



State of Ohio
Department of Transportation
Permit

Office Use Only
County or
Jurisdiction MAD
Route 29
Log pt 10.67
Acc Cat

Mr.509
Permit No.
06-0059-19

[1] Subject to all terms, conditions, and restrictions printed, written below and on the reverse side hereof, or attached,

Name: Duke Const Address: 6640 Riverside Dr suite 320 Dublin, OH, 43017 Is hereby granted a permit under Section 5515.01 and 5515.02 of Ohio Revised Code, and permission to perform work necessary in the manner described and at the location indicated attached to this permit.
Road Improvements

Location: MAD County, 29 Route: , .05 mi S of I-70

[2] This permit shall be in the possession of employees on site at all times who are in charge of the work and shall be shown, upon request, to any employee of the Department of Transportation.

Contact County Manager 10 days before work begins, also contact County Manager when work is completed for final inspection.

[3] No work authorized by this permit shall begin until the permittee has contacted and received instructions from

County Manager Mark Edwards Phone 740.833.8120 See Attached Sheet

(Authorized ODOT Employee)

NOTE: Any work performed by the permittee may be stopped if this requirement is not met.

[4] Prior to any excavation in the highway right-of-way, the Ohio Utilities Protection Service (OUPS) must be contacted in accordance with ORC Section 3781.25 to 3781.32. OUPS can be reached at 1-800-362-2764. A call must be made to OGPUPS at 1-800-925-0988.

[5] All work requiring men or vehicles within ODOT right of way shall comply with all applicable requirements of the Ohio Manual of Traffic Control Devices and Item 61.4 (Maintaining Traffic) of the Construction and Material Specifications, latest editions. Failure to comply with these requirements will be cause for immediate revocation or suspension of the permit until the proper traffic control devices have been provided.

[6] The permittee accepts the conditions, terms, and requirements printed, written on, or attached to this permit and understands that failure to comply fully with those conditions, terms, and requirements or any change in the use of the permit inconsistent with its terms and conditions will be considered a violation and cause for suspension, revocation, or annulment of the permit thereby rendering the permit illegal and subject to appropriate Department action, up to an including removal of the installation at the permittee's expense.

[7] Performance Bond Required? Yes Yes No Company:
Effective Date Expiration Date Amount \$

[8] This permit shall be void if the work described herein does not comply with the conditions, terms, and requirements applicable to this permit, and if the work is not completed by 8/21/19

Dated this 2/21/19

Rev 3/20/00

(See other side)

Director *Jacob Mark Shaska Byrnes*

General Provisions Applicable to All Permits
(Sections 5515.01 and 5515.02 of O.R.C.)

- [1] This permit is not a substitute for satisfying the rights or obligations of any other party who may have an interest in the underlying fee interest.
- [2] The granting of this permit does not convey to the permittee or to the property served any rights, title, or interest in state highway rights of way or in the design or operation of the state highway, or in any way abridge the right of the Director of the Department of Transportation in his jurisdiction over state highways. If in the process of any future work or for the benefit of the traveling public, it becomes necessary, in the opinion of the Director of Transportation to order the removal, reconstruction, relocation, or repair of any of the fixtures, or work performed under this permit, said removal, reconstruction, relocation, or repair shall be wholly at the expense of the owners thereof or the permittee and be made as directed by the Director of Transportation. Such changes in the state highway design or operation, necessary for improved safety and operation or for the benefit of the traveling public, shall not require a permit modification since the permit confers no private rights to the permittee over the control of the state highway.
- [3] The District Deputy Director acts for and on behalf of the Director in issuing and carrying out the provisions of all permits. The District Deputy Director has full authority to ensure that all provisions of the permit are met and to reject any materials, design, and workmanship that do not meet applicable Department standards. The District Deputy Director, at his/her discretion, may require a performance bond or certified check as a prerequisite to the issuance of a permit.
- [4] Failure on the part of the permittee to comply fully with the provisions and conditions of the permit will be cause for suspension, revocation, or annulment of the permit thereby rendering the permit illegal and subject to appropriate Departmental action. By accepting the permit, the permittee agrees to comply with all conditions, terms, and restrictions printed or written on or attached to the permit. If the permittee performs any work contrary to the conditions of the permit or to the instructions of the District Deputy Director and, after due notice, fails to correct the problem, the Department of Transportation may, with or without notice, correct such work and the permittee shall reimburse the Department for the costs.
- [5] The permittee shall indemnify and hold harmless the State of Ohio, Department of Transportation, its officers, representatives and assigns, from any and all loss, liability, damages, litigation costs, and claims for injury or death to any person, property, or business caused by or resulting from any act, omission, event, consequence, or occurrence, negligent or otherwise of the permittee, his employees, or assigns as a result of the issuance of this permit.
- [6] All work authorized under the permit shall be performed to the Department's satisfaction, and the entire expense shall be borne by the permittee. No work shall be performed until the permittee has contacted the Department's appointed representative named on the permit and received instructions. The Department's representative may inspect all work covered by the permit, or the Department reserves the right, during the time any or all of the work is being performed, to appoint an inspector over the work who shall represent the interest of the State on the work and any compensation arranged for shall be paid wholly by the permit holder. Work not in compliance shall be halted and the District Deputy Director shall be notified of the cause. The permittee shall be notified of the Department's action and its causes, and given an opportunity to correct the problem.
- [7] Failure to complete all work within the time specified on the permit shall void the permit, thereby making the permit illegal and subject to appropriate Departmental action. The permittee may request an extension in writing from the District Office, explaining why the extension is necessary and when the work is expected to be completed.
- [8] All work infringing on the pavement or shoulders shall comply with applicable standards and requirements regarding traffic control devices. Failure to comply will be cause for revocation or suspension of the permit. Any closure of lanes or shoulders shall be described in terms of location, duration, time of day, etc. Such work shall not begin until all traffic control devices are in place.
- [9] If any grading, sidewalk, or other work allowed by a permit interferes with the drainage of the highway in any way, such catch basins and outlets as necessary shall be constructed to take proper care of said drainage.
- [10] Upon completion of the work, the permittee shall leave the highway clean of all rubbish, excess materials, temporary structures and equipment, and all parts of the highway shall be left in a condition acceptable to the Department. Upon satisfactory completion of the work authorized by the permit, the Department's appointed representative shall complete the Permit Inspection Certificate, Form No. MR 678 certifying that the permittee has complied with the terms of the permit.
- [11] Except as herein authorized, no excavation shall be made or obstacle placed within the limits of the highway so as to interfere with the travel over the road.
- [12] All pole lines are to be built in accordance with Rule 4901.3-1-08 of Ohio Administrative Code promulgated and enforced by the Public Utilities Commission of Ohio.
- [13] The permittee shall comply with the Air Pollution requirements of Rule 3745-17-08 of the Ohio Administrative Code promulgated and enforced by the Ohio Environmental Protection Agency.
- [14] The permittee certifies that he or she is fully authorized to sign this permit. This permit shall apply to and be binding upon the permittee and his/her successors in interest. No change in ownership of the underlying property or of the facility owned by permittee shall in any way alter the permittee's obligations under this permit.

- (1.5) The permittee (s) or her/himself/hemself/herself, her/his/their/s, personal representatives, and her/his/their/s successors in interest and assigns, as a part of the consideration hereof, do/does hereby covenant and agree that:
- (1) No person on the grounds of race, color, national origin, sex, age, or disability shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of the above described property.
 - (2) In the construction of any improvements on, over, or under the above described property and the furnishing of services thereon, no person on the grounds of race, color, national origin, sex, age, or disability shall be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination.
 - (3) The above described property shall be used in a manner that at all times is in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. DOT, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. DOT - Effectuation of Title VI of the Civil Rights Act of 1964, and as such Regulations may be amended.
 - (4) In the event that this instrument grants a lease, license, or permit and any of the above nondiscrimination covenants is breached, when the State of Ohio, Department of Transportation, shall have the unfettered right to terminate the lease, license or permit and to re-enter and repossess the above-described property and hold the same as if said lease, license or permit had never been made or issued.
 - (5) In the event that this instrument grants a fee or easement interest and any of the above nondiscrimination covenants is breached, the State of Ohio, Department of Transportation, shall have the unfettered right to re-enter the above described property, and said property will thereupon revert to and vest in and become the absolute property of the State of Ohio and its successors and assigns for the use and benefit of the Department of Transportation.
 - (6) In the event that this instrument grants a lease, fee or easement interest, all of the foregoing nondiscrimination covenants shall be and are covenants running with the land.

**Attached Sheet
06-0059-19**

Road Improve as per plans and specifications attached. All disturbed terrain shall be restored to original or better condition. Any disturbed areas shall be seeded per Manual of Construction and Materials Specifications Current Edition. Excess material removed from site. Any damage to underground drainage or other installations shall be repaired by applicant. No trenching within 10 feet from outer edge of pavement. All work requiring men or vehicles on the pavement or shoulders shall comply with all requirements of the Ohio Manual of Uniform Traffic Control Devices. Applicant shall also comply with all applicable provisions on the reverse side if this permit. This is not a substitute for satisfying the rights of any other party that may have an interest in the underlying fee.

Location: MAD County, Route: 29 .05 mi S of I-70

The permittee shall take any and all appropriate measures to limit soil erosion during and after construction authorized herein. As such he shall be fully accountable to the Ohio EPA, the Soil Conservation Service, and other appropriate agencies for any violation or disregard of the applicable governing standards and regulations related to the protection and conservation of soils that are affected by this permitted work.

Extended Condition Information:

Permittee shall make Road Improvements of Widen SR29 for southbound left turn lane and northbound right turn lane onto entrance ramp for eastbound I-70, and new traffic signal.

The ODOT Intelligent Transportation System (ITS) Infrastructure and devices are not currently listed in the Ohio Utility Protection Services (OUPS) program. Please send a copy of the OUPS ticket or locate request to the ODOT ITS Section via email to CEN.ITS.LAB@dot.ohio.gov, in order to get the ITS utility infrastructure marked.

Bond #30054761 shall be held until work is complete and final inspection is accepted.

Contact County Manager for final inspection when work is completed.

MR 505
App No 18-496
State of Ohio
Department of Transportation
Permit Application

See Reverse side for additional requirements
18-496
06-0059-19

Office Use Only
County/ Jurisdiction <u>WATA</u>
Rte <u>21</u> LogPt <u>10.67</u>
AccCat <u>31</u>

[1] This form must be completed by the property owner or agents working for a utility company (if applicable). Application by contractor is unacceptable.
Name Duke Construction Limited Partnership
Address 6640 Riverside Drive, Suite 320 City Dublin State OH
Zip 43017 Phone (614) 932-6000 Other (Fax, E-mail)

[2] Type of Permit requested: Commercial (See other side) Residential Field Parcel #
 Beautification (See other side) Spraying, trimming, tree removal Other Utility Drainage

[3] Briefly describe work to be performed (Maximum 3 lines of information). (Attach plans and see Instructions.)
Construction will include the widening of SR 29 for a southbound left turn lane and a northbound right turn lane onto entrance ramp for eastbound I-70, and the installation of new traffic signal.

Traffic Plan _____

[4] Location where work is to be performed. Give sufficient detail to locate the site accurately, such as the distance in miles or feet from a mile post or from some geographical feature such as an intersecting highway.

In Madison County (along, across) State Route 29 miles or 270 feet
North East West South X of Interstate 70 on the North East X West X South side of the road.
Work to commence on _____ and will require 10.62 days to complete 10.67

[5] Does the property owner own or have any interests in any adjacent property?
if yes, please describe. Yes No

[6] Prior to any excavation in the highway right-of-way, the Ohio Utilities Protection Service (OUPS) must be contacted in accordance with ORC Section 3781.25 to 3781.32. OUPS can be reached at 1-800-362-2764. A call must be made to OGPUPS at 1-800-925-0988.

[7] Open cutting of pavement shall not be permitted unless no reasonable alternate method is available. Written approval of the Ohio Department of Transportation District Office must be obtained.

[8] All work requiring men or vehicles within ODOT right of way shall comply with all applicable requirements of the Ohio Manual of Traffic Control Devices and Item 614 (Maintaining Traffic) of the Construction and Material Specifications, latest editions. Failure to comply with these requirements will be cause for immediate revocation or suspension of the permit until the proper traffic control devices have been provided.

[9] I have received a copy of the policies and regulations pertaining to the permit for which I have applied. If a permit is subsequently issued to me by the Ohio Department of Transportation, I understand that the permit will state the terms and conditions for its use, and I agree to comply with all conditions and regulations stipulated on or attached to the permit. I also understand and agree that failure to comply fully with all conditions and regulations of the permit or any change in the use of the permit inconsistent with its terms and conditions will be considered a violation and cause for suspension, revocation, or annulment of the permit thereby rendering the permit illegal and subject to appropriate Department action, up to an including removal of the installation at the permittee's expense.

SIGN HERE

MARK GALLIXA
Please Type or Print Property Owner or Agent for Owner
Signature of Property Owner or Agent for Owner
Date 9/4/19
Day time Phone 614-932-6105



Additional Requirements

1. All requests for vehicular access connections (commercial and residential driveways and field drives) are subject to the requirements and provisions of the State Highway Access Management Manual.
2. Check with the issuing authority to determine which of the following documents and information are required and the number of copies needed to complete the review of your application. Plans should usually not be larger than 22"x 34."
 - (A) Map or plat showing property location, property lines, amount of frontage on state highway and on other abutting public roads, if any;
 - (B) Any existing access or easements of access on the property;
 - (C) Highway and driveway plan profile;
 - (D) Location of proposed access with respect to property lines and to the highway; NOTE: The proposed access location should also be physically marked on the property by a stake or other clearly visible means.
 - (E) Design and type of construction of the proposed access;
 - (F) Drainage plans showing drive culvert/pipe and impacts to the highway right of way;
 - (G) Subdivision, zoning, or development plan, if applicable;
 - (H) Maps and letters detailing utility locations before and after development in and along the right of way;
 - (I) Signing and striping plans;
 - (J) Traffic data and traffic control plan;
 - (K) Proof of liability insurance;
 - (L) Performance Bond, if required

Commercial Development

3. If you are requesting a permit for Commercial Development, complete the following. Applicants seeking permits for development generating high traffic volumes (over 100 trip ends in the peak hour) are advised to request a preliminary meeting with appropriate ODOT and/or local officials prior to submitting a formal application for access.

(3a) If the proposed access will serve residential development, what type (single family, apartment, townhouse) and number of units are in the proposed development?

Type of Units	Number of Units
Type of Units	Number of Units

(3b) If the proposed access will serve business commercial or industrial development, what types and number of businesses are in the proposed development and what is floor area square footage of each?

Type of Business	Square Footage	855,000 Sq Ft
Industrial Warehousing	Square Footage	855,000 Sq Ft
Type of Business	Square Footage	Square Footage

(3c) Number of vehicles using the access. Indicate if estimates _____ Peak hour = _____ or _____ Average daily volumes = _____ x _____ are

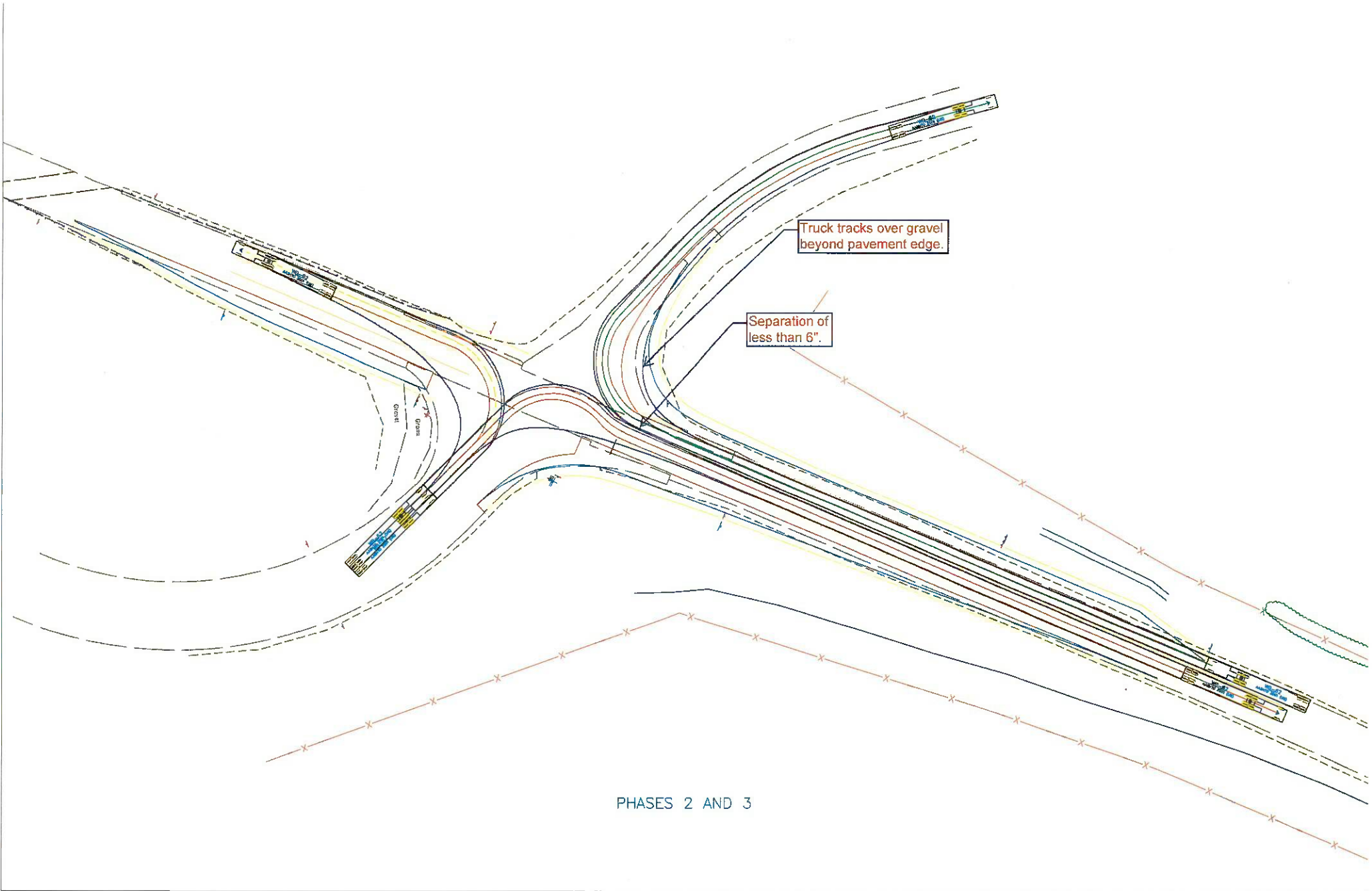
Number of Passenger Cars: 3264	Number of Multi Units: 246	Total All Vehicles: 3510
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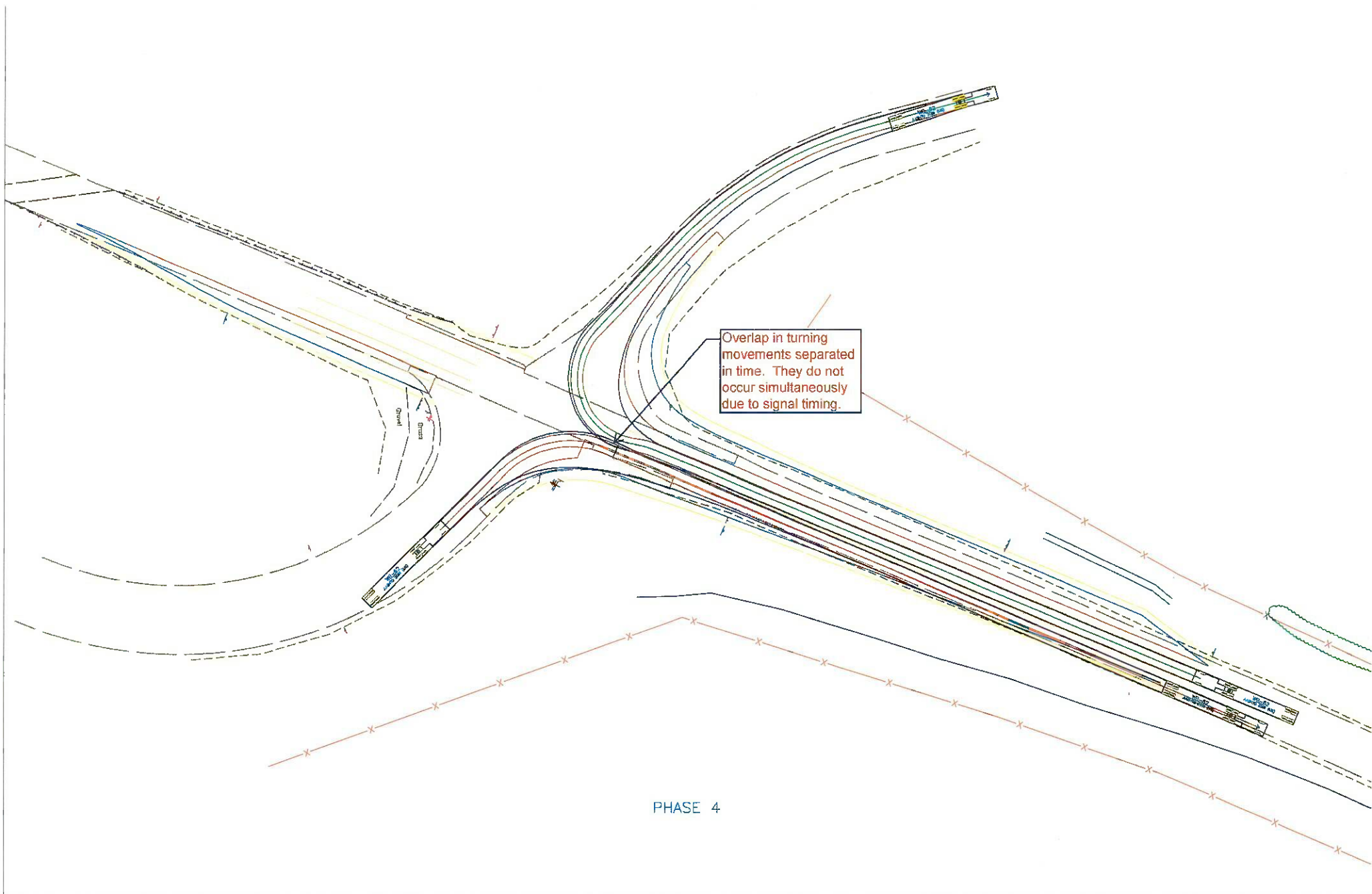
(3d) Consulting Firm: Stantec Consulting Name of Contractor: _____
 Contact Name: Perry Morgan Contact Name: _____
 Phone Number: 614.485.8355 Phone Number: _____

Beautification Permit

4. If you are applying for Beautification Permit, complete the following. Please submit proof of insurance.

Insurer's Name _____ Address _____ Phone (_____) _____
 Number of adults (over 18) _____ under 18 _____ Total people _____





Duerson, Charles

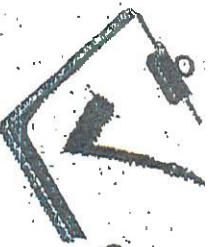
To: Fellenger, Steven
Subject: 18-app 486 Duke Const

Steve,

We can use the 18-app 486, Duke Const, MAD29, 10.67 as the application number, I'll wait on you to forward approved plans, and then we can issue the permit.

