



STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
HAM BANKS  
VARIABLE MESSAGE SIGNS  
PHASES 2 & 3  
PID: 104409  
ODOT DISTRICT 8

PROJECT DESCRIPTION

THE PHASE 2 PORTION OF THIS PROJECT WILL INSTALL FULL-SIZE VARIABLE/DYNAMIC MESSAGE SIGNS IN AND AROUND DOWNTOWN CINCINNATI. 2 SIGNS (US 50) WILL BE CONNECTED TO THE ODOT SYSTEM, WHILE THE OTHER 2 INSTALLATIONS WILL BE CONNECTED TO THE CITY OF CINCINNATI COMMUNICATION SYSTEM. SIGNS WILL ALL BE TIED TOGETHER WITH THE PHASE 3 PORTION OF THIS PROJECT WHICH INCLUDES IMPLEMENTATION OF A PARKING MANAGEMENT SYSTEM AND VARIABLE MESSAGE SIGNS LOCATED AT VARIOUS LOTS AND GARAGES NEAR THE BANKS DEVELOPMENT. FACILITY COUNTING EQUIPMENT (ENTRANCES AND GARAGE RAMPS) WILL INTERFACE WITH BOTH SPACE AVAILABILITY SIGNS AT PARKING FACILITIES AND ALSO THE DYNAMIC MESSAGE SIGN INSTALLATIONS TO CONVEY REAL-TIME PARKING INFORMATION.

PROJECT EARTH DISTURBED AREA: N/A  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A  
NOTICE OF INTENT EARTH DISTURBED AREA: N/A

LOCATION MAP

VARIOUS LOCATIONS

DESIGN DESIGNATION

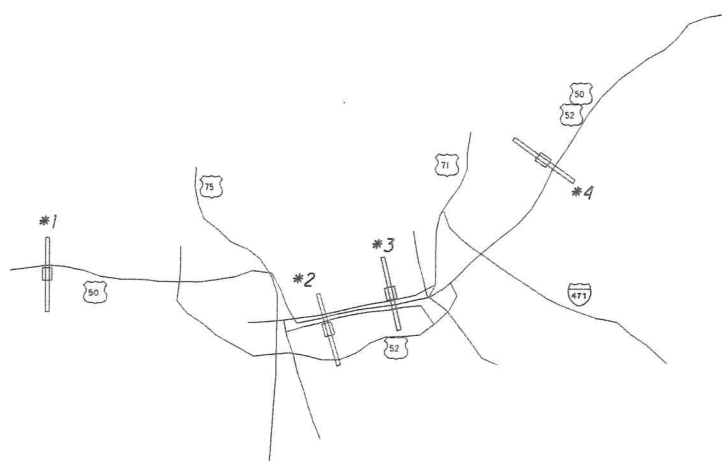
CURRENT ADT (2017) ..... VARIES  
DESIGN YEAR ADT (2037) ..... VARIES  
DESIGN HOURLY VOLUME (2037) ..... VARIES  
DIRECTIONAL DISTRIBUTION ..... VARIES  
TRUCKS (24 HOUR B&C) ..... VARIES  
DESIGN SPEED ..... VARIES  
LEGAL SPEED ..... VARIES  
DESIGN FUNCTIONAL CLASSIFICATION:  
INTERSTATE .....  
NHS PROJECT ..... NO

DESIGN EXCEPTIONS

NONE

**UNDERGROUND UTILITIES**  
CONTACT BOTH SERVICES  
CALL TWO WORKING DAYS  
BEFORE YOU DIG  
CALL  
**1-800-362-2764**  
(TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY  
OIL & GAS PRODUCERS PROTECTIVE  
SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:  
TEC Engineering, Inc.  
7288 Central Parke Blvd  
Mason, Ohio 45040



- DMS LOCATION  
\*1 US 50 EASTBOUND  
\*2 2ND STREET EASTBOUND  
\*3 3RD STREET WESTBOUND  
\*4 US 50 WESTBOUND

ENGINEERS SEAL:



DATE: 4/15/2019

| STANDARD CONSTRUCTION DRAWINGS |         |           |         |           |         |          |          |     |         | SUPPLEMENTAL SPECIFICATIONS | SPECIAL PROVISIONS |
|--------------------------------|---------|-----------|---------|-----------|---------|----------|----------|-----|---------|-----------------------------|--------------------|
| RM-4.2                         | 4-18-14 | MT-95.30  | 7-21-17 | ITS-14.10 | 7-17-15 | TC-12.30 | 1-19-18  | 800 | 1-18-19 |                             |                    |
| RM-4.3                         | 7-18-14 | MT-95.32  | 7-21-17 | ITS-14.11 | 1-18-19 | TC-21.10 | 7-21-17  | 804 | 1-18-19 |                             |                    |
| RM-4.4                         | 7-21-17 | MT-95.40  | 1-20-17 | ITS-15.10 | 7-17-15 | TC-21.20 | 7-20-18  | 809 | 1-18-19 |                             |                    |
| HL-30.41                       | 1/19/18 | MT-95.50  | 7-21-17 | ITS-15.11 | 7-17-15 | TC-21.50 | 7-15-16  | 904 | 1-18-19 |                             |                    |
|                                |         | MT-98.20  | 7-18-14 | ITS-30.11 | 1-15-16 | TC-22.20 | 1-17-14  | 977 | 1-18-19 |                             |                    |
|                                |         | MT-98.21  | 7-18-14 | ITS-30.12 | 1-15-16 | TC-51.11 | 1-15-16  |     |         |                             |                    |
|                                |         | MT-98.28  | 1-20-17 | ITS-30.13 | 7-20-18 | TC-52.10 | 10-18-13 |     |         |                             |                    |
|                                |         | MT-99.30  | 1-19-18 | ITS-30.14 | 1-15-16 | TC-52.20 | 7-20-18  |     |         |                             |                    |
|                                |         | MT-101.70 | 7-20-18 | ITS-35.11 | 1-15-16 |          |          |     |         |                             |                    |
|                                |         | MT-101.90 | 7-21-17 | ITS-35.12 | 1-15-16 |          |          |     |         |                             |                    |
|                                |         |           |         | ITS-35.13 | 1-18-19 |          |          |     |         |                             |                    |
|                                |         |           |         | ITS-35.14 | 1-15-16 |          |          |     |         |                             |                    |
|                                |         |           |         | ITS-36.12 | 1-15-16 |          |          |     |         |                             |                    |
|                                |         |           |         | ITS-50.10 | 1-19-18 |          |          |     |         |                             |                    |

STANDARDS

THE 2019 STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

INDEX OF SHEETS:

|                                       |       |
|---------------------------------------|-------|
| TITLE SHEET                           | 1     |
| PROJECT LOCATION CONTROLS             | 2     |
| GENERAL NOTES                         | 3-8   |
| GENERAL SUMMARY                       | 9-10  |
| DMS PLANS                             | 11-15 |
| STRUCTURAL PIER FOUNDATION DETAILS    | 16    |
| STRUCTURAL CONDUIT ATTACHMENT DETAILS | 17    |
| DMS ELEVATION VIEWS                   | 18    |
| PARKING MANAGEMENT SYSTEM LOCATIONS   | 19    |
| PARKING VMS LAYOUTS                   | 20-25 |
| PARKING VMS ELEVATION VIEWS           | 26-30 |

APPROVED:   
DATE: 25 APR 2019 THE BANKS PROJECT EXEC

APPROVED:   
DATE: 4/25/19 City Traffic Engineer

| US 50 EASTBOUND (W. OF CITY) |             |             |           |         |
|------------------------------|-------------|-------------|-----------|---------|
| POINT                        | NORTH       | EAST        | ELEVATION | FEATURE |
| 515                          | 407902.6361 | 1387484.117 | 494.26    | IPIN    |
| 516                          | 407953.6722 | 1387290.287 | 492.826   | CUTS    |

| 2ND STREET EASTBOUND |             |             |           |                        |
|----------------------|-------------|-------------|-----------|------------------------|
| POINT                | NORTH       | EAST        | ELEVATION | FEATURE                |
| 510                  | 405953.1082 | 1396041.625 | 531.106   | CUTS                   |
| 511                  | 405991.4195 | 1396201.3   | 529.73    | CUTS                   |
| 512                  | 405928.9728 | 1396113.38  | 494.264   | CUTS CONCRETE JUNCTION |
| 513                  | 405849.4385 | 1395910.873 | 491.714   | CUTS                   |

| US 50 WESTBOUND (E. OF CITY) |             |             |           |         |
|------------------------------|-------------|-------------|-----------|---------|
| POINT                        | NORTH       | EAST        | ELEVATION | FEATURE |
| 520                          | 410427.1873 | 1403319.596 | 535.27    | CMON    |
| 521                          | 410562.5564 | 1403366.001 | 530.168   | PKF     |

| THIRD STREET WESTBOUND |             |             |           |         |
|------------------------|-------------|-------------|-----------|---------|
| POINT                  | NORTH       | EAST        | ELEVATION | FEATURE |
| 525                    | 406690.9564 | 1398699.717 | 514.32    | PKS     |
| 526                    | 406675.9307 | 1398610.792 | 515.344   | PKS     |



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SCOPE:

THIS SECTION DESCRIBES THE SCOPE AND PROVIDES AN OVERVIEW OF THE PROJECT. IT EXPLAINS THE PROJECT SYSTEMS AS WELL AS THE COMPONENTS THAT MAKE UP EACH OF THE SUBSYSTEM COMPONENTS. EACH COMPONENT AND REQUIREMENT IS UNIQUELY IDENTIFIED IN THE GENERAL SUMMARY OF THE PLANS.

THE CONTRACTOR SHALL REFER TO THESE NUMBERS IN ALL SUBMITTALS AS WELL AS IN THE TEST PLANS. THIS NUMBERING SYSTEM SHALL ENSURE THAT ALL REQUIREMENTS HAVE BEEN ACCOUNTED FOR IN THE DESIGN SUBMITTALS AS WELL AS IN THE TEST PHASE.

THE CONTRACTOR SHALL FURNISH, INSTALL, INTEGRATE, TEST AND MAKE OPERATIONAL ALL HARDWARE AND SOFTWARE NECESSARY TO SEAMLESSLY INTEGRATE ALL SITES INCLUDED IN THE PLANS INTO THE NEW SYSTEM RESULTING IN A FULLY FUNCTIONAL AND OPERATIONAL DISTRIBUTED PARKING WAYFINDING/CONTROL SYSTEM FOR MULTIPLE LOCATIONS. THIS WORK INCLUDES ANY AND ALL ADDITIONAL SOFTWARE LICENSES REQUIRED BY THE SOFTWARE SUPPLIER TO INTEGRATE ALL DYNAMIC MESSAGE SIGNAGE AND PARKING COUNT/WAYFINDING SITES INTO THE CITY'S COMPUTERIZED TRAFFIC CONTROL SYSTEM (CTCS). ALL HARDWARE MUST BE COMPATIBLE WITH THE EXISTING HARDWARE AT THE CINCINNATI TRAFFIC MANAGEMENT CENTER (TMC) CONSISTING OF THE ASSOCIATED COMPUTER SERVERS, MOBILE MAINTENANCE UNITS, PRINTERS AND NETWORK INTERFACE; AND SYSTEM SUPPORT EQUIPMENT TO SUPPORT THE DEPLOYMENT FOR THE CITY OF CINCINNATI. ANY SOFTWARE UPGRADES TO FIELD EQUIPMENT REQUIRED TO PROVIDE COMMUNICATIONS TO THE TMC SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT. THE CONTRACTOR SHALL FURNISH, INSTALL AS SPECIFIED, INTEGRATE, AND TEST ALL HARDWARE AND SOFTWARE NECESSARY FOR THE FULL INTEGRATION INTO THE COMMUNICATIONS NETWORK INSTALLED BY THE CONTRACTOR.

THE DMS PHASE 2 PROJECT (FULL-SIZE DMS) WILL ESTABLISH COMMUNICATION BETWEEN VARIOUS PUBLIC AGENCIES IN THE REGION FOR THE PURPOSE OF WAYFINDING, TRAFFIC/INCIDENT MANAGEMENT AND PARKING MANAGEMENT. THE PROJECT INVOLVES INSTALLATION OF DYNAMIC MESSAGE SIGNAGE SYSTEM AND INCLUDES THE CONSTRUCTION OF NEW SIGNS AT FOUR LOCATIONS NEAR DOWNTOWN CINCINNATI. THE DYNAMIC MESSAGE SIGNAGE SYSTEM WILL INTERFACE WITH A PARKING MANAGEMENT SYSTEM TO CONVEY REAL-TIME PARKING SPACE AVAILABILITY IN PUBLICLY OWNED PARKING LOTS AND STRUCTURES.

THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING THE COMMUNICATIONS INTERFACES BETWEEN THE DYNAMIC MESSAGE SIGNS AND COMMUNICATION NETWORK EQUIPMENT TO BE INSTALLED, AND THE INTERFACE BETWEEN THE COMMUNICATIONS NETWORK EQUIPMENT AND THE CTCS AT THE TMC. THE CITY AND CONTRACTOR SHALL THEN COORDINATE WITH THE CITY OF CINCINNATI ENTERPRISE TECHNOLOGY SOLUTIONS (ETS) REGARDING DEVELOPMENT OF THE IP NETWORK STRUCTURE AND ANY ADDITIONAL MODIFICATIONS AND CONFIGURATION OF THE NETWORK EQUIPMENT.

THE CONTRACTOR SHALL NOT TAKE EXCEPTION TO ANY OF THE STATED REQUIREMENTS OF THE PLANS, SPECIFICATIONS, OR THESE SPECIAL PROVISIONS.

UTILITIES

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

ELECTRIC:

Duke Energy (Electric)  
139 East 4th St., Room 467A  
Cincinnati, OH 45202  
Aaron Wright (513) 287-3674

GAS:

Duke Energy (gas)  
139 East 4th St., Room 460A  
Cincinnati, OH 45202  
Kelsey Pace (513) 287-1205  
Kelsey.Pace@duke-energy.com

TELEPHONE:

Cincinnati Bell (Telephone)  
221 East 4th St.  
Bldg 121-900  
Cincinnati, OH 45201  
Mark Conner (513) 386-5499

WATER:

Cincinnati Water Works  
4747 Spring Grove Ave  
Cincinnati, OH 45232  
Jon Hunseder (513) 591-5056  
jon.hunseder@gcww.cincinnati-oh.gov

STORM & SANITARY SEWER  
Metropolitan Sewer District of Greater Cincinnati  
1600 Gest St.  
Cincinnati, OH 45204  
Robert Franklin (513) 557-7188

CABLE:  
Time Warner Cable  
11252 Cornell Park Dr.  
Cincinnati, OH 45242  
Kent Rieger (513) 386-5499

UTILITY NOTIFICATION

THE OHIO DEPARTMENT OF TRANSPORTATION HAS UTILITY FACILITIES (HIGHWAY LIGHTING AND ITS) WITHIN THE LIMITS OF THIS PROJECT.

IN ADDITION TO THE INFORMATION OUTLINED IN THE UTILITY NOTE OF THIS CONTRACT, THE CONTRACTOR SHALL TAKE THE FOLLOWING ACTION TO PROTECT ODOT'S FACILITIES DURING CONSTRUCTION:

HIGHWAY LIGHTING AND TRAFFIC SIGNALS:

EVEN THOUGH ODOT IS LISTED AS A MEMBER OF THE OHIO UTILITIES PROTECTION SERVICE (OUPS), THE CONTRACTOR ON THIS PROJECT IS REQUIRED TO CONTACT ODOT DISTRICT 8 TRAFFIC MAINTENANCE DEPARTMENT DIRECTLY SO THAT THE ODOT UTILITIES LOCATED WITHIN THIS PROJECT ARE MARKED. THE CONTRACTOR SHALL NOTIFY DISTRICT 8 TRAFFIC MAINTENANCE AT 513-933-6689 AND THE PROJECT ENGINEER, FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF ANY WORK, FOR THE NEED TO MARK ODOT OWNED UTILITIES.

ITS:

ITS FACILITIES AREN'T LISTED WITH OUPS, SO THE CONTRACTOR IS REQUIRED TO CONTACT ODOT CENTRAL OFFICE ITS LAB DIRECTLY SO THAT THE ODOT UTILITIES LOCATED WITHIN THIS PROJECT ARE MARKED. THE CONTRACTOR SHALL NOTIFY ODOT CENTRAL OFFICE ITS LAB AT THE CONTACT INFORMATION LISTED BELOW AND THE PROJECT ENGINEER, FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF ANY WORK FOR THE NEED TO MARK ODOT OWNED UTILITIES.

CENTRAL OFFICE ITS LAB  
614-387-4113 PHONE (ITS LOCATES LINE)  
CEN.ITS.LAB@DOT.OHIO.GOV EMAIL

THE ABOVE REQUIREMENTS ARE IN ADDITION TO SECTION 105.07 & 107.16 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE UTILITY PROPOSAL NOTE.

THE CONTRACTOR SHALL NOTIFY OTHER UTILITIES THROUGH OUPS OR DIRECTLY A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY WORK.

THE COST FOR THE ABOVE DESCRIBED WORK IS INCIDENTAL TO THE OVERALL BID PRICE OF THE PROJECT.

FIELD VERIFICATION OF UTILITIES

PRIOR TO INSTALLING DMS SIGN AND FOUNDATION AND ITS CABINET AND WORK PAD, THE CONTRACTOR SHALL FIELD VERIFY THAT THE PROPOSED LOCATION IS CLEAR FROM OVERHEAD AND UNDERGROUND UTILITY CONFLICTS. IN ADDITION TO CONTACTING OUPS FOR UTILITY FIELD MARKINGS, THE CONTRACTOR SHALL ALSO CONTACT ODOT DISTRICT 8 AND THE CITY OF CINCINNATI TO REQUEST FIELD MARKING OF ANY PUBLIC UNDERGROUND UTILITIES (E.G., LIGHTING). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR IDENTIFYING UTILITY CONFLICTS AND NOTIFYING THE ENGINEER OF ANY POTENTIAL CONFLICTS. THE SIGN LOCATION SHALL BE ADJUSTED BY THE ENGINEER AS NECESSARY.

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.

ITEM 614 - MAINTAINING TRAFFIC

ALL EXISTING LANES SHALL BE MAINTAINED AT ALL TIMES, EXCEPT AS ALLOWED BY THE PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE TABLE, BY USE OF THE EXISTING PAVEMENT.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY TO THE OHIO DEPT. OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSON SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN THE TRAVELED PAVEMENT SAFELY.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

|                                  |                |
|----------------------------------|----------------|
| CHRISTMAS                        | FOURTH OF JULY |
| NEW YEARS                        | LABOR DAY      |
| MEMORIAL DAY                     | THANKSGIVING   |
| ****ANY OTHER SIGNIFICANT EVENTS |                |

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

| DAY OF HOLIDAY OR EVENT      | TIME ALL LANES MUST BE OPEN TO TRAFFIC  |
|------------------------------|---|
| SUNDAY                       | 12:00N FRIDAY THROUGH 6:00 AM MONDAY    |
| MONDAY                       | 12:00N FRIDAY THROUGH 6:00 AM TUESDAY   |
| TUESDAY                      | 12:00N MONDAY THROUGH 6:00 AM WEDNESDAY |
| WEDNESDAY                    | 12:00N TUESDAY THROUGH 6:00 AM THURSDAY |
| THURSDAY                     | 12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY |
| THURSDAY (THANKSGIVING ONLY) | 6:00AM WEDNESSDAY THROUGH 6:00AM MONDAY |
| FRIDAY                       | 12:00N THUSDAY THROUGH 6:00 AM MONDAY   |
| SATURDAY                     | 12:00 FRIDAY THROUGH 6:00 AM MONDAY     |

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACATOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

ITEM 614. MAINTAINING TRAFFIC (LANE CLOSURE/REDUCTION REQUIRED)

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTION SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ITEM 614. 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 OFFICE OF COMMUNICATIONS. 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, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

| NOTICE OF CLOSURE SIGN TIME TABLE               |  |   |
|---|--|---|
| ITEM  | DURATION OF CLOSURE                                | SIGN DISPLAYED TO PUBLIC  |
| RAMP & ROAD CLOSURES                            | >= 2 WEEKS<br>> 12 HOURS & < 2 WEEKS<br>< 12 HOURS | 21 CALENDAR DAYS PRIOR TO CLOSURE<br>7 CALENDAR DAYS PRIOR TO CLOSURE<br>4 BUSINESS DAYS PRIOR TO CLOSURE |
| LANE CLOSURES & RESTRICTIONS                    | >= 2 WEEKS<br>< 2 WEEKS                            | 14 CALENDAR DAYS PRIOR TO CLOSURE<br>2 BUSINESS DAYS PRIOR TO CLOSURE                                     |
| START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES | >= 2 WEEKS<br>< 2 WEEKS                            | 14 CALENDAR DAYS PRIOR TO CLOSURE<br>2 BUSINESS DAYS PRIOR TO CLOSURE                                     |

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

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PERMITTED LANE CLOSURE TIMES

SHORT TERM LANE CLOSURES ARE THOSE WHICH ARE PERMITTED BY THE LANE CLOSURE NOTE. THESE TIMES SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL FROM THE DISTRICT 8 WORK ZONE TRAFFIC CONTRL MANAGER. SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK IS BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER THE WORK HAS STOPPED. PERMITTED LANE CLOSURES SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THE LANE VALUE TABLE INCLUDED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

LANE VALUE CONTRACT TABLE

| PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE TABLE |           |                       |                        |              |                |          |  |                  |            |                                     |  |
|--|-----------|-----------------------|------------------------|--------------|----------------|----------|--|------------------|------------|-------------------------------------|--|
| LOCATION   | DIRECTION | EX. NO. OF THRU LANES | 1 LANE CLOSED          |              | 2 LANES CLOSED |          | 15 MINUTE SHORT DURATION COMPLETE CLOSURES | COMPLETE CLOSURE | TIME UNIT  | DISINCENTIVE PER LANE PER TIME UNIT | COMMENTS   |
|  |           |                       | WEEKDAY                | WEEKEND      | WEEKDAY        | WEEKEND  | ANY DAY                                    | ANY DAY          |            |                                     |  |
| US 50  | EB        | 4                     | 10AM - 3PM & 7PM - 6AM | AT ALL TIMES | 11PM-5AM       | 10PM-6AM | 12AM - 4 AM                                | NONE             | 15 MINUTES | \$750                               | BARRING 15 MINUTE SHORT DURATION CLOSURES, AT LEAST 1 LANE FROM THE WARSAW/ELBERON AVENUE RAMP AND RIVER ROAD MUST BE MAINTAINED.                      |
|  | WB        | 3                     | 10AM - 3PM & 7PM - 6AM | AT ALL TIMES | NONE           | NONE     | 12AM - 4 AM                                | NONE             | 15 MINUTES | \$750                               |  |
| THIRD STREET   | WB        | 4                     | 9AM - 3PM & 7PM - 6AM  | AT ALL TIMES | 11PM-5AM       | 10PM-6AM | NONE                                       | NONE             | 15 MINUTES | \$750                               |  |
| SECOND STREET  | EB        | 5                     | 9AM - 3PM & 7PM - 6AM  | AT ALL TIMES | 11PM-5AM       | 10PM-6AM | 12AM-4AM                                   | NONE             | 15 MINUTES | \$750                               | BARRING 15 MINUTE SHORT DURATION CLOSURES, AT LEAST 1 LANE FROM THE SECOND STREET RAMP AND 1 LANE FROM THE FOR WASHINGTON WAY RAMP MUST BE MAINTAINED. |

NOTES

- 1 All ramp connectivity shall to be maintained, unless otherwise specified in this table, these notes, or in Scope section 13.2.2
- 2 No closures 2 hours before to 2 hours after events at Great American Ball Park, Paul Brown Stadium, or US Bank Arena. This restriction also applies to any other local venue generating an event attendance of 10,000+.
- 3 No short-term shoulder closures between the hours of 6 am to 9 am and 3 pm to 7 pm, Monday through Friday.

