

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE 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 THE APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

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

DUST CONTROL

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

ITEM 616, WATER, 50 MGAL

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

TTHE PROBABLE PCMS LOCATIONS ARE AT EACH LEG OF THE SR-46 AND CR-329 INTERSECTION, BEYOND THE WORK ZONE LIMITS, AND FACING THE DIRECTIONS OF TRAFFIC HEADING TOWARDS THE WORK ZONE. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

(THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 8 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.)

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN (CONT.)

(THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.) THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, 36 SNMT (ASSUMING 4 PCMS SIGNS FOR 9 MONTHS)

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

- EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
- NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION. IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONT.)

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR HOWLAND TOWNSHIP FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONST-RUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 3 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 AM TO 9:00 AM, 12:00 NOON TO 1:00 PM, AND 4:00 PM TO 7:00 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY OF HOWLAND TOWNSHIP POLICE, HIRED BY THE CONTRACTOR:

- SR-46 AND CR-329

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

- TIME OF NOTIFICATION OF MALFUNCTION;
- TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
- ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
- A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
- TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

EARTHWORK FOR MAINTAINING TRAFFIC
THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLAN FOR INFORMATION ONLY.

EXCAVATION FOR MAINTAINING TRAFFIC	100 CY
EMBANKMENT FOR MAINTAINING TRAFFIC	100 CY

WHEN UNDERCUTS ARE NECESSARY FOR MAINLINE PAVEMENT OR EMBANKMENT CONSTRUCTION, EVALUATE THE NEED FOR TEMPORARY ROAD UNDERCUTS IF WITHIN A CLOSE PROXIMITY TO THE MAINLINE UNDERCUTS. A GEOTECHNICAL EVALUATION SHOULD BE CONSIDERED TO DETERMINE IF THE EXISTING SOIL CONDITIONS ARE ADEQUATE TO SUPPORT THE TEMPORARY ROAD. ADDITIONAL SOIL BORINGS ALONG THE TEMPORARY ROAD ARE NOT NORMALLY REQUIRED.

ITEM 614, BUSINESS ENTRANCE (M4-H15) SIGN, AS PER PLAN

THE BUSINESS ENTRANCE (M4-H15) SIGN, AS PER PLAN SHALL BE PROVIDED AT EACH TEMPORARILY RELOCATED COMMERCIAL DRIVEWAY. ONLY ONE SIGN PER BUSINESS SHALL BE PERMITTED. THE SIGN SHALL BE 36 INCH X 48 INCH IN SIZE WITH TYPE G OR TYPE H ORANGE RETROREFLECTIVE SHEETING. THE SIGN LEGEND SHALL BE PLACED ON BOTH SIDES OF THE SIGN (BACK TO BACK). THE SIGN SHALL HAVE THE STANDARD M4-H15 LEGEND WITH THE NAME OF THE BUSINESS ON THE TOP LINE.

THE SIGN SHALL BE MOUNTED ON TWO #3 POSTS OR ON TEMPORARY POSTS IN ACCORDANCE WITH SCD MT-105.10 AND IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. THE SIGN SHALL BE CLEARLY VISIBLE AND SHALL CLEARLY IDENTIFY THE LOCATION OF THE DRIVEWAY. THE SIGN SHOULD BE POSITIONED AT 90 DEGREES TO THE DIRECTION(S) OF TRAFFIC. THE SIGN MAY NEED TO BE MOVED FOR EACH PHASE OF THE MAINTENANCE OF TRAFFIC OPERATIONS.

PAYMENT FOR ALL COSTS ASSOCIATED WITH MANUFACTURING, MOUNTING, RELOCATING, AND REMOVING THE SIGN, INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT SHALL BE INCLUDED IN THE CONTRACT PRICE PER EACH FOR ITEM 614-BUSINESS ENTRANCE SIGN, AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS ITEM.

ITEM 614, BUSINESS ENTRANCE SIGN, AS PER PLAN 20 EACH

PAVING OF DETOUR ROUTES

THE FULL DETOUR ROUTE SHALL BE VIDEOED IN EACH DIRECTION PRIOR TO DETOURING TRAFFIC TO DOCUMENT THE EXISTING CONDITION. QUANTITIES ARE BEING CARRIED FOR THE RESURFACING OF EAST MARKET ST AND HOWLAND WILSON ROAD TO BE USED AS DIRECTED BY THE ENGINEER. THE PAVING WILL CONSIST OF A 1.5" ASPHALT OVERLAY PLACED AFTER THE COMPLETION OF THE PARTIAL DEPTH REPAIRS. THE EXISTING GRADED SHOULDERS WILL BE REINFORCED WITH A 2' WIDE, 6" DEPTH OF ITEM 617, COMPACTED AGGREGATE. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE AS DOCUMENTED IN THE VIDEO. PAYMENT FOR VIDEO DOCUMENTATION OF THE EXISTING DETOUR ROUTE IS PAID FOR UNDER ITEM 614, MAINTAINING TRAFFIC.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK:

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1.5"), 14000 SY
ITEM 407 - TACK COAT, 1250 GAL
ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), AS PER PLAN, PG64-22, 583 CY
ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN, 175 CY
ITEM 408 - PRIME COAT, AS PER PLAN, 420 GAL

ITEM 614 MAINTAINING TRAFFIC, MISC.: 3" PARTIAL DEPTH PAVEMENT REPAIR

THE FOLLOWING QUANTITY HAS BEEN PROVIDED TO REPAIR POTHoles AND DETERIORATED JOINTS THROUGHOUT THE PROJECT LIMITS AND DETOUR ROUTE FOR THE DURATION OF THE PROJECT. THE WORK WILL BE COMPLETED IN COMPLIANCE WITH ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE DEPTH OF THE REPAIR WILL BE 3" MINIMUM FROM THE EXISTING PAVEMENT SURFACE. PAYMENT IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING PAINT, TACK COAT, ASPHALT CONCRETE AND ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK. PAYMENT SHALL BE PER S.F. OF ITEM 614, MAINTAINING TRAFFIC, MISC.: PARTIAL DEPTH PAVEMENT REPAIR. THIS ITEM IS INTENDED TO BE USED ON THE EXISTING MAINLINE PAVEMENT AND SHOULDER AREAS AND ALL DETOUR ROUTES UNLESS OTHERWISE NOTED. ALL REPAIRS WILL BE PERFORMED AT THE DIRECTION OF THE PROJECT ENGINEER.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE ABOVE REFERENCED WORK:

ITEM 614 - MAINTAINING TRAFFIC, MISC.: 3" PARTIAL DEPTH PAVEMENT REPAIR, 5000 SF

TIME LIMITATION, TRAFFIC ON A MILLED SURFACE

THE MAXIMUM ALLOWABLE TIME FOR TRAFFIC TO BE PLACED ON A MILLED SURFACE SHALL BE 7 CONSECUTIVE CALENDAR DAYS. SHOULD THE CONTRACTOR FAIL TO MEET THIS REQUIREMENT, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$5,000 PER DAY THAT THE TRAFFIC IS PLACED ON A MILLED SURFACE BEYOND THE SPECIFIED LIMIT.

DESIGN AGENCY

Michael Baker
INTERNATIONAL

DESIGNER

MZG

REVIEWER

KMD 01/05/22

PROJECT ID

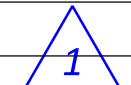
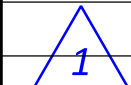
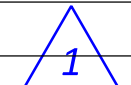

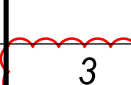

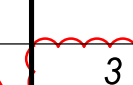
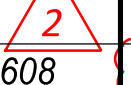
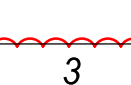
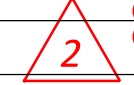
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SHEET

TOTAL

P.13

P.166

SHEET NUMBER															PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
P.8	P.9	P.10	P.11	P.12	P.13	P.14	P.15	P.49	P.52	P.57	P.142	P.143	P.149	P.151	01/S>2 /04	02/S>2/ 43/TCSE						
									23						23		611	10600	23	FT	DRAINAGE (CONT.)	
									89						89		611	13400	89	FT	30" CONDUIT, TYPE B	
	2								2						2		611	98150	2	EACH	CATCH BASIN, NO. 3	
									5						7		611	98151	7	EACH	CATCH BASIN, NO. 3, AS PER PLAN	P.10
									14						14		611	98180	14	EACH	CATCH BASIN, NO. 3A	
	2								4						6		611	98181	6	EACH	CATCH BASIN, NO. 3A, AS PER PLAN	P.10
									5						5		611	98370	5	EACH	CATCH BASIN, NO. 6	
	2								3						5		611	98371	5	EACH	CATCH BASIN, NO. 6, AS PER PLAN	P.10
									1						1		611	98470	1	EACH	CATCH BASIN, NO. 2-2B	
									3						3		611	98504	3	EACH	CATCH BASIN, NO. 2-2C	
									14						14		611	99574	14	EACH	MANHOLE, NO. 3	
		2						6	10						18		611	99655	18	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	P.10
									1						1		611	99661	1	EACH	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	P.10
									211						211		839	30100	211	FT	TRENCH DRAIN, TYPE B WITH PEDESTRIAN GRATE	
																					PAVEMENT	
		1250													1250		251	01000	1250	SY	PARTIAL DEPTH PAVEMENT REPAIR (441)	
		700													700		253	01000	700	SY	PAVEMENT REPAIR	
		100			14000										14100		254	01000	14100	SY	PAVEMENT PLANING, ASPHALT CONCRETE (T=1.5")	
										11152					11152		254	01000	11152	SY	PAVEMENT PLANING, ASPHALT CONCRETE (T=3")	
										1822					1822		301	56000	1822	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
																	304	20000	1008	CY	AGGREGATE BASE	
		120								888					1008		407	20000	3357	GAL	NON-TRACKING TACK COAT	
					1250					2107					482		408	10001	482	GAL	PRIME COAT, AS PER PLAN	P.11
					420					62					583		441	70101	583	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), AS PER PLAN, PG64-22	P.11
					583										418		441	70101	418	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), AS PER PLAN, PG70-22M	P.11
		25								393												
										542					542		441	70300	542	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	
										101					101		441	70500	101	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)	
										62					62		452	10010	62	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			50												50		452	10050	50	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
										996					996		452	12010	996	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
															200		452	12050	200	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
										71					71		609	20001	71	FT	CURB, TYPE 3-A, AS PER PLAN	P.11
										4307					4307		609	26000	4307	FT	CURB, TYPE 6	
										375					375		609	98000	375	FT	CURB, MISC.: SIDEWALK CURB	P.11
		10			175					14					199		617	10101	199	CY	COMPACTED AGGREGATE, AS PER PLAN	P.10
											188	12			12	188	638	00701	200	FT	6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS, AS PER PLAN	P.141
											71	36			36	71	638	01901	107	FT	10" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS, AS PER PLAN	P.141
											760				760		638	01901	760	FT	10" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS, AS PER PLAN (INSTALLATION ONLY)	P.141
												533			533		638	02731	533	FT	12" WATER MAIN POLYVINYL CHLORIDE PIPE AND FITTINGS, AWWA C900, DR18, AS PER PLAN	P.141
											1019	48			48	1019	638	06200	1067	FT	POLYETHYLENE ENCASEMENT	
																	638			EACH	VALVE BOX	
											3	1			1	3	638	10700	4	EACH	FIRE HYDRANT REMOVED AND DISPOSED OF	
		5										2			7		638	10801	7	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	P.10
											7	1			1	7	638	10900	8	EACH	SERVICE BOX ADJUSTED TO GRADE	
											4	1			1	4	SPECIAL	638E20538	5	EACH	6" GATE VALVE WITH VALVE BOX (TCSE)	P.141
										2						2	SPECIAL	638E20542	2	EACH	6" INSERTING VALVE WITH VALVE BOX (TCSE)	P.141
										1	1				1	1	SPECIAL	638E20570	2	EACH	10" GATE VALVE WITH VALVE BOX (TCSE)	P.141
										2						2	SPECIAL	638E20574	2	EACH	10" INSERTING VALVE WITH VALVE BOX (TCSE)	P.141
																						
												1			1		SPECIAL	638E20590	1	EACH	12" INSERTING VALVE WITH VALVE BOX (TCSE)	P.141
										2						2	SPECIAL	638E20690	2	EACH	6" X 6" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE)	P.141
										2						2	SPECIAL	638E20702	2	EACH	10" X 10" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE) (INSTALLATION ONLY)	P.141
												1			1		SPECIAL	638E20712	1	EACH	12" X 12" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE)	P.141
										3	1				1	3	SPECIAL	638E20750	4	EACH	6" FIRE HYDRANT (TCSE)	P.141
										116	147				147	116	SPECIAL	638E20824	263	FT	INSTALL 1" COPPER WATER SERVICE CONNECTION (TCSE)	P.141
											81					81	SPECIAL	638E20874	81	FT	INSTALL 2" POLYETHYLENE WATER SERVICE CONNECTION (TCSE)	P.141

