

# OHIO DEPARTMENT OF TRANSPORTATION CITY OF NEW ALBANY FRA-62-30.34 US 62 & SR 161 ROADWAY IMPROVEMENTS

## PLAIN TOWNSHIP FRANKLIN COUNTY

### PROJECT DESCRIPTION

INTERSECTION IMPROVEMENTS INCLUDING TRAFFIC SIGNALS, BIKE LANES, LEISURE PATHS, RAMP WIDENING, TURN LANES, STORM SEWERS, LANDSCAPING, AND ISLANDS FOR 2000 FEET ON US 62 AND 3300 FEET ON SIDE ROADS AND RAMPS.

### 2019 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.


### EARTH DISTURBED AREA


PROJECT EARTH DISTURBED AREA: 7.50 Ac.  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.40 Ac.  
NOTICE OF INTENT EARTH DISTURBED AREA: 7.90 Ac.


### CITY OF NEW ALBANY APPROVALS

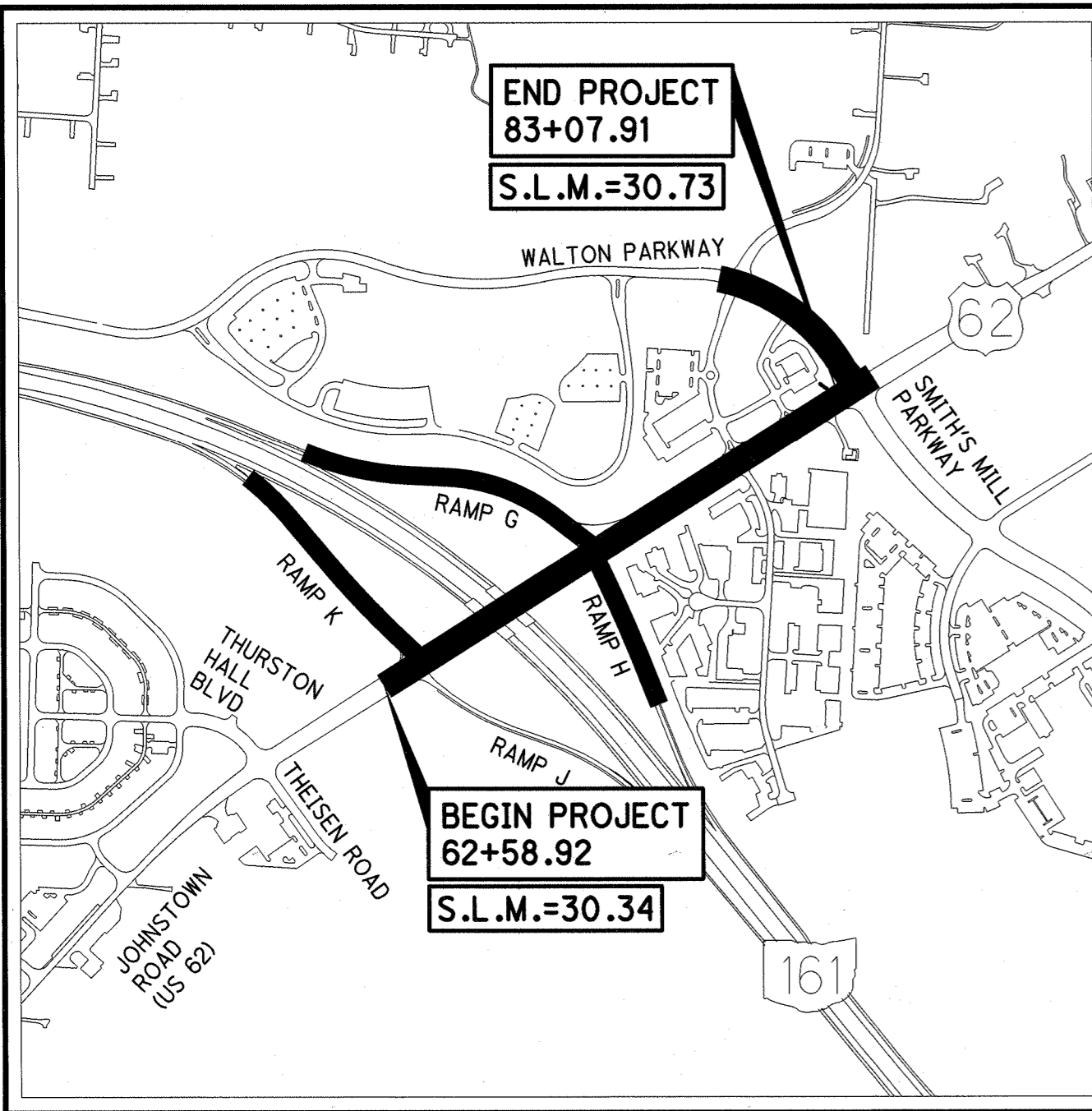
THE SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSE OF THE PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER. THE EXTENT OF CITY ENGINEER REVIEW AND APPROVAL IS BASED ONLY ON COMPLIANCE WITH CITY ORDINANCES 1181, 1183, 1187, AND OTHER APPLICABLE CITY POLICIES.

  
\_\_\_\_\_  
DIRECTOR OF FINANCE, NEW ALBANY, OHIO      04-12-22  
DATE

  
\_\_\_\_\_  
CHAIRPERSON OF SERVICE AND PUBLIC FACILITIES      04-12-2022  
DATE

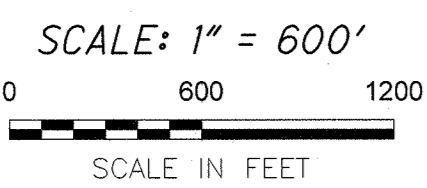
  
\_\_\_\_\_  
CITY ENGINEER, NEW ALBANY, OHIO      04-11-2022  
DATE

  
\_\_\_\_\_  
CITY MANAGER, NEW ALBANY, OHIO      4-11-22  
DATE



LOCATION MAP

LATITUDE: N 40°05'11"      LONGITUDE: W 82°48'06"



PORTION TO BE IMPROVED: \_\_\_\_\_

DESIGN DESIGNATION: \_\_\_\_\_ US 62

CURRENT ADT (2021)	26300
DESIGN YEAR ADT (2041)	35200
DESIGN HOURLY VOLUME (2041)	3470
DIRECTIONAL DISTRIBUTION	65%
TRUCKS (24 HR B&C)	3.5%
DESIGN SPEED	45
LEGAL SPEED	45
DESIGN FUNCTIONAL CLASSIFICATION:	PRINCIPAL ARTERIAL

### INDEX OF SHEETS:

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DESIGN EXCEPTIONS: NONE

E.P. Ferris & Associates has been retained by Resolution R-63-2021 to provide engineering and survey services to the City of New Albany.

ENGINEERS SEAL:



SIGNED:   
DATE: 04.07.2022

STANDARD CONSTRUCTION DRAWINGS						CITY OF COLUMBUS	CITY OF NEW ALBANY	SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS	
BP-2.1	1-21-22	TC-12.31	1-21-22	MGS 1.1	7-16-21	AA-S102	NA-SNS-1	800	4-15-22	NWP #14 11-10-21
BP-2.2	1-15-21	TC-21.11	7-16-21	MGS 3.1	1-19-18	AA-S104	NA-SNS-2	804	10-15-21	
BP-2.5	1-21-22	TC-21.21	7-16-21			AA-S112	NA-SNS-3	809	1-19-18	
BP-3.1	1-21-22	TC-21.50	4-17-20	MT-95.30	7-19-19	AA-S117	NA-SNS-4	821	4-20-12	
BP-4.1	7-19-13	TC-41.25	7-17-15	MT-95.31	7-19-19	AA-S119	NA-SNS-5	832	10-19-18	
BP-5.1	1-21-22	TC-42.10	10-18-13	MT-95.32	4-19-19	AA-S125A	NA-SNS-7	861	10-15-10	
BP-7.1	1-21-22	TC-42.20	10-18-13	MT-95.50	7-21-17	AA-S133A				
		TC-52.10	10-18-13	MT-95.60	4-19-19	AA-S128				
RM-3.1	7-20-18	TC-52.20	1-15-21	MT-97.10	4-19-19	AA-S135				
		TC-65.10	1-17-14	MT-97.11	1-20-17	AA-S141				
HW-2.1	7-20-18	TC-65.11	7-21-17	MT-99.20	4-19-19	AA-S165				
HW-2.2	7-20-18	TC-71.10	7-16-21	MT-101.90	7-17-20	AA-S169				
		TC-73.20	1-17-20	MT-105.10	1-17-20					
DM-1.1	7-17-20	TC-81.22	7-16-21	MT-110.10	7-19-13					
DM-1.2	7-16-21	TC-85.10	4-17-20	MT-120.00	1-19-18					
DM-4.4	1-15-16	TC-85.20	7-20-18							
						MIS-65				
						MIS-201				
						MIS-305				
						MIS-404				
						MIS-501				
						MIS-700				
						MIS-702				
						MIS-801				

### LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

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

FEDERAL PROJECT NO.  
**E200(545)**

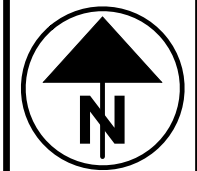
PID NO.  
**111899**

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT  
**NONE**

**FRA-62-30.34**

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0 100 200 400  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
MGS  
CHECKED  
M.L.S.

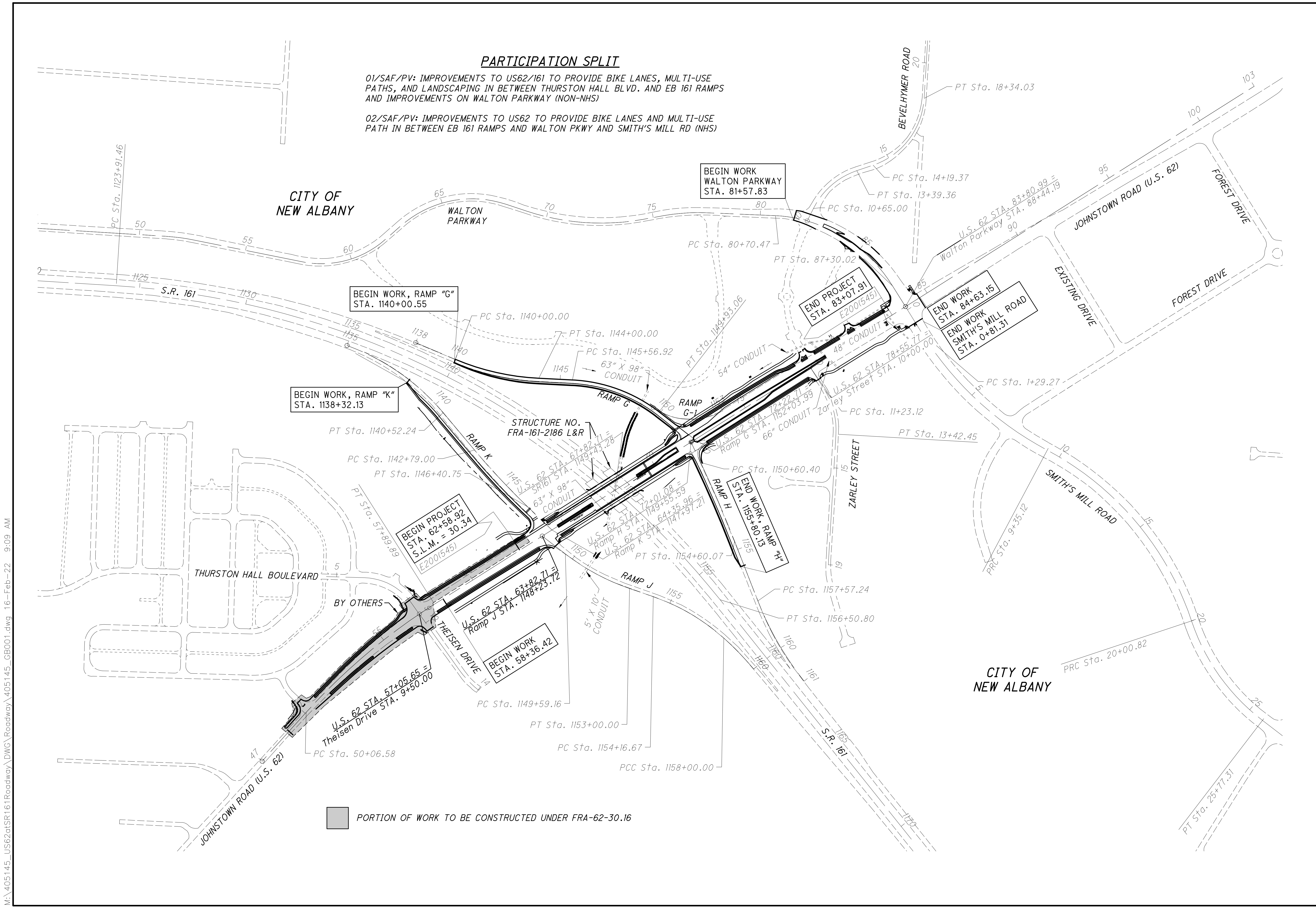
**SCHEMATIC PLAN**

**FRA-62-30.34**

**PARTICIPATION SPLIT**

01/SAF/PV: IMPROVEMENTS TO US62/161 TO PROVIDE BIKE LANES, MULTI-USE PATHS, AND LANDSCAPING IN BETWEEN THURSTON HALL BLVD. AND EB 161 RAMPS AND IMPROVEMENTS ON WALTON PARKWAY (NON-NHS)

02/SAF/PV: IMPROVEMENTS TO US62 TO PROVIDE BIKE LANES AND MULTI-USE PATH IN BETWEEN EB 161 RAMPS AND WALTON PKWY AND SMITH'S MILL RD (NHS)



CITY OF  
NEW ALBANY

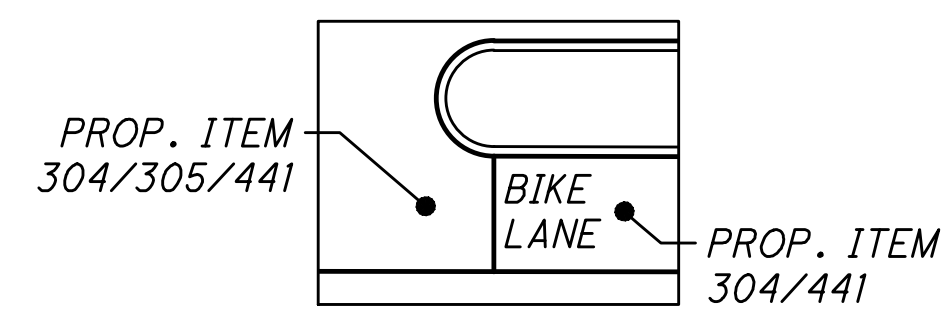
CITY OF  
NEW ALBANY

■ PORTION OF WORK TO BE CONSTRUCTED UNDER FRA-62-30.16

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- ① ITEM 441 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22
- ② ITEM 861 - 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A, (446)
- ③ ITEM 823 - 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) (BIKE LANE & LEISURE PATH) (2 LIFTS)
- ④ ITEM 407 - NON-TRACKING TACK COAT @ 0.08 GAL/SY
- ⑤ ITEM 305 - 7" CONCRETE BASE, CLASS QC 1P, AS PER PLAN (WITH TYPE D DRILLED TIED LONGITUDINAL JOINT PER BP-2.1)
- ⑥ ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
- ⑦ ITEM 204 - SUBGRADE COMPACTION
- ⑧ ITEM 254 - 1-1/2" PAVEMENT PLANING, ASPHALT CONCRETE
- ⑨ ITEM 254 - VARIABLE DEPTH PAVEMENT PLANING, ASPHALT CONCRETE
- ⑩ ITEM 659 - SEEDING AND MULCHING, AS PER PLAN (SEE LANDSCAPING PLANS)
- ⑪ ITEM 690 - SPECIAL - TOPSOIL (SEE LANDSCAPING PLANS)
- ⑫ ITEM 609 - CURB, TYPE 6
- ⑬ ITEM 605 - 6" BASE PIPE UNDERDRAINS (36" DEEP)

- ⑭ RETAINING WALL (SEE SHEETS 108-109)
- MEDIAN WITH PAVERS (SEE BRICK PAVER DETAIL) (SEE SHEET 9)
- ITEM SPECIAL - BRICK PAVERS WITH SAND SWEEP JOINTS, NEOPRENE-MODIFIED ASPHALT ADHESIVE, TACK COAT, AND ASPHALT SETTING BED
- ⑮ ITEM SPECIAL - 8" CONCRETE BASE (UNDER MEDIAN BRICK PAVERS)
- ITEM SPEC - 6" AGGREGATE BASE (UNDER MEDIAN BRICK PAVERS)
- ⑯ ITEM 203 - EXCAVATION
- ITEM 203 - EMBANKMENT
- ⑰ ITEM 305 - 8" CONCRETE BASE, CLASS QC 1P, AS PER PLAN (WITH TYPE D DRILLED TIED LONGITUDINAL JOINT PER BP-2.1)
- ⑱ ITEM 605 - 6" BASE PIPE UNDERDRAINS (36")
- ⑲ ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT
- EX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE
- EX. 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE
- EX. 7" CONCRETE BASE
- EX. 4" NON-STABILIZED DRAINAGE BASE
- EX. 6" AGGREGATE BASE
- EX. 9" LIME SOIL STABILIZED SUBGRADE
- (A) EX. 1-1/4" ASPHALT CONCRETE SURFACE COURSE
- EX. 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE
- EX. 5" BITUMINOUS AGGREGATE BASE
- EX. 6" AGGREGATE BASE
- (B) EX. 1-1/4" ASPHALT CONCRETE SURFACE COURSE
- EX. 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE
- EX. 8" CONCRETE BASE
- EX. 6" AGGREGATE BASE
- (C) EX. 4" PIPE UNDERDRAINS
- (D) EX. 6" PIPE UNDERDRAINS
- (E) EX. 1-1/4" ASPHALT CONCRETE SURFACE COURSE
- EX. 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE
- EX. 8" CONCRETE BASE
- EX. 6" AGGREGATE BASE
- (F) EX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE
- EX. 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE
- EX. 8" CONCRETE BASE
- EX. 4" NON-STABILIZED DRAINAGE BASE
- EX. 6" AGGREGATE BASE
- EX. 9" LIME SOIL STABILIZED SUBGRADE



**TYPICAL BIKE LANE PAVING LOCATIONS**

**NOTES**

FOR LEGEND SEE SHEET 3

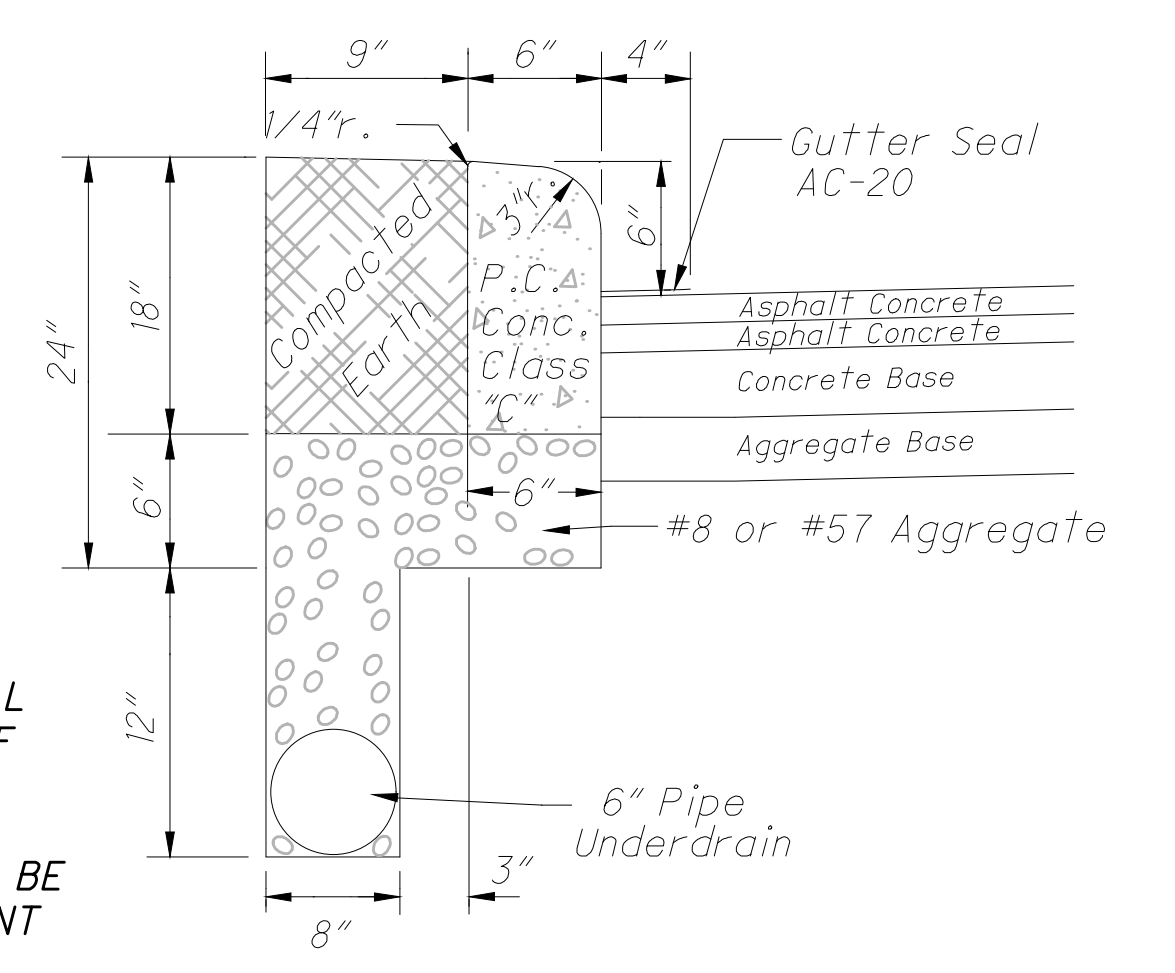
PROPOSED DEPTHS OF EACH DIFFERENT MATERIAL DEPTHS SHALL MATCH EXISTING DEPTHS, EVEN IF SHOWN DIFFERENTLY HERE IN.

ALL TRANSVERSE JOINTS IN THE WIDENING MUST BE THE SAME TYPE, LOCATION, AND SAME ALIGNMENT AS THE EXISTING JOINTS.

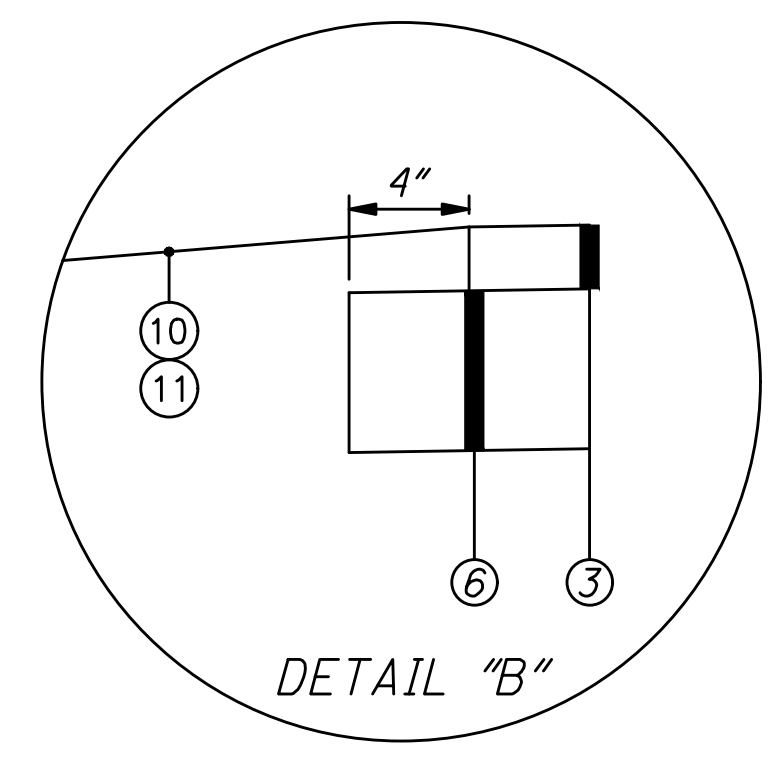
\* SEE CROSS SECTIONS

\*\* SEE PAVEMENT TABLES FOR PAVEMENT OFFSETS/ELEVATIONS/WIDTHS

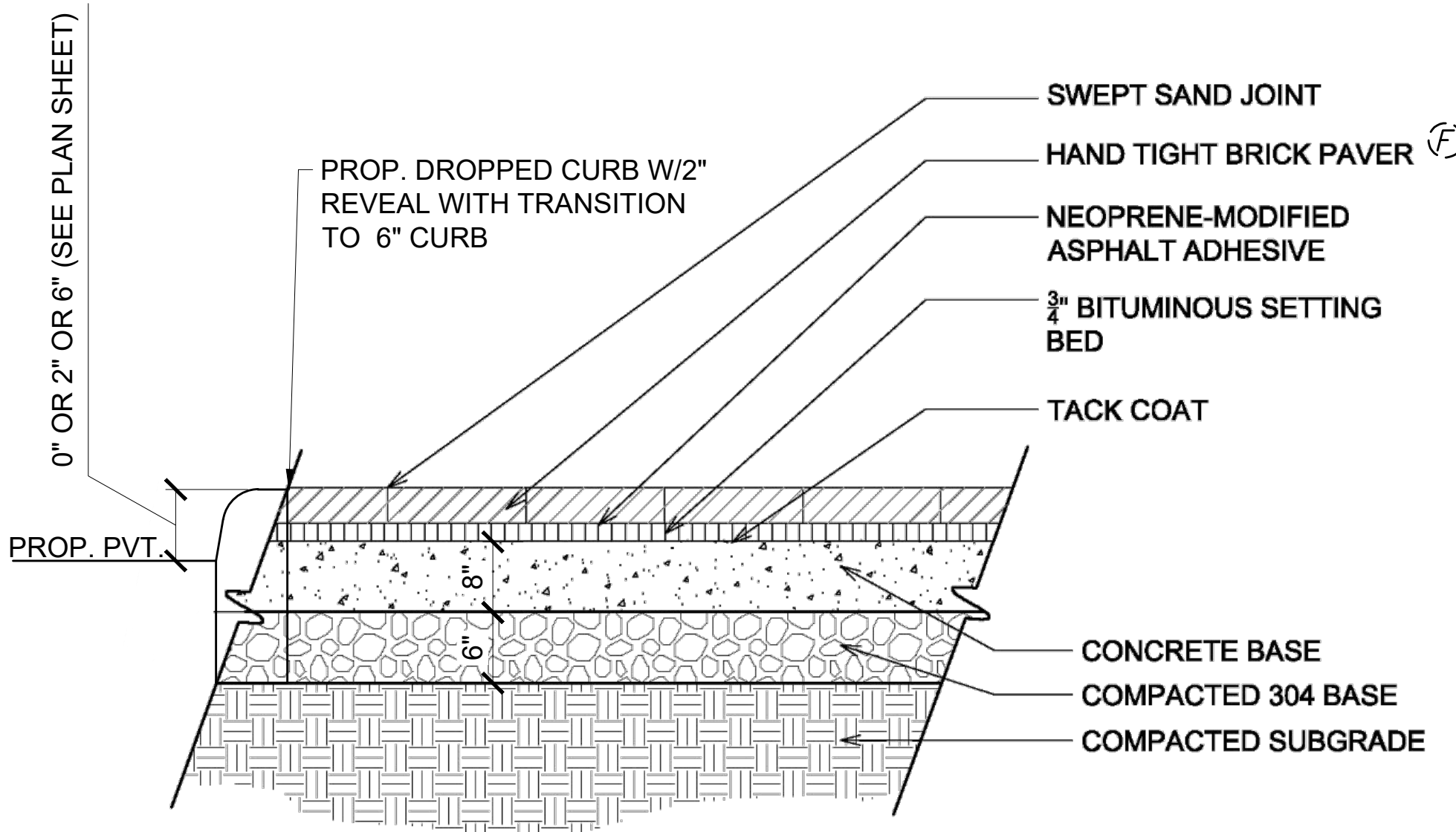
(##) ADJACENT TO THE SAWCUT, CONTRACTOR SHALL LEAVE 6" OF ITEM 304 IN PLACE TO PREVENT UNDERMINING OF THE EXISTING PAVEMENT THAT IS TO REMAIN



**UNDERDRAIN DETAIL**

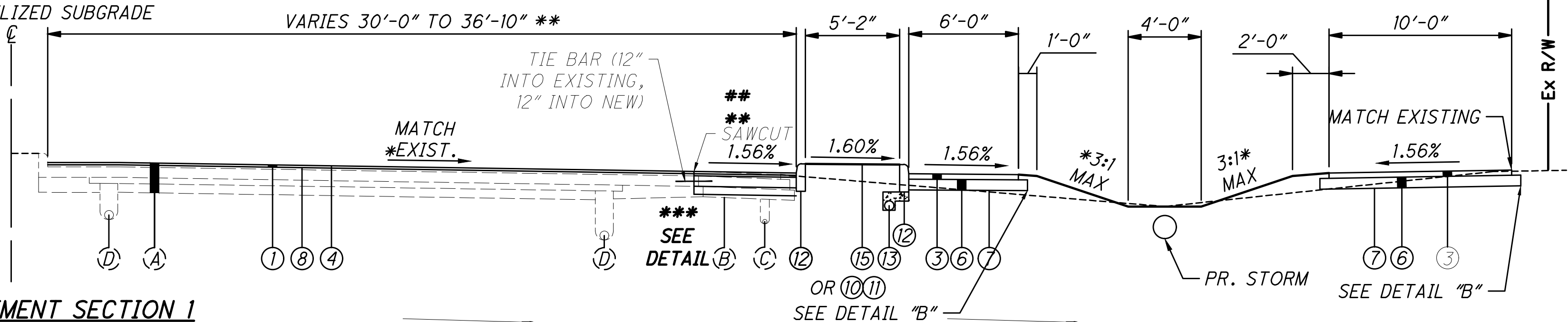


**DETAIL "B"**



**BRICK PAVER DETAIL**  
SEE PLAN SHEETS FOR STATION LIMITS  
SEE LANDSCAPING SHEETS FOR BRICK LAYOUT

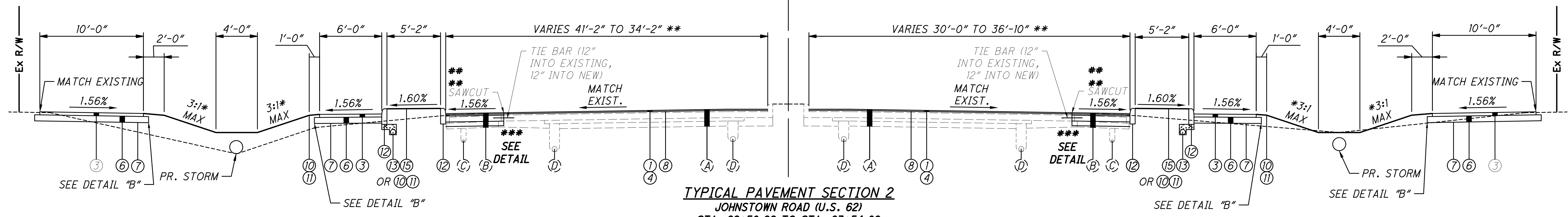
**TYPICAL PAVEMENT SECTION 1**  
JOHNSTOWN ROAD (U.S. 62)  
STA. 58+36.42 TO STA. 62+58.92



**TYPICAL PAVEMENT BUILDUP W/UD \*\*\***

**TYPICAL PAVEMENT BUILDUP NO UD \*\*\***

**TYPICAL PAVEMENT SECTION 2**  
JOHNSTOWN ROAD (U.S. 62)  
STA. 62+58.92 TO STA. 63+54.89



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**NOTES**

FOR LEGEND SEE SHEET 3

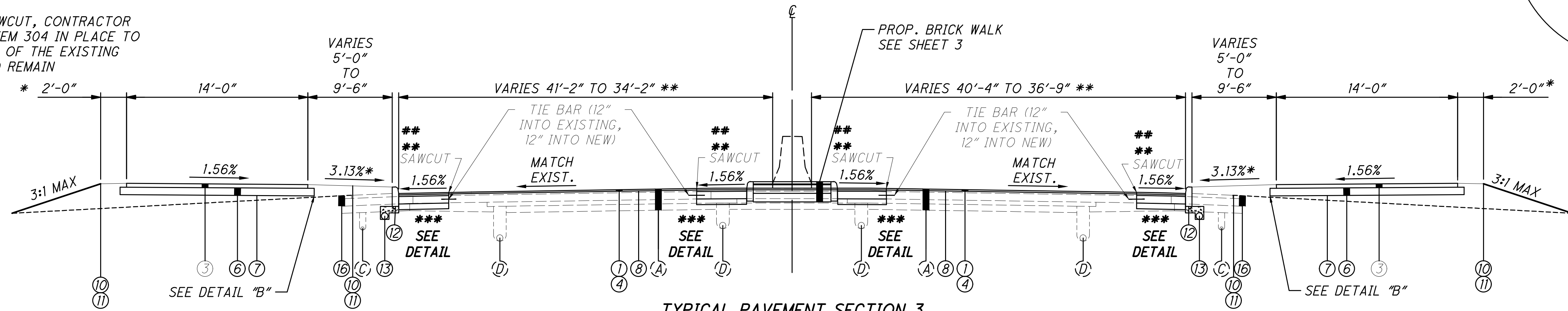
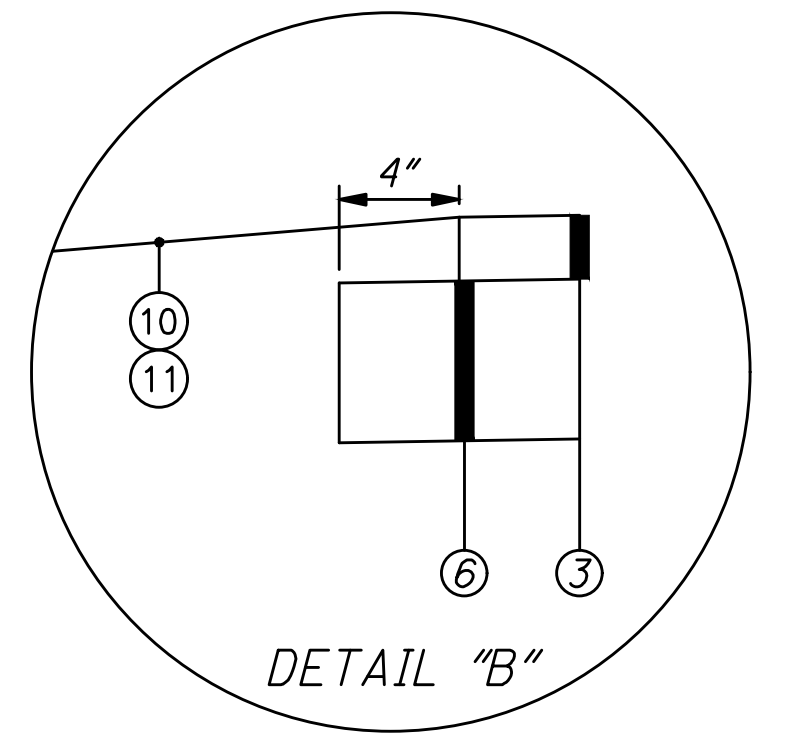
\* SEE CROSS SECTIONS

\*\* SEE PAVEMENT TABLES FOR PAVEMENT OFFSETS/ELEVATIONS/WIDTHS

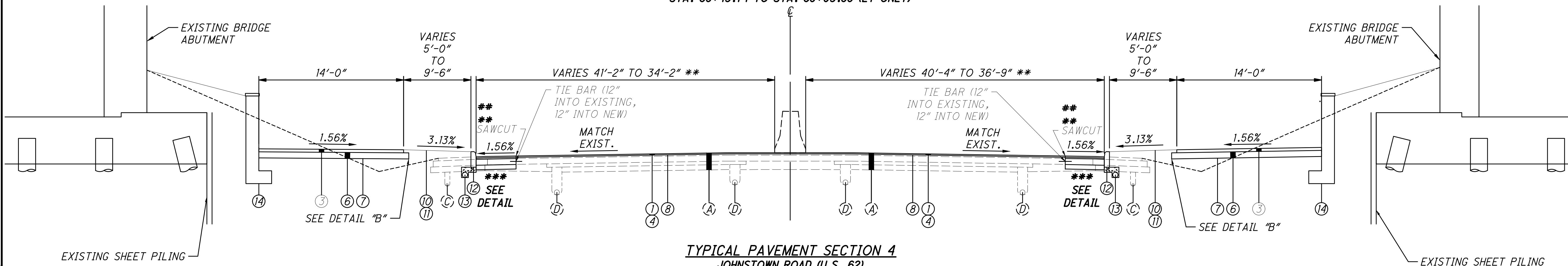
PROPOSED DEPTHS OF EACH LAYER SHALL MATCH EXISTING LAYER THICKNESSES EVEN IF DEPTHS IN THE LEGEND ARE DIFFERENT.

(##) ADJACENT TO THE SAWCUT, CONTRACTOR SHALL LEAVE 6" OF ITEM 304 IN PLACE TO PREVENT UNDERMINING OF THE EXISTING PAVEMENT THAT IS TO REMAIN

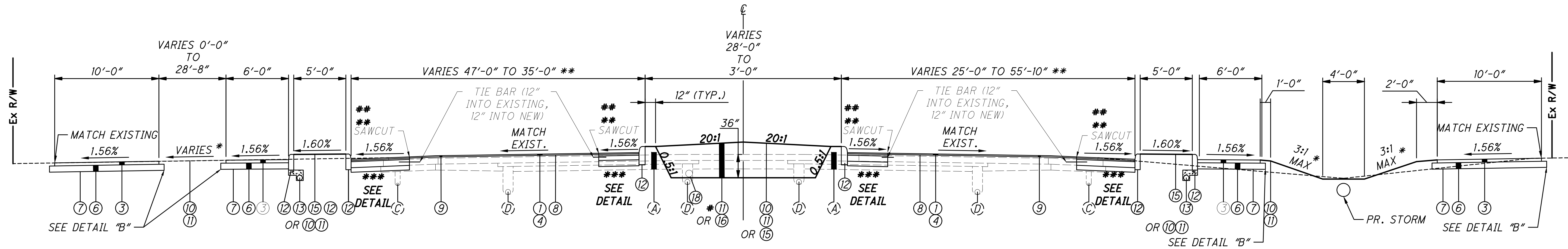
(#) EXCAVATE & INSTALL TOPSOIL AT STATIONS 70+40 TO 71+10 AND 72+80 TO 78+75



**TYPICAL PAVEMENT SECTION 3**  
 JOHNSTOWN ROAD (U.S. 62)  
 STA. 63+54.89 TO STA. 67+20.98 (RT ONLY)  
 STA. 68+81.33 TO STA. 69+03.85 (RT ONLY)  
 STA. 63+54.89 TO STA. 66+81.90 (LT ONLY)  
 STA. 68+43.74 TO STA. 69+03.85 (LT ONLY)



**TYPICAL PAVEMENT SECTION 4**  
 JOHNSTOWN ROAD (U.S. 62)  
 STA. 66+81.90 TO STA. 68+43.74 (LT ONLY)  
 STA. 67+20.98 TO STA. 68+81.33 (RT ONLY)



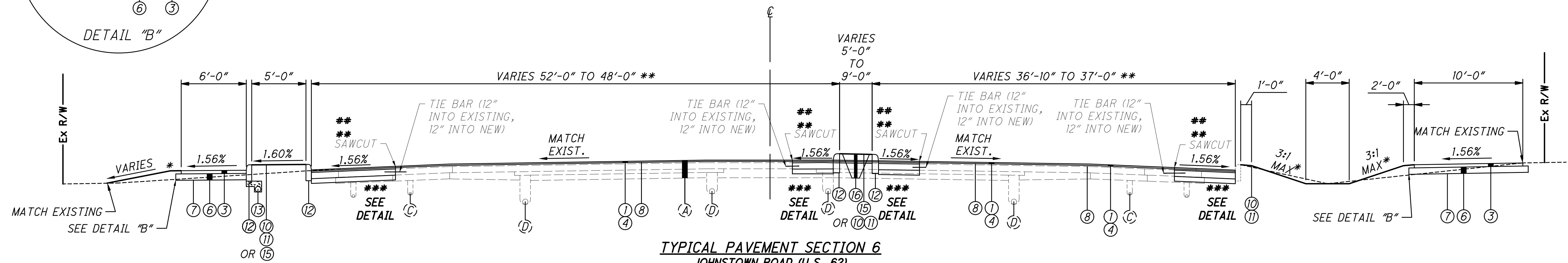
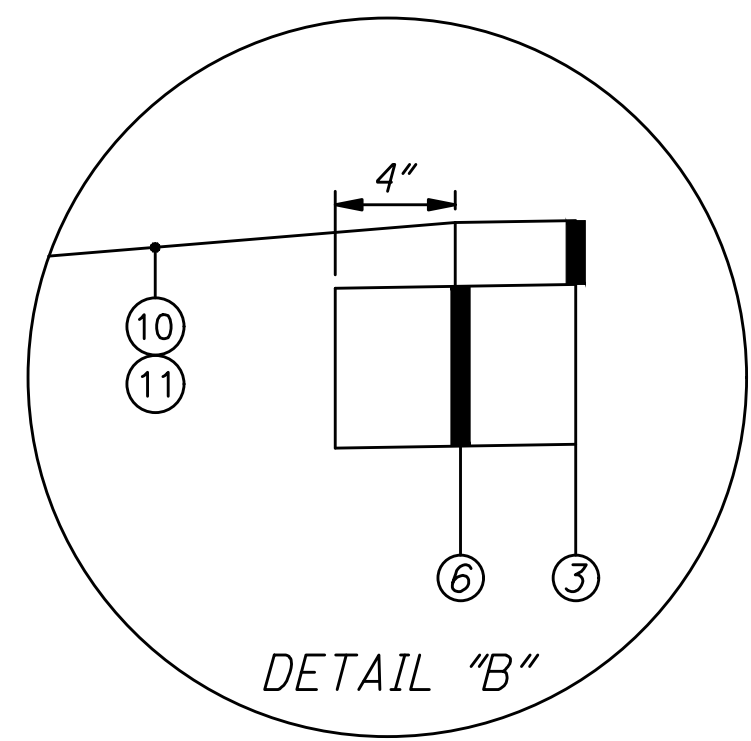
**TYPICAL PAVEMENT SECTION 5**  
 JOHNSTOWN ROAD (U.S. 62)  
 STA. 69+03.85 TO STA. 79+84.58

CALCULATED  
 WCS  
 CHECKED  
 DLS

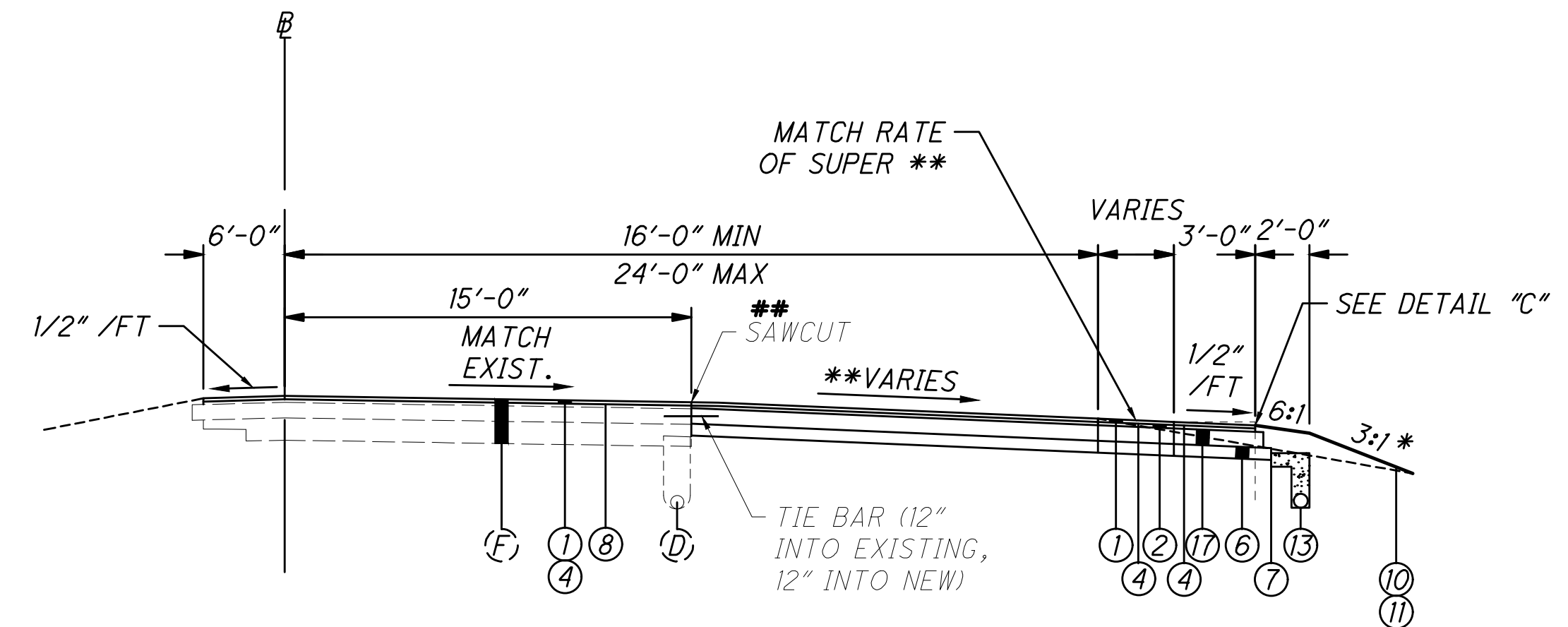
TYPICAL SECTIONS

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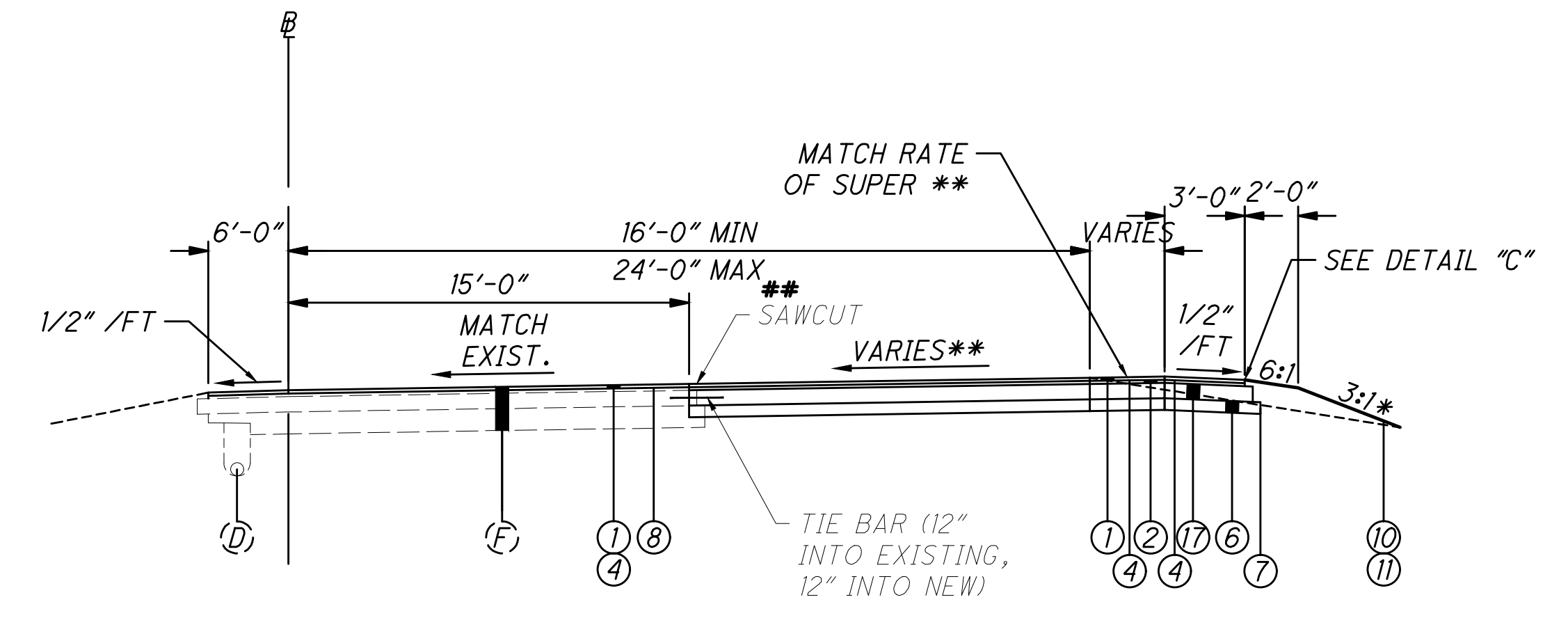


**TYPICAL PAVEMENT SECTION 6**  
JOHNSTOWN ROAD (U.S. 62)  
STA. 79+84.58 TO STA. 82+96.47

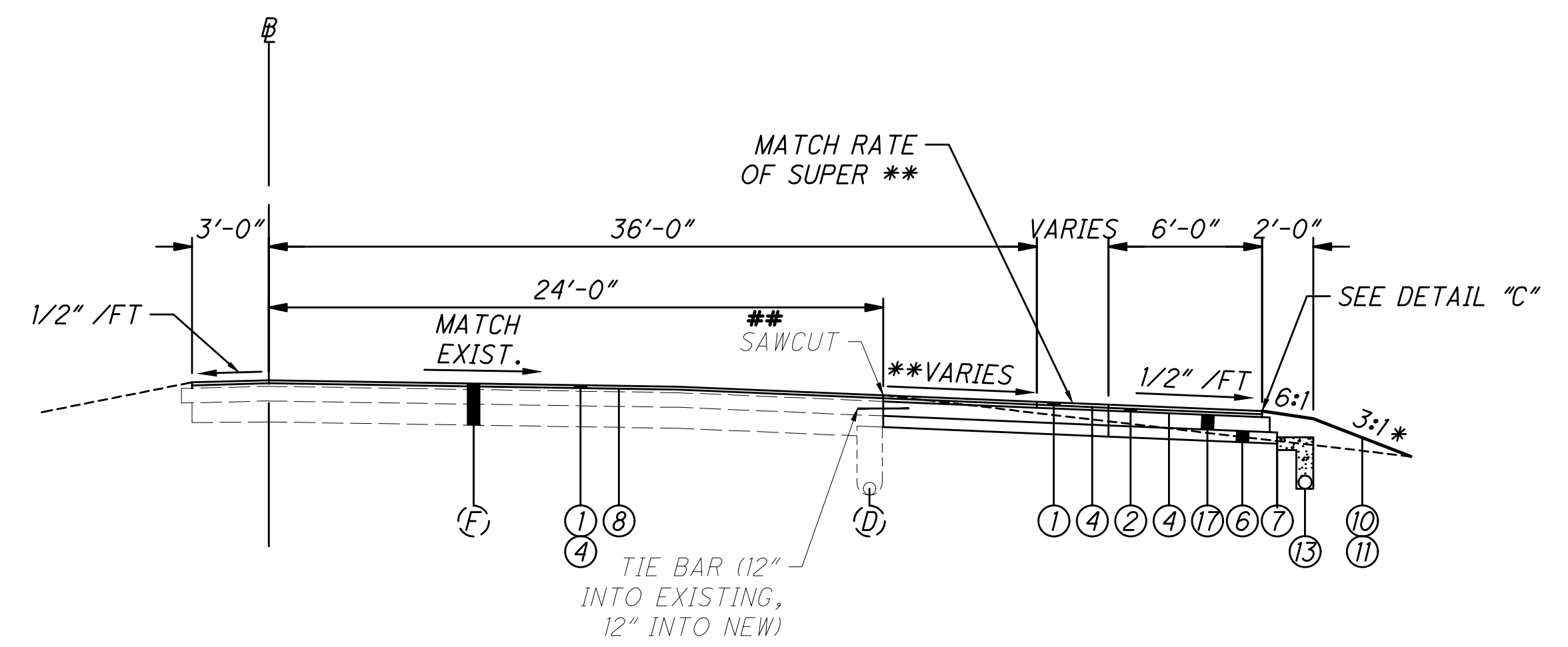


**TYPICAL PAVEMENT SECTION 7**  
RAMP SUPER ELEVATION SECTION  
RAMP G - STA. 1140+00.55 TO STA. 1144+75.40  
RAMP H - STA. 1154+60.07 TO STA. 1155+80.13

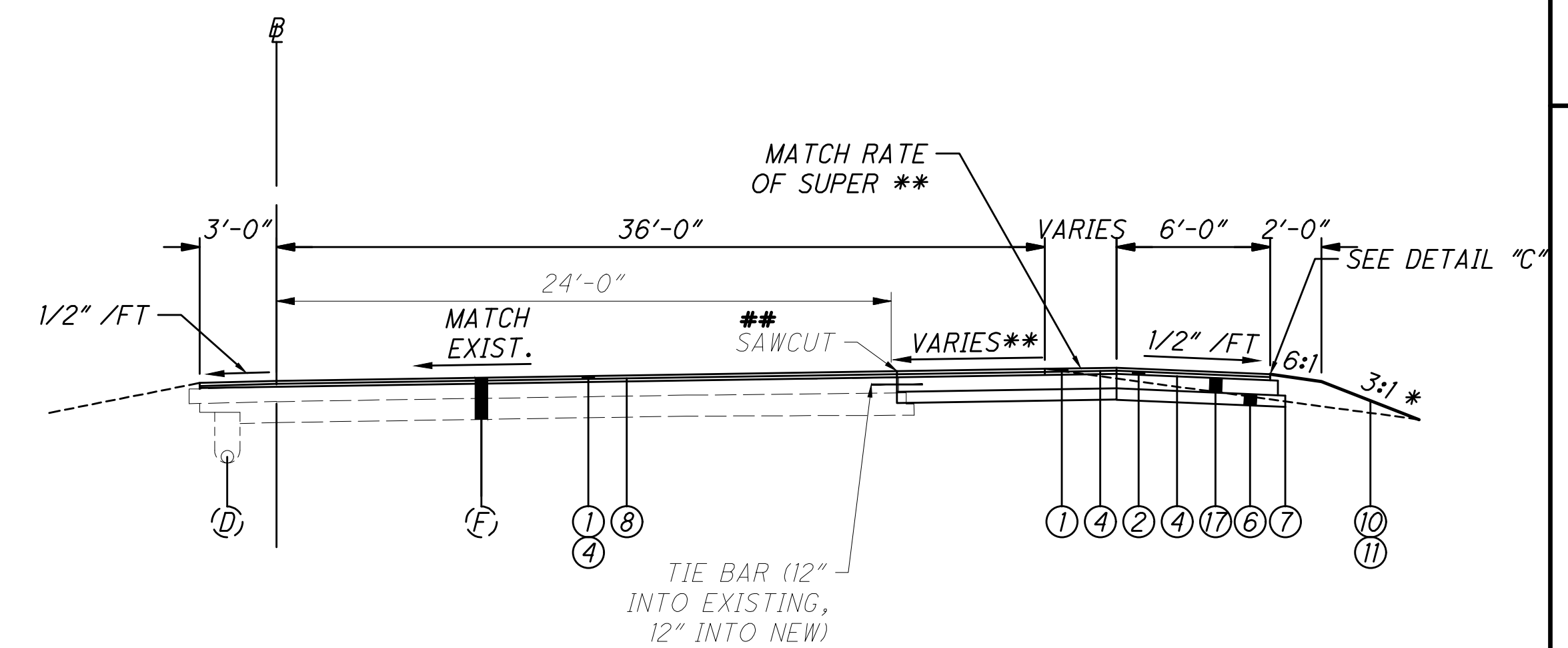
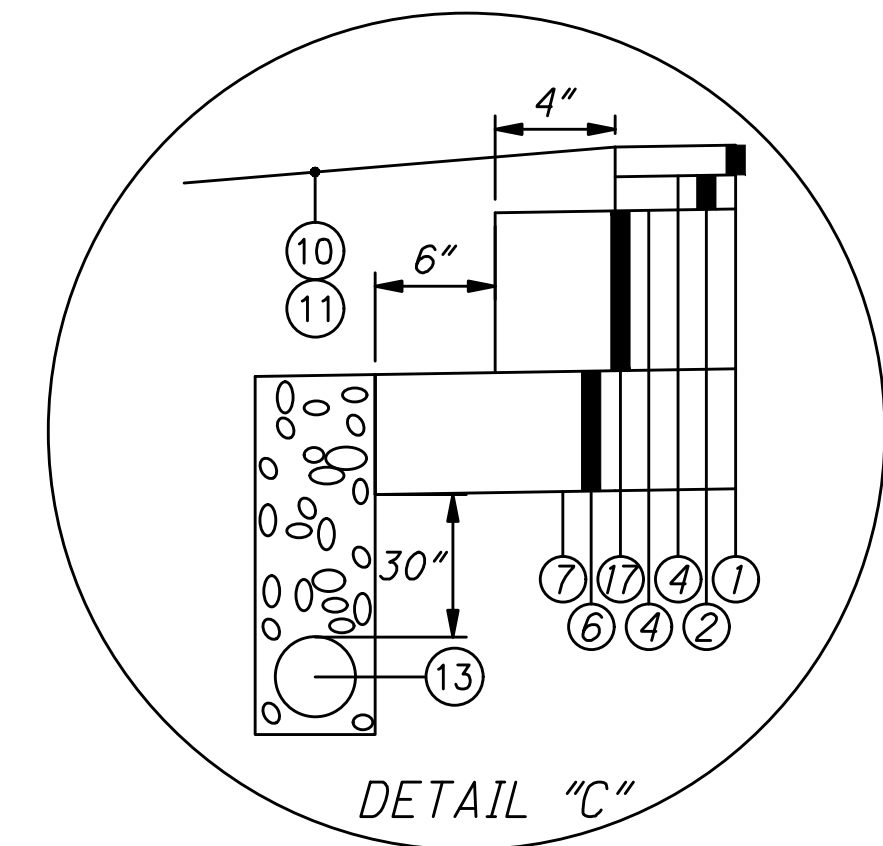
**NOTES**  
FOR LEGEND SEE SHEET 3  
\* SEE CROSS SECTIONS  
\*\* SEE PAVEMENT TABLES FOR PAVEMENT OFFSETS/ELEVATIONS/WIDTHS  
PROPOSED DEPTHS OF EACH LAYER SHALL MATCH EXISTING LAYER THICKNESSES EVEN IF DEPTHS IN THE LEGEND ARE DIFFERENT.  
(##) ADJACENT TO THE SAWCUT, CONTRACTOR SHALL LEAVE 6" OF ITEM 304 IN PLACE TO PREVENT UNDERMINING OF THE EXISTING PAVEMENT THAT IS TO REMAIN



**TYPICAL PAVEMENT SECTION 7**  
RAMP SUPER ELEVATION SECTION  
RAMP G - STA. 1144+75.40 TO STA. 1151+03.46  
RAMP H - STA. 1150+67.15 TO STA. 1154+60.07



**TYPICAL PAVEMENT SECTION 8**  
RAMP SUPER ELEVATION SECTION  
RAMP K - STA. 1138+32.13 TO STA. 1140+76.74



**TYPICAL PAVEMENT SECTION 8**  
RAMP SUPER ELEVATION SECTION  
RAMP K - STA. 1140+76.74 TO STA. 1147+04.75

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**NOTES**

FOR LEGEND SEE SHEET 3

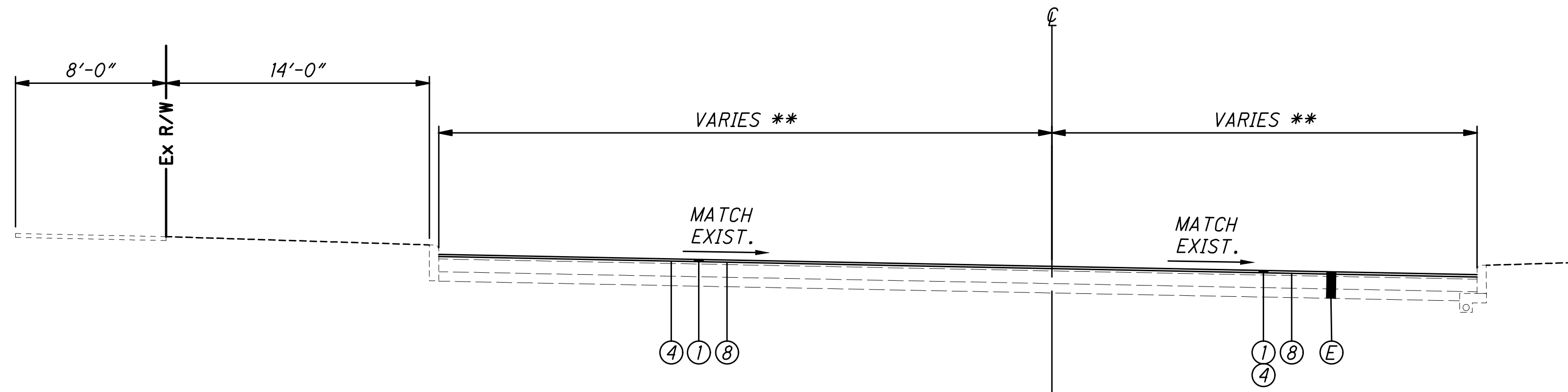
\* SEE CROSS SECTIONS

\*\* SEE PAVEMENT TABLES FOR PAVEMENT OFFSETS/ELEVATIONS

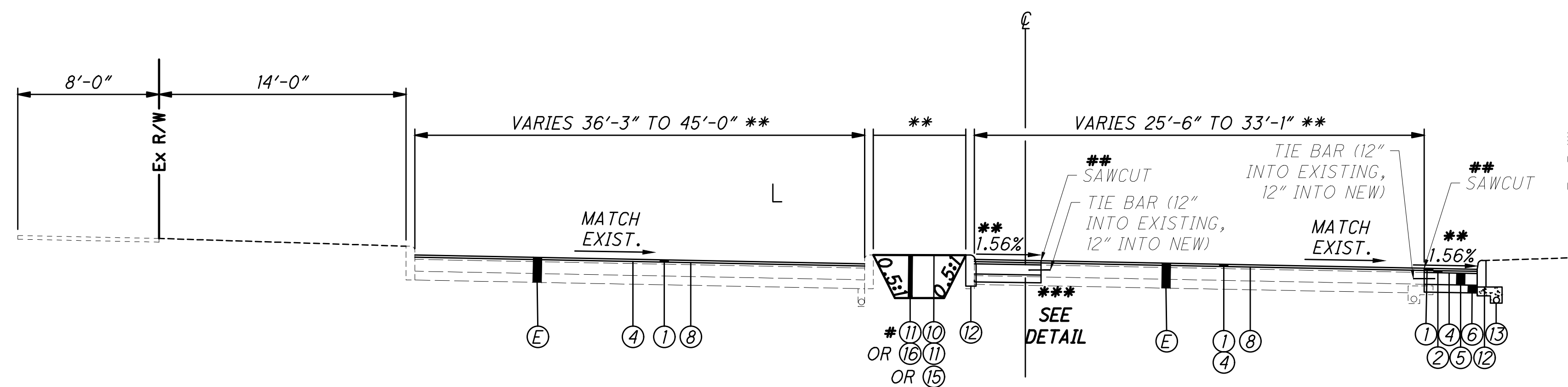
PROPOSED DEPTHS OF EACH LAYER SHALL MATCH EXISTING LAYER THICKNESSES EVEN IF DEPTHS IN THE LEGEND ARE DIFFERENT.

(##) ADJACENT TO THE SAWCUT, CONTRACTOR SHALL LEAVE 6" OF ITEM 304 IN PLACE TO PREVENT UNDERMINING OF THE EXISTING PAVEMENT THAT IS TO REMAIN

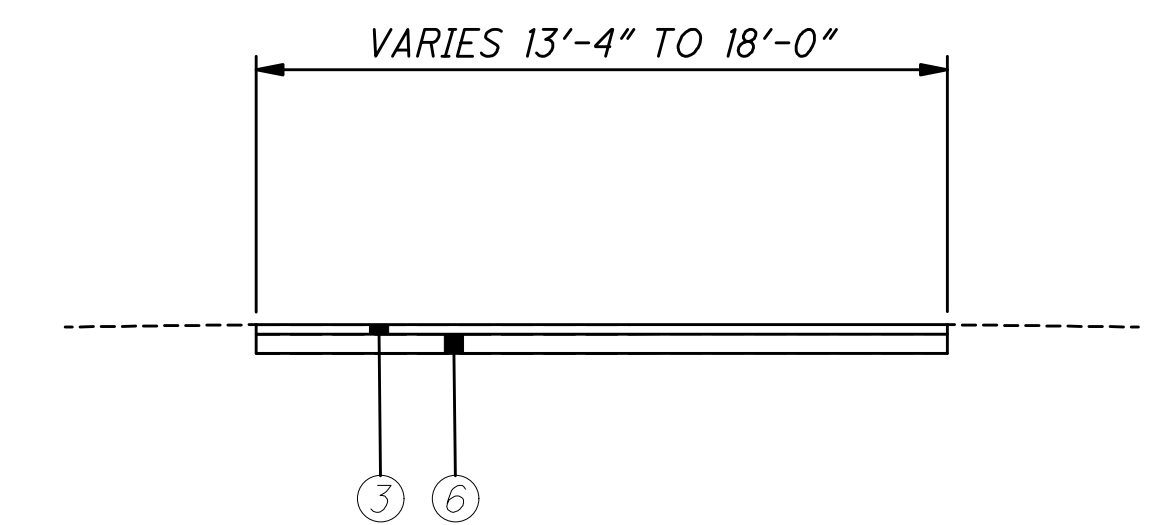
(#) EXCAVATE & INSTALL TOPSOIL AT STATIONS 84+05 TO 86+50



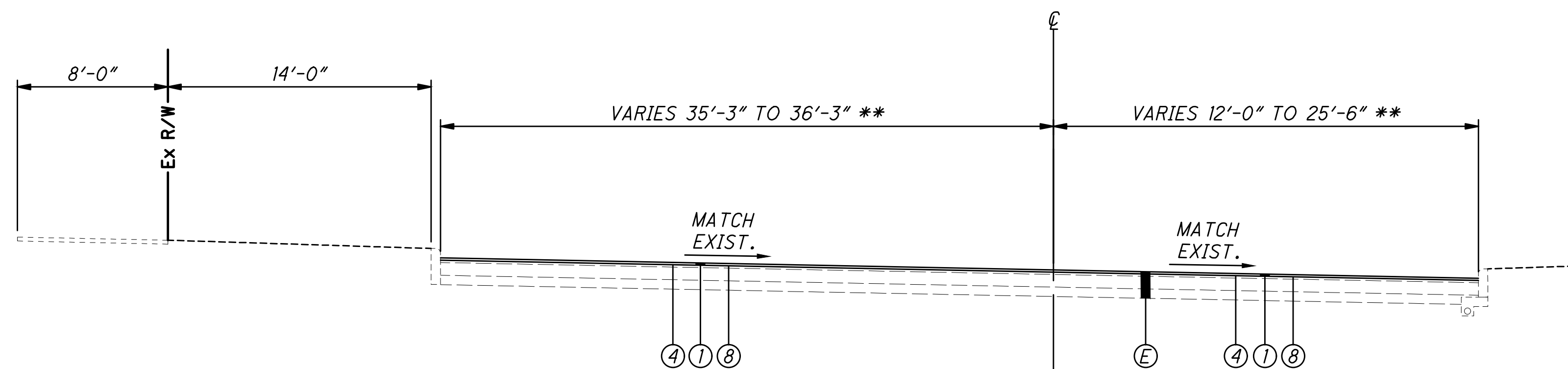
**TYPICAL PAVEMENT SECTION 9**  
WALTON PARKWAY  
STA. 86+83.10 TO STA. 87+72.84



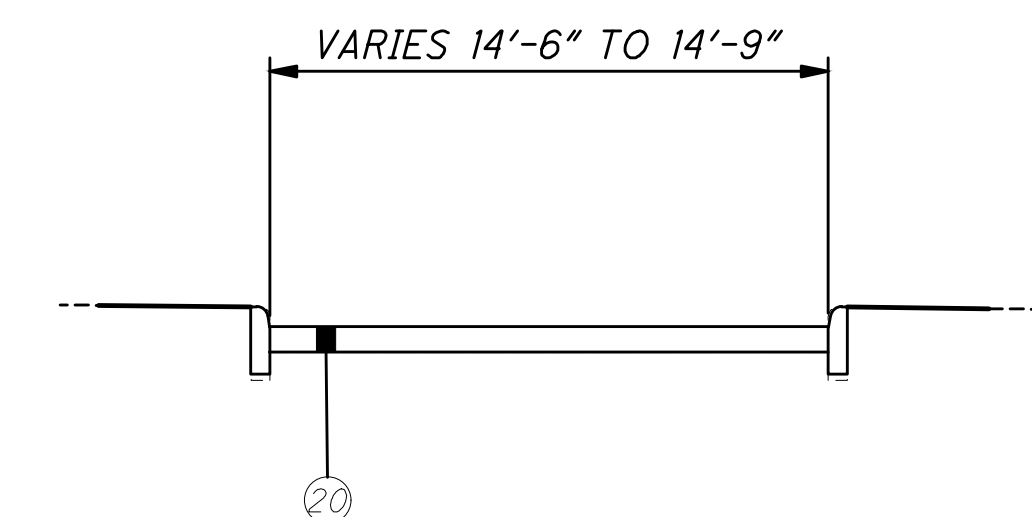
**TYPICAL PAVEMENT SECTION 10**  
WALTON PARKWAY  
STA. 83+68.54 TO STA. 86+83.10



**DRIVEWAY TYPICAL JOHNSTOWN RD. (U.S. 62)**  
STA. 82+32.68, 60.6' RT. TO STA. 82+50.66, 60.9' RT.



**TYPICAL PAVEMENT SECTION 11**  
WALTON PARKWAY  
STA. 81+60.00 TO STA. 83+68.54



**DRIVEWAY TYPICAL (WALTON RD.)**  
STA. 84+43.26, 41.5' RT. TO STA. 84+56.11, 33.2' RT. (RIGHT-IN)  
STA. 84+72.32, 34.6' RT. TO STA. 84+84.53, 43.4' RT. (RIGHT-OUT)

CALCULATED  
WCS  
CHECKED  
DLS

TYPICAL SECTIONS

FRA-62-30.34

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GENERAL NOTES

UTILITIES

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

ELECTRIC

AMERICAN ELECTRIC POWER  
777 HOPEWELL DRIVE  
HEATH, OH 43056  
ATTN: PAUL PAXTON  
ppaxton@aep.com  
OFFICE: 740-348-5322  
AEP SOLUTION CENTER:  
1-800-277-2177

MMI ATLANTIC LLC (FACEBOOK)  
ATTN: BRIAN GRAY  
TEAM FISHEL  
bcgray@fb.com  
COPY:  
mablackstone@columbusfiber.net

FIBER OPTIC

AMERICAN ELECTRIC POWER  
3760 INTERCHANGE ROAD  
6TH FLOOR, 1 RIVERSIDE PLAZA  
COLUMBUS, OH 43215  
ATTN: CRAIG FROST  
614-883-7827

CHARTER  
COMMUNICATION/SPECTRUM (AKA  
TIME WARNER COMMUNICATIONS)  
3760 INTERCHANGE ROAD  
COLUMBUS, OH 43204  
DL-MOH-CONSTRUCTION-FRELO-  
TEAM@CHARTER.com

GAS

COLUMBIA GAS OF OHIO  
3550 JOHNNY APPLESEED COURT  
COLUMBUS, OH 43231  
ATTN: ROB CALDWELL  
rcaldwell@nisource.com  
OFFICE: 614-818-2104  
CELL: 614-370-1906  
CUSTOMER SERVICE:  
1-800-344-4077  
DAMAGE PREVENTION:  
1-866-632-6243

VERIZON BUSINESS (AKA MCI/XO)  
120 RAVINE STREET  
AKRON, OH 44303  
ATTN: AL GUEST  
allan.guest@verizon.com  
OFFICE: 330-253-8267  
FAX: 330-535-9056  
CELL: 330-329-5495  
COPY: DernRE@bv.com  
PalumboJ@overlandcontracting.com  
John.cornell@verizonwireless.com

AT&T (fka SBC)

111 NORTH 4TH STREET  
COLUMBUS, OH 43215  
ATTN: THOMAS LEPLEY, SR.  
t19569@att.com

SIGNAL, LIGHTING, WATER,  
SANITARY & STORM  
CITY OF NEW ALBANY  
7800 BEVELHYMER ROAD  
NEW ALBANY, OH 43054  
614-855-0076

LUMEN (fka CENTURYLINK/LEVEL

3 COMMUNICATIONS/TW TELECOM)  
2025 AKRON RD.  
WOOSTER, OH 44691  
740-263-2819  
Jeffrey.L.Schoonover@lumen.com

COLUMBUS FIBERNET  
TEAM FISHEL  
1600 WALCUTT ROAD  
COLUMBUS, OH 43228  
CFNinfo@columbusfiber.net  
PHONE: 614-921-8524

CROWN CASTLE FIBER (FIBERTECH

& LIGHTOWER)  
2 EASTON OVALCOLUMBUS, OH  
43219  
ATTN: JON TARNOWSKI  
jon.tarnowski@crowncastle.com  
OFFICE: 585-445-5813  
CELL: 614-940-2462

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.

EXISTING UTILITIES

THE IDENTITY AND LOCATION OF THE EXISTING UNDERGROUND UTILITY FACILITIES KNOWN TO BE LOCATED IN THE CONSTRUCTION AREA HAVE BEEN SHOWN ON THE PLANS AS ACCURATELY AS PROVIDED BY THE OWNER OF THE UNDERGROUND UTILITY. THE CITY OF NEW ALBANY AND/OR THE ENGINEER ASSUMES NO RESPONSIBILITY TO THE ACCURACY OR THE DEPTHS OF THE UNDERGROUND FACILITIES WHETHER OR NOT SHOWN ON THE PLANS.

EXISTING UTILITIES, CONTINUED

INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR IS RESPONSIBLE TO COORDINATE THIS CONSTRUCTION ACTIVITY ALONG WITH THE RELOCATION OF ANY UTILITIES AS REQUIRED BY THE PLAN WITH THE OWNER OF THE AFFECTED UTILITY. PRIVATE UTILITY MANHOLES WITHIN THE LIMITS OF THE WORK SHALL BE READJUSTED TO GRADE BY THE RESPECTIVE UTILITY AT THEIR COST. UTILITY POLES WITHIN THE INFLUENCE OF THE STORM LINE TRENCHES OR EARTHWORK OPERATIONS SHALL BE REINFORCED BY THE UTILITY COMPANY PRIOR TO THESE CONSTRUCTION ACTIVITIES. NOTIFICATION OF THE UTILITY COMPANY PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL EXPOSE ANY UTILITY LINE OR STRUCTURE (PUBLIC OR PRIVATE) SUFFICIENTLY IN ADVANCE OF LAYING PIPE, DUCT, CONDUIT, OR POLE FOUNDATION IN ORDER THAT THE ENGINEER MAY DETERMINE THE EXACT ELEVATION AND MAKE ANY NECESSARY ADJUSTMENTS. COST OF THE ABOVE, IF ANY, SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT IMPROVEMENT. THE CONTRACTOR SHALL CAUSE NOTICE TO BE GIVEN TO THE OHIO UTILITIES PROTECTION SERVICE (TELEPHONE 800-362-2764, TOLL FREE) AND TO THE OWNERS OF THE UNDERGROUND UTILITIES WHO ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE IN ACCORDANCE WITH SECTION 153.64 OF THE REVISED CODE. THE ABOVE MENTIONED NOTICE SHALL BE GIVEN AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION.

UTILITY CROSSING

AT ALL UTILITY CROSSINGS, THE BACKFILL SHALL CONSIST OF COMPACTED GRANULAR MATERIAL BETWEEN THE DEEPER AND SHALLOWER PIPE. WHERE PROPOSED UTILITIES OR SERVICES CROSS PROPOSED OR EXISTING PAVEMENT AREAS, BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL IN ACCORDANCE WITH ITEM 203, GRANULAR MATERIAL, TYPE B. COST IS TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS INCLUDED IN THIS PROJECT. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CAUSE NOTICE TO BE GIVEN TO THE OHIO UTILITIES PROTECTION SERVICE (TELEPHONE 800-362-2764), TOLL FREE) AND TO THE OWNERS OF THE UNDERGROUND UTILITIES WHO ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE IN ACCORDANCE WITH SECTION 153.64 OF THE REVISED CODE. THE ABOVE MENTIONED NOTICE SHALL BE GIVEN AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION.

UTILITY POLE PROTECTION

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITIES ON UTILITY POLES WITH THE INFLUENCE OF THE CONSTRUCTION. THE INTENT IS TO ALLOW THE AFFECTED UTILITIES TO DETERMINE IF THE UTILITY POLES SHALL BE REINFORCED BY THE UTILITY COMPANY PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS AND PROTECT EXISTING UTILITY POLES TO REMAIN. UTILITY POLES WITHIN THE INFLUENCE OF THE PROPOSED UTILITY IMPROVEMENTS SHALL BE REINFORCED BY THE UTILITY COMPANY AND/OR CONTRACTOR PRIOR TO THESE CONSTRUCTION ACTIVITIES AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL COORDINATE WITH AEP AND RESPECTIVE UTILITY COMPANIES DURING CONSTRUCTION FOR SUPPORT OF THESE POLES. NO SEPARATE PAYMENT SHALL BE MADE FOR REMOBILIZATION, SUPPORT OF POLES, OR DOWNTIME DUE TO UTILITY COORDINATION. NOTIFICATION OF THE UTILITY COMPANY PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL COSTS INCURRED FOR THE SUPPORT OF UTILITY POLES SHALL BE INCLUDED WITHIN THE PRICE OF THE PROJECT.

REFERENCE SPECIFICATIONS

THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS, CURRENT EDITIONS, TOGETHER WITH THE CITY OF COLUMBUS AND THE CITY OF NEW ALBANY CONSTRUCTION AND MATERIAL SPECIFICATIONS INCLUDING ALL SUPPLEMENTS THERETO (HEREAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS), SHALL GOVERN ALL CONSTRUCTION ITEMS OF THESE PLANS UNLESS OTHERWISE NOTED. IF CONFLICT BETWEEN SPECIFICATIONS IS FOUND, THE MORE STRICT SPECIFICATION WILL APPLY AS DECIDED BY THE ENGINEER. "COL" ITEM NUMBERS LISTED REFER TO THE CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS. UNLESS OTHERWISE NOTED WITH A "COL" REFERENCE OR PLAN NOTE, THE ODOT SPECIFICATIONS SHALL GOVERN. ANY REVISIONS TO THESE PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

PLAN MODIFICATIONS

ANY MODIFICATIONS OR CHANGES TO THE WORK AS SHOWN ON THE DRAWINGS MUST HAVE PRIOR WRITTEN APPROVAL BY THE CITY ENGINEER.

CONTRACT SPECIFICATIONS

ALL CONTRACT SPECIFICATIONS ACCOMPANYING THESE PLANS ARE TO BE CONSIDERED A PART THEREOF.

MISCELLANEOUS WORK ITEMS

ALL ITEMS OF WORK CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF SAME SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT IMPROVEMENT.

PERMITS

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY COMMERCIAL PROPERTY OWNERS SEVEN (7) DAYS IN ADVANCE OF ALTERING AN EXISTING DRIVEWAY.

INSPECTION

INSPECTION ON THIS PROJECT WILL BE PROVIDED BY REPRESENTATIVES OF THE CITY OF NEW ALBANY.

ITEM 203 EXCAVATION  
ITEM SPEC. TREE SOIL MIX FURNISHED & PLACED,  
AS PER PLAN (36" DEPTH UPPER HORIZON)

THE NEW CENTER MEDIANS EXISTING PAVEMENT IS TO BE REMOVED BY ITEM 202 PAVEMENT REMOVED, EXCAVATION OF SUBGRADE INCLUDING EXISTING AGGREGATE & STABILIZED SUBGRADE, ETC. TO BE REMOVED BY ITEM 203 EXCAVATION, AND THE SOIL REPLACEMENT TO BE ITEM SPEC. - TREE SOIL MIX FURNISHED AND PLACED, AS PER PLAN (36" DEPTH UPPER HORIZON).

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER.

203	EXCAVATION	1000 CU. YD.
SPEC.	TREE SOIL MIX	1250 CU. YD.
	FURNISHED & PLACED, AS PER PLAN	
	(36" DEPTH UPPER HORIZON)	

PRE-CONSTRUCTION MEETING

A PRE-CONSTRUCTION CONFERENCE INVOLVING A REPRESENTATIVE OF THE CITY OF NEW ALBANY, THE PRINCIPAL CONTRACTOR, AND ALL AVAILABLE SUB-CONTRACTORS WILL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE CONFERENCE THROUGH THE CITY ENGINEER, WITH TWO (2) WORKING DAYS NOTIFICATION. DURING THE CONFERENCE, THE CONTRACTOR SHALL SUBMIT HIS PROPOSED SCHEDULE FOR CONTROLLING EROSION AND SILT AND TEMPORARY AND PERMANENT SEEDING SCHEDULES FOR THE IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY OF NEW ALBANY 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

COMPACTION TESTING AT UTILITY CROSSINGS

PRIOR TO CONSTRUCTION OF THE STREETS, SOIL TESTS SHALL BE MADE ON ALL STORM SEWER TRENCHES WHICH CROSS THE PROPOSED PAVEMENTS OR WHICH LIE SUCH THAT THE PROPOSED PAVEMENTS ARE LOCATED WITHIN ANY PART OF THE INFLUENCE LINE OF SAID TRENCH. WHERE SAID RESULTS INDICATE THAT THE TRENCH BACKFILL DOES NOT MEET THE COMPACTION REQUIREMENTS OF 912.03 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, ALL BACKFILL MATERIAL SHALL BE REMOVED, REPLACED, AND RETESTED UNTIL COMPACTION MEETS SAID REQUIREMENTS OF 912.03.

SAFETY REQUIREMENTS

THE CONTRACTOR AND SUB-CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUB-CONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.

SITE VISIT

THE CONTRACTOR SHALL PERFORM FIELD RECONNAISSANCE TO BECOME ACQUAINTED WITH THE EXISTING SITE CONDITIONS AND THE POTENTIAL EFFECTS UPON THE WORK SCOPE. ANY PERFORMANCE OF ADDITIONAL SITE SUBSURFACE INVESTIGATIONS (TEST HOLES) SHALL BE COORDINATED IN ADVANCE WITH THE CITY AS WARRANTED. EXCAVATED MATERIAL SHALL BE REPLACED WITH PROPER 911 BACKFILL.

ITEM 203 EXCAVATION OF SUBGRADE  
ITEM 203 GRANULAR EMBANKMENT

BORINGS WERE TAKEN ON THIS PROJECT. A DEPTH OF ONE (1) FOOT BELOW THE PROPOSED SUBGRADE FOR THE AREA OF THE PROPOSED FULL DEPTH PAVEMENT REPLACEMENT (X 10%) HAS BEEN USED FOR CONTINGENCY QUANTITIES. IT IS RECOMMENDED THAT THE SUBGRADE BE PROOF ROLLED IN ACCORDANCE WITH ITEM 203.14. UNSTABLE OR NON UNIFORM STABILITY OF THE SUBGRADE SHALL BE CORRECTED, TO ONE FOOT OUTSIDE CURB IN ACCORDANCE WITH ITEM 203.13 AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER.

203	EXCAVATION OF SUBGRADE	100 CU. YD.
203	GRANULAR EMBANKMENT	100 CU. YD.
203	PROOF ROLLING	4 HOUR

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DLS

GENERAL NOTES

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HOURS OF OPERATION IN ROW

ALLOWABLE HOURS OF OPERATION ARE 9AM TO 3PM. ALL DAY SATURDAY AND SUNDAY.

VEHICLE PARKING

VEHICLES ARE NOT TO BE PARKED ON THE PAVEMENT. ALL VEHICLES ARE TO BE PARKED AT LEAST 5 FEET FROM EDGE OF PAVEMENT.

PERSONAL PROTECTIVE EQUIPMENT

ODOT REQUIRES ALL CONTRACTORS' PERSONNEL TO WEAR THE CORRECT PPE WHILE WITHIN ODOT RIGHT-OF-WAY. ALL VEHICLES SHALL HAVE THE CORRECT SAFETY EQUIPMENT ALSO.

PROTECTION FROM DROP OFF CONDITIONS IN THE WORK ZONE

ALL DROP OFF CONDITIONS WITHIN THE WORK ZONE MUST BE PROTECTED IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-101.90.

GENERAL LANE CLOSURE POLICIES

TRAFFIC BACK-UPS CAUSED BY THEIR OPERATION OF OVER 0.75 MILES IN LENGTH FOR LONGER THAN 2 HOURS OR OVER 1.5 MILES ANY TIME IS NOT PERMITTED. ODOT RESERVES THE RIGHT TO REVOKE THE PERMIT IF THE MOT GUIDELINES ARE NOT MET.

RIGHT-OF-WAY

IN ADDITION TO DIRECT REQUIREMENTS OF THE CONTRACT SPECIFICATIONS, THE CONTRACTOR SHALL OBSERVE AND CONFORM TO THE SPECIFIC REQUIREMENTS OF ALL RIGHTS-OF-WAY INCLUDING EASEMENTS, COURT ENTRIES, RIGHTS-OF-ENTRY OR ACTION FILED IN COURT IN ACCORDANCE WITH THE CODE OF APPLICABLE GOVERNING AGENCY. THE COST OF THE OPERATIONS NECESSARY TO FULFILL SUCH REQUIREMENTS SHALL BE INCLUDED IN THE PRICE BID OF THE VARIOUS ITEMS OF THE CONTRACT UNLESS SPECIFIC PROVISION IS MADE IN THE CONTRACT SPECIFICATIONS.

THE CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO THE PROJECT SITE UNDER DEVELOPMENT ON THE EXISTING RIGHT-OF-WAYS, CONSTRUCTION AND PERMANENT EASEMENTS AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT WRITTEN CONSENT OF THE OWNER.

ABANDONED GAS LINES OR TELEPHONE CONDUIT

ALL ABANDONED GAS LINES OR TELEPHONE CONDUIT SHALL BE REMOVED WHERE THEY CONFLICT WITH PROPOSED UTILITIES, FOUNDATIONS, TREES (STRUCTURAL SOIL AREA), EXCAVATION FOR PROPOSED PAVEMENT, OR OTHER IMPROVEMENTS. ALL OTHER LINES SHALL BE LEFT IN PLACE. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN ITEM 201-CLEARING AND GRUBBING.

STAGING AREA

STAGING AREA IS TO BE ACQUIRED BY THE CONTRACTOR AT THEIR COST, AND BE INCLUDED IN VARIOUS BID ITEMS.

NON-RUBBER TIRED VEHICLES

NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON PUBLIC STREETS. EXCEPTIONS MAY BE GRANTED BY THE CITY WHERE SHORT DISTANCES AND SPECIAL CIRCUMSTANCES ARE INVOLVED. GRANTING OF EXCEPTIONS MUST BE IN WRITING, AND ANY DAMAGE MUST BE REPAIRED TO THE SATISFACTION OF THE CITY.

RESTORATION AND CLEAN UP

IT IS THE INTENT OF THE CITY TO KEEP INCONVENIENCE TO THE PROPERTY OWNERS TO AN ABSOLUTE MINIMUM. ALL WORK IS TO CONTINUE ON A UNIFORM BASIS AND ON SCHEDULE, PARTICULARLY THE RESTORATION AND CLEANUP OF DISTURBED AREAS AFTER CONSTRUCTION.

THE TRACKING OF MUD, DIRT OR DEBRIS, OR SPILLAGE OF SAME UPON STATE HIGHWAY, CITY STREETS AND RESIDENTIAL DRIVES OR SIDEWALKS, IS PROHIBITED AND ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. FAILURE TO REMOVE SAID MUD, DIRT OR DEBRIS, OR SPILLAGES MAY RESULT IN THE CITY OF NEW ALBANY PROVIDING THAT SERVICE AND THE COST OF THAT SERVICE WITHHELD FROM MONEYS WHICH MAY BECOME DUE TO THE CONTRACTOR.

ALL FENCES, SIGNS, CONCRETE STEPS, DRAINAGE STRUCTURES, OR OTHER PHYSICAL FEATURES REMOVED, DISTURBED OR DAMAGED DURING WORK UNDER THE CONTRACT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. PAYMENT FOR THE SAME SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ROADWAY ITEMS.

SECURING EXCAVATIONS AND TRENCHES FOR NON-WORKING HOURS

OPEN TRENCHES SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS AND PLATES AT ALL TIMES. PLACEMENT OF PROPOSED MATERIALS SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND PAVEMENT AND CURBING REMOVAL. THE LENGTH OF TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL AT ALL TIMES BE SUBJECT TO APPROVAL BY THE CITY ENGINEER.

EXCAVATIONS AND TRENCHES OVER 24 INCHES DEEP SHALL BE SECURELY PLATED, OR BACKFILLED DURING NON-WORKING HOURS.

WORKING HOURS

THE CONTRACTOR SHALL REFERENCE THE MAINTENANCE OF TRAFFIC NOTES FOR WORK TIME LIMITATIONS ON CONSTRUCTION ACTIVITIES.

MAINTAIN DRAINAGE

THE FLOW IN ALL SEWERS, DRAINS, FIELD TILES AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND WHENEVER SUCH WATERCOURSES AND DRAINS ARE DISTURBED OR DESTROYED DURING THE PROSECUTION OF THE WORK, THEY SHALL BE RESTORED BY THE CONTRACTOR AT HIS OWN COST AND EXPENSE TO A CONDITION SATISFACTORY TO THE CITY ENGINEER.

STORAGE OF EQUIPMENT AND MATERIALS

NO MATERIALS, INCLUDING PIPE, SHALL BE STORED WITHIN THE RIGHT-OF-WAY OR WITHIN ONE HUNDRED (100) FEET OF ANY INTERSECTION STREET OR DRIVEWAY. DURING NON-WORKING HOURS, STORAGE OF EQUIPMENT SHALL COMPLY WITH THESE SAME REQUIREMENTS. COMPLIANCE WITH THESE REQUIREMENTS SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS LEGAL RESPONSIBILITIES OR LIABILITIES FOR THE SAFETY OF THE PUBLIC. THE CONTRACTOR SHALL INDICATE HIS INTENT WITH REGARD TO STORAGE OF MATERIAL AT THE PRE-CONSTRUCTION MEETING.

THE CONTRACTOR SHALL NOT STORE CONSTRUCTION VEHICLES, WORKMAN VEHICLES, EQUIPMENT, OR MATERIAL ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL, IN WRITING, IS GRANTED FROM THE CITY.

CONVENIENCE FACILITIES

THE CONTRACTOR SHALL FURNISH AND MAINTAIN SANITARY CONVENIENCE FACILITIES FOR THE WORKMEN AND INSPECTORS FOR THE DURATION OF THE WORK. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ROADWAY ITEMS.

TEMPORARY TRAFFIC CONTROL NOTES

REFER TO MAINTENANCE OF TRAFFIC NOTES REGARDING TEMPORARY TRAFFIC CONTROL.

TRAFFIC SIGNAL NOTES

REFER TO THE TRAFFIC SIGNAL PLANS FOR THE TRAFFIC SIGNAL NOTES.

MAINTAINING MAIL SERVICE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS FOR MAIL SERVICE, POLICE, FIRE AND SOLID WASTE REMOVAL IN THE CONSTRUCTION AREA. COST FOR MAINTAINING SERVICE SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS IN THIS PROJECT.

ITEM 304 - AGGREGATE BASE, AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 304 OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE QUANTITY PROVIDED IN THE PAVEMENT CALCULATIONS, HAS BEEN ESTIMATED USING A 6" THICKNESS.

THE CONTRACTOR MUST FIRST FIELD VERIFY THE THICKNESS OF THE EXISTING AGGREGATE BASE AND DETERMINE THE DEPTH OF THE EXISTING SUBGRADE PRIOR TO PLACING THIS ITEM. IF THE EXISTING SUBGRADE IS FOUND TO BE AT A HIGHER ELEVATION THAN THE PROPOSED SUBGRADE (WHEN ASSUMING A PROPOSED 6" AGGREGATE BASE), THE CONTRACTOR SHALL PROVIDE THE RESULTS OF THE INVESTIGATION TO THE PROJECT ENGINEER. THE ENGINEER SHALL THE DIRECT THE CONTRACTOR TO ADJUST THE THICKNESS OF THIS ITEM ACCORDINGLY.

IF THE ACTUAL QUANTITY USED IS LESS THAN THE AMOUNT BID, THE ENGINEER WILL DETERMINE THE CU. YDS. FOR NON-PAYMENT BY TAKING THE DIFFERENCE IN DEPTHS AND MULTIPLY BY AREA OF PAVEMENT.

ITEM 255 - FULL-DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QCI

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF CUTTING AND REMOVING DETERIORATED PAVEMENT FULL DEPTH AND PLACING 8" 305 CONCRETE BASE. THE MAXIMUM COMPACTED DEPTH OF ANY ONE LAYER SHALL BE 6 INCHES. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THIS ITEM SHALL BE PERFORMED AFTER THE COMPLETION OF MAINLINE PAVEMENT PLANING. ALSO, THIS ITEM SHALL COMMENCE WITHIN 7 DAYS OF THE COMPLETION OF MAINLINE PAVEMENT PLANING. IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

255, FULL-DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QCI, 120 SQ YD

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DLS

GENERAL NOTES

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REPLACEMENT OF DRAIN TILE AND STORM SEWER

ALL DRAIN TILE AND STORM SEWERS DAMAGED, DISTURBED, OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH THE SAME QUALITY PIPE OR BETTER, MAINTAINING THE SAME GRADIENT AS EXISTING. THE DRAIN TILE AND/OR STORM SEWER SHALL BE CONNECTED TO THE CURB SUBDRAIN, STORM SEWER SYSTEM OR OUTLETTED INTO THE ROADWAY DITCH AS APPLICABLE. REPLACED DRAIN TILE/STORM SEWER SHALL BE LAID ON COMPACTED BEDDING EQUAL IN DENSITY TO SURROUNDING STRATUM. REPLACEMENT SHALL BE DONE AT THE TIME OF THE BACKFILL OPERATION. COST OF THIS WORK TO BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS SEWER ITEMS.

SEEDING AND MULCHING SCHEDULE

ALL FINE GRADING, FERTILIZING, SEEDING AND MULCHING OF ALL DISTURBED AREAS, INCLUDING TREE LAWN SHALL BE COMPLETED BY SEPTEMBER 25. PERMANENT SEEDING (URBAN MIXTURE) WILL BE PERMITTED UNTIL SEPTEMBER 25.

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.

NEW ALBANY LEISURE TRAIL ACCESS

THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE NEW ALBANY LEISURE TRAIL AT ALL TIMES, EXCEPT FOR THE TIME NEEDED TO TEMPORARILY OCCUPY THE PROPERTY, WHICH SHALL BE LESS THAN THE TIME NEEDED FOR CONSTRUCTION OF THE PROJECT.

THE CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION FENCING ALONG THE PROPOSED CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES TO PROTECT THE NEW ALBANY LEISURE TRAIL AND THE PUBLIC.

THE CONTRACTOR SHALL INSTALL APPROPRIATE SIGNAGE TO ALERT USERS OF THE NEW ALBANY LEISURE TRAIL OF CONSTRUCTION ACTIVITIES, ACCESS RESTRICTIONS OR CLOSURES, AND TO DIRECT USERS TO SECONDARY ACCESS POINTS.

THE CONTRACTOR SHALL BE REQUIRED TO CLOSELY COORDINATE THE CONSTRUCTION SCHEDULE WITH ODOT AND THE CITY OF NEW ALBANY PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 217.5'. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND THE ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

FEDERAL AVIATION ADMINISTRATION  
SOUTHWEST REGIONAL OFFICE  
OBSTRUCTION EVALUATION GROUP  
10101 HILLWOOD PARKWAY  
FORT WORTH, TX 76177  
FAX: (817) 222-5920  
HTTP://CEAAA.FAA.GOV

OHIO DEPARTMENT OF TRANSPORTATION  
OFFICE OF AVIATION  
2829 WEST DUBLIN-GRANVILLE ROAD  
COLUMBUS, OHIO 43235  
OHIO.AIRPORT.PROTECTION@DOT.OHIO.GOV

GENERAL LANE CLOSURE POLICIES

TRAFFIC BACK-UPS CAUSED BY THEIR OPERATION OF OVER 0.75 MILES IN LENGTH FOR LONGER THAN 2 HOURS OR OVER 1.5 MILES ANY TIME IS NOT PERMITTED. ODOT RESERVES THE RIGHT TO REVOKE THE PERMIT IF THE MOT GUIDELINES ARE NOT MET.

EXPOSING GAS LINES AND FIBER OPTIC COMMUNICATION LINES

THE CONTRACTOR SHALL EXPOSE ALL GAS LINES AND FIBER OPTIC COMMUNICATION LINES NEAR PROPOSED WORK. THE COST OF THIS EFFORT SHALL BE INCLUDED IN THE VARIOUS BID ITEMS.

INSTREAM WORK

PER THE NWP #14, NO INSTREAM WORK SHALL OCCUR BETWEEN APRIL 15TH AND JUNE 30TH ON ROSE RUN.

ITEM 606 - IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL), AS PER PLAN  
ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN, AS PER PLAN

PAINTING:

ALL STEEL GUARDRAIL SURFACES AND STEEL HARDWARE SHALL BE PAINTED NEW ALBANY GREEN AS SUPPLIED BY SHERWIN-WILLIAMS PAINT - KING AVENUE COMMERCIAL STORE 614-299-2116. FIRST, USE PRIMER PAINT COAT PRO-CRYL BY SHERWIN-WILLIAMS ON ALL GALVANIZED SURFACES. PAINT ALL METAL SURFACES WITH THE PRO-CRYL PRIMER IN A UNIFORM, CONSISTENT, AND EVEN APPLICATION. AFTER PRIMER, APPLY TWO COATS OF SHER-CRYL PAINT BY SHERWIN-WILLIAMS ON THE STEEL GUARDRAIL AND STEEL HARDWARE. EACH COAT TO BE APPLIED IN A UNIFORM, CONSISTENT, AND EVEN APPLICATION ON THE SURFACE. SHER-CRYL PAINT SHALL BE APPLIED IN TWO COATS, EACH WITH A MINIMUM 2.0 MILL DRY FILM THICKNESS FOR EACH COAT. PAINT SHALL BE HIGH QUALITY, ALL WEATHER PAINT SUITABLE FOR USE ON GALVANIZED METAL. THE WOOD POSTS SHALL NOT BE PAINTED.

POWDER COATING:

POWDER COATING OF ALL GALVANIZED GUARDRAIL COMPONENTS IN LIEU OF PAINTING WILL BE ACCEPTABLE IF PROCESSES AND MATERIALS EQUAL OR EXCEED THE PAINTING REQUIREMENTS. THOMARIOS IN AKRON IS AN APPROVED POWDER COATING COMPANY. SPECIFICATIONS AND PAINT CHIP SHALL BE SUBMITTED FOR APPROVAL TO THE CITY ENGINEER IF POWDER COATING IS USED IN LIEU OF PAINTING.

EXISTING PLANS

EXISTING PLANS OF SR 161 & US 62 FROM 1993 ARE AVAILABLE UPON REQUEST.

ITEM SPECIAL - PAVEMENT CORE (3' DEPTH)

THE CONTRACTOR SHALL PERFORM PAVEMENT CORES TO DETERMINE THE SOUNDNESS OF THE EXISTING CONCRETE PAVEMENT. IF THE CONCRETE IS NOT SOUND AT THE EDGE WHERE THE LONGITUDINAL TIES WILL BE PLACED, THEN THE TYPE D DRILLED TIED, JOINTS SHALL BE NON-PERFORMED. THE CORES SHALL ALSO BE USED IN DETERMINING EXACT MATERIAL THICKNESSES FOR THE PROPOSED PAVEMENT BUILDUP.

EXISTING ITEM 305 7" CONCRETE BASE (US 62)

THE PLANS FOR THIS IMPROVEMENT INDICATE THAT NO REINFORCING WAS USED IN CONSTRUCTION OF THE ITEM 305 - 7" CONCRETE BASE.

THE TRANSVERSE SPACING OF JOINTS WAS 15'. LOAD TRANSFER DEVICES, 1993 SPECIFICATIONS, SECTION 451.08(b) WERE PROVIDED AT TRANSVERSE CONTRACTION JOINTS IN THE PAVEMENT, BUT NOT IN THE SHOULDERS (EXCEPT WITHIN 500 FEET OF A PRESSURE RELIEF JOINT).

ALL TRANSVERSE JOINTS IN THE WIDENING MUST BE THE SAME TYPE, LOCATION, AND SAME ALIGNMENT AS THE EXISTING JOINTS.

ITEM 305 - 7" CONCRETE BASE, CLASS QC 1P, AS PER PLAN  
ITEM 305 - 8" CONCRETE BASEM CLASS QC 1P, AS PER PLAN

THESE ITEMS SHALL BE PER ITEM 305 EXCEPT THAT THE TYPE D DRILLED TIED LONGITUDINAL JOINT PER BP-2.1 SHALL BE INCLUDED WITH THIS PAY ITEM

BRICK PAVERS & SPECIFICATIONS

FOR THE BRICK PAVERS, POLYMERIC SAND, BITUMINOUS SETTING BED, NEOPRENE TACK COAT, CONCRETE PAVER BASE, AND COMPACTED 304 AGGREGATE BASE, THE CONTRACTOR SHALL SUBMIT SPECIFICATIONS AND SAMPLES FOR APPROVAL TO THE CITY ENGINEER AND CITY PLANNER FOR APPROVAL. CLAY BRICK PAVERS SHALL BE A HEAVY DUTY BRICK RATED FOR VEHICULAR TRAFFIC LOADS. PAVERS SHALL BE PINE HALL-PATHWAY FULL RANGE OR EQUIVALENT.

THE FOLLOWING ITEMS SHALL BE FULL COMPENSATION FOR THE MATERIAL, LABOR, AND EQUIPMENT TO INSTALL THE BRICK PAVERS AS SHOWN ON SHEET 3, PLAN SHEETS AND SHEET 191:

ITEM SPECIAL - BRICK PAVERS WITH SAND SWEEP JOINTS, NEOPRENE-MODIFIED ASPHALT ADHESIVE, TACK COAT, AND ASPHALT SETTING BED

ITEM SPECIAL - 8" CONCRETE BASE (UNDER MEDIAN BRICK PAVERS)

ITEM SPECIAL - 6" AGGREGATE BASE (UNDER MEDIAN BRICK PAVERS)

CALCULATED  
WCS  
CHECKED  
DLS

GENERAL NOTES

FRA-62-30.34

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**CONSTRUCTION LIMITS**

THIS PROJECT IS WITHIN PUBLIC RIGHT-OF-WAY AND DEFINED PROPERTY BOUNDARIES. NO WORK SHALL TAKE PLACE ON ADJACENT PROPERTY WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE PROPERTY OWNER AND/OR A TEMPORARY WORK EASEMENT. NO GRADING ACTIVITIES SHALL BE PERFORMED OUTSIDE THE PROJECT ONTO ADJACENT PRIVATE PROPERTY OWNERS, WITHOUT AN EASEMENT. EXISTING GRADES SHALL BE MATCHED WITHIN THE LEGAL BOUNDARIES UNLESS OTHER PROVISIONS HAVE BEEN MADE.

**ACCESS**

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ROADWAYS, BUSINESSES, AND RESIDENCES DURING CONSTRUCTION.

**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:

- 601, TIED CONCRETE BLOCK MAT, TYPE 1      50 SQ. YD.
- 605, AGGREGATE DRAINS                              200 FT.
- 611, 6" CONDUIT, TYPE F                              200 FT.
- 611, PRECAST REINFORCED CONCRETE OUTLET      3 EACH
- 605, 6" UNCLASSIFIED PIPE UNDERDRAINS      200 FT.

**PRESERVATION OF PROPERTY CORNERS AND SURVEY MARKERS**

THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCH MARKS, PROPERTY CORNERS, REFERENCE POINTS AND STAKES. ANY PROPERTY CORNER OR SURVEY MARKER DAMAGED OR DISTURBED BY THE CONTRACTOR SHALL BE RESET BY A REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.

**GENERAL**

ALL ITEMS OF WORK CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT IMPROVEMENT.

**PLAN DISCREPANCIES**

DISCREPANCIES BETWEEN PORTIONS OF THE CONTRACT DOCUMENTS, DRAWINGS, AND SPECIFICATIONS ARE NOT INTENDED. STATED DIMENSIONS TAKE PRECEDENCE OVER GRAPHICS. DO NOT SCALE DRAWINGS TO DETERMINE LOCATIONS. THE CONTRACTOR IS TO CLARIFY ANY SUCH DISCREPANCIES WITH THE ENGINEER PRIOR TO COMMENCING WORK.

**GENERAL SCHEDULE**

THE CONTRACTOR SHALL SUBMIT IN WRITING A SCHEDULE OF OPERATIONS TO THE ENGINEER (SEE 101.18) AND RECEIVE APPROVAL IN WRITING BEFORE WORK IS STARTED ON THIS PROJECT. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

**ELEVATION DATUM**

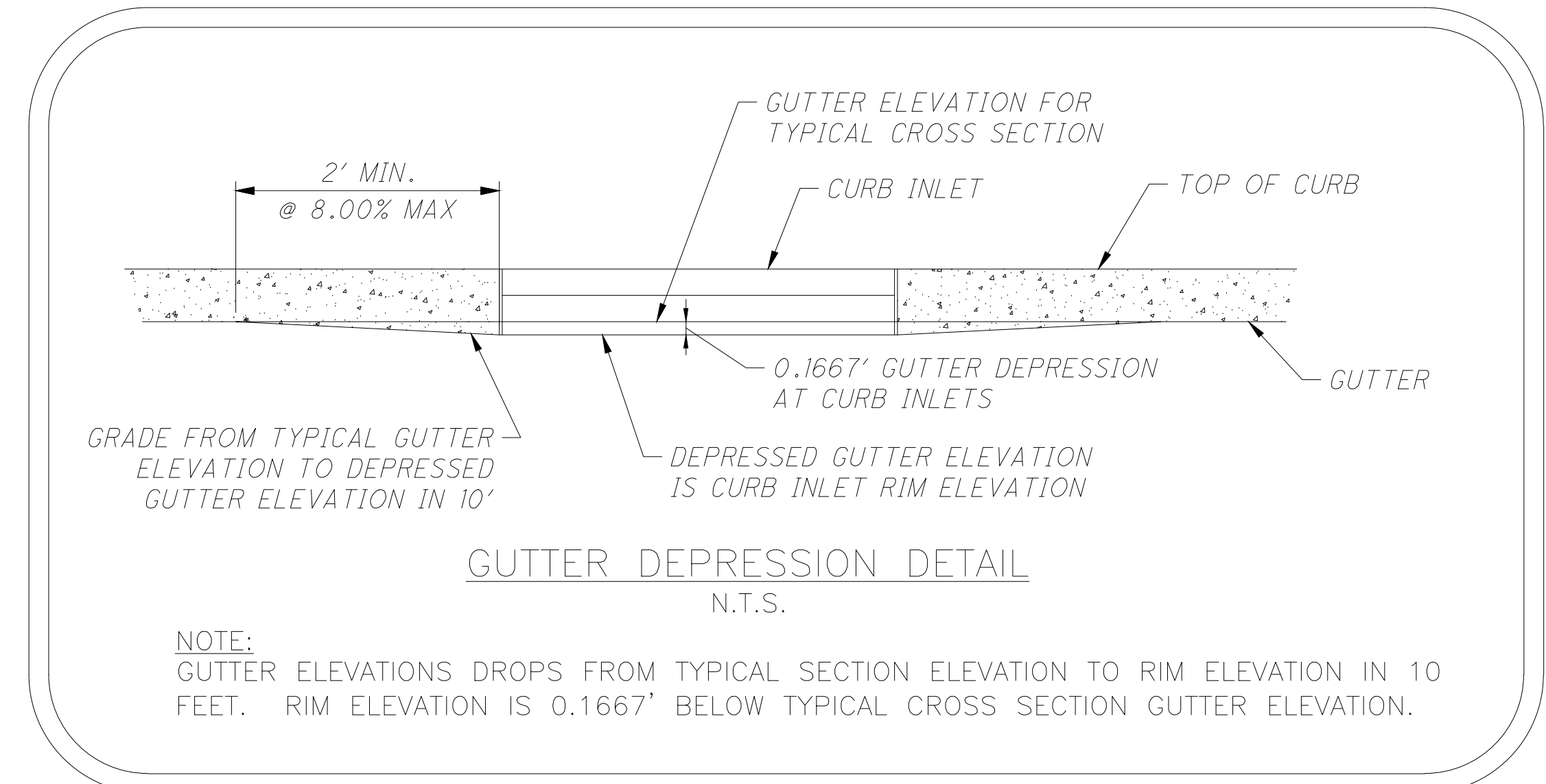
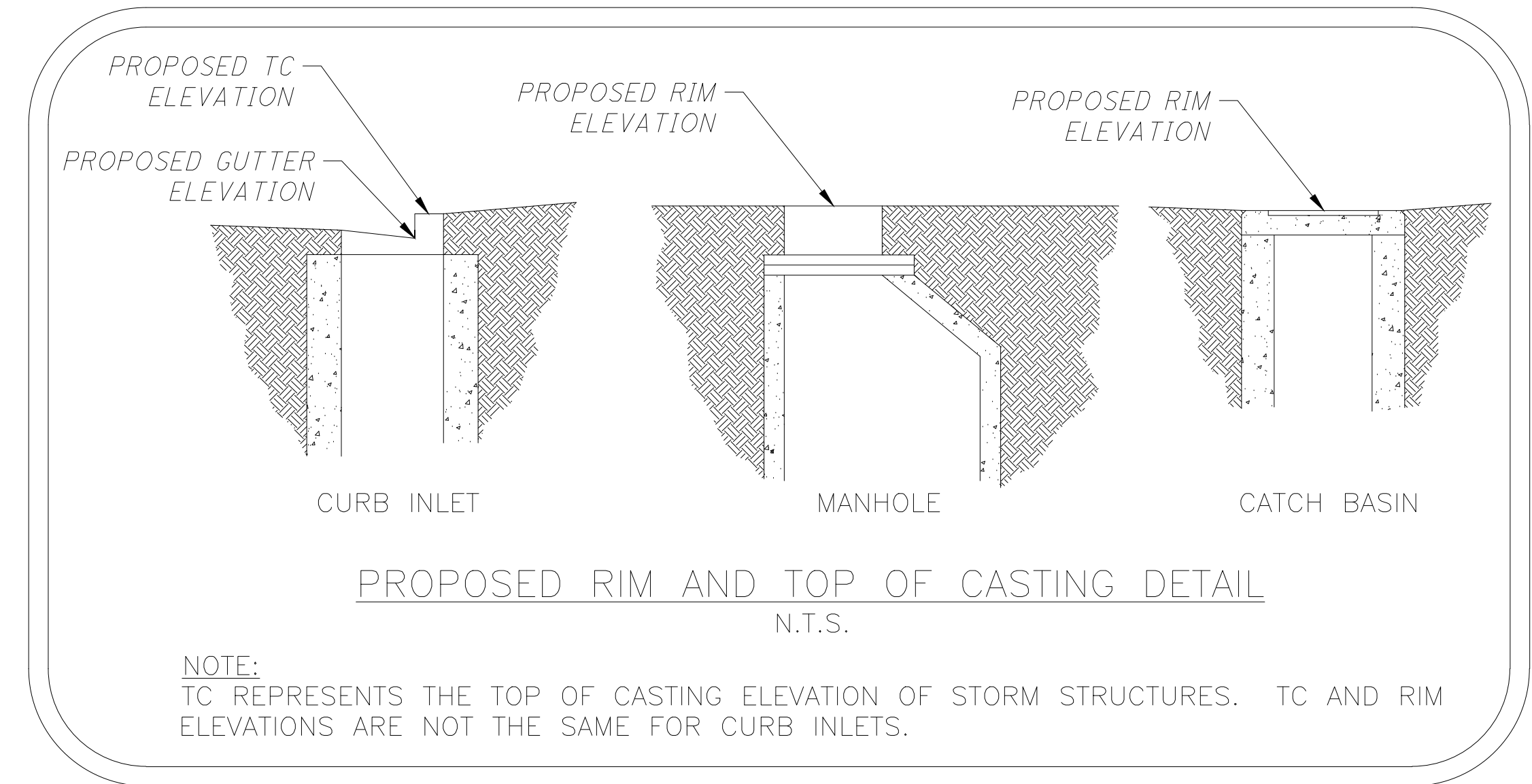
ALL ELEVATIONS ARE BASED ON THE NAVD 88 DATUM.

HORIZONTAL CONTROL POINTS						
REF. NO.	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
10	759698.47	1883581.67	1041.56	50+54.40 (US 62)	36.22' LT	IPINS
12	760159.76	1884109.77	1042.85	57+46.87 (US 62)	49.21' LT	IPINS
14	760401.07	1884698.68	1043.30	63+72.86 (US 62)	61.81' RT	IPINS
22	760824.82	1885342.40	1047.61	71+43.41 (US 62)	47.57' RT	IPINS
28	761295.00	1885891.49	1053.77	78+58.77 (US 62)	56.47' LT	IPINS
34	761493.05	1886458.86	1058.90	84+44.18 (US 62)	79.28' RT	IPINS
36	760792.99	1884367.65	1047.07	1143+34.73 (RAMP K)	35.99' RT	IPINS
42	761963.64	1885978.88	1052.41	82+74.80 (SMITH'S MILL)	60.03' LT	IPINS
44	760349.10	1885615.19	1057.19	1155+56.18 (RAMP H)	12.56' LT	IPINS
45	761169.26	1884709.18	1055.19	1144+52.75 (RAMP G)	20.95' RT	IPINS

VERTICAL BENCHMARK DATA		
REF. NO.	ELEVATION	DESCRIPTION
BM #1	1041.70	SQUARE CUT ON NORTHERLY SIDE OF RAISED STORM BASIN. LOCATED ON SOUTHERLY SIDE OF ROUTE 62, WESTERLY OF PLAIN TWP. FIRE DEPARTMENT, 40.8'± FROM POWER POLE, 27.3'± OF EDGE OF PAVEMENT.
BM #2	1043.20	"X" CUT ON HEX BOLT OF FIRE HYDRANT, EASTERLY SIDE OF THIESEN ROAD, 28'± OF EDGE OF PAVEMENT, 29.3'± SOUTHERLY OF LIGHT/STREET SIGN POLE.
BM #3	1043.84	SQUARE CUT ON CONCRETE BASE OF SIGNAL POLE, LOCATED ON SOUTHWESTERLY CORNER OF ROUTE 161 EASTBOUND OFF RAMP & ROUTE 62.
BM #4	1047.78	SQUARE CUT ON CONCRETE BASE OF PEDESTRIAN PEDESTAL, LOCATED ON SOUTHEASTERLY CORNER OF ROUTE 161 WESTBOUND OFF RAMP & ROUTE 62.
BM #5	1051.18	SQUARE CUT ON NORTHEASTERLY CORNER OF STORM VAULT, LOCATED ON NORTHERLY SIDE OF ROUTE 62, EASTERLY OF ENTRANCE TO COMMERCIAL DRIVE.
BM #6	1056.90	"X" CUT ON NORTHERLY HEX BOLT OF DIRE HYDRANT, LOCATED ON SOUTHERLY SIDE OF WALTON PARKWAY, NORTHWESTERLY OF ENTRANCE TO BANK.
BM #7	1062.02	"X" CUT ON NORTHERLY HEX BOLT OF FIRE HYDRANT, SOUTHERLY SIDE OF ROUTE 62 EASTERLY OF SMITHS MILL ROAD SOUTHEASTERLY CORNER OF ROUTE 62 & SMITHS MILL ROAD.

**"AS BUILT" DRAWINGS**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING "AS BUILT" DRAWINGS OF THE COMPLETED PROJECT, TO BE BASED UPON FIELD PLANS, CUT SHEETS, AND PROJECT INSPECTOR RECORDS. ONE FULL-SIZE SET OF "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE CITY. THE COST FOR PREPARING THESE DRAWINGS SHALL BE CONSIDERED INCIDENTAL TO THE COST BID FOR THE VARIOUS ITEMS.



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**TELECOMMUNICATIONS AND ELECTRIC NOTES AND QUANTITIES**

- ITEM 625 CONDUIT, MISC.:
- ITEM 625 TRENCH, MISC.:
- ITEM 625 PULL BOX, MISC.:
- ITEM 625 LIGHTING, MISC.:
- ITEM 625 TRENCH, MISC.: ELECTRIC TRENCH AND BACKFILL, 42" COVER MINIMUM
- ITEM 625 CONDUIT, MISC.: CONDUIT 6", DIRECTIONAL BORED
- ELECTRIC TRENCH & BACKFILL, 42" COVER MINIMUM
- ELECTRIC TRENCH & BACKFILL, 36" COVER MINIMUM
- TELECOMMUNICATIONS TRENCH & BACKFILL, 36" COVER MINIMUM
- TELECOMMUNICATIONS TRENCH & BACKFILL, 36" COVER MINIMUM FOR HOUSE SERVICE
- CONDUIT 6", DIRECTIONAL BORED (ELECTRIC)
- CONDUIT 5", DIRECTIONAL BORED (ELECTRIC)
- CONDUIT 4", DIRECTIONAL BORED (TELECOM)
- CONDUIT 3", DIRECTIONAL BORED (ELECTRIC)
- CONDUIT 2", DIRECTIONAL BORED (TELECOM)
- CONDUIT 1-1/4", DIRECTIONAL BORED (TELECOM)
- CONDUIT 6", OPEN CUT (ELECTRIC)
- CONDUIT 5", OPEN CUT (ELECTRIC)
- CONDUIT 4", OPEN CUT (TELECOM)
- CONDUIT 3", OPEN CUT (ELECTRIC)
- CONDUIT 2", OPEN CUT (TELECOM)
- CONCRETE BLOCKING FOR AEP CONDUIT (SEE BID BOOK)
- LIGHTING MISC.: TRACER WIRE AND CAUTION TAPE (ELECTRIC)
- LIGHTING MISC.: TRACER WIRE AND CAUTION TAPE (TELECOM)
- PULL BOX - 18" ROUND, AS PER PLAN
- PULL BOX - 32" ROUND, AS PER PLAN
- PULL BOX - 48" SQUARE WITH RACKING, AS PER PLAN
- PULL BOX - 48"x72" WITH RACKING, AS PER PLAN

ALL OF THE ABOVE ITEMS SHALL BE FULL COMPENSATION FOR THE EQUIPMENT, MATERIALS, AND LABOR FOR INSTALLING THE AEP ELECTRIC & TELECOMMUNICATION DUCT BANKS FOR THE BURIAL OF OVERHEAD AND RELOCATION OF OTHER UNDERGROUND FACILITIES.

**TELECOMMUNICATIONS**

BACKFILL OF THE TRENCHES UNDER PROPOSED OR EXISTING SIDEWALK, ROADS, AND DRIVEWAYS SHALL BE 304. SEE PLAN SHEETS FOR LOCATIONS OF CDF BACKFILL. ALL OTHER TRENCHES SHALL BE BACKFILLED PER ITEM 203 TO THE SURFACE. THE CONDUIT SHALL BE BEDDED & BACKFILLED WITH SAND AND HAVE A MINIMUM OF 4" ON THE TOP, AND 2" ON THE SIDES, AND BOTTOM OF THE PIPE. WHEN COMPLETED ALL MANHOLES AND CONDUIT SHALL BE FREE OF DEBRIS. ALL DIRECT BURIED CONDUIT SHALL BE SCHEDULE 40 PVC PIPE.

**ELECTRIC**

SEE BID DOCUMENTS FOR SPECIFICATIONS ON ELECTRIC CONDUIT CONSTRUCTION. BACKFILL OF THE TRENCHES SHALL BE AS SHOWN ON THE PLAN. ALL OTHER TRENCHES SHALL BE BACKFILLED PER ITEM 203 TO THE SURFACE. THE CONDUIT SHALL BE BEDDED & BACKFILLED WITH SAND AND HAVE A MINIMUM OF 4" ON THE TOP, AND 2" ON THE SIDES, AND BOTTOM OF THE PIPE. WHEN COMPLETED ALL MANHOLES AND CONDUIT SHALL BE FREE OF DEBRIS. ALL PIPE SHALL BE SCHEDULE 80 (OR HDPE EQUIVALENT RATING FOR DIRECTIONAL BORING) RATED FOR ELECTRICAL USE.

AMERICAN ELECTRIC POWER WILL PROVIDE SPOT INSPECTION OF THE CONDUIT INSTALLATION IN ACCORDANCE WITH THE PLAN SPECIFICATIONS AND AEP DESIGN STANDARDS. THE CONTRACTOR SHALL INFORM AEP OF HIS CONSTRUCTION SCHEDULE. CONTRACTOR SHALL NOTIFY AEP WHEN SETTING CONDUIT AT TRANSFORMER PADS.

**DUCT**

ALL ELECTRICAL DUCT SHALL BE OF THE NOMINAL TRADE SIZE(S) SHOWN ON THE PLANS, TYPE SCHD. 80 CONFORMING TO THE SPECIFICATIONS OF NEMA STANDARD PUBLICATION NO. TC - 2 RATED FOR 900 POWER CABLE. CONDUIT INTENDED FOR COMMUNICATIONS CABLES SHALL BE SCHD. 40 (OR HDPE SDR-II FOR DIRECTIONAL BORING). LIGHTING DUCT SHALL BE 2" SCHEDULE 40 PVC PIPE.

**DUCT ACCESSORIES**

COUPLINGS, BENDS, BELL ENDS, PLUGS, ADAPTERS, CAPS AND OTHER ACCESSORIES SHALL BE OF A TYPE DESIGNED FOR USE WITH THE DUCT SPECIFIED ABOVE. COUPLINGS, WHETHER INTERNAL OR EXTERNAL, SHALL BE DESIGNED SO AS TO MAINTAIN AS SMOOTH OF AN INTERIOR SURFACE AS POSSIBLE. ANGLE COUPLINGS OR 5 DEGREE BENDS SHALL BE USED TO MAKE ALL MINOR VERTICAL OR HORIZONTAL ADJUSTMENTS TO THE CONDUIT ALIGNMENT. NO FIELD BENDS WILL BE PERMITTED. PROPERLY DESIGNED BELL ENDS ARE TO BE USED AT ALL CONDUIT TERMINATIONS INTO MANHOLES. ALL CONDUIT ENDS ARE TO BE KEPT PLUGGED UNTIL JOINED TO THE NEXT LENGTH.

**DUCT SEPARATION**

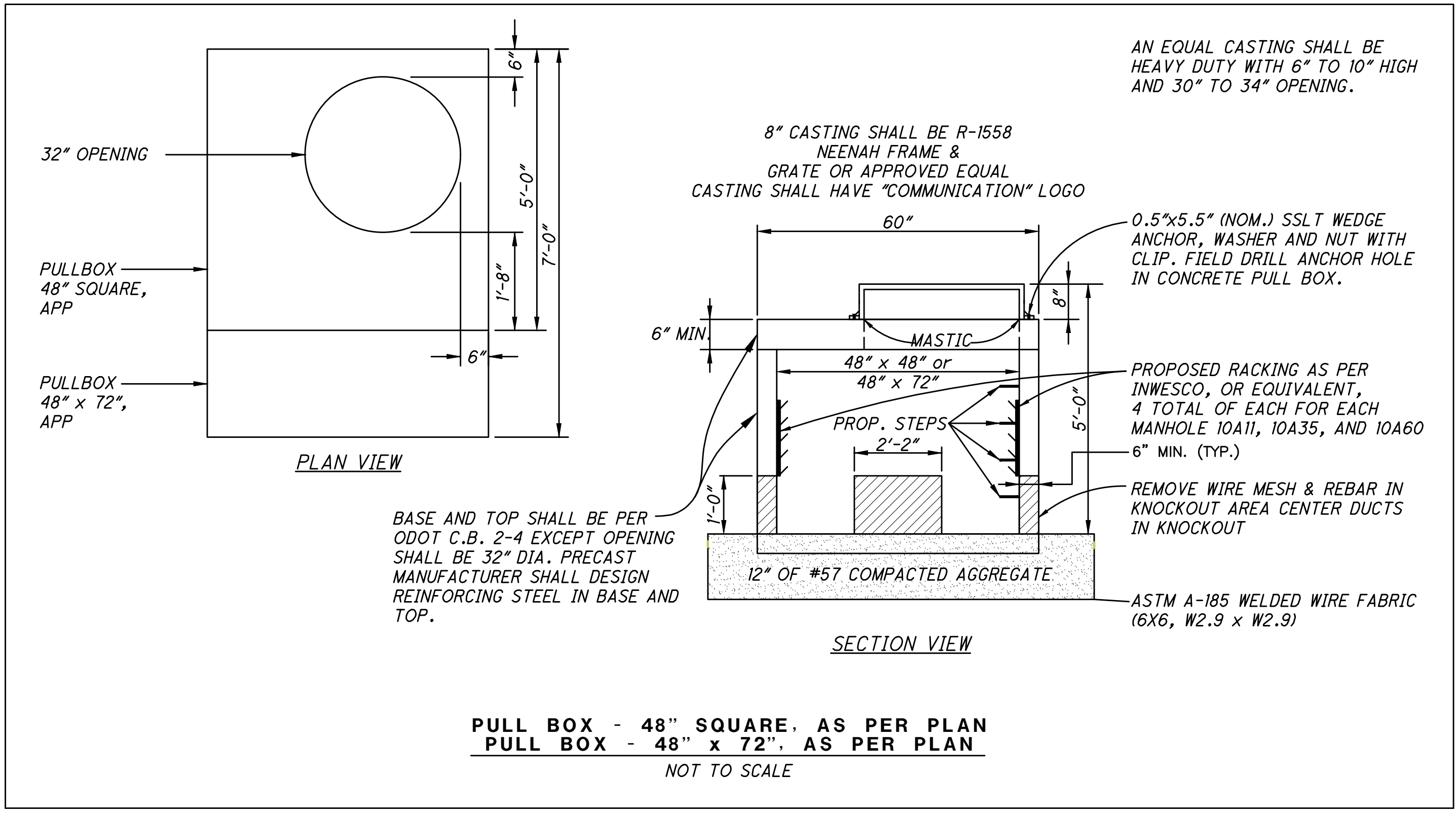
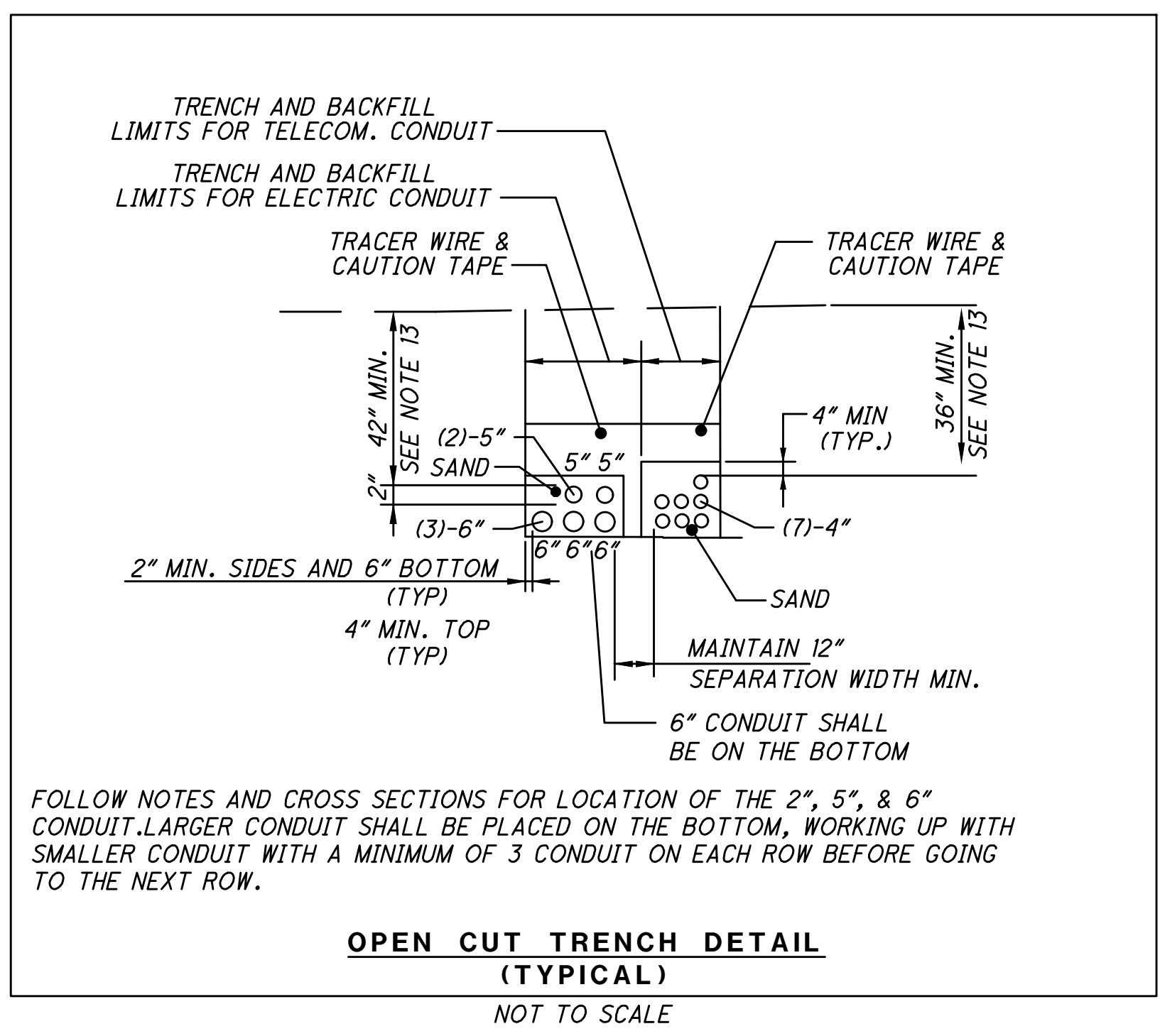
DUCT SPACING, BOTH HORIZONTAL AND VERTICAL, SHALL BE TWO INCHES (2") AS MEASURED FROM THE OUTSIDE OF ONE CONDUIT TO THE OUTSIDE OF ADJACENT CONDUITS. SPACING SHALL BE ACCOMPLISHED BY USE OF INTERLOCKING BASE AND INTERMEDIATE SPACERS PLACED AT FIVE FOOT (5') INTERVALS.

**PULL BOXES**

PULLBOX, 48" SQUARE, AS PER PLAN SHALL BE AS DETAILED IN THESE PLANS.  
PULLBOX, 48"x72", AS PER PLAN SHALL BE AS DETAILED IN THESE PLANS.

**ADDITIONAL NOTES**

1. TRACER WIRE AND CAUTION TAPE 12" ABOVE THE CONDUIT FOR OPEN CUT PLACEMENT. A PULL ROPE SHALL BE PLACED IN EACH DUCT. TRACER WIRE AND CAUTION TAPE SHALL BE PAID FOR UNDER ITEM SPECIAL-TRACER WIRE AND CAUTION TAPE.
2. CENTERLINE OF THE TRENCH SHALL BE LOCATED IN ACCORDANCE WITH THE PLAN DETAILS.
3. TRENCH LOCATION MAY BE DEFLECTED AROUND OBSTACLES AND EXISTING UTILITIES AS APPROVED BY THE ENGINEER.
4. PULL BOXES SHALL BE LOCATED APPROXIMATELY WHERE SHOWN ON PLANS WITH EXACT LOCATIONS TO BE DETERMINED IN THE FIELD AFTER CONSIDERATION IS GIVEN TO THE LOCATION OF UTILITIES, PAVEMENTS, HANDICAP RAMPS, AND GRADES.
5. ALL CONDUIT SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF ANY PERMANENT PAVEMENT, DRIVEWAY, SIDEWALK, OR SUB-BASE.
6. ALL CONDUIT SHALL BE BRUSHED AND MANDRELLED.
7. PEDESTALS SHALL BE SUPPLIED AND INSTALLED BY OWNER OF THE UTILITY COMPANY. ALL TURNED UP CONDUIT FOR PEDESTALS SHALL BE TIGHTLY TIED TOGETHER. TWO PEDESTALS SHALL BE INSTALLED OFF OF THE EXISTING CONDUIT RUNS.
8. DUCTS SHALL BE DEFLECTED AROUND PROPOSED LIGHT POLE BASES.
9. ELECTRICAL CONDUIT SHALL BE DEFLECTED AROUND AND BELOW FIBER OPTIC MANHOLES.
10. ALL RUNS SHALL BE LABELED. EACH RUN SHALL HAVE A UNIQUE LABEL. CONTRACTOR SHALL PROPOSE A LABELING SYSTEM FOR USE.
11. LIGHTING CONDUIT (L) SHALL BYPASS ALL MANHOLES, EXCEPT LIGHTING PULLBOXES.
12. INTERCONNECT CONDUIT (IC) SHALL BE RUN THROUGH THE TELECOMMUNICATION MANHOLES.
13. COVER DEPTHS SHOWN ARE MINIMUM DEPTHS TO THE TOP. DEPTHS MAY BE DEEPER TO AVOID CONFLICTS WITH OTHER UTILITIES.
14. ALL ELECTRICAL CONDUIT SHOULD BE GROUPED TOGETHER WHEN POSSIBLE.
15. ALL CONDUIT WHICH TERMINATES AT A BUILDING, POLE, PEDESTAL, HOUSE, AND ABOVE GROUND ELECTRICAL TELECOMMUNICATION FACILITIES SHALL HAVE TURNED UP ENDS. ALL COSTS INCLUDED WITH THE PRICE OF THE CONDUIT.
16. CAUTION TAPE MAY BE NON-PERFORMED WHEN DIRECTIONAL BORING



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**ITEM 614, MAINTAINING TRAFFIC, AS PER PLAN**

IN ADDITION TO THE ODOT STANDARD DRAWINGS REFERENCED FOR THESE PLANS, THE TYPICAL APPLICATIONS OF TA-1, TA-10 AND OTHER APPLICATIONS FROM THE MOST RECENT OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES SHALL BE USED, AS NECESSARY, FOR TRAFFIC CONTROL ON THIS PROJECT AS DESCRIBED IN THE MANUAL.

ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CONSTRUCTION AND MAINTENANCE OPERATIONS (CURRENT EDITION), COPIES OF WHICH ARE AVAILABLE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, 1980 WEST BROAD STREET, COLUMBUS, OHIO 43223.

STEADY-BURNING TYPE "C" LIGHTS SHALL BE REQUIRED ON ALL BARRICADES, DRUMS, AND SIMILAR TRAFFIC CONTROL DEVICES IN USE AT NIGHT. CONES ARE NOT APPROVED FOR USE AT NIGHT.

ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED AT ALL TIMES.

LANE CLOSURES SHALL NOT BE PERMITTED BETWEEN THE HOURS OF 6-9 AM AND 4-7 PM. FOR TIMES WHEN A LANE IS CLOSED, THE CONTRACTOR SHALL UTILIZE A LEO TO CONTROL TRAFFIC.

ALL TRENCHES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE BACKFILLED OR SECURELY PLATED DURING NON-WORKING HOURS.

ALL PERMANENT TRAFFIC CONTROLS (INCLUDING TRAFFIC SIGNAL-SEE TRAFFIC CONTROL NOTES) NOT IN CONFLICT WITH THE TEMPORARY TRAFFIC CONTROLS SHALL BE MAINTAINED THROUGHOUT THIS PROJECT BY THE CONTRACTOR. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR MISSING, DAMAGED AND IMPROPERLY PLACED SIGNS.

ANY WORK DONE BY THE CITY OF NEW ALBANY, INCLUDING INSTALLATION, RELOCATION, REMOVAL AND/OR REPLACEMENT OF TEMPORARY TRAFFIC CONTROL DEVICES AS A RESULT OF WORK DONE BY THE CONTRACTOR OR AS A RESULT OF THE NEGLIGENCE OF THE CONTRACTOR SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

THE PROPER ADVANCED WARNING SIGNING (IN ACCORDANCE WITH THE MANUAL FOR UNIFORM TRAFFIC CONTROL) SHALL BE PLACED ALONG STREETS APPROACHING THE PROJECT LIMITS.

PAYMENT FOR ALL TRAFFIC MAINTENANCE ITEMS SHALL BE INCLUDED WITHIN THE LUMP SUM ITEM PRICE BID FOR ITEM 614-MAINTAINING TRAFFIC, AS PER PLAN UNLESS SPECIFICALLY ITEMIZED.

WORK ZONE DROPOFFS SHALL CONFORM TO TEM 640-6 AND STD. DWG. MT-101.90 FOR 5" DROPOFF AT NIGHT WITH DRUMS AS BARRIERS SHALL BE MAINTAINED ON ANY STREET WHERE TRAFFIC IS MAINTAINED IN ACCORDANCE WITH PAGE C-18 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES).

A MINIMUM OF 4' FROM A DROPOFF TO THE EDGE OF TRAVEL WAY SHALL BE MAINTAINED AT ALL TIMES. BARRELS SPACED AT 10' INTERVALS SHALL BE USED FOR TRAFFIC CONTROL.

MANUAL CONTROL OF TRAFFIC BY ANYONE OTHER THAN POLICE OFFICERS IS PROHIBITED.

**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 ODOT INTENDS THAT FLAGGERS BE USED.

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

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

2. 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.)

3. 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 CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

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

Secondary Route: Johnstown Rd (US-62)		SLM along 161:		Detour Routes	
Ramp	Movement	Mon to Fri	Sat to Sun	Primary Route	Secondary Route
G	Johnstown Rd. to SR-161 WB	5AM to 8PM	8AM to 8PM	Ramp J to SR-161 EB to Ramp C to Beech Rd NB to Ramp A to SR-161 WB	Johnstown Rd to Walton Parkway* WB to New Albany Rd* SB to Ramp L to SR-161 WB
H	SR-161 WB to Johnstown Rd.	6AM to 7PM	8AM to 7PM	SR-161 WB to Ramp M to New Albany Rd. SB to Ramp N to SR-161 EB to Ramp K to Johnstown Rd.	
J	Johnstown Rd. to SR-161 EB	6AM-9AM & 3PM-7PM	8AM to 7PM	Ramp G to SR-161 WB to Ramp M to New Albany Rd. SB to Ramp N to SR-161 EB	Johnstown Rd to High St* SB to Dublin Granville Rd/Worthington Rd* EB to Beech Rd to Ramp D to SR-161
K	SR-161 EB to Johnstown Rd.	5AM to 8PM	8AM to 8PM	SR-161 EB to Ramp C to Beech Rd NB to Ramp A to SR-161 WB to Ramp H to Johnstown Rd.	

**ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS, CONTINUED**

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

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR, AS PER PLAN ..... 120 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 A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

**MAINTAINING TRAFFIC FOR SIGNAL INSTALLATION**

DURING THE COURSE OF SIGNAL INSTALLATIONS, LANE CLOSURES MAY BE IMPLEMENTED ONLY DURING NON-PEAK HOURS. PEAK HOURS ARE 6-9 AM AND 3-6 PM.

THE CONTRACTOR SHALL NOTIFY THE CITY OF NEW ALBANY AT (614) 855-0076 TWO WEEKS PRIOR TO BEGINNING WORK AND WEEKLY THEREAFTER TO DISCUSS ANY CHANGES TO THE MAINTENANCE OF TRAFFIC PLAN AND/OR COMPLETION DATE. BEFORE WORK IS STARTED ON THIS PROJECT, THE CONTRACTOR SHALL SUBMIT A WRITTEN SCHEDULE OF OPERATION AND A TRAFFIC MAINTENANCE OF CONTROL PLAN FOR APPROVAL. NO WORK SHALL BE STARTED THAT WILL RESTRICT ANY LANE USAGE UNLESS IT IS THE INTENT OF THE CONTRACTOR TO WORK FULL TIME WITH A FULL FORCE IN ORDER TO COMPLETE THE WORK WITH NO UNNECESSARY DELAYS. THE CITY WILL NOTIFY THE PUBLIC, LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS VIA MEDIA SOURCES.

THE FOLLOWING DEVICES MUST MEET NCHRP 350 OR MASH-08 BEFORE THE DEVICES ARE INSTALLED ON THE PROJECT: DRUMS, CONES, VERTICAL PANELS AND THE SUPPORT, PORTABLE SIGN SUPPORTS, TEMPORARY IMPACT ATTENUATORS, TEMPORARY CONCRETE BARRIER, AND BARRICADES.

**MAINTENANCE OF TRAFFIC**

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN TRAFFIC FOR ANY WORK ACTIVITIES WHICH MAY OCCUR IN THE RIGHT-OF-WAY. THE CONTRACTOR SHALL COORDINATE LANE CLOSURES AND ANY OTHER TRAFFIC CONTROL MEASURES WITH THE CITY OF NEW ALBANY. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN CONFORMANCE WITH THE ODOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

**EXISTING TRAFFIC SIGN MAINTENANCE**

SPECIAL CARE SHALL BE TAKEN TO MAINTAIN EXISTING STREET NAME SIGNS AND STOP SIGNS. IF NECESSARY, THE CONTRACTOR SHALL RELOCATE THESE SIGNS OUT OF THE WAY OF CONSTRUCTION, BUT IN CONFORMANCE WITH ODOT. ANY DAMAGED SIGN SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

**CONSTRUCTION SEQUENCING**

**PHASE 1**

CLOSURE OF OUTSIDE LANE ON US 62 WB BETWEEN RAMP G AND THE SOUTHERNMOST PRIVATE DRIVE. CLOSURE OF LEFT SHOULDER OF RAMP H. BEGIN REMOVAL OF THE ISLAND SEPARATING RAMP G AND G-1 AND RAMP H SHOULDER. RAMP G AND G-1 AND RAMP H SHALL REMAIN OPEN DURING CONSTRUCTION. SEE SHEET 15. CONSTRUCT PROPOSED PAVEMENT, AS SHOWN ON PHASE 1 DRAWING FOR USE IN PHASE 2. INSTALL TEMPORARY SIGNALS. MAINTAIN TEMPORARY SIGNALS UNTIL THE PERMANENT SIGNALS HAVE BEEN INSTALLED.

AT ANY JOINT WHERE THE EXISTING SURFACE COURSE AND THE NEW INTERMEDIATE COURSE OCCUR, A WEDGE OF ASPHALT SHALL BE PLACED FOR A SMOOTH TRANSITION FOR VEHICULAR TRAFFIC.

**PHASE 2**

CONSTRUCT THE PROPOSED IMPROVEMENTS ON THE OUTSIDE OF US 62 WB AND EB, WALTON PARKWAY, AND RAMPS, INCLUDING ALL UNDERGROUND WORK, ROAD PAVEMENT, CURB, LEISURE PATH, WALKS, ISLANDS, ETC., EXCEPT SURFACE COURSE. MAINTAIN THE EXISTING DRIVE ACCESSES DURING PHASE 2 CONSTRUCTION. MAINTAIN TRAFFIC ON US 62 WITH A MINIMUM OF ONE LANE IN EACH DIRECTION WITH TURN LANES ON THE EXISTING PAVEMENT AS SHOWN ON SHEET 22-26.

ADDITIONALLY, MAINTAIN TWO NE BOUND LANES FROM THE EB OFF-RAMP TO SMITH'S MILL ROAD AND TWO SW BOUND LANES FROM SMITH'S MILL ROAD TO WB ON-RAMP.

MAINTAIN ONE LANE OF TRAFFIC ON RAMPS G AND H AND J AND TWO LANES OF TRAFFIC ON RAMP K.

AT ANY JOINT WHERE THE EXISTING SURFACE COURSE AND THE NEW INTERMEDIATE COURSE OCCUR, A WEDGE OF ASPHALT SHALL BE PLACED FOR A SMOOTH TRANSITION FOR VEHICULAR TRAFFIC.

**PHASE 3**

CONSTRUCT THE PROPOSED IMPROVEMENTS ON THE INTERIOR OF US 62 WB AND EB AND WALTON PARKWAY, INCLUDING ALL UNDERGROUND WORK, ROAD PAVEMENT, CURB, ISLANDS, ETC., EXCEPT SURFACE COURSE. MAINTAIN TRAFFIC ON US 62 WITH A MINIMUM OF ONE LANE IN EACH DIRECTION WITH TURN LANES AS SHOWN ON SHEET 30-34.

ADDITIONALLY, MAINTAIN TWO NORTHEAST BOUND LANES FROM THE EB OFF-RAMP TO SMITH'S MILL ROAD, EXCEPT AS NOTED ON SHEETS 30-34 WHERE A MINIMUM OF ONE LANE SHALL BE MAINTAINED FOR LIMITED TIME PERIODS AND VARIOUS STATION LIMITS. MAINTAIN TWO SW BOUND LANES FROM SMITH'S MILL ROAD TO STA. 77+00.

AT ANY JOINT WHERE THE EXISTING SURFACE COURSE AND THE NEW INTERMEDIATE COURSE OCCUR, A WEDGE OF ASPHALT SHALL BE PLACED FOR A SMOOTH TRANSITION FOR VEHICULAR TRAFFIC.

FOR ALL RAMPS MAINTAIN THE FINAL LANE CONFIGURATION WITH ALL RAMP LANES FULLY OPEN TO TRAFFIC.

INSTALL PERMANENT SIGNAL POLES.

**PHASE 4**

MILL THE EXISTING ASPHALT/CONCRETE SURFACE AND PLACE FINAL ASPHALT SURFACE COURSE AND STRIPING.

MILLING, PAVING, AND STRIPING WORK SHALL BE CONSTRUCTED SUCH THAT ONLY ONE THROUGH LANE OF TRAFFIC SHALL BE CLOSED AT A TIME USING MT-95.30 DURING HOURS OUTLINED PREVIOUSLY.

**PHASE 5**

INSTALL TOPSOIL, SEEDING AND MULCHING, TREES, ETC.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

FRA-62-30.34

ACCESS TO PRIVATE PROPERTY

ACCESS TO DRIVES SHALL BE MAINTAINED VIA EXISTING PAVEMENT, TEMPORARY PAVEMENT OR ITEM 304. IN THE EVENT THAT A DRIVE CANNOT BE MAINTAINED AND A CLOSURE IS NEEDED THE CONTRACTOR WILL COORDINATE WITH THE PROPERTY OWNER TO MINIMIZE THE IMPACT TO THE OWNER.

COMMERCIAL PROPERTY WITH MULTIPLE DRIVES MAY HAVE ONE DRIVE CLOSED WHEN WORKING IN THE AREA OF THE DRIVE. COMMERCIAL PROPERTY WITH ONLY ONE DRIVEWAY OR DRIVEWAYS WITH ONE DIRECTION TRAFFIC USE WILL BE CONSTRUCTED PART WIDTH. THE CONTRACTOR WILL COORDINATE WITH THE PROPERTY OWNER TO MINIMIZE THE IMPACT TO THE OWNER.

MAINTAIN ACCESS TO RESIDENTIAL PROPERTIES AT ALL TIMES. WHEN A RESIDENTIAL DRIVE IS CLOSED FOR CONSTRUCTION, MAINTAIN ALTERNATE ACCESS TO THE PROPERTY. IT MAY BE REQUIRED FOR THE CONTRACTOR TO MAINTAIN ONE PASSABLE LANE WITHIN A CLOSURE IN ORDER FOR VEHICLES TO ACCESS RESIDENCY WITH A VEHICLE.

UNLESS CALLED OUT IN THE PLANS THE CONTRACTOR WILL COORDINATE ANY CLOSURES WITH PROPERTY OWNERS AND BE RESPONSIBLE FOR ANY AND ALL PROPERTY USE AGREEMENTS FOR ALTERNATIVE ACCESS.

SUCCESSFULLY NOTIFY THE OCCUPANTS/OWNERS OF COMMERCIAL OR RESIDENTIAL DRIVES TO BE CLOSED AND COORDINATE THE CLOSURE AT LEAST 48 HOURS BEFORE THE CLOSURE BEGINS (SIMPLY LEAVING A WRITTEN NOTICE OR PHONE MESSAGE IS NOT SUFFICIENT). COORDINATE ALTERNATE ACCESS TO RESIDENTIAL PROPERTIES WITH THE OWNER/OCCUPANT.

THE ENGINEER SHALL BE GIVEN A LIST OF THE PERSONS THAT WERE GIVEN NOTICES WITH THE DATE OF NOTICE INCLUDED. CLOSURE IS PERMITTED ONLY DURING WORK HOURS AND ACCESS MUST BE RETURNED AT THE END OF EACH WORKING DAY. PROPERTIES WITH MULTIPLE DRIVES MAY HAVE ONE DRIVE CLOSED AT A TIME, WHILE WORK IS PERFORMED IN THE AREA OF THE CLOSED DRIVE.

DROP-OFFS IN WORK ZONES

THE DROP-OFF ADJACENT TO THE TRAVEL LANE SHALL MEET THE CRITERIA OUTLINED IN STANDARD DRAWING MT-101.90. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR MATERIALS, LABOR OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS OF MT-101.90.

LANES OPEN DURING HOLIDAYS AND SPECIAL EVENTS

NO WORK SHALL BE PERFORMED AND THE SAME NUMBER OF LANES AS WERE AVAILABLE AT THE START OF THE PROJECT SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS AND EVENTS:

<u>HOLIDAYS</u>	
CHRISTMAS	FOURTH OF JULY
NEW YEAR'S EVE	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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

SPECIAL EVENTS

PELTONIA	APPROXIMATELY 3 DAYS IN AUGUST 2022, 2023
A&F CHALLENGE	APPROXIMATELY 1 DAY IN SEPTEMBER 2022, 2023

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA WIDE.

DAY OF HOLIDAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00 NOON FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00 NOON FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00 NOON MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00 NOON TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00 NOON WEDNESDAY THROUGH 6:00 AM FRIDAY
THANKSGIVING	5:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00 NOON THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00 NOON FRIDAY THROUGH 6:00 AM MONDAY

ITEM 614 - DETOUR SIGNING

SIZE AND PLACEMENT OF DETOUR SIGNS (M4-9) SHOULD FOLLOW THE REQUIREMENTS OF THE OMUTCD SECTION 6F.03, SECTION 2A.11 AND TABLE 6F.01.

DETOUR SIGNING SHALL PROVIDE DRIVERS ADEQUATE TIME TO CLEARLY READ THE SIGNS AND MAKE THE PROPER DECISIONS AT EACH REQUIRED TURNING MOVEMENT. THE DESIGNATED DETOUR ROUTE SHALL BE SIGNED IN ACCORDANCE WITH THE REQUIREMENTS BELOW:

- APPROXIMATELY 1500 FEET PRIOR TO TIP OF THE PAINTED GORE AT AN INTERCHANGE WHEN EXITING A HIGH SPEED (45 MPH OR HIGHER) FACILITY.
- AT OR NEAR THE EXISTING SIGN IN THE GORE OF AN INTERCHANGE RAMP.
- AT OR NEAR THE FIRST EXISTING LANE ASSIGNMENT SIGN ON AN INTERCHANGE EXIT RAMP.
- AT OR NEAR THE EXISTING LANE ASSIGNMENT SIGN OR EXISTING ROUTE MARKER AT THE END OF AN EXIT RAMP.
- APPROXIMATELY 500 FEET PRIOR TO A REQUIRED TURN AT AN INTERSECTION NOT CONTROLLED BY A STOP SIGN (FOR 45 MPH OR HIGHER ONLY).
- AT OR NEAR THE EXISTING LANE ASSIGNMENT SIGN OR EXISTING ROUTE MARKER AT AN INTERSECTION.
- EVERY TWO MILES ALONG A TANGENT SECTION BETWEEN TURNING MOVEMENTS OUTSIDE A CITY.
- EVERY TWO BLOCKS ALONG A TANGENT SECTION BETWEEN TURNING MOVEMENTS WITHIN A CITY.
- AT ANY OTHER INTERSECTION OR DECISION POINT WHERE THE DETOUR ROUTE IS CONTRARY TO THE NORMAL, EXPECTED TURNING MANEUVER OR OTHERWISE UNCLEAR.

DETOUR SIGNS SHALL BE PLACED, WHEN POSSIBLE, NEXT TO BUT NOT BLOCKING EXISTING ROUTE MARKERS OR LANE ASSIGNMENT SIGNS. DETOUR SIGNS SHALL NOT OBSCURE OR BE OBSCURED BY OTHER EXISTING OR TEMPORARY SIGNS.

DETOUR SIGNS SHALL BE ERECTED AND/OR UNCOVERED PRIOR TO THE ROAD OR RAMP BEING CLOSED TO TRAFFIC BUT NO EARLIER THAN FOUR HOURS PRIOR TO THE CLOSURE. DETOUR SIGNS SHALL BE COVERED AND/OR REMOVED NO LATER THAN FOUR HOURS FOLLOWING THE ROAD OR RAMP RE-OPENING TO TRAFFIC.

PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT UNIT PAYMENT SHALL BE FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, PROPER SIGN PLACEMENT AND SIZING, TIMELY ERECTING AND/OR UNCOVERING OF SIGNS, MAINTAINING SIGNS, AND TIMELY COVERING AND/OR REMOVING SIGNS AND SUPPORTS.

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

ITEM 614 - DETOUR SIGNING = LUMP SUM

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE O.D.O.T. OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL NOTIFY SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO) D06.PIO@DOT.OHIO.GOV USING THE TIME FRAMES SET FORTH IN THE TABLE BELOW. THIS NOTIFICATION SHALL BE RECEIVED BY ODOT PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

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

NOTIFICATION TIME FRAME TABLE			
ITEM	DURATION OF CLOSURE	NOTIFICATION DUE TO DISTRICT 6 COMMUNICATIONS OFFICE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE	7 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE	2 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE	
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE	
START OF TRAFFIC AND CONSTRUCTION PATTERNS CHANGES	N/A	14 CALENDAR DAYS PRIOR TO CLOSURE	

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

PERMITS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS IN ADVANCE OF ANY WORK BEING DONE IN ALL LOCAL AGENCIES RIGHT OF WAY BY THE CONTRACTOR OR SUB-CONTRACTORS AS REQUIRED BY CMS 107.02.

PUBLIC OUTREACH AND NOTIFICATION (RESURFACING PROJECTS)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE DISTRICT 6 PUBLIC INFORMATION OFFICE VIA EMAIL AT d06.pio@dot.ohio.gov 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. ALL NOTIFICATIONS SHALL BE MADE UTILIZING THE TEMPLATE PROVIDED BY THE DISTRICT 6 PUBLIC INFORMATION OFFICE.

TRUCK MOUNTED ATTENUATOR (TMA) - TWO LANE ROADS

WHEN WORKING IN A CLOSED LANE OR SHOULDER ON A TWO-LANE HIGHWAY WITHOUT TEMPORARY OR PERMANENT TRAFFIC BARRIERS SEPARATING THE WORK AREA FROM THE TRAVELED LANE, A TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE PROVIDED TO PROTECT EACH WORK AREA IN ACCORDANCE WITH OMUTCD TYPICAL APPLICATION (TA) 4, TA-6 AND TA-17, ALONG WITH STANDARD CONSTRUCTION DRAWING (SCD) MT-97.10. THE TMA SHALL BE PLACED IN SUCH A WAY TO ADEQUATELY PROTECT THE WORKERS INSIDE THE WORK ZONE. THE TMA IS NOT INTENDED TO BE USED AS OR SUBSTITUTED FOR THE FLAGGERS AND/OR WARNING SIGNS AND DEVICES. FURNISH A

TMA THAT IS NCHRP-350 (MANUFACTURED PRIOR TO 1/1/20) OR MASH TL-3 COMPLIANT. THE COST FOR PROVIDING THE TMA SHALL INCLUDE ALL MATERIAL, LABOR, EQUIPMENT, AND HARDWARE REPLACEMENT AND IS TO BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN.

WORK SITE LIGHTING

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, AS PER PLAN.

SHORT DURATION RAMP CLOSURES

FOR THE PURPOSE OF PERFORMING THE REQUIRED WORK OR WHEN REQUIRED BY THE INTERSTATE ENTRANCE RAMP CLOSURE NOTE, RAMPS MAY BE CLOSED FOR SHORT DURATIONS AND DETOURED IN ACCORDANCE WITH THE RAMP CLOSURE TABLE IF APPROVED BY THE ENGINEER. RAMP CLOSURES ARE SUBJECT TO DISINCENTIVES.

FOR ALL SERVICE RAMP CLOSURES LASTING MORE THAN 12 HOURS BUT LESS THAN 60 HOURS AND/OR, FOR ALL SYSTEM RAMP CLOSURES LASTING MORE THAN 12 HOURS BUT LESS THAN 24 HOURS

THE CONTRACTOR SHALL PROVIDE THE FOLLOWING:

- A MINIMUM OF TWO PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) PLACED, AS DIRECTED BY THE ENGINEER, TO WARN DRIVERS OF THE CLOSURE AND TO PROVIDE THE DESIGNATED DETOUR ROUTE.

- POSITIVE GUIDANCE ALONG THE DETOUR ROUTE WITH DETOUR SIGNS (M4-9 SERIES) IN ACCORDANCE WITH THE DETOUR SIGNS NOTE.

FOR ALL RAMP CLOSURES LASTING LESS THAN 12 HOURS, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING:

- A MINIMUM OF TWO PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) PLACED, AS DIRECTED BY THE ENGINEER, TO WARN DRIVERS OF THE CLOSURE AND TO PROVIDE THE DESIGNATED DETOUR ROUTE.

WHEN CLOSING ENTRANCE RAMPS, CORRESPONDING LEAD-IN LANES AND TURN LANES SHALL ALSO BE CLOSED.