NOTE:

1. THE PERMITTED LANE CLOSURE SCHEDULE IS LOCATED ON THE ODOT WEBSITE [HTTP://PLCM.DOT.STATE.OH.US/](http://PLCM.DOT.STATE.OH.US/). THE LATEST REVISION, 14 DAYS PRIOR TO BID, SHALL BE IN EFFECT FOR THIS PROJECT.

SHORT DURATION CLOSING OF THE HIGHWAY

THE FOLLOWING NOTES SHALL APPLY TO ALL WORK THIS PROJECT.

1. FIVE CALENDAR DAYS PRIOR TO IMPLEMENTING THE SHORT DURATION CLOSING OF THE HIGHWAY THE CONTRACTOR SHALL PLACE A PORTABLE CHANGEABLE MESSAGE SIGN AT THE STRUCTURE IN THE DIRECTION THE ROAD IS TO BE CLOSED WITH THE MESSAGE:

\*ROADWAY\* 12 M  
CLOSES TO  
\*DATE\* 4 AM

2. CLOSURES WILL ONLY BE PERMITTED FOR REMOVAL AND ERECTION OF THE STRUCTURAL BEAMS AND SIGN TRUSSES, TO PROTECT TRAFFIC DURING DEMOLITION OPERATIONS AS CALLED FOR IN C&MS 501.05, FOR OVERHEAD UTILITY WIRE CROSSING, AND FOR TRAFFIC SWITCHES. CLOSURES WILL BE PERMITTED BETWEEN THE HOURS OF 12 MIDNIGHT AND 4 AM. THE MAXIMUM DURATION OF THE CLOSURE SHALL NOT EXCEED 15 MINUTES SUBJECT TO A DISINCENTIVE IN THE AMOUNT OF \$1875 PER 15 MINUTE TIME PERIOD. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ONLY ONE (1) BEAM SHALL BE REMOVED OR SET PER CLOSING. TRAFFIC SHALL BE COMPLETELY CLEARED BEFORE THE NEXT CLOSING.

3. THE CONTRACTOR SHALL IMPLEMENT THE TRAFFIC CONTROL CONTAINED IN STANDARD CONSTRUCTION DRAWING MT-99.60. IN THE EVENT THE CLOSURE OCCURS IN CLOSE PROXIMITY TO SYSTEM-SYSTEM INTERCHANGE, TRAFFIC CONTROL SHALL EXTEND ONTO ANY ENTERING DIVIDED HIGHWAY ACCORDING TO THE LIMITS PROVIDED IN MT-99.60.

SHORT DURATION CLOSING OF THE HIGHWAY

4. THE CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) WATCH FOR STOPPED TRAFFIC SIGNS (W3-H7-48) 1500 FEET UPSTREAM FROM THE ANTICIPATED BACKUP ON THE CLOSED ROUTE. THE CONTRACTOR SHALL INSTALL ADDITIONAL WATCH FOR STOPPED TRAFFIC SIGNS EVERY 2000 FEET UPSTREAM FROM THE WATCH FOR STOPPED TRAFFIC SIGNS IF TRAFFIC BACKUPS REACH THE FIRST SET OF SIGNS. THE NEED FOR THESE SIGNS SHALL BE CONSTANTLY MONITORED BY THE CONTRACTOR. ALL WATCH FOR STOPPED TRAFFIC AND PREPARE TO STOP SIGNS SHALL BE EQUIPPED WITH TYPE B WARNING LIGHTS.

6. IN THE EVENT OF AN INCLEMENT WEATHER FORECAST (RAIN OR SNOW FORECAST AT 50% OR GREATER THE DAY THE EVENT WILL OCCUR IS DEFINED AS AN INCLEMENT FORECAST) THE CLOSURE SHALL NOT TAKE PLACE. THE CONTRACTOR WILL MAKE THE DETERMINATION BASED UPON THE WEATHER FORECAST PREDICTED BY THE NATIONAL WEATHER SERVICE.

7. ALTHOUGH THE PLANS CONTAIN BID ITEMS FOR LEOS AND PCMS, THEIR USE FOR THE SHORT DURATION CLOSING OF THE HIGHWAY, INCLUDING LEOS DESCRIBED IN MT-99.60 NOTE 5, IS CONSIDERED INCIDENTAL TO ITEM 614 MAINTAINING TRAFFIC IN ORDER TO LIMIT THE FREQUENCY OF CLOSURES TO THE MINIMUM NEEDED TO PERFORM THE WORK.

PROTECTION FOR DROPOFFS IN WORK ZONES

THE REQUIREMENTS FOR DROP-OFFS IN WORK ZONES ON STD DWG MT-101.90 SHALL BE ADHERED TO FOR THE ENTIRE DURATION OF THE PROJECT. OF SPECIAL CONCERN ARE DROPOFFS ADJACENT TO TRAFFIC FOR CURB REPLACEMENT. IN THESE AREAS, THE CONTRACTOR SHALL ENSURE THAT DRIVERS ARE PROTECTED FROM DROP-OFFS IN ALL DIRECTIONS OF TRAVEL IN ACCORDANCE WITH THE STANDARD DRAWING AND THE POSTED SPEED LIMIT FOR EACH ROADWAY. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614. MAINTAINING TRAFFIC

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.

ITEM 614. LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (80 HOURS)

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. USE OF LEOS SHALL BE RESTRICTED TO I-75 MAINLINE, I-75 COLLECTOR ROADS, TO SIGNAL WORK ON THE LOCAL STREETS, AND AS DIRECTED BY THE ENGINEER.

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

-DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

-DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

-FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

1 LEO IS NEEDED WHEN INSTALLING A SINGLE OR DOUBLE LANE CLOSURE. WHEN LANE CLOSURES ARE BEING INSTALLED IN MULTIPLE DIRECTIONS OR MULTIPLE LOCATIONS, 1 LEO IS NEEDED PER MOT WORK CREW. IN OTHER WORDS, IF THE SAME WORK CREW INSTALLS BOTH LANE CLOSURES, THEN ONLY 1 LEO IS NEEDED; IF 2 SEPARATE WORK CREWS INSTALL A LANE CLOSURE IN EACH DIRECTION, THEN 2 LEOS WILL BE NEEDED. THE LEO SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

ITEM 614. LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (80 HOURS) CONT.

ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 80 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. THE HOURS PAID SHALL INCLUDE UP TO 1/2 HOUR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS FOR THE WORK ASSIGNMENTS; SPECIAL WORK ASSIGNMENTS REQUIRING ADDITIONAL TIME SHALL BE APPROVED BY THE ENGINEER PRIOR TO SCHEDULING THE LEO. THE HOURS PAID PER LEO FOR LANE CLOSURES SHALL INCLUDE THE MINIMUM SHOW-UP TIME FOR THE INITIAL SET-UP PERIOD AND THE MINIMUM SHOW-UP TIME FOR THE TEAR DOWN PERIOD; BUT NO MORE THAN THE ACTUAL INVOICED HOURS.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ODOT ITS NOTE 1342-3 DYNAMIC MESSAGE SIGN INSTALLATION

THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 809, AS WELL AS ANY STANDARD CONSTRUCTION DRAWINGS NOTED ON THE PLANS

ODOT ITS NOTE 1342-7 ITEM 625E25920: CONDUIT 4" MULTI-CELL SCHEDULE 40 & SCHEDULE 80. 725.20

THIS CONDUIT IS INTENDED FOR THE USE IN UNDERGROUND SITUATIONS REQUIRING MORE THAN ONE SINGLE CONDUIT. THIS INCLUDES THE MAIN CONDUIT RACEWAY ALONG THE FREEWAY, CONNECTION FROM PULL BOXES TO THE ROAD SIDE CABINETS AND FOR RUNS OF CONDUIT FOR MULTIPLE PURPOSES, E.G., AT RAMP METER INSTALLATIONS, FOR LOOP LEAD-IN CABLE, SIGNALS CABLE FOR RAMP METER DISPLAYS, SIGNAL CABLE FOR RAMP METER SIGNING FLASHERS & ILLUMINATION AND POWER. THE CONTRACTOR SHALL PLUG ALL UNUSED CELLS WITH CONDUIT CAPS TO ASSURE AIR AND WATER INTEGRITY OF EACH INDIVIDUAL INNERDUCT. THIS CONDUIT SHALL BE USED AT ANY LOCATION WHERE FIBER INTERCONNECT IS BEING INSTALLED.



**ODOT ITS NOTE 1342-8 TRACER WIRE (CONT.)**  
TRACER WIRE SHALL BE INSTALLED IN ONE OF THE MULTI-CELL INNERDUCTS IN ALL CONDUIT RUNS. TRACER WIRE SHALL BE NO SMALLER THAN #12 AWG WIRE. THE WIRE SHALL BE HDPE INSULATED, ORANGE IN COLOR, AND CONSTRUCTED OF COPPER CLAD STEEL. APPROXIMATELY 10 FEET OF SLACK OF THE TRACER WIRE SHALL BE LEFT INSIDE THE ADJACENT PULL BOXES CONNECTING THE CONDUIT RUNS. IN SITUATIONS WHERE A TYPE 2 FIBER OPTIC CABLE MARKER IS TO BE INSTALLED IN CONJUNCTION WITH THE TRACER WIRE, THE TRACER WIRE SHALL BE RUN THROUGH THE MARKER AND CONNECTED TO TERMINALS AT THE TOP OF THE MARKER. PAYMENT FOR ALL TRACER WIRE SHALL BE INCLUDED IN THE BID ITEM FOR THE FIBER OPTIC CABLE PAY ITEM.

**ODOT ITS NOTE 1342-9 FIBER OPTIC CABLE MARKER**  
FIBER OPTIC CABLE MARKERS SHALL BE INSTALLED AS DIRECTED BY THE ODOT ENGINEER AND/OR AT EVERY PULL BOX CONTAINING FIBER OPTIC CABLE AND SHALL BE ONE OF TWO TYPES:

TYPE 1 - COTTMARK 511, FRICK FLEXPOST, OR CARSONITE CURV-FLEX MARKER  
TYPE 2 - COTT BIGFINK, FRICK TESTPOST, OR RHINODOME TEST STATION

THE FIBER OPTIC CABLE MARKERS SHALL BE 6 FEET IN LENGTH AND SHALL BE SECURELY PLACED IN THE GROUND AT A DEPTH OF 2 FEET. CARE SHALL BE TAKEN DURING INSTALLATION NOT TO DAMAGE ANY UNDERGROUND CONDUIT IN THE VICINITY. THE CONTRACTOR SHALL USE A TYPE 2 MARKER WHEN THE PATH OF THE FIBER CROSSES UNDERNEATH A ROADWAY AND WHEN CAPABLE SHALL PLACE A MARKER ON BOTH SIDES OF THE ROADWAY AT CROSSING. THE CONTRACTOR SHALL CONNECT TRACER WIRE TO TERMINAL AT TOP OF TYPE 2 MARKER. TYPE 1 MARKERS SHALL ONLY BE PLACED ON STRAIGHT FIBER RUNS BETWEEN PULL BOXES IN THE SHOULDER, AND THE CONTRACTOR SHALL BE LIMITED TO THE USE OF TYPE 1 MARKERS SO THAT A TYPE 2 MARKER SHALL BE PLACED BETWEEN ANY TWO TYPE 1 MARKERS. TYPE 1 MARKERS SHALL NOT BE PLACED IN SUCCESSION DOWN A FIBER PATH. THE MARKERS SHALL BE ORANGE IN COLOR AND SHALL HAVE THE FOLLOWING INFORMATION LOCATED ON THE UPPER PORTION OF THE MARKER IN A READABLE FORMAT:

WARNING  
CONTACT OUPS 48 HRS BEFORE DIGGING  
ODOT (ARTIMIS) ITS FIBER OPTIC CABLE  
CEN.ITS.LAB@DOT.OHIO.GOV EMAIL  
614-387-4113 PHONE

PAYMENT FOR ALL FIBER OPTIC CABLE MARKERS SHALL BE INCLUDED IN THE BID ITEM FOR THE FIBER OPTIC CABLE PAY ITEM.

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

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 WEB PAGE FOR ROADWAY STANDARDS APPROVED PRODUCTS.

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 A DAMAGING IMPACT.

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

**ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL) CONT.**

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.

**ITEM 622, PORTABLE BARRIER, 32" AS PER PLAN**  
THIS ITEM CONSISTS OF ALL TIME, PARTS, LABOR, AND MATERIALS TO PROVIDE AND INSTALL A PORTABLE BARRIER THAT MEETS CMS 622 STANDARDS. THE BARRIER SHOULD BE USED TO PROTECT THE WORK AREA OF THE US 50 EASTBOUND LOCATION (WEST OF THE CITY) WHEN PREPARING AND INSTALLING THE TRUSS FOUNDATION IN THE MEDIAN BARRIER WALL. THE PORTABLE BARRIER SHOULD BE REMOVED ONCE WORK ON THE MEDIAN BARRIER WALL HAS BEEN COMPLETED.

**ITEM 201, CLEARING AND GRUBBING, AS PER PLAN**  
THIS ITEM SHALL CONSIST OF ALL PARTS, LABOR, MATERIAL, AND EQUIPMENT FOR CLEARING AND GRUBBING NEEDED TO INSTALL A CONTROLLER WORK PAD, ELECTRIC AND FIBER PULL BOXES, AND A DMS SIGN WITH FULL AND CLEAR LINE OF SIGHT AT THE US 50 WB LOCATION (EAST OF THE CITY).

**ITEM 659, SEEDING AND MULCHING, CLASS 2, AS PER PLAN**  
THIS ITEM SHALL BE IN ACCORDANCE WITH ITEM 659 BUT SHALL INCLUDE THE FOLLOWING:

- 1.) TOPSOIL - APPLIED AT .1 CUBIC YARDS PER SQUARE YARD OF SEEDING AND MULCHING.
- 2.) COMMERCIAL FERTILIZER - APPLIED AT .25 POUNDS PER SQUARE YARD OF SEEDING AND MULCHING.
- 3.) WATER - TWO APPLICATIONS APPLIED AT 3 GALLONS PER SQUARE YARD OF SEEDING AND MULCHING.

SEEDING AND MULCHING (AND THE ABOVE ITEMS) SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL WITHIN THE RIGHT OF WAY LIMITS DISTURBED AS A RESULT OF CONSTRUCTION ACTIVITIES RELATED TO THESE PLANS. ADDITIONAL AREA OUTSIDE OF RIGHT OF WAY LIMITS AND OUTSIDE OF THE CONSTRUCTION LIMITS DISTURBED AS A RESULT OF CONTRACTOR'S ACTIVITIES SHALL BE RESTORED IN ACCORDANCE WITH THIS ITEM BUT AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE ALL MATERIAL, LABOR, EQUIPMENT, AND APPURTENANCES NECESSARY TO APPLY TOPSOIL, SEEDING, MULCHING, COMMERCIAL FERTILIZER, AND WATER AS DETAILED IN ITEM 659 ABOVE.

**ITEM 625, CONDUIT, MISC.: RIGID METAL 4", MULTICELL, AS PER PLAN**

THIS ITEM SHALL CONSIST OF ALL PARTS, LABOR, MATERIAL, AND EQUIPMENT FOR ATTACHING CONDUIT TO THE BRIDGE STRUCTURE ON US 50 WEST OF THE CITY BETWEEN THE EXISTING AND PROPOSED ITS CABINETS. THIS ITEM SHALL ALSO INCLUDE ALL NECESSARY EXPANSION AND DEFLECTION FITTINGS REQUIRED FOR PROPER INSTALLATION. THE CONDUIT WILL TRANSITION FROM UNDERGROUND TO STRUCTURE MOUNTED AT THE PULL BOXES CALLED OUT IN THE PLAN VIEW ON SHEETS 13 AND 14. A DETAIL DRAWING FOR ATTACHING THE CONDUIT TO THE BRIDGE STRUCTURE HAS BEEN SUPPLIED ON SHEET 17.

PER CMS 102.05, THE CONTRACTOR SHALL VISIT, INVESTIGATE, AND INSPECT THE SITE IN ORDER TO ESTABLISH A SATISFIED UNDERSTANDING OF ALL CHARACTER, QUALITY, QUANTITIES, AND THE CONDITIONS TO BE ENCOUNTERED IN PERFORMING THE WORK.

**ITEM 625, STRUCTURE JUNCTION BOX, AS PER PLAN**  
PROVIDE BRUSHED FINISH 20"H X 20"W X 8" D, 14 GAUGE, TYPE 304 STAINLESS STEEL, NEMA 4X JUNCTION BOX TO ALLOW ACCESS TO FIBER OPTIC CABLE DURING PULLING AND INSTALLATION. ALL SEAMS TO BE CONTINUOUS WELDED AND GROUND SMOOTH. JUNCTION BOX TO HAVE ROLLED LIP AROUND 3 SIDES OF THE DOOR AND STAINLESS STEEL DOOR CLAMPING ASSEMBLY, HASP AND STAPLE FOR PADLOCKING. PROVIDE SEAMLESS FOAM-IN-PLACE GASKET. DOOR REMOVAL MAY BE ACCOMPLISHED BY PULLING A STAINLESS STEEL CONTINUOUS HINGE PIN. STRUCTURE MOUNTING TO BE ACCOMPLISHED VIA 2 MOUNTING EARS, TOP AND BOTTOM. PROVIDE GROUNDING PROVISION ON THE DOOR AND GROUNDING STUD ON THE JUNCTION BOX BODY. JUNCTION BOXES ARE TO BE PLACED AT APPROXIMATELY EVERY 300' ALONG SOUTH SIDE OF STRUCTURE.

**ITEM 625 PULL BOX, MISC.: REUSE EXISTING PULLBOX**  
THIS ITEM CONSISTS OF TYING NEW CONDUIT AND CABLES INTO EXISTING UNDERGROUND SYSTEM WHERE SPECIFIED ON THE PLAN SHEETS. EXCAVATE TO EXISTING PULLBOX AND SAW CUT AND BREAK OUT SECTION OF PULLBOX FOR CONDUIT ENTRY. CARE IS TO BE TAKEN NOT TO HARM EXISTING WIRING AND EQUIPMENT. CLEAN PULLBOX OF ANY TRASH OR DEBRIS AND MORTAR AROUND THE CONDUIT ENTRY PRIOR TO BACKFILLING.

**ITEM 625, POWER SERVICE, AS PER PLAN, POLE MOUNTED (A)**  
FURNISH AND INSTALL AS INDICATED ON THE PLAN SET A COMPLETE ELECTRICAL SERVICE FOR THE DYNAMIC MESSAGE SIGN INSTALLATIONS IN ACCORDANCE WITH ITEM 625 AND THE NATIONAL ELECTRIC CODE. SERVICE SHOULD BE COMPLETE 120/240V GROUND 4 WIRE SYSTEM, IF AVAILABLE, TO SERVE EACH DMS INSTALLATION.

THE 4 WIRE SYSTEM IS TO OBSERVE CONVENTIONAL COLOR CODE: LINE 1 (BLACK), LINE 2 (RED), NEUTRAL (WHITE) GROUND (GREEN).  
INSTALL 120/240 VOLT-100 AMP POWER SERVICE PER SCD-ITS-15.11. PROVIDE POWER SERVICE WITH 80 AMPERE OVER CURRENT PROTECTION FOR FULL SIZE DMS INSTALLATION. WHERE UTILITY CANNOT PROVIDE 120/240V SECONDARY, GROUND 4 WIRE, 120/208V, 100 AMP WITH 80 AMPERE O.C. PROECTION WILL BE ACCEPTABLE. COLOR CODE IS TO REMAIN THE SAME.

**ITEM 625, POWER SERVICE, AS PER PLAN, POLE MOUNTED (B)**  
THIS ITEM WILL FOLLOW ALL NOTES FOR ITEM 625, POWER SERVICE, AS PER PLAN, POLE MOUNTED (A), EXCEPT THAT THE SERVICE SHALL BE 120/240V, 200 AMP POWER SERVICE.

**ITEM 625, POWER SERVICE, AS PER PLAN, GROUND MOUNTED (A)**  
THIS ITEM SHALL FOLLOW ALL NOTES OF ITEM 625, POWER SERVICE, AS PER PLAN, POLE MOUNTED, EXCEPT THAT THE CONTRACTOR SHALL INSTALL 120/240 VOLT-100 AMP POWER SERVICE PER SCD-ITS-15.10.

**ITEM 625, POWER SERVICE, AS PER PLAN, GROUND MOUNTED (B)**  
THIS ITEM SHALL FOLLOW ALL NOTES OF ITEM 625, POWER SERVICE, AS PER PLAN, POLE MOUNTED, EXCEPT THAT THE CONTRACTOR SHALL INSTALL 120/240 VOLT-60 AMP POWER SERVICE PER SCD-ITS-15.10.

**ITEM 630, OVERHEAD SIGN SUPPORT, DMS PEDESTAL, AS PER PLAN**  
PROVIDE AND INSTALL OVERHEAD SIGN SUPPORTS FOR FULL SIZE DMS AS INDICATED IN THE PLAN SET, PER SCD ITS 30.11 THROUGH ITS 30.14. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE PROJECT ENGINEER FOR ACCEPTANCE. THE DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER FROM THE MANUFACTURER. THE ITEM SHALL NOT BE RELEASED FOR CONSTRUCTION UNTIL ACCEPTED BY THE OFFICE OF TRAFFIC OPERATIONS AND ODOT DISTRICT 8.

**ITEM 630 CATWALK, DMS PEDESTAL, AS PER PLAN**  
PROVIDE AND INSTALL PEDESTAL CATWALK FOR FULL SIZE DMS AS INDICATED IN THE PLAN SET, PER SCD ITS 30.11. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE PROJECT ENGINEER FOR ACCEPTANCE. THE DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER FROM THE MANUFACTURER. THE ITEM SHALL NOT BE RELEASED FOR CONSTRUCTION UNTIL ACCEPTED BY THE OFFICE OF TRAFFIC OPERATIONS AND ODOT DISTRICT 8.