DESIGN AGENCY

Michael Baker
INTERNATIONAL

DESIGNER

MZG

REVIEWER

JTH 04/28/25

PROJECT ID

109520

SHEET

P.44

TOTAL

P.166

SHEET NUMBER															PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
P.8	P.9	P.10	P.11	P.12	P.13	P.14	P.15	P.49	P.52	P.57	P.142	P.143	P.149	P.151	01/S>2 /04	02/S>2/ 43/TCSE						
								1							1		625	31510	1	EACH	LIGHTING	
								2							2		625	75411	2	EACH	LIGHT POLE REMOVED FOR REUSE, AS PER PLAN	P.11
																					TRAFFIC CONTROL	
													29		29		621	00100	29	EACH	RPM (WHITE/RED)	
													20		20		621	00100	20	EACH	RPM (YELLOW/YELLOW)	
														355.6	355.6		630	03100	355.6	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
														62.2	62.2		630	04101	62.2	FT	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN	P.11
														23.0	23.0		630	08520	23.0	FT	STREET NAME SIGN SUPPORT, NO. 3 POST	
														11	11		630	08600	11	EACH	SIGN POST REFLECTOR	
														7	7		630	79500	7	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
														233.2	233.2		630	80100	233.2	SF	SIGN, FLAT SHEET	
														12	12		630	80510	12	EACH	SIGN, STREET NAME	
														36	36		630	84900	36	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
														4	4		630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
														33	33		630	86002	33	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
														1	1		630	87500	1	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
													0.09		0.09		646	10010	0.09	MILE	EDGE LINE, 6"	
													0.52		0.52		646	10200	0.52	MILE	CENTER LINE	
													1768		1768		646	10300	1768	FT	CHANNELIZING LINE, 8"	
													153		153		646	10400	153	FT	STOP LINE	
													574		574		646	10510	574	FT	CROSSWALK LINE, 12"	
													70		70		646	10520	70	FT	CROSSWALK LINE, 24"	
													230		230		646	10600	230	FT	TRANSVERSE/DIAGONAL LINE	
													1		1		646	10900	1	EACH	HANDICAP SYMBOL MARKING	
													40		40		646	20200	40	FT	PARKING LOT STALL MARKING	
													22		22		646	20300	22	EACH	LANE ARROW	
																					TRAFFIC SIGNALS	
																					TRAFFIC SIGNALS GENERAL SUMMARY	P.159
																					MAINTENANCE OF TRAFFIC	
				40											40		410	12000	40	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
						200									200		614	11110	200	HOURL	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
				40											40		614	13000	40	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
						LS									LS		614	18002	LS		MAINTAINING TRAFFIC, MISC.: RETIME TRAFFIC SIGNALS	P.14
					5000										5000		614	18010	5000	SF	MAINTAINING TRAFFIC, MISC.: 3" PARTIAL DEPTH PAVEMENT REPAIR	P.13
					36										36		614	18601	36	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	P.13
							1.28								1.28		614	21000	1.28	MILE	WORK ZONE CENTER LINE, CLASS I	
							2.01								2.01		614	22000	2.01	MILE	WORK ZONE EDGE LINE, CLASS I, 4"	
							100								100		614	25000	100	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I	
							110								110		614	26000	110	FT	WORK ZONE STOP LINE, CLASS I	
							111								111		614	27010	111	FT	WORK ZONE CROSSWALK LINE, CLASS I, 12"	
					20										20		614	40051	20	EACH	BUSINESS ENTRANCE SIGN, AS PER PLAN	P.13
															LS		615	10000	LS		ROADS FOR MAINTAINING TRAFFIC	
							1045								1045		615	20000	1045	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
					50										50		616	10000	50	MGAL	WATER	
																					INCIDENTALS	
															LS		108	10000	LS		CPM PROGRESS SCHEDULE	
															LS		614	11000	LS		MAINTAINING TRAFFIC	
															22		619	16020	22	MNTH	FIELD OFFICE, TYPE C	
															LS		623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
															LS		624	10000	LS		MOBILIZATION	

GENERAL

ALL WORK MUST CONFORM TO THE REQUIREMENTS AND DIRECTIONS OF THE TRUMBULL COUNTY SANITARY ENGINEERING DEPARTMENT. THE CONTRACTOR MUST CONFORM TO ALL FEDERAL, STATE AND LOCAL REQUIREMENTS, LAWS, RESOLUTIONS OR ORDINANCES RELATING TO PERMITS, SAFETY, INSURANCE WORK CONDITIONS, WORKMEN’S COMPENSATION, PATENTS, TAXES, USE OF HIGHWAYS OR STREETS AND SHALL SAVE HARMLESS FROM DAMAGES, LIABILITY OR CLAIMS THE COUNTY OF TRUMBULL.

EXCAVATION

THE CONTRACTOR SHALL EXCAVATE TO A WIDTH AND DEPTH SUFFICIENT TO ACCOMODATE THE PIPE LAYING. THE EXCAVATION SHALL BE ADEQUATELY BRACED AND SUPPORTED TO PROTECT WORKMEN AND ADJACENT STRUCTURES AND PAVEMENTS. BACKFILL SHALL BE MADE AS SHOWN OR DIRECTED. MAXIMUM PERMISSIBLE TRENCH WIDTHS SHALL BE AS FOLLOWS:

- 6” – 24” = NOMINAL PIPE DIAMETER + 2’-0”
- 27” – 30” = NOMINAL PIPE DIAMETER + 2’-6”
- 36” AND OVER = NOMINAL PIPE DIAMETER + 3’-0”

CONCRETE

CONCRETE USED IN THE WORK SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

	CLASS A WITH REINFORCING	CLASS B NON-REINFORCED
SACKS OF CEMENT/CU.YD.....	6.5	5
MAXIMUM SLUMP.....	5 INCHES	6 INCHES
28 DAY STRENGTH	4000 P.S.I.	2000 P.S.I.

AIR ENTRAINED CEMENT SHALL BE USED.

WATER MAIN PIPE

ALL DUCTILE IRON PIPE SHALL BE EQUAL TO A.W.W.A. SPECIFICATION #A 21.51 – THICKNESS CLASS 51. THICKNESS CLASS 52 MAY BE REQUIRED BY THE SANITARY ENGINEER IN CASES OF SEVERE TRENCH LOADING OR BENDING STRESS ON THE PIPE. DUCTILE IRON PIPE JOINTS SHALL BE RUBBER – GASKET JOINTS EQUAL TO THE MECHANICAL JOINT OR PUSH ON JOINT AS SPECIFIED BY A.W.W.A. SPECIFICATION #C111-79 OR A.N.S.I. SPECIFICATION #21.11-79. DUCTILE IRON PIPE SHALL HAVE A SINGLE COAT OF CEMENT LINING IN ACCORDANCE WITH A.W.W.A. / A.N.S.I. SPECIFICATION #C104 / #A21.4-80. CEMENT LINING SHALL BE GIVEN A SEAL COAT OF AN APPROVED ASPHALTIC MATERIAL. ALL NUTS AND BOLTS SHALL BE PAINTED WITH 2 COATS OF KOPPERS #50 COAL TAR PITCH PAINT OR AN APPROVED EQUAL. IN SOME SOIL CONDITIONS DUCTILE IRON PIPE AND FITTINGS MAY BE REQUIRED TO BE WRAPPED OR BAGGED IN POLYETHYLENE FILM 8 MIL OR .2MM DETERMINED BY THE SANITARY ENGINEER.

WATER MAINS UP TO 12” IN DIAMETER MAY BE POLYVINYL CHLORIDE (P.V.C). P.V.C. PIPE SHALL BE EQUAL TO A.W.W.A. SPECIFICATION #C900-75 OR #C909-PC (ULTRA-BLUE), CLASS 150. PIPE SHALL HAVE A DR OF 18 IN COMPLIANCE WITH A.W.W.A. SPECIFICATION #C900, P.V.C. PRESSURE PIPE FOR WATER WITH OUTSIDE DIMENSIONS EQUAL TO DUCTILE IRON PIPE SHALL HAVE AN INTEGRAL BELL END AND THE GASKET SEAL SHALL BE REINFORCED WITH A STEEL BAND OR OTHER RIGID MATERIAL. JOINTS SHALL COMPLY WITH A.S.T.M. SPECIFICATION #D3139. ALL NON-METALLIC WATER MAINS SHALL HAVE A #12 SINGLE STRAND COPPER WIRE LAID ON TOP OF THE WATER MAIN FOR THE FULL LENGTH FOR FIELD LOCATING AT A LATER DATE.

FITTINGS

MECHANICAL JOINT FITTINGS SHALL BE EQUAL TO CLOW BELL TIGHT OF U.S. "TYTON" A.S.A. SPECIFICATION #A21.10 WITH JOINTS EQUAL TO A.S.A. SPECIFICATION #A21.11.

DUCTILE IRON FITTINGS SHALL BE EQUAL TO A.W.W.A. / A.N.S.I. SPECIFICATION #A21.10 FOR MECHANICAL OR PUSH ON JOINTS WHICH SHALL CONFORM TO A.W.W.A. / A.N.S.I. SPECIFICATION #C111 / #A21

ALL FITTINGS, VALVES, HYDRANTS, ETC... SHALL BE BLOCKED WITH CLASS "B" CONCRETE BLOCKING AS INDICATED ON THE FOLLOWING DETAIL SHEETS AND HAVE MECHANICAL RESTRAINING DEVICES INSTALLED. EBAA #200 PV OR EQUIVALENT FOR P.V.C. PIPE OR EBAA MEGALUG SYSTEM OR EQUIVALENT FOR DUCTILE IRON PIPE.



GATE VALVES

GATE VALVES SHALL BE PLACED AT VARIOUS LOCATIONS ALONG A WATER MAIN AND IT’S INTERSECTIONS TO ALLOW FOR LOGICAL AND EFFICIENT TRANSPORT OF WATER THROUGHOUT THE WATER SYSTEM. GATE VALVES SHALL ALSO BE PLACED TO ALLOW FOR EASY REPAIRS SHOULD A WATER MAIN BE DAMAGED. A WATER MAIN MUST END WITH A GATE VALVE AND AT LEAST TWO LENGTHS OF PIPE AFTER THE VALVE. THE MAIN LINE MUST THEN BE PROPERLY CAPPED AND BLOCKED. THIS IS TO ALLOW FOR EASY EXTENSION OF THE WATER MAIN.

ALL VALVES 3” AND OVER SHALL CONFORM TO THE A.W.W.A. SPECIFICATIONS FOR GATE VALVES FOR ORDINARY WATER WORKS SERVICE – STANDARD #C500-80. GATE VALVES SHALL BE MUELLER SERIES #A-2360/#A-2380 OR EQUIVALENT. ALL VALVES SHALL OPEN BY TURNING COUNTER-CLOCKWISE OR TO THE LEFT.

GATE VALVES SHALL BE IRON-BODY WITH FUSION EPOXY COATED INTERIOR AND EXTERIOR SURFACES THAT MEETS OR EXCEEDS ALL APPLICABLE REQUIREMENTS OF ANSI/AWWA C550 STANDARD AND IS CERTIFIED TO ANSI/NSF 61, BRONZE MOUNTED DOUBLE DISC WITH BRONZE SEATS, NON-RISING BRONZE STEM CAPABLE OF OPERATING AT A WORKING PRESSURE OF 200 PSI. ALL 2” AND SMALLER GATE VALVES SHALL BE MADE OF THE BEST QUALITY BRASS OR BRONZE, SOLID WEDGE, NON-RISING STEM GATE VALVES WITH SCREWED ENDS AND SHALL OPEN BY TURNING TO THE LEFT.

BONNET BOLTS AND NUTS, STUFFING BOX BOLTS AND NUTS AND WRENCH NUT CAP SCREW SHALL BE TYPE 304 STAINLESS STEEL.

VALVE BOXES SHALL BE EQUAL IN ALL RESPECTS TO BINGHAM & TAYLOR 5-1/4” SHAFT 3-PIECE SCREW VALVE BOX, FIG.#4906-CATALOG #8. THE COVER SHALL HAVE THE WORD "WATER" MARKED ON THE TOP. WASH GRAVEL SHALL BE USED AROUND THE VALVE BOX SETTING.

THE VALVE BOX SHALL BE SO SET THAT IT DOES NOT REST ON THE VALVE. NO SURFACE LEADS SHALL BE TRANSMITTED TO THE VALVE OR TO THE MATER MAIN. THERE SHALL BE AT LEAST TWO INCHES OF EARTH BETWEEN THE VALVE AND THE VALVE BOX. AFTER BACKFILLING, IF BOX IS FOUND TO BE NOT TO GRADE OR NOT PLUMB IT SHALL BE DUG UP AND RESET.

NOTE: IF A VALVE IS GREATER THAN FIVE (5) FEET DEEP, A ROD EXTENSION IS REQUIRED WITH SET SCREWS AND BOLTS.

FIRE HYDRANTS

FIRE HYDRANTS SHALL BE MUELLER CENTURION COMPRESSION TYPE OR EQUIVALENT. HYDRANTS SHALL MEET THE FOLLOWING SPECIFICATIONS:

TEST PRESSURE (HYDRANTS SHALL BE SHOP TESTED @)	300 P.S.I.
MECHANICAL JOINT BASE ELBOW	6 IN.
DEPTH OF BURY	5.0 FT.
SIZE OF HOSE CONNECTION	2 1/2 IN.
NUMBER OF HOSE CONNECTIONS	2
THREADS FOR PUMPER AND HOSE CONNECTIONS	NATIONAL STANDARD
SIZE OF PUMPER CONNECTION	4 1/2 IN.
NUMBER OF PUMPER CONNECTIONS	1
SIZE OF VALVE OPENING (MIN)	4 1/2 IN.
CHAINED CAPS	3

HYDRANTS SHALL OPEN TO THE LEFT, COUNTER CLOCKWISE, WITH TOP NUT AND NOZZLE CAPS BEING PENTAGON SHAPED. HYDRANT SHALL BE EQUIPPED WITH A BREAKING RING LOCATED TWO INCHES ABOVE THE GROUND AND SHALL BE SHOP PAINTED YELLOW AS THE STANDARD COLOR.

ANY EXTENSIONS SHALL BE OF THE SAME MANUFACTURER AS THE HYDRANT.

