

LOCATION MAP

LATITUDE: 41°12'00" LONGITUDE: -80°33'10"



PORTION TO BE IMPROVED	
INTERSTATE HIGHWAY	
FEDERAL ROUTES	
STATE ROUTES	
COUNTY & TOWNSHIP ROADS	
OTHER ROADS	

DESIGN DESIGNATION	SLM	SLM	SLM	SLM
	4.56-4.84	4.84-5.60	5.60-8.54	8.54-9.24
CURRENT ADT (2026)	11,500	17,500	11,500	14,500
DESIGN YEAR ADT (2046)	11,500	18,500	13,500	16,000
DESIGN HOURLY VOLUME (2046)	1,500	2,200	1,600	1,600
DIRECTIONAL DISTRIBUTION	0.52	0.52	0.51	0.51
TRUCKS (24 HOUR B&C)	460	1,225	690	1,015
DESIGN SPEED	50 MPH	50 MPH	60 MPH	45 MPH
LEGAL SPEED	45 MPH	45 MPH	55 MPH	40 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	03 PRINCIPAL ARTERIAL (URBAN)			
NHS PROJECT	YES			

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig


Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:
ODOT DISTRICT 4, CAPITAL PROGRAMS
2088 S. ARLINGTON ROAD
AKRON, OH 44306

END PROJECT
US 62 SLM: 9.24

RESUME PROJECT
US 62 SLM: 7.79

SUSPEND PROJECT
US 62 SLM: 7.55

WIDENING AT HIBLER
US 62 SLM: 5.47

WIDENING AT FRANKLIN
US 62 SLM: 4.69

BEGIN PROJECT
US 62 SLM: 4.56

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STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
BP-2.5	7/19/24	RM-1.1	7/18/25	MT-98.20	4/19/19	TC-65.11	1/17/25	800-2023	7/18/25		
BP-3.1	1/19/24	RM-3.1	7/20/18	MT-98.22	1/17/20	TC-71.10	7/18/25	807	1/17/25		
BP-4.1	7/19/13			MT-98.28	1/17/20			809	7/18/25		
BP-5.1	7/18/25	HW-2.1	7/15/22	MT-99.20	4/19/19			821	4/20/12		
BP-9.1	1/18/19	HW-2.2	7/20/18	MT-101.70	7/19/24			831	4/21/23		
				MT-101.75	7/21/23			832	7/18/25		
CB-2-2B	7/19/24	MT-95.30	7/18/25	MT-101.90	7/17/20			850	7/21/23		
CB-3A	7/19/24	MT-95.31	7/18/25	MT-105.10	1/17/20			875	1/17/25		
CB-5	7/19/24	MT-95.32	7/18/25					905	1/17/25		
CB-6	7/19/24	MT-95.40	7/18/25	TC-41.10	7/19/13			909	7/18/25		
		MT-95.41	7/18/25	TC-41.20	10/18/13			921	7/19/24		
DM-1.1	1/17/25	MT-95.45	7/21/23	TC-42.20	10/18/13			931	4/21/23		
DM-1.2	1/17/25	MT-97.10	7/18/25	TC-52.10	10/18/13						
DM-4.3	1/15/16	MT-97.12	7/18/25	TC-52.20	1/15/21						
DM-4.4	1/15/16	MT-98.10	1/17/20	TC-64.10	7/21/23						
		MT-98.11	1/17/20	TC-65.10	1/17/14						

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

TRU-62-4.56

BROOKFIELD AND HUBBARD TOWNSHIPS

TRUMBULL COUNTY

FEDERAL PROJECT NUMBER

E241033

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

CONSTRUCTING LEFT TURN LANES AND MEDIAN RECONSTRUCTION ON TRU US 62 AT FRANKLIN AVE, CONSTRUCTING A TRUCK U-TURN AREA AT HIBLER LANE, AND RESURFACING 4.68 MILES OF TRU US 62.

EARTH DISTURBED AREAS


PROJECT EARTH DISTURBED AREA:	3.59 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	3.84 ACRES

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET P.12 AND P.13, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.