IF A DESIGNATED DETOUR ROUTE IS NOT PROVIDED IN THE PLANS, TRAFFIC SHALL BE DIRECTED TO THE NEXT INTERCHANGE, IF AVAILABLE, TO TURN AROUND. IF THE USE OF THE NEXT INTERCHANGE IS NOT POSSIBLE, AN ALTERNATIVE DETOUR ROUTE SHALL BE PROVIDED BY THE ENGINEER.

SERVICE RAMP: INTERCHANGE RAMPS BETWEEN FREEWAYS (OR EXPRESSWAYS) AND NON-FREEWAYS (OR NONEXPRESSWAYS). THESE RAMPS PROVIDE ACCESS (CONNECTIONS) BETWEEN FREEWAYS/EXPRESSWAYS AND OTHER PRINCIPAL/MINOR ARTERIALS, COLLECTORS OR LOCAL ROADS.

SYSTEM RAMP: INTERCHANGE RAMPS (OR CONNECTORS) BETWEEN FREEWAYS (OR EXPRESSWAYS) AND FREEWAYS (OR EXPRESSWAYS).

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MAINTENANCE OF TRAFFIC GENERAL NOTES

FRA-62-30.34

COORDINATION WITH ADJACENT PROJECTS

THE CONTRACTOR SHALL COORDINATE WORK WITH ODOT AND THE CONTRACTORS ON THE ADJACENT PROJECTS.: FRA-62-30.16. COORDINATION SHALL BE MADE TO PREVENT CONFLICTING ADVANCE WARNING SIGNS, CONFLICTING DETOUR ROUTES, OVERLAPING/CONFLICTING LANE CLOSURES, AND TO ENSURE THAT A MINIMUM DISTANCE OF 2 MILES BETWEEN ADJACENT LANE CLOSURES IS MAINTAINED. THIS IS NOT AN EXHAUSTIVE LIST OF COORDINATION ITEMS THAT MAY NEED TO BE RESOLVED BETWEEN PROJECTS. THE DEPARTMENT RESERVES THE RIGHT TO DECIDE WHICH PROJECT'S ACTIVITIES TAKE PRECEDENCE. PROJECTS THAT HAVE ACTIVITIES DELAYED DUE TO CONFLICTS WILL CONSIDER THIS AN EXCUSABLE, NON-COMPENSABLE DELAY PER 108.06.B. ON PROJECTS THAT HAVE ACTIVITIES DELAYED DUE TO CONFLICTS WHERE THE CONTRACTOR FAILED TO MEET THE NOTIFICATION REQUIREMENTS, THE DELAYS SHALL NOT BE CONSIDERED EXCUSABLE OR COMPENSABLE.

ATTENDANCE AT DEPARTMENT ORDERED TRAFFIC COORDINATION MEETINGS BETWEEN ADJACENT PROJECTS SHALL BE CONSIDERED MANDATORY FOR EACH PROJECT'S SUPERINTENDENT AND WORKSITE TRAFFIC SUPERVISOR (WTS)\*, AND INCIDENTAL TO THE LUMP SUM MAINTENANCE OF TRAFFIC PAYMENT ITEM

\*IF REQUIRED BY THE PROJECT

WORK ZONE MARKINGS AND SIGNS

SHOULD THE ENGINEER DETERMINE THAT ANY PORTION OF THE PROJECT SHOULD BE OPENED TO TRAFFIC PRIOR TO PLACEMENT OF FINAL PAVEMENT COURSES AND PERMANENT PAVEMENT MARKINGS AND SIGNS, TEMPORARY PAVEMENT MARKINGS AND SIGNS SHALL BE PROVIDED. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

		BASE BID
614	WORK ZONE EDGELINE, CLASS I, 4", 740.06, TYPE 1	1.44 MI.
614	WORK ZONE CENTERLINE, CLASS II, 740.06, TYPE 1	0.04 MI.
614	WORK ZONE STOP LINE, CLASS I, 740.06, TYPE 1	120 LF
614	WORK ZONE PAVEMENT MARKING, MISC: REMOVE/COVER CONFLICTING MARKINGS.	2800 FT
614	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 740.06, TYPE 1	1200 LF
614	WORK ZONE ARROW, CLASS I	7 EACH

STANDARD DRAWING MT-99.20 M, INCLUDED IN THE PLANS, PROVIDES NOTES GUIDING THE USE OF THESE ITEMS.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGNS, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THIS LIST IS AVAILABLE ON THE ODOT WEBSITE AT [HTTP://WWW.DOT.STATE.OH.US/TESTLAB/APPLISTS/MISC/PCMS.HTM](http://www.dot.state.oh.us/testlab/applists/misc/pcms.htm). THE LIST CURRENTLY CONTAINS CLASS I, II, AND III UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 1250 FT., 850 FT. AND 650 FT., RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

THE CONTRACTOR SHALL PROVIDE FOUR (4) PCMS CLASS I SIGNS. FOR BUDGETARY PURPOSES EACH SIGN SHALL BE USED FOR 15 MONTHS. PCMS LOCATIONS SHALL BE GENERALLY LOCATED ON S.R. 161 EAST AND WEST OF THE US 62 INTERCHANGE AND ON US 62 NORTH AND SOUTH OF THE CONSTRUCTION LIMITS OR AS DIRECTED BY THE ENGINEER.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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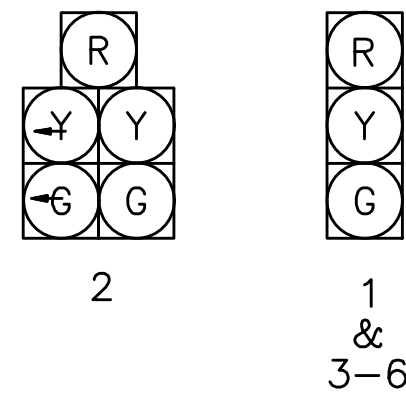


INTERSECTION TIMING								
PHASE	φ1	φ2 SB	φ3	φ4 EB	φ5 SBLT	φ6 NB	φ7	φ8 WB
MIN GREEN	-	27	-	27	6	27	-	10
WALK	-	-	-	-	-	-	-	-
PED CLR	-	-	-	-	-	-	-	-
PASSAGE	-	1	-	1	1	1	-	-
EXTENSION	-	1.8	-	2.1	2.1	1.8	-	-
MAX 1	-	60	-	70	25	60	-	-
MAX 2	-	60	-	70	25	60	-	-
YELLOW	-	4.5	-	4.1	4.5	4.5	-	-
RED CLR	-	1.0	-	2.1	1.0	1.0	-	-
MEMORY	-	ON	-	ON	OFF	ON	-	-
VEH RECALL	-	ON	-	ON	OFF	ON	-	-
PED RECALL	-	OFF	-	OFF	OFF	OFF	-	-
INITIALIZE	-	G	-	R	R	G	-	-

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	35	-	40	-	60	12	28	-	-
2	100	41	-	50	-	50	15	35	-	-
3	75	27	-	38	-	37	-	38	-	-

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

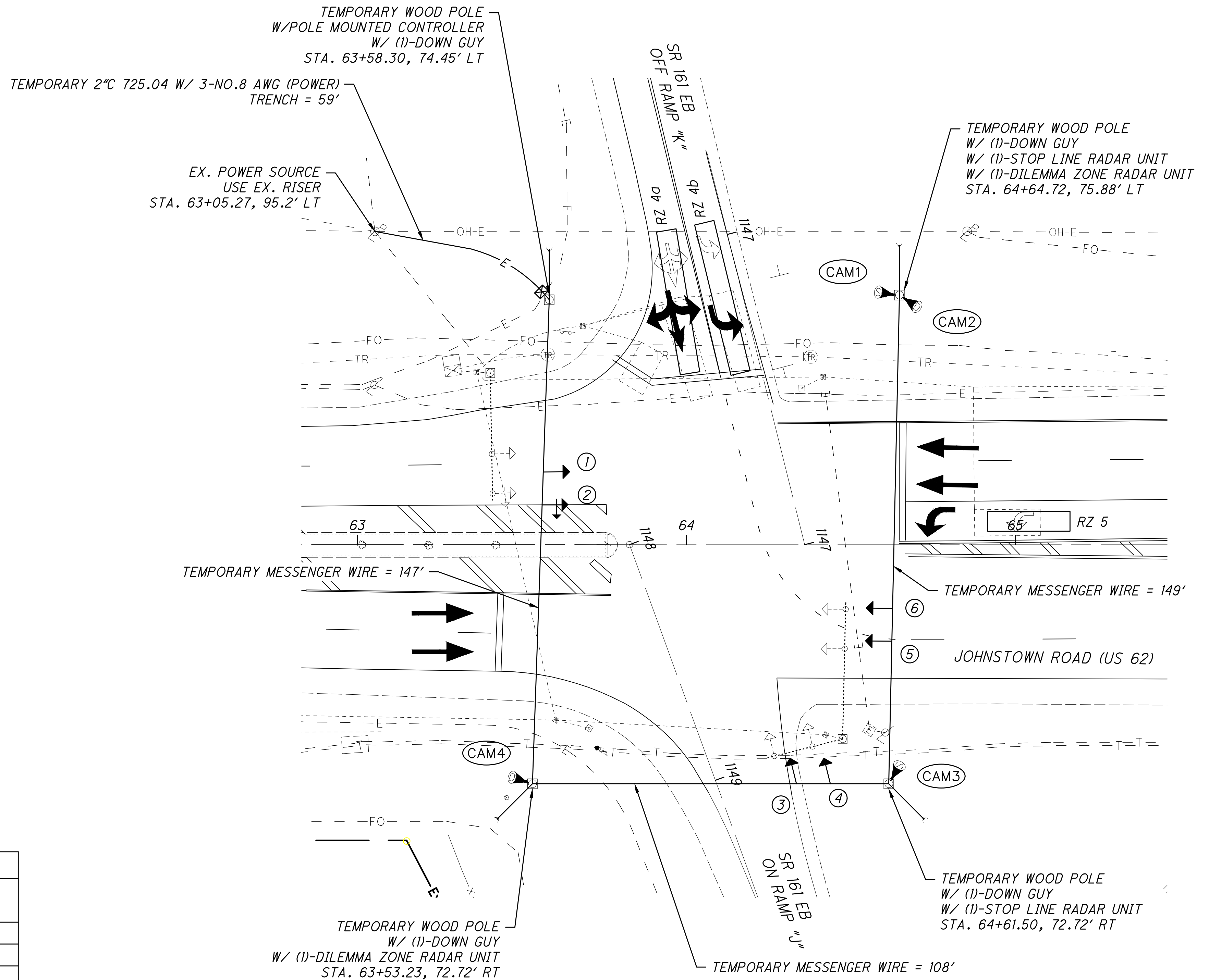


DETECTION ZONES							
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY
CAM1	RZ 4a	EB	φ4	6 X 44	-2	STOP-BAR	PRES
CAM1	RZ 4b	EB	φ4	6 X 47	0	STOP-BAR	PRES
CAM2	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----
CAM3	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES
CAM4	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----

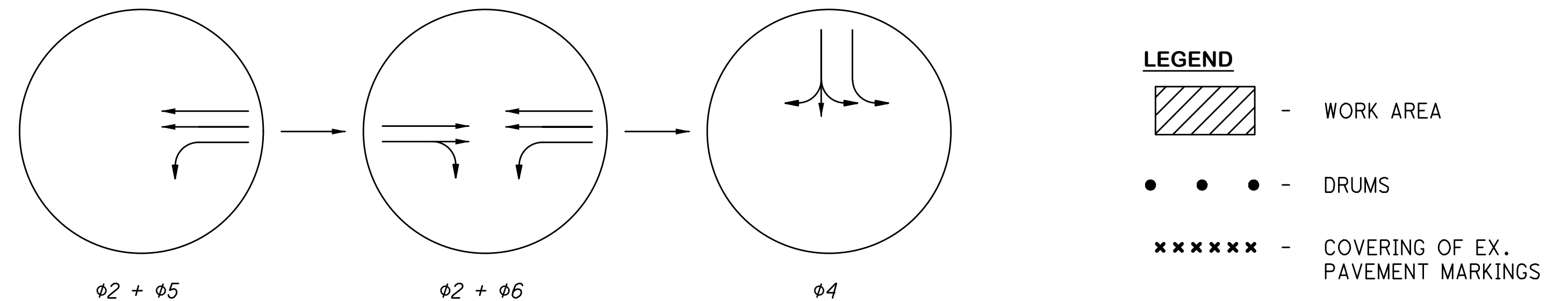
+ = EXTEND IN FRONT OF STOP LINE BY X'  
 - = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.



US 62 & EB SR 161 RAMPS PHASING DIAGRAM



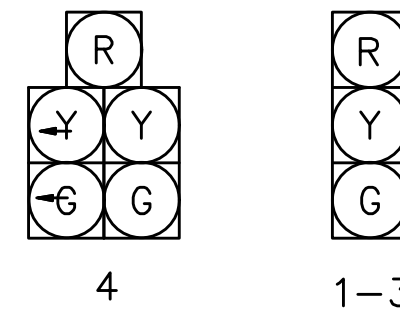


INTERSECTION TIMING								
PHASE	φ1 NBLT	φ2 SB	φ3	φ4	φ5	φ6 NB	φ7	φ8 WB
MIN GREEN	6	40	-	-	-	50	-	-
WALK	-	-	-	-	-	7	-	0
PED CLR	-	-	-	-	-	17	-	0
PASSAGE	1	1	-	-	-	1	-	1
EXTENSION	1.8	1.8	-	-	-	1.8	-	2.1
MAX 1	30	70	-	-	-	80	-	40
MAX 2	30	70	-	-	-	80	-	40
YELLOW	4.5	4.5	-	-	-	4.5	-	4.1
RED CLR	1.0	1.0	-	-	-	1.0	-	2.2
MEMORY	OFF	ON	-	-	-	ON	-	OFF
VEH RECALL	OFF	ON	-	-	-	ON	-	OFF
PED RECALL	OFF	ON	-	-	-	ON	-	OFF
INITIALIZE	R	G	-	-	-	G	-	R

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)								
			1	2	3	4	5	6	7	8	
1	100	97	18	49	-	-	-	-	67	-	33
2	100	37	15	60	-	-	-	-	75	-	25
3	75	15	12	47	-	-	-	-	59	-	16

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

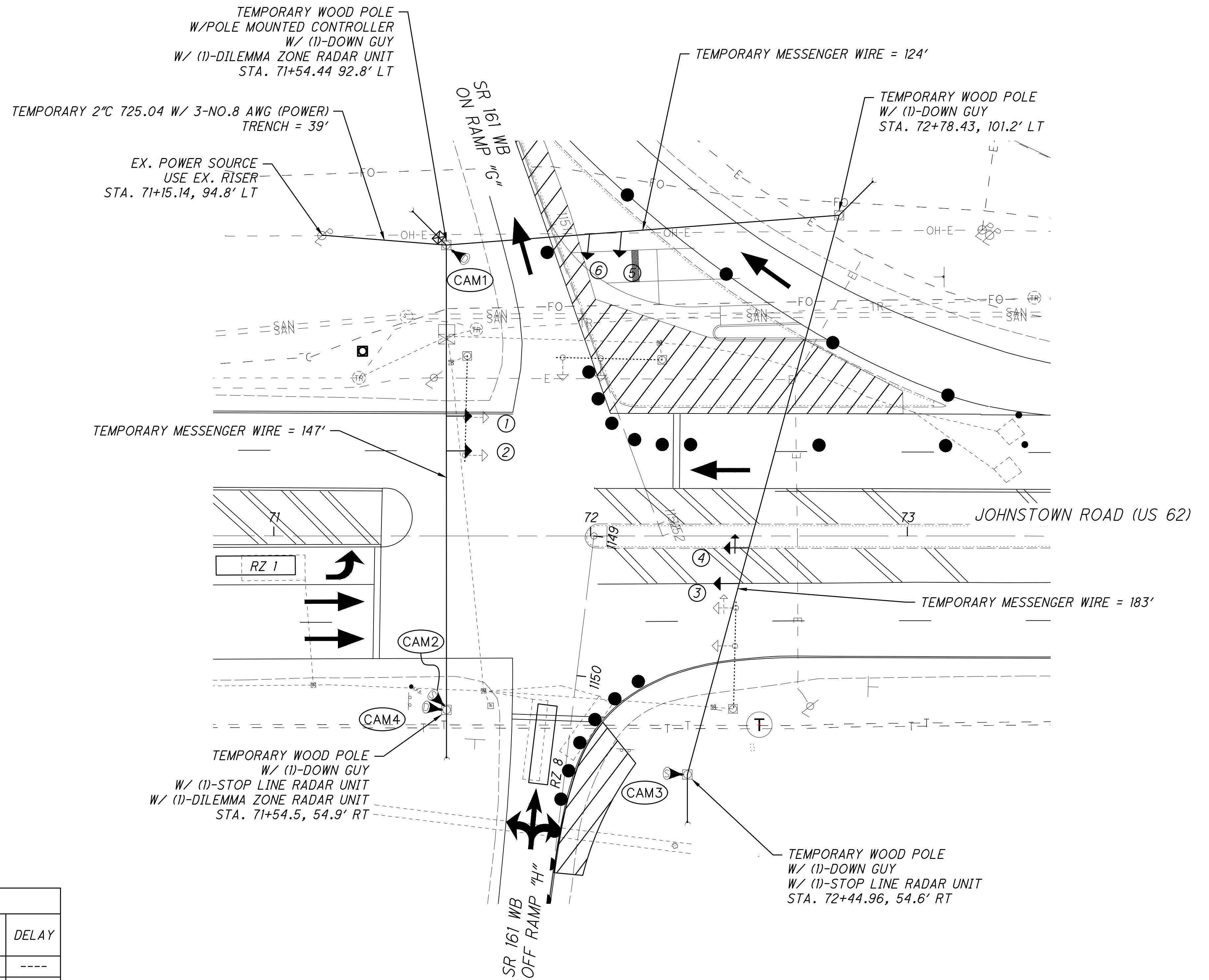


DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH x LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	----	SB	φ2	1 LANES X 600'	----	DILEMMA	----	----
CAM2	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM3	RZ 8	WB	φ8	6 X 25	+5	STOP-BAR	PRES	3
CAM4	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----	----

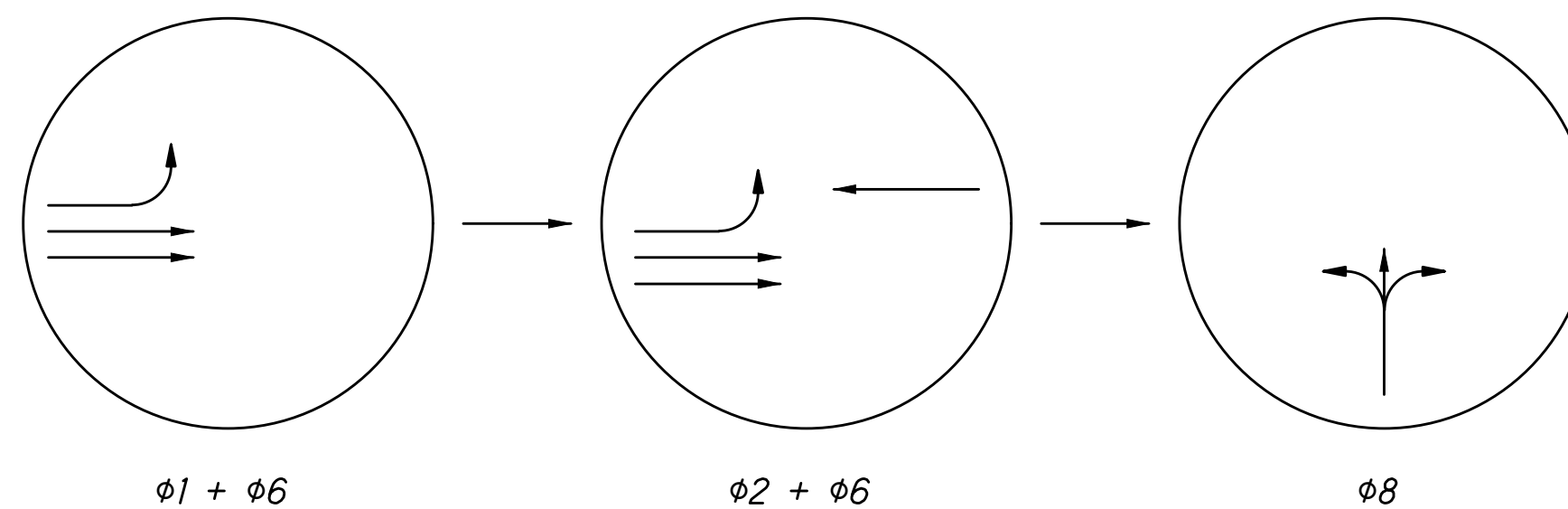
+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

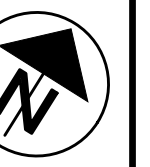
CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.



US 62 & WB SR 161 RAMPS PHASING DIAGRAM



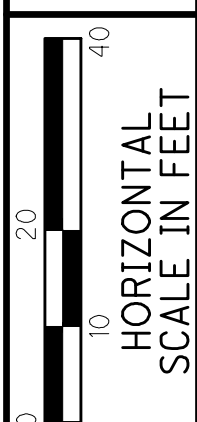
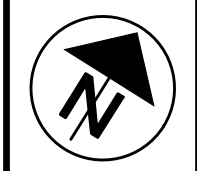
- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS



CALCULATED WCS CHECKED DLS

TEMPORARY TRAFFIC SIGNAL PLAN - PHASE 1  
SR 161 WB RAMPS AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34



CALCULATED W/C/S CHECKED DLS

TEMPORARY TRAFFIC SIGNAL PLAN - PHASE 1  
SMITH'S MILL AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34

**LEGEND**

- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS
- 1,4,8,9  
 2,5,7  
 3,6  
 10,11

INTERSECTION TIMING								
PHASE	φ1 NBLT	φ2 SB	φ3 WB LT	φ4 EB	φ5 SBLT	φ6 NB	φ7 EB LT	φ8 WB
MIN GREEN	7	23	9	8	5	25	7	10
WALK	-	-	-	-	-	-	-	-
PED CLR	-	-	-	-	-	-	-	-
PASSAGE	1	1	1	1	1	1	1	1
EXTENSION	1.5	1.8	1.8	1.8	1.8	1.5	1.8	1.8
MAX 1	30	60	45	35	25	70	25	45
MAX 2	30	60	45	35	25	70	25	45
YELLOW	4.5	4.5	3.2	4.1	4.5	4.5	3.2	4.1
RED CLR	1.5	1.0	2.8	1.8	1.0	1.5	3.7	1.2
MEMORY	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
VEH RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
PED RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
INITIALIZE	R	G	R	R	R	G	R	R

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	0	23	41	16	20	12	52	14	22
2	100	0	15	32	37	16	12	35	14	39
3	75	0	14	30	16	15	12	32	14	17

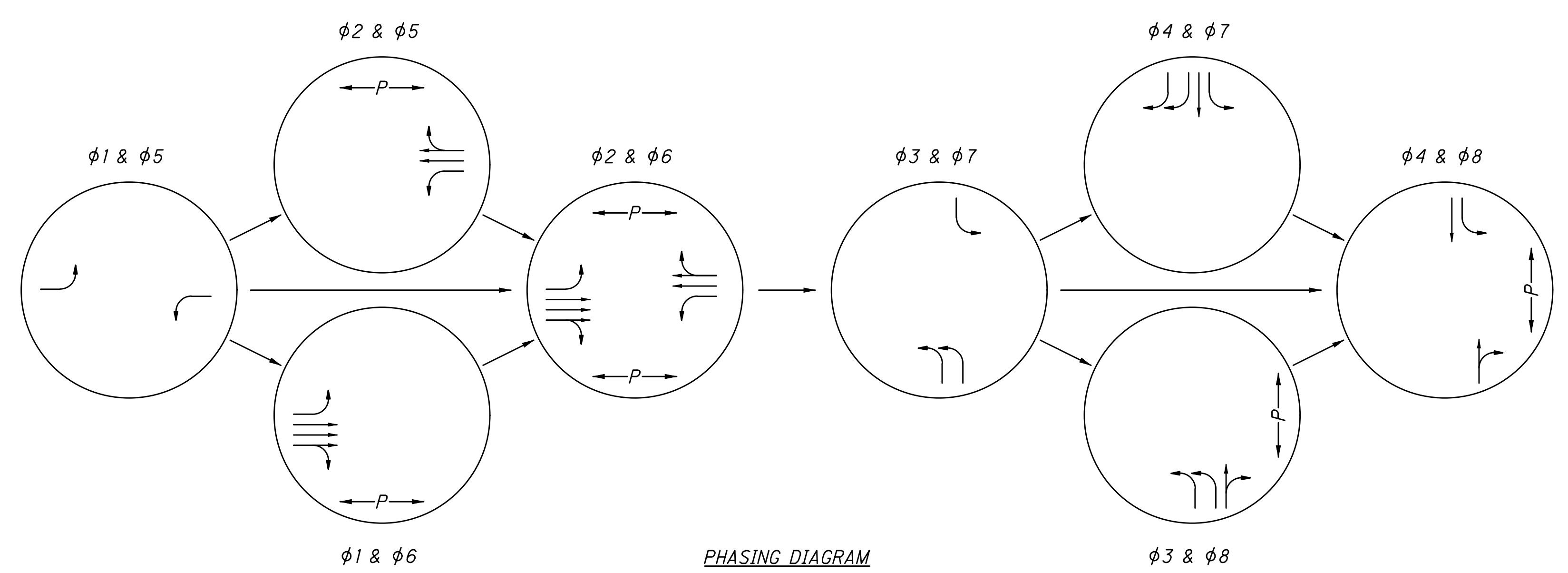
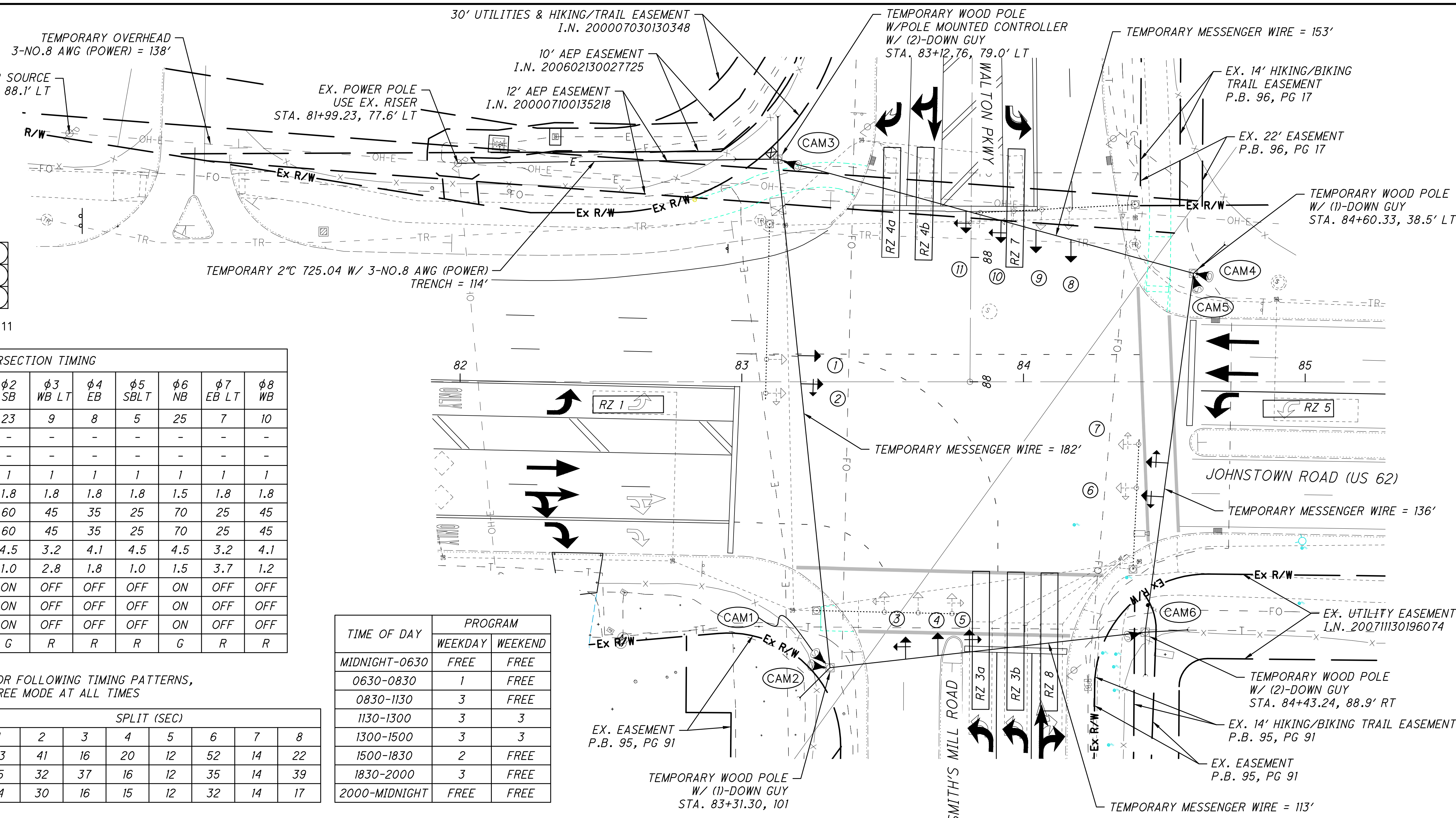
TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH x LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM2	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----	----
CAM3	RZ 4a	EB	φ4	6 X 39	+17	STOP-BAR	PRES	3
CAM3	RZ 4b	EB	φ4	6 X 40	+17	STOP-BAR	PRES	3
CAM3	RZ 7	EB LT	φ7	6 X 42	+21	STOP-BAR	PRES	3
CAM4	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----	----
CAM5	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES	3
CAM6	RZ 3a	WB LT	φ3	6 X 49	+28	STOP-BAR	PRES	3
CAM6	RZ 3b	WB LT	φ3	6 X 49	+28	STOP-BAR	PRES	3
CAM6	RZ 8	WB	φ8	6 X 49	+28	STOP-BAR	PRES	3

+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

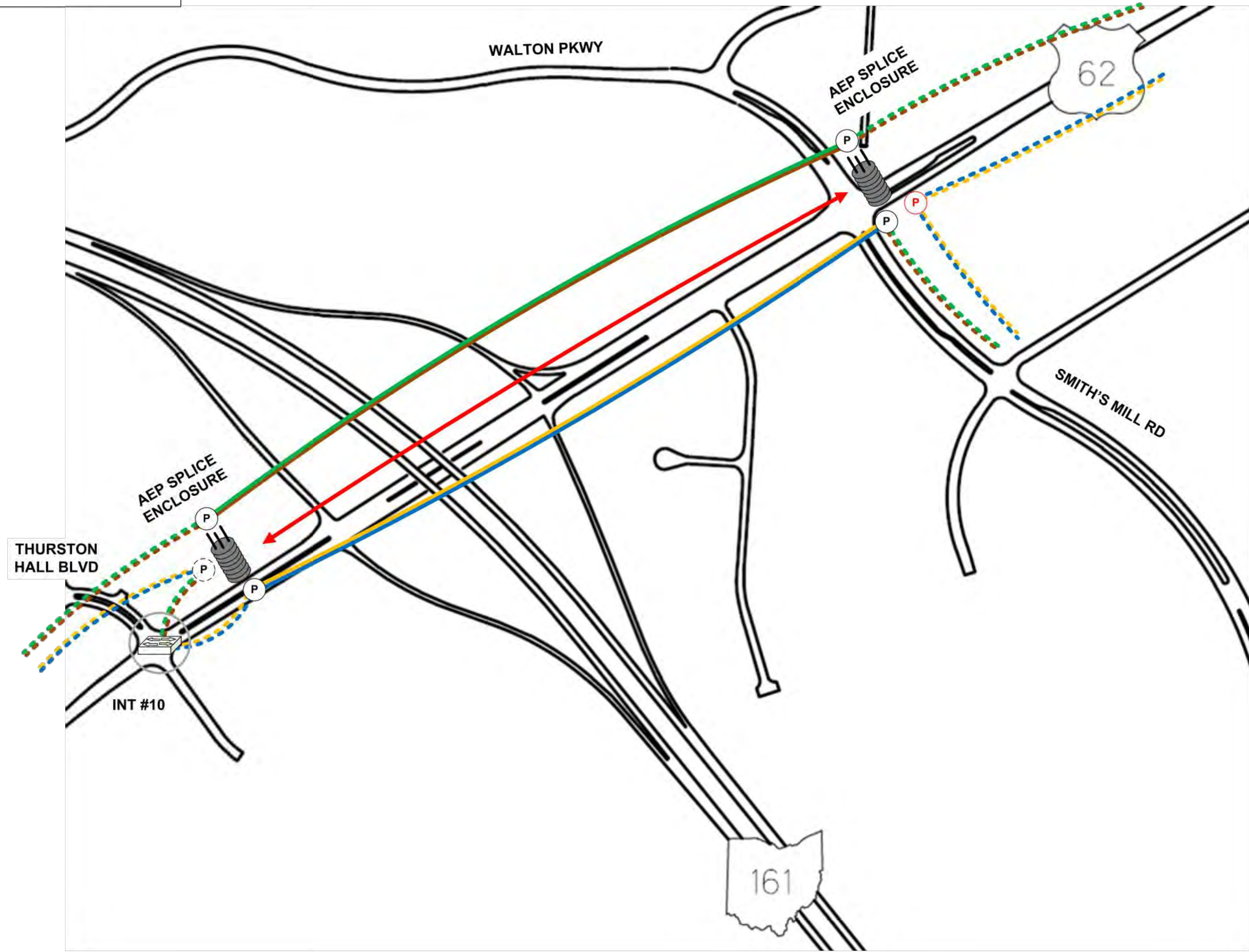
CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.



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# LEGEND

PROPOSED NETWORK CONNECTION	PATCHING
LINE COLORS INDICATE FIBERS USED	CROSSOVER PATCH AT INTERSECTION
EX. FIBER	PATCH AT INTERSECTION
LAYER 2 ETHERNET SWITCH	EXISTING CROSSOVER PATCH AT INTERSECTION
EX. LAYER 2 ETHERNET SWITCH	EXISTING PATCH AT INTERSECTION
BUFFER TUBE COLOR	



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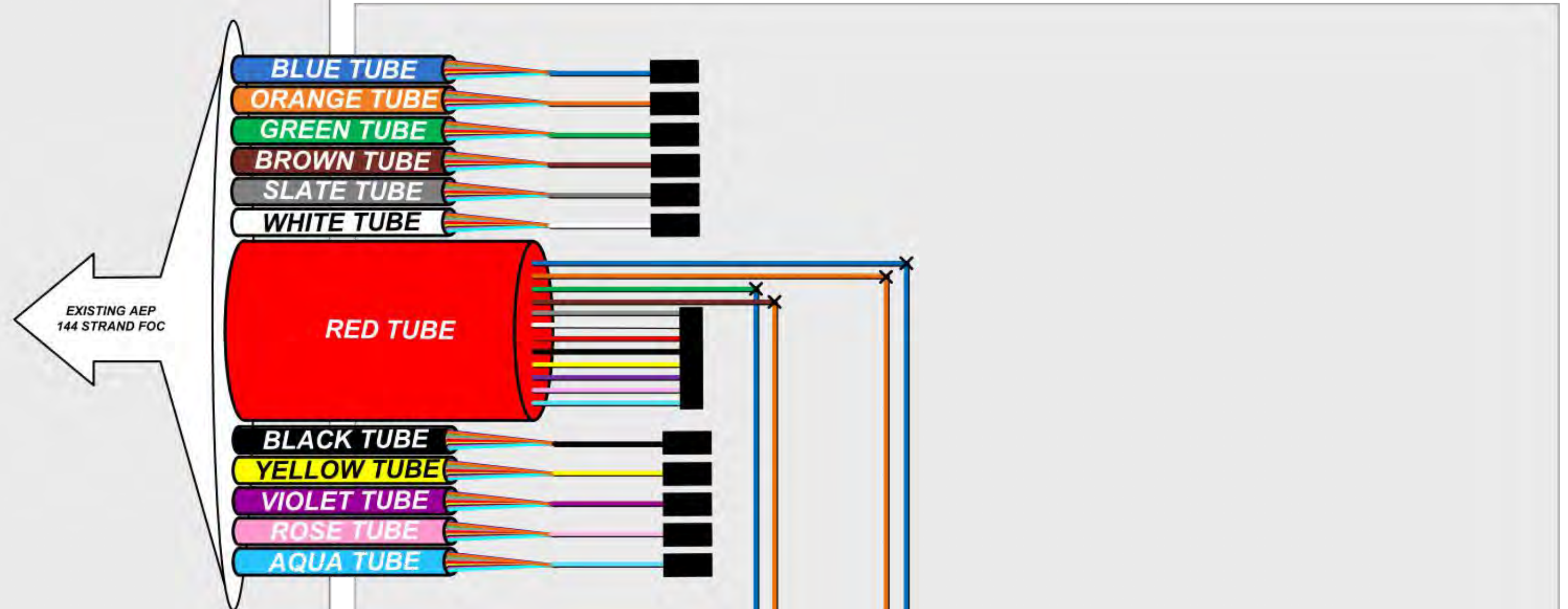
CALCULATED  
WCS  
CHECKED  
DLS

## TEMPORARY COMMUNICATION OVERVIEW NEW ALBANY, OHIO

FRA-62-30.34

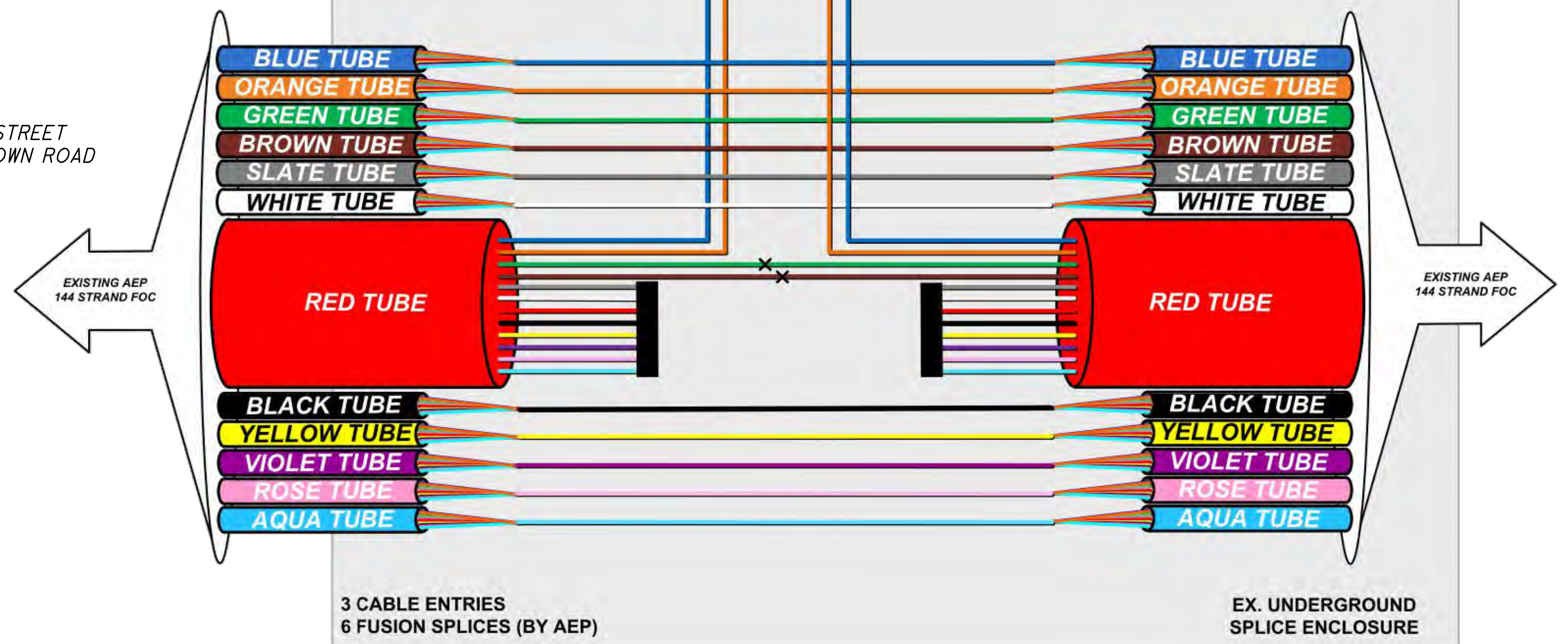
**CONNECTION TO EXISTING FIBER**

TO:  
INT #10: THURSTON HALL BLVD  
AT JOHNSTOWN ROAD (US 62)  
SEE PHASE 1 PLANS

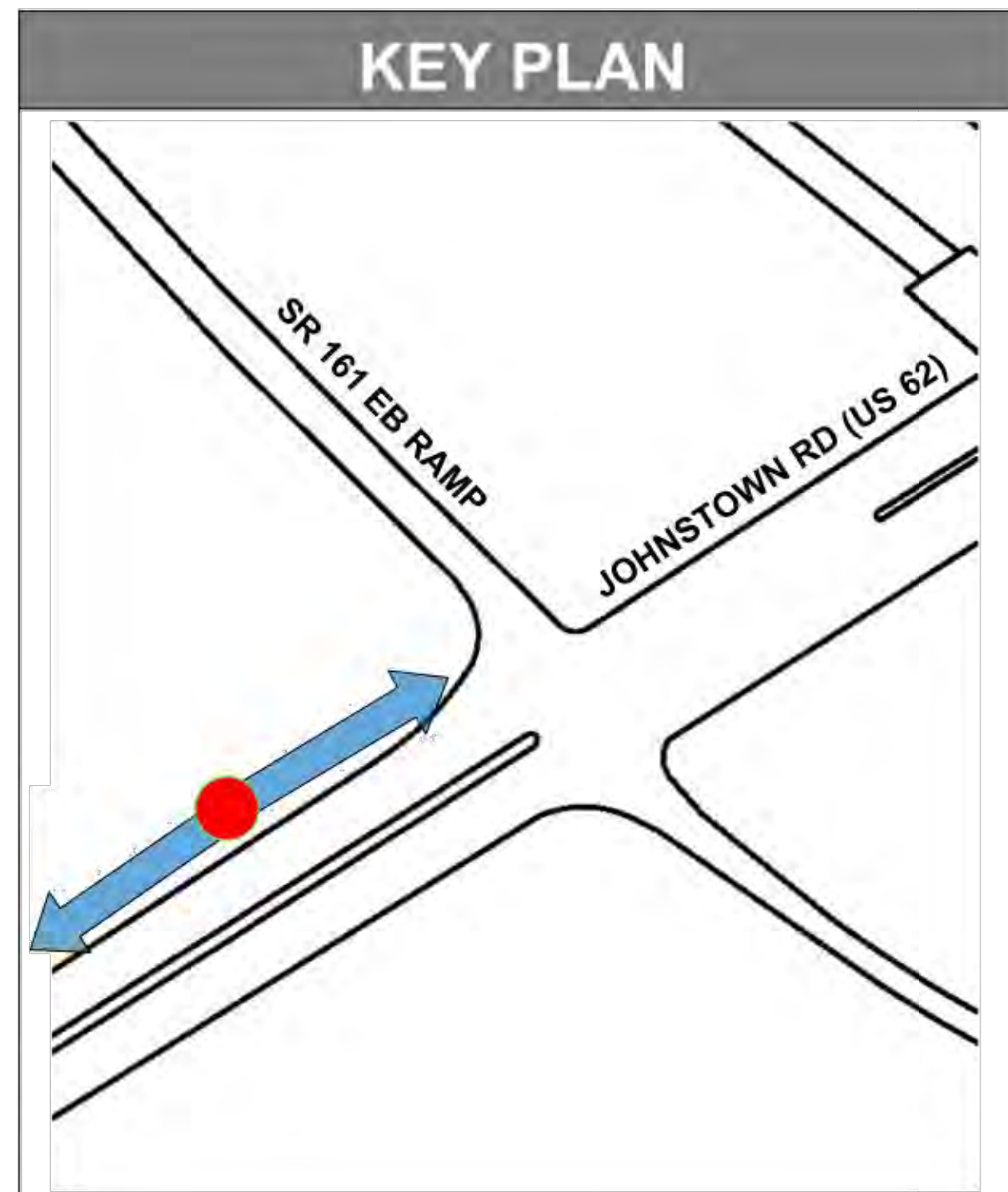


TO:  
INT #13: SMITH'S MILL RD AT  
JOHNSTOWN ROAD (US 62)  
SEE SHEET 21

TO:  
AEP PULLBOX: HIGH STREET  
(SR 605) AT JOHNSTOWN ROAD  
(US 62)



LEGEND	
	FIBER PATCH CABLE TX/RX
	FIBER PATCH CABLE RX/TX CROSSOVER
	CAT 5E CABLE
	PATCH PANEL
	EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
	FUSION SPLICE - SINGLE FIBER
	FUSION SPLICE - 12 FIBER BUFFER TUBE
	EXISTING FUSION SPLICE
	GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX - LONG HAUL LASER
	8P8C CONNECTOR
	144 STRAND SMF
	CITYNET FIBER
	COLUMBUS FIBERNET
	COLUMBUS DOT FIBER
	WIRELESS ETHERNET RADIO



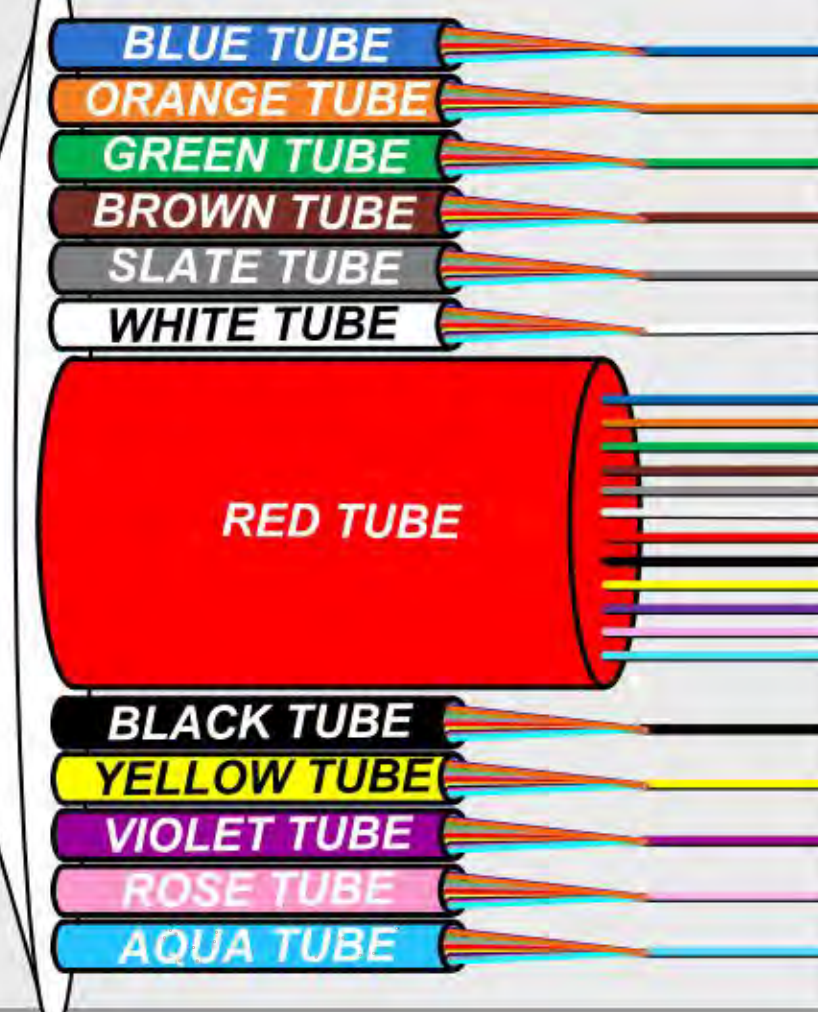
**INTERSECTION 11**

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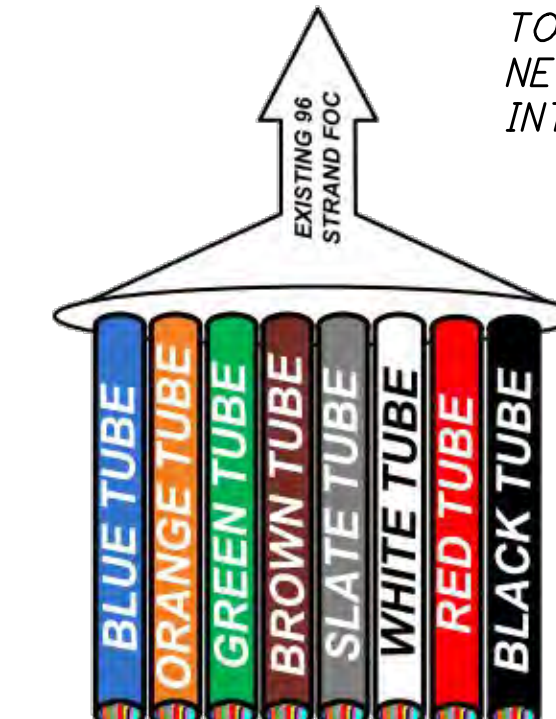
**CONNECTION TO EXISTING FIBER**

TO:  
INT #11: SR 161 EB RAMPS AT  
JOHNSTOWN ROAD (US 62)  
SEE SHEET 20

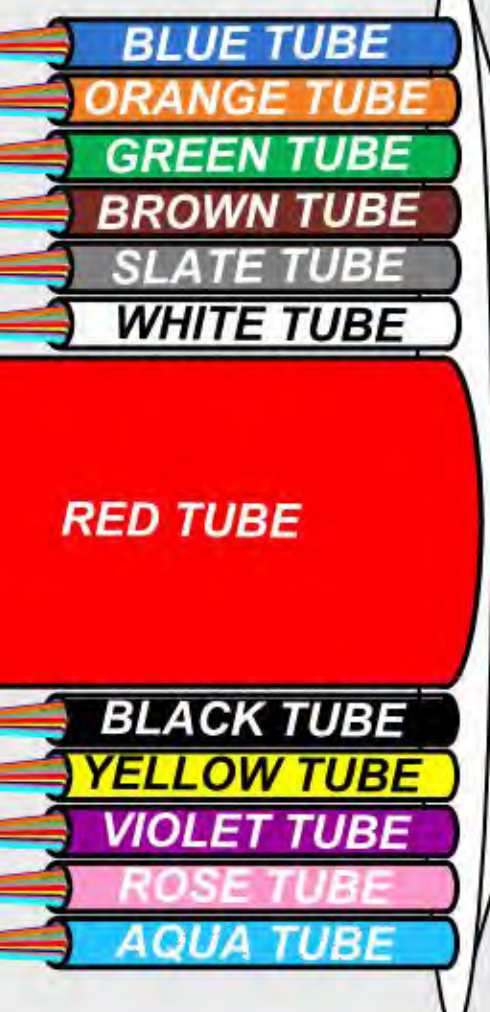
EXISTING AEP  
144 STRAND FOC



TO:  
NEW ALBANY POP  
INTERCONNECT PLANS



TO:  
INT #3: SMITH'S MILL ROAD  
AT BEECH RD  
SEE INTERCONNECT PLANS



EXISTING AEP  
144 STRAND FOC

4 CABLE ENTRIES  
6 FUSION SPLICES (BY AEP)

EX. UNDERGROUND  
SPLICE ENCLOSURE  
(NA-1105)

TO:  
INT #14: TURKEY HILL DRIVE  
AT JOHNSTOWN ROAD (US 62)  
SEE INTERCONNECT PLANS

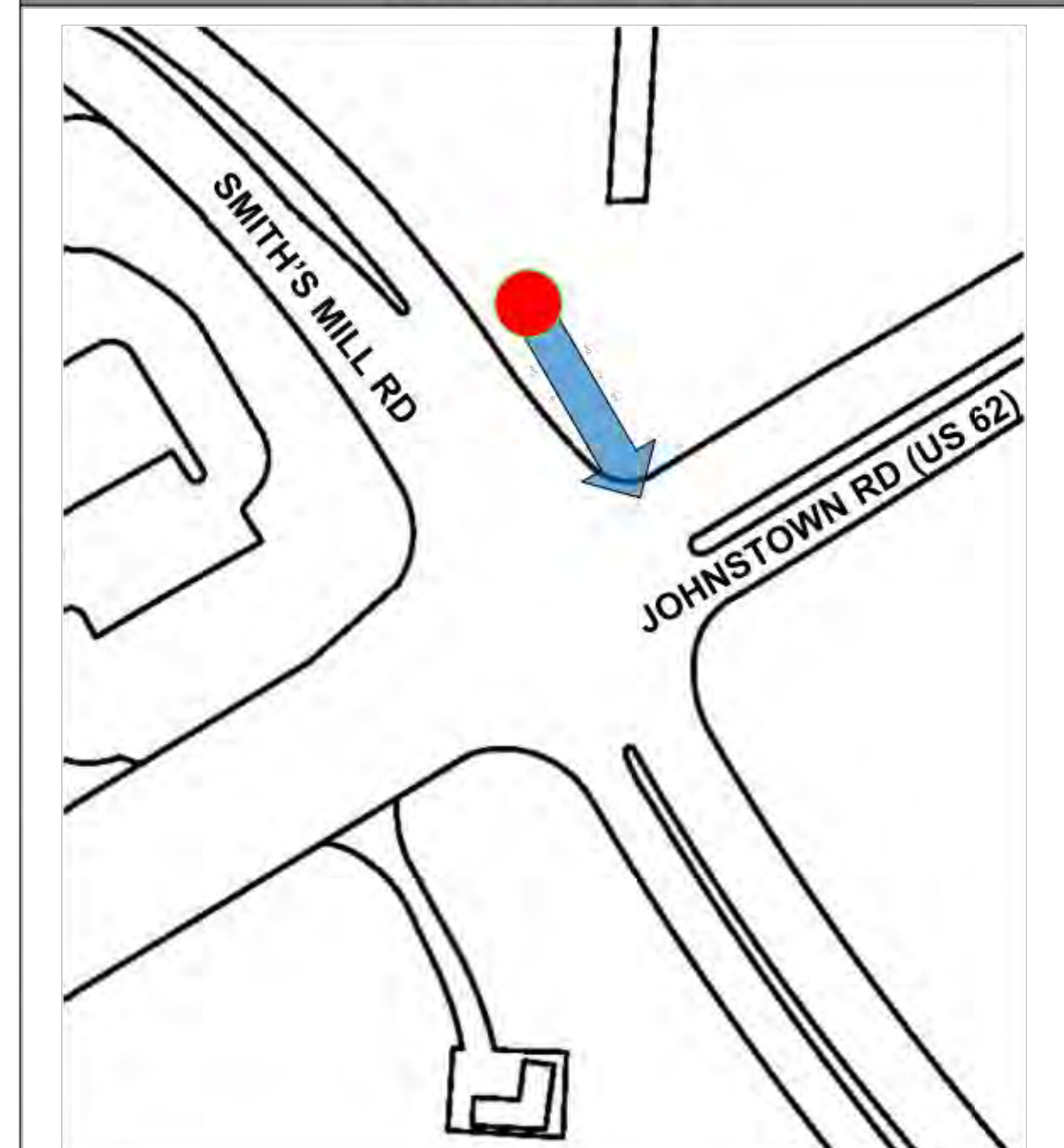
EXISTING 24  
STRAND FOC

**INTERSECTION 13**

**LEGEND**

- FIBER PATCH CABLE TX/RX
- FIBER PATCH CABLE RX/TX CROSSOVER
- CAT 5E CABLE
- PATCH PANEL
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE - SINGLE FIBER
- FUSION SPLICE - 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE
- GBIC OPTICAL TRANSCEIVER  
LH - SHORT HAUL LED  
ZX - LONG HAUL LASER
- 8P8C CONNECTOR
- 144 STRAND SMF
- CITYNET FIBER
- COLUMBUS FIBERNET
- COLUMBUS DOT FIBER
- WIRELESS ETHERNET RADIO

**KEY PLAN**



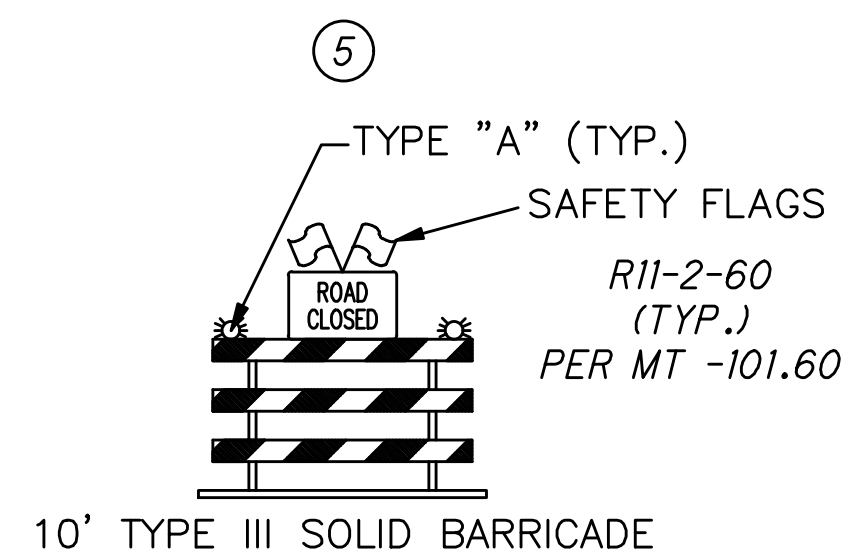
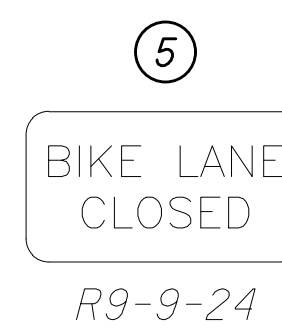
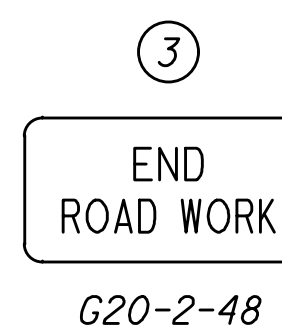
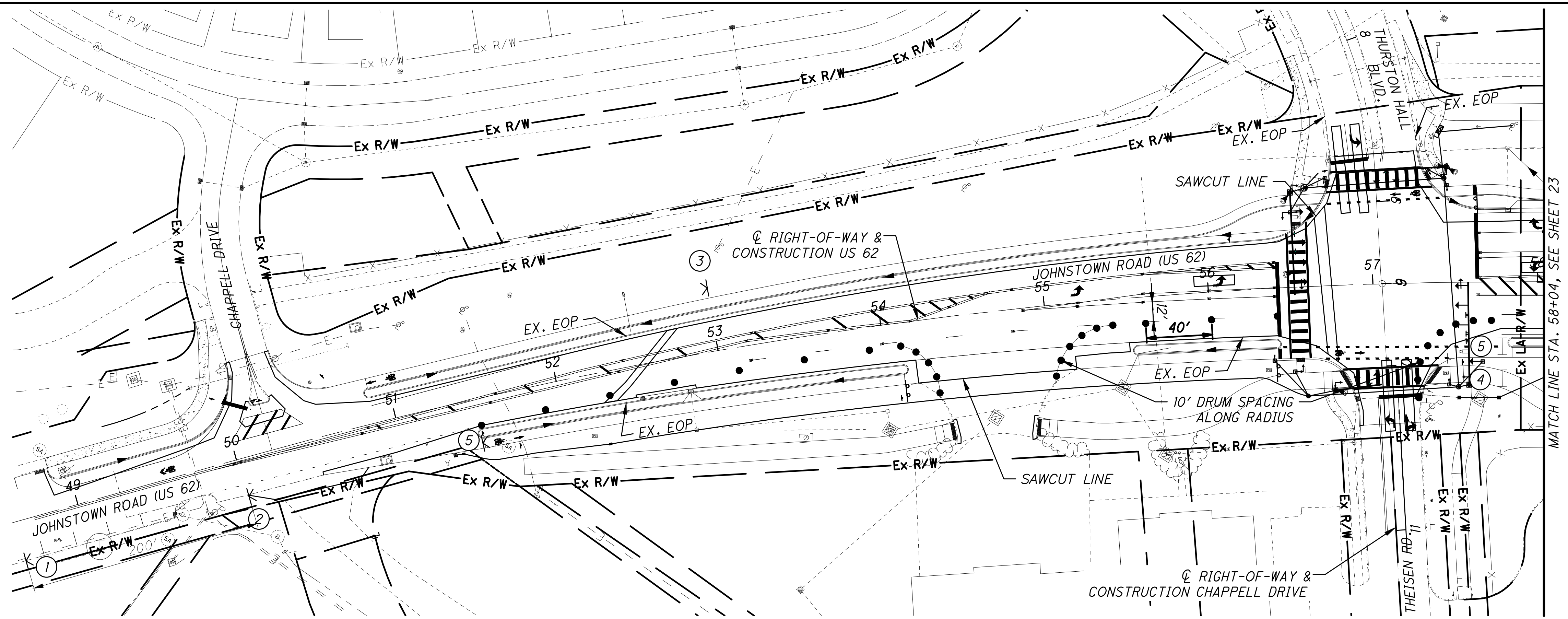
CALCULATED  
WCS  
CHECKED  
DLS

**INT #13: SMITH'S MILL ROAD AT JOHNSTOWN ROAD (US 62)  
TEMPORARY COMMUNICATION DIAGRAM**

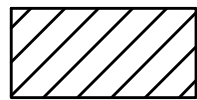

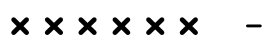


**FRA-62-30.34**

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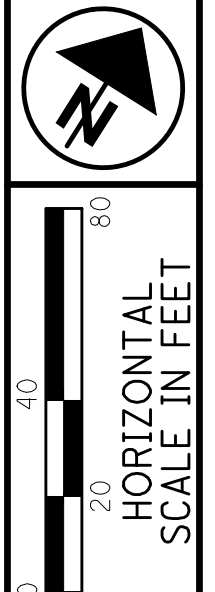
**LEGEND**

-  - WORK AREA
-  - DRUMS
-  - COVERING OF EX. PAVEMENT MARKINGS
-  - WORK ZONE SIGN
-  - TYPE III BARRICADE

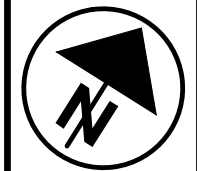
**MAINTENANCE OF TRAFFIC PHASE 2  
JOHNSTOWN ROAD (US 62)**

**FRA-62-30.34**

CALCULATED WCS  
CHECKED M/S



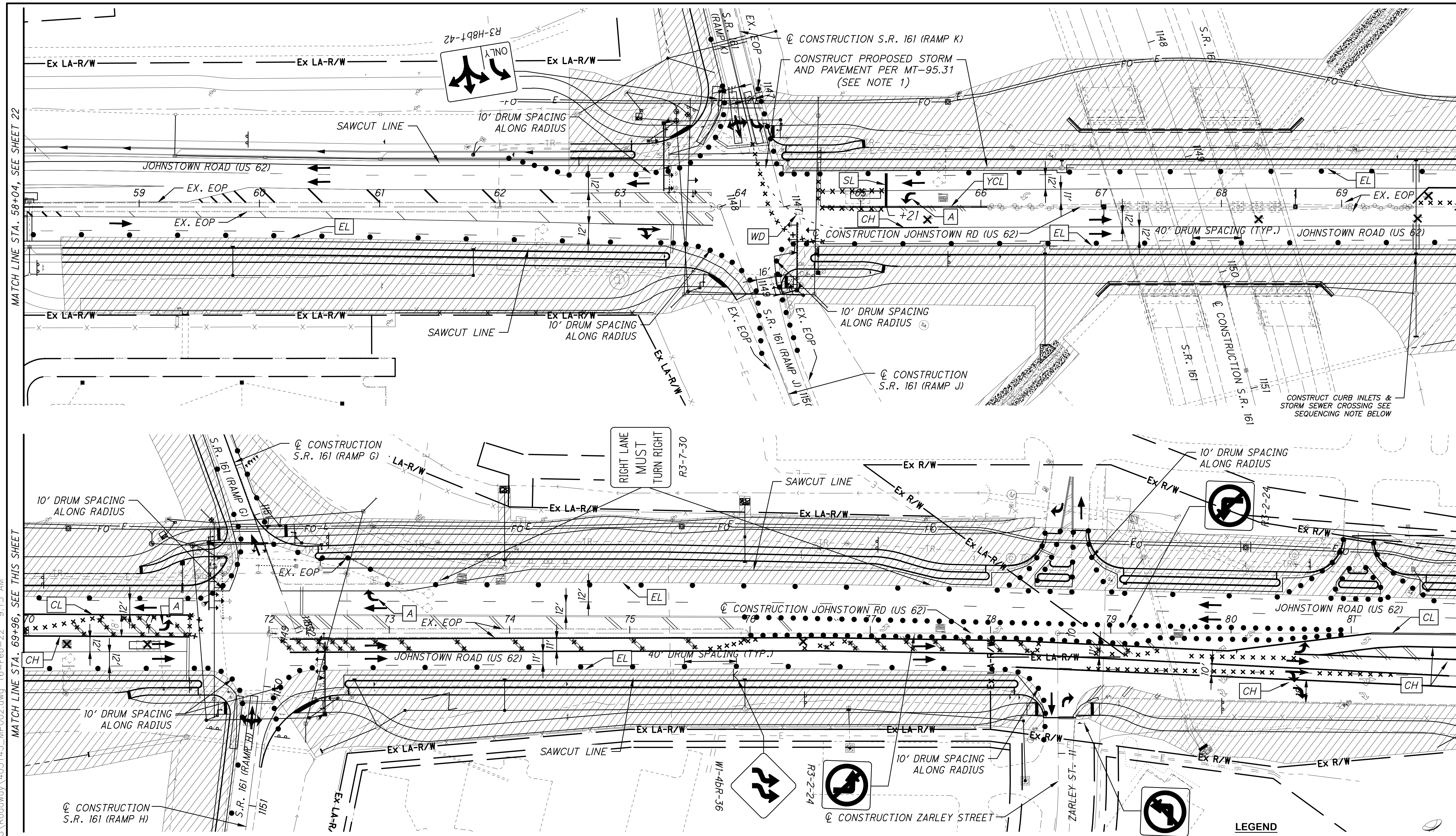
HORIZONTAL SCALE IN FEET  
0 20 40 80



0 20 40 60 80  
CALCULATED W/C S  
CHECKED M/L S  
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PHASE 2**  
**JOHNSTOWN ROAD (US 62)**

**FRA-62-30.34**



MATCH LINE STA. 58+04, SEE SHEET 22

MATCH LINE STA. 69+96, SEE THIS SHEET

MATCH LINE STA. 69+96, SEE THIS SHEET

MATCH LINE STA. 81+88, SEE SHEET 24

**NOTE:**

1. TEMPORARY LANE CLOSURES FOR ALL RAMP SHALL BE LIMITED TO THE HOURS PER THE TABLE ON SHEET 12. PLACE STEEL PLATE OVER OPEN CUT DURING NON-CONSTRUCTION HOURS.

**CONSTRUCTION SEQUENCE FOR STORM SEWER CROSSING**

PHASE 2 - CONSTRUCT CURB INLETS & STORM SEWER ACROSS EB AND WB OUTSIDE CURB LANE PER MT-95.31.  
PHASE 3C - CONSTRUCT STORM SEWER ACROSS EB & WB INTERIOR LANES PER MT-95.32 WHILE MAINTAINING TRAFFIC IN OUTSIDE LANES.

**TEMPORARY STRIPING LEGEND**

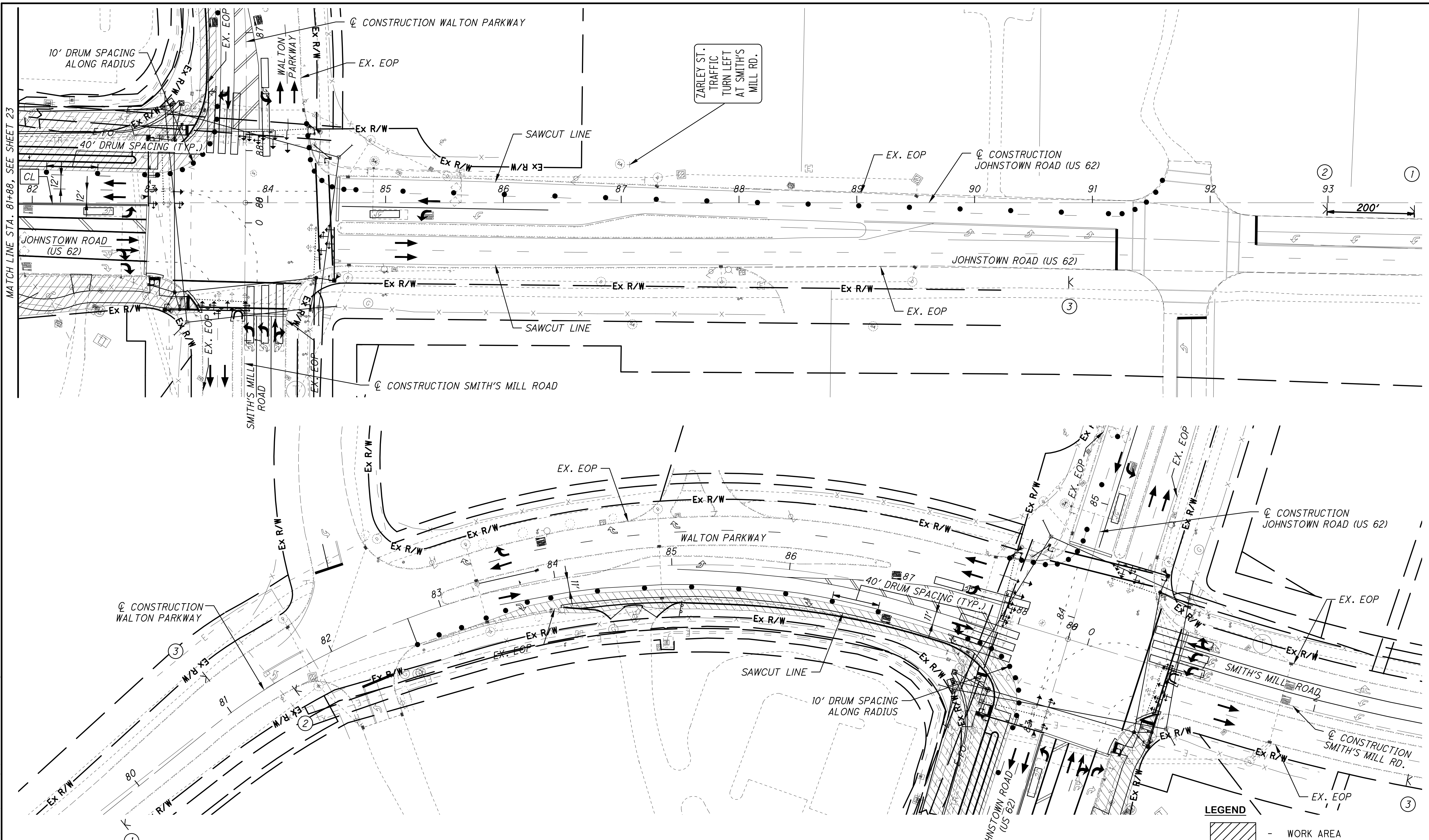
- [A] - TEMPORARY LANE ARROW
- [CL] - TEMPORARY CENTER LINE
- [SL] - TEMPORARY STOP LINE
- [CH] - TEMPORARY CHANNELIZING LINE
- [EL] - TEMPORARY EDGE LINE

**LEGEND**

- [Hatched Box] - WORK AREA
- [Dotted Line] - DRUMS
- [XXXXXX] - COVERING OF EX. PAVEMENT MARKINGS
- [Work Zone Sign] - WORK ZONE SIGN
- [Barricade] - TYPE III BARRICADE

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MATCH LINE STA. 81+88, SEE SHEET 23

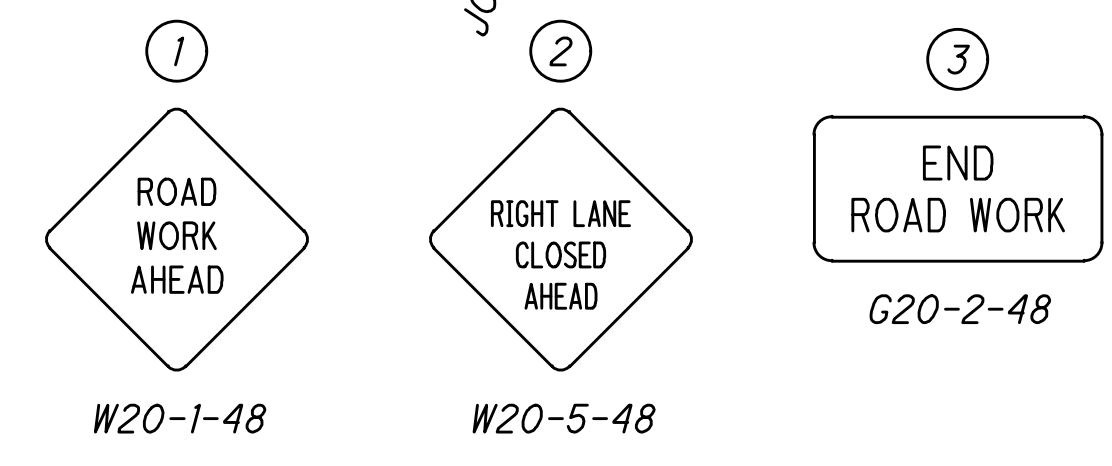
ZARLEY ST.  
TRAFFIC  
TURN LEFT  
AT SMITH'S  
MILL RD.

CALCULATED W/C S  
CHECKED M/L S

0 20 40 80  
HORIZONTAL  
SCALE IN FEET

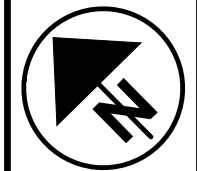
MAINTENANCE OF TRAFFIC PHASE 2  
JOHNSTOWN ROAD (US 62)

FRA-62-30.34  
24  
202



- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS
  - WORK ZONE SIGN
  - TYPE III BARRICADE

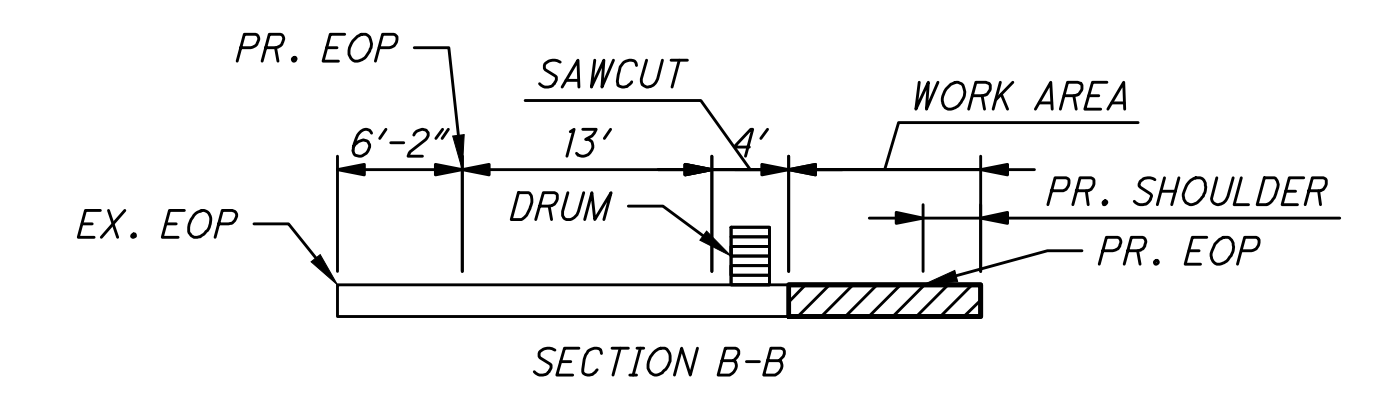
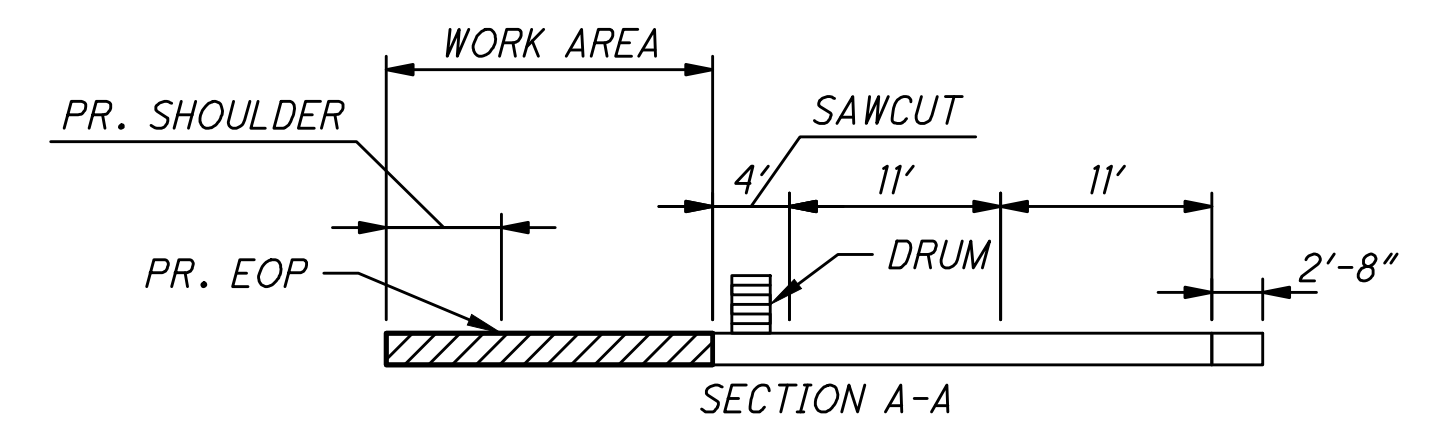
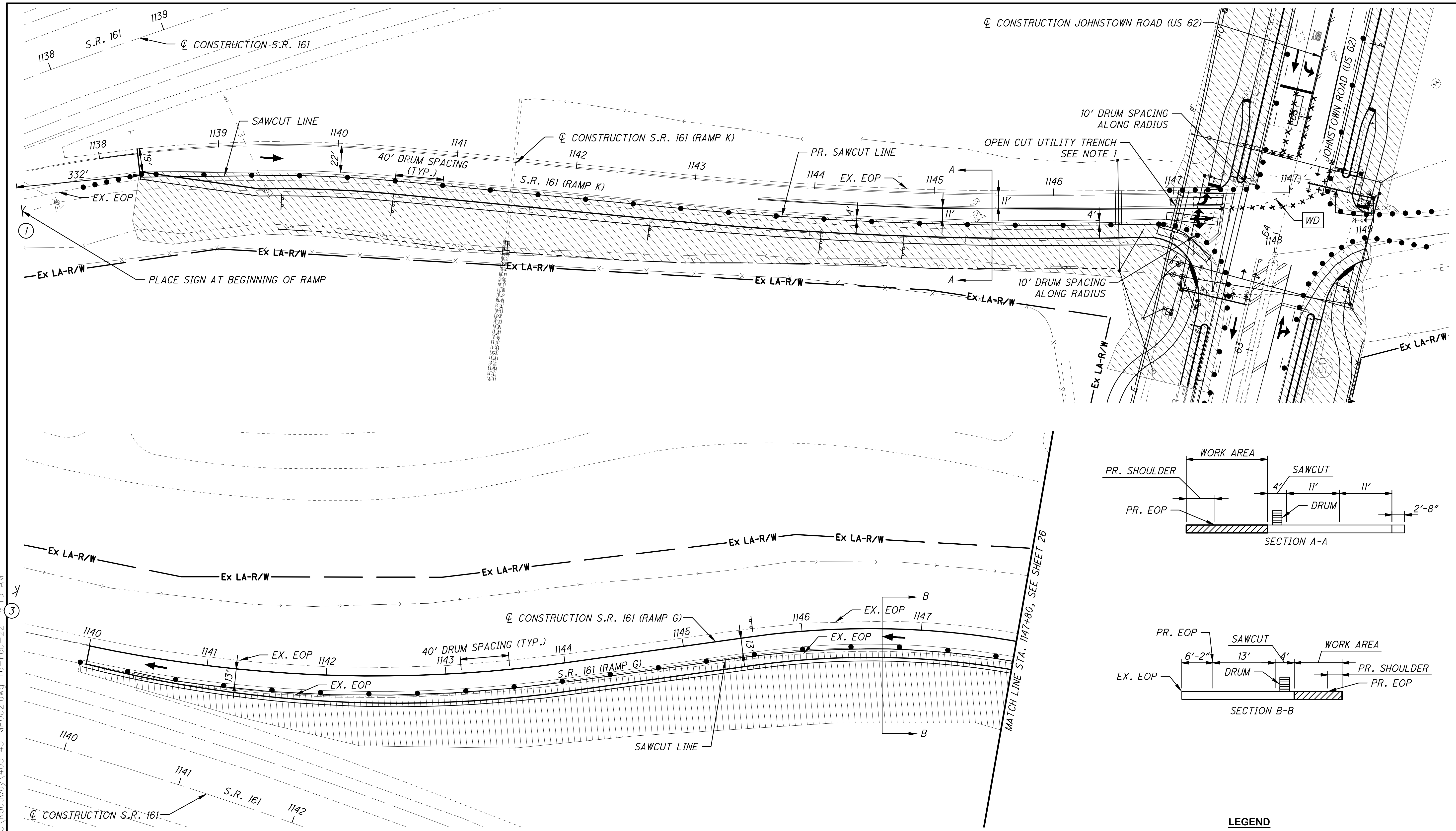




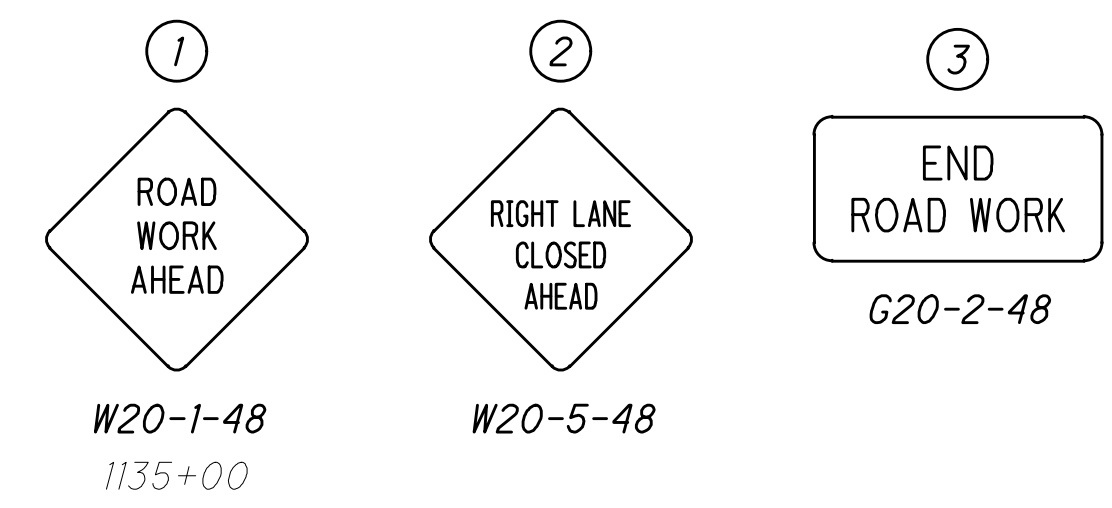
CALCULATED WCS  
CHECKED M.L.S.  
20  
80  
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PHASE 2  
JOHNSTOWN ROAD (US 62)**

**FRA-62-30.34**

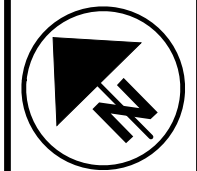


**NOTE:**  
 1. TEMPORARY LANE CLOSURES FOR ALL RAMPs SHALL BE LIMITED TO THE HOURS PER THE TABLE ON SHEET 12. PLACE STEEL PLATE OVER OPEN CUT DURING NON-CONSTRUCTION HOURS.



- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS
  - WORK ZONE SIGN
  - TYPE III BARRICADE

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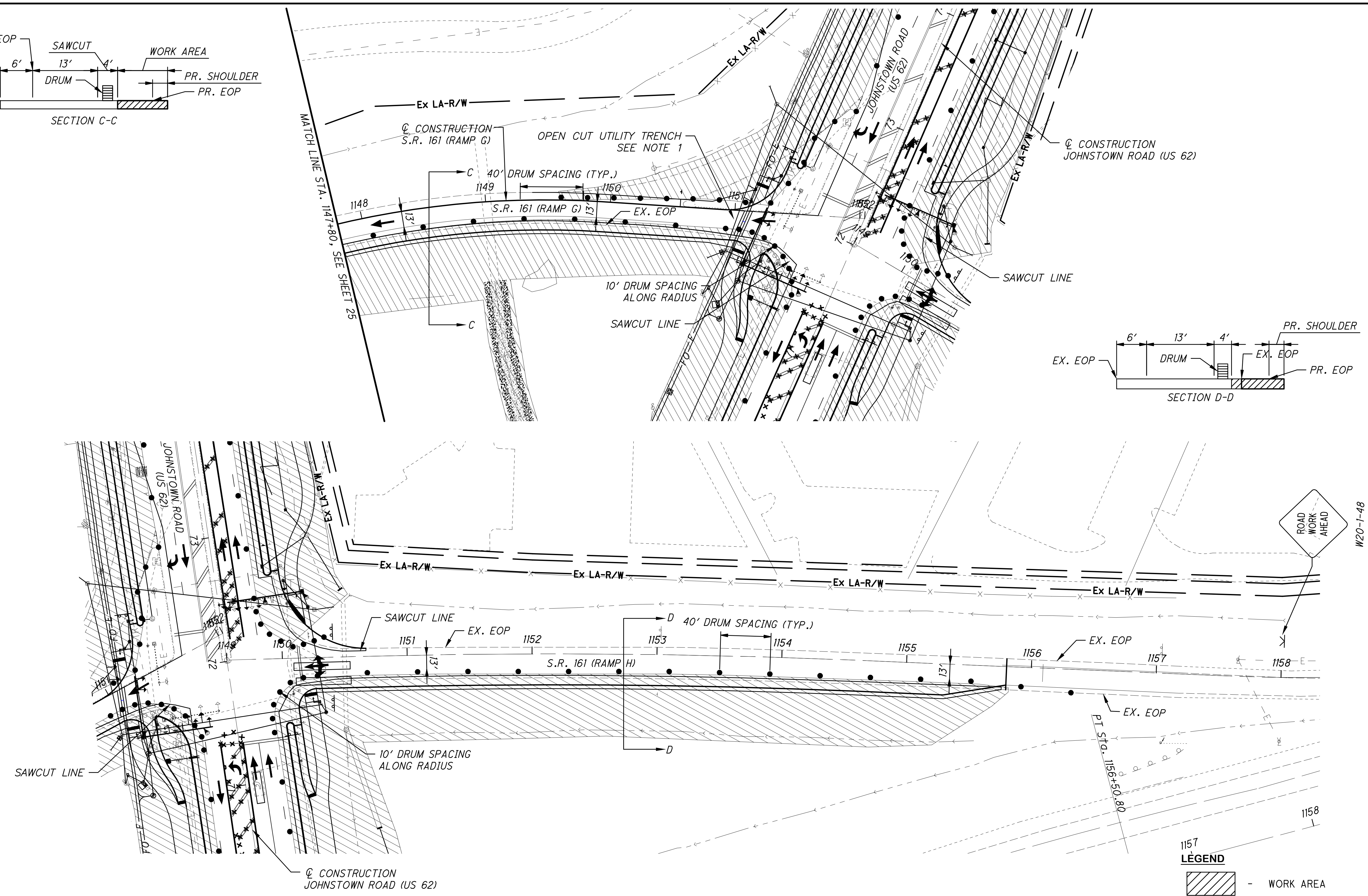
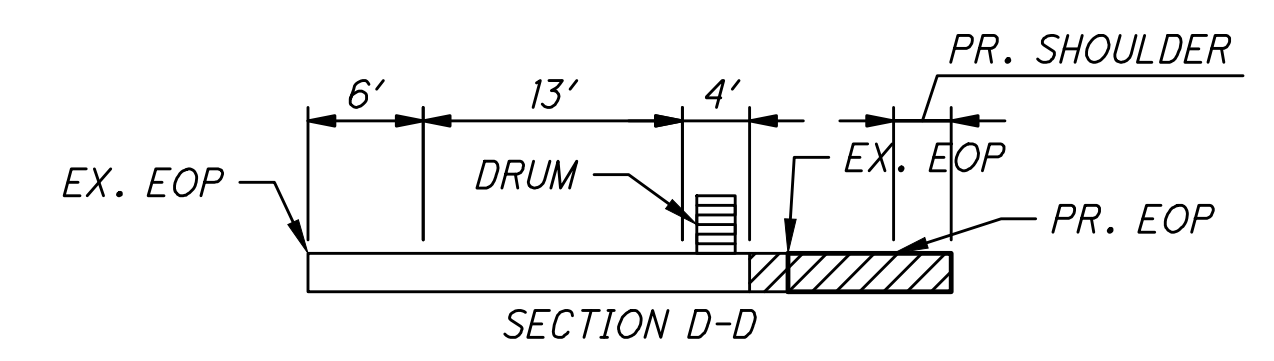
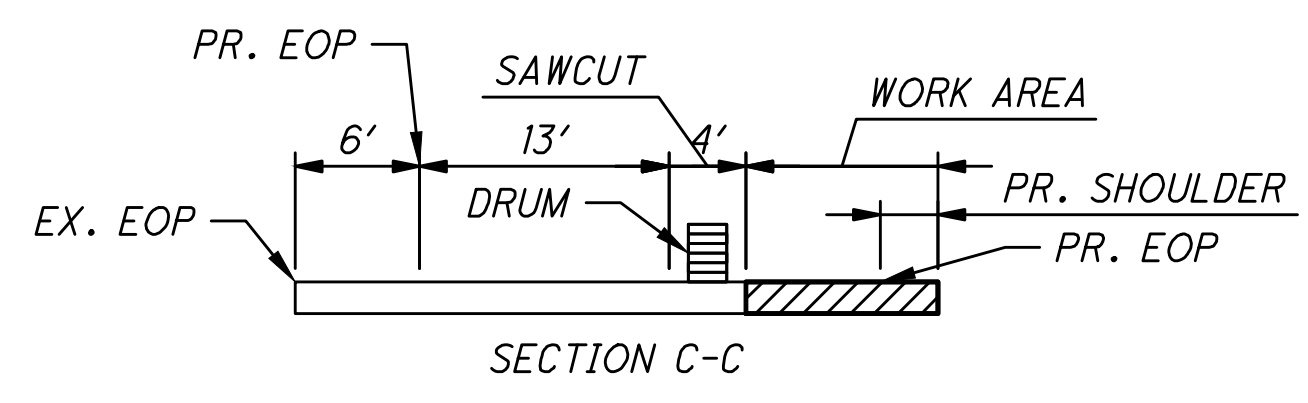


CALCULATED W/C S  
CHECKED M/L S

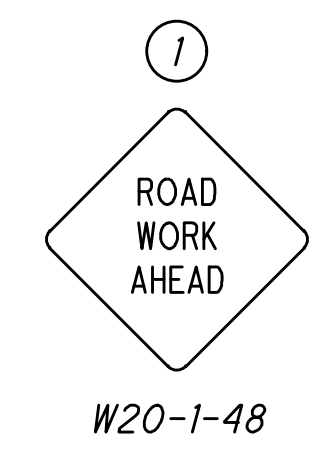
0 20 40 60 80  
HORIZONTAL  
SCALE IN FEET

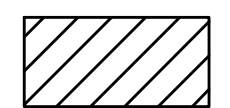

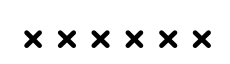
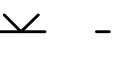

**MAINTENANCE OF TRAFFIC PHASE 2  
JOHNSTOWN ROAD (US 62)**

**FRA-62-30.34**



**NOTE:**  
1. TEMPORARY LANE CLOSURES FOR ALL RAMP SHALL BE LIMITED TO THE HOURS PER THE TABLE ON SHEET 12. PLACE STEEL PLATE OVER OPEN CUT DURING NON-CONSTRUCTION HOURS.



- 1157 LEGEND**
-  - WORK AREA
  -  - DRUMS
  -  - COVERING OF EX. PAVEMENT MARKINGS
  -  - WORK ZONE SIGN
  -  - TYPE III BARRICADE

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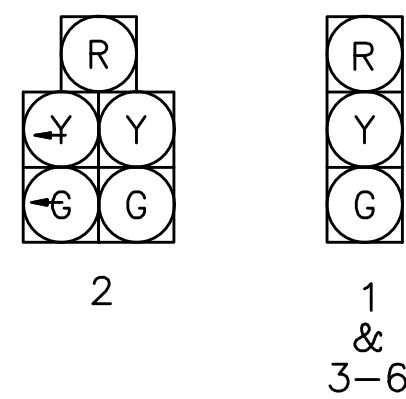
INTERSECTION TIMING								
PHASE	φ1	φ2 SB	φ3	φ4 EB	φ5 SBLT	φ6 NB	φ7	φ8 WB
MIN GREEN	-	27	-	27	6	27	-	10
WALK	-	-	-	-	-	-	-	-
PED CLR	-	-	-	-	-	-	-	-
PASSAGE	-	1	-	1	1	1	-	-
EXTENSION	-	1.8	-	2.1	2.1	1.8	-	-
MAX 1	-	60	-	70	25	60	-	-
MAX 2	-	60	-	70	25	60	-	-
YELLOW	-	4.5	-	4.1	4.5	4.5	-	-
RED CLR	-	1.0	-	*1.8	1.0	1.0	-	-
MEMORY	-	ON	-	ON	OFF	ON	-	-
VEH RECALL	-	ON	-	ON	OFF	ON	-	-
PED RECALL	-	OFF	-	OFF	OFF	OFF	-	-
INITIALIZE	-	G	-	R	R	G	-	-

NOTE: TIMINGS THE SAME AS PHASE 1 MOT EXCEPT FOR RED CLEARANCE EASTBOUND PHASE 4

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	35	-	40	-	60	12	28	-	-
2	100	41	-	50	-	50	15	35	-	-
3	75	27	-	38	-	37	-	38	-	-

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

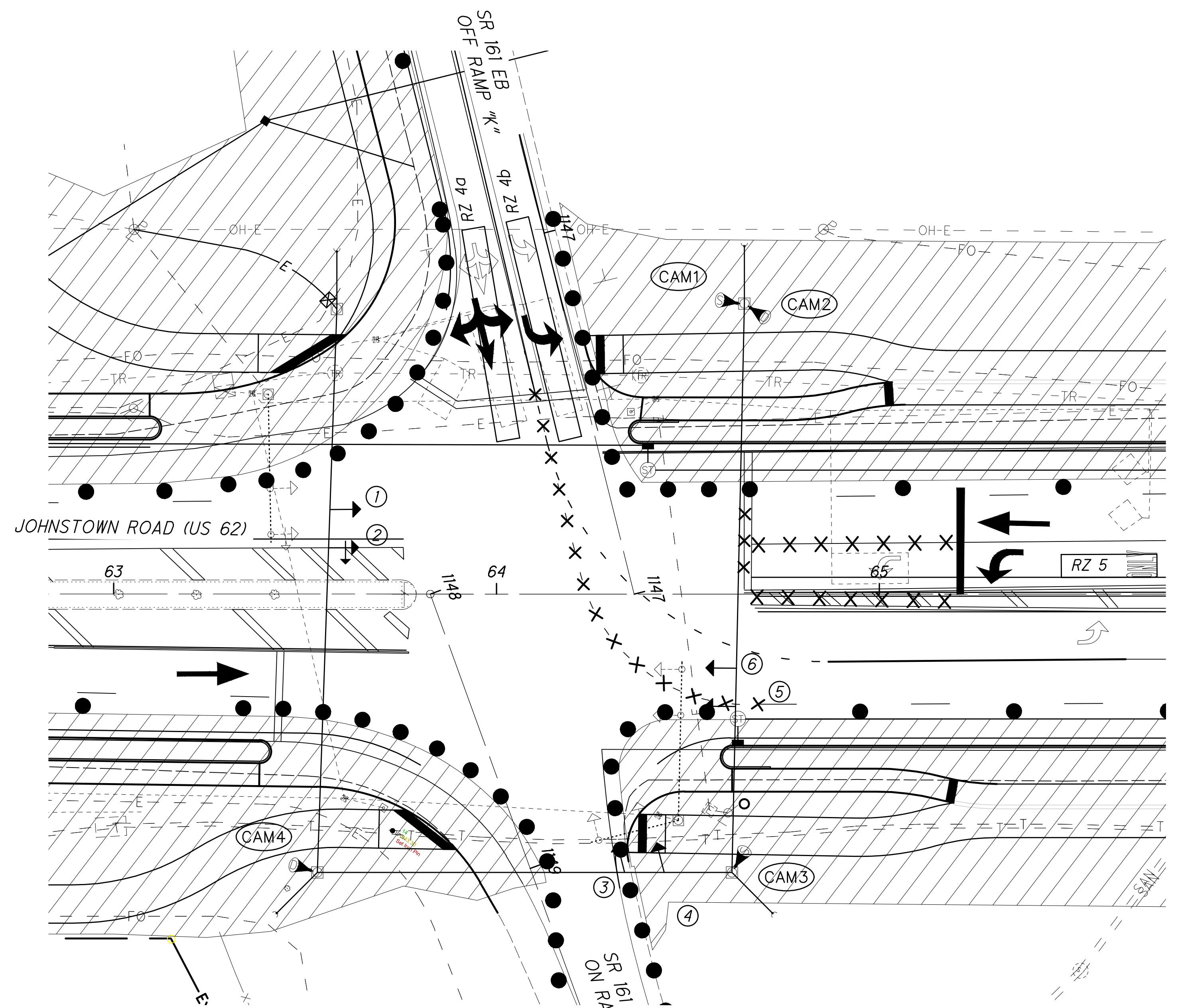


DETECTION ZONES							
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY
CAM1	RZ 4a	EB	φ4	6 X 56	+10	STOP-BAR	PRES
CAM1	RZ 4b	EB	φ4	6 X 59	+12	STOP-BAR	PRES
CAM2	----	SB	φ2	1 LANES X 600'	----	DILEMMA	----
CAM3	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES
CAM4	----	NB	φ6	1 LANES X 600'	----	DILEMMA	----

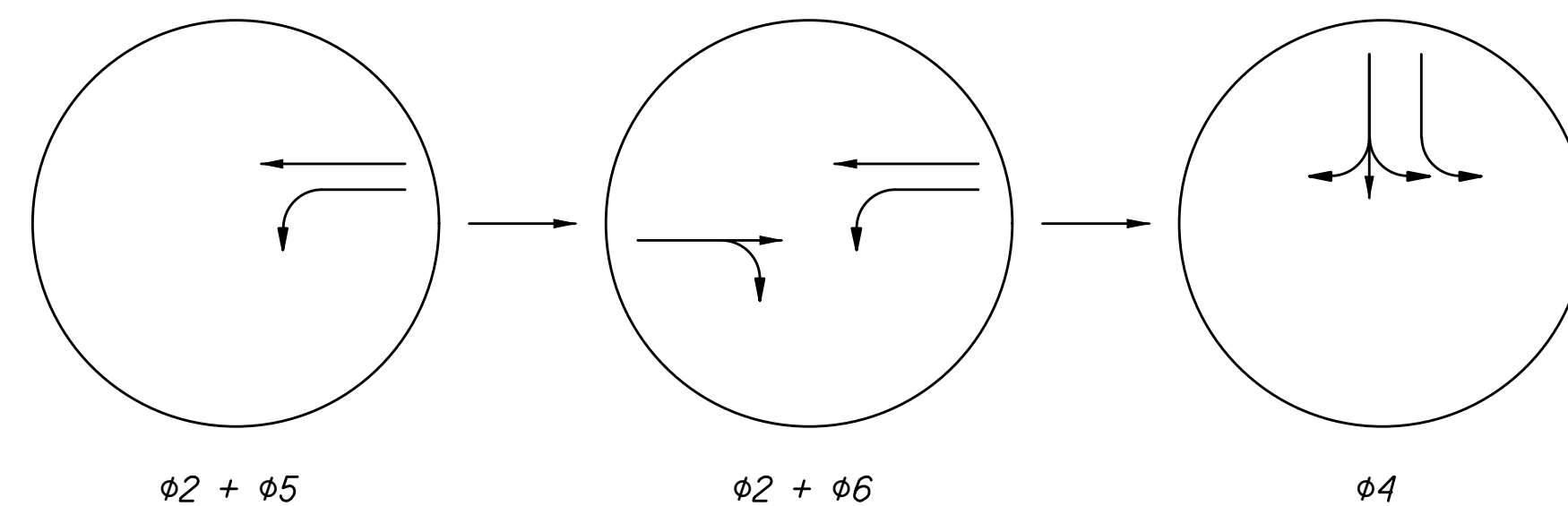
+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.

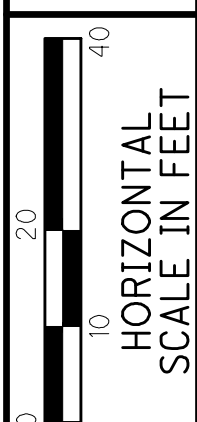
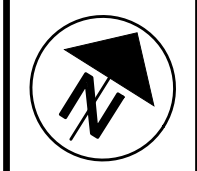


US 62 & EB SR 161 RAMPS PHASING DIAGRAM



- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS

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CALCULATED WCS CHECKED DLS

TEMPORARY TRAFFIC SIGNAL PLAN - PHASE 2  
SR 161 WB RAMP AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34  
28  
202

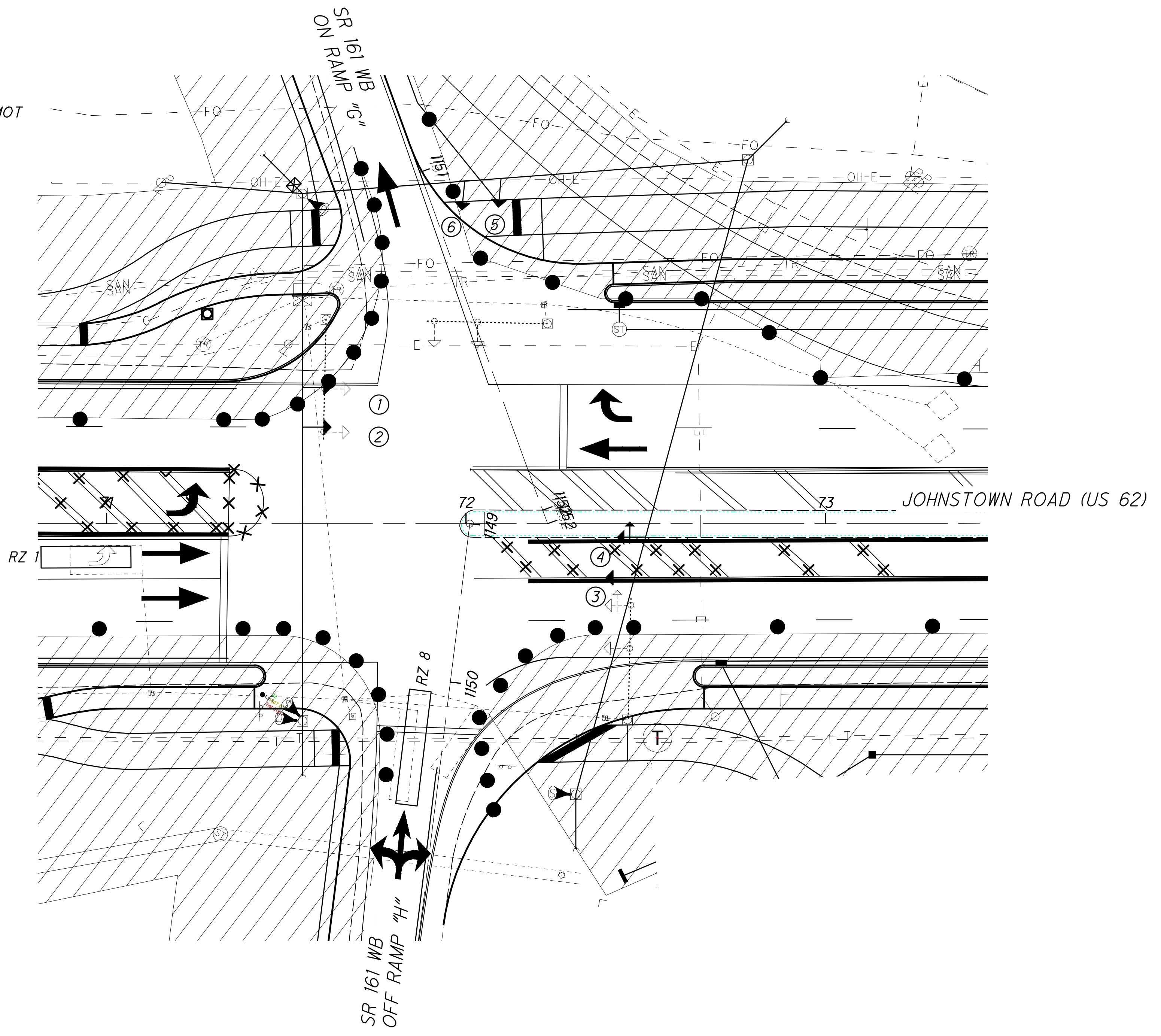
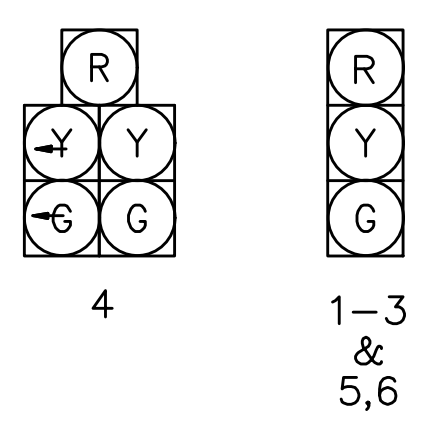
INTERSECTION TIMING								
PHASE	φ1 NBLT	φ2 SB	φ3	φ4	φ5	φ6 NB	φ7	φ8 WB
MIN GREEN	6	40	-	-	-	50	-	-
WALK	-	-	-	-	-	-	-	0
PED CLR	-	-	-	-	-	-	-	0
PASSAGE	1	1	-	-	-	1	-	1
EXTENSION	1.8	1.8	-	-	-	1.8	-	2.1
MAX 1	30	70	-	-	-	80	-	40
MAX 2	30	70	-	-	-	80	-	40
YELLOW	4.5	4.5	-	-	-	4.5	-	4.1
RED CLR	1.0	1.0	-	-	-	1.0	-	*1.8
MEMORY	OFF	ON	-	-	-	ON	-	OFF
VEH RECALL	OFF	ON	-	-	-	ON	-	OFF
PED RECALL	OFF	ON	-	-	-	ON	-	OFF
INITIALIZE	R	G	-	-	-	G	-	R

NOTE: TIMINGS THE SAME AS PHASE 1 MOT EXCEPT FOR RED CLEARANCE WESTBOUND PHASE 8

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)								
			1	2	3	4	5	6	7	8	
1	100	97	18	49	-	-	-	-	67	-	33
2	100	37	15	60	-	-	-	-	75	-	25
3	75	15	12	47	-	-	-	-	59	-	16

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE



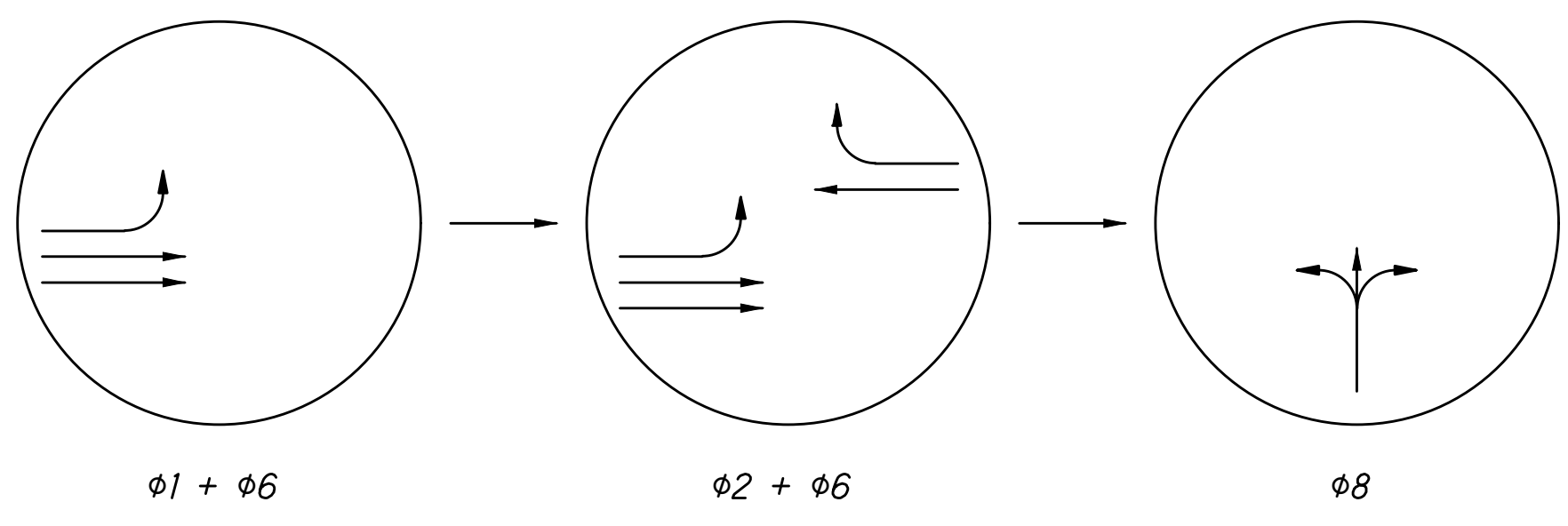
DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----	----
CAM2	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM3	RZ 8	WB	φ8	6 X 32	+12	STOP-BAR	PRES	3
CAM4	----	NB	φ6	1 LANES X 600'	----	DILEMMA	----	----

+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

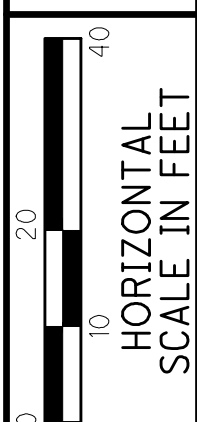
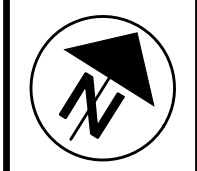
CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.

US 62 & WB SR 161 RAMPS PHASING DIAGRAM



- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS

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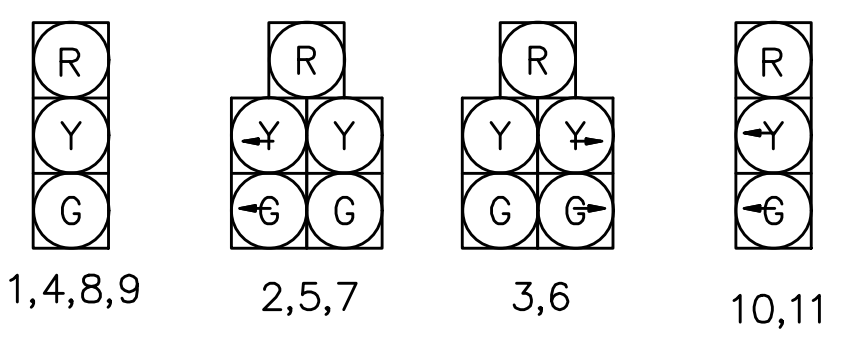
CALCULATED W/C'S CHECKED DLS

TEMPORARY TRAFFIC SIGNAL PLAN - PHASE 2  
SMITH'S MILL AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34

LEGEND

- WORK AREA
- DRUMS
- COVERING OF EX. PAVEMENT MARKINGS



NOTE: TIMINGS THE SAME AS PHASE 1 MOT EXCEPT FOR RED CLEARANCE WESTBOUND PHASE 3 & 8

INTERSECTION TIMING								
PHASE	φ1 NBLT	φ2 SB	φ3 WB LT	φ4 EB	φ5 SBLT	φ6 NB	φ7 EB LT	φ8 WB
MIN GREEN	7	23	9	8	5	25	7	10
WALK	-	-	-	-	-	-	-	-
PED CLR	-	-	-	-	-	-	-	-
PASSAGE	1	1	1	1	1	1	1	1
EXTENSION	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
MAX 1	30	60	45	35	25	70	25	45
MAX 2	30	60	45	35	25	70	25	45
YELLOW	4.5	4.5	3.2	4.1	4.5	4.5	3.2	4.1
RED CLR	1.5	1.0	*2.8	1.8	1.0	1.5	3.7	*1.2
MEMORY	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
VEH RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
PED RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
INITIALIZE	R	G	R	R	R	G	R	R

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	0	23	41	16	20	12	52	14	22
2	100	0	15	32	37	16	12	35	14	39
3	75	0	14	30	16	15	12	32	14	17

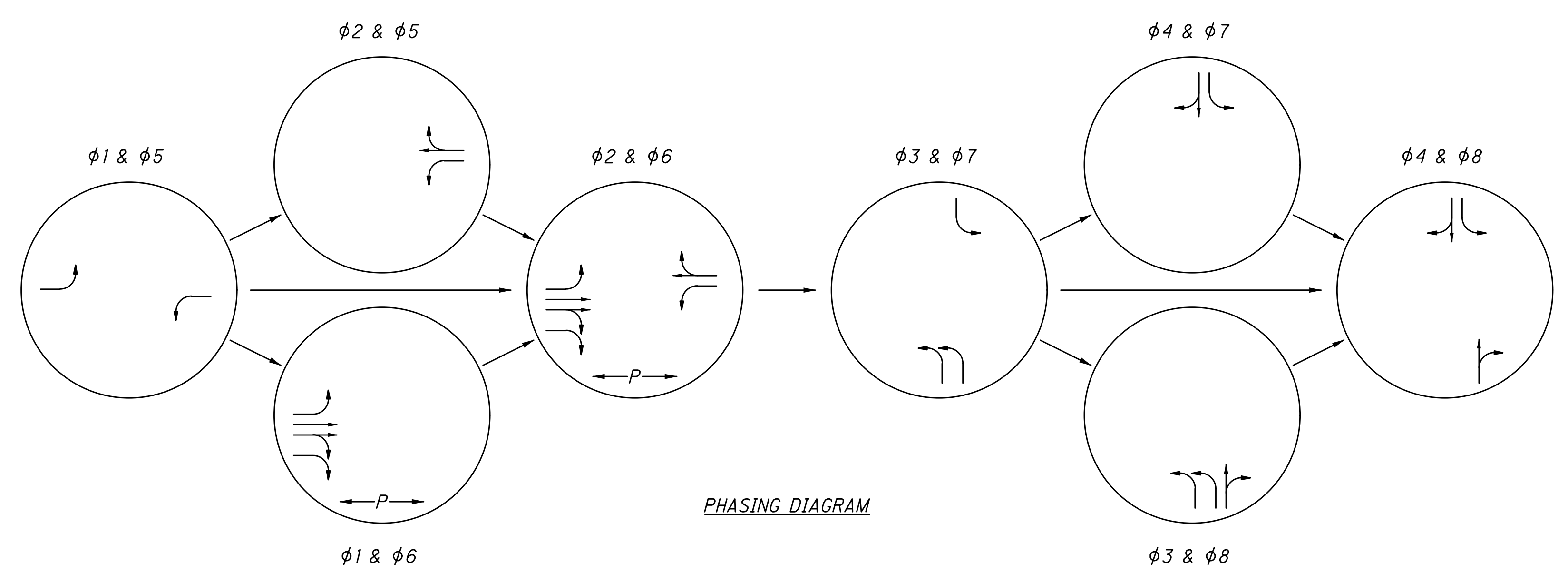
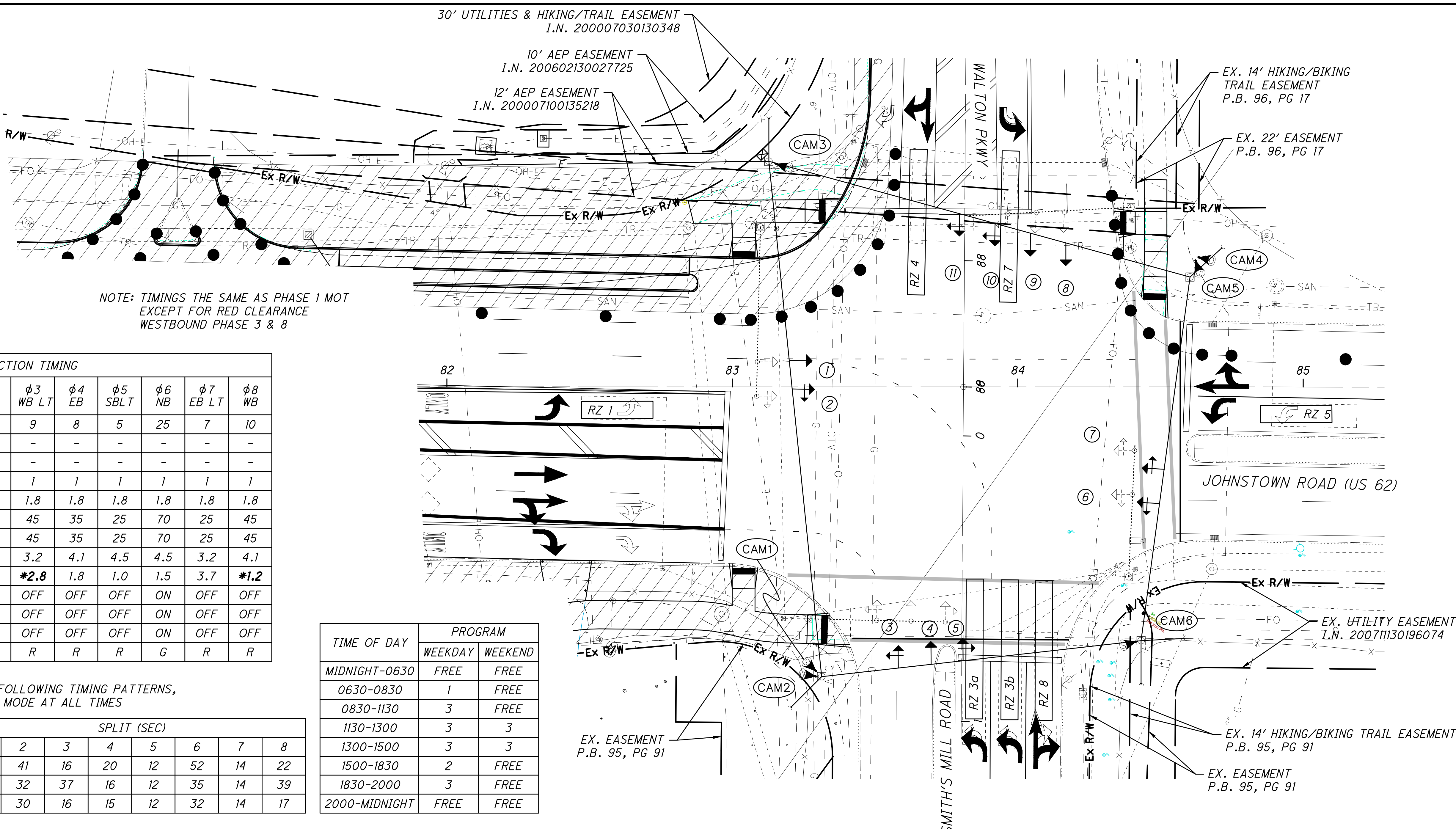
TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM2	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----	----
CAM3								
CAM3	RZ 4	EB	φ4	6 X 51	+28	STOP-BAR	PRES	3
CAM3	RZ 7	EB LT	φ7	6 X 53	+32	STOP-BAR	PRES	3
CAM4	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----	----
CAM5	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES	3
CAM6	RZ 3a	WB LT	φ3	6 X 49	+28	STOP-BAR	PRES	3
CAM6	RZ 3b	WB LT	φ3	6 X 49	+28	STOP-BAR	PRES	3
CAM6	RZ 8	WB	φ8	6 X 49	+28	STOP-BAR	PRES	3

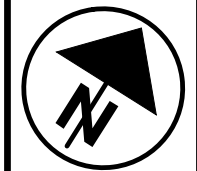
+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.



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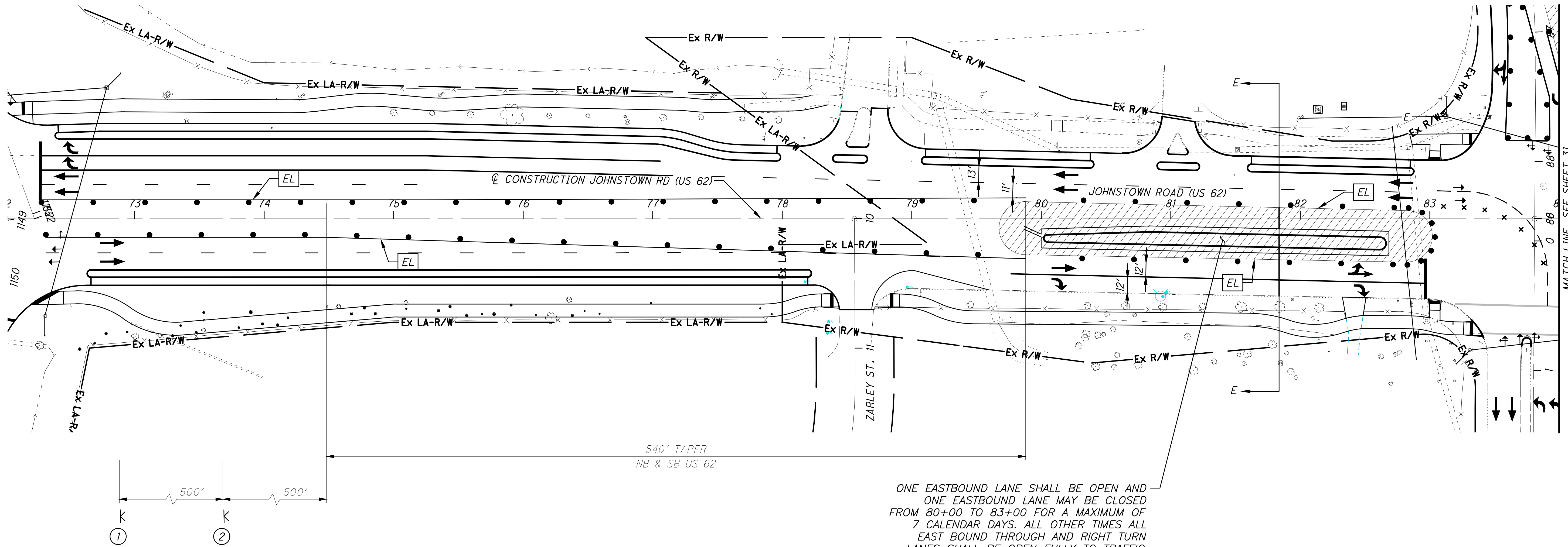
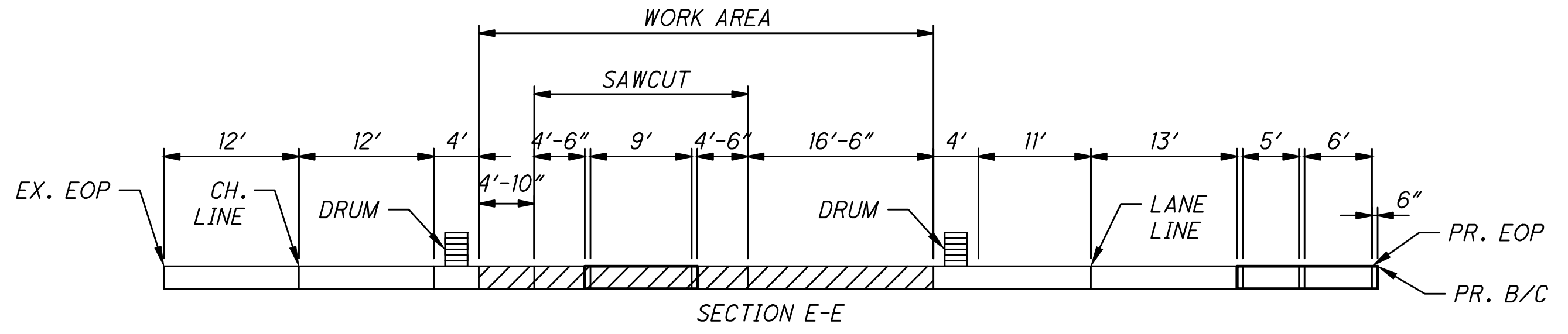
0 20 40 80  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
WCS  
CHECKED  
M/S

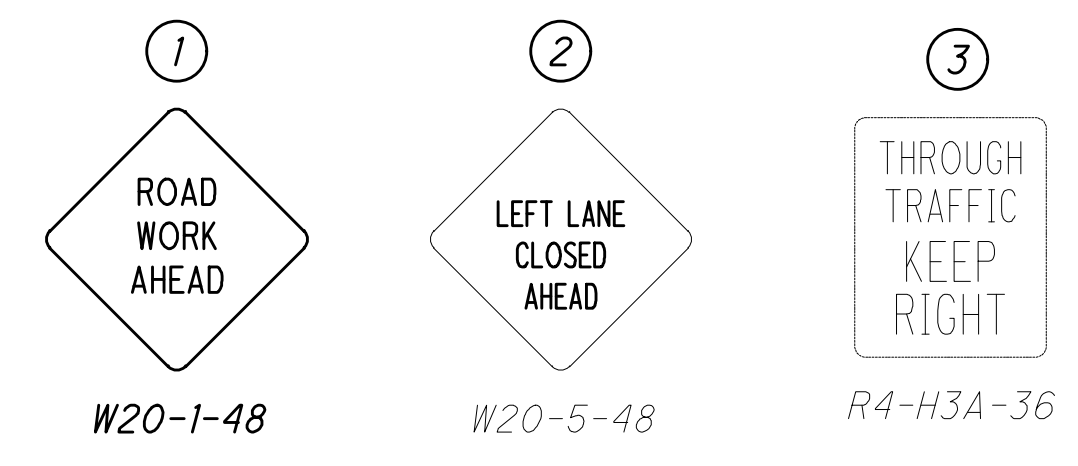
MAINTENANCE OF TRAFFIC PHASE 3A  
JOHNSTOWN ROAD (US 62)

FRA-62-30.34

30  
202



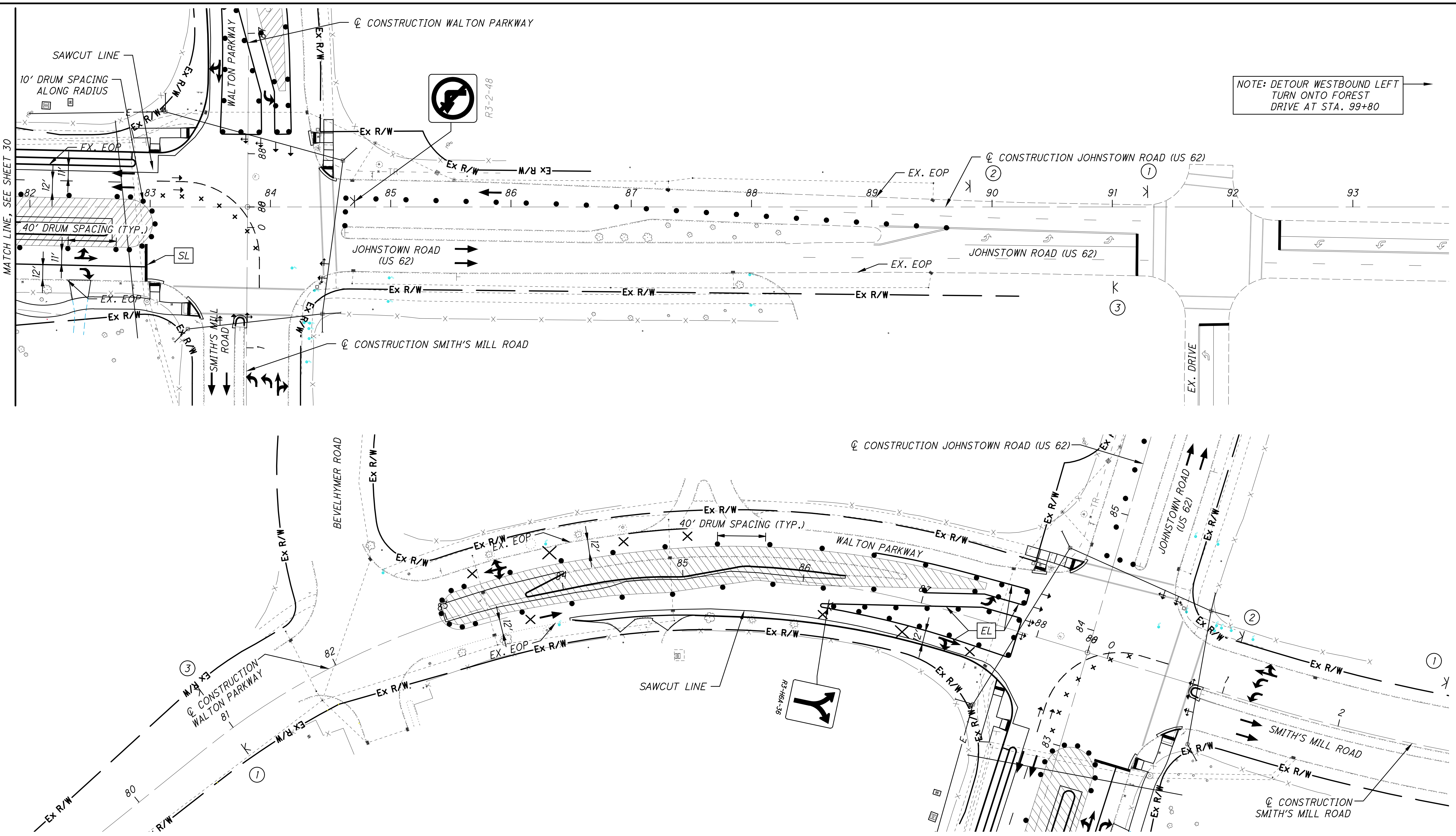
ONE EASTBOUND LANE SHALL BE OPEN AND  
ONE EASTBOUND LANE MAY BE CLOSED  
FROM 80+00 TO 83+00 FOR A MAXIMUM OF  
7 CALENDAR DAYS. ALL OTHER TIMES ALL  
EAST BOUND THROUGH AND RIGHT TURN  
LANES SHALL BE OPEN FULLY TO TRAFFIC.



**LEGEND**  
 - WORK AREA  
 - DRUMS  
 - COVERING OF EX. PAVEMENT MARKINGS

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NOTE: DETOUR WESTBOUND LEFT TURN ONTO FOREST DRIVE AT STA. 99+80

CALCULATED W/C/S CHECKED M/L/S

0 20 40 80

HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 3A  
JOHNSTOWN ROAD (US 62)

FRA-62-30.34

① ROAD WORK AHEAD  
W20-1-48

② LEFT LANE CLOSED AHEAD  
W20-5-48

③ END ROAD WORK  
G20-2-48

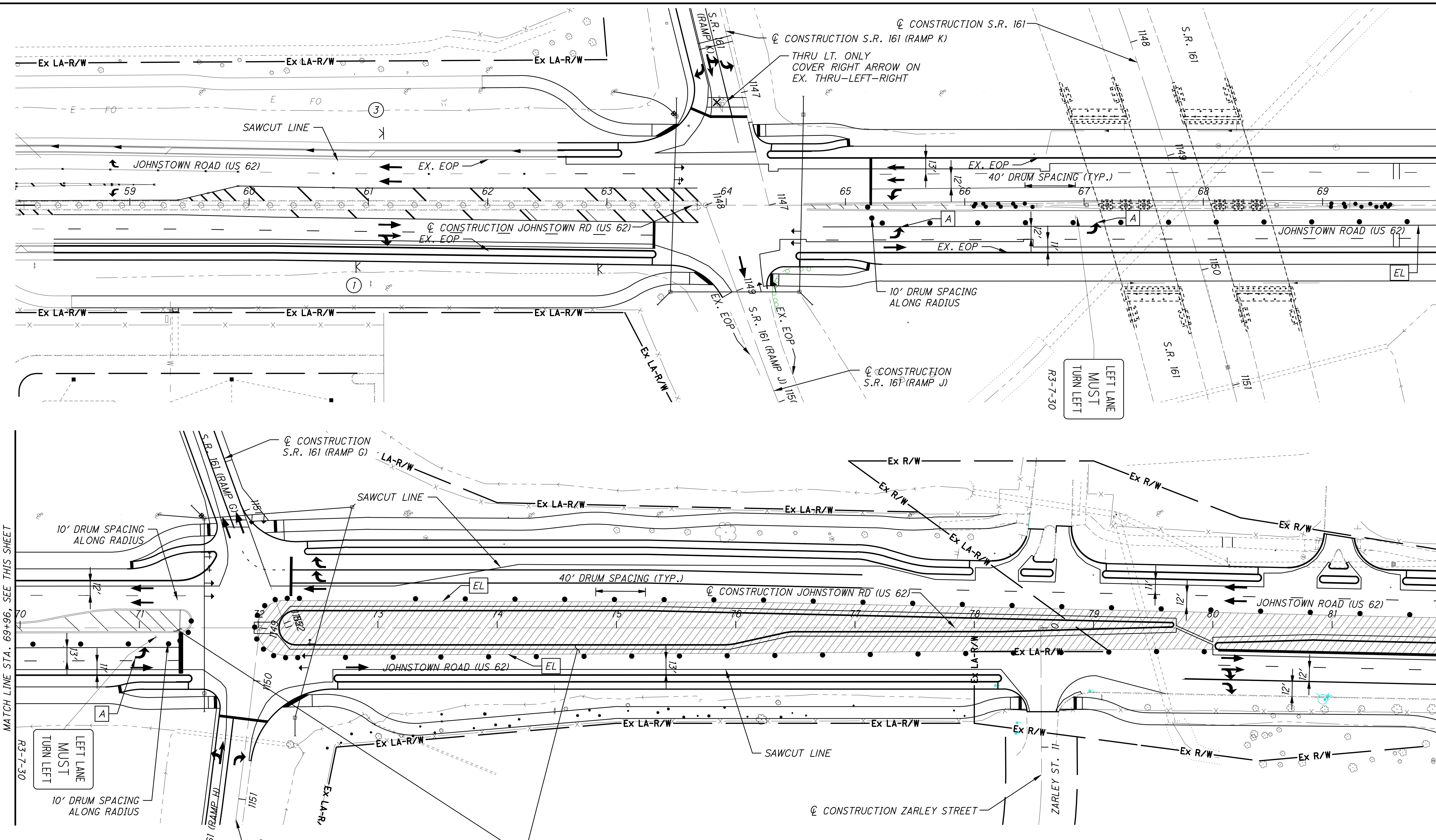
**LEGEND**

- WORK AREA

- DRUMS

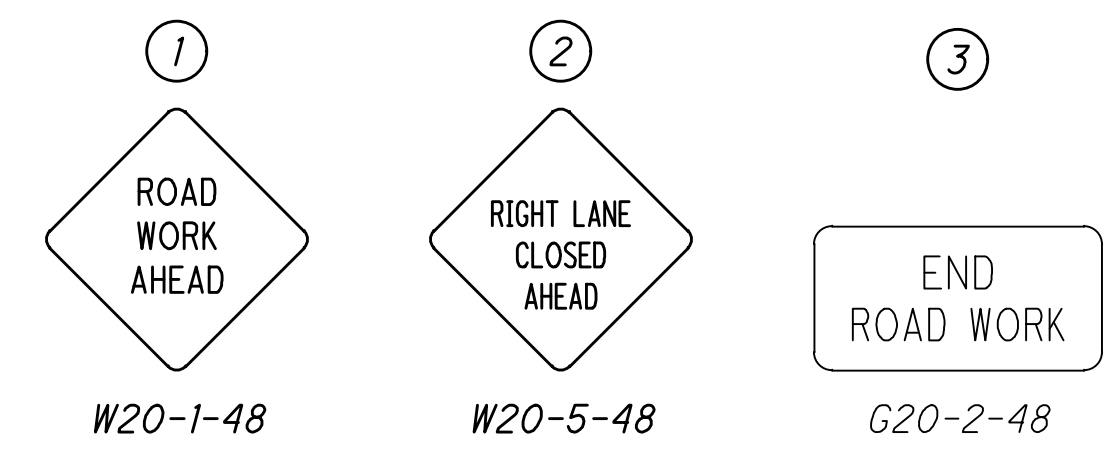
- COVERING OF EX. PAVEMENT MARKINGS

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- TEMPORARY STRIPING LEGEND**
- [A] - TEMPORARY LANE ARROW
  - [CL] - TEMPORARY CENTER LINE
  - [SL] - TEMPORARY STOP LINE
  - [CH] - TEMPORARY CHANNELIZING LINE
  - [EL] - TEMPORARY EDGE LINE

ONE EASTBOUND LANE SHALL BE OPEN AND ONE EASTBOUND LANE MAY BE CLOSED FROM 64+00 TO 80+00 FOR A MAXIMUM OF 14 CALENDAR DAYS. ALL OTHER TIMES ALL EAST BOUND THROUGH AND RIGHT TURN LANES SHALL BE OPEN FULLY TO TRAFFIC.



- LEGEND**
- [Hatched Box] - WORK AREA
  - [Dotted Line] - DRUMS
  - [Crossed Line] - COVERING OF EX. PAVEMENT MARKINGS

MATCH LINE STA. 69+96, SEE THIS SHEET

HORIZONTAL SCALE IN FEET

MATCH LINE STA. 81+88, SEE SHEET 33

**MAINTENANCE OF TRAFFIC PHASE 3B**

**JOHNSTOWN ROAD (US 62)**

MATCH LINE STA. 69+96, SEE THIS SHEET

CALCULATED W/C/S  
CHECKED M/L/S

**FRA-62-30.34**

MATCH LINE STA. 69+96, SEE THIS SHEET

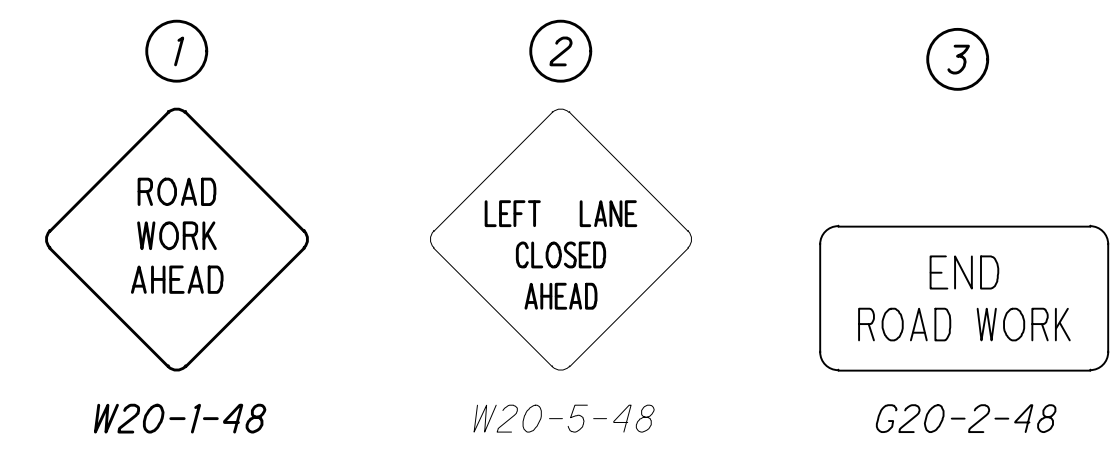
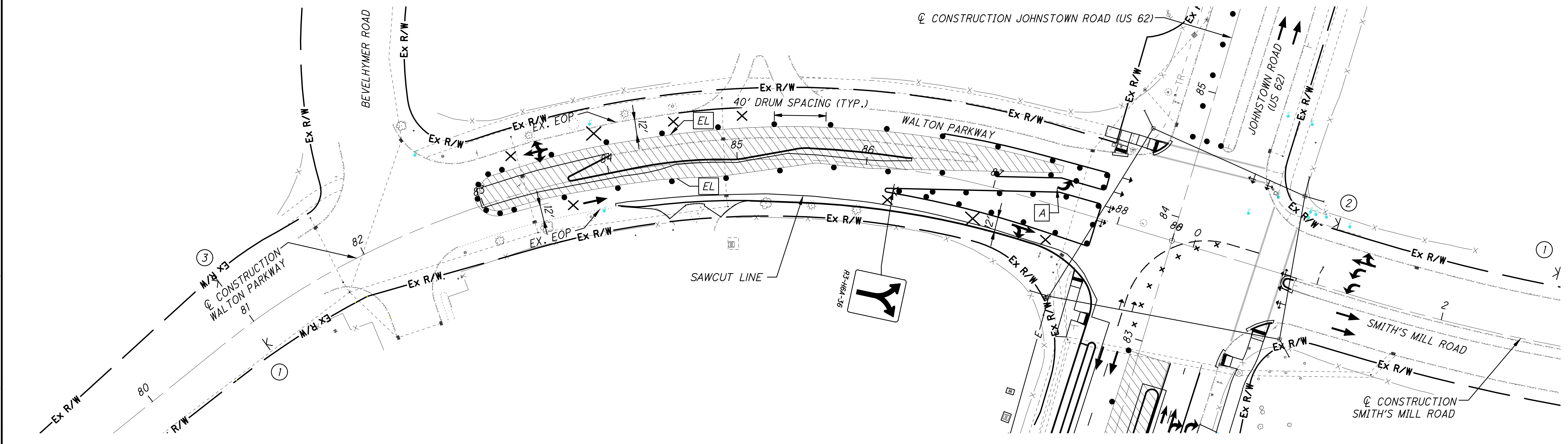
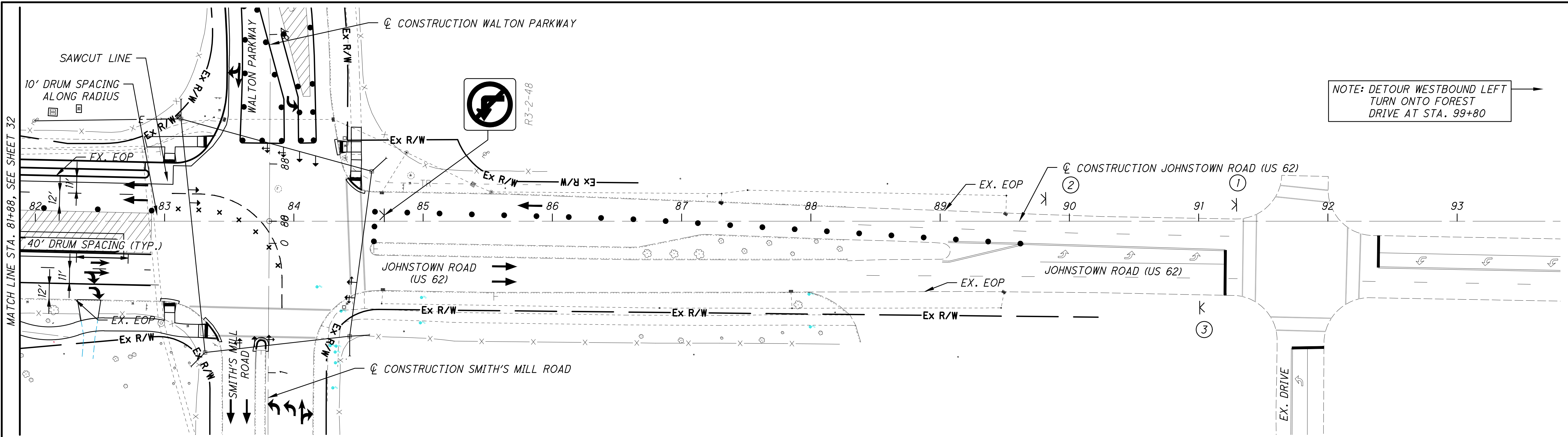
32

202

MATCH LINE STA. 81+88, SEE SHEET 33



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- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS

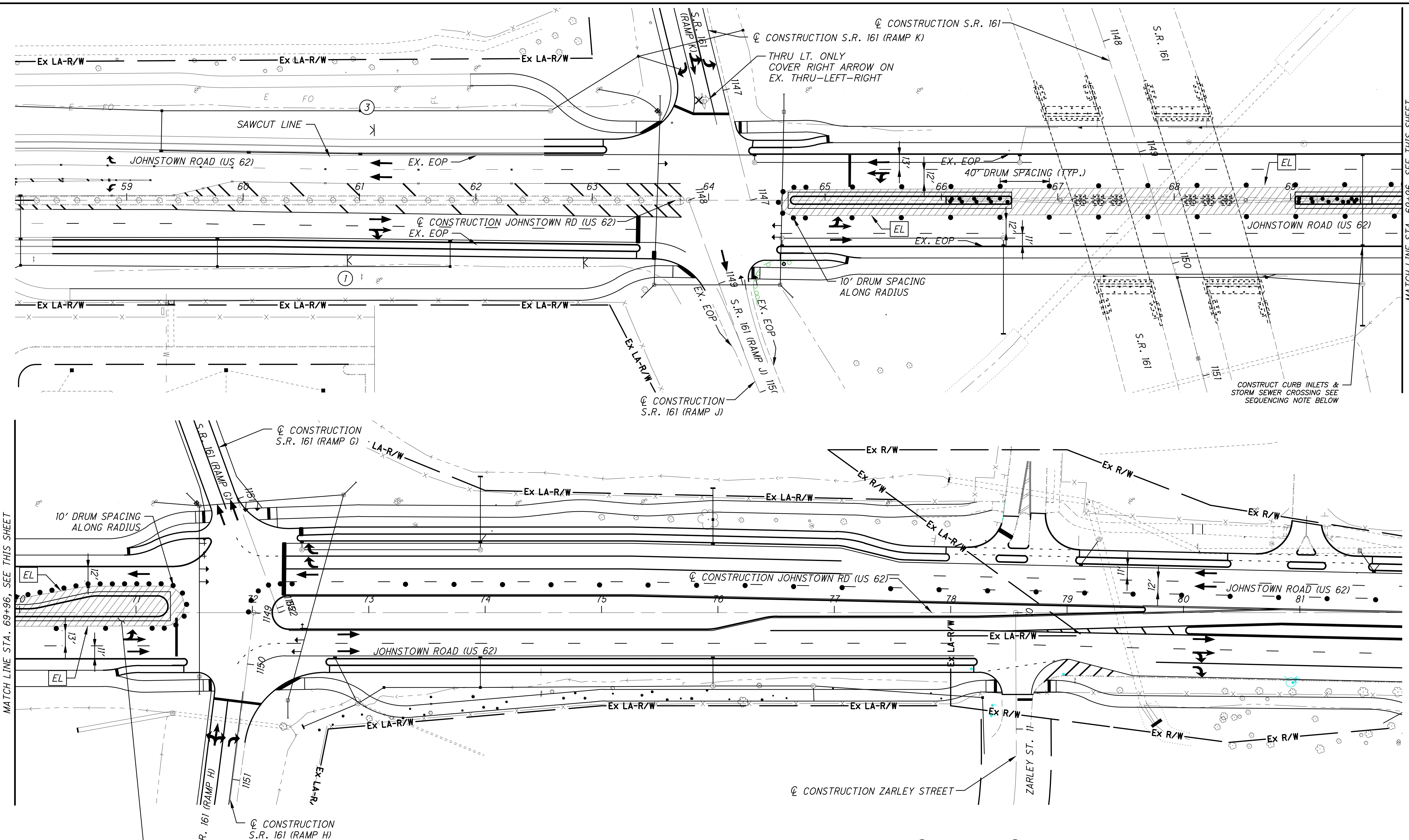
CALCULATED  
WCS  
CHECKED  
MLS

0 20 40 80  
HORIZONTAL  
SCALE IN FEET

**MAINTENANCE OF TRAFFIC PHASE 3B  
JOHNSTOWN ROAD (US 62)**

**FRA-62-30.34**

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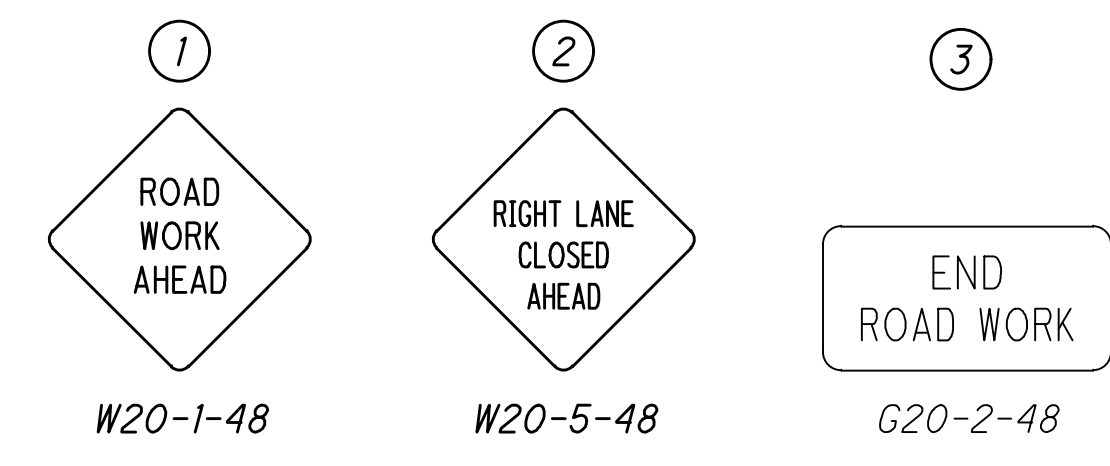


MATCH LINE STA. 69+96, SEE THIS SHEET

MATCH LINE STA. 69+96, SEE THIS SHEET

ONE EASTBOUND LANE AND ONE EASTBOUND/LEFT LANE SHALL BE OPEN AND LEFT TURN LANE CLOSED FROM 64+50 TO 71+50 FOR A MAXIMUM OF 7 CALENDAR DAYS. ALL OTHER TIMES ALL LANES SHALL BE OPEN FULLY TO TRAFFIC.

**CONSTRUCTION SEQUENCE FOR STORM SEWER CROSSING**  
 PHASE 2 - CONSTRUCT CURB INLETS & STORM SEWER ACROSS EB AND WB OUTSIDE CURB LANE PER MT-95.31.  
 PHASE 3C - CONSTRUCT STORM SEWER ACROSS EB & WB INTERIOR LANES PER MT-95.32 WHILE MAINTAINING TRAFFIC IN OUTSIDE LANES.



**LEGEND**  
 [Hatched Area] - WORK AREA  
 [Dotted Line] - DRUMS  
 [Dashed Line] - COVERING OF EX. PAVEMENT MARKINGS

**MAINTENANCE OF TRAFFIC PHASE 3C**  
**JOHNSTOWN ROAD (US 62)**

**FRA-62-30.34**

34  
202

CALCULATED WCS  
 CHECKED M.L.S.

HORIZONTAL SCALE IN FEET

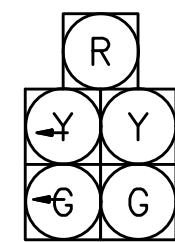
INTERSECTION TIMING								
PHASE	φ1	φ2 SB	φ3	φ4 EB	φ5 SBLT	φ6 NB	φ7	φ8 WB
MIN GREEN	-	27	-	27	6	27	-	10
WALK	-	-	-	-	-	-	-	-
PED CLR	-	-	-	-	-	-	-	-
PASSAGE	-	1	-	1	1	1	-	-
EXTENSION	-	1.8	-	2.1	2.1	1.8	-	-
MAX 1	-	60	-	70	25	60	-	-
MAX 2	-	60	-	70	25	60	-	-
YELLOW	-	4.5	-	4.1	4.5	4.5	-	-
RED CLR	-	1.0	-	*3.9	1.0	1.0	-	-
MEMORY	-	ON	-	ON	OFF	ON	-	-
VEH RECALL	-	ON	-	ON	OFF	ON	-	-
PED RECALL	-	OFF	-	OFF	OFF	OFF	-	-
INITIALIZE	-	G	-	R	R	G	-	-

NOTE: TIMINGS THE SAME AS PHASE 2 MOT EXCEPT FOR RED CLEARANCE EASTBOUND PHASE 4

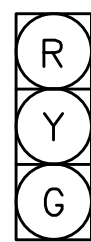
NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	35	-	40	-	60	12	28	-	-
2	100	41	-	50	-	50	15	35	-	-
3	75	27	-	38	-	37	-	38	-	-

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE



2



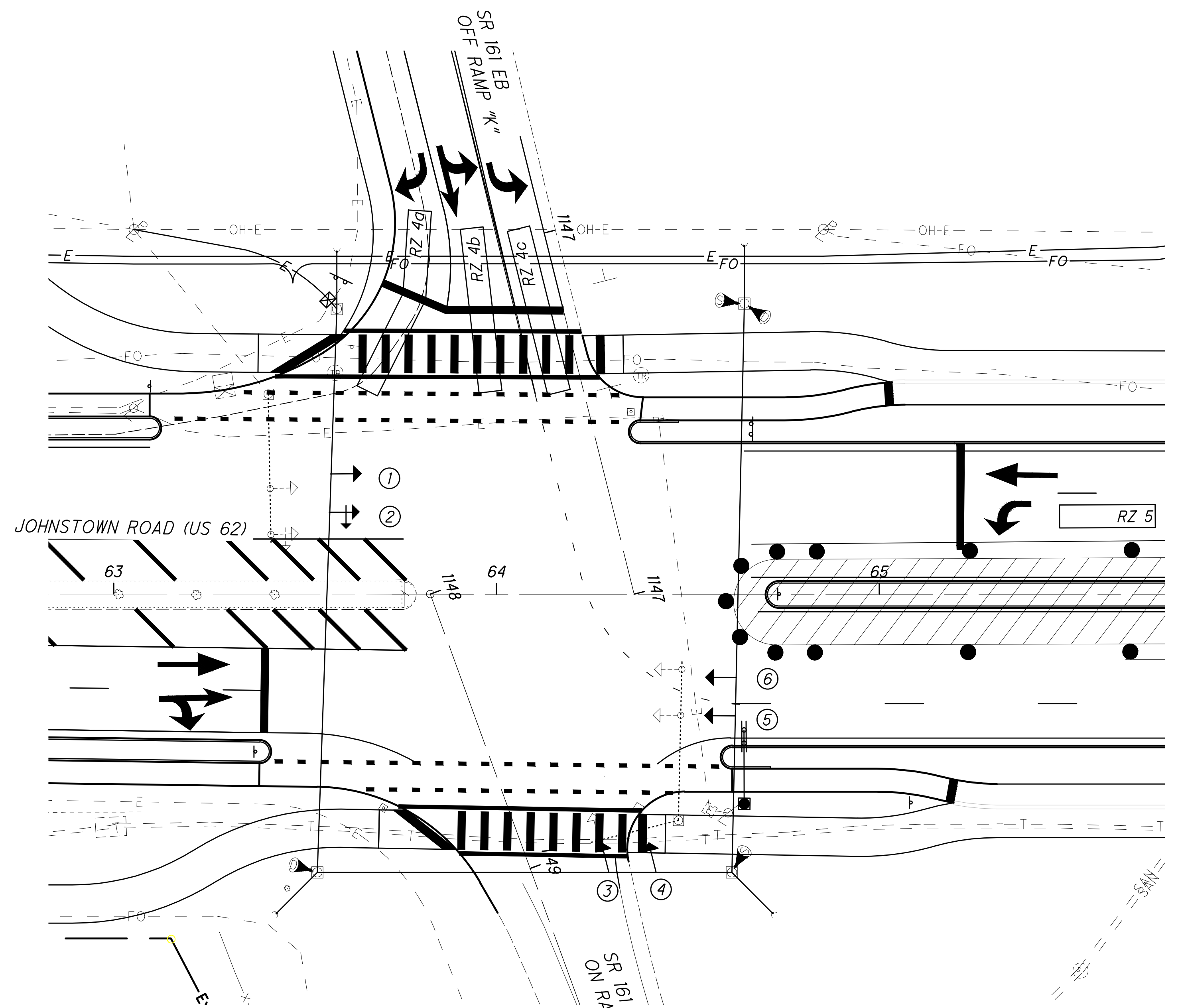
1 & 3-6

DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	RZ 4a	EB	φ4	6 X 50	+28	STOP-BAR	PRES	3
CAM1	RZ 4b	EB	φ4	6 X 43	+22	STOP-BAR	PRES	3
CAM1	RZ 4c	EB	φ4	6 X 44	+22	STOP-BAR	PRES	3
CAM2	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----	----
CAM3	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES	3
CAM4	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----	----

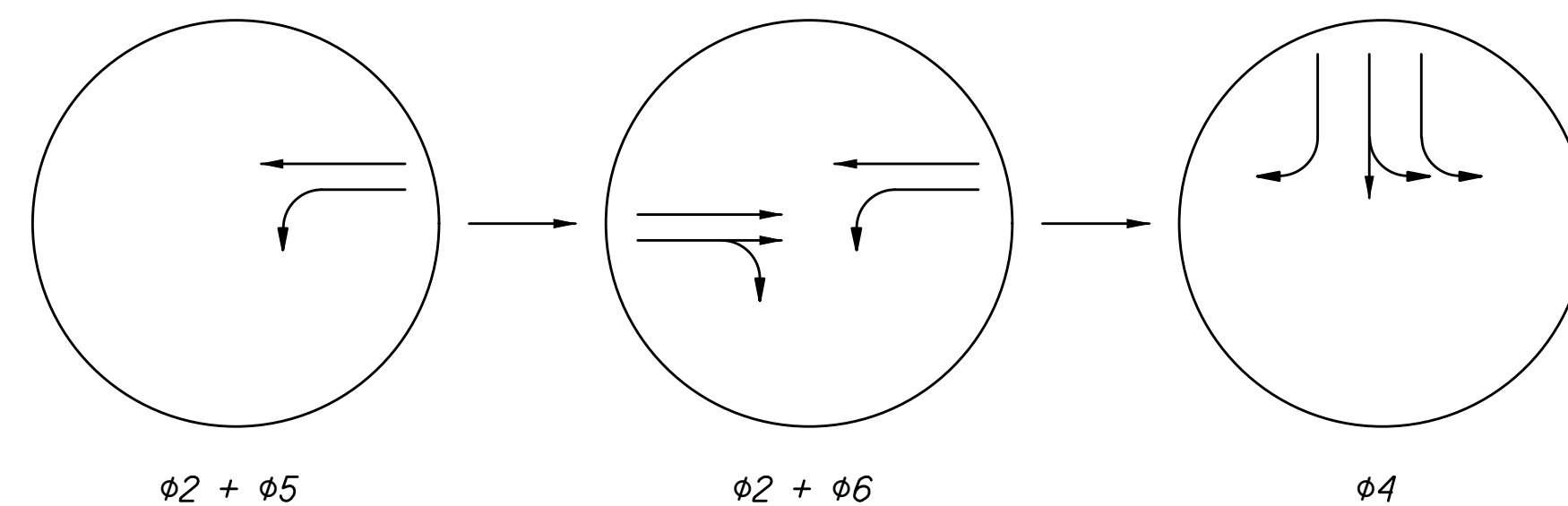
+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.