HYDRANT LOCATION SHALL BE IN ACCORDANCE WITH ODOT’S LOCATION AND DESIGN MANUAL, VOLUME 1, SECTION 600-ROADSIDE DESIGN. HYDRANTS TO BE INSTALLED AS SHOWN ON THE STANDARD WATER DETAILS WITH A WASHED GRAVEL DRAINAGE POCKET AND SHALL CONTAIN NO STONES LARGER THAN TWO (2) INCHES IN DIAMETER. #57 SLAG IS NOT TO BE USED. THE HYDRANT SHALL BE SET PLUMB AND THE NOZZLES SHALL FACE IN THE DIRECTION ORDERED BY THE COUNTY.

SERVICE CONNECTIONS

SERVICE LINES SHALL BE TYPE "K" COPPER AS PER A.S.T.M. SPECIFICATION #B-88 OR 200 P.S.I. PLASTIC #3408 DR9. CORPORATION STOPS SHALL BE EQUAL TO MUELLER #P-25008 WITH RUBBER SEALING RINGS AND TIGHTENING CLAMP. CURB STOPS SHALL BE EQUAL TO MUELLER #P-25209 WITH TIGHTENING CLAMPS. CURB BOX SHALL BE EQUAL TO BUFFALO PIPE & FOUNDRY COMPANY #93E. IRON SERVICE SADDLE SHALL BE FORD FC101, FC102, OR EQUAL. THE SADDLE SHALL HAVE A 2” MIN. WIDTH STAINLESS STEEL BAND WITH STAINLESS STEEL BOLTS, AN EPOXY COATED SADDLE BODY, AND A CC THREADED CORPORATION FITTING. SERVICE LINES SHALL INCLUDE 12 GAUGE SOLID (COPPER) COATED (INSULATED) TRACER WIRE.

TRUMBULL COUNTY SANITARY ENGINEER’S
STANDARD WATER DETAILS

LOOPING

WHENEVER THE T.C.S.E. DEEMS IT NECESSARY, WATER MAINS SHALL BE EXTENDED BEYOND THE LIMITS OF THE PROJECT AND LOOPED TO IMPROVE WATER SERVICE AND/OR ELIMINATE WATER QUALITY ISSUES.

STERILIZATION

STERILIZATION SHALL COMPLY WITH A.W.W.A. STANDARD SPECIFICATION #C651-68.

LOCATIONS AND SEPARATIONS

LOCATE WATER PIPE AT LEAST 10 FEET AWAY, HORIZONTALLY, FROM SEWER PIPES. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. WHEN IT IS NOT PRACTICAL TO MAINTAIN A 10 FOOT SEPARATION, THE TCSE DEPARTMENT MAY ALLOW DEVIATION, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. THEN, THE WATER LINE MAY BE INSTALLED CLOSER TO THE SEWER. IF SO, THE SEWER MUST BE LOCATED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE WATER MAIN AND AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER PIPE.

IF IT IS IMPOSSIBLE TO MEET PROPER HORIZONTAL AND VERTICAL SEPARATIONS AS DESCRIBED ABOVE, BOTH THE WATER MAIN AND SEWER MUST BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT PIPE COMPLYING WITH TCSE DESIGN SPECIFICATIONS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATER TIGHTNESS NOT BEFORE 30 DAYS.

CROSSINGS

WATER MAINS CROSSING SEWERS SHALL BE LAID WITH A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSINGS SHALL BE ARRANGED SO THAT THE WATER MAIN JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER JOINTS. WHERE THE WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.

IF IT IS IMPOSSIBLE TO MEET PROPER HORIZONTAL SEPARATION, EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHT CARRIER PIPE WHICH EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE OTHER LINE. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY TCSE FOR USE IN WATER MAIN CONSTRUCTION.

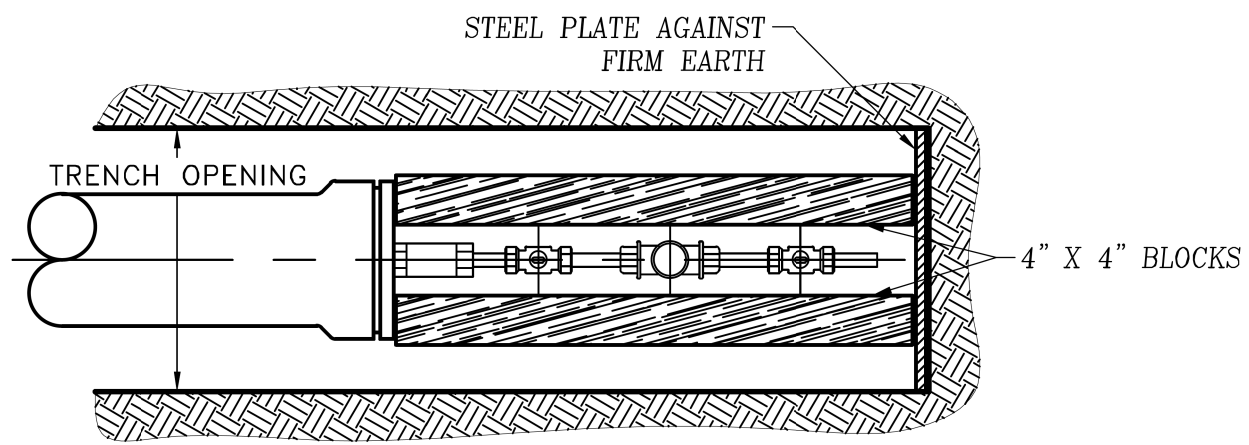
TESTING

ALL WATER MAINS SHALL BE SUBJECT TO BOTH A HYDROSTATIC AND A BACTERIOLOGICAL TEST. THE BACTERIA TEST SHALL BE TAKEN BY A REPRESENTATIVE OF THE TRUMBULL COUNTY SANITARY ENGINEER. HYDROSTATIC TESTING SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE TRUMBULL COUNTY SANITARY ENGINEER AND SHALL COMPLY WITH A.W.W.A. STANDARD SPECIFICATION #C600.

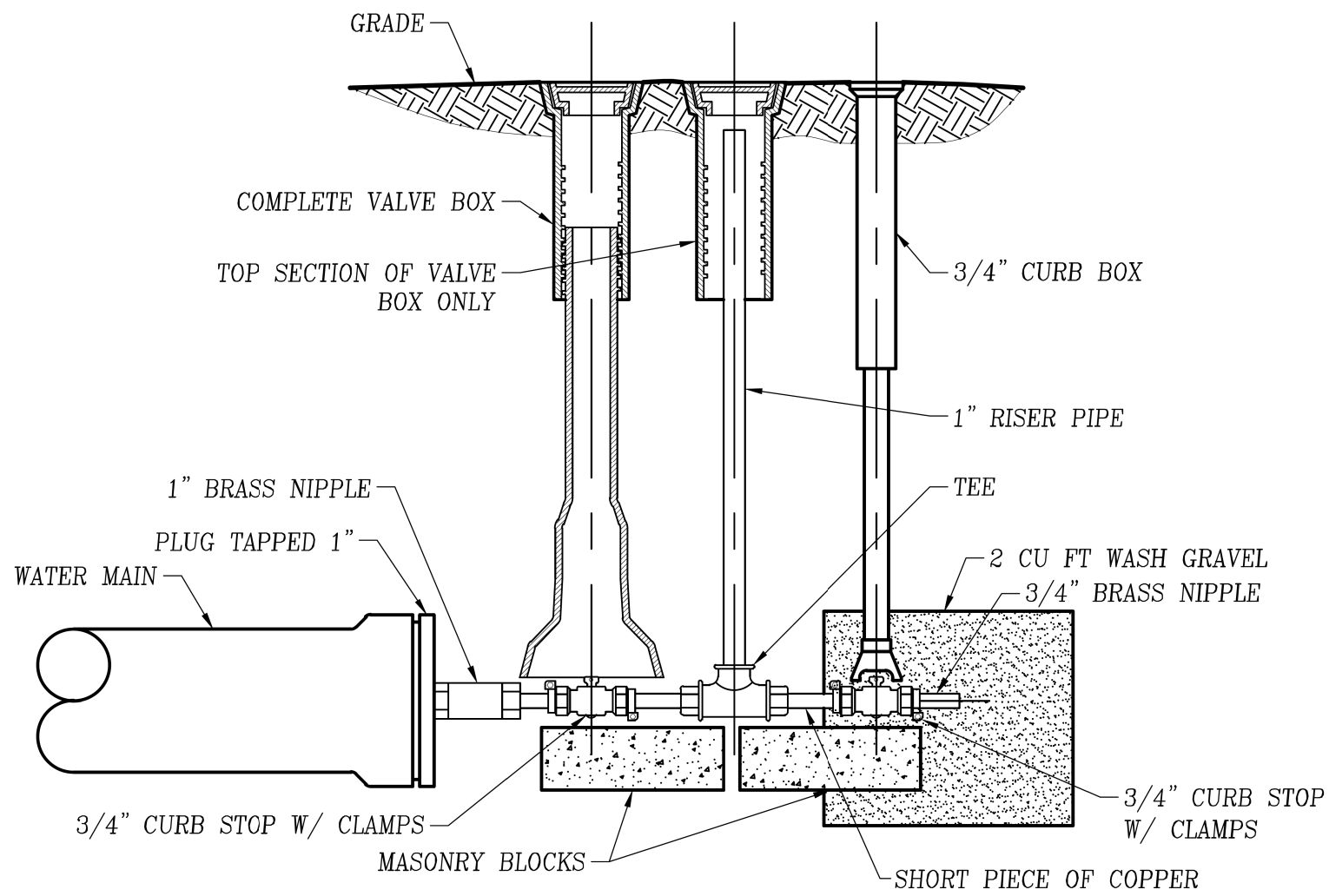
CLEAN-UP AND RESTORATION

THE ENTIRE AREA OF WORK SHALL BE CLEANED UP, RE-SEEDED AND RESTORED SO THAT UPON COMPLETION OF THE WORK, THE AREA IS IN A CONDITION EQUAL TO OR BETTER THAN IT WAS PRIOR TO THE START OF WORK.

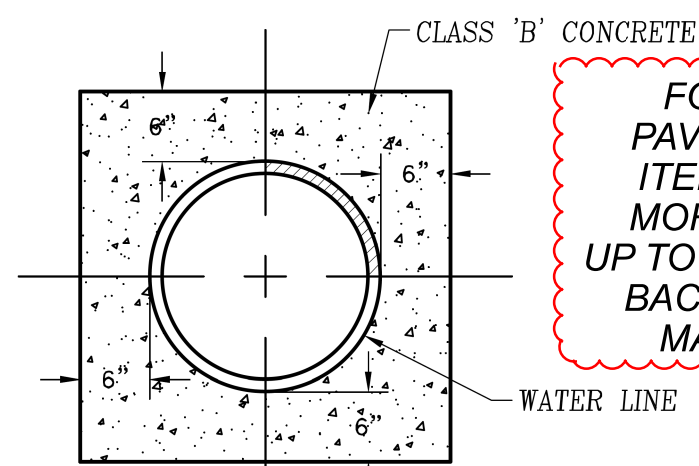
TRUMBULL COUNTY SANITARY ENGINEER'S
STANDARD WATER DETAILS



