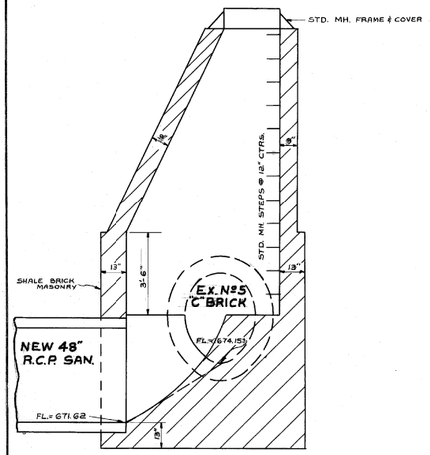
STORM SEWER RECORD DRAWING

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

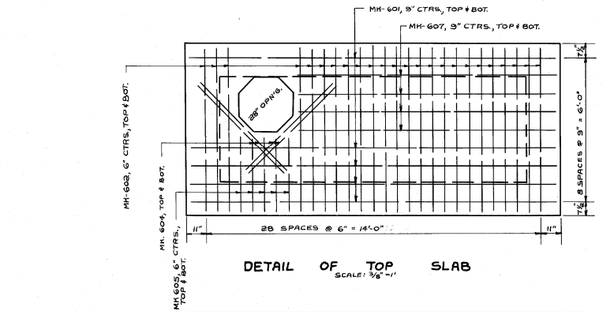
RTA PROJ XX-X — BID PAC X

SHEET C0602

SHEET FOR REFERENCE ONLY



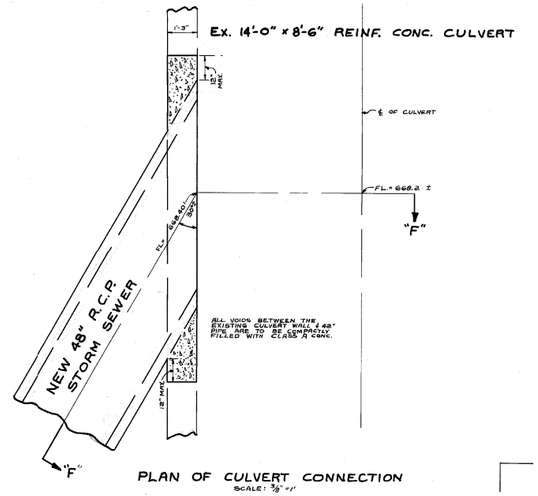
SECTION "C-C"
SCALE: 3/8"=1'



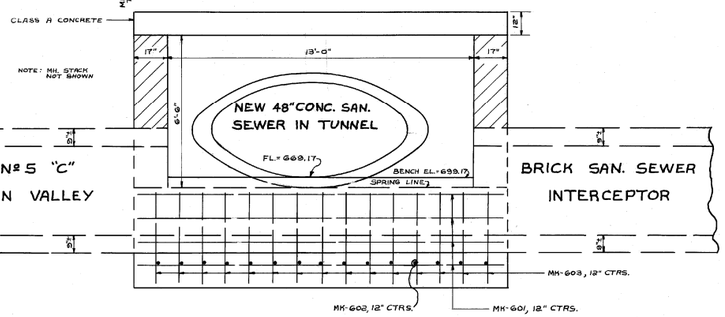
DETAIL OF TOP SLAB
SCALE: 3/8"=1'

BAR LIST

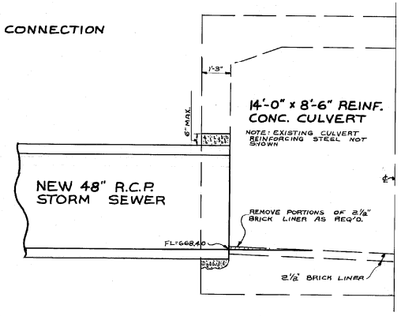
MH	SIZE	DETAIL	LGTH.	No. REQ'D.
601	3/8	STRAIGHT	15'-6"	23
602	"	"	7'-0"	63
603	"	"	3'-11"	30
604	"	"	5'-0"	8
605	"	"	3'-3"	10
606	"	DOWEL	1'-6"	28
607	"	STRAIGHT	11'-0"	8



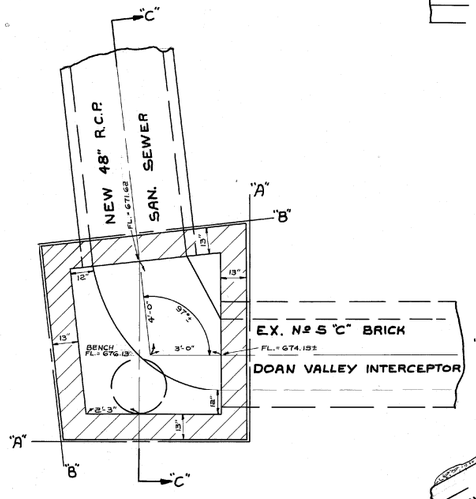
PLAN OF CULVERT CONNECTION
SCALE: 3/8"=1'



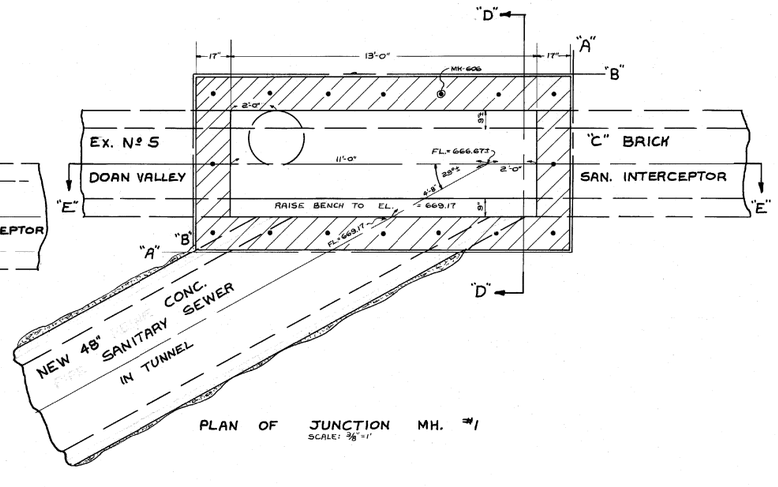
SECTION "E-E"
SCALE: 3/8"=1'



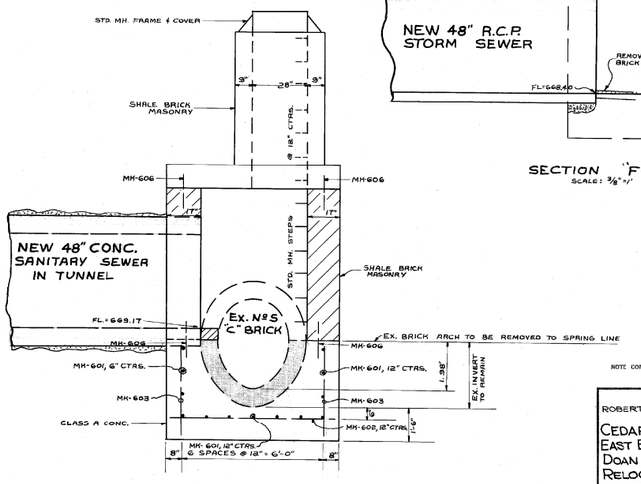
SECTION "F-F"
SCALE: 3/8"=1'



PLAN OF SPECIAL MH. #1
SCALE: 3/8"=1'



PLAN OF JUNCTION MH. #1
SCALE: 3/8"=1'



SECTION "D-D"
SCALE: 3/8"=1'

NOTE CORRECTNESS OF UNDERGROUND INFORMATION HEREON SHOWN IS NOT GUARANTEED, AND MUST BE USED AT THE BIDDERS OWN RISK.