Charles

Charles E. Duerson
Trans Tech 1
Permits
400 E. William St,
Delaware, Oh 43015
(p) 740.833.8244
transportation.ohio.gov



District 6 Permit Office
CHIEF CLERK

APPLICANT	COUNTY	TYPE OF PERMIT
Duls Const	MADISON	ROAD IMPROVEMENT
County Manager Review	NAME	DATE
MOT Review		
Access Management		
Real Estate Review		
Utilities Review		
Hydraulic Review		
Pavement Review		
Signal Review		
Geometric Review		
Pavement Marking/Striping		
Environmental		
P&E	S Williams	2.21.19

SIGNATURE PERMIT STAFF

Signature



State of Ohio
Department of Transportation
Permit Inspection Certificate

Office Use Only	
County or Jurisdiction	MAD
Rte Log Pt	29 10.67
AccCat	

To be completed by District Office

[1] Permitee Name Address
 Phone

[2] Permit No. Date Issued
 Work Authorized

To be completed by Inspector

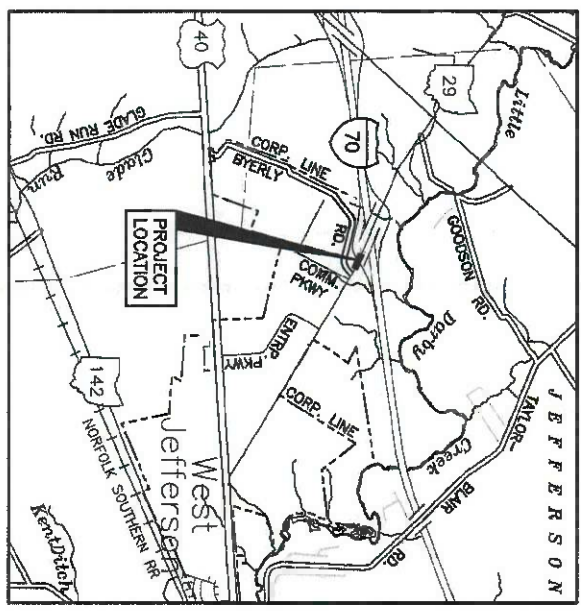
[3] Was work completed? As authorized? If no, explain variation(s)

[4] Is work approved? If no, explain conditions

If work is not approved, advise person in charge at work site, noting his/her name and relationship to permittee and the date and time of the inspection; note any instructions given such person, including work stoppage, if warranted. If no one is present at work site, so note.

Date
 Signed
 Title

Rev. 12/20/98



LOCATION MAP
 LATITUDE: 39°57'30" LONGITUDE: 83°20'30"
 SCALE IN FEET

PORTIONS TO BE IMPROVED:
 STATE AND FEDERAL ROUTES
 OTHER ROADS

DESIGN DESIGNATIONS

S.R. 29	RAMP C	RAMP D
CURRENT ADT (2018)	3,040	1,300
DESIGN YEAR (2040)	8,070	2,650
DESIGN HOURLY VOLUME (2040)	2,467	265
DIRECTIONAL DISTRIBUTION	80%	100%
TRUCKS	50%	100%
DESIGN SPEED	7%	10%
LEGAL SPEED	55 MPH	35 MPH
FUNCTIONAL CLASSIFICATION	55 MPH	35 MPH
	RURAL COLLECTOR	35 MPH

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NUMBER
GRADED SHOULDER WIDTH	1-23-19	3, 10-11
LANE WIDTH	1-23-19	21
HORIZONTAL ALIGNMENT	1-23-19	10
SUPERELEVATION RATE	1-23-19	3, 20

PLAN PREPARED BY:



REGISTERED ENGINEER
 DATE: 2-5-19

REGISTERED ENGINEER
 DATE: 2-5-19

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
**S.R. 29 IMPROVEMENTS AT
 I-70 EASTBOUND RAMPS**
 VILLAGE OF WEST JEFFERSON
 JEFFERSON TOWNSHIP
 MADISON COUNTY

INDEX OF SHEETS

TITLE SHEET
 SCHEMATIC PLAN AND REFERENCE POINTS 1
 TYPICAL SECTIONS 2
 GENERAL NOTES 3
 MAINTENANCE OF TRAFFIC 4-5
 GENERAL SUMMARY 6-7
 PROJECT SITE PLAN 8
 PLAN AND PROFILE - S.R. 29 9
 CROSS SECTIONS - S.R. 29 10-11
 CROSS SECTIONS - RAMP C 12-17
 PAVEMENT DETAILS 18-19
 TRAFFIC CONTROL 20
 SIGNAL PLANS 21
 22-29

OHIO Utilities Protection SERVICE
 Call Before You Dig

UNDERGROUND UTILITIES
 CONTACT BOTH SERVICES
 CALL TWO WORKING DAYS
BEFORE YOU DIG
 OIL & GAS PRODUCERS PROTECTIVE
 SERVICE CALL: 1-800-929-0988

STANDARD CONSTRUCTION DRAWINGS		SUPPLEMENTAL SPECS.	
BP-2.1	7-17-15	DM-1.1	7-21-17
BP-2.2	7-18-08	DM-1.2	1-18-13
BP-2.5	7-19-13	DM-4.4	1-15-18
BP-3.1	7-18-14	TC-4.1.20	10-18-13
BP-8.1	7-18-08	TC-4.1.40	10-18-13
RM-4.2	4-18-14	TC-4.1.41	10-18-13
		TC-4.2.20	10-18-13
		HL-30.11	7-20-18
		TC-5.2.10	10-18-13
		TC-5.2.20	7-20-18
		TC-6.5.10	1-17-14
		TC-6.5.11	7-21-17
		TC-7.1.10	1-19-18
		TC-8.1.10	7-15-18
		TC-8.4.20	10-18-13
		TC-8.5.21	1-20-17
		TC-8.5.22	1-19-18
		MI-105.10	7-19-13
		MI-126.00	1-20-17
		MI-95.45	7-21-17
		MI-97.11	1-20-17
		MI-101.70	7-20-18
		MI-101.75	7-19-16
		MI-101.90	7-21-17
		MI-95.45	800
		MI-97.11	809
		MI-101.70	832
		MI-101.75	1-17-14

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE WIDENING OF S.R. 29 TO PROVIDE TURN LANES AT THE EASTBOUND RAMPS OF I-70, INCLUDING A NEW TRAFFIC SIGNAL.

PROJECT EARTH DISTURBED AREA: 0.87 ACRES
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.17 ACRES
 NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES

2016 SPECIFICATIONS

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

SOURCE BENCHMARK

MADISON COUNTY ENGINEER MONUMENT 02-016, BRASS TABLET IN MONUMENT IN THE MEDIUM LANDSCAPING AT THE NORTHEAST CORNER OF THE MADISON COUNTY ENGINEER'S OFFICE.
 NORTH = 712047.38, EAST = 1722575.80,
 ELEVATION= 999.24 (NAVD 88)

BENCHMARKS

BM #205
 IRON PIN SET WITH "STANTEC" CAP, BEING 30.43 FEET RIGHT OF S.R. 29 CENTERLINE. STATION 580+38.20.
 NORTH = 7135973.09, EAST = 1733368.62
 ELEVATION= 970.28 (NAVD 88)

BM #206
 IRON PIN SET WITH "STANTEC" CAP, BEING 21.25 FEET LEFT OF S.R. 29 CENTERLINE. STATION 575+03.27.
 NORTH = 714260.46, EAST = 1732914.20
 ELEVATION= 973.73 (NAVD 88)

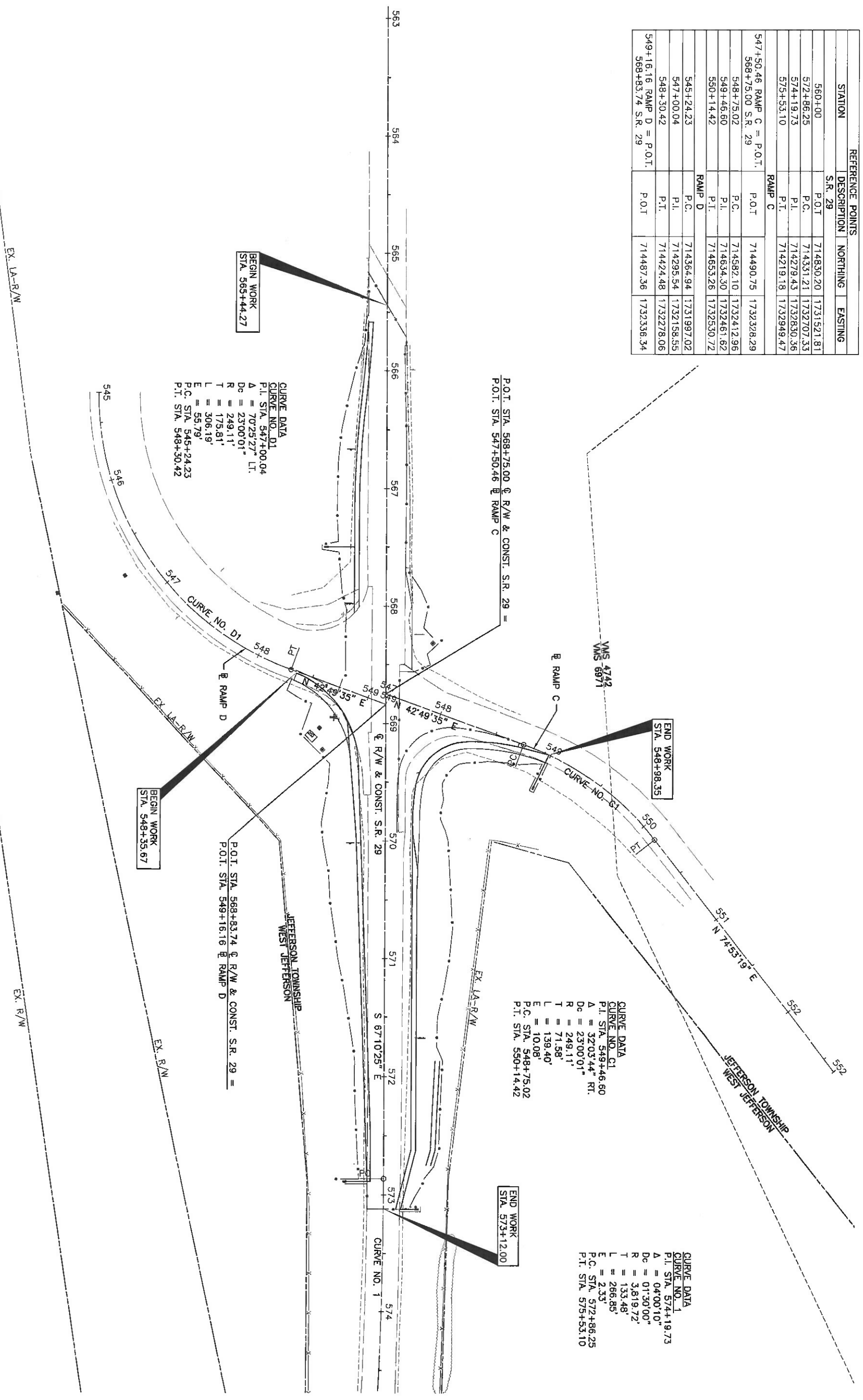
SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSE AND GENERAL LOCATION OF THE PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS.

VILLAGE ENGINEER, WEST JEFFERSON
 DATE

VILLAGE SERVICE DIRECTOR, WEST JEFFERSON
 DATE

FEDERAL PROJECT NO.	N/A
PID NO.	109471
CONSTRUCTION PROJECT NO.	N/A
RAILROAD INVOLVEMENT	N/A
S.R. 29 IMPROVEMENTS AT I-70 EASTBOUND RAMPS	1/29

STATION	REFERENCE POINTS	DESCRIPTION	NORTHING	EASTING
560+00	P.O.T.	S.R. 29	714830.20	1731521.81
572+86.25	P.C.		714331.21	1732707.33
574+19.73	P.I.		714279.43	1732830.36
575+53.10	P.T.		714219.18	1732949.47
547+50.46	P.O.T.	RAMP C	714490.75	1732328.29
568+75.00	P.O.T.	S.R. 29	714582.10	1732412.96
548+46.60	P.I.		714634.30	1732461.62
550+14.42	P.T.		714653.26	1732530.72
545+24.23	P.C.	RAMP D	714364.94	1731997.02
547+00.04	P.I.		714295.54	1732158.55
548+30.42	P.T.		714424.48	1732278.06
549+16.16	P.O.T.	RAMP D = P.O.T.	714487.36	1732336.34
568+83.74	P.O.T.	S.R. 29		



CURVE DATA
 CURVE NO. D1
 P.I. STA. 547+00.04
 A = 70°25'27" LT.
 Dc = 23700'01"
 R = 249.11'
 T = 175.81'
 L = 306.19'
 E = 55.79'
 P.C. STA. 545+24.23
 P.T. STA. 548+30.42

CURVE DATA
 CURVE NO. C1
 P.I. STA. 549+46.60
 A = 32°03'44" RT.
 Dc = 23700'01"
 R = 249.11'
 T = 71.58'
 L = 139.40'
 E = 10.08'
 P.C. STA. 548+75.02
 P.T. STA. 550+14.42

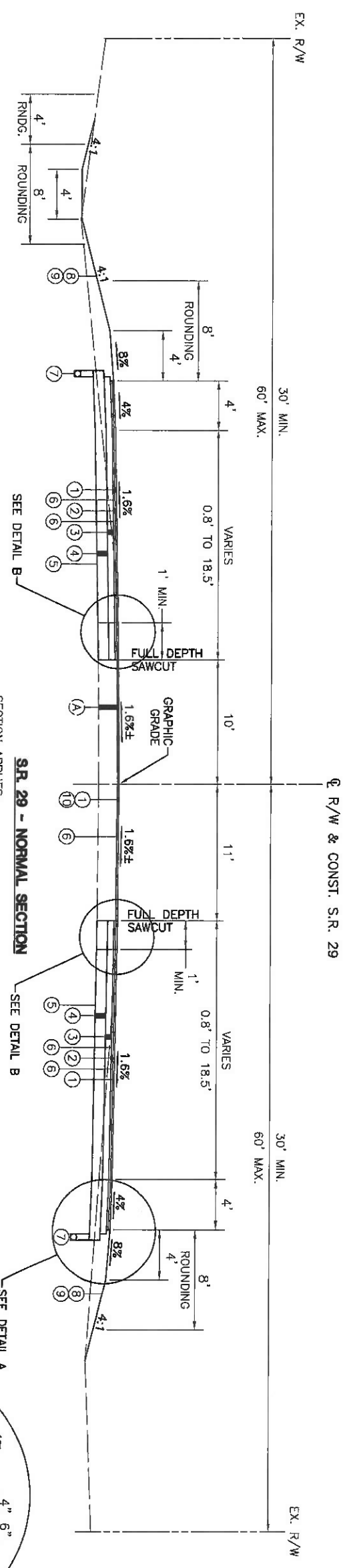
CURVE DATA
 CURVE NO. 1
 P.I. STA. 574+19.73
 A = 04°00'10"
 Dc = 01'30'00"
 R = 3,819.72'
 T = 133.48'
 L = 266.85'
 E = 2.33'
 P.C. STA. 572+86.25
 P.T. STA. 575+53.10

BEGIN WORK
 STA. 548+35.67

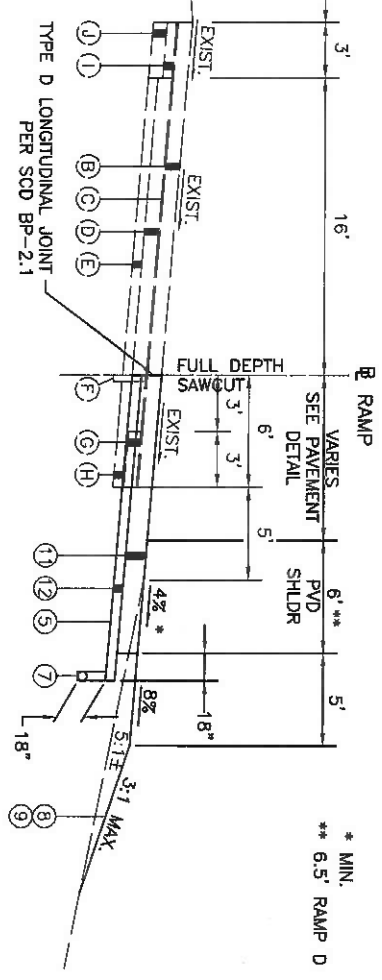
END WORK
 STA. 548+98.35

END WORK
 STA. 573+12.00

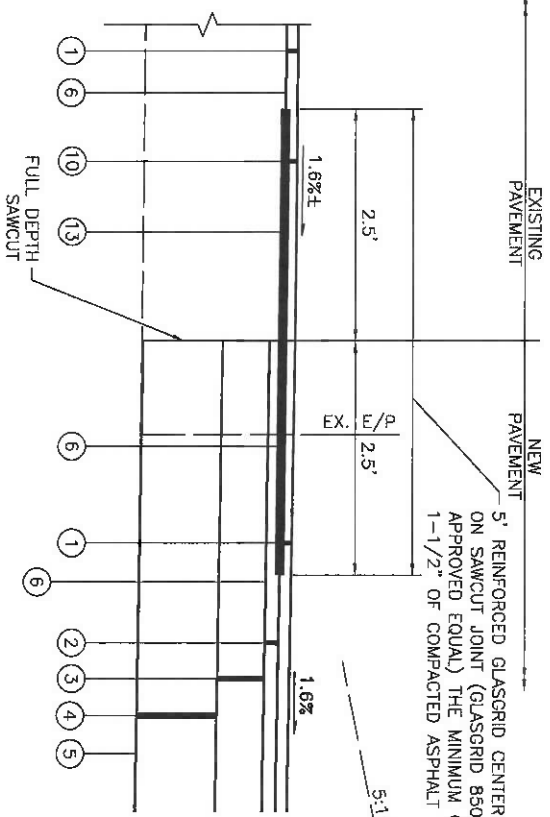
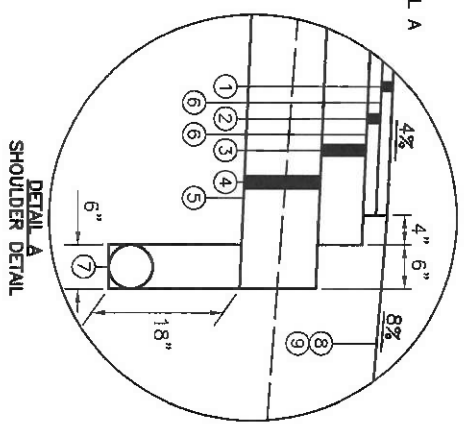
BEGIN WORK
 STA. 565+44.27



SECTION APPLIES:
 STA. 565+98.29 TO STA. 572+88.56 (RT.) = 730.27 FT.
 STA. 569+92.31 TO STA. 573+12.00 (LT.) = 319.69 FT.



SECTION APPLIES:
 STA. 547+62.66 TO STA. 548+98.35 (RAMP C) = 135.69 FT.
 STA. 548+35.67 TO STA. 549+00.42 (RAMP D) = 64.75 FT.



- LEGEND**
- ① ITEM 442 - 1.50" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A, (448)
 - ② ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A, (448)
 - ③ ITEM 301 - 6" ASPHALT CONCRETE BASE
 - ④ ITEM 304 - 10.50" (MIN.) AGGREGATE BASE (SEE SHEET 4)
 - ⑤ ITEM 204 - SUBGRADE COMPACTION
 - ⑥ ITEM 407 - NON-TRACKING TACK COAT
 - ⑦ ITEM 605 - 6" BASE PIPE UNDERDRAINS
 - ⑧ ITEM 659 - SEEDING AND MULCHING
 - ⑨ ITEM 653 - 4" TOPSOIL FURNISHED AND PLACED
 - ⑩ ITEM 254 - 1.50" DEPTH ASPHALT PAVEMENT PLANING, ASPHALT CONCRETE
 - ⑪ ITEM 452 - 13" NON-REINFORCED CONCRETE PAVEMENT, CLASS CC 1
 - ⑫ ITEM 304 - 6" AGGREGATE BASE
 - ⑬ ITEM SPECIAL - PAVEMENT REINFORCING GRID (GLASSGRID 8502 OR APPROVED EQUAL)
 - Ⓐ EXISTING 5.5" ASPHALT PAVEMENT OVER 14" STONE
 - Ⓑ EXISTING 9" CONCRETE PAVEMENT
 - Ⓒ EXISTING 1" ASPHALT PAVEMENT
 - Ⓓ EXISTING 9" REINFORCED CONCRETE PAVEMENT
 - Ⓔ EXISTING 6" AGGREGATE BASE
 - Ⓕ EXISTING EDGE DRAIN OR UNDERDRAIN
 - Ⓖ EXISTING 8" ASPHALT PAVEMENT
 - Ⓗ EXISTING 7"± AGGREGATE BASE
 - Ⓘ EXISTING 6" ASPHALT PAVEMENT
 - Ⓢ EXISTING 9" AGGREGATE BASE

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

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

AT&T 111 NORTH FOURTH STREET ROOM 802 COLUMBUS, OHIO 43215	OHIO EDISON 420 YORK STREET SPRINGFIELD, OHIO 45505 937-327-1272
614-223-3872 MIKE LEPELY ml95699@att.com	NAT BENROY nbenroy@firstenergycorp.com
COLUMBIA GAS 3550 JOHNNY APPLESEED COURT COLUMBUS, OHIO 43231	VILLAGE OF WEST JEFFERSON DIRECTOR, PUBLIC SERVICE 28 EAST MAIN STREET WEST JEFFERSON, OHIO 43162
614-818-2109 CLAY KOENIG ckoenig@hsource.com	614-879-8655 JOHN MITCHELL jmitche1@westjeffersonohio.gov
COLUMBUS & SOUTHERN OHIO POWER CO. (AEP) 700 MORRISON ROAD GAHANNA, OHIO 43230	
614-883-6631 PAUL PAXTON ppaxton@aep.com	

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

CONTINGENCY QUANTITIES

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

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES IN COMPLIANCE WITH ALL APPLICABLE LOCAL ORDINANCES AND REGULATIONS PERTAINING TO CONSTRUCTION NOISE. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

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.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRUCT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS, UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL. THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL, AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ITEM 204, SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-48, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05.

IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

3. COMPACT THE SUBGRADE ACCORDING TO 204.03.

4. APPROXIMATE LIMITS FOR EXCAVATION OF UNSUITABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSUITABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.

5. EXCAVATE UNSUITABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.

7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSUITABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

ITEM 204, PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING:

ITEM 204, PROOF ROLLING 1 HOUR

ITEM SPECIAL, SOIL STERILANT

USE ONE OF THE SOIL STERILANT PRODUCTS LISTED BELOW, OR AN APPROVED EQUAL, APPLY THE SOIL STERILANT TO LOCATIONS ONLY WHERE IN-ROAD VEGETATION EXISTS AS DETERMINED BY THE ENGINEER. THIS SHOULD BE DONE IMMEDIATELY PRIOR TO PLACING THE PROPOSED AGGREGATE BASE.

PRAMTLO 25E
GIBA SPECIALTY CHEMICALS
MCINTOSH, ALABAMA 36553

ROUNDUP PRO 1
MONSANTO COMPANY
800 N. LINDBERGH BLVD.
ST. LOUIS, MO 63167

HYVAR XL
DUPONT CORPORATION
1007 MARKET STREET
WILMINGTON, DELAWARE 19898

COMPACT THE SITE FOLLOWING PLOWING OR DISKING. APPLY THE SOIL STERILANT AT THE SUGGESTED MANUFACTURER'S RATE.

THE PREFERRED TIME FRAME TO APPLY THE SOIL STERILANT IS BETWEEN JUNE 15 AND OCTOBER 15. VERY DRY SOIL CONDITIONS MAY RESULT IN POOR WEED CONTROL. DO NOT APPLY THE SOIL STERILANT TO SOIL OR BALLAST MATERIAL WHICH IS SATURATED WITH WATER. CONSULT THE MANUFACTURER IN REGARD TO THE HANDLING AND PHYSICAL CHEMICAL HAZARDS ASSOCIATED WITH THE SOIL STERILANT.

PAYMENT FOR THE ABOVE REFERENCED ITEM IS INCLUDED IN THE PRICE PER SQUARE YARD OF ITEM SPECIAL, SOIL STERILANT. A QUANTITY OF 1,000 SQUARE YARDS IS INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DETERMINED BY THE ENGINEER.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE STATE OF OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR. IN ADDITION, ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING OF HERBICIDE WILL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY. SUBMIT APPROPRIATE LICENSES TO THE PROJECT ENGINEER, PRIOR TO COMMENCING WORK, FOR VERIFICATION.

SEEDING AND MULCHING

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

ITEM 653, TOPSOIL FURNISHED AND PLACED	242 CU. YD.
ITEM 659, COMMERCIAL FERTILIZER	0.30 TON
ITEM 659, LIME	0.10 ACRE
ITEM 659, WATER	12 M GAL.

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

ITEM 304, AGGREGATE BASE

THE CONTRACTOR IS TO ENSURE THAT THE SUBGRADE ELEVATION OF THE WIDENING IS AT OR BELOW THE ELEVATION OF THE EXISTING SUBGRADE. AS DIRECTED BY THE ENGINEER, ADDITIONAL ITEM 304, AGGREGATE BASE SHALL BE PLACED BELOW THAT SHOWN ON THE TYPICAL SECTIONS. ADDITIONAL QUANTITIES OF ITEM 203, EXCAVATION AND ITEM 304, AGGREGATE BASE REQUIRED TO MEET THIS CONDITION SHALL BE PAID AT THE CONTRACT BID PRICE.

ITEM SPECIAL, PAVEMENT REINFORCING GRID (GLASGRID 8502 OR APPROVED EQUAL)

SHOULD THE SAWCUT SHOWN ON THE PLANS (A RECOMMENDED 1 FOOT FROM THE EXISTING STRIPE) NOT EXPOSE FULL-DEPTH EXISTING PAVEMENT, THE CONTRACTOR SHALL ADJUST THE OFFSET FROM THE EXISTING STRIPE UNTIL SUCH PAVEMENT IS FOUND. ADDITIONAL PAVEMENT QUANTITIES SHALL BE PAID AT THE CONTRACT BID PRICE.

PAVEMENT REINFORCEMENT AS DETAILED ON SHEET 3 SHALL BE USED AT THE SAWCUT LOCATION. THE FOLLOWING QUANTITY IS CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

SPECIAL, PAVEMENT REINFORCING GRID (GLASGRID 8502 OR APPROVED EQUAL) 760 SQ. YD.

THE WHEEL PATH IS DEFINED AS THE AREA BETWEEN 40 AND 62 INCHES FROM THE CENTER OF EACH LANE.

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

- ITEM 601, TIED CONCRETE BLOCK MAT, TYPE 1 4 SQ. YD.
- ITEM 611, 6" CONDUIT, TYPE F 40 FT.
- ITEM 611, PRECAST REINFORCED CONCRETE OUTLET 2 EACH

UNSUITABLE FOUNDATION SOILS

IF UNSUITABLE FOUNDATION SOILS ARE ENCOUNTERED IN THE AREAS OF THE PROPOSED ROADBED, THEY SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL MEETING THE REQUIREMENTS OF 203.02.R. THE LOCATIONS AND DIMENSIONS WILL BE AS DETERMINED BY THE ENGINEER.

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

- ITEM 203, EMBANKMENT 350 CU. YD.
- ITEM 203, EXCAVATION 700 CU. YD.
- ITEM 203, GRANULAR MATERIAL, TYPE B 350 CU. YD.
- ITEM SPECIAL, GEOTEXTILE FABRIC, 712.09, TYPE D 2100 SQ. YD.

ITEM 621, RAISED PAVEMENT MARKER REMOVED

IN AREAS WHERE THE RAISED PAVEMENT MARKER CASTINGS CANNOT BE REPLACED BECAUSE OF PAVEMENT CONDITIONS, USE THIS ITEM INSTEAD OF ITEM 621 RPM INSTALLATION ONLY TO COMPENSATE THE CONTRACTOR FOR REMOVAL OF THE EXISTING RPM AND RESTORATION OF THE PAVEMENT.

ALL BROKEN, CRACKED, FRAGMENTED OR PARTIAL REMNANTS OF RAISED PAVEMENT MARKERS OR MISSING RAISED PAVEMENT MARKERS SHALL BE TOTALLY REMOVED AND THE PAVEMENT RESTORED AS DESCRIBED IN CONSTRUCTION AND MATERIAL SPECIFICATION ITEM 621.08.

THE FOLLOWING IS AN ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER FOR THE ABOVE WORK:

- ITEM 621, RAISED PAVEMENT MARKER REMOVED 10 EACH

ENDANGERED BAT HABITAT REMOVAL

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT FOR THE PURPOSES OF THIS NOTE. A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

IDENTIFICATION OF SUCH TREES IS TO BE PERFORMED BY A CONSULTANT THAT HAS BEEN PRE-QUALIFIED BY ODOT FOR DOING ECOLOGICAL SURVEYS. THE CONTRACTOR IS RESPONSIBLE FOR ENGAGING THE SERVICES OF AN ECOLOGICAL CONSULTANT. THE CURRENT LIST OF PRE-QUALIFIED CONSULTANTS IS AVAILABLE THROUGH THE ODOT CONSULTANT SERVICES SECTION (614-466-3742) OR THROUGH ODOT'S INTERNET SITE AT <http://www.dot.state.oh.us>.

ALL WORK AND COSTS ASSOCIATED WITH THE COMPLIANCE OF THIS NOTE SHALL BE INCLUDED IN THE CONTRACT LUMP SUM BID PRICE FOR ITEM SPECIAL, MISC.: IDENTIFICATION OF BAT HABITAT TREES.

CONCRETE PAVEMENT JOINTS

JOINTS IN NEW CONCRETE PAVEMENT SHALL MATCH THE TYPE AND LOCATION OF EXISTING CONCRETE JOINTS AND SHALL CONFORM TO THE APPLICABLE BP SERIES STANDARD CONSTRUCTION DRAWINGS AS NOTED ON THE TITLE SHEET. FINAL PLACEMENT OF THE JOINTS SHALL BE AT THE DISCRETION OF THE ENGINEER.

SHEET NO.	STATION TO STATION	SIDE	QUANTITIES		BEGIN ELEVATION	END ELEVATION	NOTES	BENDS & BRANCHES
			6" CONDUIT, TYPE F FT.	6" BASE PIPE UNDERDRAINS FT.				
	S.R. 29							
10	565+58.29 - 567+50	RT.	611	605	990.92	987.89	TEE	1
	567+50 - 568+00.56	RT.		192	987.89	988.14	CONNECT TO TEE	
	567+50	RT.	23		987.89	987.50	OUTLET INTO DITCH	
10-11	548+35.93 (D) - 548+90.20 (D)	RT.			985.54	984.56	MEET EXISTING. ELEV. UNKNOWN SEE MAD-70-8-68 SH. 55/142	
	548+90.20 (D) - 572+88.56(SR 29)	RT.			984.56	973.95	22.5' BEND	1
	572+88.56	RT.	18		973.95	973.75	90° BEND. OUTLET INTO DITCH	
10	548+20.14 (C) - 548+98.35 (C)	RT.		81	983.70	982.00	90° BEND	1
	548+98.35	RT.	30		982.00	981.50	OUTLET INTO DITCH	
10-11	548+98.35 (C) - 572+00.00	RT/LT		300	983.70	975.97	OUTLET INTO DITCH	
	572+00.00 - 573+12.00	LT.	13		975.97	975.16	90° BEND	1
	573+12.00	LT.			975.16	975.09	OUTLET INTO DITCH	
TOTALS CARRIED TO GENERAL SUMMARY			84	573				

SEQUENCE OF CONSTRUCTION

PHASE 1

APPLY WORK ZONE MARKINGS, INSTALL TRAFFIC SIGNAL AND COVER HEADS. TRAFFIC TO BE MAINTAINED PER STANDARD CONSTRUCTION DRAWING MT-97.11.

PHASES 2 & 3

PERFORM CONSTRUCTION OPERATION FROM STA. 565+58.29 TO STA. 568+00.56 RT. (PHASE 2) AND FROM STA. 548+35.67 RAMP D TO STA. 572+88.56 RT. S.R. 29. (PHASE 3) CONSTRUCT TO TOP OF INTERMEDIATE COURSE, ERECT AND MAINTAIN ALL MAINTENANCE OF TRAFFIC SIGNS, BARRIER AND TRAFFIC SHIFTS TO PERFORM CONSTRUCTION PER STD. DWG. MT-95.45, S.R. 29 SOUTHBOUND MOT TYPICAL SECTION, AND RAMP "D" MOT TYPICAL SECTION.

PHASE 4

PERFORM CONSTRUCTION OPERATIONS FROM STA. 567+49.70 TO STA. 568+49.69 LT. AND STA. 548+98.35 RAMP C TO STA. 573+12.00 LT. S.R. 29 CONSTRUCT TO TOP OF INTERMEDIATE COURSE, ERECT AND MAINTAIN ALL MAINTENANCE OF TRAFFIC SIGNS, BARRIER AND TRAFFIC SHIFTS TO PERFORM CONSTRUCTION PER STD. DWG. MT-95.45, S.R. 29 NORTHBOUND MOT TYPICAL SECTION, AND RAMP "C" MOT TYPICAL SECTION.

PHASE 5

MILL EXISTING SURFACE COURSE ON S.R. 29. CONSTRUCT SURFACE COURSE, INSTALL PERMANENT SIGNAGE, MARKINGS AND ANY INCIDENTALS NECESSARY TO COMPLETE CONSTRUCTION. UNCOVER SIGNAL HEADS AND OPEN TO TRAFFIC. TRAFFIC TO BE MAINTAINED PER STD. DWG. MT-97.11.

ALTERNATE METHODS

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

ITEM 614, MAINTAINING TRAFFIC, AS PER PAN

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON S.R. 29 BY USE OF THE EXISTING PAVEMENT AND THE COMPLETED PAVEMENT. NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS NEW YEARS MEMORIAL DAY	FOURTH OF JULY LABOR DAY THANKSGIVING VILLAGES OR ROAST (LABOR DAY WEEKEND) FARM SCIENCE REVIEW (SEPT. 17-SEPT. 19)
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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
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)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISCONTINUITY IN THE AMOUNT OF \$100 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS 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.

INGRESS & EGRESS FOR ALL DRIVES AND PARKING AREAS SHALL BE MAINTAINED AS PER ODOT C&MS 614.02(A). AREAS WITH MULTIPLE DRIVES SHALL HAVE AT LEAST HALF OF THE DRIVES OPEN AT ALL TIMES. NOTIFICATION SHALL BE GIVEN TO ADJOINING PROPERTIES A MINIMUM OF TWO BUSINESS DAYS IN ADVANCE OF ACCESS INTERRUPTIONS.

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 OMITTED PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS (INCLUDING 0.58 MILE WORK ZONE CENTER LINE, 1.16 MILE WORK ZONE EDGE LINE, AND 122 FEET WORK ZONE STOP LINE) SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, AS PER PLAN, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK WITH OTHER ODOT PROJECTS IN THE AREA. IT IS IMPERATIVE THAT THE CONTRACTORS COOPERATE FULLY WITH EACH OTHER AS OUTLINED IN SECTION 105.08 OF ODOT 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS. ALL MAINTENANCE OF TRAFFIC SHALL BE COORDINATED BETWEEN PROJECTS AND NOT BE IN CONFLICT WITH ONE ANOTHER.

PLACEMENT OF ASPHALT CONCRETE

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

TRENCH FOR WIDENING

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

DUST CONTROL

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

ITEM 616, WATER 5 M GAL.

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL; AND, ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS; OR ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, AS PER PLAN, AND SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE ABOVE ITEMS.

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 APPROVED PRODUCTS WEB PAGE.

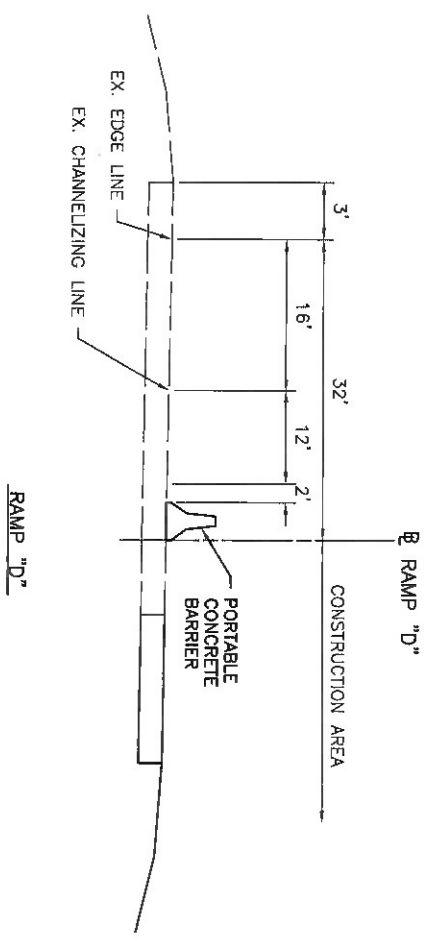
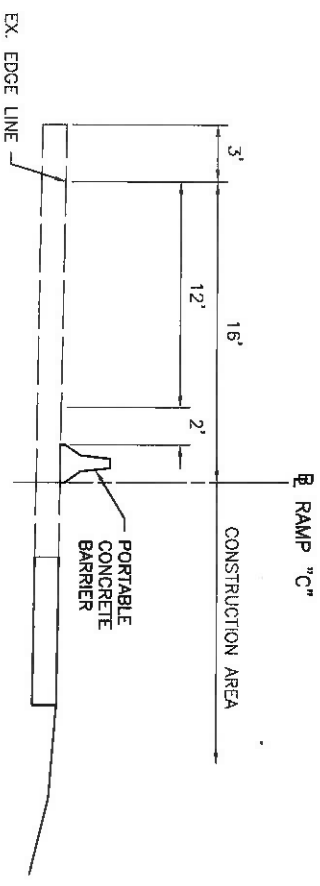
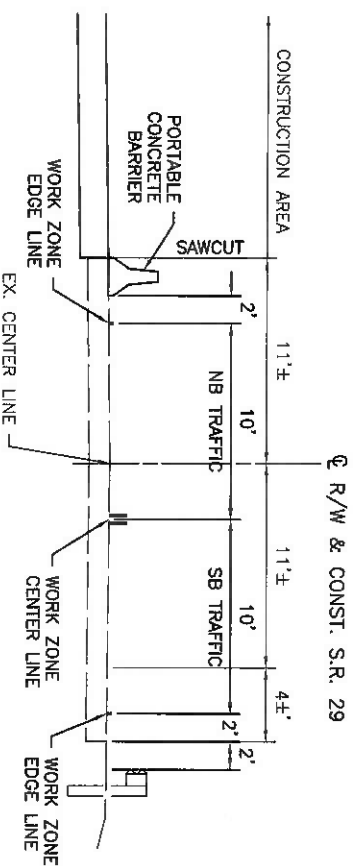
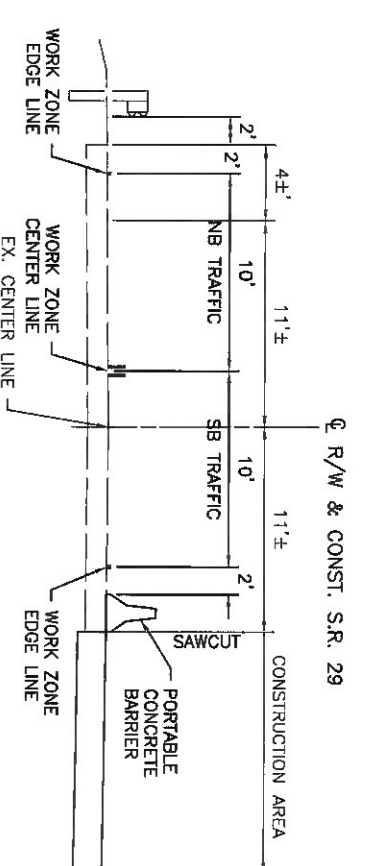
INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN SCD MT-101.75 IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

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

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

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

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, AS PER PLAN, 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 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

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 OMTUCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMTUCD, 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 OMTUCD, 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, SUBSTANTIAL SHIFTS OF A CLOSURE POINT 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).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

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. 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 AN 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 60 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

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

ITEM 614, REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW, OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGN, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 2 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

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

ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 5 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

NOTIFICATION OF CONSTRUCTION INITIATION

AT LEAST FOURTEEN DAYS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS VIA EMAIL AT DO6-PI0@DOT.OHIO.US AND THE DISTRICT WORK ZONE TRAFFIC MANAGER VIA EMAIL AT DO6.MOT@DOT.OHIO.US OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THE NOTIFICATION SHALL ALSO INCLUDE THE PROJECT NUMBER, PID, NAME AND PHONE NUMBER OF THE CONTRACTOR, A POINT OF CONTACT AND THE ANTICIPATED IMPACT ON TRAFFIC. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DISTRICT OFFICE OF COMMUNICATIONS AND THE DISTRICT WORK ZONE TRAFFIC MANAGER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION INITIATION DATE.

ADDITIONALLY, THE VILLAGE OF WEST JEFFERSON SHALL BE NOTIFIED A MINIMUM OF FOURTEEN (14) WORKING DAYS PRIOR TO STARTING WORK AND/OR PRIOR TO EACH PHASE OR MAJOR CHANGE IN TRAFFIC PATTERNS, EITHER PERMANENT OR TEMPORARY WITHIN THE ROADWAY RIGHT-OF-WAY.

PUBLIC OUTREACH AND NOTIFICATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE DISTRICT 6 PUBLIC INFORMATION OFFICE AT 740-833-8260 TO COORDINATE EFFORTS TO NOTIFY ADJACENT RESIDENTS AND BUSINESSES OF THE UPCOMING RESURFACING PROJECT. ADVANCE NOTIFICATION SHALL OCCUR NO LATER THAN FOURTEEN (14) DAYS PRIOR TO THE FIRST DAY OF WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE DISTRICT 6 PUBLIC INFORMATION OFFICE AT 740-833-8260 TO COORDINATE EFFORTS TO NOTIFY ALL LOCAL COUNTY, STATE AND FEDERAL EMERGENCY SERVICES, SCHOOL DISTRICTS AND ADJACENT RESIDENTS AND BUSINESSES OF THE UPCOMING CLOSURE. ADVANCE NOTIFICATION SHALL OCCUR NO LATER THAN FOURTEEN (14) DAYS PRIOR TO CLOSING THE ROAD. IF SUBSEQUENT TO THE ADVANCE NOTIFICATION, THE START DATE IS CHANGED, THEN A NEW SEVEN (7) DAY NOTIFICATION WILL BE REQUIRED. THE ROAD CANNOT BE CLOSED UNLESS PRIOR NOTIFICATION HAS BEEN ACCOMPLISHED. THE SAME PARTIES SHALL BE NOTIFIED WHEN THE CLOSURE HAS CONCLUDED AND THE ROAD IS BACK OPEN TO TRAFFIC.