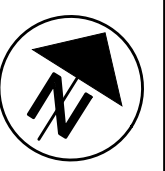


US 62 & EB SR 161 RAMPS PHASING DIAGRAM



LEGEND

- WORK AREA
- DRUMS
- COVERING OF EX. PAVEMENT MARKINGS



CALCULATED W/C/S CHECKED DLS

TEMPORARY TRAFFIC SIGNAL PLAN - PHASE 3  
SR 161 EB RAMPS AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34

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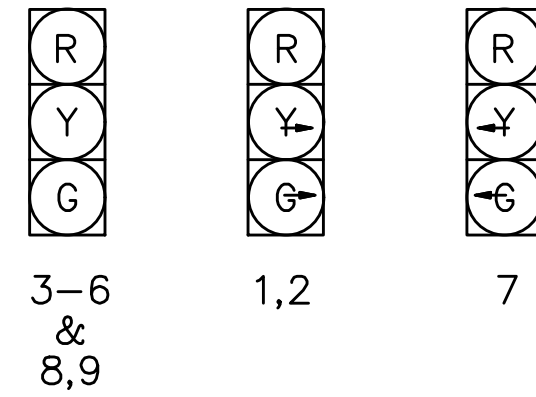
INTERSECTION TIMING								
PHASE	φ1 NBLT	φ2 SB	φ3	φ4	φ5	φ6 NB	φ7	φ8 WB
MIN GREEN	6	40	-	-	-	50	-	-
WALK	-	-	-	-	-	-	-	0
PED CLR	-	-	-	-	-	-	-	0
PASSAGE	1	1	-	-	-	1	-	1
EXTENSION	1.8	1.8	-	-	-	1.8	-	2.1
MAX 1	30	70	-	-	-	80	-	40
MAX 2	30	70	-	-	-	80	-	40
YELLOW	4.5	4.5	-	-	-	4.5	-	4.1
RED CLR	1.0	1.0	-	-	-	1.0	-	*4.1
MEMORY	OFF	ON	-	-	-	ON	-	OFF
VEH RECALL	OFF	ON	-	-	-	ON	-	OFF
PED RECALL	OFF	ON	-	-	-	ON	-	OFF
INITIALIZE	R	G	-	-	-	G	-	R

NOTE: TIMINGS THE SAME AS PHASE 2 MOT EXCEPT FOR RED CLEARANCE WESTBOUND PHASE 8

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	97	18	49	-	-	-	67	-	33
2	100	37	15	60	-	-	-	75	-	25
3	75	15	12	47	-	-	-	59	-	16

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

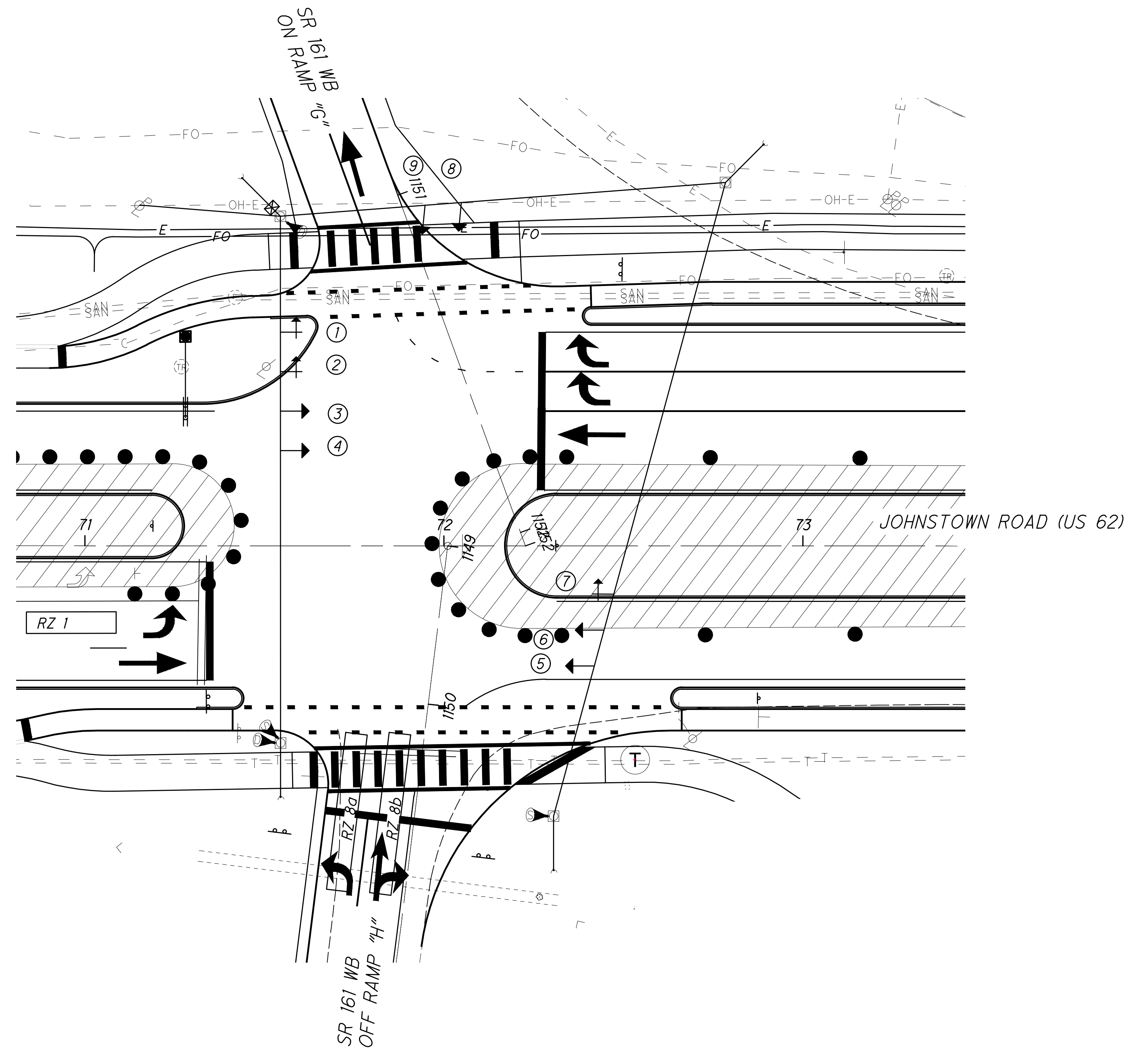


DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH x LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----	----
CAM2	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM3	RZ 8a	WB	φ8	6 X 32	+12	STOP-BAR	PRES	3
CAM3	RZ 8b	WB	φ8	6 X 32	+12	STOP-BAR	PRES	3
CAM4	----	NB	φ6	1 LANES X 600'	----	DILEMMA	----	----

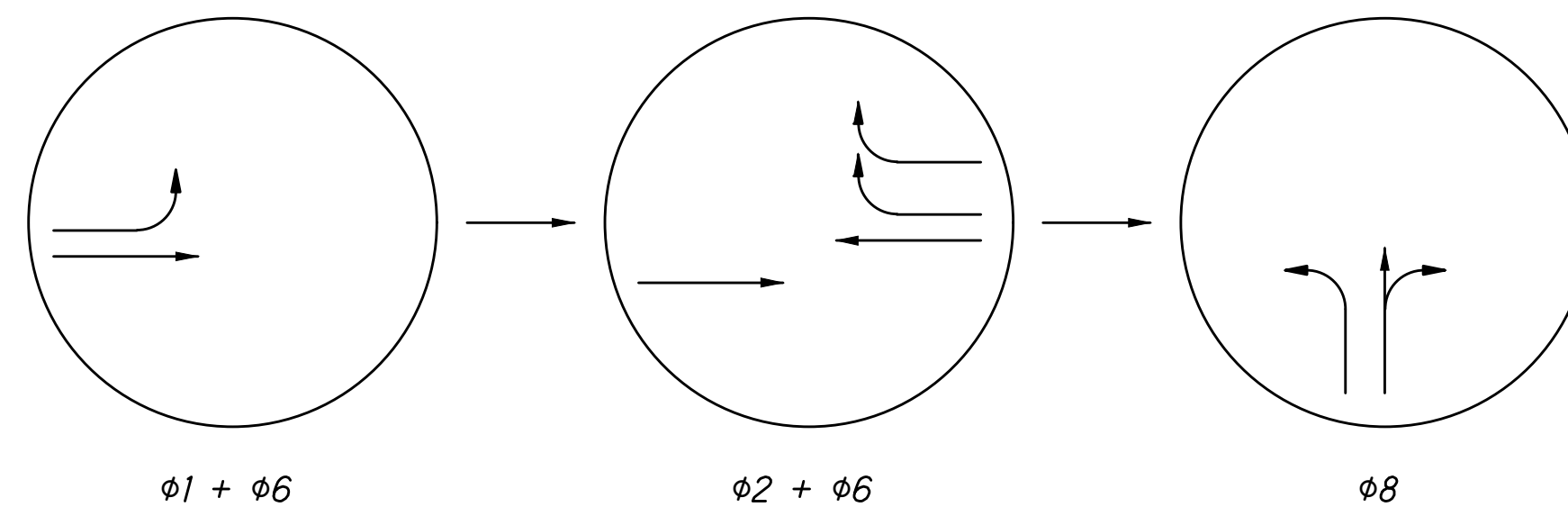
+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.

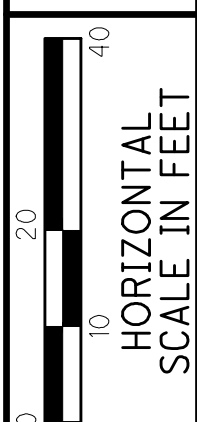
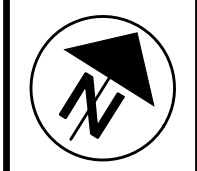


US 62 & WB SR 161 RAMPS PHASING DIAGRAM



- LEGEND**
- WORK AREA
  - DRUMS
  - COVERING OF EX. PAVEMENT MARKINGS

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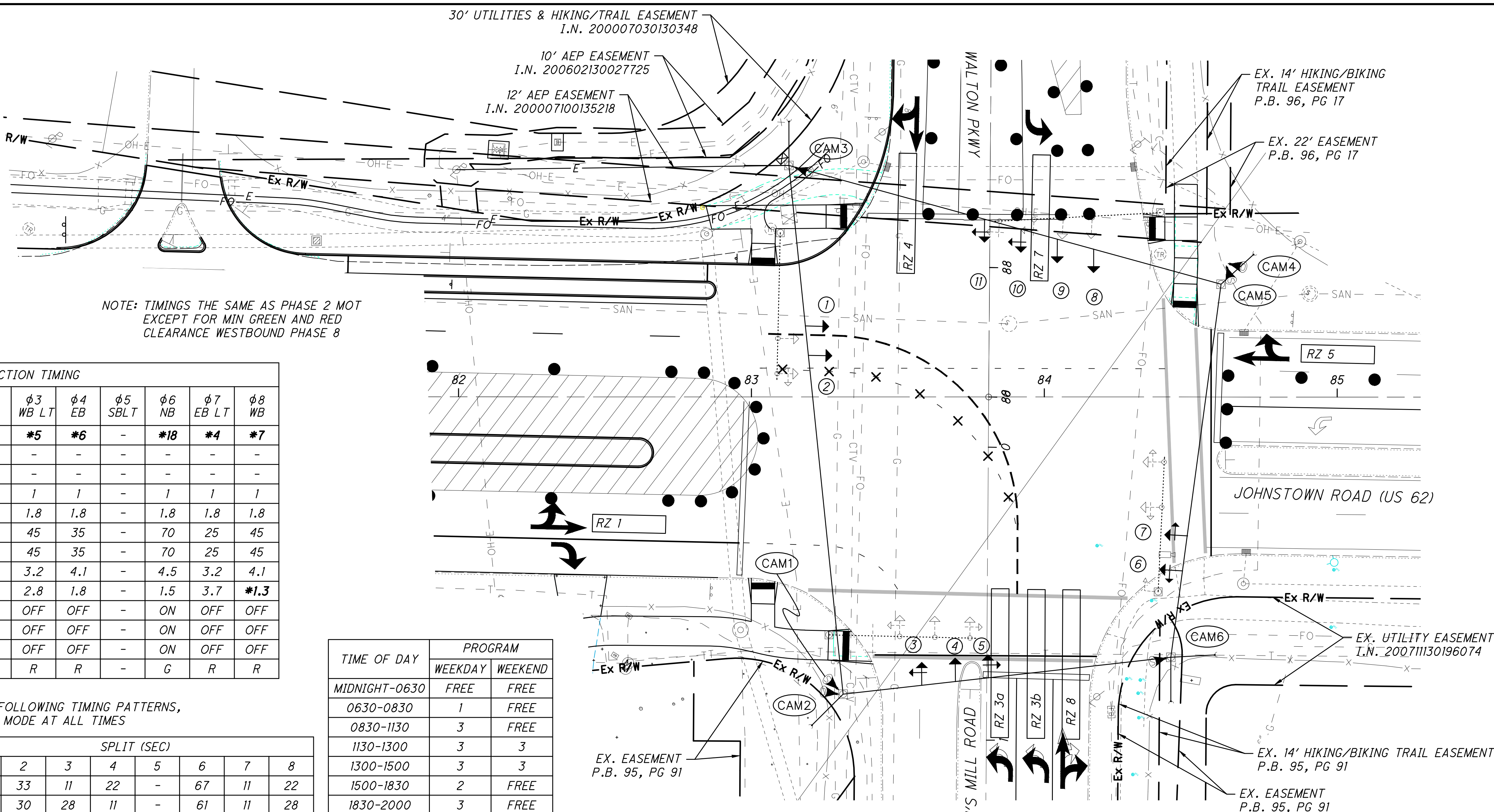
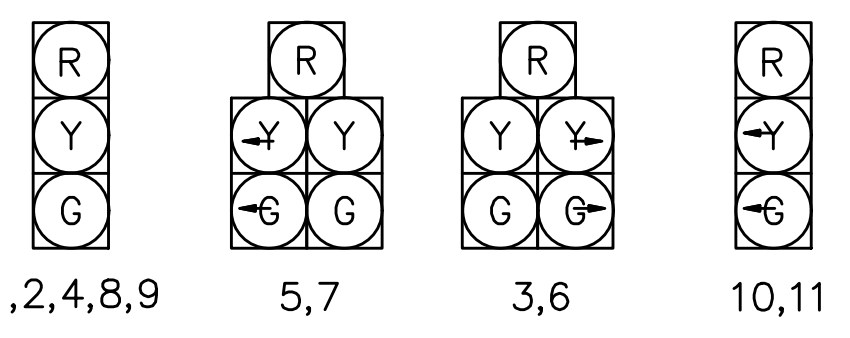
CALCULATED W/C/S CHECKED DLS

TEMPORARY TRAFFIC SIGNAL PLAN - PHASE 3  
SMITH'S MILL AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34

LEGEND

- WORK AREA
- DRUMS
- COVERING OF EX. PAVEMENT MARKINGS



NOTE: TIMINGS THE SAME AS PHASE 2 MOT EXCEPT FOR MIN GREEN AND RED CLEARANCE WESTBOUND PHASE 8

INTERSECTION TIMING									
PHASE	φ1 NBLT	φ2 SB	φ3 WB LT	φ4 EB	φ5 SBLT	φ6 NB	φ7 EB LT	φ8 WB	
MIN GREEN	-	*12	*5	*6	-	*18	*4	*7	
WALK	-	-	-	-	-	-	-	-	
PED CLR	-	-	-	-	-	-	-	-	
PASSAGE	-	1	1	1	-	1	1	1	
EXTENSION	-	1.8	1.8	1.8	-	1.8	1.8	1.8	
MAX 1	-	60	45	35	-	70	25	45	
MAX 2	-	60	45	35	-	70	25	45	
YELLOW	-	4.5	3.2	4.1	-	4.5	3.2	4.1	
RED CLR	-	1.0	2.8	1.8	-	1.5	3.7	*1.3	
MEMORY	-	ON	OFF	OFF	-	ON	OFF	OFF	
VEH RECALL	-	ON	OFF	OFF	-	ON	OFF	OFF	
PED RECALL	-	ON	OFF	OFF	-	ON	OFF	OFF	
INITIALIZE	-	G	R	R	-	G	R	R	

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	0	-	33	11	22	-	67	11	22
2	100	0	-	30	28	11	-	61	11	28
3	75	0	-	25	12	12	-	51	12	12

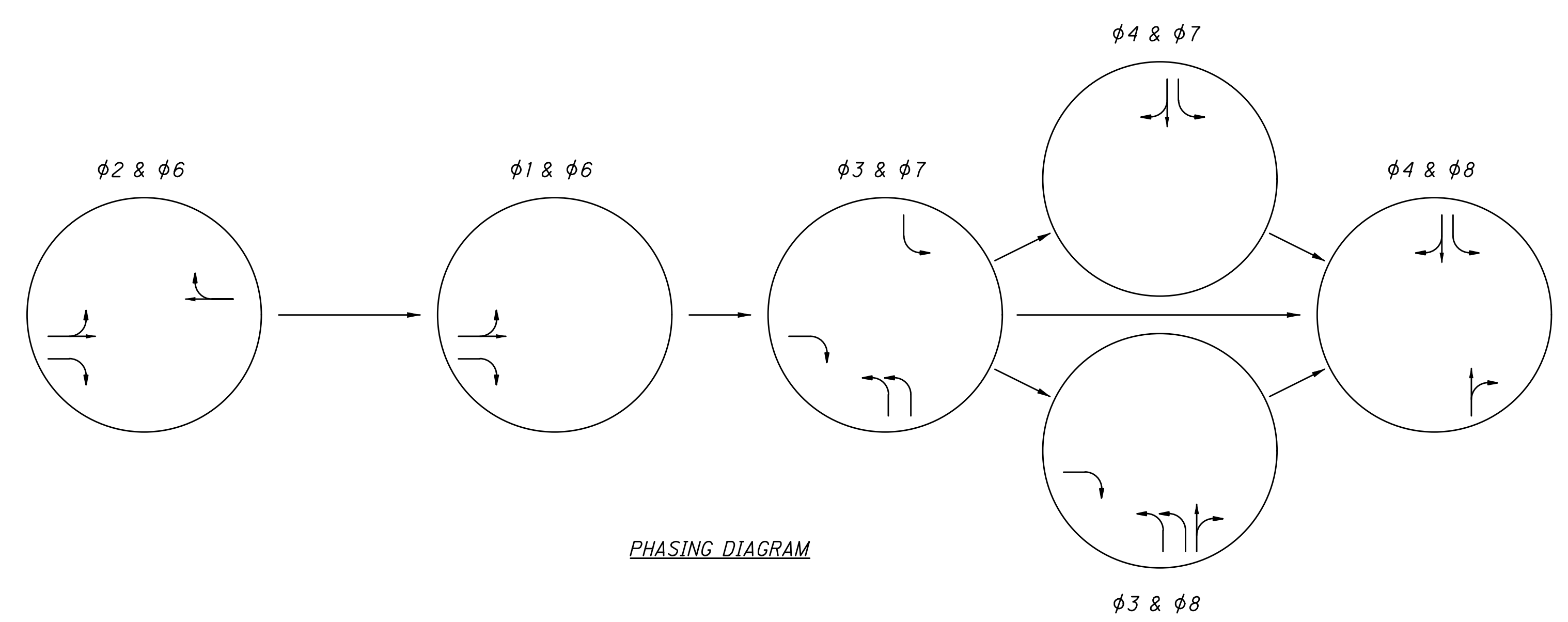
TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM2	----	NB	φ6	1 LANES X 600'	----	DILEMMA	----	----
CAM3	RZ 4b	EB	φ4	6 X 41	+18	STOP-BAR	PRES	3
CAM3	RZ 7	EB LT	φ7	6 X 43	+20	STOP-BAR	PRES	3
CAM4	----	SB	φ2	1 LANES X 600'	----	DILEMMA	----	----
CAM5	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES	3
CAM6	RZ 3a	WB LT	φ3	6 X 50	+29	STOP-BAR	PRES	3
CAM6	RZ 3b	WB LT	φ3	6 X 50	+29	STOP-BAR	PRES	3
CAM6	RZ 8	WB	φ8	6 X 50	+29	STOP-BAR	PRES	3

+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

CONTRACTOR TO VERIFY WITH SUPPLIER ON TEMPORARY DETECTOR PLACEMENT LOCATIONS.



PHASING DIAGRAM

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**DETOUR**

US 62 LEFT TURNS ONTO SMITH'S MILL ROAD SHALL BE CLOSED TO TRAFFIC WITHIN THE PROJECT WORK LIMITS FOR PHASES 3A AND 3B.

BEFORE THE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF THE CONTACT PERSON OR PERSONS WHO CAN BE CONTACTED TWENTY FOUR (24) HOURS PER DAY BY THE CITY ENGINEER, AND ALL INTERESTED LAW ENFORCEMENT AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR WILL ADVISE THE CITY ENGINEER SEVEN (7) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL PROVIDE ASSISTANCE/CLARIFICATION FOR ANY QUESTIONS.

NOTICE OF DETOUR SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN US 62 DETOUR SIGNS AND SIGN SUPPORTS AS DETAILED IN THE PLANS.

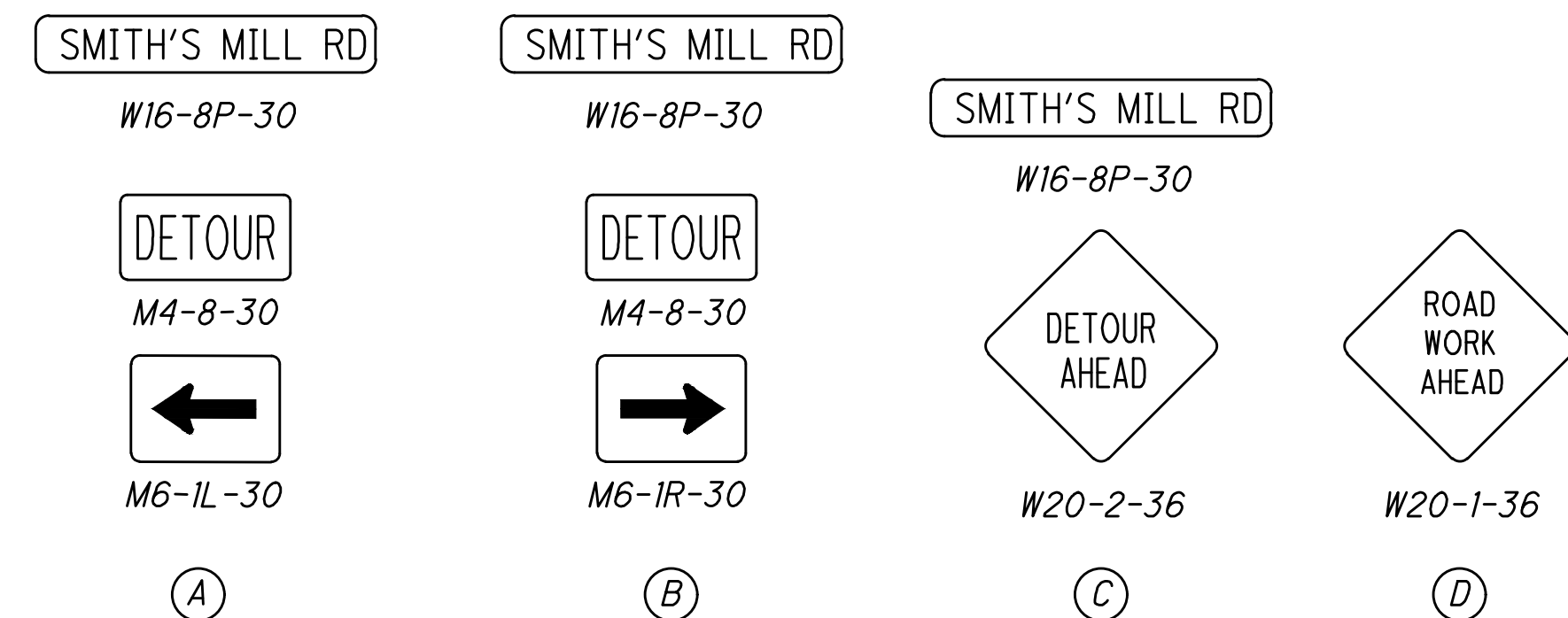
THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE DETOURING OF TRAFFIC.

ITEM 614, DETOUR SIGNING LUMP

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.



**LEGEND:**



**SIGN INDEX**



CALCULATED 0 500 1000  
 RJB  
 CHECKED  
 M/L/S  
 HORIZONTAL  
 SCALE IN FEET

**DETOUR PLAN**

**FRA-62-30.34**

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.			
8	44	45	127	128	129	130	177	179	180	181	OFFICE CALCS	01/SAF/PV	02/SAF/PV									
												14,727	1,892	12,835	204	10000	14,727	SY	PAVEMENT			
		23,380										5,263	18,117	254	01000	23,380	SY	SUBGRADE COMPACTION				
120													120	255	10010	120	SY	PAVEMENT PLANING, ASPHALT CONCRETE				
												2,500	315	2,185	304	20001	2,500	CY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1	8		
												4,967	771	4,196	305	11010	4,967	SY	AGGREGATE BASE, AS PER PLAN			
																			7" CONCRETE BASE, CLASS QC 1P			
												3,625		3,625	305	12010	3,625	SY	8" CONCRETE BASE, CLASS QC 1P			
												6,287	966	5,321	407	20000	6,287	GAL	NON-TRACKING TACK COAT			
												1,585	251	1,334	441	10100	1,585	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22M			
												43	43		452	12010	43	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P			
	9,281	41										1,686	7,636	609	26000	9,322	FT	TACK COAT, AND ASPHALT SETTING BED				
																			8' CONCRETE BASE (UNDER MEDIAN BRICK PAVERS)	9		
												521	93	428	823	10000	521	CY	BRICK PAVERS WITH SAND SWEEP JOINTS, NEOPRENE-MODIFIED ASPHALT ADHESIVE,			
												1,585	251	1,334	861	11100	1,585	CY	TACK COAT, AND ASPHALT SETTING BED			
												6,878	840	6,038	SPECIAL	69098200	6,878	SF	8' CONCRETE BASE (UNDER MEDIAN BRICK PAVERS)	9		
												6,878	840	6,038	SPECIAL	69098200	6,878	SF	6" AGGREGATE BASE (UNDER MEDIAN BRICK PAVERS)	9		
																			SANITARY SEWER			
		4													4	611	99654	4	EACH	MANHOLE ADJUSTED TO GRADE		
		1													1	611	99660	1	EACH	MANHOLE RECONSTRUCTED TO GRADE		
																			LIGHTING			
							LS						LS	SPECIAL	62540000	LS				MAINTAIN EXISTING LIGHTING	177	
								15	18	1		5	29	625	98000	34	EACH			LIGHTING, MISC.:CONNECTION, FUSED, PULL APART	177	
								28	8	1			37	625	98000	37	EACH			LIGHTING, MISC.:CONNECTION, UNFUSED, PERMANENT	177	
								15	18	1		5	29	625	98000	34	EACH			LIGHTING, MISC.:CONNECTION, UNFUSED, PULL APART	177	
								15	18	1		5	29	625	98000	34	EACH			LIGHTING, MISC.:DECORATIVE TEARDROP LUMINAIRE, SOLID-STATE (LED), 4000K	177	
													1		625	98000	1	EACH			LIGHTING, MISC.:DISCONNECT EXISTING CIRCUIT	177
								15	18	1		5	29	625	98000	34	EACH			LIGHTING, MISC.:GROUND ROD	177	
										5			5	625	98000	5	EACH			LIGHTING, MISC.:LIGHT POLE FOUNDATION REMOVED	177	
								15	18	1		5	29	625	98000	34	EACH			LIGHTING, MISC.:LIGHT POLE FOUNDATION, 24" X 6' DEEP	177	
										5			5	625	98000	5	EACH			LIGHTING, MISC.:LIGHT POLE REMOVED	177	
								15	18	1		5	29	625	98000	34	EACH			LIGHTING, MISC.:LIGHT POLE, DECORATIVE, AS PER PLAN	177	
										5			5	625	98000	5	EACH			LIGHTING, MISC.:PULL BOX REMOVED	177	
								11	4	2			17	625	98000	17	EACH			LIGHTING, MISC.:PULL BOX, 725.08, 25"X16"	177	
								2					2	625	98000	2	EACH			LIGHTING, MISC.:STEP DOWN TRANSFORMER, WALL MOUNTED	177	
								3,071	1,738	827		760	4,876	625	98100	5,636	FT			LIGHTING, MISC.:CONDUIT, 2", 725.04	177	
													305	175		480	625	98100	480	FT	LIGHTING, MISC.:CONDUIT, JACKED OR DRILLED: 3"	177
								644	828	46		184	1,334	625	98100	1,518	FT			LIGHTING, MISC.:NO. 10 AWG POLE AND BRACKET CABLE	177	
								3,646	2,133	867		810	5,836	625	98100	6,646	FT			LIGHTING, MISC.:NO. 4 AWG 480 VOLT DISTRIBUTION CABLE	177	
								3,071	1,738	827		760	4,876	625	98100	5,636	FT			LIGHTING, MISC.:TRENCH, 24" DEEP	177	
																				OTHER UTILITIES		
		8,498										8,498		625	25920	8,498	FT			CONDUIT, MISC.:CONDUIT 4", OPEN CUT (TELECOM)	11	
		6,762										6,762		625	25920	6,762	FT			CONDUIT, MISC.:CONDUIT 4", DIRECTIONAL BORED (TELECOM)	11	
		1,608										1,608		625	25920	1,608	FT			CONDUIT, MISC.:CONDUIT 5", OPEN CUT (ELECTRIC)	11	
		998										998		625	25920	998	FT			CONDUIT, MISC.:CONDUIT 5", DIRECTIONAL BORED (ELECTRIC)	11	
		3,642										3,642		625	25920	3,642	FT			CONDUIT, MISC.:CONDUIT 6", OPEN CUT (ELECTRIC)	11	
		2,898										2,898		625	25920	2,898	FT			CONDUIT, MISC.:CONDUIT 6", DIRECTIONAL BORED (ELECTRIC)	11	
		1,214										1,214		625	29700	1,214	FT			TRENCH, MISC.:TELECOMMUNICATION TRENCH AND BACKFILL, 36" COVER MINIMUM	11	
		1,214										1,214		625	29700	1,214	FT			TRENCH, MISC.:ELECTRIC TRENCH AND BACKFILL, 42" COVER MINIMUM	11	
		5										5		625	31600	5	EACH			PULL BOX, MISC.:PULL BOX 48" SQUARE WITH RACKING, AS PER PLAN	11	
		2,180										2,180		625	98000	2,180	EACH			LIGHTING, MISC.:TRACER WIRE AND CAUTION TAPE (TELECOMMUNITIONS)	11	
		2,180										2,180		625	98100	2,180	FT			LIGHTING, MISC.:TRACER WIRE AND CAUTION TAPE (ELECTRIC)	11	
																				TRAFFIC CONTROL		
			131	77	67							21	254	621	00100	275	EACH			RPM		
													150	630	03100	150	FT			GROUND MOUNTED SUPPORT, NO. 3 POST		
													2	630	09000	2	EACH			BREAKAWAY STRUCTURAL BEAM CONNECTION		
													3	630	72321	3	EACH			OVERHEAD SIGN SUPPORT, TYPE TC-12.31, DESIGN 6, AS PER PLAN	118	
													1	630	72331	1	EACH			OVERHEAD SIGN SUPPORT, TYPE TC-12.31, DESIGN 10, AS PER PLAN	118	

GENERAL SUMMARY

FRA-62-30.34



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SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
7	127	128	129	130	131	132	Landscaping	OFFICE CALCS	01/SAF/PV	02/SAF/PV							
TRAFFIC CONTROL, CONTINUED																	
						85				85	630	80100	85	SF	SIGN, FLAT SHEET		
						36				36	630	80201	36	SF	SIGN, GROUND MOUNTED EXTRUSHEET, AS PER PLAN	118	
						448				448	630	80225	448	SF	SIGN, OVERHEAD EXTRUSHEET, AS PER PLAN	118	
						2				2	630	84011	2	EACH	CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, TYPE TC-21.50, AS PER PLAN	118	
						2				2	630	84500	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION		
						2				2	630	84511	2	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION, AS PER PLAN	118	
					5					5	630	84901	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, AS PER PLAN	118	
					33	11			3	41	630	85201	44	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DELIVERY, AS PER PLAN	118	
					2				1	1	630	85701	2	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DELIVERY, AS PER PLAN	118	
					34	8			3	39	630	86002	42	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	118	
					4				2	2	630	86102	4	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	118	
					1					1	630	87451	1	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DELIVERY, AS PER PLAN	118	
					1				1		630	87551	1	EACH	REMOVAL OF POLE MOUNTED SIGN AND DELIVERY, AS PER PLAN	118	
					2					2	630	89821	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DELIVERY, AS PER PLAN	118	
					1					1	630	97700	1	EACH	SIGNING, MISC.:DECORATIVE SINGLE POST MOUNTED STREET NAME SIGN	118	
					3	3			2	4	630	97700	6	EACH	SIGNING, MISC.:REGULATORY AND WARNING SIGNS ON 2 WOOD POSTS	118	
					4					4	630	97700	4	EACH	SIGNING, MISC.:REGULATORY AND WARNING SIGNS ON 2 WOOD POSTS WITH ONE-WAY SIGNS	118	
					20	4			9	15	630	97700	24	EACH	SIGNING, MISC.:REGULATORY AND WARNING SIGNS ON SINGLE WOOD POST	118	
			0.96							0.96	644	00104	0.96	MILE	EDGE LINE, 6"		
			0.33							0.33	644	00204	0.33	MILE	LANE LINE, 6"		
			1,739							1,739	644	00404	1,739	FT	CHANNELIZING LINE, 12"		
49	41									90	644	00500	90	FT	STOP LINE		
12	24	24	6						6	60	644	01300	66	EACH	LANE ARROW		
2		1								3	644	01410	3	EACH	WORD ON PAVEMENT, 96"		
94	237	657								988	644	01510	988	FT	DOTTED LINE, 6"		
4	5									9	644	01630	9	EACH	BIKE LANE SYMBOL MARKING		
											644	19000		EACH	SHARED LANE MARKING		
4	5									9	644	50100	9	EACH	PAVEMENT MARKING, MISC.:LANE ARROW, 72"	118	
624	1,362									1,986	644	50200	1,986	SF	PAVEMENT MARKING, MISC.:GREEN COLORED PAVEMENT FOR BIKE LANES	118	
1,956	1,047	1,360							1,360	3,003	644	50300	4,363	FT	PAVEMENT MARKING, MISC.:CHANNELIZING LINE, 10" WHITE	118	
1,500	573	1,117								3,190	644	50300	3,190	FT	PAVEMENT MARKING, MISC.:CROSSWALK LINE, 10" WHITE	118	
210										210	644	50300	210	FT	PAVEMENT MARKING, MISC.:CROSSWALK LINE, GREEN	118	
	536									536	644	50300	536	FT	PAVEMENT MARKING, MISC.:DOTTED LINE, 5" GREEN	118	
		388								388	644	50300	388	FT	PAVEMENT MARKING, MISC.:DOTTED LINE, 5" WHITE	118	
		115								115	644	50300	115	FT	PAVEMENT MARKING, MISC.:DOTTED LINE, 5" YELLOW	118	
205	157	133								495	644	50300	495	FT	PAVEMENT MARKING, MISC.:STOP LINE, 20" WHITE	118	
261	115	73							334	115	644	50300	449	FT	PAVEMENT MARKING, MISC.:TRANSVERSE LINE, 20"	118	
	0.08	0.02	0.03						0.05	0.08	644	50400	0.13	MILE	PAVEMENT MARKING, MISC.:CENTER LINE, 5"	118	
	1.18	0.5	0.12						0.46	1.34	644	50400	1.8	MILE	PAVEMENT MARKING, MISC.:EDGE LINE, 5"	118	
	0.59	0.37	0.06						0.23	0.79	644	50400	1.02	MILE	PAVEMENT MARKING, MISC.:LANE LINE, 5"	118	
TRAFFIC SIGNALS SEE SHEET 151-152																	
LANDSCAPING																	
						20,667			20,667	659	10001	20,667	SY	SEEDING AND MULCHING, AS PER PLAN		193	
						49			49	661	00501	49	CY	MULCH, AS PER PLAN		193	
						255			255	661	20001	255	EACH	DECIDUOUS SHRUB, 15" HEIGHT, AS PER PLAN RHUS AROMATICA 'GRO-LOW' - GRO-LOW FRAGRANT SUMAC		193	
						215			215	661	20021	215	EACH	DECIDUOUS SHRUB, 18" HEIGHT, AS PER PLAN JUNIPERUS CHINENSIS 'SEA GREEN' - SEA GREEN JUNIPER		193	
						136			136	661	20061	136	EACH	DECIDUOUS SHRUB, 3' HEIGHT, AS PER PLAN HAMAMELIS VERNALIS - WITCH HAZEL		193	
						7			7	661	40081	7	EACH	DECIDUOUS TREE, 2" CALIPER, AS PER PLAN CRATAEGUS VIRIDIS 'WINTER KING' - WINTER KING HAWTHORN		193	
						41			41	661	40121	41	EACH	DECIDUOUS TREE, 3" CALIPER, AS PER PLAN GLEDITSIA T.I. 'SKYLINE' - SKYLINE HONEY LOCUST		193	
						13			13	661	40121	13	EACH	DECIDUOUS TREE, 3" CALIPER, AS PER PLAN QUERCUS ACUTISSIMA - SAWTOOTH OAK		193	
						50			50	661	40121	50	EACH	DECIDUOUS TREE, 3" CALIPER, AS PER PLAN ULMUS X 'FRONTIER' - FRONTIER ELM		193	
						44			44	661	40121	44	EACH	DECIDUOUS TREE, 3" CALIPER, AS PER PLAN ACER RUBRUM 'RED SUNSET' - RED SUNSET RED MAPLE		193	
						13			13	661	40121	13	EACH	DECIDUOUS TREE, 3" CALIPER, AS PER PLAN ACER SACCHARUM 'GREEN MOUNTAIN' - GREEN MOUNTAIN SUGAR MAPLE		193	
1,250						529			1,779	SPECIAL	69098700	1,779	CY	TREE SOIL MIX FURNISHED & PLACED, AS PER PLAN (36" DEPTH UPPER HORIZON)		193	
						49			49	SPECIAL	69098700	49	CY	SHRUBS AMENDED SOILS FURNISHED & PLACED, AS PER PLAN (2" DEPTH LOWER HORIZON)		193	
						2,297			2,297	SPECIAL	69098700	2,297	CY	LAWN SOIL MIX FURNISHED & PLACED, AS PER PLAN (4" DEPTH LOWER HORIZON)		193	

GENERAL SUMMARY

FRA-62-30.34

CALCULATED  
WCS  
CHECKED  
DLS







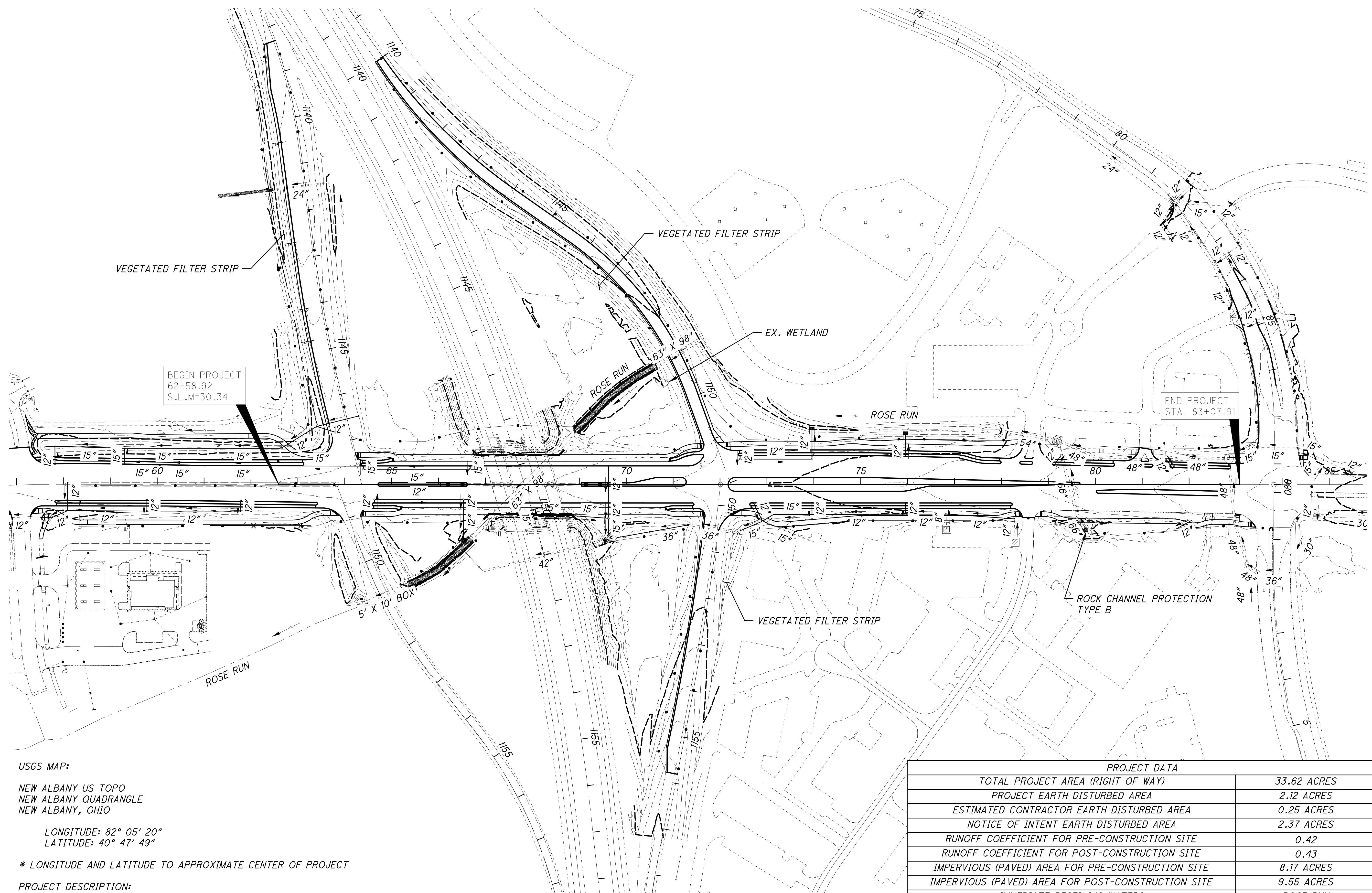




CALCULATED 0 100 200  
MGS  
CHECKED  
M.L.S.  
HORIZONTAL  
SCALE IN FEET

PROJECT SITE PLAN

FRA-62-30.34



BEGIN PROJECT  
62+58.92  
S.L.M=30.34

END PROJECT  
STA. 83+07.91

USGS MAP:

NEW ALBANY US TOPO  
NEW ALBANY QUADRANGLE  
NEW ALBANY, OHIO

LONGITUDE: 82° 05' 20"  
LATITUDE: 40° 47' 49"

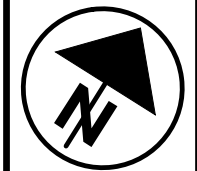
\* LONGITUDE AND LATITUDE TO APPROXIMATE CENTER OF PROJECT

PROJECT DESCRIPTION:

INTERSECTION IMPROVEMENTS INCLUDING TRAFFIC SIGNALS, BIKE LANES, LEISURE PATHS, RAMP WIDENING, TURN LANES, STORM SEWERS, LANDSCAPING, AND ISLANDS FOR 2000 FEET ON US 62 AND 3300 FEET ON SIDE ROADS AND RAMPS.

PROJECT DATA	
TOTAL PROJECT AREA (RIGHT OF WAY)	33.62 ACRES
PROJECT EARTH DISTURBED AREA	2.12 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	2.37 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.42
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.43
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	8.17 ACRES
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE	9.55 ACRES
IMMEDIATE RECEIVING WATERS	ROSE RUN
SUBSEQUENT RECEIVING WATERS	BIG WALNUT CREEK

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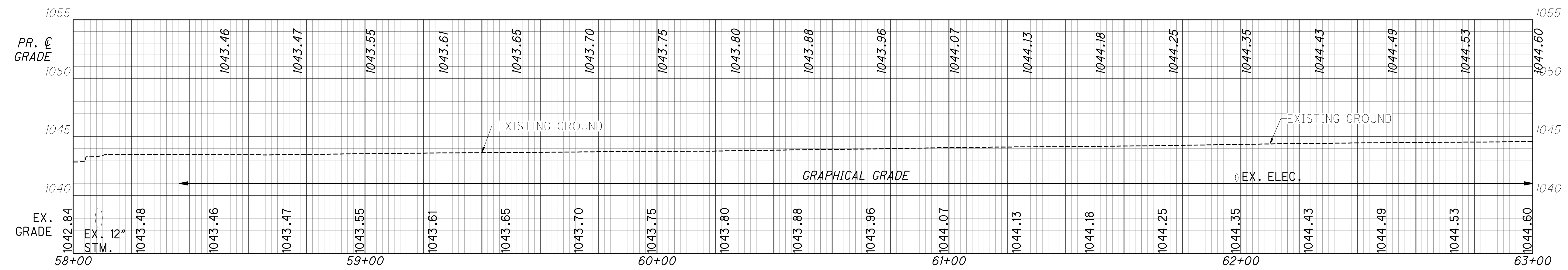
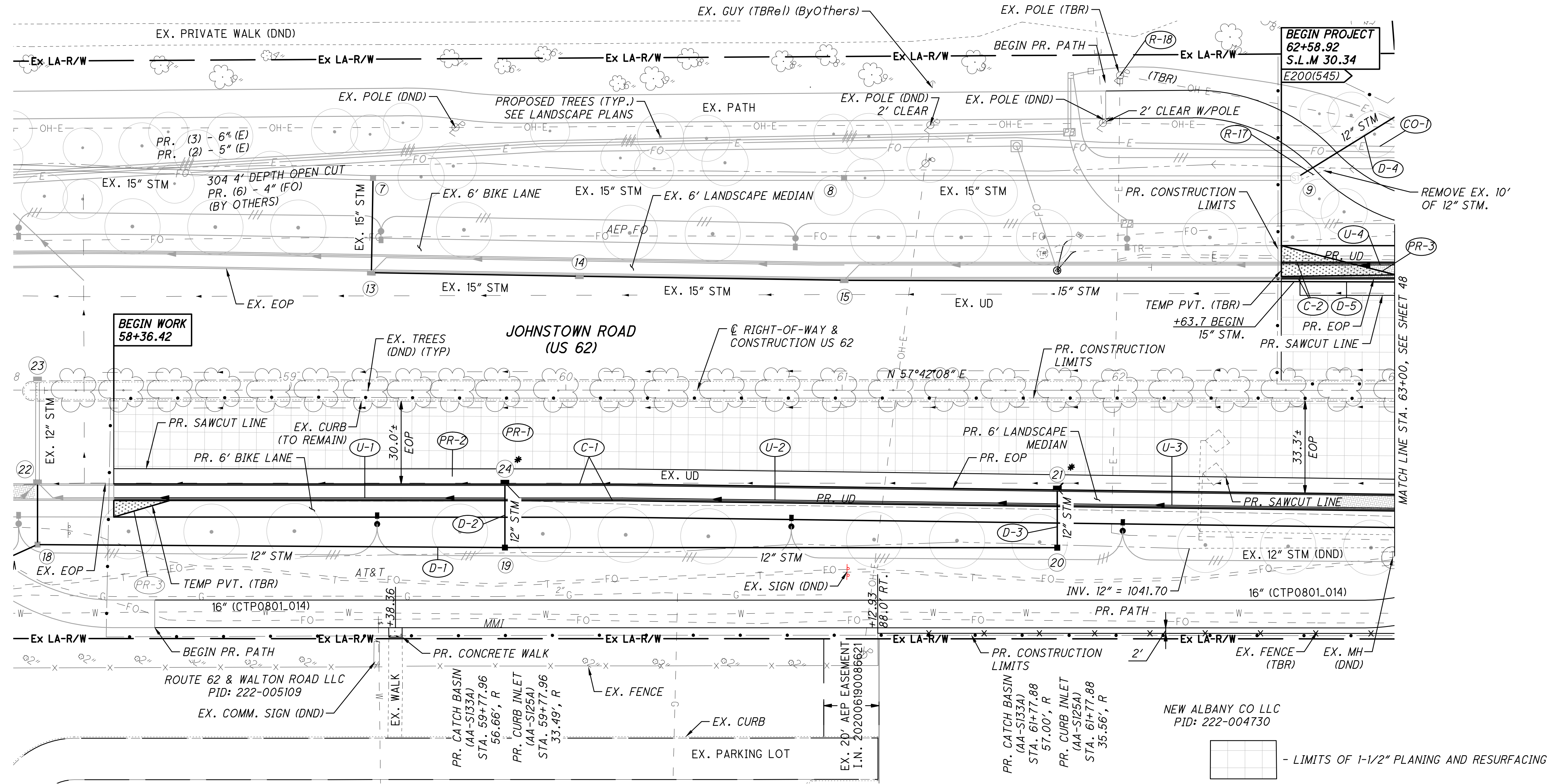
0 10 20 30 40  
HORIZONTAL SCALE IN FEET

CALCULATED MGS  
CHECKED M.L.S.

**JOHNSTOWN ROAD (US 62) ROADWAY PLAN**  
STA. 58+00 TO STA. 63+00

**FRA-62-30.34**

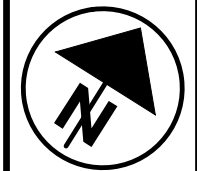
47  
202



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- NOTES:
- SEE SHEETS 133-138 FOR SIGNING AND MARKING PLAN.
  - SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.

- SEE SHEETS 112-114 FOR STORM SEWER PROFILES.  
\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.



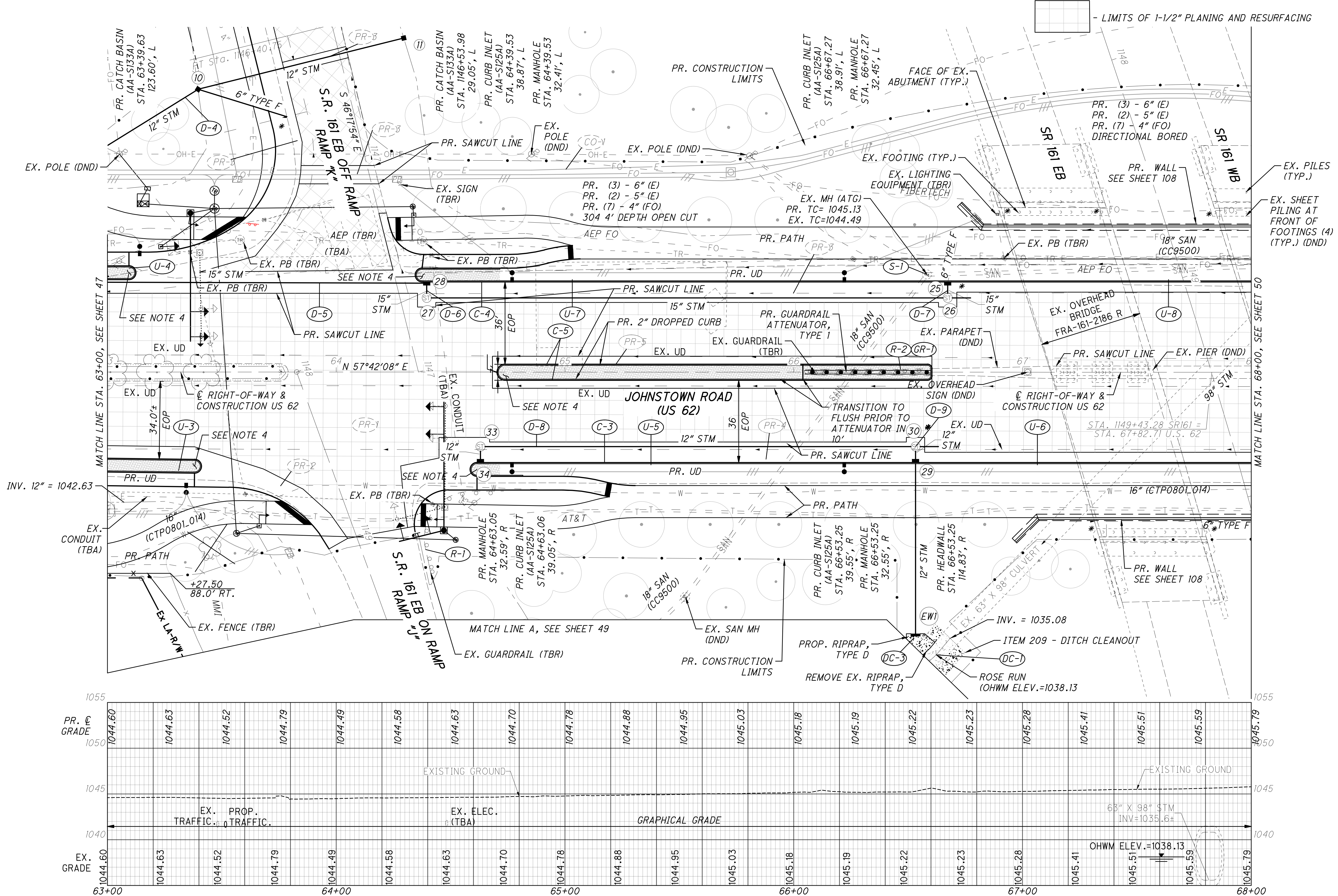
0 20 40  
HORIZONTAL  
SCALE IN FEET

CALCULATED MGS  
CHECKED MLS

**JOHNSTOWN ROAD (US 62) ROADWAY PLAN**  
STA. 63+00 TO STA. 68+00

**FRA-62-30.34**

- LIMITS OF 1-1/2" PLANING AND RESURFACING



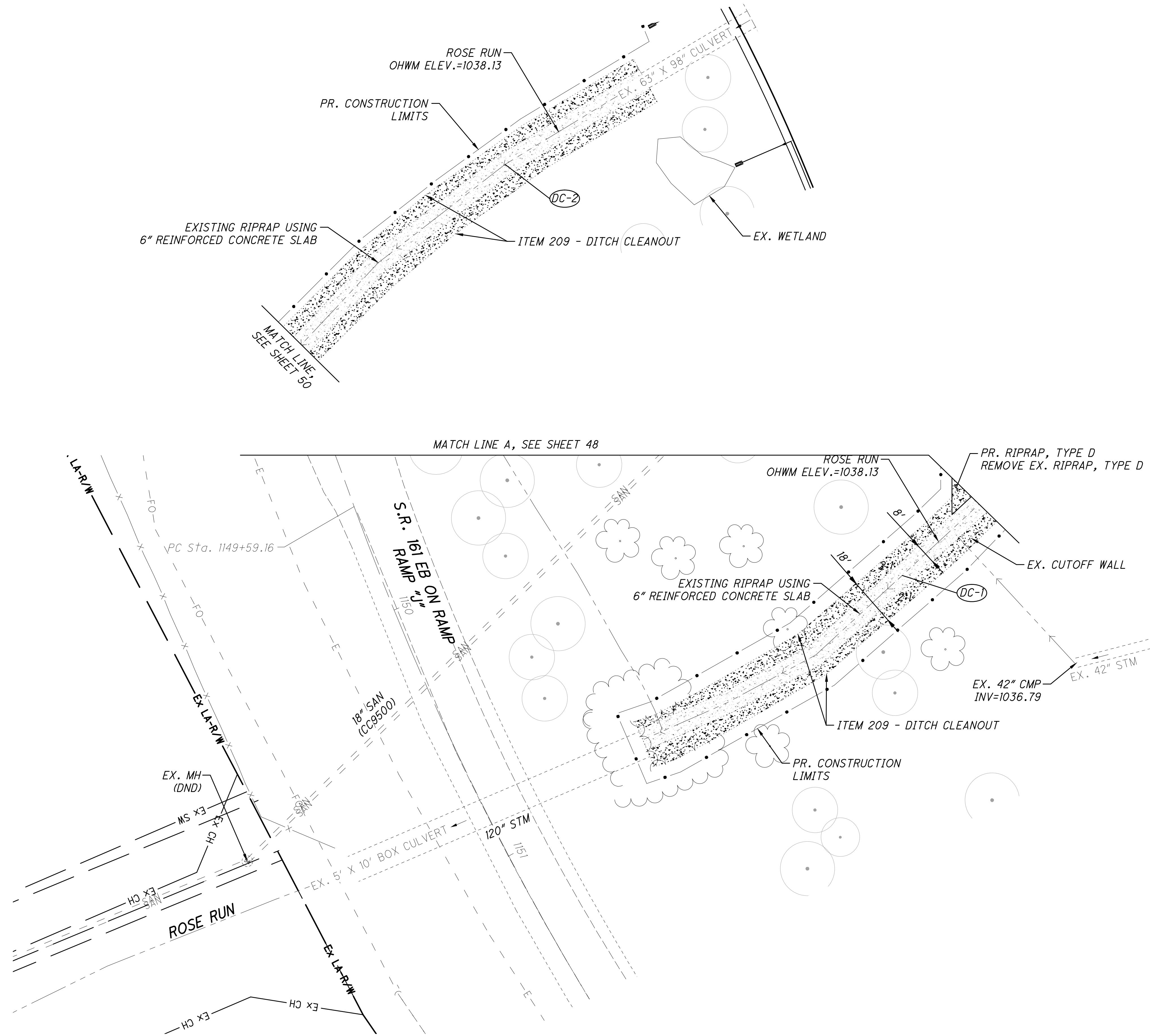
PR. $\nabla$ GRADE	1044.60	1044.63	1044.52	1044.79	1044.49	1044.58	1044.63	1044.70	1044.78	1044.88	1044.95	1045.03	1045.18	1045.19	1045.22	1045.23	1045.28	1045.41	1045.51	1045.59	1045.79
EX. GRADE	1044.60	1044.63	1044.52	1044.79	1044.49	1044.58	1044.63	1044.70	1044.78	1044.88	1044.95	1045.03	1045.18	1045.19	1045.22	1045.23	1045.28	1045.41	1045.51	1045.59	1045.79

- NOTES:
- SEE SHEETS 133-138 FOR SIGNING AND MARKING PLAN.
  - SEE SHEET 100 FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 153-155 FOR SIGNAL PLANS.
  - REFER TO ODOT SCD RM-3.1 FOR VERTICAL TRANSITION OF BRICK TRAFFIC DIVIDERS.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
- \* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

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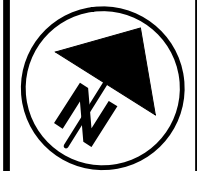


0 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED MGS  
CHECKED M.L.S.

JOHNSTOWN ROAD (US 62) ROADWAY PLAN  
MATCH LINE A

FRA-62-30.34



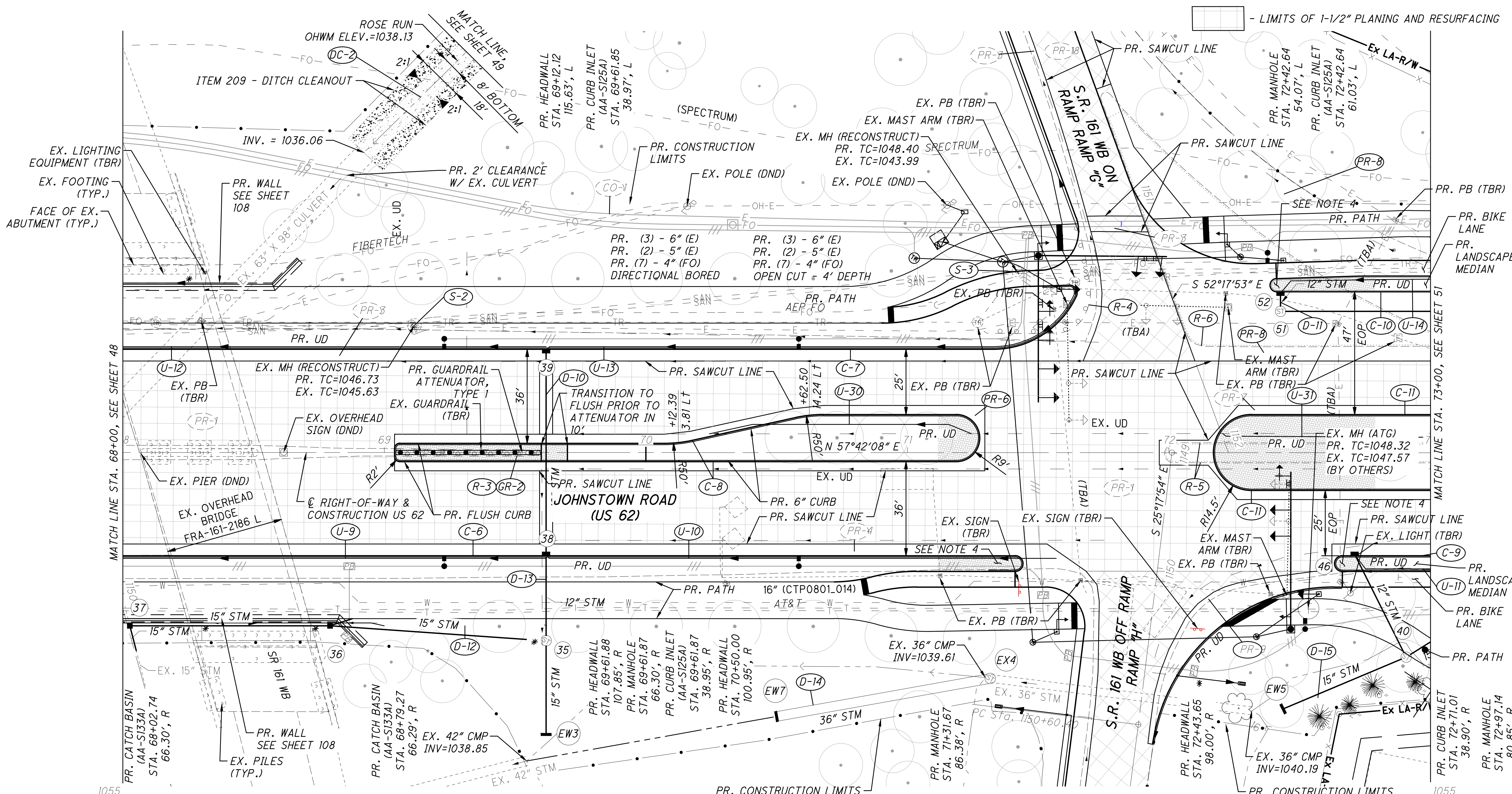
0 10 20 30 40  
HORIZONTAL SCALE IN FEET

CALCULATED MGS  
CHECKED M.L.S.

**JOHNSTOWN ROAD (US 62) ROADWAY PLAN**  
STA. 68+00 TO STA. 73+00

**FRA-62-30.34**

50  
202



PR. @ GRADE	1045.79	1045.91	1046.11	1046.29	1046.56	1046.72	1046.94	1047.05	1047.20	1047.40	1047.62	1047.81	1048.02	1048.21	1048.38	1048.61	1049.00	1049.44	1049.62	1049.82	1050.01
EXISTING GROUND																					
EX. LGT.																					
EX. GRADE	1045.79	1045.91	1046.11	1046.29	1046.56	1046.72	1046.94	1047.05	1047.20	1047.40	1047.62	1047.81	1048.02	1048.21	1048.38	1048.61	1049.00	1049.44	1049.62	1049.82	1050.01

**NOTES:**

- SEE SHEETS 133-138 FOR SIGNING AND MARKING PLAN.
  - SEE SHEET 101 FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 156-158 FOR SIGNAL PLAN.
  - REFER TO ODOT SCD RM-3.1 FOR VERTICAL TRANSITION OF BRICK TRAFFIC DIVIDERS.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
- \* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

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10  
20  
30  
40  
HORIZONTAL  
SCALE IN FEET

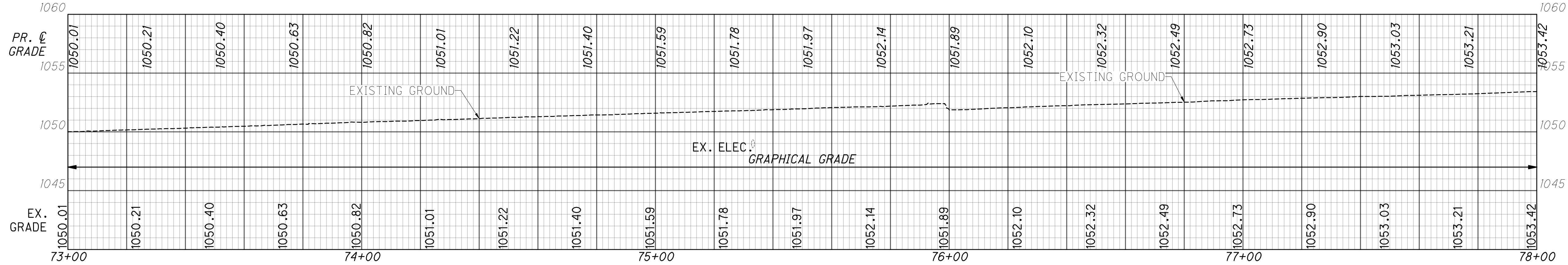
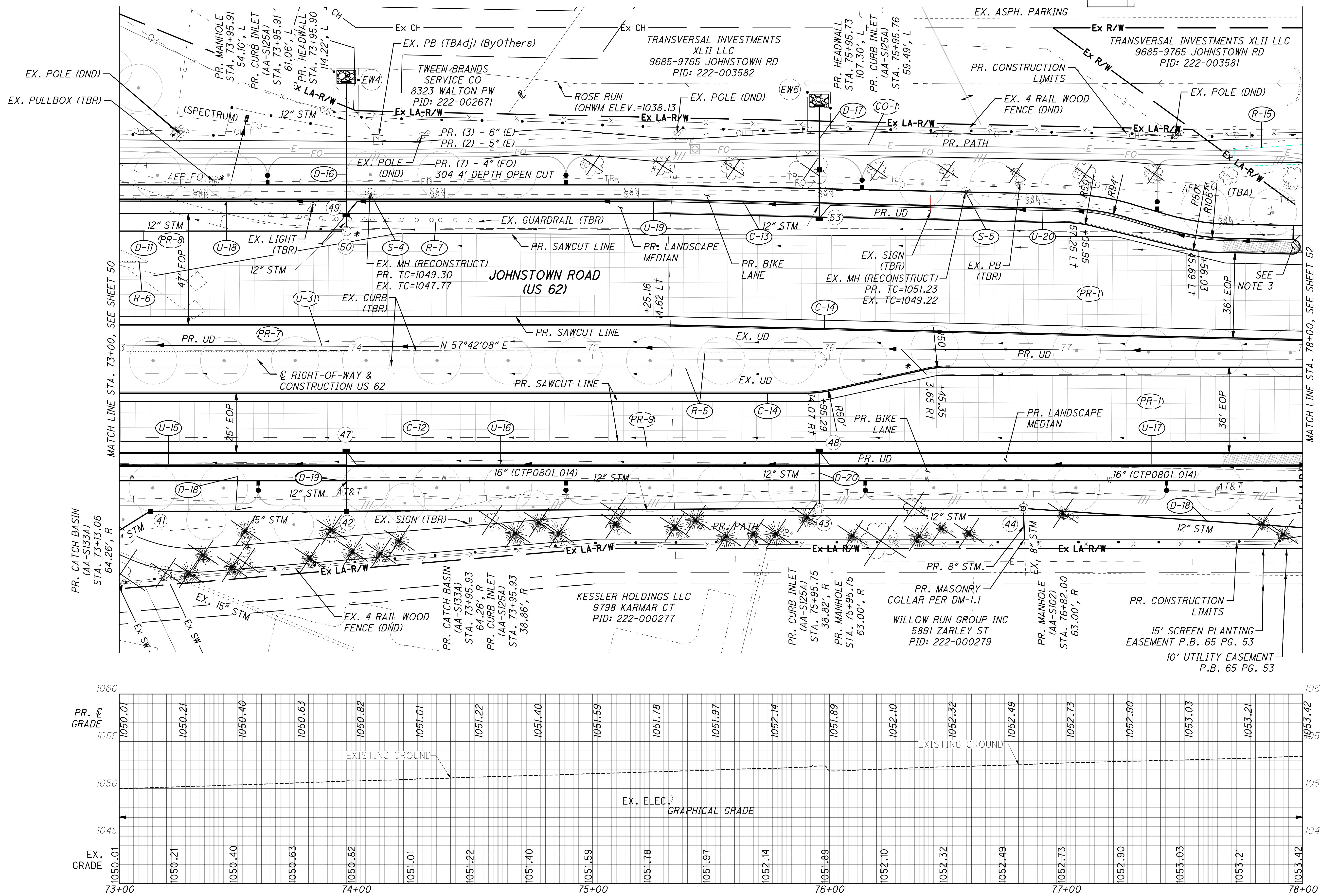
CALCULATED  
MGS  
CHECKED  
MLS

**JOHNSTOWN ROAD (US 62) ROADWAY PLAN**  
**STA. 73+00 TO STA. 78+00**

**FRA-62-30.34**

51  
202

- LIMITS OF 1-1/2" PLANING AND RESURFACING



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- NOTES:**
- SEE SHEETS 133-138 FOR SIGNING AND MARKING PLAN.
  - SEE INTERSECTION DETAIL SHEETS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - REFER TO ODOT SCD RM-3.1 FOR VERTICAL TRANSITION OF BRICK TRAFFIC DIVIDERS.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

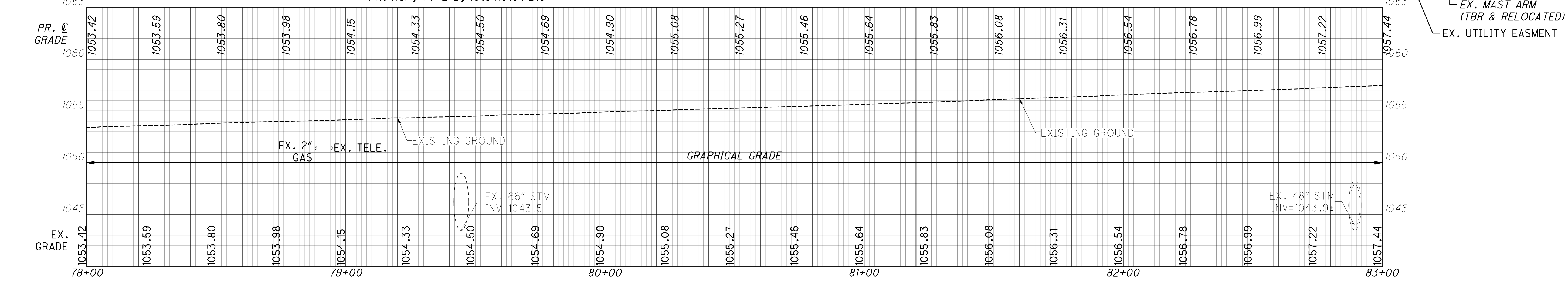
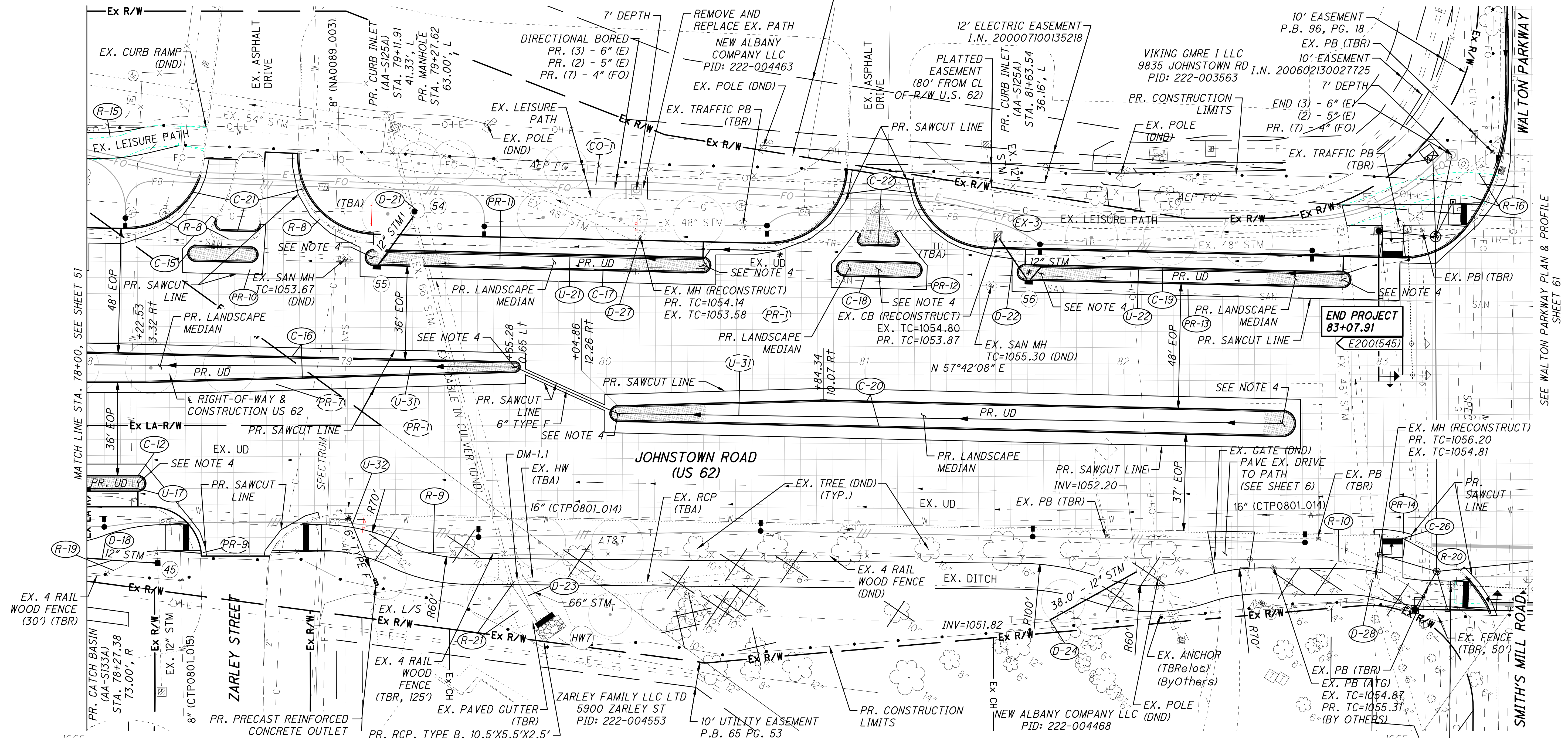
- NOTES:
- SEE SHEETS 133-138 FOR SIGNING AND MARKING PLAN.
  - SEE SHEETS 103-104 FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.

- SEE SHEETS 159-161 FOR SIGNAL PLANS.
- REFER TO ODOT SCD RM-3.1 FOR VERTICAL TRANSITION OF BRICK TRAFFIC DIVIDERS.
- DRIVE PROFILE, SEE SHEET 74
- SEE SHEETS 105-107 FOR STORM SEWER PROFILES.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

30' UTILITIES & HIKING/TRAIL EASEMENT  
I.N. 200007030130348  
RE-RECORDED  
I.N. 200101100006699

LIMITS OF 1-1/2" PLANING AND RESURFACING



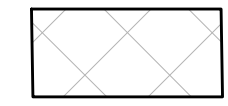
JOHNSTOWN ROAD (US 62) ROADWAY PLAN STA. 78+00 TO END PROJECT  
 FRA-62-30.34  
 SHEET 61  
 SEE WALTON PARKWAY PLAN & PROFILE

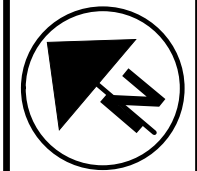
CALCULATED MGS CHECKED M.L.S.

HORIZONTAL SCALE IN FEET

52  
202

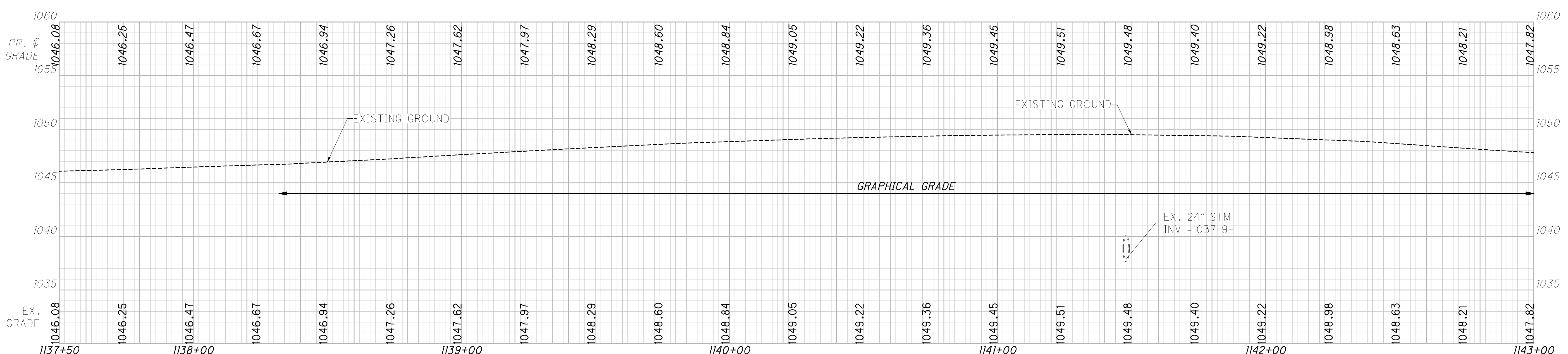
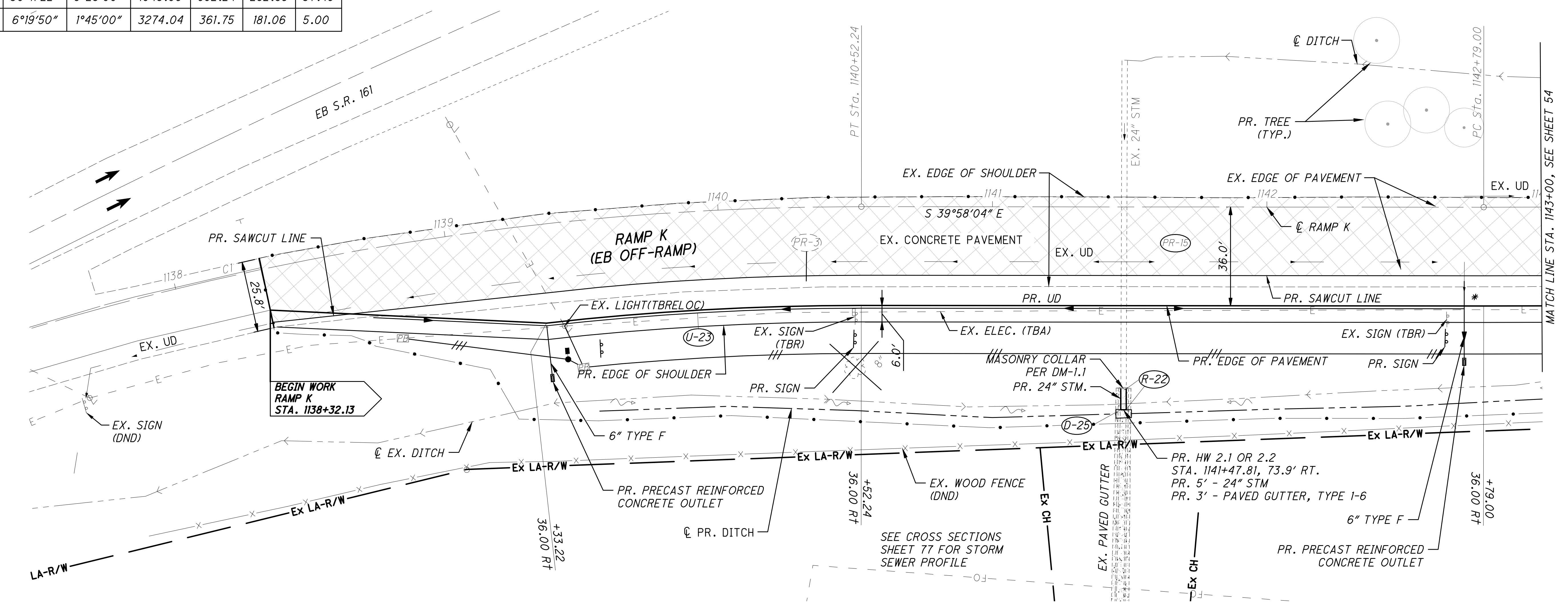
CURVE TABLE: RAMP K						
CURVE #	DELTA	Dc	L	L	T	E
C1	30°11'22"	5°28'00"	1048.09	552.24	282.69	37.45
C2	6°19'50"	1°45'00"	3274.04	361.75	181.06	5.00

 - LIMITS OF 1-1/2" PLANING AND RESURFACING



CALCULATED MGS  
CHECKED ML.S

0 10 20 40  
HORIZONTAL SCALE IN FEET



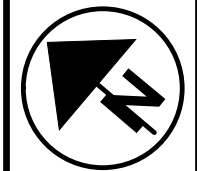
- NOTES:
- SEE SHEETS 139-140 FOR SIGNING AND MARKING PLAN.
  - SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  - SEE SHEETS 162-175 FOR SIGNAL PLANS.
- \* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

**PLAN & PROFILE - RAMP K  
STA. 1138+00 TO STA. 1143+00**

**FRA-62-30.34**

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☒ - LIMITS OF 1-1/2" PLANING AND RESURFACING



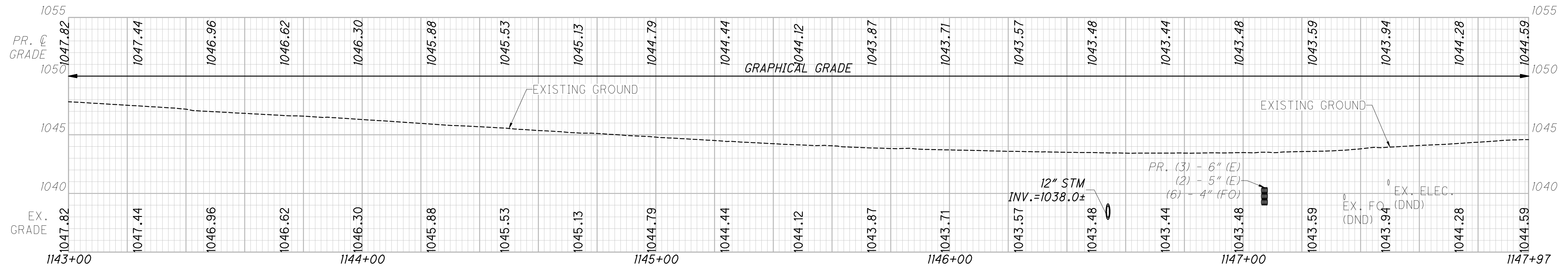
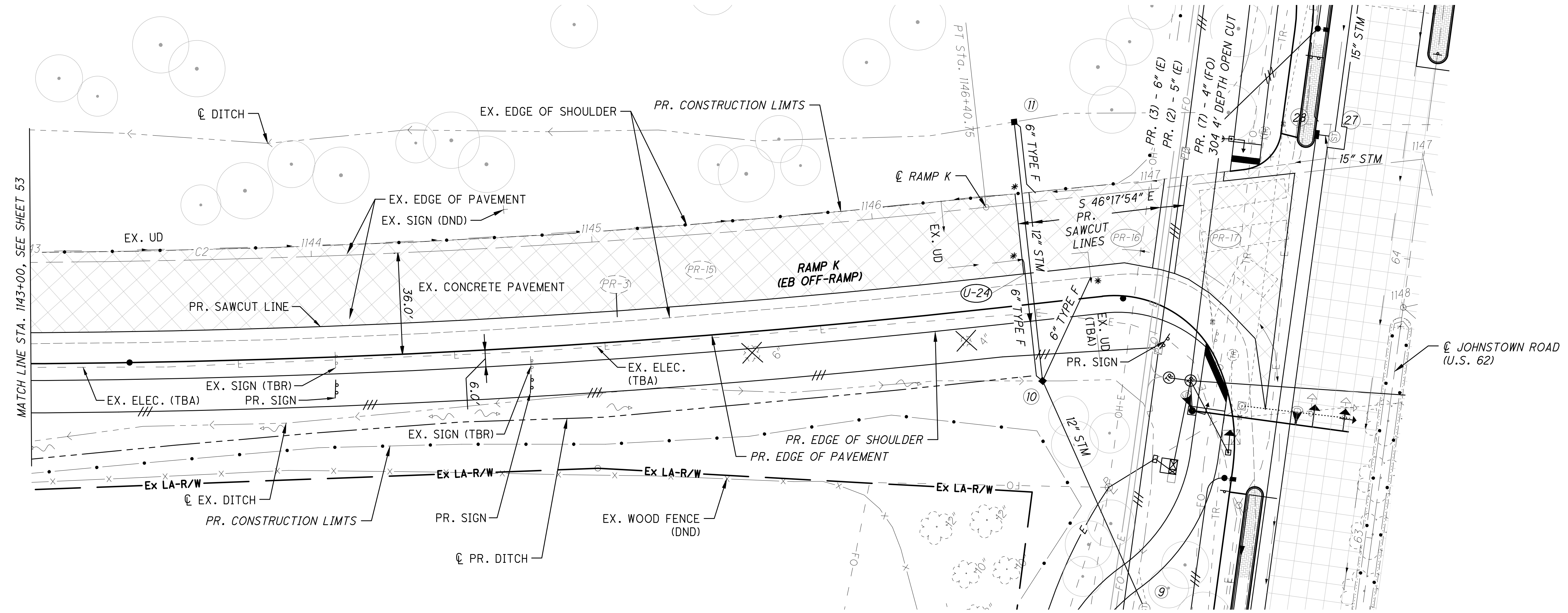
0 10 20  
HORIZONTAL SCALE IN FEET

CALCULATED M/GS CHECKED M/L.S

PLAN & PROFILE - RAMP K  
STA. 1143+00 TO STA. 1147+97.21

FRA-62-30.34

54  
202



CURVE TABLE: RAMP K

CURVE #	DELTA	Dc	L	L	T	E
C1	30°11'22"	5°28'00"	1048.09	552.24	282.69	37.45
C2	6°19'50"	1°45'00"	3274.04	361.75	181.06	5.00

- NOTES:
- SEE SHEETS 139-140 FOR SIGNING AND MARKING PLAN.
  - SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  - SEE SHEETS 162-175 FOR SIGNAL PLANS.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

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☒ - LIMITS OF 1-1/2" PLANING AND RESURFACING



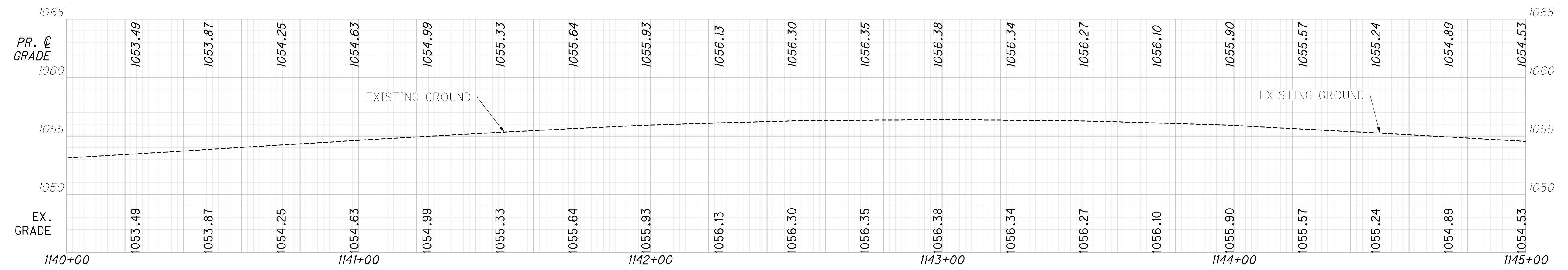
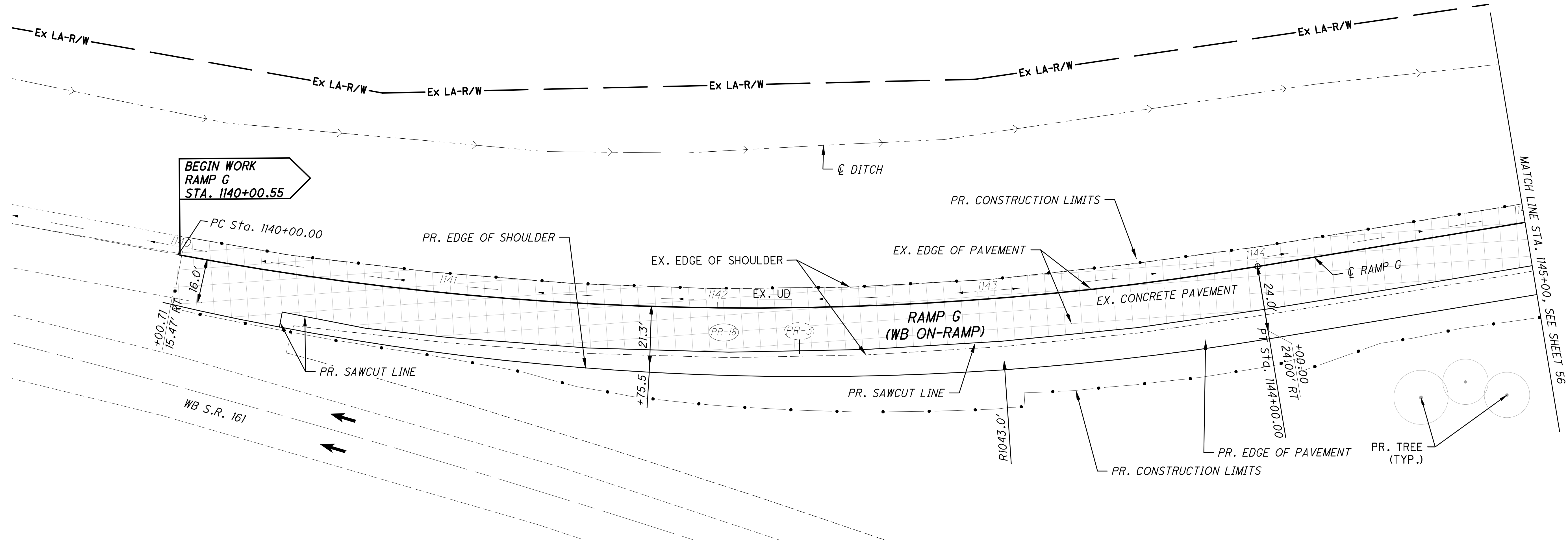
0 10 20  
HORIZONTAL  
SCALE IN FEET

CALCULATED MGS  
CHECKED M.L.S.

**PLAN & PROFILE - RAMP G  
STA. 1140+00 TO STA. 1145+00**

**FRA-62-30.34**

55  
202



- NOTES:**
1. SEE SHEETS 141-143 FOR SIGNING AND MARKING PLAN.
  2. SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  3. SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  4. SEE SHEETS 162-175 FOR SIGNAL PLANS.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

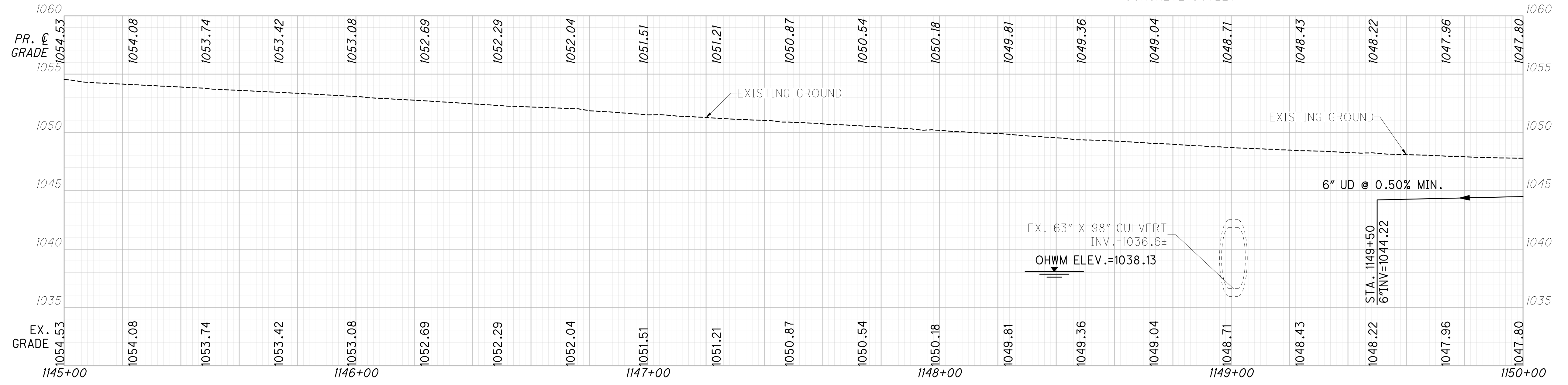
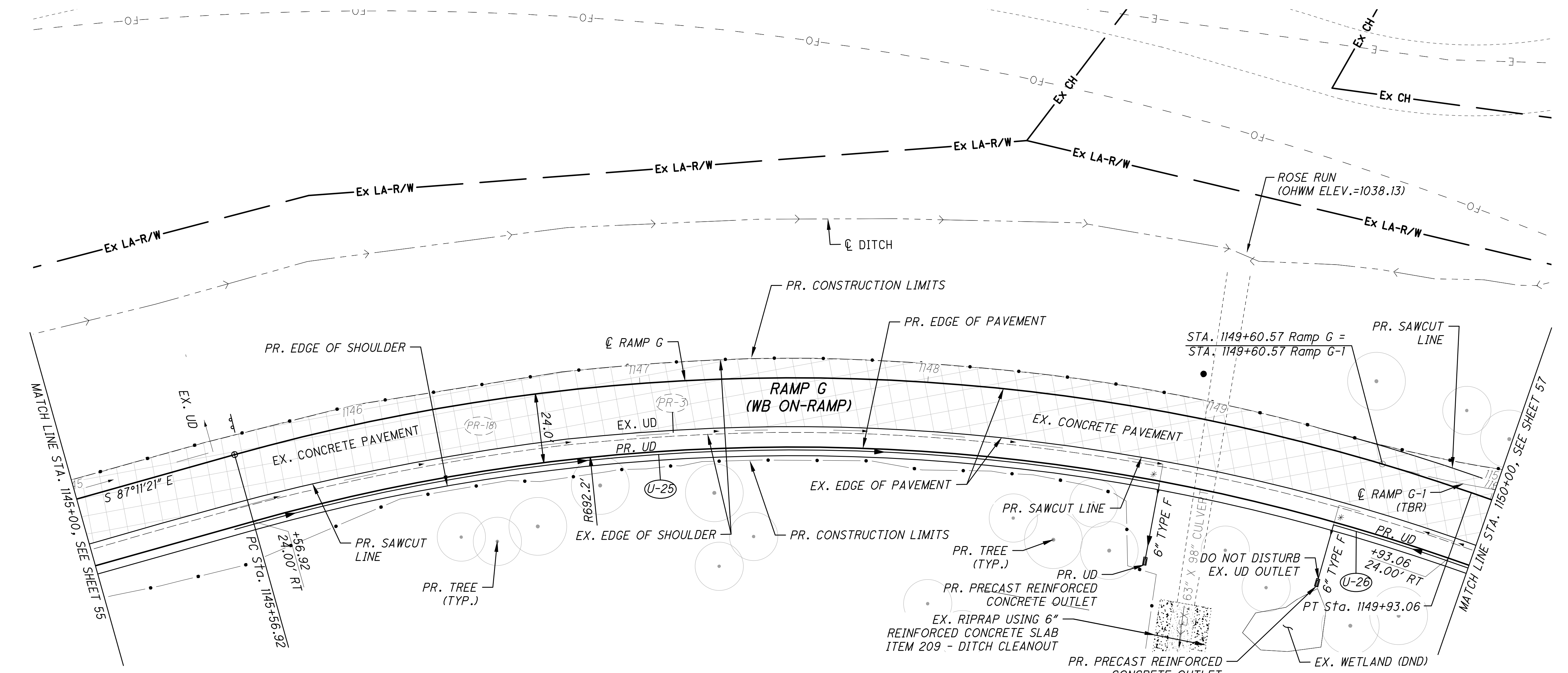
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▨ - LIMITS OF 1-1/2" PLANING AND RESURFACING



0 10 20  
HORIZONTAL SCALE IN FEET

CALCULATED M/GS  
CHECKED M/LS



- NOTES:
- SEE SHEETS 141-143 FOR SIGNING AND MARKING PLAN.
  - SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  - SEE SHEETS 162-175 FOR STORM SEWER PROFILES.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

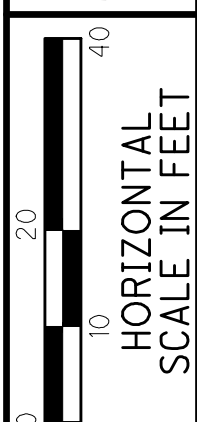
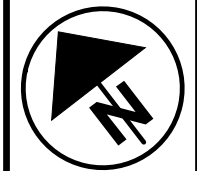
PLAN & PROFILE - RAMP G  
STA. 1145+00 TO STA. 1150+00

FRA-62-30.34

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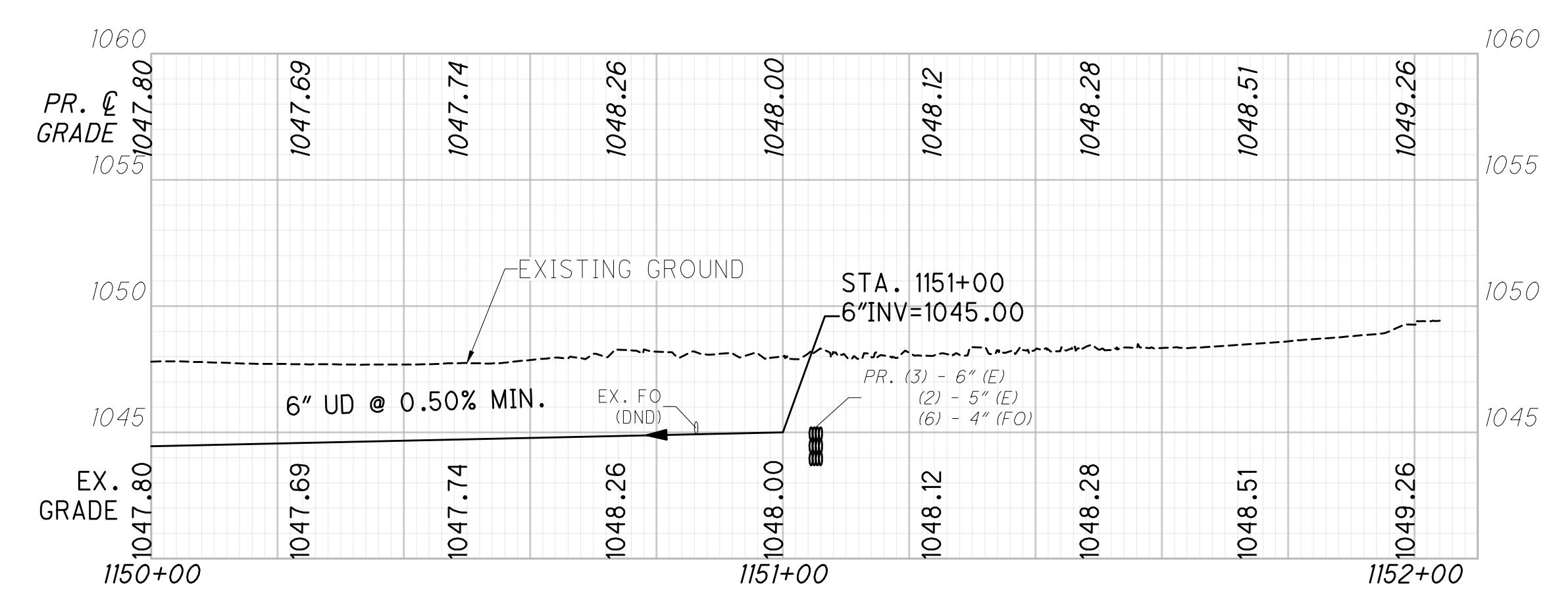
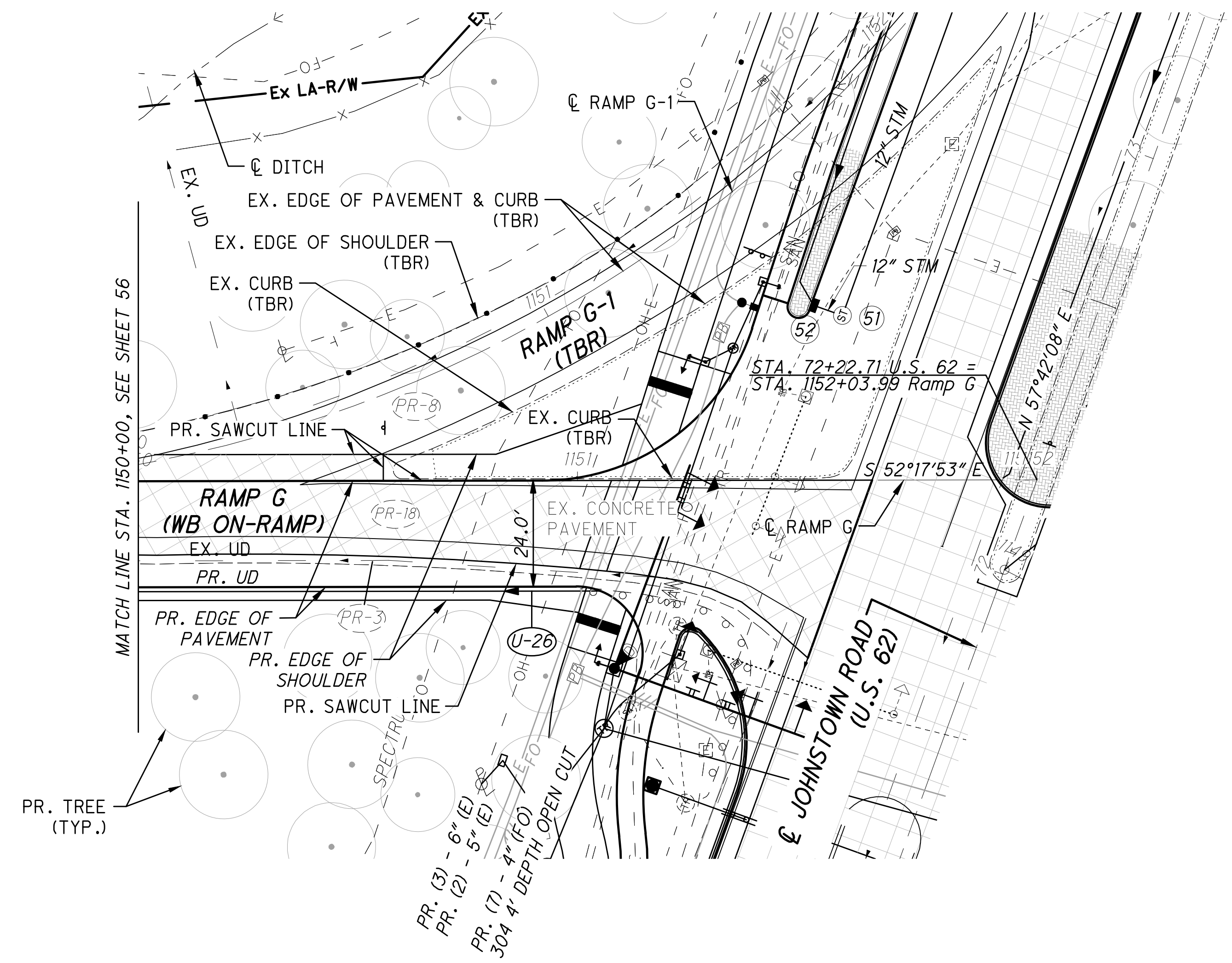
— LIMITS OF 1-1/2" PLANING AND RESURFACING



CALCULATED MGS  
CHECKED M.L.S.

**PLAN & PROFILE - RAMP G  
STA. 1150+00 TO STA. 1152+03.99**

**FRA-62-30.34**

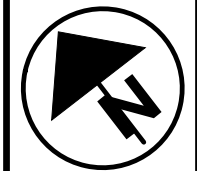


- NOTES:**
1. SEE SHEETS 141-143 FOR SIGNING AND MARKING PLAN.
  2. SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  3. SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  4. SEE SHEETS 162-175 FOR STORM SEWER PROFILES.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

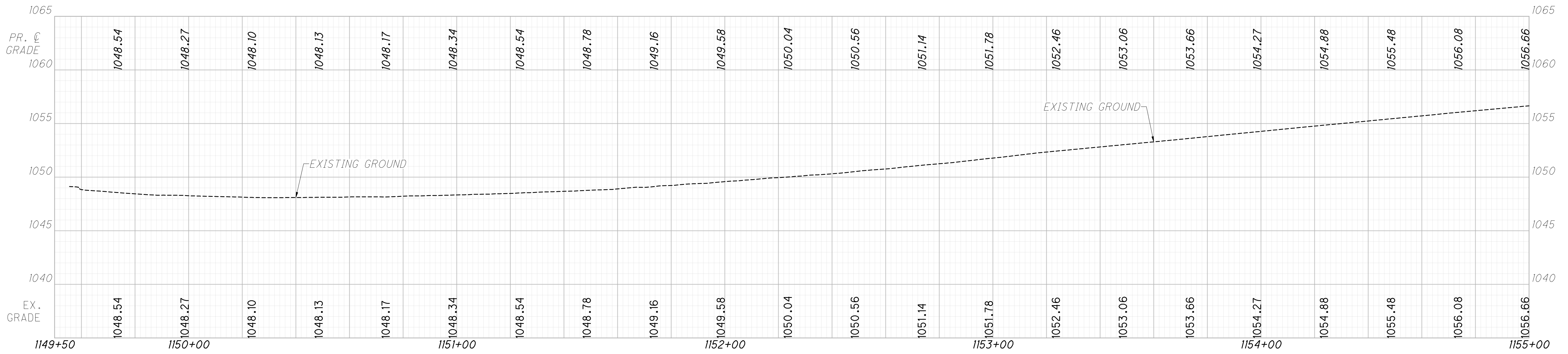
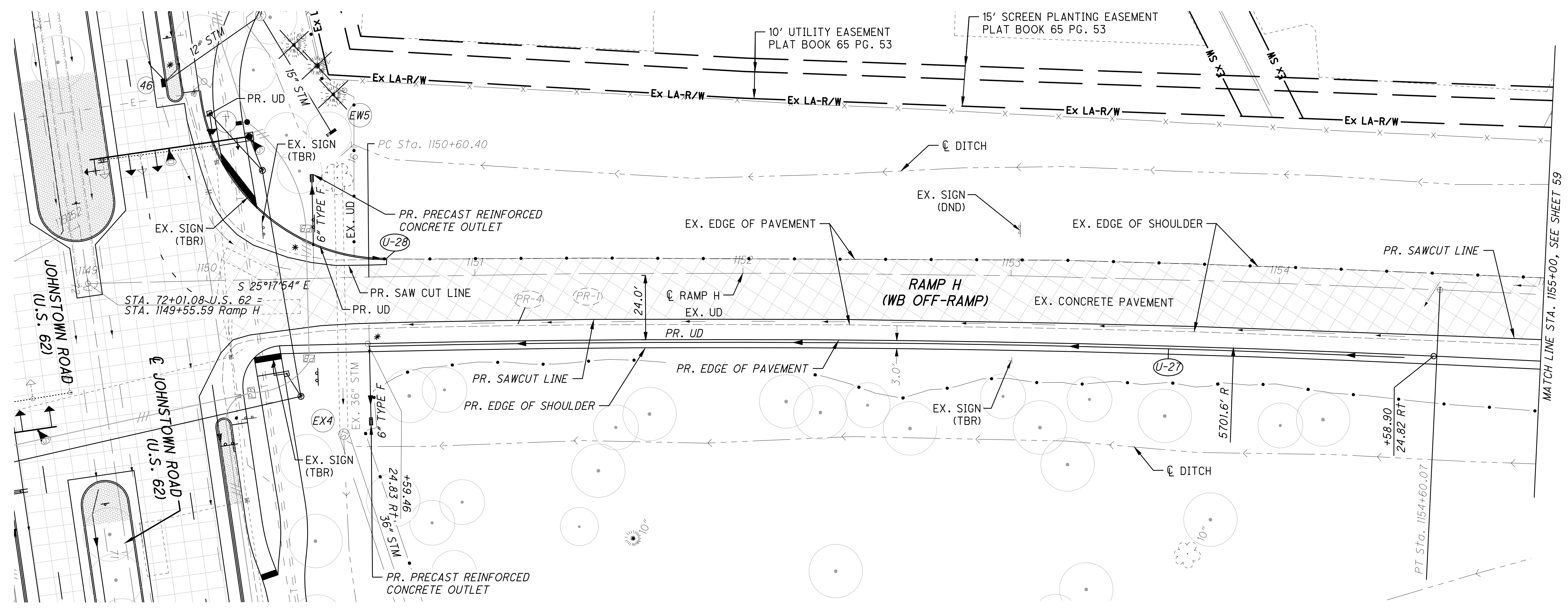
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☒ - LIMITS OF 1-1/2" PLANING AND RESURFACING



0 10 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED M/GS  
CHECKED M/L/S



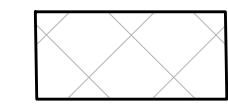
**PLAN & PROFILE - RAMP H  
STA. 1150+00 TO STA. 1155+00**

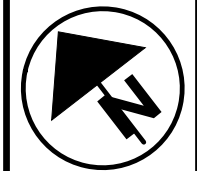
**FRA-62-30.34**

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- NOTES:
1. SEE SHEETS 144-145 FOR SIGNING AND MARKING PLAN.
  2. SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  3. SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  4. SEE SHEETS 162-175 FOR SIGNAL PLANS.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

 - LIMITS OF 1-1/2" PLANING AND RESURFACING

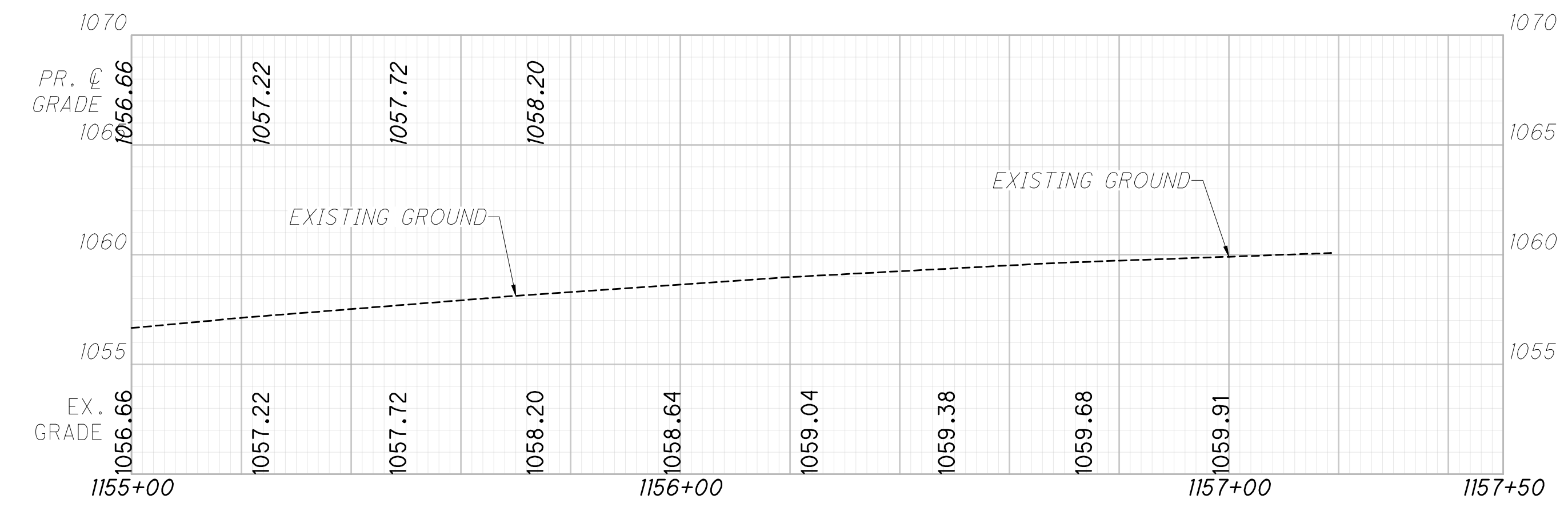
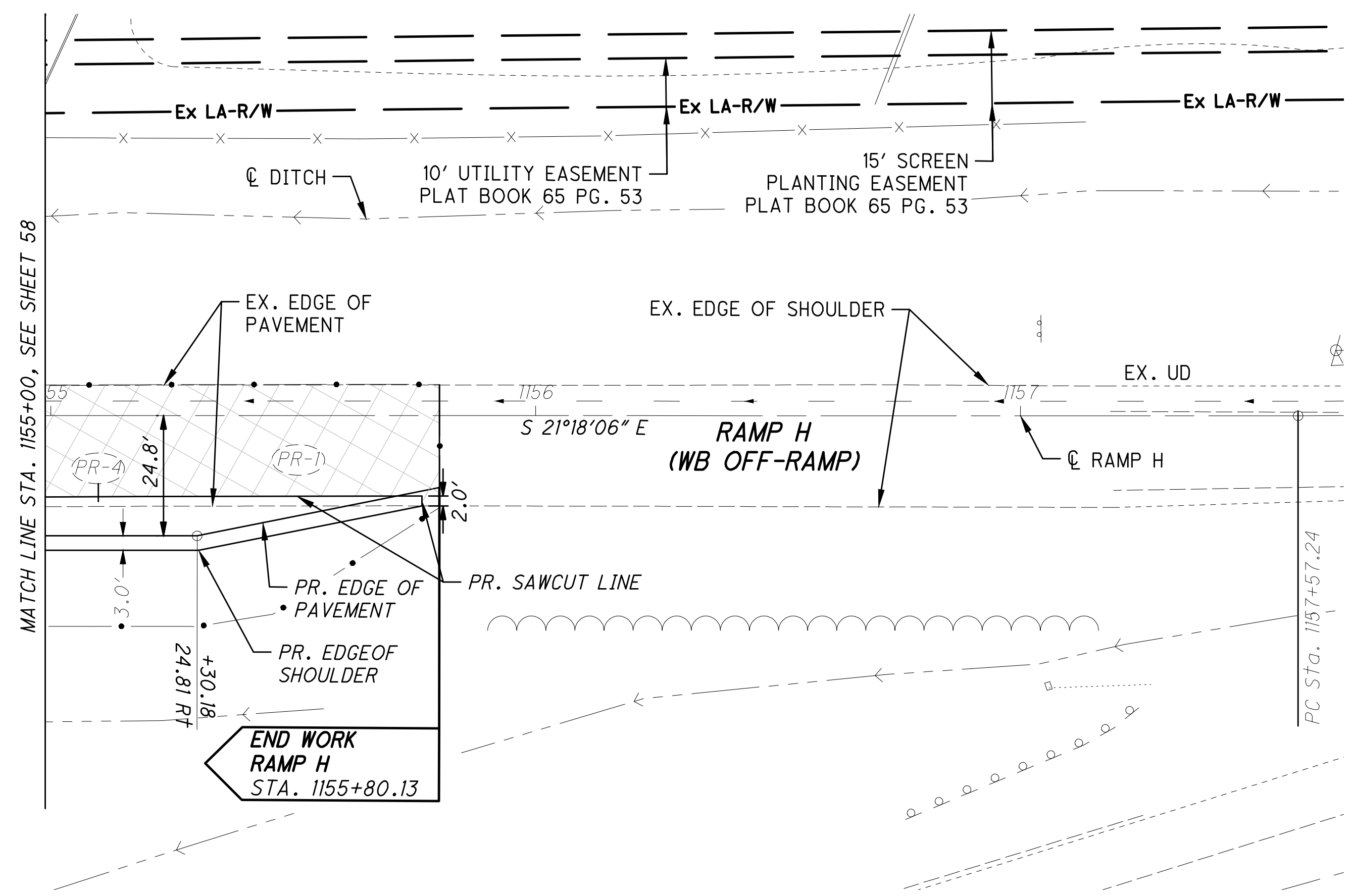


0 10 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED MGS  
CHECKED M.L.S.

**PLAN & PROFILE - RAMP H  
STA. 1155+00 TO END WORK**

**FRA-62-30.34**



- NOTES:
1. SEE SHEETS 144-145 FOR SIGNING AND MARKING PLAN.
  2. SEE INTERSECTION DETAILS FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  3. SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  4. SEE SHEETS 162-175 FOR SIGNAL PLANS.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

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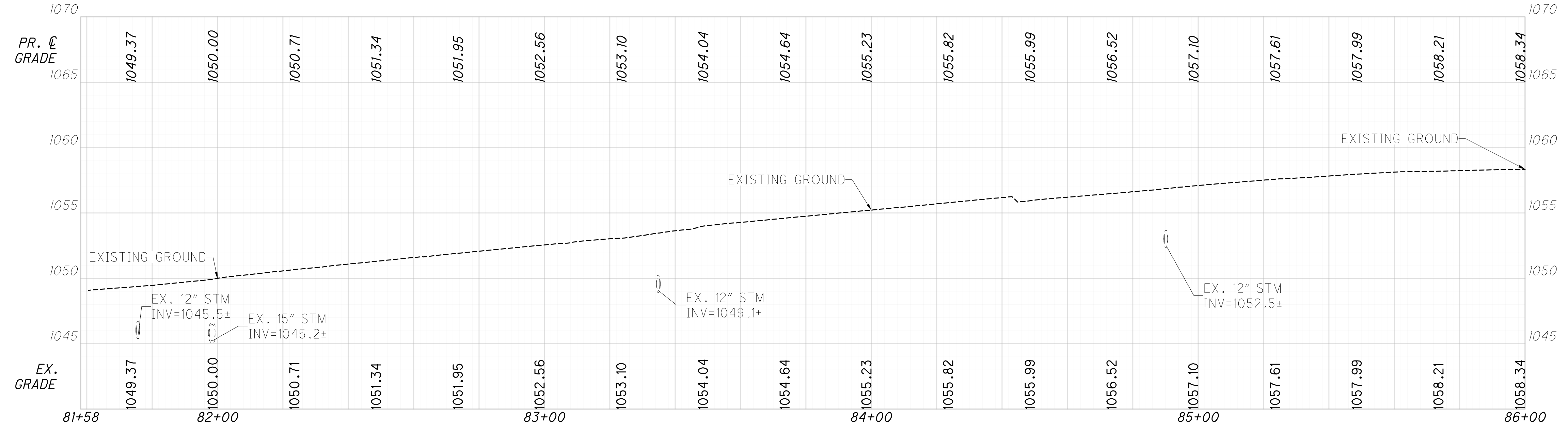
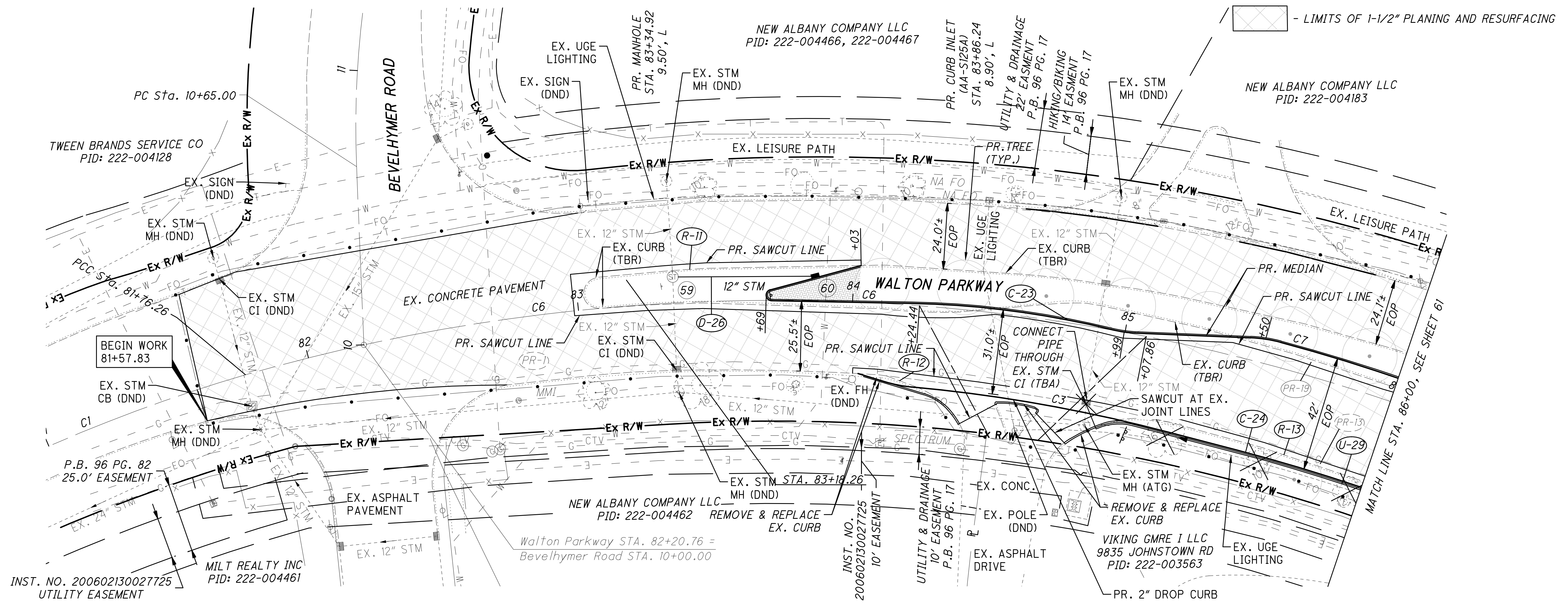
0 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED MGS CHECKED M.L.S.

**WALTON PARKWAY ROADWAY PLAN  
BEGIN WORK TO STA. 86+00**

**FRA-62-30.34**

60  
202



- NOTES:**
- SEE SHEETS 146-147 FOR SIGNING AND MARKING PLAN.
  - SEE SHEET 104 FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  - SEE SHEETS 159-161 FOR SIGNAL PLANS.
  - SEE SHEET 92 IN CROSS SECTIONS FOR DRIVE PROFILES

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

**CURVE TABLE: WALTON PARKWAY**

CURVE #	DELTA	Dc	R	L	T	E
C1	10°06'08"	9°32'57"	600.00	105.79	53.03	2.34
C2	45°19'30"	8°11'06"	700.00	553.75	292.28	58.57
C3	9°41'37"	10°10'04"	563.51	95.34	47.78	2.02
C4	12°16'46"	8°37'44"	664.00	142.30	71.43	3.83
C5	4°48'14"	8°37'44"	664.00	55.67	27.85	0.58

**CURVE TABLE: WALTON PARKWAY**

CURVE #	DELTA	Dc	R	L	T	E
C6	45°19'30"	8°11'06"	700.00	553.75	292.28	58.57
C7	45°19'30"	8°11'06"	700.00	553.75	292.28	58.57

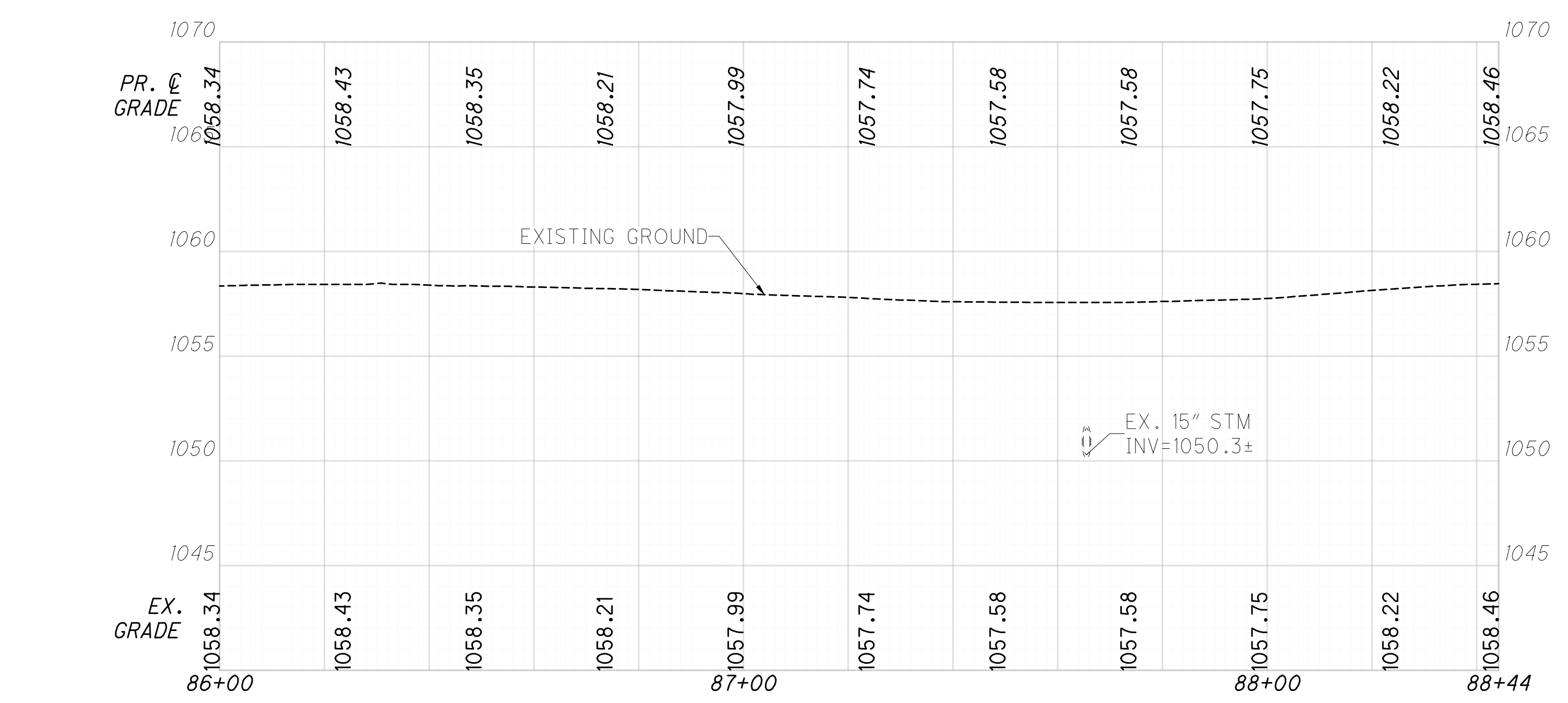
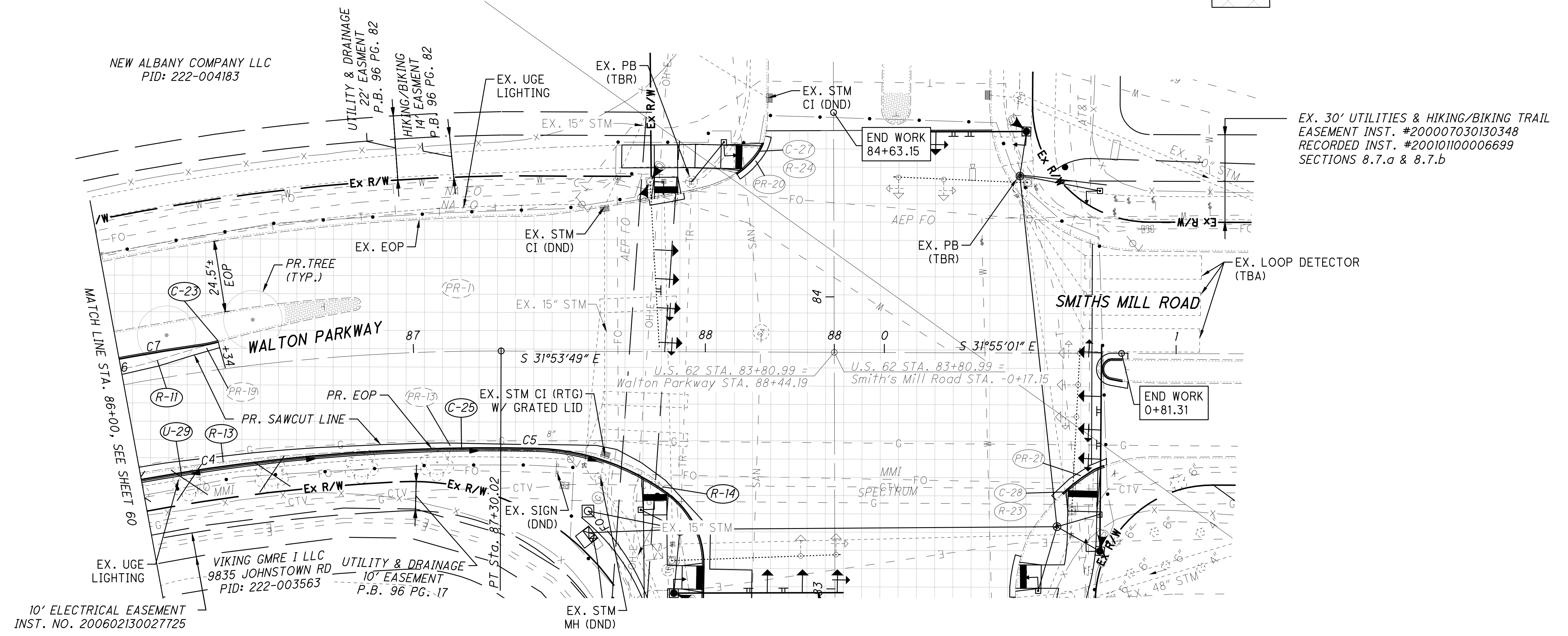
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☒ - LIMITS OF 1-1/2" PLANING AND RESURFACING



0 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED MGS CHECKED M.L.S.



CURVE TABLE: WALTON PARKWAY						
CURVE #	DELTA	Dc	R	L	T	E
C1	10°06'08"	9°32'57"	600.00	105.79	53.03	2.34
C2	45°19'30"	8°11'06"	700.00	553.75	292.28	58.57
C3	9°41'37"	10°10'04"	563.51	95.34	47.78	2.02
C4	12°16'46"	8°37'44"	664.00	142.30	71.43	3.83
C5	4°48'14"	8°37'44"	664.00	55.67	27.85	0.58
C6	45°19'30"	8°11'06"	700.00	553.75	292.28	58.57
C7	45°19'30"	8°11'06"	700.00	553.75	292.28	58.57

- NOTES:
- SEE SHEETS 146-147 FOR SIGNING AND MARKING PLAN.
  - SEE SHEET 104 FOR PROPOSED SIDEWALK, CURB RAMPS AND GRADING.
  - SEE SHEETS 112-114 FOR STORM SEWER PROFILES.
  - SEE SHEETS 159-161 FOR SIGNAL PLANS.

\* CONNECT EXISTING UNDERDRAIN TO PROPOSED UNDERDRAIN OR CATCH BASIN.

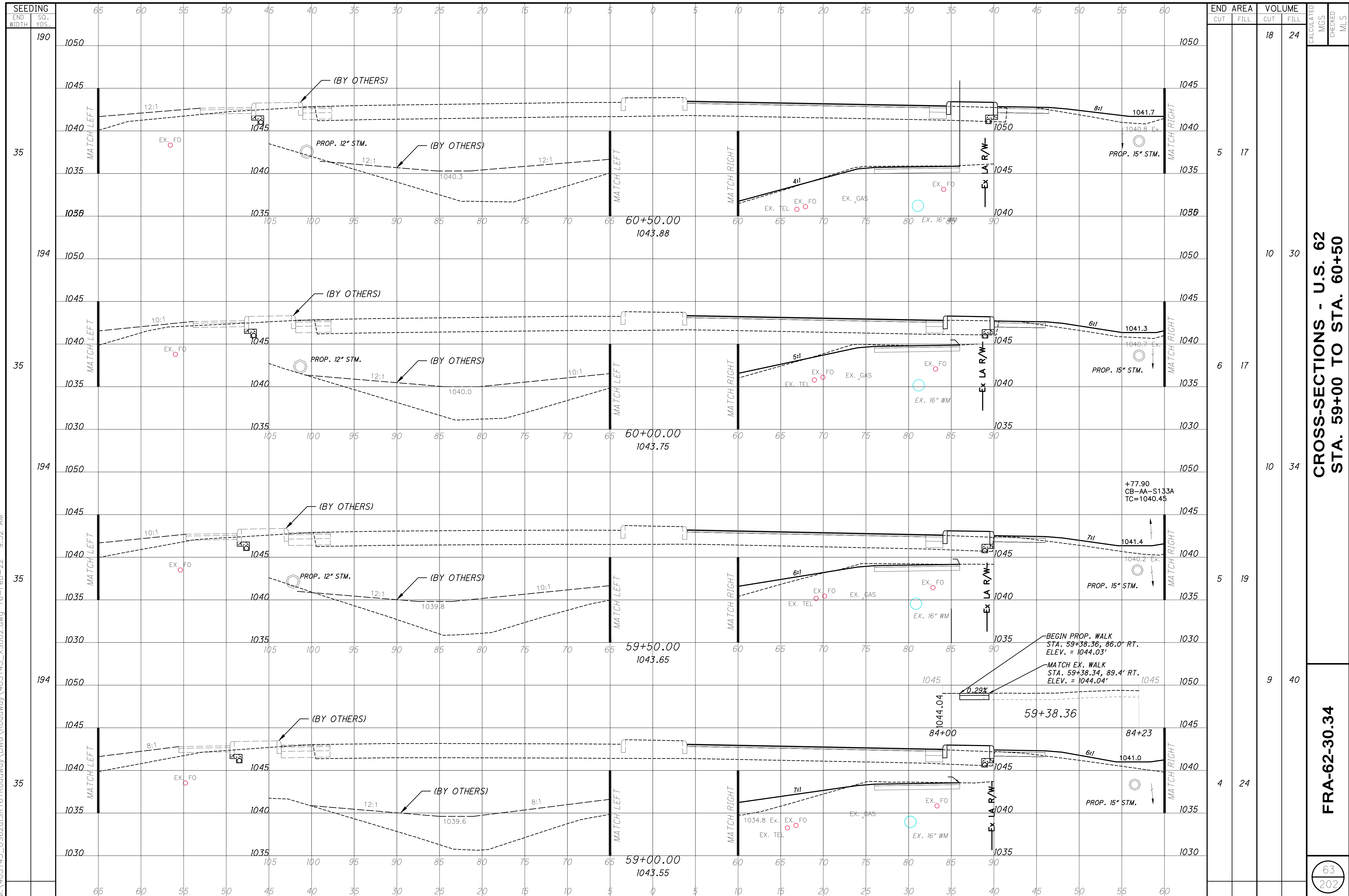
WALTON PARKWAY ROADWAY PLAN  
STA. 86+00 TO END WORK

FRA-62-30-34

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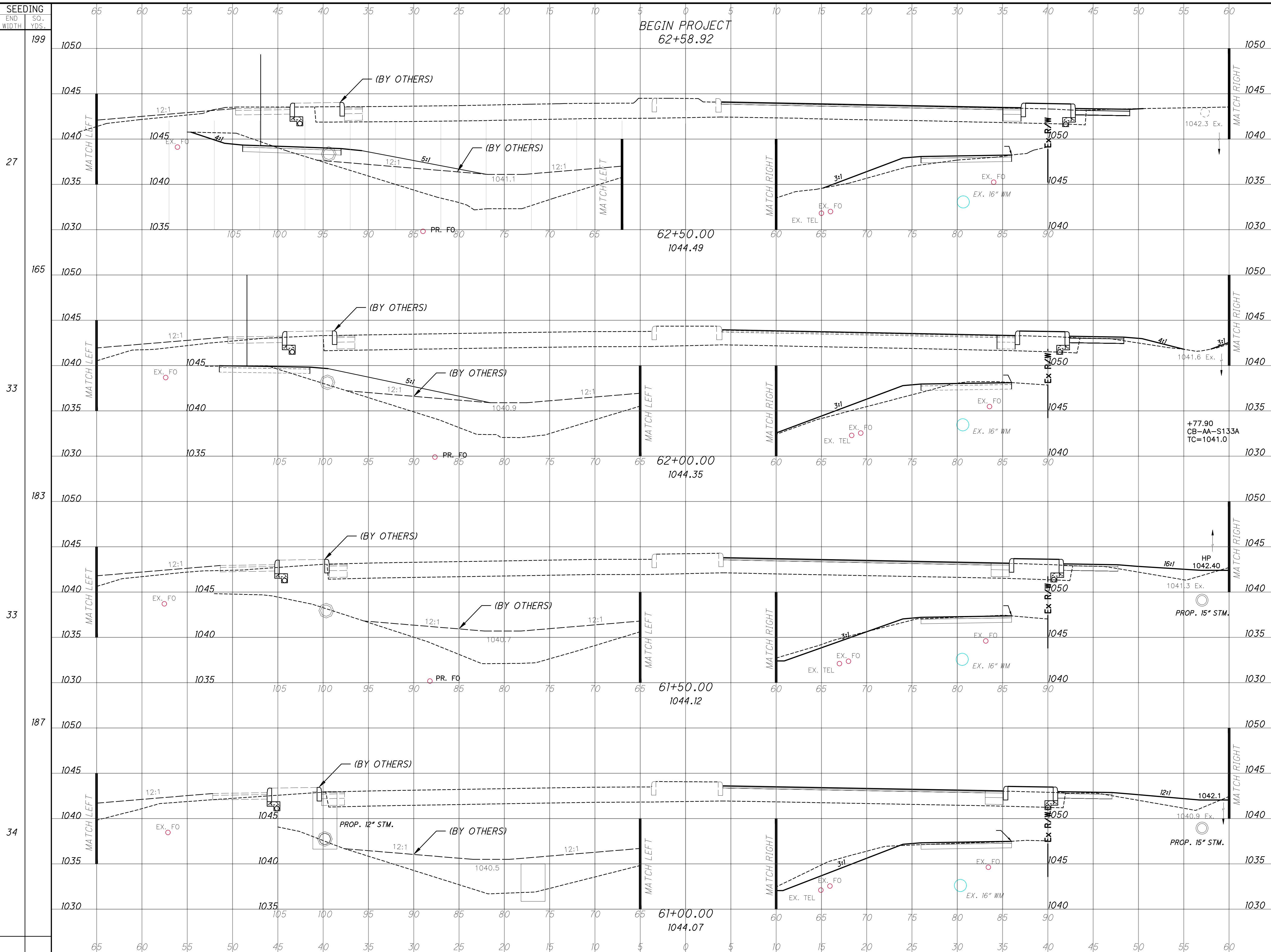


SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED MGS	CHECKED MGS
			CUT	FILL	CUT	FILL		
190	35	190			18	24		
194	35	194	5	17	10	30		
194	35	194	6	17	10	34		
194	35	194	5	19	9	40		
194	35	194	4	24				

**CROSS-SECTIONS - U.S. 62  
STA. 59+00 TO STA. 60+50**

**FRA-62-30.34**

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BEGIN PROJECT  
62+58.92

SEEDING	END AREA		VOLUME		CALCULATED MGS	CHECKED MLS
	CUT	FILL	CUT	FILL		
199			17	108		
27	10	11				
165			12	24		
33	3	16				
183			9	26		
33	6	12				
187			19	22		
34	15	11				

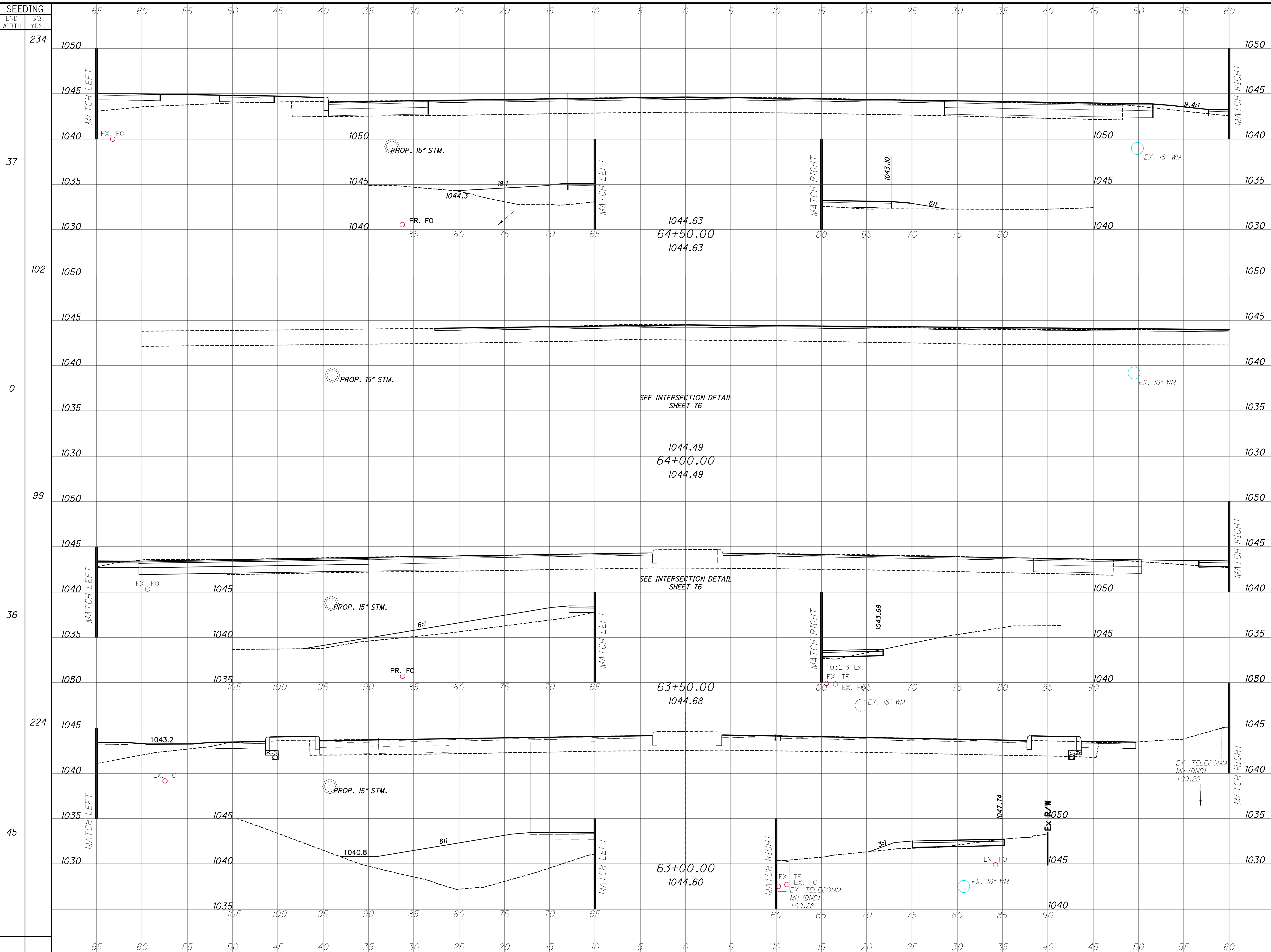
CROSS-SECTIONS - U.S. 62  
STA. 61+00 TO STA. 62+50

FRA-62-30.34

64  
202



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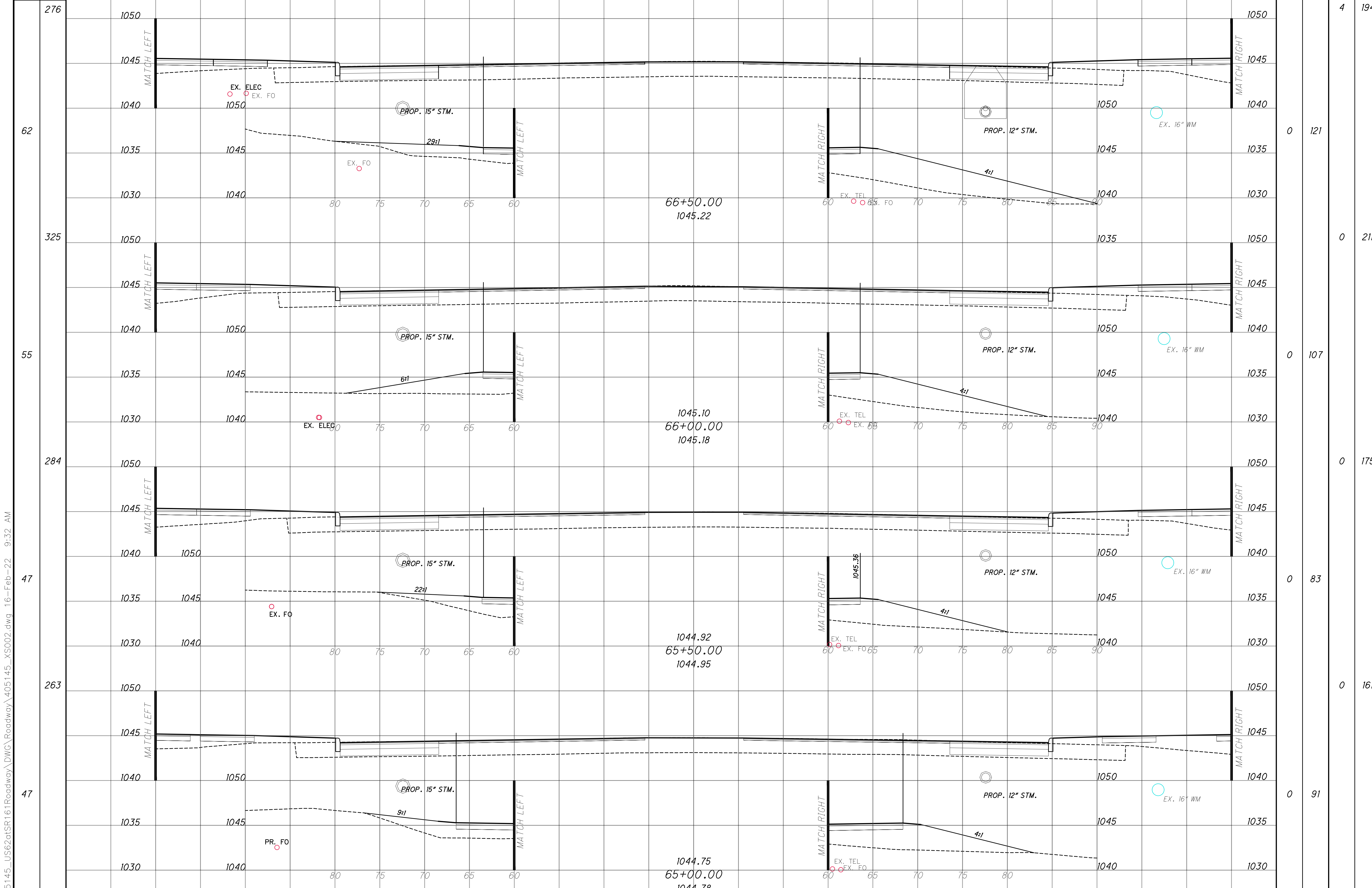


STATION	SEEDING		END AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL		
64+50.00		234			4	127		
64+00.00		37			4	46		
63+50.00		102			4	42		
63+00.00		0			0	0		
62+50.00		99			22	25		
62+00.00		36			24	27		
61+50.00		224			30	123		
61+00.00		45			9	106		

**CROSS-SECTIONS - U.S. 62  
STA. 63+00 TO STA. 64+50**

**FRA-62-30.34**

65  
202



SEEDING  
END WIDTH SO. YDS.

