

CITY OF DUBLIN, OHIO



PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF LEFT TURN LANES INCLUDING MEDIANS TO RESTRICT LEFT TURN MOVEMENTS ON AVERY-MUIRFIELD DR. AT TULLYMORE DR. & AVERY RD.

SPECIFICATIONS

CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS EXCEPT SECTION 100 GENERAL PROVISIONS, CURRENT EDITION, AND ANY SUPPLEMENTS THERETO (HEREAFTER REFERRED TO AS STANDARD SPECIFICATIONS), SHALL GOVERN ALL CONSTRUCTION ITEMS UNLESS OTHERWISE NOTED. REFER TO THE CITY OF DUBLIN GENERAL CONDITIONS DIVISION 100 FOUND IN THE PROPOSAL AND CONTRACT DOCUMENTS.

AVERY-MUIRFIELD DR., TULLYMORE DR. & AVERY RD. INTERSECTION IMPROVEMENTS

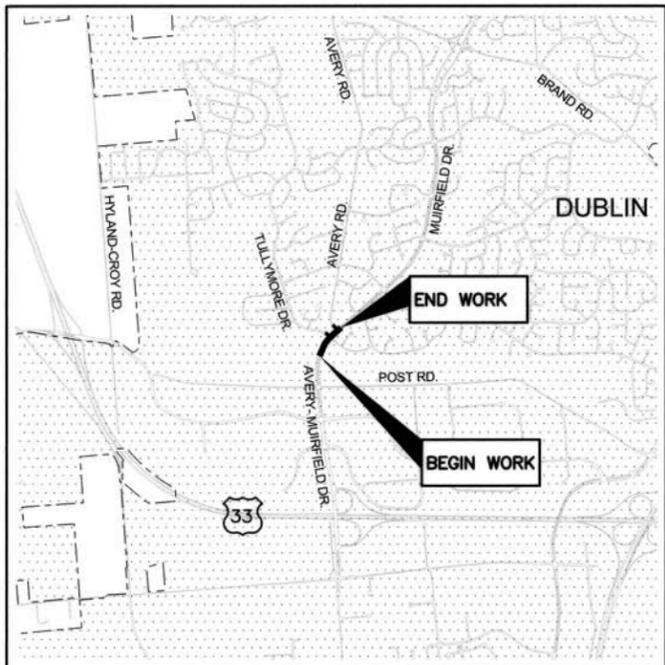


12-008-CIP

CIP NO. 12-008-CIP
CONSTRUCTION PROJECT NO.

BENCHMARK (BASED ON NAVD 88)	
BM "A" - FCGS 3E	
BRASS DISK IN THE TOP OF A CONCRETE MONUMENT IN THE GRASS MEDIAN ON AVERY ROAD, APPROXIMATELY 154.6 FT. NORTH OF THE NORTH FACE OF CURB ON POST ROAD, 4.9 FT. WEST OF THE WEST CURB OF THE NORTHBOUND LANES OF RELOCATED AVERY ROAD, 7.6 FT. SOUTHEAST OF MONUMENT FCGS 4463, 2.5 FT. EAST OF A WITNESS POST, 5 IN. BELOW THE GROUND.	
N: 768287.81 E: 1783795.10	ELEV = 919.29
BM "B"	
CHISELED SQUARE ON SOUTHEAST CORNER OF CONCRETE BASE OF LIGHT POLE LOCATED AT THE SOUTHWESTERN CORNER OF TULLYMORE DR & AVERY-MUIRFIELD INTERSECTION.	
N: 769130.68 E: 1784002.36	ELEV = 917.35

PLAN PREPARED BY:



LOCATION MAP

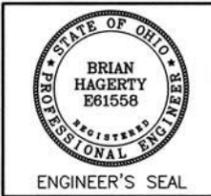


PORTIONS TO BE IMPROVED

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LEGEND	
	PROPOSED STORM SEWER, MANHOLE, CATCH BASIN
	EXISTING RIGHT-OF-WAY LINE
	PERMANENT RIGHT-OF-WAY
	EXISTING EASEMENT
	TEMPORARY EASEMENT
	WORK LIMITS
	RAILROAD SPIKE, IRON PIN, PK NAIL FOUND
	PROPERTY LINE
	BASELINE OR CENTERLINE
	EXISTING EDGE OF PAVEMENT
	EXISTING WATER MAIN, VALVE, AND HYDRANT
	EXISTING SANITARY SEWER, MANHOLE (FORCE MAIN)
	EXISTING GAS MAIN
	EXISTING STORM SEWER, MANHOLE AND INLET
	EXISTING UNDERGROUND TELEPHONE AND PEDESTAL
	EXISTING UNDERGROUND ELECTRIC AND PEDESTAL
	EXISTING FIBER OPTIC CABLE
	UTILITY POLES
	SIGNAL POLES
	POLE GUY WIRE
	SIGN
	TREE, TREE TO BE REMOVED

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS				
CITY OF DUBLIN	ODOT		CITY OF COLUMBUS	
RD-02	MT-95.30	7-18-14	1441	12-1-13
RD-06	MT-97.11	7-18-14	2000	6-1-14
SL-01	MT-99.20	7-19-13		
SL-02			AA-S102	12-6-13
SL-03	TC-41.20	10-18-13	AA-S112	12-6-13
SL-04	TC-42.20	10-18-13	AA-S125A	8-8-14
SL-05			AA-S125B	8-8-14
	TC-16.21	10-18-13	AA-S150	7-9-12
	TC-21.20	10-18-13	AA-S151	7-9-12
	TC-22.20	1-17-14		
	TC-65.10	1-17-14	SUPPLEMENTAL SPECIFICATIONS	
			1100	11-1-14
	HL-30.11	1-17-14		
	I-1.2	1-18-13		



Brian Hagerty
REGISTERED ENGINEER
11/17/14
DATE

SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSES AND GENERAL LOCATION OF THE PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS.

APPROVED: *Paul A. Hammecourt*
CITY ENGINEER, CITY OF DUBLIN, OHIO
11-18-2014
DATE

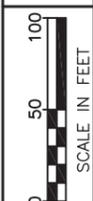
APPROVAL ON THE PART OF THE CITY OF COLUMBUS IS GIVEN PURSUANT TO THE PROVISIONS OF THE WATER SERVICE AGREEMENT BETWEEN THE CITY OF DUBLIN, OHIO AND THE CITY OF COLUMBUS, OHIO, ON APRIL 13, 1993 AND ALL SUBSEQUENT AMENDMENTS THEREOF.

EC Westcott
ADMINISTRATOR, DIVISION OF WATER,
CITY OF COLUMBUS, OHIO
11-18-14
DATE

Greg J. Dennis by Arlaby
DIRECTOR, DEPARTMENT OF PUBLIC UTILITIES,
CITY OF COLUMBUS, OHIO
11-21-2014
DATE

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

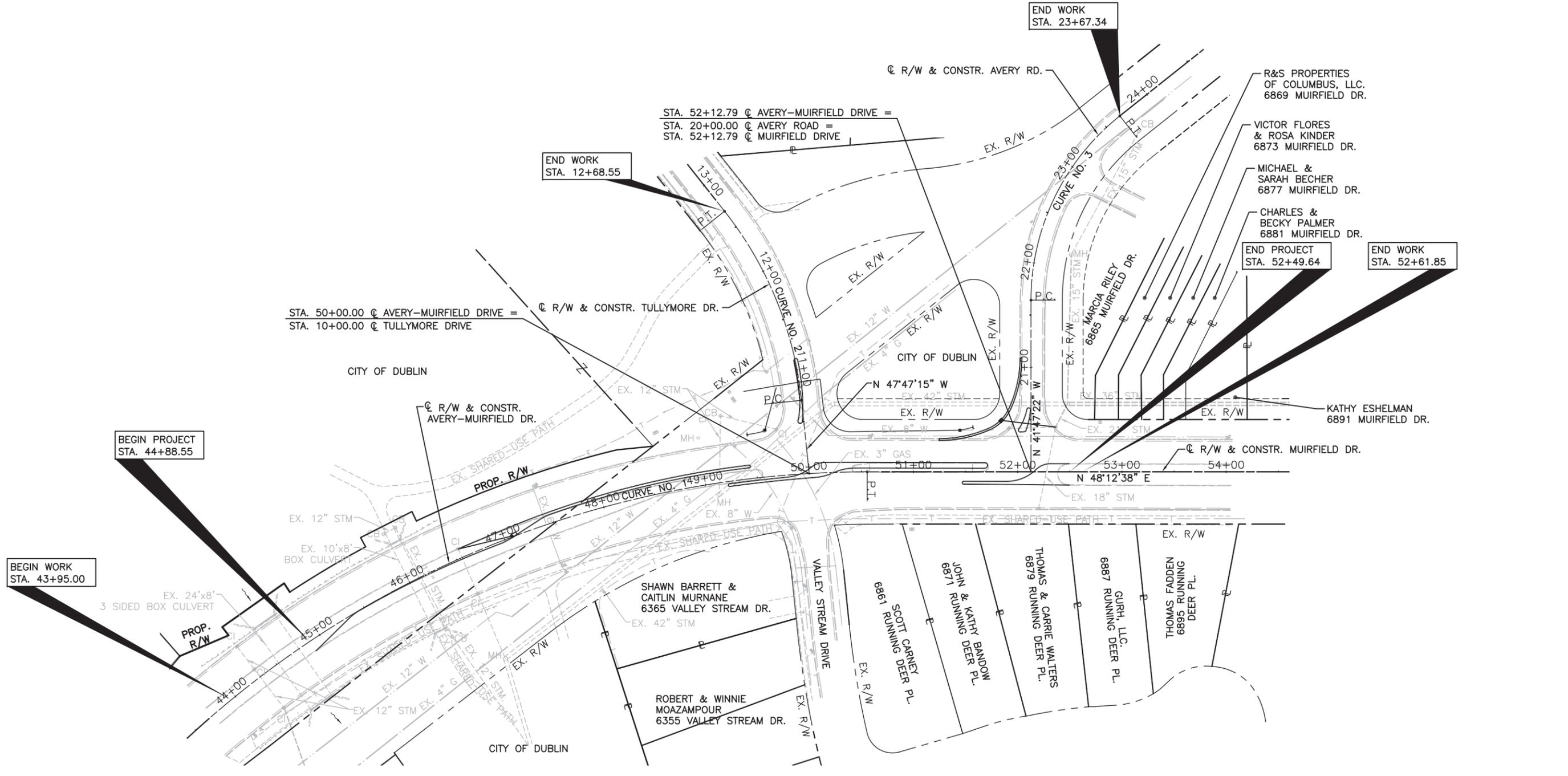
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CALCULATED
CNK
CHECKED
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SCHEMATIC PLAN

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

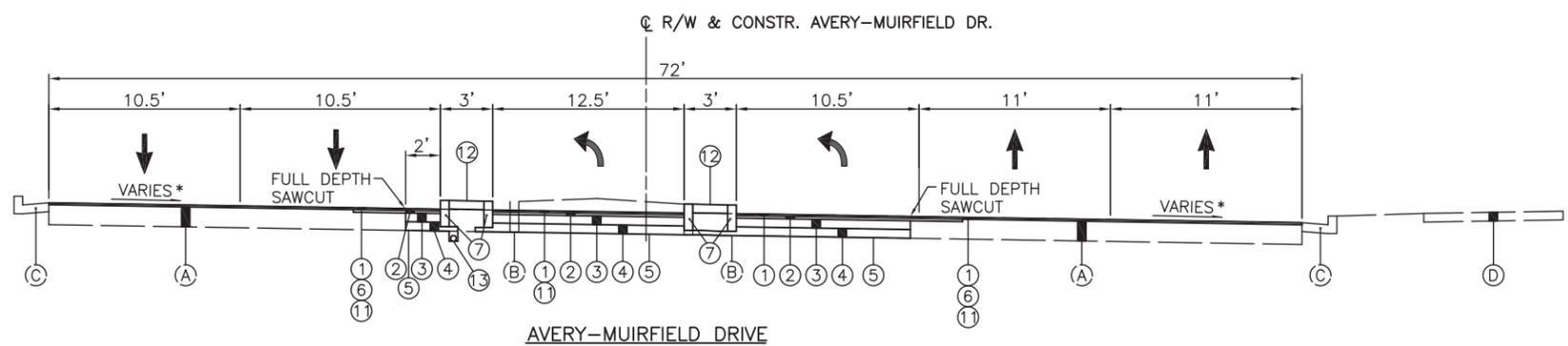


REFERENCE POINTS

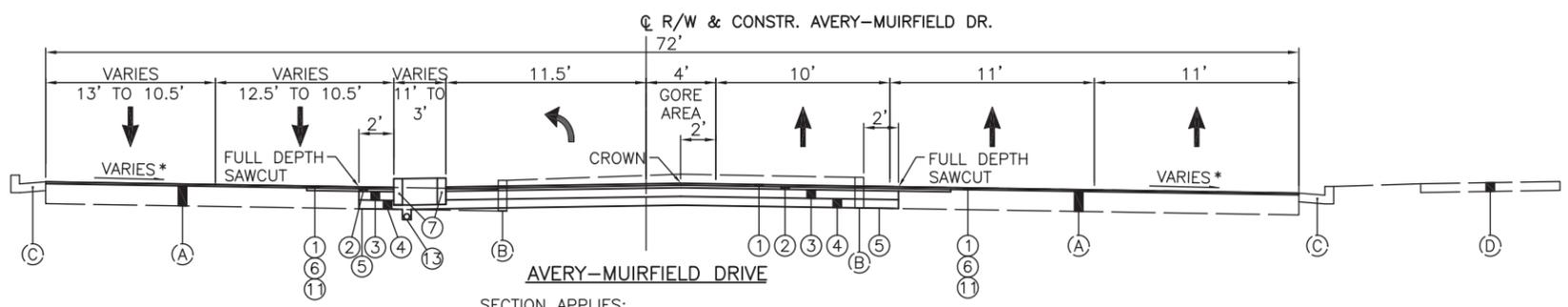
DESCRIPTION	STATION	NORTHING	EASTING
AVERY-MUIRFIELD DR.			
P.C.	41+78.53	768382.83	1783783.73
P.I.	46+50.21	768,853.35	1,783,750.65
P.O.T.	50+00 = 10+00 TULLYMORE DR.	769,129.42	1,784,061.95
P.T.	50+55.63	769167.67	1784102.33
P.O.T.	52+12.79 = 20+00 AVERY RD.	769272.40	1784219.51
P.O.T.	54+00	769397.16	1784359.09
TULLYMORE DR.			
P.O.T.	10+00 = 50+00 AVERY-MUIRFIELD DR.	769,129.42	1,784,061.95
P.C.	10+70.49	769176.78	1784009.74
P.I.	11+72.25	769,245.15	1,783,934.37
P.T.	12+68.55	769262.46	1783834.10
P.O.T.	14+00	769284.81	1783704.56
AVERY RD.			
P.O.T.	20+00 = 52+12.79 AVERY-MUIRFIELD DR.	769272.40	1784219.51
P.C.	21+64.31	769394.90	1784110.01
P.I.	22+73.03	769,475.97	1,784,037.56
P.T.	23+66.86	769583.11	1784056.05
P.O.T.	25+00	769714.31	1784078.69

CURVE DATA AVERY-MUIRFIELD DR. CURVE NO. 1	CURVE DATA TULLYMORE DR. CURVE NO. 2	CURVE DATA AVERY RD. CURVE NO. 3
P.I. STA. 46+50.21	P.I. STA. 11+72.25	P.I. STA. 22+73.03
Δ = 52°13'57"	Δ = 32°25'21"	Δ = 51°34'46"
Dc = 05°57'18"	Dc = 16°22'13"	Dc = 25°27'53"
R = 962.13'	R = 350.00'	R = 225.00'
T = 471.68'	T = 101.76'	T = 108.72'
L = 877.11'	L = 198.06'	L = 202.55'
E = 109.40'	E = 14.49'	E = 24.89'
P.C. STA. 41+78.53	P.C. STA. 10+70.49	P.C. STA. 21+64.31
P.T. STA. 50+55.63	P.T. STA. 12+68.55	P.T. STA. 23+66.86

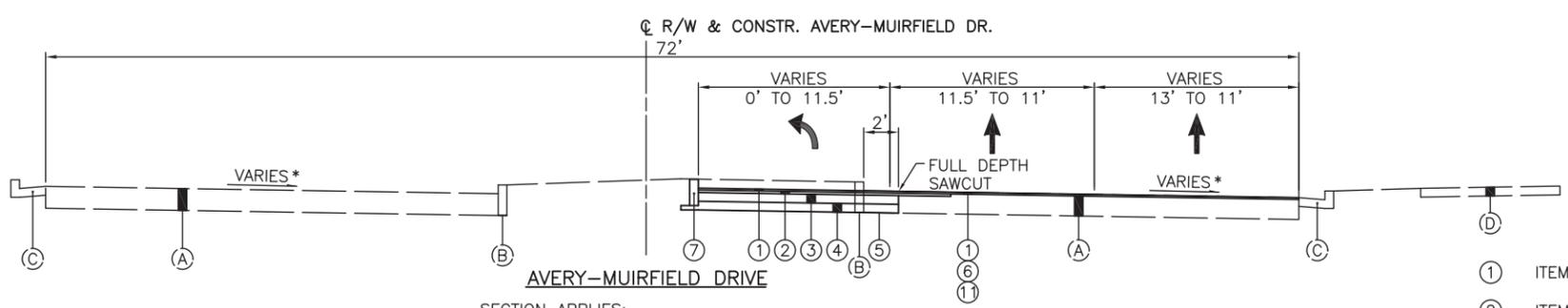
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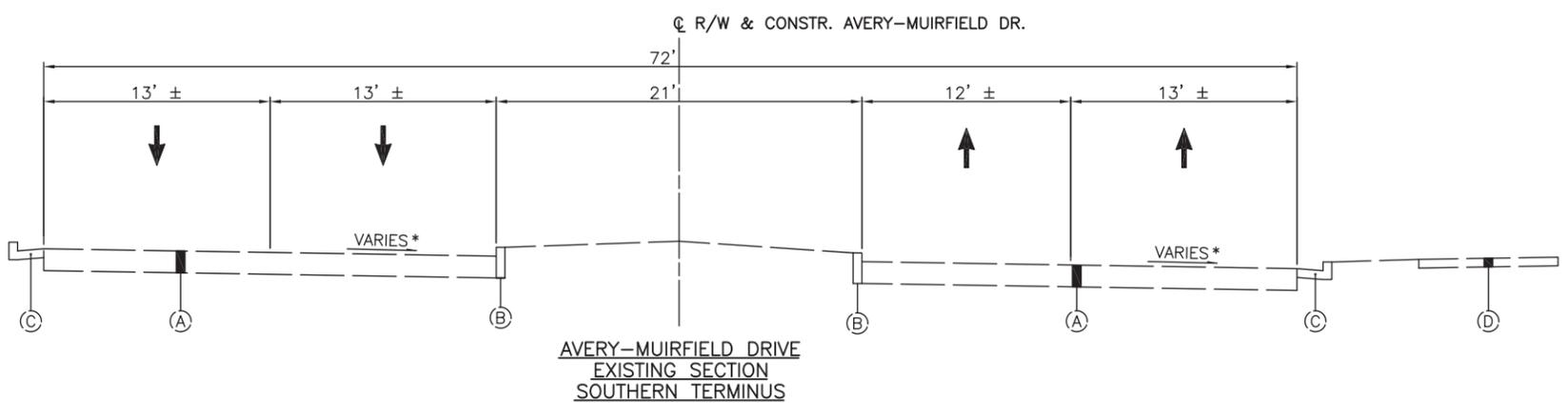
AVERY-MUIRFIELD DRIVE
SECTION APPLIES:
STA. 49+21.31 TO STA. 50+14.86