Arthur G. Noiro Jr., P.E.
District 04 Deputy Director


Pamela Boratyn
Director, Department of Transportation

ENGINEER'S SEAL



ITEM 614, MAINTAINING TRAFFIC

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

1. A MINIMUM OF ONE TEN-FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED ON US 62 AT ALL TIMES. A MINIMUM OF ONE TEN-FOOT BIDIRECTIONAL LANE SHALL BE MAINTAINED AT ALL OTHER LOCATIONS DURING CONSTRUCTION OF THE WORK.
2. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 786-2208, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.
3. TRUCK MOUNTED ATTENUATORS [TMA'S] SHALL BE USED AS SHOWN IN THE STANDARD CONSTRUCTION DRAWINGS.
4. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE SUCCESSIVE WORK ZONES UNLESS THE DISTANCE BETWEEN THE DRUMS, BARRICADES OR CONES EXCEEDS TWO (2) MILES.
5. IN ADDITION TO THE REQUIREMENTS OF 614.11 WORK ZONE PAVEMENT MARKINGS, AT THE END OF EACH DAY OF WORK, THE CONTRACTOR SHALL REPLACE (WITH WORK ZONE MARKINGS) ALL LANE, CENTER, STOP OR CHANNELIZING LINES THAT WERE REMOVED OR COVERED DURING THE PAVEMENT REMOVAL OR PLACEMENT OPERATIONS. QUANTITIES FOR SUCH PLACEMENT ARE CARRIED AS PART OF THE ITEMS LISTED UNDER 614 WORK ZONE PAVEMENT MARKINGS.
6. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.

7. THE CONTRACTOR SHALL INSTALL, MAINTAIN & SUBSEQUENTLY REMOVE WORK ZONE MARKING SIGNS & THEIR SUPPORTS WITHIN THE WORK LIMITS. THESE SIGNS INCLUDE "NO EDGE LINES", "DO NOT PASS" AND "PASS WITH CARE". ALL OTHER SIGNS WILL BE INCIDENTAL TO THE LUMP SUM PAY ITEM 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED IN THE PLANS. A QUANTITY OF ITEM 614 WORK ZONE MARKING SIGNS HAS BEEN INCLUDED IN THE PLANS AS PER CMS 614.04.

8. THE CONTRACTOR SHALL SET A WORK ZONE AT THE REQUEST OF THE ENGINEER TO ALLOW THE LAYOUT OF THE PARTIAL/FULL DEPTH PAVEMENT REPAIR AREAS. THIS WORK IS INCIDENTAL TO ITEM 614 MAINTAINING TRAFFIC

THE FOLLOWING QUANTITIES SHALL BE USED FOR THE MAINTENANCE OF TRAFFIC ON THIS PROJECT:

614, WORK ZONE CENTER LINE, CLASS I, 0.51 MILE	(MILLED SURFACE)
614, WORK ZONE LANE LINE, CLASS I, 8.94 MILE	(MILLED SURFACE)
614, WORK ZONE CHANNELIZING LINE, CLASS I, 12" 8748 FT	(MILLED SURFACE)
614, WORK ZONE STOP LINE, CLASS I, 509 FT	(MILLED SURFACE)
614, WORK ZONE MARKING SIGN, (ALL PHASES)	12 EACH
614, WORK ZONE CENTER LINE, CLASS III, 642 PAINT	0.51 MILE (SURFACE COURSE)
614, WORK ZONE LANE LINE, CLASS III, 642 PAINT, 8.94 MILE	(SURFACE COURSE)
614, WORK ZONE CHANNELIZING LINE, CLASS III, 12", 642 PAINT	8748 FT
614, WORK ZONE STOP LINE, CLASS III, 642 PAINT,	509 FT (SURFACE COURSE)
614, WORK ZONE EDGE LINE, CLASS III	17.72 MI (AS DIRECTED BY ENGINEER)

ITEM 614, MAINTAINING TRAFFIC (CONTINUED)

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 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 ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

SEQUENCE OF CONSTRUCTION

PREPHASE: ALL EXISTING CONFLICTING MARKINGS AND SIGNS SHALL BE REMOVED PRIOR TO PLACING TRAFFIC IN PHASE I. ALL REMOVALS SHALL BE INCIDENTAL TO LUMP SUM BID ITEM 614, MAINTAINING TRAFFIC.