CITY OF CLEVELAND
ROBERT J. KELLY
DIRECTOR OF PUBLIC SERVICE
ENGINEERING DIVISION

CEDAR AVE. STORM SEWER-FAIRHILL RD. TO EAST BLVD. WITH OUTLET TO DOAN BROOK DOAN VALLEY INTERCEPTING SEWER (SAN.) RELOCATION-EAST BLVD. TO STEARNS RD.

SCALE: NORE... DRAFTSMAN... DATE...
VERT... LEG. CONST. H. POHLER DATE...

LEG. PLANS APPROVED BY	CONST. PLANS APPROVED BY
	Harold Pohler ENG. OF SEWER DES. DATE
ENG. OF SEWER DES. DATE	E. E. Strange 4/5/67 CHIEF DRAFTSMAN DATE
CHIEF DRAFTSMAN DATE	Harry P. Wellborn 5/11/67 ENG. OF CONST. DATE
ASS'T COMM. OF ENG. DATE	Robert Meeker 7-27-67 ASS'T COMM. OF ENG. DATE
	COMM. OF ENG. DATE
	Edward Kelly Jr. 7-28-67 COMM. OF ENG. DATE

REVISED	SYMBOL	DATE	APPROVED

FILE NO. A-968

PREL. LEV. NOTES—BK.... P.... FRONTAGE MAP NO....
STAKING NOTES—BK.... P.... UNDERGROUND.... DATE....
FINAL LEVEL NOTES—BK.... P.... CONNECTIONS.... DATE....

SHEET 2 of 2

REVISIONS

NO.	DESCRIPTION	DATE

Checked By:
Drawn By: BGL
Approved By:
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

RTA GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

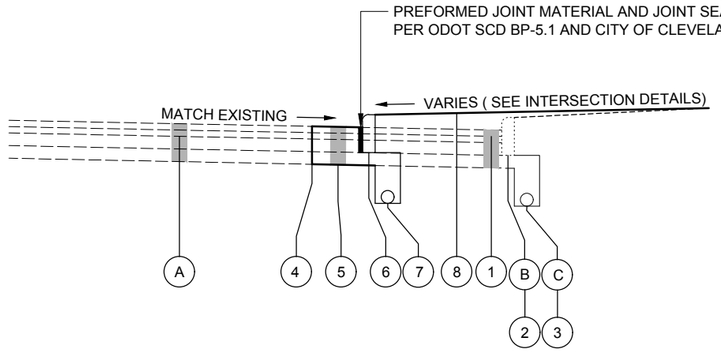
STATE OF OHIO — MARY KATHERINE REBHOLZ — E-80748 — REGISTERED PROFESSIONAL ENGINEER

STORM SEWER RECORD DRAWING

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0603



PAVEMENT REPAIR/CURB INSTALLATION DETAIL

FOR ALL PROPOSED CURB LOCATIONS

EXISTING

- (A) VARIABLE DEPTH PAVEMENT, COMPOSITION AND THICKNESS UNKNOWN
- (B) CURB
- (C) UNDERDRAIN

PROPOSED

- (1) ITEM 202 - PAVEMENT REMOVAL
- (2) ITEM 202 - CURB REMOVAL
- (3) ITEM 202 - UNDERDRAIN REMOVAL
- (4) ITEM 252 - FULL DEPTH PAVEMENT SAWING
- (5) ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT (MINIMUM WIDTH = 2') PER CITY OF CLEVELAND STANDARD CONSTRUCTION DRAWING PR-1 ON SHEET C0701 . MINIMUM THICKNESSES LISTED ON PR-1 SHALL BE EXCEEDED AS NEEDED TO MATCH ADJACENT EXISTING PAVEMENT COMPOSITION.
- (6) ITEM 609 - CURB, TYPE 6, AS PER PLAN
- (7) ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP, AS PER PLAN
- (8) SEE LANDSCAPE PLANS

NOTES

1. WHERE PROPOSED CURB IS ADJACENT TO EXISTING CONCRETE PAVEMENT, CONTRACTOR SHALL NOT DISTURB ADJACENT EXISTING CONCRETE PAVEMENT, TO GREATEST EXTENT POSSIBLE. IF DISTURBED, MINIMUM REPLACEMENT WIDTH IS 2' AND SHALL FOLLOW CITY OF CLEVELAND SCD PR-1.

NO	DESCRIPTION	DATE

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO — MARY KATHERINE [illegible] — REGISTERED PROFESSIONAL ENGINEER

PAVEMENT REPAIR DETAIL

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X
BID PAC: X

SHEET: C0700

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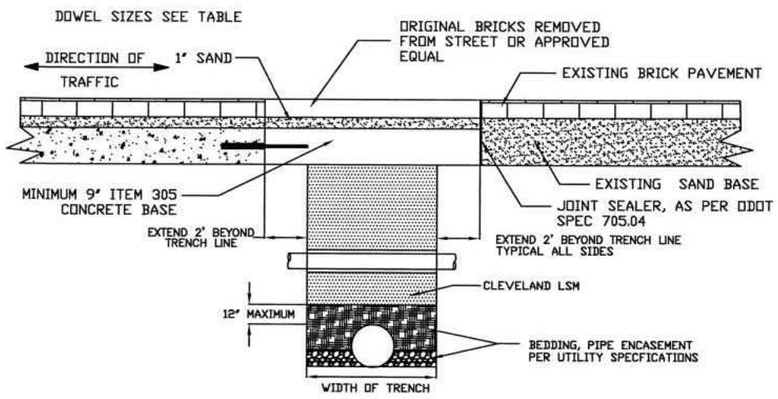
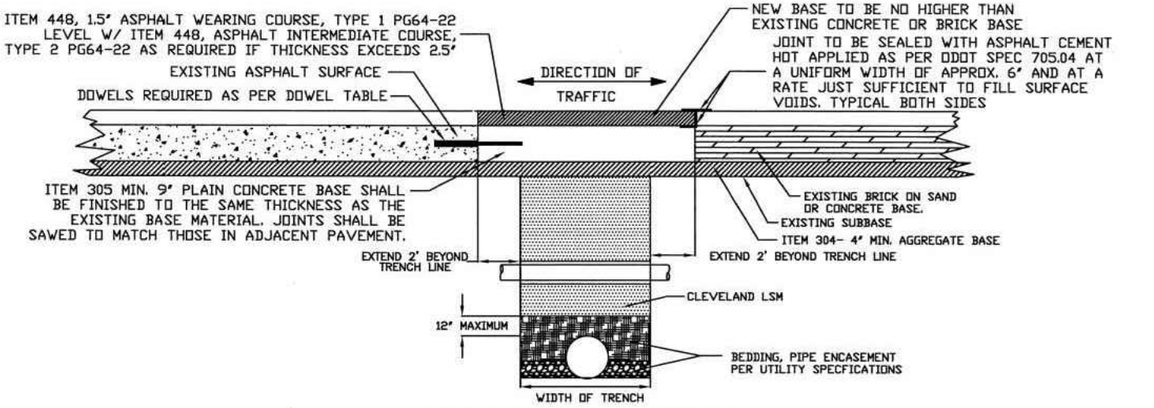
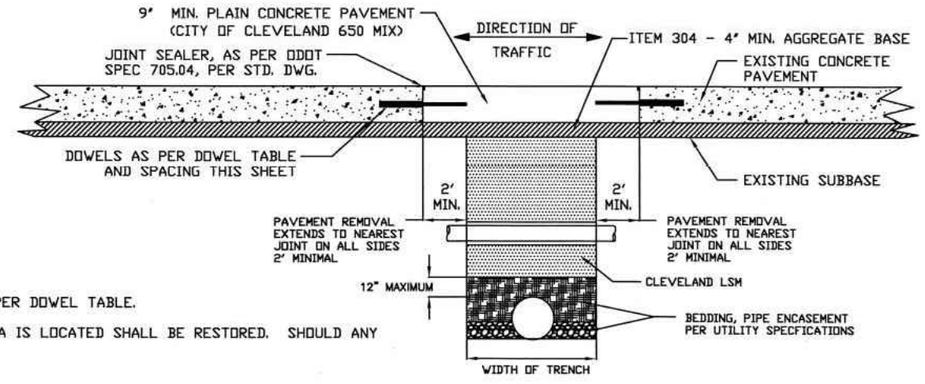