**ITEM 630, OVERHEAD SIGN SUPPORT, TRUSS SUPPORT 80', AS PER PLAN**  
PROVIDE AND INSTALL OVERHEAD SIGN SUPPORTS FOR FULL SIZE DMS AS INDICATED IN THE PLAN SET, PER SCD ITS 35.13. THE TRUSS SHALL BE A MAXIMUM OF 80'. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE PROJECT ENGINEER FOR ACCEPTANCE. THE DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER FROM THE MANUFACTURER. THE ITEM SHALL NOT BE RELEASED FOR CONSTRUCTION UNTIL ACCEPTED BY THE OFFICE OF TRAFFIC OPERATIONS AND ODOT D08.

**ITEM 630, OVERHEAD SIGN SUPPORT, TRUSS SUPPORT 115', AS PER PLAN**  
PROVIDE AND INSTALL OVERHEAD SIGN SUPPORTS FOR FULL SIZE DMS AS INDICATED IN THE PLANS, PER SCD ITS 35.13 AND 35.14. THE TRUSS SHALL BE A MAXIMUM OF 115'. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE PROJECT ENGINEER FOR ACCEPTANCE. THE DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER FROM THE MANUFACTURER. THE ITEM SHALL NOT BE RELEASED FOR CONSTRUCTION UNTIL ACCEPTED BY THE OFFICE OF TRAFFIC OPERATIONS AND ODOT D08.

**ITEM 630 CATWALK, DMS TRUSS, AS PER PLAN**  
PROVIDE AND INSTALL TRUSS CATWALK FOR FULL-SIZE DMS AS INDICATED IN THE PLANS, PER SCD ITS 35.11. CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE PROJECT ENGINEER FOR ACCEPTANCE. THE DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER FROM THE MANUFACTURER. THE ITEM SHALL NOT BE RELEASED FOR CONSTRUCTION UNTIL ACCEPTED BY THE OFFICE OF TRAFFIC OPERATIONS AND ODOT D08.

**ITEM 809 - DYNAMIC MESSAGE SIGN, FULL-SIZE, WALK-IN**  
THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 809, AS WELL AS ANY STANDARD CONSTRUCTION DRAWINGS NOTED ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO INSTALL A COMPLETE AND FUNCTIONAL DMS AND SCHEDULE COMMISSIONING OF THE DMS BY A MANUFACTURER REPRESENTATIVE. A COPY OF THE COMPLETE COMMISSIONING REPORT CHECKLIST SHALL BE PROVIDED TO THE PROJECT ENGINEER. CONTACT INFORMATION FOR THE MANUFACTURER HAS BEEN PROVIDED BELOW.

JAY RAKOWSKI  
DAKTRONICS PROJECT MANAGER  
PHONE: 605-692-0200 EXT. 57264  
MOBILE PHONE: 715-382-3367

PAYMENT FOR ABOVE WORK SHALL BE MADE AT UNIT BID PRICE FOR THIS PAY ITEM AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS NECESSARY TO INSTALL A COMPLETE AND REMOTELY FUNCTIONAL DYNAMIC MESSAGE SIGN.

~~(BID ALTERNATE) ITEM 809 - DYNAMIC MESSAGE SIGN, FULL-SIZE, FULL-COLOR, WALK-IN~~  
THIS DMS ALTERNATE BID ITEM SHALL INCLUDE ALL REQUIREMENTS FROM SECTION 1500 FROM THE ODOT OFFICE OF TRAFFIC OPERATIONS HANDBOOK FOR ITEM 809E63000: DYNAMIC MESSAGE SIGN (DMS), FULL-SIZE, WALK-IN, EXCEPT FOR DIFFERENCES AS DESCRIBED BELOW:

1. GENERAL SPECIFICATIONS  
THE DMS HOUSING SHALL PROVIDE WALK-IN ACCESS FOR ALL LIGHT EMITTING DIODE (LED) DISPLAY MODULES, ELECTRONICS, ENVIRONMENTAL CONTROL EQUIPMENT, AIR FILTERS, WIRING , AND OTHER INTERNAL DMS COMPONENTS. THE DMS SHALL BE CAPABLE OF DISPLAYING FULL COLOR MESSAGES USING RED, GREEN, AND BLUE LED ASSEMBLIES FOR THE PIXELS.

THE DMS SHALL BE ABLE TO DISPLAY THREE ROWS OF 18" CHARACTERS WITH 17 CHARACTERS PER ROW. THE DMS PIXEL PITCH SHALL BE 20 MM OR LESS TO ACHIEVE HIGH QUALITY MESSAGING AND GRAPHICS WITH FULL COLOR.

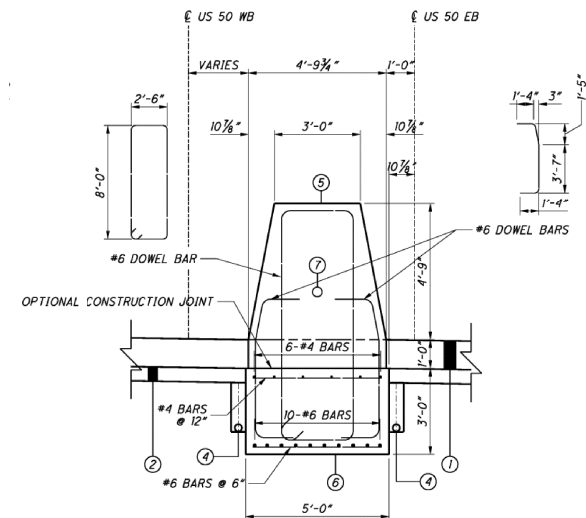
THE DMS SHALL CONTAIN A FULL DISPLAY METRIC MEASURING A MINIMUM OF 96 ROWS HIGH BY 336 PIXEL COLUMNS WIDE. THE MATRIX SHALL DISPLAY MESSAGES THAT ARE CONTINUOUS, UNIFORM, AND UNBROKEN IN APPEARANCE TO MOTORISTS AND TRAVELLERS.

THE DMS SHALL BE CAPABLE OF BEING CONTROLLED BY AND EXISTING ODOT ATMS SOFTWARE PLATFORM. THE MANUFACTURER SHALL SUBMIT A DMS CONTROLLER WHICH HAS BEEN PRECONFIGURED WITH THE FULL COLOR DMS CHARACTERISTICS TO ODOT FOR TESTING TO MAKE SURE IT S COMPATIBLE.

THE CONTRACTOR SHALL SUBMIT CUT SHEETS SHOWING COMPLETE DMS SPECIFICATIONS AND TRACEABILITY MATRIX SHOWING THEY MEET ALL REQUIREMENTS, FINAL APPROVAL SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER.

**ITEM 630. OVERHEAD SIGN SUPPORT, MISC.: CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, DMS TRUSS, AS PER PLAN**

THIS ITEM SHALL INCLUDE ALL TIME, LABOR, AND MATERIALS FOR REMOVAL OF AT LEAST 10' OF MEDIAN BARRIER WALL AND ITS REINFORCED FOOTING FOR THE US 50 EASTBOUND SIGN LOCATION, FOR INSTALLATION OF A NEW CONCRETE BARRIER DMS TRUSS FOUNDATION. FOR REFERENCE, A PLAN EXCERPT OF THE EXISTING CONCRETE BARRIER HAS BEEN PROVIDED IN THE DETAIL BELOW:



**ITEM 630. OVERHEAD SIGN SUPPORT, MISC.: CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, DMS TRUSS, AS PER PLAN, CONT.**

DIMENSIONS OF THE EXISTING CONCRETE BARRIER AT THE US 50 EASTBOUND SIGN LOCATION SHOWN IN THE DETAIL ABOVE. THIS ITEM SHALL ALSO INCLUDE ALL NECESSARY DOWELING PER SCD RM-4.3 AT THE CONSTRUCTION JOINTS CREATED BETWEEN THE NEW AND EXISTING CONCRETE BARRIERS.

THIS ITEM SHALL INCLUDE BUT IS NOT LIMITED TO ALL ITEMS FROM SCD ITS 36.12 INCLUDING ALL REINFORCING STEEL, JUNCTION BOXES, CONDUIT RACEWAYS, ETC. THE FINAL WIDTH AND HEIGHT ABOVE THE PAVEMENT OF THIS CONCRETE BARRIER TRUSS FOUNDATION, SHALL MATCH THE HEIGHT AND WIDTH OF THE ADJOINING MEDIAN CONCRETE BARRIER WALL ON EITHER SIDE OF THIS FOUNDATION.

**ITEM 809 - ITS DEVICE, MISC.: SYSTEM INTEGRATION**

TESTING SHALL CONSIST OF A THIRTY-DAY OPERATION PERIOD. PRIOR TO BEGINNING ANY TESTING, THE CONTRACTOR SHALL COMPLETE THE TEN-DAY COMMUNICATIONS CERTIFICATION PERIOD FOR THE TEST GROUP TO BE TESTED AND PROVIDE ALL SUBMITTALS, CERTIFICATIONS, AND REPORTS NECESSARY TO DETERMINE THAT THE TESTING EQUIPMENT WILL MEET SPECIFICATIONS. ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER.

THE CONTRACTOR SHALL CREATE A DETAILED TEST PLAN THAT CLEARLY INDICATES THE REQUIREMENT(S) COVERED BY EACH TEST CASE AND ALSO ENSURE THAT THE REQUIREMENTS OF THE TESTING MATRIX ARE MET.

THE CONTRACTOR SHALL IDENTIFY WHICH SIGN INSTALLATIONS ARE READY TO BE TESTED AND SHALL TEST EACH ONE AT A TIME.

THE CONTRACTOR SHALL PROVIDE A TEST PROCEDURE AND TEST DATA FORMS TO THE CITY FOR APPROVAL AT LEAST THIRTY (30) CALENDAR DAY BEFORE TESTING IS TO BEGIN. THE CONTRACTOR SHALL PROVIDE A REQUIREMENT MATRIX THAT CLEARLY MAPS EACH REQUIREMENT TO A SPECIFIC TEST CASE (S). THE CITY WILL REVIEW THE TEST PROCEDURES AND MATRIX AND RETURN THEM WITH COMMENTS OR APPROVAL TO THE CONTRACTOR WITHIN TWENTY-ONE (21) CALENDAR DAYS AFTER RECEIPT.

THE TEST PROCEDURES PROPOSED BY THE CONTRACTOR SHALL BE COMPREHENSIVE, AND IN SUFFICIENT DETAIL TO ALLOW THE CITY TO DETERMINE WHETHER OR NOT THE SYSTEM PROVIDED FULLY COMPLIES WITH THE SYSTEM REQUIREMENTS INCLUDED IN THESE SPECIAL PROVISIONS AND PLANS. IF THE CITY DEEMS THE TEST PROCEDURE TO BE UNACCEPTABLE, THE CONTRACTOR SHALL REVISE THE PROCEDURES ACCORDING TO THE CITY'S COMMENTS WITHOUT ADDITIONAL COST TO THE CITY.

AT A MINIMUM THE TEST PROCEDURES SHALL INCLUDE THE FOLLOWING:

- A STEP-BY-STEP OUTLINE OF THE TEST SEQUENCE TO BE FOLLOWED, SHOWING A TEST OF EVERY SYSTEM REQUIREMENT
- A DESCRIPTION OF THE EXPECTED OPERATION, OUTPUT AND TEST RESULTS
- AN ESTIMATION OF THE TEST DURATION PROPOSED TEST SCHEDULE
- A DATA FORM TO BE USED TO RECORD ALL DATA AND QUANTITATIVE RESULTS OBTAINED DURING THE TESTS
- A DESCRIPTION OF ANY SPECIAL EQUIPMENT, SETUP, MANPOWER, OR CONDITIONS REQUIRED FOR THE TEST
- MEET ALL REQUIREMENTS OF THE TESTING MATRIX
- MONITORING OF INSTALLATION COMMUNICATION STATUS
- TESTING OF ANY MODIFICATION OR EXTENSIONS TO LOCAL AND/OR CENTRAL SOFTWARE

**ITEM 809 - ITS DEVICE, MISC.: SYSTEM INTEGRATION, CONT.**

THE THIRTY-DAY OPERATIONAL PERIOD WILL VERIFY EACH OF THE SIGN INSTALLATIONS FUNCTION PROPERLY AND IN ACCORDANCE WITH THESE SPECIAL PROVISIONS AND PLANS. THE THIRTY-DAY OPERATIONAL PERIOD SHALL NOT BE COMPLETED UNTIL ALL ITEMS CONFORM TO THE SPECIAL PROVISIONS OF THE PLAN. THE CONTRACTOR SHALL PERFORM AND DOCUMENT ALL NECESSARY TESTING.

THE FORMAL START OF THE THIRTY-DAY OPERATIONAL PERIOD OR "BURN-IN" PERIOD SHALL BE DOCUMENTED BY THE CONTRACTOR AND APPROVED BY THE CITY. THE THIRTY-DAY OPERATIONAL PERIOD WILL INCLUDE THE COMPLETION OF A 30-DAY PERIOD, BY THE END OF WHICH THE ENTIRE INTEGRATED SYSTEM OPERATIONS WITHOUT ANY DETRIMENTAL EFFECTS OF OTHER ONLINE DEVICES.

IN THE EVENT OF A FAILURE DURING THE THIRTY-DAY OPERATIONAL PERIOD, THE CONTRACTOR SHALL REPAIR THE EQUIPMENT AS NECESSARY WITHIN TWO (2) WORKING DAYS OF THE TIME OF NOTIFICATION BY THE CITY AND THE THIRTY-DAY OPERATION PERIOD AT THE SOLE DISCRETION OF THE ENGINEER MAY BE SUSPENDED AND RESTARTED OR RESTARTED AT ZERO HOURS.

THE CONTRACTOR OR CITY, AS MUTUALLY AGREED TO, SHALL LOG ALL FAILURES DURING THE PERIOD, USING A MUTUALLY AGREED UPON FORM. IN THE EVENT THAT 5% OR MORE OF CLASS OF EQUIPMENT FAILS DURING THE THIRTY-DAY OPERATIONAL PERIOD, THE CONTRACTOR SHALL DETERMINE THE CAUSE OF FAILURE AND MAKE ANY NEEDED MODIFICATIONS AND/OR REPLACEMENTS TO PREVENT REOCCURRENCE. ALL MODIFICATIONS REPLACEMENTS SHALL BE APPROVED BY THE ENGINEER. IN THE EVENT OF A CLASS MODIFICATION OR REPLACEMENT OF COMPONENTS, ALL SUCH COMPONENTS SHALL BE SUBJECTED TO THE THIRTY-DAY OPERATIONAL PERIOD.

**ITEM 809, ITS DEVICE, MISC.: OVERHEAD SIGN ARRAY, AS PER PLAN**

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING AN ARRAY OF FIVE (5) OVERHEAD FRONT ACCESS VARIABLE MESSAGE SIGNS COMPLETE WITH ALL HARDWARE, WIRING, INSTALLATION, SYSTEM INTEGRATION, SOFTWARE AND TRAINING. SIGN ENCLOSURE IS TO BE LIGHTWEIGHT NEMA 3R RATED, UTILIZING AASHTO STRUCTURAL DESIGN STANDARDS. PROVIDE TECHNICAL SUPPORT AND SYSTEM INTEGRATION TO ALLOW THE SIGN ARRAY TO COMMUNICATE WITH THE PARKING MANAGEMENT SYSTEM ITEM LISTED IN THIS CONTRACT.

THE SIGN DISPLAYS SHALL BE FULL-MATRIX, HIGH INTENSITY LED CAPABLE OF AMBER OR FULL COLOR DISPLAY. SIGNS SHALL BE DESIGNED TO OPERATE AT 120/240 VAC SINGLE PHASE.

THE SIGNS SHALL EMPLOY NTCIP 1203 COMMUNICATIONS PROTOCOL AND MEET OR EXCEED NEMA TS 4 SECTION 2 ENVIRONMENTAL REQUIREMENTS. THE SIGNS WILL BE INTERCONNECTED BY FIBER OPTIC CABLE RUNNING BETWEEN THE SIGNS AND FEEDING BACK TO A SINGLE CONTROLLER / ITS CABINET WITH OVERCURRENT PROTECTION PROVIDED FOR EACH INDIVIDUAL SIGN. SIGNS SHALL BE FRONT ACCESS DAKTRONICKS VANGUARD VF-2420-27x60-34-RGB OR APPROVED EQUAL.

**ITEM 809 - ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN**

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A 4' WIDE, BY 5' TALL (NOMINAL) , FULL-COLOR, LED, VARIABLE MESSAGE SIGN TO BE USED FOR DISPLAYING PARKING LOT INFORMATION SUCH AS LOT NAME, SPACES AVAILABLE, PARKING RATES, AND OTHER SPECIAL EVENT MESSAGES FOR ON-STREET VEHICLES. THE SIGN IS TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM AND WILL HAVE THE ABILITY TO REMOTELY COMMUNICATE PARKING SPACES AVAILABLE IN ADDITION TO OTHER CUSTOMIZED MESSAGES IDENTIFIED BY THE SIGN OWNER/OPERATOR. THE SIGN SHALL HAVE THE ABILITY TO BE COMMUNICATED WITH WIRELESSLY VIA CELLULAR CONNECTION.

IN ADDITION TO THE PHYSICAL SIGN ITSELF, THIS ITEM CONSISTS OF ALL PARTS, MATERIALS, LABOR, AND DESIGN TO PROVIDE AND INSTALL SIGN SUPPORTS AND FOUNDATIONS FOR THE SIGNS. SIGNS ARE TO BE INSTALLED 7' MEASURED FROM THE GROUND BELOW TO THE BOTTOM OF THE SIGN. SIGNS SHALL BE ORIENTED IN POSITIONS AS IDENTIFIED IN THE PLANS. FINAL LOCATION AND ORIENTATION SHALL BE APPROVED BY THE ENGINEER AND OWNER/OPERATOR. IF THE VENDOR DOES NOT ALREADY HAVE A SUPPORT DESIGNED FOR THIS CAPABILITY, STRUCTURAL ENGINEERING SUPPORT MAY BE REQUIRED TO DESIGN A SUPPORT AND SUPPORT FOUNDATION. THE SIGN SUPPORT DESIGNER SHALL PROVIDE DRAWINGS OF THE SUPPORT WITH STRUCTURAL ASPECTS OF THE DESIGN AND MATERIALS IN COMPLIANCE WITH THE AAHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE SIGN SUPPORT SHALL BE ASTM A595 GRADE A WITH A MINIMUM YIELD STRENGTH OF 50 KSI. THE FOLLOWING DESIGN PARAMETERS SHALL BE USED:

1. BASIC WIND SPEED = 90 MPH
2. DESIGN LIFE = 25 YEARS
3. FATIGUE CATEGORY = III
4. GALLOPING: NO
5. TRUCK INDUCED GUST = NO

SUBMIT, TO THE ENGINEER PRIOR TO INCORPORATION: TWO COPIES OF THE SIGN SUPPORT AND SIGN SUPPORT FOUNDATION DRAWINGS AND SHOP DRAWINGS, WHICH IDENTIFY AND DESCRIBE EACH MANUFACTURED SIGN SUPPORT, FOUNDATION AND SIGN SUPPORT ITEM WHICH IS BEING INCORPORATED INTO THE CONSTRUCTION. THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS SHALL EACH BE REVIEWED, SEALED, STAMPED, AND DATED BY A REGISTERED PROFESSIONAL ENGINEER.

**ITEM 809 ITS DEVICE, MISC.: FLUSH STRUCTURE-MOUNTED PARKING VMS, AS PER PLAN**

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A 6' WIDE BY 3' TALL (NOMINAL), FULL-COLOR, LED, VARIABLE MESSAGE SIGN TO BE USED FOR DISPLAYING PARKING LOT INFORMATION SUCH AS GARAGE NAME, SPACES AVAILABLE, PARKING RATES, AND OTHER SPECIAL EVENT MESSAGES FOR ON-STREET VEHICLES. THE SIGN IS TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM AND WILL HAVE THE ABILITY TO REMOTELY COMMUNICATE PARKING SPACES AVAILABLE IN ADDITION TO OTHER CUSTOMIZED MESSAGES IDENTIFIED BY THE SIGN OWNER/OPERATOR. THE SIGN SHALL HAVE THE ABILITY TO BE COMMUNICATED WITH WIRELESSLY VIA CELLULAR CONNECTION.

IN ADDITION TO THE PHYSICAL SIGN ITSELF, THIS ITEM CONSISTS OF ALL PARTS, MATERIALS, LABOR, AND DESIGN TO MOUNT THE SIGN TO THE FRONT OF A PARKING GARAGE STRUCTURE (BOTH STEEL AND CONCRETE) ABOVE THE OPENING OF THE GARAGE, AS APPROXIMATELY SHOWN IN THE PLANS.



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**ITEM 809 ITS DEVICE, MISC.: FLUSH STRUCTURE-MOUNTED PARKING VMS, AS PER PLAN, CONT.**

SUBMIT, TO THE ENGINEER PRIOR TO INCORPORATION: TWO COPIES OF THE SIGN MOUNTING EQUIPMENT DRAWINGS AND SHOP DRAWINGS, WHICH IDENTIFY AND DESCRIBE EACH MANUFACTURED SIGN SUPPORT, AND SIGN SUPPORT ITEM WHICH IS BEING INCORPORATED INTO THE CONSTRUCTION. THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS SHALL EACH BE REVIEWED, SEALED, STAMPED, AND DATED BY A REGISTERED PROFESSIONAL ENGINEER.

**ITS DEVICE MISC.: PERPENDICULAR, UNIDIRECTIONAL STRUCTURE-MOUNTED PARKING VMS, AS PER PLAN**

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A 4' WIDE BY 5' TALL (NOMINAL), FULL-COLOR, LED, VARIABLE MESSAGE SIGN TO BE USED FOR DISPLAYING PARKING GARAGE INFORMATION SUCH AS GARAGE NAME, SPACES AVAILABLE, PARKING RATES, AND OTHER SPECIAL EVENT MESSAGES FOR ON-STREET VEHICLES. THE SIGN IS TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM AND WILL HAVE THE ABILITY TO REMOTELY COMMUNICATE PARKING SPACES AVAILABLE IN ADDITION TO OTHER CUSTOMIZED MESSAGES IDENTIFIED BY THE SIGN OWNER/OPERATOR. THE SIGN SHALL HAVE THE ABILITY TO BE COMMUNICATED WITH WIRELESSLY VIA CELLULAR CONNECTION.