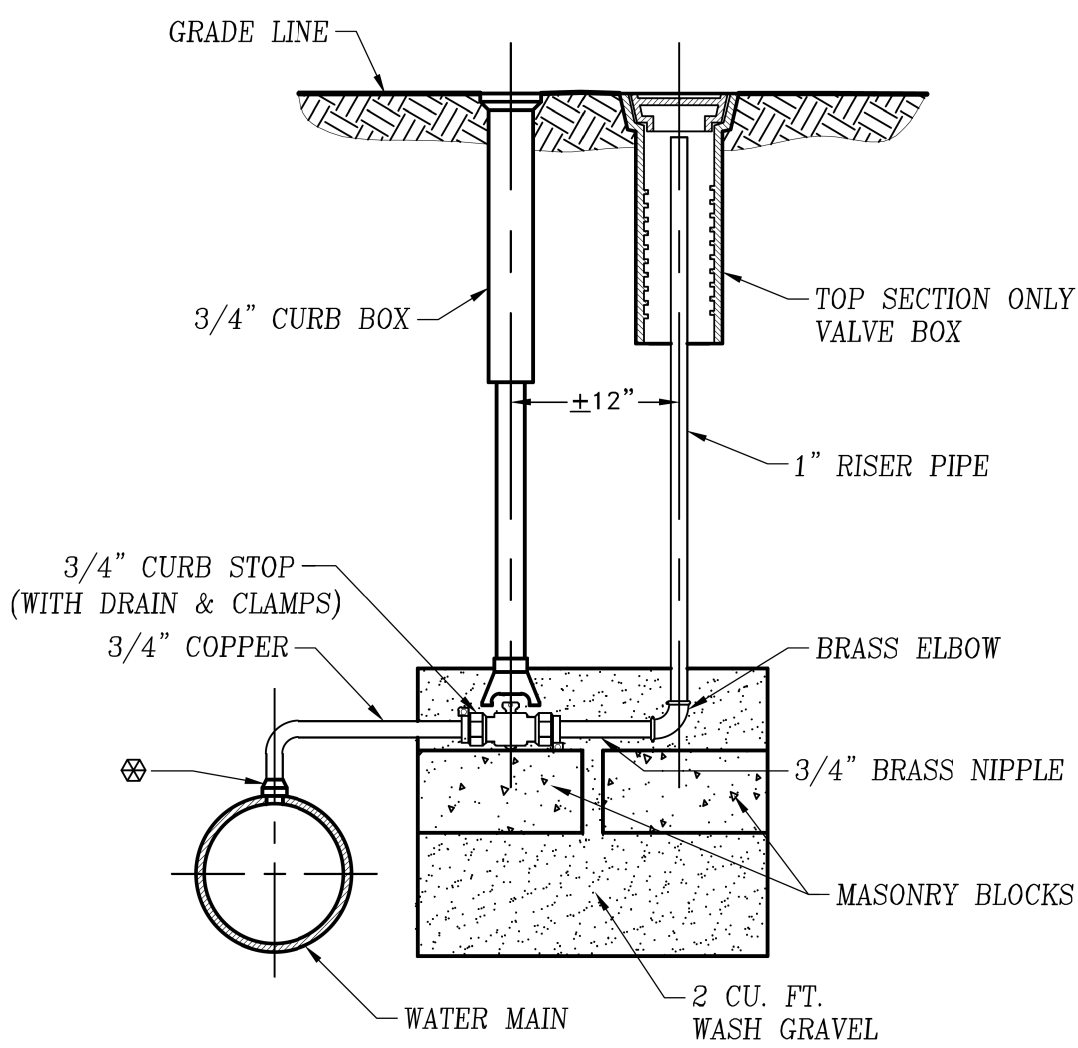
PLAN



TYPICAL DETAIL OF
DEAD END BLOW-OFF

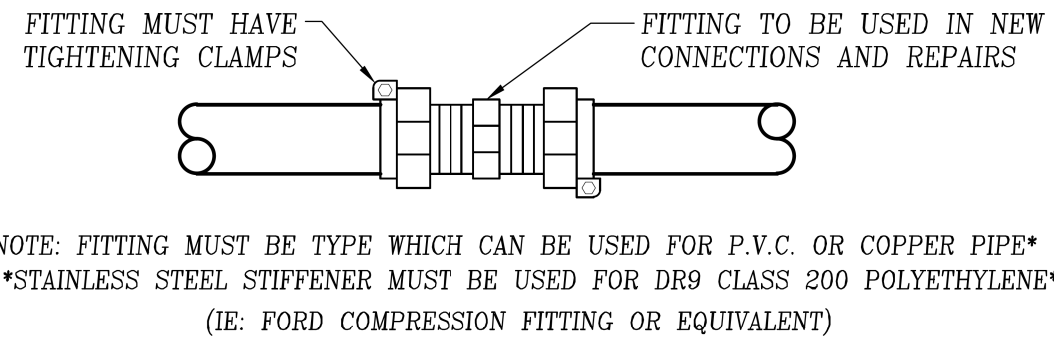


TYPICAL DETAIL 'Y'

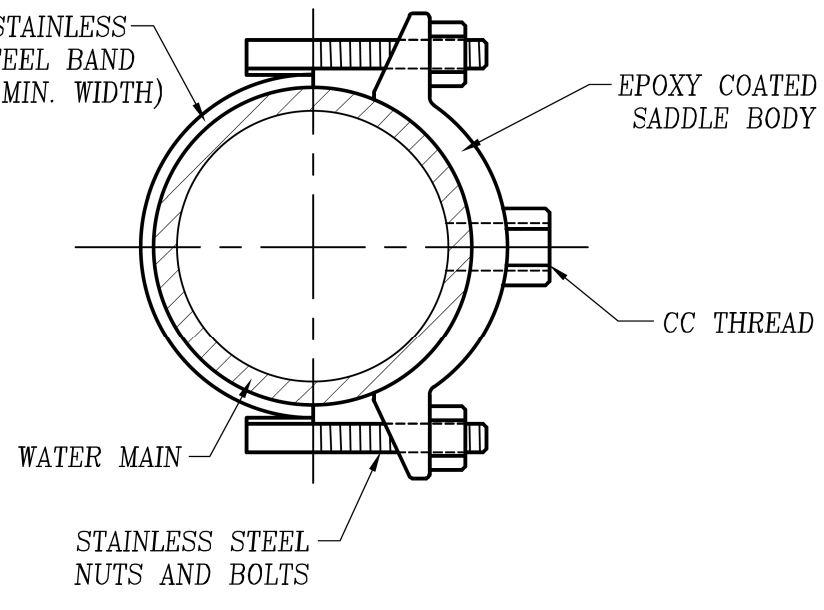


NOTE - FITTING COMING OUT OF TAPPING COLUMN SHOULD BE BRASS

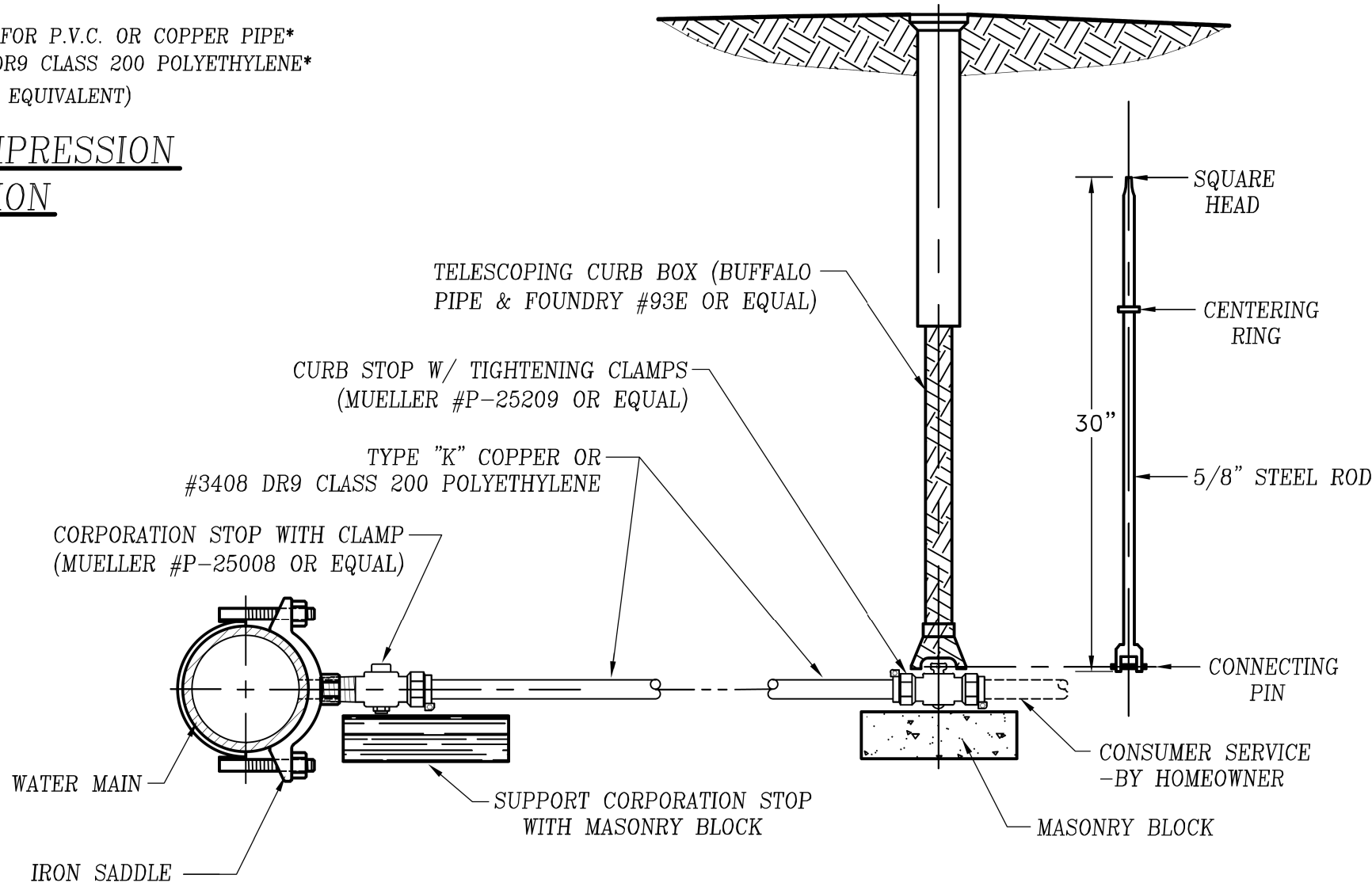
TYPICAL MANUAL AIR RELEASE DETAIL



LONG SERVICE LINE COMPRESSION
FITTING CONNECTION



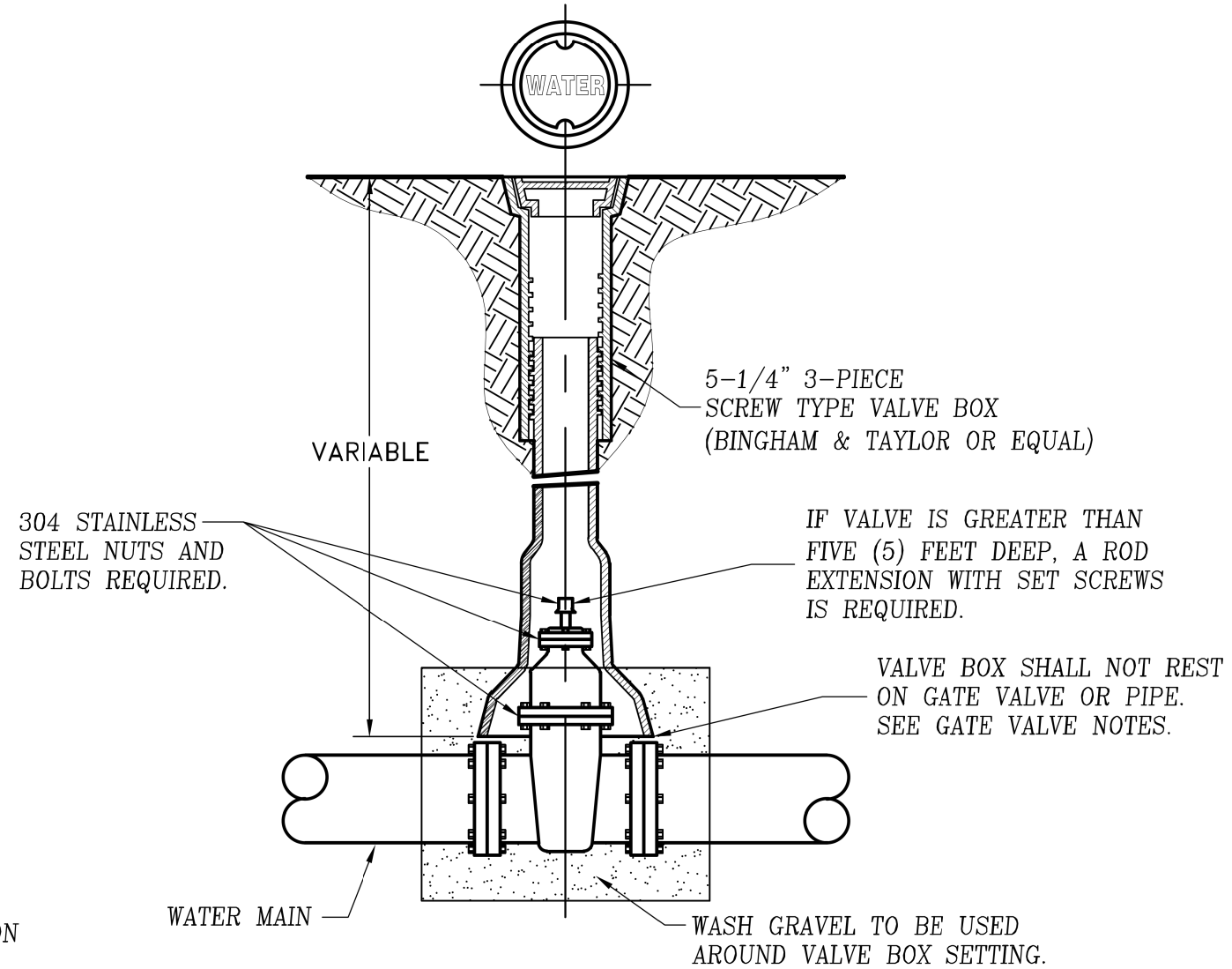
IRON SADDLE
(FORD FC101, FC102, OR EQUAL)



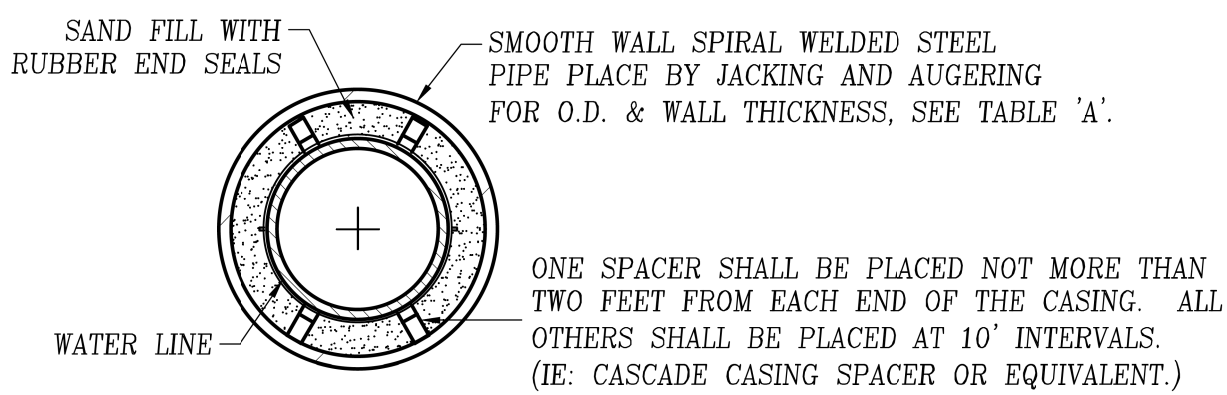
STAINLESS STEEL STIFFENER MUST BE USED FOR DR9 CLASS 200 POLYETHYLENE

STANDARD SERVICE CONNECTION

CORPORATION STOPS ARE TO BE INSTALLED HORIZONTAL (i.e. 9:00 OR 3:00)