AVERY-MUIRFIELD DRIVE
SECTION APPLIES:
STA. 46+94.52 TO STA. 49+21.31

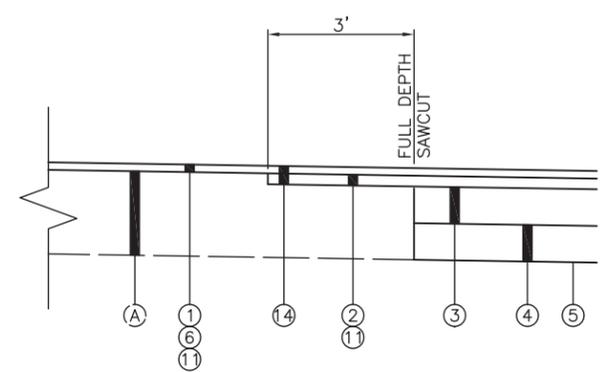


AVERY-MUIRFIELD DRIVE
SECTION APPLIES:
STA. 44+88.55 TO STA. 46+94.52



AVERY-MUIRFIELD DRIVE
EXISTING SECTION
SOUTHERN TERMINUS

* SEE PAVEMENT DETAILS



DETAIL A
WIDENING, PLANING & RESURFACING

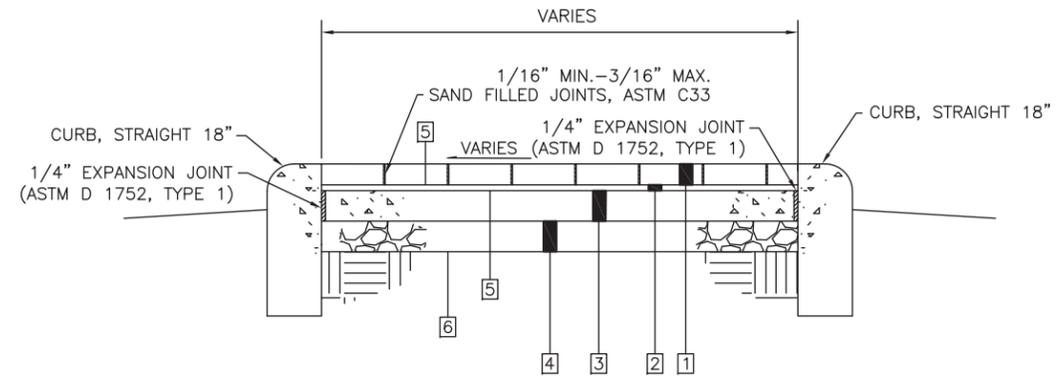
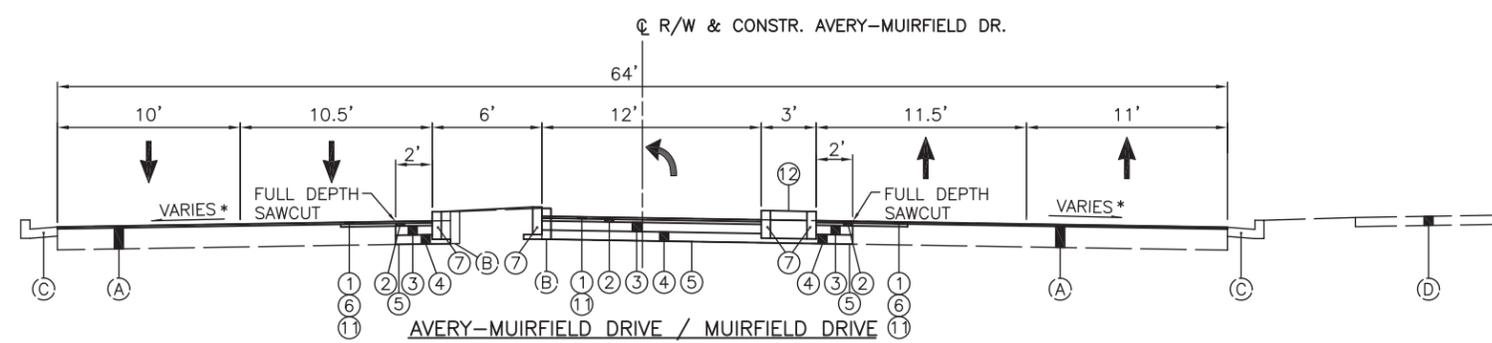
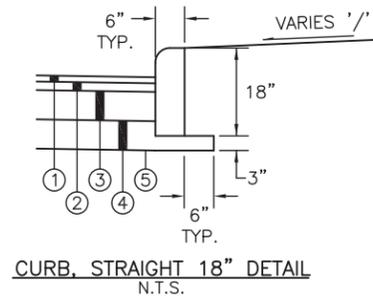
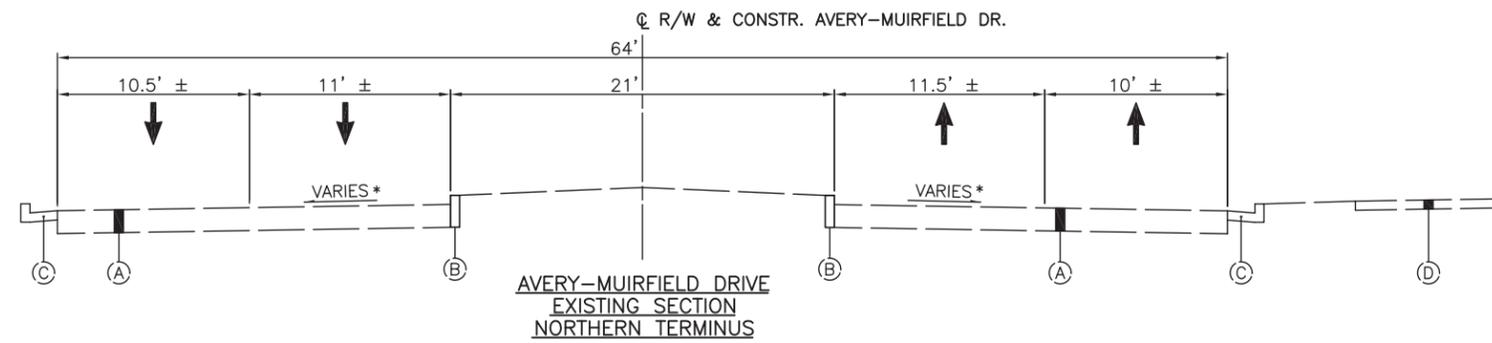
LEGEND

- ① ITEM 448 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE (MEDIUM TRAFFIC), PG64-22
- ② ITEM 448 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE (MEDIUM TRAFFIC), PG64-22
- ③ ITEM 301 - 6" ASPHALT CONCRETE BASE COURSE, PG64-22 (TWO COURSES OF 3")
- ④ ITEM 304 - 6" AGGREGATE BASE
- ⑤ ITEM 204 - SUBGRADE COMPACTION
- ⑥ ITEM 254 - 1-1/4" PAVEMENT PLANING, ASPHALT CONCRETE
- ⑦ ITEM 609 - CURB, STRAIGHT 18"
- ⑧ ITEM 609 - COMBINATION CURB AND GUTTER, AS PER PLAN
- ⑨ ITEM 659 - SEEDING AND MULCHING, AS PER PLAN
- ⑩ ITEM 653 - 3" TOPSOIL FURNISHED AND PLACED, AS PER PLAN
- ⑪ ITEM 407 - NTSS-1HM TRACKLESS TACK COAT (0.04 GAL./SQ. YD.)
- ⑫ ITEM SPECIAL - BRICK MEDIAN, AS PER PLAN
- ⑬ ITEM 605 - 4" PIPE UNDERDRAIN (720.12)
- ⑭ ITEM 254 - 3" PAVEMENT PLANING, ASPHALT CONCRETE
- ⑮ ITEM 452 - 6" NON-REINFORCED CONCRETE PAVEMENT
- (A) EXISTING PAVEMENT
- (B) EXISTING CURB
- (C) EXISTING CURB AND GUTTER
- (D) EXISTING SHARED-USE PATH

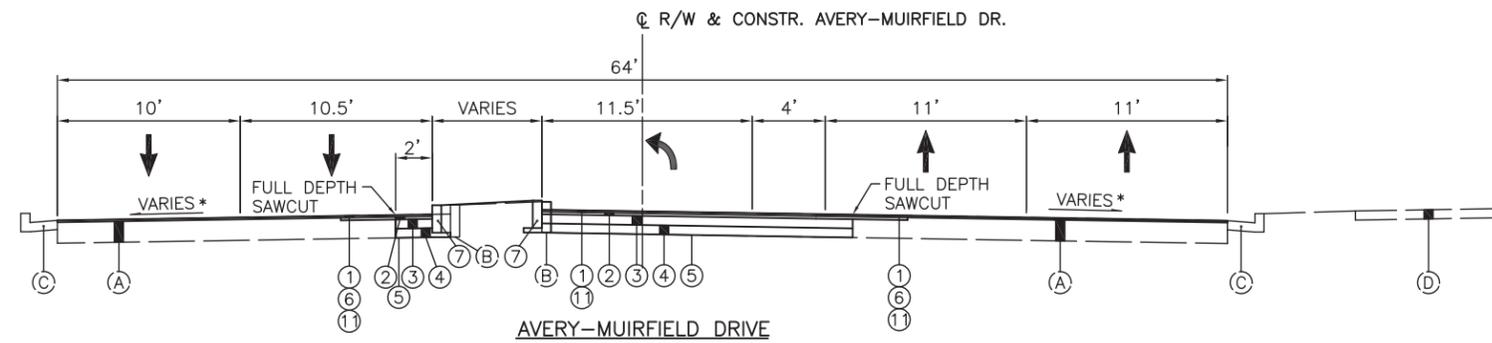
TYPICAL SECTIONS

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

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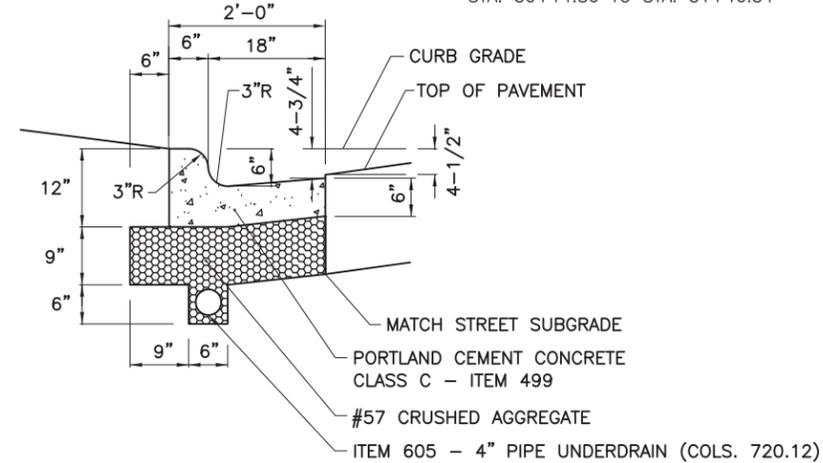
ITEM SPECIAL - BRICK MEDIAN, AS PER PLAN



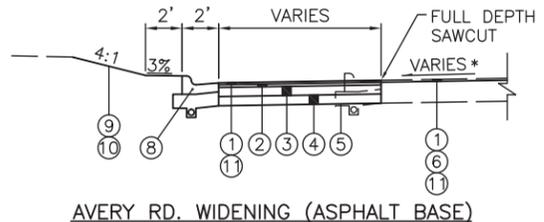
- 1 8"x4"x2-3/4" BRICK PAVERS (SEE GENERAL NOTES)
- 2 3/4" - BITUMINOUS ASPHALT SETTING BED (PG64-22)
- 3 4" COLS. CLASS "C" CONCRETE BASE
- 4 4" - ITEM 304 AGGREGATE BASE
- 5 NEOPRENE - MODIFIED ASPHALT ADHESIVE
- 6 ITEM 204 - SUBGRADE COMPACTION

LEGEND

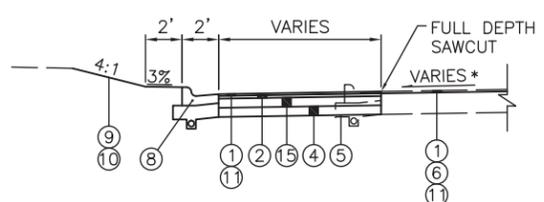
- 1 ITEM 448 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE (MEDIUM TRAFFIC), PG64-22
- 2 ITEM 448 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE (MEDIUM TRAFFIC), PG64-22
- 3 ITEM 301 - 6" ASPHALT CONCRETE BASE COURSE, PG64-22 (TWO COURSES OF 3")
- 4 ITEM 304 - 6" AGGREGATE BASE
- 5 ITEM 204 - SUBGRADE COMPACTION
- 6 ITEM 254 - 1-1/4" PAVEMENT PLANING, ASPHALT CONCRETE
- 7 ITEM 609 - CURB, STRAIGHT 18"
- 8 ITEM 609 - COMBINATION CURB AND GUTTER, AS PER PLAN
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- 10 ITEM 653 - 3" TOPSOIL FURNISHED AND PLACED, AS PER PLAN
- 11 ITEM 407 - NTSS-1HM TRACKLESS TACK COAT (0.04 GAL./SQ. YD.)
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- 15 ITEM 452 - 6" NON-REINFORCED CONCRETE PAVEMENT
- (A) EXISTING PAVEMENT
- (B) EXISTING CURB
- (C) EXISTING CURB AND GUTTER
- (D) EXISTING SHARED-USE PATH



COMBINATION CURB & GUTTER DETAIL
N.T.S.



AVERY RD. WIDENING (ASPHALT BASE)



AVERY RD. WIDENING (CONCRETE BASE)

TYPICAL SECTIONS

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

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GENERAL NOTES

CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS EXCEPT SECTION 100 GENERAL PROVISIONS, CURRENT EDITION, AND ANY SUPPLEMENTS THERETO (HEREAFTER REFERRED TO AS STANDARD SPECIFICATIONS), SHALL GOVERN ALL CONSTRUCTION ITEMS UNLESS OTHERWISE NOTED. REFER TO THE CITY OF DUBLIN GENERAL CONDITIONS DIVISION 100 FOUND IN THE PROPOSAL AND CONTRACT DOCUMENTS.

IT IS THE INTENTION OF THE CONTRACT DOCUMENTS TO PROVIDE AND REQUIRE A COMPLETED PROJECT READY FOR OPERATION. ANY WORK ITEMS OMITTED FROM THE CONTRACT DOCUMENTS WHICH ARE CLEARLY NECESSARY FOR COMPLETION OF THE WORK AND ITS APPURTENANCES SHALL BE CONSIDERED A PART OF SUCH WORK, THOUGH NOT DIRECTLY SPECIFIED OR CALLED FOR IN THE CONSTRUCTION DOCUMENTS. THIS INCLUDES, BUT IS NOT LIMITED TO, SUCH INCIDENTAL ITEMS AS RELOCATION OF MAIL BOXES, SAW CUTTING, AND REMOVAL AND/OR RELOCATION OF SIGNS, SPRINKLERS, OR OTHER MISCELLANEOUS ITEMS.

ALL ITEMS OF WORK CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR WITH THE COST TO BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS RELATED ITEMS.

THE CONTRACTOR INTENDING TO SUBMIT A BID FOR CITY OF DUBLIN (HEREIN AFTER REFERRED TO AS "CITY") CAPITAL IMPROVEMENT CONTRACTS SHALL BE PREQUALIFIED WITH THE OHIO DEPARTMENT OF TRANSPORTATION AS PER SECTION 102 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS AND CHAPTER 5525 OF THE OHIO REVISED CODE CONCERNING CONSTRUCTION CONTRACTS.

THE CONTRACTOR SHALL NOTIFY THE CITY OF DUBLIN, DIVISION OF ENGINEERING IN WRITING AT LEAST 3 WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION.

THE CITY ENGINEER SHALL NOT BE RESPONSIBLE FOR MEANS, METHODS, PROCEDURES, TECHNIQUES, OR SEQUENCES OF CONSTRUCTION THAT ARE NOT SPECIFIED HEREIN. THE CITY ENGINEER SHALL NOT BE RESPONSIBLE FOR SAFETY ON THE WORK SITE, OR FOR FAILURE BY THE CONTRACTOR TO PERFORM WORK ACCORDING TO CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL EXERCISE PRECAUTION ALWAYS FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL ALSO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES PER 29 CFR 1910.146.