IN ADDITION TO THE PHYSICAL SIGN ITSELF, THIS ITEM CONSISTS OF ALL PARTS, MATERIALS, LABOR, AND DESIGN TO MOUNT THE SIGN, PERPENDICULARLY TO THE FRONT OF A PARKING GARAGE STRUCTURE (BOTH STEEL AND CONCRETE) ABOVE THE OPENING OF THE GARAGE, AS APPROXIMATELY SHOWN IN THE PLANS. THE SIGN SHALL BE MOUNTED AT A MINIMUM 7' ABOVE THE SURFACE BELOW THE SIGN. ALL FINAL MOUNTING LOCATIONS SHOULD BE APPROVED BY THE ENGINEER AND GARAGE OWNER/OPERATOR. THE SIGN SHALL FACE ONLY 1 DIRECTION AS INDICATED ON THE PLANS.

SUBMIT, TO THE ENGINEER PRIOR TO INCORPORATION: TWO COPIES OF THE SIGN MOUNTING EQUIPMENT DRAWINGS AND SHOP DRAWINGS, WHICH IDENTIFY AND DESCRIBE EACH MANUFACTURED SIGN SUPPORT, AND SIGN SUPPORT ITEM WHICH IS BEING INCORPORATED INTO THE CONSTRUCTION. THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS SHALL EACH BE REVIEWED, SEALED, STAMPED, AND DATED BY A REGISTERED PROFESSIONAL ENGINEER.

**ITS DEVICE MISC.: PERPENDICULAR, BIDIRECTIONAL STRUCTURE-MOUNTED PARKING VMS, AS PER PLAN**

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A 4' WIDE BY 5' TALL (NOMINAL), FULL-COLOR, LED, VARIABLE MESSAGE SIGN TO BE USED FOR DISPLAYING PARKING GARAGE INFORMATION SUCH AS GARAGE NAME, SPACES AVAILABLE, PARKING RATES, AND OTHER SPECIAL EVENT MESSAGES FOR ON-STREET VEHICLES. THE SIGN IS TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM AND WILL HAVE THE ABILITY TO REMOTELY COMMUNICATE PARKING SPACES AVAILABLE IN ADDITION TO OTHER CUSTOMIZED MESSAGES IDENTIFIED BY THE SIGN OWNER/OPERATOR. THE SIGN SHALL HAVE THE ABILITY TO BE COMMUNICATED WITH WIRELESSLY VIA CELLULAR CONNECTION.

IN ADDITION TO THE PHYSICAL SIGN ITSELF, THIS ITEM CONSISTS OF ALL PARTS, MATERIALS, LABOR, AND DESIGN TO MOUNT THE SIGN PERPENDICULARLY TO THE FRONT OF A PARKING GARAGE STRUCTURE (BOTH STEEL AND CONCRETE) ABOVE THE OPENING OF THE GARAGE, AS APPROXIMATELY SHOWN IN THE PLANS. THE SIGN SHALL BE MOUNTED AT A MINIMUM 7' ABOVE THE SURFACE BELOW THE SIGN. ALL FINAL MOUNTING LOCATIONS SHALL BE APPROVED IN ADVANCE BY THE ENGINEER AND GARAGE OWNER/OPERATOR. THE SIGN INSTALLATION SHALL EITHER BE A DOUBLE-FACED SIGN CAPABLE OF DISPLAYING VARYING MESSAGES BETWEEN FACING DIRECTION, OR IT SHALL BE 2 BACK-TO-BACK SIGNS. THIS ITEM SHALL BE BID AND PAID AS EACH BIDIRECTIONAL SIGN INSTALLATION PROVIDED AND INSTALLED.

**ITS DEVICE MISC.: PERPENDICULAR, BIDIRECTIONAL STRUCTURE-MOUNTED PARKING VMS, AS PER PLAN, CONT.**

SUBMIT, TO THE ENGINEER PRIOR TO INCORPORATION: TWO COPIES OF THE SIGN MOUNTING EQUIPMENT DRAWINGS AND SHOP DRAWINGS, WHICH IDENTIFY AND DESCRIBE EACH MANUFACTURED SIGN SUPPORT, AND SIGN SUPPORT ITEM WHICH IS BEING INCORPORATED INTO THE CONSTRUCTION. THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS SHALL EACH BE REVIEWED, SEALED, STAMPED, AND DATED BY A REGISTERED PROFESSIONAL ENGINEER.

**ITS DEVICE, MISC.: STRUCTURE-MOUNT, SPACE AVAILABILITY INSERT SIGN, AS PER PLAN**

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING SPACE AVAILABILITY SIGNS FOR THE 6-LEVEL EAST GARAGE. SIGNS SHALL BE TOWER DESIGN AND EASILY INTEGRATED WITH THE PARKING MANGEMENT SYSTEM. THE CABINET IS TO BE PRE-ASSEMBLED AND MODULAR FOR EASE OF ACCESS AND MAINTENANCE. SIGNS SHALL ACCOMMODATE 6 LEVELS AND BE OUTDOOR NEMA 3R RATED AND WATER RESISTANT. CABINET SHALL BE MODULAR, ALL ALUMINUM CONSTRUCTION.

DISPLAY IS TO INCORPORATE 7-INCH RED AND GREEN LEDS, FOUR DIGITS PER MODULE ABLE TO DISPLAY NUMBERS 0-999, OPEN, FULL, AND CLSD. LED UNITS ARE TO BE PROTECTED BY POLYCARBONATE FACE COVER AND FEATURE AUTOMATIC NIGHTTIME DIMMING. SIGNS WILL HAVE AN OPERATING TEMPERATURE RANGE OF -20°TO 120° F.

THE SIGN IS TO HAVE LED RED AND GREEN SEVEN SEGMENT BAR DIGITS WITH A LIFETIME OF 100,000+ HOURS, VIEWING ANGLE 110°HORIZONTAL X 70°VERTICAL, CONTRAST ENHANCEMENT, PAINTED BLACK ALUMINUM FACE, SERVICE ACCESS FRONT ACCESS, AND MAINTAIN THE ABILITY TO BE COMMUNICATED WITH WIRELESSLY VIA CELLULAR CONNECTION. THE SIGN SHALL BE MOUNTED TO THE CONCRETE COLUMN BETWEEN THE TWO ENTRY LANES OF EACH OF THE EAST GARAGE ACCESS POINTS.

THIS ITEM WILL BE BID AND PAID AS EACH SIGN PROVIDED AND MOUNTED.

**ITS DEVICE, MISC.: PARKING MANAGEMENT SYSTEM (PMS), AS PER PLAN**

THIS SECTION INCLUDES PROVISION OF ALL MATERIAL, LABOR, EQUIPMENT, SERVICES AND TRAINING NECESSARY TO FURNISH AND INSTALL A FULLY INTEGRATED ON-LINE, REAL-TIME PARKING MANAGEMENT SYSTEM. THE SYSTEM TO BE DEPLOYED AT THE CITY OF CINCINNATI AND HAMILTON COUNTY GARAGES AND SURFACE LOTS.

ALL SYSTEM COMPONENTS MUST BE FULLY COMPATABLE AND FUNCTION AS ONE COMPLETE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR INEGRATION OF THE PARKING MANAGEMENT SOFTWARE WITH THE PHASE 1 AND 2 DMS SOFTWARE AS PART OF THE INSTALLATION. AT THE TIME OF BIDDING, THE CONTRACTOR SHALL DISCLOSE THE SYSTEM/VENDOR TO BE USED FOR THE PARKING MANAGEMENT SYSTEM.

THE PARKING MANAGEMENT SYSTEM SHALL MONITOR AND COMMUNICATE COUNTS WITH AVAILABILITY IN INDIVIDUAL LOTS AND GARAGES. THE SYSTEM WILL UTILIZE EXISTING VEHICLE COUNTS AT THE LOT AND GARAGE ENTRANCES AND EXITS. IN ADDITION TO UTILIZING EXISTING GARAGE/LOT COUNT DATA, NEW DETECTION WILL BE ADDED AS PART OF THE SYSTEM INSTALLATION AT LOT ACCESS POINTS WHERE COUNTING EQUIPMENT DOES NOT CURRENTLY EXIST. SYSTEM WILL ALSO EMPLOY VEHICLE DETECTION ON THE DIFFERENT LEVELS OF THE GARAGES TO DETERMINE OCCUPANCEY ON EACH LEVEL OF THE GARAGES. THE BASE BID WILL INCLUDE COMMUNICATION TO OUTDOOR SIGNAGE DISPLAYS AS INDICATED LATER IN THIS DOCUMENT TO IDENTIFY AT A MINIMUM, THE LOT DESIGNATION NUMBER OF SPACES AVAILABLE IN REAL TIME IN THE SPECIFIC LOT OR GARAGE.

**ITS DEVICE, MISC.: PARKING MANAGEMENT SYSTEM (PMS), AS PER PLAN, CONT.**

AS THE COUNT REACHES A PRE-DETERMINED OCCUPANCY, THE SYSTEM WILL HAVE THE CAPABILITY TO COMMUNICATE TO THE PHASE 2 STREET SIGNAGE AND ULTIMATELY, TO THE PHASE 1 HIGHWAY SIGNAGE THE NUMBER OF AVAILABLE SPACES AT THAT LOCATION OR THE NECESSITY TO DIRECT PATRONS TO ANOTHER FACILITY.

THE SYSTEM WILL ALLOW THE PARKING OPERATOR TO MONITOR, ADJUST, AND REVIEW ALL COUNTS AND BE ACCESSED REMOTELY.

DESIGN CRITERIA AND PERFORMANCE SPECIFCIATIONS:

SYSTEM SERVER/HOST COMPUTER

A NETWORK CONSISTING OF SERVER, TASK OR SUBSYSTEM COMPUTERS AND WORKSTATION THAT PROVIDE ON-LINE AND REAL TIME MONITORING AND CONTROL OF ALL PMS DEVICES, CAPABLE OF:

1. CORRELATING VEHICLE ENTRIES AND EXITS WITHIN EACH PARKING FACILITY AND LEVEL IN ORDER TO COMMUNICATE THE TOTAL VEHICLES PRESENT AND NUMBER OF SPACES AVAILABLE.
2. CONTROLLING THE DYNAMIC SPACE AVAILABILITY SIGNS BASED ON THE OCCUPANCY OF EACH FACILITY, LEVEL, OR ZONE AS DETERMINED BY THE SYSTEM.
3. PROVIDING INDEPENDENT AND CONSOLIDATED OCCUPANCY COUNTS.
4. MONITORING ALL PMS EQUIPMENT.
5. PROVIDING REAL-TIME GRAPHICAL VIEWS AND DESCRIPTIONS OF OCCUPANCY AND HISTORICAL DATA.
6. EXPORTING DATA TO OTHER APPLICATIONS.
7. MAINTAINING A MINIMUM OF 98.0% ACCURACY RATE ON DETECTION OF VEHICLES
8. MONITORING AND REPORTING ALARM CONDITIONS AND LOGS FOR ATYPICAL ACTIVITY, MALFUNCTIONS, FAILURES AND PRESET OCCUPANCY THRESHOLDS.
9. RESETTING/RECALIBRATING TO ACTUAL CAR COUNTS.
10. DATA COMMUNICATION USING STANDARD ETHERNET PROTOCOLS.
11. MANUALLY OVERRIDING LEVEL COUNTS TO SIMULATE A HIGHER OCCUPANCY THAN WHAT ACTUALLY EXISTS.
12. REPORT GENERATION:

- A. SHOWING THE NUMBER OF SPACES CURRENTLY OCCUPIED AND UNOCCUPIED FOR A FACILITY, ZONE OR ZONES.
- B. DAILY SYSTEM MONITORING ALERTS INDICATING ANY SYSTEM ALARMS AND MALFUNCTIONS.
- C. MINIMUM, MAXIMUM AND AVERAGE LEVEL SPACE OCCUPANCY IN REAL TERMS AND AS A PERCENTAGE.
- D. MINIMUM, MAXIMUM AND AVERAGE ZONE AND FACILITY SPACE AVAILABILITY IN REAL TERMS AND AS A PERCENTAGE.

DATA STORAGE:

- A. ARCHIVING PARKING VISIT DATA IN A READABLE FORMAT ON STANDARD MEDIA OR ON A CLOUD-BASED STORAGE PLATFORM.
- B. SUFFICIENT TO STORE A MINIMUM OF TWO YEARS OF DATA.

SECURITY FEATURES:

- A. PASSWORD PROTECTED INTERFACE ON WEB-BASED SOFTWARE.
- B. ASSIGNING, CHANGING, DISABLING AND DEACTIVATING UNIQUE PASSWORDS FOR EACH USER.

**ITS DEVICE, MISC.: PARKING MANAGEMENT SYSTEM (PMS), AS PER PLAN, CONT.**

PARKING MANAGEMENT SYSTEM TO UTILIZE EXISTING COUNT INFORMATION WHERE AVAILABLE FOR GARAGE RAMPS, ENTRANCES AND EXITS WHERE EXISTING COUNT DATA OR DETECTION IS NOT AVAILABLE CONTRACTOR WILL INSTALL DIRECTIONAL DETECTION MEANS TO ACCURATELY COUNT VEHICLES ENTERING AND EXITING THE VARIOUS LEVELS WITHIN THE GARAGES.

FUTURE SYSTEM EXPANSION

PROVIDE A PMS THAT IS READILY EXPANDABLE AND UPGRADEABLE TO ACCOMMODATE ADDITIONAL PARKING FACILITIES, NESTED PARKING AREAS, FEATURES AND CONFIGURATIONS. THE PARKING MANAGEMENT SYSTEM SHALL BE FULLY CAPABLE OF EXPANSIONS/ENHANCEMENTS LISTED BELOW:

1. SINGLE SPACE SENSORS AND DYNAMIC SIGNS.
2. ADD SINGLE SPACE SENSORS, EXTERNAL RGB INDICATOR LIGHTS, AND DYNAMIC SIGNS.
3. ADD ADDITIONAL PARKING FACILITIES.
4. EXPAND TO NEW AREAS WITHIN THE EXISTING FACILITIES.
5. INTERFACE WITH THE EXISTING MOBILE APPLICATIONS AND EXTERNAL WEBSITES THAT ARE NOT CALLED OUT IN THIS SPECIFICATION.

WORK SHALL INCLUDE:

1. FABRICATION, DELIVERY, AND INSTALLATION OF ALL NEW PMS EQUIPMENT AS DESCRIBED IN THIS SPECIFICATION.
2. COMPLIANCE WITH ALL APPLICABLE STATE AND FEDERAL CODES AND STANDARDS.
3. REVIEW PLANS AND SPECIFICATIONS TO BE CERTAIN THAT ALL FUNCTIONAL REQUIREMENTS, AS DESCRIBED, CAN BE ACHIEVED WITH EQUIPMENT TO BE SUPPLIED.
4. PROVIDE SHOP DRAWINGS AND PRODUCT LITERATURE FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
5. PROVIDE AND INSTALL ALL NECESSARY DEVICE CONTROL WIRING, COMMUNICATIONS WIRING, CONDUIT AND ADDITIONAL POWER WIRING REQUIRED BY SYSTEM. INCLUDE SPECIAL ELECTRICAL POWER AND GROUNDING. MAIN CONDUIT RUNS, JUNCTION BOXES AND WIRING SHOULD BE "HIDDEN" TO THE EXTENT POSSIBLE AS TO BE OUT OF SIGHT FROM THE PUBLIC VIEW AND MUST BE WHITE IN COLOR TO MATCH EXISTING COLOR REQUIREMENTS.

6.PROVIDE AND INSTALL ANY POWER CONDITIONING THAT IS REQUIRED FOR THE OPERATION OF THE SYSTEM. POWER PROVIDED FOR THIS PROJECT IS 120 VAC +/- 10% AND 60 HZ FROM CIRCUITS DEDICATED TO PMS.

7.PROVIDE AND INSTALL ALL ELECTRONICS AND COMMUNICATIONS EQUIPMENT FOR COMMUNICATION NETWORK. TERMINATE AND CONNECT ALL COMMUNICATIONS CABLING.

8.PROVIDE AND INSTALL ON-LINE, REGULATING COMPUTER GRADE UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR SERVERS.

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**ITEM 809 ITS DEVICE, MISC.: PARKING MANAGEMENT SYSTEM, AS PER PLAN, CONT.**

9.COORDINATE AND CONFIRM FINAL AND PRECISE LAYOUT OF SIGNS, CONDUITS, MOUNTING RAILS, STUBS, SENSORS AND ANCHOR BOLTS WITH THOSE RESPONSIBLE FOR INSTALLATION.

10.PARTICIPATE IN WEB AND MOBILE APPLICATION INTEGRATION REQUIREMENTS AND SOLUTIONING MEETINGS.

11. INSTALL ALL CONTRACTOR SUPPLIED EQUIPMENT AND THE INTERCONNECTION WITH OWNER SUPPLIED EQUIPMENT.

12. INTEGRATE GARAGE SIGNAGE AND SOFTWARE TO TRIGGER THE DMS TO DISPLAY PRE-DETERMINED MESSAGES AND ALERTS AT LEVELS OF OCCUPANCY DETERMINED BY THE CITY/COUNTY PARKING MANAGERS.

13. TEST, ADJUST, AND INTERFACE CIRCUITS PRIOR TO INSTALLATION OF EQUIPMENT. MAKE ALL CONNECTIONS OF WIRING TO COMPONENTS. AUTHORIZE AND ACCEPT RESPONSIBILITY FOR APPLICATION OF POWER TO EQUIPMENT AND INITIATION OF OPERATION, RUN ALL INITIAL DIAGNOSTICS AND SYSTEM TESTING PROGRAMS NECESSARY TO PROVIDE COMPLETE WORKING SYSTEM.

14. ATTEND CONSTRUCTION MEETINGS, PROVIDE SCHEDULES AS REQUESTED, AND SCHEDULE FIELDWORK TO BE COORDINATED WITH OTHER TRADES AND WITH OWNER/MANAGER.

15. TEST EQUIPMENT IN ACCORDANCE WITH THESE SPECIFICATIONS.

16. ASSIST WITH WEB AND MOBILE APPLICATION INTEGRATED SOLUTION'S ACCEPTANCE TESTING.

17. PROVIDE RECORD DRAWINGS, OPERATING MANUALS, MAINTENANCE MANUALS, AND TRAINING SESSIONS AS REQUIRED/NEEDED BY THE OWNER/MANAGER.

18. PARTICIPATE IN SYSTEM COMMISSIONING AS REQUIRED.

EQUIPMENT AND WORK NECESSARY TO ACCOMPLISH THE DETAILS LAID OUT FOR THIS ITEM MAY INCLUDE, BUT WILL NOT BE LIMITED TO MAINTAINING WORK ZONES WITH SIGNAGE, PERMITTING, AND BARRICADES, DETECTION AND ASSOCIATED WIRING, CAMERAS FOR ENTRANCE DETECTION AND SPOT DETECTION, EQUIPMENT ENCLOSURES, JUNCTION BOXES, CONDUIT, SYSTEM SERVER AND HARDWARE, REMOTE CONTROLLERS, SOFTWARE SET-UP WITH TRAINING AND INSTALLATION, EQUIPMENT WARRANTY, OWNER/USER INTERFACE AND INTEGRATION WITH PHASE 1 AND 2 SIGNAGE, CONTROLLERS WITH CELLULAR OR HARDWIRED COMMUNICATION CAPABILITIES, AND DYNAMIC SPACE AVAILABILITY SIGNS.

ALL COMPONENTS PROVIDED AND INSTALLED AS PART OF THIS ITEM SHALL ALL WORK TOGETHER AND PERFORM AS 1 SINGLE PARKING MANAGEMENT SYSTEM.

AT THE TIME OF BIDDING, THE CONTRACTOR SHALL DISCLOSE THE SYSTEM/VENDOR TO BE USED FOR THE PARKING MANAGEMENT SYSTEM.