AGENCIES TO BE NOTIFIED INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING EMERGENCY SERVICES AND SCHOOL FACILITIES:

- JEFFERSON LOCAL SCHOOL DISTRICT
- 906 WEST MAIN STREET
- WEST JEFFERSON, OHIO 43162
- 614-879-7654
- SUPERINTENDENT WILLIAM MULLETT
- WEST JEFFERSON VILLAGE POLICE DEPARTMENT
- 28 EAST MAIN STREET
- WEST JEFFERSON, OHIO 43162
- 614-879-7672
- CHIEF RICK HARDY
- JEFFERSON TOWNSHIP FIRE DEPARTMENT
- 745 WEST MAIN STREET
- WEST JEFFERSON, OHIO 43162
- 614-879-8265

NOTIFICATION OF TRAFFIC RESTRICTIONS

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

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

ITEM	DURATION OF CLOSURE	NOTIFICATION TIME TABLE
RAMP & ROAD CLOSURES	>=2 WEEKS >12 HOURS & <2 WEEKS <12 HOURS	NOTICE DUE TO PERMITS & PIO 21 CALENDAR DAYS PRIOR TO CLOSURE 14 CALENDAR DAYS PRIOR TO CLOSURE 4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>=2 WEEKS <2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE 5 BUSINESS DAYS PRIOR TO CLOSURE

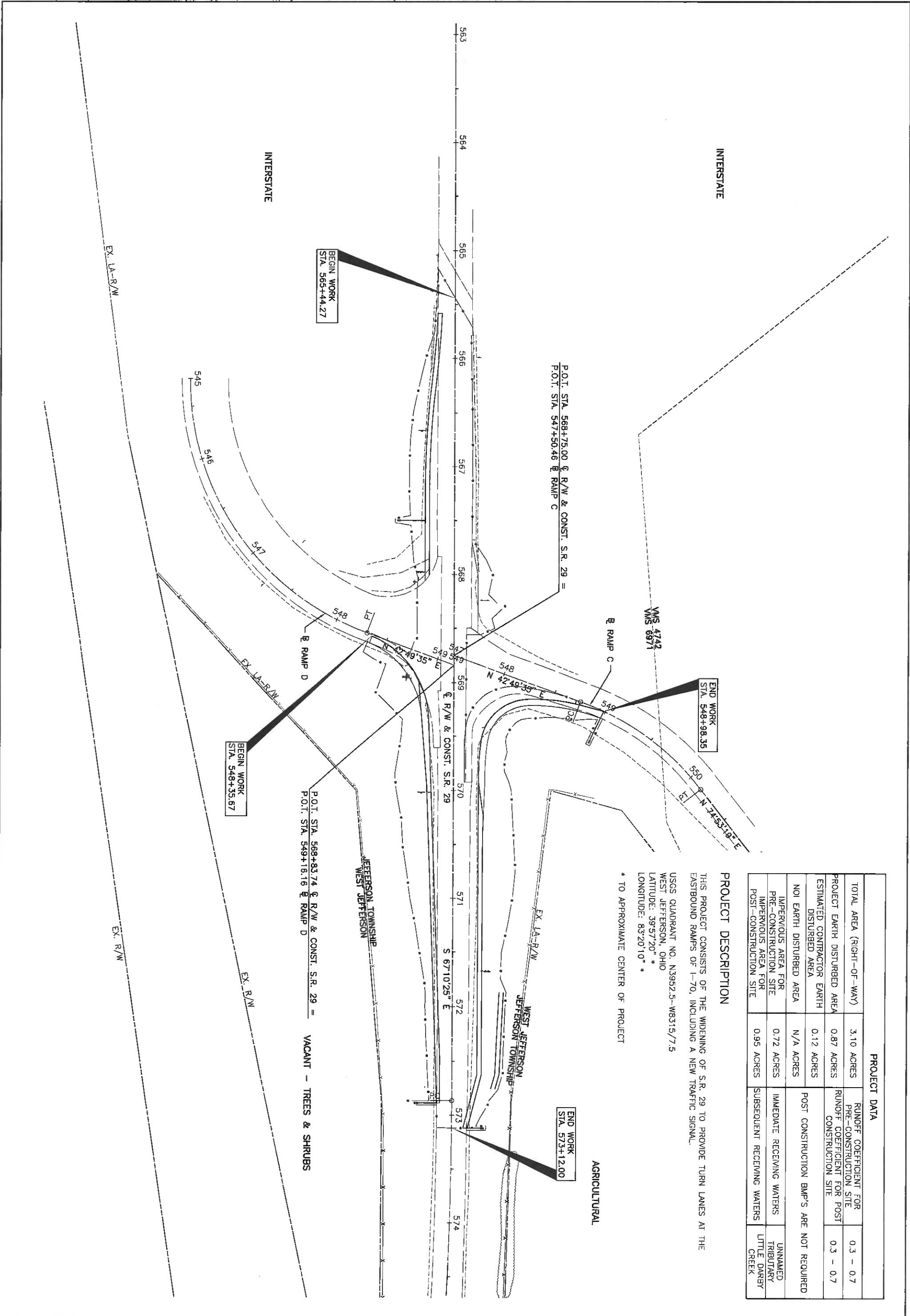
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES 14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

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

FARM SCIENCE REVIEW

LANE OR SHOULDER CLOSURES ARE NOT PERMITTED DURING THE FARM SCIENCE REVIEW 5AM-70PM DAILY ON THE FOLLOWING ROUTES:
I-70 BETWEEN SR 54 (CLARK COUNTY) AND SR 142
SR 29 BETWEEN I-70 AND SR 187

ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHI. NO.	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHI. NO.	
ROADWAY										
201	LUMP		CLEARING & GRUBBING		625	298	FT.	CONDUIT, 2" 725.04		
202	280	SQ. YD.	PAVEMENT REMOVED		625	26	FT.	CONDUIT, 3" 725.04		
203	1,531	CU. YD.	EXCAVATION		625	324	FT.	TRENCH		
203	909	CU. YD.	EMBANKMENT		625	2	EACH	PULL BOX, 725.08, 18"		
203	350	CU. YD.	GRANULAR MATERIAL, TYPE B		625	1	EACH	PULL BOX, 725.08, 24"		
204	2,073	SQ. YD.	SUBGRADE COMPACTION		625	3	EACH	GROUND ROD		
204	1	HOURL	PROOF ROLLING		632	130	FT.	TEPPER WIRE, WITH ACCESSORIES		
653	242	CU. YD.	TOPSOIL FURNISHED AND PLACED		632	130	FT.	MESSANGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES		
SPEC.	1,000	SQ. YD.	SOIL STERILANT	4	632	7	EACH	VEHICULAR SIGNAL HEAD, (LED), BLACK, 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE WITH BACKPLATE, AS PER PLAN	22	
SPEC.	LUMP		MISC. IDENTIFICATION OF BAT HABITAT TREES	5	632	1	EACH	VEHICULAR SIGNAL HEAD, (LED), BLACK, 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE WITH BACKPLATE, AS PER PLAN	22	
SPEC.	2,100	SQ. YD.	GEOTEXTILE FABRIC, 712.09, TYPE D	5	632	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD		
EROSION CONTROL										
601	12	SQ. YD.	TIED CONCRETE BLOCK MAT, TYPE 1		632	528	FT.	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		
659	2,178	SQ. YD.	SEEDING AND MULCHING		632	2	EACH	STRAIN POLE FOUNDATION		
659	0.30	TON	COMMERCIAL FERTILIZER		632	381	FT.	POWER CABLE, 3-1 CONDUCTOR, NO. 6 AWG		
659	0.10	ACRE	LIME		632	50	FT.	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG		
659	12	M GAL.	WATER		633	1	EACH	POWER SERVICE		
832	5,000	EACH	EROSION CONTROL		633	1	EACH	CABINET FOUNDATION	24	
DRAINAGE										
605	573	FT.	6" BASE PIPE UNDERDRAINS		633	1	EACH	CONTROLLER WORK PAD		
605	616	FT.	6" UNGLASSIFIED PIPE UNDERDRAINS		633	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	24	
611	6	EACH	PRECAST REINFORCED CONCRETE OUTLET		809	2	EACH	ADVANCE RADAR DETECTION		
611	40	FT.	4" CONDUIT, TYPE E		809	1	EACH	STOP-BAR RADAR DETECTION		
611	124	FT.	6" CONDUIT, TYPE F		809	2	EACH	HIGH SPEED ETHERNET RADIO	24	
PAVEMENT										
252	1,368	FT.	FULL DEPTH PAVEMENT SAWING		614	5	EACH	REPLACEMENT DRUM		
254	2,028	SQ. YD.	PAVEMENT PLANING, ASPHALT CONCRETE		614	2	EACH	REPLACEMENT SIGN		
301	247	CU. YD.	ASPHALT CONCRETE BASE, PG64-22		614	60	HOURL	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE		
304	525	CU. YD.	AGGREGATE BASE		616	5	M GAL.	WATER		
407	308	GAL.	NON-TRACKING TACK COAT		TRAFFIC CONTROL					
442	145	CU. YD.	ASPHALT CONCRETE, SURFACE COURSE, 12.5 MM, TYPE A (448)	3,4	614	5	EACH	MAINTENANCE OF TRAFFIC		
442	71	CU. YD.	ASPHALT CONCRETE, INTERMEDIATE COURSE, 19 MM, TYPE A (448)		614	2	EACH	REPLACEMENT DRUM		
452	423	SQ. YD.	13" NON-REINFORCED CONCRETE PAVEMENT, CLASS GC1		614	60	HOURL	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE		
SPEC.	760	SQ. YD.	PAVEMENT REINFORCING GRID (GLASGRID 8502 OR APPROVED EQUAL)		616	5	M GAL.	WATER		
TRAFFIC CONTROL										
621	27	EACH	RPM		616	5	M GAL.	WATER		
621	10	EACH	RAISED PAVEMENT MARKER REMOVED		TRAFFIC SIGNALS					
630	12.5	SQ. FT.	SIGN, FLAT SHEET		TRAFFIC SIGNALS					
630	106.0	FT.	GROUND MOUNTED SUPPORT, NO. 3 POST		TRAFFIC SIGNALS					
630	11	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION		TRAFFIC SIGNALS					
630	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		TRAFFIC SIGNALS					
630	9	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		TRAFFIC SIGNALS					
630	9	EACH	SIGN POST REFLECTOR		TRAFFIC SIGNALS					
644	0.25	MILE	EDGE LINE, 8"		TRAFFIC SIGNALS					
644	0.24	MILE	CENTER LINE, 4"		TRAFFIC SIGNALS					
644	305	FT.	CHANNELIZING LINE, 8"		TRAFFIC SIGNALS					
644	23	FT.	STOP LINE, 24"		TRAFFIC SIGNALS					
644	4	EACH	LANE ARROW		TRAFFIC SIGNALS					
644	372	FT.	REMOVAL OF PAVEMENT MARKING		TRAFFIC SIGNALS					
646	0.06	MILE	EDGE LINE, 6"		TRAFFIC SIGNALS					
646	55	FT.	CHANNELIZING LINE, 8"		TRAFFIC SIGNALS					
646	99	FT.	STOP LINE, 24"		TRAFFIC SIGNALS					
646	1	EACH	LANE ARROW		TRAFFIC SIGNALS					
TRAFFIC SIGNALS										
108	LUMP		TYPE B CPM PROGRESS SCHEDULE		624	LUMP		MOBILIZATION		
614	LUMP		MAINTAINING TRAFFIC, AS PER PLAN		624	LUMP		CONSTRUCTION LAYOUT STAKES AND SURVEYING		
623	LUMP		CONSTRUCTION LAYOUT STAKES AND SURVEYING		624	LUMP		MOBILIZATION		



PROJECT DATA			
TOTAL AREA (RIGHT-OF-WAY)	3.10 ACRES	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.3 - 0.7
PROJECT EARTH DISTURBED AREA	0.87 ACRES	RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.3 - 0.7
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.12 ACRES	POST CONSTRUCTION BMP'S ARE NOT REQUIRED	
NOI EARTH DISTURBED AREA	N/A ACRES		
IMPERVIOUS AREA FOR PRE-CONSTRUCTION SITE	0.72 ACRES	IMMEDIATE RECEIVING WATERS	UNNAMED TRIBUTARY
IMPERVIOUS AREA FOR POST-CONSTRUCTION SITE	0.95 ACRES	SUBSEQUENT RECEIVING WATERS	LITTLE DARBY CREEK

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE WIDENING OF S.R. 29 TO PROVIDE TURN LANES AT THE EASTBOUND RAMP OF I-70, INCLUDING A NEW TRAFFIC SIGNAL.
 USGS QUADRANT NO. N3952.5-W8315/7.5
 WEST JEFFERSON, OHIO
 LATITUDE: 39°57'20" *
 LONGITUDE: 83°20'10" *
 * TO APPROXIMATE CENTER OF PROJECT


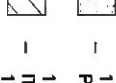
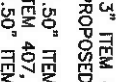
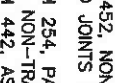
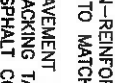


CURVE DATA
 CURVE NO. D1
 P.I. STA. 547+00.04
 $\Delta = 70.2527^\circ$ LT.
 $R = 2300.01'$
 $D_c = 249.11'$
 $T = 175.81'$
 $L = 306.19'$
 $E = 55.79'$
 P.C. STA. 545+24.23
 P.T. STA. 548+30.42

CURVE DATA
 CURVE NO. C1
 P.I. STA. 549+46.60
 $\Delta = 32.0344^\circ$ RT.
 $R = 2300.01'$
 $D_c = 249.11'$
 $T = 71.58'$
 $L = 139.40'$
 $E = 10.08'$
 P.C. STA. 548+75.02
 P.T. STA. 550+14.42

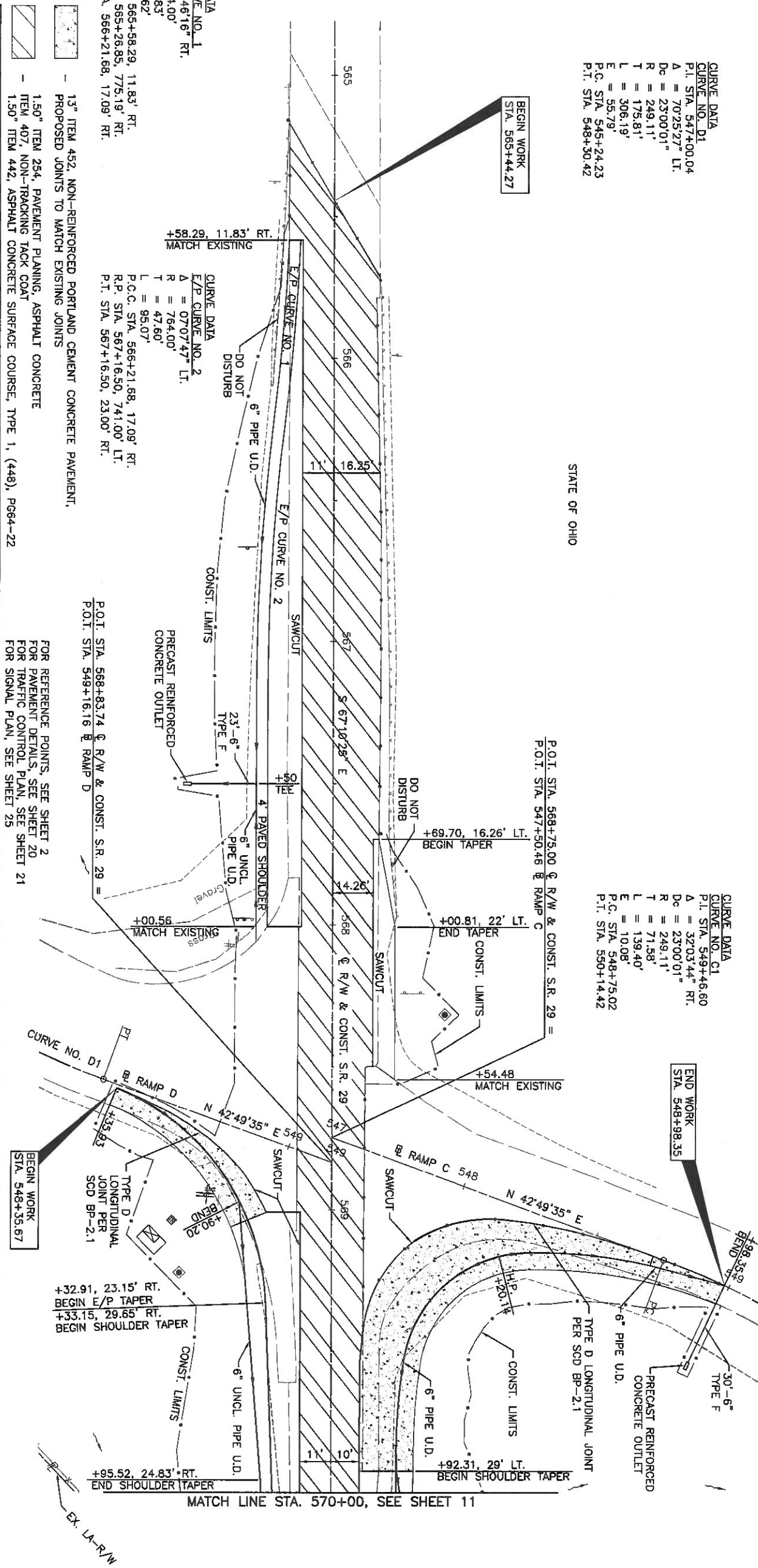
CURVE DATA
 E/P CURVE NO. 1
 $\Delta = 04.616^\circ$ RT.
 $R = 764.00'$
 $T = 31.83'$
 $L = 63.62'$
 P.C. STA. 565+58.29, 11.83' RT.
 R.P. STA. 565+26.85, 75.19' RT.
 P.C.C. STA. 566+21.66, 17.09' RT.

CURVE DATA
 E/P CURVE NO. 2
 $\Delta = 07.0747^\circ$ LT.
 $R = 764.00'$
 $T = 47.60'$
 $L = 95.07'$
 P.C. STA. 566+21.68, 17.09' RT.
 R.P. STA. 567+16.50, 74.00' LT.
 P.T. STA. 567+16.50, 23.00' RT.

-  13" ITEM 452, NON-REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.
-  PROPOSED JOINTS TO MATCH EXISTING JOINTS
-  1.50" ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE
-  ITEM 407, NON-TRACKING TACK COAT
-  1.50" ITEM 442, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22

FOR REFERENCE POINTS, SEE SHEET 2
 FOR PAVEMENT DETAILS, SEE SHEET 20
 FOR TRAFFIC CONTROL PLAN, SEE SHEET 21
 FOR SIGNAL PLAN, SEE SHEET 25

980	565+00	994.40	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	980
1010	566+00	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	1010	1005
1005	567+00	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	1005	1000
1000	568+00	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	1000	995
995	569+00	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	995	990
990	570+00	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	990	985
985	571+00	994.40	994.24	994.00	993.69	993.37	992.97	992.52	992.05	991.56	991.03	990.48	989.92	989.33	988.73	988.08	987.36	986.73	986.03	985.29	985	980