ANY MODIFICATION TO THE WORK AS SHOWN ON THESE APPROVED PLANS SHALL HAVE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.

THE CONTRACTOR SHALL RESTRICT CONSTRUCTION ACTIVITY TO PUBLIC RIGHT-OF-WAY AND AREAS DEFINED AS PERMANENT AND/OR TEMPORARY CONSTRUCTION EASEMENTS, AND/OR THE LIMITS OF DISTURBANCE SHOWN.

PROPERTY BOUNDARIES, INCLUDING PROPERTY LINES AND ROAD RIGHT-OF-WAY, ARE SHOWN FROM THE BEST INFORMATION AVAILABLE AND ARE NOT NECESSARILY COMPLETE OR CORRECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE FINISHED WORK CONFORM TO THE LINES, GRADE, ELEVATIONS, AND DIMENSIONS CALLED FOR ON THE DRAWINGS AND TYPICAL SECTIONS. PAYMENT FOR CONSTRUCTION LAYOUT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 623, CONSTRUCTION LAYOUT STAKES.

NON-RUBBER Tired VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT THE PERMISSION OF THE CITY ENGINEER.

THE CONTRACTOR SHALL SUBSTANTIALLY RESTORE ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. DRAINAGE DITCHES OR WATERCOURSES THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THE GRADES AND CROSS-SECTIONS THAT EXISTED BEFORE CONSTRUCTION.

TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR SHARED-USE PATHS IS PROHIBITED AND ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE CITY. IF THE CONTRACTOR FAILS TO REMOVE THE MUD, DIRT, DEBRIS, OR SPILLAGE, THE CITY OF DUBLIN RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE WITHHELD FROM MONIES THAT ARE DUE OR MAY BECOME DUE TO THE CONTRACTOR.

EXCESS EXCAVATED MATERIAL FROM THIS PROJECT SHALL BE HAULED OFF-SITE BY THE CONTRACTOR AND COMPENSATION FOR HAULING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203.

TOP OF PAVEMENT ELEVATIONS SHOWN ON THE PAVEMENT DETAILS MAY REFLECT DEVIATIONS FROM THE ROADWAY PROFILES AND TYPICAL SECTION CROSS SLOPES IN SOME AREAS DUE TO PAVEMENT WARPING. IN ALL CASES, THE TOP OF PAVEMENT ELEVATIONS SHOWN ON THE PAVEMENT DETAILS SHALL GOVERN.

PAVEMENTS SHALL BE CUT IN NEAT, STRAIGHT LINES THE FULL DEPTH OF THE EXISTING PAVEMENT, OR AS REQUIRED BY THE CITY ENGINEER. PAVEMENT REPLACEMENT SHALL BE CONDUCTED ACCORDING TO CITY OF COLUMBUS STANDARD DRAWING 1441 AND APPLICABLE CITY OF DUBLIN STANDARD DRAWINGS. THE REPLACEMENT OF DRIVEWAYS, HANDICAPPED RAMPS, SIDEWALKS, MULTI-USE PATHS, PARKING LOT PAVEMENT, ETC. SHALL BE PROVIDED ACCORDING TO THE APPROVED CONSTRUCTION DRAWINGS AND CITY OF DUBLIN STANDARD CONSTRUCTION DRAWINGS.

THE CONTRACTOR SHALL SUBMIT TO THE CITY ENGINEER AT THE PRECONSTRUCTION MEETING HIS PROPOSED DESIGN MIX FORMULA FOR ALL BITUMINOUS MIXTURES TO BE PLACED ON THE PROJECT FOR REVIEW AND APPROVAL. A DESIGN MIX FORMULA SHALL BE SUBMITTED FOR EACH MIXTURE AND EACH PRODUCER AND SHALL PROVIDE GRADATION OF ALL COMPONENT AGGREGATES, PERCENTAGE OF BLENDING OF AGGREGATES, PERCENTAGE OF BITUMEN, ANY ADDITIVES AND APPLICATION RATE, NAMES AND ADDRESSES OF AGGREGATE SUPPLIERS, MARSHALL MIX DESIGN DATA, AND THE THEORETICAL LABORATORY DENSITY.

ALL SOIL SUBGRADES SHALL BE PREPARED AND COMPACTED IN ACCORDANCE WITH ITEM 204 SUBGRADE COMPACTION TO A DEPTH OF 12-INCHES BELOW THE SUBGRADE SURFACE. SUBGRADE SHALL BE SCARIFIED AND CONTAIN SUFFICIENT MOISTURE TO MEET ITEM 204 SUBGRADE COMPACTION REQUIREMENTS.

NO BLASTING WILL BE PERMITTED ON THIS PROJECT.

THE CONTRACTOR IS NOT PERMITTED TO USE ANY RECLAIMED MATERIALS IN ITEM 304.

THE CONTRACTOR SHALL DEFINE THE LIMITS OF ANY WEAK SOILS ENCOUNTERED BY PROOF ROLLING. WHERE SOFT SUBGRADE IS ENCOUNTERED IN CUTS, DUE TO NO FAULT OF THE CONTRACTOR, AND SATISFACTORY COMPACTION CANNOT BE OBTAINED, THE UNSTABLE MATERIAL SHALL BE REMOVED AND REPLACED PER ITEM 203. THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED AS AN ALLOWANCE FOR BIDDING PURPOSES.

ITEM 203 EXCAVATION	50 CY
ITEM 203 SELECT GRANULAR EMBANKMENT, #2 STONE	50 CY

THE COST OF ALL ASPHALT PAVEMENT REMOVAL AND DISPOSAL SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR ITEM 203 - EXCAVATION.

PROOF SURVEY

FOLLOWING COMPLETION OF CONSTRUCTION, A PROOF SURVEY SHALL BE PROVIDED BY THE CONTRACTOR TO THE DIVISION OF ENGINEERING THAT DOCUMENTS AS-BUILT INFORMATION OF ALL ELEMENTS OF THIS PROJECT. THE SURVEY SHALL BE PREPARED AND SIGNED BY AN OHIO PROFESSIONAL SURVEYOR. THE CONTRACTOR SHALL REVISE THE ORIGINAL MYLARS IN RED INK, TO THE SATISFACTION OF THE CITY, SHOWING ALL CHANGES IN THE WORK. THE COST OF THE PROOF SURVEY, INCLUDING MYLAR REVISIONS, WILL BE PAID AT THE LUMP SUM PRICE BID FOR ITEM SPECIAL, PROOF SURVEY.

SURVEY MONUMENTATION

THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCH MARKS, PROPERTY CORNERS, REFERENCE POINTS, STAKES AND OTHER SURVEY REFERENCE MONUMENTS OR MARKERS. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATIONS. RESETTING OF MARKERS SHALL BE PERFORMED BY AN OHIO PROFESSIONAL SURVEYOR AS APPROVED BY THE CITY ENGINEER AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION NOISE

ANY DEVICE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT. THE CONTRACTOR'S CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED SO AS TO ELIMINATE ALL UNNECESSARY NOISE, DUST, AND ODORS. THE USE OF OIL OR OTHER MATERIAL FOR DUST CONTROL, WHICH MAY CAUSE TRACKING, IS NOT PERMITTED.

UTILITIES

THE CONTRACTOR SHALL GIVE NOTICE OF INTENT TO CONSTRUCT TO OHIO UTILITIES PROTECTION SERVICE (TELEPHONE NUMBER 800-362-2764), AND TO OWNERS OF UNDERGROUND UTILITIES THAT ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE. NOTICE SHALL BE GIVEN AT LEAST TWO WORKING DAYS BEFORE START OF CONSTRUCTION.

THE IDENTITY AND LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN THE CONSTRUCTION AREA HAVE BEEN SHOWN ON THE PLANS AS ACCURATELY AS PROVIDED BY THE OWNER OF THE UNDERGROUND UTILITY. THE CITY OF DUBLIN AND THE CITY ENGINEER ASSUME NO RESPONSIBILITY FOR THE ACCURACY OR DEPTHS OF UNDERGROUND FACILITIES SHOWN ON THE PLANS. IF DAMAGE IS CAUSED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF THE SAME AND FOR ANY RESULTING CONTINGENT DAMAGE.

LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF THIS WORK SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS ITEMS OF THE CONTRACT.

WHEN UNKNOWN OR INCORRECTLY LOCATED UNDERGROUND UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY AND THE CITY ENGINEER.

UTILITIES KNOWN TO BE LOCATED WITHIN THE LIMITS OF THIS PROJECT ARE LISTED BELOW WITH CONTACT INFORMATION.

AT&T (CONDUIT) KEVIN GLASER 111 N. 4TH STREET, ROOM 802 COLUMBUS, OHIO 43215 (614) 223-6424 (614) 208-9312 (MOBILE)	AMERICAN ELECTRIC POWER PAUL PAXTON 850 TECH CENTER DRIVE GAHANNA, OHIO 43230-6605 (614) 883-6831 (614) 949-8883 (MOBILE)
AT&T (CABLE) ROGER MIKESSELL 111 N. 4TH STREET, ROOM 802 COLUMBUS, OHIO 43215 (614) 223-7162	DUBLINK (TEAM FISHEL) JOE TEPPER 1600 WALCUTT ROAD COLUMBUS, OH 43228 (614) 921-8620
COLUMBIA GAS OF OHIO ROB CALDWELL 3550 JOHNNY APPLESEED CT. COLUMBUS, OHIO 43230 (614) 818-2108 (614) 370-1906 (MOBILE)	CITY OF DUBLIN DIVISION OF ENGINEERING MIKE SWEDER, P.E. 5800 SHIER-RINGS ROAD DUBLIN, OHIO 43016-1236 (614) 410-4621
TIME WARNER CABLE RAY MAURER 3760 INTERCHANGE DRIVE COLUMBUS, OHIO 43204 (614) 481-5262 (614) 348-2979 (MOBILE)	CITY OF COLUMBUS DIVISION OF WATER 910 DUBLIN ROAD COLUMBUS, OHIO 43215 (614) 645-7788
WIDE OPEN WEST ROB CARPENTER 3675 CORPORATE DRIVE COLUMBUS, OHIO 43231 (614) 668-7632 (614) 948-4653 (MOBILE)	

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THE WORK LIMITS.

TRENCH AND BACKFILL

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

ALL TRENCHES WITHIN PUBLIC RIGHT-OF-WAY SHALL BE BACKFILLED OR SECURELY PLATED DURING NONWORKING HOURS. TRENCHES OUTSIDE THESE AREAS SHALL BE BACKFILLED OR SHALL BE PROTECTED BY APPROVED TEMPORARY FENCING OR BARRICADES DURING NONWORKING HOURS. CLEAN UP SHALL FOLLOW CLOSELY BEHIND THE TRENCHING OPERATION.

BACKFILL WITHIN A 1:1 INFLUENCE LINE OF EXISTING STRUCTURES (HOUSES, GARAGES, ETC.) OR PUBLIC INFRASTRUCTURE (PAVEMENTS, SIDEWALKS, CURBS, ETC.) SHALL BE ITEM 912 - COMPACTED GRANULAR MATERIAL, OR ITEM 636 - FLOWABLE CONTROLLED DENSITY FILL, TYPE 2. OF THE STANDARD SPECIFICATIONS AS DIRECTED BY THE CITY ENGINEER. ITEM 912 MATERIAL SHALL CONSIST OF NATURAL, BROKEN, OR CRUSHED ROCK. SYNTHETIC OR MANMADE MATERIALS ARE UNACCEPTABLE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONDITION OF TRENCHES WITHIN THE RIGHT-OF-WAY AND PUBLIC EASEMENTS FOR A PERIOD OF ONE YEAR FROM THE FINAL ACCEPTANCE OF THE WORK, AND SHALL MAKE ANY NECESSARY REPAIRS AT NO COST TO THE CITY.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NEITHER ORDER MATERIALS NOR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE CITY ENGINEER" UNLESS AUTHORIZED BY THE CITY ENGINEER.

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GENERAL NOTES

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

TEMPORARY EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE CITY ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

ITEM 207 – INLET PROTECTION 9 EA

ITEM 609 – 6" CONCRETE COMBINATION CURB AND GUTTER, AS PER PLAN

THE 6" CONCRETE COMBINATION CURB AND GUTTER SHALL BE IN ACCORDANCE WITH CITY OF DUBLIN STANDARD DRAWING RD-02.

WHERE THESE ITEMS ARE TO BE PLACED WITHIN OR ADJACENT TO EXISTING PAVEMENT, THE PAVEMENT SHALL BE SAWCUT, REMOVED, AND REPLACED IN ACCORDANCE WITH THE PLAN LOCATIONS AND DETAILS. THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO SAWCUT, REMOVE AND REPLACE THE AFFECTED EXISTING PAVEMENT AREA SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PERTINENT 609 ITEM.

STORM SEWER

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES STORM SEWER, DRAIN, AND DITCH FLOWS THROUGH EXISTING FACILITIES TO REMAIN IN PLACE AND THROUGH EXISTING FACILITIES TO BE REPLACED UNTIL NEW FACILITIES ARE COMPLETED AND PUT INTO SERVICE. THE FLOW OF ALL STORM SEWERS, DRAINS, AND OTHER WATER COURSES ENCOUNTERED AND DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO A CONDITION SATISFACTORY TO THE CITY ENGINEER.

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 APPURTENANCES 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 SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEANED 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 CITY ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT CONTRACT ITEMS.

WHERE PLANS CALL FOR 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 FOR BOTH LINE AND GRADE PRIOR TO THE START OF PIPE LAYING.

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

PAYMENT FOR THE DETERMINATION OF LINE AND GRADE OF EXISTING UTILITIES AS REQUIRED SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT CONTRACT ITEMS.

ALL FIELD TILE BROKEN OR ENCOUNTERED DURING EXCAVATION SHALL BE REPLACED OR REPAIRED IN LIKE KIND AND CONNECTED TO THE STORM SEWER SYSTEM OR OPEN CHANNEL OUTLET, RESTORING NORMAL FUNCTION TO THE TILE, AS DIRECTED BY THE CITY ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS ITEMS OF THE CONTRACT.

ALL PRECAST CONCRETE PRODUCTS SHALL BE INSPECTED BY THE CITY AT THE LOCATION OF MANUFACTURE. APPROVED PRECAST CONCRETE PRODUCTS WILL BE STAMPED NOTING THAT INSPECTION HAS BEEN PERFORMED BY THE CITY OF DUBLIN. PRECAST CONCRETE PRODUCTS WITHOUT PROOF OF INSPECTION SHALL NOT BE APPROVED FOR INSTALLATION.

ALL STORM SEWERS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM DESIGNATION C76, WALL B, CLASS IV FOR PIPE DIAMETERS 12 INCHES TO 15 INCHES, CLASS III FOR 18 INCHES TO 24 INCH PIPES, AND 27 INCHES AND LARGER PIPE SHALL BE CLASS II, UNLESS OTHERWISE SHOWN ON THE PLANS.

THE CONTRACTOR SHALL PLACE CURB & GUTTER INLETS WITHIN THE CURB LINE IN ACCORDANCE WITH COLUMBUS STANDARD DRAWINGS AA-S125A AND AA-S125B.

ALL INLETS, CATCH BASINS, AND MANHOLES SHALL BE CHANNELIZED.

ALL EXISTING AND PROPOSED CASTINGS SHALL BE ADJUSTED TO MATCH THE SURROUNDING FINISH GRADE BY THE CONTRACTOR. TOP OF CASTING ELEVATIONS PROVIDED ON THE PLANS ARE APPROXIMATE. PAYMENT UNDER ITEM 604 – MANHOLES ADJUSTED TO GRADE, SHALL ONLY BE FOR CASTING ADJUSTMENTS ON EXISTING MANHOLES THAT REQUIRE NO OTHER WORK. THE COST OF ALL ADDITIONAL ADJUSTMENTS SHALL BE INCLUDED IN THE VARIOUS SEWER ITEMS.

WHERE BACKFILLING WITH CONCRETE AROUND A STORM SEWER PIPE IS DETERMINED TO BE NECESSARY, BY EITHER CALL OUT ON THE PLANS, OR AS DIRECTED BY THE ENGINEER, THE WORK SHALL BE IN ACCORDANCE WITH THE CITY OF COLUMBUS STANDARD DRAWING AA-S151, TYPE 1 BEDDING FOR RIGID SEWER PIPE USING CLASS "A" CONCRETE. THE TOTAL LENGTH OF BACKFILL SHALL BE FOR ALL EXPOSED PORTIONS OF PIPE, OR AS DIRECTED BY THE ENGINEER.

ITEM 630 – GROUND MOUNTED SUPPORT, NO. 3, TYPE S, AS PER PLAN

ALL SIGN SUPPORTS SHALL BE 2-INCH SQUARE GALVANIZED POSTS WITH DIE CUT KNOCK OUTS (ALLIED QUICK-PUNCH SUPPORTS OR APPROVED EQUAL). A SINGLE BREAKAWAY ANCHOR SHALL BE USED. ALL SIGNS SHALL BE ERECTED WITH A 7-FOOT VERTICAL CLEARANCE BETWEEN THE TOP OF CURB OR EDGE OF PAVEMENT AND THE BOTTOM OF EACH SIGN, UNLESS OTHERWISE DESIGNATED BY THE CITY ENGINEER. HORIZONTAL CLEARANCE FOR BOTH CURB AND DITCH SECTIONS SHALL BE AS PER ODOT STANDARD CONSTRUCTION DRAWING TC-42.20. THE ANCHOR POST SHALL BE PAID FOR SEPARATELY. PAYMENT FOR THIS ITEM SHALL BE FOR THE LENGTH ONLY, INCLUDING THE 8" OVERLAP IN THE ANCHOR POST, AND ALL MISCELLANEOUS ATTACHMENT HARDWARE.