ALL WORK MUST CONFORM TO LOCAL AND FEDERAL BUILDING AND ELECTRICAL CODES. ALL EQUIPMENT, CONDUITS AND OTHER SUPPORT EQUIPMENT WILL HAVE MINIMUM AESTHETIC IMPACT TO THE PUBLIC. BIDDING AND PAYMENT FOR THIS ITEM WILL BE IN 1 LUMP SUM, WITH THE EXCEPTION THAT ALL DYNAMIC SPACE AVAILABILITY SIGN (PARKING VARIABLE MESSAGE SIGNS) LOCATIONS (18) AT THE 11 FACILITY ACCESS POINTS WILL BE BID SEPARATELY AS ITEM 809 ITS DEVICE MISC.: PARKING VARIABLE MESSAGE SIGN (BY TYPE).

|                   |               |  |                             |         |
|-------------------|---------------|--|-----------------------------|---------|
| CALCULATED<br>DGO | GENERAL NOTES |  | HAM BANKS DMS<br>PID 104409 | 8<br>30 |
|                   |               |  |                             |         |
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| SHEET NUM. |     |       |     |     |     |     |     |     |     |     | PART.     | ALT | ITEM | ITEM  | GRAND | UNIT | DESCRIPTION   | SEE       | CALCULATED      | DGO | CHECKED | JW |  |
|------------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----------|-----|------|-------|-------|------|---|-----------|-----------------|-----|---------|----|--|
| 11         | 12  | 13    | 14  | 15  | 20  | 21  | 22  | 23  | 24  | 25  | 01/MPO/OT | (X) |      | EXT   | TOTAL |      |   | SHEET NO. |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      | MAINTENANCE OF TRAFFIC  |           | GENERAL SUMMARY |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     | 100       |     | 614  | 11110 | 100   | hour | LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE          |           |                 |     |         |    |  |
|            |     | 500   |     |     |     |     |     |     |     |     | 500       |     | 622  | 41001 | 500   | FT   | PORTABLE BARRIER, 32", AS PER PLAN                              | 5         |                 |     |         |    |  |
|            |     | 12    |     |     |     |     |     |     |     |     | 12        |     | 614  | 13310 | 12    | EACH | BARRIER REFLECTOR, TYPE 1                                       |           |                 |     |         |    |  |
|            |     | 12    |     |     |     |     |     |     |     |     | 12        |     | 614  | 13350 | 12    | EACH | OBJECT MARKER, ONE WAY  |           |                 |     |         |    |  |
|            |     | 2     |     |     |     |     |     |     |     |     | 2         |     | 614  | 12336 | 2     | EACH | WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)                    |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      |   |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      | ROADWAY   |           |                 |     |         |    |  |
|            |     |       |     |     |     | 1   |     |     |     |     | LS        |     | 201  | 11001 | LS    |      | CLEARING AND GRUBBING, AS PER PLAN                              | 5         |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     | 1         |     | 202  | 98100 | 1     | EACH | REMOVAL MISC.:PARKING LOT SIGN SUPPORT, FOR STORAGE             | 21        |                 |     |         |    |  |
|            |     |       |     | 70  |     |     |     |     |     |     | 70        |     | 606  | 15050 | 70    | FT   | GUARDRAIL , TYPE MGS  |           |                 |     |         |    |  |
|            |     |       |     | 1   |     |     |     |     |     |     | 1         |     | 606  | 26150 | 1     | EACH | ANCHOR ASSEMBLY, MGS TYPE E                                     |           |                 |     |         |    |  |
|            |     |       |     | 1   |     |     |     |     |     |     | 1         |     | 606  | 26550 | 1     | EACH | ANCHOR ASSEMBLY, MGS TYPE T                                     |           |                 |     |         |    |  |
| 100        | 95  |       |     |     | 50  | 50  | 100 | 50  | 50  |     | 495       |     | 608  | 12000 | 495   | SF   | 5" CONCRETE WALK  |           |                 |     |         |    |  |
|            |     |       |     |     |     |     | 14  |     |     |     | 14        |     | 609  | 54000 | 14    | SY   | 6" CONCRETE TRAFFIC ISLAND                                      |           |                 |     |         |    |  |
| 75         | 50  | 225   | 425 | 170 |     |     |     |     |     |     | 945       |     | 659  | 00511 | 945   | SY   | SEEDING AND MULCHING, CLASS 2, AS PER PLAN                      | 5         |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      |   |           |                 |     |         |    |  |
|            |     |       |     |     | 1   | 1   |     | 2   | 2   |     | 6         |     | 625  | 00450 | 6     | EACH | TRAFFIC CONTROL   |           |                 |     |         |    |  |
|            |     |       |     |     | 3   | 5   | 4   |     |     |     | 12        |     | 625  | 00460 | 12    | EACH | CONNECTION, FUSED PULL APART                                    |           |                 |     |         |    |  |
| 250        |     |       |     | 920 |     |     |     |     |     |     | 1,170     |     | 625  | 23308 | 1,170 | FT   | CONNECTION, UNFUSED PULL APART                                  |           |                 |     |         |    |  |
|            | 120 | 980   |     |     |     |     |     |     |     |     | 1,100     |     | 625  | 23100 | 1,100 | FT   | DISTRIBUTION CABLE, MISC.: NO. 1/0 AWG, 600 VOLT                |           |                 |     |         |    |  |
|            |     |       |     |     | 100 | 150 | 80  | 50  | 50  |     | 430       |     | 625  | 23400 | 430   | FT   | NO. 2 AWG 600 VOLT DISTRIBUTION CABLE                           |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     | 800 | 800       |     | 625  | 25101 | 800   | FT   | NO. 10 AWG POLE AND BRACKET CABLE                               |           |                 |     |         |    |  |
|            |     |       |     |     | 225 | 60  | 60  |     |     |     | 345       |     | 625  | 25300 | 345   | FT   | CONDUIT, 1", 725.04, AS PER PLAN                                | 25        |                 |     |         |    |  |
|            |     |       |     |     |     | 190 | 70  |     |     |     | 260       |     | 625  | 25300 | 345   | FT   | CONDUIT, 1-1/2", 725.04   |           |                 |     |         |    |  |
|            |     | 1,550 |     |     |     |     |     |     |     |     | 260       |     | 625  | 25400 | 260   | FT   | CONDUIT, 2", 725.04   |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     | 1,550     |     | 625  | 25920 | 1,550 | FT   | CONDUIT, MISC.: 4" RIGID METAL, MULTICELL, AS PER PLAN          | 5         |                 |     |         |    |  |
|            |     |       |     | 20  |     |     |     |     | 125 |     | 145       |     | 625  | 25410 | 145   | FT   | CONDUIT, 2", 725.052  |           |                 |     |         |    |  |
|            |     |       |     |     | 100 |     |     | 70  |     |     | 170       |     | 625  | 25500 | 170   | FT   | CONDUIT, 3", 725.04   |           |                 |     |         |    |  |
| 55         |     | 45    |     | 20  |     |     |     |     |     |     | 120       |     | 625  | 25506 | 120   | FT   | CONDUIT, 3", 725.052  |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     | 70  | 135 |     | 205       |     | 625  | 25802 | 205   | FT   | CONDUIT, CONCRETE ENCASED, 2", 725.052                          |           |                 |     |         |    |  |
|            | 80  |       |     |     |     |     |     |     |     |     | 80        |     | 625  | 25908 | 80    | FT   | CONDUIT, JACKED OR DRILLED, 725.052, 4"                         |           |                 |     |         |    |  |
| 25         |     | 145   |     | 190 |     |     |     |     |     |     | 360       |     | 625  | 25902 | 360   | FT   | CONDUIT, JACKED OR DRILLED, 725.04, 3"                          |           |                 |     |         |    |  |
| 100        | 40  | 340   | 400 | 20  |     |     |     |     |     |     | 900       |     | 625  | 25750 | 900   | FT   | CONDUIT, 4", MULTICELL, 725.20 , EPC-40                         |           |                 |     |         |    |  |
|            | 40  |       | 30  | 190 |     |     |     |     |     |     | 260       |     | 625  | 25752 | 260   | FT   | CONDUIT, 4", MULTICELL, 725.20 , EPC-80, JACKED OR DRILLED      |           |                 |     |         |    |  |
| 65         | 40  | 330   | 380 | 20  |     | 15  |     |     |     |     | 850       |     | 625  | 29010 | 850   | FT   | TRENCH, 30" DEEP  |           |                 |     |         |    |  |
| 68         | 120 |       |     |     | 225 | 235 | 125 | 140 | 260 |     | 1,173     |     | 625  | 29600 | 1,173 | FT   | TRENCH IN PAVED AREA, TYPE B                                    |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      |   |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     | 16  | 16        |     | 625  | 29901 | 16    | EACH | JUNCTION BOX, AS PER PLAN                                       | 25        |                 |     |         |    |  |
|            |     | 4     |     |     |     |     |     |     |     |     | 4         |     | 625  | 29921 | 4     | EACH | STRUCTURE JUNCTION BOX, AS PER PLAN                             | 5         |                 |     |         |    |  |
|            |     |       |     |     | 4   | 3   | 5   | 3   | 4   |     | 19        |     | 625  | 30700 | 19    | EACH | PULL BOX, 725.08, 18"   |           |                 |     |         |    |  |
| 1          | 1   | 2     | 2   | 2   |     |     |     |     |     |     | 8         |     | 625  | 30710 | 8     | EACH | PULL BOX, 725.08, 32"   |           |                 |     |         |    |  |
| 2          | 2   | 3     |     | 2   |     |     |     |     |     |     | 9         |     | 625  | 30706 | 9     | EACH | PULL BOX, 725.08, 24"   |           |                 |     |         |    |  |
|            |     |       | 1   |     |     |     |     |     |     |     | 1         |     | 625  | 31600 | 1     | EACH | PULL BOX, MISC.: REUSE EXISTING PULL BOX                        | 5         |                 |     |         |    |  |
|            |     | 1     |     | 1   |     |     |     |     |     |     | 2         |     | 625  | 34001 | 2     | EACH | POWER SERVICE, AS PER PLAN, POLE MOUNTED (A)                    | 5         |                 |     |         |    |  |
| 1          |     |       |     |     |     |     |     |     |     |     | 1         |     | 625  | 34001 | 1     | EACH | POWER SERVICE, AS PER PLAN, POLE MOUNTED (B)                    | 5         |                 |     |         |    |  |
|            | 1   |       |     |     |     |     |     |     |     |     | 1         |     | 625  | 34001 | 1     | EACH | POWER SERVICE, AS PER PLAN, GROUND MOUNTED (A)                  | 5         |                 |     |         |    |  |
|            |     |       |     |     | 1   | 1   | 1   | 1   | 1   |     | 5         |     | 625  | 34001 | 5     | EACH | POWER SERVICE, AS PER PLAN, GROUND MOUNTED (B)                  | 5         |                 |     |         |    |  |
|            |     | 1     |     |     |     |     |     |     |     |     | 1         |     | 631  | 85030 | 1     | EACH | DISCONNECT SWITCH, 100 AMP                                      |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      |   |           |                 |     |         |    |  |
|            | 1   |       |     | 1   |     |     |     |     |     |     | 2         |     | 630  | 70045 | 2     | EACH | OVERHEAD SIGN SUPPORT, DMS PEDESTAL, AS PER PLAN                | 5         |                 |     |         |    |  |
|            |     | 1     |     |     |     |     |     |     |     |     | 1         |     | 630  | 70001 | 1     | EACH | OVERHEAD SIGN SUPPORT, DMS TRUSS, 80', AS PER PLAN              | 5         |                 |     |         |    |  |
| 1          |     |       |     |     |     |     |     |     |     |     | 1         |     | 630  | 70021 | 1     | EACH | OVERHEAD SIGN SUPPORT, DMS TRUSS, 115', AS PER PLAN             | 5         |                 |     |         |    |  |
|            | 1   |       |     | 1   |     |     |     |     |     |     | 2         |     | 630  | 70061 | 2     | EACH | CATWALK, DMS PEDESTAL, AS PER PLAN                              | 5         |                 |     |         |    |  |
| 1          |     | 1     |     |     |     |     |     |     |     |     | 2         |     | 630  | 70051 | 2     | EACH | CATWALK, DMS TRUSS, AS PER PLAN                                 | 5         |                 |     |         |    |  |
|            | 1   |       |     | 1   |     |     |     |     |     |     | 2         |     | 630  | 70082 | 2     | EACH | OVERHEAD SIGN SUPPORT FOUNDATION, DMS PEDESTAL                  |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     | 1         |     | 630  | 70080 | 1     | EACH | OVERHEAD SIGN SUPPORT FOUNDATION, DMS TRUSS                     |           |                 |     |         |    |  |
| 2          |     |       | 1   |     |     |     |     |     |     |     | 2         |     | 630  | 74500 | 2     | EACH | OVERHEAD SIGN SUPPORT, MISC.:FOUNDATION, DMS TRUSS, AS PER PLAN | 16        |                 |     |         |    |  |
|            |     | 1     |     |     |     |     |     |     |     |     | 1         |     | 630  | 74500 | 1     | EACH | OVERHEAD SIGN SUPPORT, MISC.: CONCRETE BARRIER MEDIAN OVERHEAD  | 6         |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      | SIGN SUPPORT FOUNDATION, DMS TRUSS, AS PER PLAN                 |           |                 |     |         |    |  |
|            |     |       |     |     |     |     | 100 |     |     | 960 | 1,060     |     | 632  | 66102 | 1,060 | FT   | POWER CABLE, 2 CONDUCTOR, NO. 10 AWG                            |           |                 |     |         |    |  |
|            |     |       |     |     | 960 | 670 | 750 | 150 | 660 |     | 3,190     |     | 632  | 68100 | 3,190 | FT   | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                             |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      |   |           |                 |     |         |    |  |
| 1          | 1   | 1     |     | 1   |     |     |     |     |     |     | 4         |     | 633  | 67100 | 4     | EACH | CABINET FOUNDATION  |           |                 |     |         |    |  |
| 1          | 1   | 1     |     | 1   |     |     |     |     |     |     | 4         |     | 633  | 67200 | 4     | EACH | CONTROLLER WORK PAD   |           |                 |     |         |    |  |
| 3          | 2   | 3     |     | 2   | 4   | 5   | 8   | 2   | 2   |     | 31        |     | 625  | 32000 | 31    | EACH | GROUND ROD  |           |                 |     |         |    |  |
|            |     |       |     |     |     |     |     |     |     |     |           |     |      |       |       |      |   |           |                 |     |         |    |  |
| 100        |     | 2,400 | 420 |     |     |     |     |     |     |     | 2,920     |     | 804  | 15010 | 2,920 | FT   | FIBER OPTIC CABLE, 24 FIBER                                     |           |                 |     |         |    |  |
| 1          |     | 1     | 1   |     |     |     |     |     |     |     | 3         |     | 804  | 34022 | 3     | EACH | FIBER TERMINATION PANEL, 24 FIBER                               |           |                 |     |         |    |  |
| 1          |     | 1     | 1   |     |     |     |     |     |     |     | 3         |     | 804  | 37002 | 3     | EACH | SPLICE ENCLOSURE, IN-LINE                                       |           |                 |     |         |    |  |

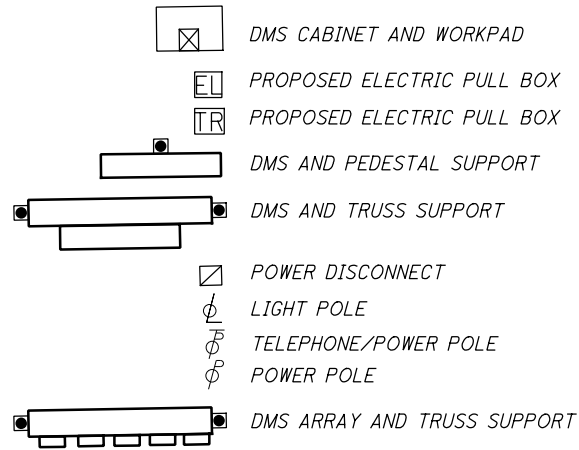
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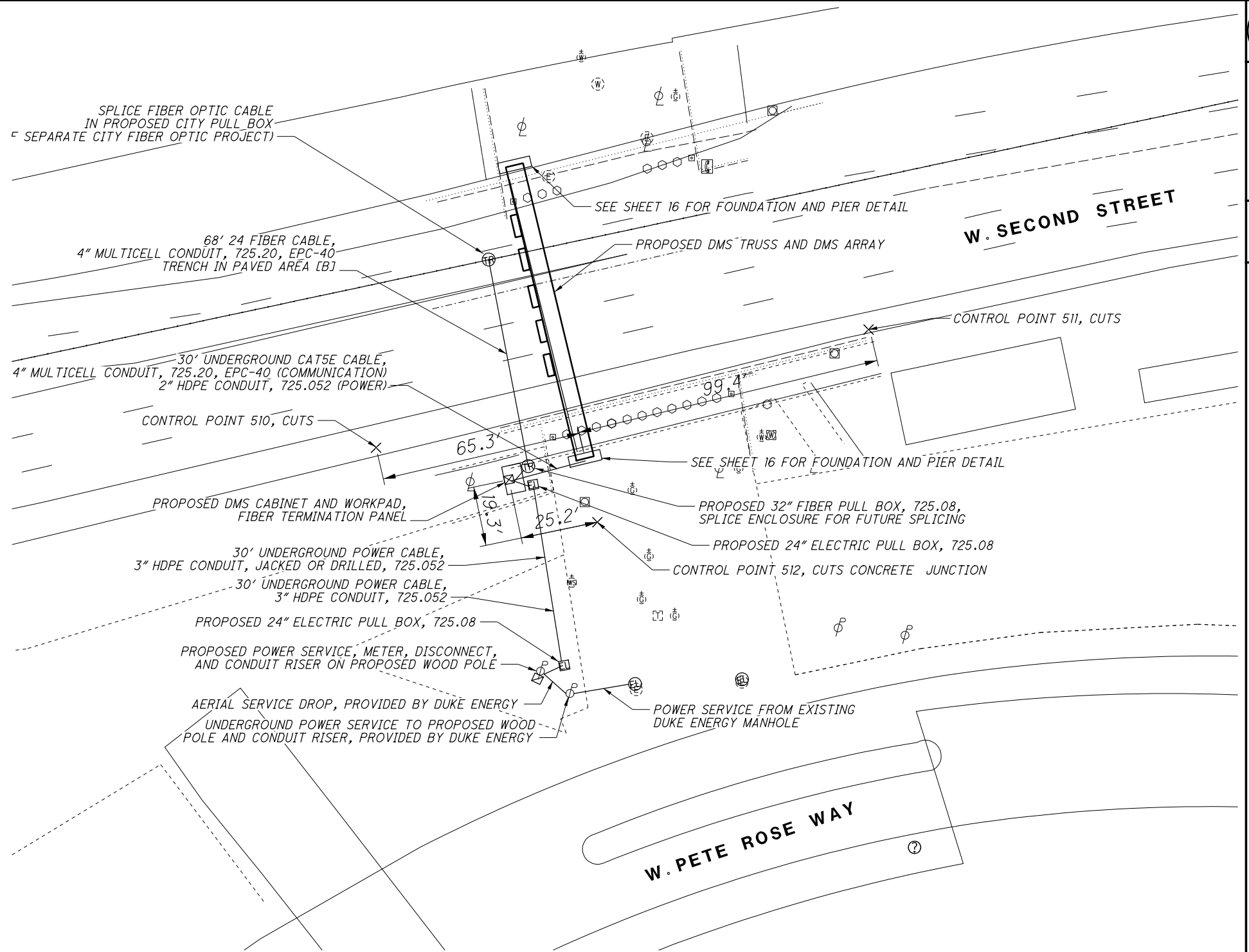


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| ITEM | DESCRIPTION   | UNIT | QUANTITY |
|------|---|------|----------|
| 659  | SEEDING AND MULCHING, CLASS 2, AS PER PLAN                      | SY   | 75       |
| 608  | 5" CONCRETE WALK  | SF   | 100      |
|      |   |      |          |
| 625  | DISTRIBUTION CABLE, MISC.: NO. 1/0 AWG, 600 VOLT                | FT   | 250      |
| 625  | CONDUIT, 3", 725.052  | FT   | 55       |
| 625  | CONDUIT, JACKED OR DRILLED, 725.052, 3"                         | FT   | 25       |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-40                         | FT   | 100      |
| 625  | TRENCH, 30" DEEP  | FT   | 65       |
| 625  | TRENCH IN PAVED AREA, TYPE B                                    | FT   | 68       |
|      |   |      |          |
| 625  | PULL BOX, 725.08, 32"   | EACH | 1        |
| 625  | PULL BOX, 725.08, 24"   | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, POLE MOUNTED (B)                    | EACH | 1        |
|      |   |      |          |
| 630  | OVERHEAD SIGN SUPPORT, DMS TRUSS, 115', AS PER PLAN             | EACH | 1        |
| 630  | CATWALK, DMS TRUSS, AS PER PLAN                                 | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT, MISC.:FOUNDATION, DMS TRUSS, AS PER PLAN | EACH | 2        |
|      |   |      |          |
| 633  | CABINET FOUNDATION  | EACH | 1        |
| 633  | CONTROLLER WORK PAD   | EACH | 1        |
| 625  | GROUND ROD  | EACH | 3        |
|      |   |      |          |
| 804  | FIBER OPTIC CABLE, 24 FIBER                                     | EACH | 100      |
| 804  | FIBER TERMINATION PANEL, 24 FIBER                               | EACH | 1        |
| 804  | SPLICE ENCLOSURE  | EACH | 1        |
| 809  | ETHERNET CABLE, OUTDOOR-RATED, CAT5E                            | FT   | 150      |
|      |   |      |          |
| 809  | ITS DEVICE, MISC.:OVERHEAD SIGN ARRAY, AS PER PLAN              | EACH | 1        |
| 809  | ITS CABINET - GROUND MOUNTED                                    | EACH | 1        |





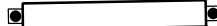






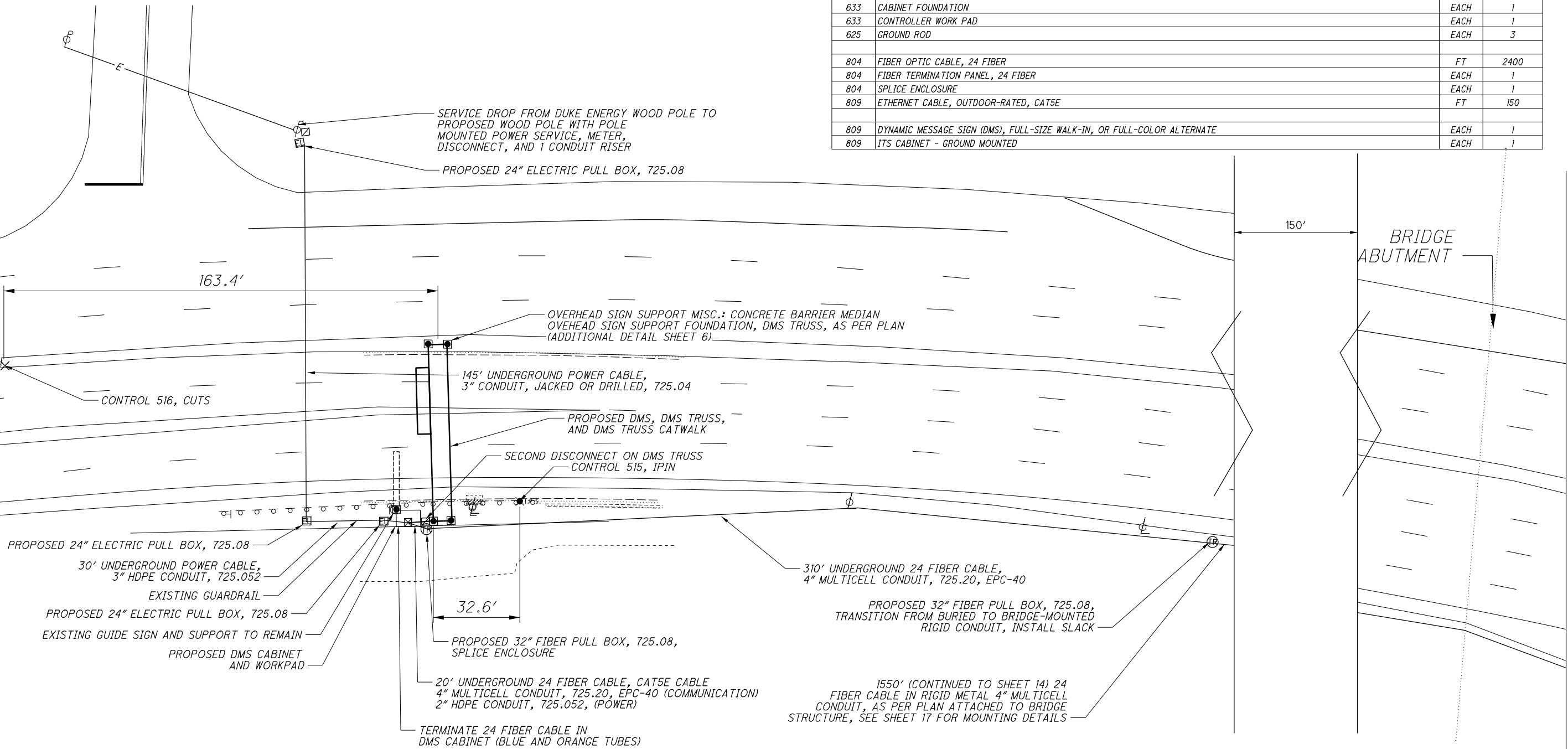
| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 659  | SEEDING AND MULCHING, CLASS 2, AS PER PLAN                             | SY   | 50       |
| 608  | 5" CONCRETE WALK   | SF   | 95       |
|      |  |      |          |
| 625  | NO. 2 AWG 600 VOLT DISTRIBUTION CABLE                                  | FT   | 120      |
| 625  | CONDUIT, JACKED OR DRILLED, 725.052, 4"                                | FT   | 80       |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-40                                | FT   | 40       |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-80, JACKED OR DRILLED             | FT   | 40       |
| 625  | TRENCH, 30" DEEP   | FT   | 40       |
| 625  | TRENCH IN PAVED AREA, TYPE B   | FT   | 120      |
|      |  |      |          |
| 625  | PULL BOX, 725.08, 32"  | EACH | 1        |
| 625  | PULL BOX, 725.08, 24"  | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, GROUND MOUNTED                             | EACH | 1        |
|      |  |      |          |
| 630  | OVERHEAD SIGN SUPPORT, DMS PEDESTAL, AS PER PLAN                       | EACH | 1        |
| 630  | CATWALK, DMS PEDESTAL, AS PER PLAN                                     | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT FOUNDATION, DMS PEDESTAL                         | EACH | 1        |
|      |  |      |          |
| 633  | CABINET FOUNDATION   | EACH | 1        |
| 633  | CONTROLLER WORK PAD  | EACH | 1        |
| 625  | GROUND ROD   | EACH | 2        |
|      |  |      |          |
| 804  | FIBER OPTIC CABLE, 24 FIBER  | EACH | 100      |
| 804  | FIBER TERMINATION PANEL, 24 FIBER                                      | EACH | 1        |
| 804  | SPLICE ENCLOSURE   | EACH | 1        |
| 809  | ETHERNET CABLE, OUTDOOR-RATED, CAT5E                                   | FT   | 150      |
|      |  |      |          |
| 809  | DYNAMIC MESSAGE SIGN (DMS), FULL-SIZE WALK-IN, OR FULL-COLOR ALTERNATE | EACH | 1        |
| 809  | ITS CABINET - GROUND MOUNTED   | EACH | 1        |