276  
62  
325  
55  
284  
47  
263  
47

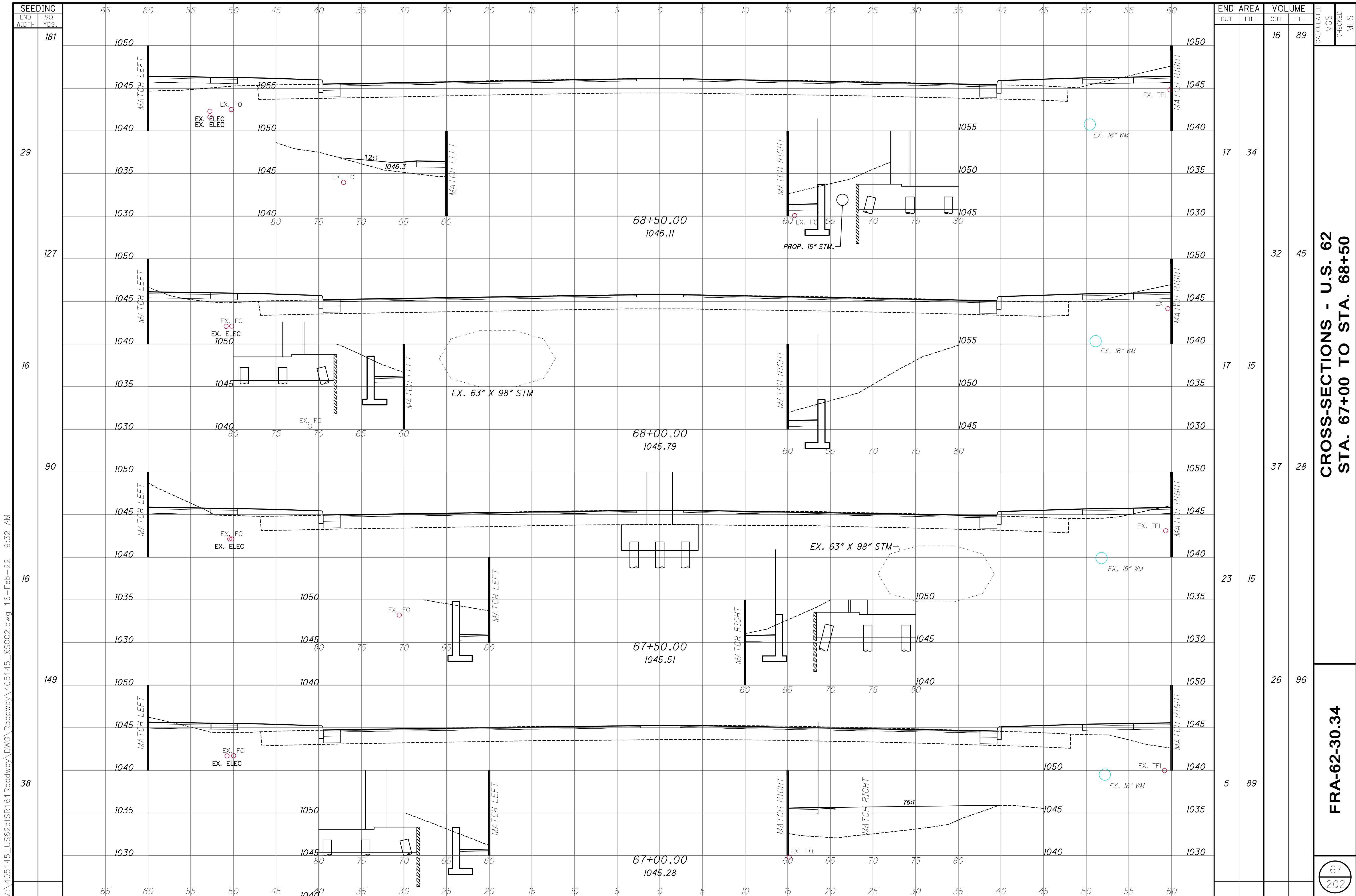
END AREA	VOLUME	CALCULATED MGS	CHECKED MGS
	4	194	
0	121		
0	211		
0	107		
0	175		
0	83		
0	161		
0	91		

**CROSS-SECTIONS - U.S. 62  
STA. 65+00 TO STA. 66+50**

**FRA-62-30.34**

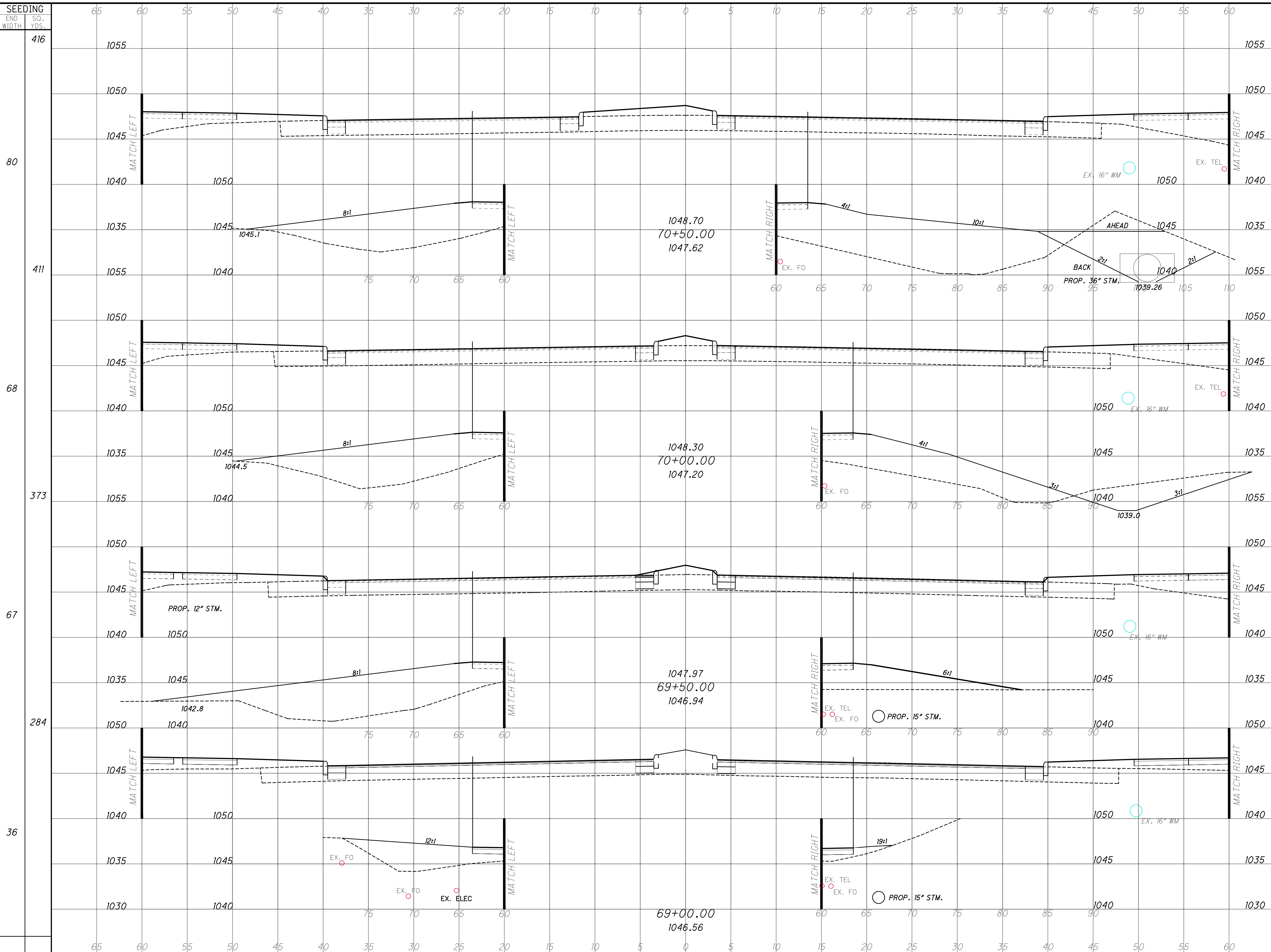
66  
202

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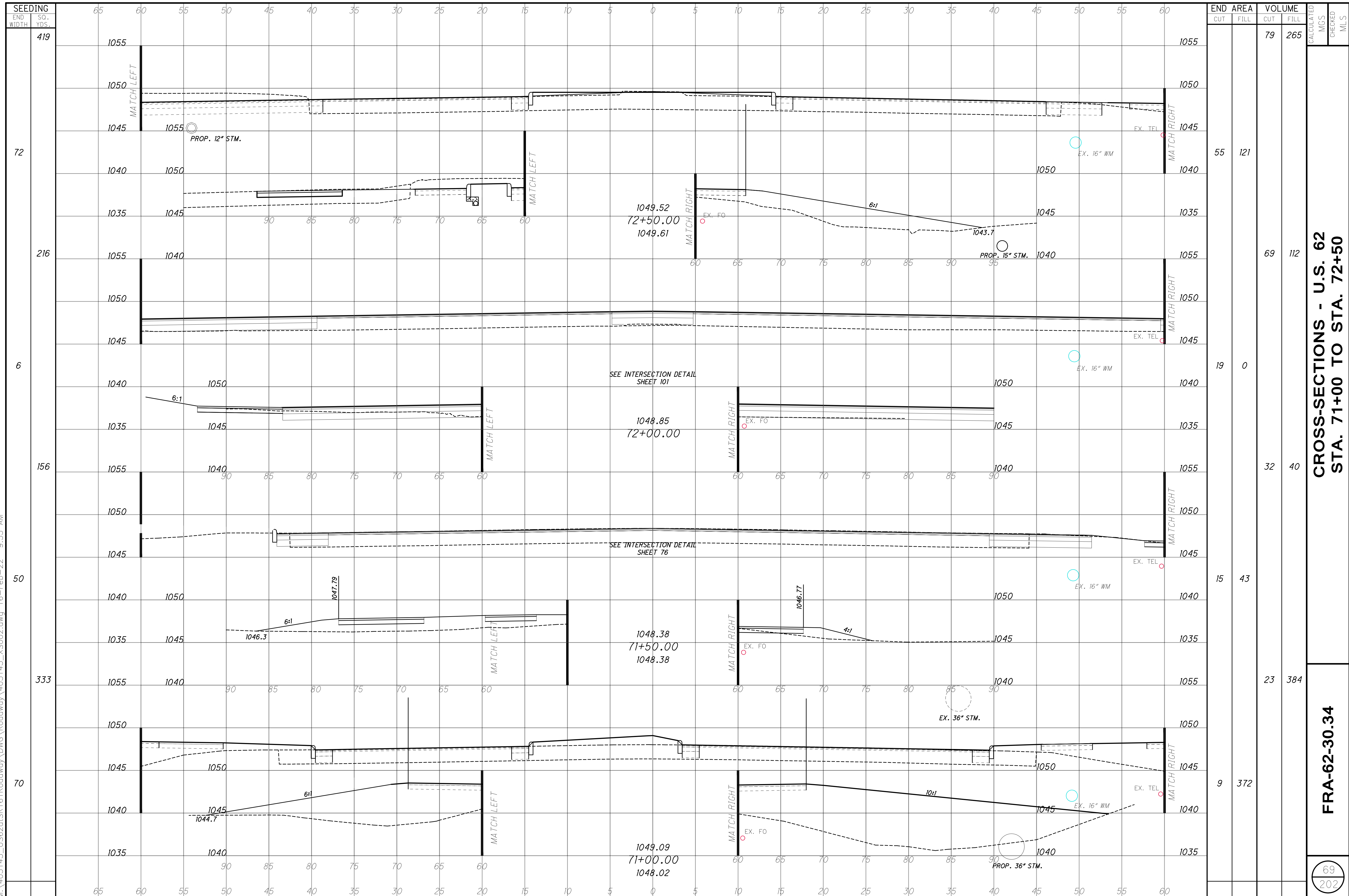
STATION	END AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	CUT	FILL	CUT	FILL		
70+00.00	64	261	68	586		
70+50.00	0	211				
70+50.00	0	363				
69+50.00	0	180				
69+00.00	0	225				
69+00.00	0	62				

**CROSS-SECTIONS - U.S. 62  
STA. 69+00 TO STA. 70+50**

**FRA-62-30.34**

68  
202

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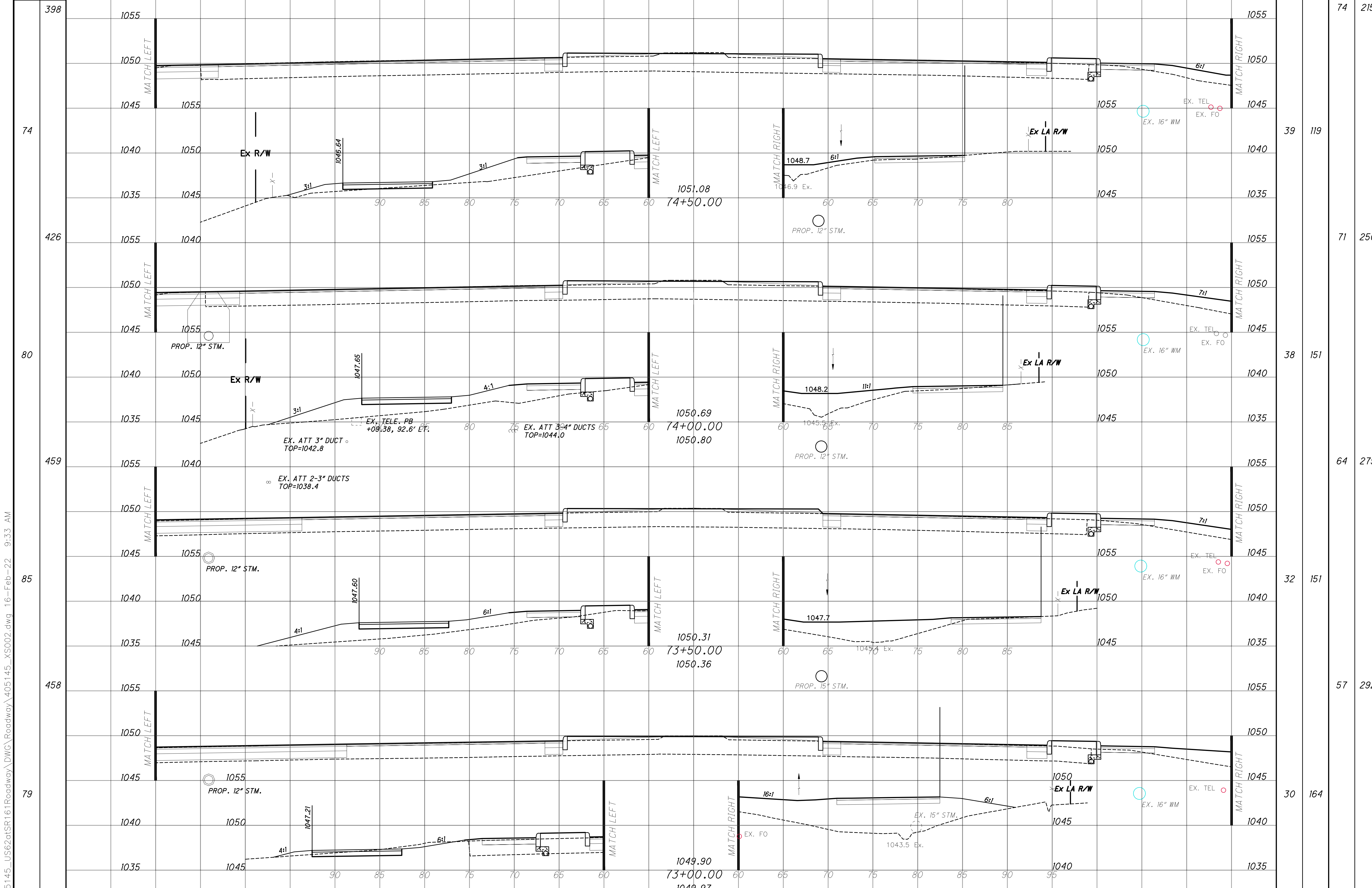


STATION	END AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	CUT	FILL	CUT	FILL		
72+50.00			79	265		
72+00.00			69	112		
71+50.00			32	40		
71+00.00			23	384		
TOTAL			103	781		

**CROSS-SECTIONS - U.S. 62  
STA. 71+00 TO STA. 72+50**

**FRA-62-30.34**

69  
202



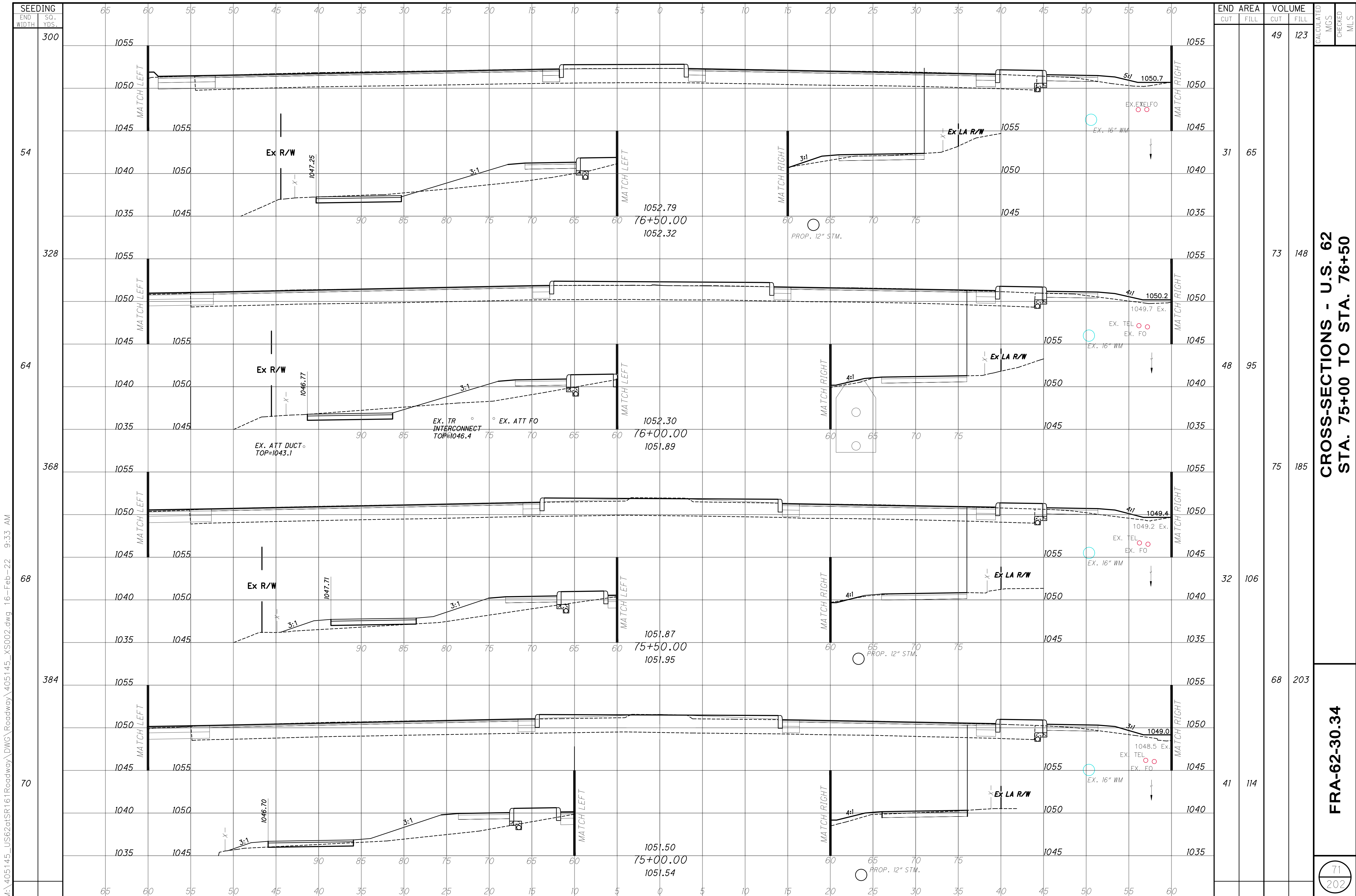
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SEEDING	END AREA		VOLUME		CALCULATED MGS	CHECKED MLS
	CUT	FILL	CUT	FILL		
398			74	215		
74			39	119		
426			71	250		
80			38	151		
459			64	279		
85			32	151		
458			57	292		
79			30	164		

**CROSS-SECTIONS - U.S. 62  
 STA. 73+00 TO STA. 74+50**

**FRA-62-30.34**

70  
 202



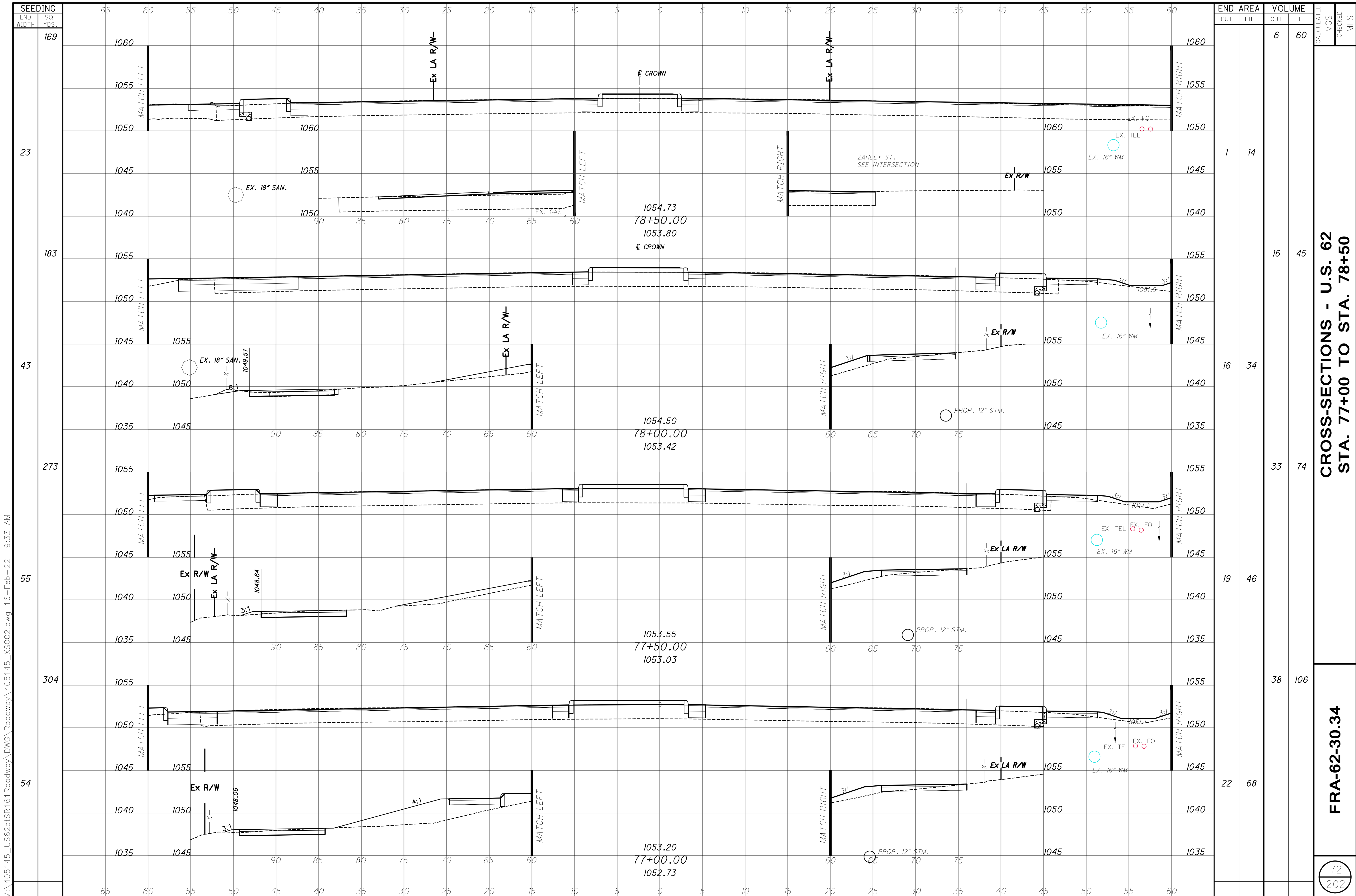
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SEEDING	END AREA		VOLUME		CALCULATED MGS	CHECKED MLS
	CUT	FILL	CUT	FILL		
300			49	123		
54			31	65		
328			73	148		
64			48	95		
368			75	185		
68			32	106		
384			68	203		
70			41	114		

**CROSS-SECTIONS - U.S. 62  
STA. 75+00 TO STA. 76+50**

**FRA-62-30.34**

71  
202



STATION	END AREA		VOLUME		CALCULATED MGS	CHECKED MLS
	CUT	FILL	CUT	FILL		
169			6	60		
23	1	14				
183		16		45		
43	16	34				
273		33		74		
55	19	46				
304		38		106		
54	22	68				

**CROSS-SECTIONS - U.S. 62  
STA. 77+00 TO STA. 78+50**

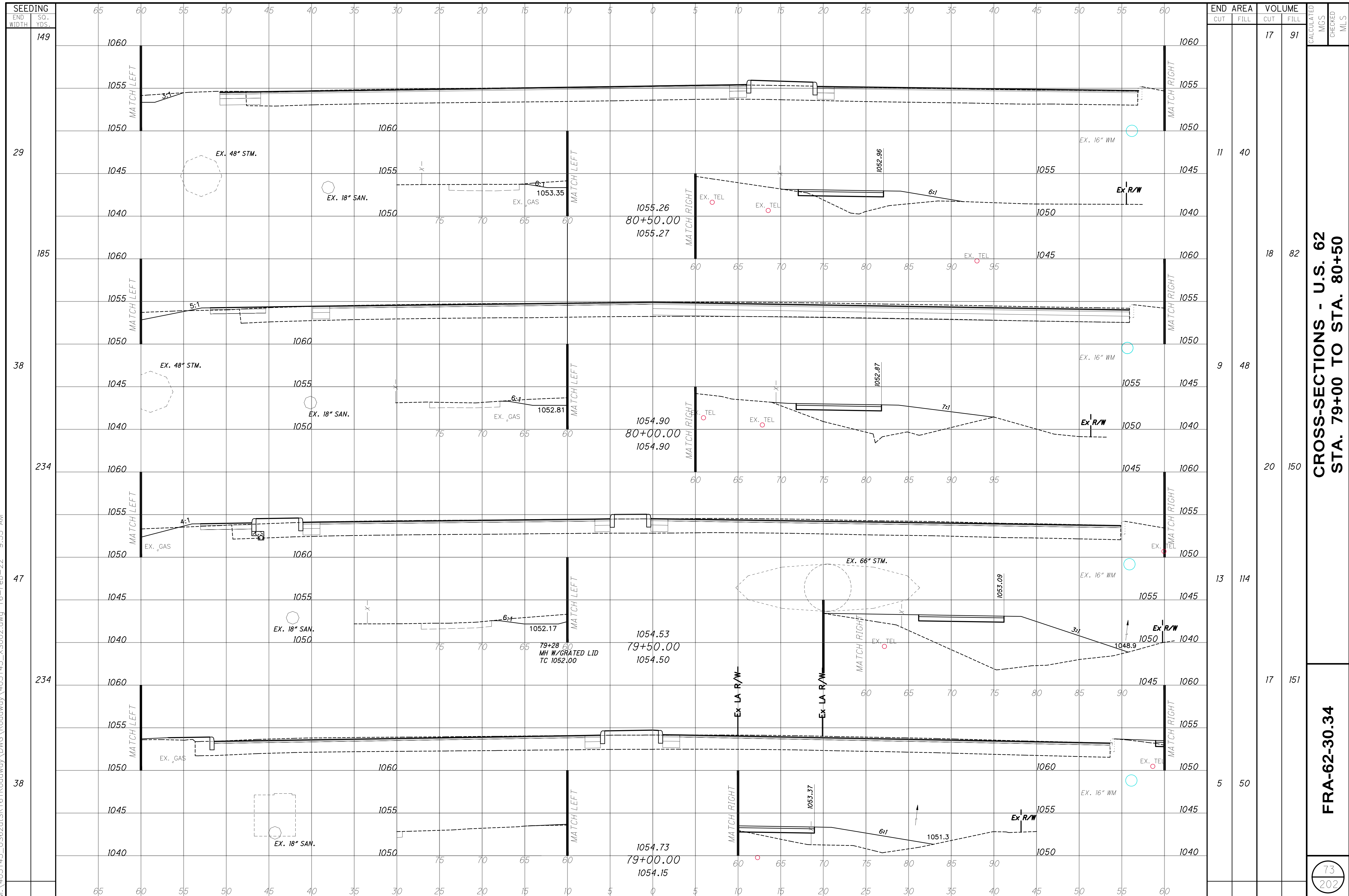
**FRA-62-30.34**

72  
202

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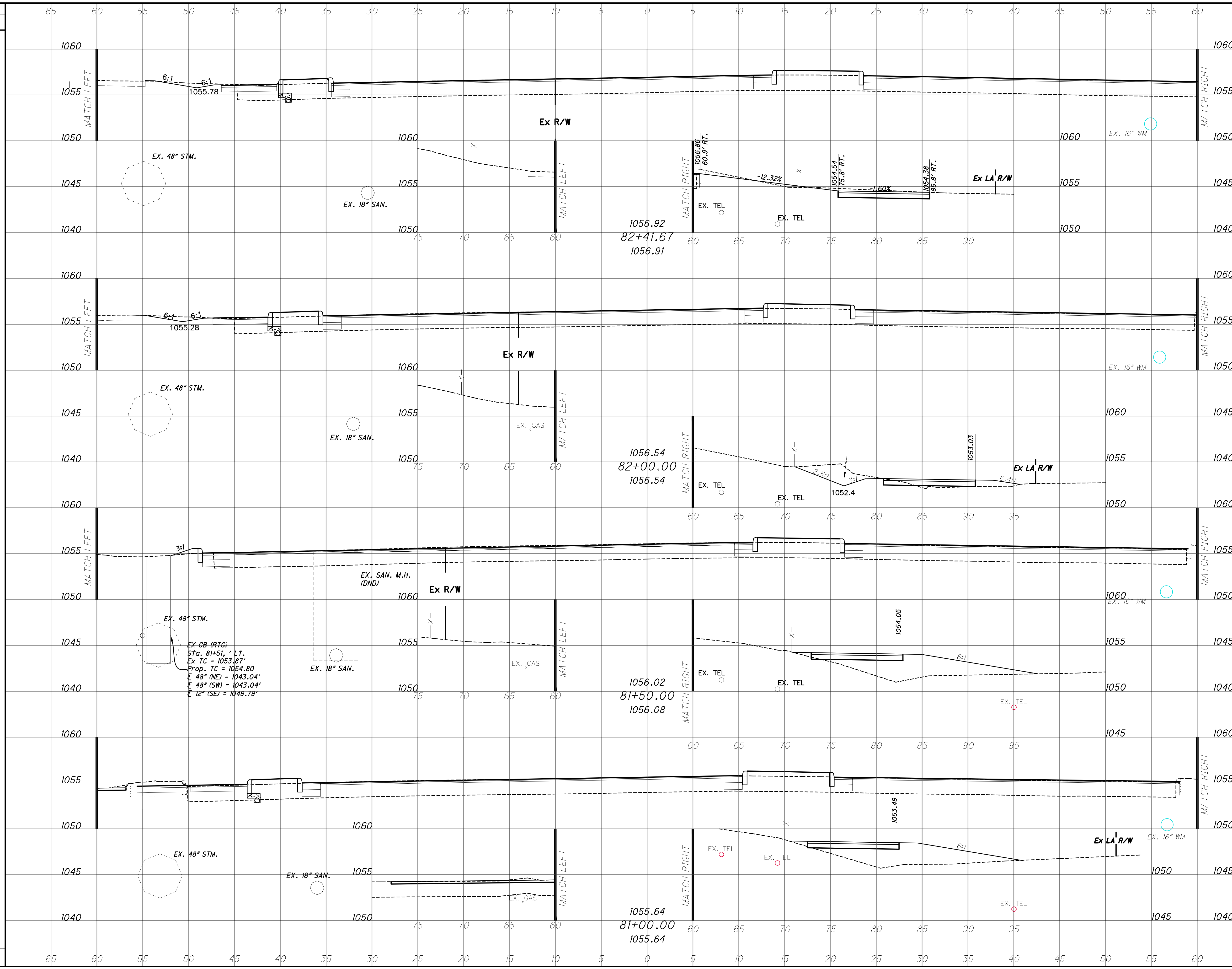
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**CROSS-SECTIONS - U.S. 62  
STA. 79+00 TO STA. 80+50**

**FRA-62-30.34**

SEEDING  
END WIDTH SQ. YDS.  
115  
35  
166  
36  
180  
29  
148  
25



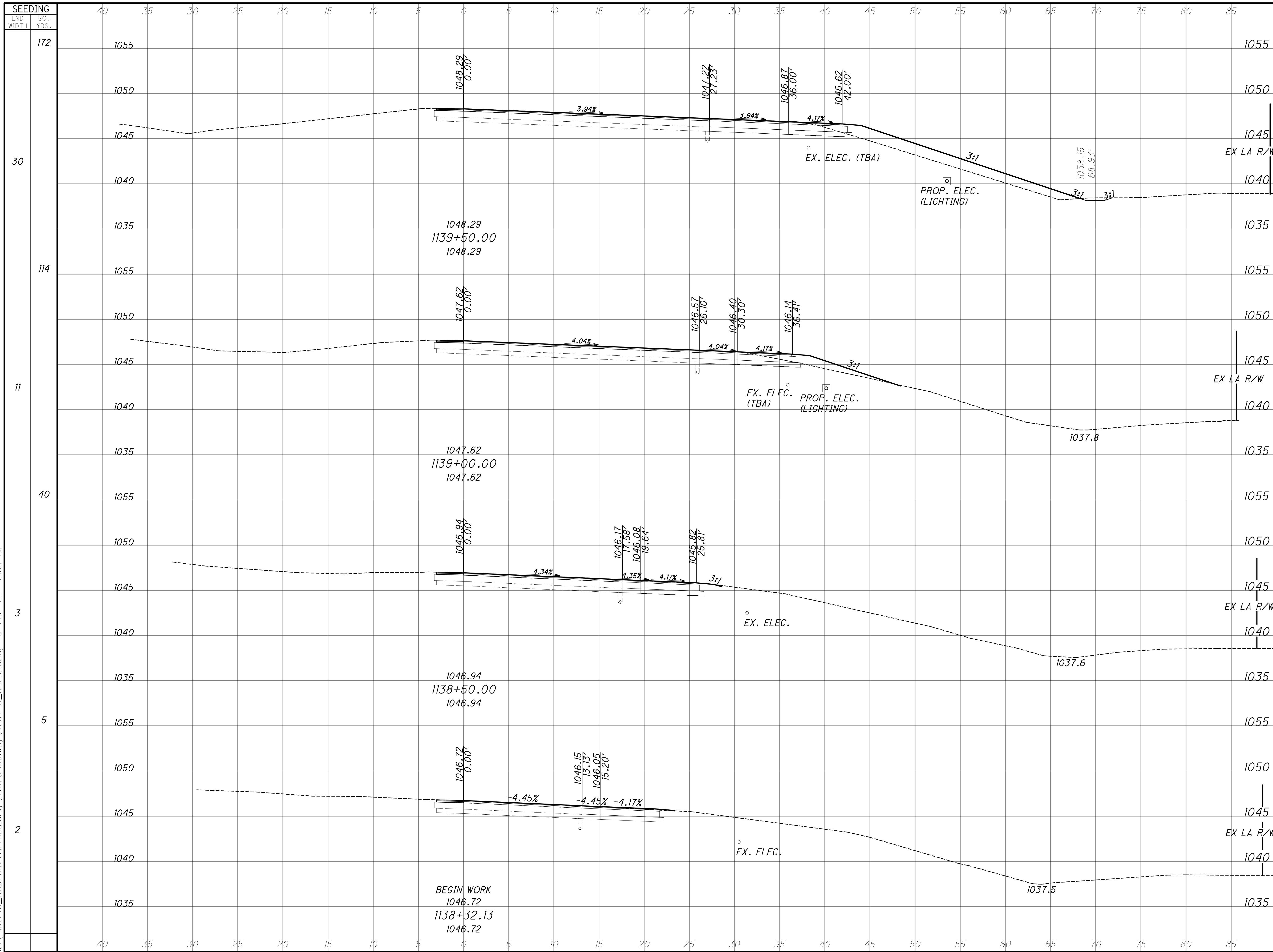
END AREA	VOLUME	CALCULATED		CHECKED	
		CUT	FILL	MGS	MLS
		32	33		
21	31				
40	48				
22	32				
28	84				
8	59				
14	108				
7	58				

**CROSS-SECTIONS - U.S. 62**  
**STA. 81+00 TO STA. 82+41.67**  
**FRA-62-30.34**  
 74  
 202

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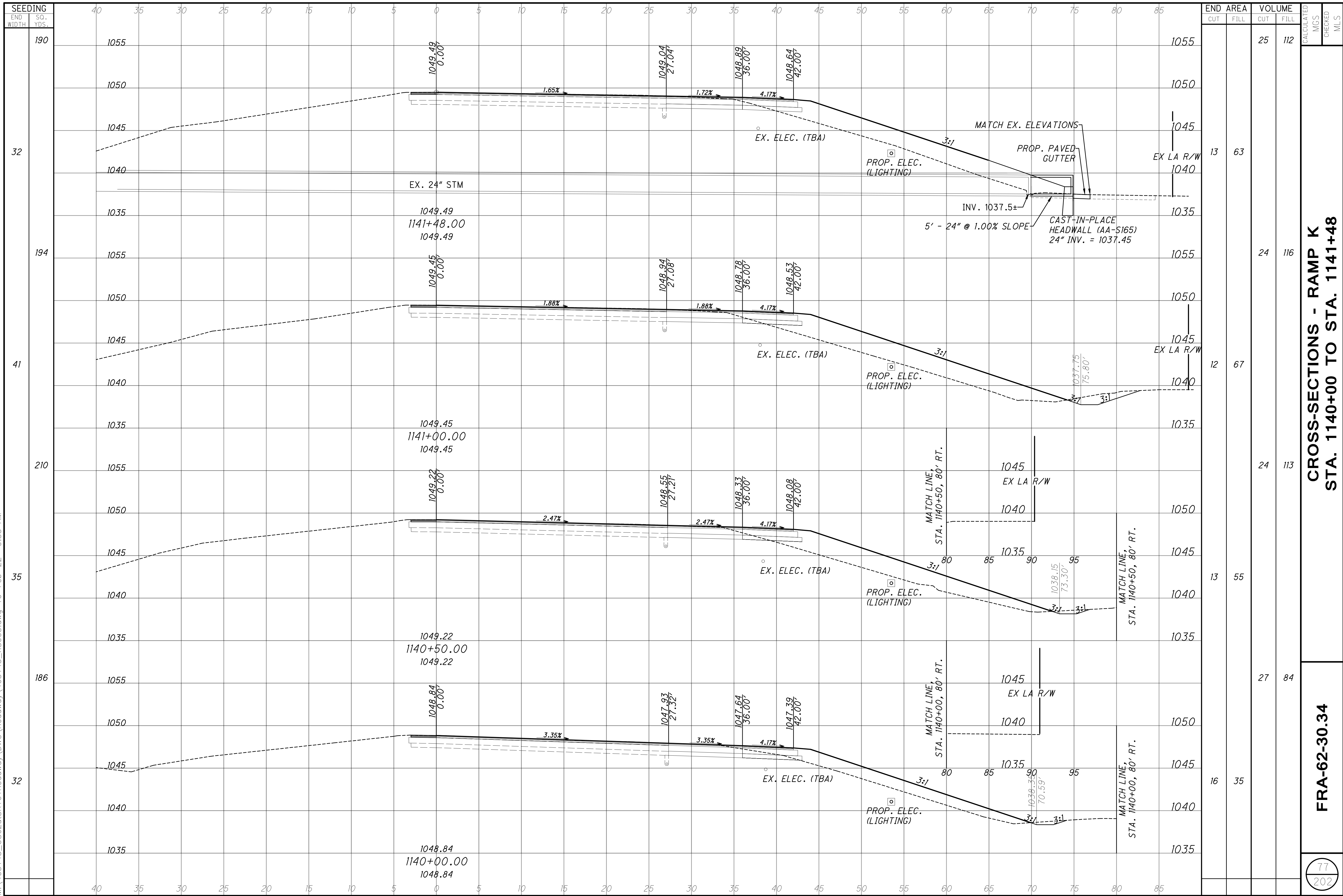


END STA.	AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	CUT	FILL	CUT	FILL		
1055			34	40		
1050						
1045						
1040						
1035						
1055			31	33		
1050						
1045						
1040						
1035						
1055			24	6		
1050						
1045						
1040						
1035						
1055			24	0		
1050						
1045						
1040						
1035						
1055			24	0		
1050						
1045						
1040						
1035						

**CROSS-SECTIONS - RAMP K  
STA. 1138+32.13 TO STA. 1139+50**

**FRA-62-30.34**

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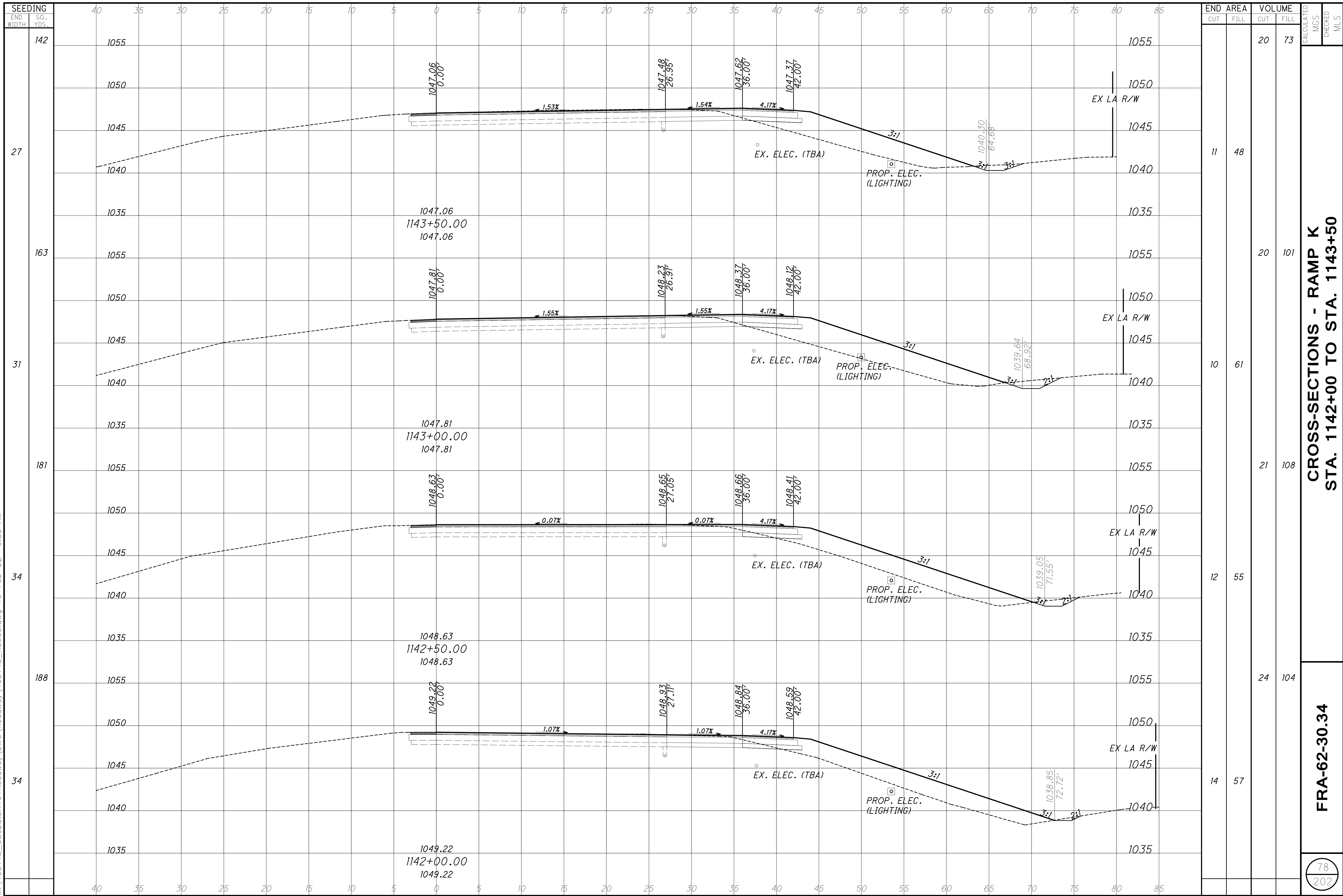


SEEDING	END AREA		VOLUME		CALCULATED M/GS	CHECKED M/L S
	CUT	FILL	CUT	FILL		
190			25	112		
32	13	63				
194			24	116		
41	12	67				
210			24	113		
35	13	55				
186			27	84		
32	16	35				

**CROSS-SECTIONS - RAMP K  
STA. 1140+00 TO STA. 1141+48**

**FRA-62-30.34**

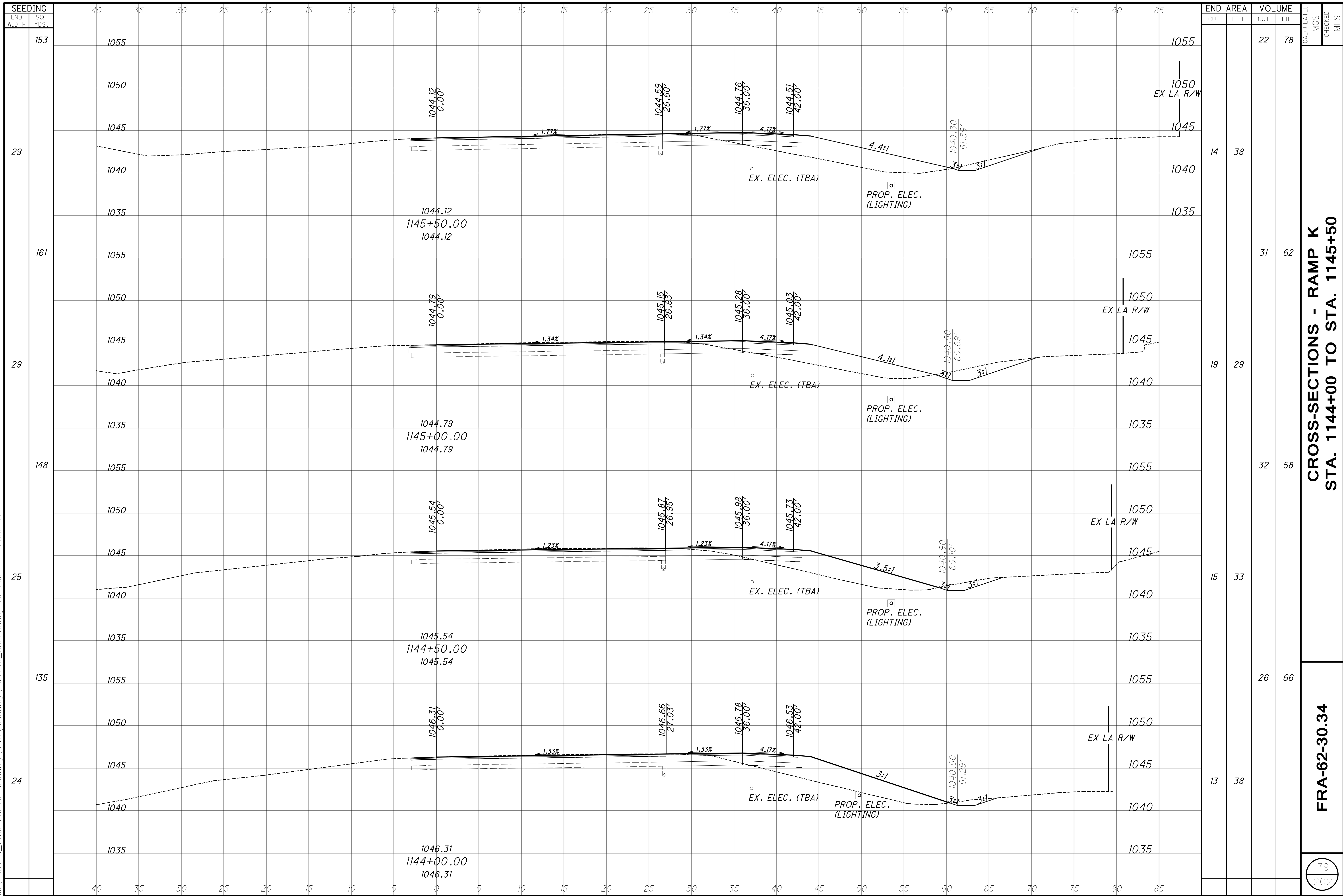
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**CROSS-SECTIONS - RAMP K  
STA. 1142+00 TO STA. 1143+50**

**FRA-62-30.34**

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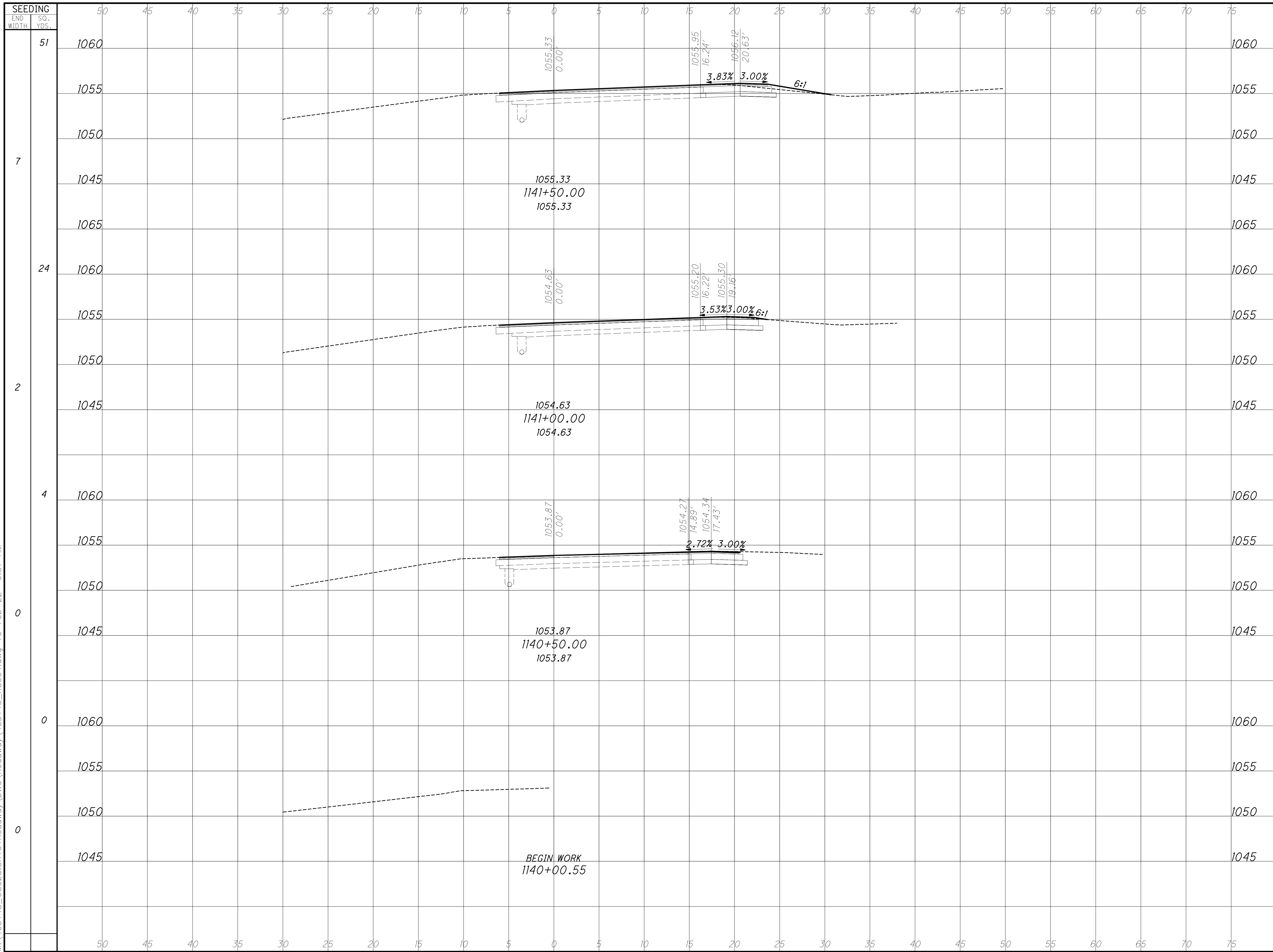
**CROSS-SECTIONS - RAMP K  
STA. 1144+00 TO STA. 1145+50**

**FRA-62-30.34**





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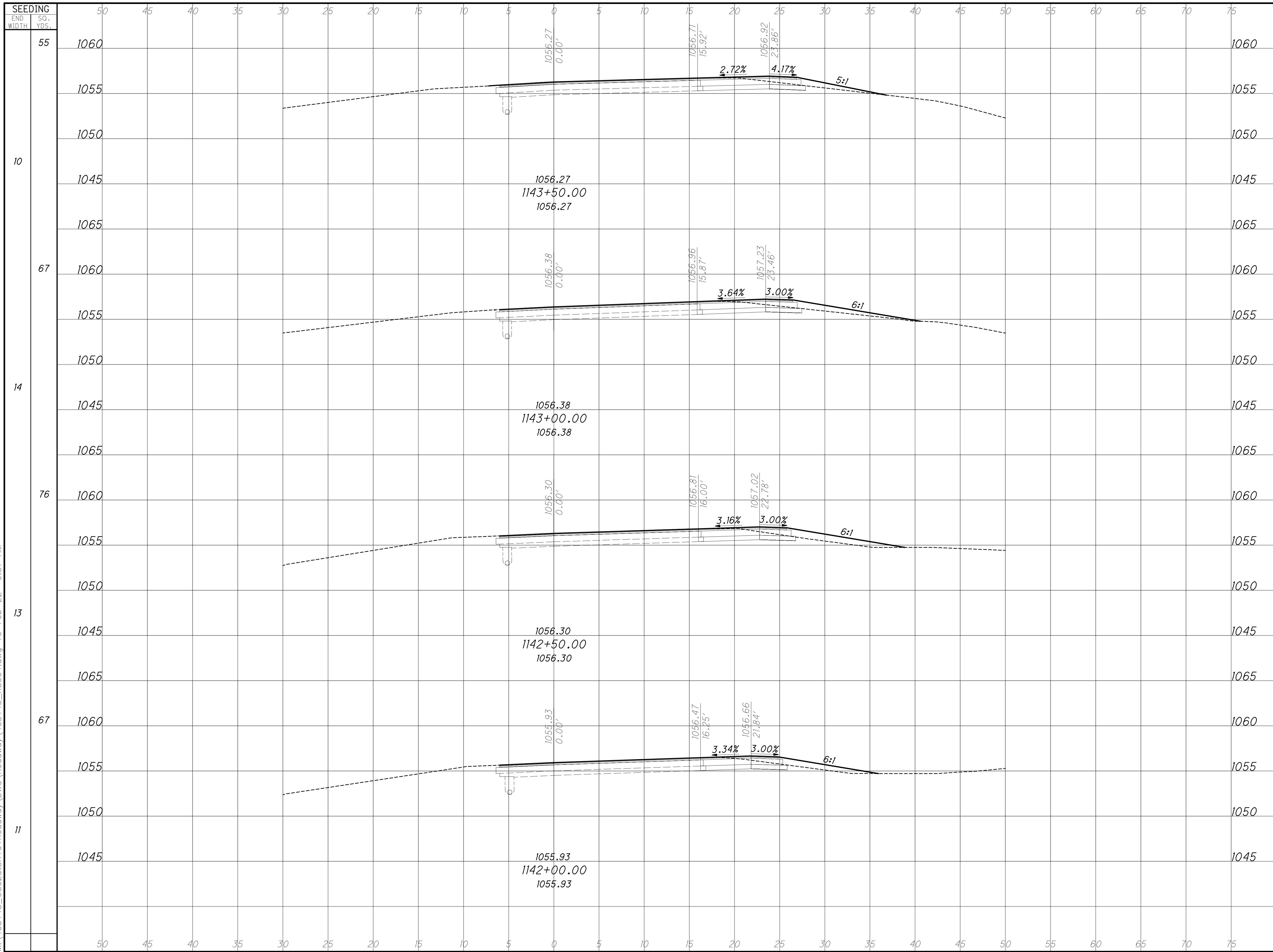


STATION	SEEDING		END AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL		
1141+50.00	51	1060	10	2	19	7		
1141+00.00	24	1060	9	0	18	1		
1140+50.00	4	1060	9	0	17	0		
1140+00.55	0	1060	0	0	17	0		

**CROSS-SECTIONS - RAMP G  
 STA. 1140+00.55 TO STA. 1141+50**

**FRA-62-30.34**

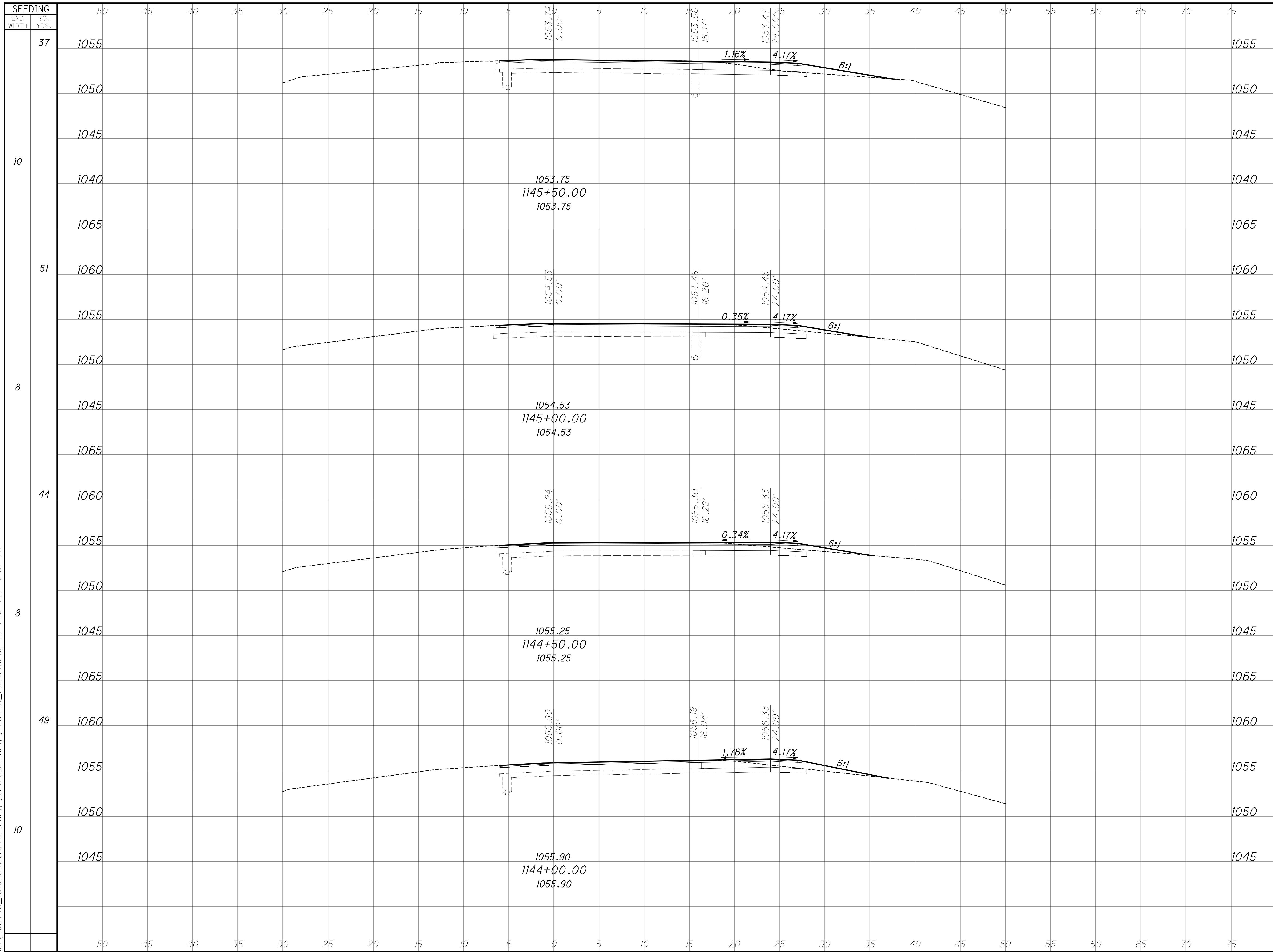
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**CROSS-SECTIONS - RAMP G  
STA. 1142+00 TO STA. 1143+50**

**FRA-62-30.34**

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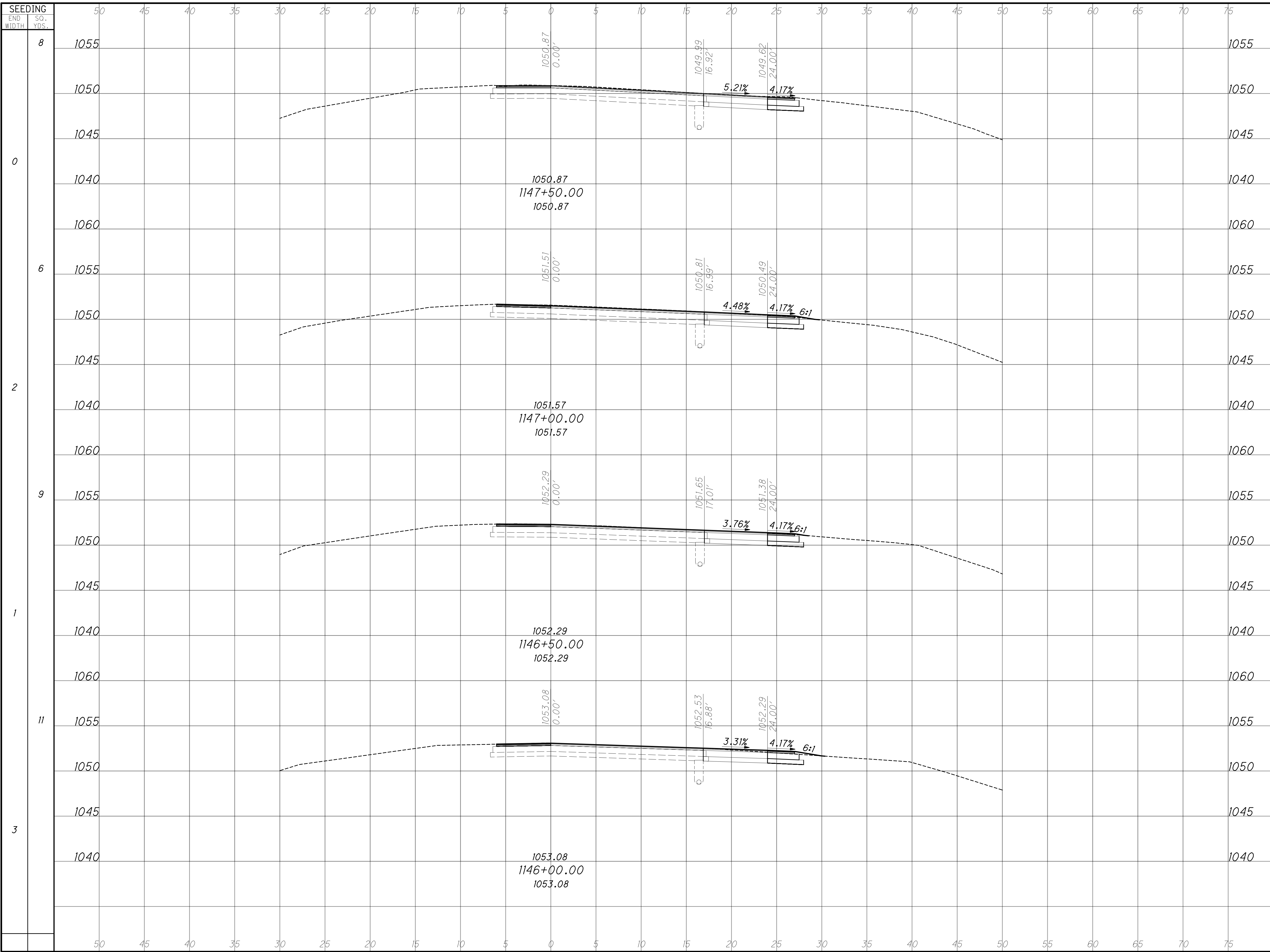


SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED MGS	CHECKED ML S
			CUT	FILL	CUT	FILL		
37	1055	1055			23	5		
10	1050	1050	10	5				
51	1060	1060			22	6		
8	1055	1055	13	2				
44	1060	1060			24	4		
8	1055	1055	12	2				
49	1060	1060			23	6		
10	1055	1055	12	4				

**CROSS-SECTIONS - RAMP G  
STA. 1144+00 TO STA. 1145+50**

**FRA-62-30.34**

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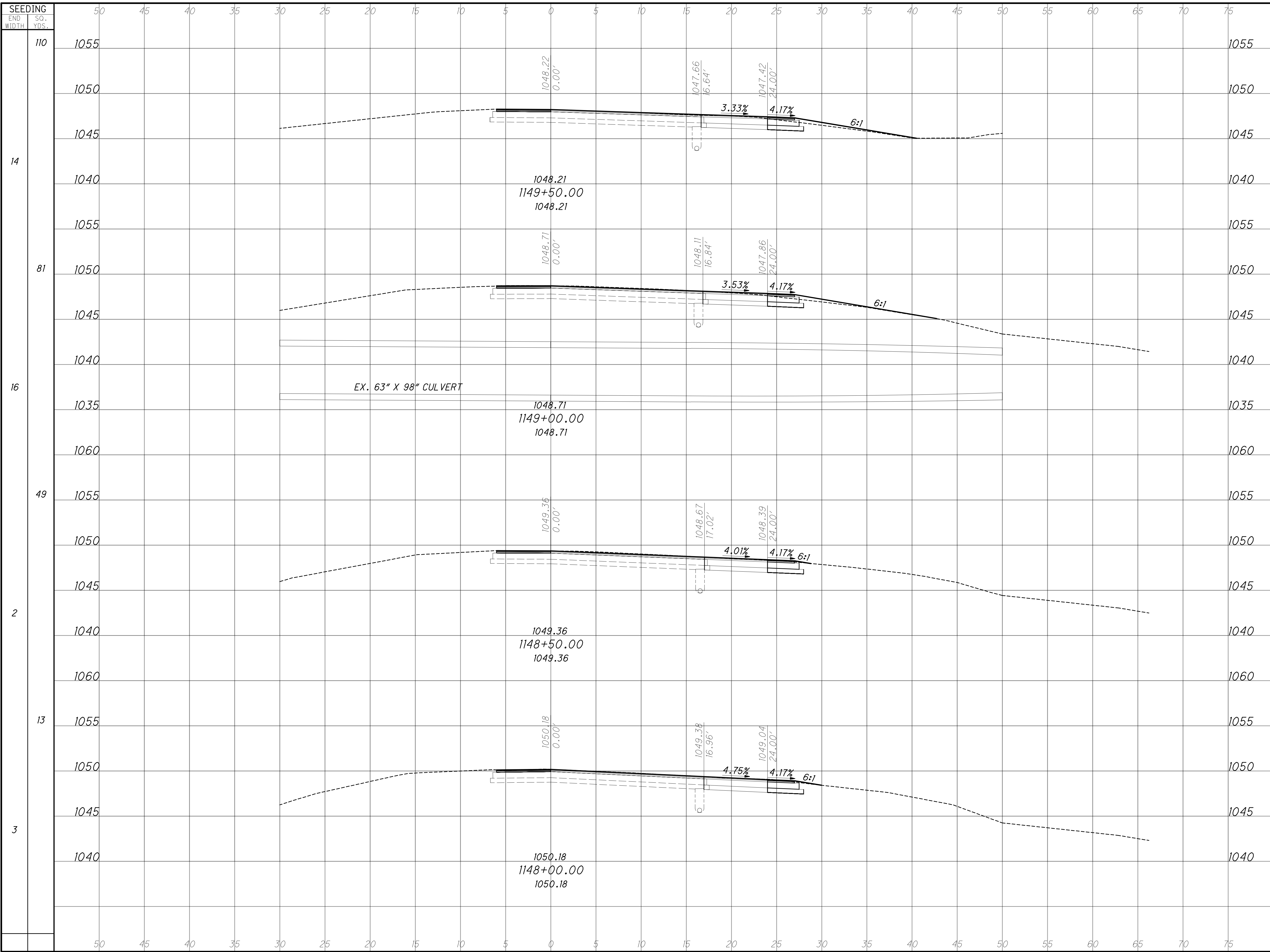


END	AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	CUT	FILL	CUT	FILL		
16	0	0	29	0		
15	0	0	29	0		
15	0	0	28	0		
15	0	0	27	0		
14	0	0				

**CROSS-SECTIONS - RAMP G  
STA. 1146+00 TO STA. 1147+50**

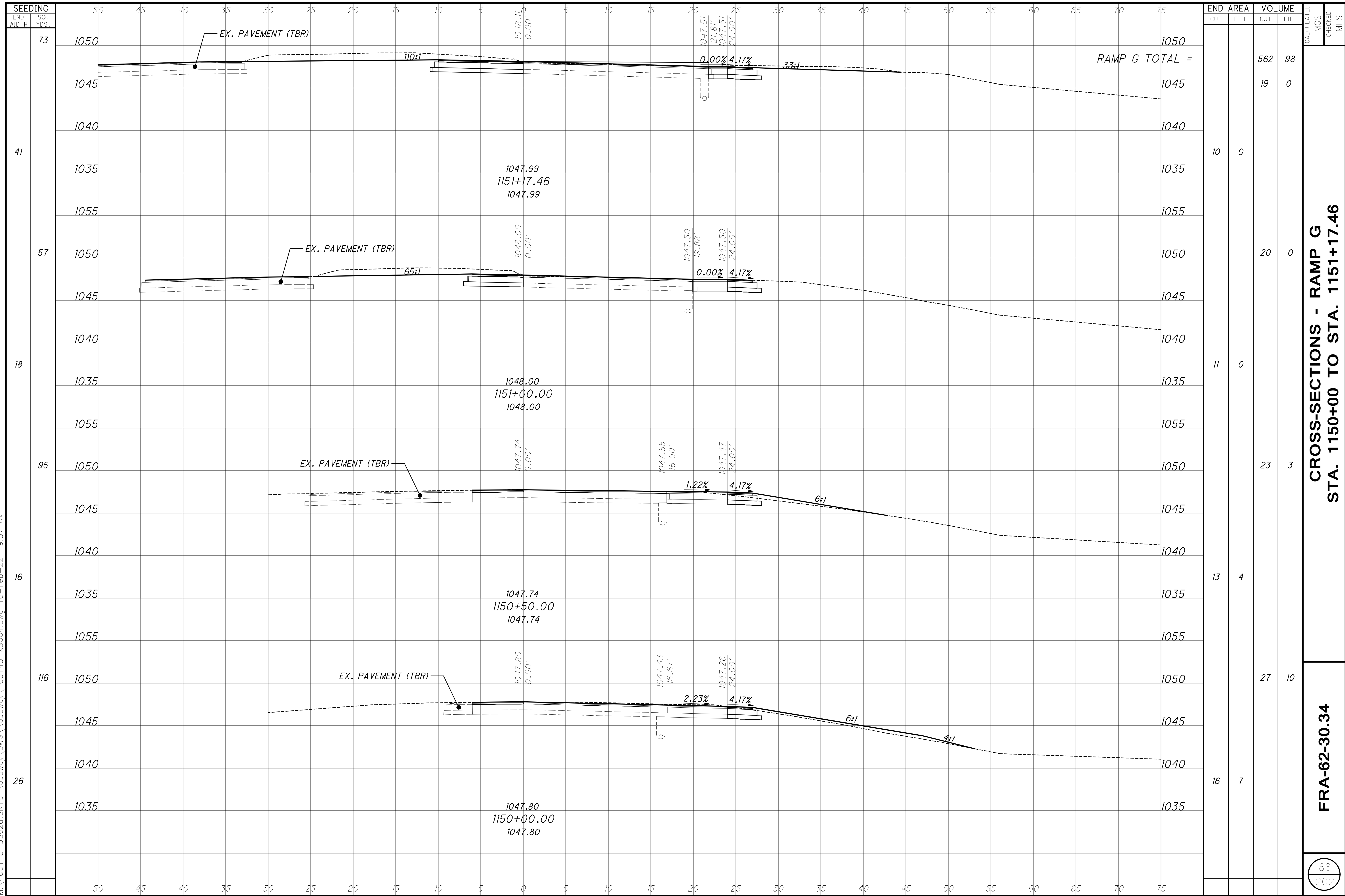
**FRA-62-30.34**

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STATION	END AREA		VOLUME		CALCULATED MGS	CHECKED M/L S
	CUT	FILL	CUT	FILL		
1148+00.00	14	3	28	9		
1148+50.00	14	2	26	4		
1149+00.00	15	0	27	2		
1149+50.00	15	0	28	0		

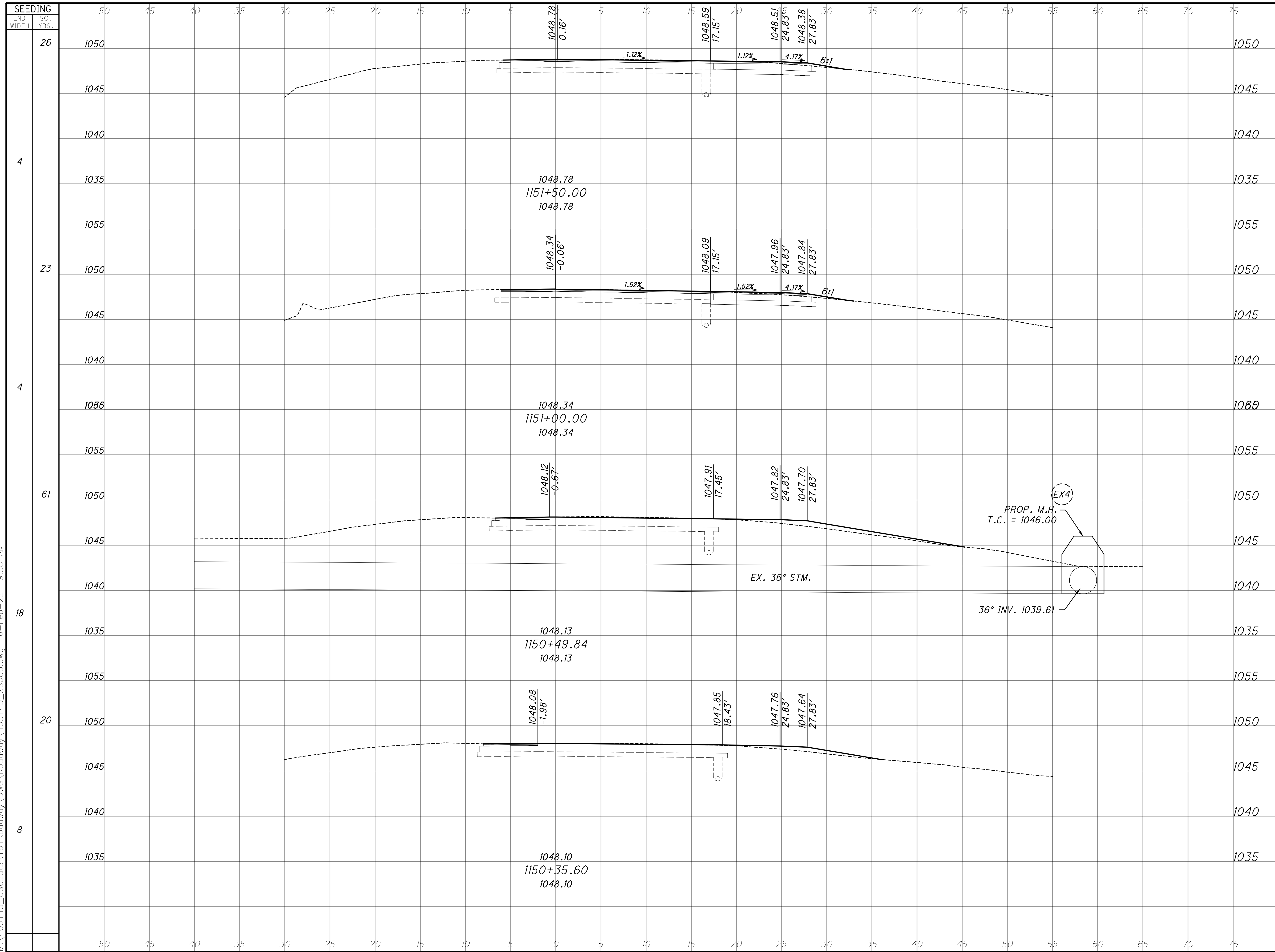
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**CROSS-SECTIONS - RAMP G  
STA. 1150+00 TO STA. 1151+17.46**

**FRA-62-30.34**

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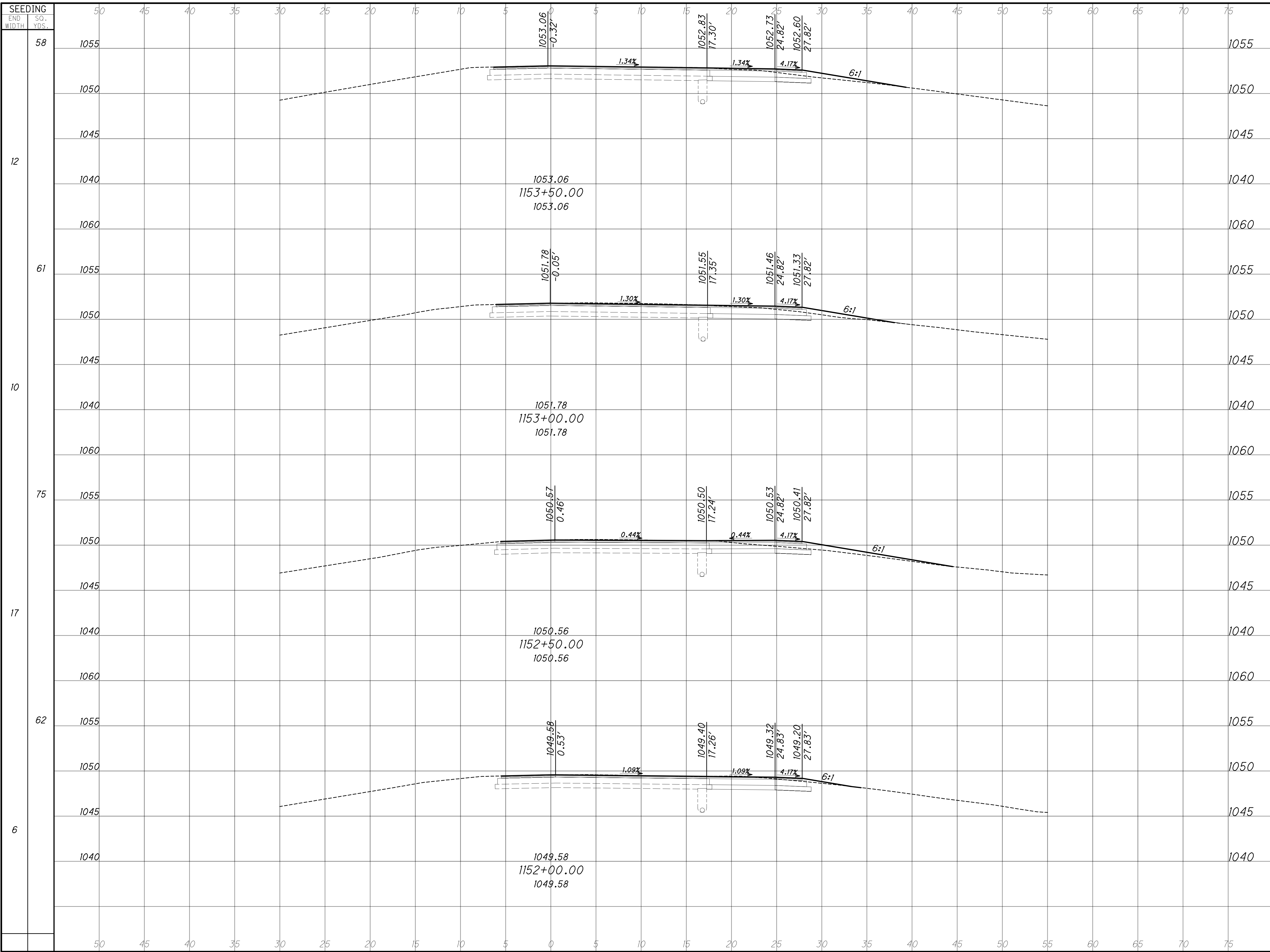
STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1151+50.00	15	1	28	1
1151+00.00	14	1	27	1
1150+49.84	13	5	25	6
1150+35.60	12	2	24	2

**CROSS-SECTIONS - RAMP H**  
**STA. 1150+35.60 TO STA. 1151+50**

**FRA-62-30.34**

87  
202

M:\405145\_US62atSR161Roadway\DWG\Roadway\405145\_XS005.dwg 16-Feb-22 9:38 AM



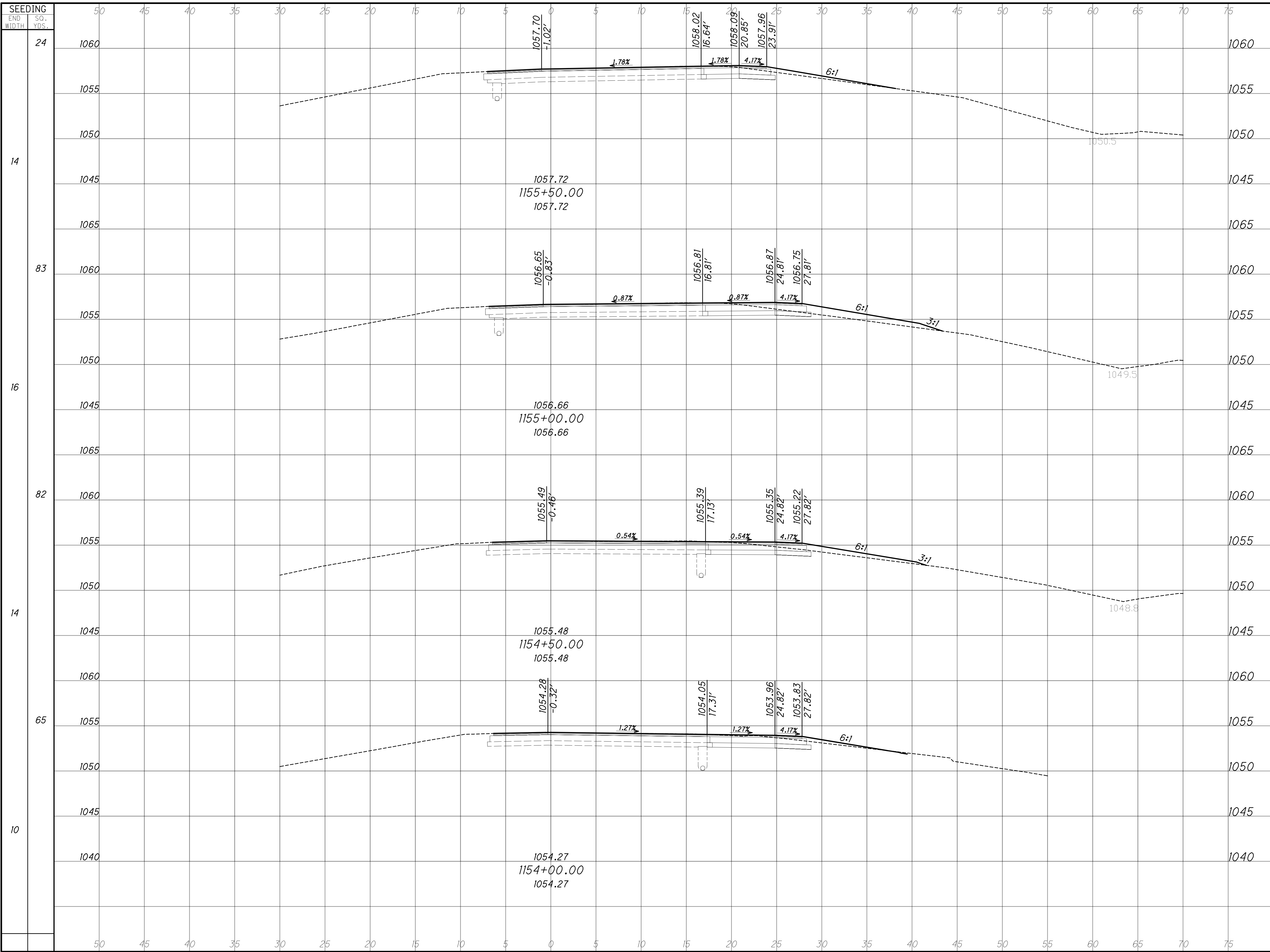
END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
1055			25	5
1050				
1045				
1040	13	3		
1060				
1055			24	6
1050				
1045				
1040	13	3		
1060				
1055			22	8
1050				
1045				
1040	11	5		
1060				
1055			24	6
1050				
1045				
1040	15	1		

**CROSS-SECTIONS - RAMP H**  
**STA. 1152+00 TO STA. 1153+50**

**FRA-62-30.34**



M:\405145\_US62atSR161Roadway\DWG\Roadway\405145\_XS005.dwg 16-Feb-22 9:38 AM

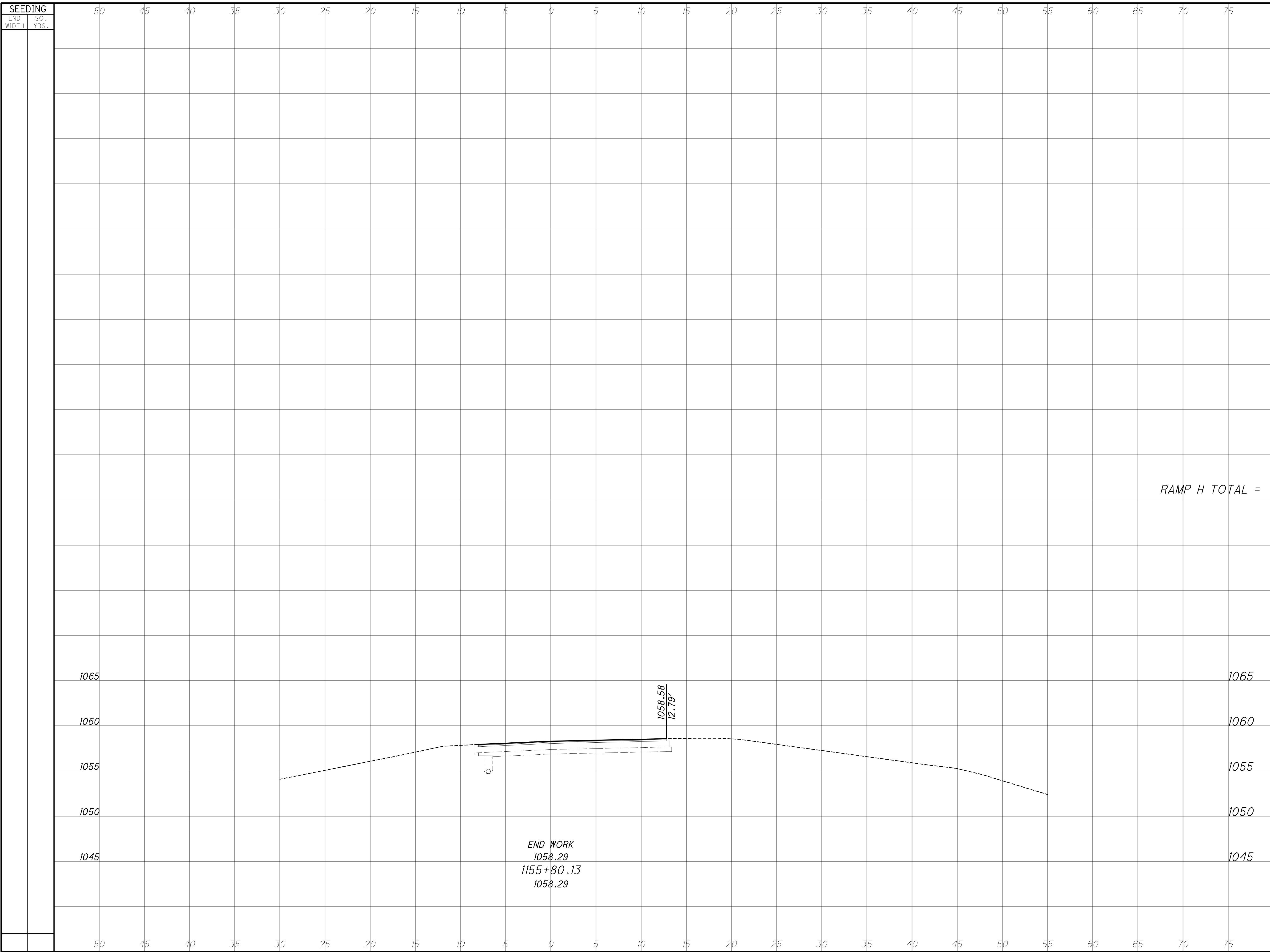


SEEDING	END AREA		VOLUME		CALCULATED MGS	CHECKED MLS
	CUT	FILL	CUT	FILL		
24			19	2		
14	10	3				
83			20	12		
16	11	10				
82			22	15		
14	12	6				
65			24	7		
10	14	2				

**CROSS-SECTIONS - RAMP H  
STA. 1154+00 TO STA. 1155+50**

**FRA-62-30.34**

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END WORK  
 1058.29  
 1155+80.13  
 1058.29

1058.58  
 12.79'

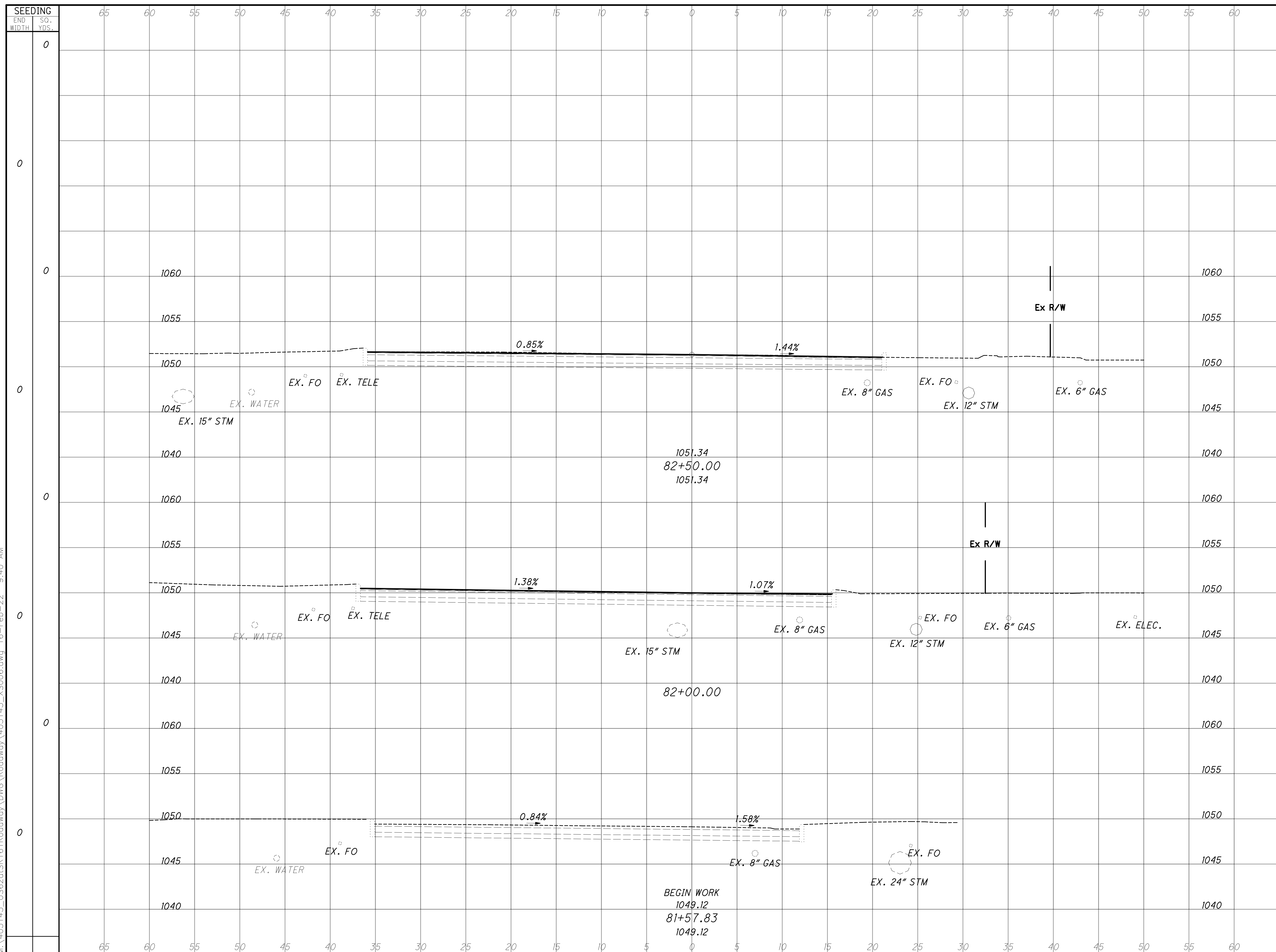
RAMP H TOTAL =

SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	MGS	CHECKED
				284	71		

**CROSS-SECTIONS - RAMP H**  
**STA. 1155+80.13**

**FRA-62-30.34**

M:\405145\_US62atSR161Roadway\DWG\Roadway\405145\_XS006.dwg 16-Feb-22 9:40 AM

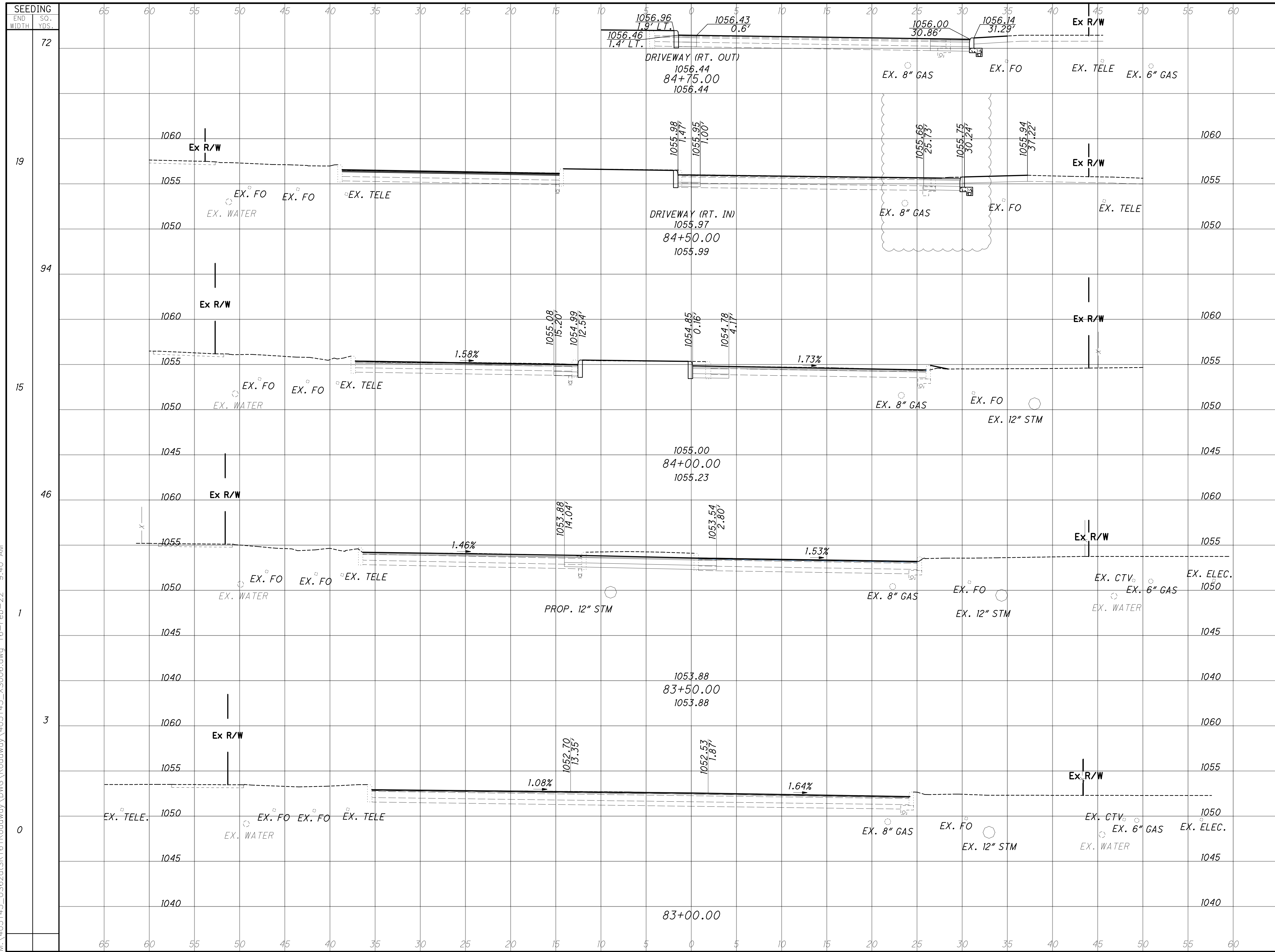


SEEDING END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED MGCS	CHECKED M/L S
		CUT	FILL	CUT	FILL		
0	0	0	0	6	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		

CROSS-SECTIONS - WALTON PARKWAY  
STA. 81+57.83 TO STA. 82+50

FRA-62-30.34

M:\405145\_US62atSR161Roadway\DWG\Roadway\405145\_XS0006.dwg 16-Feb-22 9:40 AM



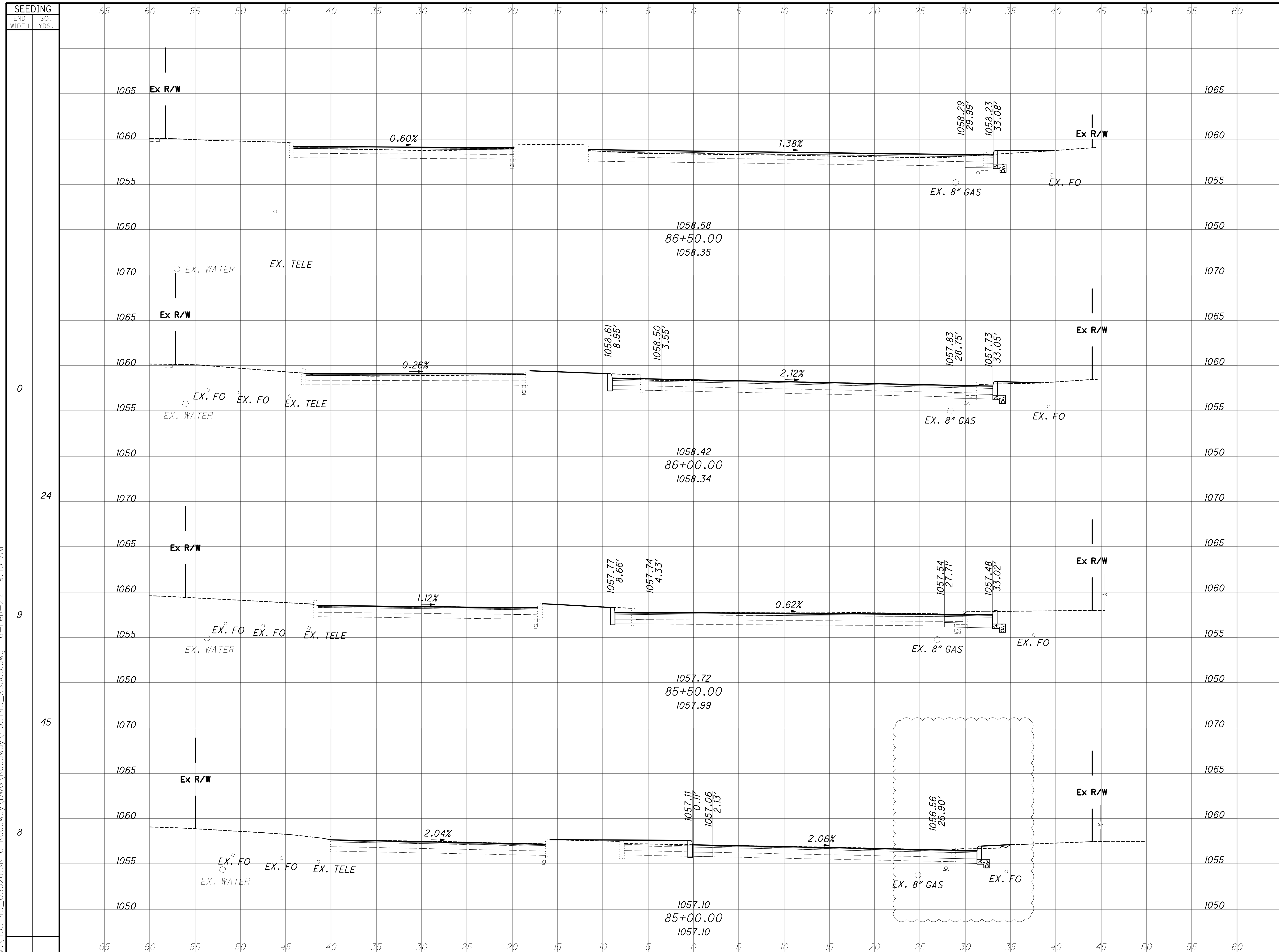
STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
84+75.00			7	1
84+50.00	1	1		
84+00.00	4	1	5	1
83+50.00	24	1	24	1
83+00.00	21	0	25	0
	6	0		

**CROSS-SECTIONS - WALTON PARKWAY  
STA. 83+00 TO STA. 84+50**

**FRA-62-30.34**

92	CALCULATED
202	CHECKED

M:\405145\_US62atSR161Roadway\DWG\Roadway\405145\_XS006.dwg 16-Feb-22 9:40 AM



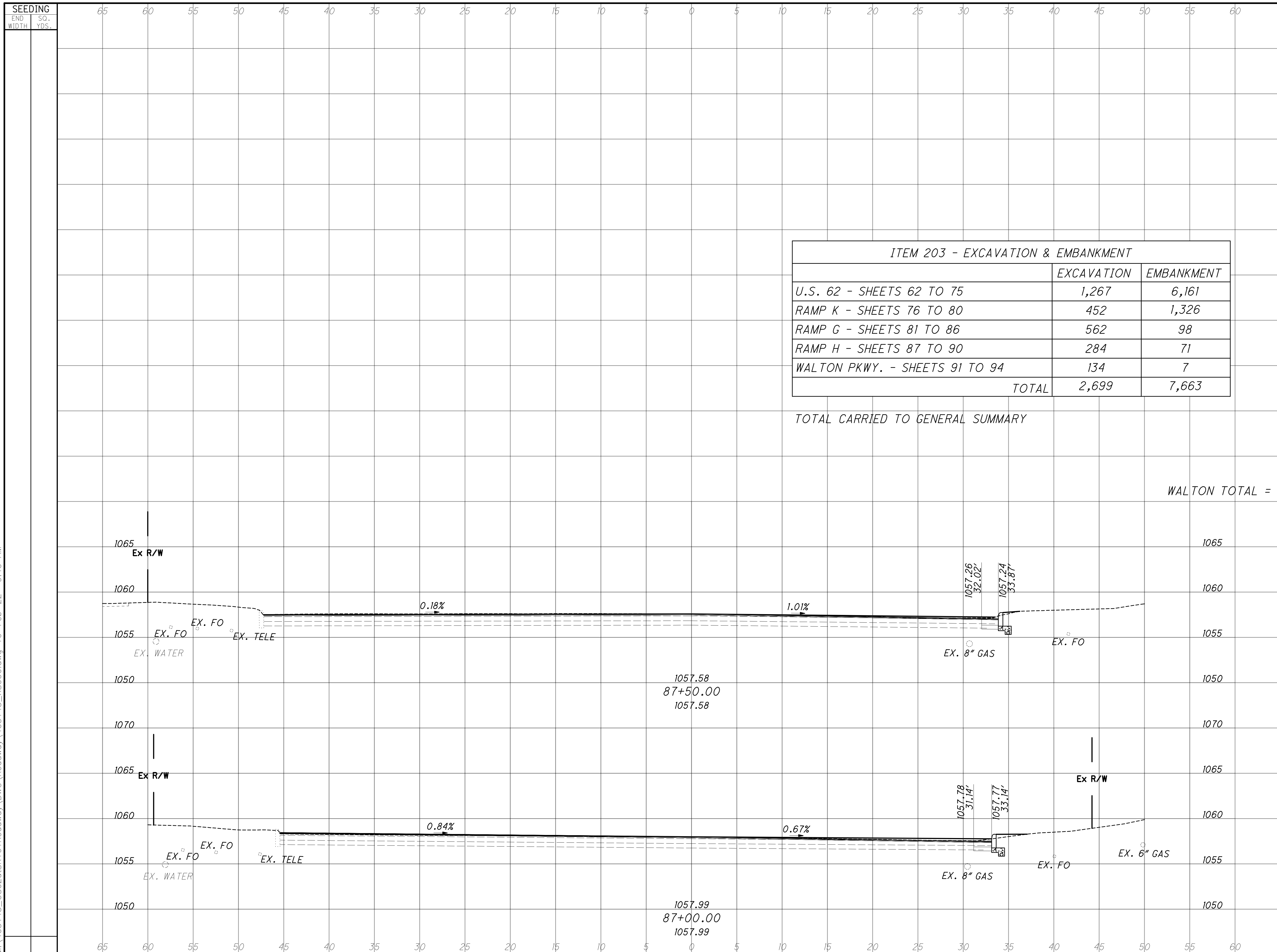
STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
86+50.00	5	0	8	1
86+00.00	13	0	17	0
85+50.00	24	0	24	0
85+00.00	13	0	18	1

**CROSS-SECTIONS - WALTON PARKWAY  
STA. 85+00 TO STA. 86+50**

**FRA-62-30.34**

93  
202

M:\405145\_US62atSR161Roadway\DWG\Roadway\405145\_XS006.dwg 16-Feb-22 9:40 AM



ITEM 203 - EXCAVATION & EMBANKMENT		
	EXCAVATION	EMBANKMENT
U.S. 62 - SHEETS 62 TO 75	1,267	6,161
RAMP K - SHEETS 76 TO 80	452	1,326
RAMP G - SHEETS 81 TO 86	562	98
RAMP H - SHEETS 87 TO 90	284	71
WALTON PKWY. - SHEETS 91 TO 94	134	7
<b>TOTAL</b>	<b>2,699</b>	<b>7,663</b>

TOTAL CARRIED TO GENERAL SUMMARY

WALTON TOTAL =

END AREA	VOLUME	CALCULATED	CHECKED				
				CUT	FILL	CUT	FILL
3	1	134	7				
3	1	6	2				

CROSS-SECTIONS - WALTON PARKWAY  
STA. 87+00 TO STA. 87+50

FRA-62-30.34

EASTBOUND (RIGHT SIDE) JOHNSTOWN ROAD (U.S. 62) PAVEMENT TABLE

STATION	SAWCUT OFFSET	EXISTING SAWCUT ELEVATION	FULL DEPTH WIDENING WIDTH	PAVEMENT CROSS SLOPE	EDGE OF PAVEMENT ELEVATION	INSIDE MEDIAN TC	LONGITUDINAL CURB SLOPE	ISLAND PAVR WIDTH	ISLAND PAVR CROSS SLOPE	OUTSIDE MEDIAN TC	EDGE OF PAVEMENT ELEVATION	PAVEMENT CROSS SLOPE	BIKE LANE WIDTH	OUTSIDE BIKE LANE ELEVATION	OUTSIDE BIKE LANE OFFSET
58+36.42	28.46	1042.41	5.5	-1.56%	1042.32	1042.84	0.15%	5	-1.60%	1042.76	1042.24	-1.56%	6	1042.15	45.96
58+50.00	28.46	1042.43	5.5	-1.56%	1042.34	1042.86	0.00%	5	-1.60%	1042.78	1042.26	-1.56%	6	1042.17	45.96
58+75.00	28.48	1042.43	5.5	-1.56%	1042.34	1042.86	0.64%	5	-1.60%	1042.78	1042.26	-1.56%	6	1042.17	45.98
59+00.00	28.49	1042.59	5.5	-1.56%	1042.50	1043.02	0.24%	5	-1.60%	1042.94	1042.42	-1.56%	6	1042.33	45.99
59+25.00	28.50	1042.65	5.5	-1.56%	1042.56	1043.08	0.24%	5	-1.60%	1043.00	1042.48	-1.56%	6	1042.39	46.00
59+50.00	28.51	1042.71	5.5	-1.56%	1042.62	1043.14	0.36%	5	-1.60%	1043.06	1042.54	-1.56%	6	1042.45	46.01
59+75.00	28.53	1042.80	5.5	-1.56%	1042.71	1043.23	0.32%	5	-1.60%	1043.15	1042.63	-1.56%	6	1042.54	46.03
60+00.00	28.54	1042.88	5.5	-1.56%	1042.79	1043.31	0.32%	5	-1.60%	1043.23	1042.71	-1.56%	6	1042.62	46.04
60+25.00	28.61	1042.96	5.5	-1.56%	1042.87	1043.39	0.24%	5	-1.60%	1043.31	1042.79	-1.56%	6	1042.70	46.11
60+50.00	28.93	1043.02	5.5	-1.56%	1042.93	1043.45	0.28%	5	-1.60%	1043.37	1042.85	-1.56%	6	1042.76	46.43
60+75.00	29.26	1043.09	5.5	-1.56%	1043.00	1043.52	0.24%	5	-1.60%	1043.44	1042.92	-1.56%	6	1042.83	46.76
61+00.00	29.58	1043.15	5.5	-1.56%	1043.06	1043.58	0.28%	5	-1.60%	1043.50	1042.98	-1.56%	6	1042.89	47.08
61+25.00	29.91	1043.22	5.5	-1.56%	1043.13	1043.65	0.28%	5	-1.60%	1043.57	1043.05	-1.56%	6	1042.96	47.41
61+50.00	30.23	1043.29	5.5	-1.56%	1043.20	1043.72	0.28%	5	-1.60%	1043.64	1043.12	-1.56%	6	1043.03	47.73
61+75.00	30.56	1043.36	5.5	-1.56%	1043.27	1043.79	0.14%	5	-1.60%	1043.71	1043.19	-1.56%	6	1043.10	48.06
62+00.00	30.88	1043.42	5.5	-2.00%	1043.31	1043.83	0.30%	5	-1.60%	1043.75	1043.23	-1.56%	6	1043.14	48.38
62+25.00	31.21	1043.47	5.5	-1.56%	1043.38	1043.90	0.36%	5	-1.60%	1043.82	1043.30	-1.56%	6	1043.21	48.71
62+50.00	31.53	1043.56	5.5	-1.56%	1043.47	1043.99	0.09%	5	-1.60%	1043.91	1043.39	-1.56%	6	1043.30	49.03
62+75.00	31.86	1043.69	5.5	-3.50%	1043.50	1044.02	0.59%	5	-1.60%	1043.94	1043.42	-1.56%	6	1043.32	49.36
63+00.00	32.18	1043.73	5.5	-1.56%	1043.64	1044.16	0.24%	5	-1.60%	1044.08	1043.56	-1.56%	6	1043.47	49.68
63+25.00	32.51	1043.79	5.5	-1.56%	1043.70	1044.22	-	5	-1.60%	1044.14	1043.62	-1.56%	6	1043.53	50.01
INTERSECTION RAMP J & K, SEE SHEET 63															
64+75.00	32.50	1044.21	7.1	-1.56%	1044.10	1044.62	0.38%	5.5	3.13%	-	1044.79	-1.56%	22.59	1044.44	68.19
65+00.00	32.22	1044.31	7.4	-1.56%	1044.19	1044.71	0.23%	5.5	3.13%	-	1044.89	-1.56%	22.77	1044.53	68.39
65+25.00	31.94	1044.37	7.6	-1.56%	1044.25	1044.77	0.22%	9.18	3.13%	-	1045.06	-1.56%	14.6	1044.83	63.82
65+50.00	31.66	1044.43	7.9	-1.56%	1044.31	1044.83	0.30%	9.5	3.13%	-	1045.12	-1.56%	14	1044.91	63.56
65+75.00	31.38	1044.51	8.2	-1.56%	1044.38	1044.90	0.30%	9.5	3.13%	-	1045.20	-1.56%	14	1044.98	63.58
66+00.00	31.10	1044.59	8.5	-1.56%	1044.46	1044.98	0.31%	9.5	3.13%	-	1045.27	-1.56%	14	1045.06	63.60
66+25.00	30.82	1044.67	8.7	-1.56%	1044.53	1045.05	0.34%	9.5	3.13%	-	1045.35	-1.56%	14	1045.13	63.52
66+50.00	28.55	1044.79	11	-1.56%	1044.62	1045.14	-0.15%	9.5	3.13%	-	1045.44	-1.56%	14	1045.22	63.55
66+75.00	35.05	1044.65	4.5	-1.56%	1044.58	1045.10	0.32%	9.5	3.13%	-	1045.40	-1.56%	14	1045.18	63.55
67+00.00	35.04	1044.73	4.5	-1.56%	1044.66	1045.18	0.36%	9.5	3.13%	-	1045.48	-1.56%	14	1045.26	63.54
67+25.00	35.04	1044.82	4.5	-1.56%	1044.75	1045.27	0.52%	9.5	3.13%	-	1045.57	-1.56%	14	1045.35	63.54
67+50.00	35.03	1044.95	4.5	-1.56%	1044.88	1045.40	0.48%	9.5	3.13%	-	1045.70	-1.56%	14	1045.48	63.53
67+75.00	35.03	1045.07	4.5	-1.56%	1045.00	1045.52	0.44%	9.5	3.13%	-	1045.82	-1.56%	14	1045.60	63.53
68+00.00	35.02	1045.18	4.5	-1.56%	1045.11	1045.63	0.64%	9.5	3.13%	-	1045.93	-1.56%	14	1045.71	63.52
68+25.00	35.02	1045.34	4.5	-1.56%	1045.27	1045.79	0.64%	9.5	3.13%	-	1046.09	-1.56%	14	1045.87	63.52
68+50.00	35.01	1045.50	4.5	-1.56%	1045.43	1045.95	0.72%	9.5	3.13%	-	1046.25	-1.56%	14	1046.03	63.51
68+75.00	35.01	1045.68	4.5	-1.56%	1045.61	1046.13	0.64%	9.5	3.13%	-	1046.43	-1.56%	14	1046.21	63.51
69+00.00	35.00	1045.84	4.5	-1.56%	1045.77	1046.29	0.76%	9.5	3.13%	-	1046.59	-1.56%	14	1046.37	63.50
69+25.00	35.00	1046.03	4.5	-1.56%	1045.96	1046.48	0.76%	9.5	3.13%	-	1046.78	-1.56%	14	1046.56	63.50
69+50.00	34.99	1046.22	4.5	-1.56%	1046.15	1046.67	0.76%	9.5	3.13%	-	1046.97	-1.56%	14	1046.75	63.49
69+75.00	34.99	1046.41	4.5	-1.56%	1046.34	1046.86	0.80%	9.5	3.13%	-	1047.16	-1.56%	14	1046.94	63.49
70+00.00	34.98	1046.61	4.5	-1.56%	1046.54	1047.06	0.72%	9.5	3.13%	-	1047.36	-1.56%	14	1047.14	63.48
70+25.00	34.98	1046.79	4.5	-1.56%	1046.72	1047.24	0.88%	9.5	3.13%	-	1047.54	-1.56%	14	1047.32	63.48
70+50.00	34.97	1047.01	4.5	-1.56%	1046.94	1047.46	0.80%	9.5	3.13%	-	1047.76	-1.56%	14	1047.54	63.47
70+75.00	34.97	1047.21	4.5	-1.56%	1047.14	1047.66	0.76%	9.5	3.13%	-	1047.96	-1.56%	14	1047.74	63.47
71+00.00	34.96	1047.40	4.5	-1.56%	1047.33	1047.85	0.92%	5.59	3.13%	-	1048.02	-1.56%	22.45	1047.67	68.00
71+25.00	34.96	1047.63	4.5	-1.56%	1047.56	1048.08	-	5.5	3.13%	-	1048.25	-1.56%	22.64	1047.90	68.10
INTERSECTION RAMP G & H, SEE SHEET 64															
72+66.28	34.93	1048.76	4.5	-1.56%	1048.69	1049.21	0.69%	5	-1.60%	1049.13	1048.61	-1.56%	6	1048.52	51.43
72+75.00	34.93	1048.82	4.5	-1.56%	1048.75	1049.27	0.56%	5	-1.60%	1049.19	1048.67	-1.56%	6	1048.58	51.43
73+00.00	34.92	1048.96	4.5	-1.56%	1048.89	1049.41	0.72%	5	-1.60%	1049.33	1048.81	-1.56%	6	1048.72	51.42
73+25.00	34.92	1049.14	4.5	-1.56%	1049.07	1049.59	0.72%	5	-1.60%	1049.51	1048.99	-1.56%	6	1048.90	51.42
73+50.00	34.91	1049.32	4.5	-1.56%	1049.25	1049.77	0.80%	5	-1.60%	1049.69	1049.17	-1.56%	6	1049.08	51.41
73+75.00	34.91	1049.52	4.5	-1.56%	1049.45	1049.97	0.80%	5	-1.60%	1049.89	1049.37	-1.56%	6	1049.28	51.41
74+00.00	34.90	1049.72	4.5	-1.56%	1049.65	1050.17	0.80%	5	-1.60%	1050.09	1049.57	-1.56%	6	1049.48	51.40
74+25.00	34.90	1049.92	4.5	-1.56%	1049.85	1050.37	0.84%	5	-1.60%	1050.29	1049.77	-1.56%	6	1049.68	51.40
74+50.00	34.89	1050.13	4.5	-1.56%	1050.06	1050.58	0.84%	5	-1.60%	1050.50	1049.98	-1.56%	6	1049.89	51.39
74+75.00	34.89	1050.34	4.5	-1.56%	1050.27	1050.79	0.84%	5	-1.60%	1050.71	1050.19	-1.56%	6	1050.10	51.39
75+00.00	34.88	1050.55	4.5	-1.56%	1050.48	1051.00	0.72%	5	-1.60%	1050.92	1050.40	-1.56%	6	1050.31	51.38
75+25.00	34.88	1050.73	4.5	-1.56%	1050.66	1051.18	0.80%	5	-1.60%	1051.10	1050.58	-1.56%	6	1050.49	51.38
75+50.00	34.87	1050.93	4.5	-1.56%	1050.86	1051.38	0.76%	5	-1.60%	1051.30	1050.78	-1.56%	6	1050.69	51.37
75+75.00	34.87	1051.12	4.5	-1.56%	1051.05	1051.57	0.76%	5	-1.60%	1051.49	1050.97	-1.56%	6	1050.88	51.37
76+00.00	34.86	1051.31	4.5	-1.56%	1051.24	1051.76	0.92%	5	-1.60%	1051.68	1051.16	-1.56%	6	1051.07	51.36
76+25.00	34.86	1051.54	4.5	-1.56%	1051.47	1051.99	0.88%	5	-1.60%	1051.91	1051.39	-1.56%	6	1051.30	51.36
76+50.00	34.85	1051.76	4.5	-1.56%	1051.69	1052.21	0.72%	5	-1.60%	1052.13	1051.61	-1.56%	6	1051.52	51.35
76+75.00	34.85	1051.94	4.5	-1.56%	1051.87	1052.39	0.84%	5	-1.60%	1052.31	1051.79	-1.56%	6	1051.70	51.35
77+00.00	34.84	1052.15	4.5	-1.56%	1052.08	1052.60	0.76%	5	-1.60%	1052.52	1052.00	-1.56%	6	1051.91	51.34
77+25.00	34.84	1052.34	4.5	-1.56%	1052.27	1052.79	0.76%	5	-1.60%	1052.71	1052.19	-1.56%	6	1052.10	51.34
77+50.00	34.83	1052.53	4.5	-1.56%	1052.46	1052.98	0.84%	5	-1.60%	1052.90	1052.38	-1.56%	6	1052.29	51.33
77+75.00	34.83	1052.74	4.5	-1.56%	1052.67	1053.19	0.68%	5	-1.60%	1053.11	1052.59	-1.56%	6	1052.50	51.33
78+00.00	34.82	1052.91	4.5	-1.56%	1052.84	1053.36	0.76%	5	-1.60%	1053.28	1052.76	-1.56%	6	1052.67	51.32
78+19.76	34.82	1053.06	4.5	-1.56%	1052.99	1053.51	-	5	-1.60%	1053.43	1052.91	-1.56%	6	1052.82	51.32

INTERSECTION WALTON PARKWAY & SMITH'S MILL ROAD, SEE SHEET 65

WESTBOUND (LEFT SIDE) JOHNSTOWN ROAD (U.S. 62) PAVEMENT TABLE															
OUTSIDE BIKE LANE OFFSET	OUTSIDE BIKE LANE ELEVATION	BIKE LANE WIDTH	PAVEMENT CROSS SLOPE	EDGE OF PAVEMENT ELEVATION	OUTSIDE MEDIAN TC	ISLAND PAVEMENT CROSS SLOPE	ISLAND PAVEMENT WIDTH	LONGITUDINAL CURB SLOPE	INSIDE MEDIAN TC	EDGE OF PAVEMENT ELEVATION	PAVEMENT CROSS SLOPE	FULL DEPTH WIDENING WIDTH	EXISTING SAWCUT ELEVATION	SAWCUT OFFSET	STATION
52.37	1043.34	6	-1.56%	1043.44	1043.96	-1.60%	5	0.31%	1044.04	1043.52	-1.56%	6	1043.61	34.37	62+58.92
52.37	1043.39	6	-1.56%	1043.49	1044.01	-1.60%	5	0.24%	1044.09	1043.57	-1.56%	6	1043.66	34.37	62+75.00
52.38	1043.45	6	-1.56%	1043.55	1044.07	-1.60%	5	-	1044.15	1043.63	-1.56%	6	1043.72	34.38	63+00.00
INTERSECTION RAMP J & K, SEE SHEET 63															
67.99	1044.44	22.58	-1.56%	1044.79	-	3.13%	5.5	0.24%	1044.62	1044.10	-1.56%	9	1044.24	30.41	64+50.00
68.42	1044.49	23.01	-1.56%	1044.85	-	3.13%	5.5	0.32%	1044.68	1044.16	-1.56%	9	1044.30	30.41	64+75.00
66.48	1044.77	17.49	-1.56%	1045.04	-	3.13%	9.07	0.16%	1044.76	1044.24	-1.56%	9	1044.38	30.42	65+00.00
63.42	1044.88	14	-1.56%	1045.10	-	3.13%	9.5	0.32%	1044.80	1044.28	-2.00%	9	1044.46	30.42	65+25.00
63.43	1044.96	14	-1.56%	1045.18	-	3.13%	9.5	0.20%	1044.88	1044.36	-2.10%	9	1044.55	30.43	65+50.00
63.43	1045.01	14	-1.56%	1045.23	-	3.13%	9.5	0.37%	1044.93	1044.41	-2.00%	9	1044.59	30.43	65+75.00
63.44	1045.10	14	-1.56%	1045.32	-	3.13%	9.5	0.23%	1045.02	1044.50	-2.20%	9	1044.70	30.44	66+00.00
63.43	1045.16	14	-1.56%	1045.38	-	3.13%	9.49	0.24%	1045.08	1044.56	-1.56%	9	1044.70	30.44	66+25.00
62.53	1045.16	14	-1.56%	1045.38	-	3.13%	7.58	0.16%	1045.14	1044.62	-1.56%	9	1044.76	31.45	66+50.00
60.62	1045.17	14	-1.56%	1045.39	-	3.13%	6.67	0.36%	1045.18	1044.66	-1.56%	4.5	1044.73	34.95	66+75.00
60.63	1045.26	14	-1.56%	1045.48	-	3.13%	6.67	0.52%	1045.27	1044.75	-1.56%	4.5	1044.82	34.96	67+00.00
60.63	1045.39	14	-1.56%	1045.61	-	3.13%	6.67	0.28%	1045.40	1044.88	-1.56%	4.5	1044.95	34.96	67+25.00
60.64	1045.46	14	-1.56%	1045.68	-	3.13%	6.67	0.48%	1045.47	1044.95	-1.56%	4.5	1045.02	34.97	67+50.00
60.64	1045.58	14	-1.56%	1045.80	-	3.13%	6.67	0.56%	1045.59	1045.07	-1.56%	4.5	1045.14	34.97	67+75.00
60.65	1045.72	14	-1.56%	1045.94	-	3.13%	6.67	0.52%	1045.73	1045.21	-1.56%	4.5	1045.28	34.98	68+00.00
60.65	1045.85	14	-1.56%	1046.07	-	3.13%	6.67	0.60%	1045.86	1045.34	-1.56%	4.5	1045.41	34.98	68+25.00
60.66	1046.00	14	-1.56%	1046.22	-	3.13%	6.67	0.68%	1046.01	1045.49	-1.56%	4.5	1045.56	34.99	68+50.00
62.26	1046.22	14	-1.56%	1046.44	-	3.13%	8.27	0.72%	1046.18	1045.66	-1.56%	4.5	1045.73	34.99	68+75.00
63.50	1046.44	14	-1.56%	1046.66	-	3.13%	9.5	0.76%	1046.36	1045.84	-1.56%	4.5	1045.91	35.00	69+00.00
63.50	1046.63	14	-1.56%	1046.85	-	3.13%	9.5	0.92%	1046.55	1046.03	-1.56%	4.5	1046.10	35.00	69+25.00
63.51	1046.86	14	-1.56%	1047.08	-	3.13%	9.5	0.68%	1046.78	1046.26	-1.56%	4.5	1046.33	35.01	69+50.00
63.51	1047.03	14	-1.56%	1047.25	-	3.13%	9.5	0.72%	1046.95	1046.43	-1.56%	4.5	1046.50	35.01	69+75.00
63.52	1047.21	14	-1.56%	1047.43	-	3.13%	9.5	0.80%	1047.13	1046.61	-1.56%	4.5	1046.68	35.02	70+00.00
63.52	1047.41	14	-1.56%	1047.63	-	3.13%	9.5	0.92%	1047.33	1046.81	-1.56%	4.5	1046.88	35.02	70+25.00
63.53	1047.64	14	-1.56%	1047.86	-	3.13%	9.5	0.80%	1047.56	1047.04	-1.56%	4.5	1047.11	35.03	70+50.00
63.53	1047.84	14	-1.56%	1048.06	-	3.13%	9.5	0.72%	1047.76	1047.24	-1.56%	4.5	1047.31	35.03	70+75.00
68.67	1047.98	18.32	-1.56%	1048.26	-	3.13%	10.31	0.80%	1047.94	1047.42	-1.56%	4.5	1047.49	35.04	71+00.00
82.23	1048.17	22.85	-1.56%	1048.53	-	2.00%	19.34	0.78%	1048.14	1047.62	-1.56%	4.5	1047.69	35.04	71+25.00
82.31	1047.75	23.21	-1.56%	1048.12	-	-0.60%	19.06	-	1048.23	1047.71	-1.56%	4.5	1047.78	35.04	71+36.56
INTERSECTION RAMP G & H, SEE SHEET 64															
61.57	-	-	-1.56%	-	-	-	-	-	-	1048.24	-1.56%	26.5	1048.65	35.07	72+41.14
72.85	1048.32	6	-1.56%	1048.42	1048.94	-1.60%	4.28	0.84%	1049.01	1048.49	-1.56%	26.5	1048.90	35.07	72+50.00
73.58	1048.52	6	-1.56%	1048.62	1049.14	-1.60%	5	0.00%	1049.22	1048.70	-1.56%	26.5	1049.11	35.08	72+75.00
73.58	1048.52	6	-1.56%	1048.62	1049.14	-1.60%	5	0.84%	1049.22	1048.70	-1.56%	26.5	1049.11	35.08	73+00.00
73.57	1048.73	6	-1.56%	1048.83	1049.35	-1.60%	5	0.67%	1049.43	1048.91	-1.56%	24.6	1049.29	36.97	73+25.00
73.61	1048.90	6	-1.56%	1048.99	1049.51	-1.60%	5	0.63%	1049.59	1049.07	-1.56%	20.3	1049.39	41.31	73+50.00
73.56	1049.06	6	-1.56%	1049.15	1049.67	-1.60%	5	0.75%	1049.75	1049.23	-1.56%	15.9	1049.48	45.66	73+75.00
73.6	1049.25	6	-1.56%	1049.34	1049.86	-1.60%	5	0.94%	1049.94	1049.42	-1.56%	11.6	1049.60	50.00	74+00.00
73.62	1049.48	6	-1.56%	1049.58	1050.10	-1.60%	5	0.52%	1050.18	1049.66	-3.00%	8.5	1049.91	53.12	74+25.00
73.61	1049.61	6	-1.56%	1049.70	1050.22	-1.60%	5	0.64%	1050.30	1049.78	-1.00%	8.6	1049.87	53.01	74+50.00
73.6	1049.77	6	-1.56%	1049.86	1050.38	-1.60%	5	0.75%	1050.46	1049.94	-1.56%	8.7	1050.08	52.90	74+75.00
73.59	1049.96	6	-1.56%	1050.05	1050.57	-1.60%	5	0.75%	1050.65	1050.13	-1.56%	8.8	1050.27	52.79	75+00.00
73.57	1050.15	6	-1.56%	1050.24	1050.76	-1.60%	5	0.90%	1050.84	1050.32	-1.56%	8.9	1050.46	52.67	75+25.00
73.06	1050.37	6	-1.56%	1050.47	1050.99	-1.60%	5	0.62%	1051.07	1050.55	-1.56%	8.5	1050.68	52.56	75+50.00
72.55	1050.53	6	-1.56%	1050.62	1051.14	-1.60%	5	1.11%	1051.22	1050.70	-1.56%	8.1	1050.83	52.45	75+75.00
71.94	1050.81	6	-1.56%	1050.90	1051.42	-1.60%	5	0.87%	1051.50	1050.98	-1.56%	7.6	1051.10	52.34	76+00.00
71.33	1051.03	6	-1.56%	1051.12	1051.64	-1.60%	5	0.78%	1051.72	1051.20	-1.56%	7.1	1051.31	52.23	76+25.00
70.82	1051.22	6	-1.56%	1051.32	1051.84	-1.60%	5	1.11%	1051.92	1051.40	-1.56%	6.7	1051.50	52.12	76+50.00
70.21	1051.50	6	-1.56%	1051.59	1052.11	-1.60%	5	0.70%	1052.19	1051.67	-1.56%	6.2	1051.77	52.01	76+75.00
69.7	1051.68	6	-1.56%	1051.77	1052.29	-1.60%	5	0.80%	1052.37	1051.85	-1.56%	5.8	1051.94	51.90	77+00.00
65.98	1051.86	6	-1.56%	1051.95	1052.47	-1.60%	6.11	1.64%	1052.57	1052.05	-1.56%	2	1052.08	50.87	77+25.00
59.08	1052.28	6	-1.56%	1052.37	1052.89	-1.60%	5.26	1.00%	1052.98	1052.46	-1.56%	2	1052.49	44.82	77+50.00
56.97	1052.54	6	-1.56%	1052.63	1053.15	-1.60%	5	-	1053.23	1052.71	-1.56%	4.5	1052.78	40.47	77+75.00
44.50	-	-	-1.56%	-	-	-	-	-	-	1052.86	-1.56%	4.5	1052.93	40.00	77+95.77
55.45	1053.06	6	-1.56%	1053.15	1053.67	-1.60%	5	0.74%	1053.75	1053.23	-1.56%	4.5	1053.30	38.95	78+41.86
55.27	1053.12	6	-1.56%	1053.21	1053.73	-1.60%	5	0.77%	1053.81	1053.29	-1.56%	4.5	1053.36	38.77	78+50.00
54.97	1053.22	6	-1.56%	1053.31	1053.83	-1.60%	5	-	1053.91	1053.39	-1.56%	4.5	1053.46	38.47	78+62.96
53.9	1053.67	6	-1.56%	1053.76	1054.28	-1.60%	5	0.62%	1054.36	1053.84	-1.56%	4.5	1053.91	37.40	79+10.42
53.57	1053.76	6	-1.56%	1053.85	1054.37	-1.60%	5	0.76%	1054.45	1053.93	-1.56%	4.5	1054.00	37.07	79+25.00
53	1053.95	6	-1.56%	1054.04	1054.56	-1.60%	5	0.76%	1054.64	1054.12	-1.56%	4.5	1054.19	36.50	79+50.00
52.44	1054.14	6	-1.56%	1054.23	1054.75	-1.60%	5	0.60%	1054.83	1054.31	-1.56%	4.5	1054.38	35.94	79+75.00
51.87	1054.29	6	-1.56%	1054.38	1054.90	-1.60%	5	0.64%	1054.98	1054.46	-1.56%	4.5	1054.53	35.37	80+00.00
51.3	1054.45	6	-1.56%	1054.54	1055.06	-1.60%	5	0.31%	1055.14	1054.62	-1.56%	4.5	1054.69	34.80	80+25.00
51.01	1054.49	6	-1.56%	1054.58	1055.10	-1.60%	5	-	1055.18	1054.66	-1.56%	4.5	1054.73	34.51	80+37.70
48.78	1054.85	6	-1.56%	1054.94	1055.46	-1.60%	5	0.13%	1055.54	1055.02	-1.56%	4.5	1055.09	32.28	80+92.36
49.6	1054.86	6	-1.56%	1054.95	1055.47	-1.60%	5	0.36%	1055.55	1055.03	-1.56%	4.5	1055.10	33.10	81+00.00
49.17	1054.93	6	-1.56%	1055.02	1055.54	-1.60%	5	-	1055.62	1055.10	-1.56%	4.5	1055.17	32.67	81+19.24
50.7	1055.29	6	-1.56%	1055.38	1055.90	-1.60%	5	1.62%	1055.98	1055.46	-1.56%	4.5	1055.53	34.20	81+62.04
47.9	1055.50	6	-1.56%	1055.59	1056.11	-1.60%	5	1.84%	1056.19	1055.67	-1.56%	4.5	1055.74	31.40	81+75.00
47.34	1055.96	6	-1.56%	1056.05	1056.57	-1.60%	5	0.16%	1056.65	1056.13	-1.56%	4.5	1056.20	30.84	82+00.00
46.77	1056.00	6	-1.56%	1056.09	1056.61	-1.60%	5	0.84%	1056.69	1056.17	-1.56%	4.5	1056.24	30.27	82+25.00
46.2	1056.21	6													



**CENTER MEDIAN JOHNSTOWN ROAD (U.S. 62) PAVEMENT TABLE**

LONGITUDINAL SLOPE	LEFT MEDIAN TC	EDGE OF PAVEMENT ELEVATION	PAVEMENT CROSS SLOPE	FULL DEPTH WIDENING WIDTH	EXISTING SAWCUT ELEVATION	SAWCUT OFFSET (LEFT)	STATION	MEDIAN WIDTH	ISLAND CROSS SLOPE	SAWCUT (RIGHT) OFFSET	EXISTING SAWCUT ELEVATION	FULL DEPTH WIDENING WIDTH	PAVEMENT CROSS SLOPE	EDGE OF PAVEMENT ELEVATION	RIGHT MEDIAN TC	LONGITUDINAL SLOPE
0.42%	1044.76	1044.60	-1.56%	3.5	1044.65	6.91	64+73.80	6.00	-0.50%	7.09	1044.62	3.5	-1.56%	1044.57	1044.73	0.42%
0.24%	1044.87	1044.71	-1.56%	3.5	1044.76	6.92	65+00.00	6.00	-0.50%	7.08	1044.73	3.5	-1.56%	1044.68	1044.84	0.28%
0.32%	1044.93	1044.77	-1.56%	3.5	1044.82	6.92	65+25.00	6.00	-0.33%	7.08	1044.80	3.5	-1.56%	1044.75	1044.91	0.40%
0.28%	1045.01	1044.85	-1.56%	3.5	1044.90	6.93	65+50.00	6.00	0.00%	7.07	1044.90	3.5	-1.56%	1044.85	1045.01	0.36%
0.48%	1045.08	1044.92	-1.56%	3.5	1044.97	6.93	65+75.00	6.00	0.33%	7.07	1044.99	3.5	-1.56%	1044.94	1045.10	0.24%
0.00%	1045.20	1045.04	-1.56%	3.5	1045.09	6.94	66+00.00	6.00	-0.67%	7.06	1045.05	3.5	-1.56%	1045.00	1045.16	0.24%
0.20%	1045.20	1045.04	-1.56%	3.5	1045.09	6.94	66+25.00	6.00	0.33%	7.06	1045.11	3.5	-1.56%	1045.06	1045.22	0.16%
0.67%	1045.25	1045.09	-1.56%	3.5	1045.14	6.95	66+50.00	6.00	0.17%	7.05	1045.15	3.5	-1.56%	1045.10	1045.26	0.19%
0.52%	1045.32	1045.16	-1.56%	3.5	1045.21	6.95	66+60.41	6.00	-0.67%	7.05	1045.17	3.5	-1.56%	1045.12	1045.28	0.51%
0.81%	1046.58	1046.42	-1.56%	3.5	1046.47	7.00	69+03.89	6.00	-0.83%	7.00	1046.42	3.5	-1.56%	1046.37	1046.53	0.95%
0.72%	1046.75	1046.59	-1.56%	3.5	1046.64	7.00	69+25.00	6.00	-0.33%	7.00	1046.62	3.5	-1.56%	1046.57	1046.73	0.72%
0.60%	1046.93	1046.77	-1.56%	3.5	1046.82	7.01	69+50.00	6.00	-0.33%	6.99	1046.80	3.5	-1.56%	1046.75	1046.91	0.68%
0.60%	1047.08	1046.92	-1.56%	3.5	1046.97	7.01	69+75.00	6.00	0.00%	6.99	1046.97	3.5	-1.56%	1046.92	1047.08	0.72%
0.68%	1047.23	1047.07	-1.56%	3.5	1047.12	7.02	70+00.00	6.00	0.50%	6.98	1047.15	3.5	-1.56%	1047.10	1047.26	0.76%
0.44%	1047.40	1047.24	-1.56%	3.5	1047.29	9.87	70+25.00	8.80	0.57%	6.98	1047.34	3.5	-1.56%	1047.29	1047.45	0.88%
0.64%	1047.51	1047.35	-1.56%	3.5	1047.40	15.37	70+50.00	14.20	1.13%	6.97	1047.56	3.5	-1.56%	1047.51	1047.67	0.80%
0.84%	1047.67	1047.51	-1.56%	3.5	1047.56	18.03	70+75.00	17.00	1.18%	6.97	1047.76	3.5	-1.56%	1047.71	1047.87	0.76%
0.70%	1047.88	1047.72	-1.56%	3.5	1047.77	18.04	71+00.00	17.00	1.06%	6.96	1047.95	3.5	-1.56%	1047.90	1048.06	0.81%
-	1048.01	1047.85	-1.56%	3.5	1047.90	18.40	71+18.60	17.00	-	6.96	1048.10	3.5	-1.56%	1048.05	1048.57	-

INTERSECTION RAMP G & H, SEE SHEET 64

0.86%	1049.26	1048.74	-1.56%	3.5	1048.79	18.06	72+31.50	28.00	0.07%	17.94	1048.81	3.5	-1.56%	1048.76	1049.28	0.76%
0.80%	1049.42	1048.90	-1.56%	3.5	1048.95	18.07	72+50.00	28.00	0.00%	17.93	1048.95	3.5	-1.56%	1048.90	1049.42	0.76%
0.88%	1049.62	1049.10	-1.56%	3.5	1049.15	18.07	72+75.00	28.00	-0.04%	17.93	1049.14	3.5	-1.56%	1049.09	1049.61	0.68%
0.76%	1049.84	1049.32	-1.56%	3.5	1049.37	18.08	73+00.00	28.00	-0.21%	17.92	1049.31	3.5	-1.56%	1049.26	1049.78	0.80%
0.88%	1050.03	1049.51	-1.56%	3.5	1049.56	18.08	73+25.00	28.00	-0.18%	17.92	1049.51	3.5	-1.56%	1049.46	1049.98	0.84%
0.92%	1050.25	1049.73	-1.56%	3.5	1049.78	18.09	73+50.00	28.00	-0.21%	17.91	1049.72	3.5	-1.56%	1049.67	1050.19	0.68%
0.84%	1050.48	1049.96	-1.56%	3.5	1050.01	18.09	73+75.00	28.00	-0.43%	17.91	1049.89	3.5	-1.56%	1049.84	1050.36	0.76%
0.80%	1050.69	1050.17	-1.56%	3.5	1050.22	18.10	74+00.00	28.00	-0.50%	17.90	1050.08	3.5	-1.56%	1050.03	1050.55	0.76%
0.64%	1050.89	1050.37	-1.56%	3.5	1050.42	18.10	74+25.00	28.00	-0.54%	17.90	1050.27	3.5	-1.56%	1050.22	1050.74	0.80%
0.88%	1051.05	1050.53	-1.56%	3.5	1050.58	18.11	74+50.00	28.00	-0.39%	17.89	1050.47	3.5	-1.56%	1050.42	1050.94	0.80%
0.80%	1051.27	1050.75	-1.56%	3.5	1050.80	18.11	74+75.00	28.00	-0.46%	17.89	1050.67	3.5	-1.56%	1050.62	1051.14	0.84%
0.80%	1051.47	1050.95	-1.56%	3.5	1051.00	18.12	75+00.00	28.00	-0.43%	17.88	1050.88	3.5	-1.56%	1050.83	1051.35	0.68%
0.80%	1051.67	1051.15	-1.56%	3.5	1051.20	18.12	75+25.00	28.00	-0.54%	17.88	1051.05	3.5	-1.56%	1051.00	1051.52	0.72%
0.72%	1051.87	1051.35	-1.56%	3.5	1051.40	17.76	75+50.00	28.00	-0.61%	17.87	1051.23	3.5	-1.56%	1051.18	1051.70	0.92%
0.96%	1052.05	1051.53	-1.56%	3.5	1051.58	16.99	75+75.00	28.00	-0.43%	17.87	1051.46	3.5	-1.56%	1051.41	1051.93	0.76%
0.80%	1052.29	1051.77	-1.56%	3.5	1051.82	16.93	76+00.00	25.20	-0.67%	16.88	1051.65	3.5	-1.56%	1051.60	1052.12	1.24%
0.76%	1052.49	1051.97	-1.56%	3.5	1052.02	15.86	76+25.00	19.20	-0.31%	11.38	1051.96	3.5	-1.56%	1051.91	1052.43	1.12%
0.84%	1052.68	1052.16	-1.56%	3.5	1052.21	15.29	76+50.00	14.20	0.21%	6.86	1052.24	3.5	-1.56%	1052.19	1052.71	0.76%
0.88%	1052.89	1052.37	-1.56%	3.5	1052.42	14.73	76+75.00	13.60	0.07%	6.91	1052.43	3.5	-1.56%	1052.38	1052.90	0.88%
0.80%	1053.11	1052.59	-1.56%	3.5	1052.64	17.16	77+00.00	13.00	0.08%	6.69	1052.65	3.5	-1.56%	1052.60	1053.12	0.68%
0.72%	1053.31	1052.79	-1.56%	3.5	1052.84	13.59	77+25.00	12.40	-0.16%	7.01	1052.82	3.5	-1.56%	1052.77	1053.29	0.68%
0.88%	1053.49	1052.97	-1.56%	3.5	1053.02	13.03	77+50.00	11.90	-0.25%	7.06	1052.99	3.5	-1.56%	1052.94	1053.46	0.64%
0.72%	1053.71	1053.19	-1.56%	3.5	1053.24	12.46	77+75.00	11.30	-0.80%	7.11	1053.15	3.5	-1.56%	1053.10	1053.62	0.96%
0.60%	1053.89	1053.37	-1.56%	3.5	1053.42	11.89	78+00.00	10.70	-0.28%	7.16	1053.39	3.5	-1.56%	1053.34	1053.86	0.68%
0.80%	1054.04	1053.52	-1.56%	3.5	1053.57	11.33	78+25.00	10.10	-0.10%	7.21	1053.56	3.5	-1.56%	1053.51	1054.03	0.84%
0.68%	1054.24	1053.72	-1.56%	3.5	1053.77	10.76	78+50.00	8.80	0.00%	7.06	1053.77	3.5	-1.56%	1053.72	1054.24	0.84%
0.60%	1054.41	1053.89	-1.56%	3.5	1053.94	11.70	78+75.00	7.60	0.53%	6.36	1053.98	3.5	-1.56%	1053.93	1054.45	0.72%
0.72%	1054.56	1054.04	-1.56%	3.5	1054.09	9.63	79+00.00	6.30	1.1%	5.67	1054.16	3.5	-1.56%	1054.11	1054.63	0.76%
0.80%	1054.74	1054.22	-1.56%	3.5	1054.27	9.06	79+25.00	5.00	1.60%	4.97	1054.35	3.5	-1.56%	1054.30	1054.82	0.72%
0.72%	1054.94	1054.42	-1.56%	3.5	1054.47	8.49	79+50.00	3.80	1.58%	4.28	1054.53	3.5	-1.56%	1054.48	1055.00	0.65%
-	1055.05	1054.53	-1.56%	3.5	1054.58	8.15	79+65.28	3.00	1.67%	3.85	1054.63	3.5	-1.56%	1054.58	1055.10	-

**CENTER MEDIAN JOHNSTOWN ROAD (U.S. 62) PAVEMENT TABLE**

STATION	SAWCUT OFFSET (RIGHT)	EXISTING SAWCUT ELEVATION	FULL DEPTH WIDENING WIDTH	PAVEMENT CROSS SLOPE	EDGE OF PAVEMENT ELEVATION	INSIDE MEDIAN TC	LONGITUDINAL SLOPE	MEDIAN WIDTH	ISLAND CROSS SLOPE	INSIDE MEDIAN TC	EDGE OF PAVEMENT ELEVATION	PAVEMENT CROSS SLOPE	FULL DEPTH WIDENING WIDTH	EXISTING SAWCUT ELEVATION	SAWCUT OFFSET (RIGHT)	LONGITUDINAL SLOPE
80+04.86	7.76	1054.96	4.5	-1.56%	1054.89	1055.41	0.94%	5.00	-3.20%	1055.25	1054.73	-1.56%	4.5	1054.80	22.76	0.50%
80+25.00	7.20	1055.15	4.5	-1.56%	1055.08	1055.60	0.88%	6.00	-4.17%	1055.35	1054.83	-1.56%	4.5	1054.90	23.21	0.92%
80+50.00	6.51	1055.37	4.5	-1.56%	1055.30	1055.82	0.68%	7.30	-3.29%	1055.58	1055.06	-1.56%	4.5	1055.13	23.78	0.88%
80+75.00	5.81	1055.54	4.5	-1.56%	1055.47	1055.99	0.80%	8.50	-2.24%	1055.80	1055.28	-1.56%	4.5	1055.35	24.35	0.84%
81+00.00	5.91	1055.74	4.5	-1.56%	1055.67	1056.19	0.84%	9.00	-2.00%	1056.01	1055.49	-1.56%	4.5	1055.56	24.91	0.84%
81+25.00	6.47	1055.95	4.5	-1.56%	1055.88	1056.40	0.96%	9.00	-2.00%	1056.22	1055.70	-1.56%	4.5	1055.77	25.48	0.96%
81+50.00	7.04	1056.19	4.5	-1.56%	1056.12	1056.64	0.96%	9.00	-2.00%	1056.46	1055.94	-1.56%	4.5	1056.01	26.04	1.00%
81+75.00	7.61	1056.43	4.5	-1.56%	1056.36	1056.88	1.04%	9.00	-1.89%	1056.71	1056.19	-1.56%	4.5	1056.26	26.61	0.96%
82+00.00	8.17	1056.69	4.5	-1.56%	1056.62	1057.14	1.04%	9.00	-2.11%	1056.95	1056.43	-1.56%	4.5	1056.50	27.18	1.20%
82+25.00	8.74	1056.95	4.5	-1.56%	1056.88	1057.40	0.92%	9.00	-1.67%	1057.25	1056.73	-1.56%	4.5	1056.80	27.74	1.16%
82+50.00	9.31	1057.18	4.5	-1.56%	1057.11	1057.63	1.21%	9.00	-1.00%	1057.54	1057.02	-1.56%	4.5	1057.09	28.31	1.12%
82+61.59	9.57	1057.32	4.5	-1.56%	1057.25	1057.77	-	9.00	-1.11%	1057.67	1057.15	-1.56%	4.5	1057.22	28.57	-

INTERSECTION WALTON PARKWAY & SMITH'S MILL ROAD, SEE SHEET 65

NOTE:

THE APPROACH ENDS OF ALL MEDIANS NEED TO HAVE VERTICALLY TAPERED CURB HEIGHT FROM 2" TO 6".

CALCULATED  
MGS  
CHECKED  
MLS

**PAVEMENT DETAILS  
U.S. 62 INTERIOR MEDIANS**

**FRA-62-30-34**

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SUPERELEVATION TABLE - RAMP G														
					P.I. Station 1142+02.06									
					Dc = 5'00'									
CENTERLINE CONTROL		RIGHT SIDE								REMARKS				
STATION	EXISTING PROFILE GRADE	EXISTING WIDTH	EXISTING CROSS SLOPE	EXISTING SAWCUT GRADE	WIDENING WIDTH	PROPOSED CROSS SLOPE	TOTAL ELEVATION CORRECTION	EXISTING TRANSITION RATE	EDGE ELEVATION					
1140+01.41	1053.13	15.5	-2.65%	1053.54	0.0	-2.65%	0.41		1053.54					
+25	1053.49	16.5	-1.88%	1053.80	0.0	-1.88%	0.31		1053.80					
+50	1053.87	17.4	-2.36%	1054.28	0.0	-2.36%	0.41		1054.28					
+75	1054.25	18.2	-2.80%	1054.76	2.1	-2.80%	0.57		1054.82					
+77.89	1054.29	18.2	-2.86%	1054.81	2.3	-2.86%	0.59		1054.88	F.S.				
1141+00.00	1054.63	18.2	-3.13%	1055.20	2.9	-3.13%	0.66		1055.29					
+25	1054.99	18.0	-3.28%	1055.58	3.9	-3.28%	0.72		1055.71					
+50	1055.33	18.2	-3.41%	1055.95	4.4	-3.41%	0.77		1056.10					
+75	1055.64	18.0	-3.28%	1056.23	5.2	-3.28%	0.76		1056.40					
1142+00.00	1055.93	18.2	-2.97%	1056.47	5.6	-2.97%	0.71		1056.64					
+25	1056.13	18.0	-2.89%	1056.65	6.4	-2.89%	0.70		1056.83					
+50	1056.30	18.0	-2.83%	1056.81	6.8	-2.83%	0.70		1057.00					
+75	1056.35	17.7	-2.99%	1056.88	7.4	-2.99%	0.75		1057.10					
1143+00.00	1056.38	17.9	-3.24%	1056.96	7.6	-3.24%	0.83		1057.21					
+24.60	1056.34	17.7	-2.94%	1056.86	8.0	-2.94%	0.76		1057.10	F.S.				
+25	1056.34	17.7	-2.94%	1056.86	8.0	-2.94%	0.76		1057.10					
+50	1056.27	17.9	-2.46%	1056.71	7.9	-2.46%	0.63		1056.90					
+75	1056.10	17.8	-2.02%	1056.46	8.2	-2.02%	0.53		1056.63					
1144+00.00	1055.90	18.0	-1.61%	1056.19	8.0	-1.61%	0.42		1056.32					
+25	1055.58	18.2	-0.88%	1055.74	7.8	-0.88%	0.23		1055.81					
+50	1055.25	18.2	-0.27%	1055.30	7.8	-0.27%	0.07		1055.32					
+75	1054.89	18.2	0.00%	1054.89	7.8	0.00%	0.00		1054.89					
+75.40	1054.89	18.2	0.05%	1054.88	7.8	0.05%	-0.01		1054.88					

SUPERELEVATION TABLE - RAMP G														
					P.I. Station 1147+81.99									
					Dc = 8'00'									
CENTERLINE CONTROL		RIGHT SIDE								REMARKS				
STATION	EXISTING PROFILE GRADE	EXISTING WIDTH	EXISTING CROSS SLOPE	EXISTING SAWCUT GRADE	WIDENING WIDTH	PROPOSED CROSS SLOPE	TOTAL ELEVATION CORRECTION	EXISTING TRANSITION RATE	EDGE ELEVATION					
1144+75.40	1054.89	18.2	0.05%	1054.88	7.8	0.05%	-0.01		1054.88					
1145+00.00	1054.53	18.2	0.27%	1054.48	7.8	0.27%	-0.07		1054.46					
+25	1054.15	18	0.61%	1054.04	8.0	0.61%	-0.16		1053.99					
+50	1053.75	18.2	1.04%	1053.56	7.8	1.04%	-0.27		1053.48					
+50	1053.75	18.2	1.04%	1053.56	7.8	1.04%	-0.27		1053.48					
P.C. +56.92	1053.65	18.3	1.26%	1053.42	7.7	1.26%	-0.33		1053.32					
+75	1053.42	18.6	1.99%	1053.05	7.4	1.99%	-0.52		1052.90					
1146+00.00	1053.08	18.9	2.91%	1052.53	7.1	2.91%	-0.76		1052.32					
+25	1052.68	19	3.58%	1052	7.0	3.58%	-0.93		1051.75					
+38.44	1052.45	19	3.21%	1051.84	7.0	3.21%	-0.83		1051.62	F.S.				
+50	1052.29	19	3.37%	1051.65	7.0	3.37%	-0.88		1051.41					
+75	1052.02	18.9	4.50%	1051.17	7.1	4.50%	-1.17		1050.85					
1147+00.00	1051.57	19	4.00%	1050.81	7.0	4.00%	-1.04		1050.53					
+25	1051.21	19	4.37%	1050.38	7.0	4.37%	-1.14		1050.07					
+50	1050.87	18.9	4.66%	1049.99	7.1	4.66%	-1.21		1049.66					
+75	1050.54	18.9	4.39%	1049.71	7.1	4.39%	-1.14		1049.40					
1148+00.00	1050.18	19	4.21%	1049.38	7.0	4.21%	-1.09		1049.09					
+25	1049.81	19	4.21%	1049.01	7.0	4.21%	-1.09		1048.72					
+50	1049.36	19	3.63%	1048.67	7.0	3.63%	-0.94		1048.42					
+75	1049.07	19	3.63%	1048.38	7.0	3.63%	-0.94		1048.13					
1149+00.00	1048.71	18.8	3.19%	1048.11	7.2	3.19%	-0.83		1047.88					
+25	1048.45	18.7	3.26%	1047.84	7.3	3.26%	-0.85		1047.60					
+29.06	1048.41	18.7	3.37%	1047.78	7.3	3.37%	-0.88		1047.53	F.S.				
+50	1048.21	18.6	3.33%	1047.59	7.4	3.33%	-0.87		1047.34					
+75	1047.96	18.6	2.20%	1047.55	7.4	2.79%	-0.73		1047.24					
P.T. +93.06	1047.81	18.6	1.40%	1047.55	7.4	2.39%	-0.62		1047.19					
1150+00.00	1047.80	18.7	1.50%	1047.52	7.3	2.23%	-0.58		1047.22					
+25	1047.71	18.5	0.54%	1047.61	7.5	1.67%	-0.44		1047.28					
+50	1047.74	18.9	1.11%	1047.53	7.1	1.12%	-0.29		1047.45					
+75	1048.26	20	3.95%	1047.47	6.0	0.56%	-0.15		1048.12					
1151+00	1048.00	21.9	2.37%	1047.48	4.1	0.00%	0.00		1048.00					

SUPERELEVATION TABLE - RAMP H														
					P.I. Station 1152+60.31									
					Dc = 1'00'									
CENTERLINE CONTROL		RIGHT SIDE								REMARKS				
STATION	EXISTING PROFILE GRADE	EXISTING WIDTH	EXISTING CROSS SLOPE	EXISTING SAWCUT GRADE	WIDENING WIDTH	PROPOSED CROSS SLOPE	TOTAL ELEVATION CORRECTION	EXISTING TRANSITION RATE	EDGE ELEVATION					
1149+87.83														
1150+00.00														
+25	1048.10	21.6	1.16%	1047.85	5.3	1.16%	-0.31		1047.79					
+50	1048.13	19.4	1.13%	1047.91	7.4	1.13%	-0.30		1047.83					
P.T. +60.40	1048.16	19.2	1.25%	1047.92	7.6	1.25%	-0.34		1047.83					
+75	1048.17	19.1	0.99%	1047.98	7.7	0.99%	-0.27		1047.90					
1151+00.00	1048.34	19.1	1.36%	1048.08	7.7	1.36%	-0.36		1047.98					
+25	1048.54	19.1	1.20%	1048.31	7.7	1.20%	-0.32		1048.22					
+50	1048.76	19.2	0.89%	1048.59	7.7	0.89%	-0.24		1048.52					
+75	1049.16	19.2	1.25%	1048.92	7.6	1.25%	-0.34		1048.83					
1152+00.00	1049.56	19.3	1.04%	1049.36	7.6	1.04%	-0.28		1049.28					
+25	1050.04	19.2	0.42%	1049.96	7.6	0.42%	-0.11		1049.93					
+50	1050.56	19.2	0.31%	1050.50	7.6	0.31%	-0.08		1050.48					
+75	1051.14	19.3	0.83%	1050.98	7.5	0.83%	-0.22		1050.92					
1153+00.00	1051.76	19.4	0.98%	1051.57	7.5	0.98%	-0.26		1051.50					
+25	1052.46	19.3	1.35%	1052.20	7.5	1.35%	-0.36		1052.10					
+50	1053.06	19.3	1.30%	1052.81	7.5	1.30%	-0.35		1052.71					
+75	1053.66	19.3	1.14%	1053.44	7.6	1.14%	-0.31		1053.35					
1154+00.00	1054.27	19.3	1.14%	1054.05	7.5	1.14%	-0.31		1053.96					
+99.13	1054.79	19.3	1.09%	1054.58	7.5	1.09%	-0.29		1054.50					
+25	1054.88	19.3	0.98%	1054.69	7.6	0.98%	-0.26		1054.62					
+50	1055.48	19.1	0.37%	1055.41	7.7	0.37%	-0.10		1055.38					
P.T. +60.07	1055.72	19.1	0.05%	1055.71	7.8	0.05%	-0.01		1055.71					
+75	1056.08	18.9	-0.26%	1056.13	7.9	-0.26%	0.07		1056.15					
+99.13	1056.64	18.8	-0.74%	1056.78	8.0	-0.74%	0.20		1056.84					

CALCULATED  
MGS  
CHECKED  
MLS

PAVEMENT DETAILS  
RAMP G & H SUPERELEVATION TABLES

FRA-62-30.34

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SUPERELEVATION TABLE - RAMP K										SUPERELEVATION TABLE - RAMP K									
P.I. Station 1137+82.69					Dc = 5'28'					P.I. Station 1144+60.06					Dc = 1'45'				
CENTERLINE CONTROL		RIGHT SIDE							REMARKS	CENTERLINE CONTROL		RIGHT SIDE							REMARKS
STATION	EXISTING PROFILE GRADE	EXISTING WIDTH	EXISTING CROSS SLOPE	EXISTING SAWCUT GRADE	WIDENING WIDTH	PROPOSED CROSS SLOPE	TOTAL ELEVATION CORRECTION	EXISTING TRANSITION RATE		EDGE ELEVATION	STATION	EXISTING PROFILE GRADE	EXISTING WIDTH	EXISTING CROSS SLOPE	EXISTING SAWCUT GRADE	WIDENING WIDTH	PROPOSED CROSS SLOPE	TOTAL ELEVATION CORRECTION	
1138+31.85	1046.72	15.2	3.75%	1046.15	0.0	3.75%	-0.57		1046.15	1142+15.00	1049.08	29.1	0.76%	1048.86	8.9	0.76%	-0.29		1048.79
+50	1046.94	19.6	3.93%	1046.17	0.0	3.93%	-0.77		1046.17	+25	1048.98	27.1	0.63%	1048.81	8.9	0.63%	-0.23		1048.75
+75	1047.26	25.3	3.75%	1046.31	0.0	3.75%	-0.95		1046.31	+50	1048.63	27.1	-0.07%	1048.65	8.9	-0.07%	0.03		1048.66
1139+00.00	1047.62	28.1	3.74%	1046.57	4.2	3.74%	-1.21		1046.41	+75	1048.21	29.0	-0.86%	1048.46	9.0	-0.86%	0.33		1048.54
+25	1048.03	28.8	3.99%	1046.88	7.9	3.99%	-1.47		1046.56	P.C. +79.00	1048.14	29.0	-1.00%	1048.43	9.0	-1.00%	0.38		1048.52
+50	1048.29	29.2	3.66%	1047.22	8.8	3.66%	-1.39		1046.90	1143+00.00	1047.81	28.9	-1.45%	1048.23	9.1	-1.45%	0.55		1048.36
+75	1048.60	29.2	3.49%	1047.58	8.8	3.49%	-1.33		1047.27	+03.00	1047.77	28.9	-1.49%	1048.20	9.1	-1.49%	0.57		1048.34
+85.74	1048.72	29.1	3.40%	1047.73	8.9	3.40%	-1.29		1047.43	+25	1047.44	28.9	-1.59%	1047.90	9.1	-1.59%	0.60		1048.04
1140+00.00	1048.84	29.3	3.11%	1047.93	8.7	3.11%	-1.18		1047.66	+50	1047.06	28.9	-1.45%	1047.48	9.1	-1.45%	0.55		1047.61
+25	1049.05	29.3	2.66%	1048.27	8.7	2.66%	-1.01		1048.04	+75	1046.69	29.0	-1.28%	1047.06	9.0	-1.28%	0.48		1047.17
+50	1049.22	29.2	2.29%	1048.55	8.8	2.29%	-0.87		1048.35	1144+00.00	1046.31	29.0	-1.21%	1046.66	9.0	-1.21%	0.46		1046.77
P.C. +52.24	1049.24	29.2	2.29%	1048.57	8.8	2.29%	-0.87		1048.37	+25	1045.91	29.0	-1.24%	1046.27	9.0	-1.24%	0.47		1046.38
+75	1049.36	29.1	1.99%	1048.78	8.9	1.99%	-0.76		1048.60	+50	1045.54	28.9	-1.14%	1045.87	9.1	-1.14%	0.43		1045.97
+76.74	1049.37	29.1	1.96%	1048.80	8.9	1.96%	-0.74		1048.63	+75	1045.18	28.9	-1.11%	1045.50	9.1	-1.11%	0.42		1045.60
										1145+00.00	1044.79	28.8	-1.25%	1045.15	9.2	-1.25%	0.48		1045.27
										+25	1044.44	28.8	-1.49%	1044.87	9.2	-1.49%	0.57		1045.01
										+50	1044.12	28.6	-1.64%	1044.59	9.4	-1.64%	0.62		1044.74
										+75	1043.87	28.6	-1.50%	1044.30	9.4	-1.50%	0.57		1044.44
										1146+00.00	1043.71	28.5	-1.23%	1044.06	9.5	-1.23%	0.47		1044.18
										+16.75	1043.61	28.6	-1.08%	1043.92	9.4	-1.08%	0.41		1044.02
										+25	1043.57	28.7	-1.01%	1043.86	9.3	-1.01%	0.38		1043.95
										P.T. +40.75	1043.50	28.5	-0.84%	1043.74	9.5	-0.84%	0.32		1043.82
										+50	1043.48	28.6	-0.66%	1043.67	9.4	-0.66%	0.25		1043.73
										+75	1043.44	28.8	-0.35%	1043.54	9.2	-0.35%	0.13		1043.57
										1147+00.00	1043.48	31	-0.06%	1043.50	12.1	-0.06%	0.03		1043.51
										+04.75	1043.48	33	-0.15%	1043.53	13.2	-0.15%	0.07		1043.55

CALCULATED  
MGS  
CHECKED  
MLS

PAVEMENT DETAILS  
RAMP K SUPERELEVATION TABLE

FRA-62-30.34

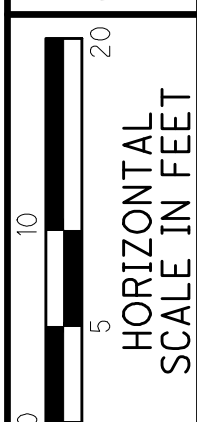
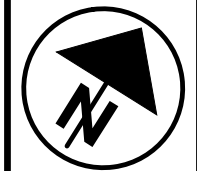
NOTE: THE CURB RETURN DATA IS AT THE EDGE OF PAVEMENT OR FACE OF CURB. STATION AND OFFSET IS OFF OF U.S. 62.

ITEM 1551 - DETECTABLE WARNING DEVICE, TYPE "A"  
 TYPE "A" DETECTABLE WARNING DEVICE INSTALL SHALL BE PER COC STD. DWG. 2319 DR. A. MATERIAL SHALL BE PRE CAST MANUFACTURED 4"x8"x2.25" RED CLAY BRICK AS MANUFACTURED BY WHITACRE-GREER (800) WG PAVER.