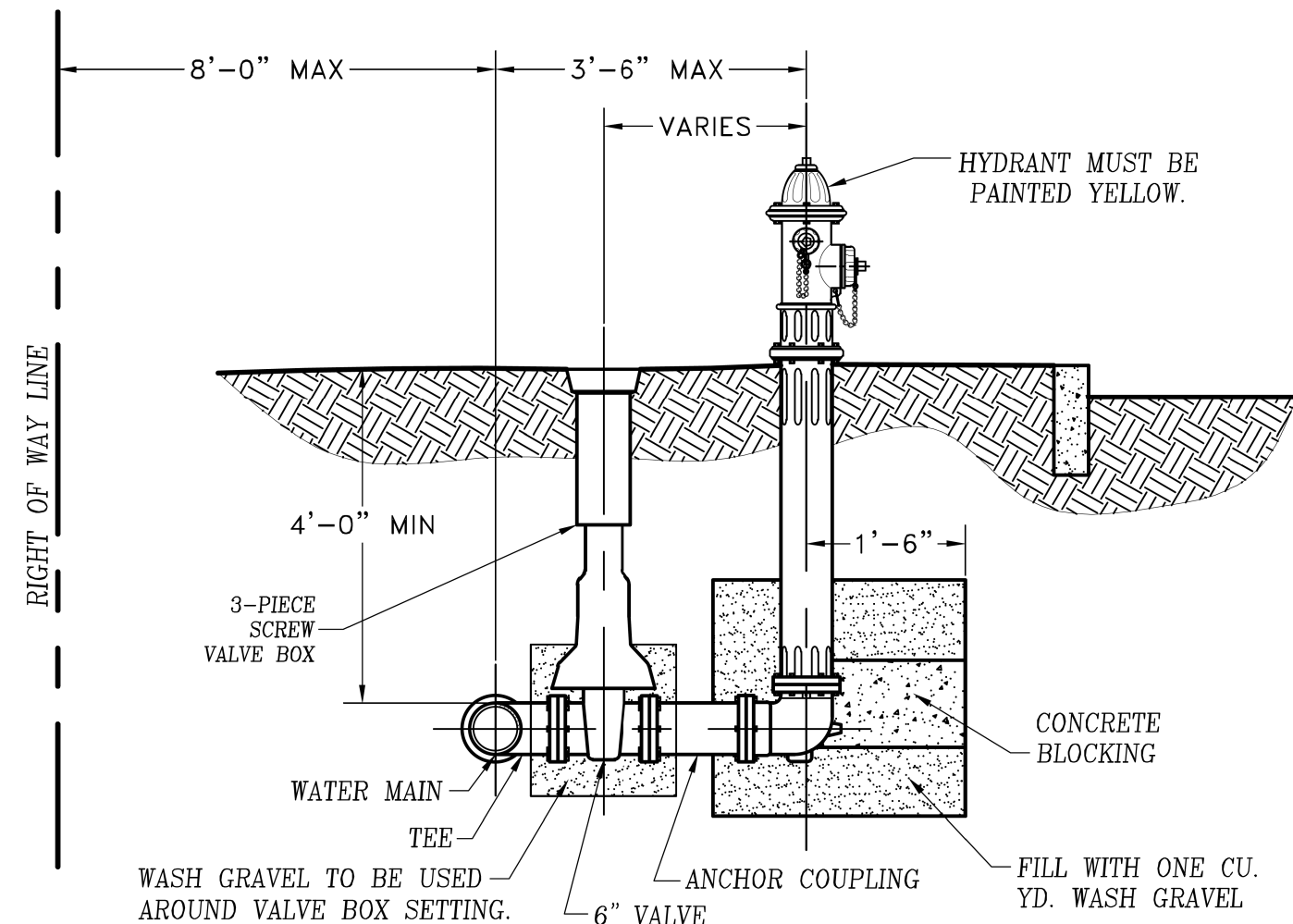
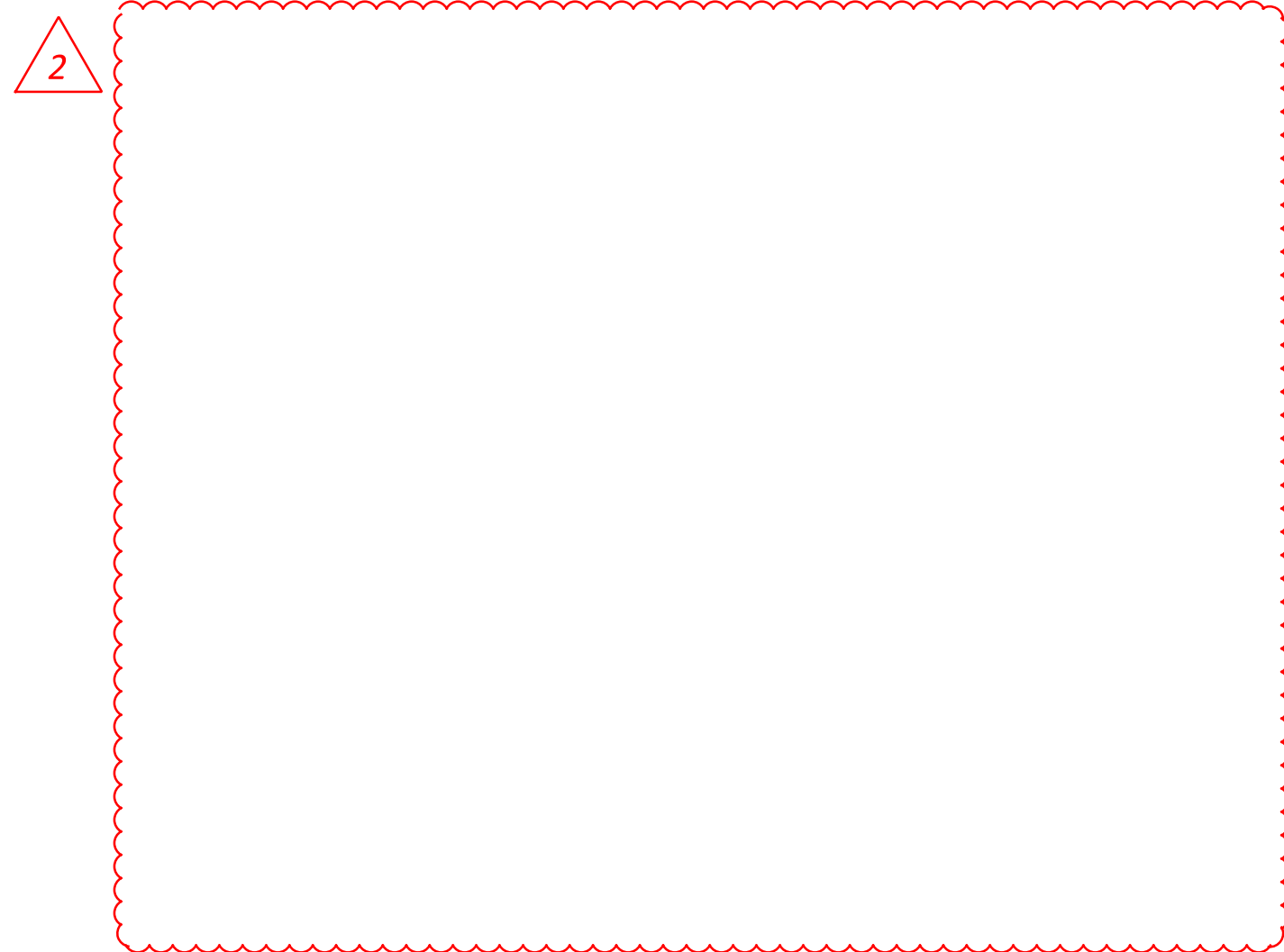


TYPICAL VALVE SETTING WITH
3-PIECE SCREW TYPE BOX



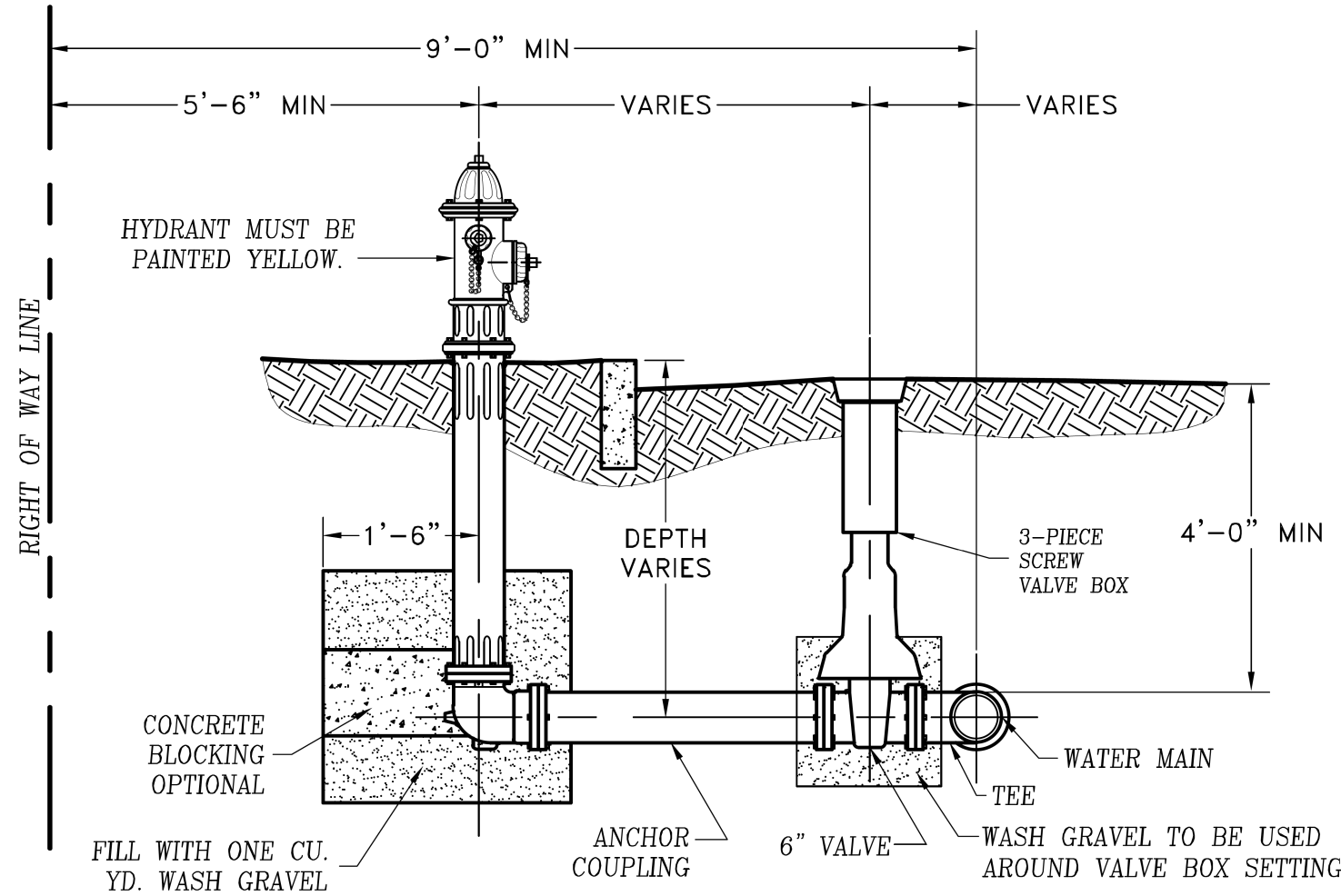
TYPICAL DETAIL 'X'
HIGHWAY AND RAILROAD CROSSING

TABLE "A"		
WATER LINE DIA	CASING O. D. (MIN)	CASING WALL THICKNESS
6"	14"	0.250
8"	16"	0.250
10"	18"	0.250
12"	20"	0.250
16"	30"	0.375



NOTE: HYDRANT LOCATION SHALL BE IN ACCORDANCE WITH ODOT'S LOCATION
AND DESIGN MANUAL, VOLUME 1, SECTION 600-ROADSIDE DESIGN.

SPECIAL HYDRANT SETTING



NOTE: HYDRANT LOCATION SHALL BE IN ACCORDANCE WITH ODOT'S LOCATION
AND DESIGN MANUAL, VOLUME 1, SECTION 600-ROADSIDE DESIGN.

STANDARD HYDRANT SETTING

WATER WORK

GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY ALL UTILITIES INDICATED WITHIN THE PROJECT LIMITS AS THEY ARE SHOWN ACCORDING TO THE INFORMATION PROVIDED BY THEIR RESPECTIVE UTILITY OWNER.
2. CONTRACTOR SHALL PRE-DIG ALL UTILITY CROSSINGS TO VERIFY EXISTING ELEVATIONS AND CLEARANCES BETWEEN THE EXISTING UTILITY AND PROPOSED WATER RELOCATION TO AVOID CONFLICTS. RESULTS SHALL BE TRANSMITTED TO OWNER PRIOR TO CONSTRUCTING PROPOSED WATER LINE RELOCATION.
3. CONTRACTOR SHALL MAINTAIN 1.5 FEET OF VERTICAL CLEARANCE AT WATER LINE CROSSINGS WITH EXISTING UTILITIES. IF 1.5 FEET OF VERTICAL CLEARANCE CANNOT BE MET, CONCRETE ENCASEMENT AROUND THE WATERLINE IS REQUIRED.
4. CONTRACTOR SHALL MAINTAIN FLOW THROUGH EXISTING UTILITY DURING INSTALLATION OF PROPOSED WATER LINE RELOCATION. THE INSERTING VALVES SHALL BE INSTALLED ON THE EXISTING WATER MAIN IN ORDER TO AVOID SHUTTING DOWN WATER SERVICE TO TOWNSHIP RESIDENTS NORTH OF THE PROJECT. COORDINATE ALL WORK WITH THE TRUMBULL COUNTY SANITARY ENGINEER.
5. AFTER COMPLETION OF THE PROPOSED WATER IMPROVEMENTS, THE INSERTING VALVES SHALL BE CLOSED AND THE VALVE BOX LID ADJUSTED / REMOVED ONE (1) FOOT BELOW GRADE. A MECHANICAL JOINT CAP WITH CONCRETE BLOCKING SHALL BE INSTALLED AT THE CUT END OF THE EXISTING WATER MAIN PIPE. LEAVE TWO (2) FULL STICKS OF PIPE BETWEEN THE INSERTING VALVE AND THE MECHANICAL JOINT CAP.
6. THE BACTERIA TEST SHALL BE PERFORMED BY A REPRESENTATIVE OF THE TRUMBULL COUNTY SANITARY ENGINEER. HYDROSTATIC TESTING SHALL BE PERFORMED IN THE PRESENCE OF A REPRESENTATIVE OF THE TRUMBULL COUNTY SANITARY ENGINEER AND SHALL COMPLY WITH AWWA STANDARD SPECIFICATION #C600.