PAVEMENT REPAIR IN BRICK PAVEMENT



ASPHALT ON CONCRETE OR BRICK BASE

DOWEL TABLE	
PAVEMENT THICKNESS	DIAMETER OF DOWELS
8" OR LESS	1"
9"	1 1/8"
10"	1 1/4"
OVER 10"	AS DIRECTED
DOWELS SHALL BE SPACED EVERY 30"	



CONCRETE PAVEMENT

NOTES:

1. ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES. DOWELS SHALL BE REQUIRED, AS PER DOWEL TABLE.
2. CONCRETE REPAVING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE AND/OR SLAB IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE AND/OR SLAB, THAT LANE OR SLAB SHALL ALSO BE REPAVED.
3. EXTEND OVERCUT IN LONGITUDINAL DIRECTION TWO FEET (2') ONTO UNDISTURBED SUBGRADE.
4. ASPHALT RESURFACING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE, THAT LANE SHALL ALSO BE RESURFACED. THE RESURFACING SHALL TAKE PLACE FROM BEGINNING PROJECT TO END PROJECT (I.E. WORK LIMITS). FOR PAVEMENTS WITH A WIDTH OF 40' OR LESS A LANE SHALL BE CONSIDERED 1/2 THE PAVEMENT WIDTH.
5. BRICKS REMOVED FROM A REPAIR SHALL BE STORED IN A SAFE PLACE BY THE CONTRACTOR FOR REUSE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING ANY BRICKS THAT ARE STOLEN OR DAMAGED AT NO COST TO THE CITY.
6. ALL NEW BRICKS SUPPLIED BY THE CONTRACTOR MUST FIRST BE APPROVED BY THE CITY BEFORE THEY ARE USED.
7. SAWCUTTING: ALL PARTIAL BRICKS SHALL BE SAWCUT. FURTHER, NO BRICK WILL BE PERMITTED TO BE CUT, FOR REPLACEMENT, TO A LENGTH LESS THAN ONE-HALF ITS ORIGINAL LENGTH. THIS MAY REQUIRE SAWCUTTING OF ADJACENT UNDISTURBED BRICK(S).
8. THE PERIMETER FACES OF THE EXISTING BASE MATERIAL SHALL BE CUT BACK TO AS NEARLY VERTICAL ORIENTATION AS POSSIBLE. IF SHEARING OF THE ADJACENT BASE RESULTS, THE CONTRACTOR SHALL REMOVE ADDITIONAL BRICK AND BASE AS SHOWN IN THE DETAIL.
9. THE MAXIMUM WIDTH OF A BRICK MORTAR JOINT SHALL BE 1/2" THIS RESTRICTION WILL ALSO APPLY TO THE PERIMETER OF A REPAIR AREA, WHERE THE ROWS MAY NOT BE PARALLEL TO ONE ANOTHER.
10. MORTARING OF JOINTS: ALL JOINTS SHALL BE MORTARED WITH A 50/50 MIXTURE BY VOLUME OF SAND /CEMENT, TO PROVIDE FOR A FLUSH FINISH. THIS MAY REQUIRE MORE THAN ONE APPLICATION; FURTHER MECHANICAL VIBRATION WILL BE REQUIRED FOR COMPACTION.
11. ALL BACKFILL MATERIALS USED UNDER ANY PAVEMENTS SHALL BE CLEVELAND LSM PLACED FROM THE INITIAL ONE FOOT OVER THE TOP OF UTILITIES, TO THE SUBGRADE.
12. TO PREVENT FLOTATION AND ENTRY OF FLOWABLE FILL INTO ANY OTHER AREASCOVER ALL JOINTS IN CLAY PIPE IN THE TRENCH AREA WITH POLYETHYLENE MATERIAL BEFORE POURING FLOWABLE FILL. REPAIR TECHNIQUES SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARD REPAIR PROCEDURES.

REVISED 8/3/09

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE

STREET OPENING REPAIR–SUPPLEMENTAL

NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: [signature] DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO. : PR 1 | SHEET 1/2 | ⑧

NO	DESCRIPTION	DATE
	REVISIONS	

Checked By: —
Drawn By: —
Approved By: —
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

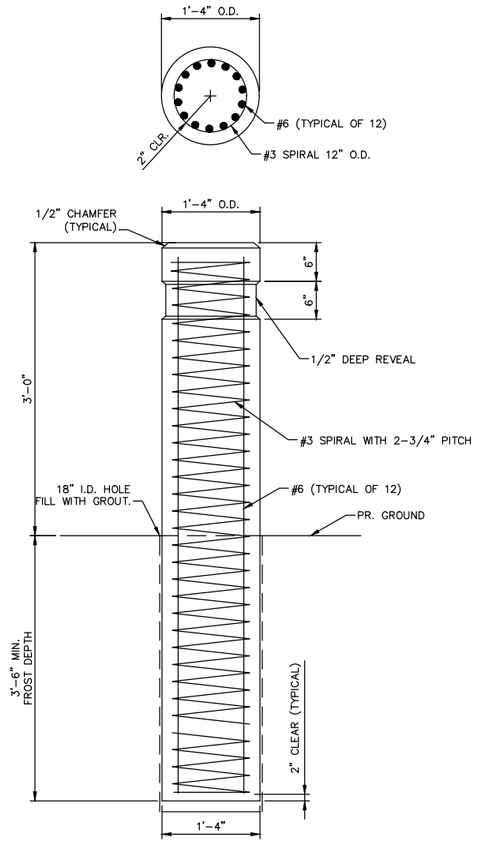
STATE OF OHIO — MARY KATHERINE [illegible] — REGISTERED PROFESSIONAL ENGINEER

PAVEMENT REPAIR DETAIL

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ: XX-X
BID PAC: X

SHEET: C0701



PRECAST BOLLARD

SCALE: NTS

MATERIALS

1. CONCRETE (CMS 515): CLASS C – COMPRESSIVE STRENGTH 4,000 PSI.
2. REINFORCING STEEL, EPOXY COATED (CMS 509): ASTM A615 OR A996 GRADE 60– YIELD STRENGTH 60,000 PSI. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.

FABRICATION

1. REINFORCING STEEL SHALL BE EPOXY COATED PER CMS 709.
2. SPIRALS: AN ADDITIONAL 1 1/2 SHALL BE INCLUDED AT EACH END OF SPIRAL REINFORCEMENT.

GENERAL

1. THE CONTRACTOR SHALL USE EXTREME CARE WHEN PLACING PRECAST BOLLARD SO THAT UNDERGROUND UTILITIES AND SEWERS WILL NOT BE DAMAGED.
2. CONTRACTOR SHALL PERFORM A UTILITY TEST HOLE PER NOTE ON SHEET C0203 FOR EACH PROPOSED BOLLARD LOCATION PRIOR TO INSTALLING ANY BOLLARDS.
3. IF UTILITIES OR OTHER OBSTRUCTIONS PREVENT THE INSTALLATION OF BOLLARDS PER PLAN, NOTIFY ENGINEER AND REVISE ENTIRE BOLLARD LAYOUT TO MAINTAIN CONSISTENT SPACING BETWEEN BOLLARDS AND A MINIMUM SETBACK OF 2' TO THE FACE OF BOLLARD FROM THE BACK OF CURB AND PRESERVE THE GENERAL LOCATION, ARRANGEMENT, AND NUMBER OF BOLLARDS SHOWN IN THE PLANS.