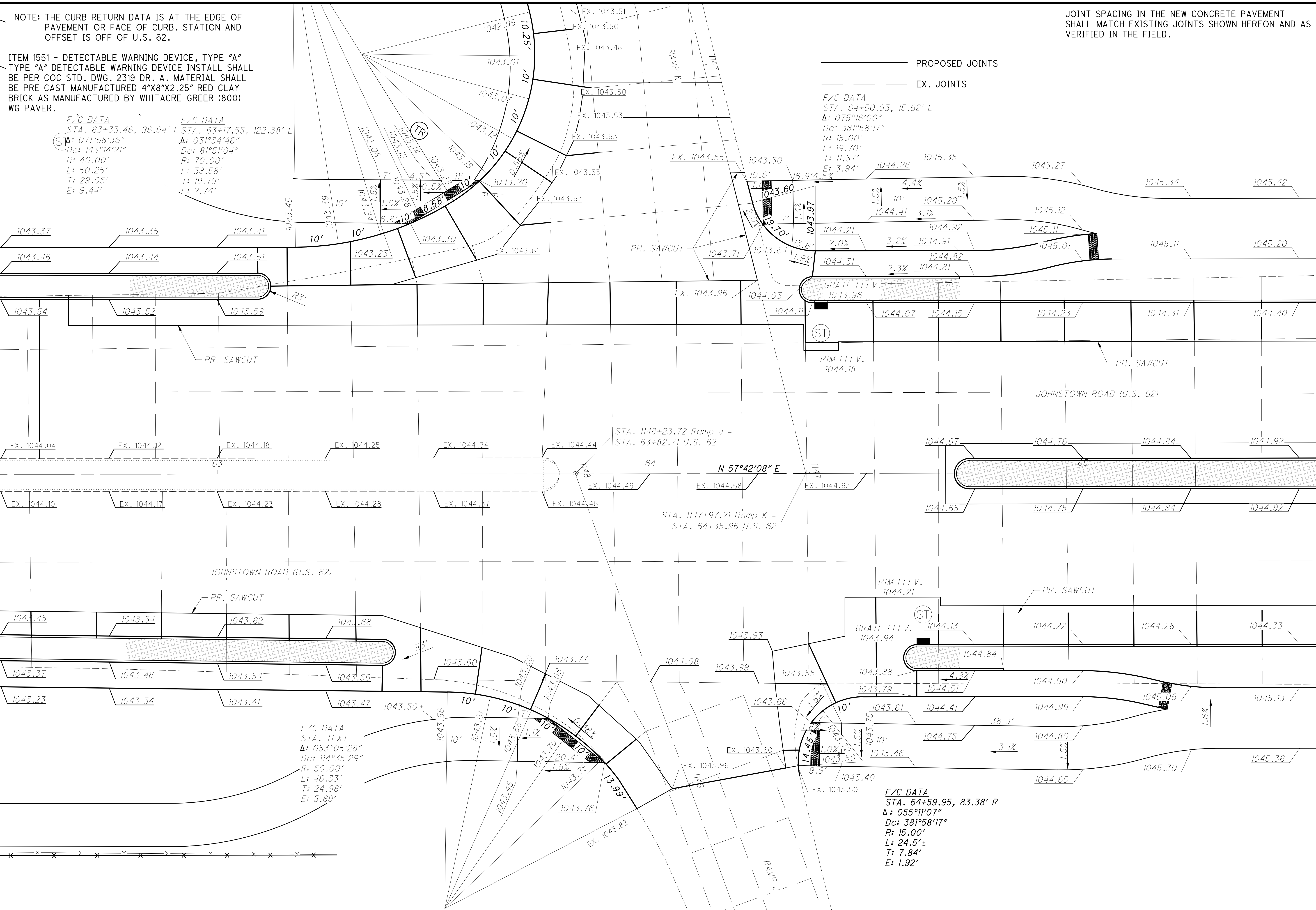
**F/C DATA**  
 STA. 63+33.46, 96.94' L  
 Δ: 071°58'36"  
 Dc: 143°14'21"  
 R: 40.00'  
 L: 50.25'  
 T: 29.05'  
 E: 9.44'

**F/C DATA**  
 STA. 63+17.55, 122.38' L  
 Δ: 031°34'46"  
 Dc: 81°51'04"  
 R: 70.00'  
 L: 38.58'  
 T: 19.79'  
 E: 2.74'

JOINT SPACING IN THE NEW CONCRETE PAVEMENT SHALL MATCH EXISTING JOINTS SHOWN HEREON AND AS VERIFIED IN THE FIELD.



CALCULATED  
 WCS  
 CHECKED  
 MLS



**F/C DATA**  
 STA. 64+50.93, 15.62' L  
 Δ: 075°16'00"  
 Dc: 381°58'17"  
 R: 15.00'  
 L: 19.70'  
 T: 11.57'  
 E: 3.94'

**F/C DATA**  
 STA. TEXT  
 Δ: 053°05'28"  
 Dc: 114°35'29"  
 R: 50.00'  
 L: 46.33'  
 T: 24.98'  
 E: 5.89'

**F/C DATA**  
 STA. 64+59.95, 83.38' R  
 Δ: 055°11'07"  
 Dc: 381°58'17"  
 R: 15.00'  
 L: 24.5'±  
 T: 7.84'  
 E: 1.92'

INTERSECTION DETAIL  
 US 62 AT RAMP K & RAMP J

FRA-62-30.34

100  
 202

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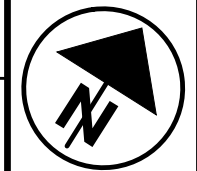
NOTE: THE CURB RETURN DATA IS AT THE EDGE OF PAVEMENT OR FACE OF CURB. STATION AND OFFSET IS OFF OF U.S. 62.

ITEM 1551 - DETECTABLE WARNING DEVICE, TYPE "A"  
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F/C DATA  
 STA. 71+32.79, 74.54' L  
 $\Delta$ : 065°05'52"  
 Dc: 163°42'07"  
 R: 35.00'  
 L: 39.77'  
 T: 22.34'  
 E: 6.52'

F/C DATA  
 STA. 72+31.41, 122.29' L  
 $\Delta$ : 071°47'51"  
 Dc: 114°35'29"  
 R: 50.00'  
 L: 62.66'  
 T: 36.19'  
 E: 11.72'

JOINT SPACING IN THE NEW CONCRETE PAVEMENT SHALL MATCH EXISTING JOINTS SHOWN HEREON AND AS VERIFIED IN THE FIELD.

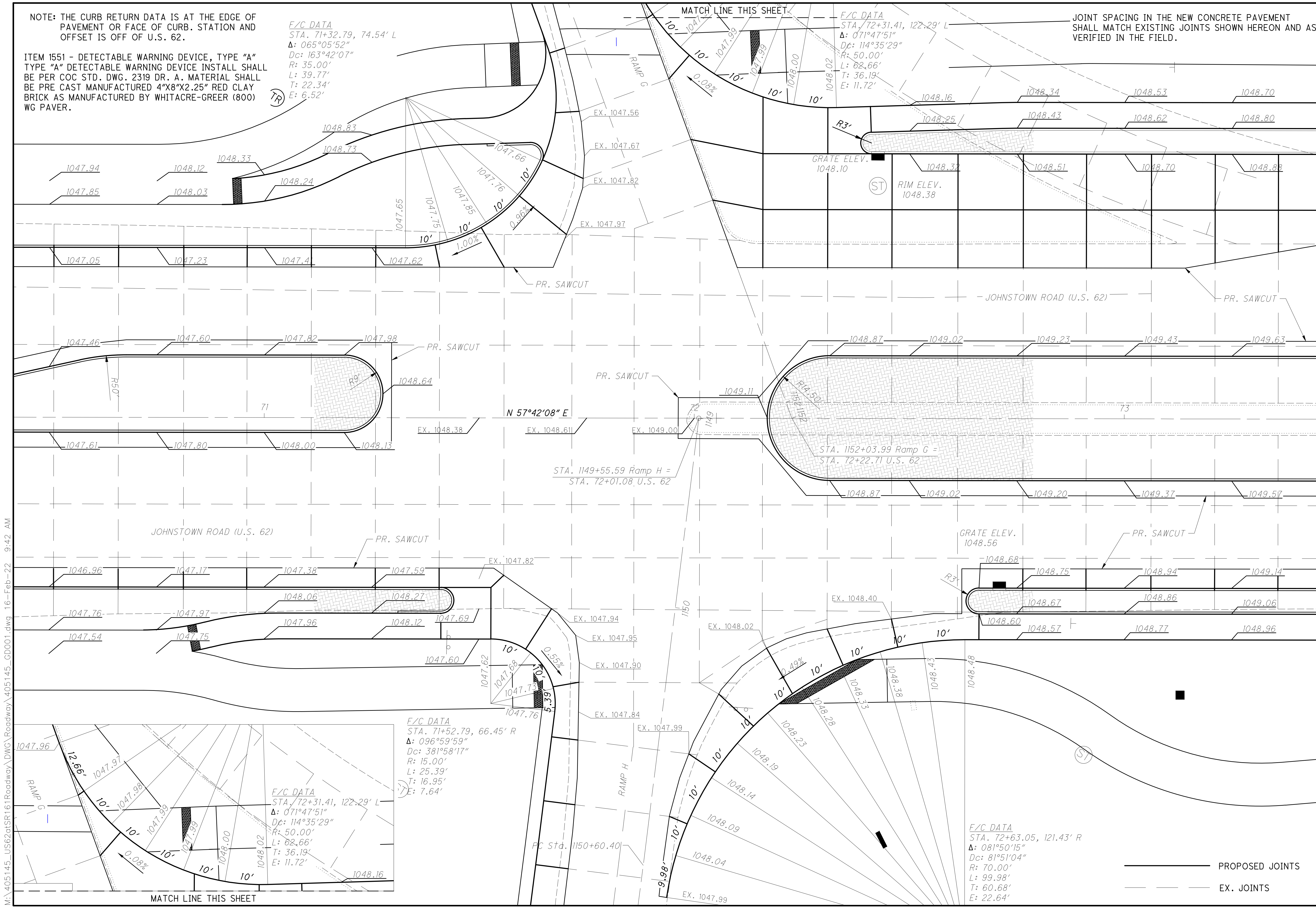


CALCULATED WCS  
 CHECKED M/S

INTERSECTION DETAIL  
 US 62 AT RAMP G AND RAMP H

FRA-62-30.34

101  
 202



F/C DATA  
 STA. 71+52.79, 66.45' R  
 $\Delta$ : 096°59'59"  
 Dc: 381°58'17"  
 R: 15.00'  
 L: 25.39'  
 T: 16.95'  
 E: 7.64'

F/C DATA  
 STA. 72+31.41, 122.29' L  
 $\Delta$ : 071°47'51"  
 Dc: 114°35'29"  
 R: 50.00'  
 L: 62.66'  
 T: 36.19'  
 E: 11.72'

F/C DATA  
 STA. 72+63.05, 121.43' R  
 $\Delta$ : 081°50'15"  
 Dc: 81°51'04"  
 R: 70.00'  
 L: 99.98'  
 T: 60.68'  
 E: 22.64'

— PROPOSED JOINTS  
 - - - EX. JOINTS

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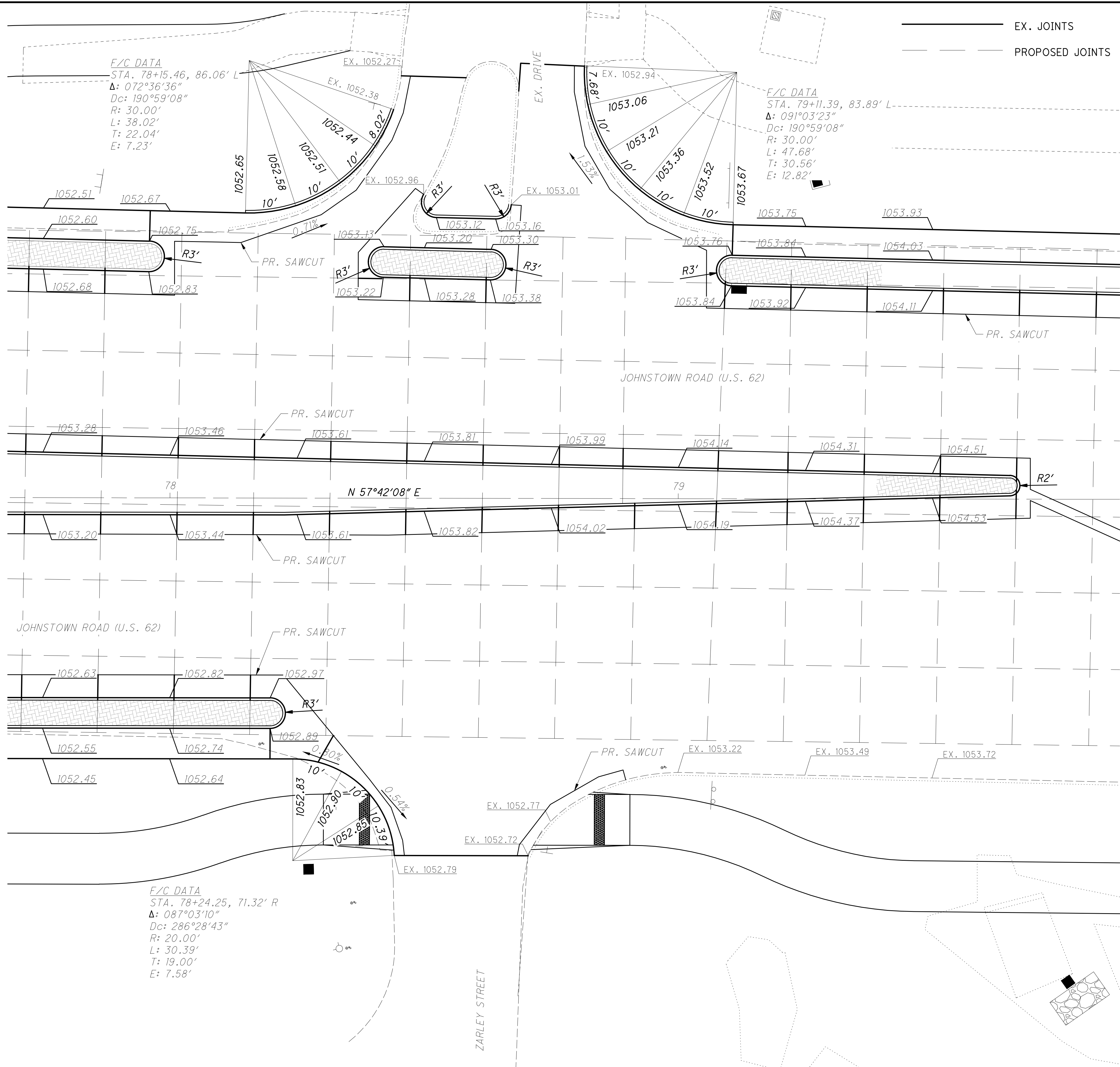
MATCH LINE THIS SHEET

MATCH LINE THIS SHEET

NOTE: THE CURB RETURN DATA IS AT THE EDGE OF PAVEMENT OR FACE OF CURB. STATION AND OFFSET IS OFF OF U.S. 62.

ITEM 1551 - DETECTABLE WARNING DEVICE, TYPE "A"  
TYPE "A" DETECTABLE WARNING DEVICE INSTALL SHALL BE PER COC STD. DWG. 2319 DR. A. MATERIAL SHALL BE PRE CAST MANUFACTURED 4"X8"X2.25" RED CLAY BRICK AS MANUFACTURED BY WHITACRE-GREER (800) WG PAVER.

JOINT SPACING IN THE NEW CONCRETE PAVEMENT SHALL MATCH EXISTING JOINTS SHOWN HEREON AND AS VERIFIED IN THE FIELD.



**INTERSECTION DETAIL  
US 62 AT ZARLEY ST**

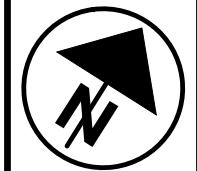
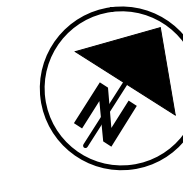
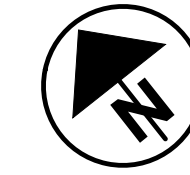
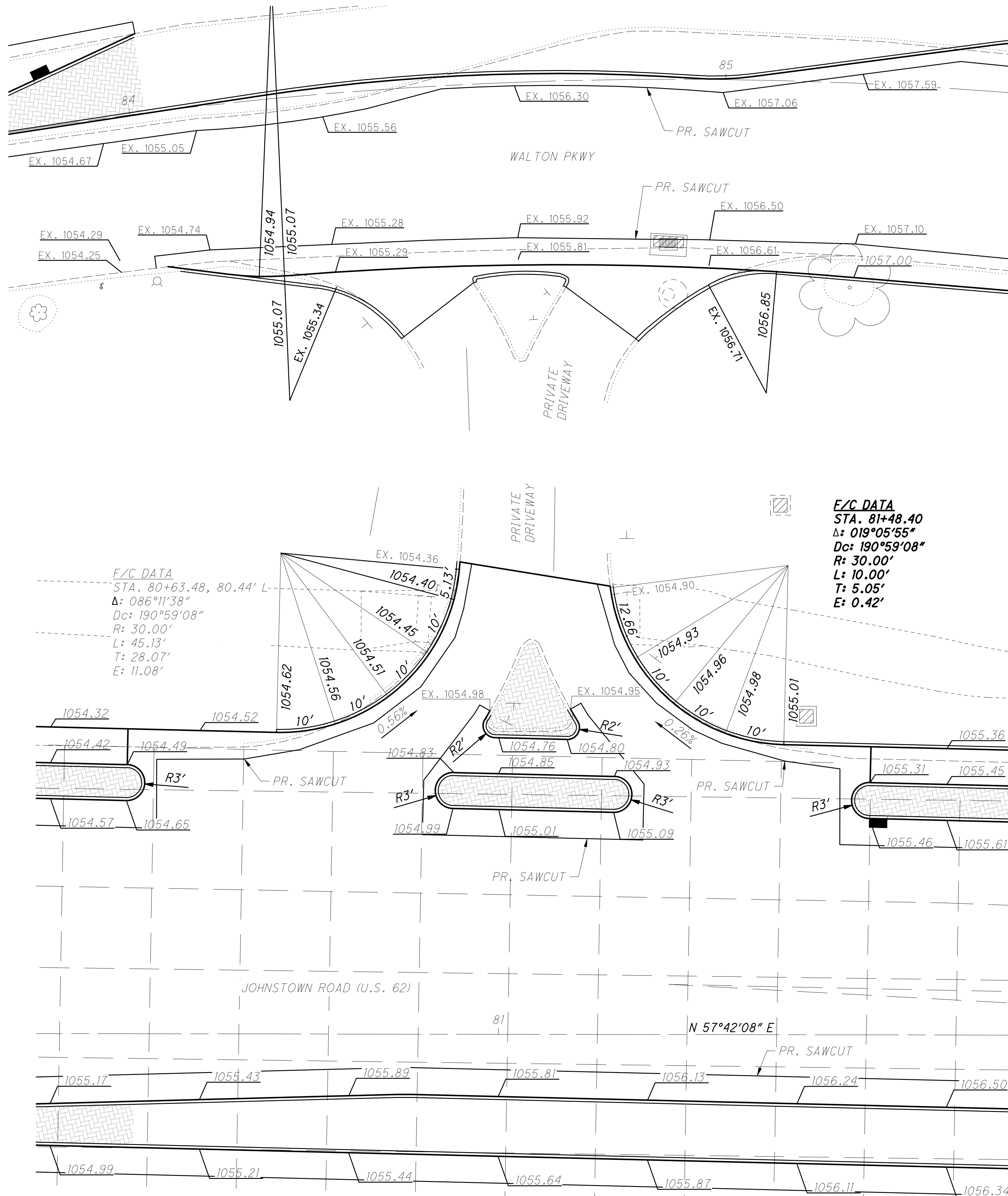
**FRA-62-30.34**

102  
202

NOTE: THE CURB RETURN DATA IS AT THE EDGE OF PAVEMENT OR FACE OF CURB. STATION AND OFFSET IS OFF OF U.S. 62.

ITEM 1551 - DETECTABLE WARNING DEVICE, TYPE "A" TYPE "A" DETECTABLE WARNING DEVICE INSTALL SHALL BE PER COC STD. DWG. 2319 DR. A. MATERIAL SHALL BE PRE CAST MANUFACTURED 4"X8"X2.25" RED CLAY BRICK AS MANUFACTURED BY WHITACRE-GREER (800) WG PAVER.

JOINT SPACING IN THE NEW CONCRETE PAVEMENT SHALL MATCH EXISTING JOINTS SHOWN HEREON AND AS VERIFIED IN THE FIELD.



0 10 20  
 HORIZONTAL SCALE IN FEET

CALCULATED WCS  
 CHECKED M.L.S.

INTERSECTION DETAIL  
 US 62 / WALTON PKWY AT PRIVATE DRIVE

FRA-62-30.34

103  
 202

F/C DATA  
 STA. 82+84.57  
 $\Delta$ : 035°03'23"  
 Dc: 71°37'11"  
 R: 80.00'  
 L: 48.95'  
 T: 25.27'  
 E: 3.90'

F/C DATA  
 STA. 83+08.59  
 $\Delta$ : 054°44'10"  
 Dc: 190°59'08"  
 R: 30.00'  
 L: 28.66'  
 T: 15.53'  
 E: 3.78'

JOINT SPACING IN THE NEW CONCRETE PAVEMENT SHALL MATCH EXISTING JOINTS SHOWN HEREON AND AS VERIFIED IN THE FIELD.

NOTE: THE CURB RETURN DATA IS AT THE EDGE OF PAVEMENT OR FACE OF CURB. STATION AND OFFSET IS OFF OF U.S. 62.

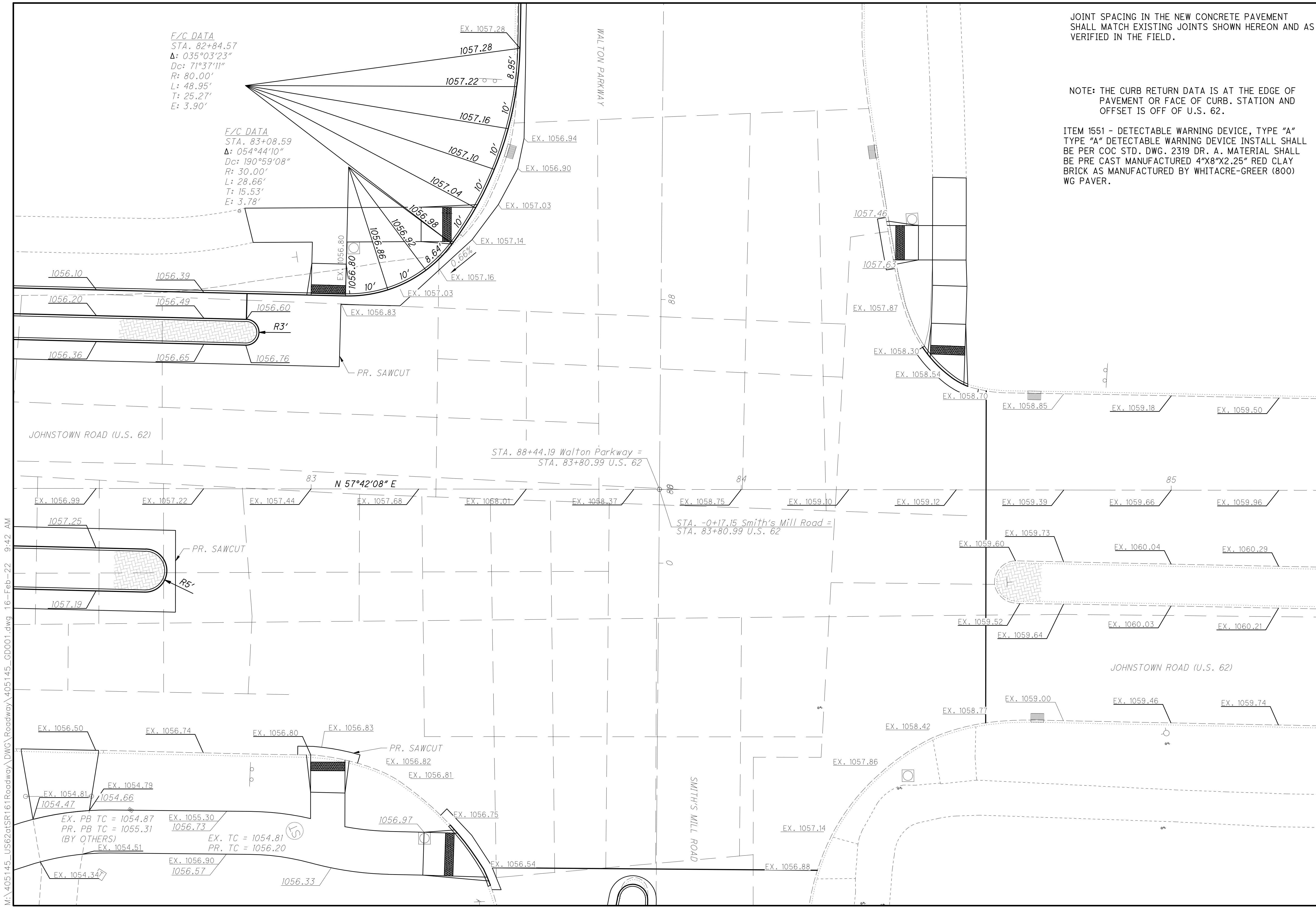
ITEM 1551 - DETECTABLE WARNING DEVICE, TYPE "A"  
 TYPE "A" DETECTABLE WARNING DEVICE INSTALL SHALL BE PER COC STD. DWG. 2319 DR. A. MATERIAL SHALL BE PRE CAST MANUFACTURED 4"X8"X2.25" RED CLAY BRICK AS MANUFACTURED BY WHITACRE-GREER (800) WG PAVER.

CALCULATED	WCS	CHECKED	MLS

0 10 20  
 HORIZONTAL SCALE IN FEET

INTERSECTION DETAIL  
 US 62 AT SMITH'S MILL RD / WALTON PKWY

FRA-62-30.34



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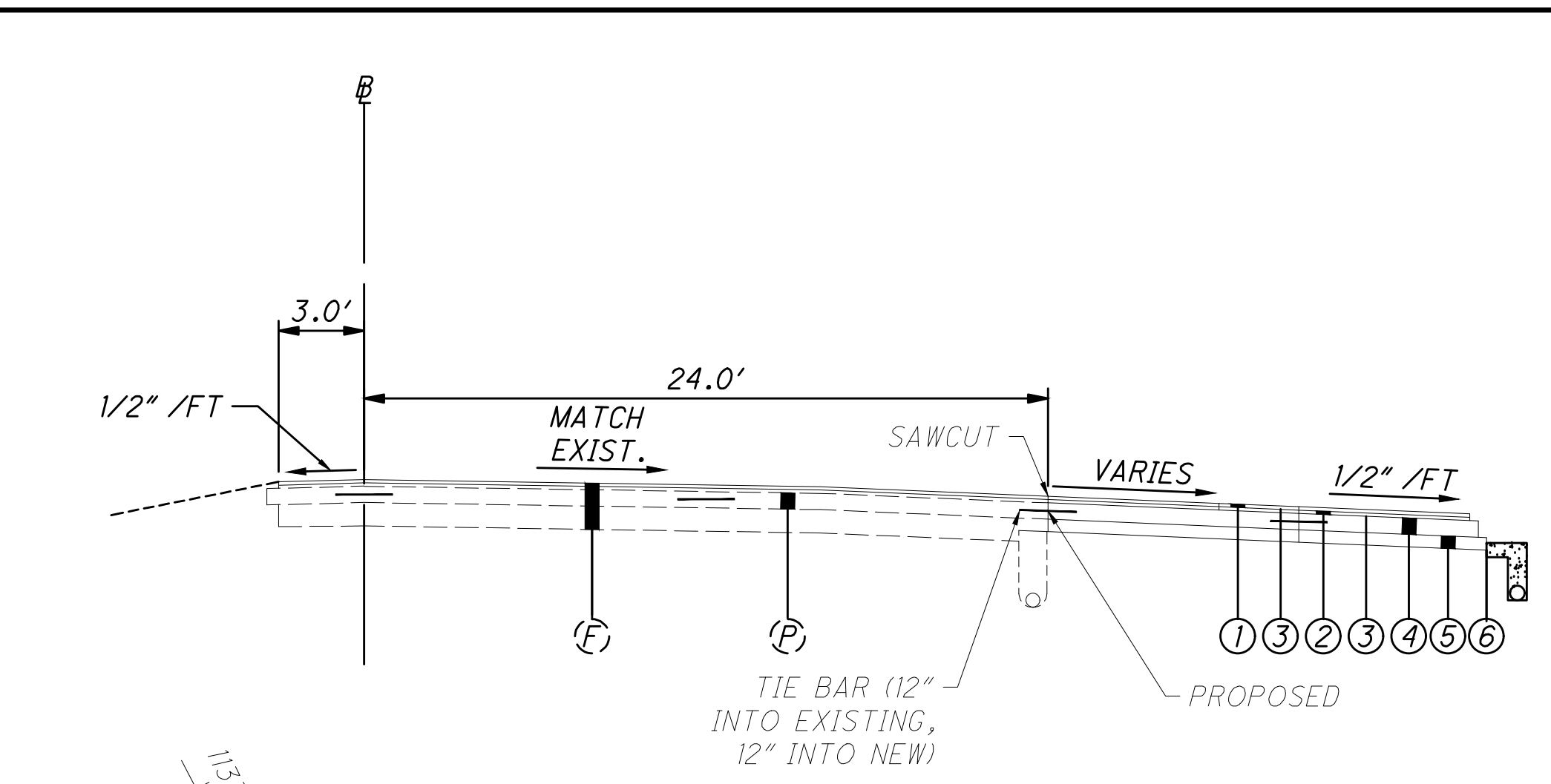
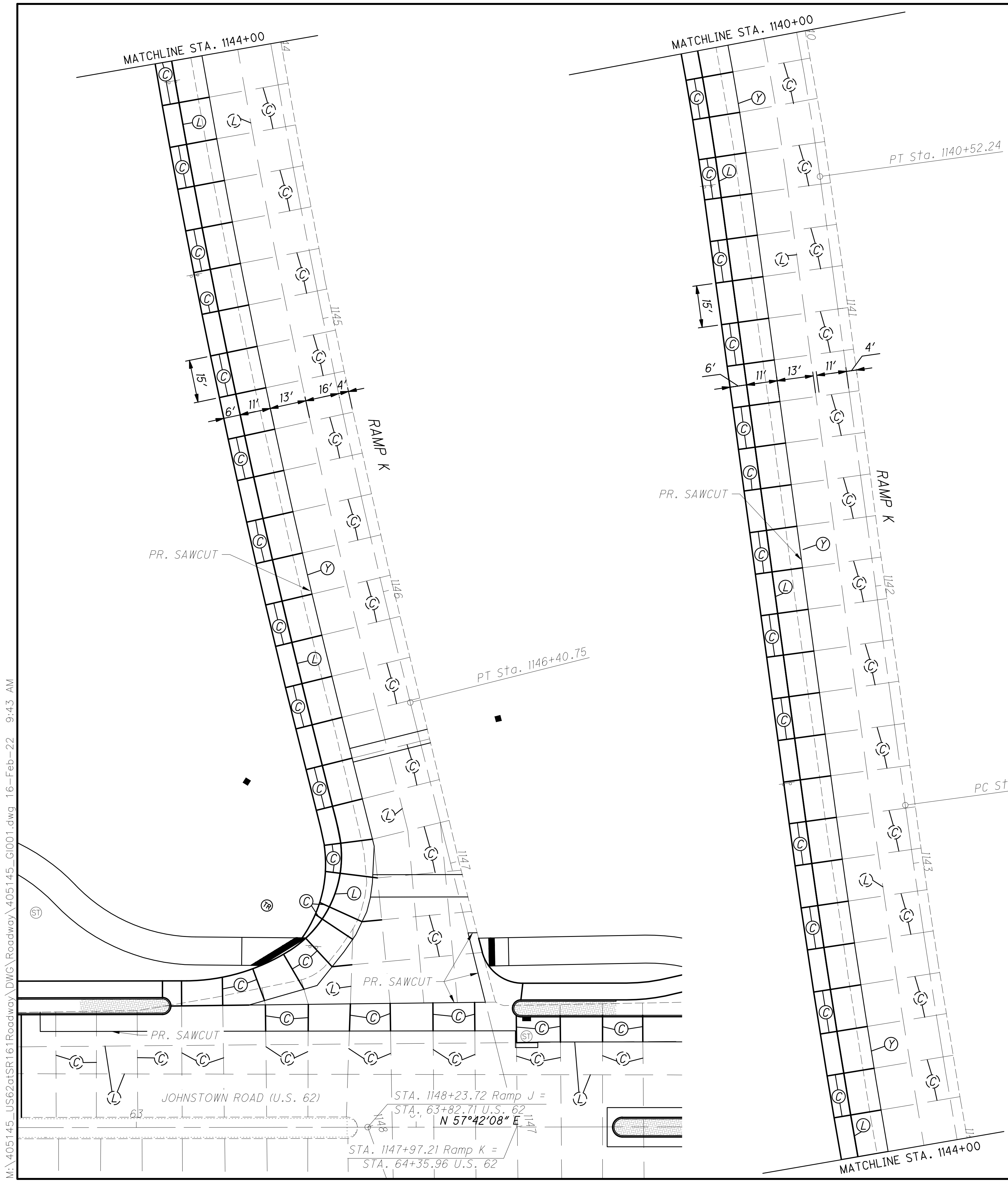
0 10 20 40  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
WCS  
CHECKED  
M.L.S.

PAVEMENT JOINT DETAIL - RAMP K  
STA. 1135+00 TO 1147+00

FRA-62-30.34

105  
202



**TYPICAL SECTION OF ADJOINING PAVEMENT**  
RAMP K - STA. 1138+32.13 TO STA. 1147+50

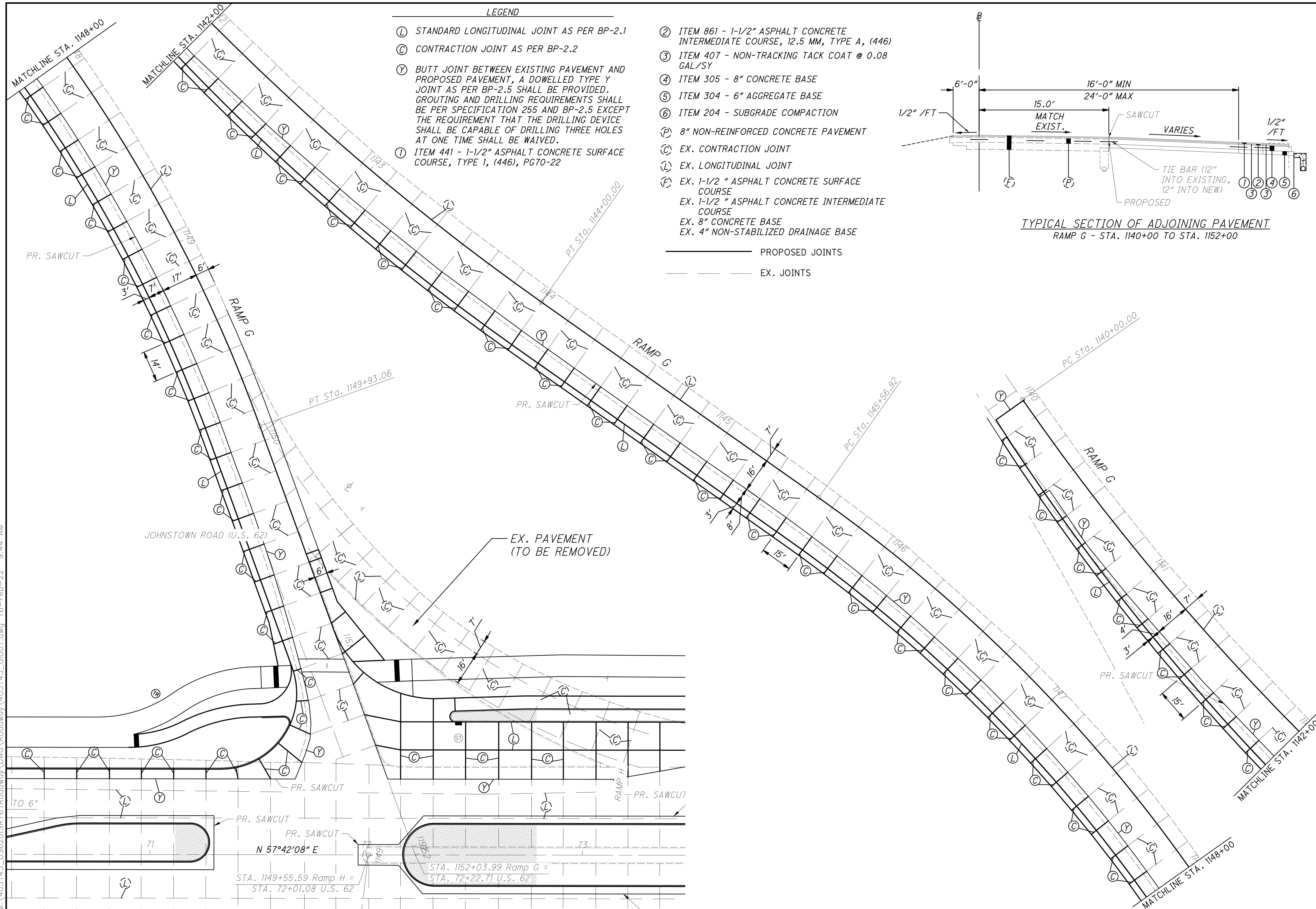
**LEGEND**

- (L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
- (C) CONTRACTION JOINT AS PER BP-2.2
- (Y) BUTT JOINT BETWEEN EXISTING PAVEMENT AND PROPOSED PAVEMENT, A DOWELLED TYPE Y JOINT AS PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER SPECIFICATION 255 AND BP-2.5 EXCEPT THE REQUIREMENT THAT THE DRILLING DEVICE SHALL BE CAPABLE OF DRILLING THREE HOLES AT ONE TIME SHALL BE WAIVED.
- (1) ITEM 441 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22
- (2) ITEM 861 - 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A, (446)
- (3) ITEM 407 - NON-TRACKING TACK COAT @ 0.08 GAL/SY
- (4) ITEM 305 - 8" CONCRETE BASE
- (5) ITEM 304 - 6" AGGREGATE BASE
- (6) ITEM 204 - SUBGRADE COMPACTION
- (P) 8" NON-REINFORCED CONCRETE PAVEMENT
- (C) EX. CONTRACTION JOINT
- (L) EX. LONGITUDINAL JOINT
- (F) EX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE  
EX. 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE  
EX. 8" CONCRETE BASE  
EX. 4" NON-STABILIZED DRAINAGE BASE

- PROPOSED JOINTS
- EX. JOINTS

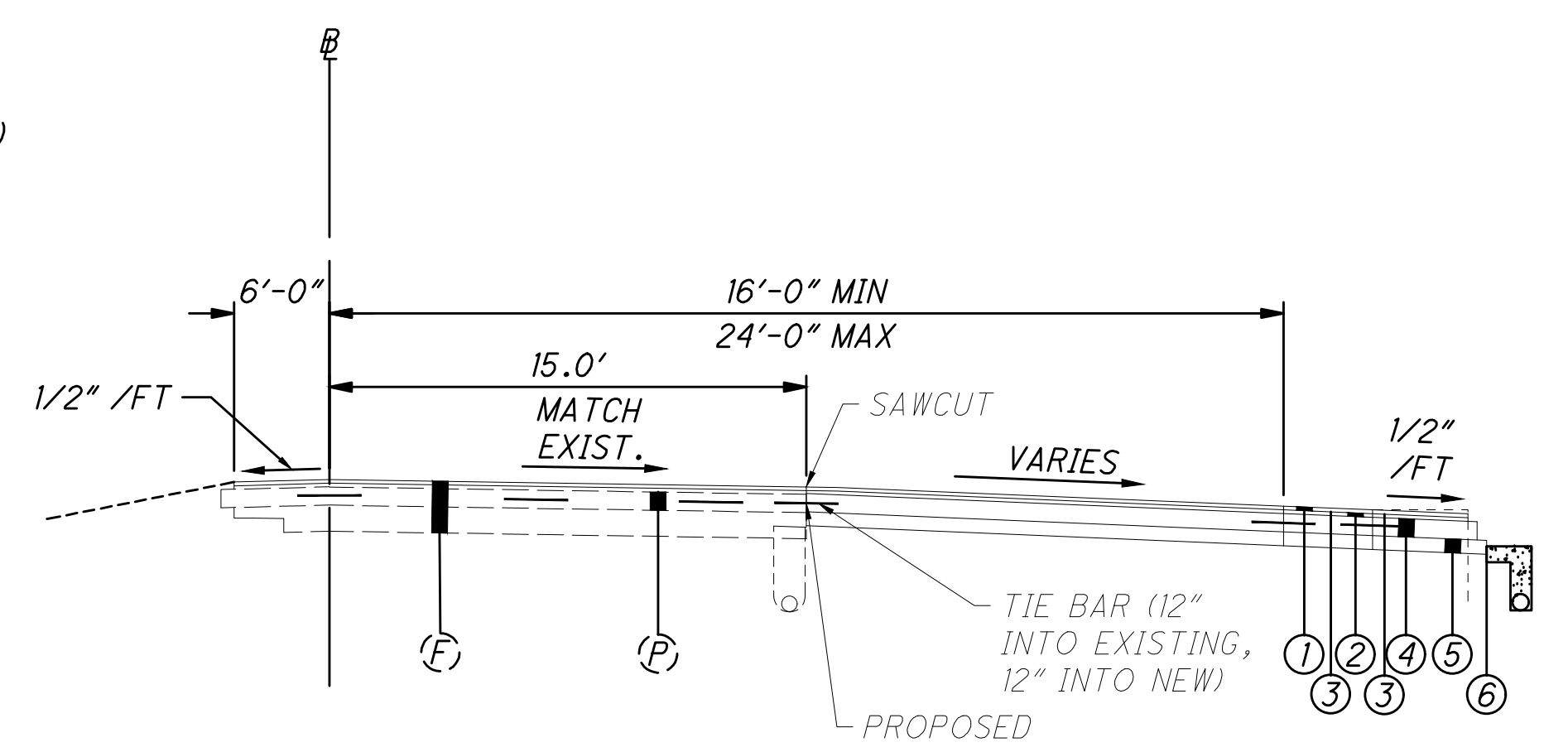
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LEGEND

- ① STANDARD LONGITUDINAL JOINT AS PER BP-2.1
  - Ⓞ CONTRACTION JOINT AS PER BP-2.2
  - Ⓨ BUTT JOINT BETWEEN EXISTING PAVEMENT AND PROPOSED PAVEMENT, A DOWELLED TYPE Y JOINT AS PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER SPECIFICATION 255 AND BP-2.5 EXCEPT THE REQUIREMENT THAT THE DRILLING DEVICE SHALL BE CAPABLE OF DRILLING THREE HOLES AT ONE TIME SHALL BE WAIVED.
  - ① ITEM 441 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22
  - ② ITEM 861 - 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A, (446)
  - ③ ITEM 407 - NON-TRACKING TACK COAT @ 0.08 GAL/SY
  - ④ ITEM 305 - 8" CONCRETE BASE
  - ⑤ ITEM 304 - 6" AGGREGATE BASE
  - ⑥ ITEM 204 - SUBGRADE COMPACTION
  - Ⓟ 8" NON-REINFORCED CONCRETE PAVEMENT
  - Ⓞ EX. CONTRACTION JOINT
  - Ⓛ EX. LONGITUDINAL JOINT
  - Ⓧ EX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE
  - EX. 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE
  - EX. 8" CONCRETE BASE
  - EX. 4" NON-STABILIZED DRAINAGE BASE
- PROPOSED JOINTS  
- - - EX. JOINTS



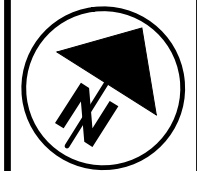
TYPICAL SECTION OF ADJOINING PAVEMENT  
RAMP G - STA. 1140+00 TO STA. 1152+00

CALCULATED W/C S  
CHECKED M/L S

10  
5  
20  
HORIZONTAL SCALE IN FEET

PAVEMENT JOINT DETAIL - RAMP G  
STA. 1138+00 TO STA. 1151+00

FRA-62-30.34



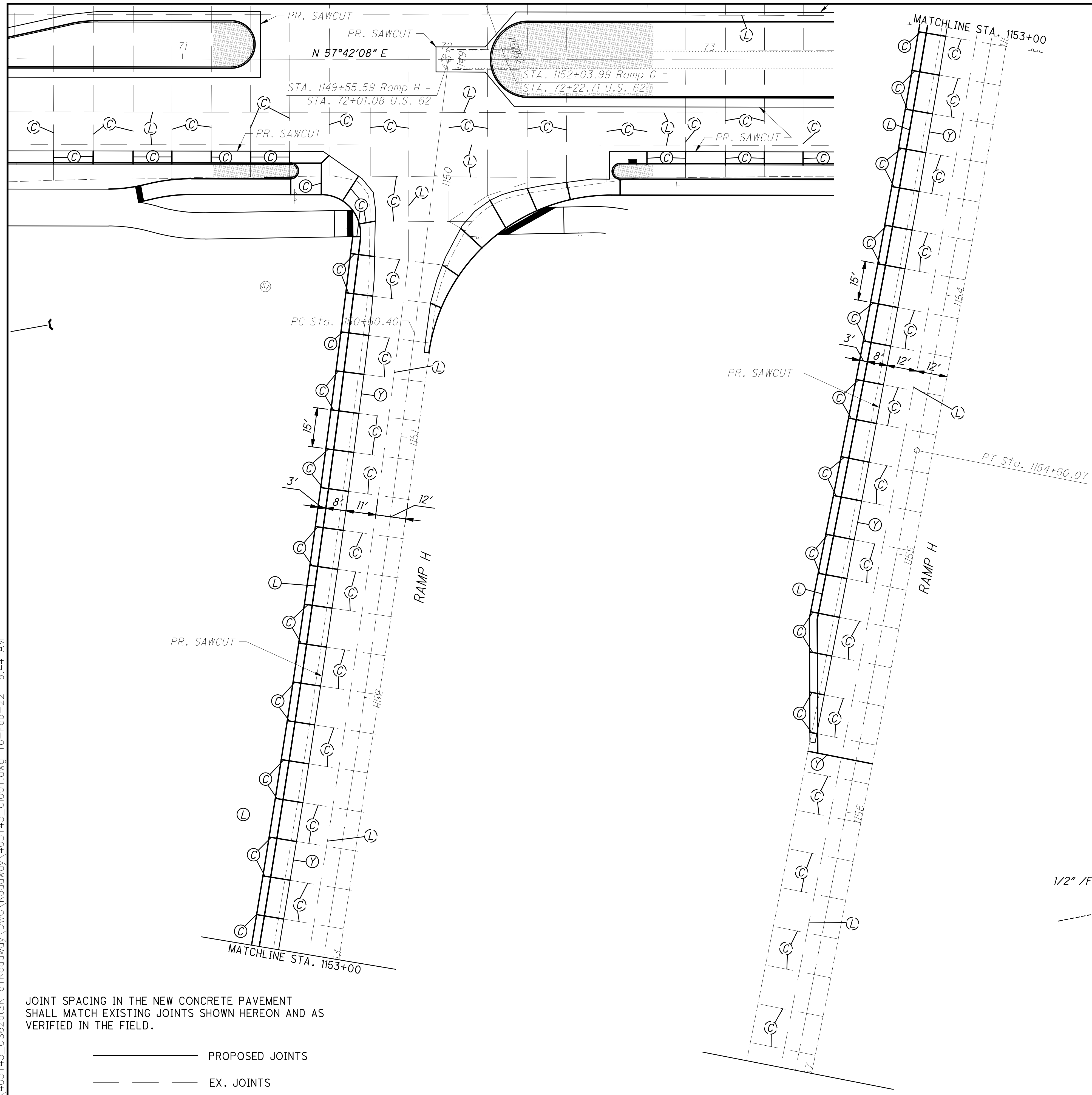
0 10 20  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
WCS  
CHECKED  
M.L.S.

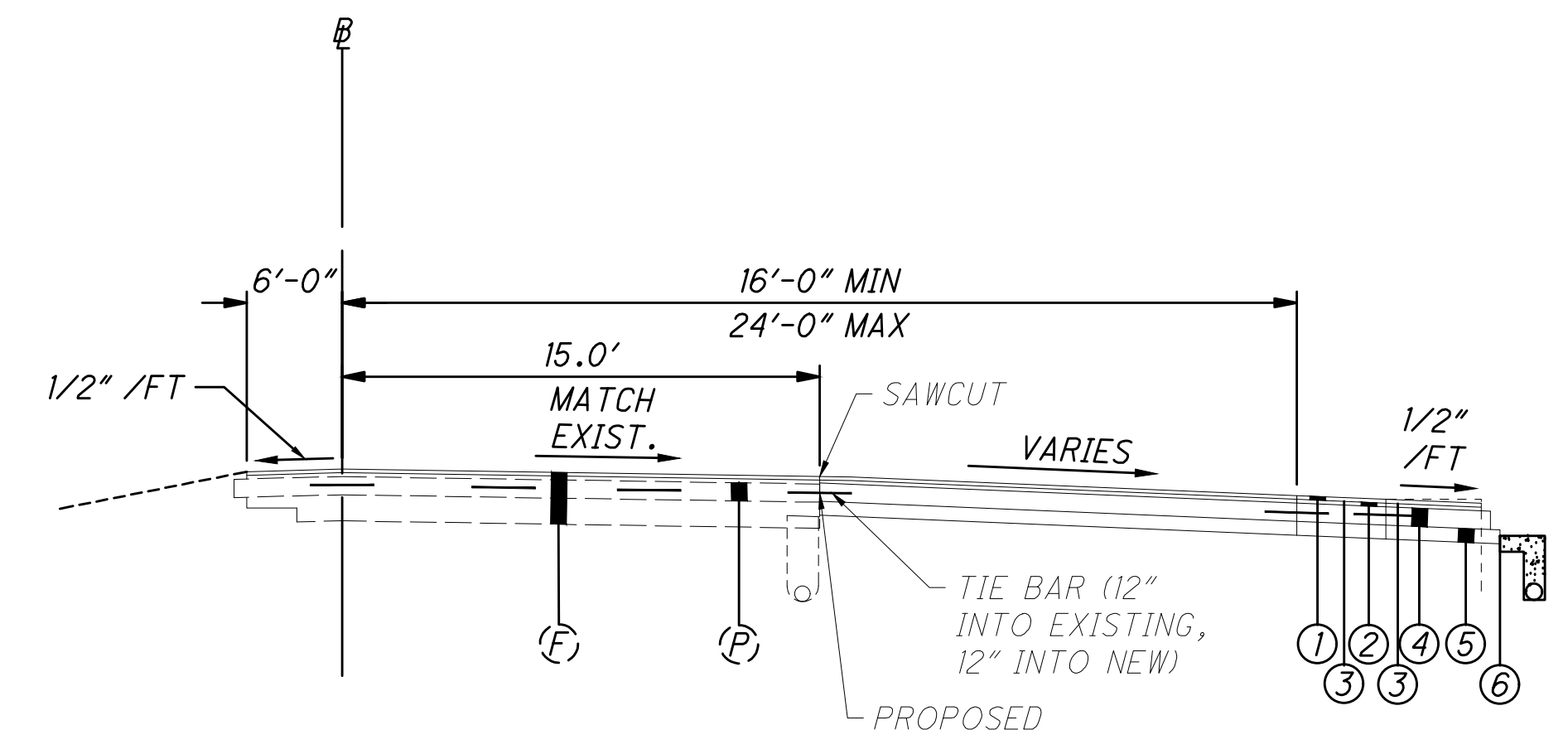
**PAVEMENT JOINT DETAIL - RAMP H**  
**STA. 1150+00 TO STA. 1161+00**

**FRA-62-30.34**

107  
202



- LEGEND**
- (L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
  - (C) CONTRACTION JOINT AS PER BP-2.2
  - (Y) BUTT JOINT BETWEEN EXISTING PAVEMENT AND PROPOSED PAVEMENT, A DOWELLED TYPE Y JOINT AS PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER SPECIFICATION 255 AND BP-2.5 EXCEPT THE REQUIREMENT THAT THE DRILLING DEVICE SHALL BE CAPABLE OF DRILLING THREE HOLES AT ONE TIME SHALL BE WAIVED.
  - ① ITEM 441 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG70-22
  - ② ITEM 861 - 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A, (446)
  - ③ ITEM 407 - NON-TRACKING TACK COAT @ 0.08 GAL/SY
  - ④ ITEM 305 - 8" CONCRETE BASE
  - ⑤ ITEM 304 - 6" AGGREGATE BASE
  - ⑥ ITEM 204 - SUBGRADE COMPACTION
  - (P) 8" NON-REINFORCED CONCRETE PAVEMENT
  - (C) EX. CONTRACTION JOINT
  - (L) EX. LONGITUDINAL JOINT
  - (F) EX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE  
EX. 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE  
EX. 8" CONCRETE BASE  
EX. 4" NON-STABILIZED DRAINAGE BASE
- PROPOSED JOINTS  
- - - - - EX. JOINTS

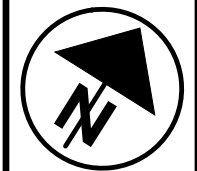


**TYPICAL SECTION OF ADJOINING PAVEMENT**  
RAMP H - STA. 1150+00 TO STA. 1155+80.13

JOINT SPACING IN THE NEW CONCRETE PAVEMENT SHALL MATCH EXISTING JOINTS SHOWN HEREON AND AS VERIFIED IN THE FIELD.

———— PROPOSED JOINTS  
- - - - - EX. JOINTS

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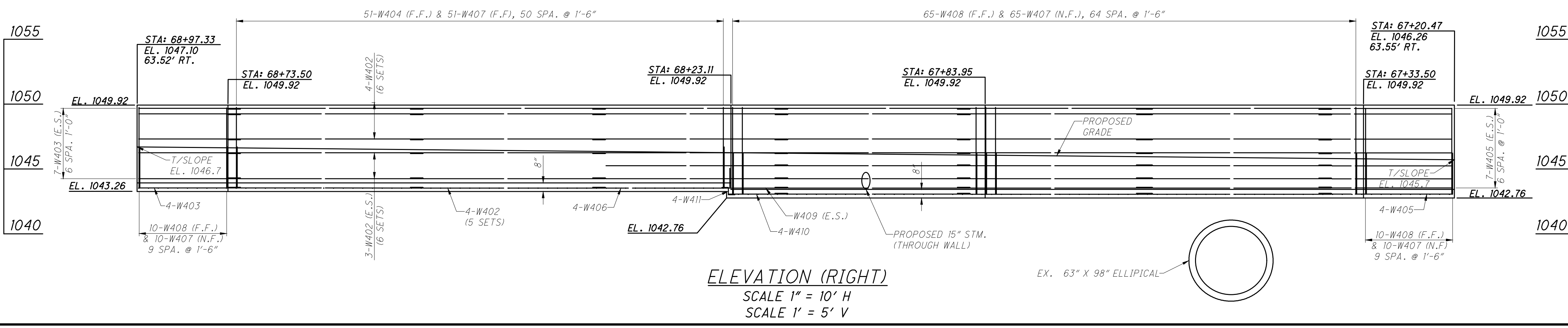
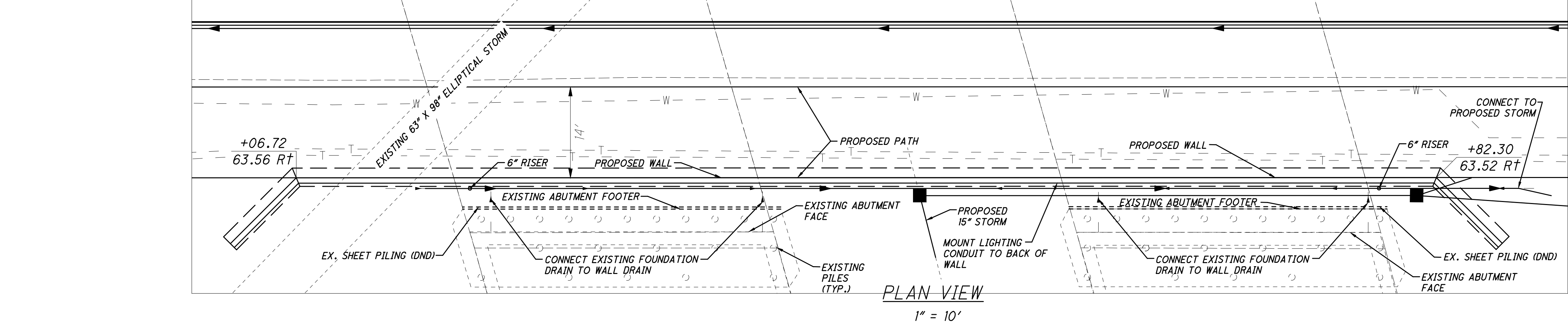
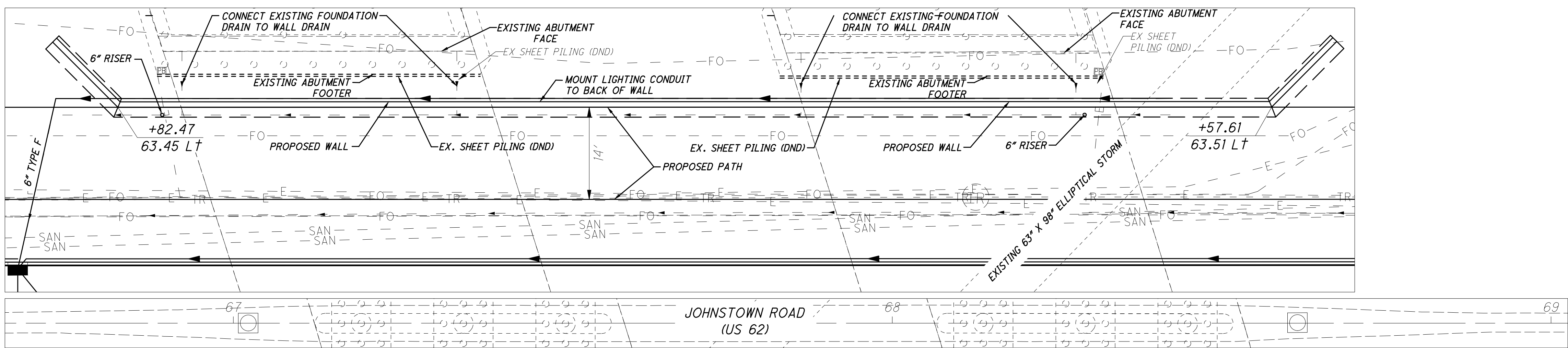
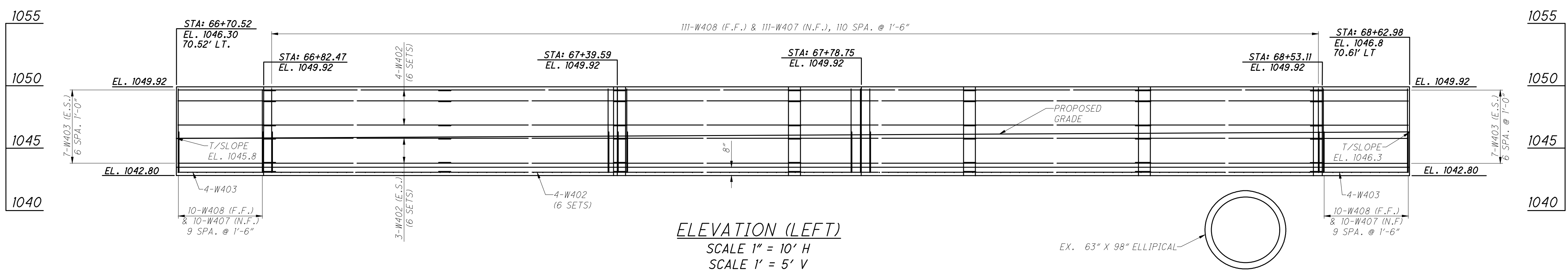


CALCULATED 0  
MGS  
CHECKED XXX

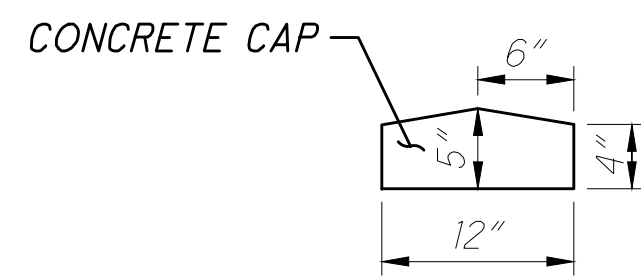
RETAINING WALLS

FRA-62-30.34

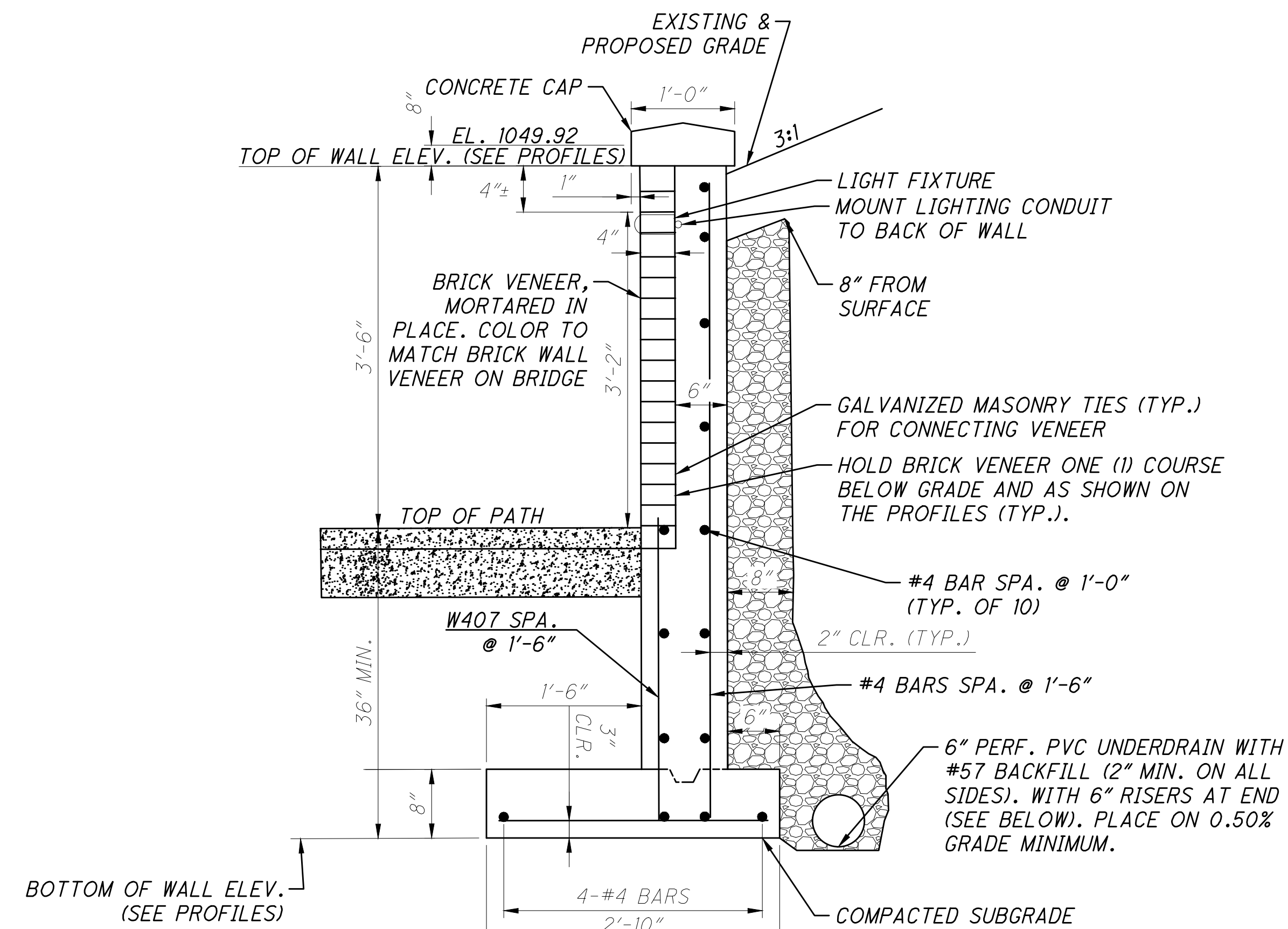
108  
202



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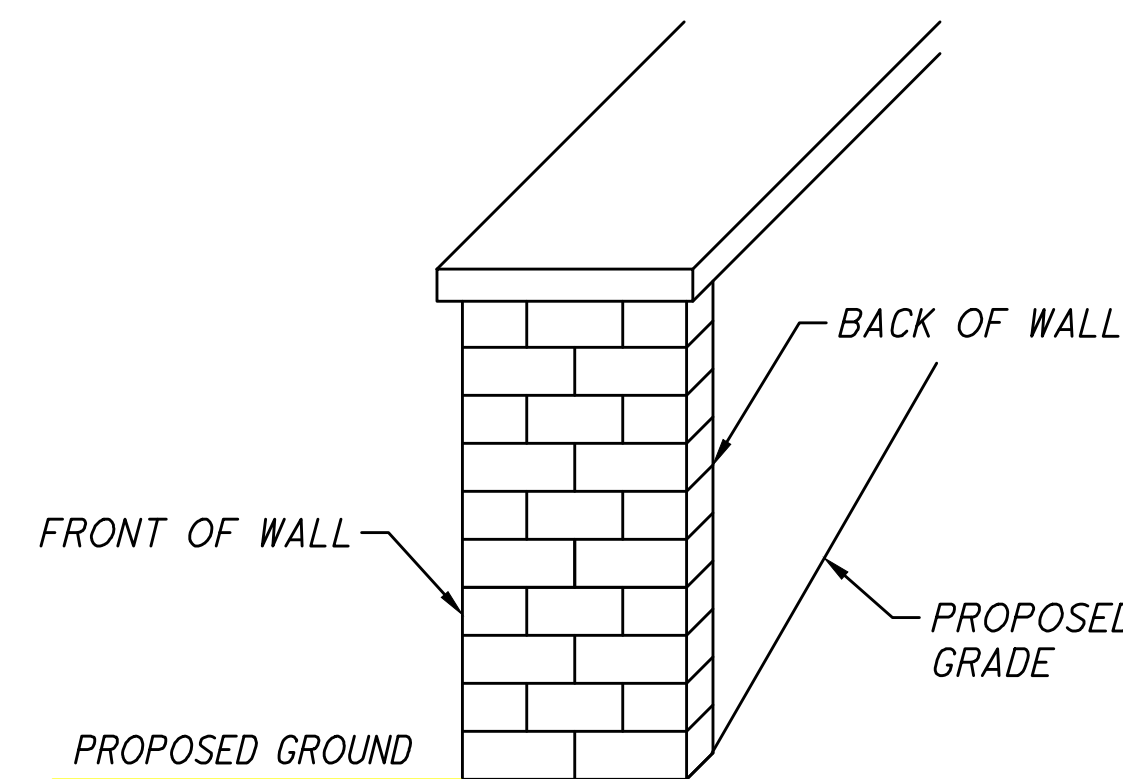
**WALL CAP DETAIL**  
NOT TO SCALE



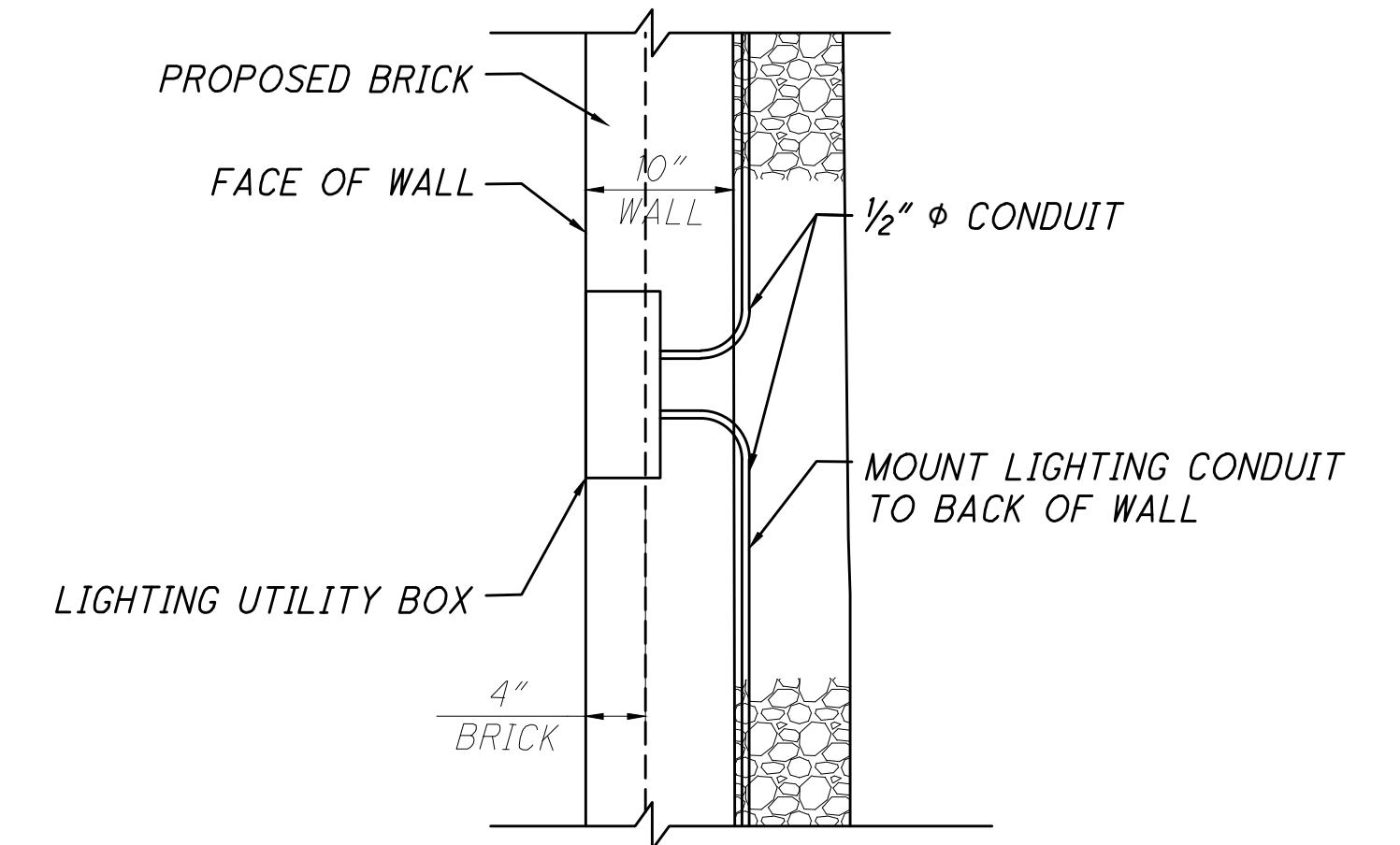
**NOTES:**  
 PAYMENTS FOR THE WALL SHALL BE PER LINEAR FOOT AND MEASURED ALONG THE FACE OF THE WALL INCLUDING ANY BENDS.  
 1- CLASS C CONCRETE - COMPRESSIVE STRENGTH 4000 PSI  
 2- REINFORCING STEEL - ASTM A615, A616 OR A617  
 3- SUBGRADE SHALL BE COMPACTED TO 2000PSF (MIN.)  
 4- ALL REINFORCING SHALL BE EPOXY COATED

**WALL SECTION**  
NOT TO SCALE

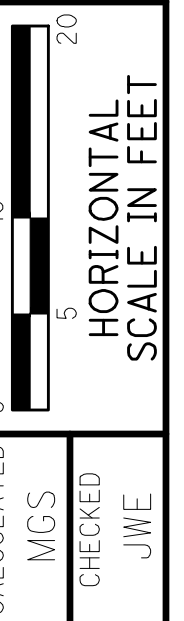
REF. NO.	SHEET NO.	STATION		SIDE	503	509	511	512	518		602	
		FROM	TO		UNCLASSIFIED EXCAVATION	EPOXY COATED REINFORCING STEEL	CLASS OCI CONCRETE - RETAINING/WING WALL INCLUDING FOOTING	SEALING OF CONCRETE SURFACES (NON-EPOXY)	POROUS BACKFILL WITH GEOTEXTILE FABRIC	6" PERFORATED CORRUGATED PLASTIC PIPE	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	MASONRY, MISC.: BRICK INLAY
					LS	LB	CY	SY	CY	FT	FT	SF
	104	66+72	68+94	LT/RT	1	4,315	171	480	105	376	24	3,040
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>					<b>1</b>	<b>4315</b>	<b>171</b>	<b>480</b>	<b>105</b>	<b>376</b>	<b>24</b>	<b>3040</b>



**ISOMETRIC END DETAIL**  
NOT TO SCALE

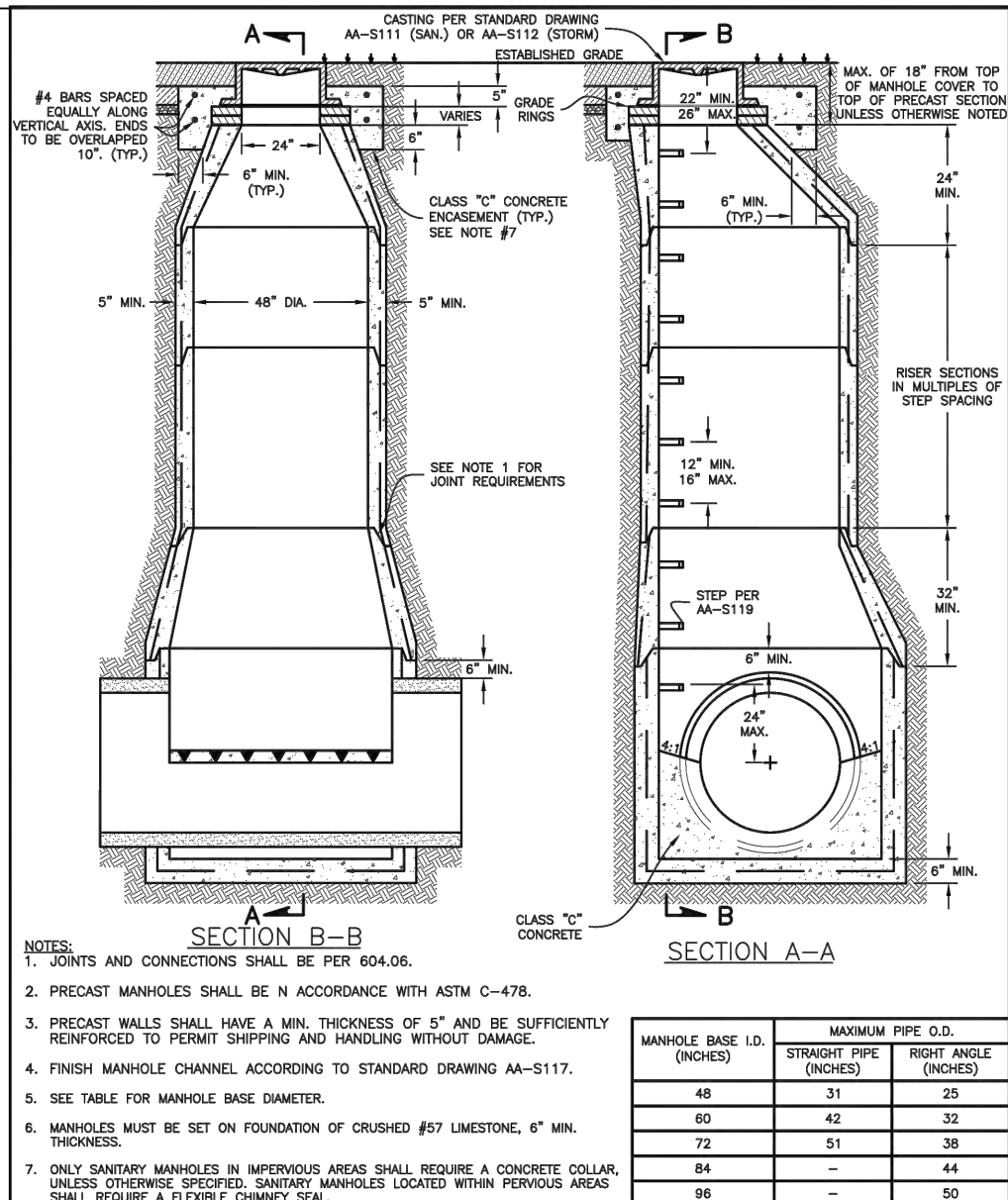


**PLAN CONNECTION DETAIL**  
NOT TO SCALE



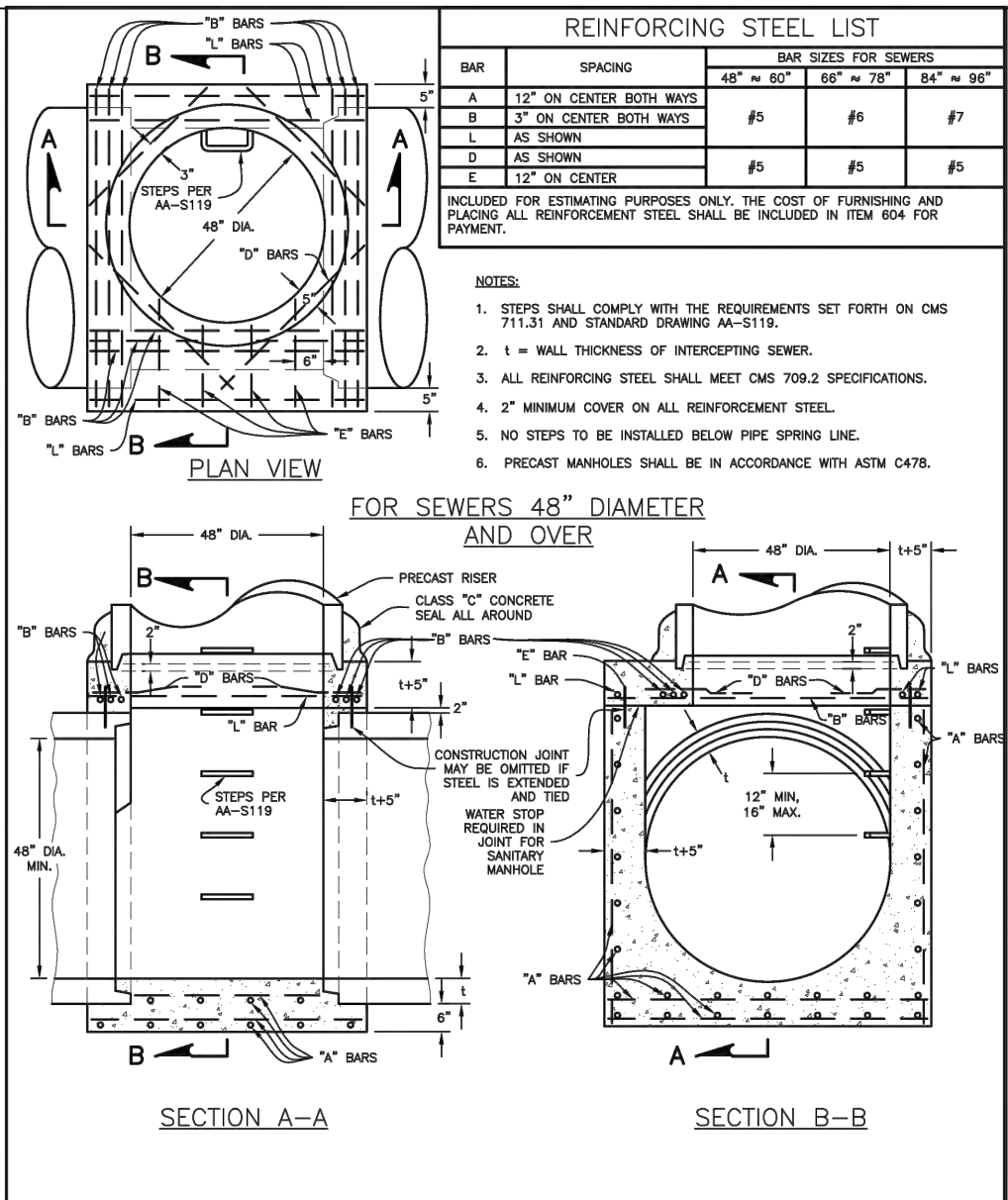
**RETAINING WALLS**

**FRA-62-30.34**



MANHOLE BASE I.D. (INCHES)	STANDARD PIPE (INCHES)	RIGHT ANGLE (INCHES)
48	31	25
60	42	32
72	51	38
84	60	44
96	70	50

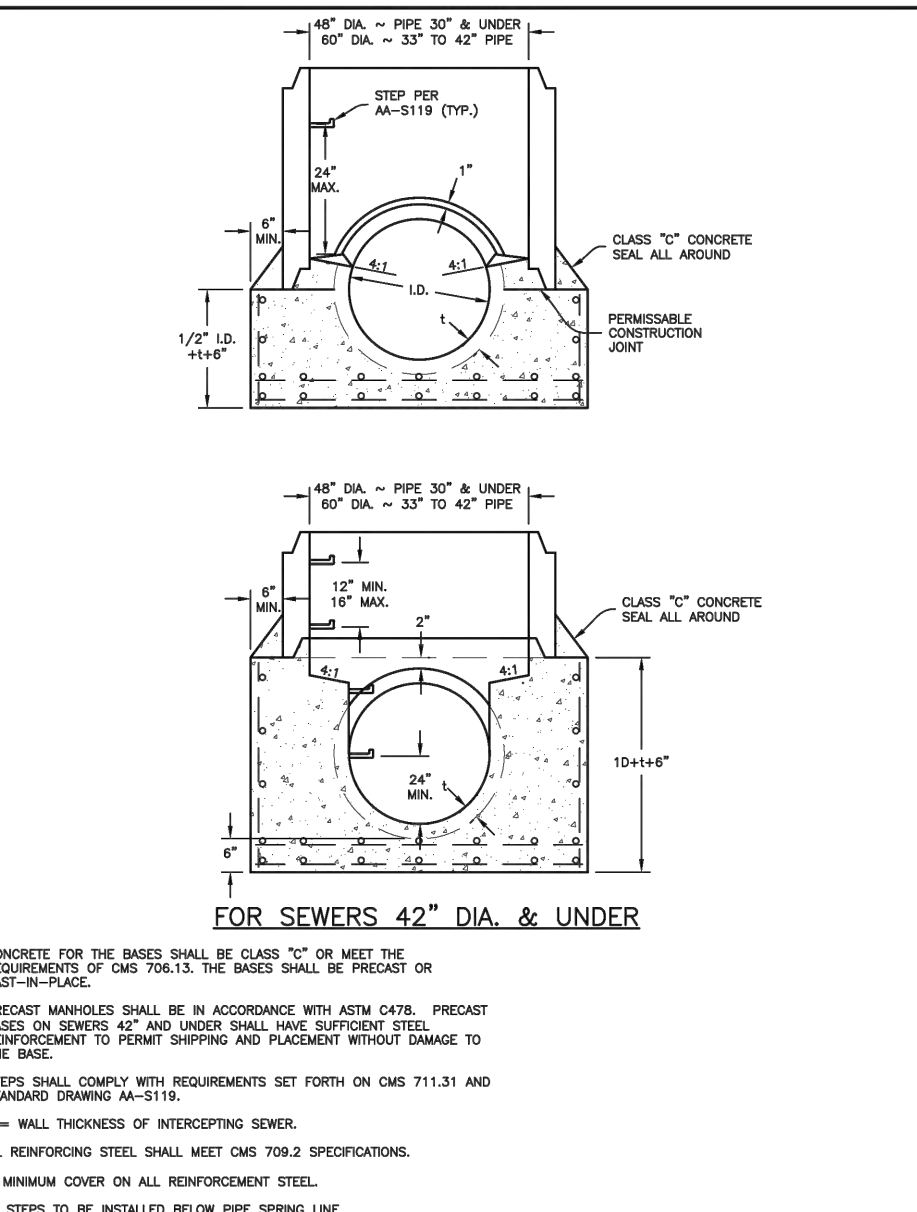
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
TYPE "C" MANHOLE  
STANDARD DRAWING AA-S103  
REVISED 12/8/14



REINFORCING STEEL LIST

BAR	SPACING	BAR SIZES FOR SEWERS
A	12" ON CENTER BOTH WAYS	#5 #6 #7
B	3" ON CENTER BOTH WAYS	#5 #6 #7
C	AS SHOWN	#5 #6 #7
D	AS SHOWN	#5 #6 #7
E	12" ON CENTER	#5 #6 #7

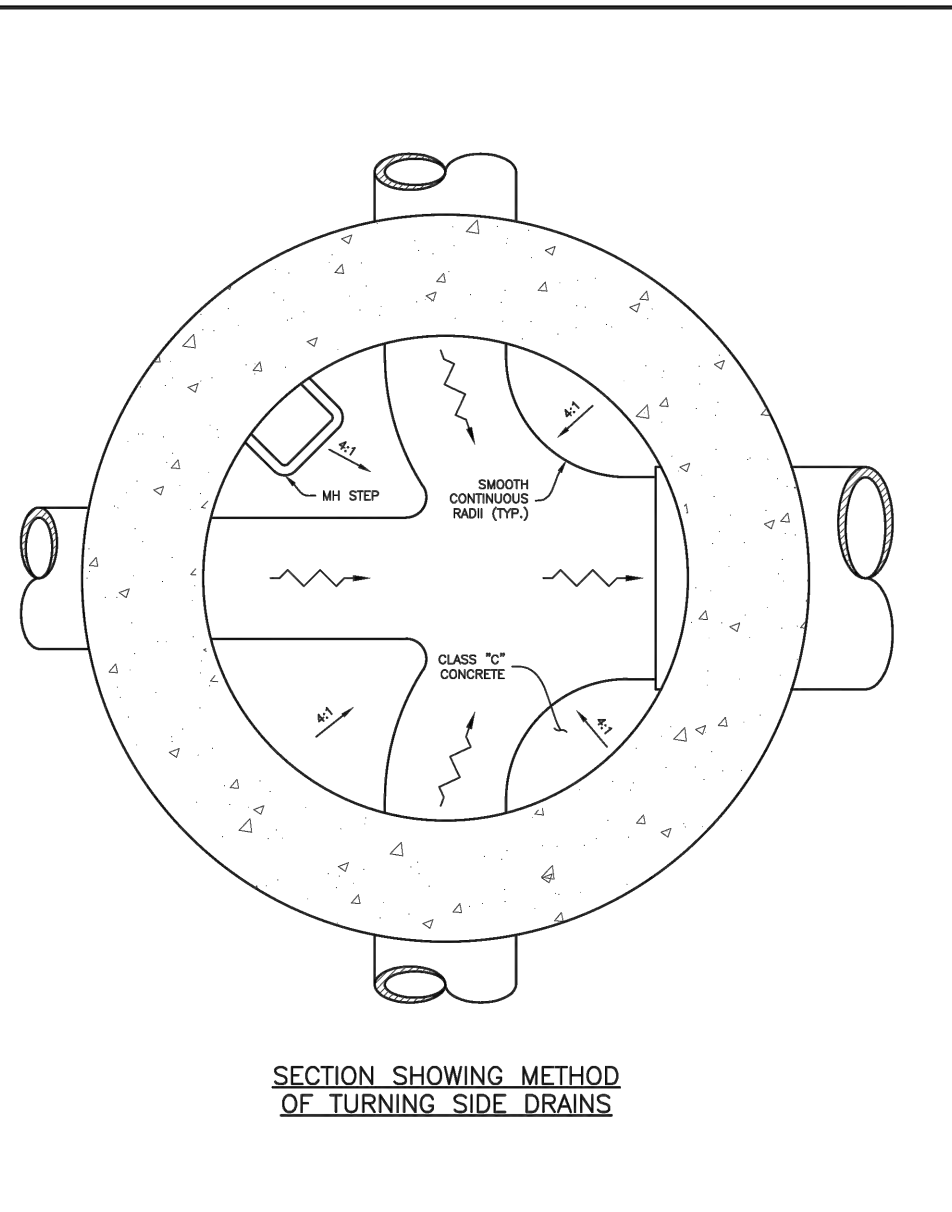
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
TYPE "E" MANHOLE  
STANDARD DRAWING AA-S104  
REVISED 8/8/14



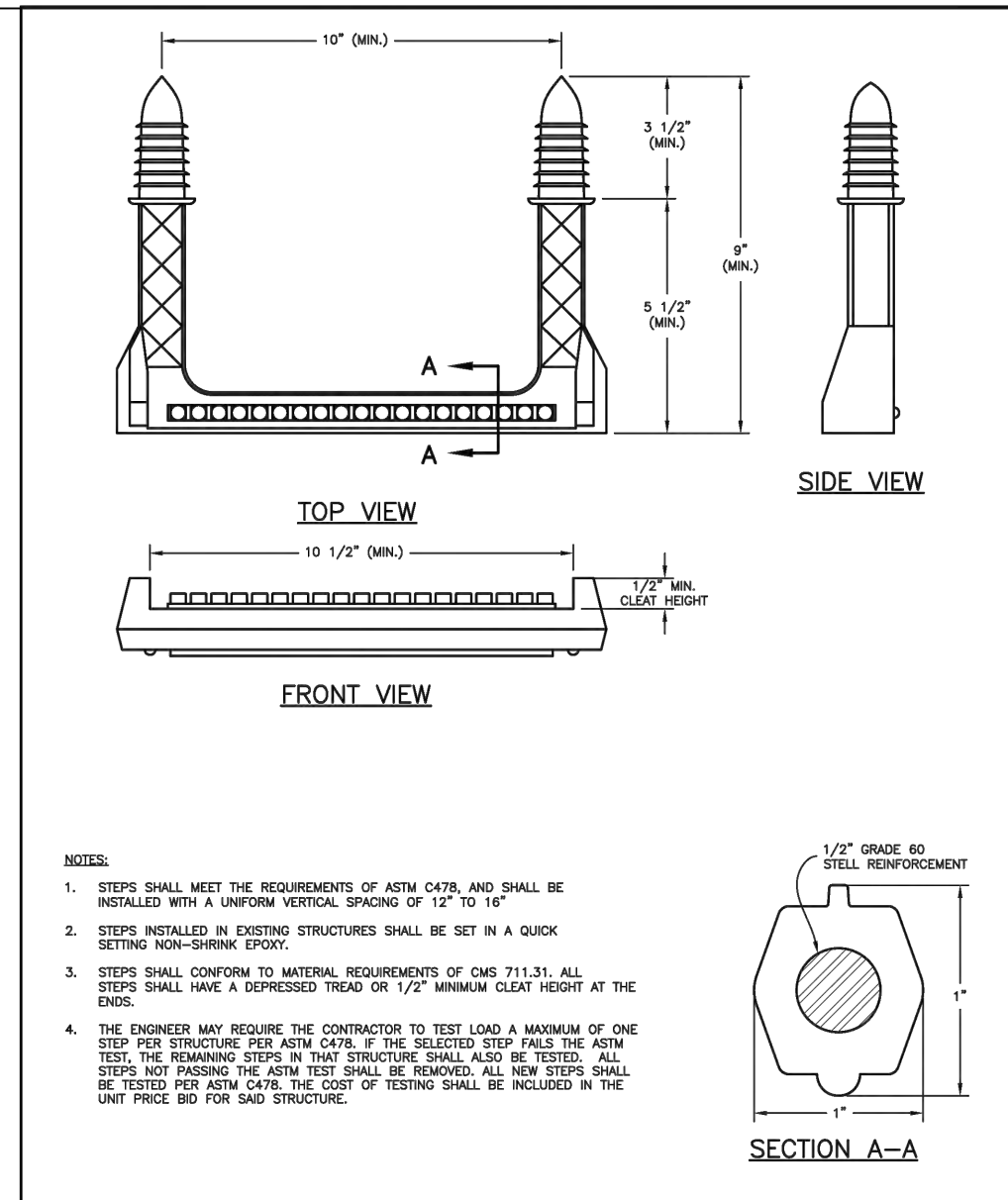
REINFORCING STEEL LIST

BAR	SPACING	BAR SIZES FOR SEWERS
A	12" ON CENTER BOTH WAYS	#5 #6 #7
B	3" ON CENTER BOTH WAYS	#5 #6 #7
C	AS SHOWN	#5 #6 #7
D	AS SHOWN	#5 #6 #7
E	12" ON CENTER	#5 #6 #7

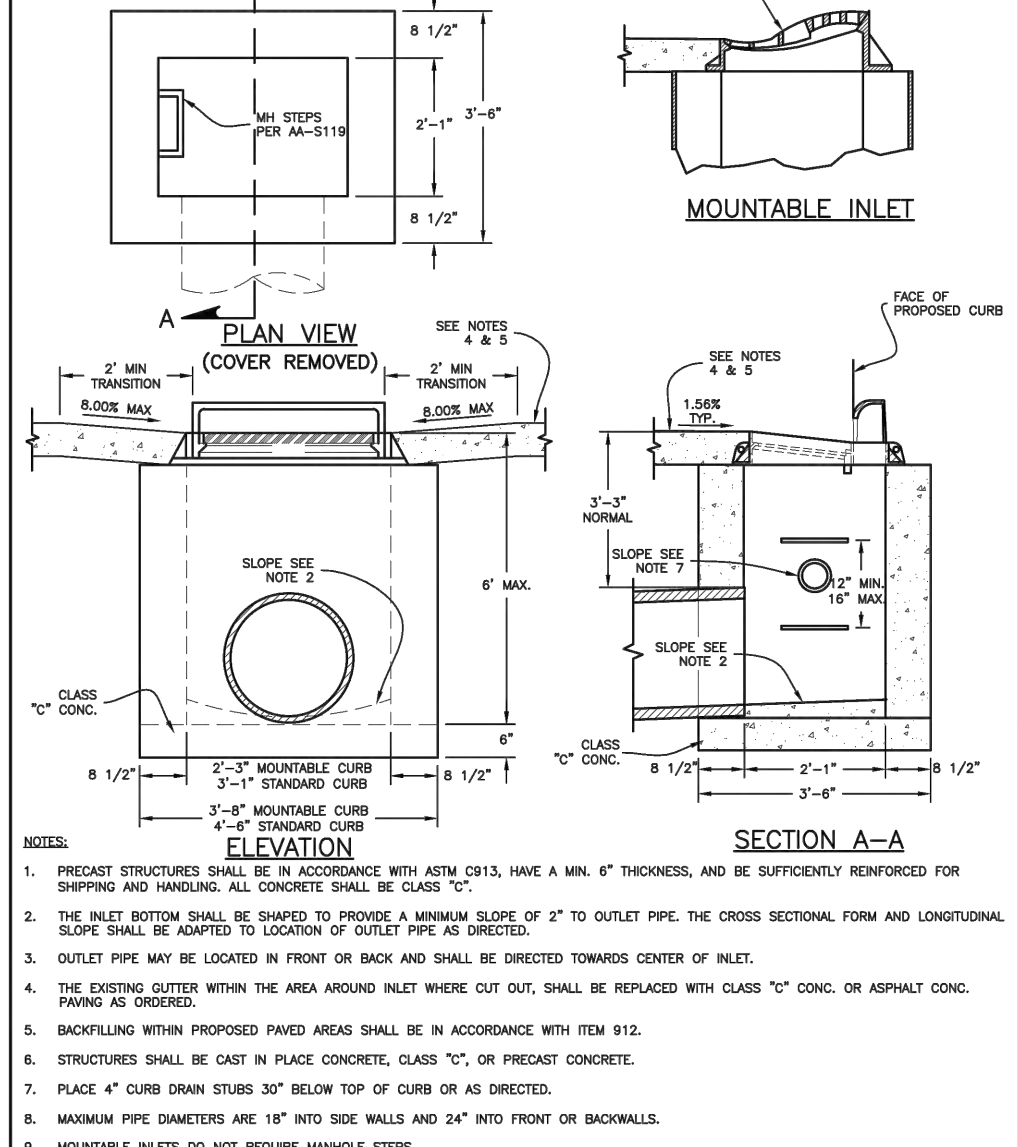
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
TYPE "E" MANHOLE  
STANDARD DRAWING AA-S104  
REVISED 8/8/14



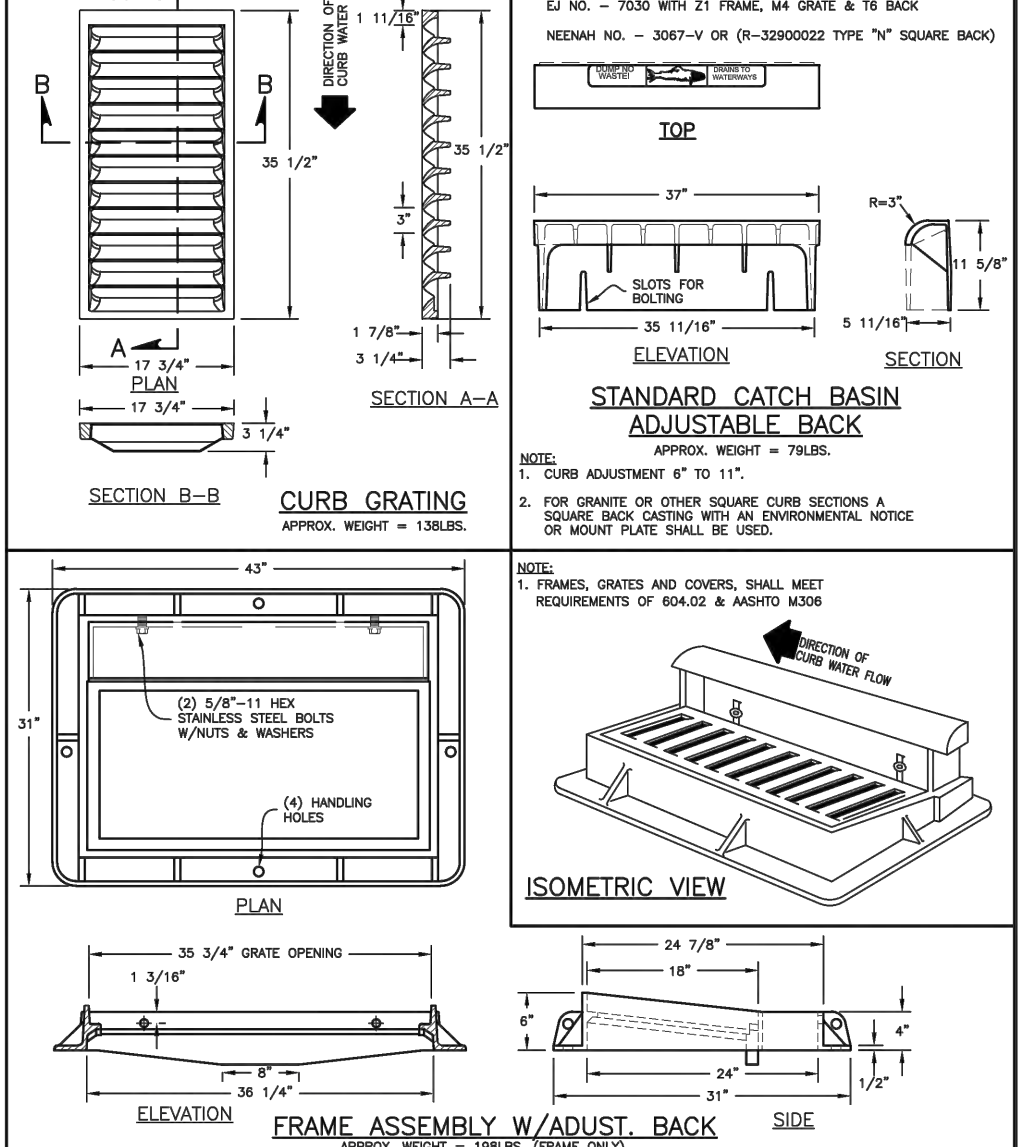
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
PRECAST MANHOLE  
BASE CHANNEL DETAIL  
STANDARD DRAWING AA-S117  
REVISED 7/9/12



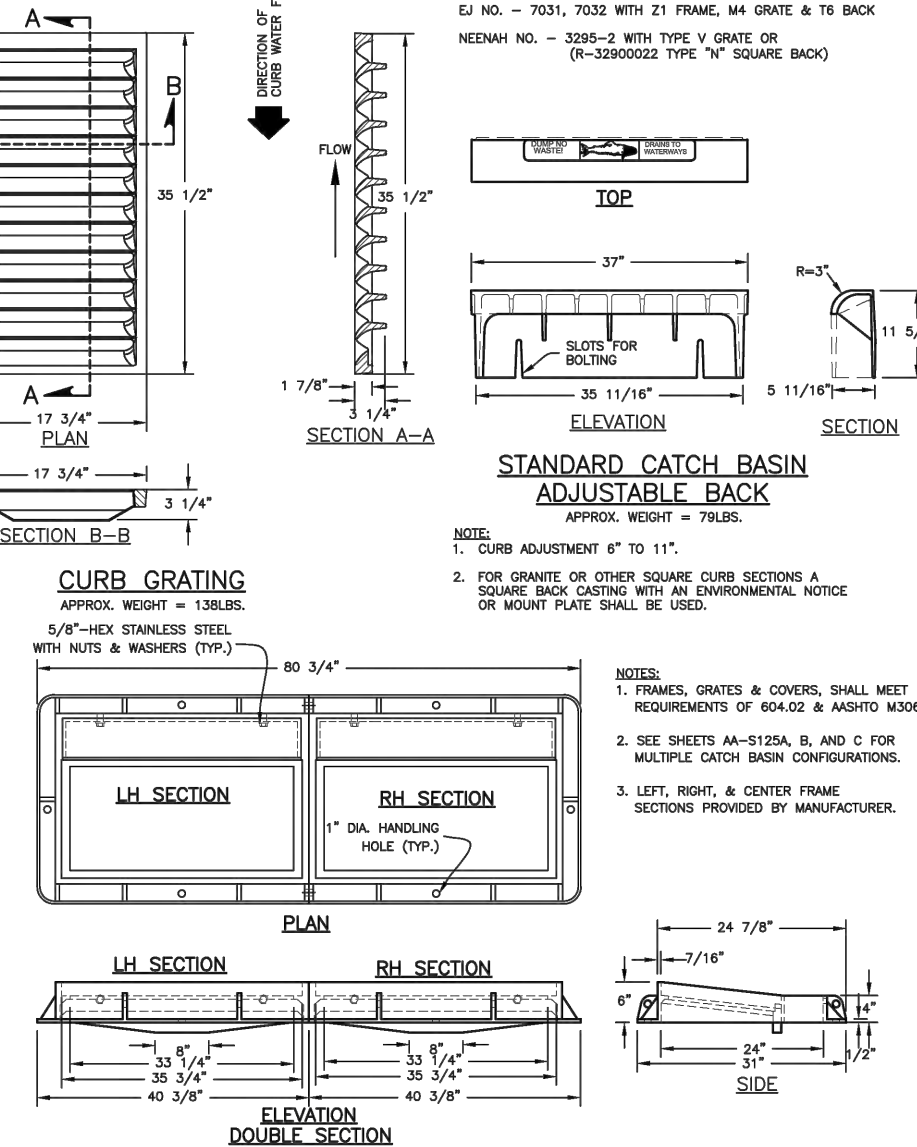
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
MANHOLE STEP  
STANDARD DRAWING AA-S119  
REVISED 8/8/14



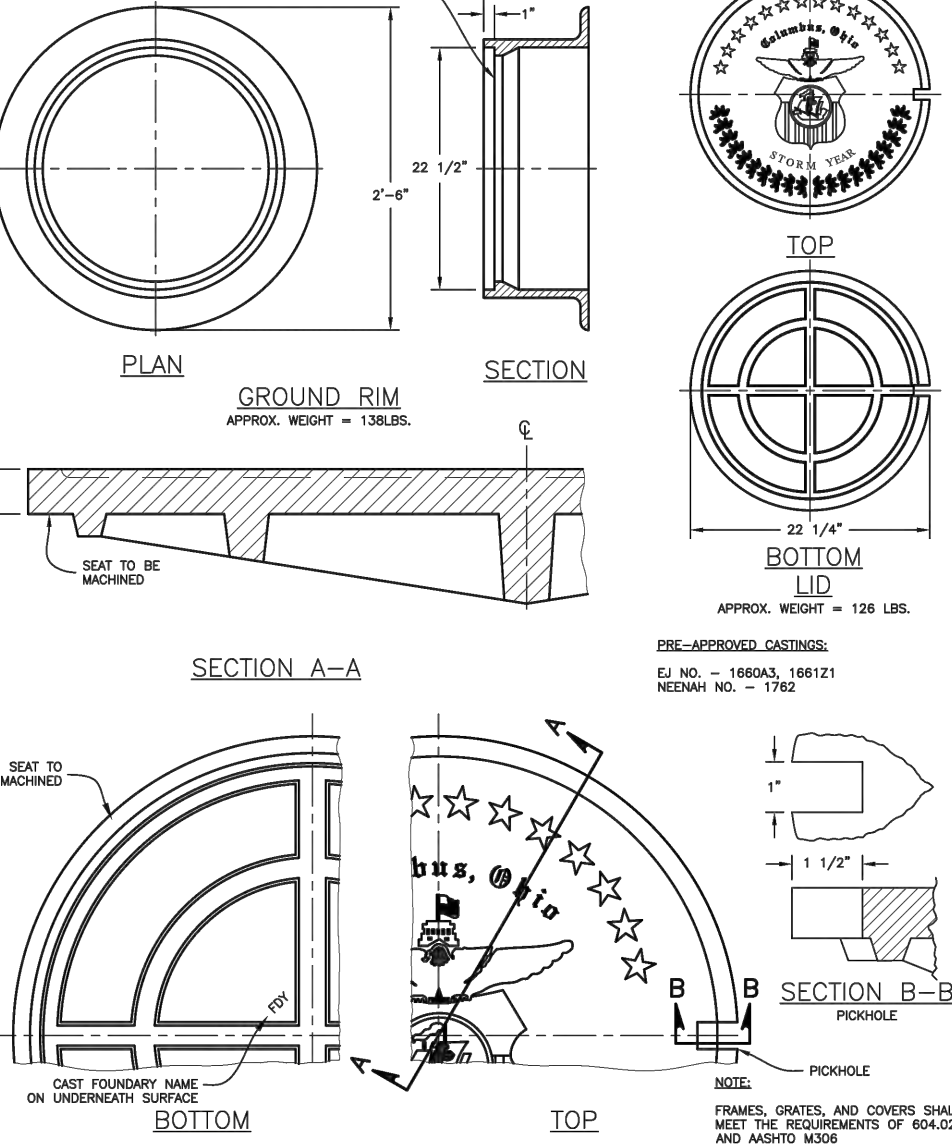
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
STANDARD CURB AND GUTTER  
INLET  
STANDARD DRAWING AA-S125A  
REVISED 8/8/14



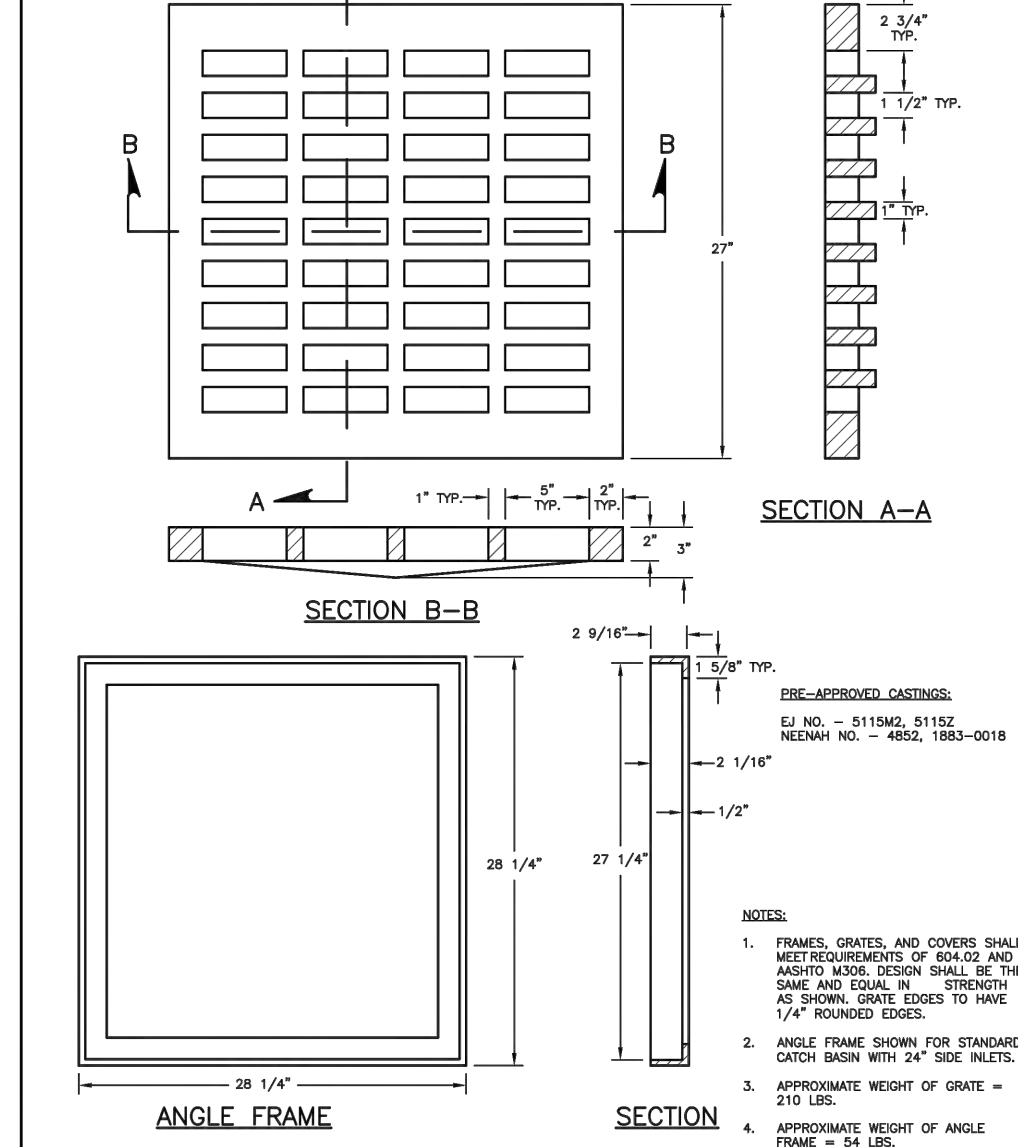
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
CAST IRON FRAME  
AND GRATE FOR CURB  
& GUTTER INLET  
(HEAVY DUTY)  
STANDARD DRAWING AA-S128  
REVISED 8/8/14



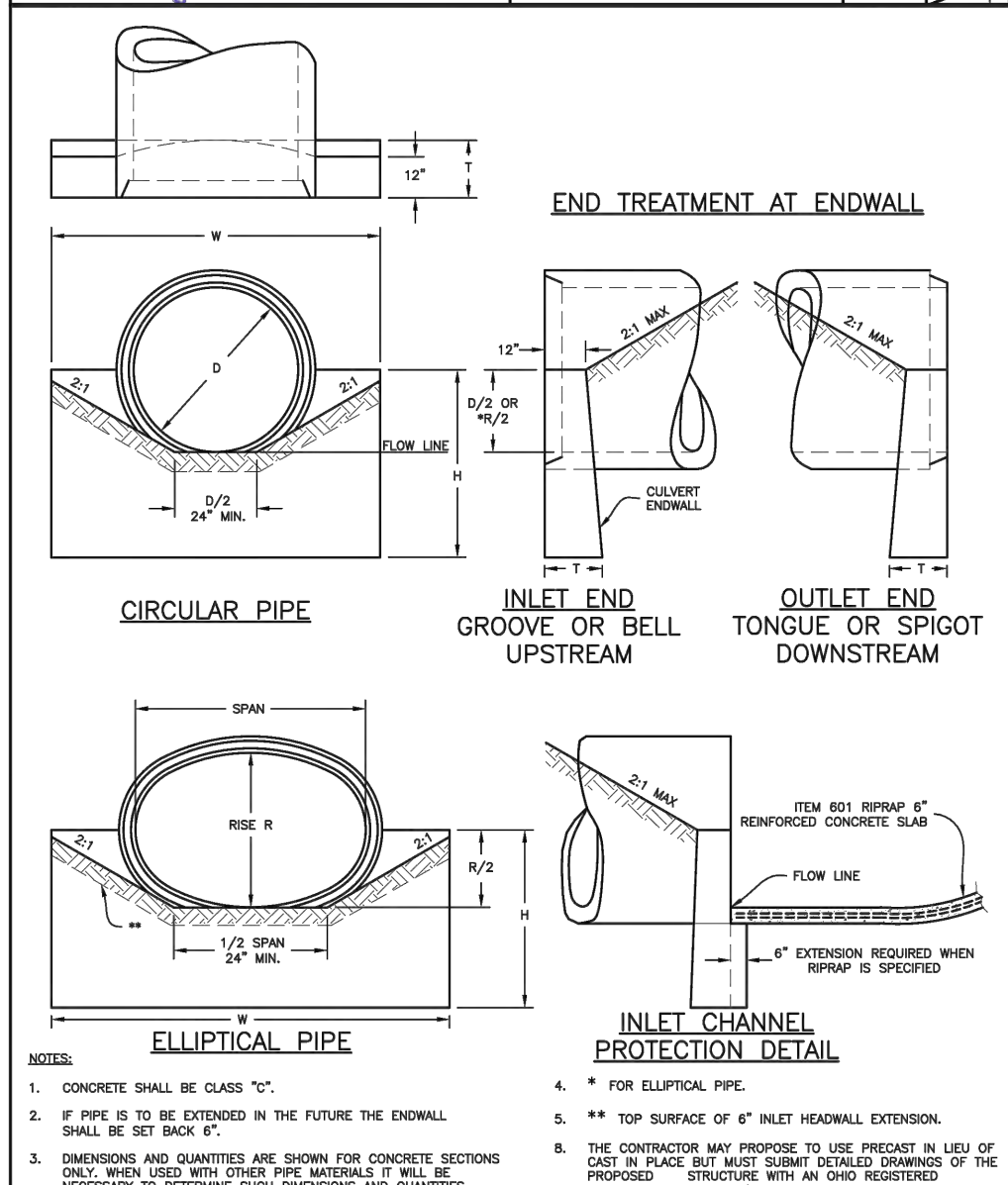
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
CAST IRON FRAME  
AND GRATE FOR CURB  
& GUTTER INLET  
(HEAVY DUTY)  
STANDARD DRAWING AA-S128  
REVISED 8/8/14



CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
STANDARD DIMENSIONS  
FOR MANHOLE FRAME  
& COVER CASTING  
(STORM SEWERS)  
STANDARD DRAWING AA-S112  
REVISED 12/8/14



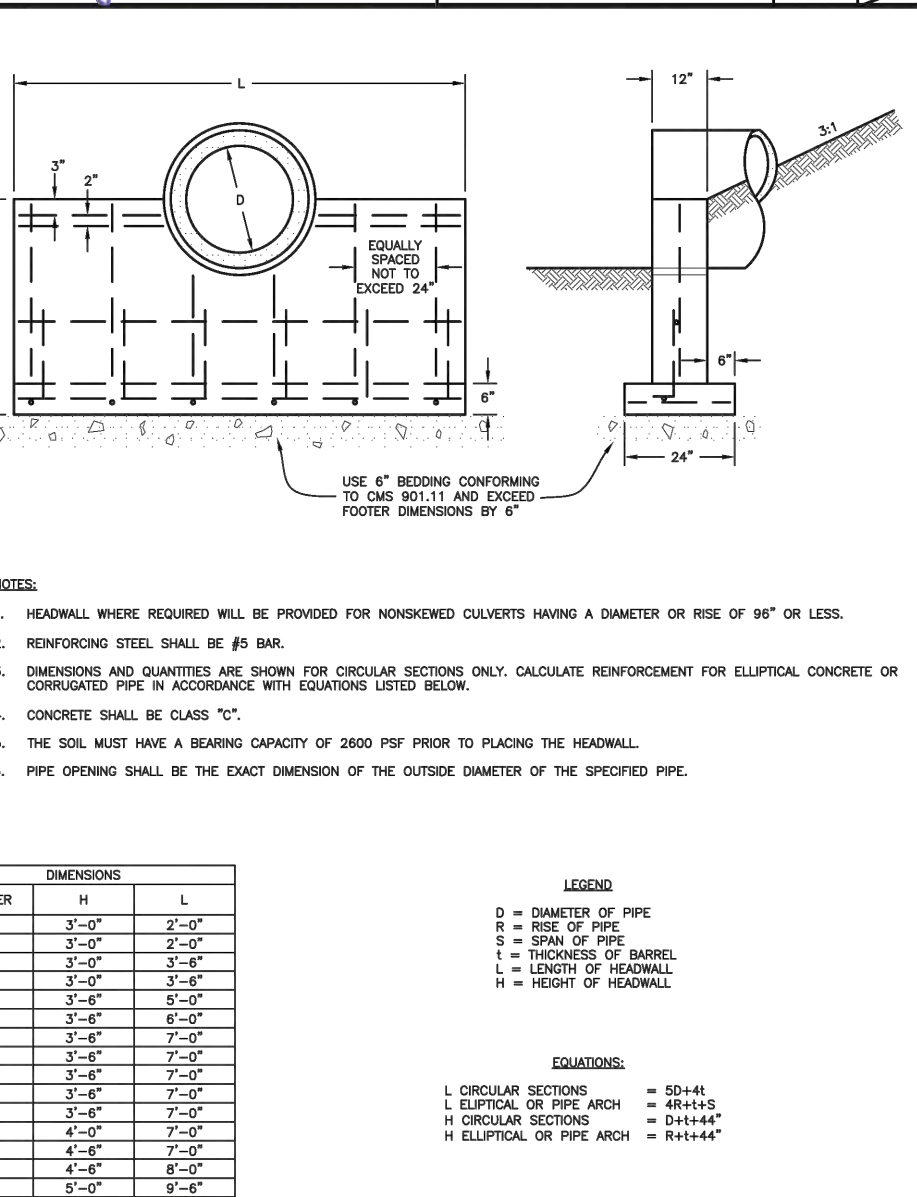
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
HEAVY DUTY GRATE AND  
ANGLE FRAME FOR  
STANDARD CATCH BASIN  
STANDARD DRAWING AA-S141  
REVISED 12/8/14



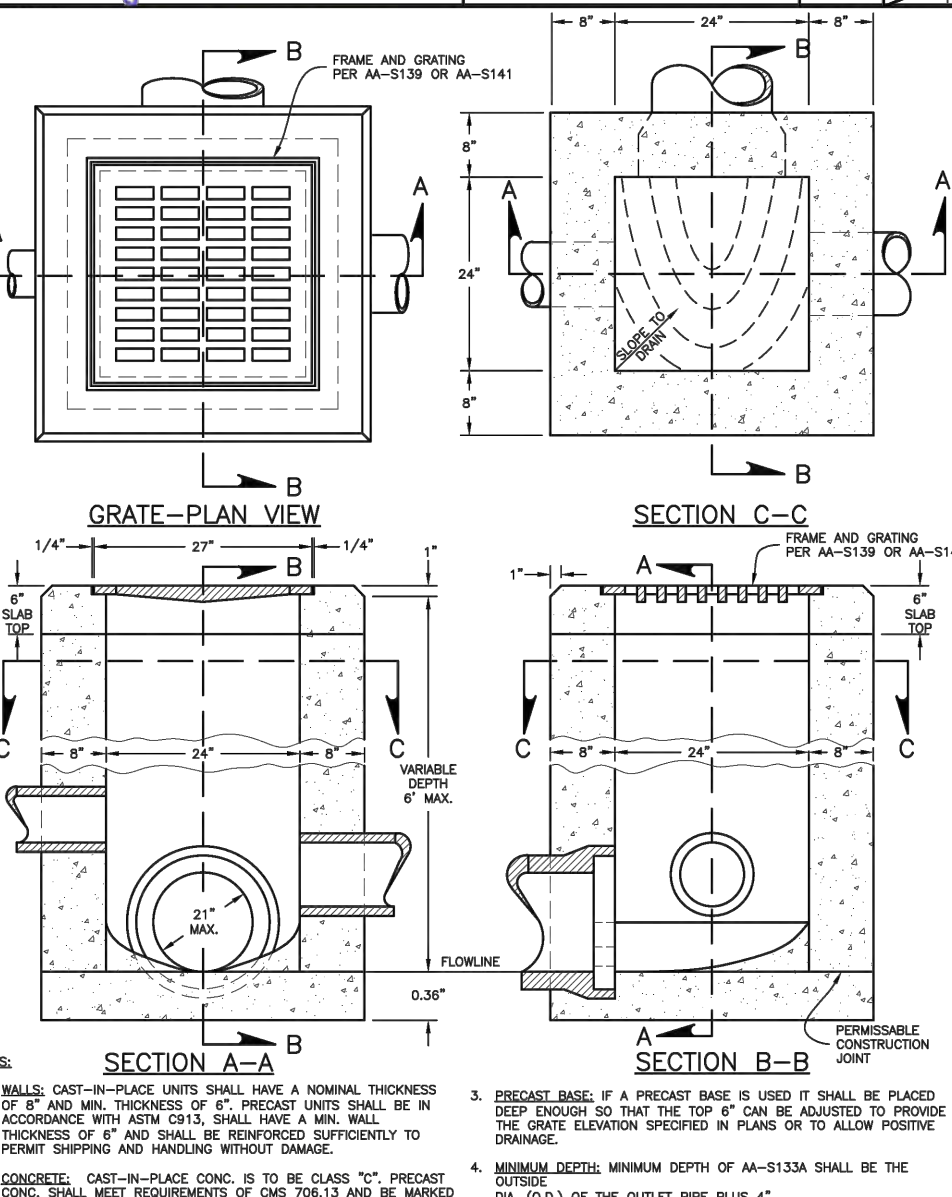
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
CAST-IN-PLACE  
PIPE CULVERT ENDWALLS  
STANDARD DRAWING AA-S165  
REVISED 7/9/12

ENDWALL FOR CONCRETE PIPE									
CIRCULAR					ELLIPTICAL				
D	W	H	T	CONC. CU. YDS.	D	W	H	T	CONC. CU. YDS.
8"-12"	2'-0"	3'-0"	12"	2.0	23"	14"	3'-0"	12"	2.9
15"	2'-6"	3'-2"	12"	2.5	30"	19"	3'-4"	12"	3.5
18"	3'-0"	3'-3"	12"	3.1	34"	22"	3'-11"	12"	3.8
21"	3'-6"	3'-4"	12"	3.7	38"	24"	4'-0"	12"	4.4
24"	4'-0"	3'-8"	12"	4.3	42"	27"	4'-3"	12"	4.8
27"	4'-6"	3'-8"	12"	4.9	46"	29"	4'-6"	12"	4.9
30"	5'-0"	3'-9"	12"	5.6	49"	32"	4'-9"	12"	5.2
33"	5'-6"	3'-10"	12"	6.2	53"	34"	5'-1"	12"	5.8
36"	6'-0"	4'-0"	12"	6.9	57"	36"	5'-3"	12"	6.2
39"	6'-6"	4'-2"	12"	7.7	60"	38"	5'-6"	12"	6.6
42"	7'-0"	4'-3"	12"	8.4	64"	40"	5'-9"	12"	7.0
45"	7'-6"	4'-4"	14"	1.09	68"	42"	6'-0"	18"	1.65
54"	9'-3"	4'-8"	14"	1.32	81"	50"	6'-11"	18"	1.97
60"	10'-0"	5'-0"	16"	1.93	98"	63"	7'-7"	20"	2.38
66"	11'-9"	5'-9"	18"	2.42	108"	68"	8'-0"	24"	2.69
72"	13'-0"	6'-0"	18"	2.77	113"	72"	8'-0"	22"	3.14
78"	14'-3"	6'-3"	20"	3.37	121"	77"	8'-11"	24"	3.49
84"	15'-6"	6'-6"	22"	4.05	128"	82"	9'-0"	24"	4.04
90"	16'-9"	6'-9"	22"	4.51	136"	87"	9'-6"	24"	4.84
96"	18'-0"	7'-0"	24"	5.31	143"	92"	10'-0"	26"	5.12
102"	19'-3"	7'-3"	26"	6.20	151"	97"	10'-6"	28"	5.42
108"	20'-6"	7'-6"	26"	6.78	166"	106"	11'-0"	28"	6.60
114"	21'-9"	7'-9"	28"	7.81	180"	116"	12'-0"	30"	7.99
120"	23'-0"	8'-0"	30"	8.93					
126"	24'-3"	8'-3"	30"	9.57					
132"	25'-6"	8'-6"	32"	10.84					
144"	28'-0"	9'-0"	34"	13.00					

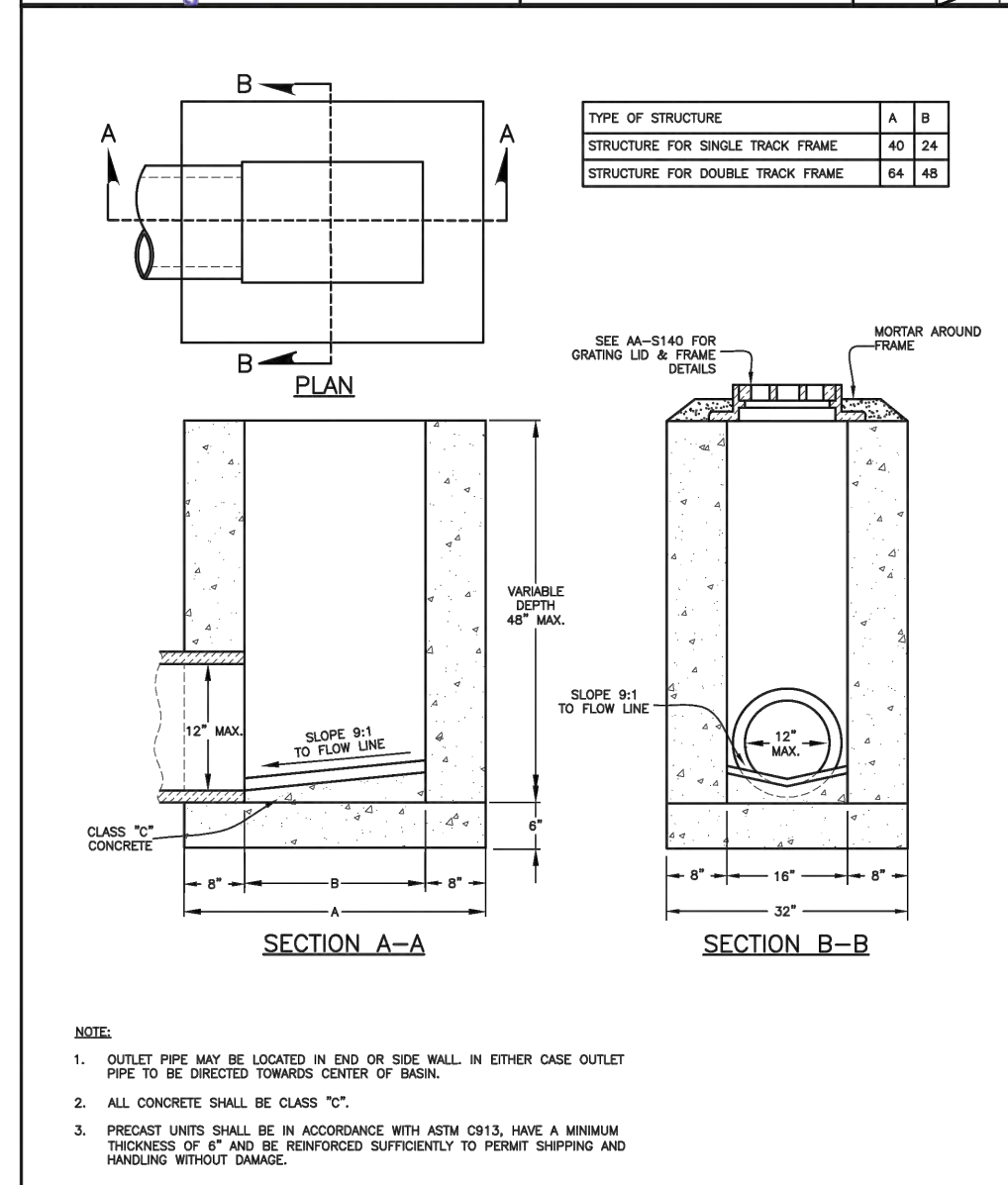
CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
CAST-IN-PLACE  
PIPE CULVERT DETAILS  
STANDARD DRAWING AA-S165  
REVISED 7/9/12



CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
PRECAST PIPE ENDWALLS  
8" TO 60" DIAMETER  
STANDARD DRAWING AA-S169  
REVISED 12/8/14



CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
STANDARD CATCH BASIN  
(SMALLER PIPE)  
STANDARD DRAWING AA-S133A  
REVISED 8/8/14



CITY OF COLUMBUS, OHIO  
DEPARTMENT OF PUBLIC UTILITIES  
DIVISION OF SEWERAGE & DRAINAGE  
PRECAST  
RECTANGULAR  
CATCH BASIN  
STANDARD DRAWING AA-S135  
REVISED 8/8/14

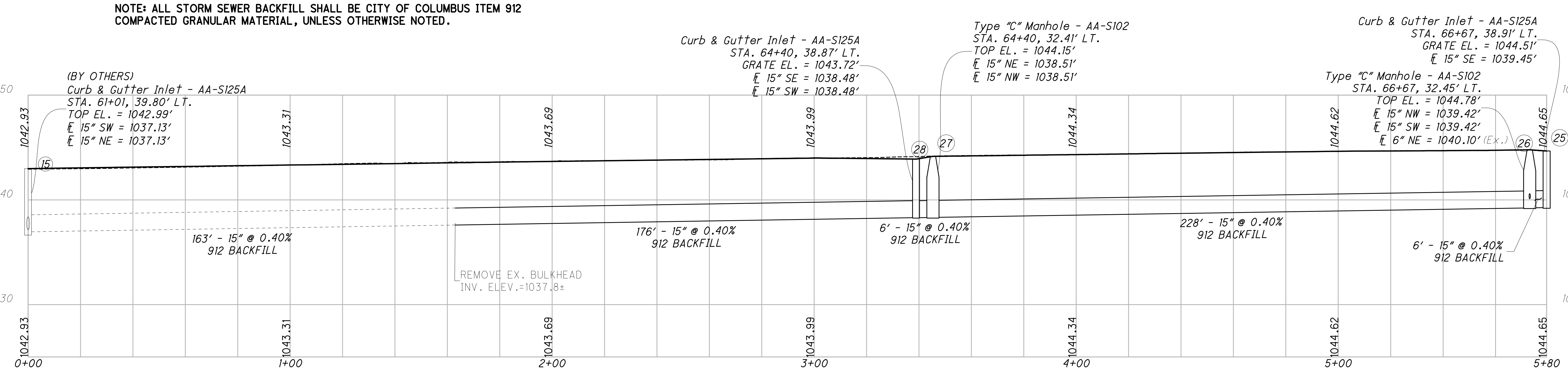
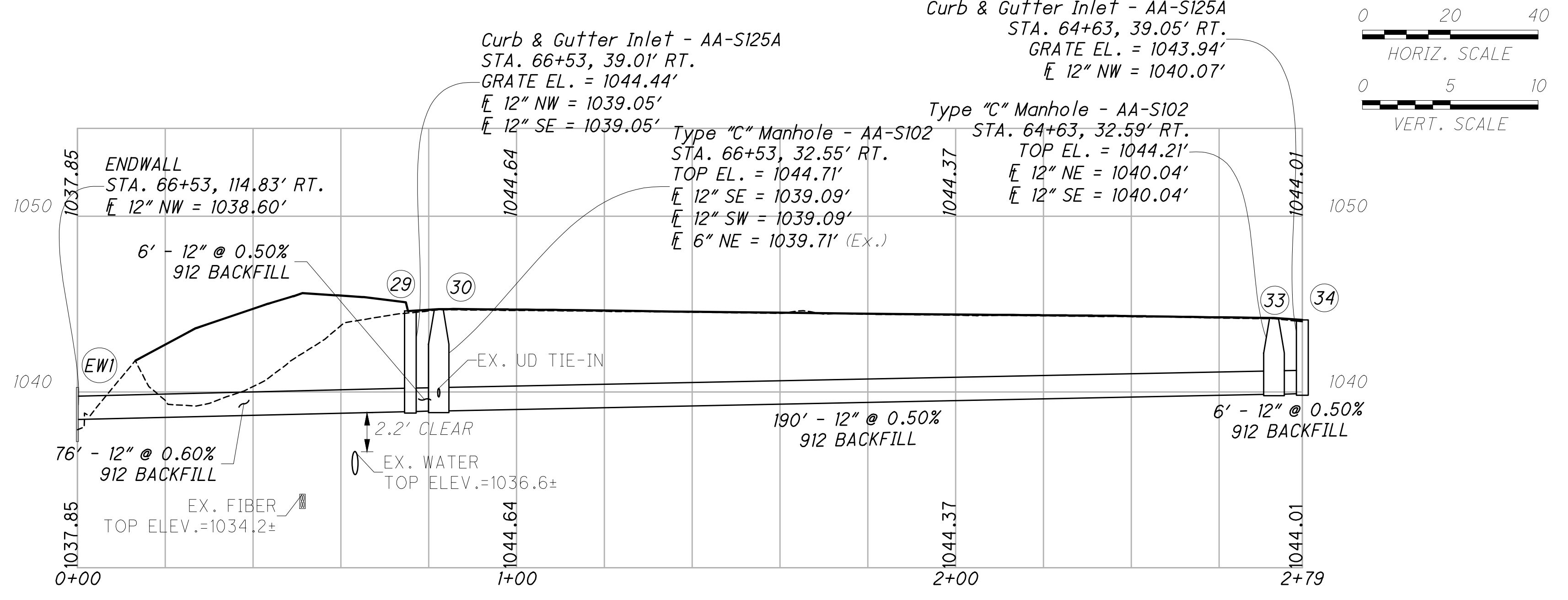
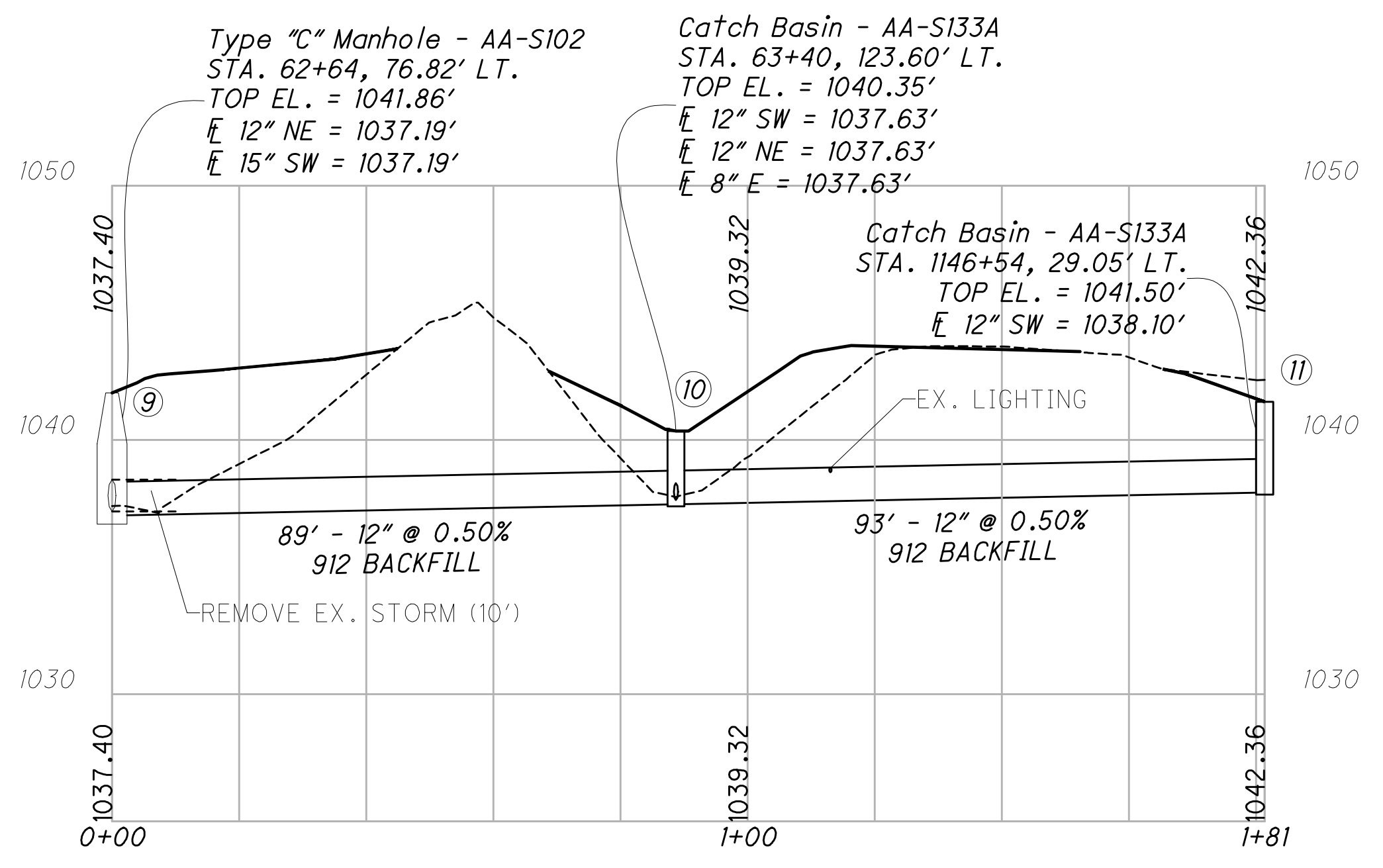
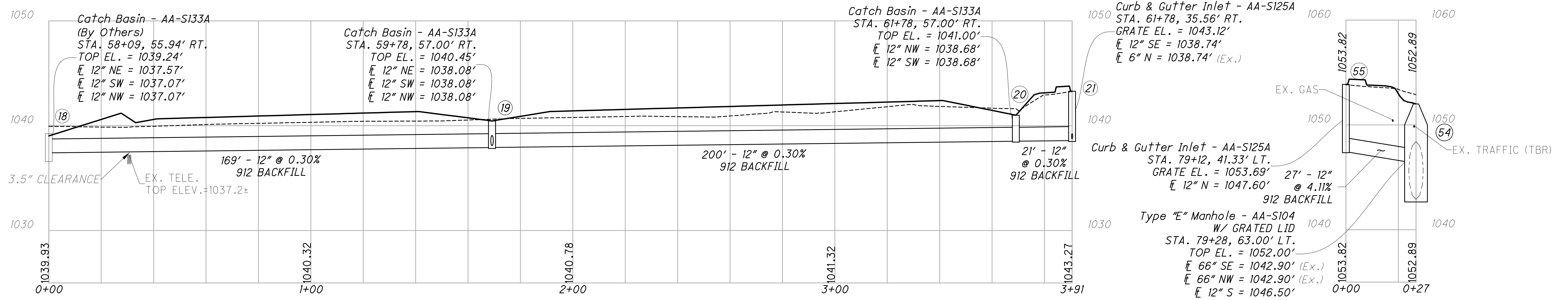
CALCULATED  
WCS  
CHECKED  
DLS

STANDARD DRAWINGS

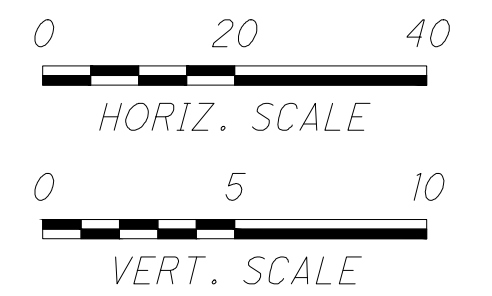


STORM SEWER PROFILES

FRA-62-30.34



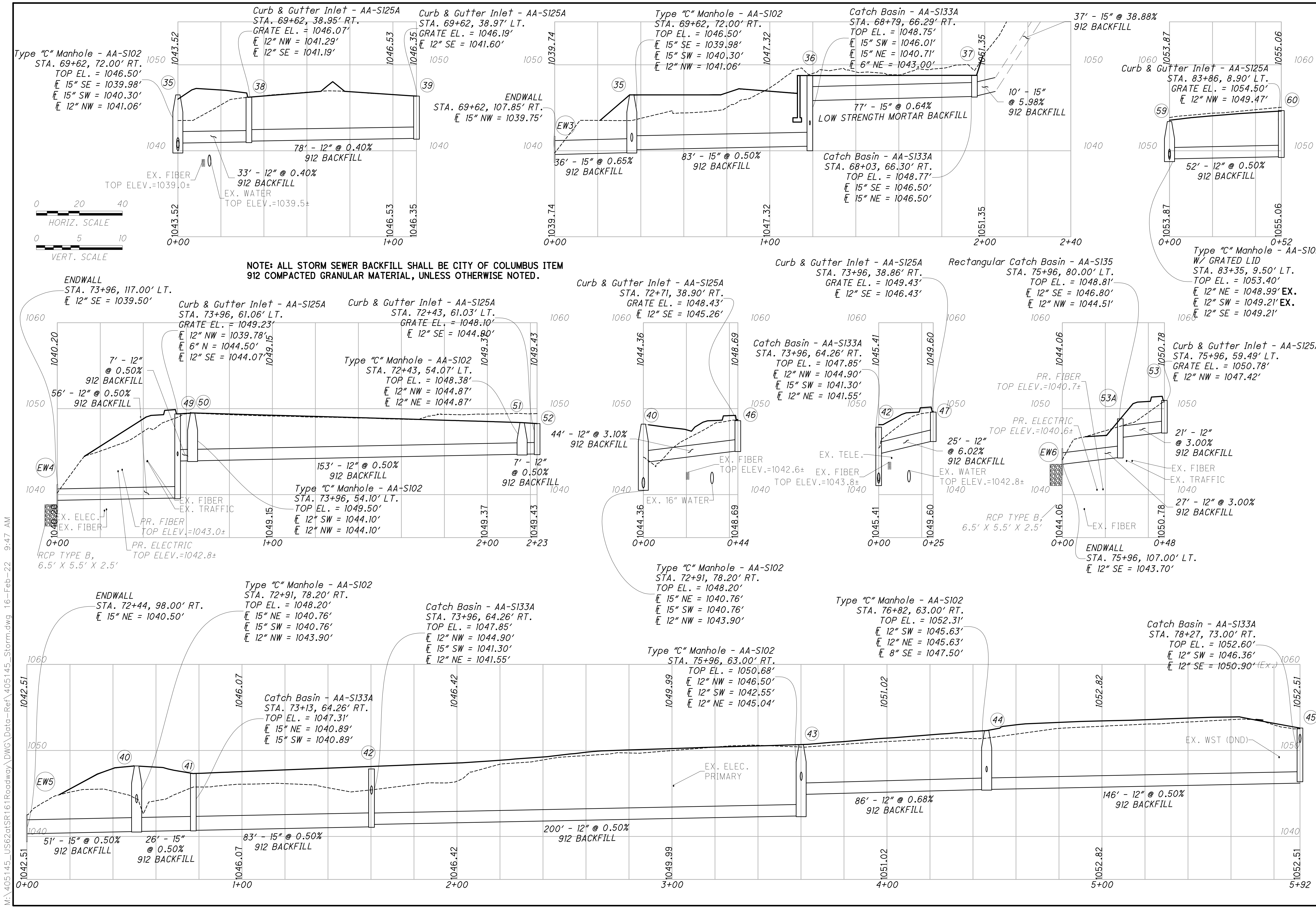
NOTE: ALL STORM SEWER BACKFILL SHALL BE CITY OF COLUMBUS ITEM 912 COMPACTED GRANULAR MATERIAL, UNLESS OTHERWISE NOTED.



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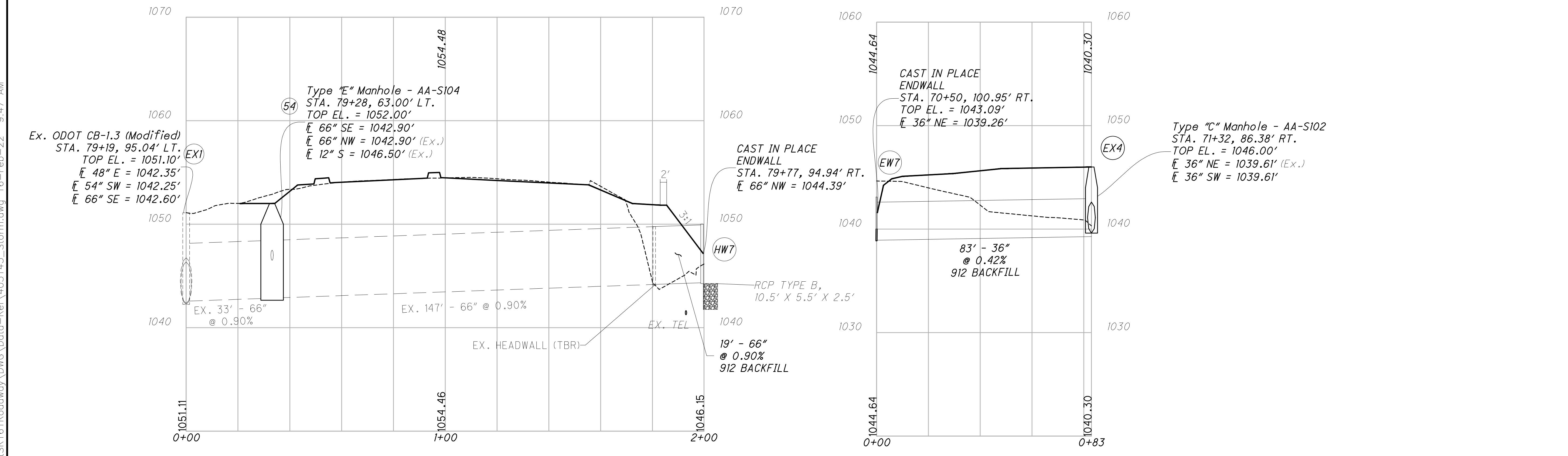
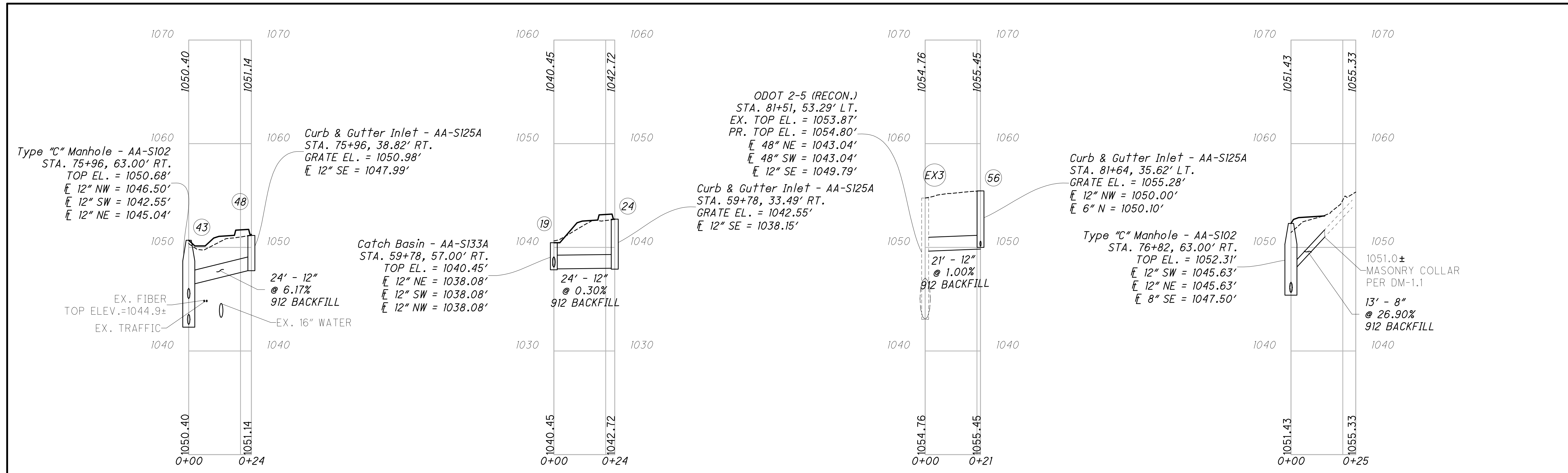


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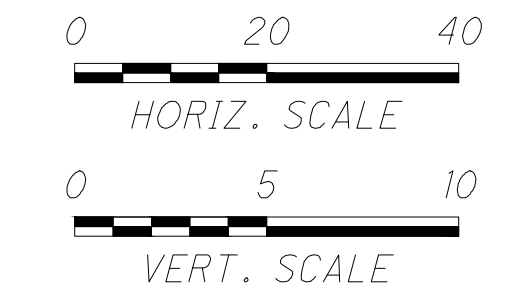


STORM SEWER PROFILES

FRA-62-30.34



NOTE: ALL STORM SEWER BACKFILL SHALL BE CITY OF COLUMBUS ITEM 912 COMPACTED GRANULAR MATERIAL, UNLESS OTHERWISE NOTED.



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REFERENCE SPECIFICATIONS

THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS, CURRENT EDITIONS, TOGETHER WITH THE CITY OF COLUMBUS AND THE CITY OF NEW ALBANY CONSTRUCTION AND MATERIAL SPECIFICATIONS INCLUDING ALL SUPPLEMENTS THERETO (HEREAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS), SHALL GOVERN ALL CONSTRUCTION ITEMS OF THESE PLANS UNLESS OTHERWISE NOTED. IF CONFLICT BETWEEN SPECIFICATIONS IS FOUND, THE MORE STRICT SPECIFICATION WILL APPLY AS DIRECTED BY THE ENGINEER. COLUMBUS SPECIFICATION ITEMS WILL BE REFERENCED IN THE PLANS WITH SPECIFIC PLAN NOTES. UNLESS OTHERWISE NOTED, ODOT SPECIFICATIONS SHALL GOVERN THE PAY ITEMS FOR THIS PROJECT.

ANY REVISION TO THESE PLANS SHALL BE SUBMITTED TO THE NEW ALBANY CITY ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

THE CONTRACTOR AND SUBCONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE CONTRACTOR-FURNISHED TRAFFIC CONTROL EQUIPMENT INSTALLED AS PART OF THE CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF NINETY (90) DAYS FOLLOWING COMPLETION OF THE TEN (10) DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATIONS, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS, AND REPLACE DEFECTIVE PARTS WITH NEW PARTS FROM THE SAME MANUFACTURER. MATERIAL AND LABOR COSTS INCURRED IN CORRECTING THE UNSATISFACTORY OPERATIONS SHALL BE BORNE BY THE CONTRACTOR. CUSTOMARY MANUFACTURERS' GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE CITY OR MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT. THE COST OF GUARANTEEING THE TRAFFIC SIGNAL EQUIPMENT SHALL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SIGNING INSTALLATION.

ACCESS TO AEP VAULTS AND MANHOLES

ACCESS OR CONNECTION TO EXISTING AEP VAULTS OR MANHOLES WITHIN THE CITY OF NEW ALBANY IS NOT ALLOWED WITHOUT PERMISSION OF AEP. THE CONTRACTOR SHALL NOTIFY AMERICAN ELECTRIC POWER (CRAIG FROST AT AEP TELECOM ENGINEERING PH 614 716 1464, CELL 740 504-9187) TWO (2) WEEKS IN ADVANCE TO SCHEDULE FOR AN AEP REPRESENTATIVE TO BE PRESENT FOR CONNECTION OF CONDUIT TO THE EXISTING AEP FACILITIES.

ALL FIBER SPLICING WITHIN THE AEP VAULTS OR MANHOLES SHALL BE PERFORMED BY AEP PERSONNEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THEIR PROJECT EFFORTS WITH AEP. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR FAILURE TO PROVIDE SUFFICIENT NOTICE TO AEP FOR SCHEDULING THEIR PRESENCE OR WORK.

ALL FUSION SPLICING ITEMS AT LOCATIONS SPECIFIED IN THESE PLANS SHALL BE PROVIDED AND INSTALLED BY AEP.

ACCESS TO AEP VAULTS AND MANHOLES, (CONTINUED)

AS SPECIFIED IN THESE PLANS, FOR TRENCHING OR JACKING/DRILLING CONDUIT LEADING TO AN AEP PULL BOX, THE CONDUIT SHALL BE PROVIDED AND INSTALLED BY AEP FOR THE LENGTHS INDICATED IN THE PLANS.

THE COST OF COORDINATION WITH AEP SHALL BE INCLUDED IN THE PROJECT COSTS.

ACCESS TO NEW ALBANY FACILITIES

ACCESS TO NEW ALBANY FACILITIES SHALL NOT BE ALLOWED WITHOUT PRIOR NOTICE TO THE CITY OF NEW ALBANY SERVICE DEPARTMENT. THIS SHALL INCLUDE COORDINATION ON ACCESSING THE SERVICE DEPARTMENT, COORDINATION WITH THE CITY IT DEPARTMENT, AND ACCESS TO THE CITY POLICE DEPARTMENT. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR FAILURE BY THE CONTRACTOR TO PROVIDE ADVANCE NOTICE ON ATTENDANCE FOR CONNECTION TO THE AEP FACILITIES OR FOR AEP PERSONNEL TO PERFORM THE CABLE SPLICING.

QUALIFICATIONS TO PERFORM THIS WORK, INCLUDING FIBER OPTIC CABLE SPLICING ARE ALSO IDENTIFIED IN THESE PLANS.

MATERIAL INFORMATION SUBMITTAL AND TESTING CERTIFICATION

PRIOR TO ORDERING OF EQUIPMENT, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR APPROVAL BY THE CITY OF NEW ALBANY:

1) A COMPLETE SCHEDULE OF EQUIPMENT INTENDED TO BE FURNISHED INCLUDING THAT WHICH HAS BEEN SPECIFICALLY LISTED IN THESE PLAN QUANTITIES AND THAT WHICH HAS NOT BEEN IDENTIFIED.

2) A DETAILED LIST OF ALL VARIANCES FROM ODOT SPECIFICATIONS AND FROM THE SPECIFICATIONS CONTAINED HEREIN FOR EACH ITEM THAT HE INTENDS TO FURNISH THAT DOES NOT COMPLY 100% WITH THESE SPECIFICATIONS. UNLESS OTHERWISE STATED BY THE CONTRACTOR THE SUPPLIED ITEMS WILL BE CONSIDERED AS BEING IN STRICT ACCORDANCE WITH ALL SPECIFICATIONS.

3) THREE (3) COMPLETE SETS OF DIAGRAMS, SHOP DRAWINGS, CUT SHEETS, BROCHURES FOR THE ITEMS THE CONTRACTOR INTENDS TO FURNISH, INCLUDING THOSE ITEMS THAT HAVE NOT BEEN SPECIFICALLY NAMED BY THE PRODUCT NUMBER. IF FOUND SATISFACTORY, ONE COPY WILL BE RETURNED MARKED "APPROVED". THE CONTRACTOR MAY ORDER THE MATERIAL UPON RECEIVING THE APPROVED COPIES.

4) A WRITTEN WORK SCHEDULE NOT LESS THAN 2 WEEKS IN ADVANCE OF STARTING WORK.

5) COLOR PAINT CHIPS ON ALL AFFECTED TRAFFIC CONTROL ITEMS INDICATED IN THESE PLANS.

PRIOR TO ORDERING ANY EQUIPMENT DESIGNATED TO BE PAINTED, THE CONTRACTOR SHALL SUBMIT TO THE CITY FOR APPROVAL PAINT CHIP SAMPLES FOR EACH AFFECTED ITEM, ALONG WITH THE PAINT CHIP REFERENCE NUMBER AND THE MANUFACTURING PROCESS FOR PAINTING THE MATERIAL. ANY COST ASSOCIATED WITH PROVIDING THESE PAINT CHIP SAMPLES SHALL BE CONSIDERED INCIDENTAL TO THE COST BID FOR THIS PROJECT.

MATERIAL INFORMATION SUBMITTAL AND TESTING CERTIFICATION, (CONTINUED)

WHEN REQUESTED AND WHEN THE EQUIPMENT IS CONTRACTOR-FURNISHED, THE MANUFACTURER SHALL PROVIDE A CERTIFIED LETTER STATING THAT THE CONTROLLER, CONFLICT MONITOR, LOAD SWITCH UNITS AND AC LINE FILTERS HAVE BEEN SUCCESSFULLY TESTED IN EXACT ACCORDANCE WITH THE NEMA ENVIRONMENTAL STANDARDS AND TEST PROCEDURES. SUCH TESTING SHALL HAVE OCCURRED NO MORE THAN THE SIX-MONTHS PRIOR TO THE DATE OF THIS CONTRACT. THIS SIX-MONTH REQUIREMENT MAY BE WAIVED BY THE CITY ENGINEER IF THE MANUFACTURER CAN SATISFACTORILY DEMONSTRATE THAT THE SUPPLIED EQUIPMENT IS IDENTICAL TO THE EQUIPMENT THAT WAS PREVIOUSLY TESTED AND THAT THE MANUFACTURER REQUEST THAT THIS TESTING REQUIREMENT BE WAIVED. ANY REDESIGN OR CHANGES OF ANY TYPE INCLUDING ANY COMPONENT CHANGES WHICH WOULD MAKE THE BID CONTROL EQUIPMENT NOT IDENTICAL TO TESTED CONTROL EQUIPMENT WILL REQUIRE THE ABOVE EQUIPMENT TO BE RE-CERTIFIED.

CONTRACTOR TESTING OF ELECTRONIC SIGNAL COMPONENTS BEFORE PRIMARY POWER INSTALLATIONS:

IF ANY TESTING OF THE SIGNAL INSTALLATION OR ANY ASPECT THEREOF IS PLANNED BY THE CONTRACTOR PRIOR TO AN APPROVED SIGNAL TURN-ON, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER ONE WORKING DAY IN ADVANCE AND SHALL HAVE A SPECIAL DUTY OFFICER PRESENT FOR THE TEST TO CONTROL TRAFFIC AS NEEDED. TESTING AND/OR TROUBLESHOOTING SHALL BE PERFORMED BY AN IMSA LEVEL TWO CERTIFIED TECHNICIAN. IF PORTABLE POWER IS APPROVED FOR USE, IT SHALL BE PROPERLY CONNECTED TO A GROUND ROD READING 10 OHMS OR LESS AND HAVE A PROPER REGULATING DEVICE TO SMOOTH CURRENT.