ITEM 202 - PIPE REMOVED, 24" DIAMETER AND UNDER, AS PER PLAN

PORTIONS OF THE EXISITNG WATER LINE THAT ARE NOT IN CONFLICT WITH PROPOSED WORK CAN BE ABANDONED IN PLACE. IF EXISTING WATER LINE CONFLICTS WITH PROPOSED WORK, CUT AND REMOVE LINE AND CAP CUT ENDS WITH MJ CAPS AND RETAINER GLANDS. SECURE WITH CONCRETE BLOCKING AS INDICATED ON THE PLANS. ALL WORK SHALL BE IN ACCORDANCE WITH 202.

ITEM 638 - 6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS, AS PER PLAN
ITEM 638 - 10" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 638, ZINC ANODE CAPS SHALL BE USED ON EVERY OTHER T-BOLT FOR ALL MECHANICAL JOINTS AND FITTINGS.

ITEM 638 - 12" WATER MAIN POLYVINYL CHLORIDE PIPE AND FITTINGS, AWWA C900, DR18, AS PER PLAN

IN LIEU OF THE TRACER TAPE SPECIFIED IN 638.06.I, INSTALL #12 AWG COPPER-CLAD STEEL TRACER WIRE AS MANUFACTURED BY COPPERHEAD INDUSTRIES (WWW.COPPERHEADWIRE.COM) OR APPROVED EQUAL. PART NUMBER: 1230B-HS-500.

TRACER WIRE SHALL BE INSULATED WITH HDPE INSULATION, COLORED BLUE. TRACER WIRE SHALL BE LAID DIRECTLY ON TOP OF THE WATER MAIN ALONG THE FULL LENGTH OF THE WATER MAIN.

TRACER WIRE SHALL TERMINATE IN ACCESS BOXES INSTALLED AT THE ENDS OF THE WATER MAIN. ACCESS BOXES WILL BE PROVIDED BY THE TRUMBULL COUNTY SANITARY ENGINEER.

ITEM SPECIAL - 6" GATE VALVE AND VALVE BOX (TCSE)
ITEM SPECIAL - 10" GATE VALVE AND VALVE BOX (TCSE)

ALL REQUIREMENTS OF 638 SHALL APPLY EXCEPT THE VALVE AND VALVE BOX SHALL CONFORM TO THE TCSE STANDARDS AS SHOWN ON THE PREVIOUS SHEETS .

ITEM SPECIAL - 6" INSERTING VALVE AND VALVE BOX (TCSE)
ITEM SPECIAL - 10" INSERTING VALVE AND VALVE BOX (TCSE)
ITEM SPECIAL - 12" INSERTING VALVE AND VALVE BOX (TCSE)

ONCE THE NEW WATER MAIN IS IN SERVICE, CLOSE THE VALVE AND ADJUST OR REMOVE THE VALVE BOX ONE (1) FOOT BELOW GRADE. ALL WORK SHALL BE DONE AT THE DIRECTION OF THE ENGINEER AND ACCORDING TO THE REQUIREMENTS OF 638. VALVE AND VALVE BOX SHALL CONFORM TO THE TCSE STANDARDS AS SHOWN ON THE PREVIOUS SHEETS .

ITEM SPECIAL - 6" X 6" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE)
ITEM SPECIAL - 10" X 10" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE)
ITEM SPECIAL - 12" X 12" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE)

ALL REQUIREMENTS OF 638 SHALL APPLY EXCEPT THE TAPPING SLEEVE MUST BE STAINLESS STEEL. SLEEVE SHALL BE ROMAC INDUSTRIES, INC. SST-MJ TAPPING SLEEVE OR APPROVED EQUAL. VALVE AND VALVE BOX SHALL CONFORM TO THE TCSE STANDARDS AS SHOWN ON THE PREVIOUS SHEETS.

ITEM SPECIAL - 6" FIRE HYDRANT (TCSE)

ALL REQUIREMENTS OF 638 SHALL APPLY EXCEPT THE CONTRACTOR SHALL INSTALL EQUIPMENT CONFORMING TO THE TCSE STANDARDS AS SHOWN ON THE PREVIOUS SHEETS.

ITEM SPECIAL - INSTALL 1" COPPER WATER SERVICE CONNECTION (TCSE)

REMOVE EXISTING SERVICE BRANCHES, CORPORATION STOPS, SERVICE STOPS, AND SERVICE BOXES. FURNISH AND INSTALL SERVICE BRANCHES INCLUDING TAPPING SADDLES, CORPORATION STOPS, SERVICE STOPS, AND SERVICE BOXES AS SHOWN ON SHEETS P.138 & P.139 . ALL WORK SHALL BE IN ACCORDANCE WITH 638.

ANY PAVEMENT RESTORATION NECESSARY TO INSTALL THE SERVICE CONNECTION IS INCIDENTAL TO THE SERVICE CONNECTION. THE PAVEMENT BUILD-UP FOR ANY PAVEMENT RESTORATION SHALL MATCH THE BUILD-UP SHOWN ON THE TRENCH REPAIR DETAIL ON SHEET P.7.

ITEM SPECIAL - INSTALL 2" POLYETHYLENE WATER SERVICE CONNECTION (TCSE)

REMOVE EXISTING SERVICE BRANCHES, CORPORATION STOPS, SERVICE STOPS, AND SERVICE BOXES. FURNISH AND INSTALL SERVICE BRANCHES INCLUDING TAPPING SADDLES, CORPORATION STOPS, SERVICE STOPS, AND SERVICE BOXES AS SHOWN ON SHEETS P.138 & P.139 .

USE A SINGLE 2" SERVICE BRANCH TO CROSS SR-46 NEAR STA. 109+05.00 AND THEN MANIFOLD WITH THREE (3) SEPARATE SERVICE STOPS AND SERVICE BOXES TO CONNECT TO THE THREE (3) EXISTING WATER SERVICES. INSTALL AN ADDITIONAL SERVICE BOX AT THE CORPORATION STOP AT THE MAIN. ALL WORK SHALL BE IN ACCORDANCE WITH 638.

ANY PAVEMENT RESTORATION NECESSARY TO INSTALL THE SERVICE CONNECTION IS INCIDENTAL TO THE SERVICE CONNECTION. THE PAVEMENT BUILD-UP FOR ANY PAVEMENT RESTORATION SHALL MATCH THE BUILD-UP SHOWN ON THE TRENCH REPAIR DETAIL ON SHEET P.7.

10" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS, AS PER PLAN (INSTALLATION ONLY)

10" X 10" TAPPING SLEEVE, VALVE AND VALVE BOX (TCSE) (INSTALLATION ONLY)

THE DEPARTMENT WILL PROVIDE THE MATERIAL FOR THESE ITEMS. THE MATERIALS CAN BE PICKED UP AT:

LEE'S EXCAVATING
5854 WARREN-SHARON ROAD
BROOKFIELD, OH 44403

ALL REQUIREMENTS OF ITEM 638 AND THE OTHER NOTES ON THIS PAGE STILL APPLY.

NONE OF THE BENDS, TEES, CROSSES, OR JOINT RESTRAINTS ARE BEING PROVIDED. VALVE AND VALVE BOXES ARE NOT INCLUDED WITH THE TAPPING SLEVES. ALL BENDS, TEES, CROSSES, AND JOINT RESTRAINTS MATERIALS SHOULD BE INCLUDED WITH THE COST OF THE "INSTALLATION ONLY" ITEMS.

DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	JTH
REVIEWER	BD 04/28/25
PROJECT ID	109520
SHEET	TOTAL
P.141	P.166

MODEL: Sheet01 PAPER(SIZE: 34x22 (in.) DATE: 8/22/2025 TIME: 1:44:48 PM USER: Joseph.Hogan
pww\mb-us-pw.bentley.com\mb-us-pw-03\Documents\Cleveland_QH01_Projects\ODOT\District04109520\400-Engineering\Utilities\Sheets\109520_US001.dgn

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DESIGN AGENCY	
<div>Michael BakerINTERNATIONAL</div>	
DESIGNER	JTH
REVIEWER	BD 04/28/25
PROJECT ID	109520
SHEET	TOTAL
P.142	P.166

WATER WORK SUBSUMMARY (TCSE)

UTILITIES

THE CONTRACTOR SHALL USE THE FOLLOWING PROCEDURE AT EACH LOCATION WHERE WORK IS PERFORMED, IN ACCORDANCE WITH SECTIONS 105.07 AND 107.16 IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS:

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, OHIO811, THE OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 HEADQUARTERS (MICHELLE CHANEY AT 330-786-2267) AND ALL NON REGISTERED UTILITY OWNERS AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ALL AREAS.

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.

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

OHIO EDISON
ATTN: BOB WITTMAN
3310 LINDEN PLACE
CANFIELD, OH 44406
330-740-7607 (O) 330-240-4152 (C)
rwittman@firstenergycorp.com

CITY OF NILES ELECTRIC / LIGHTING
ATTN: JIM NEWBROUGH
34 WEST STATE STREET
NILES, OH 44446
330-550-8872
jnewbrough@thecityofniles.com

CHARTER
ATTN: JASON SPRAGUE
2904 STATE ROAD
ASHTABULA, OH 44004
216-575-8016 EXT 216-555-5740
440-361-0024 CELL
jason.sprague@charter.com

BRIGHTSPEED/LUMEN/CENTURYLINK
ATTN: ALAN PETERS
3801 ELM ROAD
WARREN, OH 44502
330-841-1408 (O)
330-219-3306 (C)
Alan.I.Peters@brightspeed.com

ENBRIDGE GAS OHIO (FORMERLY DOMINION ENERGY OHIO)
ATTN: K. AARON CONANT
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OH 44333
OFFICE: 330.664.2451
relocation@dominionenergy.com
k.aaron.conant@dominionenergy.com

ZAYO FIBER
ATTN: DAVID GALUSKA
4199 KINROSS LAKES PARKWAY, SUITE 10
RICHFIELD, OH 44286
234-281-0025 (O) 216-533-5039 (C)
dave.galuska@zayo.com

TRUMBULL COUNTY SANITARY ENGINEER
ATTN: SCOTT VERNER
842 YOUNGSTOWN-KINGSVILLE ROAD
VIENNA, OHIO 44473
330-675-7787
severner@co.trumbull.oh.us

UTILITIES

THE UNDERGROUND UTILITIES ON THIS PLAN HAVE BEEN LOCATED BY USING A SUBSURFACE UTILITY ENGINEERING COMPANY [SUE]. IF THERE ARE ANY DISCREPANCIES BETWEEN FIELD MARKINGS AND WHAT THE PLAN INDICATES, PLEASE CONTACT MATT STEELE, DISTRICT UTILITY COORDINATOR 330-786-4832, PRIOR TO ANY SUBSURFACE WORK BEING INITIATED.

WORK LIMITS

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

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 7PM AND 7AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE 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.

ITEM 408 - PRIME COAT, AS PER PLAN

APPLY "MC-70" AT A RATE OF 0.4 GALLONS PER SQUARE YARD, OR AS DETERMINED BY THE ENGINEER, TO THE COMPLETED COMPACTED AGGREGATE SHOULDER.

ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

IN LOW SHOULDER AREAS EXCEEDING 1", AND ADJACENT TO THE SAFETY EDGE, OR AS DIRECTED BY THE ENGINEER, RECYCLED ASPHALT PAVEMENT (RAP) SHALL BE USED IN AREAS ADJACENT TO THE PAVED BERM. THE RAP SHALL HAVE A MINIMUM PG CONTENT OF 4.5% AND MEET THE FOLLOWING GRADATION. ONCE THE STOCKPILE MEETS THE GRADATION, THE PG CONTENT OF THE RAP SHALL BE DETERMINED PER 441.03. THE RAP ANALYSIS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO USE. METHOD OF MEASUREMENT SHALL BE AS PER 617.06. PLACEMENT AND COMPACTION SHALL MEET THE REQUIREMENTS OF ITEM 617. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 617 COMPACTED AGGREGATE, AS PER PLAN.