PHASE 1: LOON AREA AT TRU 62 AT HIBLER LN

THIS PHASE INCLUDES LOON CONSTRUCTION FOR THE TRUCK U-TURN. ALL NORTHBOUND LANES SHALL REMAIN OPEN TO TRAFFIC, AS SHOWN ON SHEETS P.13-P.14. FOR THE SOUTHBOUND DIRECTION, THE ON-RAMP FROM BROOKFIELD RD TO US 62 SHALL BE CLOSED AS SHOWN ON SHEET P.13, AND ALL TRAFFIC SHALL BE SHIFTED TO A SINGLE LANE, AS DETAILED ON SHEET P.14.

PHASE 2: WIDENING NORTHBOUND LEFT LANE ON US 62 AT HIBLER LN

THIS PHASE INVOLVES THE ROAD WIDENING FOR THE NORTHBOUND DIRECTION AT TRU 62 AT HIBLER LANE. ON-RAMP FROM BROOKFIELD RD (SOUTHBOUND SR-7) TO US 62 SHALL BE CLOSED. DURING PHASE 2, LANES ADJACENT TO THE MEDIAN FOR BOTH SOUTHBOUND AND NORTHBOUND DIRECTIONS SHALL BE CLOSED IN ACCORDANCE WITH SHEETS P.15-P.16. THE MEDIAN CLOSURE AND TRAFFIC RESTRICTIONS AT THE US-62/HIBLER LANE INTERSECTION SHALL NOT EXCEED 30 CALENDAR DAYS.

PHASE 3: TRU 62 AT FRANKLIN AVE

THIS PHASE INCLUDES THE ADDITION OF LEFT-TURN LANES AND THE RECONSTRUCTION OF THE MEDIAN ON US 62 AT FRANKLIN AVE. TRAFFIC IN BOTH SOUTHBOUND AND NORTHBOUND DIRECTIONS SHALL BE MANAGED AND DIRECTED AS SHOWN ON SHEETS P.17-P.18. THE CONTRACTOR IS PERMITTED TO CLOSE THE US-62/FRANKLIN AVENUE INTERSECTION BETWEEN 8:00PM AND 5:00AM TO PERFORM CULVERT INSTALLATION WORK. THE CLOSURE SHALL BE LIMITED TO NO MORE THAN TWO CONSECUTIVE NIGHTS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
ROAD & RAMP CLOSURES	>= 2WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERNS CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL OTHER THAN THE SUPERINTENDENT & SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC DEVICES AT THE BEGINNING & END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES & THEIR NAMES & PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL MAY HAVE OTHER CONSTRUCTION RELATED DUTIES AS LONG AS IMMEDIATE ATTENTION IS GIVEN TO TRAFFIC CONTROL. PAYMENT FOR THE SERVICES OF THE TRAFFIC CONTROL INSPECTOR SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, 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.

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.

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.

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.

614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

REVISDTWO (2) SIGNS 6 MONTHS EACH & FOUR (4) SIGNS 1 MONTH EACH = 16 SNMT

DETOUR NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE PROJECT ENGINEER EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH THE DETOUR SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.



DESIGN AGENCY

DESIGNER

FA

REVIEWER

RMM 07-01-25

PROJECT ID

105145

SHEET

P.10

TOTAL

51

ITEM 809 – STOP-LINE RADAR DETECTION, AS PER PLAN
ITEM 809 – ADVANCE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING STOP-LINE RADAR DETECTION - WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT OR ADVANCE RADAR DETECTION - WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

- 1) POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- 2) ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
- 3) THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
- 4) SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
- 5) THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
- 6) A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MIN. 7 FEET)
- 7) THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
- 8) THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING THE EXISTING LOOPS.
- 9) THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.
- 10) THE CONTRACTOR SHALL CONTACT THE DISTRICT OFFICE (330-786-2267) THREE WORKING DAYS PRIOR TO INSTALLING THE DETECTION TO REMOVE THE CABINET LOCKS. ANY LOOP DETECTORS DISTURBED BY THE PLANING SHOULD BE ABANDONED IN PLACE.
- 11) THE CONTRACTOR SHALL DISCONNECT AND LEAVE THE LOOP DETECTOR AMPLIFIERS IN THE CONTROLLER.