NO	REVISIONS DESCRIPTION	DATE

Checked By: KNB
Drawn By: JSB
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

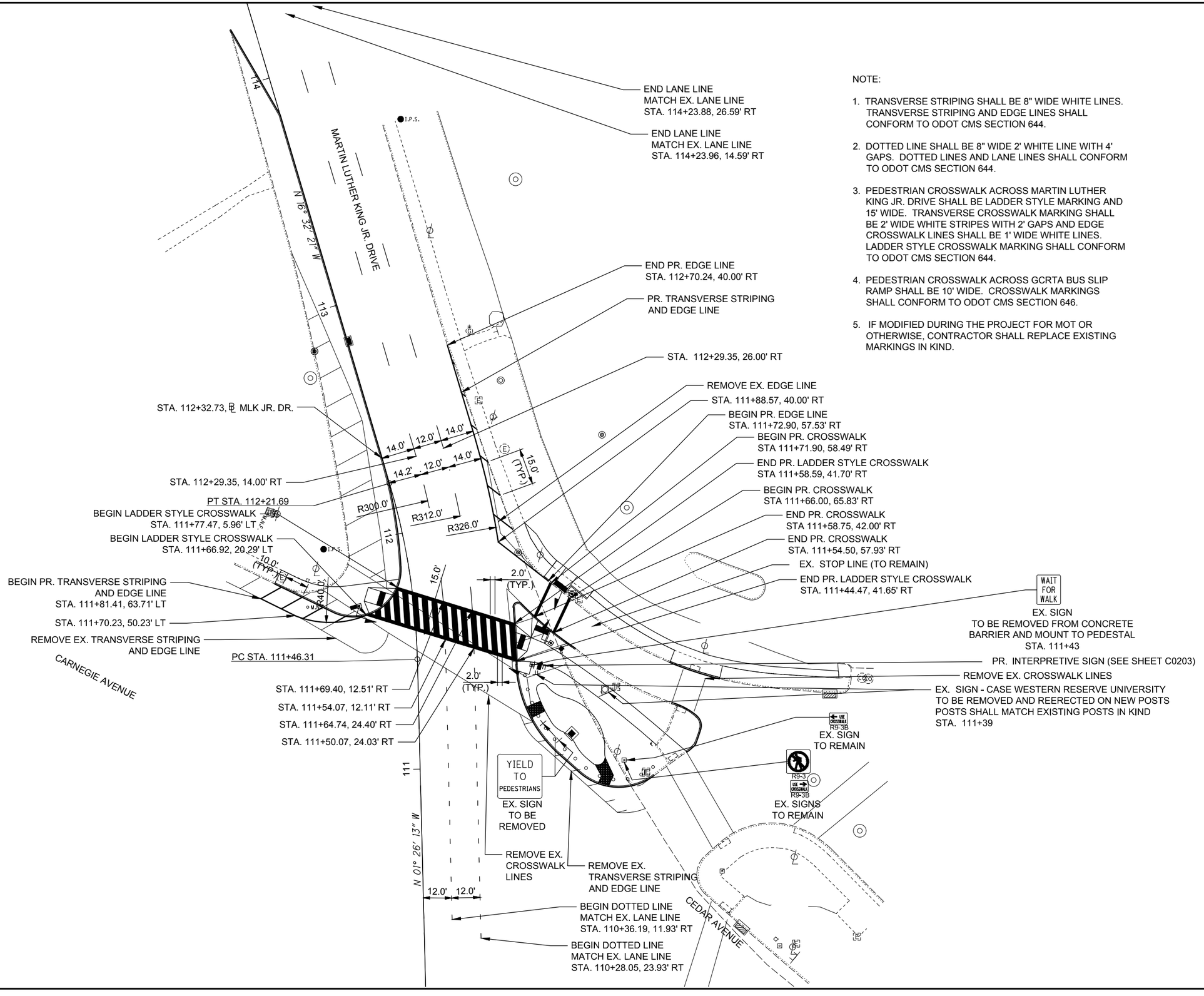
STATE OF OHIO
MARY KATHERINE BOLIN
E-80148
REGISTERED PROFESSIONAL ENGINEER

PRECAST BOLLARD DETAIL

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C0800



NOTE:

1. TRANSVERSE STRIPING SHALL BE 8" WIDE WHITE LINES. TRANSVERSE STRIPING AND EDGE LINES SHALL CONFORM TO ODOT CMS SECTION 644.
2. DOTTED LINE SHALL BE 8" WIDE 2' WHITE LINE WITH 4' GAPS. DOTTED LINES AND LANE LINES SHALL CONFORM TO ODOT CMS SECTION 644.
3. PEDESTRIAN CROSSWALK ACROSS MARTIN LUTHER KING JR. DRIVE SHALL BE LADDER STYLE MARKING AND 15' WIDE. TRANSVERSE CROSSWALK MARKING SHALL BE 2' WIDE WHITE STRIPES WITH 2' GAPS AND EDGE CROSSWALK LINES SHALL BE 1' WIDE WHITE LINES. LADDER STYLE CROSSWALK MARKING SHALL CONFORM TO ODOT CMS SECTION 644.
4. PEDESTRIAN CROSSWALK ACROSS GCRTA BUS SLIP RAMP SHALL BE 10' WIDE. CROSSWALK MARKINGS SHALL CONFORM TO ODOT CMS SECTION 646.
5. IF MODIFIED DURING THE PROJECT FOR MOT OR OTHERWISE, CONTRACTOR SHALL REPLACE EXISTING MARKINGS IN KIND.

NO.	REVISIONS DESCRIPTION	DATE

0 27 40
PLAN AND TOPOGRAPHIC SCALE IN FEET

Checked By: SS | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO MARY KATHERINE CORLETT E-80748 REGISTERED PROFESSIONAL ENGINEER

TRAFFIC CONTROL PLAN

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C0900

TRAFFIC

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS A PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 180 DAYS FOLLOWING COMPLETION OF THE TEN (10) DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS, AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL, AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

CUSTOMARY MANUFACTURER'S GUARANTEES SHALL BE TURNED OVER TO THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF ALL EQUIPMENT.

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM CLEVELAND PUBLIC POWER AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

CITY OF CLEVELAND
CLEVELAND PUBLIC POWER (MELP)
1300 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
ATTN.: CHRIS HIRZEL
PHONE: (216) 664–4245 EXT. 115

THE CONTRACTOR SHALL CONTACT THE CITY OF CLEVELAND DIVISION OF CLEVELAND PUBLIC POWER (MELP) FOR PERMITS, INSPECTION, AND TO SCHEDULE ELECTRICAL HOOKUP FOR TRAFFIC SIGNALS FROM CLEVELAND PUBLIC POWER.

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 FOR CONTACTING THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNALS ARE ACCEPTED BY THE MAINTAINING AGENCY.

VEHICULAR SIGNAL HEAD VERTICAL CLEARANCES

PRIOR TO ACCEPTANCE BY THE CITY, PROVIDE DOCUMENTATION TO THE PROJECT ENGINEER SHOWING THE ACTUAL MEASURED VERTICAL CLEARANCES OF ALL VEHICULAR SIGNAL HEADS.