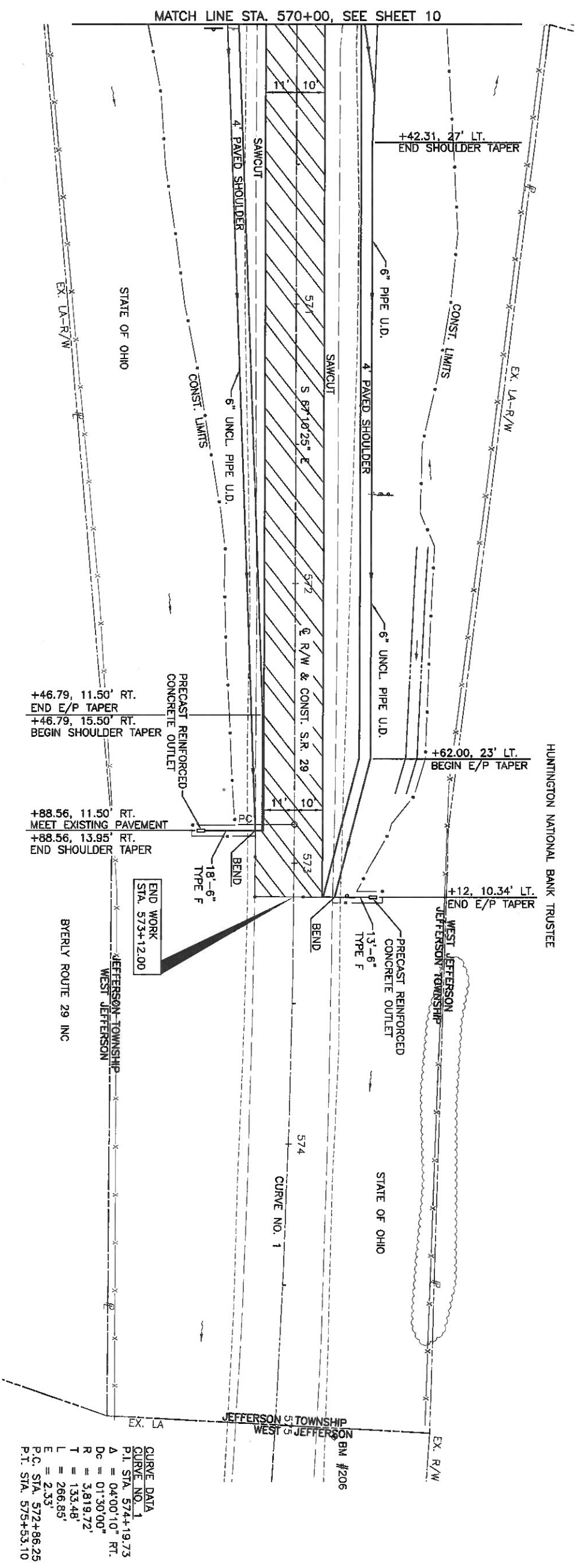
BEGIN WORK
 STA. 565+44.27

END WORK
 STA. 548+98.35

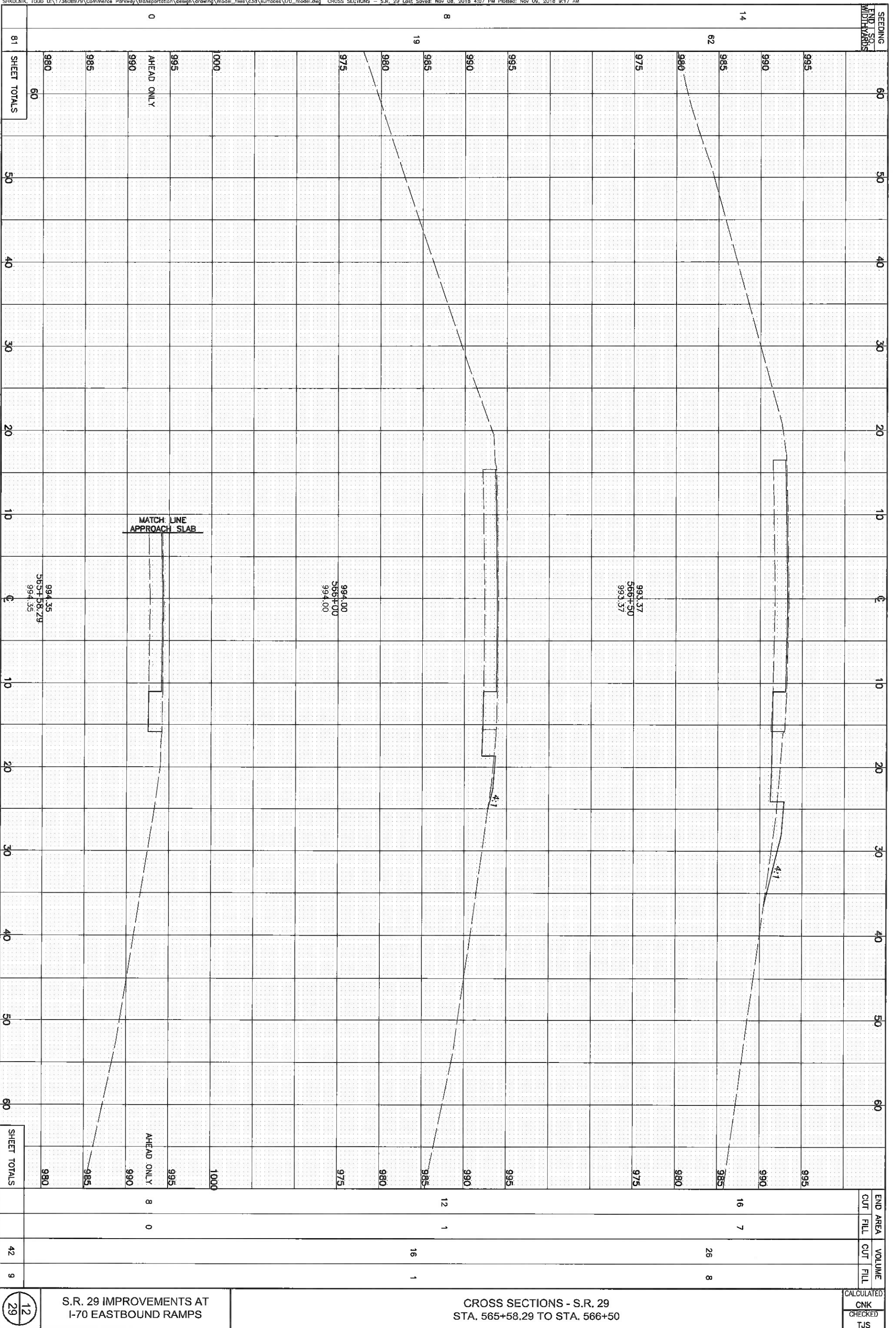
995	985.29	985.29
990	984.55	984.55
985	983.81	983.81
980	983.07	983.07
975	982.34	982.34
970	981.62	981.62
965	980.90	980.90
960	980.22	980.22
955	979.58	979.58
	979.00	979.00
	978.43	978.43
	977.87	977.87
	977.31	977.31
	976.82	976.82
	976.37	976.37
	975.96	975.96
	975.56	975.56
	975.15	975.15
	974.73	974.73
	974.38	974.38
	974.05	974.05
995	974.05	974.05
990	974.05	974.05
985	974.05	974.05
980	974.05	974.05
975	974.05	974.05
970	974.05	974.05
965	974.05	974.05
960	974.05	974.05
955	974.05	974.05

1.50" ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE
 1.50" ITEM 407, NON-TRACKING TACK COAT
 1.50" ITEM 442, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22

FOR REFERENCE POINTS, SEE SHEET 2
 FOR PAVEMENT DETAILS, SEE SHEET 20
 FOR TRAFFIC CONTROL PLAN, SEE SHEET 21



CURVE DATA
 CURVE NO. 1
 P.I. STA. 574+19.75
 Δ = 04°00'10" RT.
 Dc = 01'30'00"
 R = 3,819.72'
 T = 133.48'
 L = 266.85'
 E = 2.33'
 P.C. STA. 572+86.25
 P.T. STA. 575+53.10

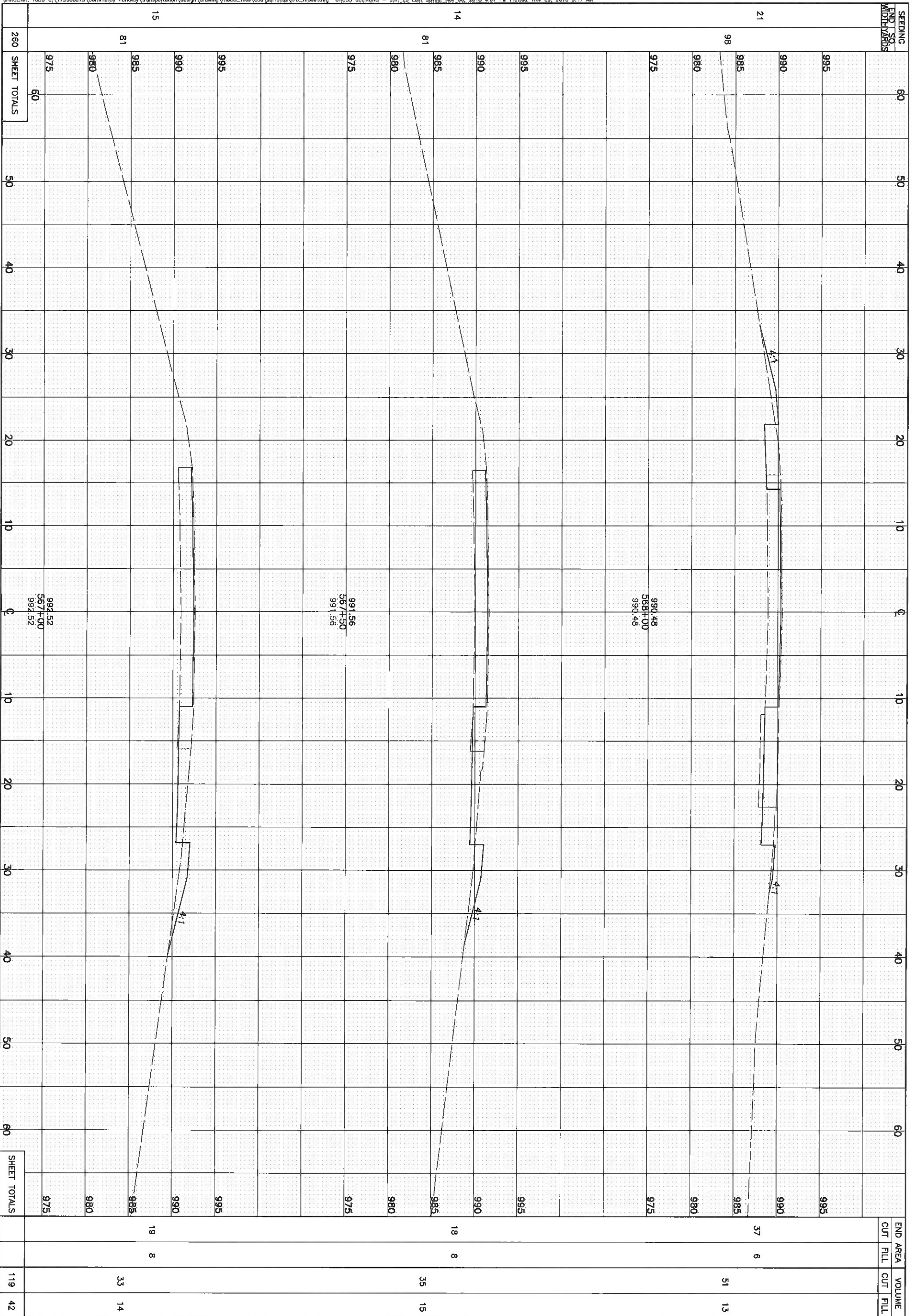


S.R. 29 IMPROVEMENTS AT I-70 EASTBOUND RAMPS

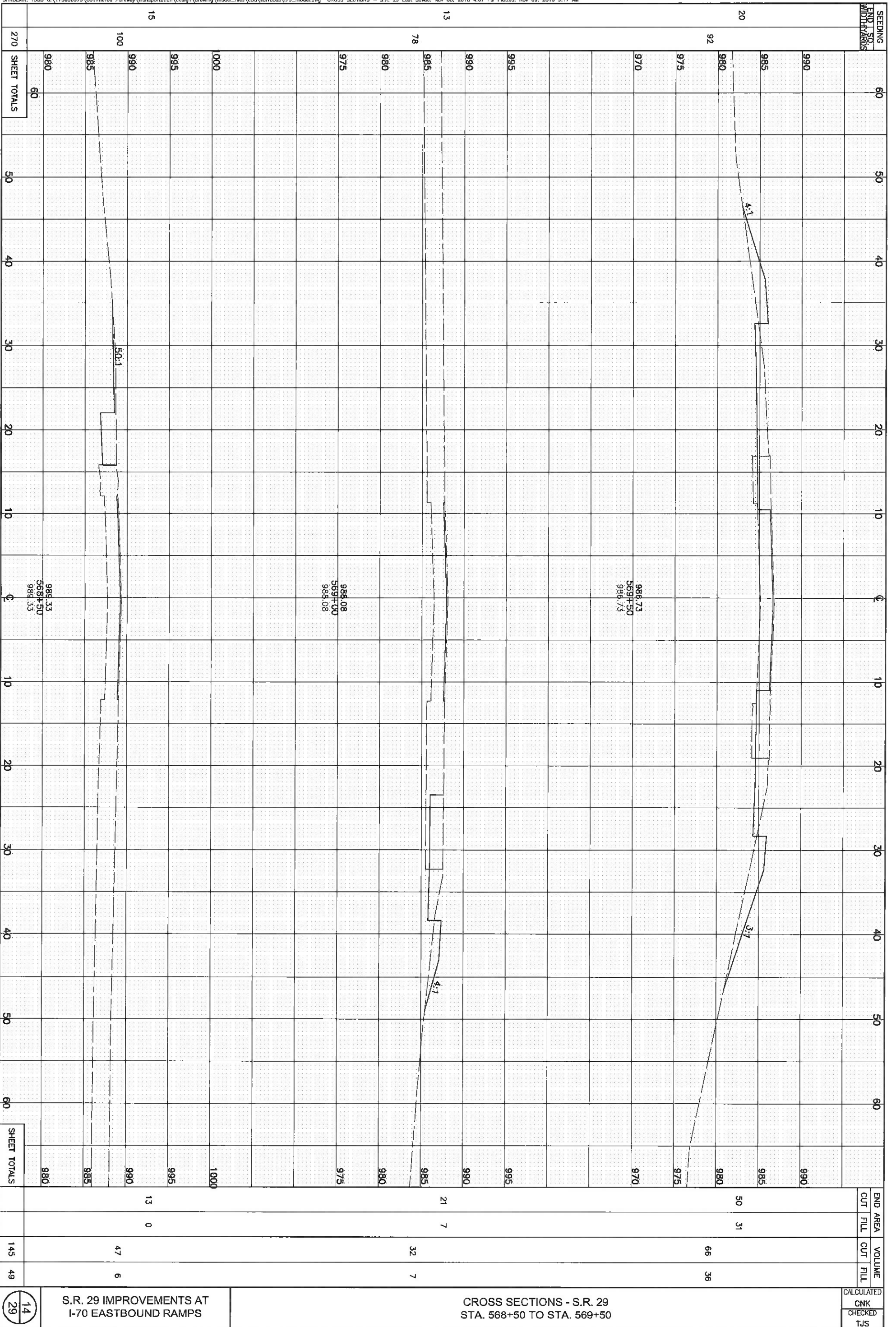
CROSS SECTIONS - S.R. 29
STA. 565+58.29 TO STA. 566+50

CALCULATED
CNK
CHECKED
TJS





SEEDING	END SO. WIDTH (FEET)	60	50	40	30	20	10	0	10	20	30	40	50	60	END AREA	VOLUME
															CUT	FILL
260	60														119	42
975	60															
980	60															
985	60															
990	60															
995	60															
998	60															
14	60														18	8
15	60														19	8
13	60														33	14
13	60														35	15
13	60														51	13
13	60														37	6

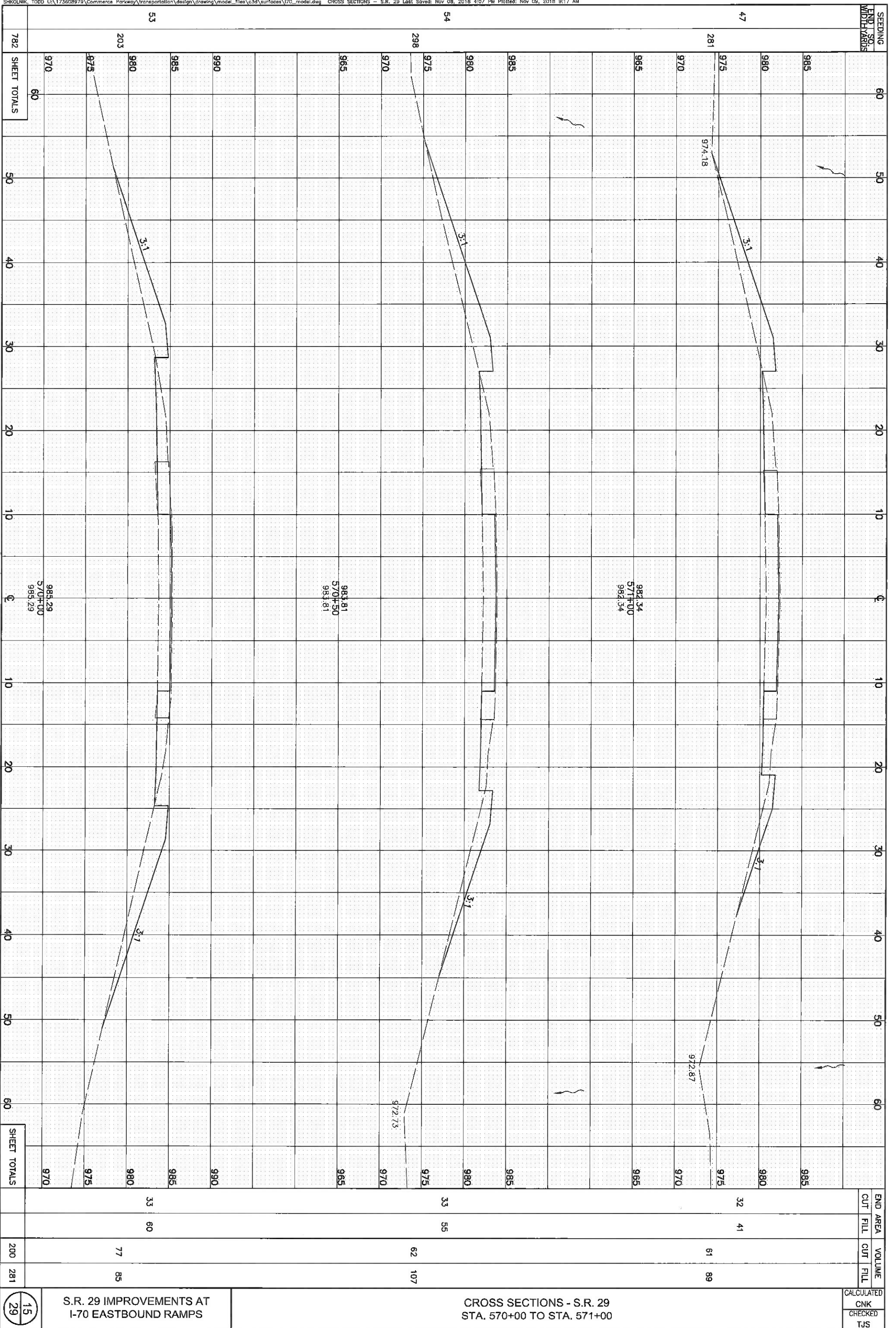


S.R. 29 IMPROVEMENTS AT I-70 EASTBOUND RAMPS

CROSS SECTIONS - S.R. 29
STA. 568+50 TO STA. 569+50

CALCULATED
CNK
CHECKED
TJS





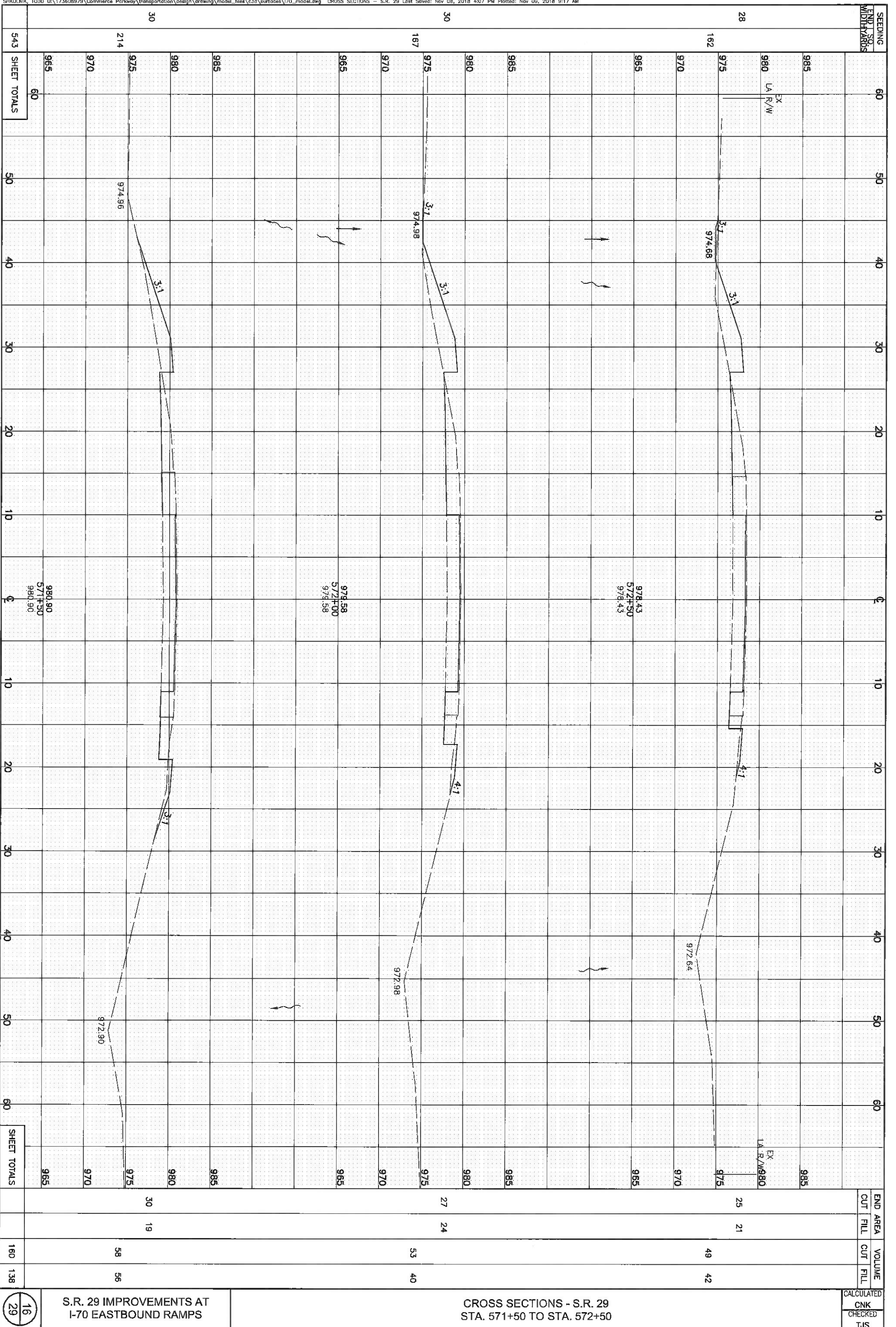
SEEDING	END SO. MATH YARDS	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
47	281	32	41	61	89
54	298	33	55	62	107
53	203	33	60	77	85
782	SHEET TOTALS			200	281