TEN-DAY TEST REQUIREMENTS

A 10-DAY TEST IS REQUIRED TO START AFTER INSTALLATION IS 100% COMPLETE. NO PARTIAL TESTS WILL BE CONDUCTED. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE CITY ENGINEER STATING THAT THE SIGNAL INSTALLATION IS 100% COMPLETED, AND A START DATE FOR THE TEN DAY TEST IS REQUESTED. IF LESS THAN 100% COMPLETION IS DETECTED UPON INSPECTION BY THE CITY OR ANY MAJOR MALFUNCTION (CONTROLLER, INTERCONNECT EQUIPMENT, LOOP DETECTORS, VIDEO DETECTION EQUIPMENT, ETC.) IS DETECTED THEN THE TEN-DAY SHALL BE COMPLETELY RESTARTED.

PAINTING REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF ODOT CMS, ALL ITEMS TO BE PAINTED SHALL BE PAINTED WITH NEW ALBANY GREEN (PAINT REF. NO. PMS 5535). GLOSS FINISH.

ALL EXTERIOR SURFACES OF THE SUPPORTS AND SIGNAL EQUIPMENT SPECIFIED TO BE PAINTED SHALL INCLUDE BUT NOT BE LIMITED TO PAINTING OF ARMS, BOLT COVERS, CLAMPS, HOUSINGS, AND WIRE ENTRANCES. EXTERIOR SURFACES OF BOLTS, WASHERS, AND SCREW FASTENERS SHALL ALSO HAVE A COATING APPLIED TO THEM. FASTENER THREADS SHALL NOT BE CLOGGED WITH COATING MATERIAL.

THE EXTERIOR COATING FOR ALL ITEMS SHALL BE WARRANTED TO YIELD A MINIMUM LIFE EXPECTANCY OF 5 YEARS WITHOUT PEELING OR FADING. ALL ITEMS TO BE PAINTED WITH THIS COLOR SHALL BE PAINTED IN A CONTROLLED ENVIRONMENT PRIOR TO SHIPPING IN THE FIELD. THE SIGNAL SUPPORTS SHALL BE UNWEATHERED AND GALVANIZED PRIOR TO PREPARING THE SURFACE FOR PAINTING.

ALL COATED ITEMS SHALL BE SHIPPED IN A MANNER TO MINIMIZE DAMAGE IN TRANSIT. MATERIALS DAMAGED IN TRANSIT OR DURING THE COURSE OF INSTALLATION SHALL BE REPAIRED OR REPLACED AT THE DIRECTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH CORRECTING DAMAGED MATERIAL SHALL BE BORNE BY THE CONTRACTOR.

SIGNAL INSTALLATION & MAINTENANCE PERSONNEL REQUIREMENTS

THE CONTRACTOR SHALL ASSIGN A PROJECT SUPERVISOR. THE SUPERVISOR SHALL BE A FULL TIME EMPLOYEE OF THE CONTRACTOR. THE CONTRACTOR SHALL NOT CHANGE THE PROJECT SUPERVISOR WITHOUT GIVING THE PROJECT ENGINEER WRITTEN NOTICE. THE CONTRACTOR SHALL PROVIDE INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) CERTIFIED DOCUMENTATION FOR THEIR EMPLOYEES IF REQUESTED BY PROJECT OR CITY PERSONNEL.

ALL CONTROLLER WORK AS DEFINED BELOW IN ITEMS 1 THROUGH 4 SHALL BE PERFORMED BY AN IMSA LEVEL TWO CERTIFIED TECHNICIAN.

1. BACK PANEL WIRING TERMINATIONS
2. TESTING OR TURN ON
3. PROGRAMMING
4. TROUBLESHOOTING

THE CONTRACTOR SHALL ALSO HAVE A FOREMAN ASSIGNED TO EACH CREW PERFORMING WORK FOR THIS PROJECT. A FOREMAN SHALL BE PRESENT AT ALL TIMES WHEN WORK IS PERFORMED BY THE CREW. EACH FOREMAN SHALL BE AN IMSA LEVEL ONE CERTIFIED TECHNICIAN. THE CONTRACTOR SHALL PROVIDE PRIOR VERBAL NOTICE TO THE PROJECT ENGINEER IN ORDER TO REPLACE A CREW FOREMAN.

IN ADDITION, ANY TRADE PERSON PERFORMING WORK AS DEFINED BELOW IN ITEMS 1 THROUGH 7 SHALL BE AN IMSA LEVEL ONE CERTIFIED TECHNICIAN.

1. CABLE SPLICES
2. GROUND ROD TESTING
3. SIGNAL HEAD INSTALLATION
4. CABLE INSULATION TESTING
5. CABLE AND WIRE INSTALLATION
6. FIELD WIRING TERMINATIONS
7. POWER SERVICE INSTALLATION

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EXPOSING GAS LINES AND FIBER OPTIC COMMUNICATION LINES

THE CONTRACTOR SHALL EXPOSE ALL GAS LINES AND FIBER OPTIC COMMUNICATION LINES NEAR PROPOSED SIGNAL SUPPORT FOUNDATIONS AND PROPOSED PULLBOX LOCATIONS. THE COST OF THIS EFFORT SHALL BE INCLUDED IN THE VARIOUS BID ITEMS.

SIGNAL INSTALLATION INSPECTION

THE CONTRACTOR SHALL NOTIFY THE CITY OF NEW ALBANY ENGINEER ONE WORK DAY BEFORE STARTING ANY TRAFFIC SIGNAL WORK INCLUDING BUT NOT LIMITED TO SIGNAL POLE FOUNDATIONS, PULL BOX, TRAFFIC SIGNAL CONDUIT, SIGNAL OR LOOP WIRING, OR LOOP CUTTING. IF THE CONTRACTOR STOPS ANY TRAFFIC SIGNAL INSTALLATION WORK FOR GREATER THAN THREE CONSECUTIVE WORKING DAYS FOR ANY REASONS, RE-NOTIFICATION IS REQUIRED.

TESTING:

THE CONTRACTOR SHALL SUBMIT CERTIFIED DOCUMENTATION, IN ACCORDANCE WITH 632.28, FOR THE FOLLOWING TESTS:

1. GROUND TEST
2. SHORT-CIRCUIT TEST
3. CIRCUIT CONTINUITY TEST
4. CABLE INSULATION TEST
5. FUNCTIONAL TEST

AS AN ALTERNATIVE, THE CONTRACTOR MAY REQUEST THAT A REPRESENTATIVE FROM THE CITY OF NEW ALBANY BE PRESENT. TO MAKE ARRANGEMENTS, CALL (614) 855-0076. ANY TEST CONDUCTED AND NOT CERTIFIED (OR IF THE TEST IS CONDUCTED WITHOUT THE CITY REPRESENTATIVE(S) SHALL BE RE-DONE.

INSTALLATION LAYOUT

ALL TRAFFIC SIGNAL SUPPORTS AND ALL OTHER STATIONED SIGNAL ITEMS SHALL BE LOCATED AND MARKED BY A PROFESSIONAL SURVEYOR USING THE STATION NUMBERS AND OFFSETS PROVIDED IN THESE PLANS. THE SURVEYOR SHALL SET PROPER POLE AND CABINET FOUNDATION ELEVATIONS AND STAKE EACH POLE FOUNDATION ANGLE SO IT MATCHES THE ADJACENT PATHWAY ANGLE. PROJECT PERSONNEL SHALL APPROVE ALL FOUNDATION LOCATIONS AND ELEVATIONS PRIOR TO THE CONTRACTOR INSTALLING THEM. COSTS INCURRED FOR THIS SERVICE SHALL BE PROVIDED UNDER THE CONSTRUCTION LAYOUT STAKE ITEM.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS

A) PROPOSED TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING & PROPOSED TRAFFIC SIGNAL DEVICES UNDER THE FOLLOWING CONDITIONS FROM THE TIME OF AWARD OF THE PROJECT UNTIL THE DEVICE HAS BEEN ACCEPTED BY THE CITY ENGINEER'S OFFICE.

THE CONTRACTOR SHALL PROVIDE ONE OR MORE CONTACT PERSONS WHO CAN RECEIVE ALL DEVICE OUT-OF-SERVICE CALLS THAT FALL UNDER THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL DISPATCH MAINTENANCE PERSONNEL TO CORRECT THE PROBLEM. THE CONTRACTOR SHALL PROVIDE THE CITY ENGINEER & THE PROJECT ENGINEER WITH ADDRESSES & PHONE NUMBERS OF THESE CONTACT PERSONS. MAINTENANCE PERSONNEL MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS & A PERSON IS CONTINUOUSLY AVAILABLE TWENTY-FOUR (24) HOURS A DAY & SEVEN (7) DAYS A WEEK. THE CONTRACTOR SHALL PROVIDE MAINTENANCE SERVICE ENTIRELY WITH HIS PERSONNEL.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS, CONTINUED

THE CONTRACTOR SHALL CORRECT ALL BULB OUTAGES, DEVICE MALFUNCTIONS OF ANY TYPE, INTERNAL CABINET POWER LOSSES, SPAN OR CABLE PROBLEMS AND MISALIGNED OR DAMAGED VEHICULAR OR PEDESTRIAN SIGNAL HEADS WITHIN TWO (2) HOURS AFTER THE CONTRACTOR'S CONTACT PERSON HAS BEEN NOTIFIED OF ANY ONE OF THE ABOVE. IN THE EVENT A NEW SIGNAL DEVICE IS DAMAGED PRIOR TO ACCEPTANCE, THE DAMAGED DEVICE EXCEPT POLES SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY ENGINEER'S OFFICE. ANY DAMAGED CABINET ASSEMBLY DEVICE IF REPAIRED SHALL BE TESTED ONCE AGAIN BEFORE THE DEVICE CAN BE INSTALLED.

IN THE EVENT OF A LOSS OF POWER TO THE SIGNAL INDICATIONS OTHER THAN AN ELECTRIC COMPANY GENERAL POWER OUTAGE, THE CONTRACTOR AT HIS EXPENSE SHALL IMMEDIATELY TAKE ACTION (WITHIN 30 MINUTES) TO PROPERLY ERECT TEMPORARY STOP SIGN(S) & PROVIDE POLICE OFFICER(S) TO DIRECT TRAFFIC UNTIL THE SIGNAL IS BACK ON "FLASH" OR OPERATING PROPERLY.

IF A TRAFFIC SIGNAL POLE IS DAMAGED & THAT DAMAGE CAUSED POLE INSTABILITY, THEN THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION (WITHIN 2 HOURS) TO STABILIZE IT. THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR PROVIDING THE PROJECT WITH A NEW UNDAMAGED POLE.

WHERE OUT-OF-SERVICE CALLS ARE THE DIRECT RESULT OF A VEHICULAR ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COLLECTION OF ANY COMPENSATION FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE TO THE CONTRACTOR'S MATERIALS.

WHERE THE CONTRACTOR HAS FAILED TO RESPOND OR CANNOT RESPOND TO AN OUT-OF-SERVICE CALL WITHIN THE TIME PERIOD SPECIFIED ABOVE AT LOCATIONS UNDER HIS RESPONSIBILITY, THE CITY ENGINEER MAY TAKE ACTION AS IT DEEMS NECESSARY TO CORRECT THE SITUATION. THIS ACTION MAY INCLUDE CONTROLLING THE INTERSECTION USING CITY OF NEW ALBANY POLICE OFFICERS, COMPLETELY REMOVING OR REPLACING ANY MALFUNCTIONING TRAFFIC CONTROL DEVICE, AND/OR INSTALLING ANY DEVICE(S) REQUIRED TO RETURN THE INTERSECTION TO REGULAR SIGNAL OPERATION. ALL COSTS ASSOCIATED WITH THESE ACTIONS SHALL BE BILLED DIRECTLY TO THE CONTRACTOR & NOT INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

ANY NON-OPERATING VEHICULAR OR PEDESTRIAN SIGNAL HEAD OR PUSHBUTTON SHALL BE COVERED AS REFERENCED TO IN THESE PLANS. ALL SIGNAL HEADS WHILE COVERED SHALL BE DARK BY DISCONNECTING POWER TO THE SIGNAL INDICATIONS. NO COVERED HEAD SHALL BLOCK THE VIEW OF AN OPERATING HEAD. A MINIMUM OF TWO (2) VEHICULAR SIGNAL HEADS PER TRAVELED DIRECTION (SPACED 8' APART MINIMUM AND 12' MAXIMUM) SHALL BE OPERATING AT ALL TIMES. NO EXCEPTIONS!

B) TEMPORARY CONTROLLER OR TRAFFIC SIGNALS

IN ADDITION TO ITEM 614.10, THE FOLLOWING SHALL APPLY.

IF THE CONTRACTOR IS REQUIRED TO ERECT AND/OR INSTALL ANY TEMPORARY TRAFFIC CONTROL DEVICE OR TEMPORARY SIGNAL/SUPPORT POLE THAT IS NOT SPECIFIED IN THESE PLANS, THEN THE CONTRACTOR SHALL SUBMIT THE DESIGN CHANGE TO THE CITY ENGINEER, FOR APPROVAL PRIOR TO THEIR INSTALLATION. THIS DIVISION ALSO RESERVES THE RIGHT TO MAKE OR HAVE THE CONTRACTOR MAKE CHANGES TO THE TRAFFIC SIGNAL OPERATION.

IF THE CONTRACTOR NEEDS TO INSTALL A TEMPORARY CONTROLLER AND/OR A CABINET ASSEMBLY AT ANY INTERSECTION, THEN THE EQUIPMENT SHALL MEET NEMA STANDARDS TS1-1989 OR TS2-1998 (TYPE 2) & SHALL BE APPROVED BY THE CITY ENGINEER.

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

MAINTENANCE OF TRAFFIC SIGNAL FIBER OPTIC COMMUNICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EXISTING FIBER OPTIC COMMUNICATIONS WITHIN THE PROJECT LIMITS. THIS PROJECT CALLS FOR THE TEMPORARY DISRUPTION OF COMMUNICATIONS AT AND NEAR THE AEP VAULT, AS DETAILED IN THESE PLANS.

THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO COORDINATE WITH AEP SO THAT THIS SCHEDULED DISRUPTION TO THE SIGNAL FIBER COMMUNICATIONS IS MINIMIZED AND LIMITED TO A 24-HOUR PERIOD.

DAMAGE TO THE FIBER COMMUNICATIONS AS A RESULT OF CONTRACTOR WORK SHALL BE REPORTED IMMEDIATELY BY THE CONTRACTOR TO THE ENGINEER AND REPAIRED THE SAME DAY UNLESS APPROVED BY THE OWNER, AT THE SOLE DISCRETION OF THE ENGINEER. ALL COSTS OF THE EMERGENCY REPAIRS FOR THE DAMAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR REGARDLESS OF WHO DOES THE REPAIR. THE ENGINEER SHALL DETERMINE ACCEPTABLE TIME PERIODS FOR COMPLETION OF REPAIRS.

FOR INSTANCES WHERE THE CONTRACTOR CANNOT PERFORM THE REPAIR WORK WITHIN THIS TIME PERIOD, THE CITY RESERVES THE RIGHT TO USE THEIR INTERNAL FORCES OR OUTSOURCE TO COMPLETE THE WORK AND MAY BILL THE CONTRACTOR BASED ON TIME AND MATERIAL COSTS.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE "HL" AND "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. (AT THE CONTROLLER CABINET)

A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.

B. 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.

GROUNDING AND BONDING, CONTINUED

C. 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.

D. METAL PULL BOX LIDS SHALL BE BONDED BY ATTACHMENT OF THE EQUIPMENT GROUNDING CONDUCTOR TO THE FRAME DIAGONAL AS PROVIDED ON HL-30.11.

E. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

F. 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.

G. MESSENGER WIRE, IF INSTALLED 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.

2. 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.

3. WIRE FOR GROUNDING AND BONDING. 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:

A. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.

B. THE INSULATION SHALL BE GREEN. FOR 4 AWG OR LARGER, INSULATION SHALL ALSO BE GREEN WITH TWO YELLOW STRIPES/TRACERS.

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.

B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. 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 THE GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

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GROUNDING AND BONDING, CONTINUED

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.

PAYMENT FOR THE ABOVE WORK SHALL BE INCIDENTAL TO THE VARIOUS BID ITEMS.

ITEM 625 - GROUND ROD, AS PER PLAN

THE GROUND WIRE CABLE SHALL BE CROSS-LINKED POLYETHYLENE, #4 AWG COPPER, STRANDED, RHW INSULATED, 600 VOLT RATED AND EXOTHERMICALLY WELDED TO THE GROUND ROD WITH INSULATING VARNISH APPLIED TO THE WELD. THE COPPER USED IN THE GROUND WIRE SHALL BE HARD ENOUGH TO WITHSTAND THE EXOTHERMAL WELDING PROCESS BUT SOFT ENOUGH TO MELT AND FORM A SOLID BOND TO THE ROD. THE OHM READING AT THE END OF THE UNATTACHED GROUND WIRE THROUGH THE GROUND ROD SHALL BE 10 OHMS OR LESS FOR THE GROUNDING SYSTEM ATTACHED TO THE CONTROL CABINET OR TO ANY OTHER ELECTRONIC CABINET AND 25 OHMS OR LESS FOR THE GROUNDING SYSTEM ATTACHED TO THE SIGNAL SUPPORT OR PEDESTAL POLE. ANY ELECTRONIC CABINET, POLE OR BASE MOUNTED, SHALL HAVE TWO (2) GROUND RODS INSTALLED SIX FEET APART.

A GROUND WIRE JUMPER THAT IS WELDED TO EACH ROD SHALL CONNECT THE RODS. A SIGNAL SUPPORT THAT HAS A POLE MOUNTED CABINET ATTACHED TO IT SHALL ALSO HAVE A SEPARATE POLE GROUND ROD AND WIRE. THE GROUND WIRE ATTACHED TO THE CABINET SIGNAL POLE SHALL HAVE A SEPARATE "EMT" AND BE ON THE OPPOSITE SIDE OF THE FOUNDATION AND FROM THE CABINET GROUNDING SYSTEM.

TWO GROUND RODS EACH SHALL BE INSTALLED FOR GROUND MOUNTED CABINETS, AND AN ADDITIONAL GROUND ROD FOR SUPPORTS WITH POLE MOUNTED CABINETS. THE ONLY GROUND ROD OHM MEASUREMENT METHOD ACCEPTABLE TO THE CITY IS THE 3 POINT, FALL-OF-POTENTIAL METHOD. THE VOLTAGE PROBE SHALL NOT BE LESS THAN 50' FROM THE GROUND ROD UNDER TEST. THE CURRENT PROBE SHALL BE PLACED TWO TIMES THE DISTANCE THAT THE VOLTAGE PROBE IS FROM THE TEST GROUND ROD. EXCEPTION TO THE DISTANCE REQUIREMENTS SHALL BE ACCEPTED ONLY IF THE MEASURING INSTRUMENT TEST PROCEDURE DICTATES DIFFERENT DISTANCES FOR THAT PARTICULAR INSTRUMENT. AT THE DISCRETION OF THE CITY, UP TO 4 MEASUREMENTS MAY BE REQUIRED TO CONSTRUCT A RESISTANCE VERSUS DISTANCE GRAPH PER GROUND ROD TEST SO THAT THE FLAT PORTION OF THE RESISTANCE GRAPH CAN BE DETERMINED. PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 625 - NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN

A GREEN COLORED WITH TWO YELLOW STRIPES/TRACERS, INSULATED CABLE SHALL BE USED FOR THE GROUND WIRE (GND) WHERE INDICATED IN THE SIGNAL PLANS. THIS GND CABLE SHALL BE SEPARATE FROM THE GROUND ROD WIRE, BUT SHALL BE CONNECTED TO THE SAME GROUNDING BOLT USED FOR THE GROUND ROD WIRE ATTACHMENT AT THE POLE. THE GND CABLE SHALL BE TAGGED AS "GND SYS" AT ALL POLE LOCATIONS, PULL BOXES AND CONTROL CABINETS. ALL CONNECTIONS/SPLICING OF THE GND CABLE IN PULL BOXES SHALL BE CONSIDERED INCIDENTAL TO THE UNIT COST BID FOR THIS ITEM.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 625 - CONDUIT, BY SIZE, 725.052, AS PER PLAN

IN ADDITION TO ITEM 625 AND 725, IT IS INTENDED THAT AT THOSE LOCATIONS WHERE CONDUIT CROSSES THE WATER LINES, THE CONDUIT SHALL BE INSTALLED TO PROVIDE FOR A 1-FOOT MINIMUM VERTICAL CLEARANCE FROM EXISTING WATER LINES.

ITEM 625 - CONDUIT JACKED OR DRILLED, 725.052, AS PER PLAN, BY SIZE

AT THOSE LOCATIONS WHERE CONDUIT CROSSES WATER LINES, THE CONDUIT SHALL BE INSTALLED TO PROVIDE FOR A 1-FOOT MINIMUM VERTICAL CLEARANCE FROM EXISTING WATER LINES.

ITEM 625 TRENCH, AS PER PLAN

THIS ITEM SHALL INCLUDE TRENCHING UNDER NEW SIDEWALKS OR PATHWAYS. FOR TRENCHING UNDER NEW SIDEWALKS OR PATHWAYS, IT IS INTENDED THAT THE CONTRACTOR SHALL INSTALL THE CONDUIT PRIOR TO PLACEMENT OF THE NEW SIDEWALK OR PATHWAYS. THE COST OF COORDINATION FOR TRENCHING AND CONDUIT INSTALLATION PRIOR TO NEW SIDEWALK OR PATHWAYS PLACEMENT SHALL BE CONSIDERED INCIDENTAL TO THE COST BID FOR THIS ITEM. SAWCUTTING OF SIDEWALK SLABS OR PATHWAYS SHALL NOT BE PERMITTED.

IN THE EVENT THE CONDUIT IS PLACED AFTER THE NEW SIDEWALK OR PATHWAYS HAVE BEEN INSTALLED, THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL REPLACE THE ENTIRE SLAB(S) AFFECTED BY THE TRENCHING, AND MATCH THE SURFACE TREATMENT AND EDGING OF THE ADJACENT PATHWAY. IN LIEU OF REPLACING THE SLAB(S), THE CONTRACTOR MAY ELECT TO JACK OR DRILL THE CONDUIT UNDER THE SIDEWALK. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR SELECTION OF EITHER METHOD.

AT THOSE LOCATIONS WHERE CONDUIT CROSSES WATER LINES, THE CONDUIT SHALL BE INSTALLED TO PROVIDE FOR A 1-FOOT MINIMUM VERTICAL CLEARANCE FROM EXISTING WATER LINES

ITEM 625 - PULLBOX REMOVED AND REPLACED, AS PER PLAN

IT IS INTENDED THAT ONE (1) 24" PULL BOXES AS NOTED IN THE PLANS ON THE NORTHEAST OF SMITHS MILL AT 62 SHALL BE REPLACED WITH A 32" PULL BOX. THIS ITEM SHALL ALSO INCLUDE BACKFILL AS APPROPRIATE TO RESTORE THE AFFECTED AREAS TO FINISHED GRADE INCLUDING SEEDING/MULCHING.

PULL BOXES AT OTHER LOCATIONS NOT USED IN THE COMPLETED INSTALLATION SHALL BE REMOVED BY THE CONTRACTOR, AND SHALL BE CONSIDERED INCIDENTAL TO ROADWAY EXCAVATION, INCLUDING PATHWAY OR SIDEWALK INSTALLATION/MODIFICATIONS.

ITEM 625 - PULLBOX, MISC.: 725.06, BY SIZE

IT IS THE INTENT OF THIS ITEM THAT THE TOPS OF THE PULLBOXES SHALL BE FLUSH WITH ADJACENT SIDEWALKS OR PATHWAYS.

THE PULL BOXES SHALL BE 'PG STYLE' WITH HA COVERS AND SHALL HAVE SKID RESISTANT SURFACES. THE COVERS SHALL BE SECURED TO THE BOX WITH TWO STAINLESS STEEL HEX-HEAD BOLTS, WASHERS AND INSERTS.

FOR ALL SIGNAL PULLBOXES THE COVERS SHALL BE STAMPED 'TRAFFIC'. ALL STREET LIGHTING PULBOXES SHALL BE STAMPED 'ELECTRIC', AND ALL UTILITY PULLBOXES SHALL BE STAMPED 'TELECOM'.

PAYMENT SHALL BE AT THE UNIT PRICE PER EACH.

ITEM 625 - PULLBOX, MISC.: 725.08, BY SIZE

PULLBOXES OF 27", 32" OR 48" DIAMETER SHALL BE PER DETAILED IN THESE PLANS. THE TOPS OF PULLBOXES SHALL BE FLUSH WITH ADJACENT SIDEWALKS OR PATHWAYS. THE LID SHALL HAVE THE WORD "TRAFFIC" CAST IN THE LID.

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ITEM 621 - RAISED PAVEMENT MARKER REMOVED, AS PER PLAN

EXISTING RAISED PAVEMENT MARKERS SHALL BE REMOVED AND TRANSPORTED TO THE CITY OF NEW ALBANY SERVICE DEPARTMENT FOR REFURBISHING. MARKERS DESIGNATED AS UNUSABLE BY THE CITY SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

ITEM 630 GROUND MOUNTED WOODEN BOX BEAM SUPPORT, TYPE M BEAM, AS PER PLAN

IN ADDITION TO ITEM 630, THE BEAMS SHALL BE PAINTED NEW ALBANY GREEN (PMS 5535).

ITEM 630 OVERHEAD SIGN SUPPORT, TYPE TC-12.31, DESIGN BY SIZE, AS PER PLAN

ALL OVERHEAD SIGN SUPPORTS AS DETAILED IN THESE PLANS SHALL BE FACTORY PAINTED NEW ALBANY GREEN (PAINT REF. NO. PMS 5535). THE EXTERIOR COATING SHALL BE WARRANTED TO YIELD A LIFE EXPECTANCE OF A MINIMUM OF 5 YEARS WITHOUT PEELING OR FADING. THE PAINTING SHALL OTHERWISE MEET THE CRITERIA IN THESE PLANS FOR PAINTING REQUIREMENTS. THE SUPPORTS SHALL BE DESIGNED TO MEET THE CRITERIA DETAILED IN THESE PLANS, WITH STRUCTURAL ASPECTS OF THE DESIGN AND MATERIALS IN COMPLIANCE WITH AASHTO STANDARD SPECIFICATIONS AND ODOT STANDARDS FOR SIGN SUPPORTS. PER ODOT CMS, COVER BASES AND/OR ANCHOR BOLT COVERS ARE NOT PROVIDED. TOUCH UP PAINT SHALL BE APPLIED BY CONTRACTOR FOR POLE SURFACES THAT ARE MARRED DURING THE COURSE OF INSTALLATION.

FOR THE CANTILEVER SIGN SUPPORTS ON THE MEDIAN BARRIER, IT IS INTENDED FOR THE NEW SUPPORTS TO BE PLACED ON THE EXISTING SUPPORT FOUNDATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE NEW SUPPORTS MEET THE EXISTING BOLT CIRCLE PATTERN, ANCHOR BOLT DIAMETERS, AND ORIENTATION OF THE BOLT PATTERN SO THAT THE CANTILEVER SIGN SUPPORTS MEET THE ORIENTATION PATTERN SPECIFIED IN THESE PLANS.

SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO FABRICATION OF THE SUPPORTS. INCLUDE SIGN SUPPORT IDENTIFICATION STICKERS OF TYPE F REFLECTIVE SHEETING PER ODOT CMS.

ANCHOR BOLTS SHALL BE INCLUDED WITH THE SUPPORTS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ANCHOR BOLT SIZE AND PATTERNS MATCH WITH THE POLES BEING INSTALLED.

ITEM 630 SIGN HANGER ASSEMBLY, AS PER PLAN

CONTRACTOR SHALL APPLY TOUCH UP PAINT TO RIGID MOUNT ASSEMBLIES MARRED OR SCRATCHED BY CONTRACTOR DURING COURSE OF INSTALLATION (GLOSSY BLACK). WHEN INSTALLING THE HANGER ASSEMBLIES, CONTRACTOR SHALL SPACE THE HANGER ASSEMBLIES ON THE SIGNS UNIFORMLY FROM EACH EDGE OF THE SIGN. HOWEVER, CONTRACTOR MAY ADJUST ASSEMBLIES SO THAT THE HANGER BOLTS DO NOT DAMAGE THE LETTERING OR OTHERWISE AFFECT LEGIBILITY OF THE SIGN WORDS. THIS ADJUSTMENT, IF NEEDED, SHALL BE INCIDENTAL TO PROJECT COSTS. SIGNS DRILLED BY THE CONTRACTOR THAT RESULT IN DAMAGE TO THE LETTERER OR AFFECT LEGIBILITY SHALL BE REPLACED AT CONTRACTOR EXPENSE.

ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN

ATTACHMENT ASSEMBLIES ON PEDESTAL POLES SHALL USE STAINLESS STEEL BANDING. THE BANDING AND EXPOSED ASSEMBLY HARDWARE ALSO SHALL BE FIELD PAINTED NEW ALBANY GREEN TO MATCH THE SUPPORTS. PAYMENT SHALL BE AT THE UNIT PRICE BID PER EACH.

ITEM 630 SIGN, FLAT SHEET, AS PER PLAN

SIGNING ATTACHED TO MAST ARMS SHALL HAVE THE BACKS OF THE SIGNS FACTORY PAINTED NEW ALBANY GREEN (PAINT REF. NO. PMS 5535). THE PAINT SHALL BE WARRANTED TO YIELD A LIFE EXPECTANCE OF A MINIMUM OF 5 YEARS WITHOUT PEELING OR FADING. THE PAINTING SHALL OTHERWISE MEET THE CRITERIA IN THESE PLANS FOR PAINTING REQUIREMENTS.

ITEM 630 SIGN, GROUND MOUNTED EXTRUSHEET, AS PER PLAN

IN ADDITION TO ITEM 630, THE BACK OF SIGNS SHALL BE FACTORY PAINTED NEW ALBANY GREEN (PMS 5535).

ITEM 630 SIGN, OVERHEAD EXTRUSHEET, AS PER PLAN

IN ADDITION TO ITEM 630, THE BACK OF SIGNS SHALL BE FACTORY PAINTED NEW ALBANY GREEN (PAINT REFERENCE PMS 5535). THE PAINT SHALL BE WARRANTED TO YIELD A LIFE EXPECTANCE OF A MINIMUM OF 5 YEARS WITHOUT PEELING OR FADING. THE PAINTING SHALL OTHERWISE MEET THE CRITERIA IN THESE PLANS FOR PAINTING REQUIREMENTS.

ITEM 630 SIGN, STREET NAME, AS PER PLAN

CITY TO PROVIDE STREET NAME SIGN AND BLACK SIGN FRAME FOR RIGID MOUNTING TO MAST ARM. CONTRACTOR PROVIDES HANGER ASSEMBLY FACTORY PAINTED GLOSSY BLACK WITH STAINLESS STEEL CABLE FOR ARM ATTACHMENT.

CONTRACTOR SHALL APPLY TOUCH UP PAINT TO ASSEMBLIES MARRED OR SCRATCHED BY CONTRACTOR DURING INSTALLATION. THE HANGER ASSEMBLY IS PAID FOR SEPARATELY.

ITEM 630 - RIGID OVERHEAD SIGN SUPPORT FOUNDATION, AS PER PLAN

IN ADDITION TO ODOT STANDARDS THE FOLLOWING SHALL ALSO APPLY.

SIGN SUPPORT FOUNDATIONS SHALL BE INSTALLED PRIOR TO ORDERING THE SIGN SUPPORTS. THE POLE BASE FOUNDATION SIDES SHALL BE ORIENTED PARALLEL TO THE SIDEWALK OR BACK-OF-CURB OR EDGE-OF-PAVEMENT AS SHOWN ON THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND INSTALLING FOUNDATIONS TO BE FLUSH AND AT SAME ELEVATION AS ADJACENT NEW SIDEWALK/PATHWAYS. THE COST OF THIS COORDINATION SHALL BE CONSIDERED PART OF THE COST BID FOR THIS ITEM.

THE EXCEPTION IS WHERE THE GROUND RISES STEEPLY BEHIND THE SIDEWALK OR CONCRETE AREA. THEN THE BACK SIDE OF THE FOUNDATION SHALL MATCH THE GROUND SLOPE AND THE STREET SIDE OF THE FOUNDATION SHALL BE ABOVE THE SIDEWALK OR CONCRETE AREA, AND COMPLETELY OUT OF THE SIDEWALK OR CONCRETE AREA.

ITEM 630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN

SIGNS REMOVED AS PART OF THIS INSTALLATION SHALL BECOME THE PROPERTY OF THE CITY OF NEW ALBANY. THE CONTRACTOR SHALL NOTIFY THE CITY WHEN THE SIGNS ARE AVAILABLE FOR PICKUP. SIGNS DESIGNATED AS UNUSABLE BY THE CITY SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

ITEM 630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DELIVERY, AS PER PLAN

ITEM 630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DELIVERY, AS PER PLAN

EXTRUSHEET SIGN SHEETING REMOVED AS PART OF THIS PROJECT SHALL BE DELIVERED TO THE CITY OF NEW ALBANY SERVICE DEPARTMENT, 7800 BEVELHYMER ROAD, NEW ALBANY. THE COST OF THIS ITEM SHALL INCLUDE SCHEDULING DELIVERY WITH THE CITY OF NEW ALBANY. ITEMS DESIGNATED AS UNUSABLE BY THE CITY SHALL BE DISPOSED OF BY THE CONTRACTOR).

ITEM 630 SIGNING, MISC.: GROUND MOUNTED REGULATORY, WARNING SIGN, AND POST

ITEM 630 SIGNING, MISC.: DECORATIVE SINGLE POST MOUNTED STREET NAME SIGN

THE CONTRACTOR SHALL INSTALL WOOD SUPPORT POSTS EMBEDDED IN CONCRETE, AND ATTACH SIGNS AS PER THE SIGNING DETAILS IN THESE PLANS. THIS ITEM SHALL INCLUDE THE SUPPORT POST, FOUNDATION, AND SIGNING FOR A COMPLETED INSTALLATION.

ITEM 630 SIGNING, MISC.: POLE MOUNTED SIGN

POLE MOUNTED SIGNS ATTACHED TO PEDESTALS SHALL INCLUDE 1-1/4" SYNTHETIC BACKER PANEL, PER SNS-4 DETAIL, AS PROVIDED IN THESE PLANS. THE SIGNS SHALL BE ATTACHED TO THE POLES USING STAINLESS STEEL HARDWARE.

PAYMENT SHALL BE AT THE UNIT PRICE BID.

- ITEM 644 PAVEMENT MARKING, MISC.: EDGE LINE, 5" SOLID WHITE
- ITEM 644 PAVEMENT MARKING, MISC.: EDGE LINE, 5" SOLID YELLOW
- ITEM 644 PAVEMENT MARKING, MISC.: LANE LINE, 5"
- ITEM 644 PAVEMENT MARKING, MISC.: CENTER LINE, 5" DOUBLE YELLOW
- ITEM 644 PAVEMENT MARKING, MISC.: CHANNELIZING LINE, 10" WHITE
- ITEM 644 PAVEMENT MARKING, MISC.: STOP LINE, 20" WHITE
- ITEM 644 PAVEMENT MARKING, MISC.: CROSSWALK LINE, 10" WHITE
- ITEM 644 PAVEMENT MARKING, MISC.: TRANSVERSE LINE, 20" WHITE
- ITEM 644 PAVEMENT MARKING, MISC.: TRANSVERSE LINE, 20" YELLOW
- ITEM 644 PAVEMENT MARKING, MISC.: TRANSVERSE LINE, 20" WHITE
- ITEM 644 PAVEMENT MARKING, MISC.: LANE ARROW, 72"
- ITEM 644 PAVEMENT MARKING, MISC.: DOTTED LINE, 5" WHITE

PAVEMENT MARKINGS SHALL BE INSTALLED AS DETAILED ON THE TRAFFIC CONTROL PLAN SHEET.

ITEM 644 PAVEMENT MARKING, MISC.: CROSSWALK LINE, GREEN

THE CROSSWALK LINES SHALL BE INSTALLED AS DETAILED ON THESE PLANS. INCLUDING GREEN AND WHITE DASHED LINES AND THE DOTTED LINE EXTENSIONS TO END OF THE BICYCLE CROSSINGS.

THE DAYTIME CHROMATICITY COORDINATES FOR THE COLOR USED FOR THE GREEN COLORED PAVEMENT SHALL BE AS FOLLOWS:

	1		2		3		4	
X	Y	X	Y	X	Y	X	Y	
0.230	0.754	0.266	0.460	0.367	0.480	0.444	0.583	

THE DAYTIME LUMINANCE FACTOR (Y) SHALL BE AT LEAST 7, BUT NO MORE THAN 35. GREEN COLORED PAVEMENT SHALL BE UNIFORMLY NON-RETROREFLECTIVE.

ITEM 644 PAVEMENT MARKING, MISC.: 5" DOTTED LINE, GREEN

THE DAYTIME CHROMATICITY COORDINATES FOR THE COLOR USED FOR THE GREEN COLORED PAVEMENT SHALL BE AS FOLLOWS:

	1		2		3		4	
X	Y	X	Y	X	Y	X	Y	
0.230	0.754	0.266	0.460	0.367	0.480	0.444	0.583	

THE DAYTIME LUMINANCE FACTOR (Y) SHALL BE AT LEAST 7, BUT NO MORE THAN 35. GREEN COLORED PAVEMENT SHALL BE UNIFORMLY NON-RETROREFLECTIVE.

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TRAFFIC CONTROL GENERAL NOTES

FRA-62-30.34

CALCULATED  
WCS  
CHECKED  
DLS

ITEM 632 - VEHICULAR SIGNAL HEAD, MISC.: BIKE SIGNAL, 3-SECTION, 12" LENS, 1-WAY

BIKE SIGNALS SHALL BE INSTALLED PER DETAILS IN THESE PLANS.

IN ADDITION TO ITEMS 632 AND 732 THE FOLLOWING SHALL APPLY:

- a) SIGNAL HEADS SHALL NOT INCLUDE BACKPLATES.
- b) THE SIGNAL FACE, INCLUDING DOOR, SHALL BE FEDERAL YELLOW PER ITEM 632.
- c) THE VISOR AND BACK OF HOUSING SHALL BE NEW ALBANY GREEN (PAINT REF. NO. PMS 5535 OR APPROVED EQUAL) TO MATCH THE SIGNAL SUPPORTS.
- d) POLE MOUNTED SIGNAL ATTACHED TO THE MAST ARM USE BLIND HALF COUPLINGS PER ODOT SCD. ATTACHMENT EQUIPMENT SHALL BE PAINTED WITH NEW ALBANY GREEN (PAINT REF. NO. PMS 5535 OR APPROVED EQUAL). THE CONTRACTOR SHALL FIELD DRILL THE CABLE OPENING AND ATTACHMENT ASSEMBLY SO THAT THE SIGNAL FACE IS PROPERLY ORIENTED. THE COST OF THE ATTACHMENT ASSEMBLY SHALL BE INCLUDED IN THE COST BID FOR THIS ITEM.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 632 VEHICULAR SIGNAL HEAD, (LED), BY SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN

IN ADDITION TO ITEMS 632 AND 732 THE FOLLOWING SHALL APPLY:

- a) SIGNAL HEADS SHALL NOT INCLUDE BACKPLATES.
- b) THE SIGNAL FACE, INCLUDING DOOR, SHALL BE FEDERAL YELLOW PER ITEM 632.
- c) THE VISOR AND BACK OF HOUSING SHALL BE NEW ALBANY GREEN (PAINT REF. NO. PMS 5535 OR APPROVED EQUAL) TO MATCH THE SIGNAL SUPPORTS.
- d) SIGNAL HEADS ATTACHED TO THE MAST ARMS SHALL BE SUSPENDED BY CABLING FROM THE MAST ARMS.
- e) POLE MOUNTED SIGNAL ATTACHED TO THE MAST ARM USE BLIND HALF COUPLINGS PER ODOT SCD. ATTACHMENT EQUIPMENT SHALL BE PAINTED WITH NEW ALBANY GREEN (PAINT REF. NO. PMS 5535 OR APPROVED EQUAL). THE CONTRACTOR SHALL FIELD DRILL THE CABLE OPENING AND ATTACHMENT ASSEMBLY SO THAT THE SIGNAL FACE IS PROPERLY ORIENTED. THE COST OF THE ATTACHMENT ASSEMBLY SHALL BE INCLUDED IN THE COST BID FOR THIS ITEM.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 632 VEHICULAR HEAD, (LED), BY SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, RIGID MOUNT

IT IS INTENDED THAT TWO OF THE SIGNALS INSTALLED AT THE INTERSECTION OF US 62 AT SMITHS MILL ROAD WILL BE RIGID MOUNTED INSTEAD OF SUSPENDED FROM THE MAST ARMS. ONE OF THE SIGNALS WILL MATCH THE EXISTING RIGID MOUNT INSTALLATION WHICH IS THE RIGHT MOST SIGNAL FOR WESTBOUND TRAFFIC, AND THE RIGHT MOST EASTBOUND SIGNAL WILL MATCH THIS STYLE ALSO. THE RIGID MOUNT SIGNALS SHALL USE STAINLESS STEEL CABLE FOR ATTACHMENT TO THE SUPPORT, TO MATCH THE STYLE OF ATTACHMENT OF THE REST OF THE SIGNALS. THE ATTACHMENT ASSEMBLIES SHALL BE FACTORY PAINTED NEW ALBANY GREEN (PMS 5535) TO MATCH POLE COLOR.

ITEM 632 - PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN

THE SIGNAL HEADS SHALL BE POLYCARBONATE. THE EXTERIOR SURFACE SHALL BE NEW ALBANY GREEN (PAINT REF. NO. PMS 5535).

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 632 - COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN

ITEM 632 - COVERING OF PEDESTRIAN SIGNAL HEAD, AS PER PLAN

IN ADDITION TO ITEM 632, HEAVY DUTY PLASTIC BAGS SHALL BE PERMITTED. TWO BAGS PER HEAD SHALL BE USED. THE BAGS SHALL BE SECURELY LASHED DOWN SO THE WIND DOES NOT RIP THEM FROM THE SIGNAL HEAD. ALL SIGNAL HEADS WHILE COVERED SHALL BE DARK BY DISCONNECTING THE POWER TO THE BULBS. NO COVERED HEAD SHALL BLOCK THE VIEW OF AN OPERATING HEAD. ANY EXISTING VEHICULAR SIGNAL HEAD THAT IS NOT FUNCTIONAL SHALL BE REMOVED IMMEDIATELY OR COVERED.

ITEM 632 - PEDESTRIAN PUSHBUTTON, AS PER PLAN

THE PUSHBUTTONS SHALL BE POLARA BRAND BULLDOG, OR APPROVED EQUAL, WITH A BLACK HOUSING, AND SHALL INCLUDE AUDIBLE TONES AND VISUAL CONFIRMATION LIGHT.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN  
ITEM 632 - PEDESTAL FOUNDATION, AS PER PLAN

IN ADDITION TO ODOT STANDARDS THE FOLLOWING SHALL ALSO APPLY.

SIGNAL SUPPORT FOUNDATIONS SHALL BE INSTALLED PRIOR TO ORDERING THE SIGNAL SUPPORTS. THE POLE BASE FOUNDATION SIDES SHALL BE ORIENTED PARALLEL TO THE SIDEWALK OR BACK-OF-CURB OR EDGE-OF-PAVEMENT AS SHOWN ON THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND INSTALLING FOUNDATIONS TO BE FLUSH AND AT SAME ELEVATION AS ADJACENT NEW SIDEWALK/PATHWAYS. THE COST OF THIS COORDINATION SHALL BE CONSIDERED PART OF THE COST BID FOR THIS ITEM.

THE EXCEPTION IS WHERE THE GROUND RISES STEEPLY BEHIND THE SIDEWALK OR CONCRETE AREA. THEN THE BACK SIDE OF THE FOUNDATION SHALL MATCH THE GROUND SLOPE AND THE STREET SIDE OF THE FOUNDATION SHALL BE ABOVE THE SIDEWALK OR CONCRETE AREA, AND COMPLETELY OUT OF THE SIDEWALK OR CONCRETE AREA. ONE SPARE 2" CONDUIT ELL SHALL BE INSTALLED IN EACH POLE FOUNDATION.

ITEM 632 POWER SERVICE, AS PER PLAN

THE CONTRACTOR SHALL CONTACT THE CITY FOR OBTAINING AN ADDRESS FOR THE POWER METER LOCATION. THE COST OF COORDINATING WITH THE CITY REGARDING THIS ADDRESS AND PROVIDING THIS INFORMATION TO AEP SHALL BE AN INCIDENTAL COST.

WHEN THE POWER CABLE IS IN PLACE AND TWO WEEKS PRIOR TO THE TIME THAT THE ELECTRICAL POWER WILL BE REQUIRED, THE CONTRACTOR SHALL CONTACT AEP, WHICH WILL MAKE THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE AEP CIRCUITS. THE COST OF COORDINATION WITH AEP SHALL BE INCIDENTAL TO THE COST BID FOR THIS ITEM.

ITEM 632 - CONDUIT RISER, DIAMETER BY SIZE, AS PER PLAN, STANDOFF

THIS ITEM SHALL INCLUDE USE OF A STANDOFF RISER AND MEET THE CRITERIA OF AEP FOR RISER ATTACHMENTS. THE CONTRACTOR SHALL BOTH VERIFY AND COORDINATE WITH AEP ON THE RISER INSTALLED AT THE PROPOSED POWER SOURCE LOCATION. THE COST OF VERIFICATION AND COORDINATION SHALL BE CONSIDERED INCIDENTAL TO THE COST BID FOR THIS ITEM.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE, IN PLACE, AND ACCEPTED.

ITEM 632 - SIGNAL SUPPORT, (BY TYPE), DESIGN BY TYPE, AS PER PLAN

COMBINATION SIGNAL SUPPORT, TYPE TC-12.31, DESIGN (BY TYPE), WITH MAST ARMS TC-81.22 DESIGN (BY TYPE) AND DESIGN (BY TYPE), AS PER PLAN

ITEM 632 - PEDESTAL, BY SIZE, AS PER PLAN

ALL SIGNAL SUPPORTS, AS DETAILED IN THESE PLANS, SHALL BE FACTORY PAINTED NEW ALBANY GREEN (PAINT REF. NO. PMS 5535). THE EXTERIOR COATING SHALL BE WARRANTED TO YIELD A LIFE EXPECTANCY OF A MINIMUM OF 5 YEARS WITHOUT PEELING OR FADING. THE PAINTING SHALL OTHERWISE MEET THE CRITERIA SPECIFIED IN THESE PLANS FOR PAINTING REQUIREMENTS. THE SUPPORTS SHALL BE DESIGNED TO MEET THE CRITERIA DETAILED IN THESE PLANS, WITH STRUCTURAL ASPECTS OF THE DESIGN AND MATERIALS IN COMPLIANCE WITH AASHTO STANDARD SPECIFICATIONS FOR SIGNAL SUPPORTS. THE SIGNAL SUPPORT SHALL BE ASTM A595 GRADE A WITH A MINIMUM YIELD STRENGTH OF 50 KSI. THE FOLLOWING DESIGN PARAMETERS SHALL BE USED:

- a) BASIC WIND SPEED= 90 MPH
- b) DESIGN LIFE=25 YEARS
- c) FATIGUE CATEGORY=III
- d) GALLOPING: NO
- e) TRUCK INDUCED GUST: NO

SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO FABRICATION OF THE SUPPORTS.

ANCHOR BOLTS SHALL BE INCLUDED WITH THE SUPPORTS AND PEDESTAL POLES AND LIGHT POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ANCHOR BOLT SIZE AND PATTERNS MATCH WITH THE POLES BEING INSTALLED.

ITEM 632 REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM  
REMOVAL AND STORAGE OF VEHICULAR SIGNAL HEAD  
ITEM 632 REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM  
REMOVAL AND STORAGE OF PEDESTRIAN SIGNAL HEAD  
ITEM 632 REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM  
REMOVAL AND STORAGE OF PEDESTRIAN PUSHBUTTON

FOR THE SIGNAL POLE DESIGNATED TO REMAIN AT THE US 62/SMITHS MILL INTERSECTION, THE SIGNAL DISPLAYS, PUSHBUTTON, AND SIGNS SHALL BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE CITY SERVICE DEPARTMENT AT 7800 BEVELHYMER ROAD, NEW ALBANY, OHIO. ITEMS DESIGNATED AS UNUSABLE BY THE CITY SHALL BE DISPOSED OF BY THE CONTRACTOR. ITEMS SHALL NOT BE REMOVED UNTIL THE TEMPORARY SIGNAL IS INSTALLED AND IN OPERATION. THE CONTRACTOR SHALL COORDINATE WITH THE POLE PAINTING CONTRACTOR ON REMOVAL OF THESE ITEMS AND PLUGGING UNUSED HOLES, BEFORE THE PAINTING CONTRACTOR BEGINS REPAINTING THE POLES.

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ITEM 632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

IT IS INTENDED THAT TEMPORARY SIGNAL INSTALLATIONS BE INSTALLED AT THE EB AND WB RAMP INTERSECTIONS, AND AT THE US 62 AND SMITHS MILL INTERSECTION. UPON INSTALLATION AND PROPER OPERATION OF THE TEMPORARY SIGNALS, THE CONTRACTOR MAY REMOVE THE EXISTING SIGNAL INSTALLATIONS.

THE SIGNAL CONTROLLER CABINET, UPS CABINET, AND ALL COMPONENTS IN THE CABINETS AS WELL AS ALL SIGNAL HEADS, MONITOR CAMERAS, AND PUSH BUTTONS SHALL BE CAREFULLY DELIVERED TO THE CITY OF NEW ALBANY, 7800 BEVELHYMER ROAD. THIS ITEM SHALL INCLUDE COORDINATION WITH THE CITY ON DELIVERY OF THIS EQUIPMENT TO THE CITY. ITEMS DESIGNATED AS UNUSABLE BY THE CITY SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

ALL CABLING AND ALL FIBER OPTIC CABLE IN CONDUIT NOT USED IN THE COMPLETED INSTALLATION SHALL BE REMOVED BY THE CONTRACTOR, AS PART OF THE SIGNAL REMOVAL PAY ITEM.

ALL OTHER ITEMS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR. TRAFFIC SIGNAL PULL BOXES NOT USED IN THE COMPLETED INSTALLATION SHALL BE REMOVED BY THE CONTRACTOR, AND SHALL BE CONSIDERED INCIDENTAL TO ROADWAY EXCAVATION. CONDUIT SHALL EITHER BE ABANDONED IN PLACE OR REMOVED AS PART OF ROADWAY EXCAVATION.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID.

ITEM 632 SIGNALIZATION, MISC.: REPAINT MAST ARM SUPPORT AND MAST ARM

IT IS INTENDED THAT EXISTING SIGNAL SUPPORT NOT REPLACED SHALL BE REPAINTED. ONE (1) EACH OF SIGNAL SUPPORTS, POLE CAPS, AND MAST ARMS ARE DESIGNATED TO REMAIN AT THE US 62 AT SMITHS MILL INTERSECTION, AND ARE TO BE REPAINTED AS PART OF THIS PROJECT. ONE (1) NEW BASE COVER IS TO BE INSTALLED TO MATCH THE NEW SUPPORTS, AND IS PAID FOR SEPARATELY. THE REPAINTED POLES SHALL MATCH THE COLOR AND FINISH OF THE NEW SUPPORTS INSTALLED AT THIS INTERSECTION. ACRYLIC PAINT SHALL BE USED, GLOSS FINISH, PAINT REFERENCE PMS 5535, TO MATCH THE COLOR AND FINISH OF THE NEW SUPPORTS. MATERIALS SELECTED FOR COATING SYSTEMS FOR EACH TYPE OF SURFACE SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. MANUFACTURER WARRANTIES SHALL APPLY TO THE COMPLETED INSTALLATION. THE CONTRACTOR SHALL SUBMIT A LIST TO THE CITY OF ALL MATERIALS THE CONTRACTOR PROPOSES TO USE IN THE EXECUTION OF THIS WORK PRIOR TO PURCHASE OF MATERIALS, INCLUDING A SAMPLE PAINT COLOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE PAINT USED FOR REPAINTING OF POLES MATCH THE COLOR OF THE NEW SUPPORTS.

ACCESSORY MATERIALS SUCH AS TURPENTINE, THINNER AND PUTTY SHALL BE OF THE HIGHEST QUALITY. FINISHED COATS SHALL NOT BE THINNED WITHOUT CITY APPROVAL. SUFFICIENT COATS SHALL BE APPLIED AT NO ADDITIONAL COST TO COMPLETELY HIDE BASE MATERIALS, PRODUCE UNIFORM COLOR AND PROVIDE SATISFACTORY FINISH RESULT.

PRIOR TO INITIATING REPAINTING FOR THE AFFECTED SUPPORTS AND MAST ARMS, THE CONTRACTOR SHALL CONDUCT A TEST TREATMENT ON A PORTION OF A POLE DESIGNATED FOR REPAINTING, TO ENSURE THAT THE NEW PAINT WILL PROPERLY ADHERE TO THE TREATED SURFACES.

ALL UNUSED OPENINGS, IF ANY, SHALL BE PLUGGED. THIS SHALL INCLUDE PLUGGING HOLES WHERE PEDESTRIAN SIGNAL HEADS ARE DESIGNATED FOR REMOVAL FROM THE SUPPORTS DESIGNATED TO REMAIN. THE MANNER OF PLUGGING SHALL BE PER APPROVAL OF THE CITY WITH THE INTENT THAT THE PLUGS CAL ALSO BE PAINTED TO MATCH THE SUPPORTS. POLE MOUNTED PUSHBUTTON SIGNS SHALL BE TEMPORARILY REMOVED FOR POLE REPAINTING, AND REATTACHED UPON COMPLETION. AFFECTED POLES, SIGNS, PUSHBUTTONS, OR SIGNALS DAMAGED BY THE CONTRACTOR DURING THE COURSE OF REPAINTING SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

IN PREPARING SURFACES FOR PAINTING, ALL LOOSE PAINT AND RUST SHALL BE REMOVED AND SANDED TO A SMOOTH SURFACE PRIOR TO APPLICATION OF THE PRIMER COAT. ALL SURFACES TO RECEIVE PAINT SHALL BE CLEAN DRY AND DUST FREE BEFORE APPLICATION OF ANY MATERIALS. ALL BARE METAL WILL BE PRIMED WITH AN APPROVED PRIMER PRIOR TO APPLYING THE FINISH COLOR COAT.

THE CONTRACTOR SHALL COMPLY WITH MANUFACTURER RECOMMENDATIONS AS TO ENVIRONMENTAL CONDITIONS UNDER WHICH COATINGS CAN BE APPLIED. PAINT SHALL NOT BE APPLIED WHEN TEMPERATURE IS BELOW 45 DEGREES F, OR IN DAMP/RAINY WEATHER. FINISH COATS SHALL NOT BE APPLIED WHERE DUST IS BEING GENERATED.

ONE COAT OF APPROVED FINISH COLOR PAINT WHERE SPECIFIED IS REQUIRED. FINISH COATS SHALL NOT BE THINNED WITHOUT CITY APPROVAL. SUFFICIENT COATS SHALL BE APPLIED AT NO ADDITIONAL COST TO COMPLETELY HIDE BASE MATERIALS, PRODUCE UNIFORM COLOR AND PROVIDE SATISFACTORY FINISH RESULTS. ALL PAINT SHALL BE APPLIED WITH SUITABLE BRUSHES, ROLLERS OR SPRAYING EQUIPMENT. THE RATE OF APPLICATION AND DRYING TIME BETWEEN SUCCESSIVE COATS SHALL BE PER MANUFACTURER RECOMMENDATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING ALL PARTS OF MOLDING AND ORNAMENTS CLEAN AND TRUE TO DETAILS WITH NO UNDUE AMOUNT OF PAINT IN CORNERS AND DEPRESSIONS. ACCESS PANELS SHALL NOT BE PAINTED SHUT AND ACCESS PANELS MAY NEED TO BE REMOVED PRIOR TO PAINTING POLES, ETC. ALL EDGES OF PAINT ADJOINING OTHER MATERIAL SHALL BE LEFT CLEAN AND SHARP WITH NO OVERLAPPING.

ITEM 632 SIGNALIZATION, MISC.: REPAINT MAST ARM SUPPORT AND MAST ARM, CONTINUED

REPAINTED SURFACES REJECTED BY THE INSPECTOR SHALL BE MADE GOOD AT THE EXPENSE OF THE CONTRACTOR. SMALL AFFECTED AREAS MAY BE TOUCHED UP, LARGE AFFECTED AREAS SHALL BE REPAINTED. RUNS SAGS OR DAMAGED PAINT SHALL BE REMOVED BY SCRAPER/SANDING PRIOR TO APPLICATION OF PAINT. THE CONTRACTOR SHALL NOT PAINT OVER ANY UNDERWRITER'S LABELS, FUSIBLE LINKS, POLE IDENTIFICATION NUMBERS OR RECESSED SCREWS.

APPROPRIATE MEASURES SHALL BE TAKEN TO CONTROL ANY OVER SPRAY, AND TO PROHIBIT ANY MATERIAL FROM ENTERING STREAMS OR WATER WAYS. OVERSPRAY OR SPILLAGE ONTO ADJACENT SIDEWALK, STREET PRIVATE OR PUBLIC PROPERTY AND VEHICLES IS PROHIBITED. CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGES CAUSED BY OVERSPRAY OR SPILLAGE. THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORATION OF PROPERTY OR SURFACES DAMAGED DURING THE PAINTING PROCESS AND WILL BE RESPONSIBLE TO CORRECT ANY/ALL REPAIRS AT THEIR OWN EXPENSE. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL AND DEBRIS AND LEAVE THE AREA IN A NEAT AND ORDERLY CONDITION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL NEWLY REPAINTED EXTERIOR SURFACES FROM RAIN AND SNOW, CONDENSATION, CONTAMINATION, DUST, SALT SPRAY AND FREEZING TEMPERATURES UNTIL PAINT COATINGS ARE COMPLETELY DRY. CURING PERIODS SHALL EXCEED MANUFACTURER'S MINIMUM TIME REQUIREMENTS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ERECTING BARRIERS OR SCREENS AND POST SIGNS TO WARN, LIMIT OR DIRECT TRAFFIC AWAY FROM OR AROUND THE WORK AREA AS REQUIRED.

PAYMENT SHALL BE PAID AT THE UNIT PRICE PER SIGNAL SUPPORT, INCLUDING VERTICAL SUPPORT, POLE CAP AND MAST ARM.

ITEM 632 SIGNALIZATION, MISC.: MAST ARM BASE COVER

IT IS INTENDED THAT FOR THE ONE (1) MAST ARM SUPPORT DESIGNATED TO REMAIN AT THE INTERSECTION OF US 62 AT SMITHS MILL, THAT THE EXISTING BOLT COVERS SHALL BE REMOVED AND A BASE COVER INSTALLED AT THE SUPPORT DESIGNATED TO REMAIN. THE COVER SHALL MATCH THE STYLE AND TYPE OF BASE COVER USED FOR THE NEW SUPPORTS, AND AS DETAILED IN THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE NEW BASE COVERS WILL FIT THE EXISTING POLE DIAMETER AND BASE PLATE AND BOLTS TO VERIFY THE BASE COVER WILL FIT THE EXISTING SUPPORTS. THE BASE COVER SHALL BE OF THE SAME PAINT COLOR AND FINISH AS THE NEW SUPPORTS.

PAYMENT SHALL BE AT THE UNIT PRICE BID PER EACH, COMPLETE AND IN PLACE.

ITEM 633 CABINET FOUNDATION, AS PER PLAN

IN ADDITION TO ITEM 633 THE FOUNDATIONS SHALL BE SIZED TO MEET THE CONTROLLER CABINET INCLUDING UPS (SUPER P CABINET).

THE FOLLOWING SHALL ALSO APPLY:

THE FOUNDATION IN THE GROUND SLOPE SHALL BE SET SO THAT THE TOP OF FOUNDATION AT THE HIGHEST PART OF THE GROUND SLOPE IS FOUR (4) INCHES NOMINAL ABOVE FINAL GRADE.

ITEM 633 CONTROLLER WORKPAD, AS PER PLAN

THIS ITEM SHALL ENTAIL PROVIDING A WORKPAD FOR THE UPS CABINET AND SHALL BE DETAILED IN THE PLANS.



ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER UNIT,  
TS2/A2, W/CABINET 8PH, P44UPS

IT IS INTENDED THAT THE CABINET PROVIDED SHALL BE AN ECONOLITE BRAND COBALT CLASSIC ATC CONTROLLER, WIRED TO ALLOW FOR FULL COMMUNICATIONS WITH THE CITY OF COLUMBUS TRAFFIC SIGNAL SYSTEM (CTSS). THE CABINET SHALL BE A 'SUPER P' CABINET TO ALLOW FOR UPS EQUIPMENT. THE UPS SHALL BE PAID FOR SEPARATELY.

THE CABINET EXTERIOR SHALL BE FACTORY PAINTED NEW ALBANY GREEN (PAINT REF. NO. PMS 5535), WITH THE INTERIOR PAINTED WHITE.

IN ADDITION TO THE OTHER REQUIREMENTS OF 633 & 733, THE CONTROLLER (TS2, TYPE 2/TS1 COMPATIBLE) SHALL BE ECONOLITE COBALT ATC. THE TS1 CABINET ASSEMBLY SHALL BE COMPLETELY WIRED (INCLUDES ALL PANELS & HARNESSSES) FOR THE PHASE OPERATION, DETECTION AND ALL ADDITIONAL DEVICES AS CALLED FOR IN THE PLANS. THE COLUMBUS MUTCD FLASH CIRCUITRY SHALL BE INSTALLED AS A PANEL MOUNTED, CABINET ASSEMBLY ITEM. THE CABINET ASSEMBLY SHALL MEET ALL CITY STANDARDS AS SET FORTH BETWEEN THE SUPPLIERS AND THIS DIVISION.

THE LOOP DETECTOR UNIT SHALL BE A SOLID STATE, 2 CHANNEL, SHELF MOUNTED RENO A&E MODEL T210-SS.

IN ADDITION TO THE OTHER SPECIFICATION DOCUMENTS, THE CABINET ASSEMBLY SHALL MEET THE FOLLOWING SPECIFICATIONS.

- (A) ALL LABELS SHALL BE PERMANENTLY SECURED TO THE CABINET. PLASTIC LABEL MAKER TAPE IS NOT CONSIDERED TO BE PERMANENT. CROY TYPE LABELS ARE ACCEPTABLE.
- (B) IN LIEU OF A LAMP ASSEMBLY, A DOOR MOUNTED FLEX LIGHT THAT ILLUMINATES THE ENTIRE BACK PANEL SHALL BE INSTALLED. THE 120 VAC, CONVENIENCE OUTLET ASSEMBLY (GFI TYPE) SHALL BE MOUNTED ON THE RIGHT CABINET SIDE PANEL NEAR THE DOOR HINGE AREA AND FACE THE DOOR OR THE CENTER INTERIOR PORTION OF THE CABINET. THE OUTLET & FLEX LIGHT ASSEMBLIES SHALL NOT INTERFERE WITH THE REMOVAL OR INSTALLATION OF ANY EQUIPMENT.
- (C) LOAD SWITCHES SHALL BE EDI MODEL 510 WITH LIGHTS PERMANENTLY LABELLED AS R, Y, G OR A, B, C. A LOAD SWITCH SHALL BE PROVIDED FOR EACH BACK PANEL LOAD SWITCH SOCKET POSITION WHETHER USED OR UNUSED. ALL LOAD SWITCHES SHALL REST IN A SUPPORT RACK. LOAD SWITCH POSITIONS 5-8 (4PH) OR 9-12 (8PH) SHALL BE USED FOR EITHER A PEDESTRIAN OR OVERLAP LOAD SWITCH UNLESS SPECIFIED OTHERWISE.
- (D) LIGHTNING PROTECTION DEVICES SUCH AS ITT, SURRESTOR, GENERAL ELECTRIC, OR APPROVED EQUAL (AS DETERMINED BY THE COLUMBUS TRANSPORTATION DIVISION) SHALL BE PROVIDED.

ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER UNIT,  
TS2/A2, W/CABINET 8PH, P44UPS, CONTINUED

- (E) THE MAIN CABINET DOOR LOCK (CCL ENCLOSURE LOCK 1548IRS) SHALL HAVE A LOCK KEYHOLE COVER AND SHALL BE KEYPED TO THE CITY OF COLUMBUS MASTER, # 2 KEY (IR 6380). THE POLICE PANEL DOOR LOCK (CCL ENCLOSURE LOCK # R357SGS) SHALL HAVE A LOCK KEYHOLE COVER AND SHALL BE SUPPLIED WITH A R4266 KEY.
- (F) THE NEMA 3R CABINET SHALL BE MADE BY APX ENCLOSURES, CALIFORNIA CHASSIS, OR ECONOLITE. IT SHALL BE OF STANDARD SIZE AND SHALL BE SUPPLIED WITH A COMPLETE BACK PANEL AS PER PLAN. THE CABINET MATERIAL SHALL BE 5052 MARINE GRADE, .125 INCH THICK ALUMINUM SHEETING WITH A 32 HARDNESS IN ITS NATURAL COLOR AND SHALL BE PAINTED WHITE ON THE INSIDE. THE INSIDE OF THE CABINET SHALL BE TREATED WITH A THREE (3) STAGE IRON PHOSPHATE COATING AND A ZINC CHROMATE PRIMER COATING. A BAKED WHITE ALKALI ENAMEL FINISH SHALL THEN BE APPLIED. ALL COATINGS SHALL BE PROPERLY DRIED AND APPLIED SUCH THAT THE INSIDE WHITE PAINT WILL NOT PEEL FOR A GUARANTEED PERIOD OF TWO (2) YEARS. ALL EXTERIOR SEAMS SHALL BE EITHER CONTINUOUSLY WELDED, TACK WELDED, SEALED WITH A 15 TO 20 YEAR SILICONE SEALER, AND/OR OVERLAPPED SUCH THAT WATER DOES NOT ENTER THE CABINET. ALL CABINET EDGES SHALL BE SMOOTH (FREE OF ANY SHARP EDGES). THE CABINET DOOR FRAME OPENING SHALL BE DOUBLE-FLANGED ON ALL FOUR SIDES. THE CABINET DOOR SHALL BE HINGED USING A HEAVY GAUGE CONTINUOUS HINGE THAT HAS A STAINLESS STEEL HINGE PIN. THE HINGE SHALL BE BOLTED TO THE CABINET SO THE DOOR CAN BE REMOVED. THE BOLTS AND NUTS SHALL BE MADE OF STAINLESS STEEL, TAMPERPROOF AND SECURELY FASTENED TO PREVENT VIBRATIONS FROM LOOSENING THE NUTS. THE DOOR, SEALED WITH A NEOPRENE GASKET, SHALL BE EQUIPPED WITH A THREE (3) POINT LATCHING MECHANISM AND A HANDLE WHICH CAN BE PADLOCKED. THE DOOR SHALL BE DESIGNED SUCH THAT THE DOOR CAN BE LOCKED IN AN OPEN POSITION AT 90, 135, AND 180 DEGREES TO THE CABINET FACE (NOMINAL VALUES). THE POLICE DOOR AND MAIN CABINET DOOR SHALL HAVE A KEYHOLE COVER. BOLT PATTERN SHALL CONSIST OF AN ANCHOR BOLT POSITIONED IN EACH CABINET CORNER. (M36 CABINET SIZE - 50" H x 36" W x 17" D; DOOR OPENING - 39" H x 33.5" W; P44 CABINET SIZE - 55" H x 44" W x 26" D; DOOR OPENING - 44" H x 41.5" W; P44UPS CABINET SIZE 58" Hx60" Wx26"D WITH SEPARATE COMPARTMENT FOR UPS SYSTEM
- (G) A THYRECTOR SURGE PROTECTOR WITH A RMS INPUT OF 150 VOLTS AND INPUT PEAK OF 210 VOLTS SHALL BE PROVIDED IN ADDITION TO ANY LIGHTNING PROTECTION DEVICE. THE THYRECTOR SHALL BE PLACED ACROSS THE INPUT AC POWER LINE.
- (H) A 35 AMP LINE FILTER SHALL BE SUPPLIED AND SHALL BE MOUNTED ON THE POWER DISTRIBUTION PANEL.
- (I) TWO (2) CIRCUIT SOLID STATE FLASHER, EDI MODEL 810, RATED AT 15 AMPS (MINIMUM) PER CIRCUIT SHALL BE PROVIDED (NEMA TYPE 3). CIRCUIT 1 SHALL CONTROL THE MAINLINE FLASHING SIGNAL INDICATIONS. CIRCUIT 2 SHALL CONTROL THE SIDE STREET FLASHING SIGNAL INDICATIONS.
- (J) ONE (1) 30-AMP CIRCUIT BREAKER, LABELLED AS "MAIN", SHALL BE WIRED AS THE MAIN POWER DISTRIBUTION BREAKER. A SECOND CIRCUIT BREAKER, LABELLED AS "PED" AND RATED AT 10 AMPS, SHALL BE SUPPLIED FOR THE PEDESTRIAN SIGNAL LOAD ONLY. THE PEDESTRIAN SIGNAL BREAKER SHALL BE WIRED IN SERIES WITH BUT AFTER THE MAIN POWER BREAKER. A THIRD CIRCUIT BREAKER, LABELLED AS "AUX" AND RATED AT 15 AMPS, SHALL SUPPLY A SEPARATE BRANCH OF AC+ POWER TO THE VENTILATING FAN, CONVENIENCE 'GFI' OUTLET AND LIGHT SO THAT THEY MAY OPERATE INDEPENDENTLY OF THE MAIN POWER BREAKER. THE POWER TO THE FAN AND LIGHT SHALL ALSO BE INTERRUPTED BY THE 'GFI' OUTLET. ALL BREAKERS SHALL BE MOUNTED SIDE-BY-SIDE ON THE POWER DISTRIBUTION PANEL.

ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER UNIT,  
TS2/A2, W/CABINET 8PH, P44UPS, CONTINUED

- (K) ALL CONTROLLER MS CONNECTOR HARNESSSES SHALL HAVE A CONDUCTOR FOR EACH PLUG PIN EXCEPT THE REMOTE RESET FUNCTION FOR THE CONFLICT MONITOR. THE CONTROLLER AND CONFLICT MONITOR MS HARNESS CONDUCTORS SHALL BE CONNECTED TO A BACK PANEL TERMINAL STRIP WHICH IS ACCESSIBLE FROM THE FRONT OF THE PANEL. DETECTOR UNIT HARNESS CONDUCTORS SHALL BE CONNECTED TO A LEFT SIDE CABINET MOUNTED TERMINAL STRIP. OTHER EQUIPMENT SHALL BE CONNECTED AS APPROPRIATE.
- (L) THE CABINET ASSEMBLY SHALL CONTAIN ALL PEDESTRIAN SIGNAL CIRCUITRY FOR EACH NEMA DEFINED THROUGH PHASE.
- (M) A POLICE DOOR MOUNTED SIGNAL SHUTDOWN SWITCH WITH SWITCH POSITIONS LABELLED AS "SIG ON" AND "SIG OFF" SHALL BE INSTALLED.
- (N) A POLICE DOOR MOUNTED SIGNAL\_FLASH SWITCH WITH SWITCH POSITIONS LABELLED AS "ON SIG" AND "ON FLASH" SHALL NOT ONLY PLACE THE SIGNALS ON FLASH BUT ALSO STOP-TIME THE CONTROLLER UNIT. A RUN/STOP-TIME SWITCH WITH SWITCH POSITIONS LABELLED AS "CONT. RUN" AND "STOP-TIME" SHALL BE INSTALLED ON THE INSIDE OF THE CABINET DOOR. THE RUN/STOP-TIME SWITCH SHALL ALLOW THE CONTROLLER UNIT TO TIME NORMALLY BUT KEEP THE SIGNALS ON FLASH. THE SIGNAL\_FLASH SWITCH SHALL NOT RETURN THE SIGNALS TO NORMAL OPERATION UNLESS THE RUN/STOP-TIME SWITCH IS RESET TO THE STOP-TIME POSITION SO THE SIGNAL\_FLASH SWITCH CAN AGAIN STOP-TIME THE CONTROLLER UNIT. THE SIGNAL\_FLASH SWITCH SHALL NOT REMOVE POWER TO THE CONTROLLER UNIT OR ITS AUXILIARY EQUIPMENT.
- (O) A POLICE DOOR MOUNTED AUTO-MANUAL TRANSFER SWITCH WITH SWITCH POSITIONS LABELLED AS "AUTO" AND "MANUAL" SHALL BE INSTALLED. A MANUAL PUSH BUTTON CONTROL SHALL NOT BE INSTALLED UNLESS SPECIFIED, BUT WIRING FOR A PUSH BUTTON CONTROL SHALL BE PROVIDED UP TO THE POINT WHERE THE PUSH BUTTON WOULD HAVE BEEN CONNECTED.
- (P) A CONTROLLER SHUTDOWN SWITCH WITH SWITCH POSITIONS LABELLED AS "CONT ON" AND "CONT OFF" AND A COORDINATED/FREE SWITCH WITH SWITCH POSITIONS LABELLED AS "COORD" AND "FREE" SHALL BE INSTALLED INSIDE THE CABINET NEXT TO THE RUN/STOP-TIME SWITCH. A COORDINATED/FREE SWITCH SHALL NOT BE REQUIRED IF THE CONTROLLER HAS A BUILT-IN COORD/FREE SWITCH.
- (Q) AFTER A NEMA DEFINED POWER INTERRUPTION THE CONFLICT MONITOR SHALL CAUSE THE INTERSECTION SIGNALS TO FLASH AS PER PLAN FOR 10 SECONDS BEFORE THE INITIALIZED CONTROLLER UNIT TAKES CONTROL OF THE INTERSECTION SIGNALS. THE CONFLICT MONITOR SHALL BE EDI MODEL SERIES SSM LE AND SHALL CONTAIN SUFFICIENT CHANNELS AS CALLED FOR IN THESE PLANS.
- (R) THE CONFLICT MONITOR SHALL BE CONNECTED DIRECTLY TO THE FIELD TERMINALS. USING JUMPERS OR LINKS ON THE BACK PANEL TO FORM A CIRCUIT FOR THE CONFLICT MONITOR SHALL NOT BE ACCEPTABLE.
- (S) THE CONFLICT MONITOR SETTINGS FOR MINIMUM YELLOW TIMING ON ALL CHANNELS SHALL BE SET AT THREE AND ONE HALF (3.5) SECONDS.
- (T) THE WATCH DOG TIMER SHALL CAUSE THE CONTROLLER TO GO INTO A FLASH OPERATION IF A MICROPROCESSOR FAILURE IS DETECTED.
- (U) ALL BACK PANEL HARDWARE SHALL BE MOUNTED WITH SCREWS. ALL SCREWS SHALL BE COMPLETELY SCREWED DOWN. RIVETS OR OTHER NON.REMOVABLE FASTENERS ARE NOT ACCEPTABLE.

ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TS2/A2, W/CABINET 8PH, P44UPS, CONTINUED

- (V) WIRE CONNECTIONS ON THE BACK PANEL SHALL BE MADE WITH CRIMP TERMINALS AND THREADED FASTENERS. TELEPHONE TYPE KNIFE CONNECTORS (SOLDERED OR OTHERWISE) ARE NOT ACCEPTABLE.
- (W) ALL WIRES FASTENED TO THE LOAD SWITCH AND FLASHER PLUGS SHALL BE SOLDERED IN PLACE.
- (X) THE BACK PANEL AND POWER DISTRIBUTION PANEL SHALL HAVE SILK SCREENED TERMINAL/SOCKET FUNCTION IDENTIFICATION LABELS SUCH AS AC COM, PHASE 3 GREEN, I15 VAC, SIGNAL BUS, ETC. REFERENCE NUMBERS SHALL NOT BE ACCEPTABLE IN LIEU OF FUNCTION LABELS BUT THEY CAN SUPPLEMENT THEM. ADDITIONAL TERMINAL BLOCKS AND AUXILIARY PANELS SHALL USE SILK SCREENED REFERENCE NUMBERS TO IDENTIFY TERMINAL CONNECTIONS.
- (Y) ALL TERMINAL STRIPS IN CLOSE PROXIMITY OF SHELF MOUNTED CONTROL DEVICE EQUIPMENT SHALL BE COVERED WITH NON-CONDUCTIVE MATERIAL TO PREVENT ACCIDENTAL CONTACT WITH THE DEVICES. ALL TERMINAL STRIPS SHALL BE READILY ACCESSIBLE WITHOUT REMOVAL OF ANY EQUIPMENT.
- (Z) THE CABINET SHALL HAVE TWO (2) NON-VENTED (SOLID) SHELVES SPACED AT LEAST 9" APART. BOTH SHELVES SHALL HAVE A WIDTH OF 13" AND THE BACK EDGE OF THE SHELF SHALL BE LIPPED WITH THE LIP POINTING UP. THE FRONT EDGE OF THE SHELF SHALL BE LIPPED WITH THE LIP POINTING DOWN. ALL LIP EDGES SHALL BE ROUNDED. THE SHELVES SHALL BE ATTACHED TO THE CABINET SIDE PANELS. THE SHELF ARRANGEMENT SHALL BE DESIGNED SO ALL SHELF DEVICES FIT ON THEM.
- (AA) THERE SHALL BE A MINIMUM OF ONE (1) INCH EMPTY SPACE BETWEEN ALL ITEMS ATTACHED TO THE DOOR AND ALL SHELF-MOUNTED DEVICES INCLUDING ITS CONNECTING HARNESS(ES), ALL LOAD SWITCHES, FLASHER AND ALL SIDE-PANEL-MOUNTED ITEMS.
- (BB) "P" AND "M" SIZED CABINETS SHALL HAVE TWO VENTILATION FANS. THE THERMOSTAT CONTROLLING THE VENTILATING FAN CIRCUIT SHALL BE SET AT 95 DEGREES FAHRENHEIT.
- (CC) ALL FLASH TRANSFER RELAYS SHALL BE WIRED FOR FAIL-SAFE OPERATION (ENERGIZED DURING NORMAL OPERATION) AND WIRED WITH A MAXIMUM OF TWO PHASES PER RELAY.
- (DD) THE CONTROLLER ASSEMBLY, WHEN PLACED IN OR COMING OUT OF AN AUTOMATIC FLASHING MODE, SHALL CONFORM TO THE AUTOMATIC FLASHING CRITERIA SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, SECTION 4D.29-4D.31. INCLUDING THE FOLLOWING ADDITIONS.
- 1) A VEHICULAR CALL SHALL BE PLACED ON ALL PHASES IMMEDIATELY PRIOR TO ENTERING THE "FLASH" MODE SO THE CONTROLLER WILL CYCLE TO THE "FLASH" POINT. IT IS OPTIONAL TO HAVE ONE EXTERNAL VEHICULAR CALL PLACED IMMEDIATELY ON ALL PHASES WHEN THE "FLASH" MODE TERMINATES. THE CONTROLLER SHALL OPERATE NORMALLY ONCE THE "FLASH" MODE SEQUENCE IS TERMINATED.
  - 2) THE CONTROLLER SHALL ENTER THE "FLASH" MODE AT THE END OF THE THROUGH SIDE STREET PHASE(S) YELLOW (OR DURING THE SIDESTREET PHASE(S) RED CLEARANCE INTERVAL) BUT JUST PRIOR TO ANY MAIN STREET GREEN.

THE FLASH TRANSFER LOGIC DEVICE SHALL TRIGGER THE "FLASH" OPERATION, SHALL BE SOLID STATE, SHALL BE EXTERNAL TO THE CONTROLLER (A CABINET ASSEMBLY DEVICE), AND SHALL FUNCTION WITH ANY NEMA CONTROLLER. THIS CIRCUITRY SHALL BE SUPPLIED IN ADDITION TO ANY INTERNAL CONTROLLER FLASH LOGIC PROVIDED BY THE CONTROLLER.

ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TS2/A2, W/CABINET 8PH, P44UPS, CONTINUED

EXCEPTION: FOR ON-STREET MASTER ARTERIAL CONTROLLERS ONLY, INTERNAL IC LOGIC CAN BE USED IN LIEU OF AN EXTERNAL DEVICE AS LONG AS THE INTERNAL IC LOGIC MEETS THE STANDARDS SET FORTH ABOVE.

- (EE) THE POWER CABLE SHALL BE CONNECTED TO AN ACCESSIBLE TERMINAL STRIP THAT SHALL BE LOCATED NEAR THE BOTTOM OF THE CABINET AND SHALL BE OF SUFFICIENT SIZE TO ACCEPT A SUPPLIED #8 WIRE LUG. THE TERMINAL STRIP SHALL BE COVERED OR SHIELDED TO MINIMIZE ACCIDENTAL CONTACT DURING NORMAL SERVICING OPERATIONS. THE COVER SHALL BE SNAPPED ON/OFF OR SECURED BY STANDARD SCREWS. THE POWER CABLE LUG TERMINAL CONNECTION SHALL BE LOCATED IMMEDIATELY BELOW THE MAIN POWER DISTRIBUTION BREAKER. POWER SHALL BE JUMPERED TO THE MAIN POWER DISTRIBUTION BREAKER. THE POWER DISTRIBUTION PANEL SHALL BE LOCATED IN THE BOTTOM RIGHT SIDE OF THE CABINET OR IT SHALL BE AN INTEGRAL PART OF THE RIGHT SIDE OF THE BACK PANEL. THERE SHALL BE A MINIMUM OF TWO (2) INCHES CLEARANCE BETWEEN THE POWER TERMINAL AND THE BOTTOM OF THE CABINET.
- (FF) A #4 WIRE LUG SHALL BE PROVIDED FOR ATTACHING A GROUNDING WIRE FROM A GROUND ROD. THE GROUNDING WIRE LUG SHALL BE ATTACHED TO THE POWER DISTRIBUTION PANEL (LOWER LEFT CORNER), OR IF NONE, TO THE BACK PANEL (BOTTOM MIDDLE). IT SHALL BE DIRECTLY GROUND TO THE CABINET.
- (GG) A SOLID STATE RELAY, CRYDOM PART NO. CWA2450, SHALL BE INSTALLED WHICH WILL ALLOW POWER TO BE REMOVED FROM THE VEHICULAR AND PEDESTRIAN POWER BUSES. THE SOLID STATE RELAY SHALL BE RATED AT 50 AMPS AND 120 VOLTS AND SHALL BE EQUIPPED WITH A PLASTIC COVER.
- (HH) ALL EXTERNAL RELAY COILS SHALL HAVE NOISE SUPPRESSION DEVICES.
- (II) THE DOOR FILTER (U.L. LISTED CLASS 2, STANDARD 900) SHALL CONSIST OF THREE DISTINCT LAYERS OF FILTERING MEDIA. THE FIRST AIR ENTERING LAYER SHALL BE COMPOSED OF A DUAL FIBER BLEND OF 100% NON-WOVEN POLYESTER TO TRAP LARGER SIZED PARTICLES. THE NEXT LAYER SHALL BE A DUAL PLY, DUAL DENIER, 100% NON-WOVEN POLYESTER OF SMALLER SIZE TO TRAP FINER PARTICLES PASSING THROUGH THE FIRST LAYER. A NON-TOXIC, NON-MIGRATORY, ODORLESS TACKIFIER SHALL BE APPLIED TO THESE LAYERS. ADHESIVES SPRAYED ON THE LAYERS ARE NOT ACCEPTABLE. THE TACKIFIER SHALL BE INCORPORATED INTO THE LAYER MEDIA DURING THE MANUFACTURING PROCESS OF THE RAW MATERIAL. A 10 GAUGE MESH SHALL BE INCORPORATED IN THE FILTER DESIGN FOR RIGIDITY. SUFFICIENT MEDIA OVERLAP SHALL BE PRESENT ABOUT THE WIRE PERIMETER TO INSURE POSITIVE SELF SEAL. THE DOOR FILTER HOLDER SHALL BE DESIGNED SO THE FILTER MAKES POSITIVE CONTACT WITH THE CABINET DOOR AT ALL TIMES AND UNDER ALL CONDITIONS AND SITUATIONS.
- (JJ) AN OUTLET RECEPTACLE AND BOX SHALL BE INSTALLED IN THE CABINET TO PROTECT NETWORK EQUIPMENT FROM AN IMBALANCE FLOW OF CURRENT FROM THE HOT TO THE NEUTRAL. THE OUTLET SHALL BE A NEMA DUPLEX 5-15 RECEPTACLE, RATED AT 15 AMPS (MINIMUM) AT 120 VAC. THE OUTLET SHALL MEET OR EXCEED FEDERAL SPECIFICATIONS AND UL 498 STANDARDS AND SHALL BE RATED AS WEATHER-RESISTANT. THE RECEPTACLE SHALL BE INSTALLED WITHIN A METALLIC, SINGLE GANG ELECTRICAL BOX WITH A COVER PLATE. THE ELECTRICAL BOX SHALL BE STANDARD DEPTH (NOMINALLY 2 - 1/8 IN.) AND SHALL BE UL-LISTED. THE OUTLET SHALL BE INSTALLED INSIDE THE CABINET ALONG ONE OF THE SIDE WALLS AND SHALL BE WIRED FROM THE SAME CIRCUIT BREAKER AS THE OTHER OUTLETS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TS2/A2, W/CABINET 8PH, P44UPS, CONTINUED

(KK) A SURGE SUPPRESSION DEVICE SHALL BE INSTALLED IN THE CABINET TO PROVIDE PROTECTED POWER OUTLETS TO NETWORK EQUIPMENT. THE SURGE SUPPRESSION DEVICE SHALL BE SECURELY MOUNTED IN THE CABINET IN A METHOD APPROVED BY THE ENGINEER. THE SURGE SUPPRESSION DEVICE INSTALLED SHALL HAVE 6 NEMA 5-15 OUTLETS AND SHALL BE CAPABLE OF BEING PLUGGED INTO A STANDARD 5-15 OUTLET. THE OUTPUT CURRENT OF THE SURGE SUPPRESSION DEVICE SHALL BE 15 AMPS. THE SURGE SUPPRESSION DEVICE SHALL HAVE AN ENERGY HANDLING RATING OF 1280 JOULES, UL 1499 LET THROUGH RATING OF 330 VOLTS, AND SURGE CURRENT RATING OF 50,000 AMPS.

FOUR (4) SETS OF CABINET WIRING SCHEMATICS, TWO (2) SERVICE MANUALS AND TWO (2) INSTRUCTIONAL MANUALS SHALL BE PROVIDED PER CABINET. DELIVERY OF THESE DIAGRAMS & MANUALS SHALL ACCOMPANY THE CABINET. THE CONTRACTOR SHALL CLEARLY NOTE ANY DEVIATIONS, CHANGES, ADDITIONS OR OTHER MODIFICATIONS ON THE DIAGRAMS AND MANUALS THAT ARE APPROPRIATE TO REFLECT THE EXACT EQUIPMENT TO BE PROVIDED. THE COST FOR THIS MATERIAL SHALL BE INCIDENTAL TO THE COST OF THE SIGNAL EQUIPMENT. THE COPIES OF DIAGRAMS AND MANUALS SHALL BE STORED IN A PLASTIC ENVELOPE MOUNTED HORIZONTALLY AND SECURELY FASTENED TO THE INSIDE OF THE MAIN CABINET DOOR. THE ENVELOPE OPENING SHALL BE TO THE RIGHT OR LEFT. THE ENVELOPE SHALL NOT BLOCK ANY PART OF THE AIR FILTER OR THE AIR INTAKE LOCATED IN THE DOOR.

SERVICE & INSTRUCTIONAL MANUALS SHALL INCLUDE SECTIONS COVERING THE GENERAL DESCRIPTION OF EQUIPMENT, EQUIPMENT INSTALLATION PROCEDURES, EQUIPMENT PROGRAMMING PROCEDURES, THEORY OF OPERATION WITH SYSTEM DESCRIPTION INCLUDING BLOCK DIAGRAMS AND DETAILED CIRCUIT DIAGRAMS, PREVENTIVE MAINTENANCE, FIELD TROUBLE ANALYSIS, BENCH TROUBLE ANALYSIS, TROUBLESHOOTING ANALYSIS CHART, WAVE FORMS, VOLTAGE MEASUREMENTS, VOLTAGE MEASUREMENT CHARTS, PARTS LIST, ELECTRICAL INTERCONNECTION DRAWINGS, SCHEMATIC AND LOGIC DIAGRAMS, ASSEMBLY DRAWINGS WITH PICTORIAL DIAGRAMS SHOWING PHYSICAL LOCATIONS AND IDENTIFICATION OF EACH COMPONENT.

ITEM 633 SIGNAL ITEM, MISC.: CENTRAL SYSTEM SOFTWARE

THIS ITEM SHALL CONSIST OF ALL SOFTWARE, EQUIPMENT, INTEGRATION AND ALL OTHER MATERIALS, TASKS AND WORK REQUIRED FOR INTEGRATING THIS NEW SIGNAL TO THE CITY'S EXISTING CENTRACS ATMS CENTRAL SYSTEM. THE CENTRAL CONTROL SYSTEM (CSS) SHALL MEET AND IMPLEMENT ALL APPLICABLE STANDARDS OF THE NTCIP COMMUNICATIONS STANDARDS. THE NEW CONTROLLER AND ASSOCIATED EQUIPMENT SHALL BE FULLY INTEGRATED INTO THE CITY'S DESIGNATED WORKSTATION AT THE COLUMBUS TMC AND ACCESSIBLE ON THE CITY'S NETWORK.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR THIS ITEM, COMPLETE AND IN PLACE.

ITEM 809 - ADVANCE RADAR DETECTION, AS PER PLAN  
ITEM 809 - STOP-BAR RADAR DETECTION, AS PER PLAN

IN ADDITION TO SUPPLEMENTAL SPECIFICATION 809 THE FOLLOWING ALSO APPLIES:

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION SYSTEM THAT SHALL ENCOMPASS ALL EQUIPMENT NECESSARY AT AN INTERSECTION FOR DETECTION OF THE DESIGNATED TRAVEL LANES. FOR THE INTERSECTION OF US 62 AT THE WB RAMPS, THE RADAR SHALL ALSO BE USED FOR BICYCLE DETECTION. FOR THIS INTERSECTION, THE PLANS INCLUDE THE USE OF A PUSHBUTTON TO ENSURE BICYCLISTS CAN OBTAIN A GREEN BICYCLE SIGNAL INDICATION.

THIS ITEM SHALL INCLUDE ALL DETECTOR UNITS, AS SPECIFIED, CABLING, ATTACHMENT HARDWARE, AND CABINET EQUIPMENT FOR A COMPLETE DETECTION SYSTEM, AND SHALL ALSO INCLUDE THE FOLLOWING:

- DETECTOR ATTACHMENT AND MOUNTING HARDWARE TO BE FACTORY PAINTED NEW ALBANY GREEN (PMS 5535).
- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- ALL REQUIRED INPUT 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 RADAR DETECTOR LOCATIONS SHOWN IN THESE PLANS ARE INTENDED TO INDICATE RADAR DETECTION DEVICES NEEDED FOR ADVANCE AND STOP-BAR DETECTION, AND THE UNITS WILL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM. HOWEVER, FINAL LOCATION SHALL BE AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER AND INCLUDED IN THE COST BID FOR THIS ITEM.
- 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 COMMUNICATIONS MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR THESE ITEMS SHALL BE MADE AT THE CONTRACT UNIT PRICE PER DETECTOR UNIT, INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL SYSTEM FOR DETECTION OF THE DESIGNATED TRAVEL LANES AT THIS INTERSECTION.

FIBER OPTIC INTERCONNECT SYSTEM

CONTRACTOR QUALIFICATIONS

ANY CONTRACTOR WHO ENTERS IN AN EXISTING SPLICE ENCLOSURE TO MAKE SPLICES OR INSTALLS A NEW SPLICE ENCLOSURE INTO FIBER OPTIC CABLE MAINTAINED BY THE CITY SHALL BE QUALIFIED TO DO ODOT TYPE 56 WORK. THE CONTRACTOR SHALL ALSO BE A CERTIFIED MEMBER IN GOOD STANDING OF THE CORNING OPTICAL COMMUNICATIONS NETWORK OF PREFERRED INSTALLERS. PROOF OF THESE CERTIFICATIONS SHALL BE PRESENTED AT THE PRECONSTRUCTION MEETING AND THE CONTRACTOR SHALL BE ABLE TO PRESENT PROOF AT ANY TIME DURING THE CONSTRUCTION PERIOD.

ITEM 633 CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH

THIS ITEM SHALL BE A COMNET BRAND MODEL CNGE8FX4TX4MS MANGED ETHERNET SWITCH, OR APPROVED EQUAL. IT SHALL BE AN ENVIRONMENTALLY HARDENED UNIT, AND INCLUDE (4) 10/100/1000TX + (4) 100/1000FX SFP PORTS.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 804 - FUSION SPLICE, AS PER PLAN

ALL PERMANENT OPTICAL SPLICES SHALL BE OF THE CORE ALIGNMENT FUSION TYPE METHOD.

SPLICING SHALL OCCUR ONLY AT LOCATIONS IDENTIFIED IN THE PLANS OR APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT NOTIFICATION TO THE ENGINEER AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED WORK AND RECEIVE APPROVAL BY THE ENGINEER PRIOR TO PERFORMING THE WORK.

ALL SPLICING EQUIPMENT SHALL BE IN GOOD WORKING ORDER, PROPERLY CALIBRATED, AND MEETING ALL INDUSTRY STANDARDS AND SAFETY REGULATIONS. CABLE PREPARATION, CLOSURE INSTALLATION, AND SPLICING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ACCEPTED AND APPROVED INDUSTRY STANDARDS.

UPON COMPLETION OF THE SPLICING OPERATION, ALL WASTE MATERIAL SHALL BE DEPOSITED IN SUITABLE CONTAINERS, REMOVED FROM THE JOB SITE, AND DISPOSED OF IN AN ENVIRONMENTALLY ACCEPTABLE MANNER.

THE AVERAGE SPLICE LOSS OF EACH FIBER SHALL BE 0.05 DB OR LESS PER SPLICE. THE AVERAGE SPLICE LOSS IS DEFINED AS THE SUMMATION OF THE ATTENUATION AS MEASURED IN BOTH DIRECTIONS THROUGH THE SPLICE, DIVIDED IN HALF. NO INDIVIDUAL SPLICE LOSS MEASURED IN A SINGLE DIRECTION SHALL EXCEED 0.05 DB.

WHEN ORDERING FIBER CABLE THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION ALSO AS TO ENSURE THAT NO ADDITIONAL SPLICING, BEYOND THAT INDICATED IN THE PLANS, PERMITTED IN THIS PAY ITEM, OR FROM POINTS AS DETERMINED BY THE ENGINEER SHALL BE REQUIRED. SHOULD THE CONTRACTOR BELIEVE ADDITIONAL SPLICES ARE REQUIRED BEYOND WHAT IS PERMITTED, THIS MATTER SHALL BE IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.

FOR THE PURPOSES OF SIMPLIFICATION OF CONSTRUCTION EFFORTS AND REDUCING RISK OF DANGER TO CABLES DURING INSTALLATION, THE CONTRACTOR MAY, AT THEIR DISCRETION COMPLETELY CUT THE CABLE IN ORDER TO BREAK UP LONG, CONTINUOUS, OR DIFFICULT CABLE PULLS INTO SMALLER, MORE MANAGEABLE CABLE PULLS. ALL FIBERS SHALL BE SPLICED BACK TOGETHER OR TO APPROPRIATE DROP CABLES AS SHOWN IN THE PLANS. THE CONTRACTOR MAY PERFORM THIS OPERATION AT UP TO THREE (3) LOCATIONS ON THE PROJECT, AND SHOULD BE LOCATED WHERE SPLICING AT INTERSECTIONS IS ALREADY DESIGNATED FOR DROP CABLES. THESE PROPOSED LOCATIONS MUST BE SUBMITTED IN WRITING TO THE ENGINEER BY SHEET NUMBER AND STATION NUMBER AND MUST BE APPROVED BY THE ENGINEER IN ADVANCE OF THE WORK.

THIS ADDITIONAL SPLICING (144 SPLICING PER LOCATION, 432 MAXIMUM ADDITIONAL SPLICES) IS INCLUDED IN THIS BID ITEM AND IS CARRIED TO THE GENERAL SUMMARY.

THE WORK AS DESCRIBED WILL BE MEASURED AS THE NUMBER OF FIBER OPTIC FUSION SPLICES COMPLETED.

ITEM 804 - FIBER OPTIC CABLE MISC.: FIBER OPTIC CABLE, 144 FIBER

ITEM 804 - FIBER OPTIC CABLE, 24 FIBER, AS PER PLAN

THE WORK SPECIFIED IN THIS SECTION SHALL INCLUDE THE FURNISHING AND INSTALLATION OF COMMUNICATION SYSTEM CABLES OF THE TYPE SPECIFIED AND ASSOCIATED COMPONENTS IN ACCORDANCE WITH THE PLANS. THIS SPECIFICATION DEFINES THE TYPE OF COMMUNICATION SYSTEM CABLES, SPLICING, AND INTERFACE EQUIPMENT THAT SHALL BE IMPLEMENTED FOR THIS PROJECT.

THE CONTRACTOR SHALL COIL 75 FT OF FIBER OPTIC CABLE PER CABLE ENTERING AND EXITING A SPLICE ENCLOSURE, AND THAT QUANTITY OF CABLE IS INCLUDED IN THE PLAN QUANTITIES.

THE CONTRACTOR SHALL PROVIDE ALL MATERIALS REQUIRED FOR THE INSTALLATION, CONNECTORIZATION, AND SPLICING OF THE SPECIFIED COMMUNICATIONS CABLES. ALL MATERIALS, CABLES, FIBER, AND HARDWARE SHALL BE CORNING PART NUMBER 144EU4-T470ID20 FOR 144 FIBER, CORNING PART NUMBER 024EU4-T470ID20 FOR 24 FIBER, OR APPROVED EQUAL.

THE CONTRACTOR SHALL PROVIDE MANUFACTURER'S CERTIFICATION THAT THE OFFERED CABLE SHALL COMPLY WITH ALL OPTICAL AND/OR ELECTRICAL, AND MECHANICAL REQUIREMENTS SET FORTH IN THIS SPECIFICATION. ANY DEVIATION OF THE OFFERED CABLE FROM THE REQUIREMENTS SET FORTH HEREIN SHALL BE CONSPICUOUSLY NOTED IN THE CONTRACTOR'S MATERIAL SUBMITTAL.

THE CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL INSTALLED CABLE FOR A PERIOD OF THREE (3) YEAR FOLLOWING FINAL PROJECT ACCEPTANCE.

ALL FIBERS IN THE CABLE SHALL BE USABLE FIBERS AND SHALL BE FREE OF SURFACE IMPERFECTIONS MATERIAL AND INCLUSIONS IN ORDER TO MEET OR EXCEED ONE HUNDRED PERCENT (100%) OF THE OPTICAL, MECHANICAL, AND ENVIRONMENTAL REQUIREMENTS CONTAINED IN THIS SPECIFICATION. IF 100% USEABLE FIBERS ARE NOT ACHIEVABLE, THE CABLE SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

ALL CABLES SHALL BE FREE OF MATERIAL OR MANUFACTURING DEFECTS AND DIMENSIONAL NON-UNIFORMITY THAT WOULD:

1. INTERFERE WITH THE CABLE INSTALLATION USING ACCEPTED CABLE INSTALLATION PRACTICES.
2. DEGRADE THE TRANSMISSION PERFORMANCE AND ENVIRONMENTAL RESISTANCE AFTER INSTALLATION.
3. INHIBIT PROPER CONNECTION TO INTERFACING ELEMENTS.
4. OTHERWISE YIELD AN INFERIOR PRODUCT.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL FIBERS TESTED AND ACCEPTED.

ITEM 804 FIBER OPTIC CABLE, MISC.: REUSE FIBER OPTIC CABLE, 24 FIBER

IT IS INTENDED THAT THE EXISTING 24-FIBER CABLE EXTENDING NORTH FROM THE US 62 AT SMITHS MILL SIGNAL SHALL BE REUSED IN THE COMPLETED INSTALLATION. DURING CONSTRUCTION IT IS INTENDED THAT THE 24-FIBER CABLE BE CAREFULLY REMOVED FROM EXISTING CONDUIT EXTENDING TO THE EXISTING CONTROLLER CABINET AT THE SMITHS MILL SIGNAL. THAT CABLE SHALL BE COILED IN THE NEW 32 INCH PULLBOX THAT WILL REPLACE AN EXISTING PULLBOX IN THE NORTHWEST CORNER OF THE INTERSECTION. THAT 24 FIBER WILL ALSO BE REROUTED TO THE EXISTING AEP VAULT IN THAT CORNER AND RESPLICED TO THE CITY FIBER SO THAT COMMUNICATIONS WILL BE MAINTAINED OF SIGNAL AND CAMERA FOR THE TWO SIGNALS TO THE NORTH.

THE RESPLICING TO THE CITY CABLE IN THE AEP VAULT IS PAID FOR SEPARATELY.

UPON COMPLETION OF THE SIGNAL MODIFICATIONS AT THE SMITHS MILL SIGNAL, THE 24 FIBER SHALL THEN BE REROUTED AS SHOWN IN THE PLANS FOR PERMANENT SPLICING AT THE LOCATION INDICATED IN THE PLANS. IN THE EVENT THE CONTRACTOR DAMAGES THE FIBER DURING THE COURSE OF CONSTRUCTION, THE 24-FIBER SHALL BE REPLACED UP TO THE NEXT SIGNAL, WHERE A SPLICE MAY BE MADE TO THE EXISTING FIBER LEADING FURTHER NORTH TO THE NEXT SIGNAL.

THIS ITEM SHALL INCLUDE REMOVAL OF CABLE FROM EXISTING CONDUIT, COILING OF SLACK IN THE NEW 32 INCH PULL BOX, ROUTING OF CABLE TO THE AEP VAULT FOR TEMPORARY SPLICING, AND REROUTING OF CABLE IN THE COMPLETED INSTALLATION. ALL SPLICING SHALL BE PAID FOR SEPARATELY. PAYMENT SHALL BE MADE AS A LUMP SUM FOR REUSE OF THIS CABLE.

ITEM 804 - FIBER OPTIC CABLE MISC.: FIBER OPTIC SPLICE ENCLOSURE, CLAMSHELL, 288 SPLICE

FIBER OPTIC CABLE SPLICES SHALL BE PERFORMED IN SPLICE ENCLOSURES AS SHOWN ON THE PLANS. THE SPLICE ENCLOSURES SHALL BE CORROSION RESISTANT, RODENT PROOF, RE-ENTERABLE, AND MANUFACTURER CERTIFIED FOR UNDERGROUND INSTALLATION.

THE 288 CLAMSHELL SPLICE ENCLOSURES SHALL BE 6.5" X 22" PREFORMED COYOTE DOME ENCLOSURE PART #8006877 AND COYOTE SPLICE TRAY ARE TO BE INSTALLED IN 32", 36", OR 48" PULL BOXES OR MOUNTED AERIALLY AS DIRECTED IN THE PLANS. CONTRACTOR SHALL ADVISE THE ENGINEER IN THE EVENT THAT CABLES CANNOT ENTER SPLICE ENCLOSURE PERPENDICULARLY TO CABLE PORT ENTRY PLATE, OR IF CABLE BENDS EXCEED MINIMUM INSTALLATION BEND RADIUS RATING AT THE ENCLOSURE ENTRY DUE TO EXISTING FIELD CONDITIONS SUCH AS INADEQUATE SPACE IN PULL BOX OR OTHER OBSTRUCTIONS. NO MORE THAN TWELVE (12) SPLICES SHALL OCCUR IN A SINGLE TRAY. ADDITIONALLY, CONTRACTOR SHALL ADVISE THE ENGINEER PRIOR TO BEGINNING SPLICING IF PLANNED NUMBER OF SPLICES CANNOT BE NEATLY AND SECURELY CONTAINED IN THE TYPE OF SPLICE ENCLOSURE CALLED OUT IN THE PLANS.

FOR UNDERGROUND INSTALLATION, SPLICE ENCLOSURE AND SLACK CABLE MUST FIT WITHIN PULL BOX TO AVOID DAMAGE TO THE ENCLOSURE OR CABLE UPON CLOSING THE PULL BOX LID.

FOR AERIAL INSTALLATION, AN EXTENDED STRENGTH MEMBER BRACKET, COYOTE NUMBER 80805431, SHALL BE INSTALLED WITH THE SPLICE ENCLOSURE TO ENSURE CABLE ENTRIES REMAIN PERPENDICULAR AND SECURELY FASTENED TO THE PORT ENTRY PLATE. AERIAL MOUNTED SLACK STORAGE RACKS ARE TO BE USED FOR ALL INSTALLATIONS WHERE CABLES ARE LOOPEO OR BENT 1800. THE COST OF THE STRAIN RELIEF HARDWARE, EXTENDED STRENGTH MEMBER BRACKETS, TIES OR OTHER INSTALLATION HARDWARE IS CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ALL BUFFER TUBES NOT SHOWN AS BEING SPLICED IN THE PLANS ARE TO BE SECURELY COILED WITHIN THE SPLICE ENCLOSURE).

PLUG KITS AND BRACKETS SHALL BE INCIDENTAL TO PAY ITEM. ANY PROPOSED EQUIVALENT MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. FIBER OPTIC CABLE SPLICE ENCLOSURES MUST MEET THE REQUIREMENTS LISTED UNDER BELLCORE TESTING REQUIREMENT GR-771-CORE AND UL 1863.

THE WORK AS DESCRIBED WILL BE MEASURED AS ONE UNIT FOR EACH OF THE INSTALLATIONS SPECIFIED, AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND INCIDENTALS, COMPLETE IN PLACE. TERMINATIONS, CONNECTIONS, AND OTHER MISCELLANEOUS ITEMS AND MATERIALS SHALL BE INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

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TRAFFIC CONTROL GENERAL NOTES

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ITEM 804 - FIBER OPTIC CABLE MISC.: TERMINATION PANEL, 24 FIBER

THE TERMINATION PANEL SHALL BE FURNISHED AND INSTALLED IN THE TRAFFIC SIGNAL CONTROLLER CABINET AT THE LOCATION SHOWN ON THE PLANS. THE TERMINATION PANEL HOUSING SHALL BE CORNING MODEL SPH-01P AND SHALL INCLUDE ONE CLOSET CONNECTOR HOUSING, CORNING MODEL CCH-CP24-A9-P03RH.

THE TERMINATION PANEL HOUSING SHALL BE FASTENED TO THE WALL OF THE CONTROL CABINET, WITH THE HINGED SIDE OF THE ENCLOSURE POSITIONED TO ALLOW EASY ACCESS TO INSIDE OF THE ENCLOSURE.

TERMINATION PANELS SHALL BE INSTALLED IN A LOCATION AND ORIENTATION THAT PROVIDES REQUIRED SPACE FOR ROUTING OF DROP CABLES AND PATCH CABLES TO EQUIPMENT AND CONDUIT ENSURING THAT MINIMUM BEND RADII ARE NOT EXCEEDED.

TERMINATION PATCH CABLES OF APPROPRIATE LENGTHS TO CONNECT TO THE ETHERNET SWITCH SHALL BE INCLUDED AND SHALL BE CONSIDERED INCIDENTAL TO THE TERMINATION PANEL. THE OPTICAL PATCH CABLES FURNISHED SHALL CONSIST OF A SECTION OF JACKETED, SINGLE-MODE FIBER CABLE EQUIPPED WITH FACTORY ASSEMBLED OPTICAL CONNECTORS AT BOTH ENDS. EACH PATCH CABLE SHALL HAVE UNIQUE IDENTIFICATION LABELS ON EACH END.

PER THE REQUIREMENTS OUTLINED UNDER FIBER OPTIC CABLE TESTING, THE TERMINATION PANEL MUST BE INSTALLED IN ITS FINAL POSITION WITHIN THE CONTROLLER CABINET AND/OR EQUIPMENT RACK AS INDICATED IN THE PLANS, AND THE DROP CABLE PATH MUST BE INSTALLED IN ITS FINAL POSITION FROM THE CONTROLLER CABINET TO THE SPLICE ENCLOSURE. FAILURE TO TEST THE CABLE SYSTEM AND ITS COMPONENTS IN THEIR FINAL INSTALLED POSITIONS WILL RESULT IN NULLIFICATION OF TEST RESULTS AND WILL REQUIRE THE RETESTING OF THOSE CABLE SEGMENTS.

THE WORK AS DESCRIBED WILL BE MEASURED AS ONE UNIT FOR EACH OF THE INSTALLATIONS SPECIFIED COMPLETE AND IN PLACE. THIS INCLUDES AN OPTICAL ADAPTER PANEL AND CONNECTORS, FAN-OUT KITS, FUSION SPLICING, TERMINATIONS, AND OTHER MISCELLANEOUS HARDWARE AND MATERIALS INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

ITEM 633 CONTROLLER ITEM, MISC.: ETHERNET TRANSCEIVER, SHORT RANGE

THIS ITEM SHALL BE A COMNET BRAND MODEL SFP-6 UNIT, OR APPROVED EQUAL. IT SHALL BE MSA COMPLIANT SMALL FORM-FACTOR PLUGGABLE MODULE TO ALLOW FOR OPTICAL OR ELECTRICAL INTERFACE, AND FULLY COMPATIBLE WITH SWITCHES OR OTHER INTERFACES USED FOR THIS PROJECT.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

CABLE WRAPS

THE CONTRACTOR IS REQUIRED TO PLACE A UV-RESISTANT CABLE OWNER IDENTIFICATION WRAP ON EVERY INSTALLED CABLE, AT EVERY POLE, PULL BOX, MEDIAN JUNCTION BOX, AND CABINET LOCATION. THESE PRE-COILED, SNAP -ON WRAP-AROUND MARKERS WILL BE FOUR (4) INCHES IN HORIZONTAL LENGTH FOR UNDERGROUND INSTALLATIONS AND EIGHT (8) INCHES IN HORIZONTAL LENGTH FOR AERIAL INSTALLATIONS. THE ENGINEER WILL DIRECT THE CONTRACTOR ON THE LOCATIONS OF EACH TYPE OF CABLE MARKER DEPENDENT ON MAINTAINING AGENCY. THEY SHALL BE MADE OF 0.015 MIL SOLID COLOR THROUGHOUT VINYL WITH BLACK HEAT-SEALED INK PRINTING. THE WORDING SHALL INCLUDE NO ADVERTISING LOGO OR MESSAGE. COLOR AND TEXT SHALL BE AS FOLLOWS:

SHOCKING PINK BACKGROUND WITH BLACK PRINT TEXT "TRAFFIC, CITY OF NEW ALBANY, 614-855-0076".

THE MANUFACTURER AND SPECIFIED PRODUCT WILL BE APPROVED BY THE PROJECT ENGINEER BEFORE ANY MARKERS ARE ORDERED.

CABLE WRAPS SHALL BE CONSIDERED INCIDENTAL TO ITEM 632 INTERCONNECT, MISC.: FIBER OPTIC CABLE, 144 STRAND.

PATCH CABLES

THE OPTICAL PATCH CORDS FURNISHED UNDER THIS CONTRACT SHALL BE CONSTRUCTED OF DUPLEX SINGLE FIBER, JACKETED, CABLE EQUIPPED WITH FACTORY ASSEMBLED OPTICAL CONNECTORS AT BOTH ENDS (LC/UPC DUPLEX).

ALL PATCH CABLES SHALL HAVE UNIQUE IDENTIFICATION LABELS ON EACH END.

THE NON-ARMORED DUPLEX CABLE SHALL USE DIFFERENT COLORS FOR STRAIN RELIEF BOOTS ON EITHER SIDE OF THE CABLE, WITH LIKE COLORS ON EITHER END OF THE SAME FIBER (I.E. FIBER #1 STRAIN RELIEF BOOT IS BLUE ON BOTH ENDS OF PATCH CABLE, FIBER #2 STRAIN RELIEF BOOT IS WHITE ON BOTH SIDES OF CABLE).

NON-ARMORED PATCH CABLES SHALL BE CORNING PART NUMBER 040402R5120001M (1 M LENGTH).

PATCH CABLES SHALL BE CONSIDERED INCIDENTAL TO ITEM 804 - FIBER OPTIC CABLE MISC.: TERMINATION PANEL, 24 FIBER

, ITEM 633 CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET TRANSCEIVER, SHORT RANGE, AND ITEM 633 CONTROLLER ITEM, MISC.: LAYER 2 SWITCH.

TRACER WIRE

TRACER WIRE SHALL BE INSTALLED IN ALL 144 FIBER RUNS. TRACER WIRE SHALL BE NO SMALLER THAN #12 AWG WIRE. THE WIRE SHALL BE HDPE INSULATED, ORANGE IN COLOR, AND CONSTRUCTED OF COPPER CLAD STEEL. APPROXIMATELY 10 FEET OF SLACK OF THE TRACER WIRE SHALL BE LEFT INSIDE THE PULL BOXES CONNECTING THE CONDUIT RUNS. THE CONTRACTOR SHALL USE A TYPE 2 MARKER WHEN THE PATH OF THE FIBER MAKES A DIRECTIONAL CHANGE OR CROSSES UNDERNEATH A ROADWAY AND WHEN CAPABLE SHALL PLACE A MARKER ON BOTH SIDES OF THE ROADWAY AT CROSSING. THE TRACER WIRE SHALL BE RUN THROUGH THE MARKER AND CONNECTED TO TERMINALS AT THE TOP OF THE MARKER.

PAYMENT FOR ALL TRACER WIRE SHALL BE INCLUDED IN THE BID FOR ITEM 804 - FIBER OPTIC CABLE MISC.: FIBER OPTIC CABLE, 144 FIBER

FIBER OPTIC CABLE TESTING

THE CONTRACTOR SHALL OBTAIN A FACTORY TEST DATA SHEETS FOR EACH REEL OF OPTICAL FIBER CABLE DELIVERED. THE TESTS SHALL BE PERFORMED BY THE FACTORY AT 1310 NM AND 1550 NM AND SHALL INCLUDE DIRECTIONAL OTDR TRACES AND TEST DATA FOR EACH FIBER IN THE CABLE. THE CONTRACTOR SHALL TEST EACH REEL AT 1550 NM PRIOR TO INSTALLATION TO ENSURE NO DAMAGE OCCURS TO THE FIBER IN TRANSIT AND THAT THE LENGTH OF CABLE IS CORRECT. THE CONTRACTOR SHALL PROVIDE THE OTDR MANUFACTURER, MODEL NUMBER, AND SERIAL NUMBER OF EACH UNIT USED DURING THE TEST ALONG WITH THE NAME OF THE PERSON(S) PERFORMING THE TEST. THESE TWO TEST RESULTS SHALL BE PROVIDED TO THE CITY OF NEW ALBANY PRIOR TO INSTALLATION AS PART OF FINAL ACCEPTANCE OF THE SECTION OF CABLE FOR PAYMENT.

ALL CABLED OPTICAL FIBERS > 3500 FEET (1000 M) IN LENGTH SHALL BE ATTENUATION TESTED. THE ATTENUATION OF EACH FIBER SHALL BE PROVIDED WITH EACH CABLE REEL. THE CONTRACTOR SHALL SUPPLY THE CITY OF NEW ALBANY WITH THE FACTORY, AND PRE-INSTALLATION TEST RESULTS DOCUMENTING THAT THE CABLES MEET ALL RELEVANT EIA SPECIFICATIONS AS STIPULATED IN THESE SUPPLEMENTAL SPECIFICATIONS. SINGLE-MODE FIBERS UTILIZED IN THE CABLES SPECIFIED HEREIN SHALL BE SUBJECTED TO AND SUCCESSFULLY PASS A TENSILE PROOF STRESS TEST EQUIVALENT TO 100 KPSI (0.70 GN/M2) FOR 1.0 SECOND.

FIBERS SHALL CONTAIN NO FACTORY SPLICES.

THE CONTRACTOR SHALL TEST ALL CONTINUOUS FIBER WITH A LIGHT SOURCE UTILIZING PROCEDURES AS STATED IN ANSI/TIA/EIA-526-7: OFSTP-7 MEASUREMENT OF OPTICAL POWER LOSS OF INSTALLED SINGLE-MODE FIBER CABLE PLANT. TESTING PROCEDURES SHALL UTILIZE ONE JUMPER REFERENCE. BI-DIRECTIONAL TESTING OF OPTICAL FIBERS WILL BE REQUIRED.

THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF NEW ALBANY FOR SPECIFIC LOCATIONS FOR THE TESTING. THE CONTRACTOR SHALL PROVIDE THE CITY OF NEW ALBANY WRITTEN NOTIFICATION A MINIMUM 14 CALENDAR DAYS BEFORE TESTING THE FIBER OPTIC CABLE. TESTING SHALL NOT BEGIN UNLESS RECEIVING WRITTEN AUTHORIZATION AND FIBER LOCATIONS AND TEST POINTS FROM THE CITY OF NEW ALBANY. THE CONTRACTOR SHALL PROVIDE THE OTDR MANUFACTURER, MODEL NUMBER AND SERIAL NUMBER OF EACH UNIT USED DURING THE TEST ALONG WITH THE NAME OF THE PERSON(S) PERFORMING THE TEST.

NOTE: PRIOR TO THE TESTING OF A SEGMENT OF INSTALLED FIBER OPTIC CABLE, ALL TERMINATIONS AND PATCH PANELS CONNECTED TO THAT SPECIFIC CABLE SEGMENT MUST BE INSTALLED IN THEIR FINAL POSITION WITHIN THE CONTROLLER CABINET AND/OR EQUIPMENT RACK AS INDICATED IN THE PLANS. FAILURE TO TEST THE CABLE SYSTEM AND ITS COMPONENTS IN THEIR FINAL INSTALLED PLACEMENT WILL RESULT IN NULLIFICATION OF TEST RESULTS AND WILL REQUIRE THE RETESTING OF THOSE CABLE SEGMENTS.

ALL SINGLE MODE FIBER CABLES SHALL BE TESTED AT BOTH 1310 NM AND 1550 NM AFTER INSTALLATION. FIBERS WILL BE CONSIDERED ACCEPTABLE IF THE OTDR TRACE FOR THAT FIBER SHOWS AN END TO END LOSS OF LESS THAN  $XXDB + YY(0.05DB + ZZ(0.2DB$  (WHERE YY IS THE NUMBER OF SPLICES (A NUMBER TO BE PROVIDED BY THE ENGINEER), ZZ IS THE NUMBER OF CONNECTOR PAIRS AND XX IS CALCULATED USING THE FOLLOWING FORMULA:  $XX = DISTANCE \times FIBER \text{ ATTENUATION} / UNIT \text{ DISTANCE} @ \text{ LAMBDA}$ ). IN ADDITION, NO SPLICE MAY SHOW A LOSS OF GREATER THAN 0.05 DB AND NO CONNECTOR PAIRS MAY SHOW A LOSS OF GREATER THAN 0.2 DB, REGARDLESS OF THE TOTAL ACCUMULATED END-TO-END LOSS. ANY ADDITIONAL TESTS REQUIRED BY THE ANSI/TIA/EIA STANDARD SHALL ALSO BE PERFORMED AND ALSO INCLUDED IN THE WRITTEN TEST REPORT.

THE CONTRACTOR SHALL TEST EACH FIBER STRAND FROM BOTH ENDS OF THE FIBER UTILIZING AN OTDR AT THE WAVELENGTHS SPECIFIED ABOVE. OVERALL, THE OTDR TEST RESULTS SHALL BE MADE UP OF THE WAVELENGTH OF THE CONDUCTED TEST, THE LINK LENGTH, ATTENUATION, CABLE IDENTIFICATION, AND THE LOCATIONS OF THE NEAR END, THE FAR END AND EACH SPLICE POINT OR POINTS OF DISCONTINUITY.

FIBER OPTIC CABLE TESTING (CONTINUED)

ELECTRONIC FORMAT RESULTS FOR EACH FIBER STRAND SHALL BE SUBMITTED AS PART OF "AS-BUILT" DOCUMENTATION. ALL TEST RESULTS SHALL BE TURNED OVER TO THE ENGINEER AND THE CITY OF NEW ALBANY IN ELECTRONIC FORMAT PROVIDED BY THE MANUFACTURER OF THE TEST EQUIPMENT USED BY THE CONTRACTOR TO PERFORM THE TESTS. THOSE RESULTS MUST BE PROVIDED SUCH THAT THEY CAN BE VIEWABLE BY AND THE CITY OF NEW ALBANY WITHOUT THE USE OF SPECIAL SOFTWARE OR ADDITIONAL EQUIPMENT. IF THE TEST RESULTS CANNOT BE VIEWED ON A STANDARD PC WITHOUT REQUIRING THE NEED FOR ADDITIONAL SOFTWARE OR EQUIPMENT, THAT SOFTWARE OR EQUIPMENT MUST ALSO BE DELIVERED TO THE CITY OF NEW ALBANY. IF SOFTWARE IS PROVIDED A SEPARATE DOCUMENT SHOWING ALL FIBER TEST RESULTS MUST BE SUBMITTED TO THE CITY OF NEW ALBANY TO BE PLACED IN THE PROJECT FILE. ANY SOFTWARE OR EQUIPMENT SO DELIVERED WILL BECOME THE PERMANENT PROPERTY OF AND THE CITY OF NEW ALBANY AND WILL NOT BE RETURNED.

IF THE CABLE FAILS TO MEET THE ABOVE REQUIREMENTS, IT SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

TEST RESULTS SHALL INCLUDE A RECORD OF WAVELENGTH, FIBER TYPE, FIBER AND BUNDLE NUMBER, TEST EQUIPMENT AND MODEL NUMBER, DATE, REFERENCE SETUP, AND OPERATOR (CREW MEMBERS). THE CONTRACTOR SHALL DOCUMENT THE START/END LOCATIONS OF ALL FIBERS.

THE CONTRACTOR SHALL PROVIDE HARD COPY AND ELECTRONIC FORMAT REPORTS OF ALL TEST DATA TO THE ENGINEER. IN THE EVENT THAT TEST RESULTS ARE NOT SATISFACTORY, THE CONTRACTOR SHALL MAKE ADJUSTMENTS, REPLACEMENTS, AND CHANGES AS NECESSARY AND SHALL THEN REPEAT THE TEST OR TESTS THAT DISCLOSED FAULTY OR DEFECTIVE MATERIAL, EQUIPMENT, OR INSTALLATION METHOD, AND SHALL PERFORM ADDITIONAL TESTS AS THE ENGINEER DEEMS NECESSARY.

TESTS RELATED TO CONNECTED EQUIPMENT OF OTHERS SHALL ONLY BE DONE WITH THE PERMISSION AND PRESENCE OF THE AGENCY REPRESENTATIVE INVOLVED. THE CONTRACTOR SHALL PERFORM ONLY THAT TESTING AS REQUIRED TO PROVE THE FIBER CONNECTIONS ARE CORRECT.

FIBER OPTIC CABLE TESTING SHALL BE CONSIDERED INCIDENTAL TO ITEM 632.

CONTACT THE DEPARTMENT OF PUBLIC SERVICE PRIOR TO TESTING FOR A LIST OF TESTING LOCATIONS.

AEP SHALL PROVIDE AND INSTALL THE FOLLOWING ITEMS:

NOTE-AS SPECIFIED IN THESE PLANS, THE CONTRACTOR SHALL INSTALL CABLE UP TO BUT NOT IN AEP PULL BOXES. QUANTITIES IN GENERAL SUMMARY INCLUDE CABLE INSTALLED WITHIN AEP PULL BOXES. COST OF CONTRACTOR COORDINATION WITH AEP ON CABLE INSTALLATION TO BE INCLUDED IN COST BID FOR THIS PROJECT.

SHEETS 167-169: TEMPORARY INSTALLATION.

- 2 EA - USE EX SPLICE ENCLOSURE
- 12 EA - FUSION SPLICE, AS PER PLAN

SEE SHEETS 19-21 FOR TEMPORARY COMMUNICATION DIAGRAMS

SHEETS 167-169: PERMANENT INSTALLATION.

- 2 EA - USE EX SPLICE ENCLOSURE
- 150 EA - FUSION SPLICE, AS PER PLAN

SEE SHEETS 170-175 FOR FINAL COMMUNICATION DIAGRAMS

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ALTERNATE 1

ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 1 CAMERA  
ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 2 CAMERAS

THE CAMERAS SHALL BE AXIS COMMUNICATION BRAND MODEL NUMBER Q6075-E, BOSCH BRAND AUTODOME IP STARLIGHT 7000I, OR APPROVED EQUAL.

THE CAMERAS AND ASSOCIATED MILESTONE SOFTWARE SHALL BE FULLY COMPATIBLE WITH AND MEET SPECIFICATIONS FOR THE EXISTING NEW ALBANY MONITOR CAMERA NETWORK. TRAFFIC SURVEILLANCE CAMERAS SHALL BE INSTALLED AT THE LOCATIONS NOTED IN THESE PLANS. THIS ITEM SHALL INCLUDE CAMERAS, BRACKET ARMS, CABLING AND ALL WIRING FOR CONNECTION TO THE SIGNAL CABINET. ETHERNET SWITCHES SHALL BE PAID FOR SEPARATELY.

TRAINING CITY STAFF IS NOT INCLUDED IN THIS PAY ITEM.

CAMERA PLACEMENTS

AT SIGNALIZED INTERSECTIONS, THE CAMERAS SHALL BE INSTALLED ON BRACKET ARMS, AS DETAILED IN THESE PLANS, ATTACHED TO THE MAST ARMS. THE ATTACHMENT ON MAST ARMS SHALL GENERALLY BE ON THE MAST ARM MIDWAY BETWEEN THE VERTICAL SUPPORT AND THE FIRST TRAFFIC SIGNAL. FINAL LOCATION ON THE MAST ARM SHALL BE PER APPROVAL OF THE CITY OF NEW ALBANY, AND TO AVOID PLACEMENT ON A SHARP UPSWEEP OF THE MAST ARM.

THE CAMERAS SHALL BE POWERED THROUGH THE SIGNAL CONTROLLER CABINETS. THE IMAGES FROM THE CAMERAS SHALL BE TRANSMITTED TO THE CITY OF NEW ALBANY SERVICE DEPARTMENT, AND ALLOW FOR VIEWING BY THE CITY OF NEW ALBANY POLICE DEPARTMENT.

CAMERAS

THE CAMERA HOUSING AND BRACKET ARMS SHALL BE PAINTED NEW ALBANY GREEN (PMS 5535), TO MATCH THE EXISTING SUPPORTS. IN THE EVENT THE CONTRACTOR MARS OR DAMAGES THE POLE FINISH DURING THE COURSE OF CAMERA INSTALLATION, THE CONTRACTOR SHALL APPLY TOUCH UP PAINT MATCHING THE CAMERA HOUSING PAINT FINISH REFERENCED ABOVE. THE COST OF REFINISHING SHALL BE INCLUDED IN THE COST BID FOR THIS ITEM. THE CONTRACTOR SHALL TIGHTEN THE THREADED COMPONENTS OF THE BRACKET ARM PIPE USING A STRAP WRENCH AND APPLY PIPE JOINT COMPOUND OR SIMILAR SEALANT ON ALL PIPE THREADS TO PREVENT WATER INGRESS.

THE COST OF THE CAMERA SHALL INCLUDE THE CAMERA UNIT, BRACKET ARMS, MIDSPAN POE INJECTOR FOR EACH SIGNALIZED INTERSECTION AND MISCELLANEOUS HARDWARE. STAINLESS STEEL HARDWARE SHALL BE USED. THIS ITEM SHALL ALSO INCLUDE ALL SINGLE OUTDOOR RATED ETHERNET CAT 6 CABLES.

THE CAMERA INSTALLATIONS SHALL INCLUDE FULL COMMUNICATIONS WITH THE CITY SERVICE DEPARTMENT AND POLICE DEPARTMENT, AND ASSOCIATED SOFTWARE MODIFICATIONS, IF ANY. THE COST BID FOR THIS ITEM SHALL BE PER INTERSECTION, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ALTERNATE 1

ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 1 CAMERA, CONTINUED  
ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 2 CAMERAS, CONTINUED

PERMISSION TO ACCESS AND WORK AT FACILITIES IN THE CITY OF NEW ALBANY

NEW ALBANY RESERVES THE RIGHT TO REJECT THE CONTRACTOR PERFORMING WORK AT NEW ALBANY FACILITIES.

THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE CITY OF NEW ALBANY TO PERFORM ANY WORK AT NEW ALBANY FACILITIES. THE CONTRACTOR SHALL OBTAIN THAT APPROVAL TWO (2) WEEKS IN ADVANCE OF THE INTENDED WORK.

IN THE EVENT NEW ALBANY REJECTS THE CONTRACTOR FROM PERFORMING THE WORK WITHIN NEW ALBANY FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SERVICES FROM A CONTRACTOR DEEMED ACCEPTABLE TO THE CITY OF NEW ALBANY, AND SHALL BEAR ALL COSTS ASSOCIATED WITH PROVIDING AN ACCEPTABLE CONTRACTOR. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED IN THIS PROJECT FOR COSTS ASSOCIATED WITH THE HIRING OF OR WORK PERFORMED BY A CONTRACTOR DEEMED ACCEPTABLE BY THE CITY OF NEW ALBANY.

LICENSING, FEES AND WARRANTIES

THESE CAMERAS REPLACE EXISTING CAMERAS, AND NO NEW LICENSES ARE REQUIRED TO BE INCLUDED IN THE BID FOR THESE PLANS.

IF NEEDED, SYSTEM SOFTWARE NEEDED AS PART OF THIS PROJECT SHALL BE INCLUDED, AND SHALL BE WARRANTIED FOR FIVE (5) YEARS FROM FINAL ACCEPTANCE, AND THREE (3) YEARS FOR HARDWARE AND COMPONENTS.

AFTER FIVE YEARS THE AGREEMENT MAY BE RENEWED ON AN ANNUAL BASIS AT THE DISCRETION OF THE CITY, AND THE COST FOR RENEWAL TO BE PAID FOR BY THE CITY.

PAYMENT

THIS ITEM SHALL BE PAID UNDER THE COST BID PER INTERSECTION, AND SHALL INCLUDE ALL EQUIPMENT, SOFTWARE, LABOR AND MATERIALS IDENTIFIED FOR A COMPLETE AND FUNCTIONING SYSTEM, IN PLACE AND ACCEPTED.

ALTERNATE 1

ITEM 633 - UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

THE CONTRACTOR SHALL PROVIDE AN UNINTERRUPTIBLE POWER SUPPLY (UPS). BATTERY BACKUP UPS SYSTEM, INCLUDING POWER INTERFACE, SNMP ETHERNET ADAPTER AND BATTERIES. THIS EQUIPMENT SHALL BE INCORPORATED INTO THE UPS COMPARTMENT OF THE P44UPS TRAFFIC CONTROLLER CABINET. THE CONTROLLER SHALL BE PAID FOR SEPARATELY AS PART OF THE CONTROLLER PAY ITEM.

THIS ITEM SHALL ALSO INCLUDE THE FOLLOWING:

TWO EXTERIOR LED INDICATOR LAMPS: A GREEN LED STATUS LAMP INDICATING NORMAL POWER OPERATION AND A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL 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, AND SHALL BE VISIBLE A MINIMUM OF 100 FEET DISTANCE. THE INDICATOR LAMP SHALL BE INSTALLED ON THE TOP OF THE CABINET AND SEALED FROM WATER INTRUSION. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER. THIS ITEM 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. OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

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TRAFFIC CONTROL GENERAL NOTES - ALT BID

FRA-62-30.34

125  
202

ALTERNATE 2

ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 1 CAMERA

ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 2 CAMERAS

THE CAMERAS SHALL BE AXIS COMMUNICATION BRAND, MODEL NUMBER Q6075-E, OR APPROVED EQUAL.

THE CAMERAS AND ASSOCIATED MILESTONE SOFTWARE SHALL BE FULLY COMPATIBLE WITH AND MEET SPECIFICATIONS FOR THE EXISTING NEW ALBANY MONITOR CAMERA NETWORK. TRAFFIC SURVEILLANCE CAMERAS SHALL BE INSTALLED AT THE LOCATIONS NOTED IN THESE PLANS. THIS ITEM SHALL INCLUDE CAMERAS, BRACKET ARMS, CABLING AND ALL WIRING FOR CONNECTION TO THE SIGNAL CABINET. ETHERNET SWITCHES SHALL BE PAID FOR SEPARATELY.

TRAINING CITY STAFF IS NOT INCLUDED IN THIS PAY ITEM.

CAMERA PLACEMENTS

AT SIGNALIZED INTERSECTIONS, THE CAMERAS SHALL BE INSTALLED ON BRACKET ARMS, AS DETAILED IN THESE PLANS, ATTACHED TO THE MAST ARMS. THE ATTACHMENT ON MAST ARMS SHALL GENERALLY BE ON THE MAST ARM MIDWAY BETWEEN THE VERTICAL SUPPORT AND THE FIRST TRAFFIC SIGNAL. FINAL LOCATION ON THE MAST ARM SHALL BE PER APPROVAL OF THE CITY OF NEW ALBANY, AND TO AVOID PLACEMENT ON A SHARP UPSWEEP OF THE MAST ARM.

THE CAMERAS SHALL BE POWERED THROUGH THE SIGNAL CONTROLLER CABINETS. THE IMAGES FROM THE CAMERAS SHALL BE TRANSMITTED TO THE CITY OF NEW ALBANY SERVICE DEPARTMENT, AND ALLOW FOR VIEWING BY THE CITY OF NEW ALBANY POLICE DEPARTMENT.

CAMERAS

THE CAMERA HOUSING AND BRACKET ARMS SHALL BE PAINTED NEW ALBANY GREEN (PMS 5535), TO MATCH THE EXISTING SUPPORTS. IN THE EVENT THE CONTRACTOR MARS OR DAMAGES THE POLE FINISH DURING THE COURSE OF CAMERA INSTALLATION, THE CONTRACTOR SHALL APPLY TOUCH UP PAINT MATCHING THE CAMERA HOUSING PAINT FINISH REFERENCED ABOVE. THE COST OF REFINISHING SHALL BE INCLUDED IN THE COST BID FOR THIS ITEM. THE CONTRACTOR SHALL TIGHTEN THE THREADED COMPONENTS OF THE BRACKET ARM PIPE USING A STRAP WRENCH AND APPLY PIPE JOINT COMPOUND OR SIMILAR SEALANT ON ALL PIPE THREADS TO PREVENT WATER INGRESS.

THE COST OF THE CAMERA SHALL INCLUDE THE CAMERA UNIT, BRACKET ARMS, MIDSPAN POE INJECTOR FOR EACH SIGNALIZED INTERSECTION AND MISCELLANEOUS HARDWARE. STAINLESS STEEL HARDWARE SHALL BE USED. THIS ITEM SHALL ALSO INCLUDE ALL SINGLE OUTDOOR RATED ETHERNET CAT 6 CABLES.

THE CAMERA INSTALLATIONS SHALL INCLUDE FULL COMMUNICATIONS WITH THE CITY SERVICE DEPARTMENT AND POLICE DEPARTMENT, AND ASSOCIATED SOFTWARE MODIFICATIONS, IF ANY. THE COST BID FOR THIS ITEM SHALL BE PER INTERSECTION, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

ALTERNATE 2

ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 1 CAMERA, CONTINUED

ITEM 632 - SIGNALIZATION, MISC.: MONITOR CAMERA CONTROL UNIT WITH 2 CAMERAS, CONTINUED

PERMISSION TO ACCESS AND WORK AT FACILITIES IN THE CITY OF NEW ALBANY

NEW ALBANY RESERVES THE RIGHT TO REJECT THE CONTRACTOR PERFORMING WORK AT NEW ALBANY FACILITIES.

THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE CITY OF NEW ALBANY TO PERFORM ANY WORK AT NEW ALBANY FACILITIES. THE CONTRACTOR SHALL OBTAIN THAT APPROVAL TWO (2) WEEKS IN ADVANCE OF THE INTENDED WORK.

IN THE EVENT NEW ALBANY REJECTS THE CONTRACTOR FROM PERFORMING THE WORK WITHIN NEW ALBANY FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SERVICES FROM A CONTRACTOR DEEMED ACCEPTABLE TO THE CITY OF NEW ALBANY, AND SHALL BEAR ALL COSTS ASSOCIATED WITH PROVIDING AN ACCEPTABLE CONTRACTOR. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED IN THIS PROJECT FOR COSTS ASSOCIATED WITH THE HIRING OF OR WORK PERFORMED BY A CONTRACTOR DEEMED ACCEPTABLE BY THE CITY OF NEW ALBANY.

LICENSING, FEES AND WARRANTIES

THESE CAMERAS REPLACE EXISTING CAMERAS, AND NO NEW LICENSES ARE REQUIRED TO BE INCLUDED IN THE BID FOR THESE PLANS.

IF NEEDED, SYSTEM SOFTWARE NEEDED AS PART OF THIS PROJECT SHALL BE INCLUDED, AND SHALL BE WARRANTIED FOR FIVE (5) YEARS FROM FINAL ACCEPTANCE, AND THREE (3) YEARS FOR HARDWARE AND COMPONENTS.

AFTER FIVE YEARS THE AGREEMENT MAY BE RENEWED ON AN ANNUAL BASIS AT THE DISCRETION OF THE CITY, AND THE COST FOR RENEWAL TO BE PAID FOR BY THE CITY.

PAYMENT

THIS ITEM SHALL BE PAID UNDER THE COST BID PER INTERSECTION, AND SHALL INCLUDE ALL EQUIPMENT, SOFTWARE, LABOR AND MATERIALS IDENTIFIED FOR A COMPLETE AND FUNCTIONING SYSTEM, IN PLACE AND ACCEPTED.

ALTERNATE 2

ITEM 633 - UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

THE CONTRACTOR SHALL PROVIDE AN UNINTERRUPTIBLE POWER SUPPLY (UPS), SPECIFICALLY CLARY CORP. BATTERY BACKUP UPS SYSTEM MODEL SPI250LX WITH SPD-302A POWER INTERFACE MODEL, SNMP ETHERNET ADAPTER, OUTPOST BATTERIES, OR APPROVED EQUAL. THIS EQUIPMENT SHALL BE INCORPORATED INTO THE UPS COMPARTMENT OF THE P44UPS TRAFFIC CONTROLLER CABINET. THE CONTROLLER SHALL BE PAID FOR SEPARATELY AS PART OF THE CONTROLLER PAY ITEM.

THIS ITEM SHALL ALSO INCLUDE THE FOLLOWING:

TWO EXTERIOR LED INDICATOR LAMPS: A GREEN LED STATUS LAMP INDICATING NORMAL POWER OPERATION AND A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL 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, AND SHALL BE VISIBLE A MINIMUM OF 100 FEET DISTANCE. THE INDICATOR LAMP SHALL BE INSTALLED ON THE TOP OF THE CABINET AND SEALED FROM WATER INTRUSION. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER. THIS ITEM 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. OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

PAYMENT SHALL BE AT THE UNIT PRICE BID, COMPLETE AND IN PLACE, ALL CONNECTIONS TESTED AND ACCEPTED.

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TRAFFIC CONTROL GENERAL NOTES - ALT BID

FRA-62-30.34

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202











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REF. NO.	SHEET NO.	STATION		SIDE	630								630					
		FROM	TO		REMOVAL OF GROUND MOUNTED SIGN AND DELIVERY, AS PER PLAN	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DELIVERY, AS PER PLAN	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DELIVERY, AS PER PLAN	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DELIVERY, AS PER PLAN	REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND DELIVERY, AS PER PLAN	SIGNING, MISC.: REGULATORY AND WARNING SIGNS ON SINGLE WOOD POST	SIGNING, MISC.: DECORATIVE SINGLE POST MOUNTED STREET NAME SIGN	SIGNING, MISC.: REGULATORY AND WARNING SIGNS ON 2 WOOD POSTS	SIGNING, MISC.: REGULATORY AND WARNING SIGNS ON 2 WOOD POSTS WITH ONE-WAY SIGNS	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, AS PER PLAN		
					EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
		U.S. 62																
SR-1	131	61+02		RT				1	2									
SR-2	131	63+60		LT	1	2												
SR-3	131	64+29		LT	1	1												
SR-4	132	66+34		CL	1	1												
SR-5	132	69+23		CL	1	1												
SR-6	133	71+64		RT	3	1												
SR-7	133	72+11		RT	1	2												
SR-8	133	73+12		LT	1	1												
SR-9	133	73+81		LT						1		2						
SR-10	133	75+93		CL	2	1												
SR-11	134	76+43		LT				1	2									
SR-12	134	77+95		LT	1												1	
SR-13	134	78+33		RT	1												1	
SR-14	134	78+74		RT	2												1	
SR-15	134	79+07		RT	1	2												
SR-16	134	80+07		LT	1	2												
SR-17	135	83+32		LT	2												1	
		RAMP G																
SR-18	140	1150+45		LT	1	2												
		WALTON PARKWAY																
SR-19	144	87+49		RT	1	2												
		U.S. 62																
SN-1	131	63+09		LT				1				1						
SN-2		63+37		RT								1						
SN-3		63+59		LT	1	2											1	
SN-4		64+28		LT	1	3											1	
SN-5		64+73		LT								1						
SN-6		64+67		LT	1	2						1						
SN-7	132	65+84		RT	1	1						1						
SN-8		66+16		RT								1						
SN-9		69+46		LT								1						
SN-10		70+12		LT	1	2						1						
SN-11	133	71+19		LT								1						
SN-12		71+34		RT	1	2						1						
SN-13		1150+40		LT													1	
SN-14		1150+47		RT													1	
SN-15		72+31		LT	2	1						1						
SN-16		72+49		LT										1				
SN-17		72+88		RT								1						
SN-18		74+48		RT	2	1						1						
SN-19	134	76+45		RT								1						
SN-20		77+70		LT	1	2							1					
SN-21		78+16		RT								1						
SN-22		78+24		RT	1								1				1	
SN-23		78+64		CL								1						
SN-24		78+74		RT								1						
SN-25		79+65		LT								1						
SN-26		79+92		RT									1					
SN-27		80+05		RT								1						
SN-28		81+01		LT								1						
TOTALS CARRIED TO GENERAL SUMMARY					33	34	1	2	4	1		2		20	1	3	4	5



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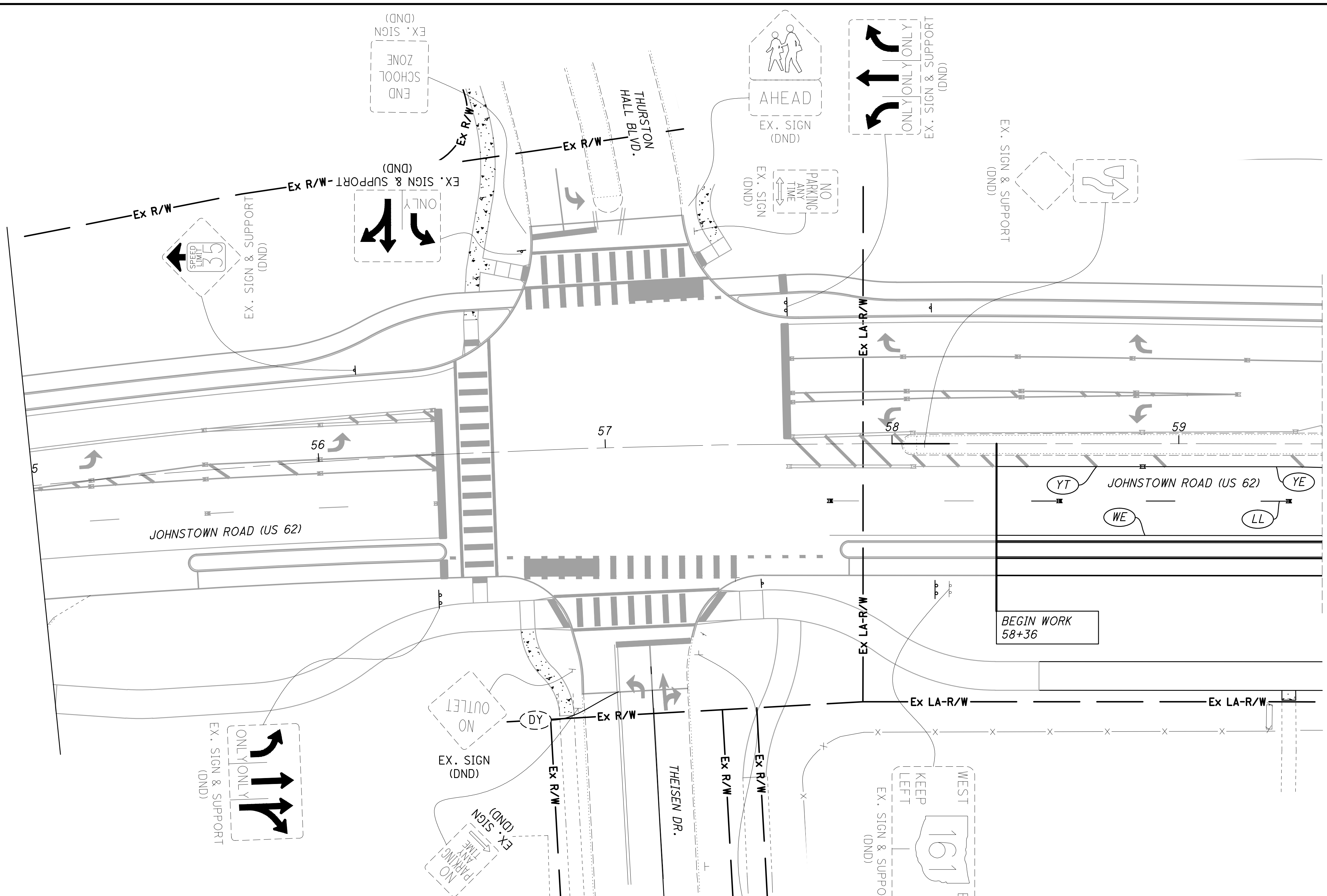
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HORIZONTAL SCALE IN FEET

**JOHNSTOWN ROAD (US 62) TRAFFIC CONTROL**  
**STA. 54+00 TO STA. 59+50**

**FRA-62-30.34**

133  
202



**LEGEND**

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- ⊗ EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

LINE SPECIFICATIONS	
WE	EDGE LINE, 5" SOLID WHITE, 6" ON RAMPS
YE	EDGE LINE, 5" SOLID YELLOW, 6" ON RAMPS
LL	LANE LINE, 5", 6" ON RAMPS
DY	CENTER LINE, 5" DOUBLE YELLOW
CH	CHANNELIZING LINE, 10" WHITE, 12" ON RAMPS
SL	STOP LINE, 20" WHITE, 24" ON RAMPS
XW	CROSSWALK LINE, 10" WHITE
GW	CROSSWALK LINE, GREEN
YT	TRANSVERSE LINE, 20" YELLOW
WT	TRANSVERSE LINE, 20" WHITE
B	BICYCLE LANE SYMBOL MARKING
SH	SHARED LANE MARKING
A	LANE ARROW - SEE NOTE
W	WORD ON PAVEMENT
WD	DOTTED LINE, 5" WHITE, 6" ON RAMPS
GD	DOTTED LINE, 5" GREEN
GP	GREEN COLORED PAVEMENT FOR BIKE LANES
RM	REMOVE MARKING

XXXX - PAVEMENT MARKING TO BE REMOVED  
(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

NOTE: ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.

**RAISED PAVEMENT MARKERS**

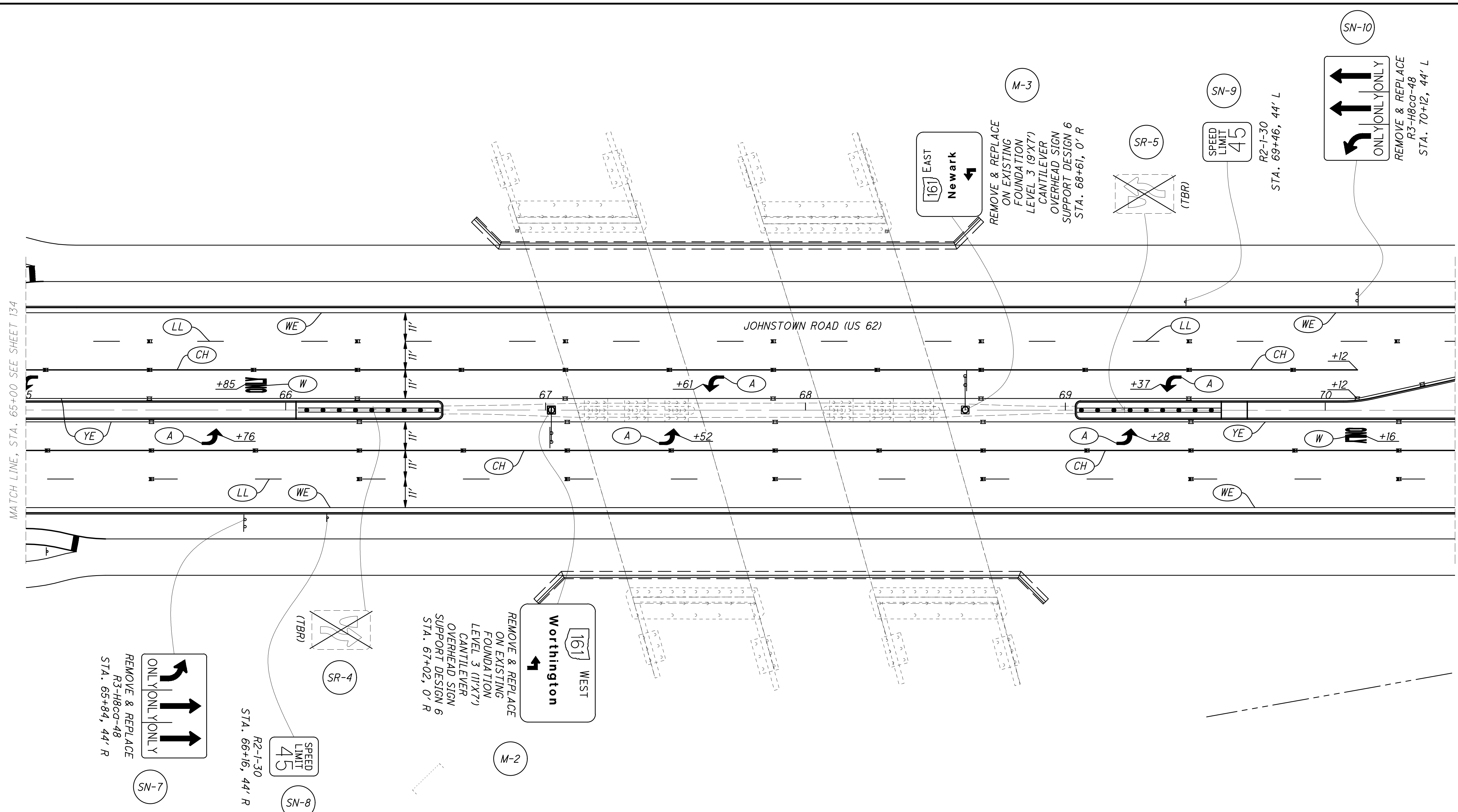
- NORMAL:**
- CENTERLINE: 2-WAY (YELLOW/YELLOW) AT 80' ☐
  - LANE LINE: 2-WAY (WHITE/RED) AT 80' ☐
  - TWO WAY LEFT TURN LANE: 2-WAY (YELLOW/YELLOW) AT 40' ☐
- APPROACH TO SIGNAL:**
- CENTERLINE: 2-WAY (YELLOW/YELLOW) AT 20' ☐
  - LANE LINES: 2-WAY (WHITE/RED) AT 20' ☐
  - CHANNELIZING LINES: 2-WAY (WHITE/RED) AT 20' ☐

MATCH LINE, STA. 59+50 SEE SHEET 134



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MATCH LINE, STA. 65+00 SEE SHEET 134



MATCH LINE, STA. 70+50 SEE SHEET 136

LEGEND

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- ⊗ EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

- XXXX - PAVEMENT MARKING TO BE REMOVED
- (DND) - DO NOT DISTURB
- (TBR) - TO BE REMOVED

NOTE:

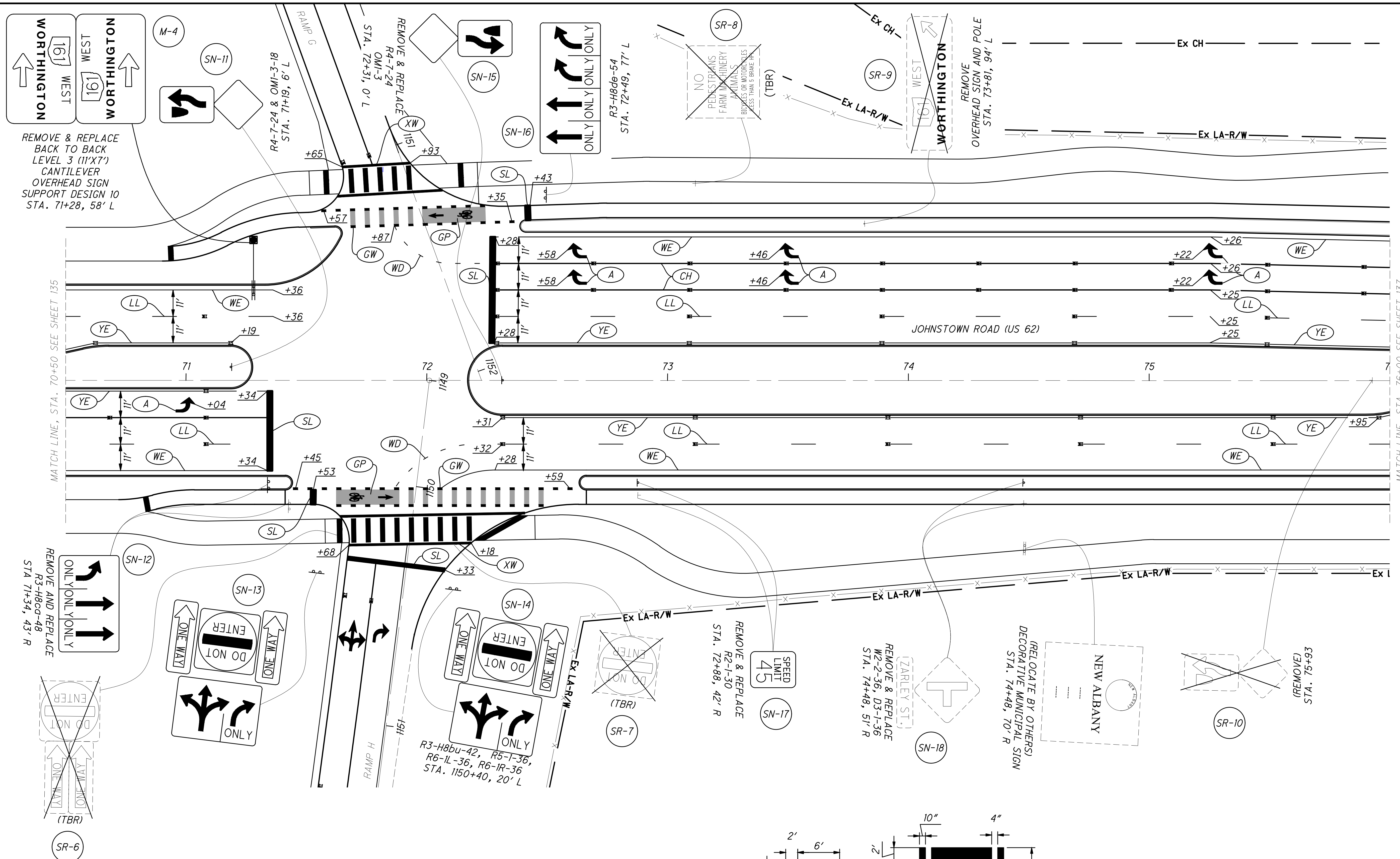
- ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.
- BIKE LANE ARROWS SHALL BE 72" AND TURN LANE ARROWS SHALL BE 96".
- SEE SHEET 133 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 133 FOR RPM LEGEND AND DETAILS.