SHOULD THE VERTICAL CLEARANCE OF ANY VEHICULAR SIGNAL HEAD BE LESS THAN THE ALLOWED MINIMUM, ADJUST EACH NON–CONFORMING SIGNAL HEAD UNTIL THE MINIMUM CLEARANCE CRITERION IS MET, AND RE–DOCUMENT THE MEASUREMENT.

SIGNAL SUPPORTS

DUE TO THE POSSIBILITY OF CONFLICT WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATIONS FOR THESE ITEMS, AND CONSEQUENTLY, THE DESIGN OF THE VARIOUS SUPPORTS, AND/OR ARMS, THE CONTRACTOR SHALL NOT PLACE FINAL ORDERS FOR THESE ITEMS UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED, AND HE HAS RECEIVED, FROM THE ENGINEER, WRITTEN NOTICE TO PROCEED WITH THE ORDERS FOR THESE ITEMS.

IF ANY FOUNDATION LOCATIONS MUST BE ADJUSTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, WHO WILL DETERMINE THE REVISED LOCATIONS AND IF ANY SUPPORT DESIGN CHANGES ARE NECESSARY, IN CONSULTATION WITH THE MAINTAINING AGENCY. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DETERMINING THE REVISED DESIGN. THE ENGINEER WILL SUBSEQUENTLY INFORM THE CONTRACTOR OF ANY CHANGES NECESSARY, AND AUTHORIZE HIM TO ORDER THE SUPPORTS.

THE CONTRACTOR SHALL, WHEN DEVELOPING HIS PROGRESS SCHEDULE, AND THOSE OF HIS SUBCONTRACTORS, ENSURE THAT THE FOUNDATIONS ARE INSTALLED AT THE EARLIEST TIME AS IS FEASIBLE AND PRACTICAL, AND SHALL INCLUDE SUFFICIENT TIME IN THE PROGRESS SCHEDULE FOR THE ORDERING, MANUFACTURE, DELIVERY, AND INSTALLATION OF THESE ITEMS AFTER THE FOUNDATIONS ARE IN PLACE.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) 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 PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
 a. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (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 GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
 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 POINT, 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 COMPATABLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATABLE FOR USE WITH 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 CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
 d. METALLIC CONDUIT MAY BE BONDED TO 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, 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. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.a.I ABOVE.
  III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.a.I ABOVE.
  IV. 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.
 b. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH A MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE A MINIMUM SIZE 4 AWG.

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 GROUNDING CONDUCTOR.
 b. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH.
 a. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH 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 SWITCH.
  I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH 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.

ITEM 632 – SIGNALIZATION, MISC.: FOUNDATION TEST HOLE

IF UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED THAT PRECLUDE THE USE OF THE STANDARD OR ALTERNATE FOUNDATION DESIGNS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COMPLETE INFORMATION REGARDING THE OBSTRUCTION, INCLUDING TYPE (I.E. UTILITY), SIZE, DEPTH, AND LATERAL CLEARANCES TO THE SIDES OF THE FOUNDATION EXCAVATION. THE FOUNDATION HOLE SHALL BE COVERED WITH A STEEL PLATE UNTIL THE ENGINEER DETERMINES IF A NEW FOUNDATION LOCATION WILL BE REQUIRED. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL BACKFILL AND COMPACT THE HOLE AND SHALL RESTORE THE SURFACE TO THE SATISFACTION OF THE ENGINEER.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND OTHER INCIDENTALS, INCLUDING BACKFILL, COMPACTING, AND SURFACE RESTORATION, SHALL BE INCLUDED.

ITEM 632 – VEHICULAR SIGNAL HEAD, (LED), YELLOW, BY SECTION, 12" LENS, 1–WAY, WITH BACKPLATE, AS PER PLAN

SECTION 732.01 OF THE SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

A. SIGNAL HEADS AND VISORS SHALL BE YELLOW AND BE CONSTRUCTED OF INJECTION MOLDED, UV STABILIZED, POLYCARBONATE PLASTIC AND SHALL MEET I.T.E. SPECIFICATIONS.

B. GLASS LENSES SHALL BE USED.

C. PIPE, SPACERS, AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.

D. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

E. SIGNALS SHALL BE ATTACHED TO MAST ARMS USING RIGID MOUNTING FIXTURES AS SHOWN ON TC–85.20 OR ALTERNATE RIGID SIGNAL HEAD MOUNTING DEVICES AS SPECIFIED IN NOTE 5 ON TC–85.20.

F. BACKPLATES SHALL BE BLACK WITH A 2–INCH WIDE YELLOW REFLECTIVE STRIP AROUND THE PERMITER (SEE CMS 732.22).

PROVIDE THE CITY, IN WRITING, THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF THE LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS TO BE USED IN THE TRAFFIC SIGNAL HEADS PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES. THE WORK SHALL INCLUDE COMPLETE UNITS FURNISHED AND INSTALLED, AND WILL INCLUDE ALL SUPPORT AND MOUNTING HARDWARE, CLOSURE CAPS, AND LED UNITS AS SPECIFIED.

NO | DESCRIPTION | REVISIONS | DATE

Checked By: SS
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

RTA GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

SIGNAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C1000

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ITEM 632 – PEDESTAL, BY SIZE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.19 AND 732.15, ALL PEDESTALS ARE TO BE DELIVERED WITH ALL GALVANIZED EXTERIOR SURFACES COATED WITH A URETHANE OR TRIGLYCIDYL–ISOCYANURATE (TGIC) POLYESTER POWDER TO A MINIMUM FILM THICKNESS OF 2.0 MILS (0.002 INCH). THE POWDER SHALL BE DARK BRONZE (ORION BROWN), COLOR A–52355. PRIOR TO APPLICATION, THE SURFACES TO BE POWDER COATED SHALL BE MECHANICALLY ETCHED BY BRUSH BLASTING (REF. SSPC–SP7) AND THE ZINC COATED SUBSTRATE PREHEATED TO 450 DEGREES FAHRENHEIT (450F) FOR A MINIMUM OF ONE HOUR IN A GAS FIRED CONVECTION OVEN. THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRED CONVECTION OVEN BY HEATING THE ZINC COATED SUBSTRATE TO A MINIMUM OF 350 DEGREES FAHRENHEIT (350F), AND A MAXIMUM OF 400 DEGREES FAHRENHEIT (400F). THE THERMOSETTING POWDER RESIN SHALL PROVIDE BOTH INTERCOAT AND SUBSTRATE FUSION ADHESION THAT MEETS CLASSIFICATION 5A OR 5B OF ASTM D–3359.

FOUR ANCHOR BOLTS SPECIFIED ON THE PLAN SHOULD BE INCLUDED FOR PEDESTAL MOUNTED ON THE EXISTING BRIDGE CONCRETE MEDIAN. FULL RESTORATION FOR ANY DAMAGE DONE DURING CONSTRUCTION TO THE EXISTING CONCRETE MEDIAN SHALL BE INCLUDED.

ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED WORK SHALL BE INCLUDED.

ITEM 632 – PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, AS PER PLAN

SECTION 732.05 OF THE SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

1. PEDESTRIAN SIGNAL HOUSINGS MAY BE CONSTRUCTED OF INJECTION MOLDED, UV STABILIZED, POLYCARBONATE PLASTIC AND SHALL MEET I.T.E. SPECIFICATIONS.
2. VISORS SHALL BE CONSTRUCTED OF INJECTION MOLDED, UV STABILIZED, POLYCARBONATE PLASTIC AND SHALL MEET I.T.E. SPECIFICATIONS.
3. PLASTIC LENSES SHALL BE USED.
4. SIGNAL HEADS, VISORS, PIPE, SPACERS, AND FITTINGS SHALL BE BLACK IN COLOR. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING, IF POLYCARBONATE HEADS ARE FURNISHED.
5. PIPE, SPACERS, AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM, IF POLYCARBONATE HEADS ARE FURNISHED.
6. SIGNALS SHALL BE ATTACHED TO POLES AS SHOWN ON TC–85.10, EXCEPT THAT THE USE OF BRACKET ARM HUB PLATES, POLE CLAMPS WITH THREADED HUBS, OR THE OPTIONAL 2 PIECE HINGED BRACKET ("CLAM SHELL") WILL NOT BE PERMITTED.
7. SIGNALS SHALL DISPLAY THE UPRAISED PALM AND WALKING PERSON SYMBOLS, IN LIEU OF WORD MESSAGES.

ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED WORK INCLUDING SUPPORT AND MOUNTING HARDWARE, CLOSURE CAPS, AND LAMPS AS SPECIFIED SHALL BE INCLUDED.

ITEM 625 – PULL BOX, MISC.: 17"x30", AS PER PLAN

PULL BOXES PROVIDED SHALL BE AS PER THE CITY OF CLEVELAND DETAIL SPECIFICATIONS, PART D, D–57.

SIZE:

17" X 30"

1. THE EXTERIOR DIMENSIONS AT THE TOP SHALL BE 17" X 30" (NOMINAL).
2. THE BOX SHALL BE 24" DEEP (NOMINAL) AND SHALL TAPER OUTWARD FROM THE TOP TO THE OPEN BOTTOM.
3. THE INSIDE DIMENSIONS AT THE BOTTOM SHALL BE 15–5/8" X 28–5/8" (MINIMUM).
4. THE BOX (WITHOUT COVER) SHALL WEIGH APPROXIMATELY 84 LBS.
5. THE COVER SHALL BE 17–1/2" X 30–1/2" X 2", AND SHALL WEIGH APPROXIMATELY 65 LBS.

LOAD CAPACITY:

THE BOX AND COVER SHALL BE CAPABLE OF SUPPORTING A LOAD OF 20,000 LBS, ON A 10" X 10" AREA, TESTED IN ACCORDANCE WITH WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. THE COVER DEFLECTION SHALL NOT EXCEED 1/2" AT DESIGN LOAD. THE COVER AND BOX SHALL SHOW NO SIGNS OF DAMAGE AFTER TEN (10) CYCLES AT DESIGN LOAD.

MATERIAL AND CONSTRUCTION:

THE BOX SHALL BE CONSTRUCTED OF FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPTHALIT POLYESTER USING THE SPRAY–UP AND ROLL CONSTRUCTION METHOD. THE MATERIAL SHALL HAVE STABILIZERS TO RESIST ULTRAVIOLET (UV) DEGRADATION IN ACCORDANCE WITH ASTM D–790 AND ASTM D–11501–71, SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX SHALL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING SHALL HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS FOR THE COVER BOLTS SHALL BE STAINLESS STEEL.

THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM OF TEN PERCENT (10%) FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIN MATRIX. THE COVER SHALL BE MARKED WITH THE WORD "TRAFFIC" IN 2" LETTERS, EMBOSSED INTO THE TMC, AND SHALL HAVE A NON–SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL.

THE COVER SHALL BE SECURED TO THE BOX USING TWO HEX HEAD STAINLESS STEEL BOLTS AND WASHERS WHICH SHALL ATTACH TO THREADED INSERTS IN THE BODY OF THE BOX.

CONDUIT OPENINGS:

OPENINGS IN THE SIDE OF THE PULL BOX, WHICH ARE REQUIRED TO INSERT CONDUIT (INTO THE PULL BOX) SHALL BE DRILLED OR SAWN IN THE FIELD, ONCE THESE LOCATIONS HAVE BEEN DETERMINED. THE OPENINGS SHALL NOT EXCEED THE OUTSIDE DIAMETER OF THE CONDUIT BY MORE THAN FIVE PERCENT (5%). ALL OPENINGS IN THE SIDE OF THE PULL BOX SHALL BE THOROUGHLY GROUTED WITH CEMENT MORTAR AFTER PLACING THE CONDUIT.

NOTE:

THE EXACT LOCATIONS OF PULL BOXES ARE TO BE STAKED AND CHECKED BY THE ENGINEER PRIOR TO PLACEMENT TO VERIFY CLEARANCE OF UNDERGROUND FACILITIES AND ANY ABOVE GROUND OBSTRUCTIONS. IF THERE ARE ANY CONFLICTS, THEY ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS IS INCIDENTAL TO ALL 625 ITEMS.

PULL BOXES ARE TO BE PROVIDED A 4" DRAIN TO THE NEAREST STORM INLET, UNDER DRAIN OR OTHER SUITABLE OUTLET FROM THE PULL BOX. TWENTY (20) FEET OF 4" PVC CONDUIT SHALL BE USED AND BE INCLUDED IN THE PRICE OF THE PULL BOX. ADDITIONAL 4" CONDUIT IN THE AMOUNT OF 100 L.F. HAS BEEN INCLUDED IN THE BID PROPOSAL FOR USE AS DIRECTED BY THE ENGINEER. FAILURE TO INSTALL DRAIN CONDUIT SHALL RESULT IN A PENALTY EQUAL TO THE PRICE BID FOR THE AFFECTED PULL BOXES. PAYMENT FOR PULL BOX ITEMS SHALL NOT BE MADE UNTIL PULL BOXES, INCLUDING UNDER DRAIN, HAVE BEEN COMPLETELY INSTALLED.

PAYMENT:

PAYMENT SHALL BE MADE AT THE CONTRACT LUMP SUM PRICE BID AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITIES OF:

ITEM 625 PULL BOX, MISC.: 17" X 30", AS PER PLAN

ITEM 632 SIGNALIZATION MISC.: DELASHING AND RELASHING OF CABLE

WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, LEAD–IN CABLES, SIGNAL CABLES, AND/OR DROP CABLE ARE TO BE LASHED IN WITH EXISTING CABLES ON EXISTING MESSENGER WIRE. THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING LASHING ROD, REMOVE THE EXISTING CABLE, INSERT THE NEW CABLE IN THE EXISTING BUNDLE, AND RELASH THE BUNDLE. CARE SHALL BE TAKEN TO MAINTAIN A NEAT APPEARANCE OF THE LASHED CABLES. THE EXISTING LASHING ROD MAY BE REUSED UNLESS IT IS SHOWING RUST OR DAMAGE. ALL REPLACEMENT LASHING ROD SHALL BE FURNISHED BY THE CONTRACTOR. PAYMENT FOR DELASHING AND RELASHING SHALL BE INCLUDED IN THE LUMP SUM PRICE BID.

ITEM 632 – PEDESTRIAN PUSHBUTTON, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632 AND 732.06, PEDESTRIAN PUSHBUTTONS SHALL BE BULLDOG PRESSURE ACTIVATED ADA COMPLIANT PEDESTRIAN PUSHBUTTON WITH AUDIBLE SIGNAL.

ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID.

NO	DESCRIPTION	REVISIONS	DATE

Checked By: SS | Drawn By: MKS | Approved By: DAB | Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1060 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO · MARY KATHERINE BOSWELL · E-80174 · REGISTERED PROFESSIONAL ENGINEER

SIGNAL NOTES

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X | BID PAC X

SHEET C1001

MARTIN LUTHER KING JR. DRIVE

CARNEGIE AVENUE

PB 1 — PR. PULLBOX, 17"X30"
STA. 111+71.04, 25.33' LT

CONDUIT, 2-2", 725.051
CAP SPARE CONDUIT

EX. STRAIN POLE (REMAIN)
EX. PEDESTRIAN SIGNAL (REMOVE)
INSTALL NEW 2" CONDUIT RISER
STA. 111+91.91, 38.68' LT

PT STA. 112+21.69

I.P.S.