15
29

S.R. 29 IMPROVEMENTS AT I-70 EASTBOUND RAMPS

CROSS SECTIONS - S.R. 29
STA. 570+00 TO STA. 571+00

CALCULATED
CNK
CHECKED
TJS



CALCULATED
CNK
CHECKED
TJS

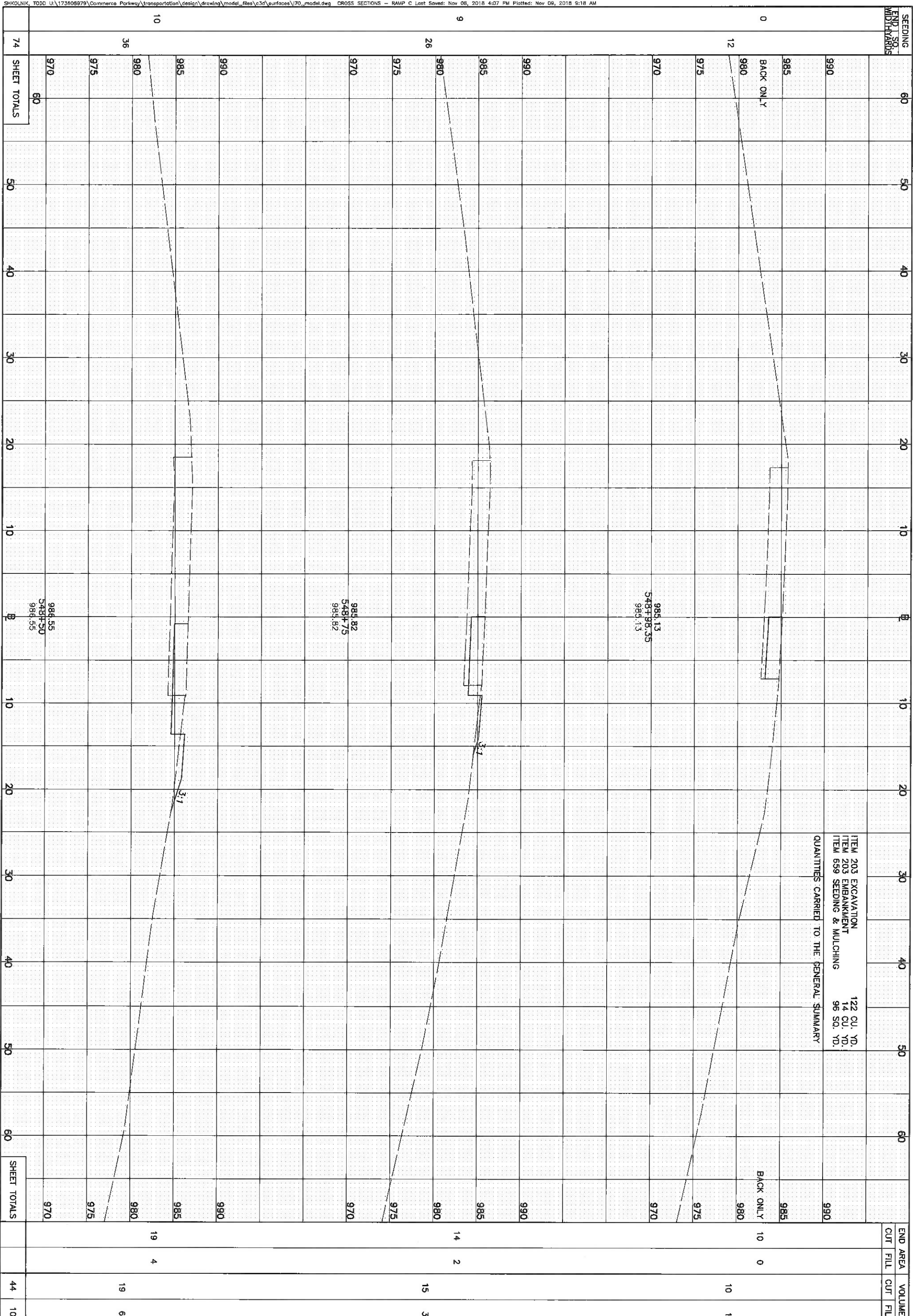
CROSS SECTIONS - S.R. 29
STA. 571+50 TO STA. 572+50

S.R. 29 IMPROVEMENTS AT
I-70 EASTBOUND RAMPS

16
29

SHEET TOTALS

SHEET TOTALS



ITEM 203 EXCAVATION 122 CU. YD.
 ITEM 203 EMBANKMENT 14 CU. YD.
 ITEM 659 SEEDING & MULCHING 96 SQ. YD.
 QUANTITIES CARRIED TO THE GENERAL SUMMARY





END AREA	CUT	FILL	VOLUME	CUT	FILL
10	14	2	15	15	3
0	4	4	19	19	6
10	10	1	10	10	10

S.R. 29 IMPROVEMENTS AT I-70 EASTBOUND RAMPS

CROSS SECTIONS - RAMP C
 STA. 548+50 TO STA. 548+98.35

CALCULATED
 CNK
 CHECKED
 TJS

LEGEND

-  EXIST. ELEVATION
-  PROP. ELEVATION
-  1.50' ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE
-  13" ITEM 452, NON-REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT, PROPOSED JOINTS TO MATCH EXISTING JOINTS

NOTES: ALL ELEVATIONS ARE TOP OF PAVEMENT.
 JOINTS IN NEW CONCRETE PAVEMENT SHALL MATCH THE TYPE AND LOCATION OF EXISTING CONCRETE JOINTS AND SHALL CONFORM TO THE APPLICABLE BP SERIES STANDARD CONSTRUCTION DRAWINGS AS NOTED ON THE TITLE SHEET. FINAL PLACEMENT OF THE JOINTS SHALL BE AT THE DISCRETION OF THE ENGINEER.

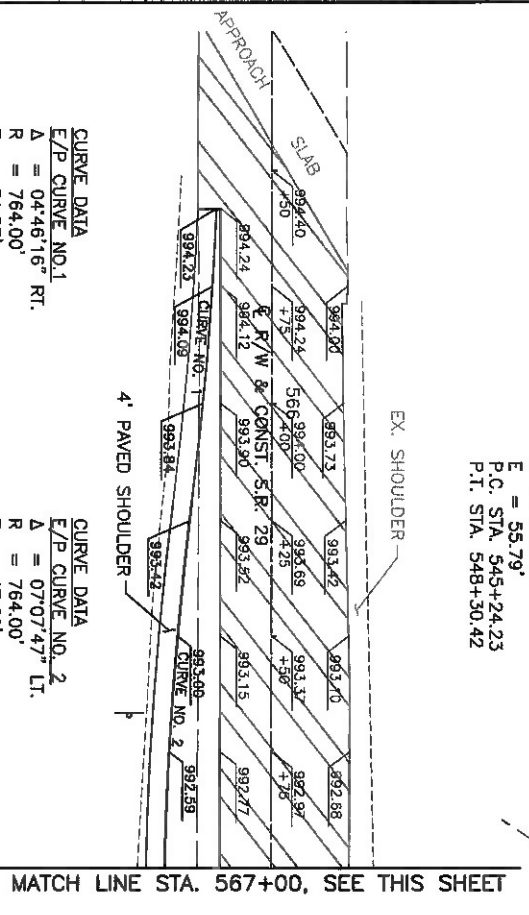
CURVE DATA
 CURVE NO. C1
 P.I. STA. 549+46.60
 Δ = 32°03'44" RT.
 Dc = 23'00'01"
 R = 249.11'
 T = 71.58'
 L = 139.40'
 E = 10.08'
 P.C. STA. 548+75.02
 P.T. STA. 550+14.42

CURVE DATA
 E/P RETURN A
 Δ = 14°17'08" LT.
 R = 175.00'
 T = 21.93'
 L = 43.63'
 P.C. STA. 548+71.17, 3.44' RT.
 R.P. STA. 549+34.78, 175.00' RT.
 P.C.C. STA. 548+28.98, 14.11' RT.

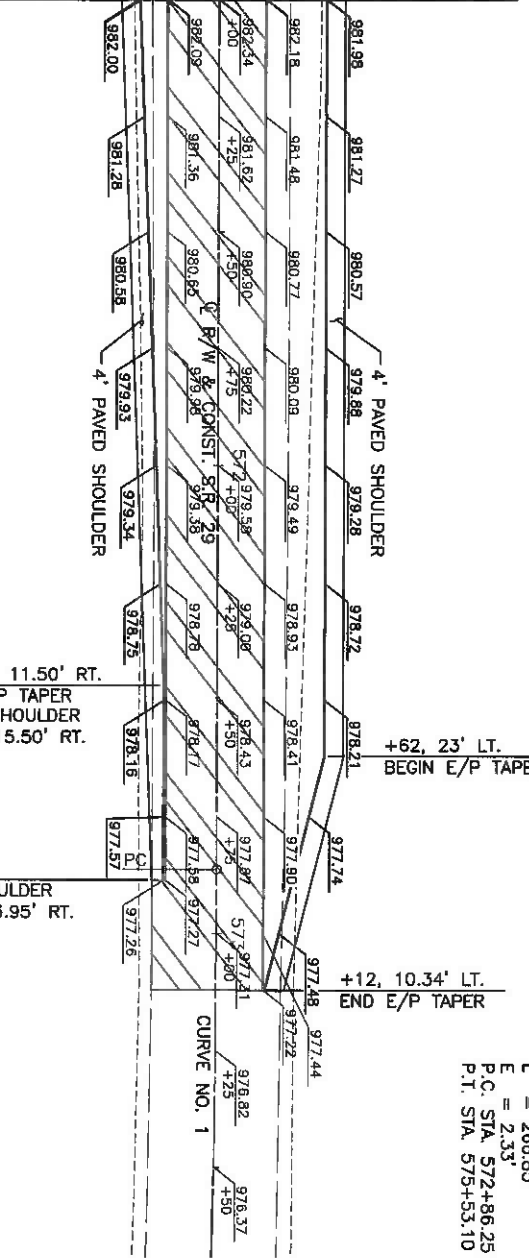
CURVE DATA
 E/P RETURN B
 Δ = 79°27'25" LT.
 R = 45.00'
 T = 37.40'
 L = 62.41'
 P.C.C. STA. 548+28.98, 14.11' RT.
 R.P. STA. 548+45.34, 56.03' RT.
 P.C.C. STA. 569+52.89, 25.58' LT.

MATCH LINE STA. 567+00, SEE THIS SHEET

MATCH LINE STA. 571+00, SEE THIS SHEET



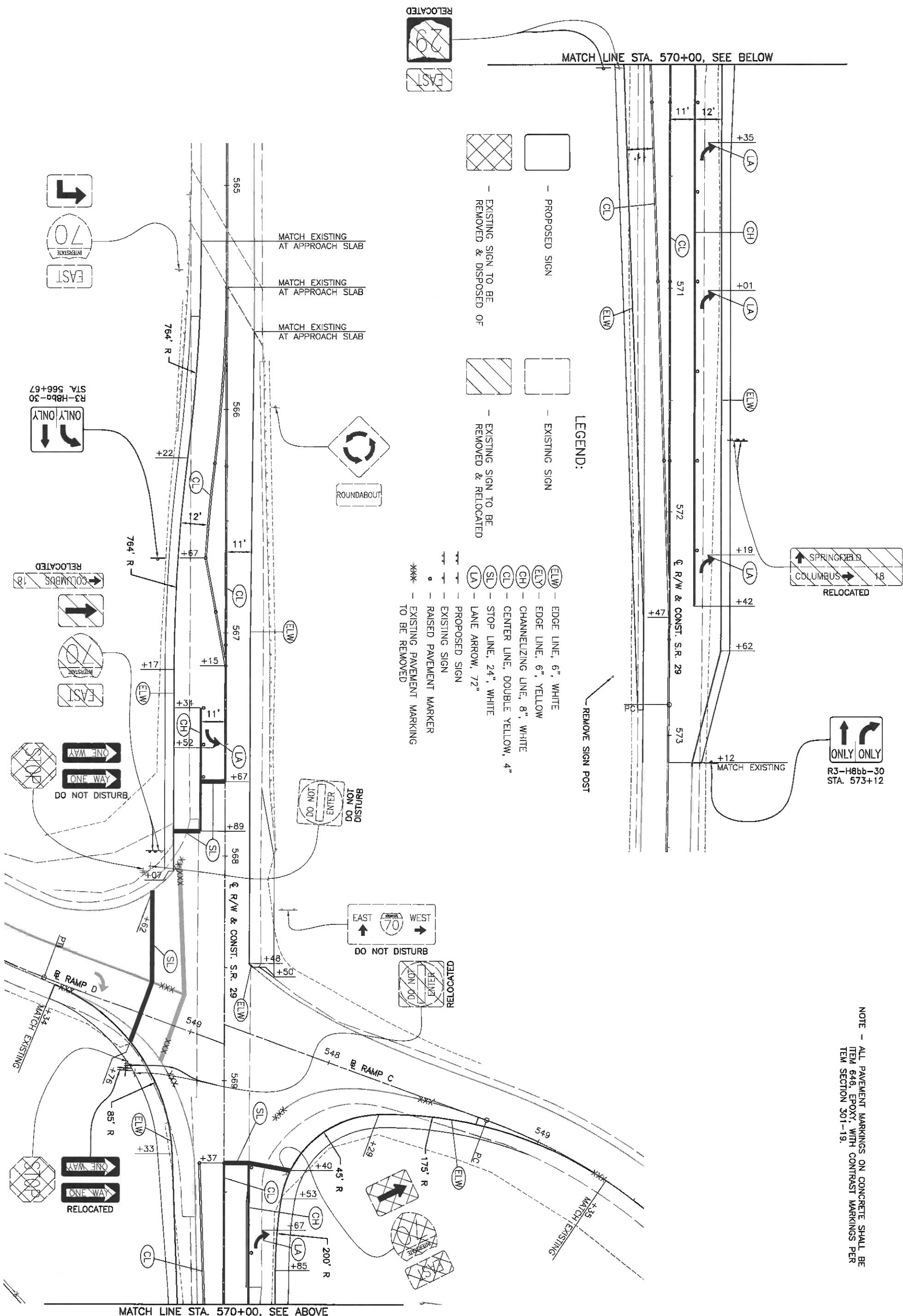
MATCH LINE STA. 571+00, SEE THIS SHEET



CURVE DATA
 CURVE NO. D1
 P.I. STA. 547+00.04
 Δ = 70°25'27" LT.
 Dc = 23'00'01"
 R = 249.11'
 T = 173.81'
 L = 306.19'
 E = 55.79'
 P.C. STA. 545+24.23
 P.T. STA. 548+30.42

CURVE DATA
 E/P RETURN D
 Δ = 65°32'48" RT.
 R = 85.00'
 T = 54.72'
 L = 97.24'
 P.C. STA. 548+35.93, 1.21' RT.
 R.P. STA. 548+32.48, 86.14' RT.
 P.T. STA. 569+32.91, 23.15' RT.

CURVE DATA
 CURVE NO. 1
 P.I. STA. 574+19.73
 Δ = 04°00'10" RT.
 Dc = 01'30'00"
 R = 3,819.72'
 T = 133.48'
 L = 268.85'
 E = 2.33'
 P.C. STA. 572+86.25
 P.T. STA. 575+53.10



NOTE - ALL PAVEMENT MARKINGS ON CONCRETE SHALL BE ITEM 646, EPOXY, WITH CONTRAST MARKINGS PER ITEM SECTION 301-19.

NEW TRAFFIC SIGNAL INSTALLATION
 THIS WORK CONSISTS OF FURNISHING AND INSTALLING TRAFFIC SIGNAL EQUIPMENT, COMPLETE AND READY FOR SERVICE. THIS WORK ALSO INCLUDES NECESSARY EXCAVATION AND BACKFILL, DISPOSAL OF DISCARDED MATERIALS, RESTORATION OF DISTURBED FACILITIES AND SURFACES TO A CONDITION EQUAL TO THAT EXISTING BEFORE THE WORK STARTED, AND ELECTRICAL TESTING AS SPECIFIED.

PULL BOXES, CONDUITS, GROUND RODS, AND CABLE SPLICING KITS REQUIRED FOR TRAFFIC SIGNAL EQUIPMENT INSTALLATIONS ARE SPECIFIED IN ITEM 625.

BEFORE ANY WORK IS STARTED ON THE TRAFFIC SIGNAL, THE DISTRICT SIX TRAFFIC ENGINEER (740-833-8198) AND THE CONTRACTOR'S REPRESENTATIVE SHALL REVIEW AND RESOLVE ANY POTENTIAL PROBLEMS AT THE LOCATION WHERE THE NEW SIGNAL WILL BE CONSTRUCTED.

ALL OF THE REQUIRED PERMANENT SIGNS SHALL BE ERECTED AND THE REQUIRED PERMANENT PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO THE FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL.

PRIOR TO THE FINAL ACCEPTANCE OF THE COMPLETED TRAFFIC SIGNAL, THE DISTRICT SIX ROADWAY SERVICES REPRESENTATIVE AND THE CONTRACTOR'S REPRESENTATIVE SHALL INSPECT AND RESOLVE ANY EXISTING PROBLEMS PRIOR TO THE ACCEPTANCE OF EACH NEW SIGNAL BY THE OHIO DEPARTMENT OF TRANSPORTATION.

SIGNAL ACTIVATION
 PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED. (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT AFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

DETECTION MAINTENANCE
 IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NONINTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDON, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

WORK INSPECTION
 THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CIRCUMSTANCES:

1. EXISTING SIGNAL INSTALLATION WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES, OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME THE CONTRACTOR'S OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
2. NEW SIGNAL INSTALLATION OR DEVICE, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THIS FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS AND PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER WITH THE NAME(S) AND PHONE NUMBER(S) OF THE CONTRACTOR'S REPRESENTATIVE(S) TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MUST GIVE PROMPT ATTENTION TO THESE CALLS AND BE READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF AN OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE NEW SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROLLERS ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO OPERATION WITHIN THE ALLOWED 8 HOUR TIME PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

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

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

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

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

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
 2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
 3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED AND REPLACED;
 4. A DIAGNOSIS OR REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
 5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.
- A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

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

STRAIN POLE AND PEDESTAL FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE AND PEDESTAL FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TO-21.20 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN SCD TO-21.20 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

ITEM 632 - POWER SERVICE

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF OHIO EDISON FOR INFORMATION REGARDING THE METER BASE INSTALLATION PRIOR TO ORDERING POLES. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS.

THE VOLTAGE SUPPLIED SHALL BE NOMINALLY 120 VOLTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES WITH THE EXCEPTION OF NORMAL MONTHLY ENERGY CHARGES. WHERE THERE IS AN EXISTING TRAFFIC SIGNAL THAT IS BEING REPLACED, THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY TO CONTINUE BILLING ON THE EXISTING DISTRICT 6 ACCOUNT. WHERE A NEW SIGNAL IS BEING INSTALLED, THE CONTRACTOR SHALL ESTABLISH THE ACCOUNT IN THE DISTRICT'S NAME FROM THE ONSET.

THE ADDRESS FOR POWER SERVICE IS 4895 S.R. 29, WEST JEFFERSON, OHIO 43162.

ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), BLACK, 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE AS PER PLAN
ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), BLACK, 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE AS PER PLAN
 IN ADDITION TO THE REQUIREMENTS OF CMS 632 AND 732, THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET THE SPECIFICATIONS.
 2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
 3. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL.
 4. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.
 5. **NOT USED**
 6. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.
 7. THE LIGHT EMITTING DIODE (LED) SIGNAL LAMP UNITS SHALL MEET THE REQUIREMENTS OF CMS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.
 8. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.
 9. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
 10. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS. BEFORE CLOSING SERRATIONS, APPLY A BEAD OF ROOM-TEMPERATURE VULCANIZING (RTV) SILICONE TO ALL SERRATED SURFACES AND THEN TIGHTEN. RTV SILICONE SHALL BE WHITE TO FACILITATE VISUAL INSPECTION. ON HEADS WITH DUAL CONCENTRIC SERRATED RINGS, COMPLETELY FILL THE SPACE BETWEEN THE RINGS WITH RTV SILICONE.
 11. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS OR TETHERED HEADS.
- ITEM 632 - COVERING OF VEHICULAR SIGNAL HEADS, AS PER PLAN**
 IN ADDITION TO FOLLOWING CMS 632, ALL PARTS OF THE SIGNAL HEADS INCLUDING THE ENTIRE BACKPLATE SHALL BE COVERED.

FURNISH A CDMA MODEM, TWO ANTENNAS WITH A 10-FOOT CABLE, AND A 10' ETHERNET CABLE FOR REMOTE WIRELESS CELLULAR COMMUNICATION. FOR NETWORK CONSISTENCY CDMA MODEMS SHALL BE THE SIERRA WIRELESS AIRLINK GX450 ETHERNET MODEL.

THIS ITEM SHALL INCLUDE THE FURNISHING OF A CONTROL, ROCKETLINK ES8105 ETHERNET SWITCH WITH ALL POWER SUPPLIES NECESSARY TO FUNCTION.

THIS ITEM SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A MOUNTING BRACKET FOR THE ANTENNA WITH ALL NECESSARY HARDWARE INCLUDING BUT NOT LIMITED TO SPRING NUTS, WASHERS, AND BOLTS THAT INSTALLS TO THE MOUNTING CHANNEL ON THE SIDE OF THE SIGNAL CABINET.

THE CDMA MODEM EQUIPMENT SHALL BE DELIVERED TO ODOT DISTRICT 6 TRAFFIC FOR PROGRAMMING AND INSTALLATION.

ODOT DISTRICT 6 TRAFFIC
ATTN: KEN GREENE
400 EAST WILLIAM STREET
DELAWARE, OHIO 43015

THE CONTRACTOR SHALL PROVIDE THE MODEM SERIAL NUMBERS AND NECESSARY ESN NUMBERS FOR ODOT TO ESTABLISH WIRELESS SERVICE.

THE DEPARTMENT WILL MEASURE "SIGNALIZATION, MISC.: CDMA MODEM, FURNISH ONLY" BY THE NUMBER OF COMPLETE UNITS FURNISHED AND RECEIVED BY ODOT DISTRICT 6 TRAFFIC.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, INTERCONNECTION ITEMS AND MASTER CONTROL EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE OHIO DEPARTMENT OF TRANSPORTATION FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

ITEM 633 - CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN
THE ELECTRICAL TRAFFIC CONTROL EQUIPMENT PROVIDED SHALL MEET THE FOLLOWING SPECIFICATIONS AND BE MANUFACTURED BY ECONOLITE. THE EQUIPMENT PROVIDED AS PART OF THIS CONTRACT SHALL BE THE LATEST MODEL, CURRENTLY UNDER PRODUCTION AND NEW. THE CONTROLLER CABINET AND ACCESSORIES SHALL MEET THE NEMA TS-2, 1992 STANDARD FOR ACTUATED CONTROLLER UNITS. THE CATALOG NUMBER FOR THE GROUND MOUNTED P CABINET SHALL BE EL 720 SIZE 7 (SIZE R) WITH A MINIMUM OF THREE SHELVES. THE CABINET SHALL BE ALUMINUM WITH THE NATURAL ALUMINUM FINISH INSIDE AND OUTSIDE. THE LOAD BAY SHALL BE THE T5016 OR NEWER, WITH 16 LOAD SWITCH POSITIONS. PROVIDE ONLY THE EXACT NUMBER OF LOAD SWITCHES REQUIRED. EACH LOAD SWITCH SHALL HAVE LIGHT EMITTING DIODES (LEDS) FOR THE CONTROLLER OUTPUT AND LOAD SWITCH OUTPUT. ALSO PROVIDE 8 FLASH RELAY POSITIONS (BUT ONLY SUPPLY THE EXACT NUMBER OF RELAYS NEEDED FOR EACH SPECIFIC INTERSECTION). 1 NEMA 2-CIRCUIT FLASHER, AND AN MMU MONITOR. EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED, WHERE LOOP DETECTORS ARE SPECIFIED. THE CABINET SHALL INCLUDE THE EXACT NUMBER OF FOUR CHANNEL DETECTOR CARDS WITH SOFTWARE REQUIRED FOR EACH INTERSECTION. THE CABINET SHALL BE EQUIPPED WITH A CABINET POWER SUPPLY (CPS). THE CABINET SHALL BE WIRED TO ALLOW THE USE OF EYP CONFIGURATION LIGHTS. THE POLICE PANEL ON THE OUTSIDE OF THE CABINET DOOR SHALL HAVE A FLASH SWITCH, A SWITCH FOR AUTOMATIC/MANUAL OPERATION, SIGNAL ON/OFF SWITCH AND A MANUAL PUSHBUTTON WITH A MINIMUM CORD LENGTH OF 10 FEET. THE TECHNICIAN PANEL ON THE INSIDE OF THE CABINET DOOR SHALL INCLUDE A FLASH SWITCH, A STOP TIME SWITCH, AND AN EQUIPMENT ON/OFF SWITCH, A CABINET DOOR OPEN SWITCH AND A CABINET LIGHT ON / OFF SWITCH. SHALL ALSO BE SUPPLIED.