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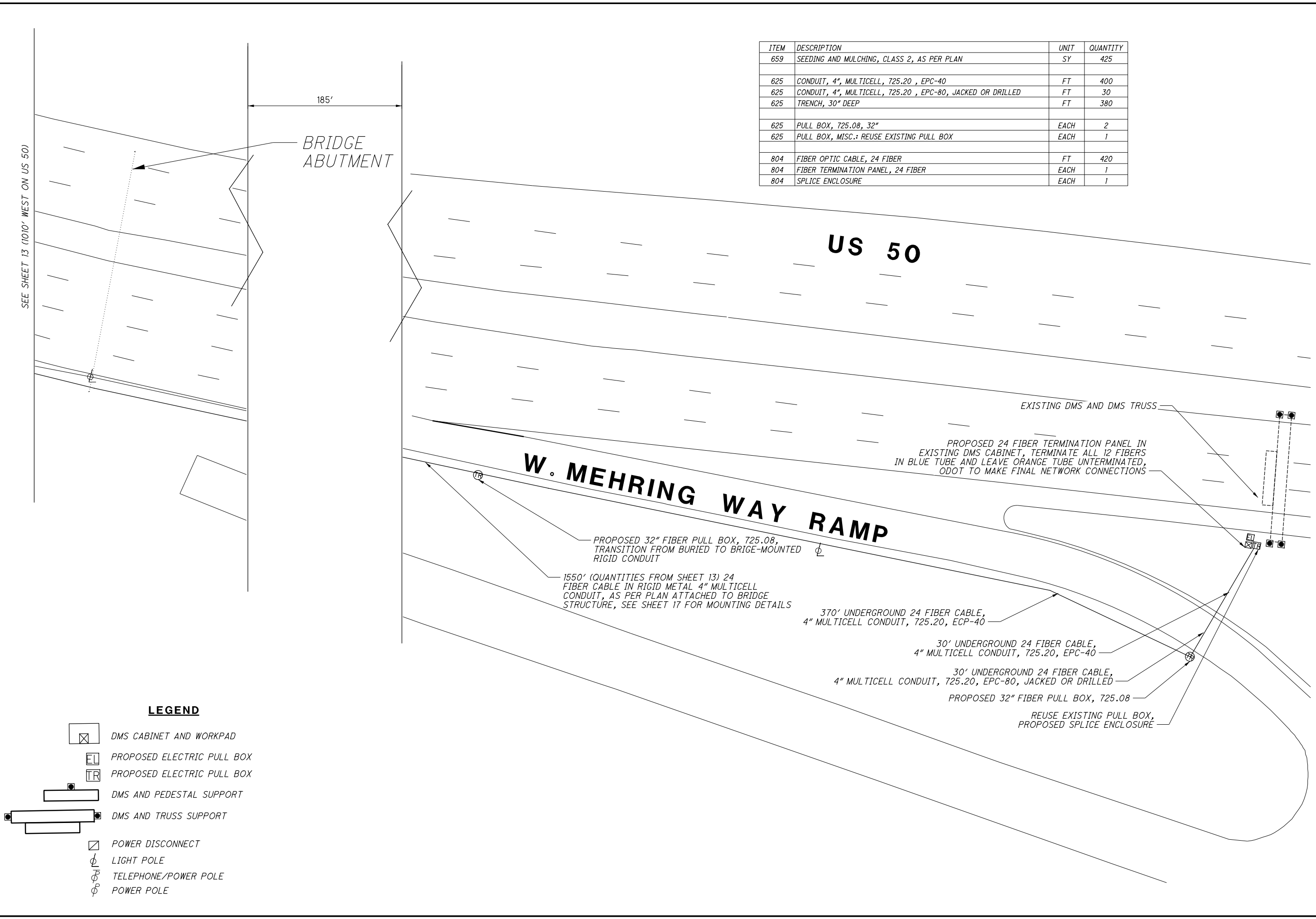
-  DMS CABINET AND WORKPAD
-  PROPOSED ELECTRIC PULL BOX
-  PROPOSED ELECTRIC PULL BOX
-  DMS AND PEDESTAL SUPPORT
-  DMS AND TRUSS SUPPORT
-  POWER DISCONNECT
-  LIGHT POLE
-  TELEPHONE/POWER POLE
-  POWER POLE



| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 622  | PORTABLE BARRIER, 32", AS PER PLAN   | FT   | 500      |
| 614  | BARRIER REFLECTOR, TYPE 1  | EACH | 12       |
| 614  | OBJECT MARKER, ONE WAY   | EACH | 12       |
| 614  | WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)   | EACH | 2        |
| 659  | SEEDING AND MULCHING, CLASS 2, AS PER PLAN   | SY   | 225      |
| 625  | NO. 2 AWG 600 VOLT DISTRIBUTION CABLE  | FT   | 980      |
| 625  | CONDUIT, MISC.: 4" RIGID METAL, MULTICELL, AS PER PLAN   | FT   | 1550     |
| 625  | CONDUIT, 3", 725.052   | FT   | 45       |
| 625  | CONDUIT, JACKED OR DRILLED, 725.04, 3"   | FT   | 145      |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-40  | FT   | 340      |
| 625  | TRENCH, 30" DEEP   | FT   | 330      |
| 625  | STRUCTURE JUNCTION BOX, AS PER PLAN  | EACH | 4        |
| 625  | PULL BOX, 725.08, 32"  | EACH | 2        |
| 625  | PULL BOX, 725.08, 24"  | EACH | 3        |
| 625  | DISCONNECT SWITCH, 100 AMP   | EACH | 1        |
| 625  | POWER SERVICE, AS PER PLAN, POLE MOUNTED (A)   | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT, DMS TRUSS, 80', AS PER PLAN   | EACH | 1        |
| 630  | CATWALK, DMS TRUSS, AS PER PLAN  | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT FOUNDATION, DMS TRUSS  | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT, MISC.: CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, DMS TRUSS, AS PER PLAN | EACH | 1        |
| 633  | CABINET FOUNDATION   | EACH | 1        |
| 633  | CONTROLLER WORK PAD  | EACH | 1        |
| 625  | GROUND ROD   | EACH | 3        |
| 804  | FIBER OPTIC CABLE, 24 FIBER  | FT   | 2400     |
| 804  | FIBER TERMINATION PANEL, 24 FIBER  | EACH | 1        |
| 804  | SPLICE ENCLOSURE   | EACH | 1        |
| 809  | ETHERNET CABLE, OUTDOOR-RATED, CAT5E   | FT   | 150      |
| 809  | DYNAMIC MESSAGE SIGN (DMS), FULL-SIZE WALK-IN, OR FULL-COLOR ALTERNATE   | EACH | 1        |
| 809  | ITS CABINET - GROUND MOUNTED   | EACH | 1        |

SEE SHEET 14 (1010' EAST ON US 50)

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| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 659  | SEEDING AND MULCHING, CLASS 2, AS PER PLAN                 | SY   | 425      |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-40                    | FT   | 400      |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-80, JACKED OR DRILLED | FT   | 30       |
| 625  | TRENCH, 30" DEEP   | FT   | 380      |
| 625  | PULL BOX, 725.08, 32"                                      | EACH | 2        |
| 625  | PULL BOX, MISC.: REUSE EXISTING PULL BOX                   | EACH | 1        |
| 804  | FIBER OPTIC CABLE, 24 FIBER                                | FT   | 420      |
| 804  | FIBER TERMINATION PANEL, 24 FIBER                          | EACH | 1        |
| 804  | SPLICE ENCLOSURE   | EACH | 1        |

LEGEND

- DMS CABINET AND WORKPAD
- PROPOSED ELECTRIC PULL BOX
- PROPOSED ELECTRIC PULL BOX
- DMS AND PEDESTAL SUPPORT
- DMS AND TRUSS SUPPORT
- POWER DISCONNECT
- LIGHT POLE
- TELEPHONE/POWER POLE
- POWER POLE

CALCULATED  
DGO  
CHECKED  
JW

DYNAMIC MESSAGE SIGN PLANS  
US 50 EASTBOUND

HAM BANKS DMS  
PID 104409





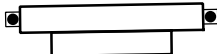




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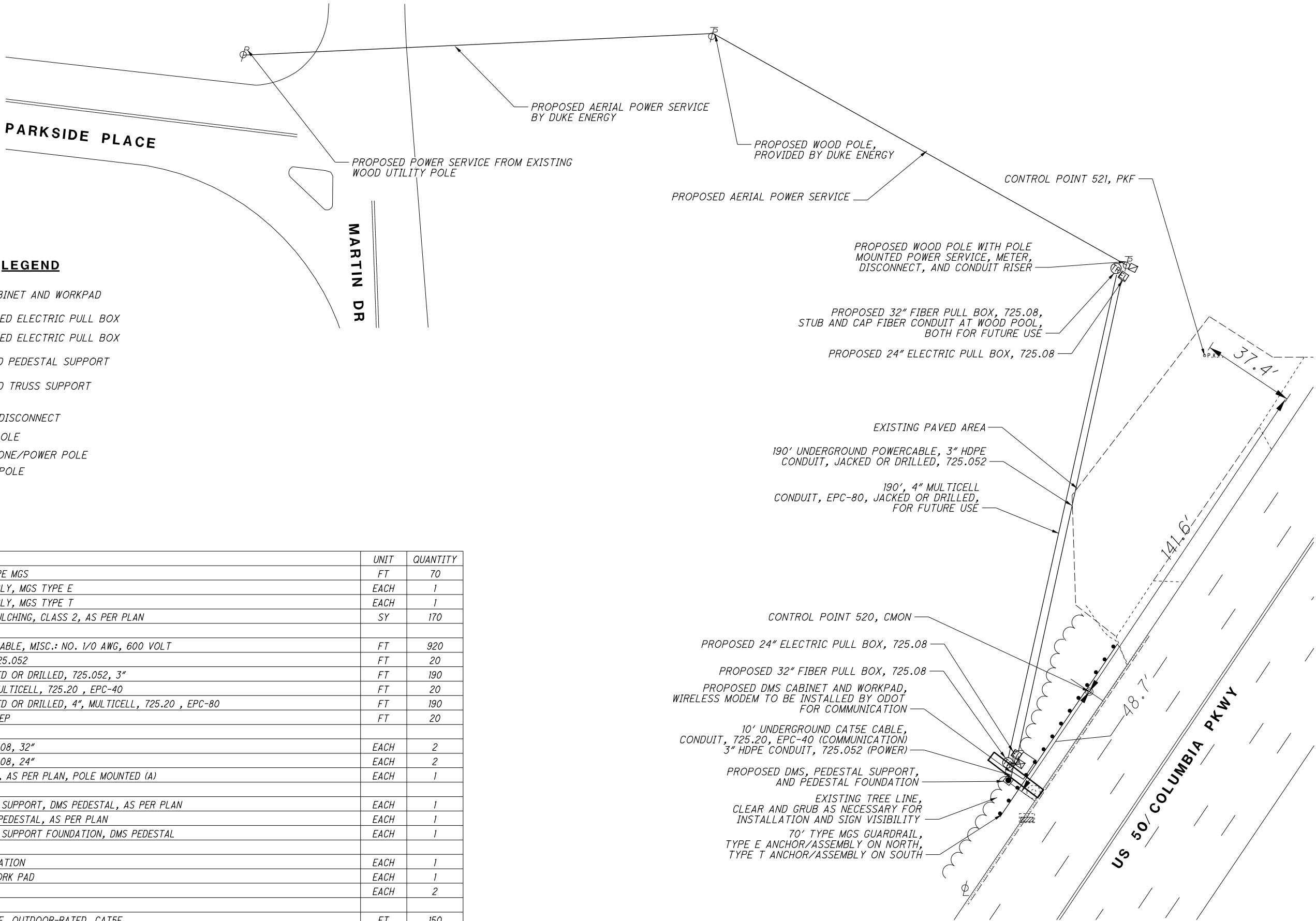


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| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 606  | GUARDRAIL, TYPE MGS  | FT   | 70       |
| 606  | ANCHOR ASSEMBLY, MGS TYPE E  | EACH | 1        |
| 606  | ANCHOR ASSEMBLY, MGS TYPE T  | EACH | 1        |
| 659  | SEEDING AND MULCHING, CLASS 2, AS PER PLAN                             | SY   | 170      |
| 625  | DISTRIBUTION CABLE, MISC.: NO. 1/0 AWG, 600 VOLT                       | FT   | 920      |
| 625  | CONDUIT, 3", 725.052   | FT   | 20       |
| 625  | CONDUIT, JACKED OR DRILLED, 725.052, 3"                                | FT   | 190      |
| 625  | CONDUIT, 4", MULTICELL, 725.20 , EPC-40                                | FT   | 20       |
| 625  | CONDUIT, JACKED OR DRILLED, 4", MULTICELL, 725.20 , EPC-80             | FT   | 190      |
| 625  | TRENCH, 30" DEEP   | FT   | 20       |
| 625  | PULL BOX, 725.08, 32"  | EACH | 2        |
| 625  | PULL BOX, 725.08, 24"  | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, POLE MOUNTED (A)                           | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT, DMS PEDESTAL, AS PER PLAN                       | EACH | 1        |
| 630  | CATWALK, DMS PEDESTAL, AS PER PLAN                                     | EACH | 1        |
| 630  | OVERHEAD SIGN SUPPORT FOUNDATION, DMS PEDESTAL                         | EACH | 1        |
| 633  | CABINET FOUNDATION   | EACH | 1        |
| 633  | CONTROLLER WORK PAD  | EACH | 1        |
| 625  | GROUND ROD   | EACH | 2        |
| 809  | ETHERNET CABLE, OUTDOOR-RATED, CAT5E                                   | FT   | 150      |
| 809  | DYNAMIC MESSAGE SIGN (DMS), FULL-SIZE WALK-IN, OR FULL-COLOR ALTERNATE | EACH | 1        |
| 809  | ITS CABINET - GROUND MOUNTED   | EACH | 1        |

LEGEND

-  DMS CABINET AND WORKPAD
-  PROPOSED ELECTRIC PULL BOX
-  PROPOSED ELECTRIC PULL BOX
-  DMS AND PEDESTAL SUPPORT
-  DMS AND TRUSS SUPPORT
-  POWER DISCONNECT
-  LIGHT POLE
-  TELEPHONE/POWER POLE
-  POWER POLE





**DESIGN SPECIFICATION:**

DESIGN DATA:

NOTES:

1. LAP LENGTH FOR NO. 5 BAR = 2'-6".
2. ALL EXPOSED SURFACES OF PIER CAP AND COLUMN SHALL BE SEALED WITH "ITEM 512 - SEALING OF CONCRETE SURFACES EPOXY-URETHANE)".
3. FOR ANCHOR BOLT SIZE AND BOLT PATTERN, SEE STANDARD DRAWING ITS-35.12.
4. FOR CONDUIT DETAILS, SEE STANDARD DRAWING ITS-35.12.
5. FOR TRUSS DETAILS, SEE STANDARD DRAWING ITS-35.14.
6. FOR TRUSS CATWALK DETAILS, SEE STANDARD DRAWING ITS-35.11.



*NORTH PIER:*

*SOUTH PIER:*

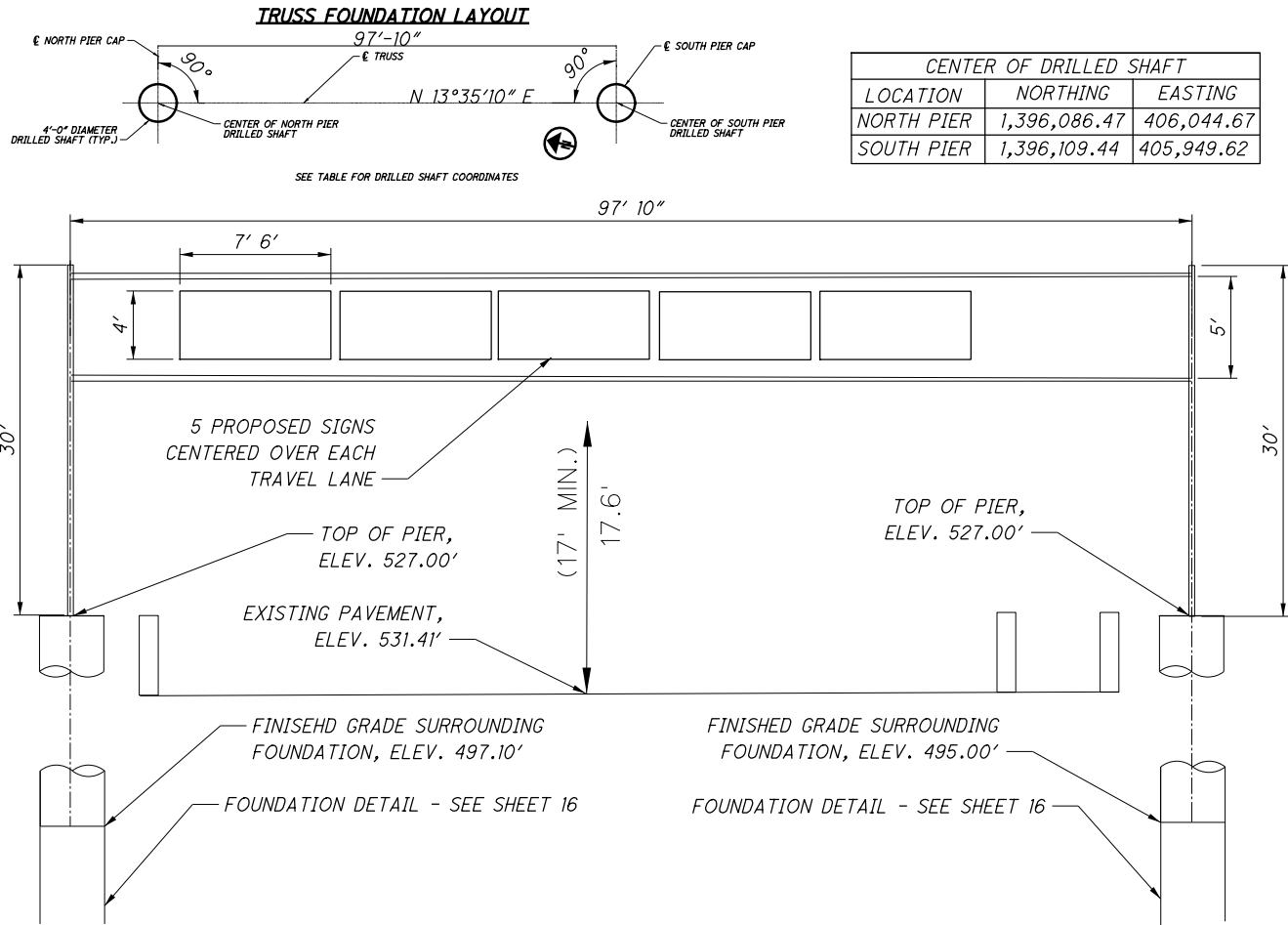
THE MAXIMUM FACTORED LOAD TO BE SUPPORTED BY DRILLED SHAFT IS 83.56 KIPS AT THE SOUTH PIERS. THIS LOAD IS RESISTED BY SIDE RESISTANCE BETWEEN 3 FEET BELOW THE TOP AND 5 FEET ABOVE THE BOTTOM OF THE DRILLED SHAFT. THE FACTORED RESISTANCE DEVELOPED BY SIDE RESISTANCE IS 83.60 KIPS.