PAYMENT FOR EACH DETECTION UNIT SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:
ITEM 809 – STOP-LINE RADAR DETECTION, AS PER PLAN, 8 EACH
ITEM 809 – ADVANCE RADAR DETECTION, AS PER PLAN, 2 EACH

INTERSECTION	SLM	STOP LINE RADAR	ADVANCE RADAR	STOP LINE DIRECTION	ADVANCE DIRECTION	COMMENTS
US 62 @ LOVES TRUCK STOP	4.69	2	2	WB, EB	NB, SB	
US 62 @ HUBBARD MASURY	4.84	2		WB, SB		SB LEFT TURN
US 62 @ FLYING J TRUCK STO	5.33	2		NB, EB		NB LEFT TURN
US 62 @ CHESTNUT RIDGE RD	6.24	2		WB, EB		
US 62 @ I-80						HAS WAVETRONIX

ASPHALT PAVING LIMITATION

THE CONTRACTOR SHALL NOT ANTICIPATE OR SCHEDULE PLACING ASPHALT (ASPHALT SURFACE COURSE, ASPHALT INTERMEDIATE COURSE, ASPHALT CONCRETE BASE, ETC.) BETWEEN NOVEMBER 1 AND APRIL 1 WHEN SUBMITTING THEIR INITIAL BAR CHART PROGRESS SCHEDULE TO THE DISTRICT CONSTRUCTION ENGINEER (DCE) AS SPECIFIED IN CMS SECTION 108.02A. THIS LIMITATION SHALL ALSO INCLUDE INITIAL BASE LINE SCHEDULES AND ALL UPDATES IF A CPM SCHEDULE IS REQUIRED.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING’S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER’S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

THE FOLLOWING HAS BEEN CARRIED TO THE GENERAL SUMMARY:
ITEM 614 WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL) 7 EACH

TRU 80 WB OFF RAMP TO US 62 CLOSURE

THE TRU 80 WB OFF RAMP TO US 62 WILL BE CLOSED FOR 1 NIGHT FROM 6PM TO 6AM TO REPAIR THE PAVEMENT AND INSTALL UNDERDRAINS. THE DETOUR SHALL BE SIGNED USING PCMS AND SHALL BE I-80 WB TO TRU 193 AND I-80 EB TO US 62.

ADDED

THESE DETOURS WILL BE IN EFFECT AS DIRECTED BY THE ENGINEER FOR RESURFACING OPERATIONS ADJACENT TO THE SPECIFIED RAMPS. THE PCMS QUANTITIES ARE INCLUDED IN THE PCMS QUANTITY PROVIDED ON P.10. ANY ADDITIONAL COSTS TO INSTITUTE THE DETOURS BELOW SHALL BE INCLUDED UNDER THE LUMP SUM FOR BID ITEM 614, DETOUR SIGNING.

LOOP RAMP DETOURS					
RAMP DESIGNATION	RAMP DESCRIPTION	DURATION	DETOUR ROUTE	APPROX. NUMBER OF PCMS	ADDITIONAL RESTRICTIONS
RAMP D	80 EAST TO 62 EAST	1 CALENDAR DAY (7AM SATURDAY TO 7AM SUNDAY)	USE EXIT 234A	1	
RAMP C	US 62 WEST TO SR 82 EAST (SHARON BEDFORD RD)	1 CALENDAR DAY (7AM SATURDAY TO 7AM SUNDAY)	US 62 WEST TO SR 7 NORTH TO SR 82 E	1	
RAMP B	SR 82 WEST TO US 62 WEST	1 CALENDAR DAY (7AM SATURDAY TO 7AM SUNDAY)	SR 82 WEST / ADDISON RD	1	RAMP B SHALL BE CLOSED SIMULTANEOUSLY WITH RAMP C: RAMP B SHALL NOT BE CLOSED WITH RAMPS F AND G
RAMP F	US 62 EAST TO SR 82 WEST	1 CALENDAR DAY (7AM SATURDAY TO 7AM SUNDAY)	ADDISON RD	1	RAMP F SHALL BE CLOSED SIMULTANEOUSLY WITH RAMP G: RAMP F SHALL NOT BE CLOSED WITH RAMPS C AND B
RAMP G	SR 82 EAST T OUS 62 EAST	1 CALENDAR DAY (7AM SATURDAY TO 7AM SUNDAY)	ADDISON RD	1	RAMP G SHALL BE CLOSED SIMULTANEOUSLY WITH RAMP F: RAMP G SHALL NOT BE CLOSED WITH RAMPS C AND B