M.N.F.

CONDUIT, 2-2", 725.051

PP 1 — PR. PEDESTAL, 8'
STA. 111+71.44, 22.93' LT
WITH PR. PEDESTRIAN SIGNAL

PC STA. 111+46.31

PR. PEDESTAL, 15'
ON EXISTING FOUNDATION
MATCH EXISTING BOLT PATTERN
EX. PEDESTAL (REMOVE)
WITH RELOCATED SIGNAL HEAD
WITH PR. PEDESTRIAN SIGNAL
STA. 111+67.27, 66.92' RT — PP 2

EX. PULLBOX (REMAIN)
STA. 111+65.30, 69.52' RT

PR. PEDESTAL, 15'
WITH RELOCATED SIGNAL HEAD
WITH PR. PEDESTRIAN SIGNAL
STA. 111+50.85, 56.58' RT — PP 3

CONDUIT, 2-2", 725.051

PR. PULLBOX, 18"
STA. 111+53.76, 54.04' RT — PB 2

CONDUIT, 2-2", 725.051
CONTRACTOR TO FIELD VERIFY DEPTHS AND LOCATIONS OF EXISTING TELECOMMUNICATIONS, ELECTRICAL, AND GAS LINES USING TEST HOLES. SEE UTILITY TEST HOLE NOTE IN GENERAL NOTES.

EX. LOOP DETECTORS (REMAIN)

EX. PEDESTAL (REMOVE)
WITH EX. SIGNAL HEAD (RELOCATE)
STA. 111+31.59, 78.85' RT

EX. PULLBOX (REMAIN)
STA. 111+32.59, 83.69' RT

EX. TELECOM. DUCTBANK
(TO REMAIN)

EX. UNDERGROUND ELECTRICAL
(TO REMAIN)

EX. 3" GAS (TO REMAIN)

EX. LIGHT POLE (REMAIN)
STA. 111+05.31, 83.48' RT

PP 4 — PR. PEDESTAL, 8'
WITH PR. PEDESTRIAN SIGNAL
STA. 111+42.90, 48.36' RT

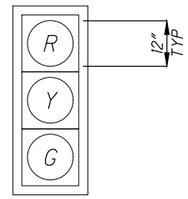
CONDUIT, 2-2", 725.051

PB 3 — PR. PULLBOX, 17"X30"
STA. 111+41.92, 51.39' RT

EX. SIGNAL SUPPORT (REMAIN)
WITH EX. (1) PEDESTRIAN SIGNAL (REMAIN)
WITH EX. (1) PEDESTRIAN SIGNAL (REMOVE)
INSTALL NEW 2" CONDUIT RISER
STA. 111+01.66, 86.18' RT

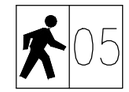
CONDUIT, 2-2", 725.051
CAP SPARE CONDUIT

EXISTING VEHICLE SIGNAL

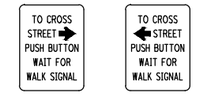


1,2

PROPOSED PEDESTRIAN SIGNAL



A - A
B - B



R10-4a-9
TO BE MOUNTED ABOVE
PEDESTRIAN PUSHBUTTONS

LEGEND

- EXISTING SIGNAL POLE
- EXISTING CONDUIT
- EXISTING PEDESTRIAN SIGNAL WITHOUT PUSHBUTTON
- PEDESTAL, 8' OR 15'
- PULL BOX, 17"X30" OR 18"X18"
- VEHICULAR SIGNAL 3-SECTION
- PEDESTRIAN SIGNAL WITHOUT PUSHBUTTON
- b — PEDESTRIAN SIGNAL WITH PUSHBUTTON
- CONDUIT
- L1 — EX. LOOP DETECTOR

NOTES:

1. FOR ALL UNDERGROUND 2" CONDUIT, CONTRACTOR TO INSTALL A SPARE 2" CONDUIT AS SHOWN. STUB AND CAP WHERE CONDUIT DAYLIGHTS.
2. FOR REFERENCE, THE LOCATIONS OF EXISTING SIGNAL CONTROLLERS ARE AS FOLLOWS:
   SOUTHEAST CORNER OF MLK JR. DR.(NB) - CARNEGIE AVE. INTERSECTION
   N 669299.3443 E 2212937.9654
3. EXISTING VEHICLE SIGNALS ARE TO BE REMOUNTED ON NEW PEDESTALS SUCH THAT THEY ARE FACE MOUNTED. MATCH EXISTING SIGNAL HEIGHT.

REVISIONS

NO.	DESCRIPTION	DATE

PLAN AND HORIZONTAL SCALE IN FEET
0 10' 20'

Checked By: SS
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

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STATE OF OHIO — MARY KATHERINE [illegible] — E-90748 — REGISTERED PROFESSIONAL ENGINEER

SIGNAL PLAN

CARNEGIE AVENUE/MLK JR. DRIVE
INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C1002

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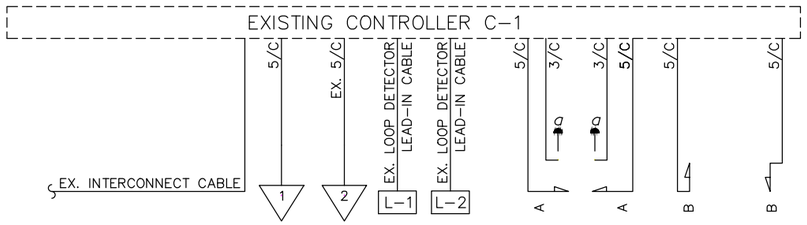
SIGNAL TIMING CHART
TO BE PROVIDED BY THE CITY OF CLEVELAND

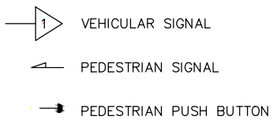
PHASING DIAGRAM
TO BE PROVIDED BY THE CITY OF CLEVELAND

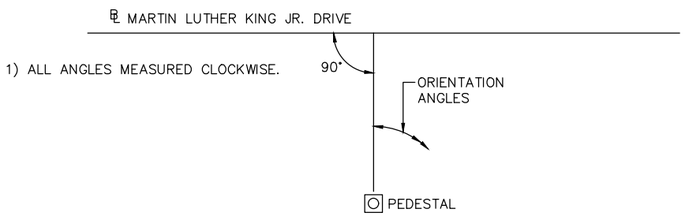
TRAFFIC SIGNAL DETECTOR CHART
DETECTION LOOPS TO REMAIN

WIRING DIAGRAM



WIRING LEGEND





PEDESTAL SUPPORT

POLE NO.	POLE HEIGHT (FT.)	APPROX. VEHICULAR SIGNAL MOUNTING HEIGHT (FT.)	ANGLES (DEG.) FROM ℄ MLK JR. DRIVE					
			VEHICULAR SIGNAL	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	CONDUIT ELL.		
PP1	8	–	–	115	295	170		
PP2	15	8	240	30	–	225		
PP3	15	8	185	25	–	210		
PP4	8	–	–	290	100	200		

EXISTING FIELD WIRING HOOK-UP CHART (FOR REFERENCE)

SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH
1,2 (NB)	R	ϕ3 R	R
	Y	ϕ3 Y	
	G	ϕ3 G	

NO	DESCRIPTION	DATE
REVISIONS		

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GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO — MARY KATHERINE PETRILLA E-80174 — REGISTERED PROFESSIONAL ENGINEER