MODIFIED GRADATION SHALL APPLY:

SIEVE	TOTAL PERCENT PASSING
1- 1/2"	100
3/4"	50-100
NO. 4	35-70
NO. 30	9-33
NO. 200	0-13

UNSTABLE OR UNSUITABLE SOILS FOR PAVEMENT STABILIZATION

THE FOLLOWING ITEMS AND QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO ADDRESS UNSTABLE OR UNSUITABLE SOILS ENCOUNTERED IN THE AREAS OF PAVEMENT CONSTRUCTION:
ITEM 204 - EXCAVATION OF SUBGRADE, 45 CY
ITEM 204 - GRANULAR MATERIAL, TYPE B, 45 CY
ITEM 204 - GEOTEXTILE FABRIC 125 SY

EXCAVATION AND EMBANKMENT

THE FOLLOWING QUANTITIES HAVE BEEN TAKEN FROM SHEETS P.27 - P.44 AND CARRIED TO THE GENERAL SUMMARY:

ITEM 203, EXCAVATION, 4,224 CY
ITEM 203, EMBANKMENT, 1,238 CY

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL, 835 CY
659, SEEDING AND MULCHING, 7,500 SY
659, COMMERCIAL FERTILIZER, 1.01 TON
659, LIME, 1.55 AC
659, WATER, 20.3 MGAL

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

CHANNEL EMBANKMENTS

FILL AND SLOPE PORTIONS OF THE EXISTING CHANNEL TO DRAIN AS SHOWN IN THESE PLANS. IN CHANNEL EMBANKMENT AREAS WHICH WILL NOT SUPPORT ANY PORTION OF THE NEW ROAD BED OR STRUCTURAL EMBANKMENTS, THE CONTRACTOR MAY UTILIZE EMBANKMENT METHODS MEETING THE FOLLOWING REQUIREMENTS:

CLEAR ALL WEEDS AND BRUSH IN AREAS WHERE CHANNEL EMBANKMENTS ARE TO BE PLACED. THE REQUIREMENTS FOR MOISTURE, DENSITY CONTROL, BENCHING AND SUITABLE MATERIALS IS WAIVED. PLACE THE MATERIAL IN 8-INCH LOOSE LIFTS. THE ENGINEER MAY INCREASE THE LIFT THICKNESS IN ORDER TO BRIDGE THE SOFT OR WET FOUNDATIONS DEPENDING ON THE STABILITY OF THE FOUNDATION. THE ENGINEER MAY INCREASE THE LIFT THICKNESS UP TO 24 INCHES TO OBTAIN STABILITY AT THE TOP OF THE LIFT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 203, EMBANKMENT.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, 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 STATE.

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 CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

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 CONTRACTORS OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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 THE 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.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

DESIGN AGENCY



DESIGNER

MJP

REVIEWER

EMS 09-22-23

PROJECT ID

109520

SHEET

P.6

TOTAL

68

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A PORTABLE CHANGEABLE MESSAGE SIGN, THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCE OF 800 FEET AND 650 FEET RESPECTIVELY.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY UNLESS IT IS PROTECTED FROM BOTH DIRECTIONS OF TRAFFIC. THE PCMS SHALL BE LOCATED. IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE THE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF. ADDITIONALLY WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE CONTRACTOR. A LIST OF ALL PROPOSED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE LINE PRESENTATION FORMATS WITH UP TO OF SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DE-ACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL [IN ACTIVE CELLULAR AREAS] ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.07. THE CONTRACTOR SHALL PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THEIR USE. THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 614.02.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

614 PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN, 16 SIGN MONTH
ASSUMING 2 SIGNS FOR 8 MONTHS

642-4 ITEM 614, MAINTAINING TRAFFIC (TIME LIMITATION ON A
DETOUR)

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 75 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 12. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF \$ 2,500 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

SEQUENCE OF CONSTRUCTION

MAINTENANCE OF TRAFFIC OPERATIONS FOR RECONSTRUCTION OF SR 82 AT HOWLAND-WILSON ROAD SHALL ADHERE TO THE FOLLOWING CONSTRUCTION SEQUENCE:

PHASE 1: THE CONTRACTOR SHALL CONSTRUCT THE MEDIAN TURNAROUND ON SR 82 EAST OF HOWLAND-WILSON ROAD PRIOR TO BEGINNING WORK AT THE HOWLAND-WILSON / SR-82 INTERSECTION.

PHASE 2: THE CONTRACTOR SHALL CLOSE AND DETOUR HOWLAND-WILSON ROAD TRAFFIC AT THE SR-82 INTERSECTION. HOWLAND WILSON TRAFFIC SHALL REMAIN DETOURED FOR THE DURATION OF THE INTERSECTION IMPROVEMENTS. THE EXISTING MEDIAN PAVEMENT, LEFT-TURN, AND RIGHT-TURN LANES TO HOWLAND-WILSON ROAD SHALL BE CLOSED USING TYPE 3 BARRICADES AND WITH DRUMS SPACED AT 10' C/C THROUGH THE WORK LIMITS. ONCE HOWLAND-WILSON ROAD HAS BEEN CLOSED AND DETOURED, THE CONTRACTOR SHALL REMOVE THE EXISTING TRAFFIC SIGNAL ALLOWING SR-82 TO FUNCTION AS FREE-FLOW. THE COST TO REMOVE OR TEMPORARILY COVER SIGNAL HEADS SHALL BE COVERED UNDER ITEM 614 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN (SEE NOTE IN TRAFFIC CONTROL NOTES). PERFORM THE NECESSARY MEDIAN IMPROVEMENTS BEFORE PROCEEDING TO PHASE 3. MEDIAN GRADING SHALL BE PERFORMED WITH THE INSIDE PAVEMENT REMOVAL TO MAINTAIN DROP-OFF CONDITIONS IN ACCORDANCE WITH MT-101.90. THIS WORK IS COVERED UNDER ITEM 614 – MAINTAINING TRAFFIC

PHASE 3: ONCE PHASE 2 MEDIAN WORK IS COMPLETE, THE CONTRACTOR SHALL PROCEED WITH PAVEMENT REMOVAL WORK AFFECTING THE NORTH AND SOUTH SIDES OF THE INTERSECTION. DROP-OFF CONDITIONS SHALL BE MAINTAINED IN ACCORDANCE WITH MT-101.90. ACCESS TO LOCAL PROPERTIES SHALL BE MAINTAINED FROM HOWLAND-WILSON ROAD.

PHASE 4: THE CONTRACTOR SHALL CONSTRUCT THE RIGHT-TURN LANES, CUL-DE-SAC, AND REMAINING INTERSECTION IMPROVEMENTS. DROP-OFF CONDITIONS DUE TO PAVEMENT REMOVAL SHALL BE MAINTAINED IN ACCORDANCE WITH MT-101.90. PHASE 4 WORK MAY BE PERFORMED CONCURRENTLY WITH PHASE 3.

PHASE 5. THE CONTRACTOR SHALL PERFORM FINAL RESURFACING, SIGNAGE, AND PAVEMENT MARKING WORK. DETOUR SIGNAGE MAY BE REMOVED ONCE THE ABOVE PHASES ARE COMPLETE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR WORK ZONE PROTECTION ACCORDING TO SCD MT-95.45:

MEDIAN PAVEMENT (BOTH EB AND WB):
WORK ZONE PAVEMENT MARKINGS (MAINLINE SR 82 BOTH EB/WB)
614, WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I, 0.18 MI

INTERIM START DATE

NO WORK FOR TRU-82-18.64 PART 2 SHALL BEGIN UNTIL ALL WORK HAS BEEN COMPLETED FOR PART 1 AND PART 3, EXCEPT FOR PHASE 1 OF THE SEQUENCE OF CONSTRUCTION (MEDIAN TURNAROUND). ALL OTHER PHASES OF PART 2 ARE STILL SUBJECT TO THIS INTERIM START DATE. SHOULD THE CONTRACTOR FAIL TO MEET THIS REQUIREMENT, A DISINCENTIVE IN THE AMOUNT OF \$10,000 PER DAY SHALL BE ASSESSED.

DUST CONTROL

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

ITEM 616, WATER 17.6 M. GAL.

DESIGN AGENCY



DESIGNER

MJP

REVIEWER

EMS 09-22-23

PROJECT ID

109520

SHEET

P.10

TOTAL

68

SHEET NUM.																PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
6	7	8	9	10	16	17	18	20	45	53	58	59	60	63	64	03/NHS/04		EXT	TOTAL			
																					ROADWAY	
							2									2	202	20010	2	EACH	HEADWALL REMOVED	
					5,343				204							5,547	202	23000	5,547	SY	PAVEMENT REMOVED	
					645											645	202	32000	645	FT	CURB REMOVED	
					675											675	202	32500	675	FT	CURB AND GUTTER REMOVED	
							573									573	202	35100	573	FT	PIPE REMOVED, 24" DIAMETER AND UNDER	
							1									1	202	58000	1	EACH	MANHOLE REMOVED	
							8									8	202	58100	8	EACH	CATCH BASIN REMOVED	
							40									40	SPECIAL	20270000	40	FT	FILL AND PLUG EXISTING CONDUIT	8
	1															1	202	98100	1	EACH	REMOVAL MISC.: INSPECTION WELL	7
	10															10	202	98200	10	FT	REMOVAL MISC.: CONDUIT	7
4,224																4,224	203	10000	4,224	CY	EXCAVATION	
																23	203	10001	23	CY	EXCAVATION, AS PER PLAN	7
1,238																1,238	203	20000	1,238	CY	EMBANKMENT	
	3															3	203	20001	3	CY	EMBANKMENT, AS PER PLAN	7
45																45	203	35110	45	CY	GRANULAR MATERIAL, TYPE B	
					2,499				504							3,003	204	10000	3,003	SY	SUBGRADE COMPACTION	
45																45	204	13000	45	CY	EXCAVATION OF SUBGRADE	
					1											1	204	45000	1	hour	PROOF ROLLING	
125																125	204	50000	125	SY	GEOTEXTILE FABRIC	
	7															7	625	31510	7	EACH	PULL BOX REMOVED	
			LUMP													LUMP	SPECIAL	69098400	LS		SURVEY CONTROL VERIFICATION	8
																					EROSION CONTROL	
			9													9	601	21050	9	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
835				17.6												17.6	616	10000	17.6	MGAL	WATER	
7,500							1,005									1,840	659	00300	1,840	CY	TOPSOIL	
375									191							7,691	659	10000	7,691	SY	SEEDING AND MULCHING	
																375	659	14000	375	SY	REPAIR SEEDING AND MULCHING	
1.01																1.01	659	20000	1.01	TON	COMMERCIAL FERTILIZER	
1.55																1.55	659	31000	1.55	ACRE	LIME	
20.3																20.3	659	35000	20.3	MGAL	WATER	
							9,051									9,051	670	00700	9,051	SY	DITCH EROSION PROTECTION	
								LS								LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
								LS								LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
								LS								LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
																3,000	832	30000	3,000	EACH	EROSION CONTROL	
																					DRAINAGE	
							2									2	602	20000	2	CY	CONCRETE MASONRY	
							1,046									1,046	605	14020	1,046	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
			50													50	611	01500	50	FT	6" CONDUIT, TYPE F	
							38									38	611	04400	38	FT	12" CONDUIT, TYPE B	
							97									97	611	05900	97	FT	15" CONDUIT, TYPE B	
									40							40	611	07200	40	FT	18" CONDUIT, TYPE A	
							32									32	611	07600	32	FT	18" CONDUIT, TYPE C	
							82									82	611	10400	82	FT	24" CONDUIT, TYPE B	
							15									15	611	12100	15	FT	27" CONDUIT, TYPE C	
							86									86	611	52302	86	FT	19" X 30" CONDUIT, TYPE B, 706.04	
							31									31	611	52304	31	FT	19" X 30" CONDUIT, TYPE C, 706.04	
	10															10	611	97400	10	FT	CONDUIT, MISC.: TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE	7
	10															10	611	97400	10	FT	CONDUIT, MISC.: TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE	7
	10															10	611	97400	10	FT	CONDUIT, MISC.: TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE	7
	10															10	611	97400	10	FT	CONDUIT, MISC.: TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE	7
							5									5	611	98151	5	EACH	CATCH BASIN, NO. 3, AS PER PLAN	8
							2									2	611	98450	2	EACH	CATCH BASIN, NO. 2-2A	
			5													5	611	99710	5	EACH	PRECAST REINFORCED CONCRETE OUTLET	
	1															1	611	99720	1	EACH	INSPECTION WELL	

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

MJP

REVIEWER

EMS 09-22-23

PROJECT ID

109520

SHEET

P.13

TOTAL

68

[illegible]

MODEL: Sheet PAPER:SIZE: 34x22 (in.) DATE: 8/25/2025 TIME: 1:58:46 PM USER: shayes
pww\ohiodo-pw-bentley.com\ohiodo-pw-02\Documents\01 Active Projects\District 04\Tumbull\109521400-Engineering\Drainage\Sheets\109521_DS001.dgn