DESIGN AGENCY

DESIGNER

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SHEET

P.12

TOTAL

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SHEET NUMBER											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P.6	P.7	P.8	P.9	P.23	P.24	P.25	P.26	P.28	P.40		01/NHS	02/NHS	03/IMS						
																		ROADWAY	
						2						2		202	20010	2	EACH	HEADWALL REMOVED	
	75				965							1,040		202	23000	1,040	SY	PAVEMENT REMOVED	
						197						197		202	35100	197	FT	PIPE REMOVED, 24" DIAMETER AND UNDER	
						3						3		202	58100	3	EACH	CATCH BASIN REMOVED	
					1							1		202	60010	1	EACH	MONUMENT ASSEMBLY REMOVED	
						421						421		SPECIAL	20270000	421	FT	FILL AND PLUG EXISTING CONDUIT	P.8
	24										24			202	98100	24	EACH	REMOVAL MISC.:BARRIER REFLECTOR	P.7
									740			740		203	10000	740	CY	EXCAVATION	
	117										100		17	203	10000	117	CY	EXCAVATION (FOR PAVEMENT REPAIR)	
									126			126		203	20000	126	CY	EMBANKMENT	
	75				1,898							1,973		204	10000	1,973	SY	SUBGRADE COMPACTION	
					1							1		204	45000	1	HOUR	PROOF ROLLING	
	469										469			209	60200	469	STA	LINEAR GRADING	
					1							1		623	38500	1	EACH	MONUMENT ASSEMBLY, TYPE C	
					643							643		SPECIAL	69012060	643	SY	PAVEMENT OVERLAY FABRIC COMPOSITE	
		LS									LS			SPECIAL	69091000	LS		AS-BUILT CONSTRUCTION PLANS	P.8
		38									38			831	00101	38	FT	LONGITUDINAL CHANNELIZING DEVICE, AS PER PLAN, NEW	P.8
		38									38			831	00101	38	FT	LONGITUDINAL CHANNELIZING DEVICE, AS PER PLAN, REUSE	P.8
		38									38			831	00500	38	FT	REMOVAL OF LONGITUDINAL CHANNELIZING DEVICE	
																		EROSION CONTROL	
						2						2		601	32204	2	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
	4		2				6					10	2	601	21050	12	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
177											177			659	00300	177	CY	TOPSOIL	
1,591											1,591			659	10000	1,591	SY	SEEDING AND MULCHING	
0.22											0.22			659	20000	0.22	TON	COMMERCIAL FERTILIZER	
0.33											0.33			659	31000	0.33	ACRE	LIME	
9											9			659	35000	9	MGAL	WATER	
						338						338		670	00700	338	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	
						1.14						1.14		602	20000	1.14	CY	CONCRETE MASONRY	
	20											20		605	13300	20	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
							1,174					1,174		605	14020	1,174	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
	20						48					68		611	00510	68	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
			30										30	611	00511	30	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS, AS PER PLAN	P.9
				90									90	611	01501	90	FT	6" CONDUIT, TYPE F, AS PER PLAN, 704.42	P.9
						432						432		611	04400	432	FT	12" CONDUIT, TYPE B	
						220						220		611	05900	220	FT	15" CONDUIT, TYPE B	
						11						11		611	05900	11	FT	15" CONDUIT, TYPE B, 706.02	
						71						71		611	07400	71	FT	18" CONDUIT, TYPE B	
						3						3		611	98180	3	EACH	CATCH BASIN, NO. 3A	
						3						3		611	98300	3	EACH	CATCH BASIN, NO. 5	
						1						1		611	98370	1	EACH	CATCH BASIN, NO. 6	
						1						1		611	98470	1	EACH	CATCH BASIN, NO. 2-2B	
	2						3					5		611	99710	5	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
	1,800										1,800			251	01000	1,800	SY	PARTIAL DEPTH PAVEMENT REPAIR (441) (LONGITUDINAL)	
					1,459							1,459		252	01500	1,459	FT	FULL DEPTH PAVEMENT SAWING	
				171,822							171,822			254	01000	171,822	SY	PAVEMENT PLANING, ASPHALT CONCRETE (T=1.5")	
				31,356							31,356			254	01001	31,356	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (T=1.5")	P.9
	900										900			255	12000	900	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 2, CLASS QC1	
			106										106	255	19100	106	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 2, CLASS QC RS	
	4,050		241								4,050		241	255	20000	4,291	FT	FULL DEPTH PAVEMENT SAWING	
	17				387							404		301	56000	404	CY	ASPHALT CONCRETE BASE, PG64-22, (449)(T=8")	
	117										100		17	304	20000	117	CY	AGGREGATE BASE (FOR PAVEMENT REPAIR)	