ITEM 630 – 2-1/4" SQUARE ANCHOR POST, AS PER PLAN

IN ADDITION TO ITEMS 630 AND 730, THE ANCHOR POST PROVIDED AND INSTALLED WITH THE GROUND MOUNTED SIGN SUPPORT SHALL BE AS PER ODOT SCD TC-41.20, AND SHALL BE 48" IN LENGTH. THE ANCHOR SHALL BE 2-1/4 INCHES SQUARE, 12 GA., WITH A 2-1/2-INCH OVERSLEEVE 18 INCHES LONG OVER TOP OF THE ANCHOR. THIS ITEM SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH.

CONTRACTOR SHALL OBTAIN SQUARE ANCHOR POSTS, FROM THE CITY OF DUBLIN, AND INSTALL PRIOR TO THE PLACEMENT OF THE CONCRETE BASE IN MEDIAN AREAS.

ITEM 630 – SIGNS, FLAT SHEET

TRAFFIC CONTROL SIGNS, AS SHOWN ON THE DRAWINGS, SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND THE PROVISIONS OF ODOT ITEM 630, UNLESS OTHERWISE NOTED.

ITEM 630 – REMOVAL OF GROUND MOUNTED SIGN AND STORAGE

ALL EXISTING GROUND MOUNTED SIGNS WITHIN THE PROJECT AREA SHALL BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE CITY AT A LOCATION TO BE DETERMINED WITHIN THE DUBLIN CITY LIMITS. THE CONTRACTOR SHALL COMPENSATE THE CITY IN AN AMOUNT EQUAL TO THE REPLACEMENT COST OF ANY SIGNS DAMAGED AS A RESULT OF THE CONSTRUCTION OPERATIONS. PAYMENT FOR SIGN REMOVAL AND DELIVERY WILL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 630, REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL.

ALL POST MOUNTED ROADWAY SIGNING WILL BE FURNISHED AND INSTALLED BY THE CITY OF DUBLIN INCLUDING SUPPORTS, ANCHOR POSTS, SUPPORT ASSEMBLIES, FLAT SHEET SIGNS AND POST REFLECTORS.

ITEM 630 – OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 13, AS PER PLAN

ALL OVERHEAD SIGNS SUPPORTS SHALL BE MANUFACTURED BY VALMONT OR AN APPROVED EQUAL. THE SUPPORTS SHALL BE MANUFACTURED TO INDUSTRY STANDARDS USING THE OVERHEAD SIGN SUPPORT INFORMATION PROVIDED IN THESE PLANS. ALL SUPPORTS AND PEDESTALS SHALL HAVE THE FOLLOWING FEATURES:

1. THE CONTRACTOR SHALL VERIFY THE ANCHOR BOLT CIRCLE, ANCHOR BOLT DIAMETER, AND ORIENTATION PATTERN WITH THE SIGN SUPPORT MANUFACTURER.
2. THE POLE AND DESIGN SHALL COMPLY WITH 1994 AASHTO DESIGN CRITERIA AND ALL OTHER APPLICABLE ODOT STANDARDS.
3. THE MANUFACTURER SHALL BE RESPONSIBLE FOR VERIFYING THE POLE DESIGN, AND SHALL PREPARE SHOP DRAWINGS AND STRUCTURAL DESIGN CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER. THE SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY FOR APPROVAL PRIOR TO FABRICATION.
4. IT IS THE INTENT OF THESE PLANS THAT THE POLES, MAST ARMS, AND SIGN BRACKETS ATTACHED TO THE POLE SHALL MATCH THE CITY OF DUBLIN STANDARD FOR POLE PAINT COLOR (DUBLIN BRONZE). PRIOR TO SHIPPING, THE POLES, MAST ARMS, AND ALL POLE HARDWARE AND SIGN BRACKETS ATTACHED TO THE POLE SHALL BE FACTORY PRIME COATED AND FINISHED. IF DURING TRANSPORTATION, ERECTION, INSTALLATION OF SIGN HARDWARE OR AT ANYTIME BEFORE FINAL ACCEPTANCE THE PAINTED SURFACES ARE SCRATCHED OR MARRED IN ANY MANNER, THE CONTRACTOR SHALL BE REQUIRED TO APPLY "TOUCHUP" PAINT OF THE SAME TYPE AS SPECIFIED ABOVE TO THE AFFECTED AREAS.
5. MANUFACTURER'S FACTORY QUALITY CONTROL FOR VERTICAL POLES SHALL INCLUDE BUFFING THE VERTICAL SEAM WELD TO COSMETICALLY BLEND. MANUFACTURER SHALL GRIND THE VERTICAL WELD SEAM FLUSH WITH PARENT MATERIAL.
6. PAINT CHIP SAMPLES AND SHOP DRAWINGS FOR ALL COMPONENTS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIALS.
7. THE CONTRACTOR SHALL COORDINATE WITH CITY OF DUBLIN PERSONNEL TO BE ON SITE PRIOR TO DRILLING/CUTTING OR WELDING INTO SIGNAL SUPPORTS WHICH INCLUDES BUT IS NOT LIMITED TO PLACEMENT OF PEDESTRIAN PUSH BUTTONS AND INSTALLATION OF DISCONNECT SWITCH.

MAST ARM TO BE PROVIDED BY THE CITY OF DUBLIN. THE CONTRACTOR SHALL PROVIDE DELIVERY AND INSTALLATION SERVICES. PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID, FOR LABOR TO INSTALL THE PROVIDED MATERIAL, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 653 – TOPSOIL FURNISHED AND PLACED, AS PER PLAN

A MINIMUM 3 INCHES OF TOPSOIL SHALL BE PLACED IN ALL AREAS TO BE SEEDED. PRIOR TO PLACING TOPSOIL IN CUT AREAS, THE EARTH SHALL BE EXCAVATED TO A DEPTH SUFFICIENT TO PLACE 3 INCHES OF TOPSOIL. THE COST OF EXCAVATION AND DISPOSAL OF SURPLUS MATERIALS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE VARIOUS CONTRACT ITEMS.

TOPSOIL SHALL BE REMOVED AND WASTED OR UTILIZED IN NON-LOAD BEARING FILLS IN ACCORDANCE WITH THE SPECIFICATIONS. NO EXTRA COMPENSATION SHALL BE PAID FOR THE REMOVAL OF EXCESS TOPSOIL AS REQUIRED TO OBTAIN A SUITABLE SUBGRADE. PAYMENT FOR TOPSOIL REMOVAL IS INCLUDED IN ITEM 203, EXCAVATION.

ALL TOPSOIL MATERIALS AND FINAL AREA OF SUBGRADE PREPARATION SHALL BE FREE FROM ROCK AND OTHER FOREIGN MATERIAL 1/2" OR GREATER IN ANY DIMENSION.

ITEM 659 – SEEDING AND MULCHING, AS PER PLAN

SEED – CERTIFICATION OF GRASS SEED SHALL BE PROVIDED BY SEED VENDOR FOR EACH GRASS-SEED MIXTURE STATING THE BOTANICAL AND COMMON NAME, PERCENTAGE BY WEIGHT OF EACH SPECIES AND VARIETY; AND PERCENTAGE OF PURITY, GERMINATION, AND WEED SEED. INCLUDE THE YEAR OF PRODUCTION AND DATE OF PACKAGING. FURNISH NATIONAL TURFGRASS EVALUATION PROGRAM (NTEP) DATA FOR EACH SPECIES TO BE USED.

GRASS SEED MUST BE FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH THE A.O.S.A. "JOURNAL OF SEED TECHNOLOGY" RULES FOR TESTING SEEDS FOR PURITY AND GERMINATION TOLERANCES.

SEED SPECIES SHALL BE AS FOLLOWS, WITH NOT LESS THAN 90 PERCENT GERMINATION, NOT LESS THAN 98 PERCENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

TURFGRASS SEED MIX PROPORTIONED BY WEIGHT:

- A. 80 PERCENT TALL FESCUE (FESTUCA ARUNDINACEA), WITH A MINIMUM OF 3 IMPROVED TURF-TYPE VARIETIES. KENTUCKY-31 AND ALTA VARIETIES ARE NOT APPROVED.
- B. 20 PERCENT PERENNIAL RYEGRASS (LOLIUM PERENNE).

SEEDING – SOW SEED AT A TOTAL RATE OF 7-9 LB. / 1,000 SF WITH A SPREADER OR SEEDING MACHINE. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY. THOROUGHLY COVER WITH STRAW AND NETTING. NETTING SHALL BE ADEQUATELY PINNED TO PREVENT THE STRAW FROM BEING BLOWN OR WASHED AWAY.

PROTECT SEEDED AREAS WITH SLOPES EXCEEDING 3:1 WITH EROSION CONTROL BLANKETS AS DIRECTED BY THE ENGINEER. COST OF EROSION CONTROL BLANKETS, MATERIAL, AND LABOR SHALL BE PAID FOR BY THE CITY.

HYDRO-SEEDING & HYDRO-MULCHING ARE NOT PERMITTED.

TURF MAINTENANCE – MAINTAIN AND ESTABLISH TURF BY WATERING DAILY, FERTILIZING, WEEDING, MOWING, TRIMMING, AND REPLANTING TO ESTABLISH HEALTHY, VIABLE TURF. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH TURF. PROVIDE THE SAME MATERIALS AND INSTALLATION AS THOSE USED IN THE ORIGINAL INSTALLATION. WATER TURF WITH FINE SPRAY AT A MINIMUM RATE OF 1 INCH PER WEEK UNLESS RAINFALL PRECIPITATION IS ADEQUATE.

MOW TURFGRASS SEED MIX AREAS AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN 1/3 OF GRASS HEIGHT. MOW AREAS TO A HEIGHT OF 2 TO 3 INCHES.

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GENERAL NOTES

EVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

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ITEM SPECIAL -- BRICK MEDIAN, AS PER PLAN

PAVERS: THE PAVERS SHALL BE REGIMENTAL FULL RANGE WITH A CHAMFERED EDGE AND SPACER LUGS, 8" x 4" x 2 3/4", MADE BY BELDON BRICK COMPANY, CANTON, OHIO, LAID IN A RUNNING BOND PATTERN.

NEOPRENE-MODIFIED ASPHALT ADHESIVE: FURNISH NEOPRENE MODIFIED ASPHALT ADHESIVE THAT CONTAINS 2% GRADE WM1 NEOPRENE, OXIDIZED ASPHALT WITH A 150 DEGREE SOFTENING POINT (77 PENETRATION), AND 10% LONG-FIBERED INERT MATERIAL, AS SUPPLIED BY SEIDEL COMPANY, INC., NEWBURYPORT, MA, (617) 649-6740; HASTINGS PAVEMENT COMPANY, INC., LAKE SUCCESS, NY, (516) 379-3500; OR APPROVED EQUAL.

BITUMINOUS SETTING BED, 3/4-INCH: FURNISH ASPHALT CEMENT CONFORMING TO ASTM D 3381, PG64-22. FINE AGGREGATE SHALL BE NATURAL SAND AND/OR STONE SAND COMPOSED OF HARD, DURABLE, UNCOATED PARTICLES, FREE FROM CLAY, SILT, ORGANIC MATERIAL, OR OTHER DELETERIOUS SUBSTANCES. ALL SAND SHALL BE UNIFORMLY GRADED AND PASS A NO. 4 SIEVE, MEETING THE REQUIREMENTS OF ASTM C 136. THE DRIED FINE AGGREGATE SHALL BE MIXED WITH HOT ASPHALT CEMENT AT THE PLANT AND HEATED TO APPROXIMATELY 300 DEGREES (F). APPROXIMATE MATERIAL PROPORTIONS SHALL BE 7% ASPHALT CEMENT AND 93% FINE AGGREGATE; OR 140 LBS ASPHALT TO 1,860 LBS FINE AGGREGATE PER TON.

SAND: ALL JOINTS SHALL BE FILLED WITH A POLYMERIC SAND. SAND SHALL BE ALLIANCE GATOR MAXX POLYMERIC SAND FOR OVERLAYS AND SLATE GREY IN COLOR OR AN APPROVED EQUAL.

EDGING: A BRICK/PAVER EDGING SHALL BE PROVIDED ALONG ANY PAVER EDGE NOT RESTRAINED BY CURB, CURB-AND-GUTTER, SIDEWALK, MULTIUSE PATH, ETC. EDGING TO BE PERMALOC ASPHALT EDGE, BLACK, 3"x3" OR APPROVED EQUAL.

PAYMENT: PAYMENT FOR THE BRICK MEDIAN WILL BE MADE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM SPECIAL -- BRICK MEDIAN, AS PER PLAN, AND SHALL INCLUDE THE SUB-GRADE COMPACTION, AGGREGATE BASE, CONCRETE BASE SLAB, BITUMINOUS SETTING BED, ASPHALT ADHESIVE, BRICK PAVERS, EDGING, AND SAND FILL. THE COST OF ALL CONCRETE CURBING WILL BE PAID UNDER THE APPROPRIATE 609 CURB ITEM.

WATER

THE CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS, 2012 EDITION AND ALL REVISIONS, INCLUDING ALL SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS THAT ARE A PART OF THIS PLAN, UNLESS OTHERWISE NOTED.

ALL WATER MAIN MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER. ALL CITY OF COLUMBUS, DIVISION OF WATER STANDARD DRAWINGS SHALL APPLY TO THE PROJECT, UNLESS OTHERWISE NOTED.

ALL BRASS FITTINGS ASSOCIATED WITH WATER WORK, INCLUDING REPAIRS TO THE EXISTING SYSTEM, SHALL CONFORM TO THE REVISED ALLOWABLE LEAD EXTRACTION LIMIT PER THE UPDATED NSF/ANSI 61 STANDARD. THE DIVISION OF WATER'S APPROVED MATERIALS LIST HAS BEEN UPDATED TO REFLECT THIS REQUIREMENT.

LIGHTING

THE CONTRACTOR IS TO COORDINATE THE FINAL CONDUIT LOCATIONS WITH OTHER UTILITIES.

ALL ELECTRICAL AND CONTROL WIRING SHALL HAVE 600V INSULATION.

ITEM 625 -- LIGHT POLE FOUNDATION, AS PER PLAN

THE EXCAVATION FOR THE LIGHT POLE FOUNDATIONS SHALL BE PER ODOT ITEM 625. ALL EQUIPMENT, MATERIALS AND OTHER INSTALLATION METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF DUBLIN'S STANDARD CONSTRUCTION DRAWING SL-04.

ITEM 625 -- LUMINAIRE REMOVED, AS PER PLAN

THE EXISTING LUMINAIRES SHALL BE CAREFULLY REMOVED AND CAREFULLY DELIVERED AND UNLOADED AT 5800 SHIER-RINGS ROAD, DUBLIN, OHIO. ANY ITEMS SPECIFICALLY DESIGNATED AS "UNUSABLE" BY THE CITY SHALL BE DISPOSED OF BY THE CONTRACTOR.

ITEM 625 -- HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

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GENERAL NOTES

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

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ITEM 614 – MAINTAINING TRAFFIC

ACCESS TO ALL ADJOINING PROPERTIES AS WELL AS ACCESS FOR MAIL, WATER, SANITARY SERVICE, AND EMERGENCY VEHICLES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

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

IN THE EVENT THAT IT BECOMES NECESSARY FOR THE CITY TO PERFORM WORK OF AN IMMEDIATE NATURE (SUCH AS THE PLACEMENT OF BARRICADES OR REPLACEMENT OF SIGNS AND OTHER WARNING OR PROTECTIVE DEVICES) BECAUSE OF FAILURE OR REFUSAL OF THE CONTRACTOR TO PERFORM SUCH WORK AS REQUIRED BY THE CONTRACT, THE CONTRACTOR SHALL REIMBURSE THE CITY AT A RATE OF 2.5 TIMES THE ACTUAL COST OF THE LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO PERFORM SUCH WORK. THE CITY SHALL BE REQUIRED TO NOTIFY OR ATTEMPT TO NOTIFY THE DESIGNATED REPRESENTATIVE OF THE CONTRACTOR OF THE NECESSITY TO PERFORM SUCH WORK. IF THE CONTRACTOR REFUSES OR FAILS WITHIN A REASONABLE TIME TO PERFORM OR CAUSE THE PERFORMANCE OF SUCH WORK, THE CITY SHALL BE REIMBURSED BY THE CONTRACTOR IN THE AMOUNT PROVIDED HEREIN BY WAY OF A DEDUCTION FROM THE CONTRACTOR'S NEXT PAYMENT UNDER THE CONTRACT. REASONABLE TIME FOR ALL STREETS INVOLVED ON THIS CONTRACT IS 2 HOURS FROM THE TIME OF NOTIFICATION BY THE CITY.

SIGNING FOR THE AVERY ROAD AND TULLYMORE DRIVE DETOUR ROUTES AS SHOWN ON SHEETS 9 & 10 SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF WORK.

ALTERNATE METHODS

IF THE CONTRACTOR SO ELECTS, THEY MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED BY THE CITY ENGINEER.

ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR, AS PER PLAN

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED IN THIS NOTE WILL NOT BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS FOR FLAGGERS BE USED.

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

- A. FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED. IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.
- B. DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE BLOCKAGE OF TRAFFIC IS REQUIRED.

LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES. THE CONTRACTOR SHALL UTILIZE ANY OF THE FOLLOWING LAW ENFORCEMENT AGENCY(S): CITY OF DUBLIN, FRANKLIN COUNTY SHERIFF'S OFFICE, OR OHIO STATE HIGHWAY PATROL.

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON AN HOURLY BASIS UNDER ITEM 614 – LAW ENFORCEMENT OFFICE WITH PATROL CAR, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR, A.P.P. 40 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF LEOS ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR, AS PER PLAN.