CALCULATED WCS  
CHECKED DLS

0 20 40  
10  
HORIZONTAL SCALE IN FEET

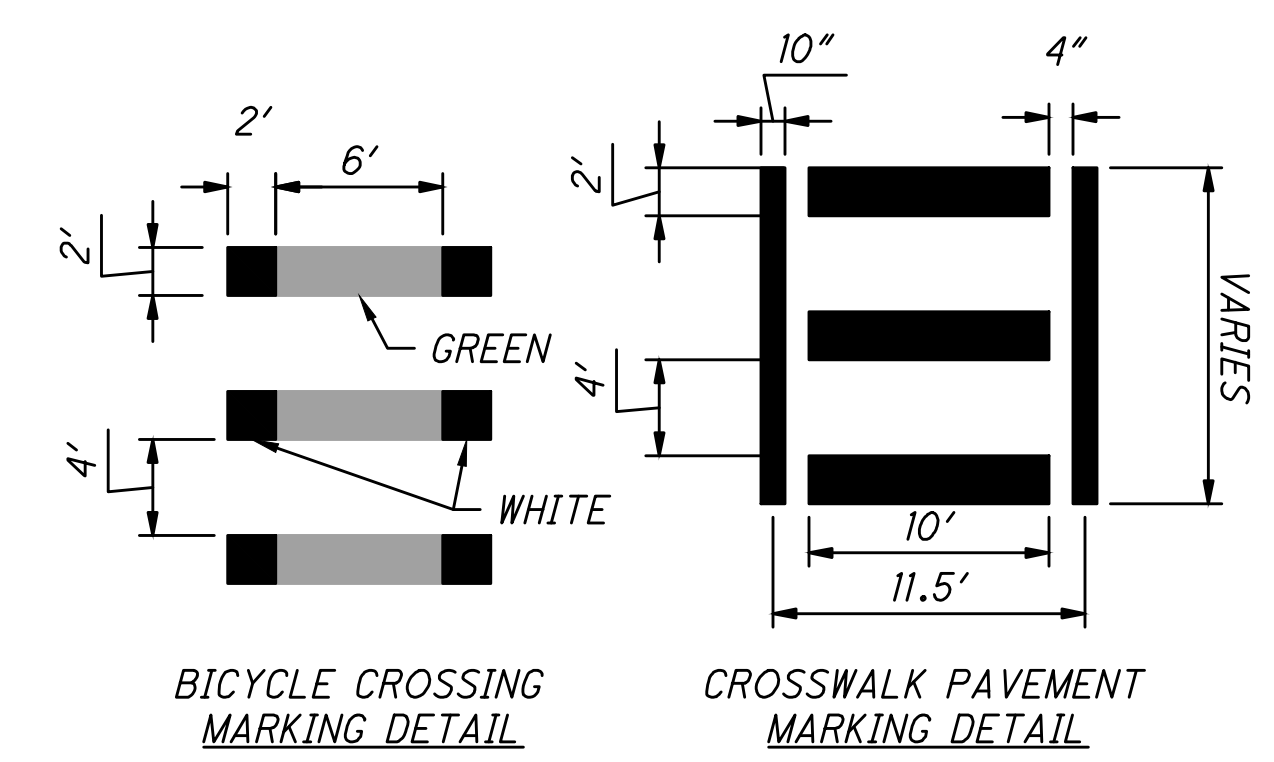
JOHNSTOWN ROAD (US 62) TRAFFIC CONTROL  
STA. 65+00 TO STA. 70+50

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**LEGEND**

(DY)	PROPOSED PAVEMENT MARKINGS	(M-XX)	MAJOR (EXTRUSHEET) SIGN	XXXX - PAVEMENT MARKING TO BE REMOVED
(DY)	EXISTING PAVEMENT MARKINGS TO REMAIN	(SR-XX)	SIGN REMOVAL	(DND) - DO NOT DISTURB
	PROPOSED SIGN	(SN-XX)	SIGN, FLAT SHEET	(TBR) - TO BE REMOVED
	EXISTING SIGN			
	EXISTING SIGN TO BE REMOVED			

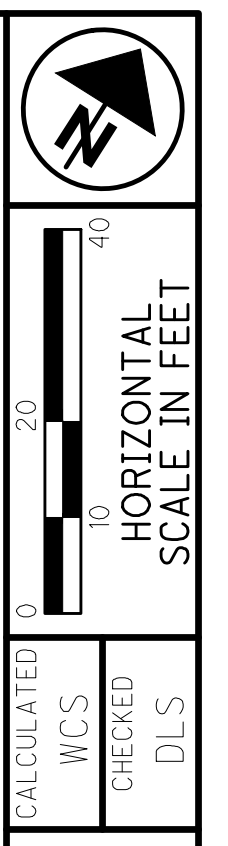


**NOTE:**

- ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.
- BIKE LANE ARROWS SHALL BE 72" AND TURN LANE ARROWS SHALL BE 96".
- SEE SHEET 133 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 133 FOR RPM LEGEND AND DETAILS.

MATCH LINE, STA. 76+00 SEE SHEET 137

MATCH LINE, STA. 70+50 SEE SHEET 135

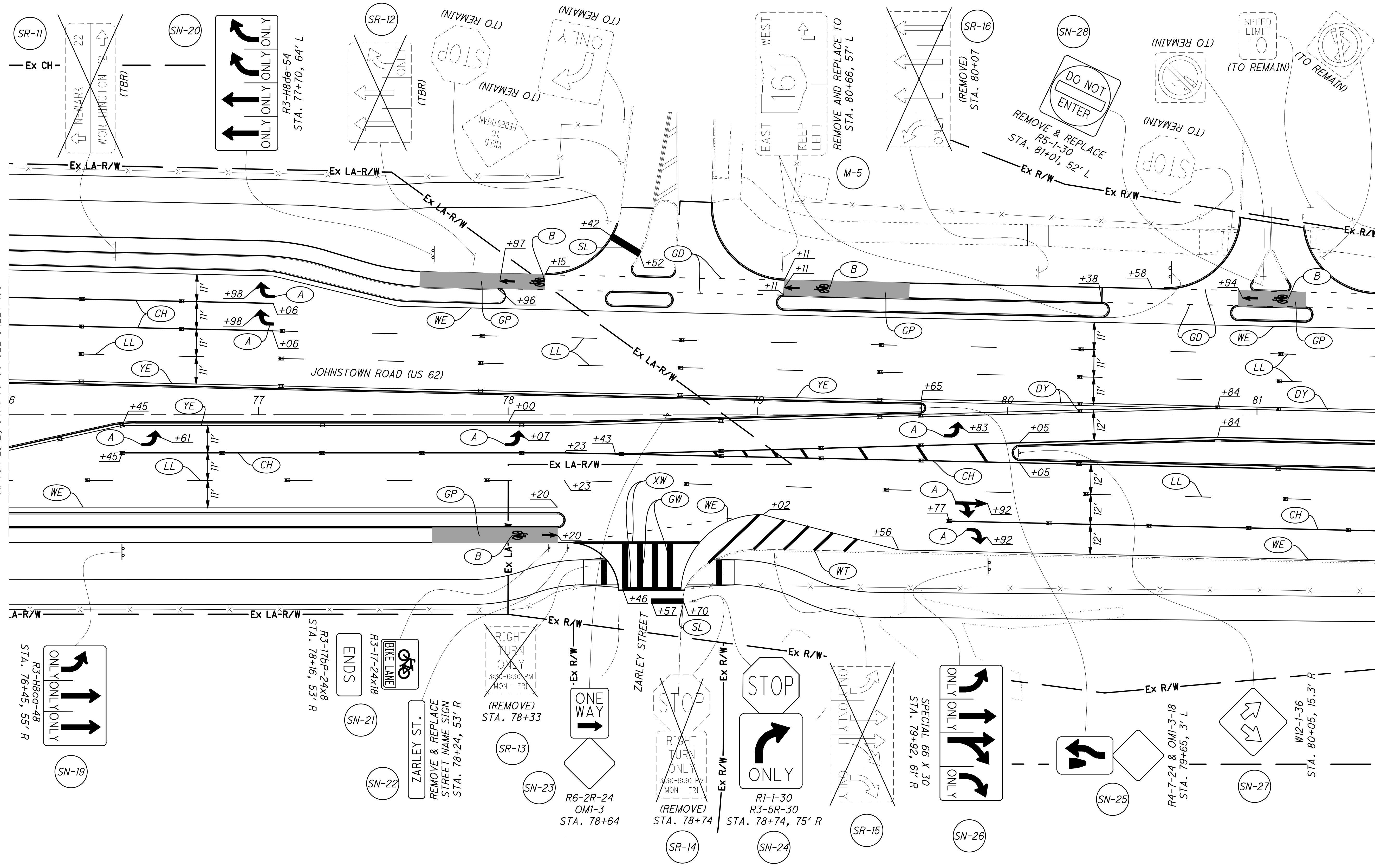


**JOHNSTOWN ROAD (US 62) TRAFFIC CONTROL  
STA. 70+50 TO STA. 76+00**



MATCH LINE, STA. 76+00 SEE SHEET 136

MATCH LINE, STA. 81+50 SEE SHEET 138



LEGEND

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- [ ] PROPOSED SIGN
- [ ] EXISTING SIGN
- [ ] EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET
- XXXX - PAVEMENT MARKING TO BE REMOVED
- (DND) - DO NOT DISTURB
- (TBR) - TO BE REMOVED

NOTE:

- ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.
- BIKE LANE ARROWS SHALL BE 72" AND TURN LANE ARROWS SHALL BE 96".
- SEE SHEET 133 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 133 FOR RPM LEGEND AND DETAILS.

CALCULATED WCS CHECKED DLS

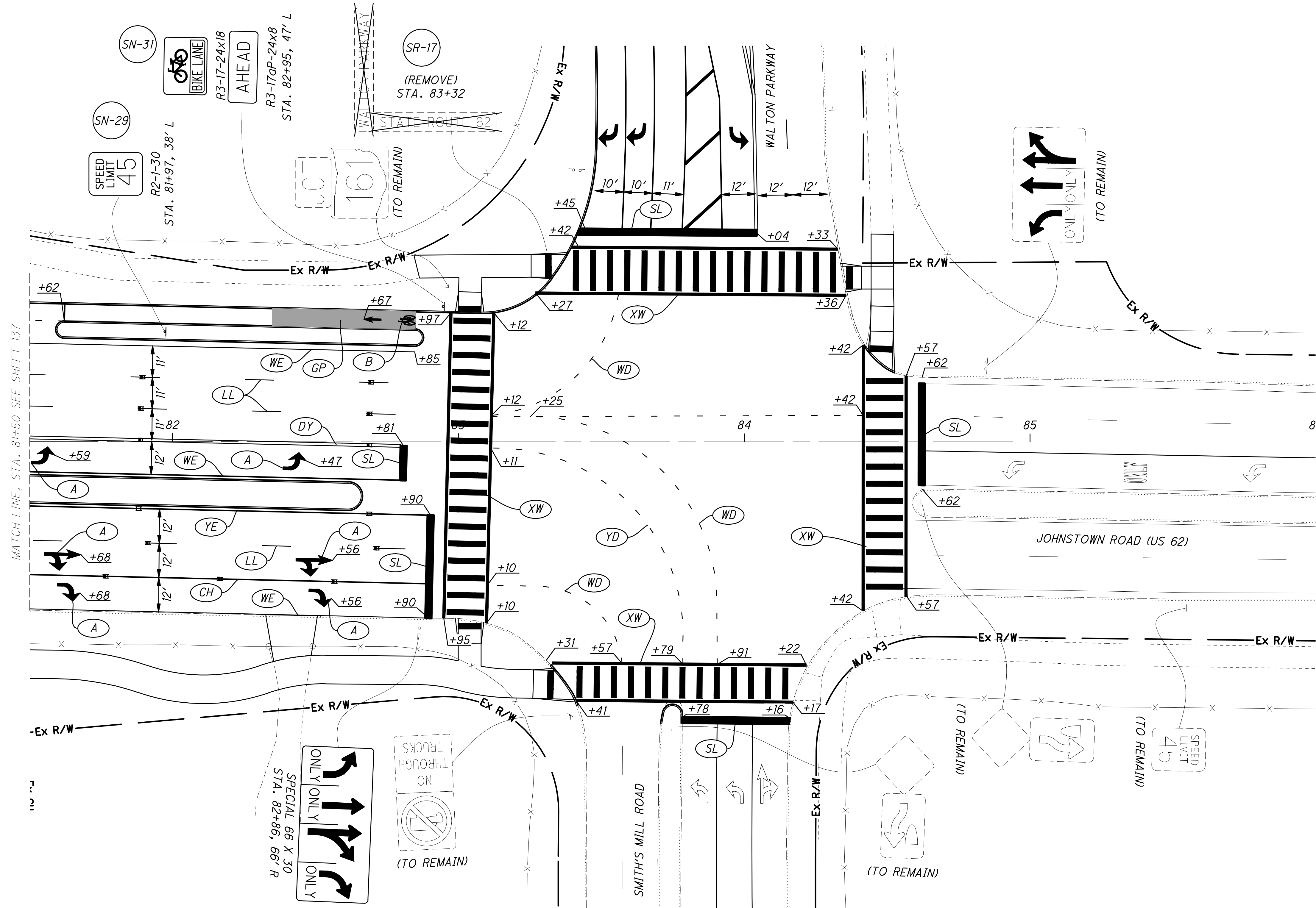
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10 HORIZONTAL SCALE IN FEET

JOHNSTOWN ROAD (US 62) TRAFFIC CONTROL

STA. 76+00 TO STA. 81+50

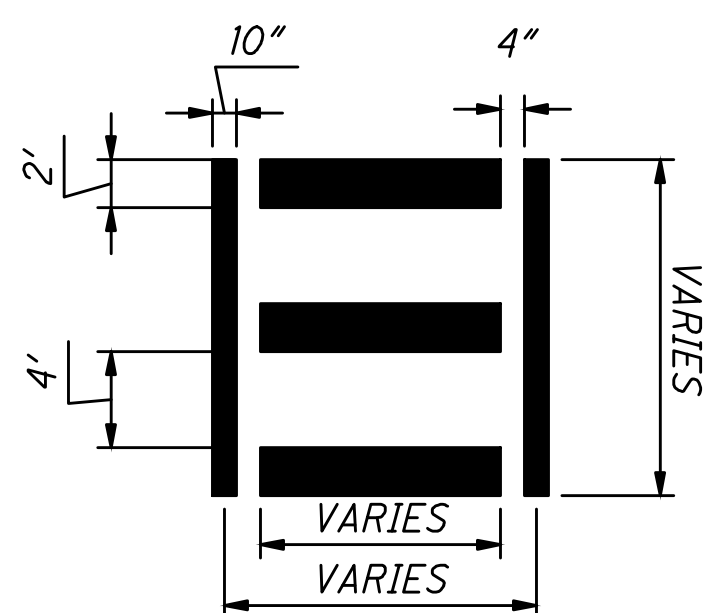
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**LEGEND**

- |  |                                      |  |                         |
|--|--------------------------------------|--|-------------------------|
|  | PROPOSED PAVEMENT MARKINGS           |  | MAJOR (EXTRUSHEET) SIGN |
|  | EXISTING PAVEMENT MARKINGS TO REMAIN |  | SIGN REMOVAL            |
|  | PROPOSED SIGN                        |  | SIGN, FLAT SHEET        |
|  | EXISTING SIGN                        |  |                         |
|  | EXISTING SIGN TO BE REMOVED          |  |                         |

- XXXX - PAVEMENT MARKING TO BE REMOVED  
 (DND) - DO NOT DISTURB  
 (TBR) - TO BE REMOVED

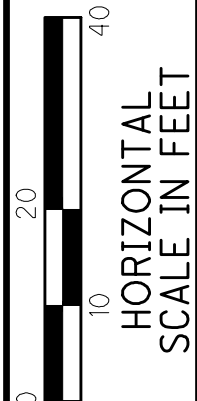
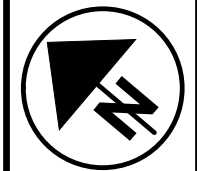


CROSSWALK PAVEMENT MARKING DETAIL

- NOTE:**
- ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.
  - BIKE LANE ARROWS SHALL BE 72" AND TURN LANE ARROWS SHALL BE 96".
  - SEE SHEET 133 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
  - SEE SHEET 133 FOR RPM LEGEND AND DETAILS.

CALCULATED WCS CHECKED DLS  
 0 20 40  
 HORIZONTAL SCALE IN FEET

**JOHNSTOWN ROAD (US 62) TRAFFIC CONTROL  
 STA. 81+50 TO STA. 86+00**

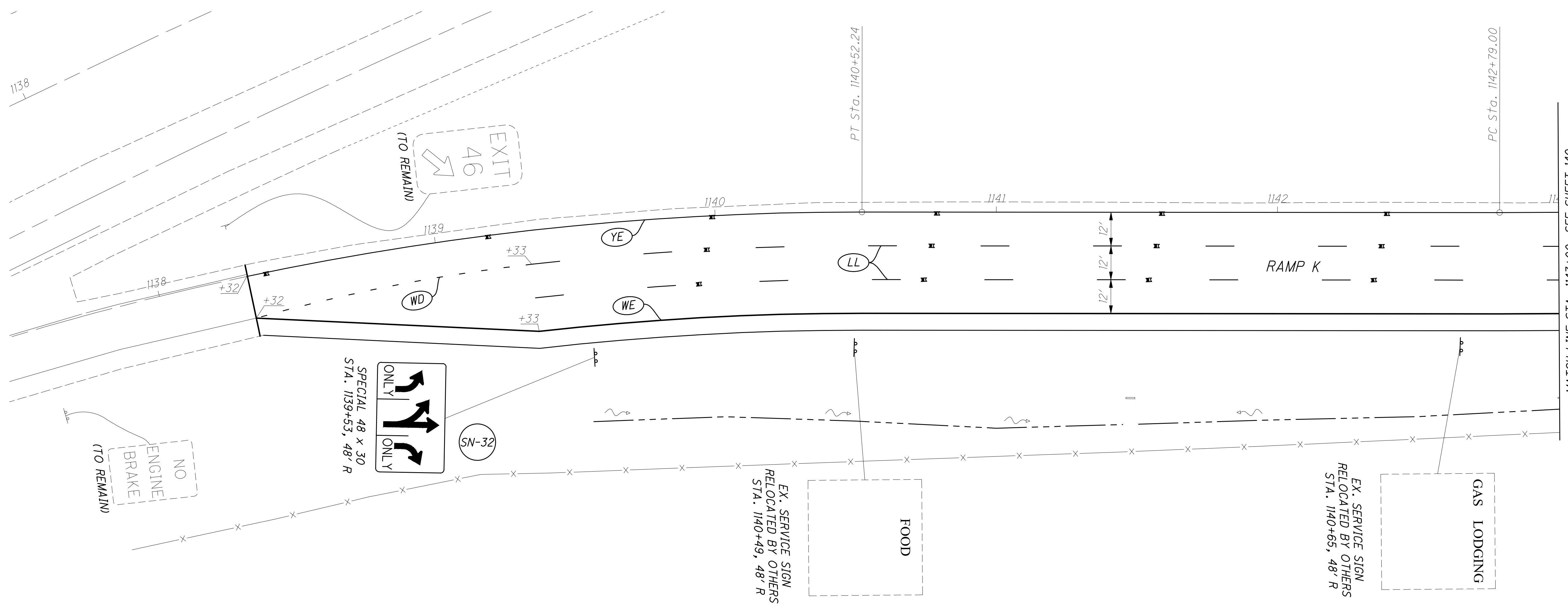


CALCULATED WCS  
CHECKED DLS

# RAMP K TRAFFIC CONTROL PLAN STA. 1138+00 TO STA. 1143+00

## FRA-62-30.34

139  
202



### LEGEND

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- ⊗ EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

LINE SPECIFICATIONS	
WE	EDGE LINE, 5" SOLID WHITE, 6" ON RAMPS
YE	EDGE LINE, 5" SOLID YELLOW, 6" ON RAMPS
LL	LANE LINE, 5", 6" ON RAMPS
DY	CENTER LINE, 5" DOUBLE YELLOW
CH	CHANNELIZING LINE, 10" WHITE, 12" ON RAMPS
SL	STOP LINE, 20" WHITE, 24" ON RAMPS
XW	CROSSWALK LINE, 10" WHITE
GW	CROSSWALK LINE, GREEN
YT	TRANSVERSE LINE, 20" YELLOW
WT	TRANSVERSE LINE, 20" WHITE
B	BICYCLE LANE SYMBOL MARKING
SH	SHARED LANE MARKING
A	LANE ARROW - SEE NOTE
W	WORD ON PAVEMENT
WD	DOTTED LINE, 5" WHITE, 6" ON RAMPS
GD	DOTTED LINE, 5" GREEN
GP	GREEN COLORED PAVEMENT FOR BIKE LANES
RM	REMOVE MARKING

NOTE:  
- MARKINGS ON RAMP, UP TO AND INCLUDING STOP LINE, TO FOLLOW ODOT STANDARDS.

(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

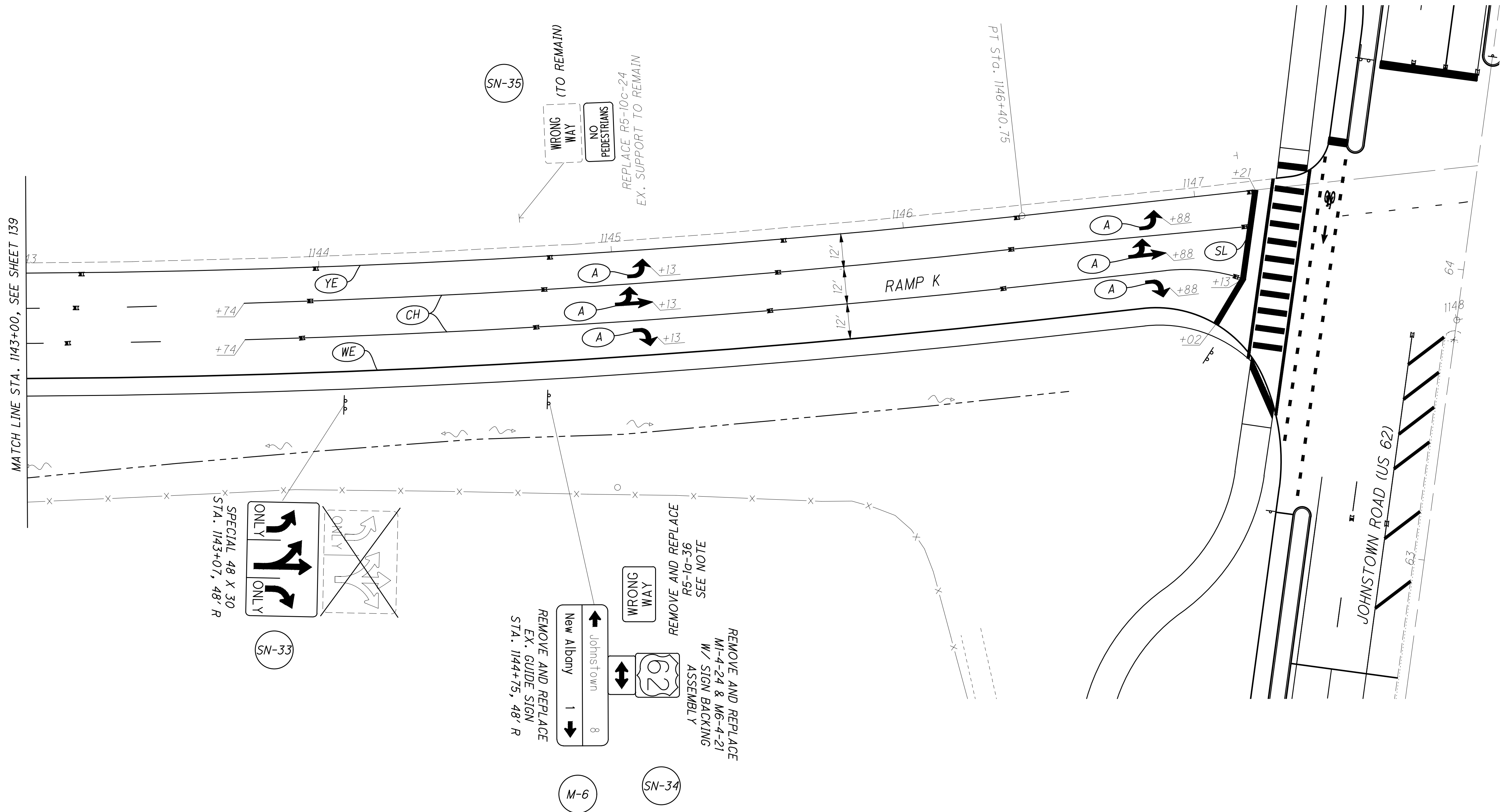
### RAISED PAVEMENT MARKERS

- NORMAL:**
- CHANNELIZING: 2-WAY (WHITE/RED) AT 80' ■
  - LANE LINE: 2-WAY (WHITE/RED) AT 80' ■
  - EDGE LINE: 2-WAY (YELLOW/RED) AT 80' ■

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MATCH LINE STA. 1143+00, SEE SHEET 139



LEGEND

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- [ ] PROPOSED SIGN
- [ ] EXISTING SIGN
- [X] EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

(SN-33)  
SPECIAL 48 X 30  
STA. 1143+07, 48' R

(M-6)  
New Albany  
Johnstown  
1  
8

(SN-34)  
WRONG WAY  
REMOVE AND REPLACE  
R5-1a-36  
SEE NOTE

REMOVE AND REPLACE  
M1-4-24 & M6-4-21  
W/ SIGN BACKING  
ASSEMBLY

(SN-35)  
WRONG WAY (TO REMAIN)  
NO PEDESTRIANS  
REPLACE R5-10c-24  
EX. SUPPORT TO REMAIN

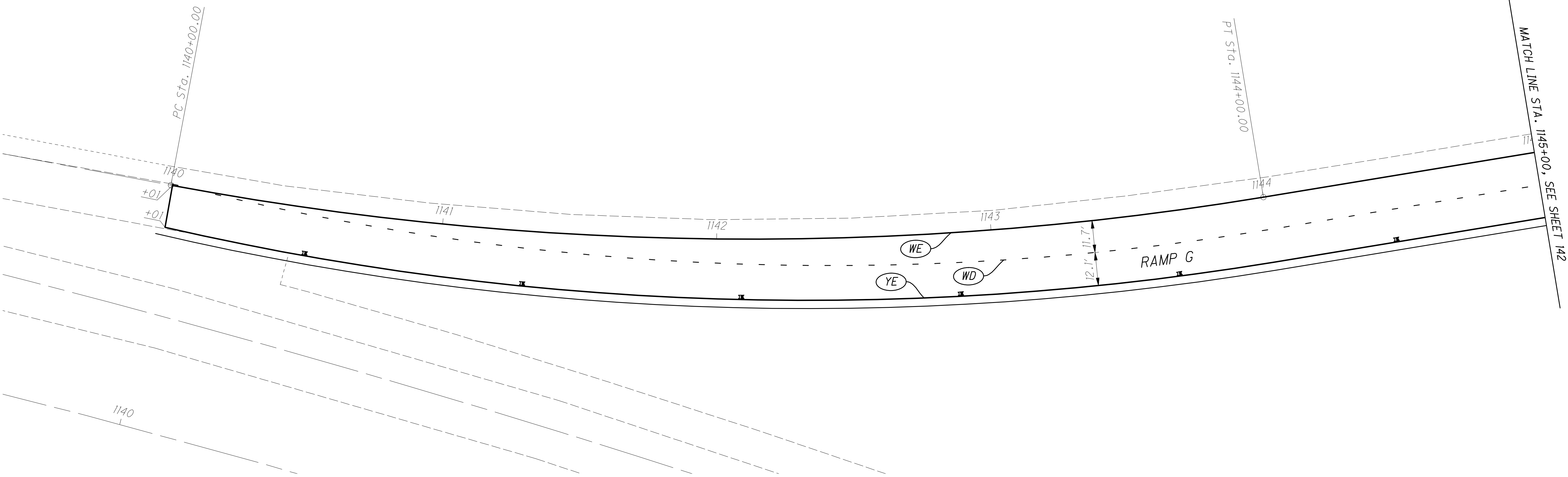
- NOTE:
- MARKINGS ON RAMP, UP TO AND INCLUDING STOP LINE, TO FOLLOW ODOT STANDARDS.
  - WRONG WAY SIGN ATTACHED TO FLANGE OF BEAM SUPPORT, BELOW MAJOR SIGN.
  - SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
  - SEE SHEET 139 FOR RPM LEGEND AND DETAILS.

CALCULATED 0  
WCS 10  
CHECKED 40  
DLS

10  
20  
40  
HORIZONTAL SCALE IN FEET

RAMP K TRAFFIC CONTROL PLAN  
STA. 1143+00 TO STA. 1147+00

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LEGEND

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- [ ] PROPOSED SIGN
- [ ] EXISTING SIGN
- [X] EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
 (TBR) - TO BE REMOVED

NOTE:  
 - MARKINGS ON RAMP, UP TO CROSSWALK, TO FOLLOW ODOT STANDARDS.  
 - SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.  
 - SEE SHEET 139 FOR RPM LEGEND AND DETAILS.

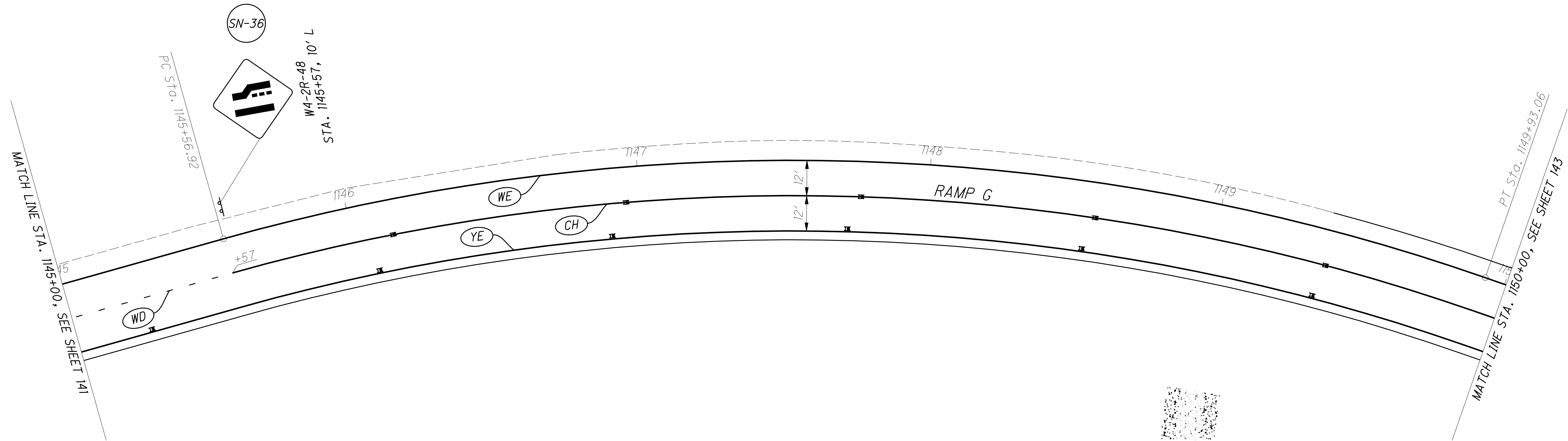
CALCULATED WCS  
 CHECKED DLS

0 10 20 40  
 HORIZONTAL SCALE IN FEET

**RAMP G TRAFFIC CONTROL PLAN**  
**STA. 1140+00 TO STA. 1145+00**

**FRA-62-30.34**

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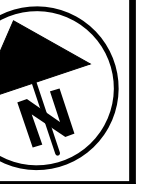


**LEGEND**

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- ⊗ EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

**NOTE:**  
 - MARKINGS ON RAMP, UP TO CROSSWALK, TO FOLLOW ODOT STANDARDS.  
 - SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.  
 - SEE SHEET 139 FOR RPM LEGEND AND DETAILS.



CALCULATED WCS  
 CHECKED DLS

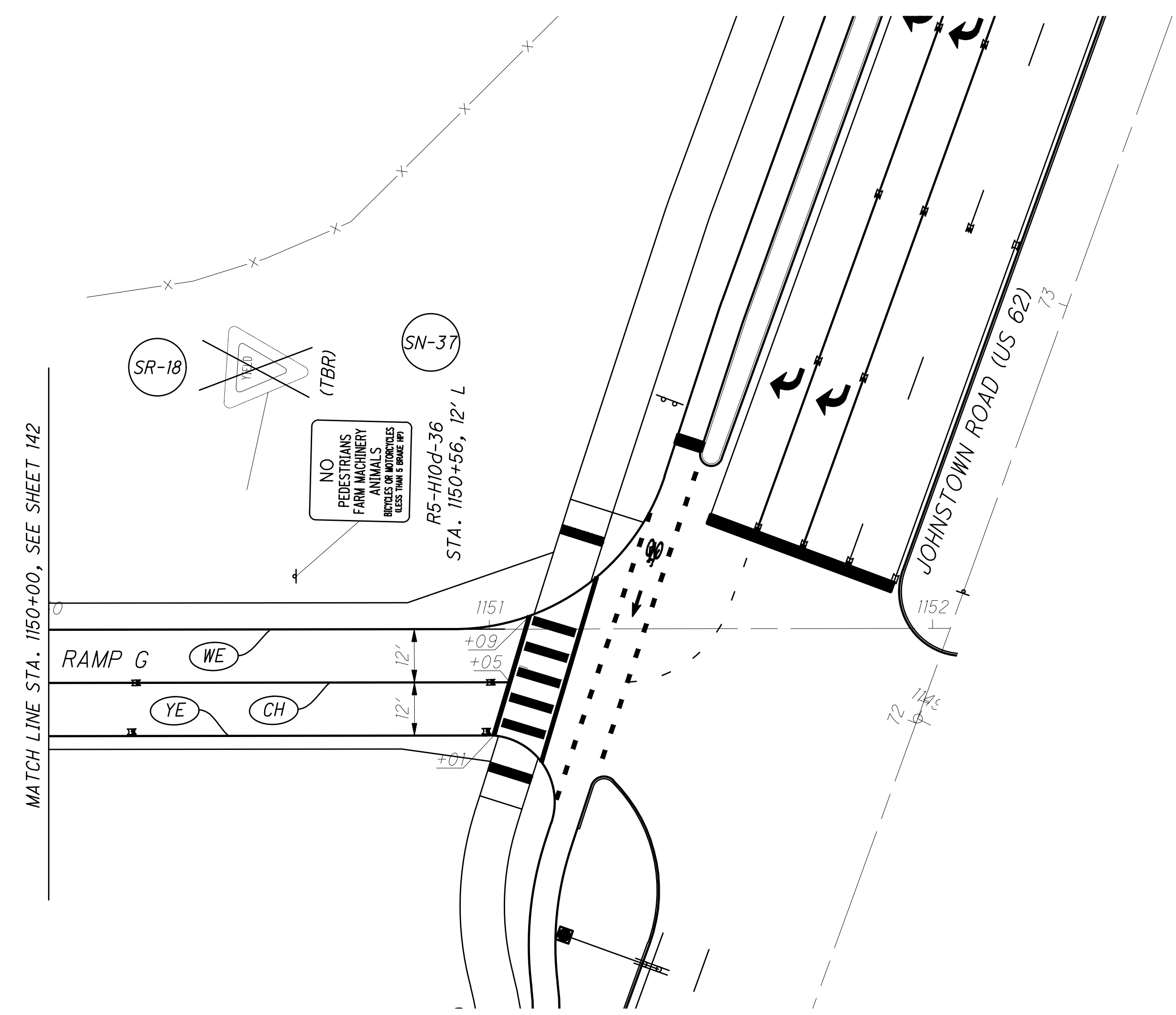
**RAMP G TRAFFIC CONTROL PLAN  
 STA. 1145+00 TO STA. 1150+00**

**FRA-62-30.34**

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- LEGEND**
- (DY) PROPOSED PAVEMENT MARKINGS
  - (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
  - [ ] PROPOSED SIGN
  - [ ] EXISTING SIGN
  - [X] EXISTING SIGN TO BE REMOVED
  - (M-XX) MAJOR (EXTRUSHEET) SIGN
  - (SR-XX) SIGN REMOVAL
  - (SN-XX) SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
 (TBR) - TO BE REMOVED



**NOTE:**

- MARKINGS ON RAMP, UP TO CROSSWALK, TO FOLLOW ODOT STANDARDS.
- SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 139 FOR RPM LEGEND AND DETAILS.

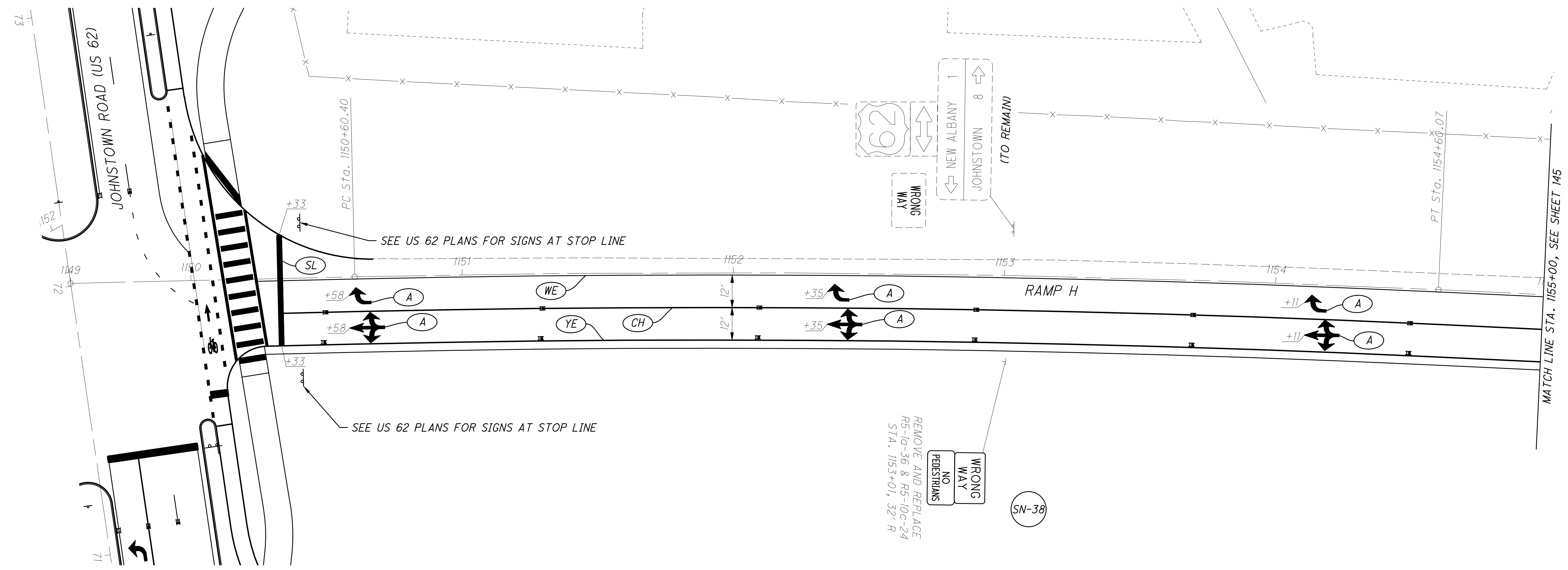
CALCULATED WCS  
 CHECKED DLS

0 10 20 40  
 HORIZONTAL SCALE IN FEET

**RAMP G TRAFFIC CONTROL PLAN**  
**STA. 1150+00 TO STA. 1152+00**

**FRA-62-30.34**

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CALCULATED MGS CHECKED M.L.S.

0 10 20 40  
HORIZONTAL SCALE IN FEET

**RAMP H TRAFFIC CONTROL PLAN**  
**STA. 1149+00 TO STA. 1155+00**

**FRA-62-30.34**

144  
202

**LEGEND**

- (DY) PROPOSED PAVEMENT MARKINGS
- (DY) EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- ⊗ EXISTING SIGN TO BE REMOVED
- (M-XX) MAJOR (EXTRUSHEET) SIGN
- (SR-XX) SIGN REMOVAL
- (SN-XX) SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

**NOTE:**

- MARKINGS ON RAMP, UP TO AND INCLUDING STOP LINE, TO FOLLOW ODOT STANDARDS.
- SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 139 FOR RPM LEGEND AND DETAILS.

REMOVE AND REPLACE  
R5-1a-36 & R5-10c-24  
STA. 1153+01, 32' R

WRONG WAY  
NO PEDESTRIANS

(SN-38)

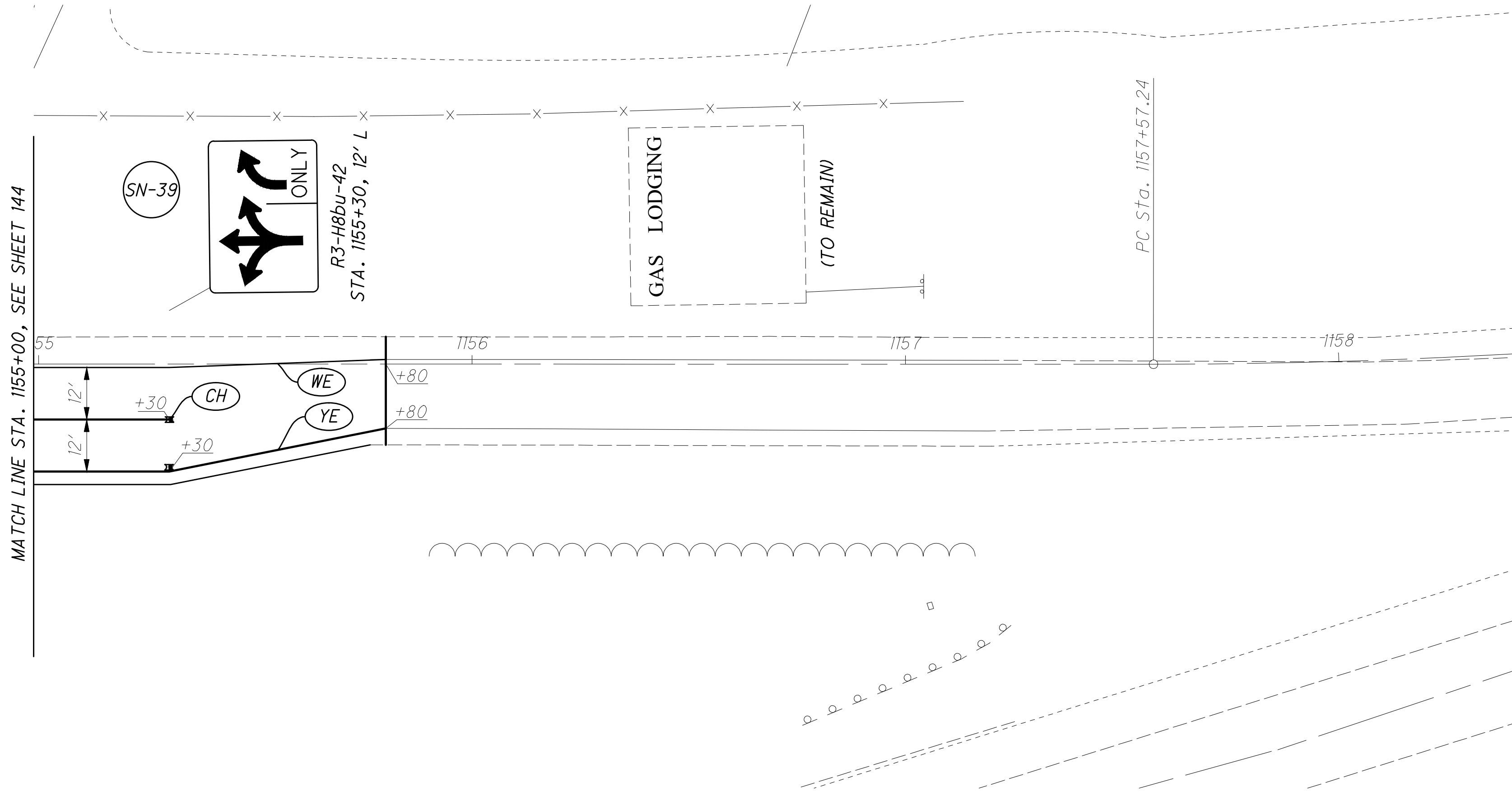
SEE US 62 PLANS FOR SIGNS AT STOP LINE

SEE US 62 PLANS FOR SIGNS AT STOP LINE




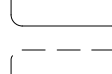


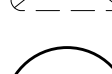
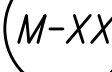
MATCH LINE STA. 1155+00, SEE SHEET 145



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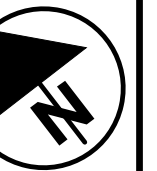


LEGEND

-  PROPOSED PAVEMENT MARKINGS
-  EXISTING PAVEMENT MARKINGS TO REMAIN
-  PROPOSED SIGN
-  EXISTING SIGN
-  EXISTING SIGN TO BE REMOVED
-  MAJOR (EXTRUSHEET) SIGN
-  SIGN REMOVAL
-  SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
 (TBR) - TO BE REMOVED

- NOTE:**
- MARKINGS ON RAMP, UP TO AND INCLUDING STOP LINE, TO FOLLOW ODOT STANDARDS.
  - SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
  - SEE SHEET 139 FOR RPM LEGEND AND DETAILS.



CALCULATED M/GS  
 CHECKED M/L/S

**RAMP H TRAFFIC CONTROL PLAN  
 STA. 1155+00 TO STA. 1158+00**

**FRA-62-30.34**

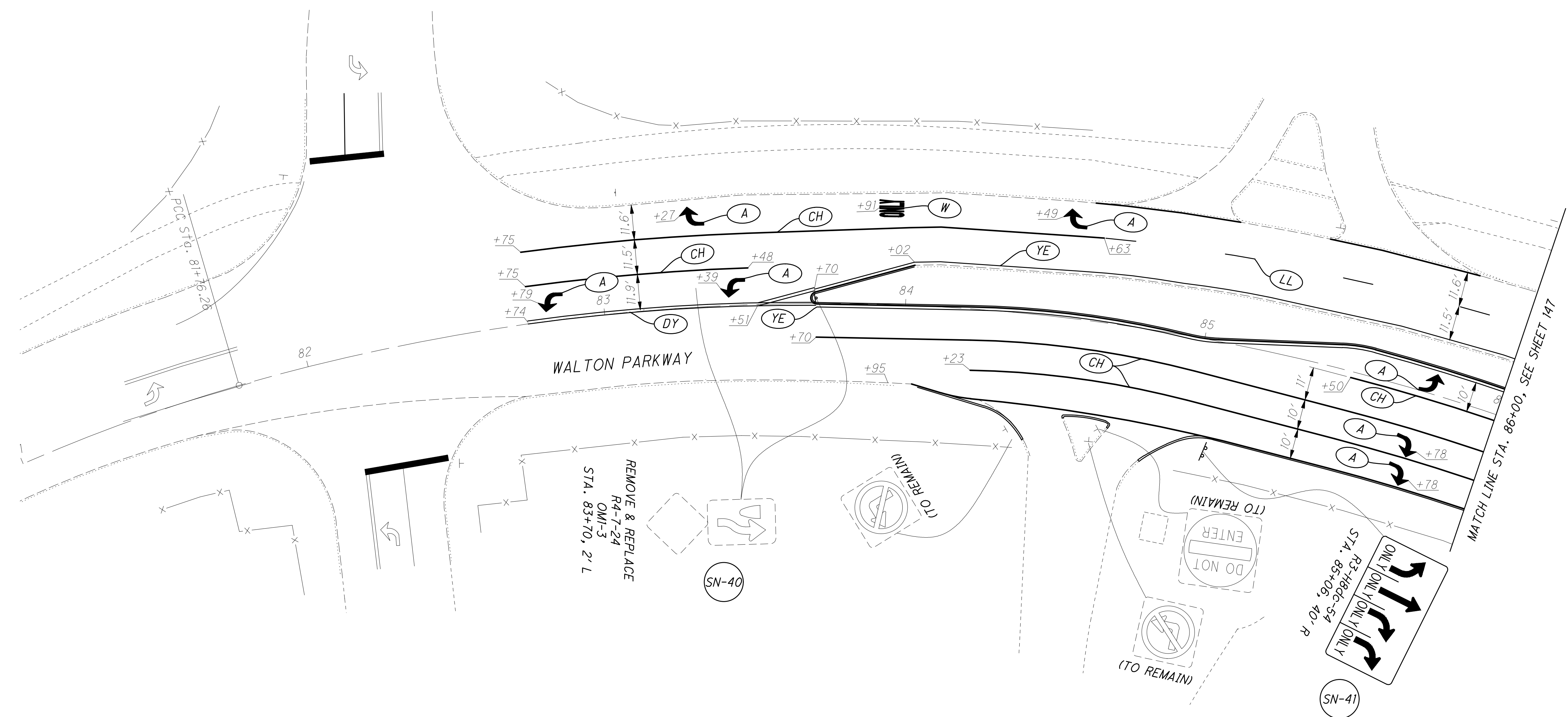
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CALCULATED MGS  
CHECKED M.L.S.

HORIZONTAL SCALE IN FEET

**WALTON PARKWAY TRAFFIC CONTROL PLAN**  
**STA. 81+00 TO STA. 86+00**

**FRA-62-30.34**



**LEGEND**

- PROPOSED PAVEMENT MARKINGS
- EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- EXISTING SIGN TO BE REMOVED
- MAJOR (EXTRUSHEET) SIGN
- SIGN REMOVAL
- SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

**NOTE:**

- ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.
- SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 139 FOR RPM LEGEND AND DETAILS.

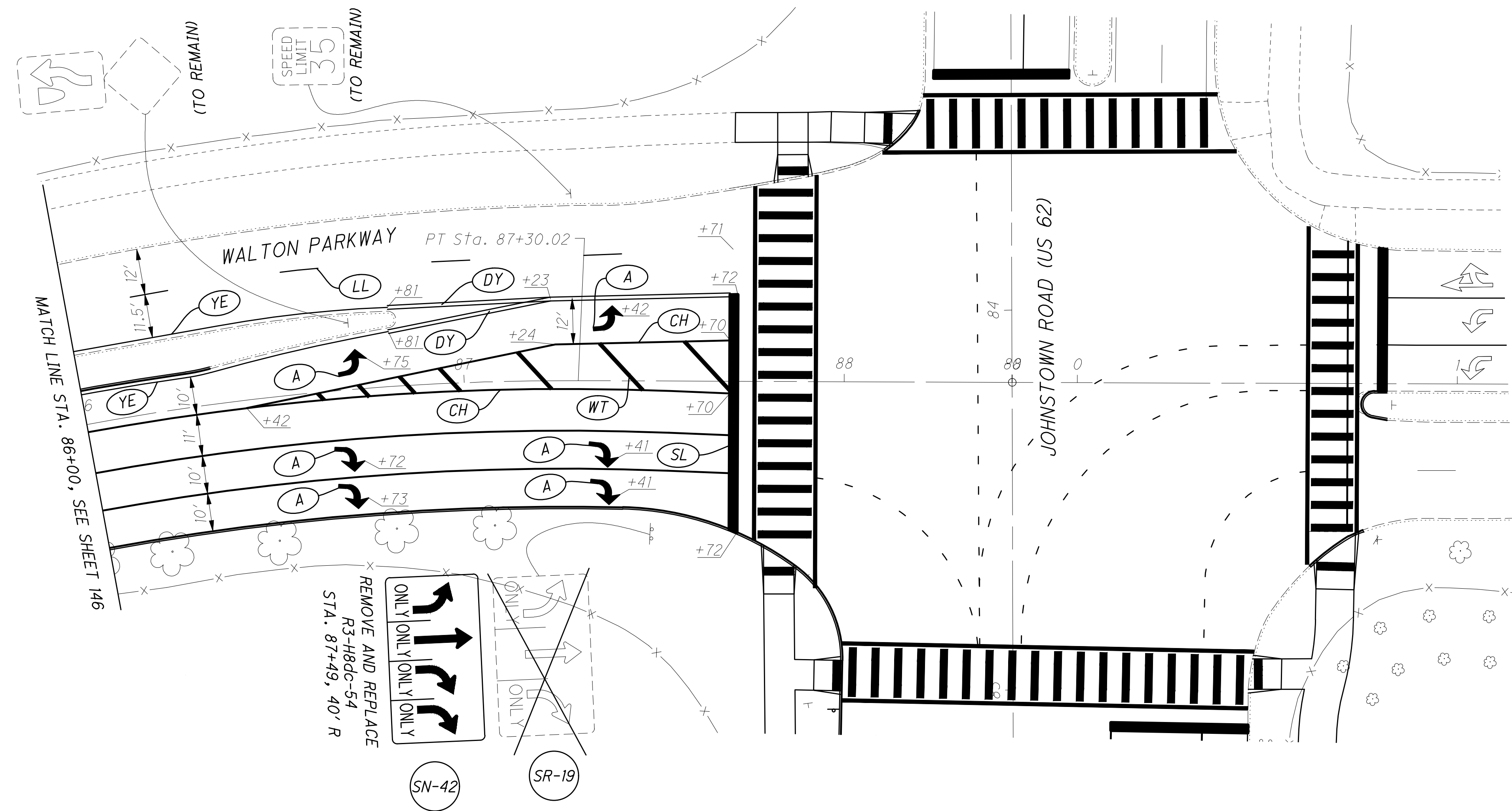
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CALCULATED MGS CHECKED M.L.S.

0 10 20 40  
HORIZONTAL SCALE IN FEET

**WALTON PARKWAY TRAFFIC CONTROL PLAN**  
STA. 86+00 TO STA. 89+00

**FRA-62-30.34**



**LEGEND**

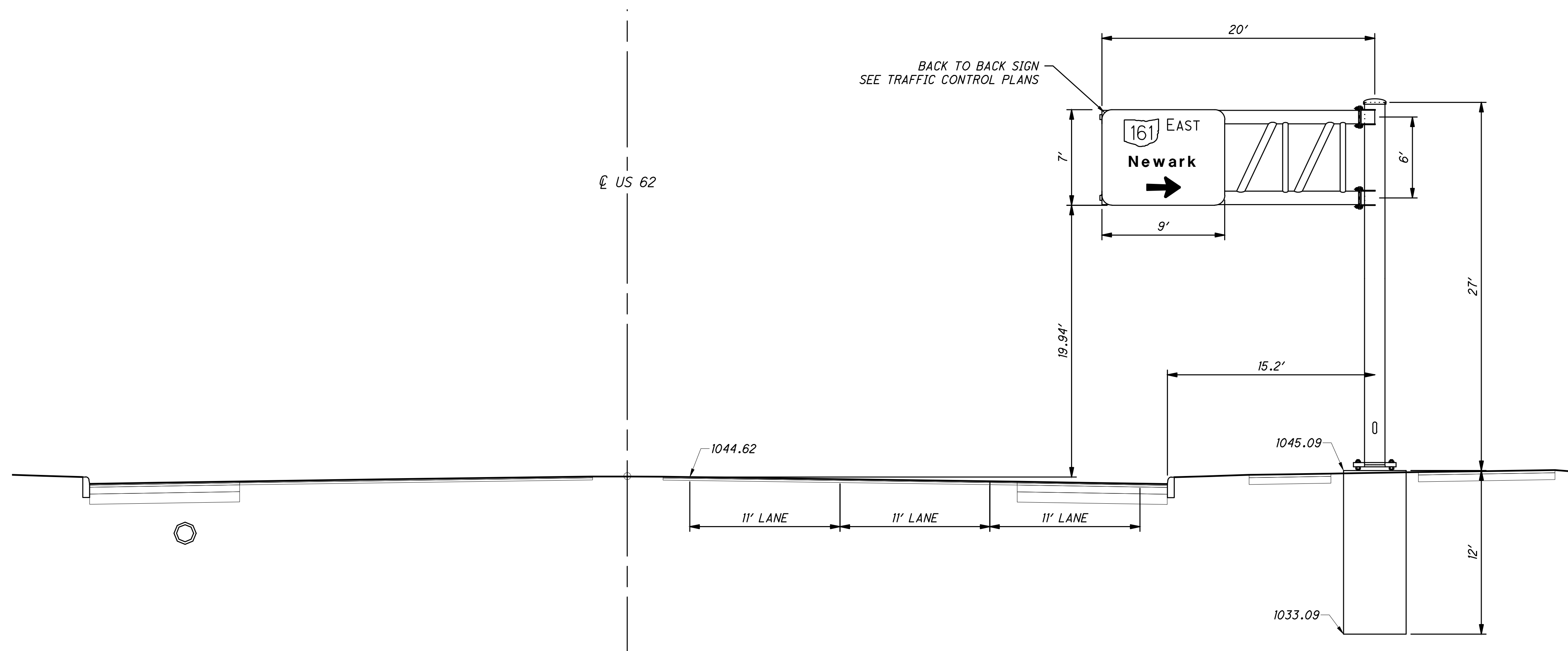
- PROPOSED PAVEMENT MARKINGS
- EXISTING PAVEMENT MARKINGS TO REMAIN
- PROPOSED SIGN
- EXISTING SIGN
- EXISTING SIGN TO BE REMOVED
- MAJOR (EXTRUSHEET) SIGN
- SIGN REMOVAL
- SIGN, FLAT SHEET

(DND) - DO NOT DISTURB  
(TBR) - TO BE REMOVED

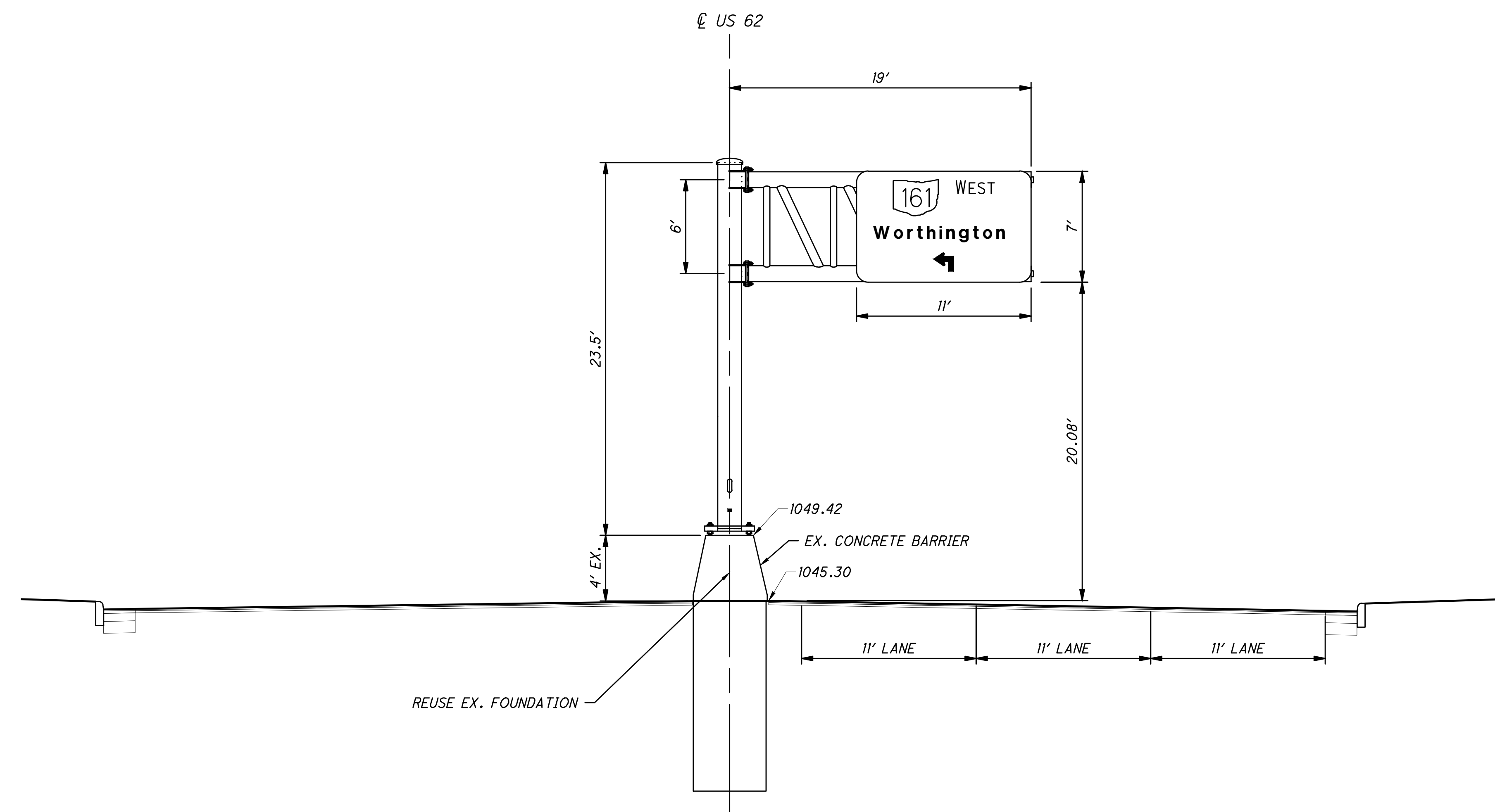
**NOTE:**

- ALL GROUND MOUNTED SIGN SUPPORTS SHALL BE WOOD POST, AS PER PLAN UNLESS OTHERWISE NOTED.
- SEE SHEET 139 FOR LINE WIDTH SPECIFICATIONS FOR US 62 AND RAMPS.
- SEE SHEET 139 FOR RPM LEGEND AND DETAILS.

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FRONT ELEVATION VIEW  
 CANTILEVER OVERHEAD SIGN  
 TC-12.31, DESIGN 6, AS PER PLAN  
 US 62 NORTHBOUND  
 STA. 64+64.71  
 M-1



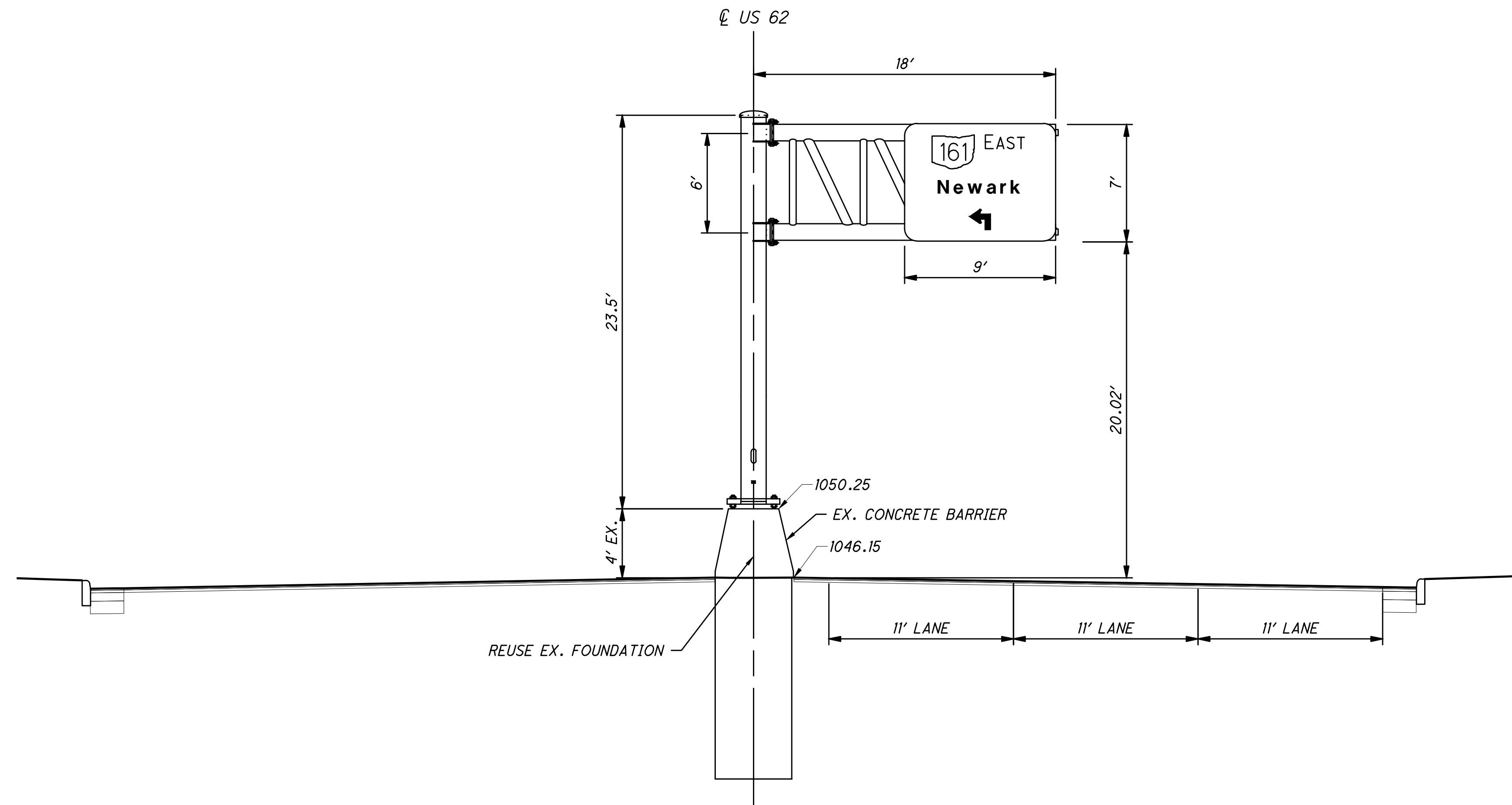
FRONT ELEVATION VIEW  
 CANTILEVER OVERHEAD SIGN  
 TC-12.31, DESIGN 6, AS PER PLAN  
 US 62 NORTHBOUND  
 STA. 67+02.24  
 M-2

CALCULATED  
 WCS  
 CHECKED  
 DLS

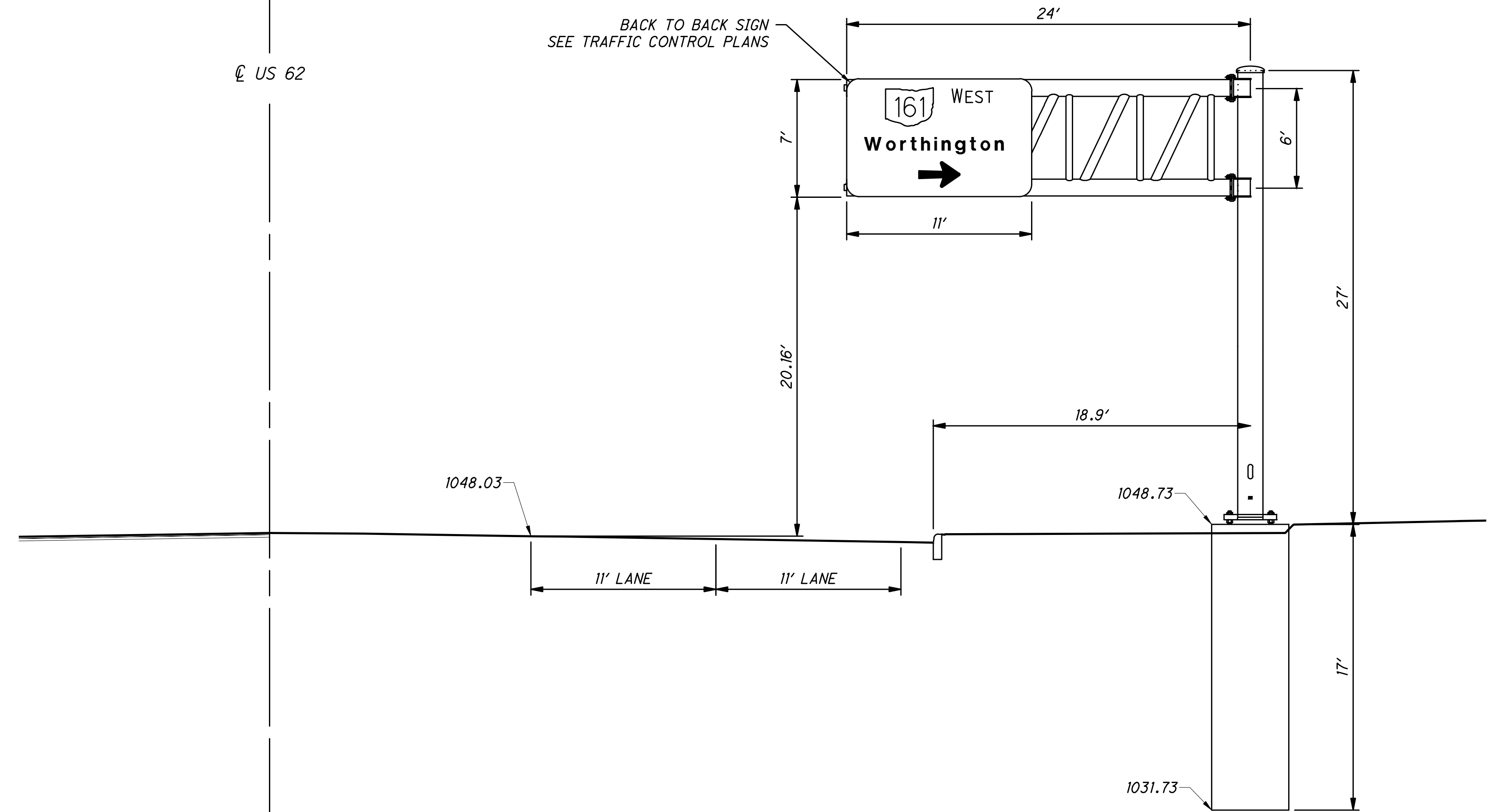
GUIDE SIGN ELEVATION DETAILS

FRA-62-30.34

FRONT ELEVATION VIEW  
 CANTILEVER OVERHEAD SIGN  
 TC-12.31, DESIGN 6, AS PER PLAN  
 US 62 SOUTHBOUND  
 STA. 68+61.50  
 M-3



FRONT ELEVATION VIEW  
 CANTILEVER OVERHEAD SIGN  
 TC-12.31, DESIGN 10, AS PER PLAN  
 US 62 SOUTHBOUND  
 STA. 71+28.01  
 M-4



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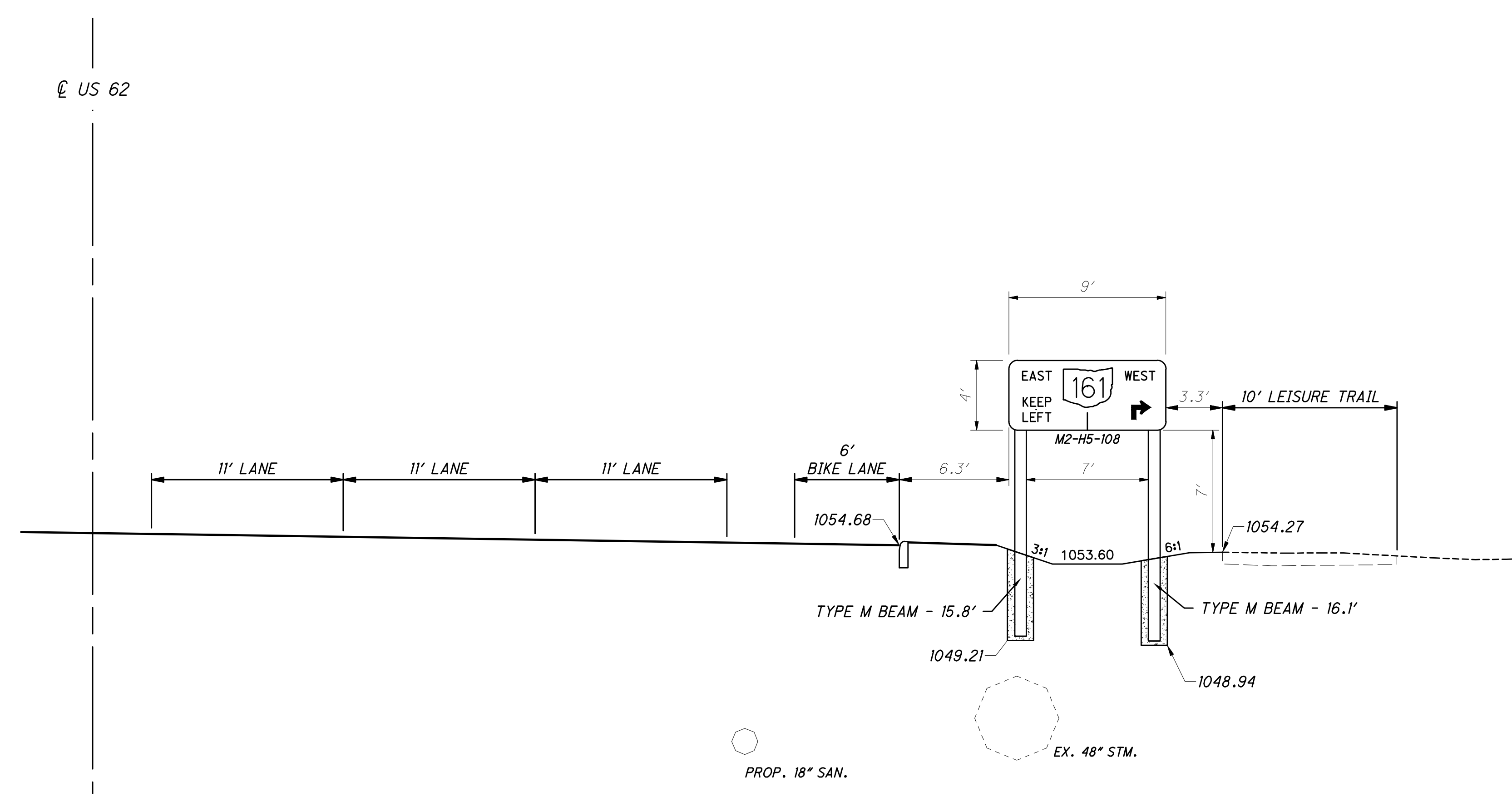
CALCULATED  
 WCS  
 CHECKED  
 DLS

GUIDE SIGN ELEVATION DETAILS

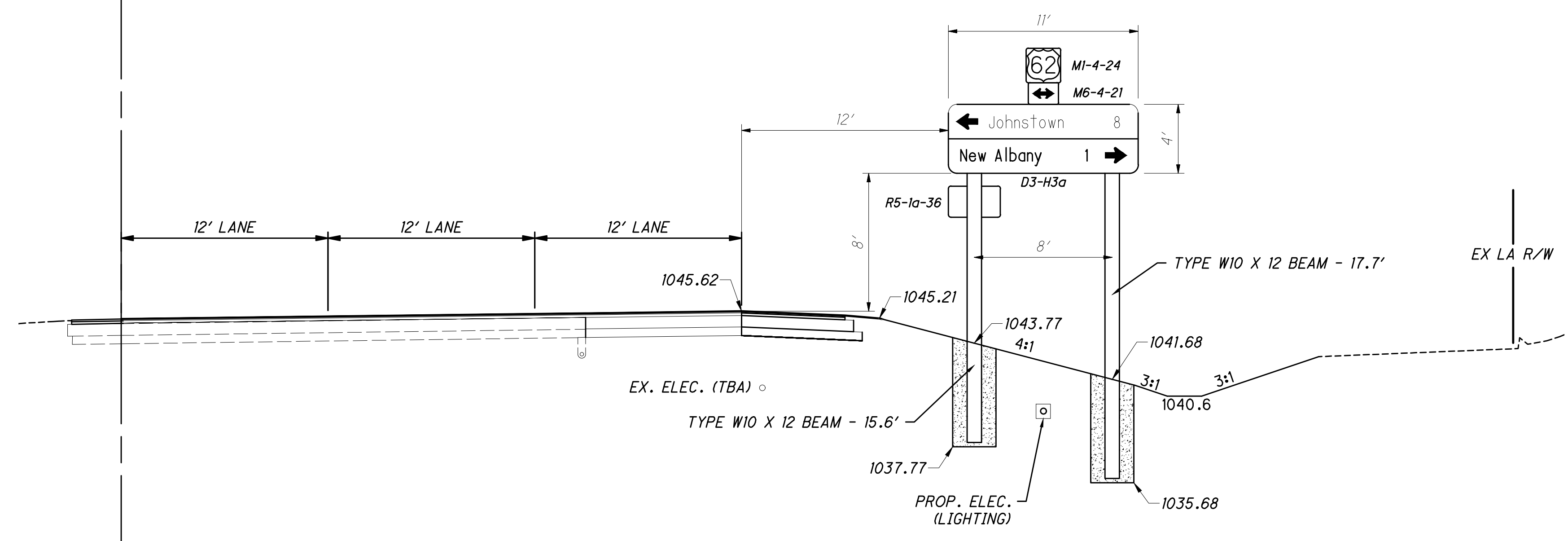
FRA-62-30.34

149  
 202

FRONT ELEVATION VIEW  
GROUND MOUNTED GUIDE SIGN  
US 62 SOUTHBOUND  
STA. 80+65.81  
M-5



FRONT ELEVATION VIEW  
GROUND MOUNTED GUIDE SIGN  
RAMP K (SR 161 EB OFF RAMP)  
STA. 1144+75.23  
M-6



NOTE:  
IN ADDITION TO SCD 41.25, TYPE M WOOD BEAMS TO BE PAINTED NEW ALBANY GREEN (PAINT REF NO. PMS 5535). SEE TRAFFIC CONTROL NOTES FOR DETAILS.

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SHEET NUM.						PART.		ALT (X)	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
150	153	156	164-166	01/SAF/P V	02/SAF/ PV									
													TRAFFIC SIGNALS	
507	570	703			1,780		625	23001	1,780		FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	114	
	16	30			46		625	25307	46		FT	CONDUIT, 1-1/2", 725.052, AS PER PLAN	114	
27	21	119			167		625	25400	167		FT	CONDUIT, 2", 725.04		
88	140	164			392		625	25411	392		FT	CONDUIT, 2", 725.052, AS PER PLAN	114	
44	162	265			471		625	25507	471		FT	CONDUIT, 3", 725.052, AS PER PLAN	114	
740	644	738			2,122		625	25909	2,122		FT	CONDUIT, JACKED OR DRILLED, 725.052, AS PER PLAN, 3", SCH 80	114	
98	90	195			383		625	29000	383		FT	TRENCH		
29	103	142			274		625	29001	274		FT	TRENCH, AS PER PLAN	114	
		1			1		625	31507	1		EACH	PULL BOX REMOVED AND REPLACED, AS PER PLAN	114	
1	1				2		625	31600	2		EACH	PULL BOX, MISC.:725.06, 11"x18"	114	
2	2				4		625	31600	4		EACH	PULL BOX, MISC.:725.08, 27" CONCRETE ROUND	114	
1	1	2			4		625	31600	4		EACH	PULL BOX, MISC.:725.08, 32" CONCRETE ROUND	114	
1	1	1			3		625	31600	3		EACH	PULL BOX, MISC.:725.08, 48" CONCRETE ROUND	114	
7	9	10			26		625	32001	26		EACH	GROUND ROD, AS PER PLAN	114	
2	6	12			20		630	79101	20		EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	115	
1	2				3		630	79501	3		EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN	115	
4	28	13			45		630	80101	45		SF	SIGN, FLAT SHEET, AS PER PLAN	115	
1	1	6			8		630	80511	8		EACH	SIGN, STREET NAME, AS PER PLAN	115	
1	1	5			7		630	87451	7		EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DELIVERY, AS PER PLAN	115	
1	2				3		632	04000	3		EACH	VEHICULAR SIGNAL HEAD, MISC.: BIKE SIGNAL, 3-SECTION, 12" LENS, 1-WAY	116	
5	9	6			20		632	05007	20		EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	116	
		1			1		632	05007	1		EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, RIGID MOUNT	116	
1		5			6		632	05087	6		EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	116	
		1			1		632	05087	1		EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, RIGID MOUNT	116	
4	4	8			16		632	20731	16		EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	116	
8	11	13			32		632	25001	32		EACH	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN	116	
4	4	8			16		632	25011	16		EACH	COVERING OF PEDESTRIAN SIGNAL HEAD, AS PER PLAN	116	
	3	8			11		632	26001	11		EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	116	
	373	1,631			2,004		632	40200	2,004		FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG		
1,587	1,720	1,437			4,744		632	40700	4,744		FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		
		988			988		632	40900	988		FT	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG		
2	2	3			7		632	64011	7		EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	116	
3	5	5			13		632	64021	13		EACH	PEDESTAL FOUNDATION, AS PER PLAN	116	
100	80	180			360		632	68300	360		FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG		
1	1	1			3		632	70001	3		EACH	POWER SERVICE, AS PER PLAN	116	
1	1	1			3		632	70601	3		EACH	CONDUIT RISER, 3" DIAMETER, AS PER PLAN	116	
1					1		632	71361	1		EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 2, AS PER PLAN, 56' ARM AND 20' ARM	116	
	1				1		632	71369	1		EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12, AS PER PLAN, 56' ARM AND 45' ARM	116	
1					1		632	72141	1		EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13, AS PER PLAN, 56' ARM	116	
		1			1		632	72141	1		EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13, AS PER PLAN, 58' ARM	116	
		1			1		632	72141	1		EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13, AS PER PLAN, 60' ARM	116	
		1			1		632	72151	1		EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 14, AS PER PLAN, 45' ARM	116	
		1			1		632	72151	1		EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 14, AS PER PLAN, 70' ARM	116	
2	2	4			8		632	90010	8		EACH	PEDESTAL, MISC.: 11", AS PER PLAN	116	
1	2				3		632	90010	3		EACH	PEDESTAL, MISC.: 14.5", AS PER PLAN	116	
	1	1			2		632	90010	2		EACH	PEDESTAL, MISC.: 5", AS PER PLAN	116	
		1			1		632	90020	1		EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: REMOVAL AND STORAGE OF PEDESTRIAN PUSHBUTTON		
		1			1		632	90020	1		EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: REMOVAL AND STORAGE OF PEDESTRIAN SIGNAL HEAD		
		4			4		632	90020	4		EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: REMOVAL AND STORAGE OF VEHICULAR SIGNAL HEAD		
1	1	1			3		632	90101	3		EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	117	
		1			1		632	90400	1		EACH	SIGNALIZATION, MISC.:MAST ARM BASE COVER	117	

TRAFFIC SIGNAL SUBSUMMARY

FRA-62-30.34

CALCULATED  
MGS  
CHECKED  
BDS

151  
202

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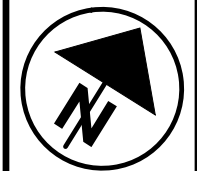
SHEET NUM.										PART.		ALT (X)	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
150	153	156	164-166	01/SAF/P V	02/SAF/ PV													
<i>TRAFFIC SIGNALS, CONTINUED</i>																		
		1			1	632	90400	1	EACH	SIGNALIZATION, MISC.:REPAINT MAST ARM SUPPORT AND MAST ARM	117							
1	1	1			3	633	67101	3	EACH	CABINET FOUNDATION, AS PER PLAN	117							
1	1	1			3	633	67201	3	EACH	CONTROLLER WORK PAD, AS PER PLAN	117							
			1		1	633	99000	1	EACH	CONTROLLER ITEM, MISC.:CENTRAL SYSTEM SOFTWARE	119							
1	1	1			3	633	99000	3	EACH	CONTROLLER ITEM, MISC.:CONTROLLER UNIT, TS2/A2 WITH CABINET 8 PH, P44 UPS	118							
					6	633	99000	6	EACH	CONTROLLER ITEM, MISC.:ETHERNET TRANSCEIVER, SHORT RANGE	121							
					6	633	99000	6	EACH	CONTROLLER ITEM, MISC.:LAYER 2 ETHERNET SWITCH	120							
					757	804	15011	757	FT	FIBER OPTIC CABLE, 24 FIBER, AS PER PLAN	120							
					4	804	34023	4	EACH	FIBER TERMINATION PANEL, 24 FIBER, AS PER PLAN	121							
					234	804	35001	234	EACH	FUSION SPLICE, AS PER PLAN	120							
					3,153	804	98000	3,153	FT	FIBER OPTIC CABLE, MISC.:FIBER OPTIC CABLE, 144 FIBER	120							
					270	804	98100	270	EACH	FIBER OPTIC CABLE, MISC.:REUSE FIBER OPTIC CABLE, 24 FIBER	120							
					3	804	98100	3	EACH	FIBER OPTIC CABLE, MISC.:SPLICE ENCLOSURE, CLAMSHELL, 288 SPLICE	120							
2	2	2			6	809	69001	6	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	119							
3	3	4			10	809	69101	10	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	119							
<i>TRAFFIC SIGNALS ALTERNATES</i>																		
		1			1	X	632	90400	1	EACH	SIGNALIZATION, MISC.:MONITOR CAMERA CONTROL UNIT WITH 1 CAMERA (ALTERNATE 1)	122						
1			1		2	X	632	90400	2	EACH	SIGNALIZATION, MISC.:MONITOR CAMERA CONTROL UNIT WITH 2 CAMERAS (ALTERNATE 1)	122						
1	1	1			3	X	633	75001	3	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN (ALTERNATE 1)	122						
		1			1	X	632	90400	1	EACH	SIGNALIZATION, MISC.:MONITOR CAMERA CONTROL UNIT WITH 1 CAMERA (ALTERNATE 2)	123						
1			1		2	X	632	90400	2	EACH	SIGNALIZATION, MISC.:MONITOR CAMERA CONTROL UNIT WITH 2 CAMERAS (ALTERNATE 2)	123						
1	1	1			3	X	633	75001	3	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN (ALTERNATE 2)	123						

TRAFFIC SIGNAL SUBSUMMARY

FRA-62-30.34

CALCULATED	MGS	CHECKED	BDS
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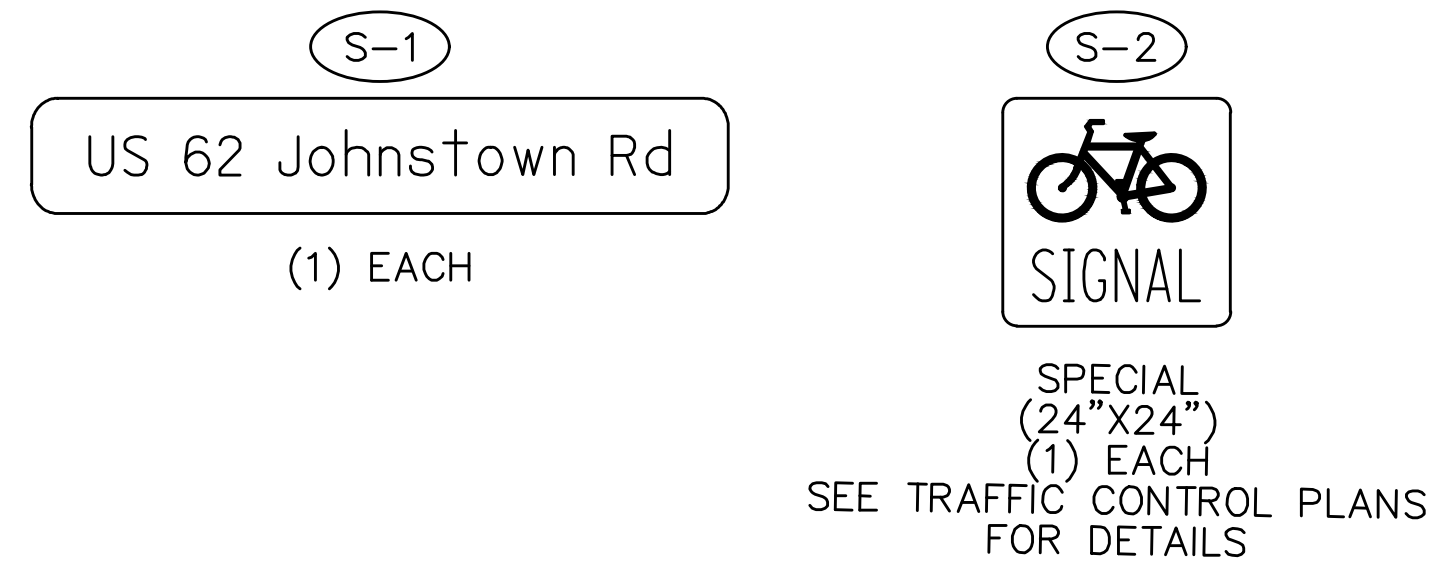
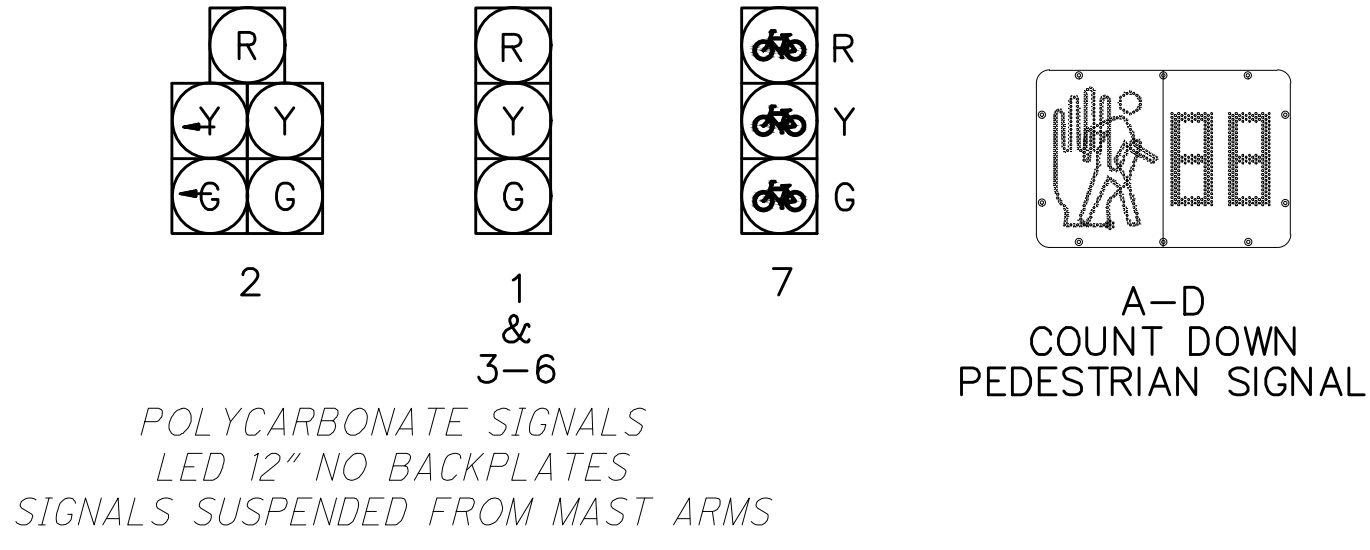
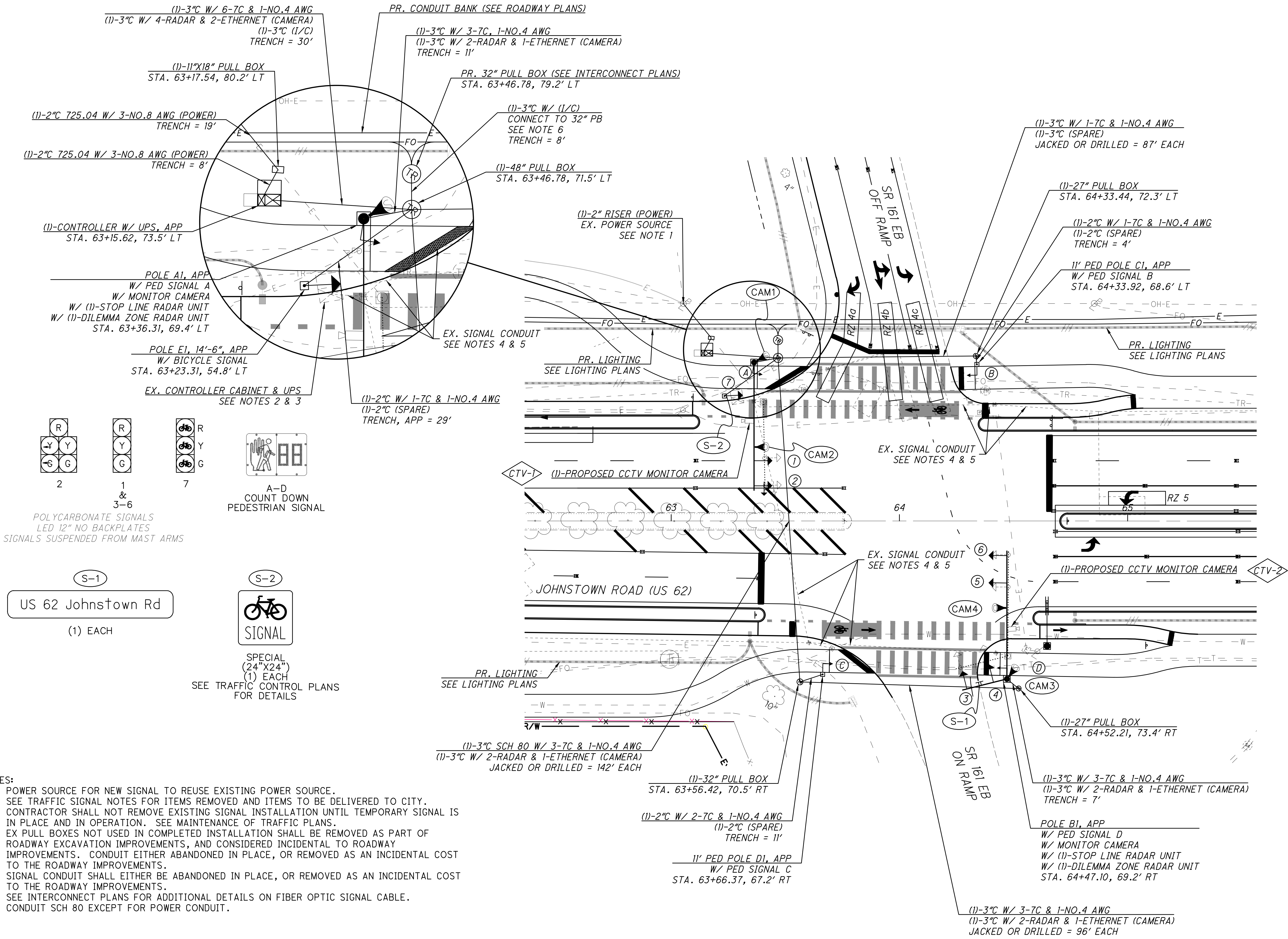
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HORIZONTAL  
SCALE IN FEET

CALCULATED W/C/S  
CHECKED DLS

TRAFFIC SIGNAL PLAN  
SR 161 EB RAMPS AT JOHNSTOWN ROAD (US 62)

FRA-62-30.34

153  
202



- NOTES:
1. POWER SOURCE FOR NEW SIGNAL TO REUSE EXISTING POWER SOURCE.
  2. SEE TRAFFIC SIGNAL NOTES FOR ITEMS REMOVED AND ITEMS TO BE DELIVERED TO CITY.
  3. CONTRACTOR SHALL NOT REMOVE EXISTING SIGNAL INSTALLATION UNTIL TEMPORARY SIGNAL IS IN PLACE AND IN OPERATION. SEE MAINTENANCE OF TRAFFIC PLANS.
  4. EX PULL BOXES NOT USED IN COMPLETED INSTALLATION SHALL BE REMOVED AS PART OF ROADWAY EXCAVATION IMPROVEMENTS, AND CONSIDERED INCIDENTAL TO ROADWAY IMPROVEMENTS. CONDUIT EITHER ABANDONED IN PLACE, OR REMOVED AS AN INCIDENTAL COST TO THE ROADWAY IMPROVEMENTS.
  5. SIGNAL CONDUIT SHALL EITHER BE ABANDONED IN PLACE, OR REMOVED AS AN INCIDENTAL COST TO THE ROADWAY IMPROVEMENTS.
  6. SEE INTERCONNECT PLANS FOR ADDITIONAL DETAILS ON FIBER OPTIC SIGNAL CABLE.
  7. CONDUIT SCH 80 EXCEPT FOR POWER CONDUIT.

INTERSECTION TIMING								
PHASE	φ1	φ2 SB	φ3	φ4 EB	φ5 SBLT	φ6 NB	φ7	φ8 WB
MIN GREEN	-	27	-	27	6	27	-	10
WALK	-	7	-	-	-	7	-	-
PED CLR	-	20	-	-	-	20	-	-
PASSAGE	-	1	-	1	1	1	-	-
EXTENSION	-	1.8	-	2.1	2.1	1.8	-	-
MAX 1	-	60	-	70	25	60	-	-
MAX 2	-	60	-	70	25	60	-	-
YELLOW	-	4.8	-	3.9	3.9	4.8	-	-
RED CLR	-	1.5	-	2.2	1.9	1.5	-	-
MEMORY	-	ON	-	ON	OFF	ON	-	-
VEH RECALL	-	ON	-	ON	OFF	ON	-	-
PED RECALL	-	ON	-	OFF	OFF	ON	-	-
INITIALIZE	-	G	-	R	R	G	-	-

FIELD WIRING HOOK-UP CHART			
SIGNAL HEAD NO.	INDICATION	FIELD TERMINAL	FLASH
1	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
2	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
	Y	φ5 Y	
3,4	R	φ4 R	R
	Y	φ4 Y	
5,6	G	φ4 G	Y
	R	φ6 R	
7	Y	φ6 Y	R
	G	φ6 G	
	R	φ2 R	
	Y	φ2 Y	
	G	φ2 G	

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	35	-	40	-	60	12	28	-	-
2	100	41	-	50	-	50	15	35	-	-
3	75	27	-	38	-	37	-	38	-	-

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

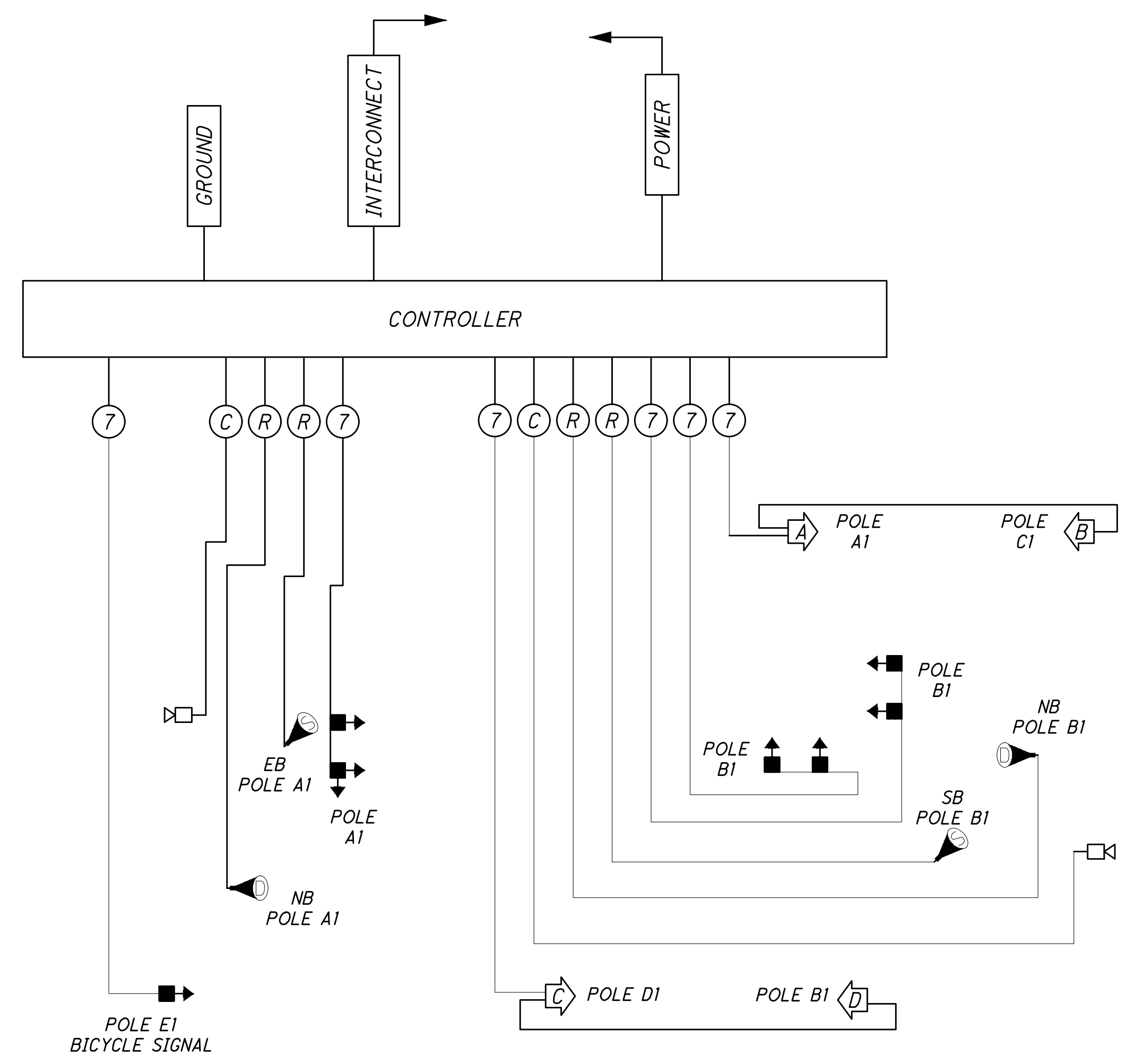
DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	RZ 4a	EB	φ4	6 X 50	+28	STOP-BAR	PRES	3
CAM1	RZ 4b	EB	φ4	6 X 43	+22	STOP-BAR	PRES	3
CAM1	RZ 4c	EB	φ4	6 X 44	+22	STOP-BAR	PRES	3
CAM2	----	SB	φ2	2 LANES X 600'	----	DILEMMA	----	----
CAM3	RZ 5	SB LT	φ5	6 X 25	-26	STOP-BAR	PRES	3
CAM4	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----	----

+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

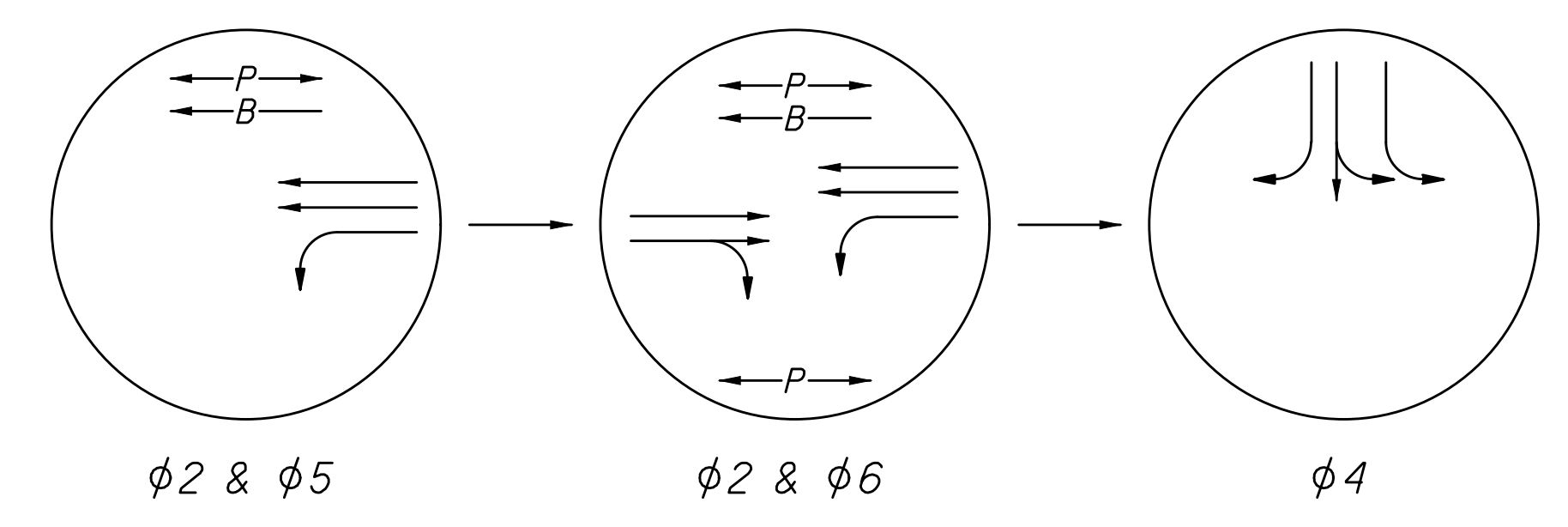
DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

TRAFFIC SIGNAL WIRING DIAGRAM LEGEND

- PEDESTRIAN SIGNAL HEAD
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN PUSHBUTTON
- STOP BAR RADAR DETECTION
- DILEMMA ZONE RADAR DETECTION
- CCTV MONITOR CAMERA



PHASING DIAGRAM



NOTE: BIKE AND PEDESTRIAN SIGNALS ON RECALL DURING PHASE 2.

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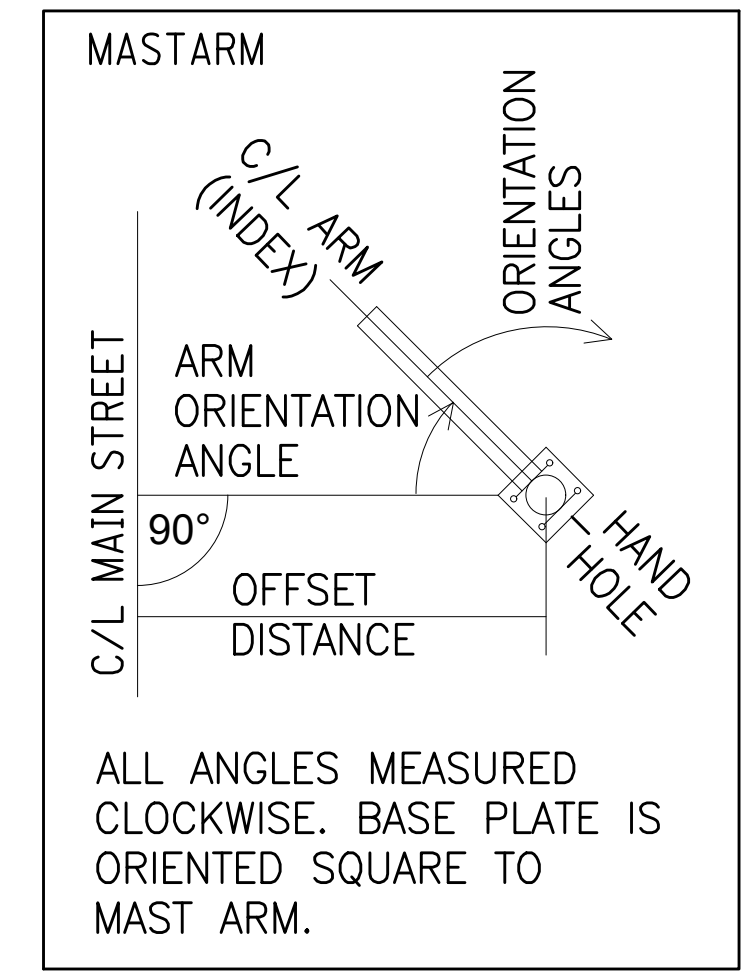
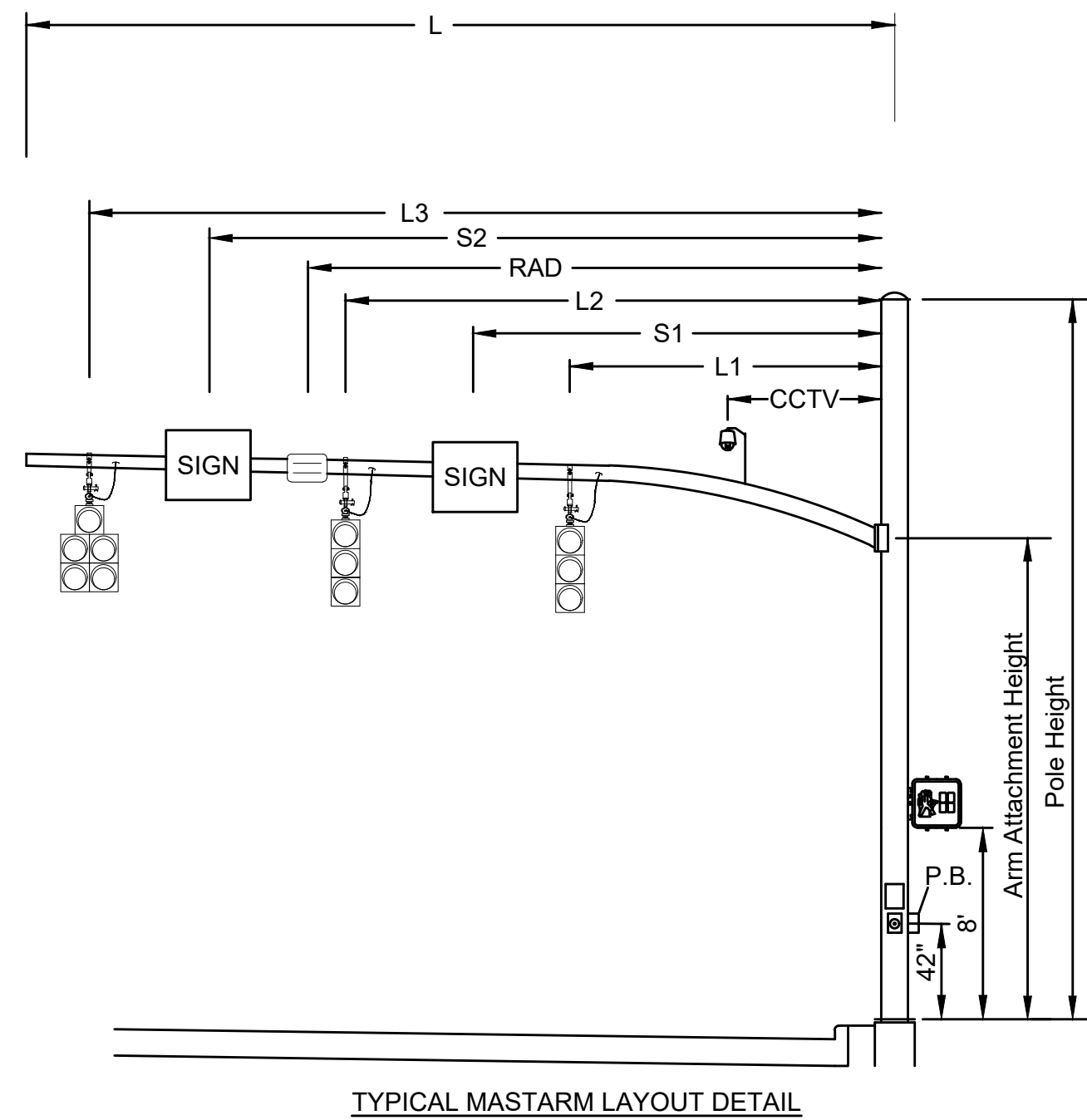
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SUPPORT SCHEDULE & ORIENTATION																						
SUPPORT NUMBER	POLE* DESIGN NO.				FOUNDATION**			SEE MASTARM TYPICAL LAYOUT DETAIL FOR BELOW REFERENCES								INDEX FIELD ANGLE		ANGLES MEASURED FROM MASTARM & PEDESTAL DOOR				
	TC-12.31	TC-81.22	PEDESTAL SIZE (FT)	POLE HEIGHT (FT)	ARM ATTACHMENT HEIGHT (FT)	TOP ELEVATION	STATION	OFFSET	L (FT)	L3 (FT)	L2 (FT)	L1 (FT)	S2 (FT)	S1 (FT)	RAD (FT)	CCTV (FT)	MASTARM ARM ANGLE (DEG)	PEDESTAL DOOR ANGLE (DEG)	HANDHOLE ANGLE (DEG)	PEDESTRIAN SIGNAL (DEG)	PUSHBUTTON (DEG)	BICYCLE SIGNAL (DEG)
A1		13		22.5	16.5	1043.50	63+36.31	69.4' Lt	56	-	54	42	-	-	0,37	30	0	-	180	0	-	-
B1	10			22.5	16.5	1044.03	64+47.10	69.2' Rt	56	-	54	42	-	-	37	30	0	-	180	0	-	-
									***20	-	18	6	-	12	0	-						
C1			11				64+33.92	68.6' Lt									-	180	-	180	-	-
D1			11				63+66.37	67.2' Rt									-	180	-	180	-	-
E1			14.5				63+23.31	54.8' Lt									-	180	-	-	-	90

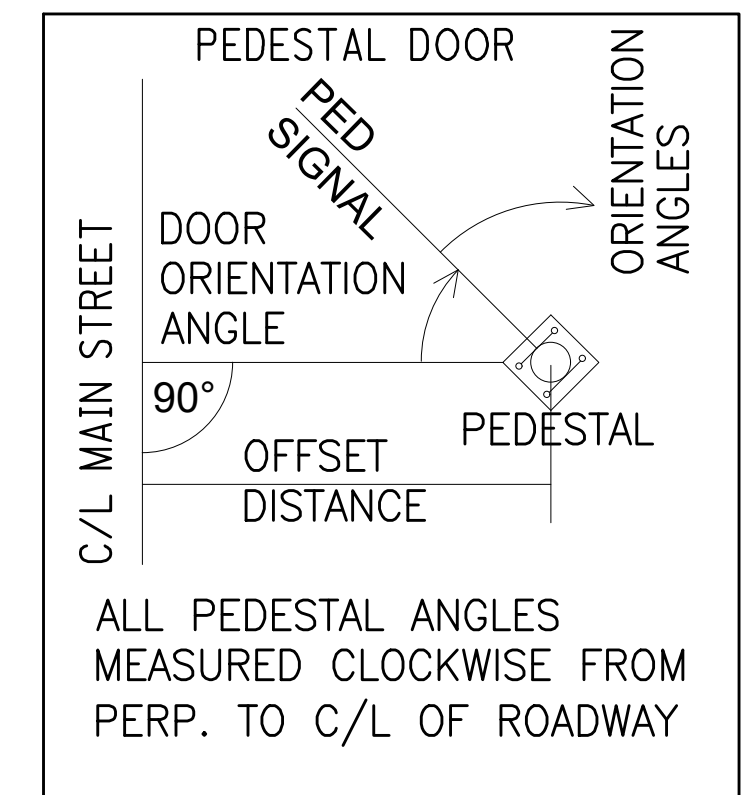
\* AS PER PLAN - SEE SIGNAL GENERAL NOTES AND DETAILS

\*\* FINAL MASTARM & PEDESTAL ELEVATIONS ARE TO BE FIELD APPROVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ANCHOR BOLT DIAMETERS, BOLT CIRCLE, AND PATTERNS SO THAT THE MAST ARMS WILL EXTEND OVER THE ROADWAY AT THE SPECIFIED ORIENTATION AND OVERHEAD ROADWAY CLEARANCE.

\*\*\* ARM "B" 2ND ARM ATTACHMENT. SEE MAST ARM SIGNAL DETAILS



ALL ANGLES MEASURED CLOCKWISE. BASE PLATE IS ORIENTED SQUARE TO MAST ARM.



ALL PEDESTAL ANGLES MEASURED CLOCKWISE FROM PERP. TO C/L OF ROADWAY

NOTE:  
"MAIN STREET" = U.S. 62

CALCULATED  
WCS  
CHECKED  
DLS

EB RAMPS TRAFFIC SIGNAL DETAILS

FRA-62-30.34

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202



INTERSECTION TIMING								
PHASE	φ1 NBLT	φ2 SB	φ3	φ4	φ5	φ6 NB	φ7 NB/PED	φ8 WB
MIN GREEN	6	40	-	-	-	50	0	-
WALK	-	-	-	-	-	7	7	0
PED CLR	-	-	-	-	-	17	11	0
PASSAGE	1	1	-	-	-	1	-	1
EXTENSION	1.8	1.8	-	-	-	1.8	-	2.1
MAX 1	30	70	-	-	-	80	18	40
MAX 2	30	70	-	-	-	80	18	40
YELLOW	3.9	4.8	-	-	-	4.8	4.8	3.9
RED CLR	1.7	1.3	-	-	-	1.3	1.3	2.2
MEMORY	OFF	ON	-	-	-	ON	OFF	OFF
VEH RECALL	OFF	ON	-	-	-	ON	OFF	OFF
PED RECALL	OFF	ON	-	-	-	ON	OFF	OFF
INITIALIZE	R	G	-	-	-	G	R	R

PHASE 7 CLEARANCE ENDS AT END OF YELLOW

NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES  
\* PHASE 7 ACTUATED BY PUSHBUTTON

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7*	8
1	100	97	18	49	-	-	-	67	22	33
2	100	37	15	60	-	-	-	75	22	25
3	75	15	12	47	-	-	-	59	22	16

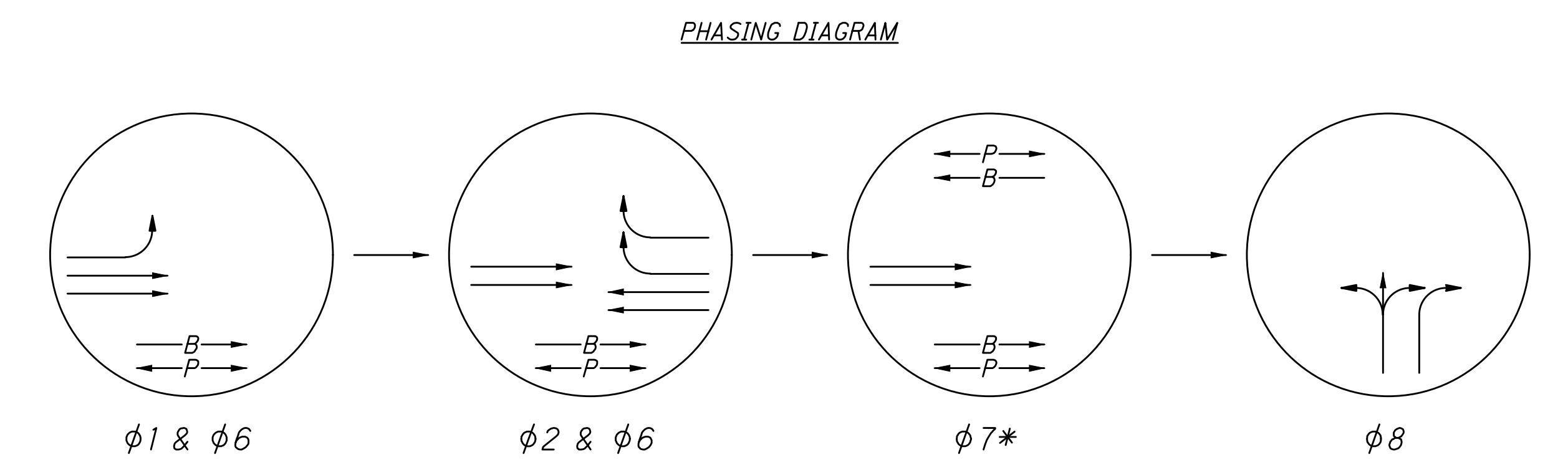
TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	----	SB	φ2	4 LANES X 600'	----	DILEMMA	----	----
CAM2	RZ 1	NB LT	φ1	6 X 25	-26	STOP-BAR	PRES	3
CAM3	RZ 8a	WB LT	φ8	6 X 44	+22	STOP-BAR	PRES	3
CAM3	RZ 8b	WB RT	φ8	6 X 45	+23	STOP-BAR	PRES	3
CAM4	----	NB	φ6	2 LANES X 600'	----	DILEMMA	----	----

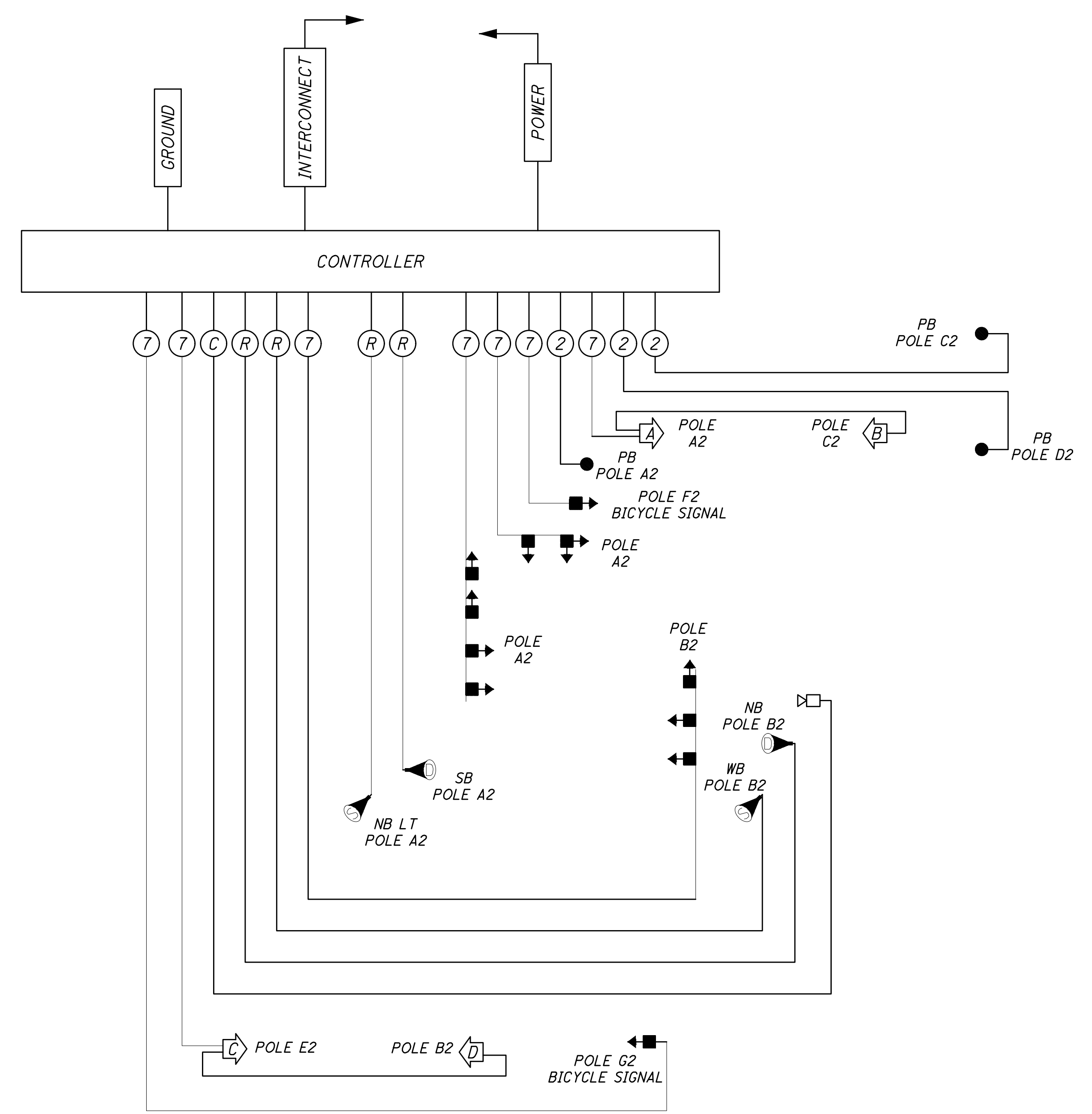
+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

FIELD WIRING HOOK-UP CHART			
SIGNAL HEAD NO.	INDICATION	FIELD TERMINAL	FLASH
1	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
	Y	φ8 Y	
2	R	φ2 R	R
	Y	φ2 Y	
3,4	R	φ2 R	Y
	Y	φ2 Y	
5,6	R	φ2 R	Y
	Y	φ2 Y	
7,8	R	φ6 R	Y
	Y	φ6 Y	
9	R	φ1 R	Y
	Y	φ1 Y	
10	R	φ7 R	Y
	Y	φ7 Y	
11	R	φ6 R	Y
	Y	φ6 Y	



NOTE:  
- BIKE SIGNAL FOR SB US 62 ACTIVATED BY PUSHBUTTON ONLY DURING PHASE 7.  
- BIKE SIGNAL FOR NB US 62 ON RECALL DURING PHASE 6 AND EXTENDED GREEN UPON ACTIVATION OF PHASE 7.



TRAFFIC SIGNAL WIRING DIAGRAM LEGEND

- PEDESTRIAN SIGNAL HEAD
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN PUSHBUTTON
- STOP BAR RADAR DETECTION
- DILEMMA ZONE RADAR DETECTION
- CCTV MONITOR CAMERA

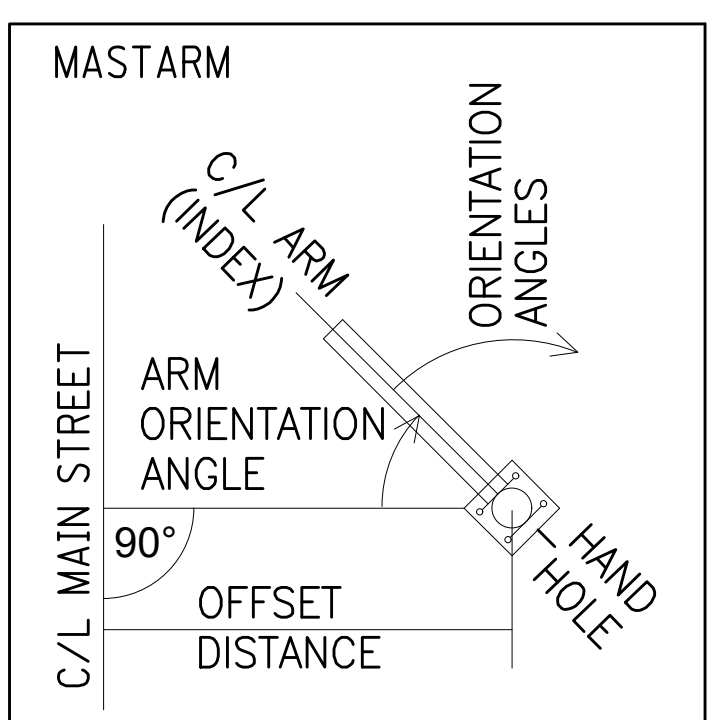
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SUPPORT NUMBER	POLE* DESIGN NO.					FOUNDATION**			SEE MASTARM TYPICAL LAYOUT DETAIL FOR BELOW REFERENCES								INDEX FIELD ANGLE		ANGLES MEASURED FROM MASTARM & PEDESTAL DOOR				
	TC-12.31	TC-81.22	PEDESTAL SIZE (FT)	POLE HEIGHT (FT)	ARM ATTACHMENT HEIGHT (FT)	TOP ELEVATION	STATION	OFFSET	L (FT)	L4 (FT)	L3 (FT)	L2 (FT)	L1 (FT)	S2 (FT)	S1 (FT)	RAD (FT)	CCTV (FT)	MASTARM ARM ANGLE (DEG)	PEDESTAL DOOR ANGLE (DEG)	HANDHOLE ANGLE (DEG)	PEDESTRIAN SIGNAL (DEG)	PUSHBUTTON (DEG)	BICYCLE SIGNAL (DEG)
A2	10			22.5	16	1048.34	71+54.08	75.6' Lt	56	54.5	43.5	32.5	21.5	27	18.5	0,49	-	0	-	180	180	180	-
								***45	-	-	43	34	41	37	-	-							
B2		13		22.5	16.5	1048.54	72+46.57	67.5' Rt	60	-	58.5	45.5	35.5	55.5	24	0,30	24	0	-	180	0	-	-
C2			11				72+18.48	79.5' Lt										-	180	-	0	0	-
D2			5				72+43.71	73.5' Lt										-	180	-	-	180	-
E2			11				71+57.09	68.5' Rt										-	180	-	180	-	-
F2			14.5				71+50.87	62.3' Lt										-	180	-	-	-	90
G2			14.5				72+57.30	54.1' Rt										-	180	-	-	-	90

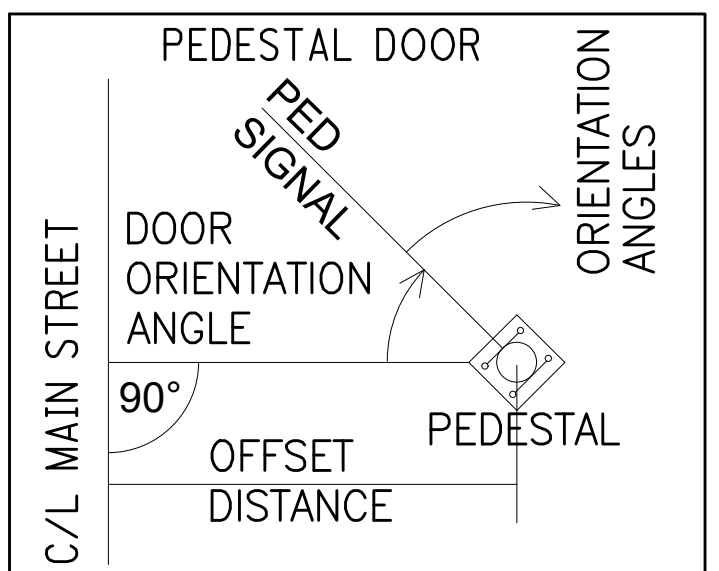
\* AS PER PLAN - SEE SIGNAL GENERAL NOTES AND DETAILS

\*\* FINAL MASTARM & PEDESTAL ELEVATIONS ARE TO BE FIELD APPROVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ANCHOR BOLT DIAMETERS, BOLT CIRCLE, AND PATTERNS SO THAT THE MAST ARMS WILL EXTEND OVER THE ROADWAY AT THE SPECIFIED ORIENTATION AND OVERHEAD ROADWAY CLEARANCE.

\*\*\* ARM "B" 2ND ARM ATTACHMENT. SEE MAST ARM SIGNAL DETAILS

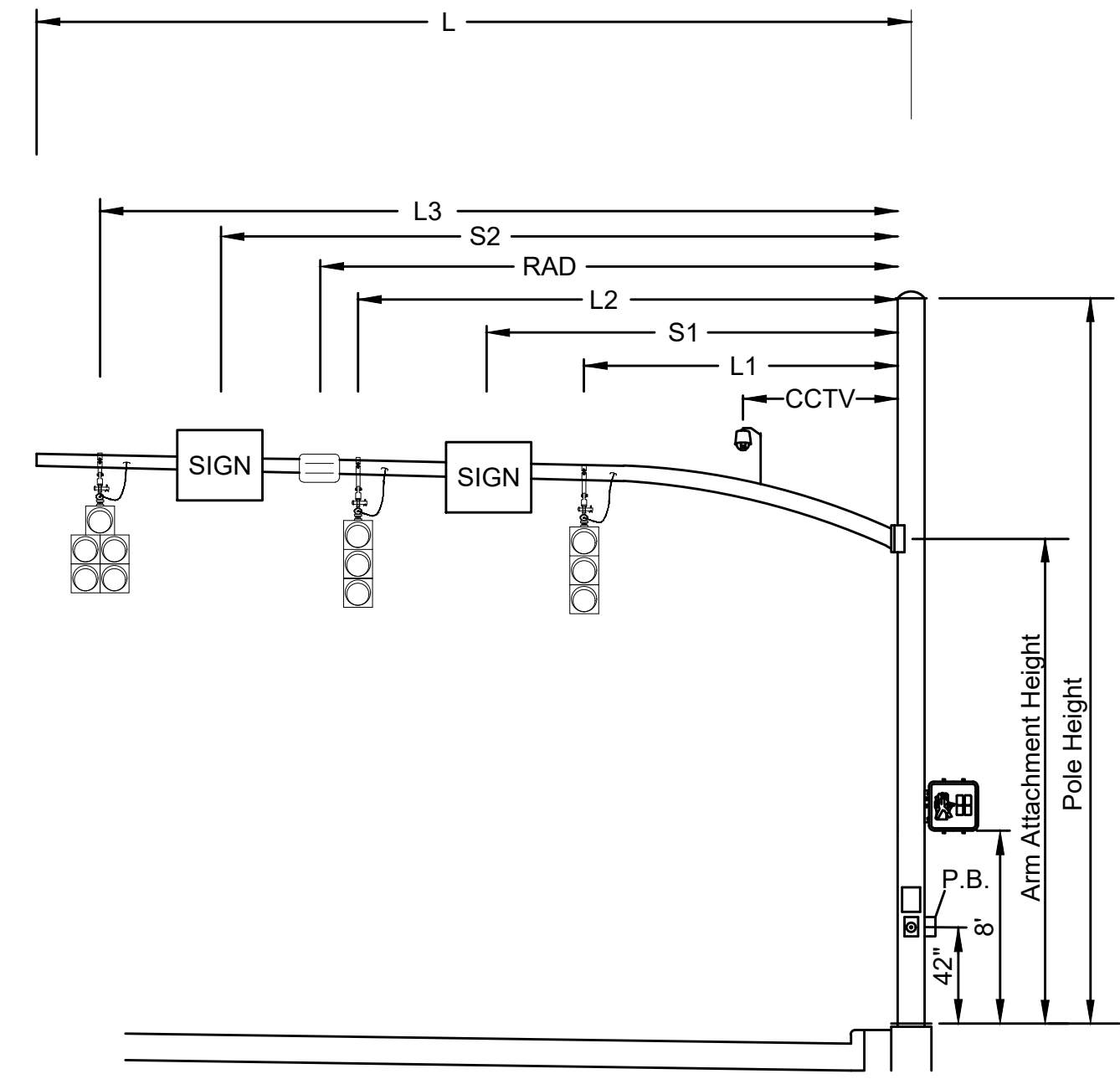


ALL ANGLES MEASURED CLOCKWISE. BASE PLATE IS ORIENTED SQUARE TO MAST ARM.

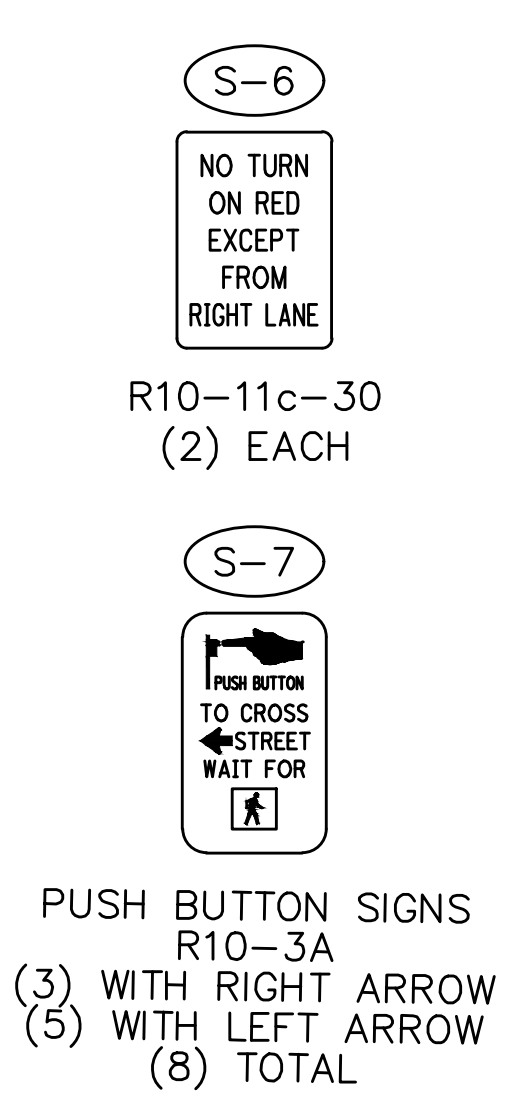
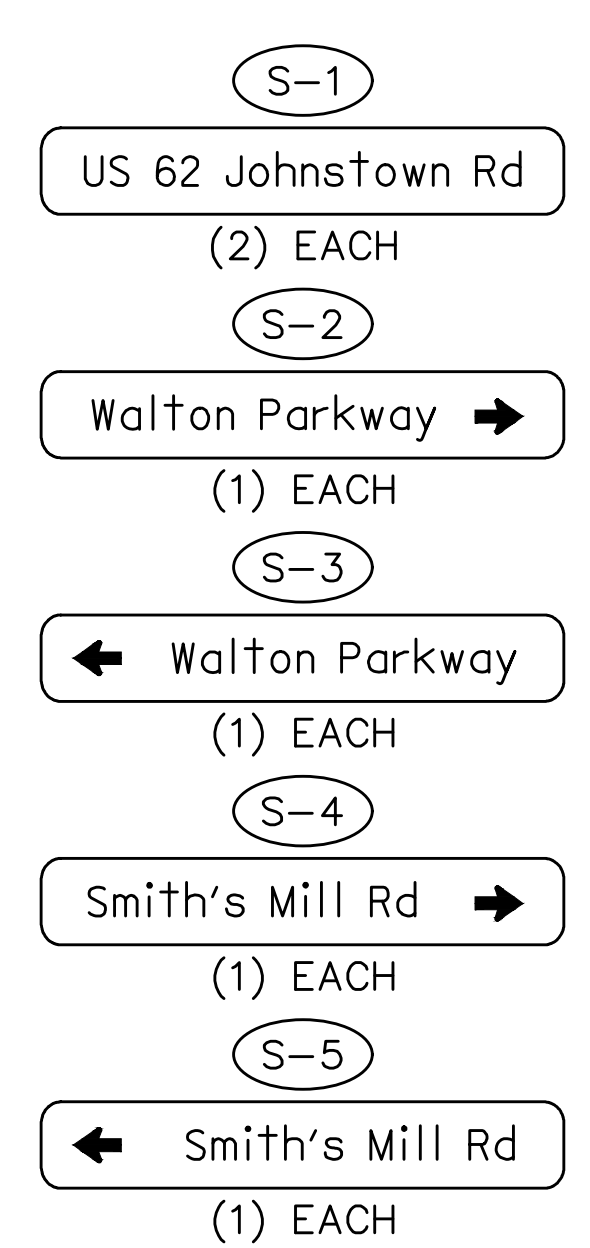
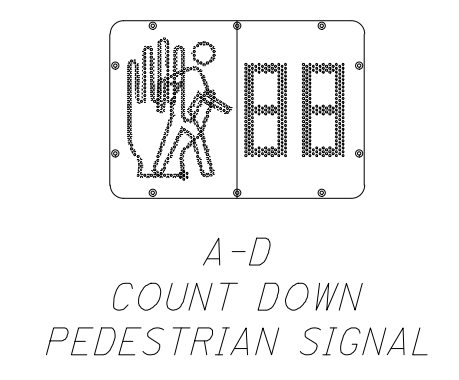
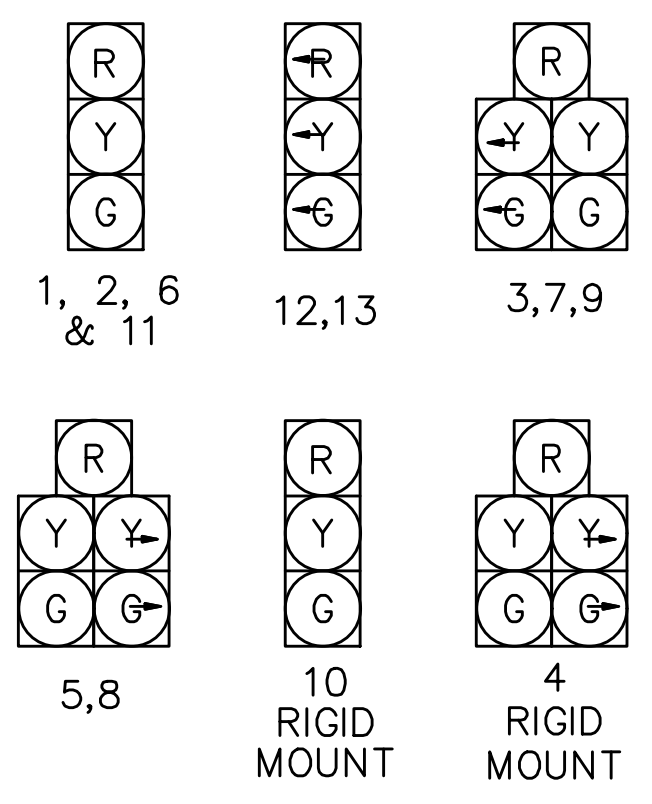
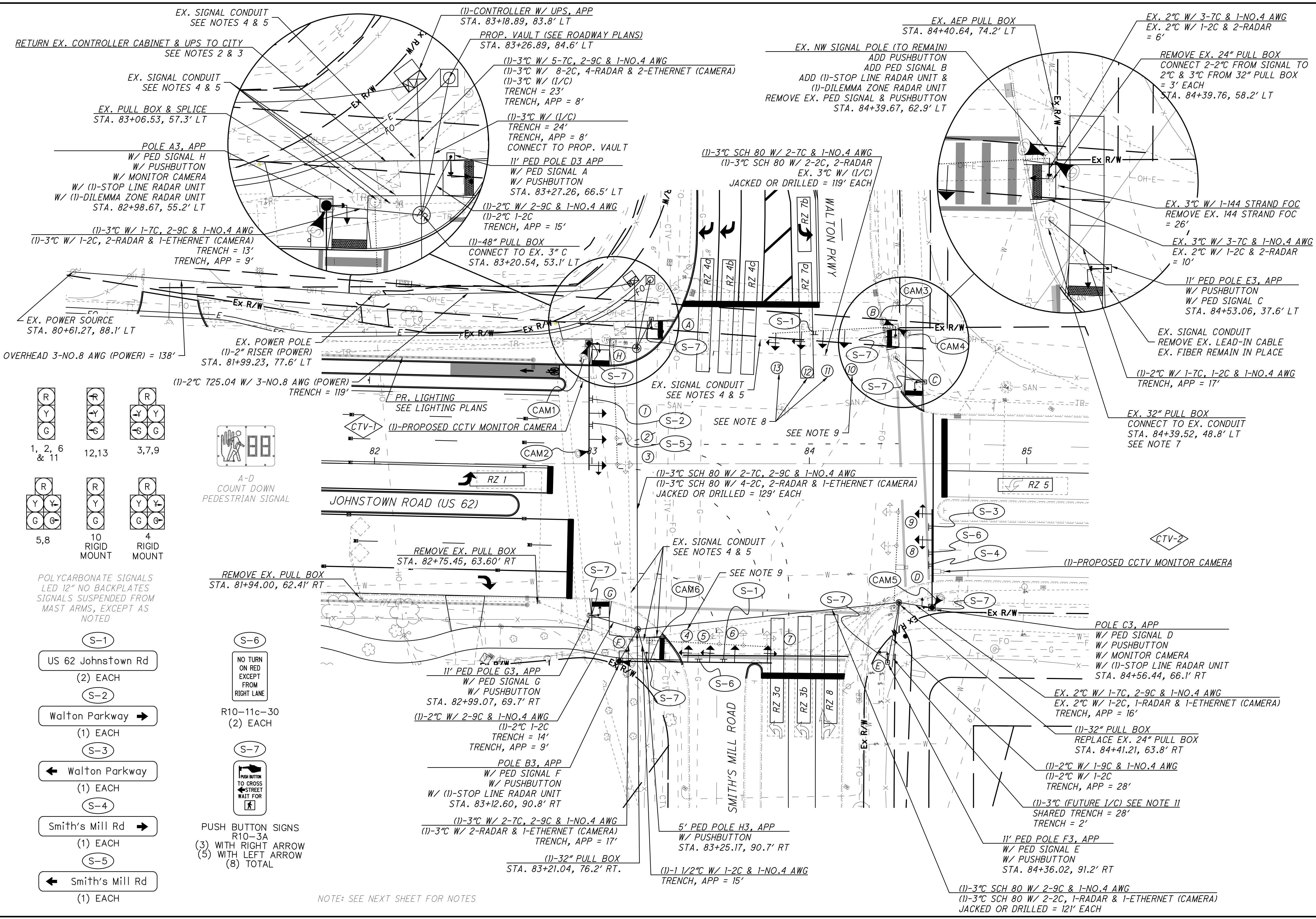


ALL PEDESTAL ANGLES MEASURED CLOCKWISE FROM PERP. TO C/L OF ROADWAY

NOTE:  
"MAIN STREET" = U.S. 62



TYPICAL MASTARM LAYOUT DETAIL



NOTE: SEE NEXT SHEET FOR NOTES

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FIELD WIRING HOOK-UP CHART

SIGNAL HEAD NO.	INDICATION	FIELD TERMINAL	FLASH
1,2	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
3	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
	←Y	φ5 Y	
4,5	R	φ4 R	R
	Y	φ4 Y	
	G	φ4 G	
	Y→	OLA	
	G→	OLA	
6	R	φ4 R	Y
	G	φ4 G	
7	R	φ4 R	R
	Y	φ4 Y	
	G	φ4 G	
	←Y	φ7 Y	
8	R	φ6 R	R
	Y	φ6 Y	
	G	φ6 G	
	Y→	OLB	
	G→	OLB	
9	R	φ6 R	R
	Y	φ6 Y	
	G	φ6 G	
	←Y	φ1 Y	
10,11	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
12,13	←R	φ3 R	R
	←Y	φ3 Y	
	←G	φ3 G	

OLA = φ1  
OLB = φ3

INTERSECTION TIMING

PHASE	φ1 NBLT	φ2 SB	φ3 WB LT	φ4 EB	φ5 SBLT	φ6 NB	φ7 EB LT	φ8 WB
MIN GREEN	7	23	9	8	5	25	7	10
WALK	-	7	-	7	-	7	-	7
PED CLR	-	30	-	33	-	24	-	24
PASSAGE	1	1	1	1	1	1	1	1
EXTENSION	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
MAX 1	30	60	60	50	25	70	25	50
MAX 2	30	60	60	50	25	70	25	50
YELLOW	3.9	4.8	3.2	4.1	3.9	4.8	3.2	4.1
RED CLR	2.5	1.9	3.1	2.5	2.3	1.9	3.5	2.5
MEMORY	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
VEH RECALL	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
PED RECALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
INITIALIZE	R	G	R	R	R	G	R	R

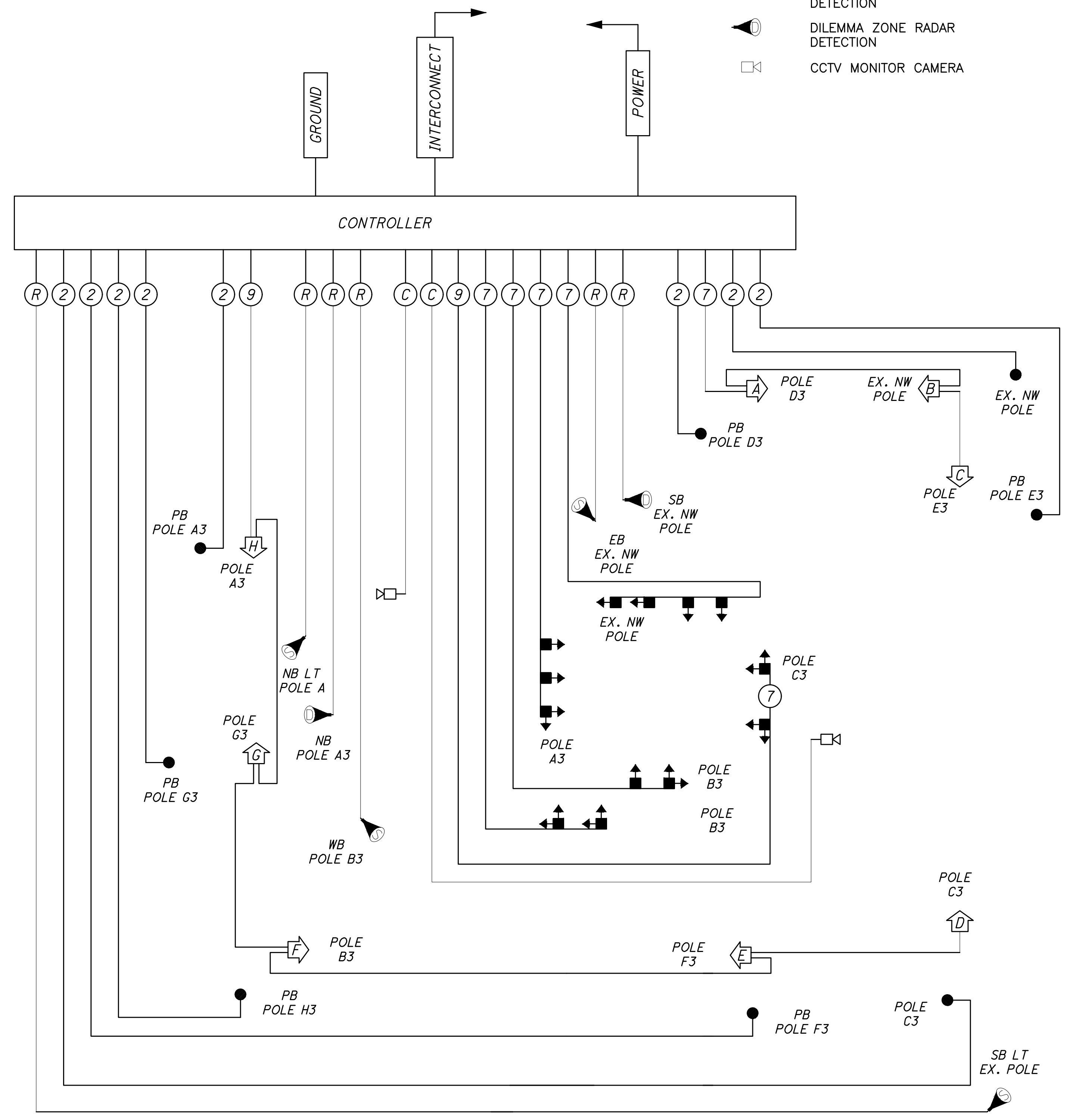
NOTE: SIGNAL TO BE PROGRAMMED FOR FOLLOWING TIMING PATTERNS, BUT SIGNAL TO OPERATE IN FREE MODE AT ALL TIMES

TIME OF DAY PROGRAM	CYCLE (SEC)	OFFSET (SEC)	SPLIT (SEC)							
			1	2	3	4	5	6	7	8
1	100	0	23	41	16	20	12	52	14	22
2	100	0	15	32	37	16	12	35	14	39
3	75	0	14	30	16	15	12	32	14	17

TIME OF DAY	PROGRAM	
	WEEKDAY	WEEKEND
MIDNIGHT-0630	FREE	FREE
0630-0830	1	FREE
0830-1130	3	FREE
1130-1300	3	3
1300-1500	3	3
1500-1830	2	FREE
1830-2000	3	FREE
2000-MIDNIGHT	FREE	FREE

TRAFFIC SIGNAL WIRING DIAGRAM LEGEND

- PEDESTRIAN SIGNAL HEAD
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN PUSHBUTTON
- STOP BAR RADAR DETECTION
- DILEMMA ZONE RADAR DETECTION
- CCTV MONITOR CAMERA



NOTES:

1. POWER SOURCE FOR NEW SIGNAL TO REUSE EXISTING POWER SOURCE.
2. SEE TRAFFIC SIGNAL NOTES FOR ITEMS REMOVED AND ITEMS TO BE DELIVERED TO CITY.
3. CONTRACTOR SHALL NOT REMOVE EXISTING SIGNAL INSTALLATION UNTIL TEMPORARY SIGNAL IS IN PLACE AND IN OPERATION. SEE MAINTENANCE OF TRAFFIC PLANS.
4. EX PULL BOXES NOT USED IN COMPLETED INSTALLATION SHALL BE REMOVED AS PART OF ROADWAY EXCAVATION IMPROVEMENTS, AND CONSIDERED INCIDENTAL TO ROADWAY IMPROVEMENTS. CONDUIT EITHER ABANDONED IN PLACE, OR REMOVED AS AN INCIDENTAL COST TO THE ROADWAY IMPROVEMENTS.
5. SIGNAL CONDUIT SHALL EITHER BE ABANDONED IN PLACE, OR REMOVED AS AN INCIDENTAL COST TO THE ROADWAY IMPROVEMENTS.
6. SEE INTERCONNECT PLANS FOR ADDITIONAL DETAILS ON FIBER OPTIC SIGNAL CABLE.
7. CONDUIT SCH 80 EXCEPT FOR POWER CONDUIT.
8. DURING CONSTRUCTION, CONTRACTOR TO PULL EX. 24 STRAND FOC FROM EX. SPLICE AT STA. 83+06.53 AND ROUTE TO EX. AEP PULL BOX AT STA. 84+40.64. SEE TEMPORARY COMMUNICATION DIAGRAMS. FOR FINAL INSTALLATION, THE CONTRACTOR WILL ROUTE THE EX. 24 STRAND FOC TO THE PROPOSED SPLICE ENCLOSURE AT STA. 83+20.54. SEE INTERCONNECT PLANS FOR DETAILS.
9. REPLACE EX. SIGNAL HEADS AND CLAMPS. INSTALL NEW SIGNAL HEADS WITH CABLE ATTACHMENTS TO MATCH NEW SUPPORTS.
10. SIGNAL RIGID MOUNT FOR SIGNALS CLOSEST TO VERTICAL SUPPORT FOR THE EB AND WB SIGNALS (2 TOTAL).
11. FUTURE I/C CONDUIT EXTENDED SOUTH OF PEDESTAL SUPPORT

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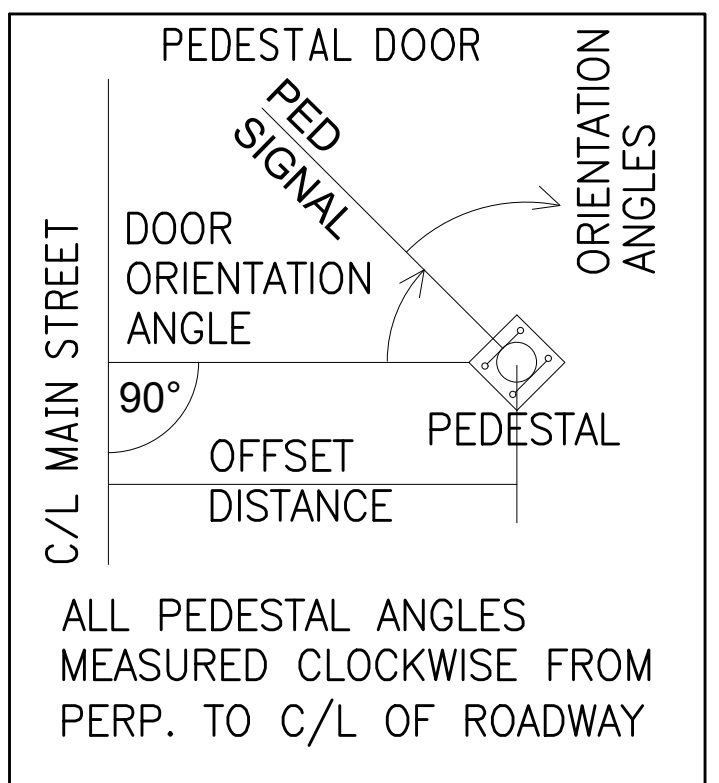
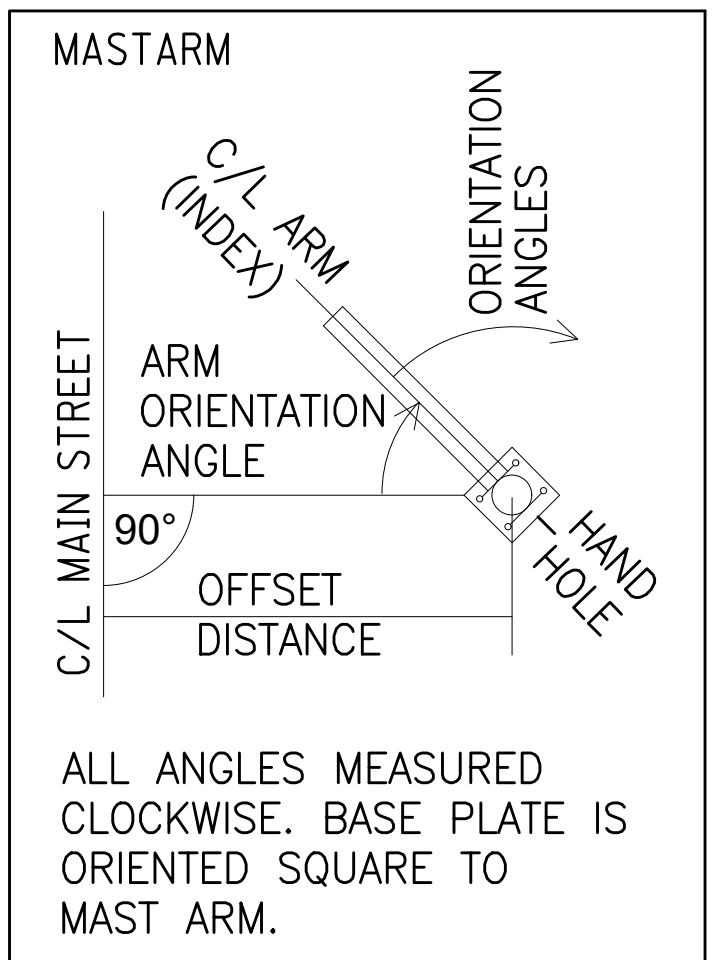
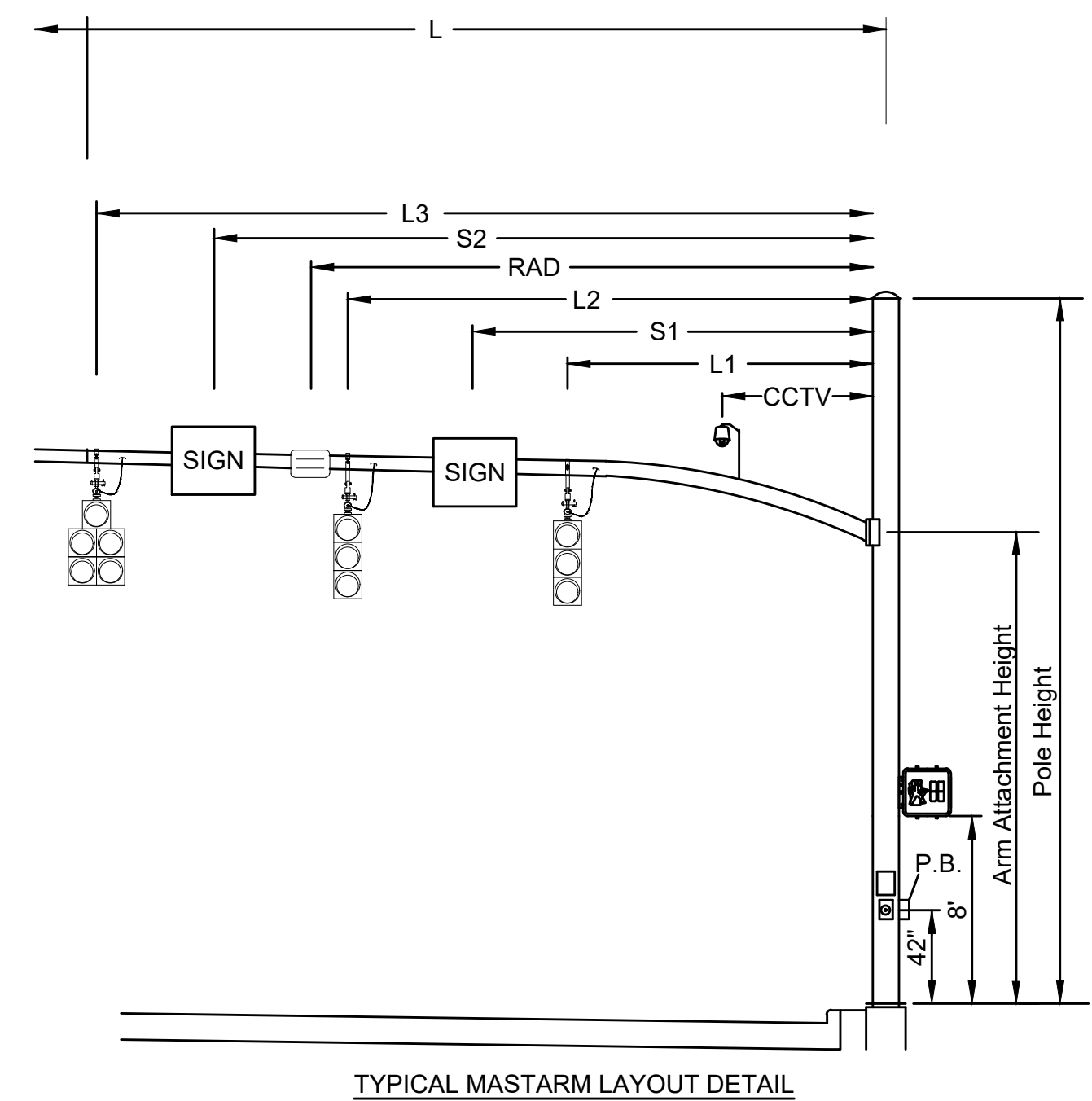


SUPPORT SCHEDULE & ORIENTATION

SUPPORT NUMBER	POLE* DESIGN NO.				FOUNDATION**			SEE MASTARM TYPICAL LAYOUT DETAIL FOR BELOW REFERENCES										INDEX FIELD ANGLE					ANGLES MEASURED FROM MASTARM & PEDESTAL DOOR		
	TC-81.22	PEDESTAL SIZE (FT)	POLE HEIGHT (FT)	ARM ATTACHMENT HEIGHT (FT)	TOP ELEVATION	STATION	OFFSET	L (FT)	L4 (FT)	L3 (FT)	L2 (FT)	L1 (FT)	S3 (FT)	S2 (FT)	S1 (FT)	RAD (FT)	CCTV (FT)	MASTARM ARM ANGLE (DEG)	PEDESTAL DOOR ANGLE (DEG)	HANDHOLE ANGLE (DEG)	PEDESTRIAN SIGNAL (DEG)	PUSHBUTTON (DEG)			
A3	13		22.5	16.5	1057.01	82+98.67	55.2' Lt	58	-	56	44	32	-	38	25.5	0,50	21	0	-	180	270	270			
B3	14		22.5	16.5	1056.81	83+12.60	90.8' Rt	70	68	53	41.5	31.5	-	47.25	36.5	0	-	90	-	90	270	-			
C3	14		22.5	16.5	1059.05	84+56.44	66.1' Rt	45	-	-	43	31	37	28	21.5	0	16	0	-	180	270	270			
D3		11				83+27.26	66.5' Lt											-	180	-	180	180			
E3		11				84+53.06	37.6 Lt											-	180	-	270	270			
F3		11				84+36.02	91.2' Rt											-	90	-	270	270			
G3		11				82+99.07	69.7' Rt											-	180	-	270	270			
H3		5				83+25.17	90.7' Rt											-	180	-	-	180			

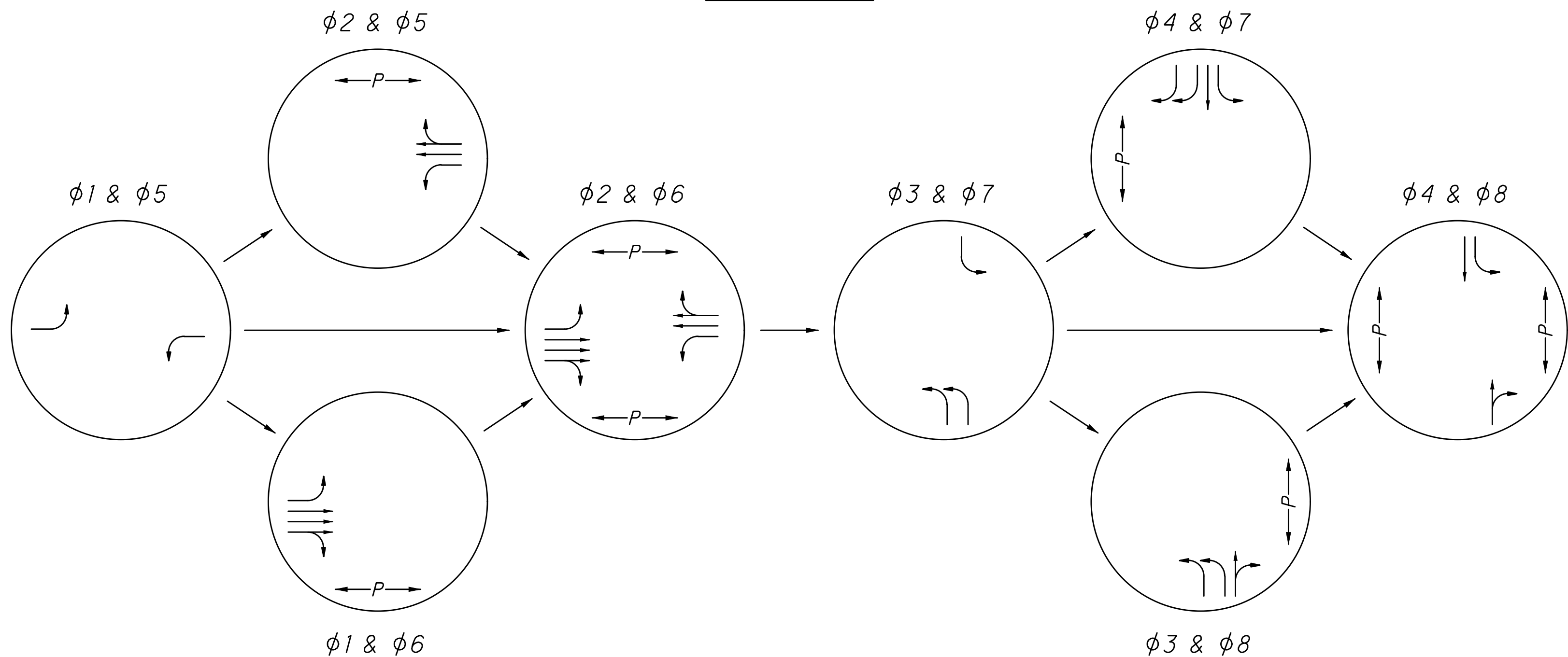
\* AS PER PLAN - SEE SIGNAL GENERAL NOTES AND DETAILS

\*\* FINAL MASTARM & PEDESTAL ELEVATIONS ARE TO BE FIELD APPROVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ANCHOR BOLT DIAMETERS, BOLT CIRCLE, AND PATTERNS SO THAT THE MAST ARMS WILL EXTEND OVER THE ROADWAY AT THE SPECIFIED ORIENTATION AND OVERHEAD ROADWAY CLEARANCE.