REF	NO.	SHEET NO.	STATION TO STATION					202	202	202	202	SPECIAL	602	611	611	611	611	611	611	611	611	659	670					
							HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	MANHOLE REMOVED	CATCH BASIN REMOVED	FILL AND PLUG EXISTING CONDUIT	CONCRETE MASONRY	12" CONDUIT, TYPE B	15" CONDUIT, TYPE B	18" CONDUIT, TYPE C	24" CONDUIT, TYPE B	24" CONDUIT, TYPE C	27" CONDUIT, TYPE C	19" X 30" CONDUIT, TYPE B, 706.04	19" X 30" CONDUIT, TYPE C, 706.04	CATCH BASIN, NO. 3, AS PER PLAN	CATCH BASIN, NO. 2-2A	MANHOLE, NO. 3	TOPSOIL	DITCH EROSION PROTECTION			
							EACH	FT	EACH	EACH	FT	CY	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	CY	SY					
D-1	22		19+04	36.73	TO	19+03	5.11								32				1									
D-2	22		19+03	5.11	TO	18+82	-75.81											1										
D-3	22		18+07	-30.21	TO	18+82	-75.81							97		82			1									
D-4	22		19+22	-52.78	TO	18+82	-75.81						38						1									
D-5	22		18+93	-75.81	TO	18+96	-90.15					0.53					15		1									
D-6	23		21+50	58.69	TO	21+50	49.62					0.35																
D-7	23		21+50	49.62	TO	21+71	-34.13										86		1									
D-8	23		21+71	-34.13	TO	21+72	-55.22					0.35						22	1									
R-1	22		19+11	40.43	TO	19+04	36.20																					
R-2	22		19+04	36.20	TO	19+05	23.06																					
R-3	22		19+05	23.06	TO	19+00	-34.09				1																	
R-4	22		18+07	-30.21	TO	19+00	-34.09																					
R-5	22		19+00	-34.09	TO	19+32	-75.31																					
R-6	22		19+32	-75.31	TO	19+31	-57.83																					
R-7	22		19+00	-34.09	TO	18+92	-55.49																					
R-8	23		21+72	27.88	TO	21+72	20.43	1																				
R-9	23		21+72	20.43	TO	21+72	-20.43				1																	
R-10	23		21+72	-20.43	TO	21+72	-30.10	1																				
R-11	20		811+95	9.41		809+97	16.07																					
R-12	22		809+97	16.07		809+97	-9.85																					
R-13	22		809+97	-9.85		809+97	-97.15				1	40																
VBF #1	16		810+50		TO	817+00	LT															177	1597					
VBF #2	16		812+25		TO	817+00	RT															118	1065					
VBF #3	16		801+75		TO	807+50	LT															204	1839					
VBF #4	16		803+00		TO	817+00	C															226	2033					
VBF #5	17		818+00		TO	823+00	C															183	1646					
VBF #6	17		818+00		TO	820+00	LT															54	484					
VBF #7	17		818+00		TO	820+00	RT															43	387					
TOTALS CARRIED TO GENERAL SUMMARY									2	573	1	8	40	2	38	97	32	82		15	86	31	5	2		1005	9051	
REF	NO.	SHEET NO.	STATION TO STATION				BEGIN ELEVATION	END ELEVATION	OUTLET				601	611	611	605					FOR INFORMATION ONLY							
									BEGIN		STATION										END		TEE	45° BEND	90° BEND	END CAP		
									ELEVATION	OFFSET	SHALLOW UNDERDRAIN OUTLET	OUTLET TO DRAINAGE STRUCTURE									ELEVATION	OFFSET						
UD-1	22		19+27.7		TO	18+92.1	1058.70	1058.30				CONNECT TO D-4					89									1		
UD-2	22		19+27.7		TO	18+90.4	1059.00	1058.30				CONNECT TO CB-1					88									1		
UD-3	22		17+27.1		TO	18.92.1	1060.61	1059.86				CONNECT TO D-3					193									1		
UD-4	22		17+27.1		TO	18+90.4	1060.60	1059.67				CONNECT TO CB-1					179									1		
UD-5	23		22+55.7		TO	21+71.6	1060.06	1059.26				CONNECT TO CB-6					84									1		
UD-6	23		22+55.9		TO	21+13.5	1060.00	1059.14				CONNECT TO CB-5					83									1		
UD-7	23		20+70.9		TO	21+13.5	1062.00	1059.15				CONNECT TO D-7					154									1		
UD-8	23		20+66.5		TO	21+71.6	1061.00	1059.60				CONNECT TO CB-6					176									1		
TOTALS CARRIED TO GENERAL SUMMARY																		1046										

DRAINAGE AND UNDERDRAIN SUBSUMMARY

DESIGN AGENCY



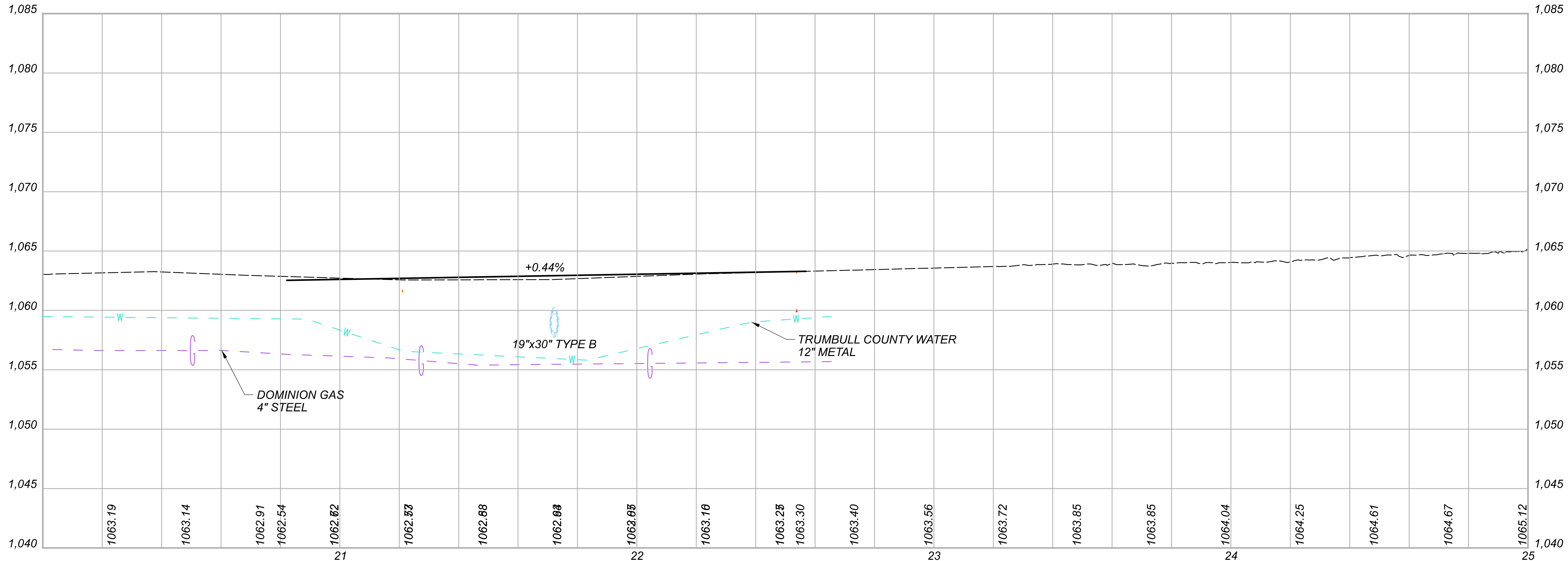
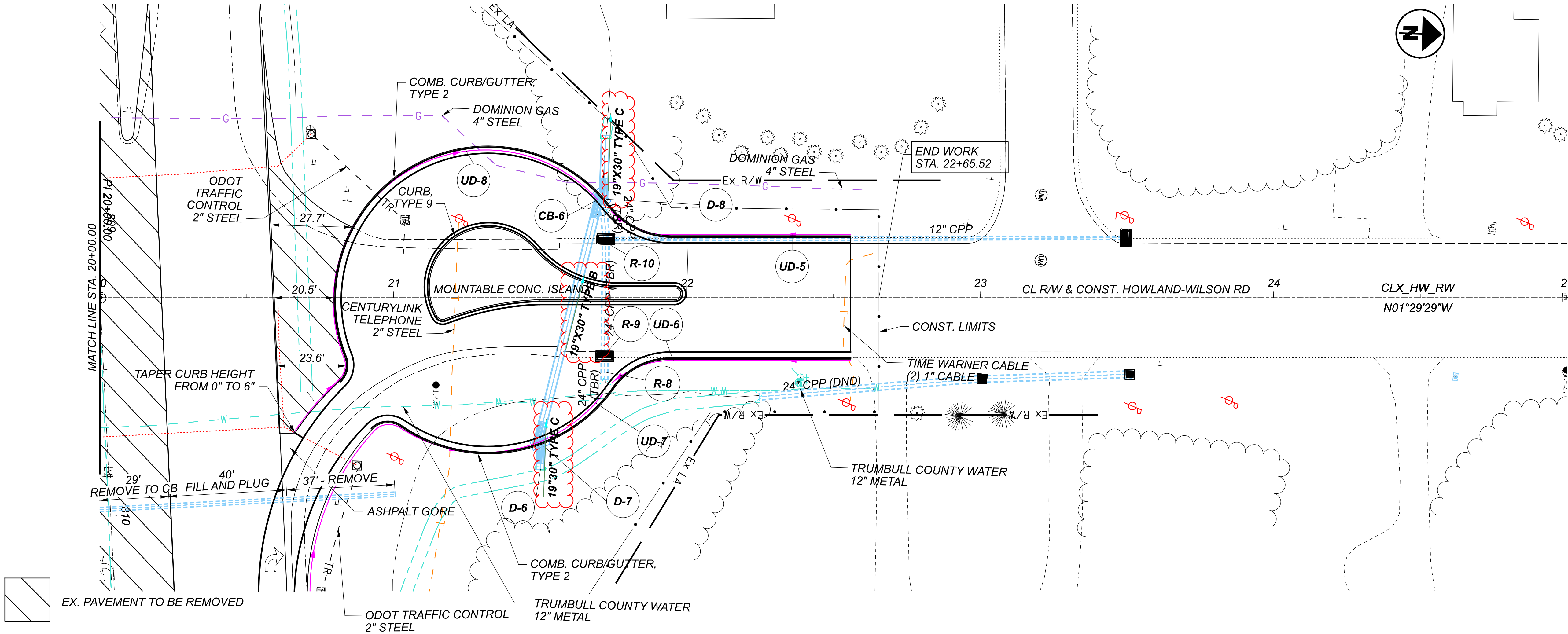
DESIGNER
MJP

REVIEWER
EMS 09-22-23

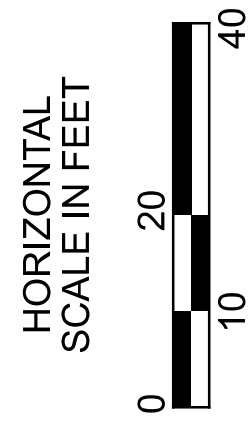
PROJECT ID
109520

SHEET
P.18

TOTAL
68



PLAN AND PROFILE
HOWLAND-WILSON RD - STA. 20+00 - STA. 25+00



DESIGN AGENCY



DESIGNER
MJP

REVIEWER
EMS 09-22-23

PROJECT ID
109520

SHEET TOTAL
P.26 68

SIGNAGE FOR CLOSED-ACCESS INTERSECTION (HOWLAND WILSON RD)

THE CONTRACTOR SHALL INSTALL THE FOLLOWING SIGNS ON HOWLAND-WILSON RD IMMEDIATELY NORTH OF HOWLAND-SPRINGS RD AND IMMEDIATELY SOUTH OF WARREN-SHARON RD:

NORTH OF HOWLAND-SPRINGS:
NO OUTLET (W14-2-30)
NO TRUCKS (R5-2-24)

SOUTH OF WARREN-SHARON:
NO TRUCKS (R5-2-24)

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 630, SIGN, FLAT SHEET	17 SF
ITEM 630, GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN	38.5 FT

ITEM 630, GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN

SQUARE POSTS, CMS 730.016, SHALL NOT BE PERMITTED TO BE USED. ALL OTHER SECTIONS OF CMS 630 SHALL BE FOLLOWED.

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

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, SIGNAL SUPPORTS, CABINET(S), CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. UNLESS NOTED, POWER SERVICES SHALL BE REMOVED IN ACCORDANCE WITH C&MS 625.21.F. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY (NAME OF AGENCY RECEIVING STORED ITEMS) IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

SIGNAL CONTROLLER CABINETS AND COMPONENTS
UNINTERRUPTIBLE POWER SUPPLY (UPS) CABINETS AND COMPONENTS
WAVETRONIX UNITS AND COMPONENTS
METER
DISCONNECT

REMOVED ITEMS SHALL BE DELIVERED TO THE NEAREST ODOT FACILITY WHOSE ADDRESS IS LISTED BELOW:

ODOT DISTRICT 4
ATTN: JOE PARTHEMER
5140 BELMONT AVE
YOUNGSTOWN, OHIO 44420
(330) 637-1921

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.

RAISED PAVEMENT MARKERS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

MAINLINE SR 82 GORE AREAS	
ITEM 621, RPM (WHITE/RED)	8 EACH
SOUTH CUL-DE-SAC AND RIGHT-IN LANE	
ITEM 621, RPM (WHITE/RED)	16 EACH
ITEM 621, RPM (YELLOW)	7 EACH

NORTH CUL-DE-SAC, RIGHT-IN LANE, AND TWLTL	
ITEM 621, RPM (WHITE/RED)	24 EACH
ITEM 621, RPM (YELLOW)	7 EACH

PLACEMENT OF RAISED PAVEMENT MARKERS SHALL CONFORM TO SCDS TC-65.10 AND TC-65.11.

GROOVING FOR RECESSED-WET REFLECTIVE PAVEMENT MARKINGS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED WITH ITEM 807 RECESSED-WET REFLECTIVE PAVEMENT MARKINGS (SEE SHEET P.59):

ITEM 850, GROOVING FOR 6" RECESSED PAVEMENT MARKING (ASPHALT), 0.63 MILES

ITEM 850, GROOVING FOR 12" RECESSED PAVEMENT MARKING (ASPHALT), 186 FEET

REMOVAL OF EXISTING PAVEMENT MARKINGS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED FOR REMOVAL OF EXISTING PAVEMENT MARKINGS ON HOWLAND-WILSON ROAD:

ITEM 644, REMOVAL OF PAVEMENT MARKING	5 EA
ITEM 644, REMOVAL OF PAVEMENT MARKING	327 FT

DESIGN AGENCY



DESIGNER

MJP

REVIEWER

EMS 09-22-23

PROJECT ID

109520

SHEET

P.58

TOTAL

68