SIGNAL DETAILS

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C1003

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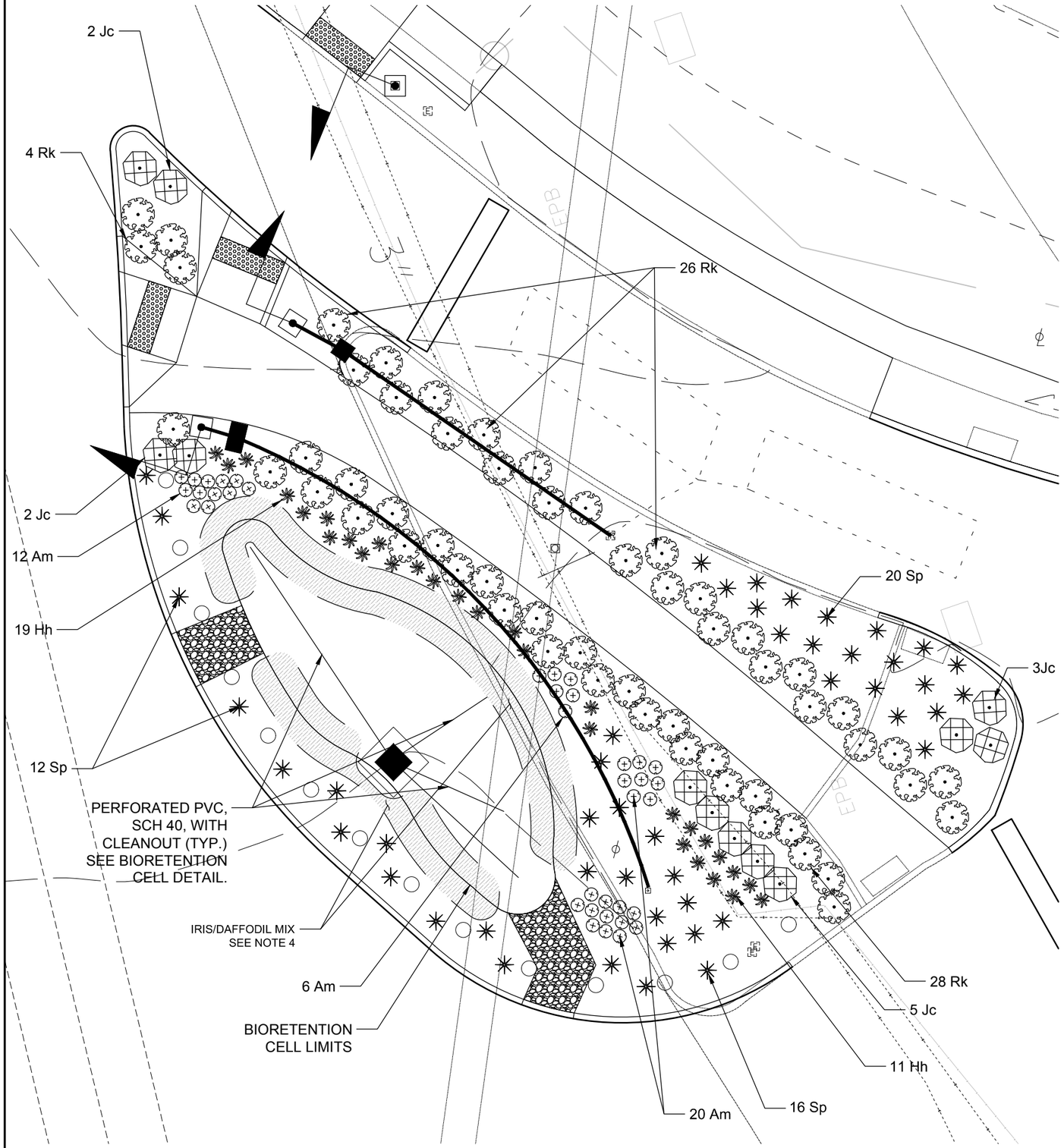

NOTES:

1. COMPLETED LANDSCAPE SHALL CONFORM TO THIS PLAN THROUGH EITHER A COMBINATION OF NEW AND TRANSPLANTED PLANTS OR ALL NEW PLANTS. WARRANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR PER ODOT CM&S 661 AND PROVIDE OWNER WITH A MAINTENANCE GUIDE AT COMPLETION OF PROJECT.

2. IF TRANSPLANT IS USED, VERIFY PHYSICAL CONDITION OF ALL EXISTING PLANT MATERIAL AND TO PREPARE A STORAGE AND TRANSPLANTING STRATEGY BASED UPON SITE EVALUATION. FORWARD THE PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE BEGINNING ANY WORK ON THE SITE. IF EXISTING PLANTS ARE FOUND TO BE IN AN UNFAVORABLE CONDITION FOR TRANSPLANTING ADD APPROPRIATE PLANTS TO AUGMENT THOSE ANTICIPATED TO BE REUSED.

3. UPROOT EACH PLANT AND REMOVE FROM CONSTRUCTION ZONE, STORE AND WATER APPROPRIATELY AND TRANSPLANT IN SUCH A MANNER TO ENCOURAGE RAPID REESTABLISHMENT OF ROOT SYSTEM.

4. CENTER IRIS/DAFFODIL PLANT MIX ON OVERFLOW ELEVATION CONTOUR. BLEND PLANT TYPES IN AN INFORMAL MANNER ALONG THE LENGTH OF THE FOUR FOOT WIDE BED

5. WITHIN BIORETENTION CELL LIMITS, CONTRACTOR SHALL INSTALL BIORETENTION CELL PER BIORETENTION CELL DETAIL WITH ITEM 671 - EROSION CONTROL MATTING. SEED BIORETENTION CELL LIMITS WITH EMERGENT WETLAND SEED MIX (TYPE 5 SEED MIX). NO COMMERCIAL FERTILIZER OR LIME SHALL BE APPLIED TO TYPE 5 SEED MIX.

6. ON ISLAND, OUTSIDE OF BIORETENTION CELL LIMITS, INSTALL 6" OF ITEM 653 - TOPSOIL FURNISHED & PLACED AND 3" OF ITEM 661 - MULCH. MULCH SHALL BE DOUBLE SHREDDED HARDWOOD.

7. FOR ALL OTHER DISTURBED AREAS, INSTALL 3" OF ITEM 653 - TOPSOIL FURNISHED & PLACED AND SEED WITH LAWN MIX (TYPE 1 SEED MIX).

PLANT LIST

KEY	NUM	BOTANICAL NAME	COMMON NAME	SIZE AND CONDITION
NEW OR RELOCATED PLANTS				
Rk	58	Rosa 'Rainbow Knockout'	Rainbow Knockout Rose	Existing
Jc	12	Juniperous chinensis 'Kallay's Compact'	Kallay's Compact Pfitzer Juniper	Existing
Hh	30	Hemrocallis 'Happy Returns'	Happy Returns Daylily	Existing
N/Iv	100	NarcisiSp sp.	Daffodils	Existing
NEW PLANTS				
Am	38	Armeria maritima	Sea Pinks	#2 Cont.
Iv	50	Iris versicolor	Blueflag Iris	#2 Cont.
Sp	48	Spartina pectinate	Prairie Cordgrass	#2 Cont.
N/Iv	100	NarcisiSp sp.	Daffodils	Bulbs

REVISIONS

NO	DESCRIPTION	DATE

PLAN AND HORIZONTAL SCALE IN FEET
0 5 10'

Checked By: KNB
Drawn By: MKS
Approved By: DAB
Date: 2017-03-08

Michael Baker INTERNATIONAL
1228 EUCLID AVE., STE. 1050 CLEVELAND, OH 44115

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

STATE OF OHIO · MARY KATHERINE BOYLE · E-90748 · REGISTERED PROFESSIONAL ENGINEER

LANDSCAPE PLAN

CARNEGIE AVENUE/MLK JR. DRIVE INTERSECTION IMPROVEMENTS

RTA PROJ XX-X
BID PAC X

SHEET C1100

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