THE CONTROLLER CABINET SHALL ALSO INCLUDE:

- A. SLIDE-OUT LAPTOP SHELF
- B. INTERIOR, UNDER-SHELF LED CABINET LIGHTING, INCLUDING A MINIMUM OF 2 PANELS OF 6 HIGH-INTENSITY LED'S, EACH AND A DOOR-ACTIVATED SWITCH. THE LED PANELS SHALL BE MOUNTED IN LOCATIONS TO MAXIMIZE LIGHT ON THE CABINET EQUIPMENT.
- C. A GOOSENECK/ADJUSTABLE LIGHT FIXTURE WITH AN LED LAMP, LOWER RIGHT SIDE OF THE CONTROLLER CABINET.
- D. A MINIMUM OF TWO (2) GFCI PROTECTED RECEPTACLES
- E. A MINIMUM OF SIX (6) SURGE PROTECTED RECEPTACLES (NON-GFCI)RECEPTACLES

DETECTOR LEAD-IN CABLE:
PHASE NUMBER SERVICE, DIRECTION, MOVEMENT TYPE, AND LOOP PLAN NUMBER.

SIGNAL HEAD FIELD WIRING:
PHASE NUMBER, DIRECTION, MOVEMENT TYPE, AND COLOR (RED, YELLOW, GREEN, YELLOW ARROW, GREEN ARROW) OR PEDESTRIAN MOVEMENT.

THE CONTROLLER TIMER SHALL BE THE ECONOLITE COBALT (OR MOST CURRENT MODEL) NEMA TS-2 TYPE 2 AND COME EQUIPPED WITH ALL INTERNAL COMPONENTS TO MAKE IT FULLY SYSTEM READY FOR THE CENTRAC (OR LATEST) SYSTEM, INCLUDING THE INTERNAL MODEM. EACH CONTROLLER TIMER SHALL HAVE 6 MODES OF COORDINATION, ADAPTIVE TRAFFIC CONTROL, REPORTS, PREEMPTION / PRIORITY, DIAGNOSTICS AND INTERNAL TIME BASE CONTROL. THE MALFUNCTION MANAGEMENT UNIT SHALL HAVE A RJ-45 PORT FOR PC/NETWORK COMMUNICATIONS.

EACH CONDUIT ENTRANCE TO THE CABINET SHALL BE SEALED WITH A RUBBER PIPE/CONDUIT SEAL GASKET. THE SEAL SHALL BE OF A MATERIAL AND TYPE TIGHTLY FITTING AND ABLE TO SEAL OUT WATER, INSECTS, RODENTS, AND DIRT. THE SEAL SHALL BE EASILY REMOVED FOR SERVICE INSTALLATIONS OR CABLE REPLACEMENTS.

THE CONTRACTOR SHALL PROVIDE THE CABINET WIRING DIAGRAM/PLANS IN .PDF FORMAT TO ODOT DISTRICT 6 TRAFFIC.

PAYMENT FOR ITEM 633 - CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN, WILL BE AT THE CONTRACT BID PRICE COMPLETE AND IN PLACE AND CONNECTIONS TESTED AND ACCEPTED.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

- 1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
- 2. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
- 3. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
- 4. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
- 5. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
- 6. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
- 7. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY, WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.
- 8. CONDUITS.
 - a. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
 - b. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
 - c. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
 - d. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

- i. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:

- ii. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
- iii. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A1 ABOVE.
- iv. INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A1 ABOVE.
- v. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S) FOR 4 AWG OR LARGER. INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

- 6. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.

- 4. GROUND ROD.

- a. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
- b. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

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

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

POWER SERVICE AND DISCONNECT SWITCH:

- a. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
- b. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

- i. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
- ii. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

- 7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

UNDERDRAINS FOR PULLBOXES
REFERENCE TRAFFIC SCD HL-30.11 FOR DETAILS ABOUT DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED 20 FEET. THE FOLLOWING ESTIMATED QUANTITY IS CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 611, 4" CONDUIT, TYPE E 40 FT.

IN ADDITION TO THE REQUIREMENTS OF CWS 633 AND 733, A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS SHALL BE PROVIDED WITH THE BASE MOUNTED CABINET BEFORE PERFORMING THE WORK. THE CONTRACTOR SHALL ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH, A DOOR THAT SECURELY CLOSURES OVER THE POWER CORD, AND AN LED LIGHT THAT INDICATES LINE POWER IS AVAILABLE.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2 HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER. SPECIAL STATUS ALARMS SHALL BE PROGRAMMED INTO THE CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FEET MINIMUM. THE ENCLOSURE AND LED LAMP UNIT SHALL BE PLACED ON THE STREET-SIDE OF THE CABINET OR CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY" WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM ALSO INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

A BATTERY BALANCER SHALL BE FURNISHED AND INSTALLED WITH THE SYSTEM.

THIS ITEM SHALL INCLUDE THE INSTALLATION OF THE ALPHA POWER AGENT REMOTE BATTERY MANAGEMENT SYSTEM FURNISHED WITH ALL EQUIPMENT AND SOFTWARE TO BRING THE SYSTEM TO FULL OPERATING CAPABILITIES. THE SOFTWARE PROVIDED SHALL BE THE "NO SOFTWARE" OPTION USING THE SITE CONTROLLER'S INTERNAL WEB INTERFACE AND THE "LOOKOUT" SOFTWARE.

ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, AS PER PLAN
THE CONTROLLER UNIT AT S.R. 29 AND ENTERPRISE PARKWAY SHALL BE REPLACED WITH THE LATEST MODEL OF ECONOLITE TOUCH SCREEN CONTROLLER UNIT. THE OLD CONTROLLER UNIT SHALL BE DELIVERED TO THE VILLAGE OF WEST JEFFERSON.

PAYMENT FOR ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, AS PER PLAN SHALL BE MADE FOR COMPLETE UNIT FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIALS.

ITEM 632 - SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

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

- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA
- TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
- THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
- SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
- THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
- A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MIN. 7 FEET)
- THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR A UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
- PRIOR TO PROGRAMMING, THE CONTRACTOR SHALL CONTACT THE ODOT DISTRICT 6 DISTRICT TRAFFIC ENGINEER AT 740-833-8198. A DISTRICT 6 TRAFFIC DEPARTMENT REPRESENTATIVE SHALL BE PRESENT DURING THE PROGRAMMING OF THE SYSTEM.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

ITEM 809 STOP-BAR RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA
- TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
- THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
- SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
- THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
- A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MIN. 7 FEET)
- THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR A UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
- PRIOR TO PROGRAMMING, THE CONTRACTOR SHALL CONTACT THE ODOT DISTRICT 6 DISTRICT TRAFFIC ENGINEER AT 740-833-8198. A DISTRICT 6 TRAFFIC DEPARTMENT REPRESENTATIVE SHALL BE PRESENT DURING THE PROGRAMMING OF THE SYSTEM.

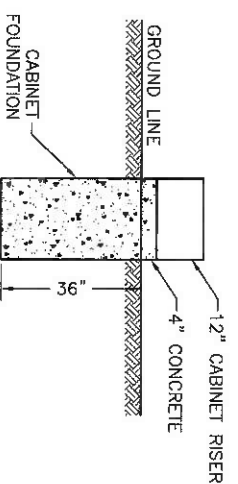
PAYMENT FOR ITEM 809 STOP-BAR RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 809 HIGH SPEED ETHERNET RADIO, AS PER PLAN

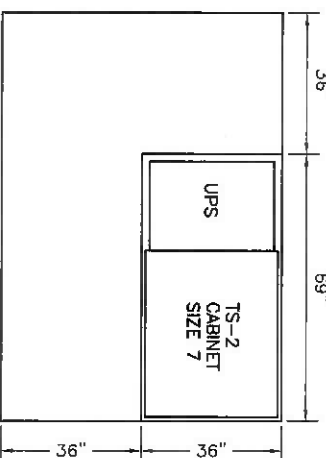
CONTRACTOR SHALL INSTALL HIGH SPEED ETHERNET RADIOS ON THE SIGNALS AT THE INTERSECTIONS OF S.R. 29 AND ENTERPRISE PARKWAY AND S.R. 29 AND COMMERCE PARKWAY. THESE RADIOS SHALL BE INSTALLED TO PROVIDE UNINTERRUPTIBLE COMMUNICATION BETWEEN ALL THREE SIGNALS, AS APPROVED BY THE ENGINEER.

PAYMENT FOR ITEM 809, HIGH SPEED ETHERNET RADIO, AS PER PLAN SHALL BE MADE FOR COMPLETE RADIO FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND ATTACHMENT HARDWARE.

TS-2 SIZE 7 CABINET DETAIL



CABINET FOUNDATION DETAIL



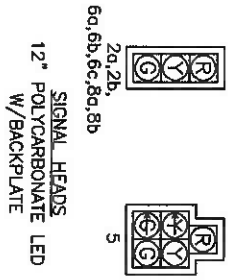
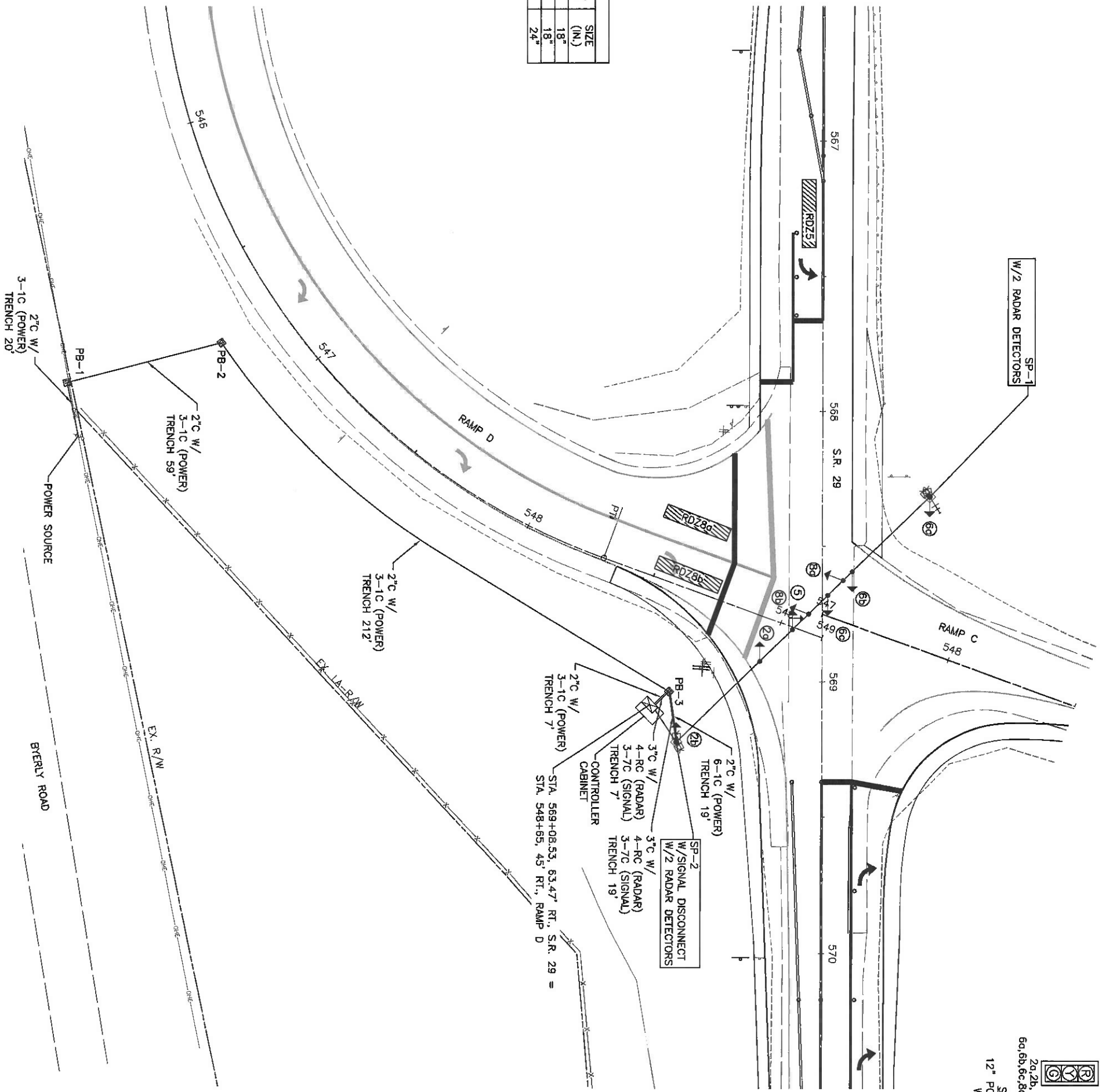
CABINET & WORK PAD DETAIL

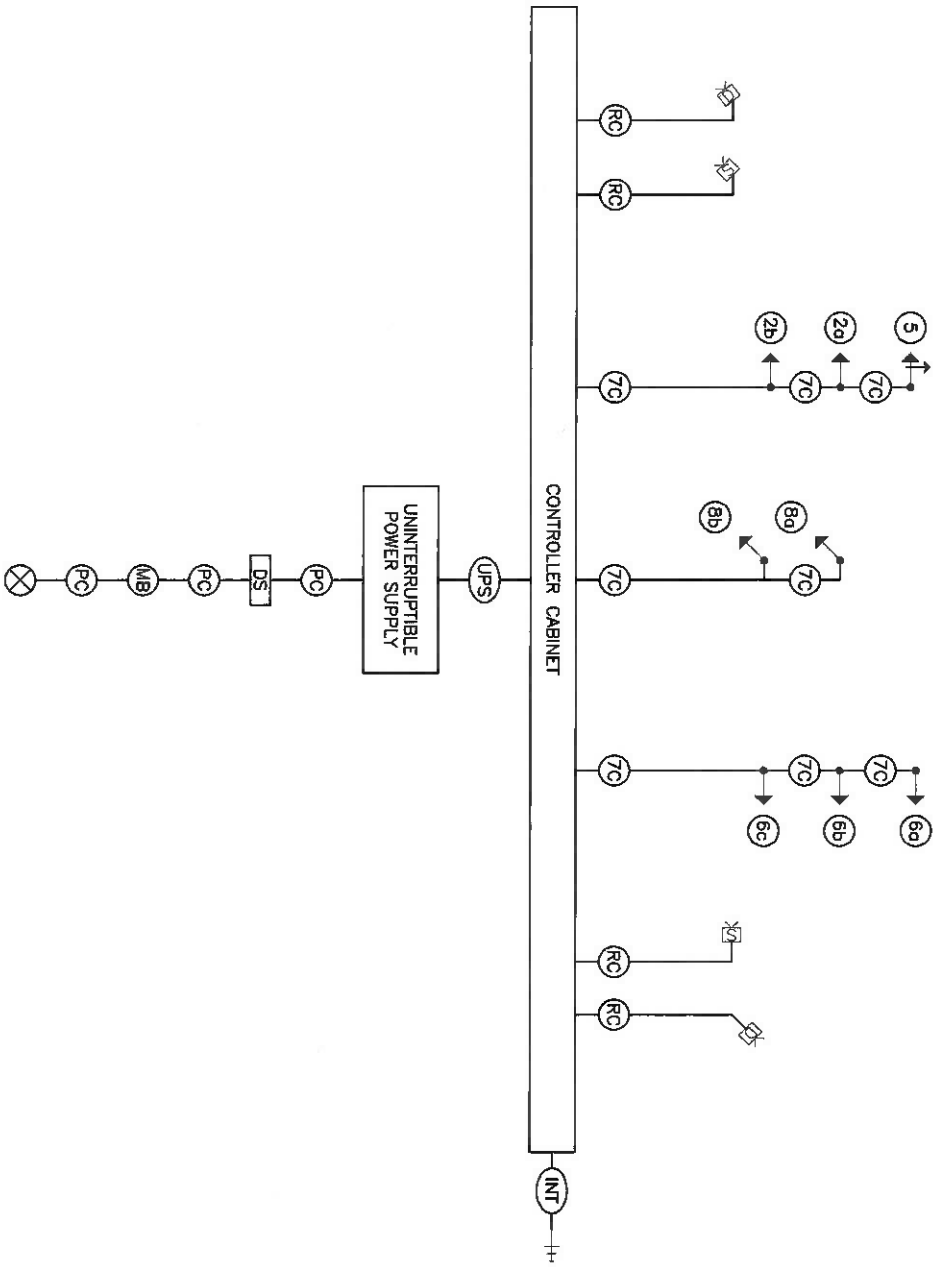
- NOTES:
1. THE SIZE OF THE UPS FOUNDATION MAY VARY BASED ON THE CABINET SIZE PROVIDED.
 2. UPS FOUNDATION ELEVATION SHOULD MATCH CABINET FOUNDATION ELEVATION
 3. THE UPS CABINET SHALL BE MOUNTED FLUSH UP AGAINST THE SIGNAL CABINET AND SEALED.
 4. CONDUIT AND WIRING FROM THE SIGNAL CABINET TO THE UPS SHALL BE INSTALLED THROUGH THE CABINET RISER.

LEGEND

- PROP
- TRAFFIC SIGNAL, 3 UNIT HEAD, 12"
- TRAFFIC SIGNAL, 5 UNIT HEAD, 12"
- SIGNAL SUPPORT POLE
- CONTROLLER CABINET AND WORK PAD (TS2/A2)
- TRAFFIC PULL BOX
- STOP BAR RADAR DETECTION UNIT
- DILEMMA ZONE RADAR DETECTION UNIT
- ETHERNET RADIO

PULL BOX TABLE				
PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	546+60	RT.	81'	18"
PB-2	546+75	RT.	25'	18"
PB-3	548+70	RT.	38'	24"





WIRING DIAGRAM

LEGEND

- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- ↔ 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- ↔ DILEMMA ZONE RADAR DETECTION UNIT
- ↔ STOP BAR RADAR DETECTION UNIT
- ⊖ METER BASE
- ⊖ POWER CABLE, 3-1 CONDUCTOR, NO. 6 AWG
- ⊖ UNINTERRUPTIBLE SUPPLY CABLE
- ⊖ RADAR DETECTION CABLE
- ⊖ POWER SOURCE
- ⊖ DISCONNECT SWITCH
- ⊖ SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- ⊖ ETHERNET RADIO
- ⊖ INTERCONNECT CABLE

FIELD WIRING
HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2a, 2b EB	R	⊖2R	R
	Y	⊖2Y	
5 EBLT	G	⊖2G	R
	R	⊖2R	
	Y	⊖2Y	
6a, 6b, 6c WB	Y	⊖5Y	R
	G	⊖5G	
	R	⊖5R	
	Y	⊖6Y	
	G	⊖6G	
	R	⊖6R	
8a, 8b NB	Y	⊖8Y	R
	R	⊖8R	
	G	⊖8G	

SIGNAL TIMING CHART

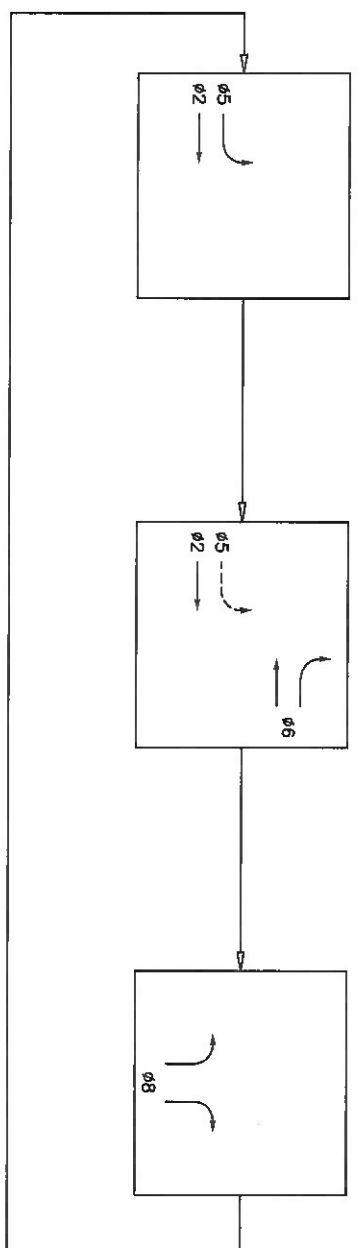
INTERSECTION: SR 29 / RAMP C & D (I-70)		START UP		DUAL ENTRY: -		PHASES: -	
MAINTAINING AGENCY: 0001		REST IN RED: -		RING 1 NO		RING 2 NO	
START IN: ALL RED		OVERLAP		A		B	
TIME FOR FLASH OR ALL RED: 2 & 6		PHASES		-		-	
FIRST PHASE(S): GREEN		CONTROLLER MOVEMENT NO.		5		6	
COLOR DISPLAYED: -		1		2		3	
INTERVAL OR FEATURE		2		3		4	
INTERSECTION MOVEMENT (PHASE)		SB		SB LT		NB	
DIRECTION		(SEC.)		(SEC.)		(SEC.)	
MINIMUM GREEN (INITIAL)		30		7		30	
ADDED INITIAL		-		-		-	
MAXIMUM INITIAL		-		-		-	
PASSAGE TIME (PRESET GAP)		1		3		1	
TIME BEFORE REDUCTION		-		-		-	
MINIMUM GAP		-		-		-	
TIME TO REDUCE		-		-		-	
MAXIMUM GREEN I		50		20		50	
MAXIMUM GREEN II		50		20		50	
YELLOW CHANGE		5.5		4.5		5.5	
ALL RED CLEARANCE		1		3.5		1	
WALK		-		-		-	
PEDESTRIAN CLEARANCE		-		-		-	
RECALL		MAXIMUM (ON/OFF)		OFF		OFF	
MEMORY		MINIMUM (ON/OFF)		OFF		OFF	
		PEDESTRIAN (ON/OFF)		OFF		OFF	
				OFF		OFF	