GENERAL SUMMARY

DESIGN AGENCY



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SHEET

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TOTAL

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SHEET NUMBER											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P.7	P.9	P.10	P.11	P.12	P.13	P.19	P.23	P.24	P.46	P.47	01/NHS	02/NHS	03/IMS						
13	1							320				333	1	304	20000	334	CY	PAVEMENT (CONTINUED)	
14							18,286	315			18,286	329		407	20000	18,615	GAL	NON-TRACKING TACK COAT	P.7
							7,867				7,867			408	10001	7,867	GAL	PRIME COAT, AS PER PLAN @ 0.40 GAL/SY	
							5,845				5,845			441	00100	5,845	CY	ANTI-SEGREGATION EQUIPMENT	
3							8,466	73			8,466	76		442	10000	8,542	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446) (T=1.5")	
5								121				126		442	22400	126	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (449) (T=2.5")	
								115				115		452	10010	115	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
								528				528		609	26000	528	FT	CURB, TYPE 6	P.7
							547				547			617	10101	547	CY	COMPACTED AGGREGATE, AS PER PLAN (T=1" AVG.)	
							14				14			618	40600	14	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
																		TRAFFIC CONTROL	
											160			621	00100	160	EACH	RPM	P.7
											884			621	00101	884	EACH	RPM, AS PER PLAN (WHITE/RED)	
											519			621	54000	519	EACH	RAISED PAVEMENT MARKER REMOVED	
5						35					40			626	00102	40	EACH	BARRIER REFLECTOR, TYPE 1 (ONE WAY)	
90											90			626	00110	90	EACH	BARRIER REFLECTOR, TYPE 2 (ONE WAY)	
											132			630	03101	132	FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN	P.7
											1			630	08600	1	EACH	SIGN POST REFLECTOR (RED)	
											6			630	08600	6	EACH	SIGN POST REFLECTOR (WHITE)	
											2			630	08600	2	EACH	SIGN POST REFLECTOR (YELLOW)	
											35			630	80100	35	SF	SIGN, FLAT SHEET	
											3			630	84900	3	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
											4			630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
											7			630	86002	7	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
									4.52		4.52			646	10010	4.52	MILE	EDGE LINE, 6"	
									2.34		2.34			646	10110	2.34	MILE	LANE LINE, 6"	
									0.22		0.22			646	10200	0.22	MILE	CENTER LINE	
									4,598		4,598			646	10310	4,598	FT	CHANNELIZING LINE, 12"	
									355	154	509			646	10400	509	FT	STOP LINE	
									805	250	1,055			646	10600	1,055	FT	TRANSVERSE/DIAGONAL LINE	
									134	400	534			646	10620	534	FT	CHEVRON MARKING	
									523		523			646	10800	523	SF	ISLAND MARKING	
									44	10	54			646	20300	54	EACH	LANE ARROW	
									1,390		1,390			646	20504	1,390	FT	DOTTED LINE, 6"	
										13.2	13.2			807	12010	13.2	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6"	
										6.6	6.6			807	12110	6.6	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, LANE LINE, 6"	
										0.29	0.29			807	12200	0.29	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, CENTER LINE	
										4,150	4,150			807	12310	4,150	FT	WET REFLECTIVE EPOXY PAVEMENT MARKING, CHANNELIZING LINE, 12"	
										3,030	3,030			807	12410	3,030	FT	WET REFLECTIVE EPOXY PAVEMENT MARKING, DOTTED LINE, 6"	
										19.89	19.89			850	10010	19.89	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
										3,030	3,030			850	10110	3,030	FT	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
										4,150	4,150			850	10130	4,150	FT	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	
										0.2	0.2			850	20010	0.2	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	
																		TRAFFIC SIGNALS	
				2							2			809	69001	2	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	P.11
				8							8			809	69101	8	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	P.11
																		MAINTENANCE OF TRAFFIC	
			100								100			614	11110	100	HOURL	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
				7							7			614	12380	7	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	
					LS						LS			614	12420	LS		DETOUR SIGNING	
		12									12			614	12460	12	EACH	WORK ZONE MARKING SIGN	
						35				REVISED FROM 12 to 16	35			614	13350	35	EACH	OBJECT MARKER, ONE WAY	
		16									16			614	18601	16	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	P.9
		8.94									8.94			614	20010	8.94	MILE	WORK ZONE LANE LINE, CLASS I, 6"	
		8.94									8.94			614	20560	8.94	MILE	WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT	
		0.51									0.51			614	21000	0.51	MILE	WORK ZONE CENTER LINE, CLASS I	
		0.51									0.51			614	21550	0.51	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