TRENCH FOR WIDENING

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

DROPOFFS IN WORKZONE

THE DROPOFF ADJACENT TO THE TRAVELED LANE SHALL BE NO GREATER THAN 1.5 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. THIS REQUIREMENT MAY BE MET BY TEMPORARILY PLACING SUBBASE AND BASE MATERIAL TO WITHIN 1.5 INCHES OF THE EXISTING GRADE ADJACENT TO THE TRAVELED LANE AND SLOPING THE MATERIAL AT 3:1 OR FLATTER WITHIN THE EXCAVATED AREA. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS DURING WORKING HOURS. THESE REQUIREMENTS SHALL BE MET AT NO ADDITIONAL COST.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616 – WATER 15 M GAL.

DRUM REQUIREMENTS

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID FOR MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED.

CONSTRUCTION SEQUENCE

PHASE 1 AVERY ROAD INTERSECTION

- 1) PROVIDE DETOUR AS SHOWN ON SHEET 9 AND CLOSE AVERY ROAD FOR MAXIMUM OF TWO WEEKS.
- 2) CONSTRUCT WIDENING, MEDIAN, AND PERFORM MILLING OPERATIONS.
- 3) INSTALL ALL PERMANENT SIGNING.

PHASE 2 TULLYMORE DRIVE INTERSECTION

- 1) PROVIDE DETOUR AS SHOWN ON SHEET 10 AND CLOSE TULLYMORE DRIVE FOR MAXIMUM OF TWO WEEKS.
- 2) CONSTRUCT MEDIAN AND PERFORM MILLING OPERATIONS.
- 3) INSTALL ALL PERMANENT SIGNING.

PHASE 3 AVERY-MUIRFIELD DRIVE

- 1) PERFORM MILLING OPERATIONS ON AVERY-MUIRFIELD DRIVE PER ODOT'S SCD MT-97.11.
- 2) CLOSE THE INSIDE LANE OF BOTH NORTH BOUND AND SOUTH BOUND AVERY-MUIRFIELD DRIVE PER ODOT'S SCD MT-95.30. THIS LANE CLOSURE SHALL BE A MAXIMUM OF ONE WEEK.
- 3) CONSTRUCT WIDENING AND ALL APPURTENANCES.

PHASE 4 SURFACE COURSE AND PERMANENT STRIPING

- 1) CONSTRUCT SURFACE COURSE FOR AVERY ROAD, TULLYMORE DRIVE, AND AVERY-MUIRFIELD DRIVE PER ODOT'S SCD MT-97.11.
- 2) APPLY ALL PERMANENT STRIPING PER ODOT'S SCD MT-99.20.
- 3) OPEN ALL ROADWAYS TO TRAFFIC.

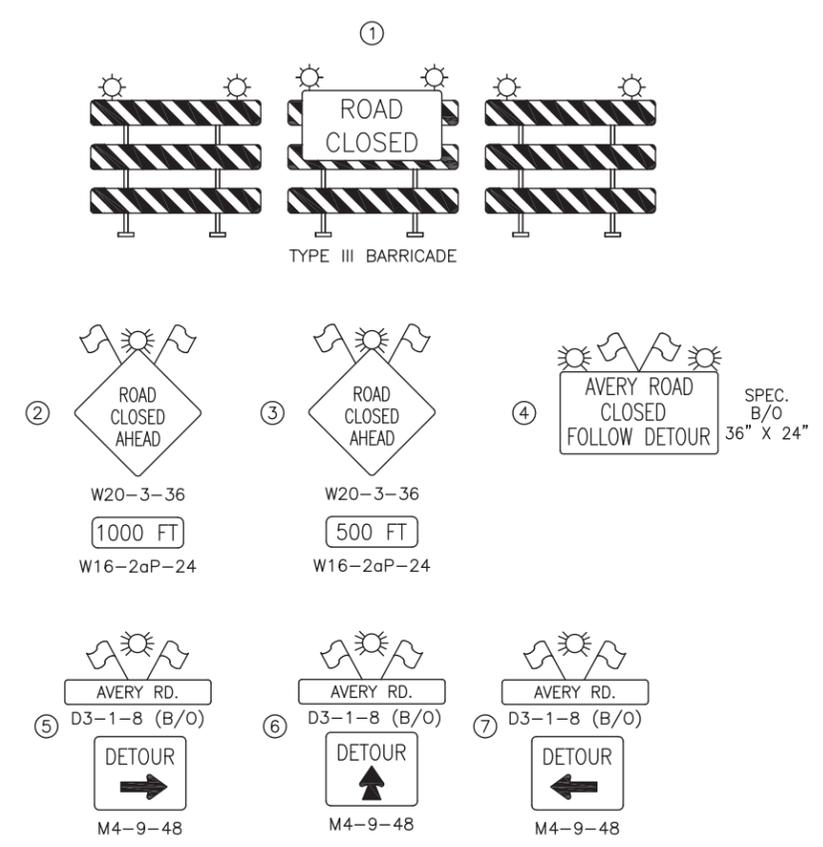
CALCULATED
CNK
CHECKED
TUS

MAINTENANCE OF TRAFFIC
GENERAL NOTES

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS



DETOUR - AVERY RD



LEGEND:
 T - SIGN ON POST
 HH - TYPE III BARRICADE
 → - DETOUR ROUTE

CALCULATED
 CNK
 CHECKED
 TJS

0 200 400
 SCALE IN FEET

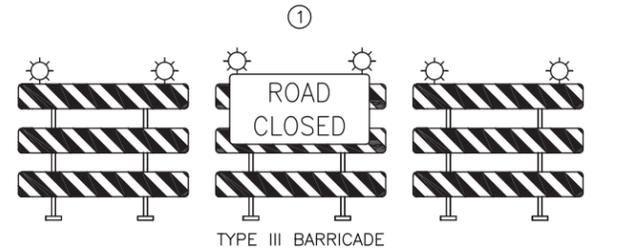
MAINTENANCE OF TRAFFIC
 PHASE 1 DETOUR MAP (AVERY ROAD)

AVERY-MUIRFIELD DR.,
 TULLYMORE DR. & AVERY RD.
 INTERSECTION IMPROVEMENTS

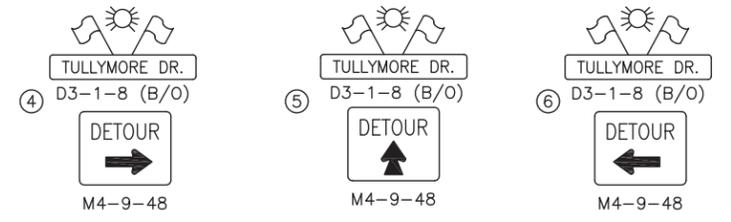
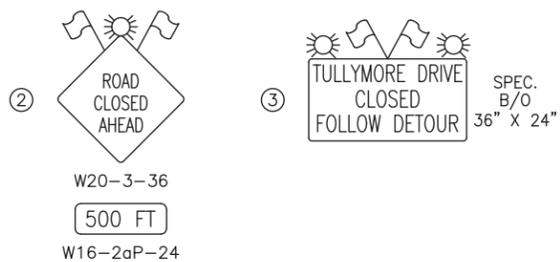
KIRLANGITIS, KC U:\17360876\design\plan set\Work of Traffic\17360876r102.dwg MAINTENANCE OF TRAFFIC Last Saved: Oct 21, 2014 8:58 AM, KIRLANGITIS, Plotter: Nov 19, 2014 10:54 AM



DETOUR - TULLYMORE DRIVE



TYPE III BARRICADE



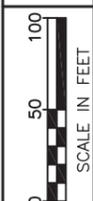
- LEGEND:
- T - SIGN ON POST
 - HH - TYPE III BARRICADE
 - - DETOUR ROUTE

CALCULATED
CNK
CHECKED
TJS

SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 2 DETOUR MAP (TULLYMORE DRIVE)

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

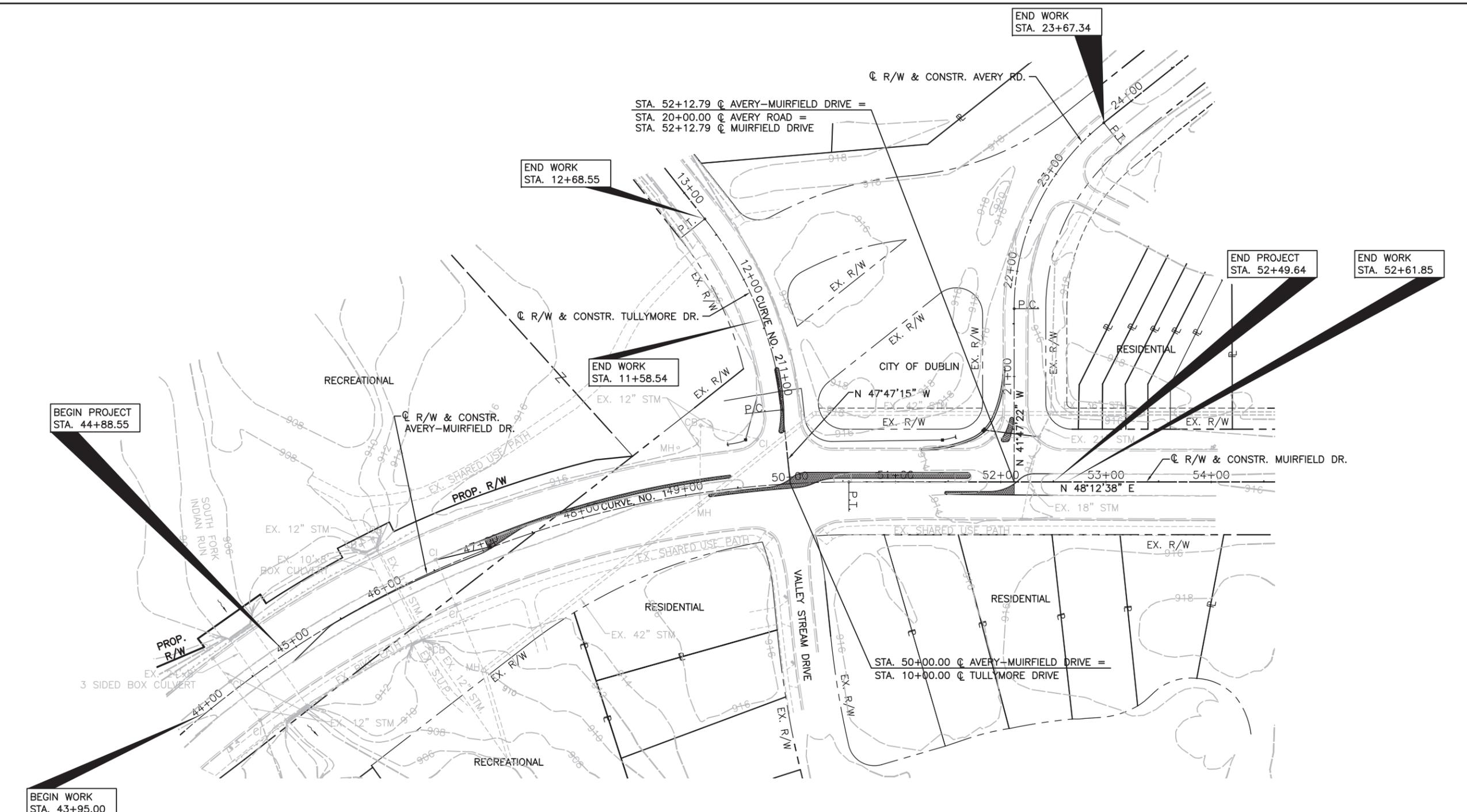


CALCULATED
CNK
CHECKED
BMH

PROJECT SITE PLAN

EVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

MURLANGTIS, KC U:\17360876\design\plan set\17360876\ps01.dwg PROJECT SITE PLAN Last Saved: Nov 14, 2014 3:18 PM Plotted: Nov 19, 2014 10:55 AM



PROJECT DATA			
TOTAL AREA (RIGHT-OF-WAY)	2.92 ACRES	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.5-0.9
PROJECT EARTH DISTURBED AREA	0.35 ACRES	RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.5-0.9
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.06 ACRES	POST CONSTRUCTION BMP	N/A
NOTICE OF INTENT EARTH DISTURBED AREA	N/A	IMMEDIATE RECEIVING WATERS	SOUTH FORK INDIAN RUN
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	1.29 ACRES	SUBSEQUENT RECEIVING WATERS	SCIOTO RIVER
IMPERVIOUS AREA (PAVED) FOR POST-CONSTRUCTION SITE	1.44 ACRES	NPDES GENERAL PERMIT NUMBER	

USGS QUADRANT HILLIARD, OHIO 2013
LAT. N 40°06'35"
LONG. W 83°09'35"

PROJECT DESCRIPTION
THE PROJECT CONSISTS OF THE CONSTRUCTION OF LEFT TURN LANES INCLUDING MEDIANS TO RESTRICT LEFT TURN MOVEMENTS ON AVERY-MUIRFIELD DR. AT TULLYMORE DR. & AVERY RD.

CURVE DATA AVERY-MUIRFIELD DR. CURVE NO. 1	CURVE DATA TULLYMORE DR. CURVE NO. 2	CURVE DATA AVERY RD. CURVE NO. 3
P.I. STA. 46+50.21	P.I. STA. 11+72.25	P.I. STA. 22+73.03
Δ = 52°13'57"	Δ = 32°25'21"	Δ = 51°34'46"
Dc = 05°57'18"	Dc = 16°22'13"	Dc = 25°27'53"
R = 962.13'	R = 350.00'	R = 225.00'
T = 471.68'	T = 101.76'	T = 108.72'
L = 877.11'	L = 198.06'	L = 202.55'
E = 109.40'	E = 14.49'	E = 24.89'
P.C. STA. 41+78.53	P.C. STA. 10+70.49	P.C. STA. 21+64.31
P.T. STA. 50+55.63	P.T. STA. 12+68.55	P.T. STA. 23+66.86

END WORK
STA. 12+68.55

END WORK
STA. 23+67.34

CURVE DATA
AVERY-MUIRFIELD DR.
CURVE NO. 1
 P.I. STA. 46+50.21
 $\Delta = 52^{\circ}13'57''$
 $D_c = 05^{\circ}57'18''$
 $R = 962.13'$
 $T = 471.68'$
 $L = 877.11'$
 $E = 109.40'$
 P.C. STA. 41+78.53
 P.T. STA. 50+55.63

CURVE DATA
TULLYMORE DR.
CURVE NO. 2
 P.I. STA. 11+72.25
 $\Delta = 32^{\circ}25'21''$
 $D_c = 16^{\circ}22'13''$
 $R = 350.00'$
 $T = 101.76'$
 $L = 198.06'$
 $E = 14.49'$
 P.C. STA. 10+70.49
 P.T. STA. 12+68.55

CURVE DATA
AVERY RD.
CURVE NO. 3
 P.I. STA. 22+73.03
 $\Delta = 51^{\circ}34'46''$
 $D_c = 25^{\circ}27'53''$
 $R = 225.00'$
 $T = 108.72'$
 $L = 202.55'$
 $E = 24.89'$
 P.C. STA. 21+64.31
 P.T. STA. 23+66.86

RADIUS DATA @ FACE OF CURB
CURVE G
 $\Delta = 03^{\circ}26'06''$
 $R = 1376.50'$
 $T = 41.27'$
 $L = 82.53'$
 P.R.C. STA. 49+22.81, 5.10' RT.
 R.P. STA. 51+09.17, 1378.18' RT.
 P.R.C. STA. 50+05.75, 4.27' RT.

RADIUS DATA @ FACE OF CURB
CURVE I
 $\Delta = 34^{\circ}56'41''$
 $R = 40.00'$
 $T = 12.59'$
 $L = 24.40'$
 P.C. STA. 49+79.43, 1.77' RT.
 R.P. STA. 49+78.86, 38.23' LT.
 P.R.C. STA. 50+02.09, 6.05' LT.

RADIUS DATA @ FACE OF CURB
CURVE J
 $\Delta = 39^{\circ}31'58''$
 $R = 20.00'$
 $T = 7.19'$
 $L = 13.80'$
 P.R.C. STA. 50+02.09, 6.05' LT.
 R.P. STA. 50+14.29, 9.81' RT.
 P.T. STA. 50+14.86, 10.18' LT.

RADIUS DATA @ FACE OF CURB
CURVE K
 $\Delta = 20^{\circ}16'51''$
 $R = 50.00'$
 $T = 8.94'$
 $L = 17.70'$
 P.R.C. STA. 50+05.75, 4.27' RT.
 R.P. STA. 50+04.64, 45.72' LT.
 P.R.C. STA. 50+23.01, 0.61' RT.

RADIUS DATA @ FACE OF CURB
CURVE L
 $\Delta = 24^{\circ}39'52''$
 $R = 50.00'$
 $T = 10.93'$
 $L = 21.52'$
 P.R.C. STA. 50+23.01, 0.61' RT.
 R.P. STA. 50+43.24, 46.56' RT.
 P.T. STA. 50+43.95, 3.43' LT.

RADIUS DATA @ FACE OF CURB
CURVE M
 $\Delta = 180^{\circ}00'00''$
 $R = 1.50'$
 $L = 5.00'$
 P.C. STA. 51+48.15, 8.78' RT.
 R.P. STA. 51+48.15, 10.38' RT.
 P.T. STA. 51+48.15, 11.10' RT.
 * TAPER MEDIAN NOSE FROM 0" TO 6" IN 10 FEET

RADIUS DATA @ FACE OF CURB
CURVE N
 $\Delta = 180^{\circ}00'00''$
 $R = 3.00'$
 $L = 9.42'$
 P.C. STA. 51+68.32, 3.18' LT.
 R.P. STA. 51+68.32, 6.18' LT.
 P.T. STA. 51+68.32, 9.18' LT.
 * TAPER MEDIAN NOSE FROM 0" TO 6" IN 10 FEET

RADIUS DATA @ FACE OF CURB
CURVE O
 $\Delta = 44^{\circ}13'12''$
 $R = 40.00'$
 $T = 16.25'$
 $L = 30.87'$
 P.C. STA. 51+89.56, 8.85' LT.
 R.P. STA. 51+89.62, 31.15' LT.
 P.R.C. STA. 52+17.47, 2.44' LT.