① CONDUIT DIAMETERS REFLECT THE DIMENSIONS  
FOR RIGID GALVANIZED STEEL

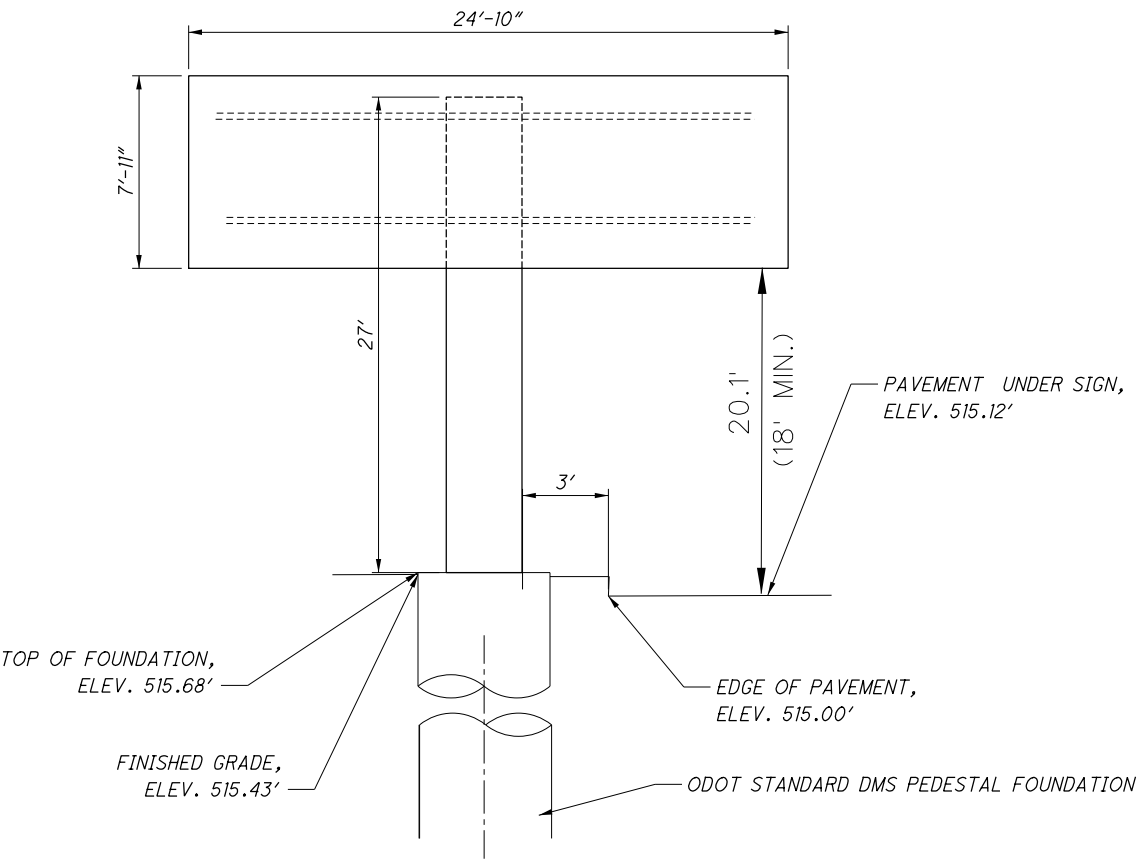


ELEVATION VIEWS (NOT TO SCALE)

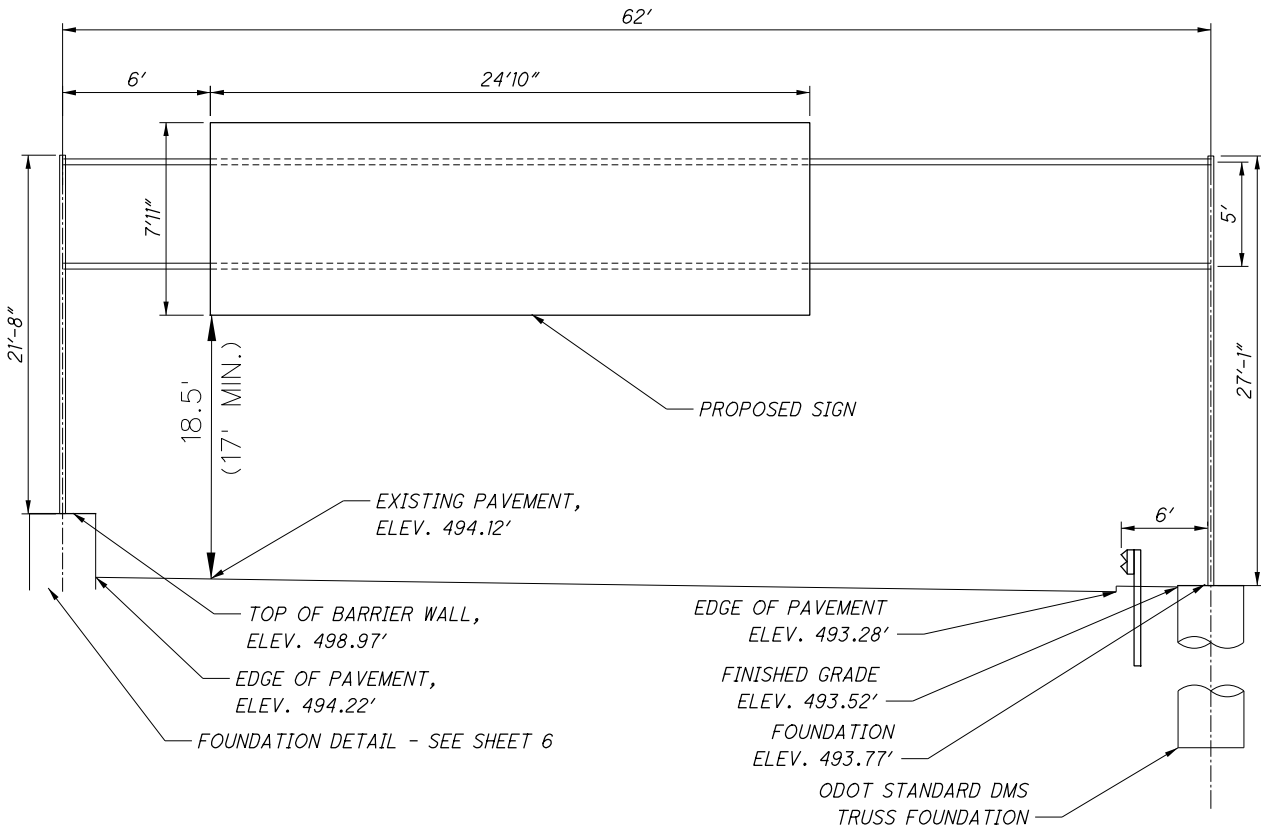
W. SECOND STREET (LOOKING EAST)



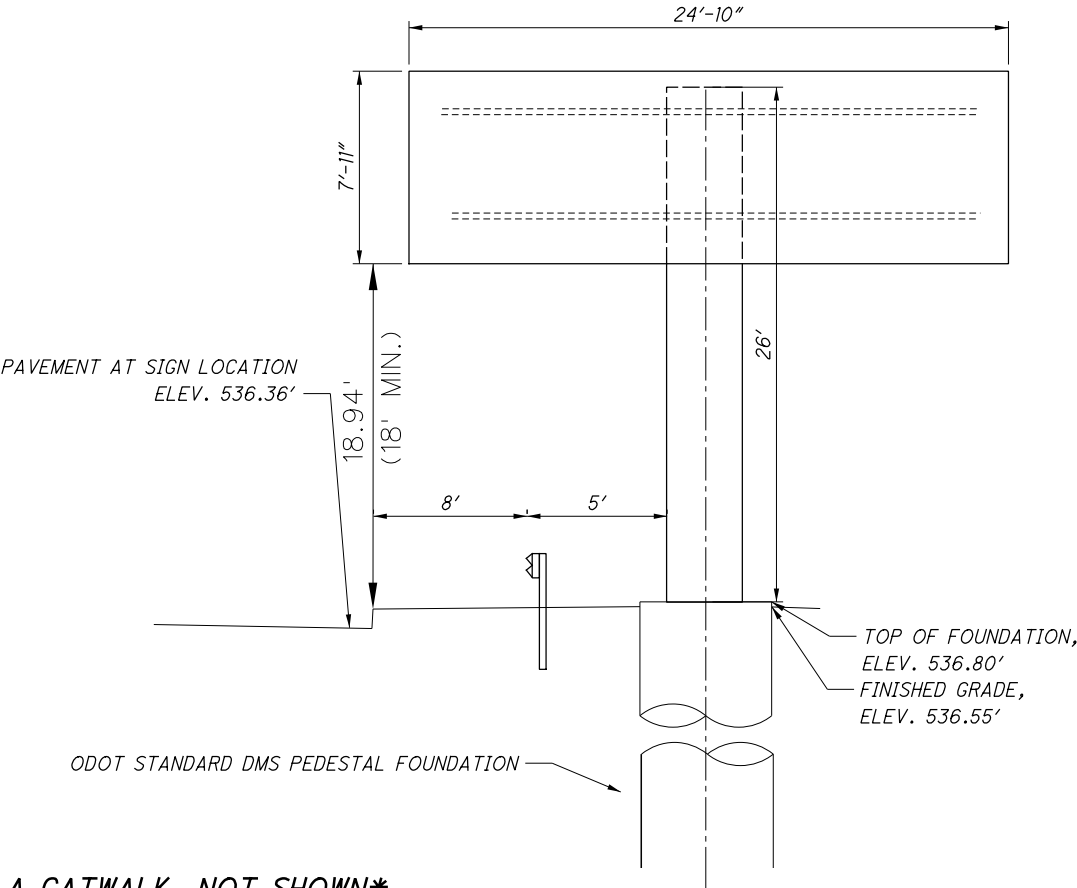
THIRD STREET (LOOKING WEST)



US 50 EB (W. OF CITY, LOOKING EAST)

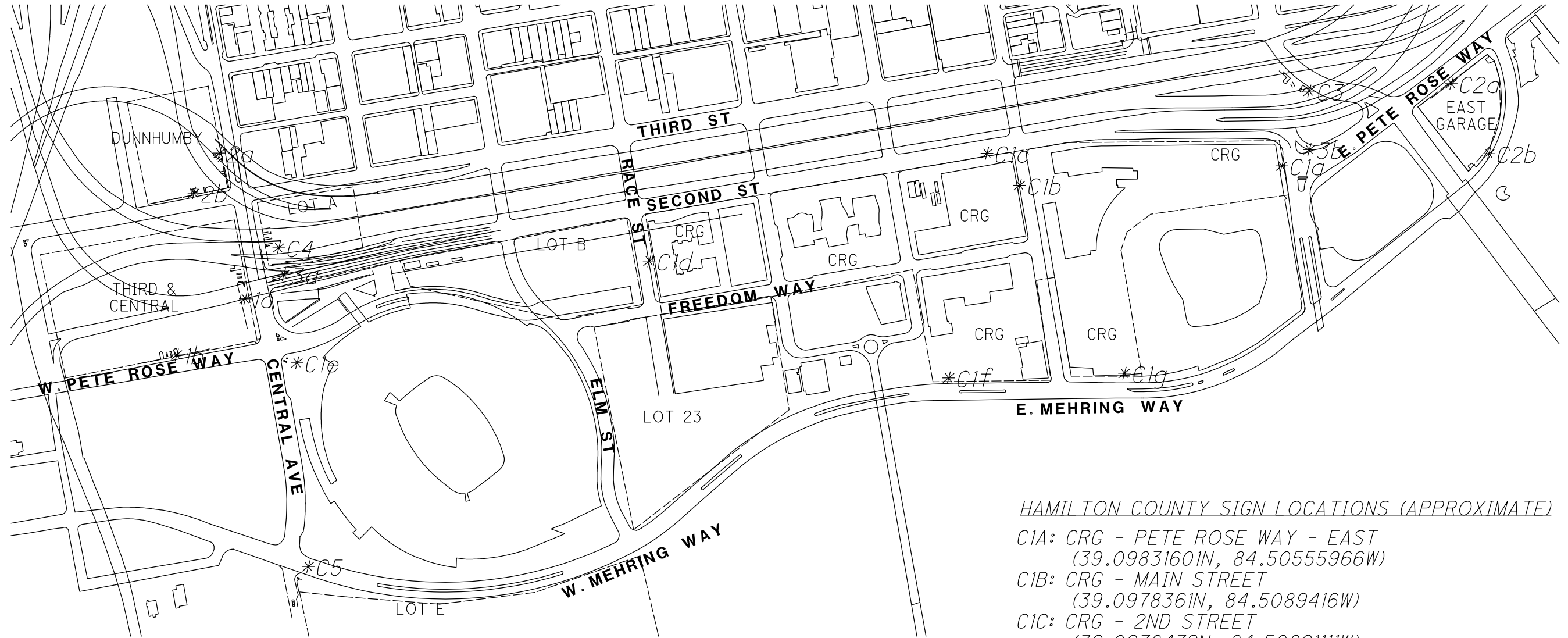


US 50 WESTBOUND (E. OF CITY, LOOKING WEST)



\*EACH SUPPORT INCLUDES A CATWALK, NOT SHOWN\*





CITY OF CINCINNATI SIGN LOCATIONS (APPROXIMATE)

- 1A: THIRD & CENTRAL LOT (LOT 1), CENTRAL AVE ACCESS  
(39.09687054N, 84.51856966W)  
1B: THIRD & CENTRAL LOT (LOT 1), PETE ROSE WAY ACCESS  
(39.09623488N, 84.51947314W)  
2A: DUNHUMBY LOT, CENTRAL AVE ACCESS  
(39.09846755N, 84.51907932W)  
2B: DUNHUMBY LOT, THIRD STREET AT JOHN STREET ACCESS  
(39.09777649N, 84.5197902W)  
3A: TRANSIT CENTER, WESTERN APRON ON CENTRAL AVE  
(39.09688888N, 84.51838425W)  
3B: TRANSIT CENTER, EASTERN APRON AT SECOND ST & E.  
PETE ROSE WAY (39.09845044N, 84.50548224W)

HAMILTON COUNTY SIGN LOCATIONS (APPROXIMATE)

- C1A: CRG - PETE ROSE WAY - EAST  
(39.09831601N, 84.50555966W)  
C1B: CRG - MAIN STREET  
(39.0978361N, 84.5089416W)  
C1C: CRG - 2ND STREET  
(39.0978472N, 84.5089111W)  
C1D: CRG - RACE STREET - NORTH  
(39.09635241N, 84.51322292W)  
C1E: CRG - PETE ROSE WAY - WEST  
(39.0961944N, 84.5185277W)  
C1F: CRG - W. MEHRING WAY, BIKE SHOP  
(39.09610838N, 84.50959537W)  
C1G: CRG - E. MEHRING WAY, PLAYERS ENTRANCE  
(39.09626102N, 84.50746996W)  
C2A: EAST GARAGE, NORTH ACCESS  
(39.09913217N, 84.50352526W)  
C2B: EAST GARAGE, SOUTH ACCESS  
(39.09834118N, 84.50299839W)  
C3: BROADWAY LOT (BROADWAY ENTRANCE)  
(39.0989972N, 84.5054722W)  
C4: LOT A (CENTRAL ENTRANCE)  
(39.0972861N, 84.5183111W)  
C5: LOT E  
(39.093994N, 84.5179388W)



CALCULATED  
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DYNAMIC MESSAGE SIGN PLANS  
PARKING MANAGEMENT SIGNS

HAM BANKS DMS  
PID 104409

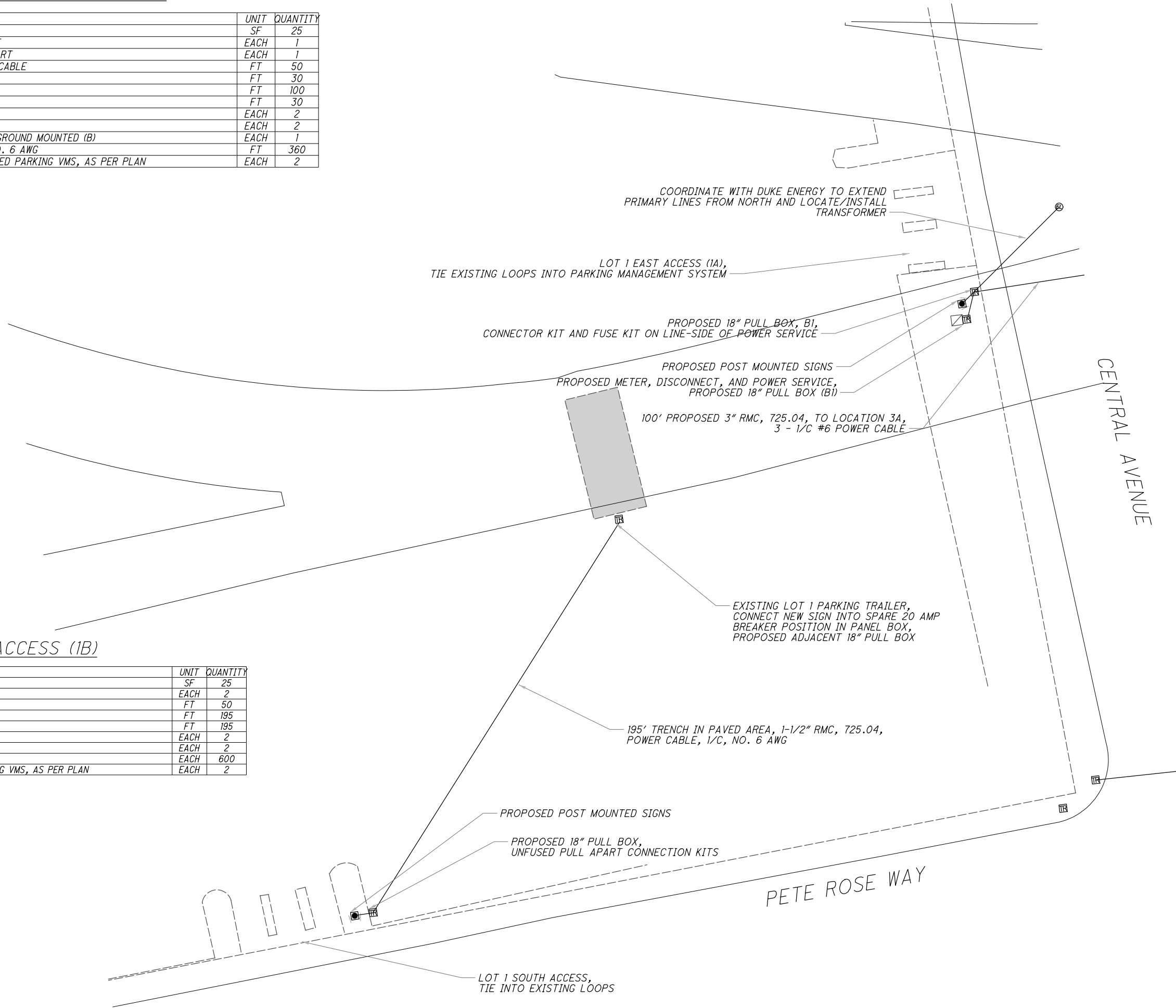
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LOT 1 EAST ACCESS (1A)

| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 608  | 5" CONCRETE WALK   | SF   | 25       |
| 625  | CONNECTION, FUSED PULL APART                             | EACH | 1        |
| 625  | CONNECTION, UNFUSED PULL APART                           | EACH | 1        |
| 625  | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50       |
| 625  | CONDUIT, 1-1/2", 725.04                                  | FT   | 30       |
| 625  | CONDUIT, 3", 725.04                                      | FT   | 100      |
| 625  | TRENCH IN PAVED AREA, TYPE B                             | FT   | 30       |
| 625  | PULL BOX, 725.08, 18"                                    | EACH | 2        |
| 625  | GROUND ROD   | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, GROUND MOUNTED (B)           | EACH | 1        |
| 632  | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                      | FT   | 360      |
| 809  | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 2        |

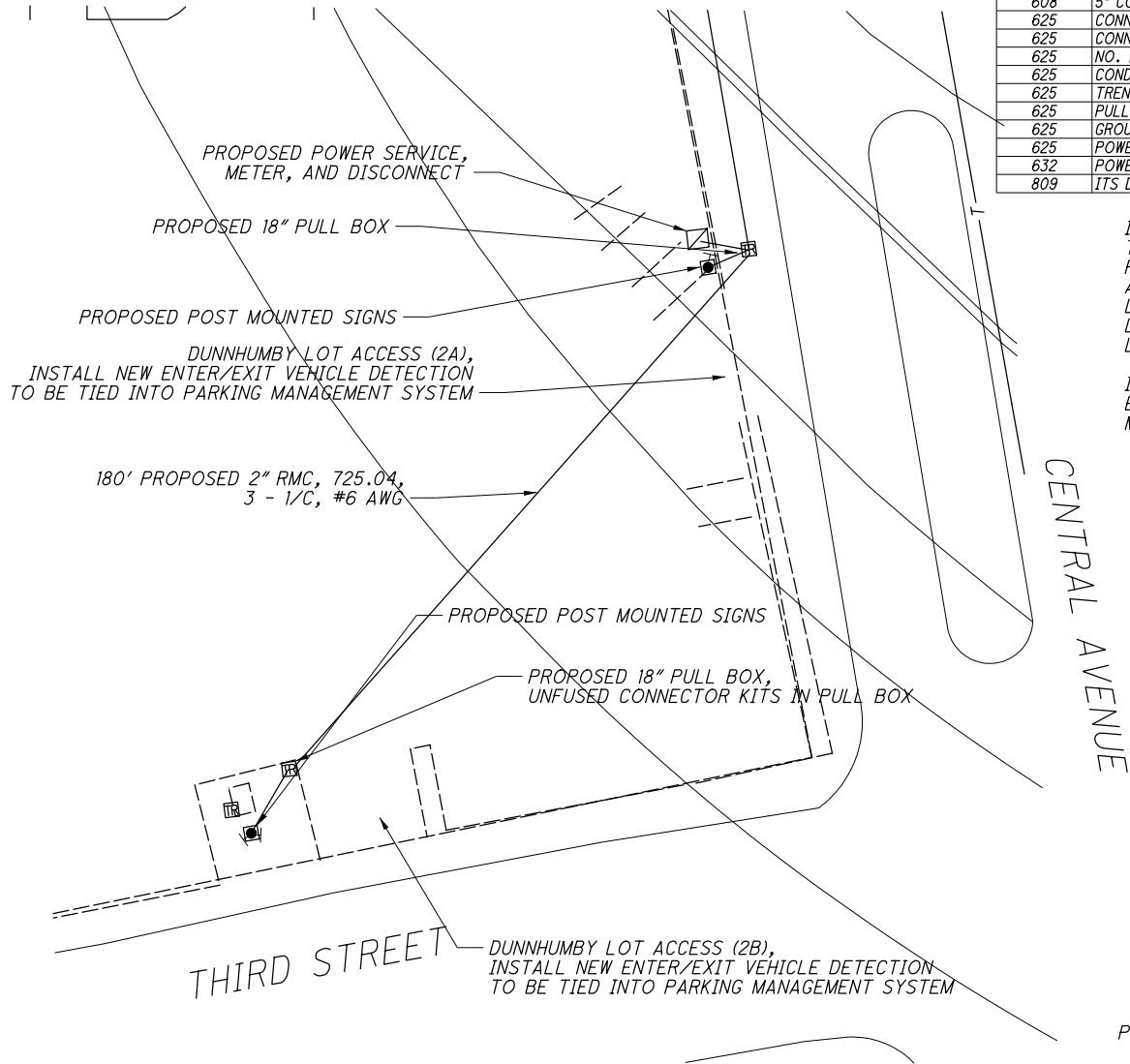
LOT 1 SOUTH ACCESS (1B)

| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 608  | 5" CONCRETE WALK   | SF   | 25       |
| 625  | CONNECTION, UNFUSED PULL APART                           | EACH | 2        |
| 625  | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50       |
| 625  | CONDUIT, 1-1/2", 725.04                                  | FT   | 195      |
| 625  | TRENCH IN PAVED AREA, TYPE B                             | FT   | 195      |
| 625  | PULL BOX, 725.08, 18"                                    | EACH | 2        |
| 625  | GROUND ROD   | EACH | 2        |
| 630  | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                      | EACH | 600      |
| 809  | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 2        |



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DUNNHUMBY LOT LAYOUT



| DUNNHUMBY SOUTH ACCESS (2B) |  |      |          |
|-----------------------------|--|------|----------|
| ITEM                        | DESCRIPTION  | UNIT | QUANTITY |
| 608                         | 5" CONCRETE WALK   | SF   | 25       |
| 625                         | CONNECTION, UNFUSED PULL APART                           | EACH | 2        |
| 625                         | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50       |
| 625                         | CONDUIT, 2", 725.04                                      | FT   | 10       |
| 625                         | TRENCH IN PAVED AREA, TYPE B                             | FT   | 10       |
| 625                         | PULL BOX, 725.08, 18"                                    | EACH | 1        |
| 625                         | GROUND ROD   | EACH | 2        |
| 809                         | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 2        |

INSTALL SIGN AND ADJACENT PULLBOX, B2 AT LOT ENTRANCE 2B. PULL IN #6 AWG, RHH/RHW/USE FEEDERS FROM DISCONNECT INSTALLED AT ENTRANCE 2A TO NEW SIGN(S). PROVIDE CONNECTOR KITS IN ADJACENT PULLBOX B2 TO PROVIDE A DISCONNECTING MEANS. CONNECT SIGN 2 TO BREAKER CB2 IN PANEL INSTALLED AT THE CENTRAL AVENUE ACCESS.