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REVIEWER

RMM 07-01-25

PROJECT ID

105145

SHEET

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TOTAL

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MODEL: DRAINAGE.CAL PAPERSIZE: 34x22 (in.) DATE: 12/15/2025 TIME: 1:13:41 PM PLTDRY: OHDOT_PDF.plt USER: Joel.Fitzsimmons@dot.ohio.gov WORKSPACE: OHDOTCEv02 WORKSET: 105145 PRODUCT: OpenRoadsDesigner 24.00.00.205
 pw:\ohiodot-pw-02\Documents\01 Active Projects\District 04\Trumbull\105145\400-Engineering\Roadway\Sheets\105145_GC002.dgn

REF NO.	SHEET NO.	STATION TO STATION						202	202	202	602	SPECIAL	611	611	611	611	611	611	601	670							
								CATCH BASIN REMOVED	HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	CONCRETE MASONRY	FILL AND PLUG EXISTING CONDUIT	CATCH BASIN, NO. 2-2B	CATCH BASIN, NO. 3A	CATCH BASIN, NO. 5	CATCH BASIN, NO. 6	12" CONDUIT, TYPE B	15" CONDUIT, TYPE B	15" CONDUIT, TYPE B, 706.02	18" CONDUIT, TYPE B	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	DITCH EROSION PROTECTION					
								EACH	EACH	FT	CY	FT	EACH	EACH	EACH	EACH	FT	FT	FT	FT	CY	SY					
R-01	P.44	247+04.42	LT	TO	248+78.73	LT		1				213															
R-02	P.44	248+78.73	LT	TO	250+39.18	LT		1				158															
R-03	P.44	250+39.18	LT	TO	251+67.24	LT		1		128																	
R-04	P.45	289+02.00	LT	TO	288+46.25	LT			1																		
R-05	P.45	288+46.25	LT	TO					1																		
P-13	P.45	289+02.00	LT	TO	288+46.25	LT				56																	
P-14	P.45	289+11.16	RT	TO	288+48.00	RT				13		50															
D-01	P.44	245+50.00	LT	TO	246+64.00									1													
D-02	P.44	246+64.00	LT	TO	246+64.00									1													
D-03	P.44	246+64.00	LT	TO	247+04.42	LT								1													
D-04	P.44	247+04.42	LT	TO	247+73.24	RT									1												
D-05	P.44	247+73.24	RT	TO						0.27																	
D-06	P.44	248+83.19	RT	TO	249+70.19	RT							1														
D-07	P.44	249+70.19	RT	TO	251+67.24	LT								1								143					
D-08	P.44	251+67.24	LT	TO	251+72.24	LT					0.27			1								70					
D-10	P.45	289+02.00	LT	TO	287+85.00	LT					0.27																
D-11	P.45	287+85.00	LT	TO							0.27																
D-12	P.45	289+11.16	RT	TO	288+40.00	LT								1								125					
D-13	P.45	288+40.00	LT	TO							0.33																
P-01	P.44	245+50.00	LT	TO	246+64.00											112											
P-02	P.44	246+64.00	LT	TO	246+64.00											2											
P-03	P.44	246+64.00	LT	TO	247+04.42	LT										39											
P-04	P.44	247+04.42	LT	TO	247+73.24	RT											103										
P-06	P.44	248+83.19	RT	TO	249+70.19	RT																					
P-07	P.44	249+70.19	RT	TO	251+67.24	LT										85											
P-08	P.44	251+67.24	LT	TO	251+72.24	LT										195											
P-09	P.44	247+04.42	LT	TO	247+03.2	LT												5									
P-10	P.45	289+02.00	LT	TO	287+85.00	LT											117	6									
P-12	P.45	289+11.16	RT	TO	288+40.00	LT													71	1.33							

DRAINAGE CALCULATIONS

DESIGN AGENCY



DESIGNER

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REVIEWER

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