RADIUS DATA @ FACE OF CURB
CURVE P
 $\Delta = 44^{\circ}13'12''$
 $R = 20.00'$
 $T = 8.13'$
 $L = 15.44'$
 P.R.C. STA. 52+17.47, 2.44' LT.
 R.P. STA. 52+31.40, 11.91' RT.
 P.T. STA. 52+31.43, 8.09' LT.

RADIUS DATA @ FACE OF CURB
CURVE Q
 $\Delta = 80^{\circ}22'05''$
 $R = 2.00'$
 $T = 1.69'$
 $L = 2.81'$
 P.C. STA. 10+48.49, 3.08' LT.
 R.P. STA. 10+50.49, 3.07' LT.
 P.C.C. STA. 10+50.15, 1.10' LT.

RADIUS DATA @ FACE OF CURB
CURVE R
 $\Delta = 107^{\circ}59'35''$
 $R = 2.00'$
 $T = 2.75'$
 $L = 3.77'$
 P.C. STA. 10+48.49, 3.75' LT.
 R.P. STA. 10+50.49, 3.75' LT.
 P.R.C. STA. 10+51.11, 5.65' LT.

RADIUS DATA @ FACE OF CURB
CURVE S
 $\Delta = 18^{\circ}19'58''$
 $R = 80.00'$
 $T = 12.91'$
 $L = 25.60'$
 P.R.C. STA. 10+51.11, 5.65' LT.
 R.P. STA. 10+77.58, 81.65' LT.
 P.C.C. STA. 10+76.32, 1.66' LT.

RADIUS DATA @ FACE OF CURB
CURVE T
 $\Delta = 05^{\circ}29'13''$
 $R = 340.00'$
 $T = 16.29'$
 $L = 32.56'$
 P.C.C. STA. 10+76.32, 1.66' LT.
 R.P. STA. 12+36.26, 340.68' LT.
 P.R.C. STA. 11+09.02, 1.30' LT.

RADIUS DATA @ FACE OF CURB
CURVE U
 $\Delta = 180^{\circ}00'00''$
 $R = 2.00'$
 $L = 6.29'$
 P.R.C. STA. 11+09.14, 2.70' RT.
 R.P. STA. 11+09.08, 0.70' RT.
 P.R.C. STA. 11+09.02, 1.30' LT.
 * TAPER MEDIAN NOSE FROM 0" TO 6" IN 10 FEET

RADIUS DATA @ FACE OF CURB
CURVE V
 $\Delta = 16^{\circ}12'49''$
 $R = 210.00'$
 $T = 129.91'$
 $L = 59.43'$
 P.C.C. STA. 10+50.15, 1.10' LT.
 R.P. STA. 11+07.55, 207.29' LT.
 P.R.C. STA. 11+09.14, 2.70' RT.

RADIUS DATA @ FACE OF CURB
CURVE W
 $\Delta = 64^{\circ}52'41''$
 $R = 2.00'$
 $T = 1.27'$
 $L = 2.26'$
 P.T. STA. 20+38.17, 6.33' LT.
 R.P. STA. 20+40.17, 6.48' LT.
 P.T. STA. 20+39.46, 4.61' LT.

RADIUS DATA @ FACE OF CURB
CURVE X
 $\Delta = 128^{\circ}45'13''$
 $R = 2.00'$
 $T = 4.17'$
 $L = 4.49'$
 P.C. STA. 20+37.87, 10.25' LT.
 R.P. STA. 20+39.87, 10.40' LT.
 P.T. STA. 20+40.99, 12.06' LT.

RADIUS DATA @ FACE OF CURB
CURVE Y
 $\Delta = 23^{\circ}35'17''$
 $R = 50.00'$
 $T = 10.44'$
 $L = 20.58'$
 P.R.C. STA. 20+40.99, 12.66' LT.
 R.P. STA. 20+69.23, 53.32' LT.
 P.R.C. STA. 20+59.87, 4.21' LT.

RADIUS DATA @ FACE OF CURB
CURVE Z
 $\Delta = 173^{\circ}13'29''$
 $R = 2.00'$
 $T = 33.79'$
 $L = 6.05'$
 P.C. STA. 20+59.35, 0.25' LT.
 R.P. STA. 20+59.49, 2.24' LT.
 P.T. STA. 20+59.87, 4.21' LT.
 * TAPER MEDIAN NOSE FROM 0" TO 6" IN 10 FEET

RADIUS DATA @ FACE OF CURB
CURVE AA
 $\Delta = 16^{\circ}43'54''$
 $R = 70.00'$
 $T = 10.29'$
 $L = 20.44'$
 P.R.C. STA. 20+39.46, 4.61' LT.
 R.P. STA. 20+64.25, 70.07' LT.
 P.R.C. STA. 20+59.35, 0.25' LT.

-  PERMANENT PAVEMENT REPLACEMENT, TYPE 1
-  3" PAVEMENT PLANING
-  1 1/4" PAVEMENT PLANING
-  BRICK MEDIAN, AS PER PLAN

FOR REFERENCE POINTS, SEE SHEET 2
 FOR PAVEMENT DETAILS, SEE SHEET 20
 FOR STORM SEWER PROFILES, SEE SHEET 21
 FOR TRAFFIC CONTROL PLAN, SEE SHEET 24

BM "B": CHISELED SQUARE ON SOUTHEAST CORNER OF CONCRETE BASE OF LIGHT POLE LOCATED AT THE SOUTHWESTERN CORNER OF TULLYMORE DR & AVERY-MUIRFIELD INTERSECTION.
 N: 769130.68, E: 1784002.36
 ELEV = 917.35

K:\BLANGUIS_KC_U\173560876\design\plan set\Plan Proj\173560876\p02.dwg PLAN Last Saved: Nov. 19, 2014 10:51 AM, KKIRLANGITIS Plotted: Nov. 19, 2014 11:42 AM

PLAN
STA. 49+50 TO STA. 52+61.82





 SCALE IN FEET

CALCULATED: _____
 CNK: _____
 CHECKED: _____
 BMH: _____



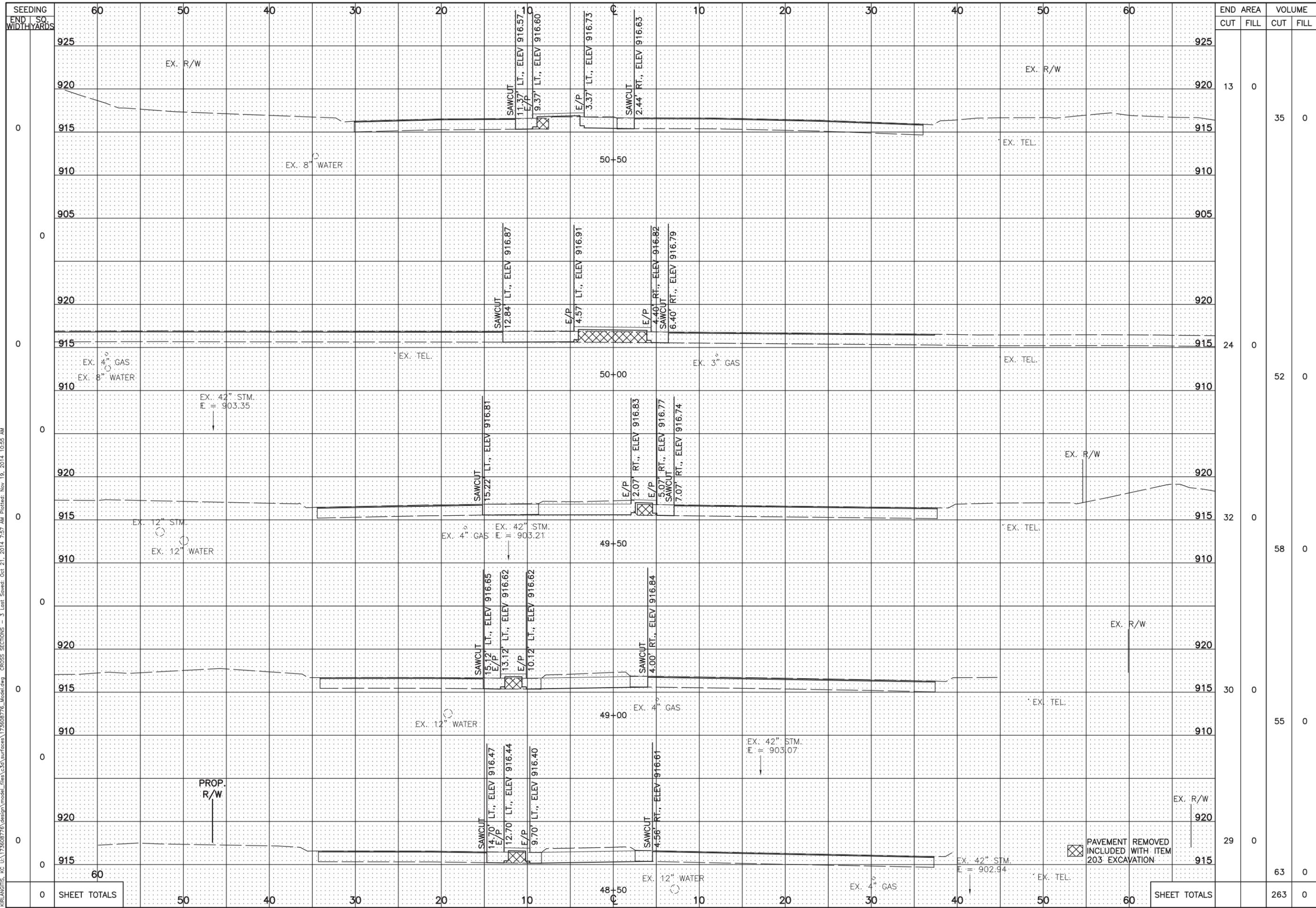
K:\BLANKETS_KC\173608776\design\model_files\c3a\surfaces\173608776_Model.dwg CROSS SECTIONS - 2 Last Saved: Oct 21, 2014 7:57 AM Plotted: Nov 19, 2014 10:55 AM

SEEDING END SQ. WIDTH YARDS	60 50 40 30 20 10 C 10 20 30 40 50 60														END AREA		VOLUME		CALCULATED CNK CHECKED BMH			
															CUT	FILL	CUT	FILL				
0	920	PROP. R/W														920						
0	915	SAWCUT 13.99' LT., ELEV 916.18 E/P 11.99' LT., ELEV 916.15 E/P 8.99' LT., ELEV 916.11 CROWN POINT 4.00' RT., ELEV 916.32 SAWCUT 10.50' RT., ELEV 916.21														39	0					
0	910	48+00 EX. TEL. EX. 4" GAS EX. 12" WATER																73	0			
0	905																					
0	920	PROP. R/W														920						
0	915	SAWCUT 12.97' LT., ELEV 915.89 E/P 10.97' LT., ELEV 915.85 E/P 7.97' LT., ELEV 915.88 CROWN POINT 4.00' RT., ELEV 916.07 SAWCUT 13.53' RT., ELEV 915.91														39	0					
0	910	47+50 EX. TEL. EX. 12" WATER																59	0			
0	905																					
11	920	PROP. R/W														920						
11	915	SAWCUT 11.66' LT., ELEV 915.63 E/P 9.66' LT., ELEV 915.60 E/P 2.04' RT., ELEV 915.82 SAWCUT 13.38' RT., ELEV 915.64														24	0					
11	910	12" STM. 47+00 EX. TEL. EX. 12" WATER																40	0			
11	905																					
48	920	PROP. R/W														920						
48	915	SAWCUT 13.34' RT., ELEV 915.36														19	0					
48	910	20' E/P 1.62' RT., ELEV 915.55 EX. TEL. PAVEMENT REMOVED INCLUDED WITH ITEM 203 EXCAVATION																37	0			
48	905																					
6	920	PROP. R/W														920						
6	915	SAWCUT 13.34' RT., ELEV 915.36														19	0					
6	910	46+50 EX. TEL. PAVEMENT REMOVED INCLUDED WITH ITEM 203 EXCAVATION																37	0			
6	905																					
110	SHEET TOTALS	50	40	30	20	10	C	10	20	30	40	50	60	SHEET TOTALS			209	0				

CROSS SECTIONS - AVERY-MUIRFIELD DR.
STA. 46+50 TO STA. 48+00

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS

K:\BLANGTIS_KC_U\173608776\design\model_files\c3a_surfaces\173608776_Model.dwg CROSS SECTIONS - 3_Last_Saved: Oct 21, 2014 7:57 AM Plotted: Nov 19, 2014 10:55 AM



END STA.	AREA		VOLUME		CALCULATED	CNK	CHECKED	BMH
	CUT	FILL	CUT	FILL				
925								
920	13	0						
915			35	0				
910								
905								
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915	24	0						
910			52	0				
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910			58	0				
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K:\BLANKETS_KC\173608776\design\model_files\c3a\surfaces\173608776_Model.dwg CROSS SECTIONS - 4_Last Saved: Oct 21, 2014 7:57 AM Plotted: Nov 19, 2014 10:55 AM

SEEDING END SQ. WIDTH YARDS	60 50 40 30 20 10 0 10 20 30 40 50 60												END AREA		VOLUME		CALCULATED CNK	CHECKED BMH
													CUT	FILL	CUT	FILL		
76	ADD FOR AVERY RD.														13 0			
925															82 0			
920	EX. R/W																	
20	BACK ONLY														11 7			
915															40 9			
910	EX. 8" WATER																	
56	52+49.64 END PROJECT																	
925																		
920	EX. R/W														32 2			
0	BACK ONLY														57 2			
915																		
910	EX. 8" WATER																	
0	52-00																	
925																		
920	EX. R/W														29 0			
0	BACK ONLY														46 0			
915																		
910	EX. 8" WATER																	
0	51-50																	
925																		
920	EX. R/W														20 0			
0	BACK ONLY														31 0			
915																		
910	EX. 8" WATER																	
0	51-00																	
60	SHEET TOTALS														269 11			

ITEM 203 EXCAVATION 808 CU. YD.
 ITEM 203 EMBANKMENT 11 CU. YD.
 ITEM 659 SEEDING & MULCHING, A.P.P. 277 SQ. YD.

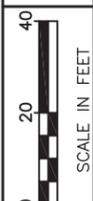
QUANTITIES CARRIED TO GENERAL SUMMARY

PAVEMENT REMOVED
 INCLUDED WITH ITEM
 203 EXCAVATION

CROSS SECTIONS - AVERY-MUIRFIELD DR.
 STA. 51+00 TO STA. 52+49.64

AVERY-MUIRFIELD DR.,
 TULLYMORE DR. & AVERY RD.
 INTERSECTION IMPROVEMENTS

K:\R\LANGTIS_KC_U\1735608776\design\plan_sst\Detail\1735608776p01.dwg PAVEMENT DETAILS Lot: Saved: Apr 21, 2014 9:29 AM Plotted: Nov 19, 2014 10:55 AM



CALCULATED
CNK
CHECKED
BMH

PAVEMENT DETAILS

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS



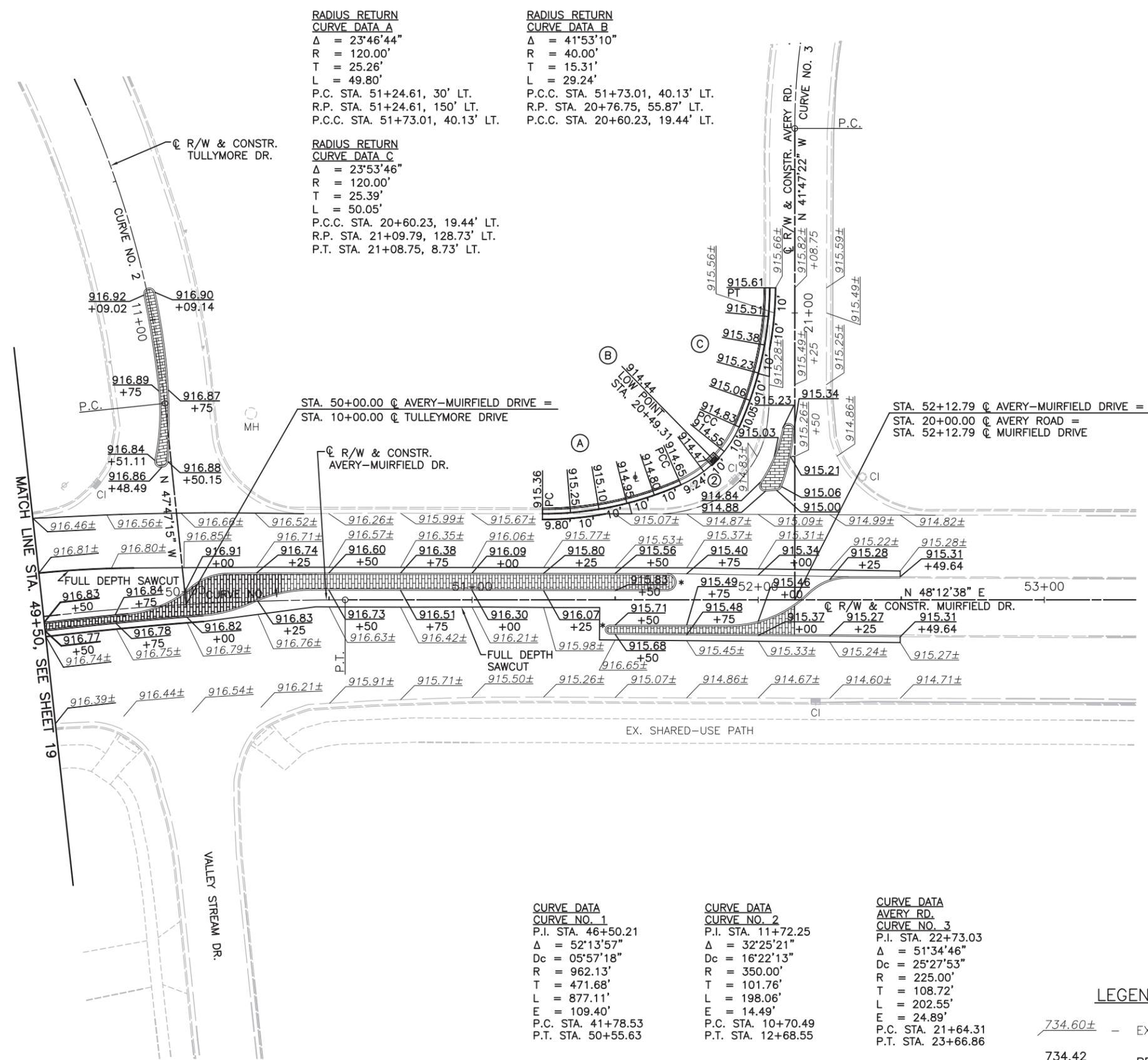
LEGEND

- $\frac{734.60\pm}{+50}$ - EXIST. ELEVATION
- $\frac{734.42}{+50}$ - PROP. ELEVATION

* TAPER MEDIAN NOSE FROM 6" TO 0", IN 10'.