INSTALL EITHER NEW INDUCTANCE LOOPS OR ALTERNATIVE MEANS OF VEHICLE DETECTION AND ALL NECESSARY EQUIPMENT TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM.

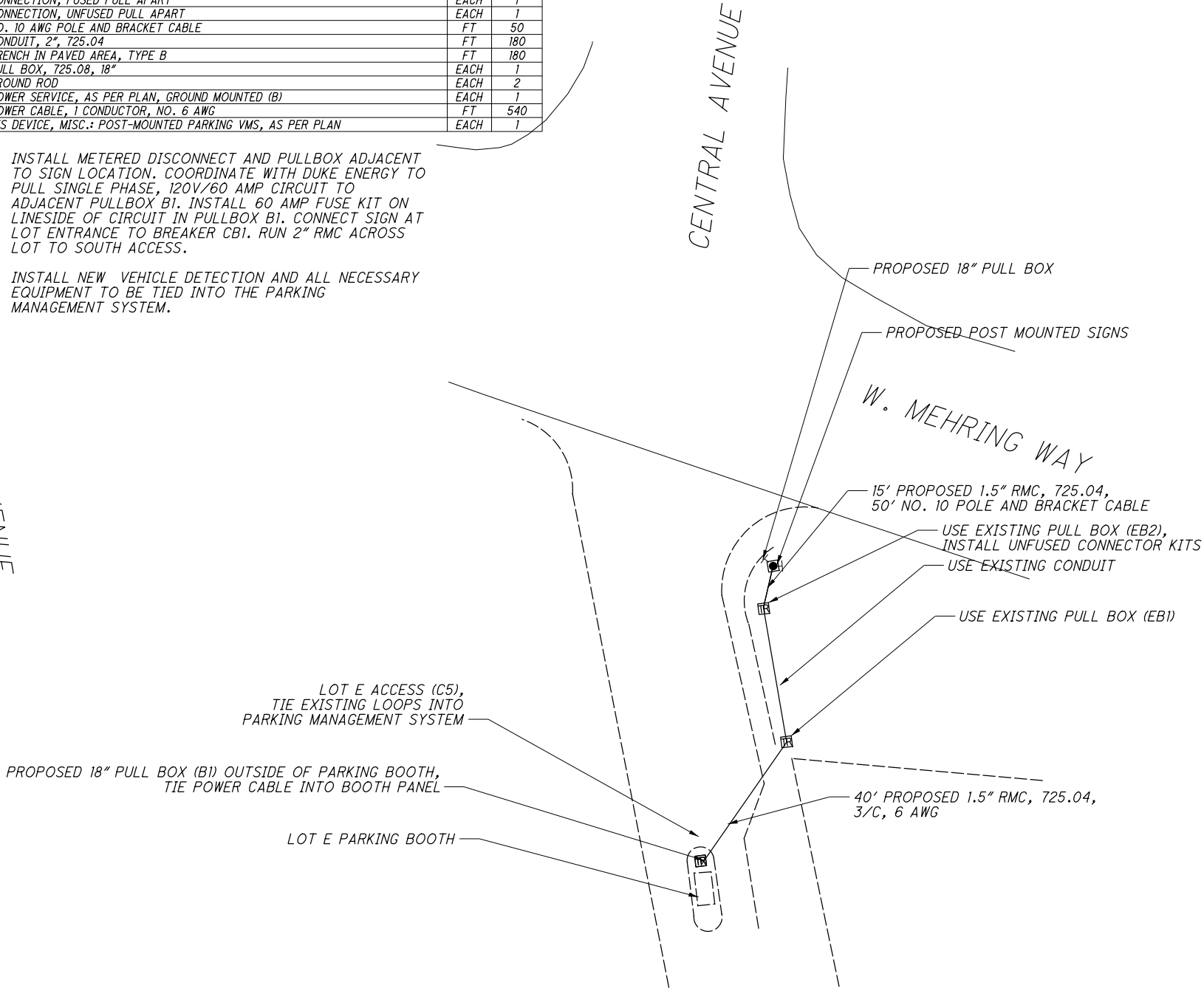
DUNNHUMBY EAST ACCESS (2A)

| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 608  | 5" CONCRETE WALK   | SF   | 25       |
| 625  | CONNECTION, FUSED PULL APART                             | EACH | 1        |
| 625  | CONNECTION, UNFUSED PULL APART                           | EACH | 1        |
| 625  | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50       |
| 625  | CONDUIT, 2", 725.04                                      | FT   | 180      |
| 625  | TRENCH IN PAVED AREA, TYPE B                             | FT   | 180      |
| 625  | PULL BOX, 725.08, 18"                                    | EACH | 1        |
| 625  | GROUND ROD   | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, GROUND MOUNTED (B)           | EACH | 1        |
| 632  | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                      | FT   | 540      |
| 809  | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 1        |

INSTALL METERED DISCONNECT AND PULLBOX ADJACENT TO SIGN LOCATION. COORDINATE WITH DUKE ENERGY TO PULL SINGLE PHASE, 120V/60 AMP CIRCUIT TO ADJACENT PULLBOX B1. INSTALL 60 AMP FUSE KIT ON LINESIDE OF CIRCUIT IN PULLBOX B1. CONNECT SIGN AT LOT ENTRANCE TO BREAKER CB1. RUN 2" RMC ACROSS LOT TO SOUTH ACCESS.

INSTALL NEW VEHICLE DETECTION AND ALL NECESSARY EQUIPMENT TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM.

LOT E LAYOUT



| LOT E (C5) |  |      |   |
|------------|--|------|---|
| ITEM       | DESCRIPTION  | UNIT | QUANTITY  |
| 202        | REMOVAL MISC.: PARKING LOT SIGN SUPPORT, FOR STORAGE     | EACH | 1 REMOVE EXISTING SIGN POST, "LOT E" AND STORE ON     |
| 625        | CONNECTION, UNFUSED PULL APART                           | EACH | 2 SITE. NOTIFY PARKING MANAGERS TO PICK UP. OR        |
| 625        | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50 PROPERLY DISPOSE OF IF POLE IS NO LONGER WANTED.   |
| 625        | CONDUIT, 1-1/2", 725.04                                  | FT   | 60 INSTALL SIGN AT LOCATION OF EXISTING POST, TIE THE |
| 625        | TRENCH, 30" DEEP   | FT   | 15 WEST LEG OF SIGN SUPPORT INTO EXISTING PULLBOXES   |
| 625        | TRENCH IN PAVED AREA, TYPE B                             | FT   | 45 B1 AND B2 RUN NEW 1 1/2" RMC CONDUIT BETWEEN PULL  |
| 625        | PULL BOX, 725.08, 18"                                    | EACH | 1 BOX EB2 AND PARKING BOOTH. PULL NUMBER 10-2, CU,    |
| 625        | GROUND ROD   | EACH | 1 UF CABLE FROM SIGN TO PANEL LOCATED IN THE          |
| 632        | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                      | FT   | 130 PARKING BOOTH. PROVIDE 20 AMP BREAKER IN SPARE    |
| 809        | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 2 SLOT TO POWER SIGN(S).                              |

CRG PETE ROSE WAY WEST



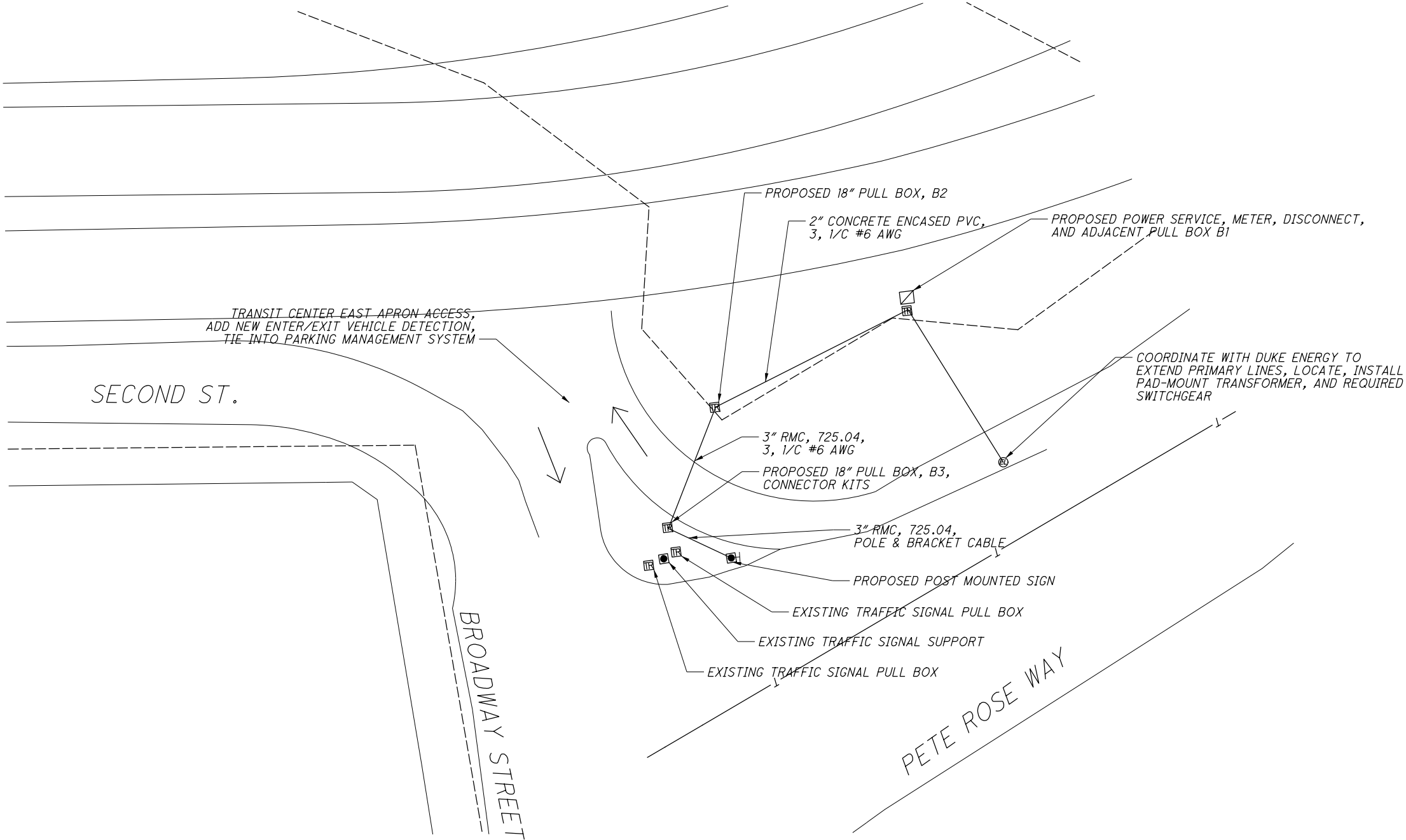
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TRANSIT EAST APRON LOT LAYOUT

| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 608  | 5" CONCRETE WALK   | SF   | 50       |
| 625  | CONNECTION, UNFUSED PULL APART                           | EACH | 2        |
| 625  | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50       |
| 625  | CONDUIT, 3", 725.04                                      | FT   | 70       |
| 625  | CONDUIT, CONCRETE ENCASED, 2", 725.052                   | FT   | 70       |
| 625  | TRENCH IN PAVED AREA, TYPE B                             | FT   | 140      |
| 625  | PULL BOX, 725.08, 18"                                    | EACH | 3        |
| 625  | GROUND ROD   | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, GROUND MOUNTED (B)           | EACH | 1        |
| 632  | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                      | FT   | 150      |
| 809  | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 1        |

COORDINATE WITH DUKE ENERGY TO EXTEND PRIMARY AND  
INSTALL SWITCHGEAR AND PADMOUNT TRANSFORMER. RUN  
SERVICE FROM DUKE MANHOLE TO PULL BOX AND SIGN ON  
TRAFFIC ISLAND.

850' WEST OF THE SIGN INSTALLATION AT  
THE TRANSIT CENTER, INSTALL NEW VEHICLE DETECTION TO TIE  
INTO PARKING MANAGEMENT SYSTEM.



CALCULATED

DGO

CHECKED

DYNAMIC MESSAGE SIGN PLANS

PARKING MANAGEMENT SIGNS

HAM BANKS DMS

PID 104409

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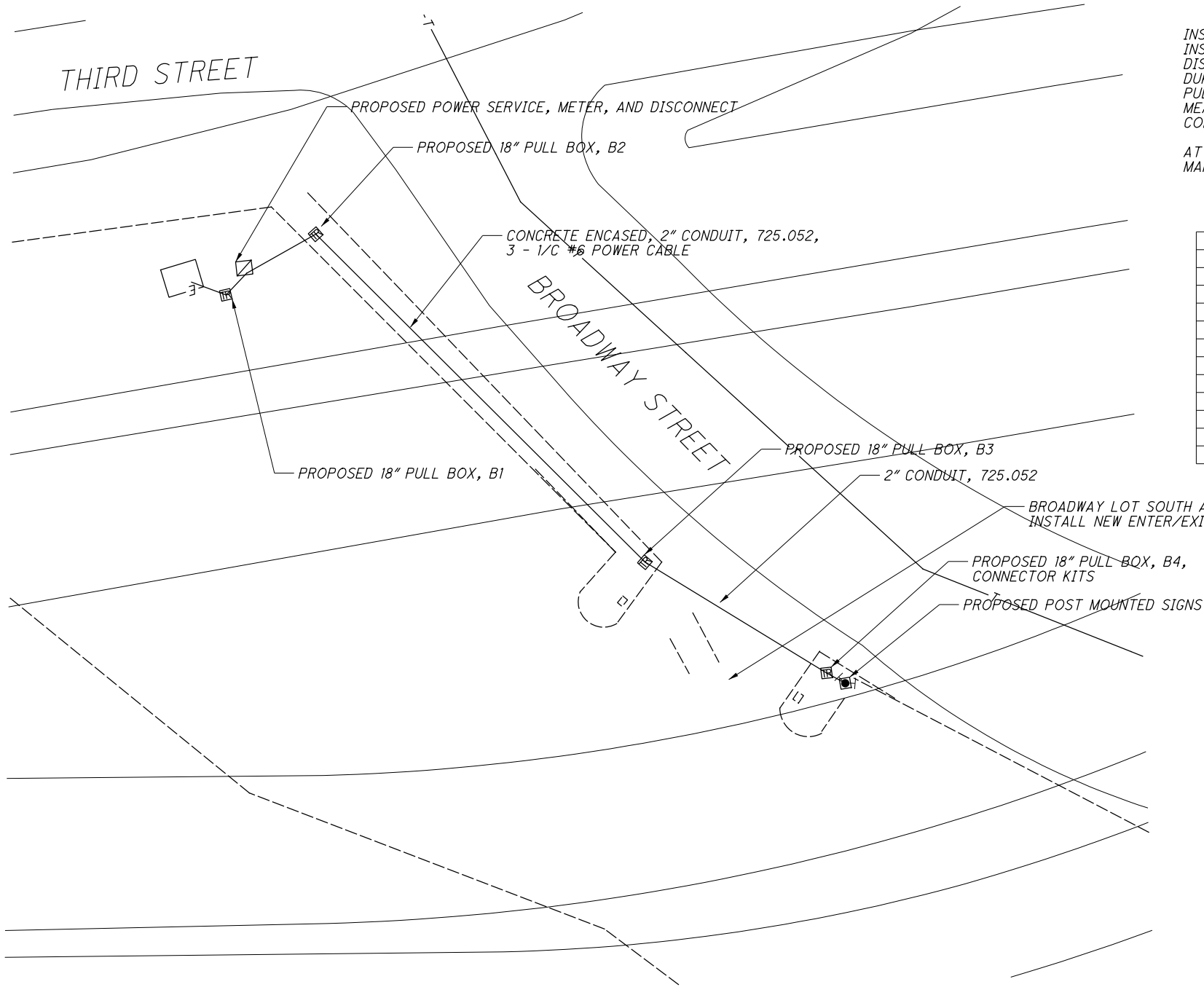
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HORIZONTAL

SCALE IN FEET

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BROADWAY LOT LAYOUT (C3)



BROADWAY LOT LAYOUT (C3)

INSTALL PULLBOX B1 AND 2" HDPE CONDUIT ADJACENT TO TRANSFORMER ON NORTH END OF LOT. INSTALL METER AND 120V/30 AMP DISCONNECT ADJACENT TO PULLBOX. RUN #6 AWG CABLE FROM B1 TO DISCONNECT LEAVE 25' OF CABLE FOR CONNECTION TO TRANSFORMER. COORDINATE THIS WORK WITH DUKE ENERGY. DUKE ENERGY TO MAKE CONNECTION TO TRANSFORMER. RUN #6 AWG FEEDERS FROM PULLBOX B2 TO PULLBOX B3 AND B4 ADJACENT TO NEW SIGN INSTALLATION. INSTALL DISCONNECTING MEANS, CITY STANDARD CONNECTOR KITS IN PULLBOX B4 WITH #10 AWG POLE AND BRACKET TO SIGN CONNECTION.

AT BROADWAY LOT NORTH ACCESS, INSTALL NEW VEHICLE DETECTION TO BE TIED INTO THE PARKING MANAGEMENT SYSTEM.

| ITEM | DESCRIPTION  | UNIT | QUANTITY |
|------|--|------|----------|
| 608  | 5" CONCRETE WALK   | SF   | 50       |
| 625  | CONNECTION, UNFUSED PULL APART                           | EACH | 2        |
| 625  | NO. 10 AWG POLE AND BRACKET CABLE                        | FT   | 50       |
| 625  | CONDUIT, 2", 725.052                                     | FT   | 125      |
| 625  | CONDUIT, CONCRETE ENCASED, 2", 725.052                   | FT   | 135      |
| 625  | TRENCH, 30" DEEP   | FT   | 0        |
| 625  | TRENCH IN PAVED AREA, TYPE B                             | FT   | 260      |
| 625  | PULL BOX, 725.08, 18"                                    | EACH | 4        |
| 625  | GROUND ROD   | EACH | 2        |
| 625  | POWER SERVICE, AS PER PLAN, GROUND MOUNTED (B)           | EACH | 1        |
| 632  | POWER CABLE, 1 CONDUCTOR, NO. 6 AWG                      | FT   | 660      |
| 809  | ITS DEVICE, MISC.: POST-MOUNTED PARKING VMS, AS PER PLAN | EACH | 2        |

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DYNAMIC MESSAGE SIGN PLANS

PARKING MANAGEMENT SIGNS

HAM BANKS DMS

PID 104409

CALCULATED

DGO

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HORIZONTAL

SCALE IN FEET

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CENTRAL & THIRD LOT, EAST, BIDIRECTIONAL (N-S),  
POLE MOUNT



CENTRAL & THIRD LOT, SOUTH, BIDIRECTIONAL (E-W),  
POLE MOUNT



DUNHUMBY LOT, EAST, UNIDIRECTIONAL (NORTH), POLE MOUNT



DUNHUMBY LOT, BIDIRECTIONAL (E-W), POLE MOUNT



CALCULATED  
DGO  
CHECKED  
JW

DYNAMIC MESSAGE SIGN PLANS  
PARKING MANAGEMENT SIGNS

HAM BANKS DMS  
PID 104409



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TRANSIT CENTER EAST APRON, UNIDIRECTIONAL (EAST),  
POLE MOUNT



CRG, PETE ROSE EAST, UNIDIRECTIONAL (EAST), WALL-MOUNT



TRANSIT CENTER WEST APRON, BIDIRECTIONAL (N-S), POLE  
MOUNT



CALCULATED  
DGO  
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DYNAMIC MESSAGE SIGN PLANS  
PARKING MANAGEMENT SIGNS

HAM\_BANKS\_DMS  
PID 104409

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CRG, MAIN STREET, BIDIRECTIONAL (N-S), PERPENDICULAR MOUNT



CRG, SECOND STREET, UNIDIRECTIONAL (EAST), PERPENDICULAR MOUNT



CRG, RACE STREET NORTH, BIDIRECTIONAL (N-S), PERPENDICULAR MOUNT



CRG, PETE ROSE WEST, TRI-DIRECTIONAL (N-S-W), POLE MOUNT



CALCULATED  
DGO  
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DYNAMIC MESSAGE SIGN PLANS  
PARKING MANAGEMENT SIGNS

HAM BANKS DMS  
PID 104409



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CRG, MEHRING WAY WEST-BIKE SHOP, BIDIRECTIONAL (E-W), PERPENDICULAR MOUNT



CRG, MEHRING WAY EAST-PLAYER ENTRANCE, BIDIRECTIONAL (E-W), PERPENDICULAR MOUNT



EAST GARAGE, NORTH ENTRANCE, UNIDIRECTIONAL (NORTH), WALL MOUNT (STEEL BEAM)



EAST GARAGE, SOUTH ENTRANCE, UNIDIRECTIONAL (SOUTH), WALL MOUNT



CALCULATED  
DGO  
CHECKED  
JW

DYNAMIC MESSAGE SIGN PLANS  
PARKING MANAGEMENT SIGNS

HAM BANKS DMS  
PID 104409

K:\2017 Projects\17005 Cincinnati, City of\002 HAM Banks VMS Phase 2\Drawings\026-030 Phase 3 Parking Signs Elevations.dgn Elevation 5 4/15/2019 9:15:19 AM synchro

BROADWAY LOT, BIDIRECTIONAL (NW-SE), POLE MOUNT



LOT A-CENTRAL ENTRANCE, BIDIRECTIONAL (N-S), POLE MOUNT



LOT E, BIDIRECTIONAL (E-W), POLE MOUNT



|            |     |         |    |
|------------|-----|---------|----|
| CALCULATED | DGO | CHECKED | JW |
|            |     |         |    |

DYNAMIC MESSAGE SIGN PLANS

PARKING MANAGEMENT SIGNS

HAM BANKS DMS  
PID 104409

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