PLAN DETAILS FOR STRAIN POLES

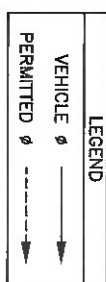
REFERENCE SHEET NO.	STATION & OFFSET	POLE NO.	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV.	SPAN WIRE ATTACHED HEIGHT	CABLE ENTRANCE DISTANCE FROM TOP (IN.)	INDEX LINE ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE
-	568+31.6, 39.5' LT	SP-1	13	32	987.42	29.9	30	136	180
-	569+22.2, 53.7' RT	SP-2	13	37	982.09	35.2	24	136	180

RADAR DETECTION CHART

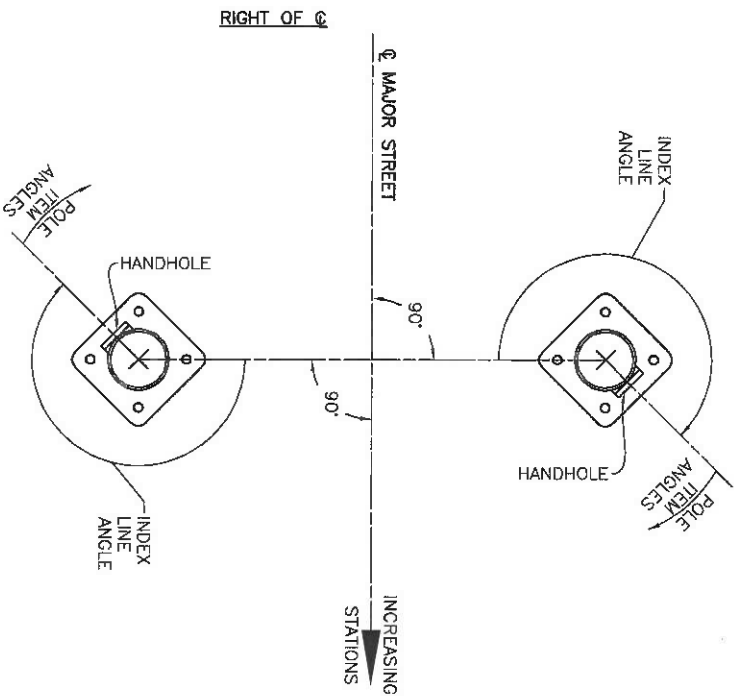
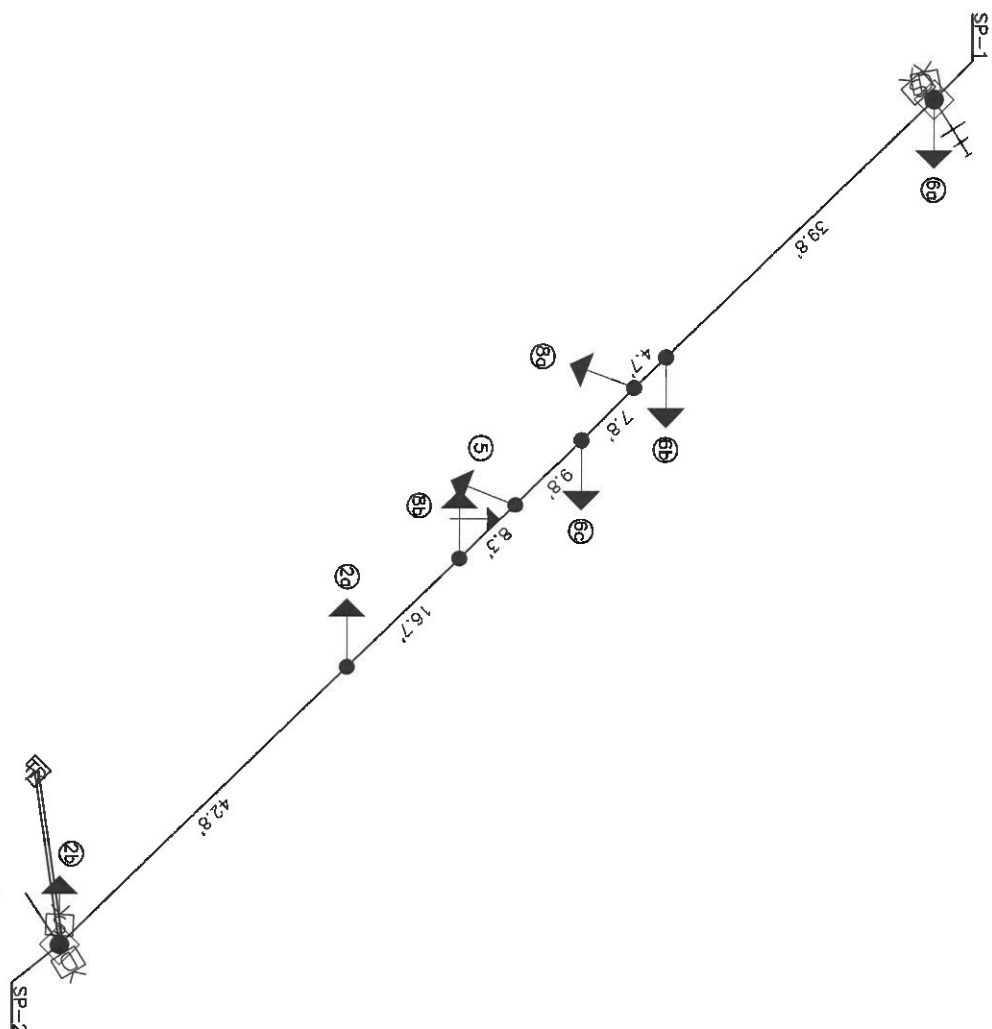
DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
RDZ2	SB THRU	PULSE	2	-	-	DILEMMA ZONE	MAX
RDZ5	SB LT	PRESENCE	5	4	-	CALL/EXTEND PHASE 5	25
RDZ6	NB THRU	PULSE	6	-	-	DILEMMA ZONE	MAX
RDZ8a	RAMP	PRESENCE	8	4	-	CALL/EXTEND PHASE 8	25



PHASING DIAGRAM



PLAN VIEW FOR SPANWIRE DETAIL



NOTES:
 - ALL ANGLES ARE MEASURED CLOCKWISE.
 - THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE

POLE DIAGRAM

NOTE: RADAR DETECTORS ARE SHOWN ON PLAN FOR INFORMATION ONLY. LOCATION OF RADAR DETECTORS SHALL BE PER MANUFACTURER'S RECOMMENDATION.

MATERIAL SPECIFICATIONS FOR BBS GENERATOR POWER PANEL EQUIPMENT

GENFPA1CP INLET - The inlet shall be 30 amp, 125/250V, locking, four (4) wire grounding and meet the NFMA configuration number 114-30-P 30V 125/250 V specification. The inlet shall be a Hubbell catalog #2715.

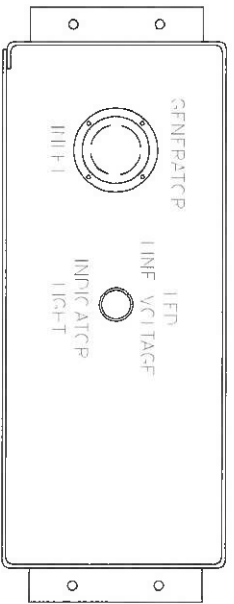
LINE VOLTAGE GENFPA1CP SWITCH - The switch shall be 30 amp, 125/250V AC, two (2) pole, three (3) position (On, Off, On).

The switch shall be a Hubbell catalog #1388.

LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be 25V AC light emitting diode with a red lens.

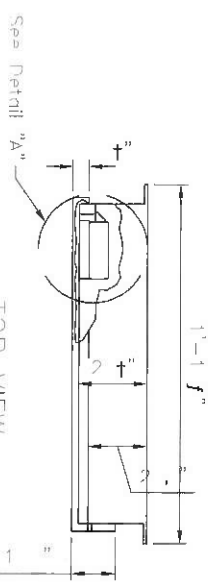
LINE VOLTAGE CIRCUIT BREAKER - The circuit breaker shall be single pole single throw and a minimum of 30 amps. The amperage shall be increased to accommodate greater loads, if necessary. The gauge of the power cable shall be of proper size per N.E.C.

EXTERNAL LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be a 1" waterproof NFMA 4X or 1266 LED lamp with a green lens.

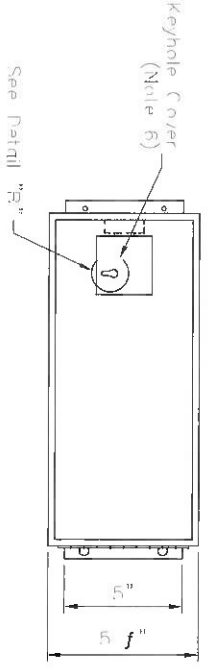


FRONT VIEW OF GENERATOR POWER PANEL

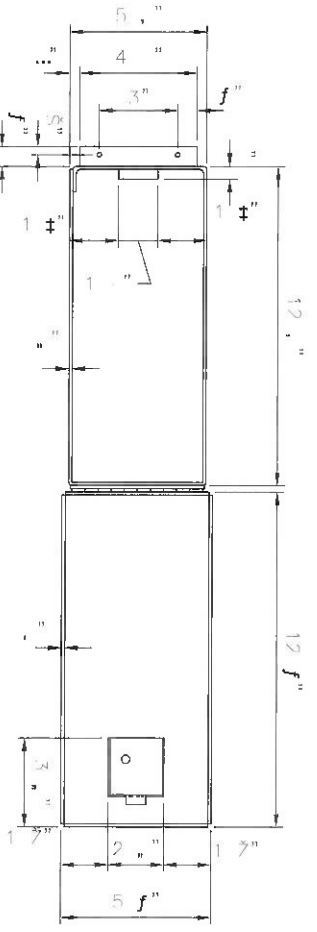
GENERATOR POWER PANEL ENCLOSURE



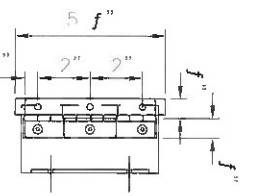
TOP VIEW



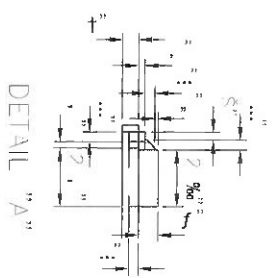
FRONT VIEW CLOSED DOOR



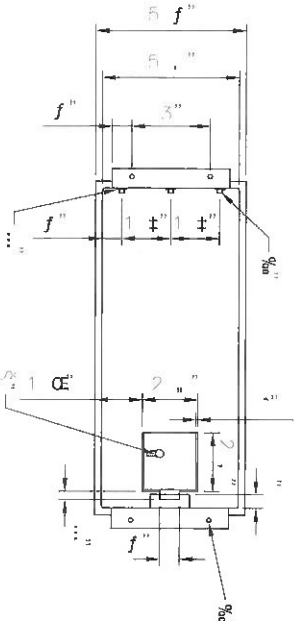
FRONT VIEW OPEN DOOR



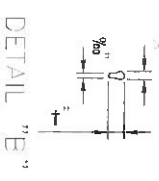
RIGHT SIDE VIEW CLOSED DOOR



DETAIL "A"

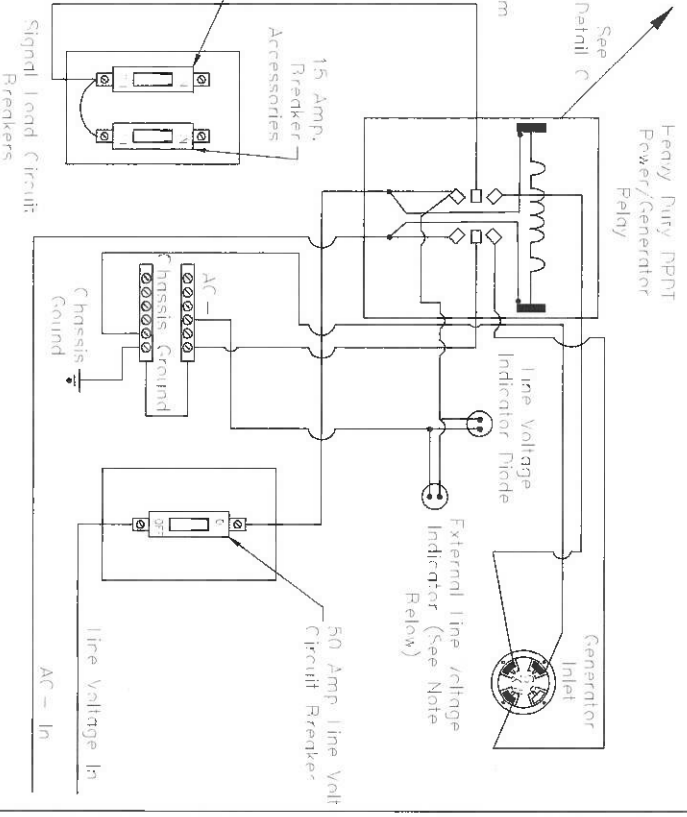
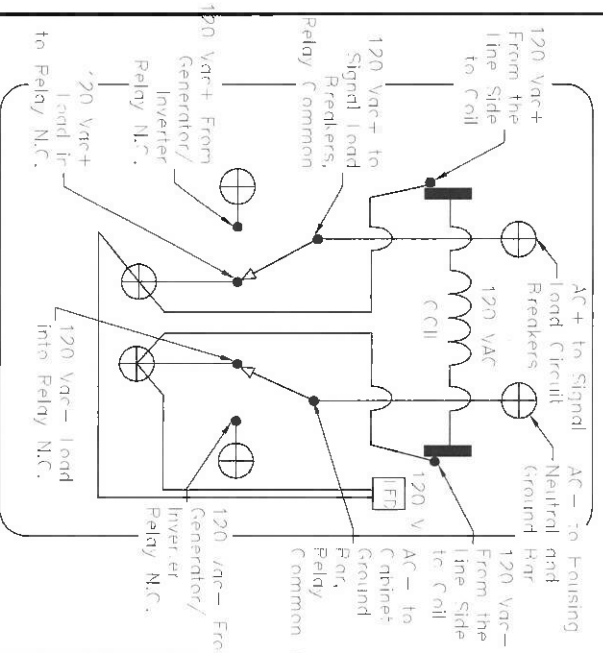


BACK VIEW CLOSED DOOR



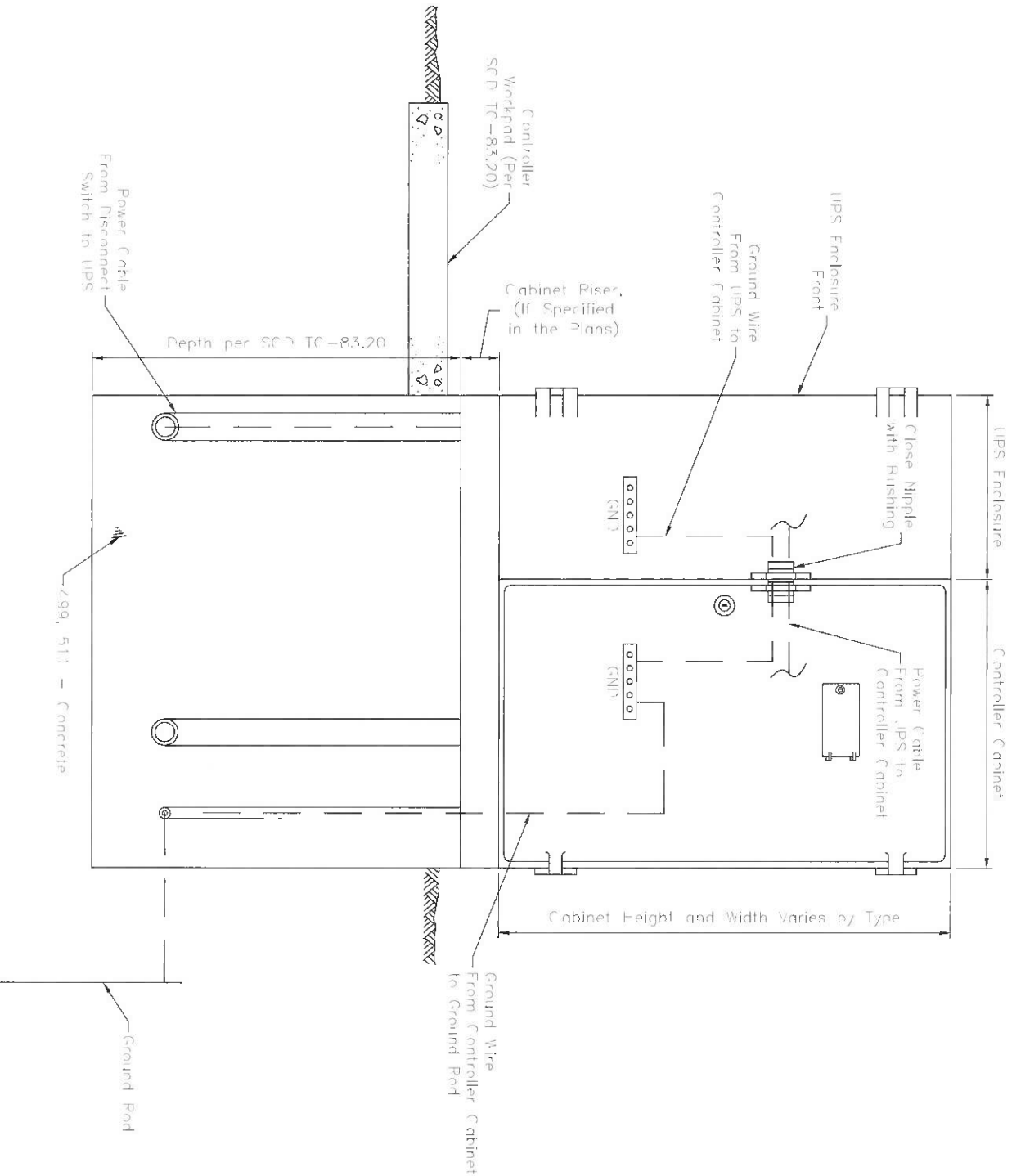
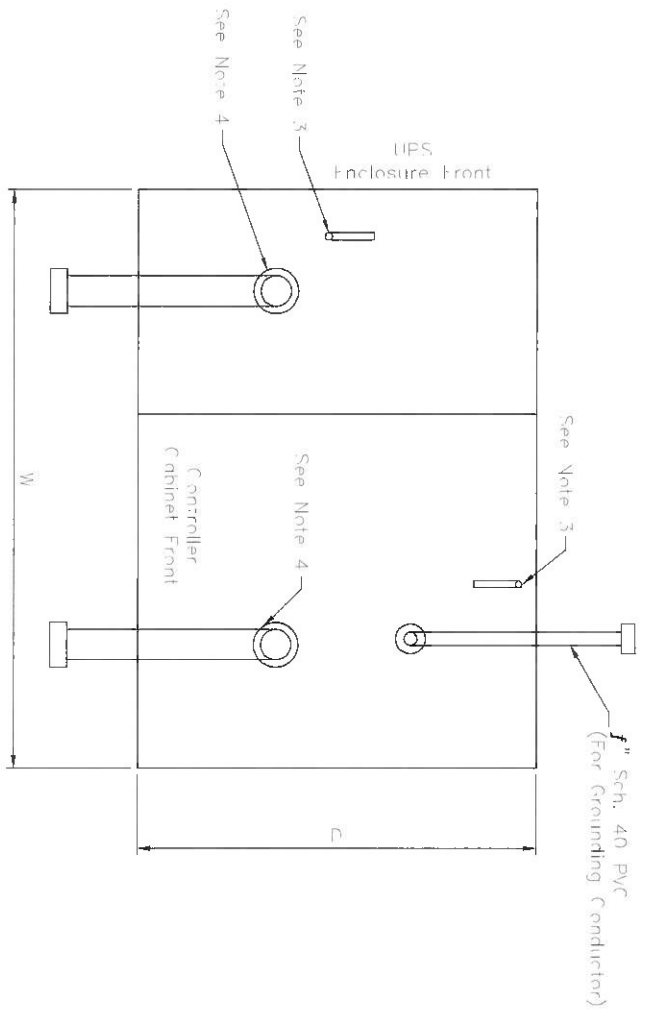
DETAIL "B"

- NOTES:**
1. The enclosure shall be constructed of 1/8" thick aluminum.
 2. The lock shall be the standard police door type, keyed with the standard flasher door skeleton key.
 3. The door shall be sealed with a foam rubber gasket to prevent moisture from entering the enclosure.
 4. The enclosure shall be mounted onto the outside of the controller cabinet with non-accessible bolts and sealed with a high quality silicon caulk at all surfaces touching the cabinet.
 5. The hinge shall be of stainless steel or equivalent corrosion-resistant material.
 6. Keyhole shall be covered with a movable circular aluminum or brass cover with top pivot pin.



ELECTRICAL HOOKUP DETAIL FOR THE CONTROLLER CABINET GENERATOR POWER PANEL

NOTE: EXTERNAL LINE VOLTAGE INDICATOR LIGHT required when called for in the plans. EXTERNAL LINE VOLTAGE INDICATOR LIGHT shall be located on the enclosure exterior for visibility from the adjacent roadway when all cabinet and generator panel doors are closed.



NOTES:

1. The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet and sealed with silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
2. The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCP) TC-83,20). The UPS placement for a NEMA cabinet varies; placement should provide adequate access with respect to slope, guardrail spacing, etc.
3. The size, number, and location of anchor bolts shall be in accordance with the manufacturer's recommendations.
4. The size, number, and orientation of conduit elbows shall be as shown in the plan, except that a "f" schedule 40 PVC shall be installed in each foundation.
5. 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See SCP TC-83,20 for further details.

TYPE	W (IN.)	D (IN.)	FOUNDATION CONC RETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

THIS DRAWING REPLACES PIS 208320 DATED 04-20-2012.