NOTE: ALL ELEVATIONS ARE TOP OF PAVEMENT

K:\R\LANGTIS_KC_U\173608776\design\plan_sst\Detail\173608776p02.dwg PAVEMENT DETAILS Lot Saved: Nov 17, 2014 8:35 AM Plotted: Nov 19, 2014 10:55 AM



RADIUS RETURN CURVE DATA A
 $\Delta = 23^\circ 46' 44''$
 $R = 120.00'$
 $T = 25.26'$
 $L = 49.80'$
 P.C. STA. 51+24.61, 30' LT.
 R.P. STA. 51+24.61, 150' LT.
 P.C.C. STA. 51+73.01, 40.13' LT.

RADIUS RETURN CURVE DATA B
 $\Delta = 41^\circ 53' 10''$
 $R = 40.00'$
 $T = 15.31'$
 $L = 29.24'$
 P.C.C. STA. 51+73.01, 40.13' LT.
 R.P. STA. 20+76.75, 55.87' LT.
 P.C.C. STA. 20+60.23, 19.44' LT.

RADIUS RETURN CURVE DATA C
 $\Delta = 23^\circ 53' 46''$
 $R = 120.00'$
 $T = 25.39'$
 $L = 50.05'$
 P.C.C. STA. 20+60.23, 19.44' LT.
 R.P. STA. 21+09.79, 128.73' LT.
 P.T. STA. 21+08.75, 8.73' LT.

CURVE DATA CURVE NO. 1
 P.I. STA. 46+50.21
 $\Delta = 52^\circ 13' 57''$
 $Dc = 05^\circ 57' 18''$
 $R = 962.13'$
 $T = 471.68'$
 $L = 877.11'$
 $E = 109.40'$
 P.C. STA. 41+78.53
 P.T. STA. 50+55.63

CURVE DATA CURVE NO. 2
 P.I. STA. 11+72.25
 $\Delta = 32^\circ 25' 21''$
 $Dc = 16^\circ 22' 13''$
 $R = 350.00'$
 $T = 101.76'$
 $L = 198.06'$
 $E = 14.49'$
 P.C. STA. 10+70.49
 P.T. STA. 12+68.55

CURVE DATA AVERY RD. CURVE NO. 3
 P.I. STA. 22+73.03
 $\Delta = 51^\circ 34' 46''$
 $Dc = 25^\circ 27' 53''$
 $R = 225.00'$
 $T = 108.72'$
 $L = 202.55'$
 $E = 24.89'$
 P.C. STA. 21+64.31
 P.T. STA. 23+66.86

LEGEND

$\frac{734.60\pm}{+50}$ - EXIST. ELEVATION

$\frac{734.42}{+50}$ - PROP. ELEVATION

* TAPER MEDIAN NOSE FROM 6" TO 0", IN 10'.

NOTE: ALL ELEVATIONS ARE TOP OF PAVEMENT

SCALE IN FEET

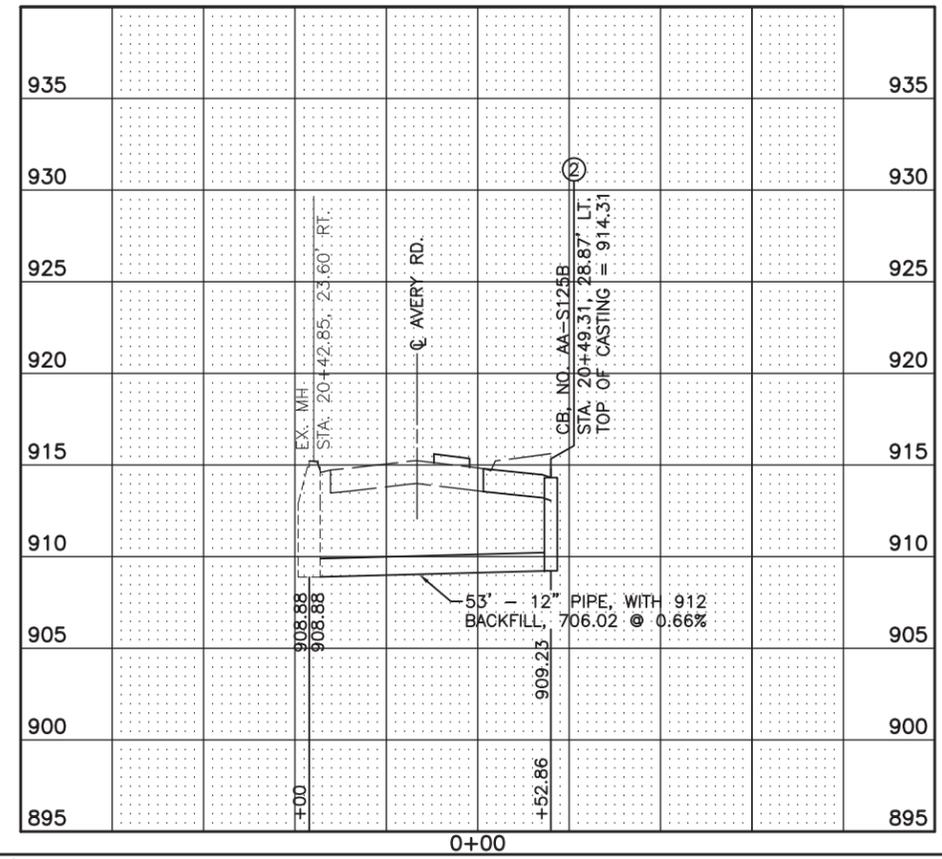
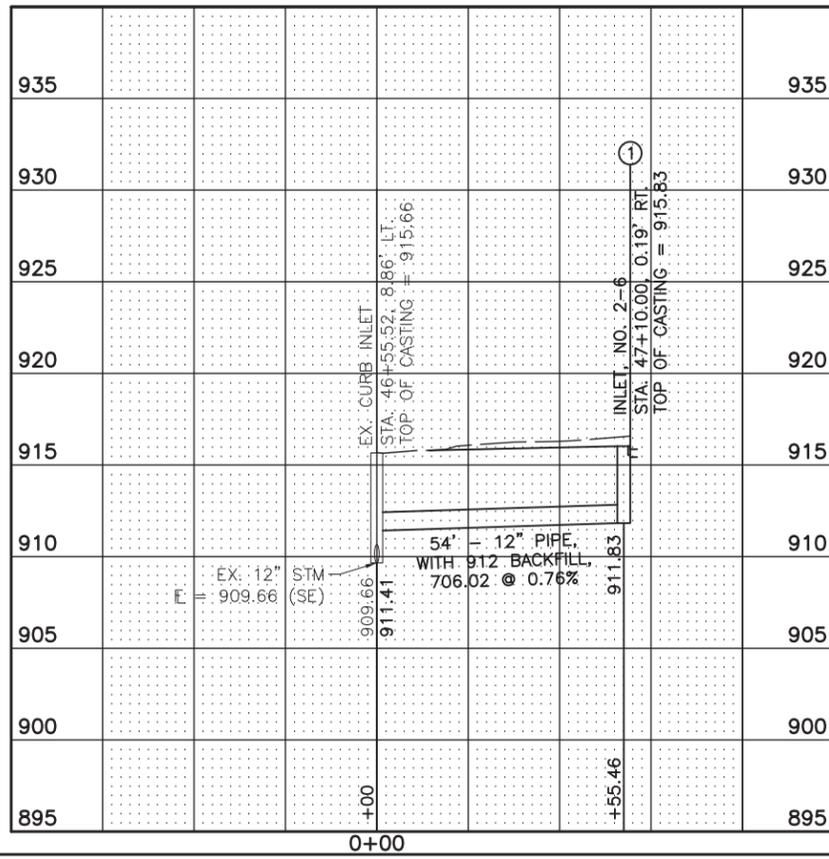
CALCULATED	CNK	CHECKED	BMH

PAVEMENT DETAILS

AVERY-MUIRFIELD DR., TULLYMORE DR. & AVERY RD. INTERSECTION IMPROVEMENTS

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KIRLANGTIS, KC. U:\17360876\design\17360876\storm\17360876\storm.dwg STORM SEWER PROFILES & COMPUTATIONS Last Saved: Oct 21, 2014 7:59 AM, KIRLANGTIS, KC. U:\17360876\design\17360876\storm\17360876\storm.dwg Nov 19, 2014 10:55 AM



STORM WATER INLET COMPUTATIONS (N = 0.013)

INLET NUMBER	TYPE	INLET STATION	DRAINAGE AREA	C	CA	TIME	I-5 (IN./HR.)	Q-5 (C.F.S.)	Q (CARRYOVER) (C.F.S.)	Q TOTAL (GUTTER FLOW)	S (GUTTER SLOPE) (FT./FT.)	Sx (CROSS SLOPE)	SPREAD (FT.)	TOTAL FLOW INTERCEPTED	CARRY OVER FLOW	% PICK UP
1	AA-S125A	47+10	0.08	0.90	0.07	10.25	4.46	0.3	0	0.31	0.0009	0.016	8.3	0.24	0.07	77%
3	AA-S125B	20+49.31	0.70	0.67	0.47	12.07	4.21	2.0	0	1.96	SUMP	0.023	8.1	1.96	0.00	100%
EX. CI	AA-S125A	10+45.42	0.16	0.76	0.12	10	4.50	0.5	0	0.53	SUMP	0.02	3.5	0.53	0.00	100%
EX. CI	AA-S125A	46+55.46	0.38	0.66	0.25	15.48	3.79	1.0	0	0.95	0.0086	0.0476	4.1	0.80	0.15	84%
EX. CI	AA-S125A	46+55.38	0.41	0.84	0.34	10	4.50	1.5	0	1.53	0.0102	0.0206	7.3	1.05	0.48	69%
EX. CI	AA-S125A	44+30.41	0.26	0.83	0.22	10	4.50	1.0	0.48	1.45	0.0064	0.0243	7.2	1.02	0.43	70%
EX. CI	AA-S125A	52+20.14	0.28	0.83	0.23	10	4.50	1.0	0	1.04	0.0041	0.0385	5.2	0.88	0.16	84%

STORM SEWER DESIGN COMPUTATIONS - 5 YEAR

TIME OF CONCENTRATION:
10 MINUTES FOR CURB INLETS
15 MINUTES FOR DITCH CATCH BASINS
OVERLAND FLOW USED FOR LARGER AREAS

FROM POINT	TO POINT	DRAINAGE AREA ACRES	RUNOFF COEFF. C	CA		INLET TIME MIN.	RAINFALL INTENSITY IN./HR.	Q-5 YR. RUNOFF C.F.S.	INVERT ELEVATION		RIM ELEV. FT.	LENGTH FT.	SLOPE FT./FT.	DIA. IN.	n	CAPACITY C.F.S.	VELOCITY F.P.S.	FLOW TIME MIN.	REMARKS
				INCREM.	ACCUM.				UPPER FT.	LOWER FT.									
1	EX. CI	0.08	0.90	0.07	0.07	10.25	4.46	0.3	911.83	911.41	915.83	55.6	0.0076	12	0.013	3.1	2.3	0.40	
EX. CI	EX. CI	0.38	0.66	0.25	0.32	10.65	4.40	1.4	909.66	909.52	915.66	47.7	0.0029	12	0.013	1.9	2.4	0.33	
2	EX. CI	0.70	0.67	0.47	0.47	12.07	4.21	2.0	909.23	908.88	914.31	52.86	0.0066	12	0.013	2.9	4.2	0.21	

HYDRAULIC GRADE LINE - 10 YEAR

INLET #	OUTLET INVERT ELEV. FT.	OUTLET WATER SURFACE ELEV. FT.	OUTLET PIPE DIAM. IN.	OUTLET FLOW RATE C.F.S.	OUTLET PIPE LENGTH FT.	FRICTION SLOPE %	FRICTION LOSS HF FT.	JUNCTION LOSS										FINAL HEAD LOSS H FT.	INLET WATER SURFACE ELEV. FT.	RIM ELEV. FT.	REMARKS		
								VELOCITY OUTLET PIPE V _o F.P.S.	CONTR. LOSS H _o FT.	DISCHARGE INFLOW PIPE Q _i C.F.S.	VELOCITY INFLOW PIPE V _i F.P.S.	MAX. INFLOW PRODUCT Q _i V _i FT. ⁴ /S ²	INFLOW VELOCITY HEAD (V _i ²)/2g FT.	MAX. EXPAN. LOSS H _i FT.	MAX. ANGLE A _i DEG.	LOSS COEFF. K	MAX. BEND LOSS H _b FT.					TOTAL HEAD LOSS H _t FT.	INLET CORRECT. FACTOR 1.3*H _t FT.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)			
EX. CI	909.66	910.32	12	1.6	48	0.28%	0.13356	2.1	0.017	1.6	0.5	0.75	0.0033	0.001	0.000	0.018	0.023	0.143	910.46	915.66	AA-S125A		
1	911.83	910.46	12	0.4	56	0.01%	0.00556	0.5	0.001	0.4	0.0	0.00	0.0000	0.000	0	0.66	0.000	0.001	0.001	0.006	910.47	915.83	AA-S125A
2	909.23	909.70	12	2.3	53	0.54%	0.28544	2.9	0.032	2.3	2.9	6.52	0.1289	0.045	0	0.00	0.000	0.077	0.101	0.324	910.02	914.31	EX. CI

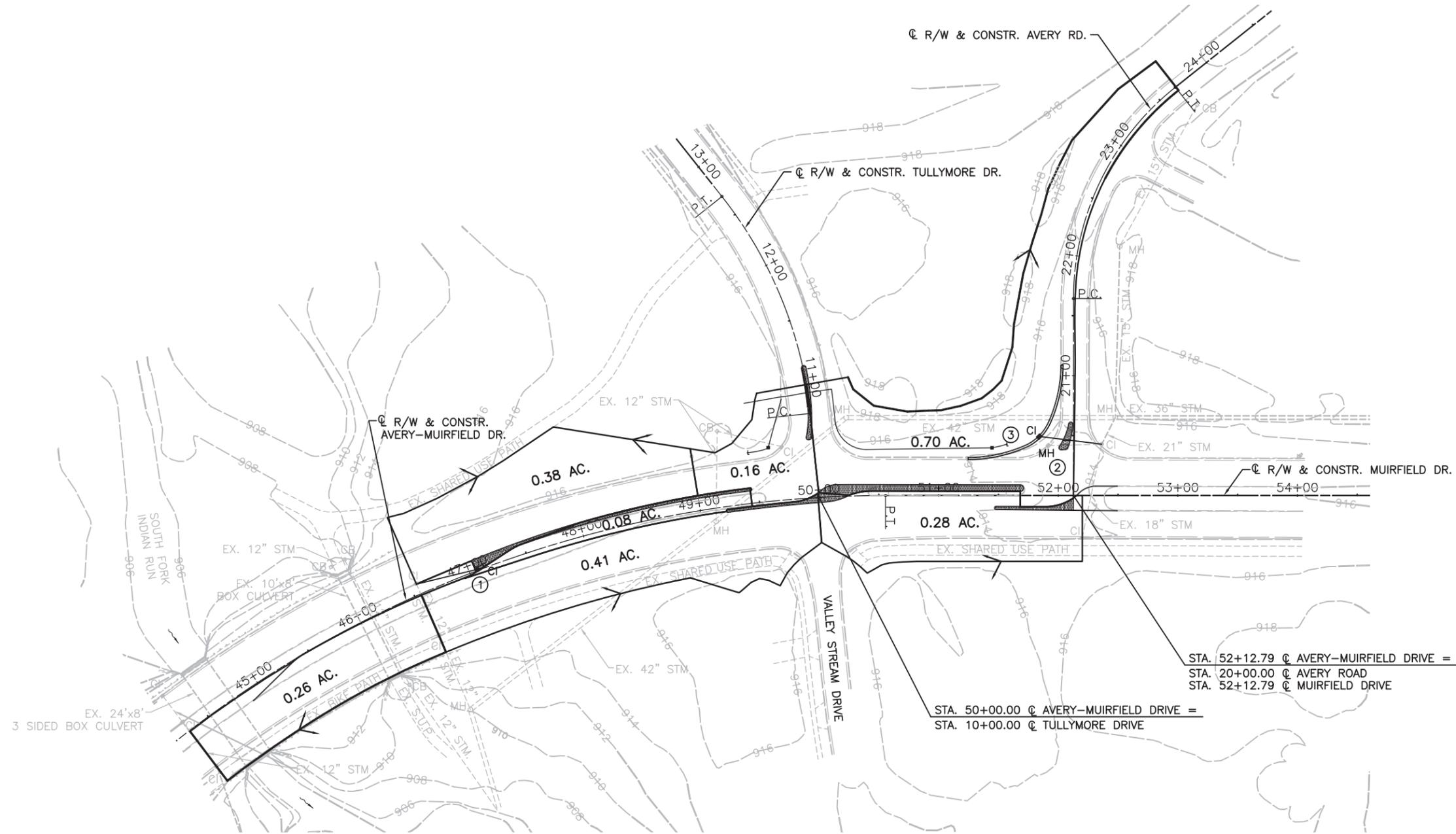
$H_i = 0.35 \frac{V_i^2}{2g}$
 $H_o = 0.25 \frac{V_o^2}{2g}$
 $H_b = K \frac{V_i^2}{2g}$
 FINAL H = H_f + H_s
 90° K=0.70 50° K=0.47 20° K=0.16
 80° K=0.66 40° K=0.38 15° K=0.10
 70° K=0.61 30° K=0.28
 60° K=0.55 25° K=0.22

STORM SEWER PROFILES & COMPUTATIONS

AVERY-MUIRFIELD DR., TULLYMORE DR. & AVERY RD. INTERSECTION IMPROVEMENTS

CALCULATED
CNK
CHECKED
TJS

K:\R\LANGTIS, KC U\173608776\design\plan_sst\173608776\hls_oreo01.dwg STORM SEWER TRIBUTARY AREA MAP Lot1_Sownd Oct 09, 2014 11:21 AM Plotted: Nov 19, 2014 10:56 AM



STA. 52+12.79 @ AVERY-MUIRFIELD DRIVE =
 STA. 20+00.00 @ AVERY ROAD
 STA. 52+12.79 @ MUIRFIELD DRIVE

 STA. 50+00.00 @ AVERY-MUIRFIELD DRIVE =
 STA. 10+00.00 @ TULLYMORE DRIVE

CALCULATED
 CNK
 CHECKED
 BMH

SCALE IN FEET

AVERY-MUIRFIELD DR.,
 TULLYMORE DR. & AVERY RD.
 INTERSECTION IMPROVEMENTS

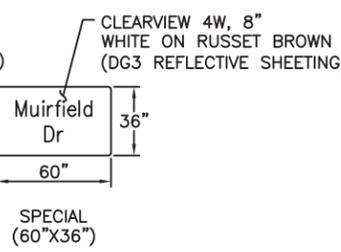
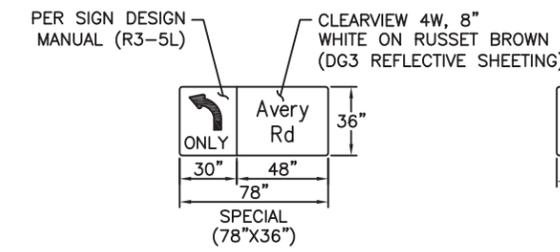
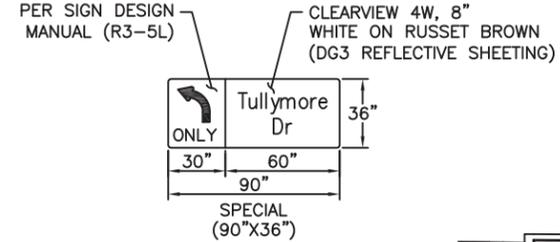
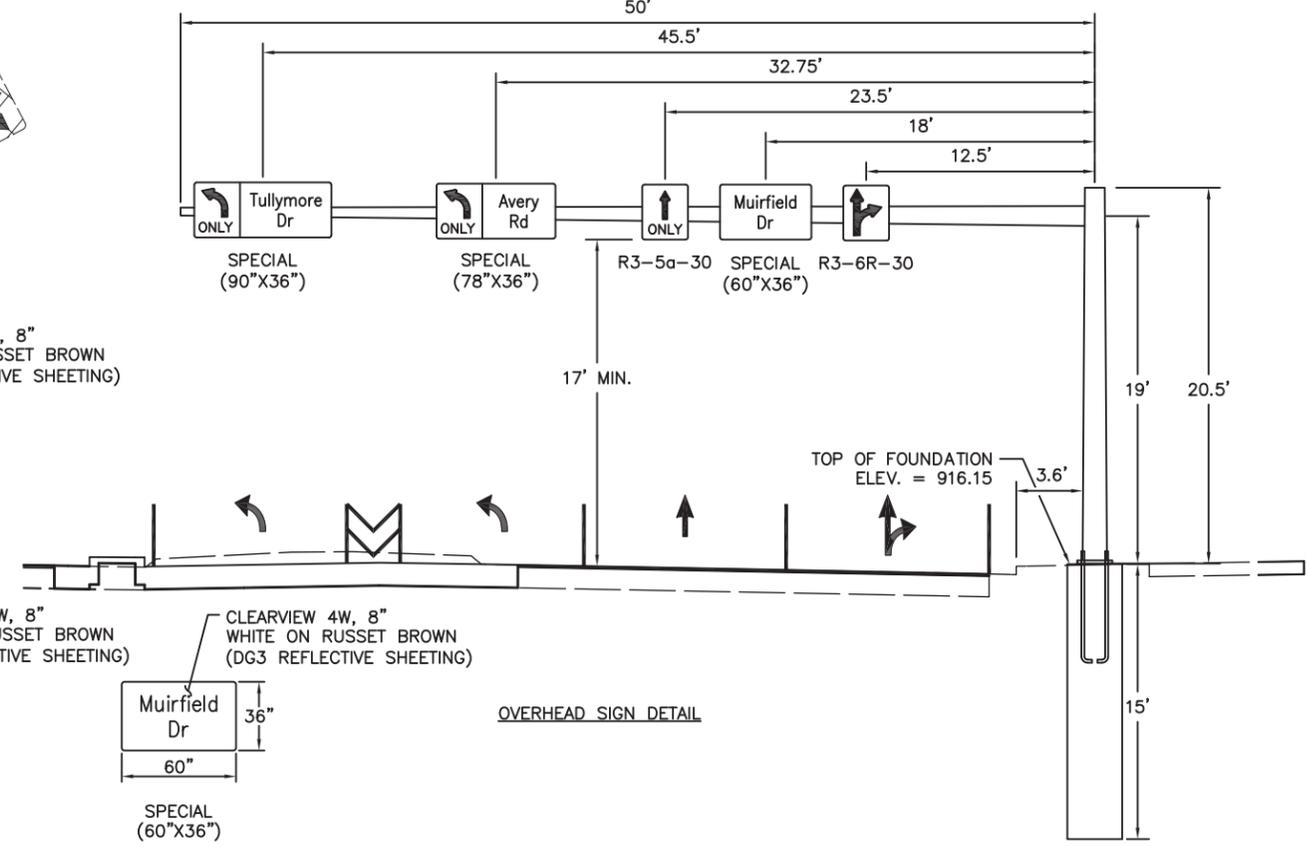
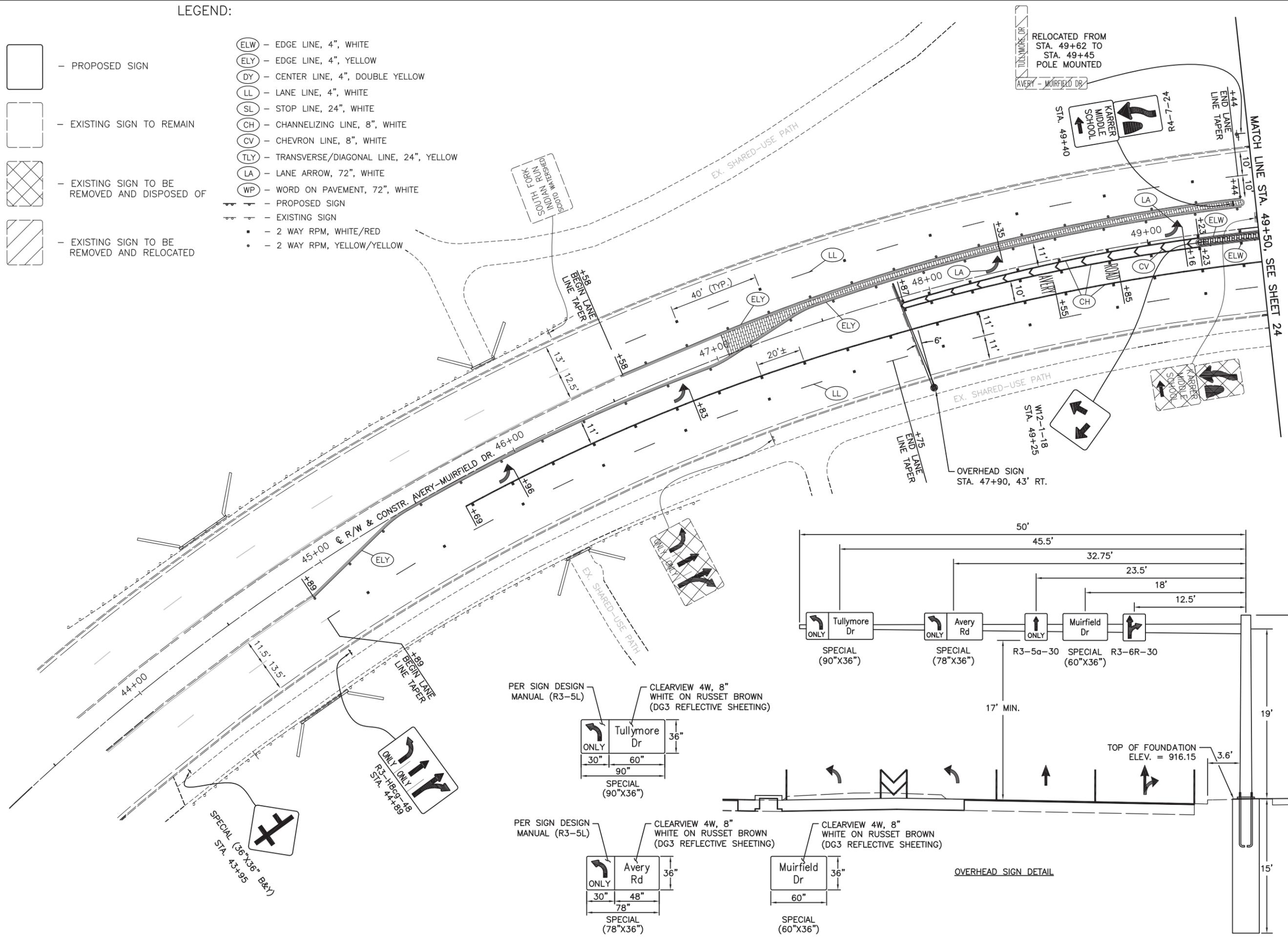
STORM SEWER TRIBUTARY AREA MAP

LEGEND:

-  - PROPOSED SIGN
-  - EXISTING SIGN TO REMAIN
-  - EXISTING SIGN TO BE REMOVED AND DISPOSED OF
-  - EXISTING SIGN TO BE REMOVED AND RELOCATED

- (ELW) - EDGE LINE, 4", WHITE
- (ELY) - EDGE LINE, 4", YELLOW
- (DY) - CENTER LINE, 4", DOUBLE YELLOW
- (LL) - LANE LINE, 4", WHITE
- (SL) - STOP LINE, 24", WHITE
- (CH) - CHANNELIZING LINE, 8", WHITE
- (CV) - CHEVRON LINE, 8", WHITE
- (TLY) - TRANSVERSE/DIAGONAL LINE, 24", YELLOW
- (LA) - LANE ARROW, 72", WHITE
- (WP) - WORD ON PAVEMENT, 72", WHITE
-  - PROPOSED SIGN
-  - EXISTING SIGN
-  - 2 WAY RPM, WHITE/RED
-  - 2 WAY RPM, YELLOW/YELLOW

KURLANGTIS, KC U:\17360876\design\plan set\Traffic Control\17360876\c01.dwg TRAFFIC CONTROL Last Saved: Nov 18, 2014 12:45 PM, KURLANGTIS, Plotter: Nov 19, 2014 10:56 AM



RELOCATED FROM STA. 49+62 TO STA. 49+45 POLE MOUNTED



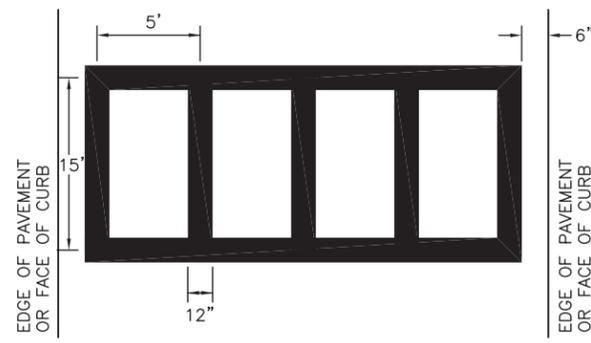
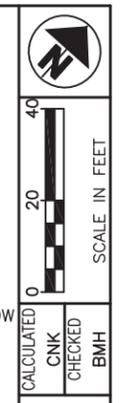
TRAFFIC CONTROL STA. 44+88.55 TO STA. 49+50

AVERY-MUIRFIELD DR., TULLYMORE DR. & AVERY RD. INTERSECTION IMPROVEMENTS

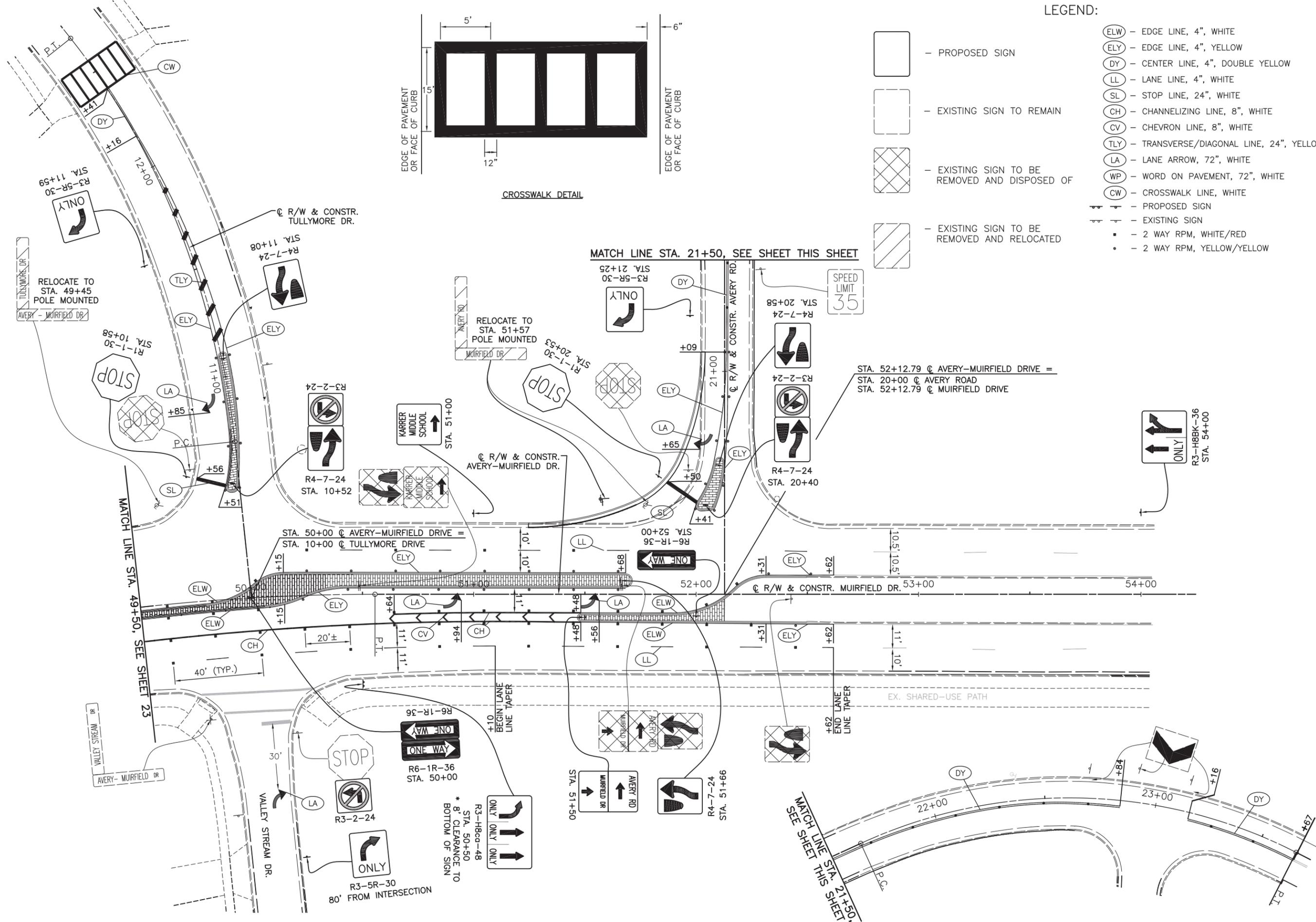
KURLANGTIS, KC. U:\17360876\design\plan_sst\Traffic_Control\17360876rc02.dwg TRAFFIC CONTROL Last Saved: Nov. 18, 2014 2:32 PM, KURLANGTIS Plotted: Nov. 19, 2014 10:56 AM

LEGEND:

-  - PROPOSED SIGN
-  - EXISTING SIGN TO REMAIN
-  - EXISTING SIGN TO BE REMOVED AND DISPOSED OF
-  - EXISTING SIGN TO BE REMOVED AND RELOCATED
-  - ELW - EDGE LINE, 4", WHITE
-  - ELY - EDGE LINE, 4", YELLOW
-  - DY - CENTER LINE, 4", DOUBLE YELLOW
-  - LL - LANE LINE, 4", WHITE
-  - SL - STOP LINE, 24", WHITE
-  - CH - CHANNELIZING LINE, 8", WHITE
-  - CV - CHEVRON LINE, 8", WHITE
-  - TLY - TRANSVERSE/DIAGONAL LINE, 24", YELLOW
-  - LA - LANE ARROW, 72", WHITE
-  - WP - WORD ON PAVEMENT, 72", WHITE
-  - CW - CROSSWALK LINE, WHITE
-  - PROPOSED SIGN
-  - EXISTING SIGN
-  - 2 WAY RPM, WHITE/RED
-  - 2 WAY RPM, YELLOW/YELLOW



CROSSWALK DETAIL



TRAFFIC CONTROL
STA. 49+50 TO STA. 52+61.85

AVERY-MUIRFIELD DR.,
TULLYMORE DR. & AVERY RD.
INTERSECTION IMPROVEMENTS