NOTE:  
"MAIN STREET" = U.S. 62

PHASING DIAGRAM



DETECTION ZONES								
CAMERA NUMBER	ZONE	CAMERA LABEL	PHASE	SIZE (FT) WIDTH X LENGTH	ZONE POSITION RELATIVE TO C/L STOP LINE	RADAR TYPE	DELAY	DELAY
CAM1	RZ 1	NB LT	phi 1	6 X 25	-26	STOP-BAR	PRES	3
CAM2	----	NB	phi 6	2 LANES X 600'	----	DILEMMA	----	----
CAM3	RZ 4a	EB	phi 4	6 X 52	+22	STOP-BAR	PRES	3
CAM3	RZ 4b	EB	phi 4	6 X 52	+22	STOP-BAR	PRES	3
CAM3	RZ 4c	EB	phi 4	6 X 52	+22	STOP-BAR	PRES	3
CAM3	RZ 7a	EB LT	phi 7	6 X 53	+22	STOP-BAR	PRES	3
CAM3	RZ 7b	EB LT	phi 7	6 X 25	-26	STOP-BAR	PRES	3
CAM4	----	SB	phi 2	2 LANES X 600'	----	DILEMMA	----	----
CAM5	RZ 5	SB LT	phi 5	6 X 25	-26	STOP-BAR	PRES	3
CAM6	RZ 3a	WB LT	phi 3	6 X 48	+26	STOP-BAR	PRES	3
CAM6	RZ 3b	WB LT	phi 3	6 X 49	+27	STOP-BAR	PRES	3
CAM6	RZ 8	WB	phi 8	6 X 50	+28	STOP-BAR	PRES	3

+ = EXTEND IN FRONT OF STOP LINE BY X'  
- = BACK FROM STOP LINE BY X'

DETECTION ZONE WIDTH & LENGTHS ARE APPROXIMATE & TO BE FIELD ADJUSTED TO MEET INTENT OF DETECTION AREAS. SET TO PRESENCE.

**DECORATIVE SINGLE POST MOUNTED STREET NAME SIGN STANDARD**

Post Size (Inch)	SPEED LIMIT	RECORDING STROKES	A	B	C	D	E	F	G	H	I	J	K	L	M
6"x4"	25 MPH	WITHOUT	VAR	8	2	4/20	2	1.5	3	3.5	2	30	3	1.5	0.5
6"x4"	30-40 MPH	WITHOUT	VAR	8	2.5	4/20	1.5	1.5	3	3.5	2	30	3.5	1.5	0.5
6"x4"	More Than 40 MPH	WITHOUT	VAR	12	3	4/20	3	1.5	4.2	5.25	3	40	5	2	0.5
6"x4"	25 MPH	WITH	VAR	12	3.5	4/20	2.5	1.5	4.2	5.25	3.5	40	4.5	2	0.5
6"x4"	30-40 MPH	WITH	VAR	12	3.5	4/20	3	1.5	4.2	5.25	3.5	40	4.5	2	0.5
6"x4"	More Than 40 MPH	WITH	VAR	18	5	4/20	5	1.5	7.5	8	5	60	7	3	0.5
6"x4"	25 MPH	WITHOUT	VAR	18	5.5	4/20	4.5	1.5	7.5	8	5.5	60	6.5	3	0.5

**WHITE SHEETING**

Ra	OBSERVATIONS
-4.0'	580 420 120
30.0'	220 150 45

**GREEN SHEETING**

Ra	OBSERVATIONS
-4.0'	58 42 12
30.0'	22 15 5.0

**City Engineer:** E. P. FERRIS ASSOCIATES  
**CONTACT:** 880 KING AVENUE COLUMBUS, OHIO 43212 (614) 299-2999 (614) 299-2992 (Fax) www.EPFERRIS.com  
**DESIGNED BY:** BCS **REVIEWED BY:** BLS

**DUAL POST MOUNTED ADVANCE STREET NAME SIGN STANDARD**

**WHITE SHEETING**

Ra	OBSERVATIONS
-4.0'	580 420 120
30.0'	220 150 45

**GREEN SHEETING**

Ra	OBSERVATIONS
-4.0'	58 42 12
30.0'	22 15 5.0

**City Engineer:** E. P. FERRIS ASSOCIATES  
**CONTACT:** 880 KING AVENUE COLUMBUS, OHIO 43212 (614) 299-2999 (614) 299-2992 (Fax) www.EPFERRIS.com  
**DESIGNED BY:** BCS **REVIEWED BY:** BLS

**COMBINATION STOP SIGN/ STREET NAME SIGN STANDARD**

**City Engineer:** E. P. FERRIS ASSOCIATES  
**CONTACT:** 880 KING AVENUE COLUMBUS, OHIO 43212 (614) 299-2999 (614) 299-2992 (Fax) www.EPFERRIS.com  
**DESIGNED BY:** BCS **REVIEWED BY:** BLS

**REGULATORY & WARNING SIGNS ON WOOD POSTS STANDARD**

**City Engineer:** E. P. FERRIS ASSOCIATES  
**CONTACT:** 880 KING AVENUE COLUMBUS, OHIO 43212 (614) 299-2999 (614) 299-2992 (Fax) www.EPFERRIS.com  
**DESIGNED BY:** BCS **REVIEWED BY:** BLS

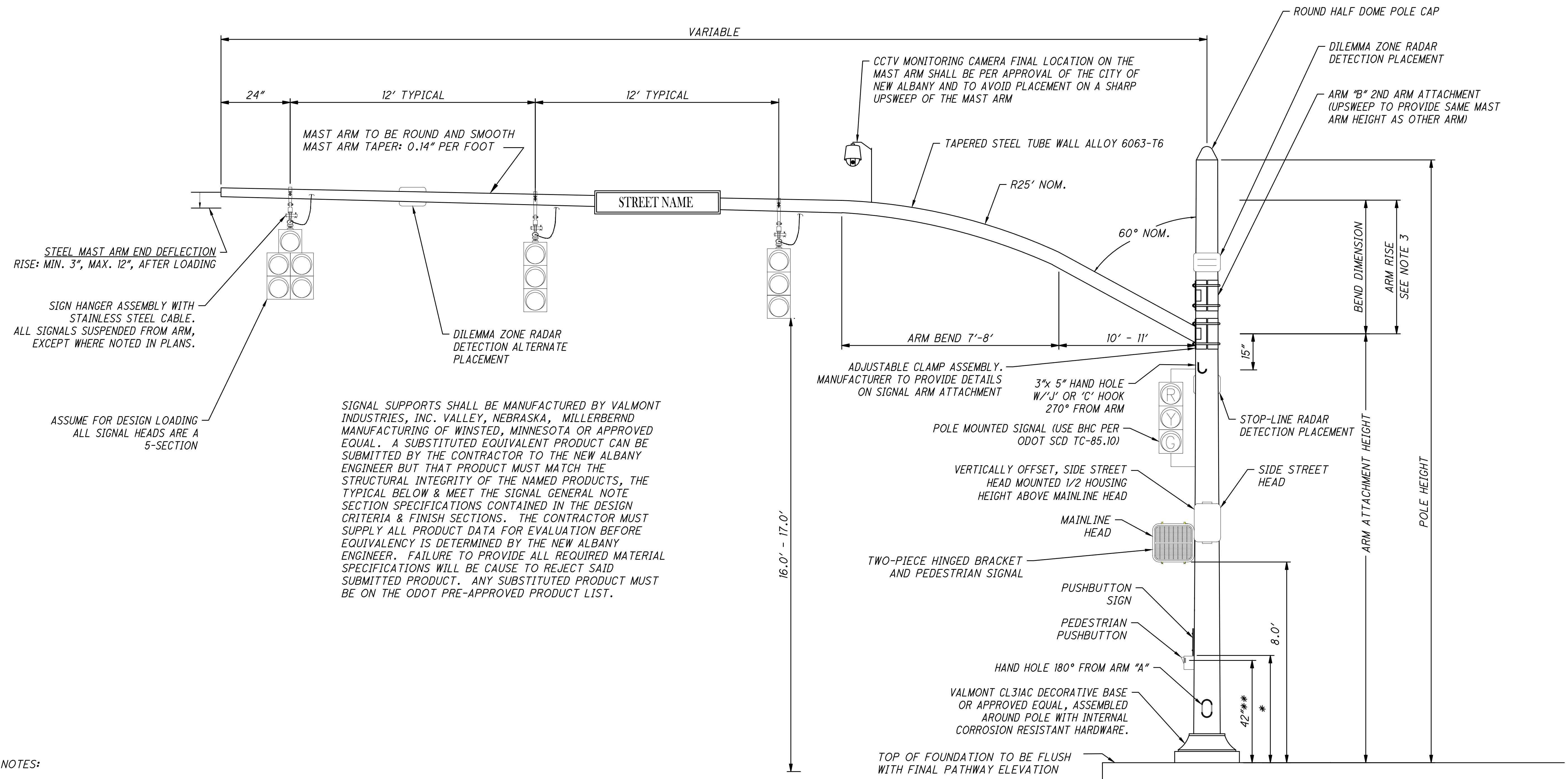
**STREET NAME SIGNS ON MAST ARM SIGNALS STANDARD**

SPEED LIMIT	RECORDING STROKES	A	B	C	D	E	F	G	H	I	J	K	L	M	N
25 MPH	WITHOUT	VAR	14	0.75	3	3	3	9	3.5	5.5	6	2.75	4	10 U2/8 U2	8 U2/6 U2
30-40 MPH	WITHOUT	VAR	14	0.75	3	3	3	9	3.5	5.5	6	2.75	4	10 U2/8 U2	8 U2/6 U2
More Than 40 MPH	WITHOUT	VAR	18	0.75	3	3	3	12	5	7	8	3.5	4	10 U2/8 U2	8 U2/6 U2
25 MPH	WITH	VAR	18	0.75	3	3	3	12	5	7	8	3.5	4	10 U2/8 U2	8 U2/6 U2
30-40 MPH	WITH	VAR	18	0.75	3	3	3	12	5	7	8	3.5	4	10 U2/8 U2	8 U2/6 U2
More Than 40 MPH	WITH	VAR	18	0.75	3	3	3	14	6	8	9	4	5	12 U2/9 U2	8 U2/6 U2
25 MPH	WITHOUT	VAR	18	0.75	3	3	3	14	6	8	9	4	5	12 U2/9 U2	8 U2/6 U2

**City Engineer:** E. P. FERRIS ASSOCIATES  
**CONTACT:** 880 KING AVENUE COLUMBUS, OHIO 43212 (614) 299-2999 (614) 299-2992 (Fax) www.EPFERRIS.com  
**DESIGNED BY:** BCS **REVIEWED BY:** BLS

# MAST ARM SIGNAL DETAIL

CALCULATED  
WCS  
CHECKED  
DLS



- NOTES:**
1. A DETAILED SHOP DRAWING SHALL BE SUBMITTED BY THE CONTRACTOR SHOWING THE MANUFACTURER'S NAME & THE PRODUCT PART NUMBER FOR EACH MAST ARM STRUCTURE & BOLT COVER. THIS DRAWING MUST BE APPROVED BY THE ENGINEER BEFORE THE CONTRACTOR ORDERS THE EQUIPMENT.
  2. RADAR DETECTOR UNIT TO BE INSTALLED ON ARM OR POLE PER MANUFACTURER RECOMMENDATION. SEE TRAFFIC SIGNAL NOTES FOR ADDITIONAL DETAILS.
  3. ARM RISE 5' MAX BEFORE LOADING AND 4' TOTAL RISE AFTER LOADING. ARM RISE MEASURED FROM CENTERLINE OF MAST ARM CLAMP ASSEMBLY AND THE END OF ARM.
  4. SEE FINISH SECTION IN THE SIGNAL GENERAL NOTES FOR COATING COLOR SPECIFICATIONS FOR THE SIGNAL MAST ARM STRUCTURE, BOLT COVER, CAP, SIGNAL HEADS, PEDESTRIAN UNITS & ALL MOUNTING HARDWARE.

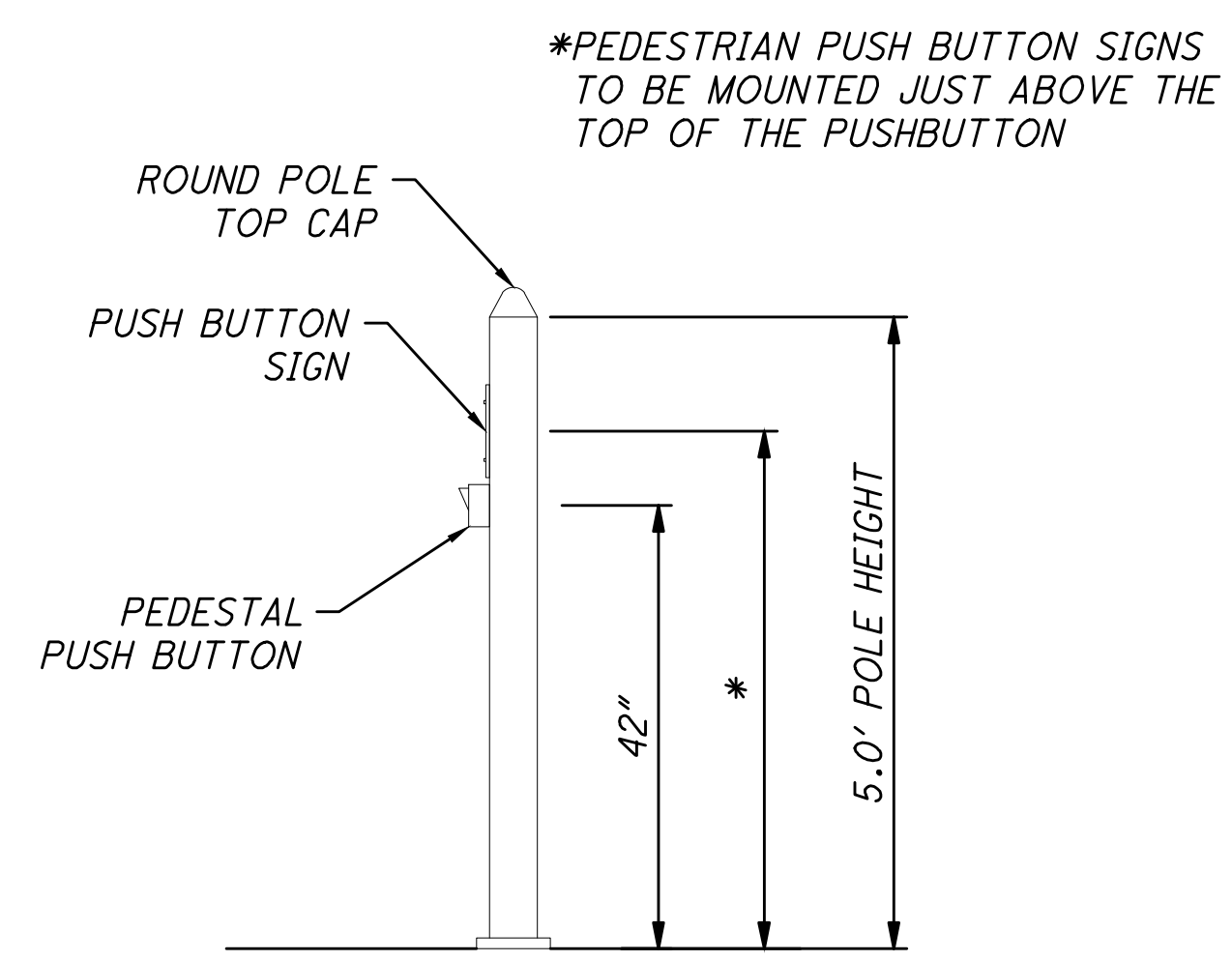
\* PEDESTRIAN PUSH BUTTON SIGNS TO BE MOUNTED JUST ABOVE THE TOP OF THE PUSHBUTTON

TRAFFIC SIGNAL TYPICALS

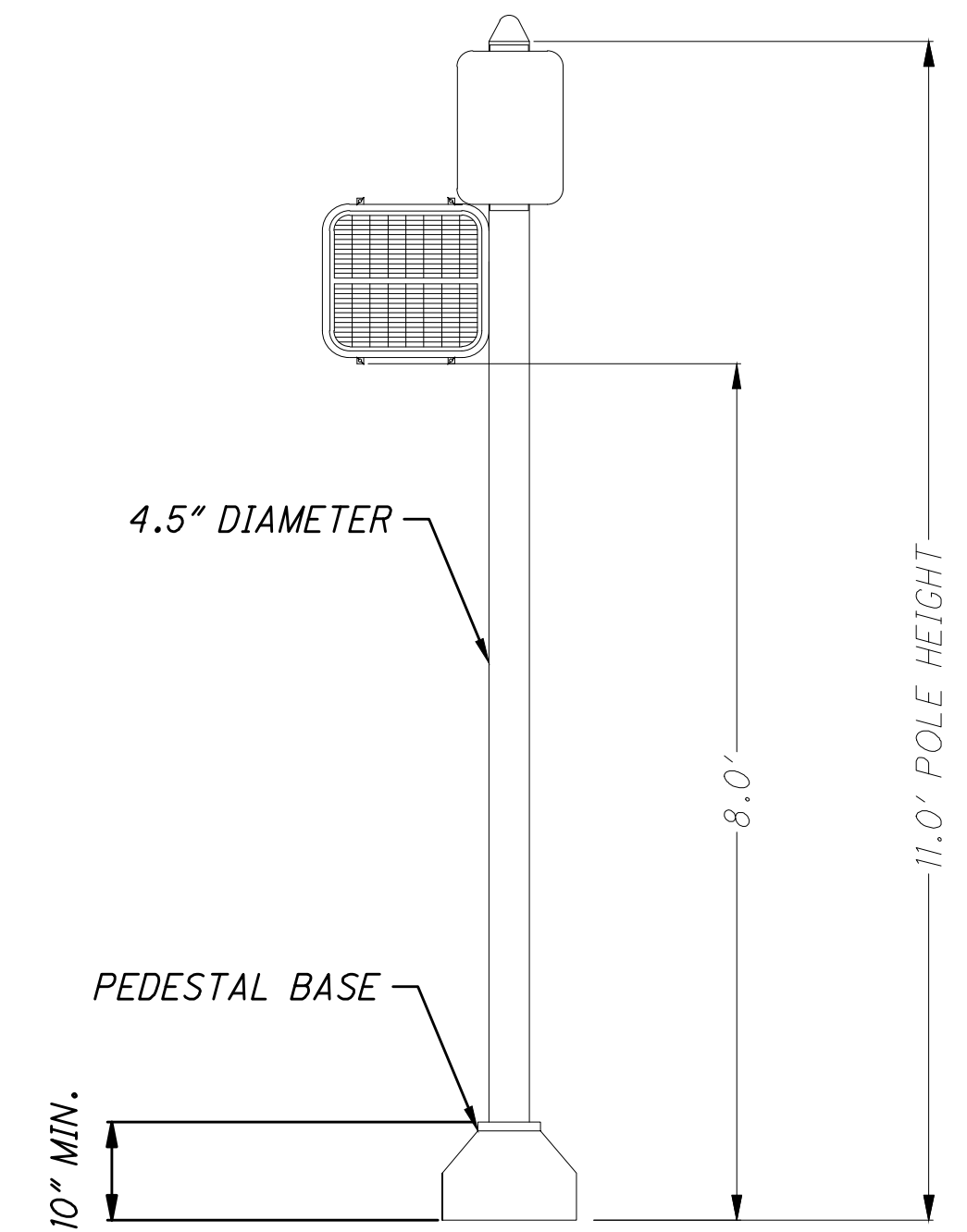
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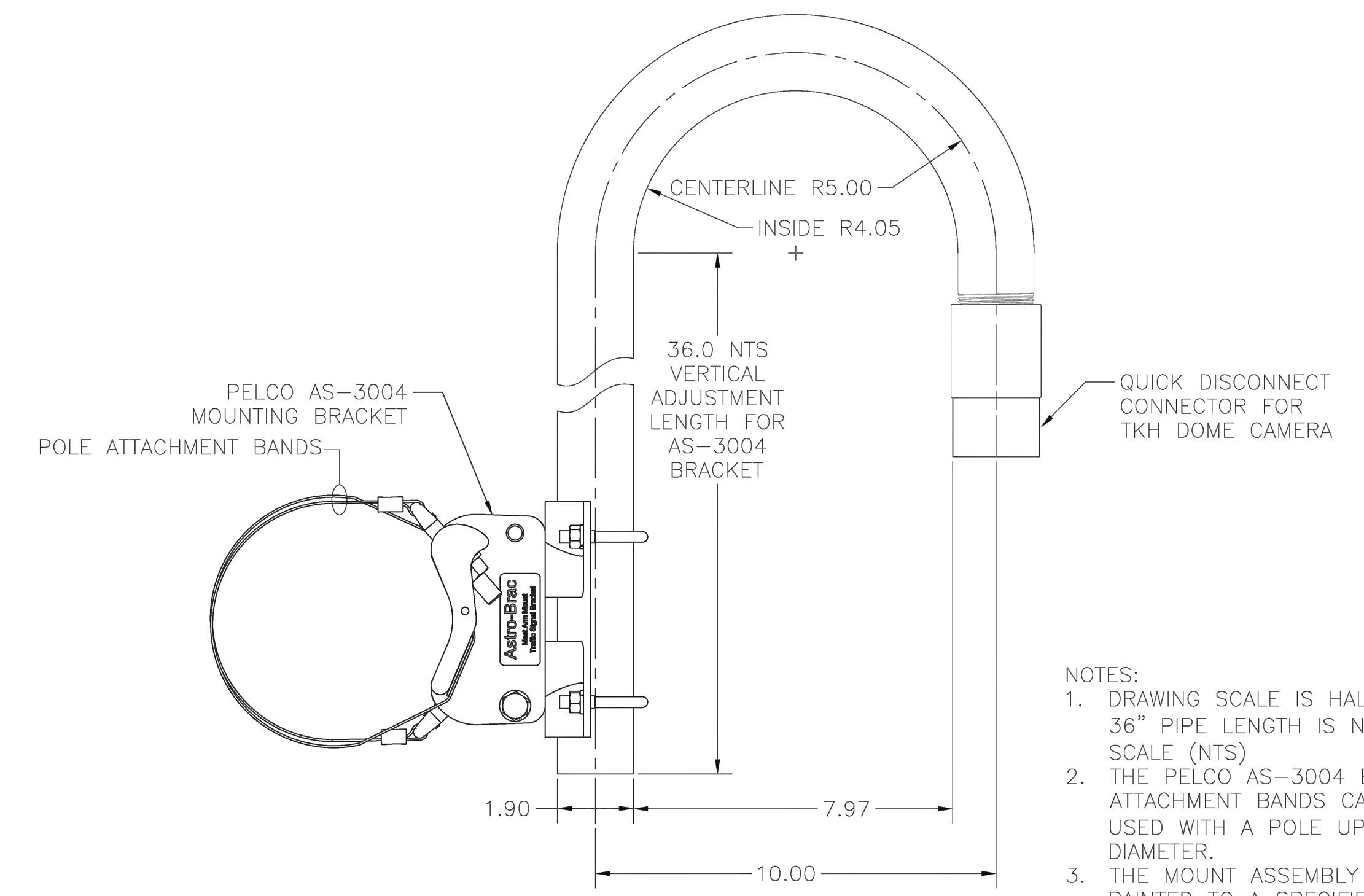
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5' PEDESTRIAN PEDESTAL DETAIL

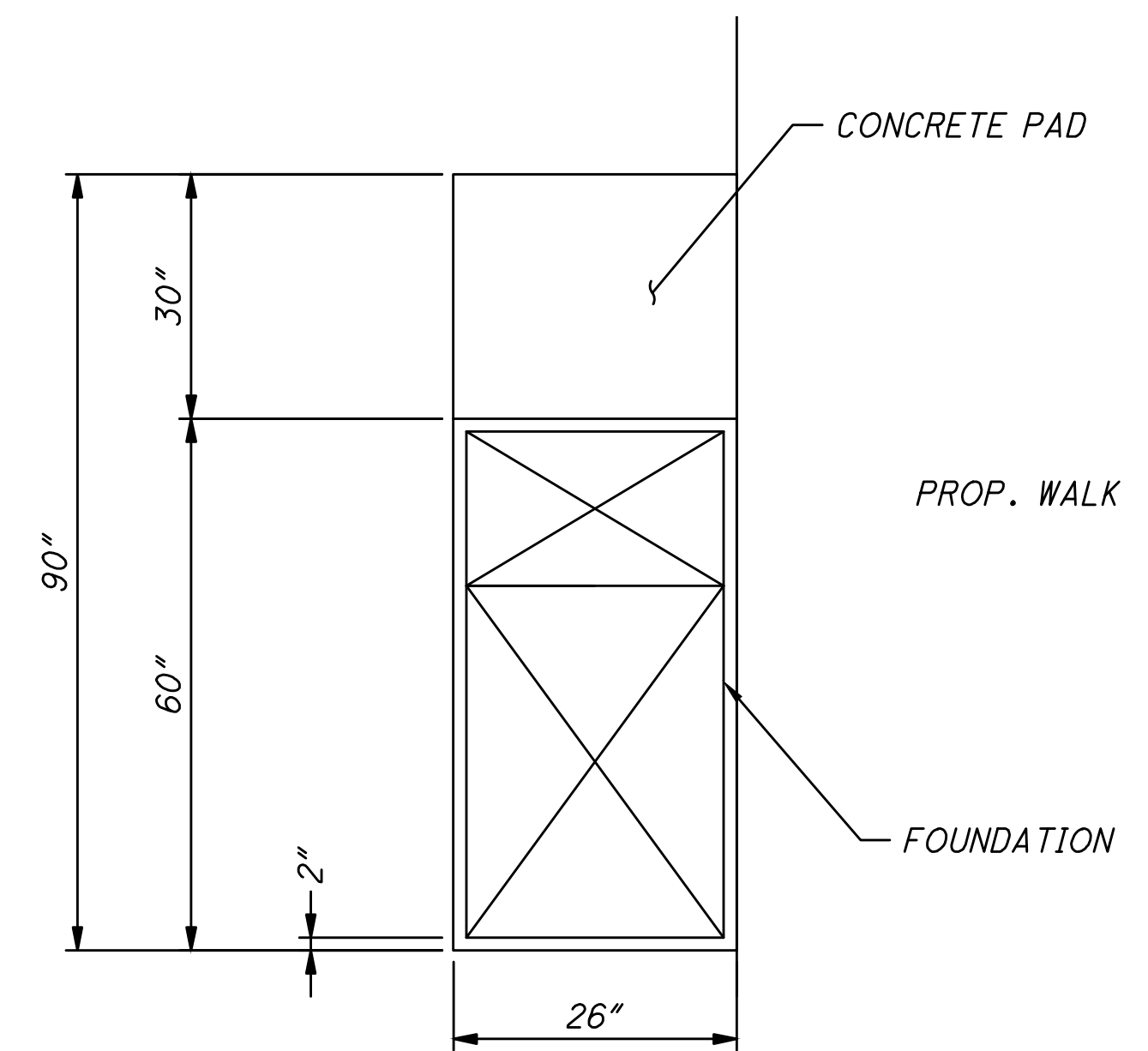


11' PEDESTRIAN SIGNAL PEDESTAL DETAIL



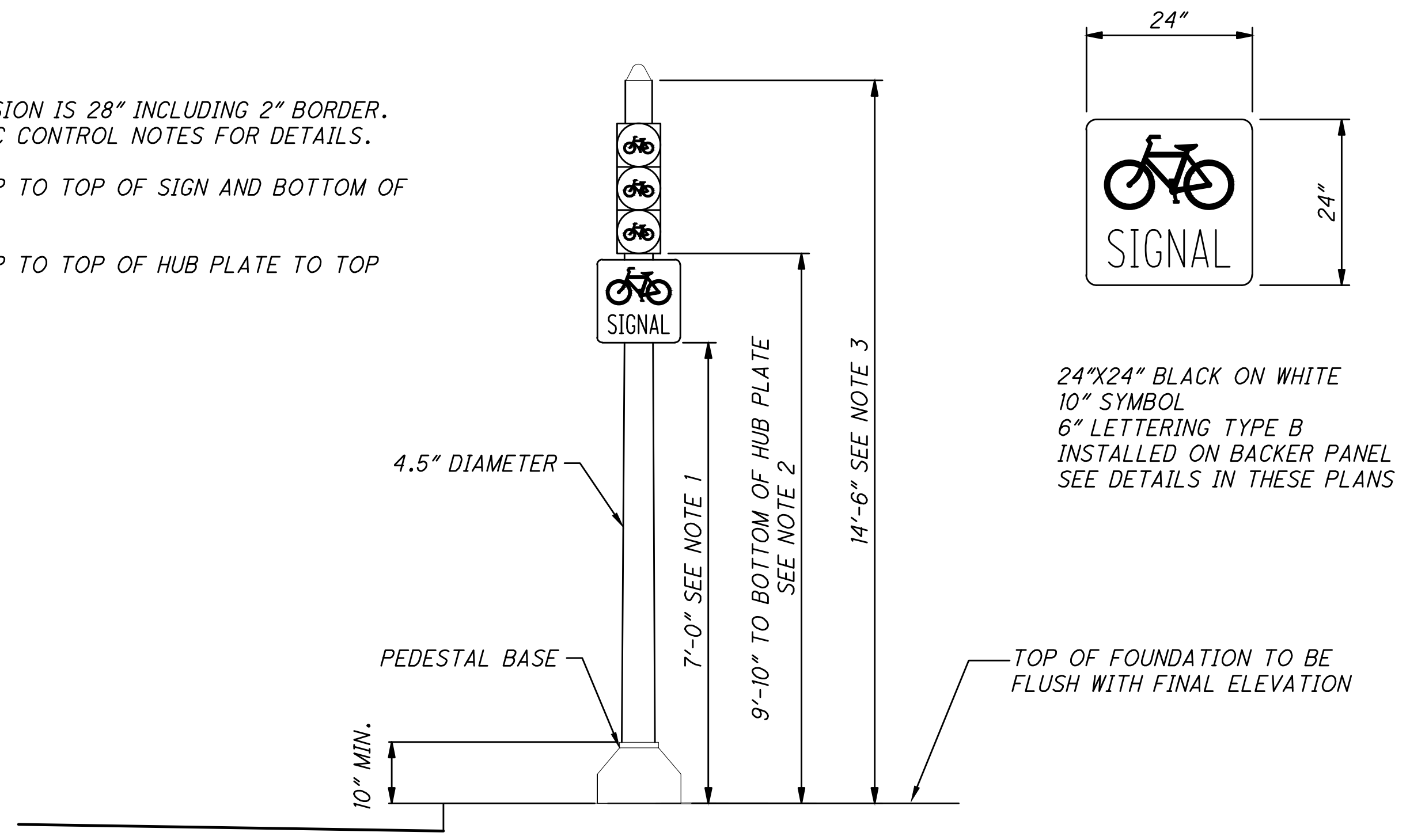
BRACKET ARM DETAIL

- NOTES:
1. DRAWING SCALE IS HALF EXCEPT 36" PIPE LENGTH IS NOT TO SCALE (NTS)
  2. THE PELCO AS-3004 BRACKET ATTACHMENT BANDS CAN BE USED WITH A POLE UP TO 34.3" DIAMETER.
  3. THE MOUNT ASSEMBLY IS PAINTED TO A SPECIFIED COLOR.
  4. ALL PARTS EXCEPT FASTENERS AND BANDS ARE CONSTRUCTED OF ALUMINUM



CABINET FOUNDATION/WORKPAD DETAIL

- NOTE 1:  
- SIGN DIMENSION IS 28" INCLUDING 2" BORDER.  
SEE TRAFFIC CONTROL NOTES FOR DETAILS.
- NOTE 2:  
- 6" NOM. GAP TO TOP OF SIGN AND BOTTOM OF HUB PLATE.
- NOTE 3:  
- 6" NOM. GAP TO TOP OF HUB PLATE TO TOP OF POLE.



14'-6" BIKE SIGNAL PEDESTAL DETAIL

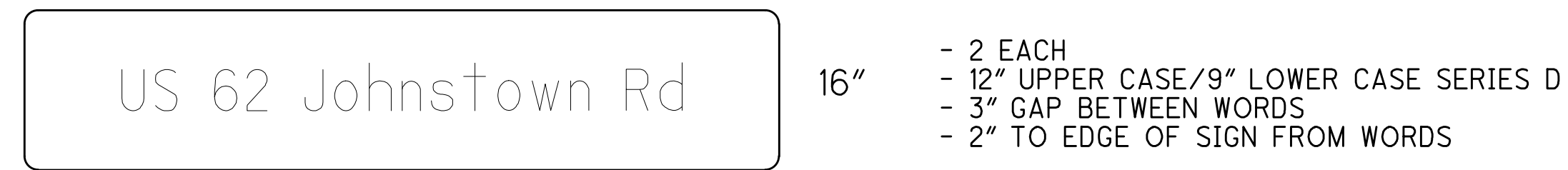
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INFORMATION ONLY.  
SIGNS SUPPLIED BY CITY.

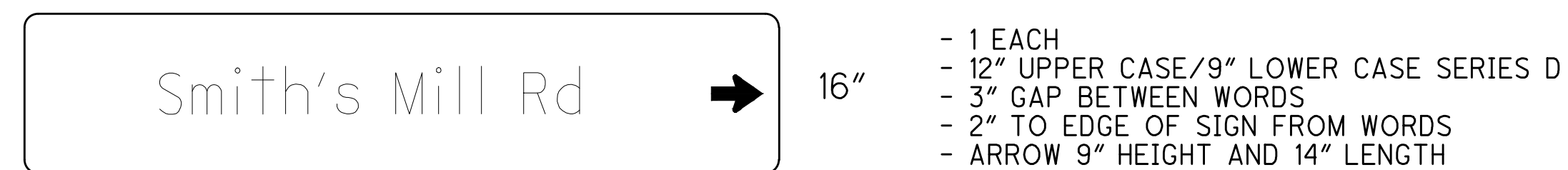
FOR DESIGN ANALYSIS, ASSUME  
ALL STREET NAME SIGNS 114" X 16"

BLACK LETTERS/WHITE BACKGROUND

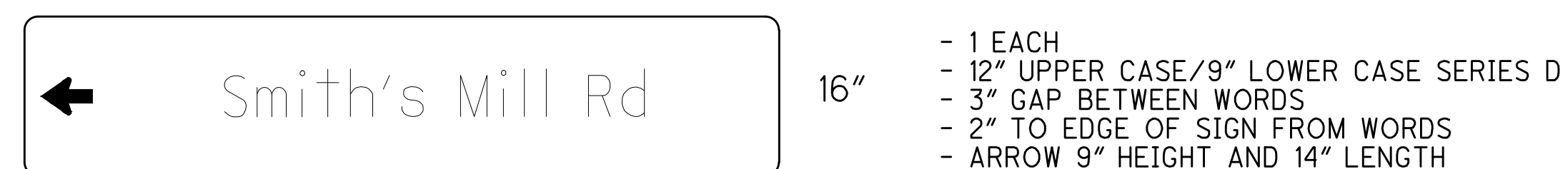
STREET NAME SIGNS ON MAST ARM SIGNALS STANDARD:



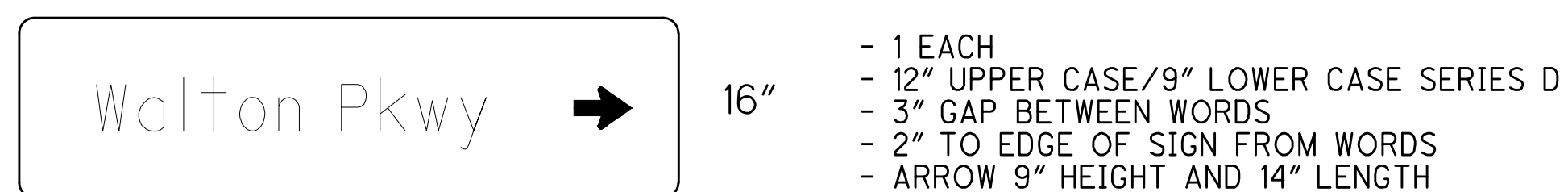
- 2 EACH
- 12" UPPER CASE/9" LOWER CASE SERIES D
- 3" GAP BETWEEN WORDS
- 2" TO EDGE OF SIGN FROM WORDS



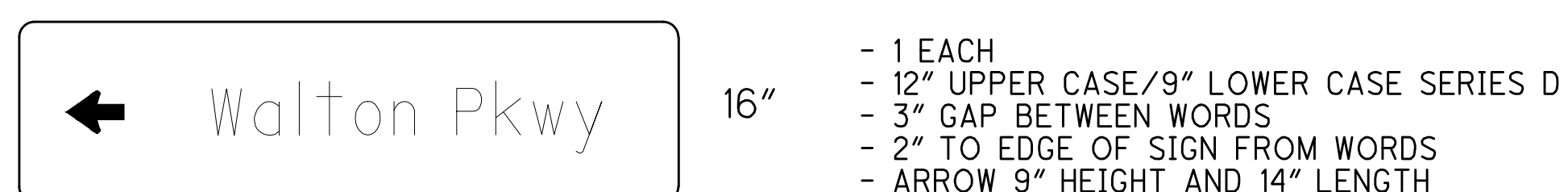
- 1 EACH
- 12" UPPER CASE/9" LOWER CASE SERIES D
- 3" GAP BETWEEN WORDS
- 2" TO EDGE OF SIGN FROM WORDS
- ARROW 9" HEIGHT AND 14" LENGTH



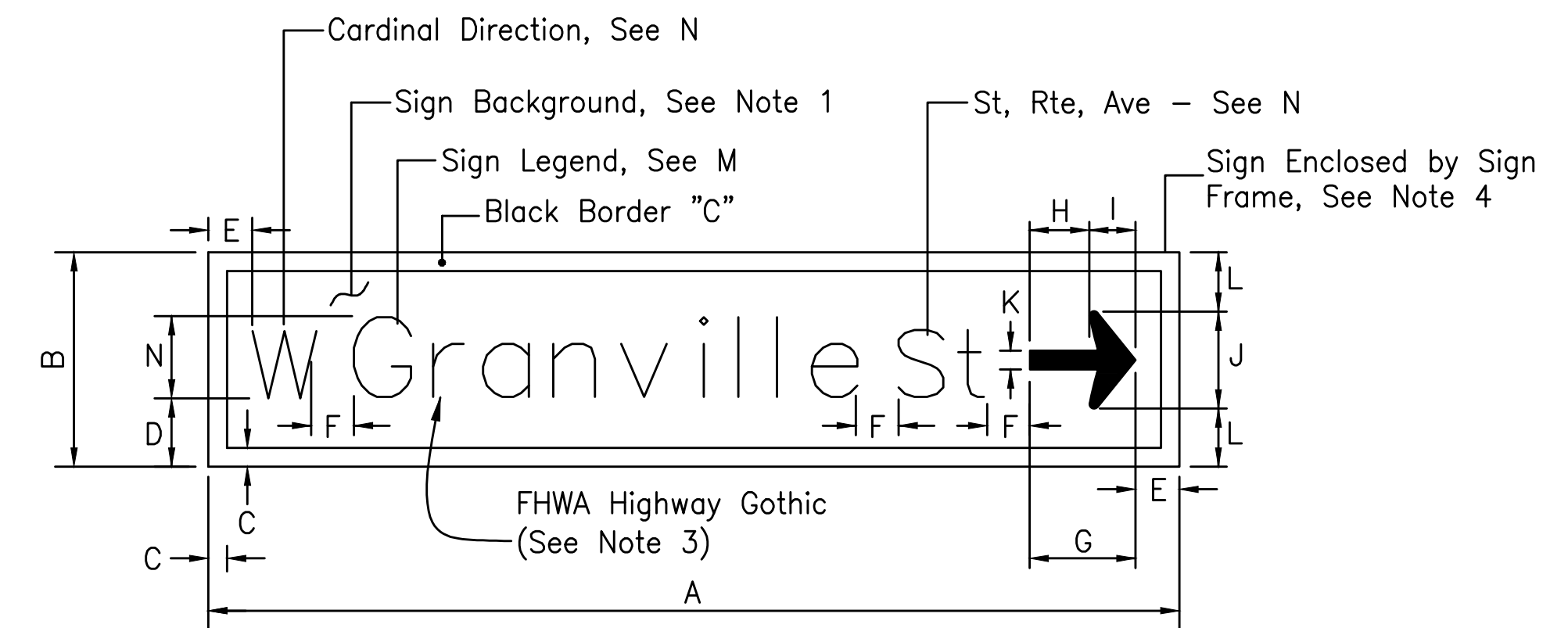
- 1 EACH
- 12" UPPER CASE/9" LOWER CASE SERIES D
- 3" GAP BETWEEN WORDS
- 2" TO EDGE OF SIGN FROM WORDS
- ARROW 9" HEIGHT AND 14" LENGTH



- 1 EACH
- 12" UPPER CASE/9" LOWER CASE SERIES D
- 3" GAP BETWEEN WORDS
- 2" TO EDGE OF SIGN FROM WORDS
- ARROW 9" HEIGHT AND 14" LENGTH



- 1 EACH
- 12" UPPER CASE/9" LOWER CASE SERIES D
- 3" GAP BETWEEN WORDS
- 2" TO EDGE OF SIGN FROM WORDS
- ARROW 9" HEIGHT AND 14" LENGTH



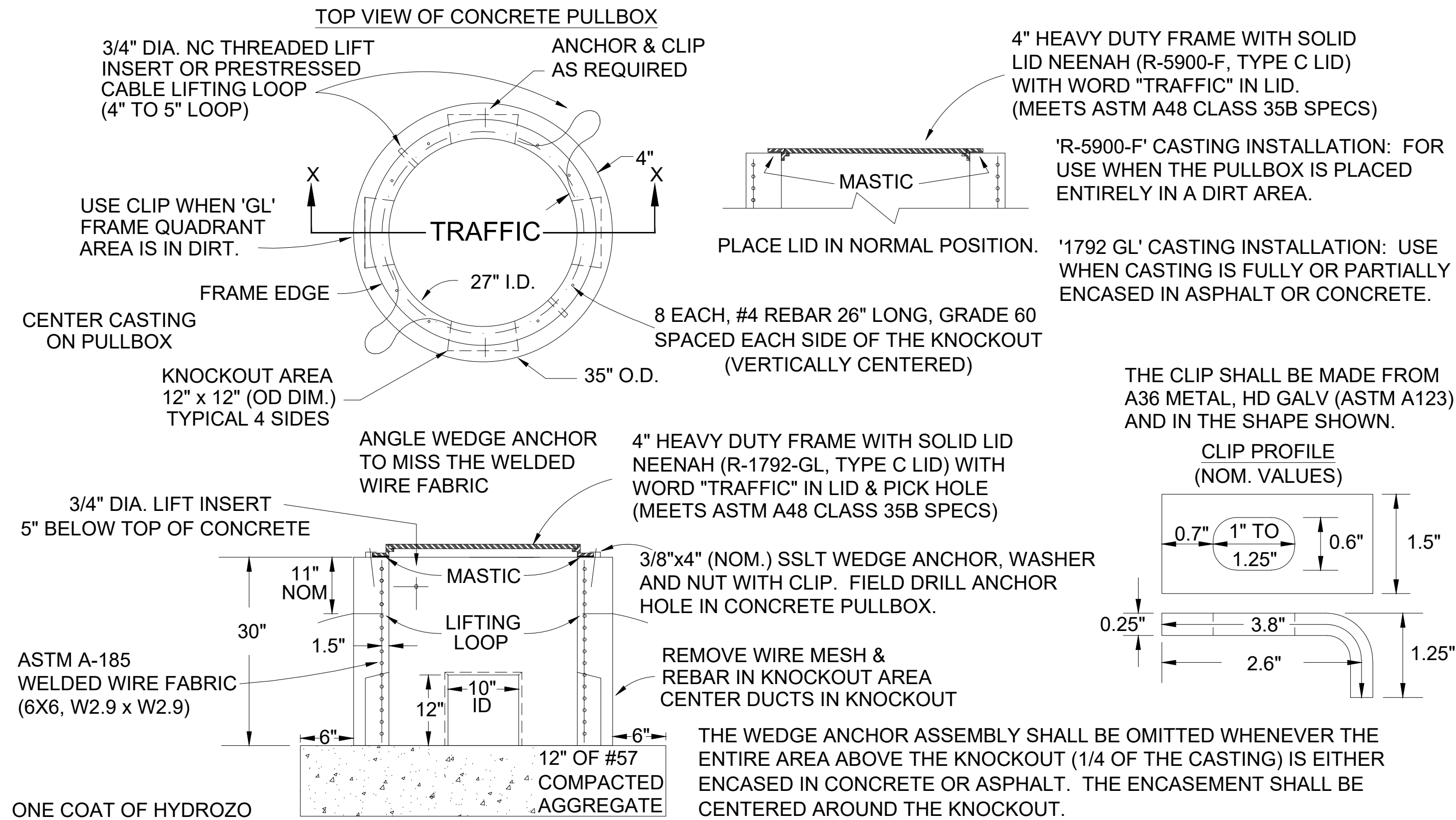
SPEED LIMIT	DESCENDING STROKES	A	B	C	D	E	F	G	H	I	J	K	L	M	N
25 MPH	WITHOUT	VAR	14	0.75	3	3	3	9	3.5	5.5	6	2.75	4	8 UC/6 LC	6 UC/6 LC
	WITH	VAR	14	0.75	3	3	3	9	3.5	5.5	6	2.75	4	8 UC/6 LC	6 UC/6 LC
30-40 MPH	WITHOUT	VAR	16	0.75	3	3	3	12	5	7	8	3.5	4	10 UC/8 LC	6 UC/6 LC
	WITH	VAR	16	0.75	3	3	3	12	5	7	8	3.5	4	10 UC/8 LC	6 UC/6 LC
More Than 40 MPH	WITHOUT	VAR	18	0.75	3	3	4	14	6	8	9	4	5	12 UC/9 LC	8 UC/8 LC
	WITH	VAR	18	0.75	3	3	4	14	6	8	9	4	5	12 UC/9 LC	8 UC/8 LC

NOTE:

- SINGLE FACED SIGNS, WITH BLACK SIGN LEGEND ACRYLIC FILM (EC 'ELECTRO CUT' FILM OR APPROVED EQUAL), AND WHITE TYPE XI RETRO-REFLECTIVE BACKGROUND.
- SIGN SHEETING TO BE INSTALLED ON 0.25" ALUMINUM SHEET, WITH BLACK VINYL COVERING BACK OF SIGN. SIGN CORNERS TO BE SQUARED.
- SIGN LETTERING TO BE HIGHWAY GOTHIC FONT D OR DIFFERENT FONT AS NOTED PER SIGN. SERIES TYPE AND LETTER HEIGHTS AS DETAILED FOR THE SIGNS.
- SIGN DIMENSIONS SHOWN INCLUDE 1" BLACK BORDER.
- SIGNING MATERIAL MUST MEET OR EXCEED THE FOLLOWING MINIMUM COEFFICIENTS OF RETROFLECTION (cd/lux/m<sup>2</sup>)
- IF REQUIRED, CONTRACTOR SHALL SUBMIT CUT SHEETS OF SIGNS, SIGNING MATERIAL, AND HANGER ASSEMBLIES FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURE, AND SHALL INCLUDE SIGNING AND LETTER DIMENSIONS.

WHITE	-4	30
0.2	580	220
0.5	420	150
1.0	120	45

**ITEM 625 PULLBOX, 27", AS PER PLAN**



ONE COAT OF HYDROZO ENVIROSEAL 40, RAINSTOPPER 140 OR CHEMTRETE BSM40 SHALL BE APPLIED TO THE INSIDE & OUTSIDE OF THE PULLBOX.

CONCRETE SHALL HAVE AIR ENTRAPMENT OF 6% ± 2% AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. LID RING LOAD TRANSFER IS TO BE DISTRIBUTED BY USE OF A PREFORMED MASTIC JOINT MATERIAL. CONCRETE MATERIALS SHALL MEET ODOT SPECIFICATIONS. STANDARD PLACEMENT FOR WIRE MESH & REBAR SHALL BE USED. CUT OFF CONDUITS SO THEY EXTEND NO MORE THAN THREE INCHES BEYOND THE INSIDE PULLBOX WALL.

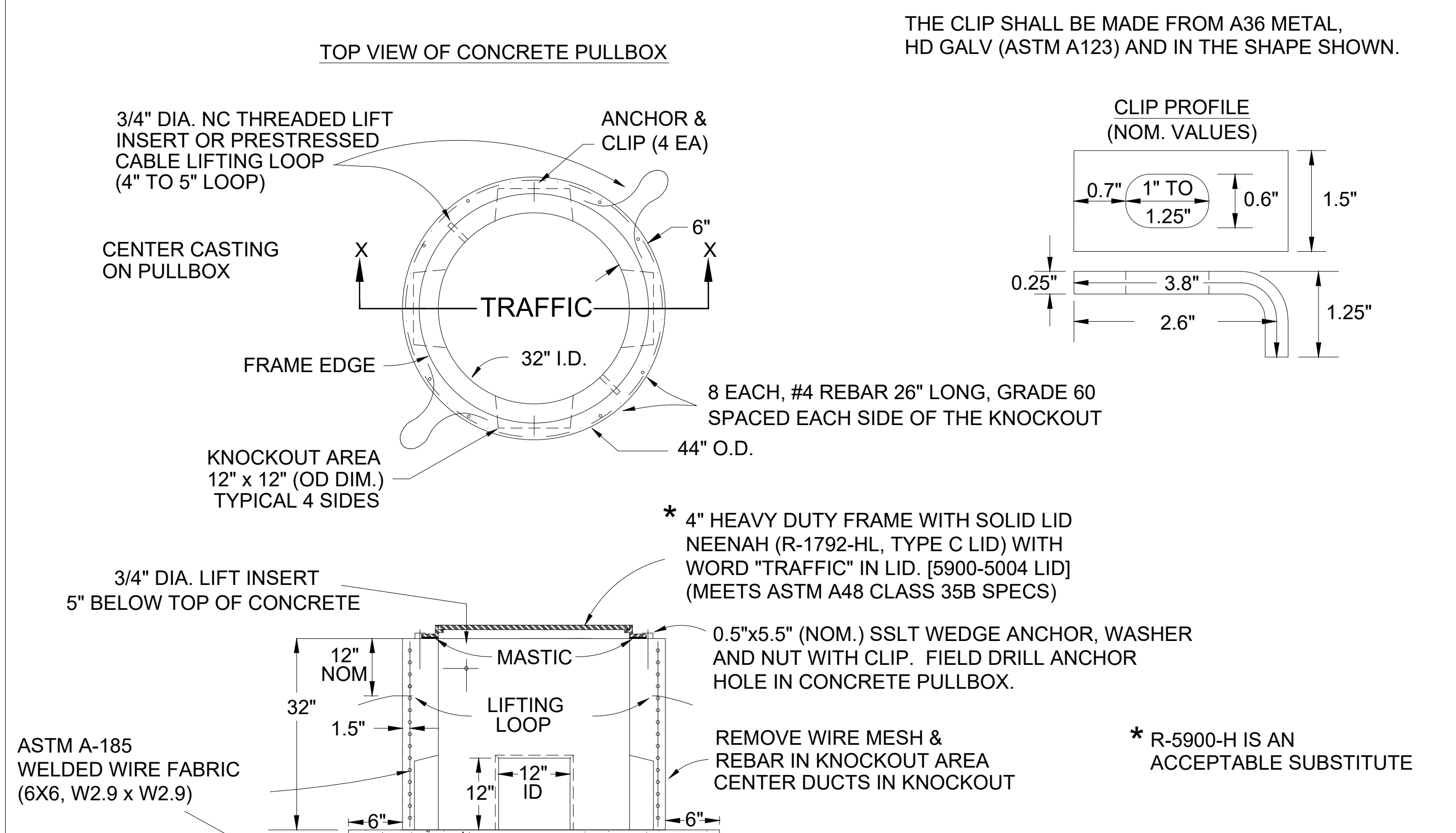
CONDUIT SHALL ENTER THE PULLBOX VIA A KNOCKOUT. CONDUIT WHEN APPROVED BY SIGNAL PERSONNEL MAY ENTER THE BOX THRU ITS WALL ONLY IF THE OPENING IS SAWN OR CORE DRILLED.

ENLARGING THE KNOCKOUT AREA IF REQUIRED SHALL BE DONE BY SAW CUTTING THE CONCRETE. NO OTHER METHOD IS ALLOWED. CONTRACTOR SHALL REPLACE THE CONCRETE HOUSING IF DAMAGED AT HIS EXPENSE. A PULL LINE (POLYOLEFIN, #14 CU WIRE OR NYLON ROPE) SHALL BE INSTALLED IN EACH CONDUIT (USED OR UNUSED) AND SHALL BE SECURELY FASTENED AT BOTH CONDUIT ENDS. ALL UNUSED CONDUITS SHALL BE CAPPED AND THE CAPS SECURED TO THE CONDUIT WITH TAPE. ANY CONDUIT THAT EXITS A PULLBOX, CONTAINS CABLE AND DIRECTLY ENTERS ANY ELECTRONIC CABINET, SHALL BE FOAM SEALED IN THE PULLBOX. PULLBOX BEARING CAPACITY TO EXCEED 40,000# AFTER THE CONDUITS HAVE BEEN INSTALLED, ANY OPENING IN THE PULLBOX WALL SHALL BE TOTALLY FILLED WITH MORTAR OR CONCRETE AND FINISHED FLUSH WITH THE INSIDE PULLBOX WALL. (NO VOIDS)

27 ROUND PULLBOX.DWG 10-12-05

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**ITEM 625 PULLBOX, 32", AS PER PLAN**



ONE COAT OF HYDROZO ENVIROSEAL 40, RAINSTOPPER 140 OR CHEMTRETE BSM40 SHALL BE APPLIED TO THE INSIDE & OUTSIDE OF THE PULLBOX.

CONCRETE SHALL HAVE AIR ENTRAPMENT OF 6% ± 2% AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. LID RING LOAD TRANSFER IS TO BE DISTRIBUTED BY USE OF A PREFORMED MASTIC JOINT MATERIAL. CONCRETE MATERIALS SHALL MEET ODOT SPECIFICATIONS. STANDARD PLACEMENT FOR WIRE MESH & REBAR SHALL BE USED. CUT OFF CONDUITS SO THEY EXTEND NO MORE THAN THREE INCHES BEYOND THE INSIDE PULLBOX WALL.

CONDUIT SHALL ENTER THE PULLBOX VIA A KNOCKOUT. CONDUIT WHEN APPROVED BY SIGNAL PERSONNEL MAY ENTER THE BOX THRU ITS WALL ONLY IF THE OPENING IS SAWN OR CORE DRILLED.

ENLARGING THE KNOCKOUT AREA IF REQUIRED SHALL BE DONE BY SAW CUTTING THE CONCRETE. NO OTHER METHOD IS ALLOWED. CONTRACTOR SHALL REPLACE THE CONCRETE HOUSING IF DAMAGED AT HIS EXPENSE. A PULL LINE (POLYOLEFIN, #14 CU WIRE OR NYLON ROPE) SHALL BE INSTALLED IN EACH CONDUIT (USED OR UNUSED) AND SHALL BE SECURELY FASTENED AT BOTH CONDUIT ENDS. ALL UNUSED CONDUITS SHALL BE CAPPED AND THE CAPS SECURED TO THE CONDUIT WITH TAPE. ANY CONDUIT THAT EXITS A PULLBOX, CONTAINS CABLE AND DIRECTLY ENTERS ANY ELECTRONIC CABINET, SHALL BE FOAM SEALED IN THE PULLBOX. FOR EACH INDIVIDUAL INTERCONNECT CABLE ONLY: COIL 6 TURNS (50') OF NON-COAX INTERCONNECT CABLE IN EACH PULLBOX. PLACE CABLE AROUND THE INSIDE BOX PERIMETER. TIE WRAP THE COILS. COIL 2 TURNS (15') OF COAX CABLE IN EACH PULLBOX ADJACENT TO ANY CABINET. COIL COAX CABLE IN OTHER PULLBOXES WHEN SPECIFIED.

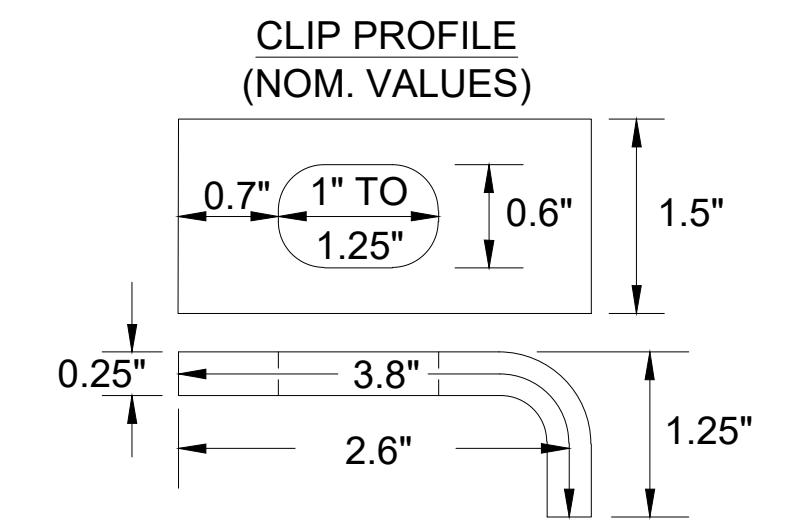
32 ROUND PULLBOX.DWG 10-12-05

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NOTE:

48" INNER DIAMETER PULLBOX SHALL GENERALLY MEET THE DESIGN CRITERIA FOR THE 32" PULLBOX.

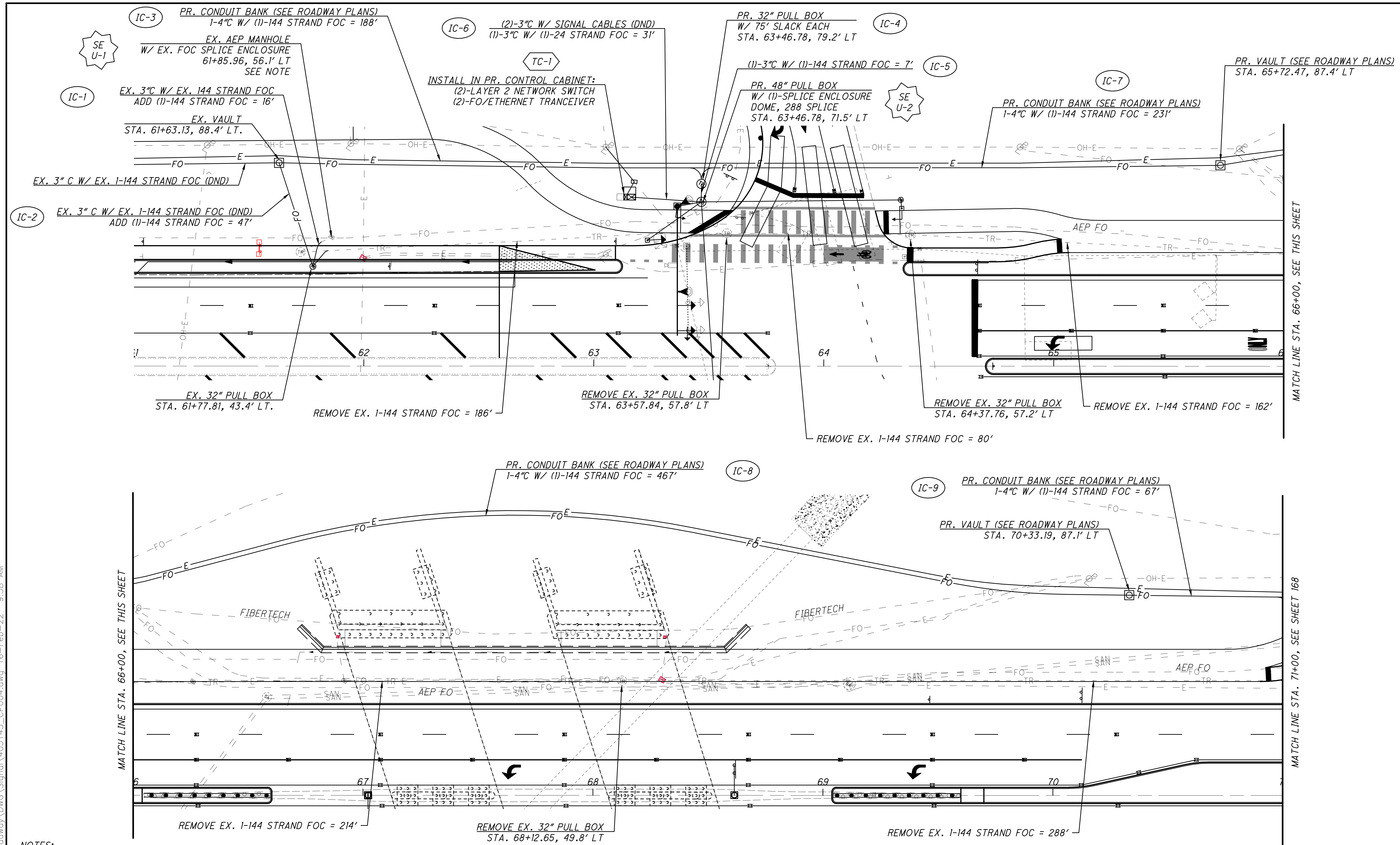
THE CLIP SHALL BE MADE FROM A36 METAL, HD GALV (ASTM A123) AND IN THE SHAPE SHOWN.



CALCULATED  
WCS  
CHECKED  
DLS

**PULLBOX DETAILS**

**FRA-62-30-34**

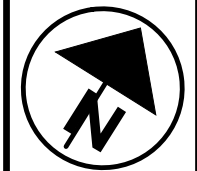


NOTES:

1. ACCESS TO AEP VAULTS IS NOT ALLOWED WITHOUT PERMISSION FROM AEP. SEE ALSO TRAFFIC CONTROL GENERAL NOTES.
2. CONTRACTOR SHALL COORDINATE WITH AEP FOR CONDUIT WORK AROUND THE EXISTING AEP MANHOLE. DURING CONSTRUCTION, CONTRACTOR TO COORDINATE WITH AEP TO MODIFY SPLICING AT THE EXISTING SPLICE ENCLOSURE AT STA. 61+85.96. SEE TEMPORARY COMMUNICATION DIAGRAMS. FOR FINAL INSTALLATION, THE CONTRACTOR WILL ROUTE THE PROPOSED 144 STRAND FOC TO THE SPLICE ENCLOSURE AND COORDINATE WITH AEP TO MODIFY SPLICING. SEE FINAL COMMUNICATION DIAGRAMS. SEE TRAFFIC CONTROL GENERAL NOTES FOR ADDITIONAL INFORMATION ON WHAT AEP PROVIDE AND INSTALLS. COST FOR COORDINATION INCIDENTAL TO PROJECT COST.

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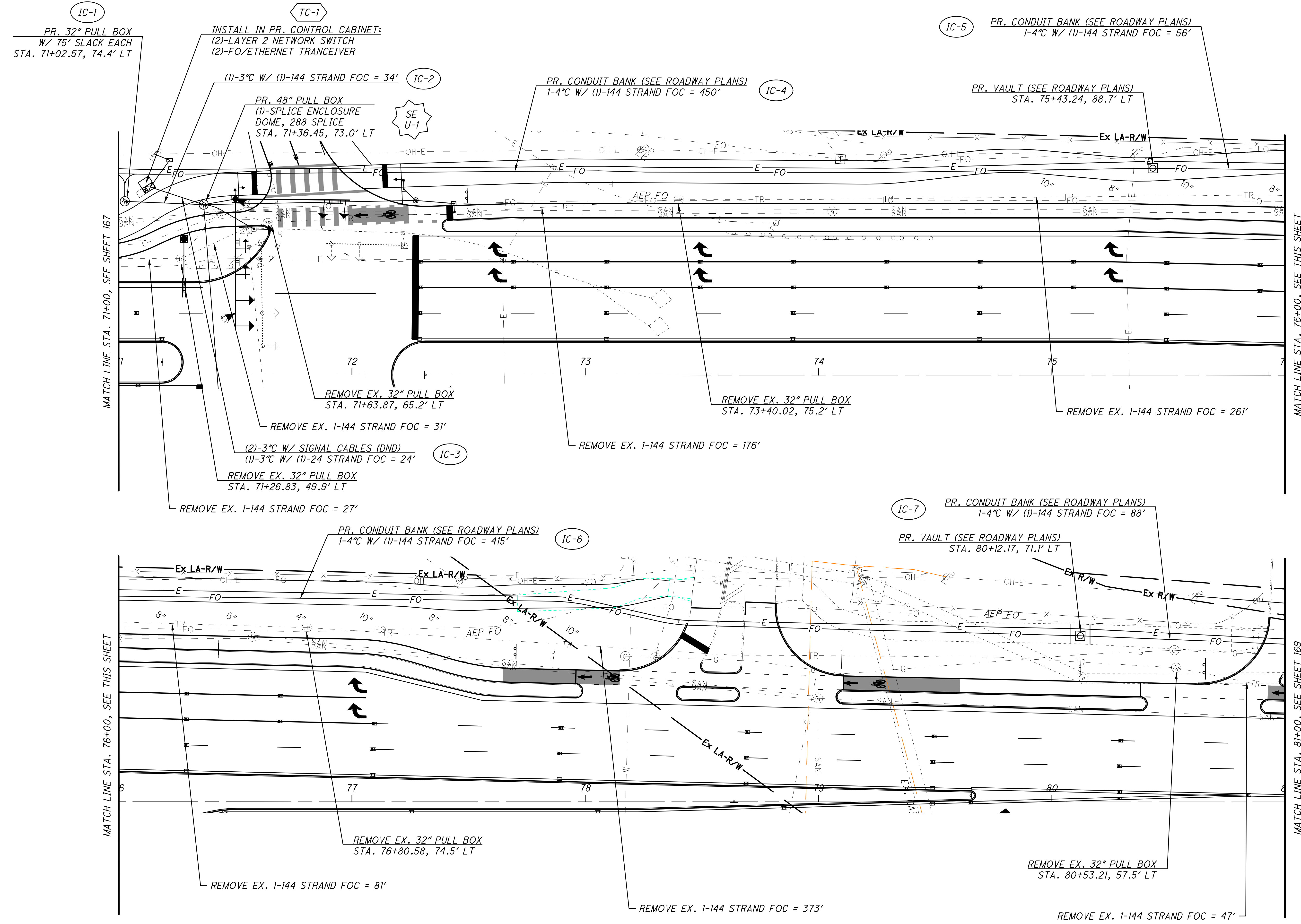
0 20 40  
10  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
WCS  
CHECKED  
DLS

TRAFFIC SIGNAL INTERCONNECT PLAN  
STA. 71+00 TO STA. 81+00

FRA-62-30.34

168  
202



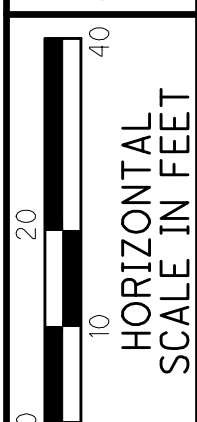
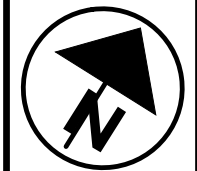
MATCH LINE STA. 71+00, SEE SHEET 167

MATCH LINE STA. 76+00, SEE THIS SHEET

MATCH LINE STA. 76+00, SEE THIS SHEET

MATCH LINE STA. 81+00, SEE SHEET 169

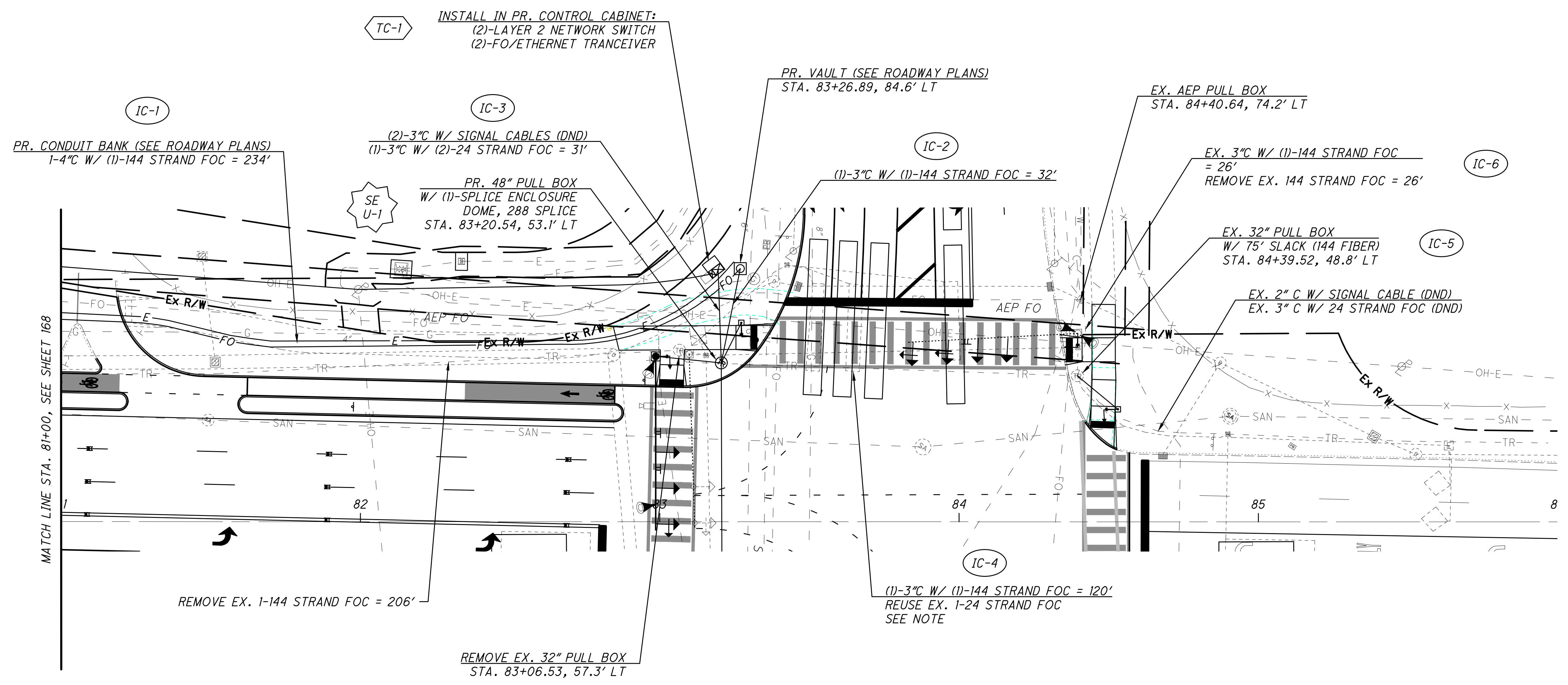




CALCULATED WCS CHECKED DLS

TRAFFIC SIGNAL INTERCONNECT PLAN  
STA. 81+00 TO STA. 86+00

FRA-62-30.34

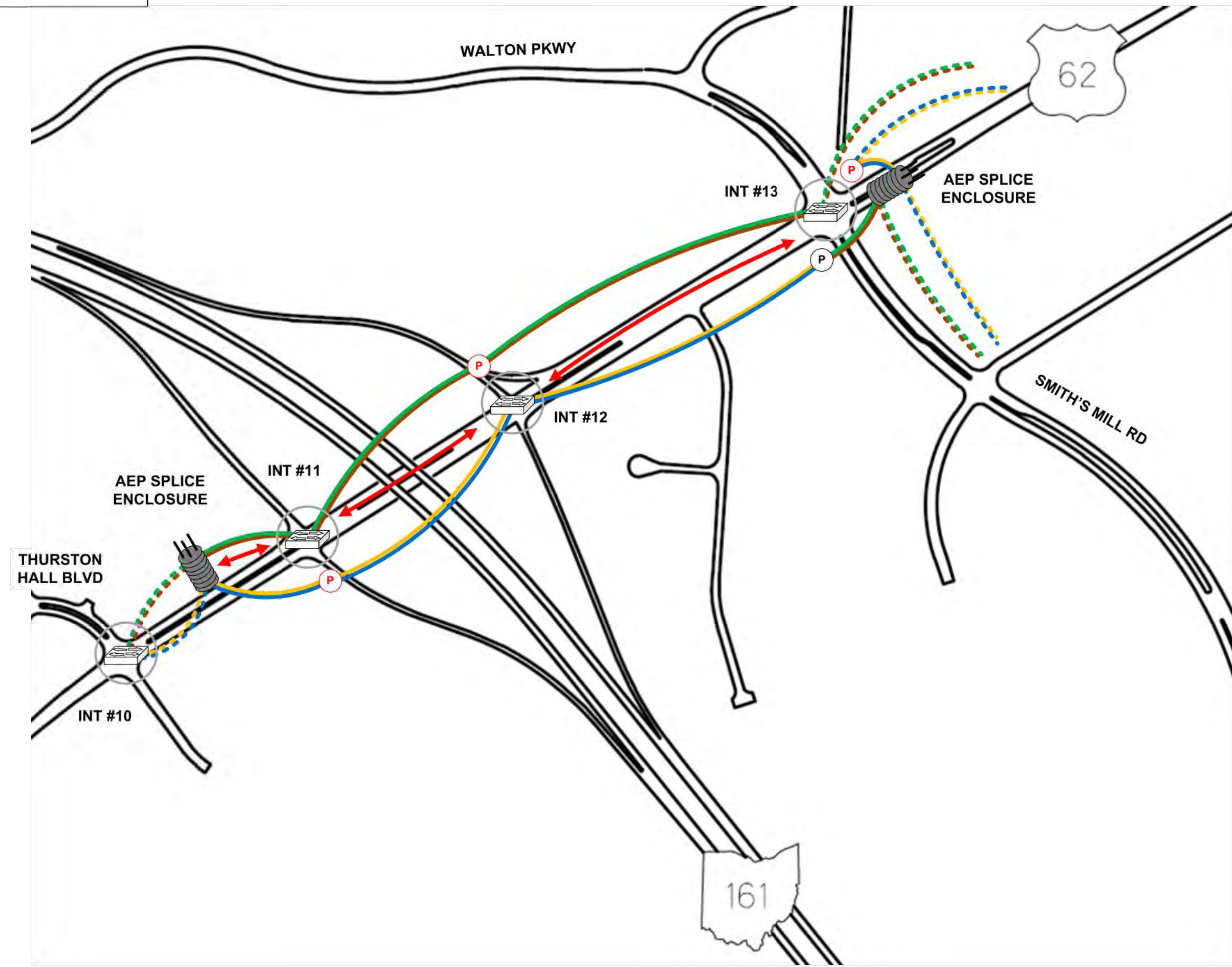


- NOTES:
1. ACCESS TO AEP VAULTS IS NOT ALLOWED WITHOUT PERMISSION FROM AEP. SEE ALSO TRAFFIC CONTROL GENERAL NOTES.
  2. CONTRACTOR SHALL COORDINATE WITH AEP FOR CONDUIT WORK AROUND THE EXISTING AEP MANHOLE. DURING CONSTRUCTION, CONTRACTOR TO PULL EX. 24 STRAND FOC FROM EX. SPLICE AT STA. 83+06.53 AND ROUTE TO EX. AEP PULL BOX AT STA. 84+40.64. SEE TEMPORARY COMMUNICATION DIAGRAMS. FOR FINAL INSTALLATION, THE CONTRACTOR WILL ROUTE THE EX. 24 STRAND FOC TO THE PROPOSED SPLICE ENCLOSURE AT STA. 83+20.54. SEE FINAL COMMUNICATION DIAGRAMS. SEE TRAFFIC CONTROL GENERAL NOTES FOR ADDITIONAL INFORMATION ON WHAT AEP PROVIDE AND INSTALLS. COST FOR COORDINATION INCIDENTAL TO PROJECT COST.

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### LEGEND

PROPOSED NETWORK CONNECTION	PATCHING
LINE COLORS INDICATE FIBERS USED	CROSSOVER PATCH AT INTERSECTION
EX. FIBER	PATCH AT INTERSECTION
LAYER 2 ETHERNET SWITCH	EXISTING CROSSOVER PATCH AT INTERSECTION
EX. LAYER 2 ETHERNET SWITCH	EXISTING PATCH AT INTERSECTION
BUFFER TUBE COLOR	

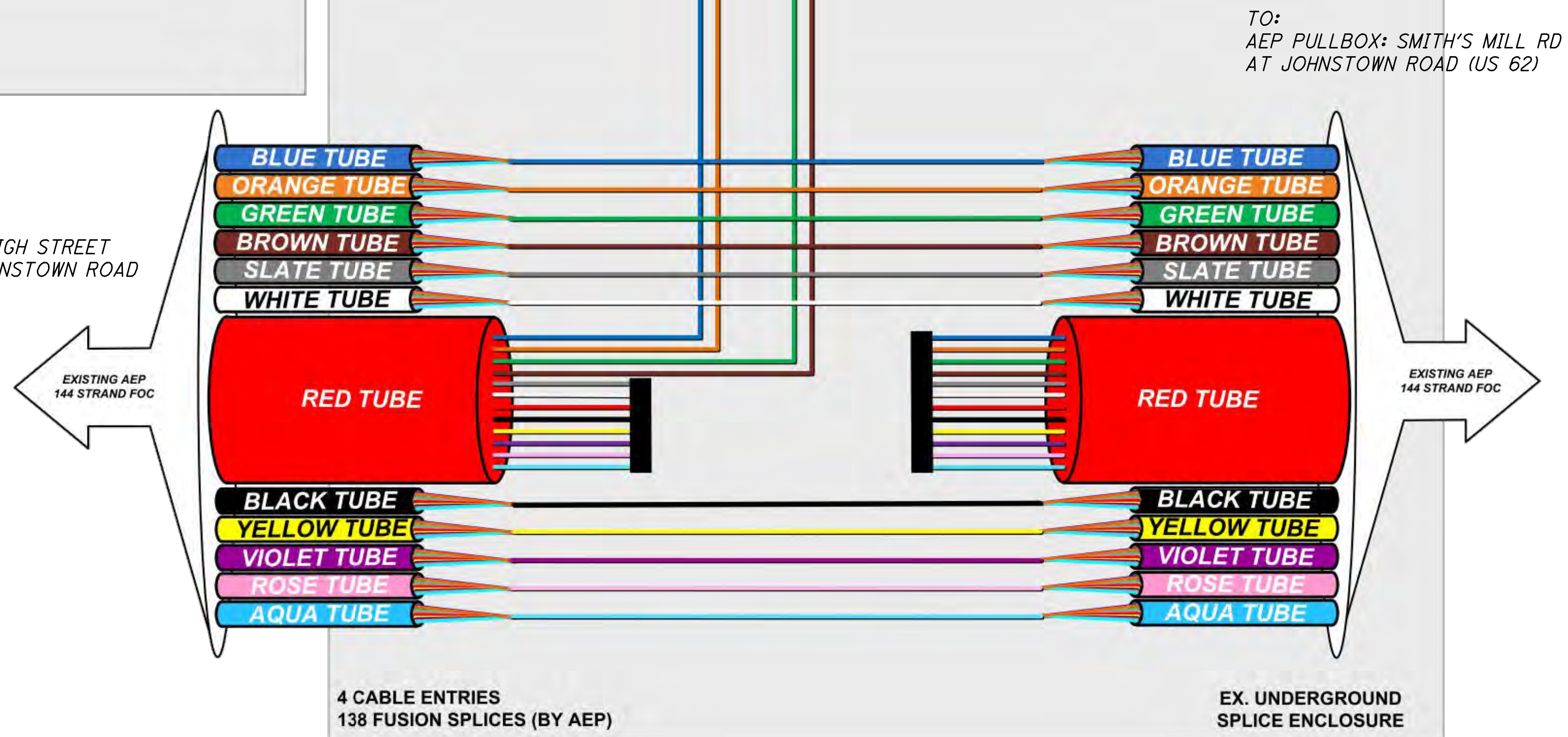
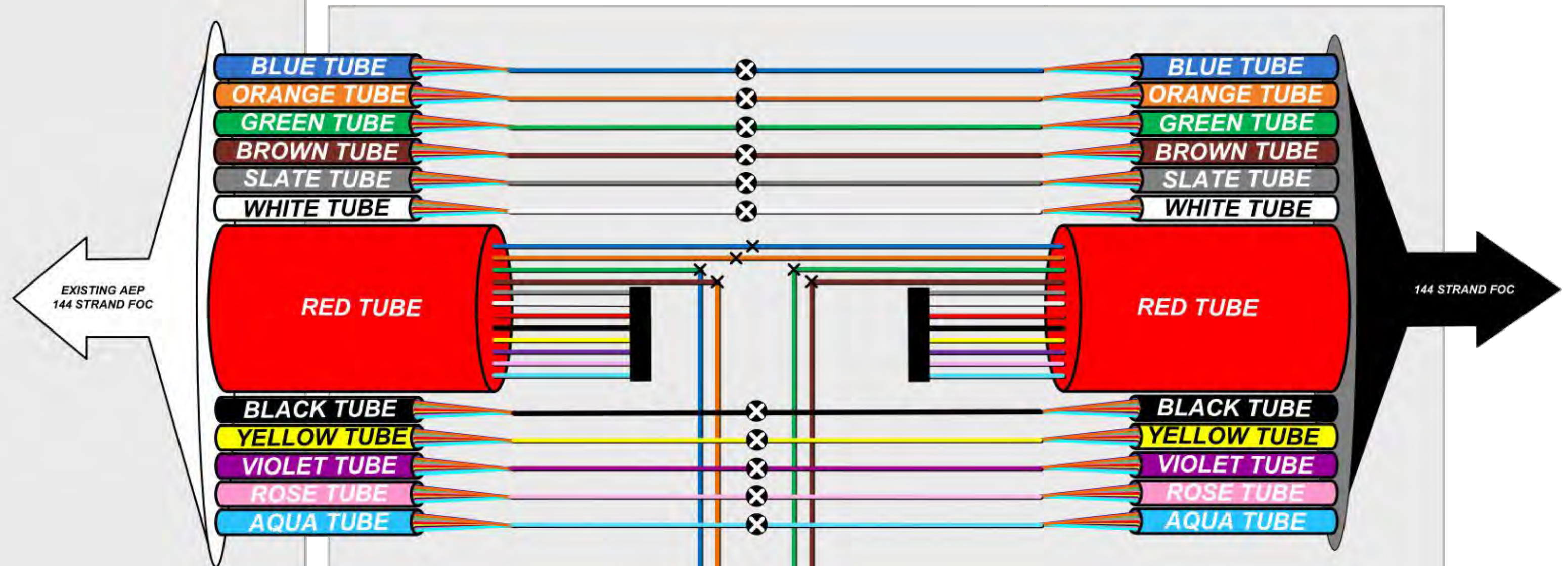


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CONNECTION TO EXISTING FIBER

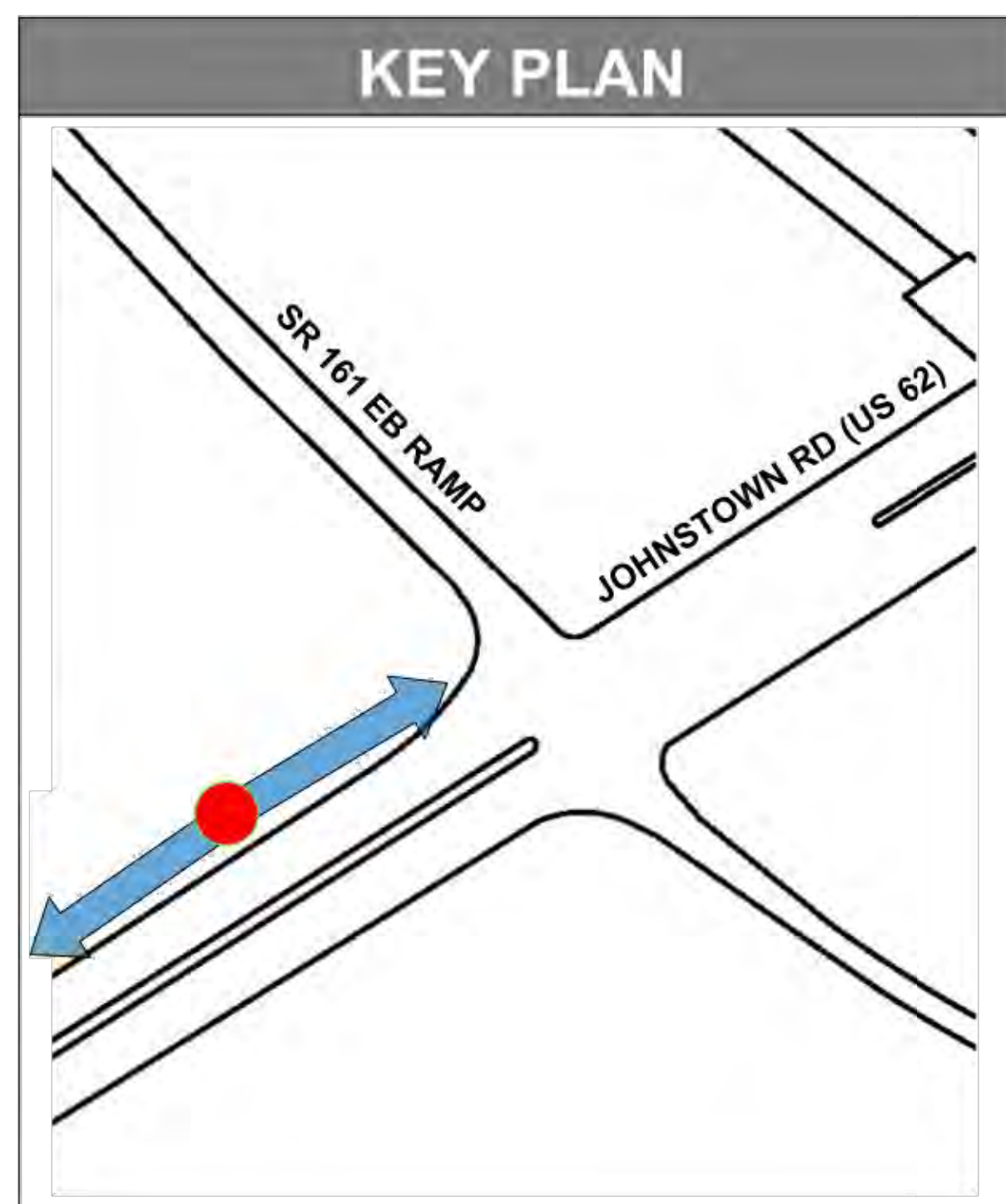
TO:  
INT #10: THURSTON HALL BLVD  
AT JOHNSTOWN ROAD (US 62)  
SEE PHASE 1 PLANS

TO:  
INT #11A: SR 161 EB RAMPS AT  
JOHNSTOWN ROAD (US 62)  
SEE SHEET 172



TO:  
AEP PULLBOX: HIGH STREET  
(SR 605) AT JOHNSTOWN ROAD  
(US 62)

LEGEND	
	FIBER PATCH CABLE TX/RX
	FIBER PATCH CABLE RX/TX CROSSOVER
	CAT 5E CABLE
	PATCH PANEL
	EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
	FUSION SPLICE - SINGLE FIBER
	FUSION SPLICE - 12 FIBER BUFFER TUBE
	EXISTING FUSION SPLICE
	GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX - LONG HAUL LASER
	8P8C CONNECTOR
	144 STRAND SMF
	CITYNET FIBER
	COLUMBUS FIBERNET
	COLUMBUS DOT FIBER
	WIRELESS ETHERNET RADIO



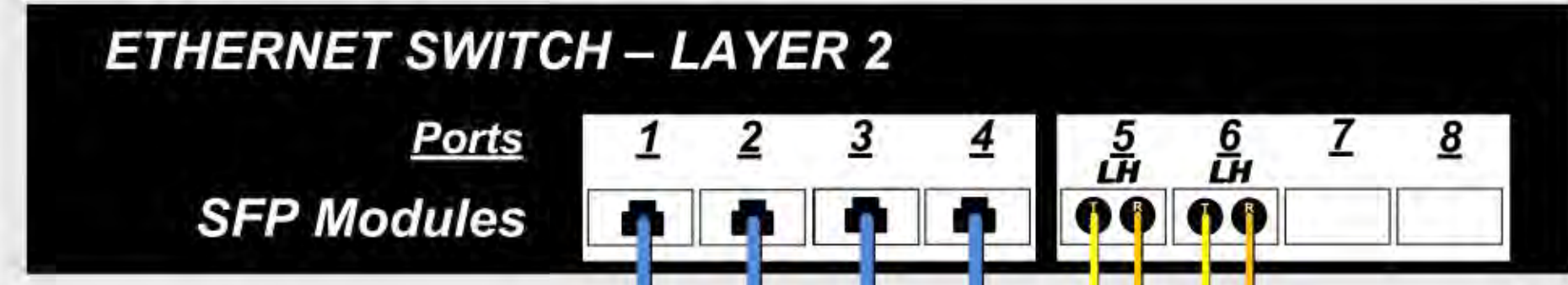
4 CABLE ENTRIES  
138 FUSION SPLICES (BY AEP)

EX. UNDERGROUND  
SPLICE ENCLOSURE

**INTERSECTION 11**  
REFER TO SHEET 167 FOR CONSTRUCTION PLAN DETAILS

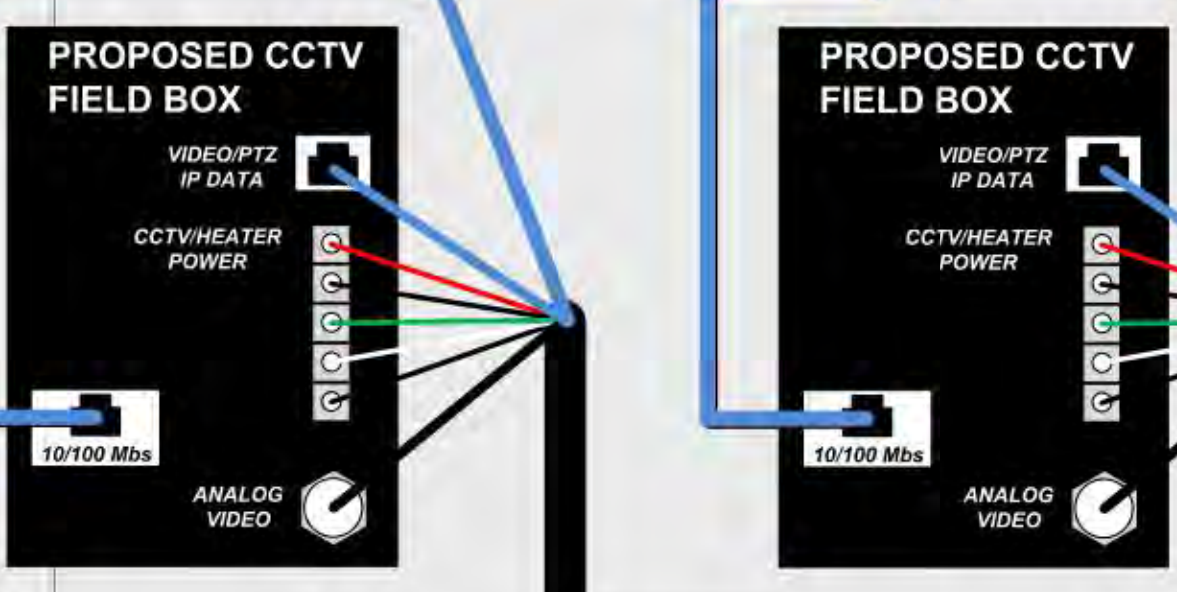
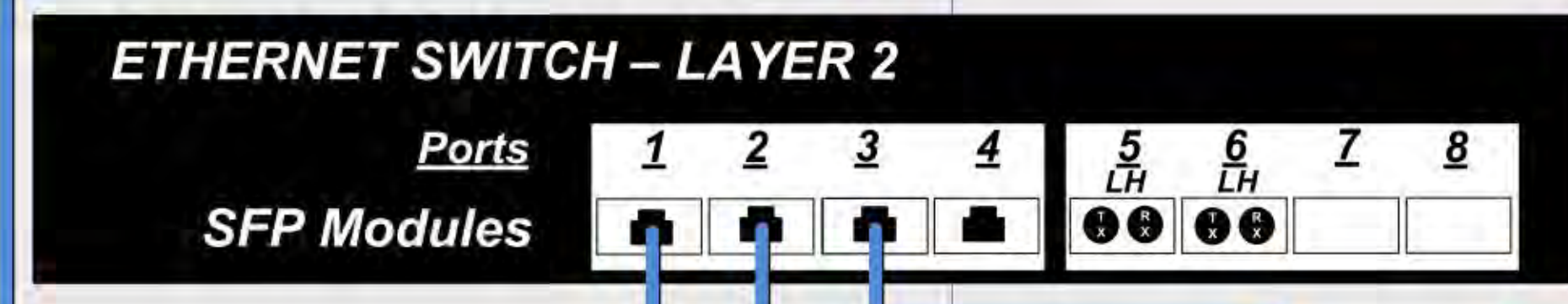
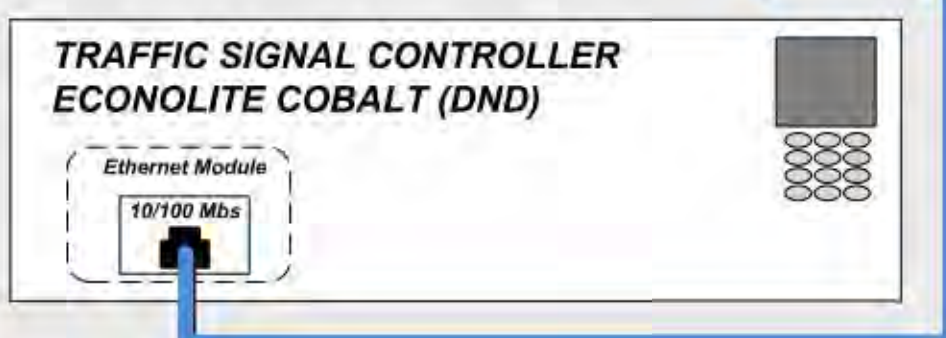
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**TRAFFIC SIGNAL CABINET ASSEMBLY**

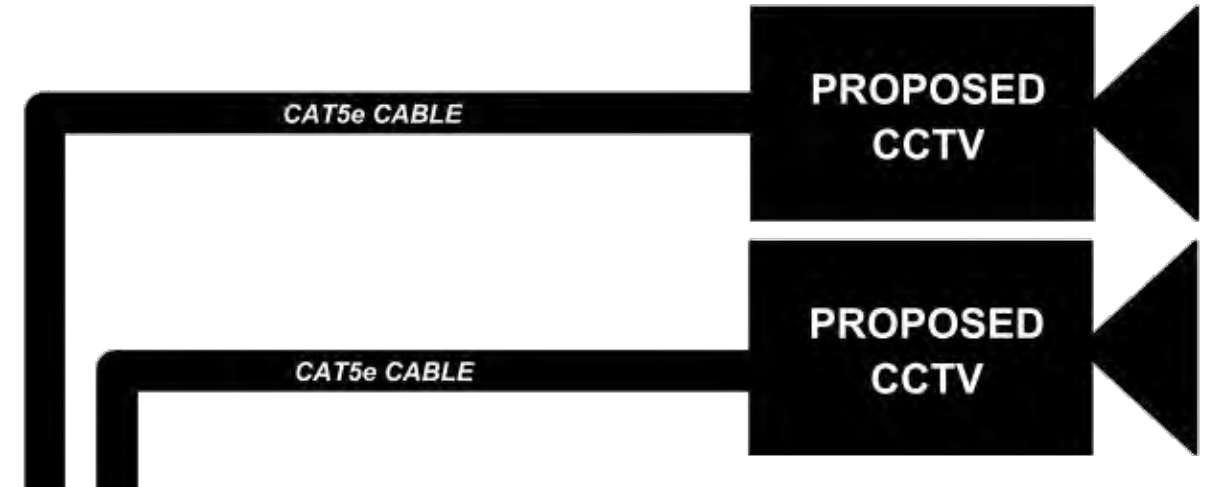
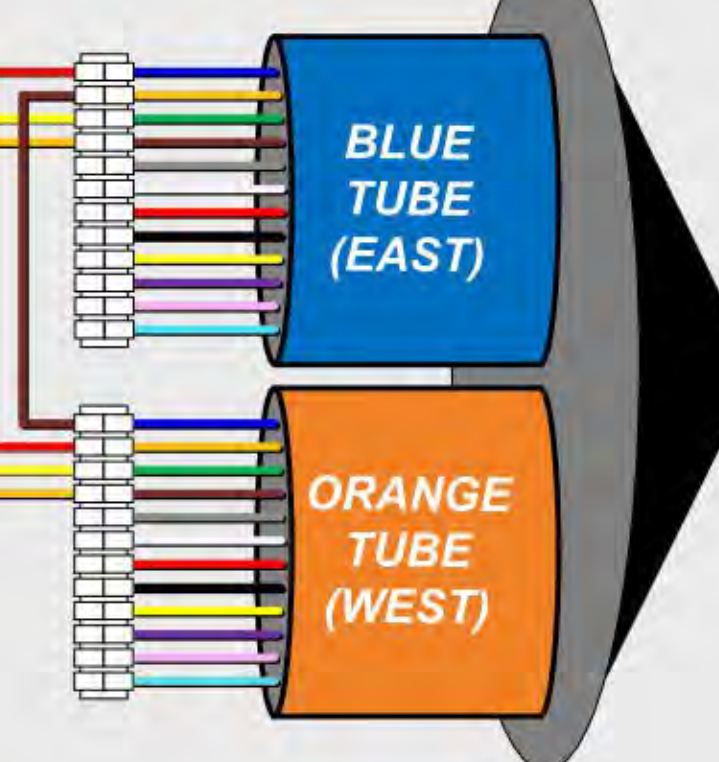


**ETHERNET SWITCH PORT DESTINATION**

PORT 5: INT #13A: SMITH'S MILL RD AT JOHNSTOWN RD (US 62)  
SEE SHEET 175  
PORT 6: INT #17: WALTON PKWY AT NEW ALBANY CONDIT RD (SR 605)  
SEE INTERCONNECT PLANS



**PATCH PANEL ENCLOSURE - 24 TERMINATION**



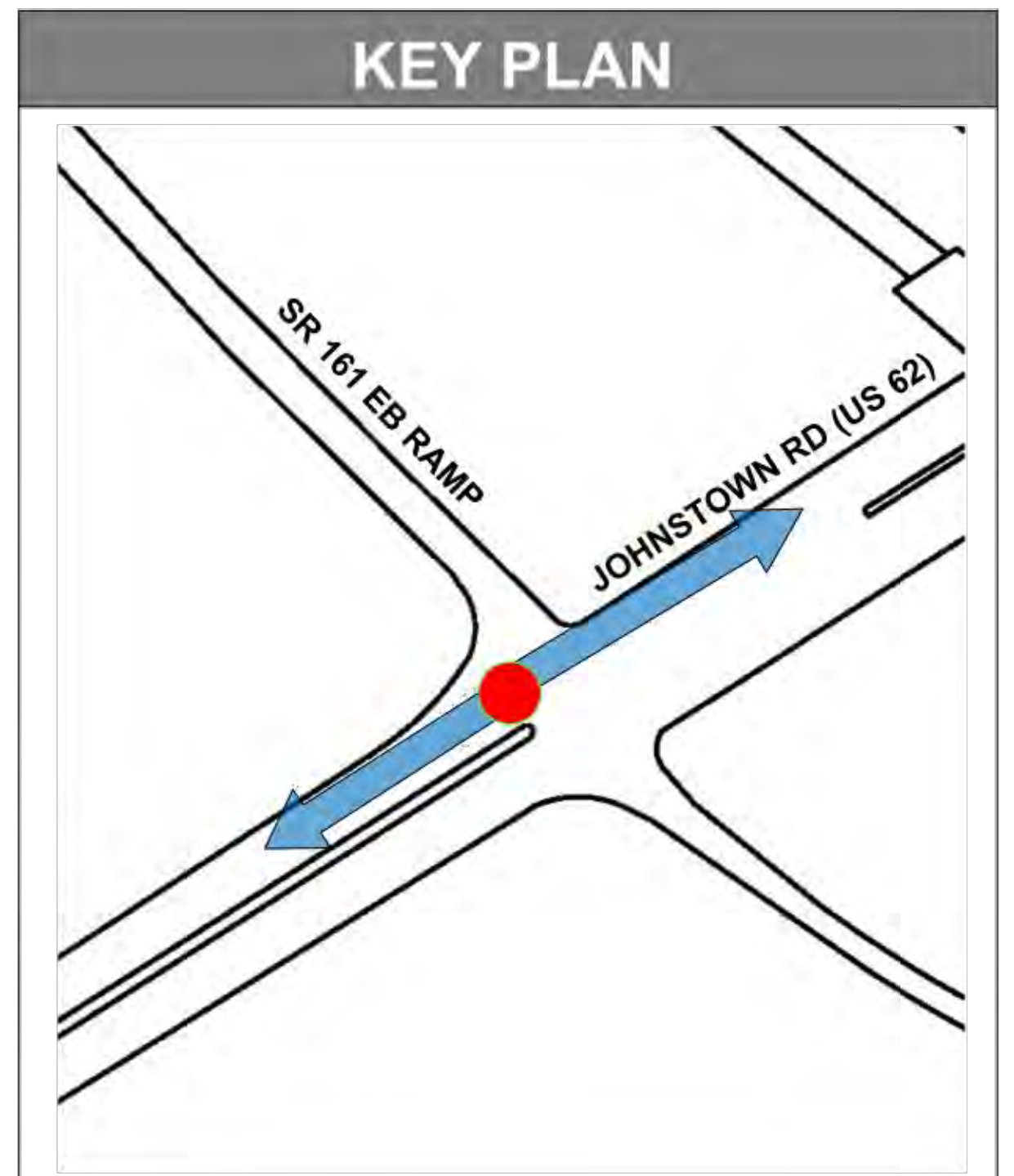
24 STRAND DROP



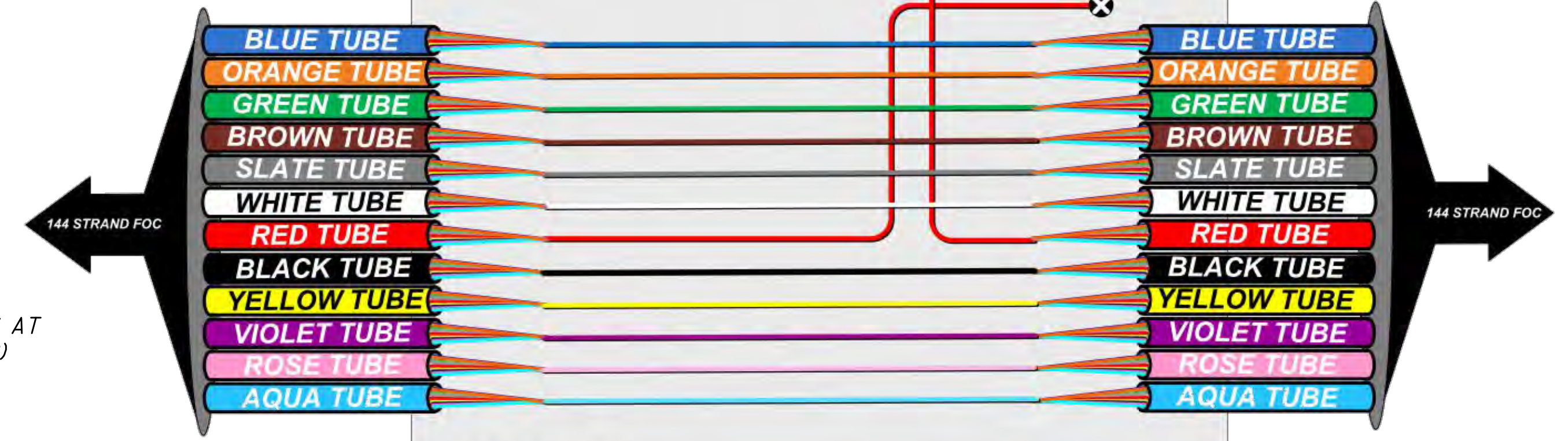
TO:  
INT #12: SR 161 WB RAMPS AT  
JOHNSTOWN ROAD (US 62)  
SEE SHEET 173

**LEGEND**

- FIBER PATCH CABLE TX/RX
- FIBER PATCH CABLE RX/TX CROSSOVER
- CAT 5E CABLE
- PATCH PANEL
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE - SINGLE FIBER
- FUSION SPLICE - 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE
- GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX - LONG HAUL LASER
- 8P8C CONNECTOR
- 144 STRAND SMF
- CITYNET FIBER
- COLUMBUS FIBERNET
- COLUMBUS DOT FIBER
- WIRELESS ETHERNET RADIO



TO:  
INT #11: SR 161 EB RAMPS AT  
JOHNSTOWN ROAD (US 62)  
SEE SHEET 171



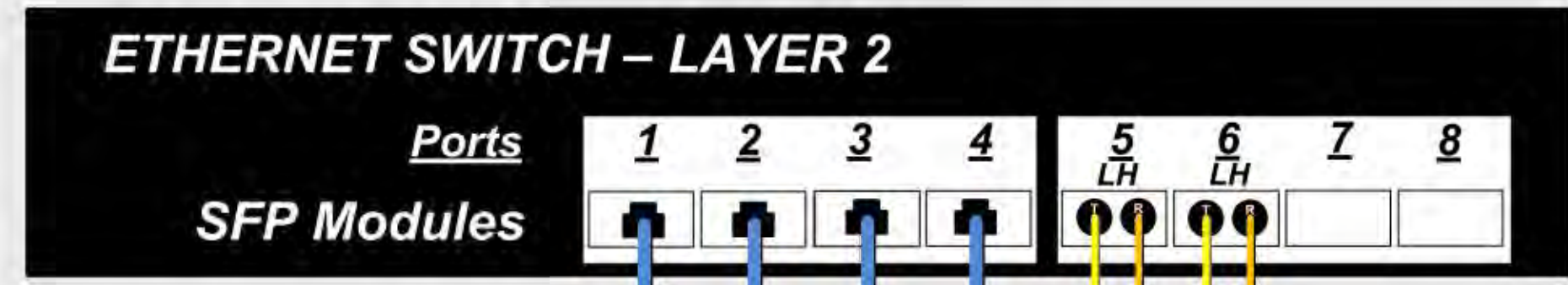
3 CABLE ENTRIES  
24 FUSION SPLICES  
11 BUFFER TUBES PASSED THROUGH UNSPLICED

DOME, 144 FUSION SPLICE, UNDERGROUND SPLICE ENCLOSURE

**INTERSECTION 11A**  
REFER TO SHEET 167 FOR CONSTRUCTION PLAN DETAILS

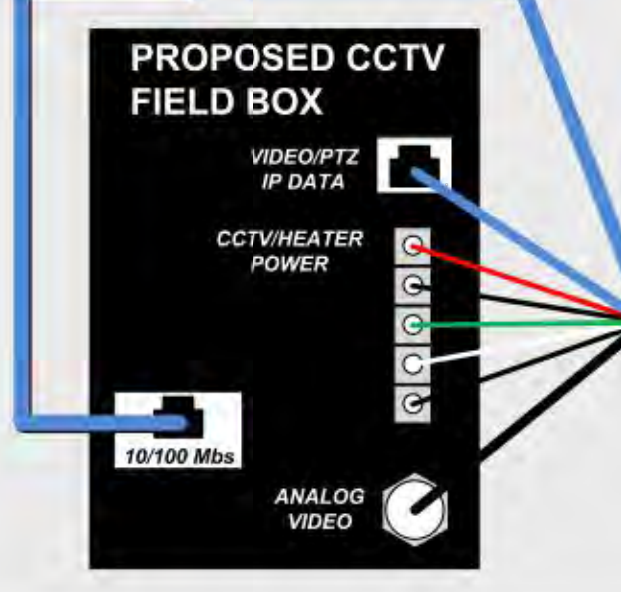
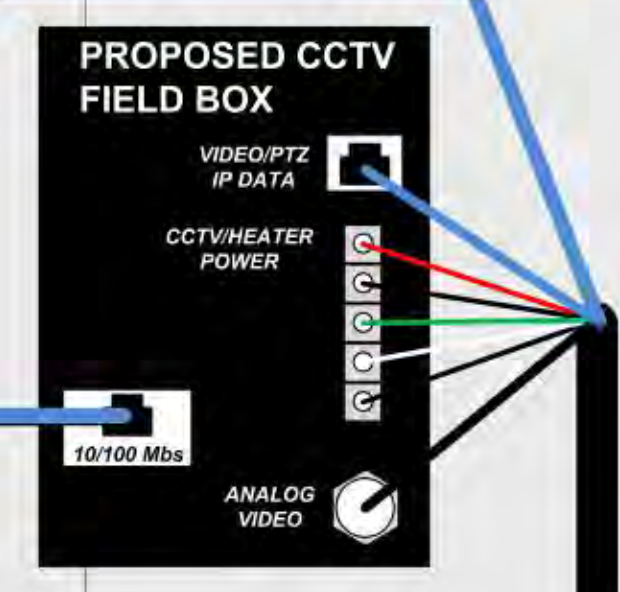
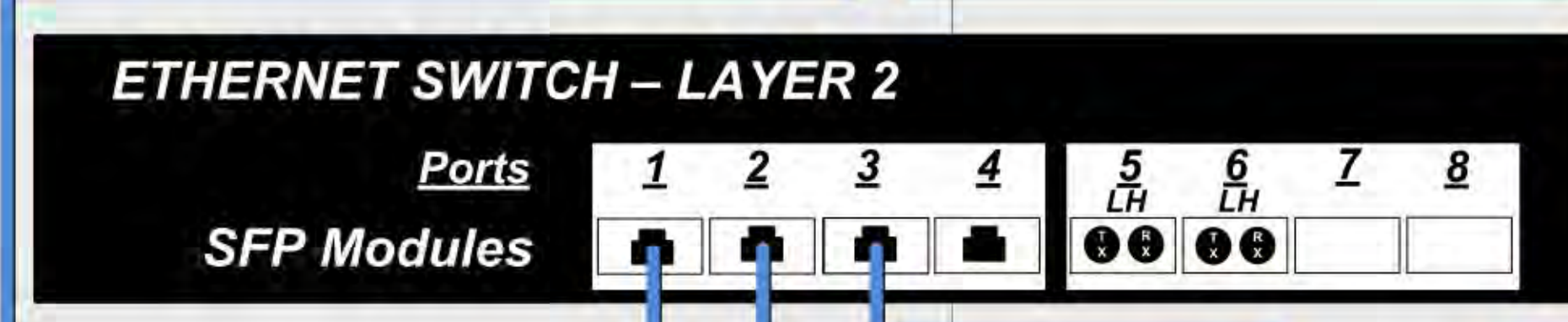
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**TRAFFIC SIGNAL CABINET ASSEMBLY**



**ETHERNET SWITCH PORT DESTINATION**

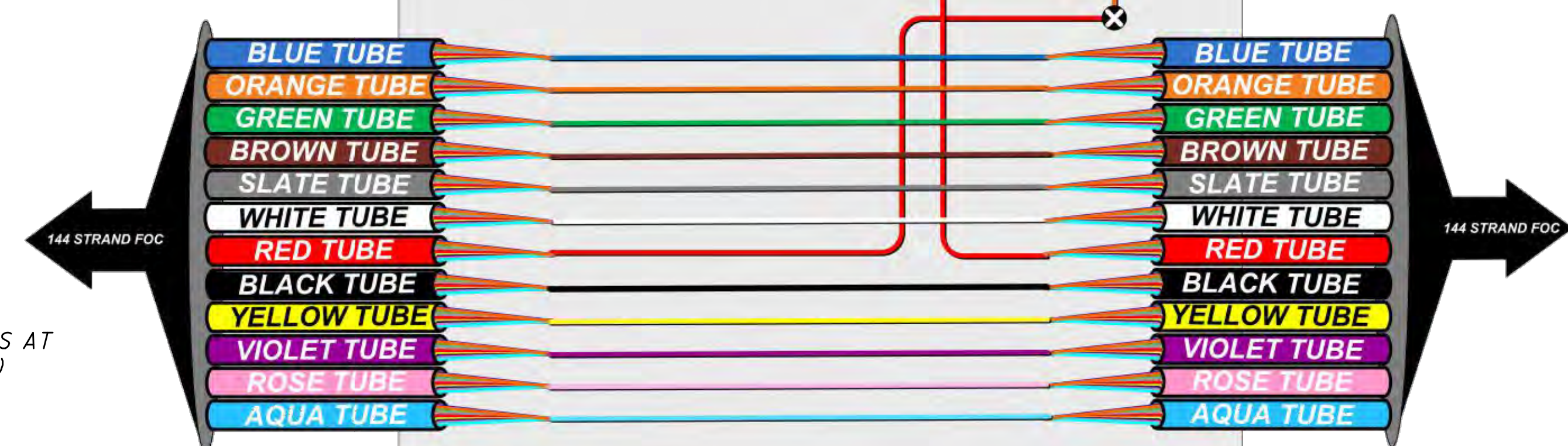
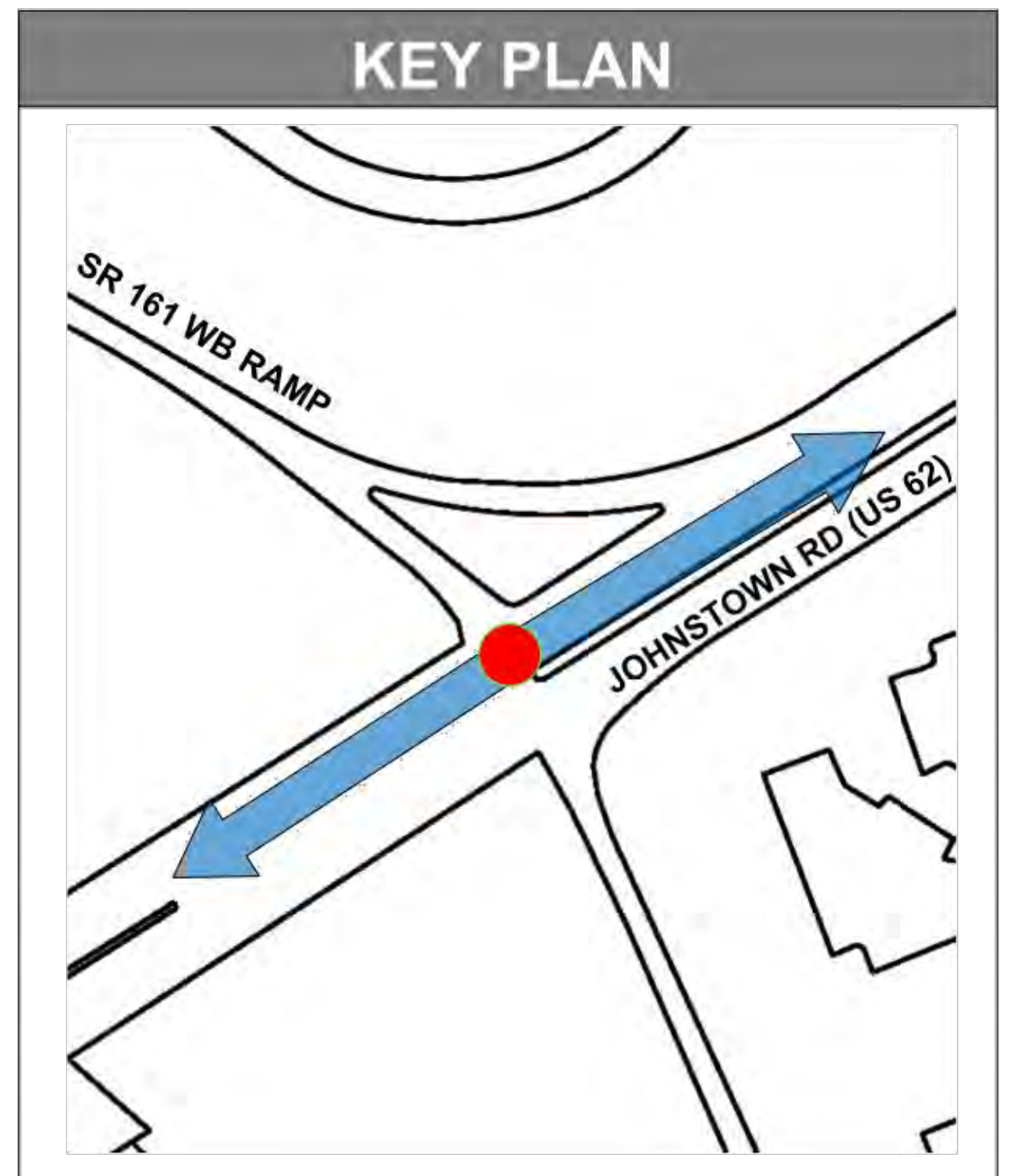
PORT 5: INT #10: THURSTON HALL BLVD AT JOHNSTOWN ROAD (US 62)  
SEE PHASE 1 PLANS  
PORT 6: INT #2: SR 161 WB RAMP AT BEECH RD  
SEE INTERCONNECT PLANS



**PATCH PANEL ENCLOSURE - 24 TERMINATION**

**LEGEND**

- FIBER PATCH CABLE TX/RX
- FIBER PATCH CABLE RX/TX CROSSOVER
- CAT 5E CABLE
- PATCH PANEL
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE - SINGLE FIBER
- FUSION SPLICE - 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE
- GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX - LONG HAUL LASER
- 8P8C CONNECTOR
- 144 STRAND SMF
- CITYNET FIBER
- COLUMBUS FIBERNET
- COLUMBUS DOT FIBER
- WIRELESS ETHERNET RADIO



3 CABLE ENTRIES  
24 FUSION SPLICES  
11 BUFFER TUBES PASSED THROUGH UNSPLICED

DOME, 144 FUSION SPLICE, UNDERGROUND SPLICE ENCLOSURE

TO: INT #13A: SMITH'S MILL AT JOHNSTOWN ROAD (US 62)  
SEE SHEET 175

TO: INT #11A: SR 161 EB RAMP AT JOHNSTOWN ROAD (US 62)  
SEE SHEET 172

**INTERSECTION 12**  
REFER TO SHEET 168 FOR CONSTRUCTION PLAN DETAILS

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**CONNECTION TO EXISTING FIBER**

CALCULATED  
WCS  
CHECKED  
DLS

**INT #13: SMITH'S MILL ROAD AT JOHNSTOWN ROAD (US 62)  
COMMUNICATION DIAGRAM**

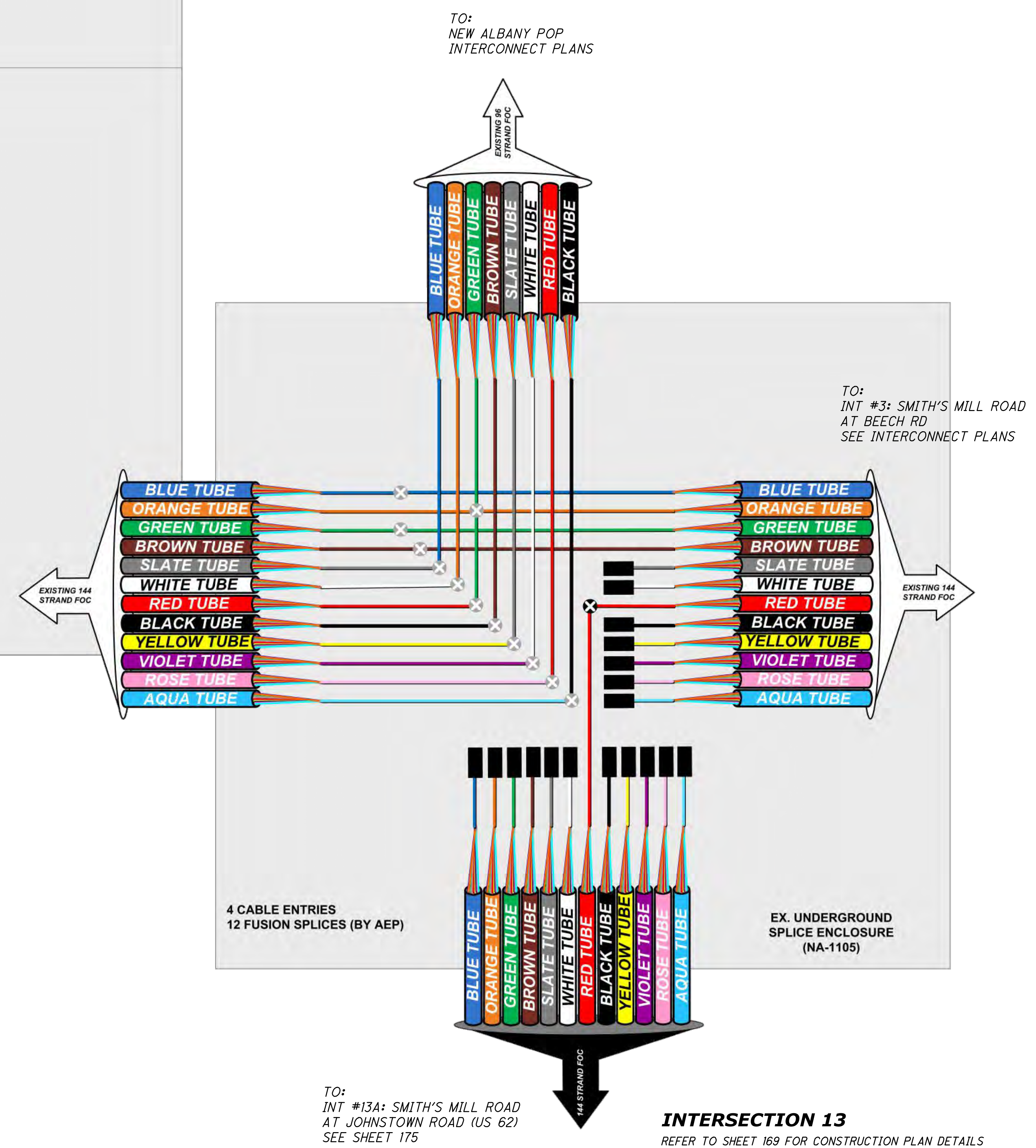
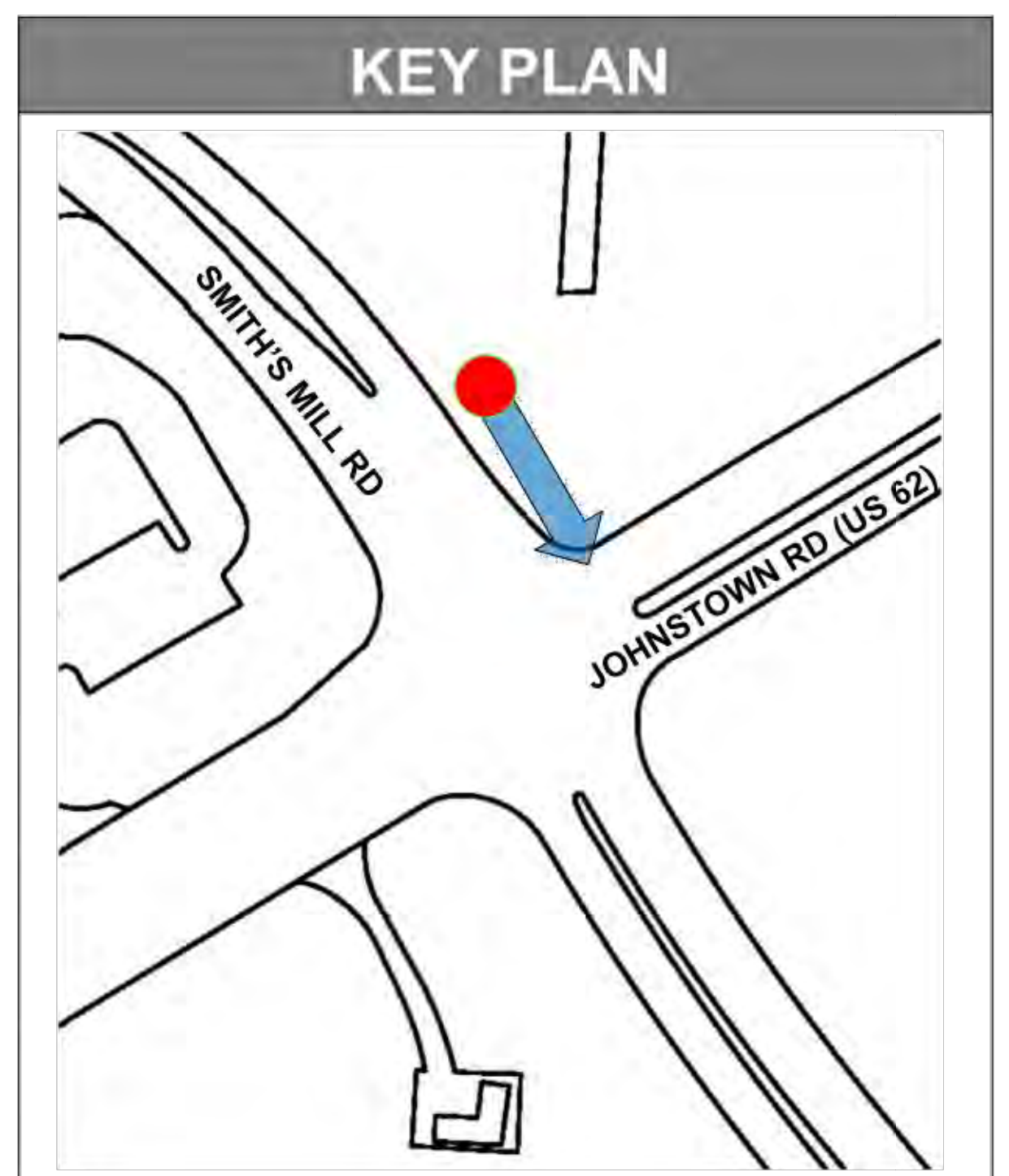
**FRA-62-30.34**

174  
202

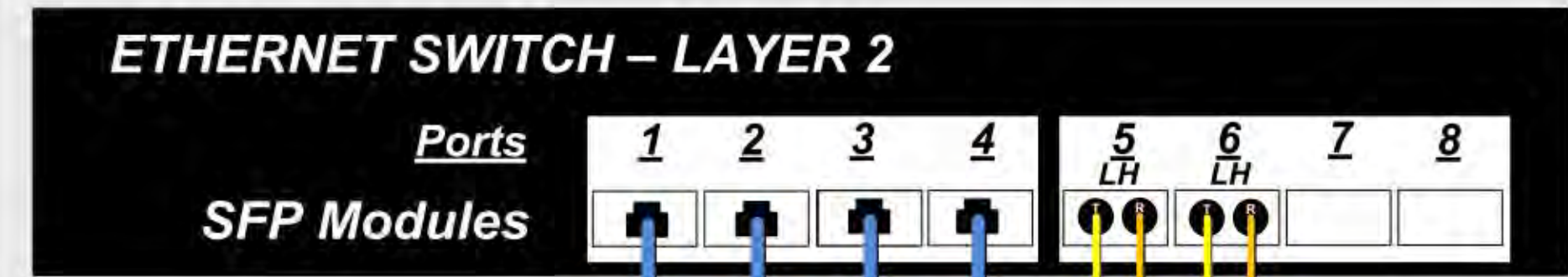
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**LEGEND**

- FIBER PATCH CABLE TX/RX
- FIBER PATCH CABLE RX/TX CROSSOVER
- CAT 5E CABLE
- PATCH PANEL
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE - SINGLE FIBER
- FUSION SPLICE - 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE
- GBIC OPTICAL TRANSCEIVER
- LH - SHORT HAUL LED
- ZX - LONG HAUL LASER
- 8P8C CONNECTOR
- 144 STRAND SMF
- CITYNET FIBER
- COLUMBUS FIBERNET
- COLUMBUS DOT FIBER
- WIRELESS ETHERNET RADIO



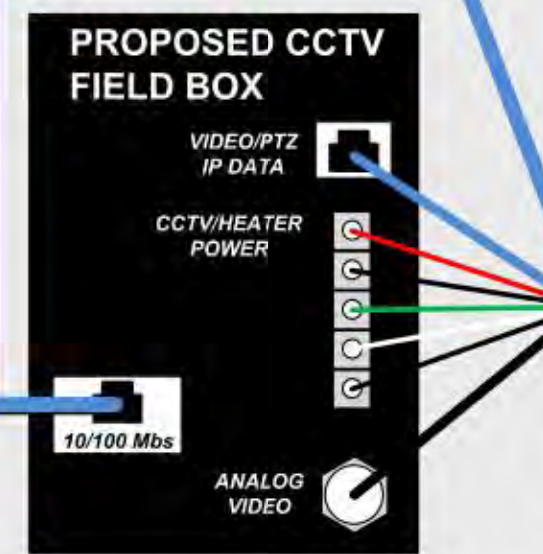
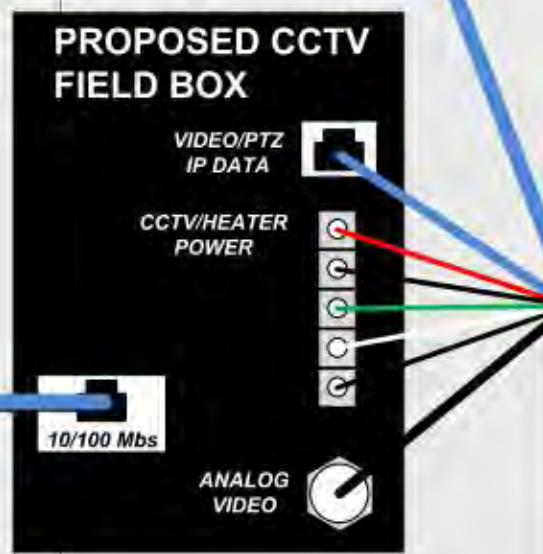
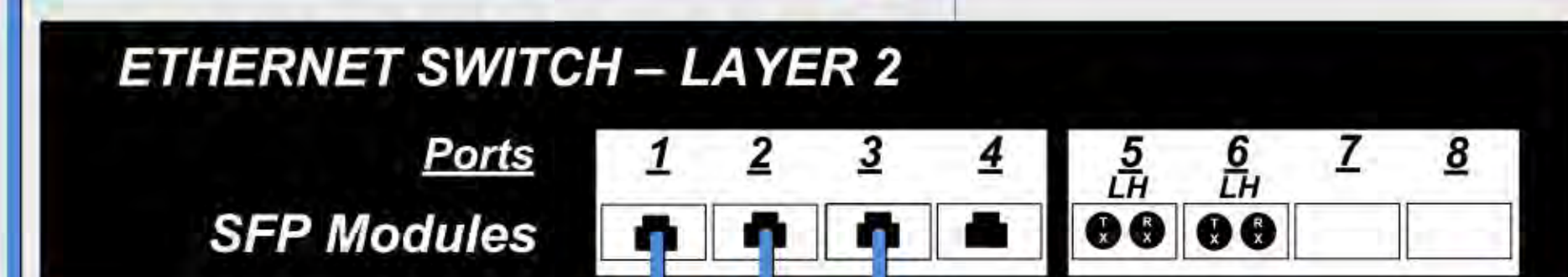
**TRAFFIC SIGNAL CABINET ASSEMBLY**



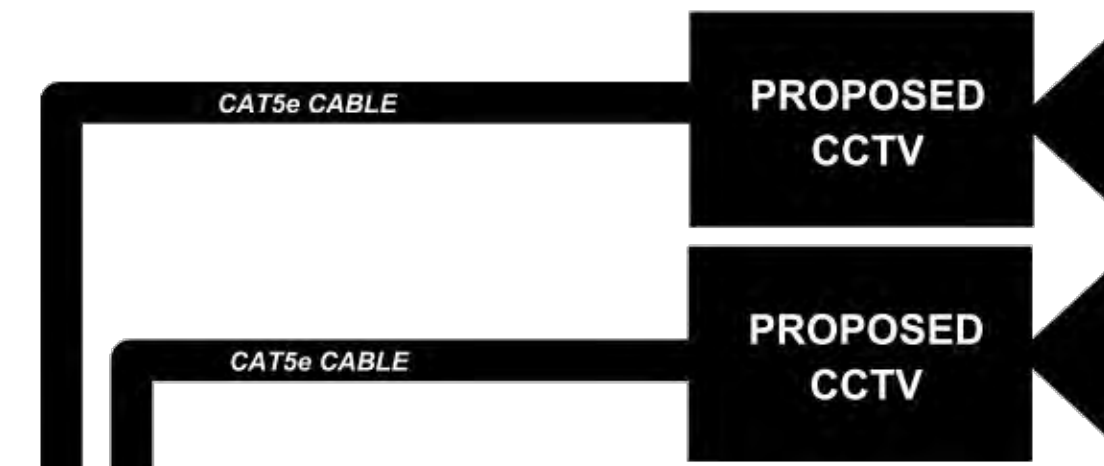
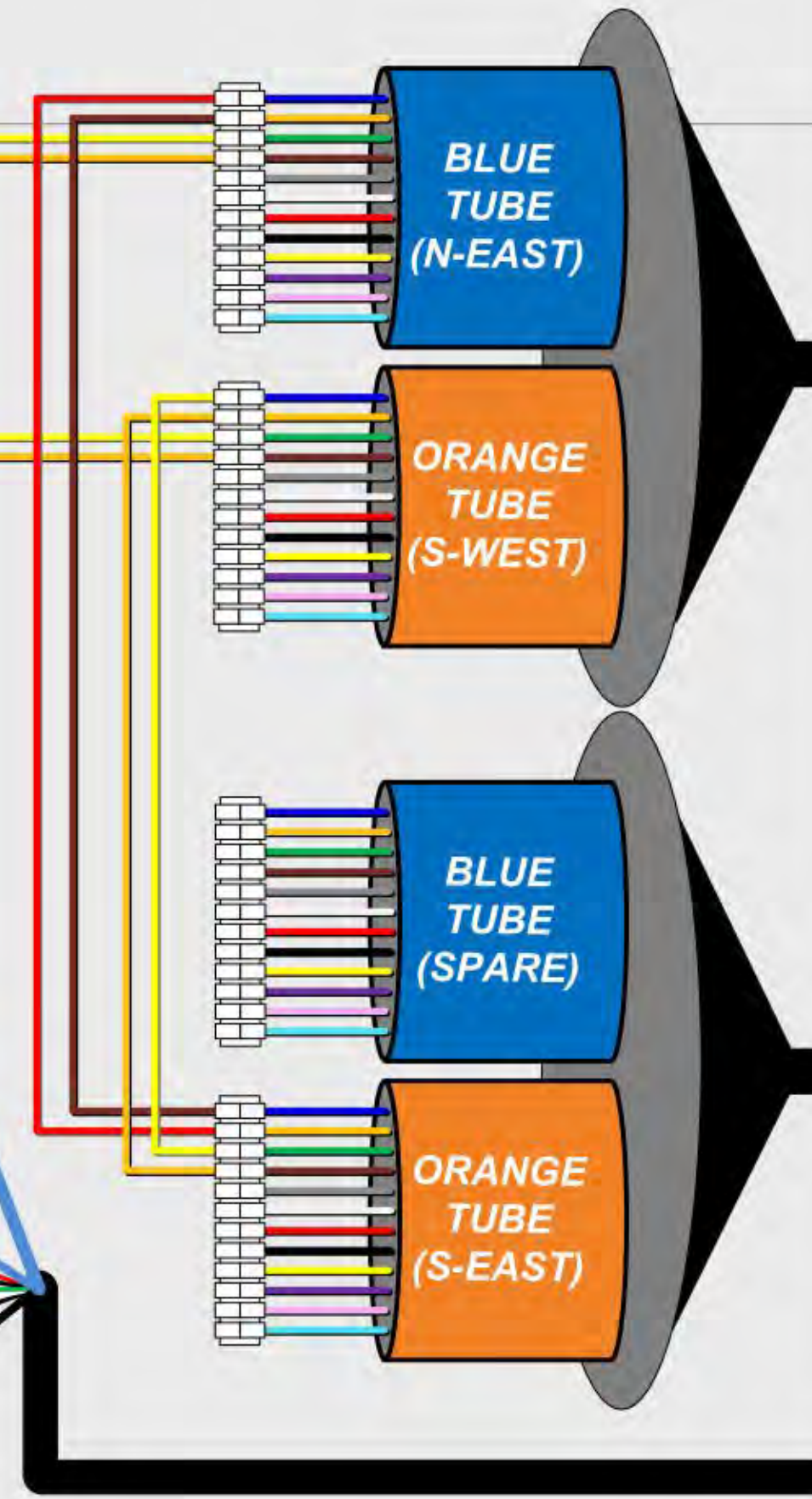
**ETHERNET SWITCH PORT DESTINATION**

PORT 5: INT #11A: SR 161 EB RAMPS AT JOHNSTOWN RD (US 62)  
SEE SHEET 172

PORT 6: INT #15: FOREST DR AT JOHNSTOWN RD (US 62)  
SEE INTERCONNECT PLANS



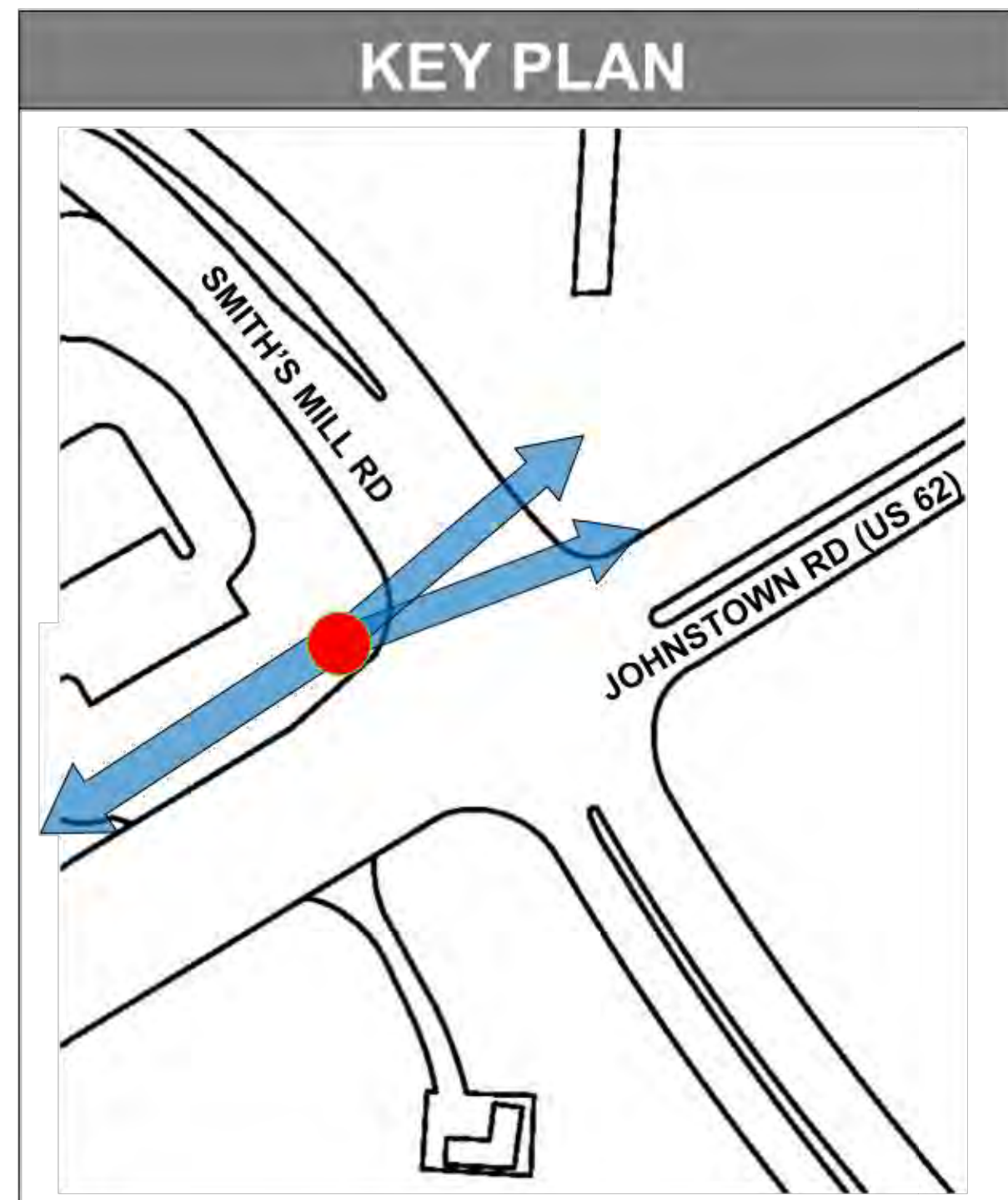
PATCH PANEL ENCLOSURE - (2)-24 TERMINATION



TO:  
INT #14: TURKEY HILL DR AT  
JOHNSTOWN ROAD (US 62)  
SEE INTERCONNECT PLANS

**LEGEND**

- FIBER PATCH CABLE TX/RX
- FIBER PATCH CABLE RX/TX CROSSOVER
- CAT 5E CABLE
- PATCH PANEL
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE - SINGLE FIBER
- FUSION SPLICE - 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE
- GBIC OPTICAL TRANSCIVER LH - SHORT HAUL LED ZX - LONG HAUL LASER
- 8P8C CONNECTOR
- 144 STRAND SMF
- CITYNET FIBER
- COLUMBUS FIBERNET
- COLUMBUS DOT FIBER
- WIRELESS ETHERNET RADIO



TO:  
INT #12: SR 161 WB RAMPS AT  
JOHNSTOWN ROAD (US 62)  
SEE SHEET 173

TO:  
INT #13: SMITH'S MILL ROAD  
AT JOHNSTOWN ROAD (US 62)  
SEE SHEET 174

5 CABLE ENTRIES  
36 FUSION SPLICES  
11 BUFFER TUBES PASSED THROUGH UNSPLICED

5 CABLE ENTRIES  
36 FUSION SPLICES  
11 BUFFER TUBES PASSED THROUGH UNSPLICED

**INTERSECTION 13A**

REFER TO SHEET 169 FOR CONSTRUCTION PLAN DETAILS

CALCULATED  
WCS  
CHECKED  
DLS

INT #13A: SMITH'S MILL ROAD AT JOHNSTOWN ROAD (US 62)  
COMMUNICATION DIAGRAM

FRA-62-30.34

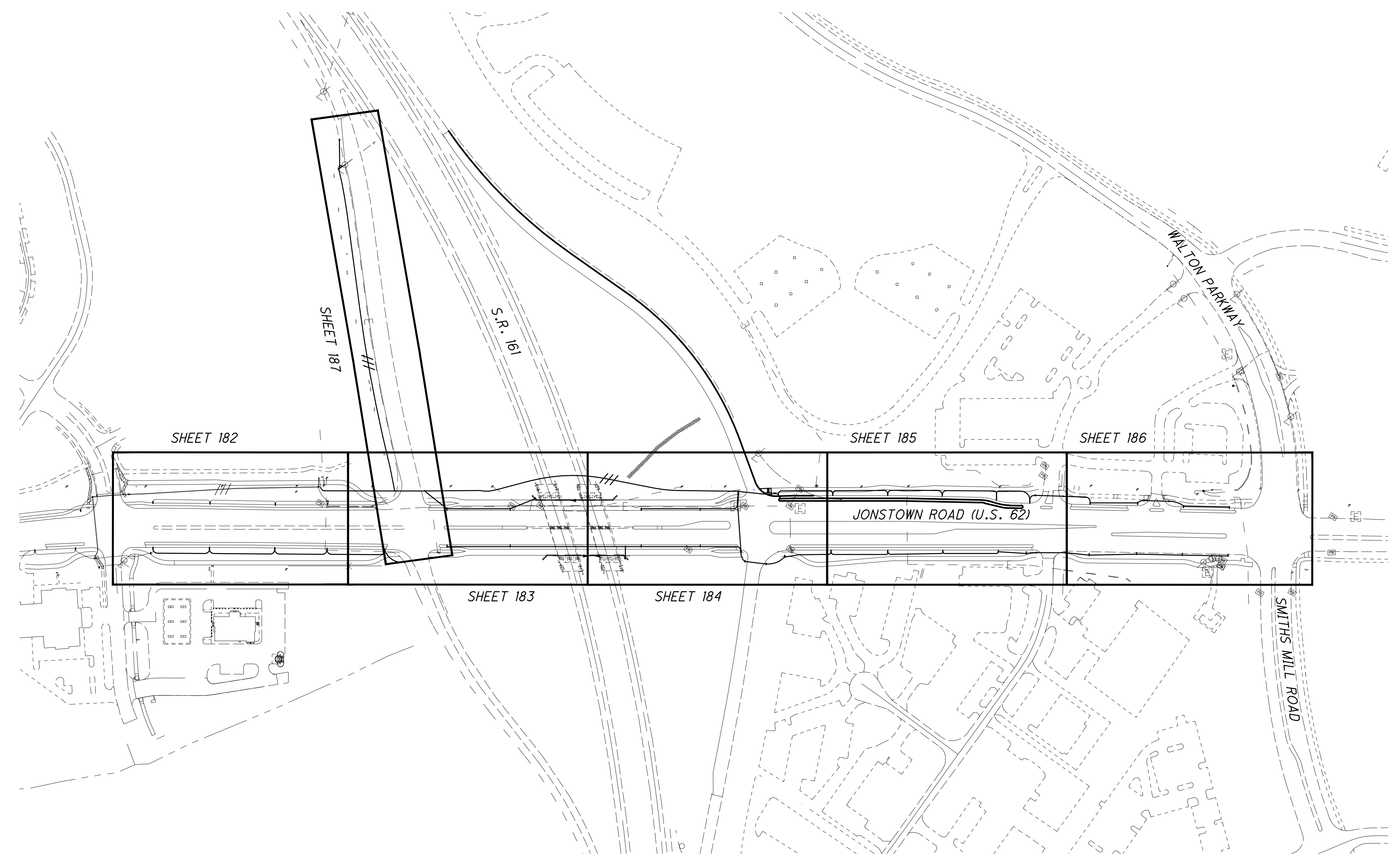
175  
202

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**LEGEND**

- ■ PROPOSED CONVENTIONAL LIGHT POLE, LED
- ▣ PROPOSED PULL BOX
- ▣ EXISTING PULL BOX
- ● EXISTING LIGHT POLE
- EXISTING CONTROL CENTER, TO REMAIN

- - - E - - - EXISTING LIGHTING CIRCUIT, TO REMAIN
- /// 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)



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CALCULATED MGS  
CHECKED M.L.S.

0 20 40  
HORIZONTAL SCALE IN FEET

**JOHNSTOWN ROAD (US 62) - LIGHTING PLAN  
LIGHTING PLAN SCHEMATIC**

**FRA-62-30.34**



ITEM 625 - LIGHTING MISC.: PULL BOX REMOVED

THIS ITEM OF WORK WILL CONSIST OF REMOVING AND PROPERLY DISPOSING OF AN EXISTING PULL BOX. THE RESULTANT OPENING SHALL THEN BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625 - PULL BOX REMOVED, FOR EACH PULL BOX REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - LIGHTING MISC.: DECORATIVE TEARDROP LUMINAIRE, SOLID-STATE (LED), 4000K

THE TEARDROP STYLE LUMINAIRES SHALL BE MANUFACTURED BY HOLOPHANE AND BE MODEL #ESL2-P20S-40K.

THE LUMINAIRE SHALL BE LED, 480 VOLT LAMPS WITH 347-480V AUTO-SENSING VOLTAGE. LUMINAIRES SHALL BE COATED NEW ALBANY GREEN TO MATCH THE LIGHT POLES.

SHOP DRAWINGS AND A PAINT CHIP, FURNISHED BY HOLOPHANE, SHALL BE SUBMITTED FOR EACH LUMINAIRE FOR ENGINEER'S REVIEW PRIOR TO ORDERING ANY EQUIPMENT. FAILURE TO DO SO MAY RESULT IN THE CITY NOT ACCEPTING THE WORK. A NEW ALBANY GREEN COLOR SAMPLE CAN BE OBTAINED FROM THE NEW ALBANY SERVICE DIRECTOR FOR SPECTRUM ANALYSIS. THE SAMPLE MUST BE RETURNED.

ITEM 625 - LIGHTING MISC.: LIGHT POLE, DECORATIVE, AS PER PLAN

THE POLES SHALL BE MANUFACTURED BY HAPCO AND BE MODEL #874135.

THE POLES SHALL BE COATED 'NEW ALBANY GREEN' PMS 5535.

LIGHT POLES PROVIDED AND INSTALLED BY THE CONTRACTOR SHALL BE DESIGN AT5.5B31 AND SHALL BE OF THE STYLE AND DIMENSIONS SHOWN IN THE DETAILS INCLUDED IN THIS PLAN. ALL ALUMINUM SURFACES ON THE POLE AND BASE SHALL BE ROTARY SANDED TO A SATIN GROUND FINISH AND BRACKETS SHALL BE ETCHED TO A MATTE FINISH. SHAFTS AND BRACKETS SHALL BE TREATED WITH AN ALCOHOL-PHOSPHORIC ACID SOLUTION AT 70 DEGREES F FOR APPROXIMATELY FIVE MINUTES.

ITEM 625 - LIGHTING MISC.: DISCONNECT EXISTING CIRCUIT

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR TRANSFORMER BASE. DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED FROM THE PULL BOX SO THAT NO CABLE IS LEFT IN THE BOX.

DISCONNECTION AT A TRANSFORMER BASE SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. ALL DUCT-CABLE NOT TO BE REUSED SHALL BE REMOVED FROM THE TRANSFORMER BASE AND THE EXISTING CONDUIT IN THE FOUNDATION SHALL BE CLEANED OF ALL CABLE AND DEBRIS SO THAT THE NEW DUCT-CABLE CAN BE INSTALLED. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RE-CONNECTION. THOSE WIRES THAT ARE TO REMAIN ON ACTIVE CIRCUITS SHALL HAVE A WATER-RESISTANT SEAL AT THE CUT END. THE WATER-RESITANT SEAL SHALL BE ACCOMPLISHED BY PLUGGING THE DEACTIVATED PORT OF AN EXISTING CONNECTOR KIT OR BY INSTALLING A CABLE SPLICE KIT ON THE CUT END OF THE CABLE.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE UNDER CMS ITEM 625 - DISCONNECT EXISTING CIRCUIT, AS PER PLAN, AT EACH LOCATION WHERE DISCONNECTION IS REQUIRED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - PULL BOX CLEANED

THIS ITEM OF WORK SHALL CONSIST OF CLEANING AN EXISTING PULL BOX BY REMOVING ANY EXISTING CABLES NOT BEING RECONNECTED, AND DEBRIS SO THAT NEW CABLES CAN BE INSTALLED. ANY UNUSED OPENINGS SHALL BE CLOSED. DISTURBED AREAS NEAR THE PULL BOX SHALL BE CLEARED OF WEEDS OR DEBRIS AND SHALL BE FULLY RESTORED. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF OF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625 - PULL BOX CLEANED FOR EACH PULL BOX CLEANED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN:

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY, AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THE INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY, AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

WHEN THE SEQUENCE OF CONSTRUCTION ACTIVITIES REQUIRES, OR SHOULD THE CONTRACTOR DESIRE, THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING OF THIS PORTION OF THE ROADWAY.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATIONS OF POLES, LENGTHS OF BRACKET ARMS, STYLES OF LUMINAIRES, MOUNTING HEIGHTS, WIRING METHODS, AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES (13 LUX) WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 3H. MOUNTING HEIGHT OF TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 30 FEET (9 METERS), AND THE MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET (6 METERS).

TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL - MAINTAIN EXISTING LIGHTING SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING /IS SPECIFIED HEREIN.

LIGHTING PAY ITEMS

ALL LIGHTING QUANTITIES CALLED OUT AS ITEM 625 LIGHTING, MISC.: XXXXX SHALL USE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS, CURRENT EDITION, AND ANY SUPPLEMENTS THERETO AND SHALL GOVERN THESE CONSTRUCTION ITEMS. STANDARD DRAWINGS ARE INCLUDED IN THESE PLANS.

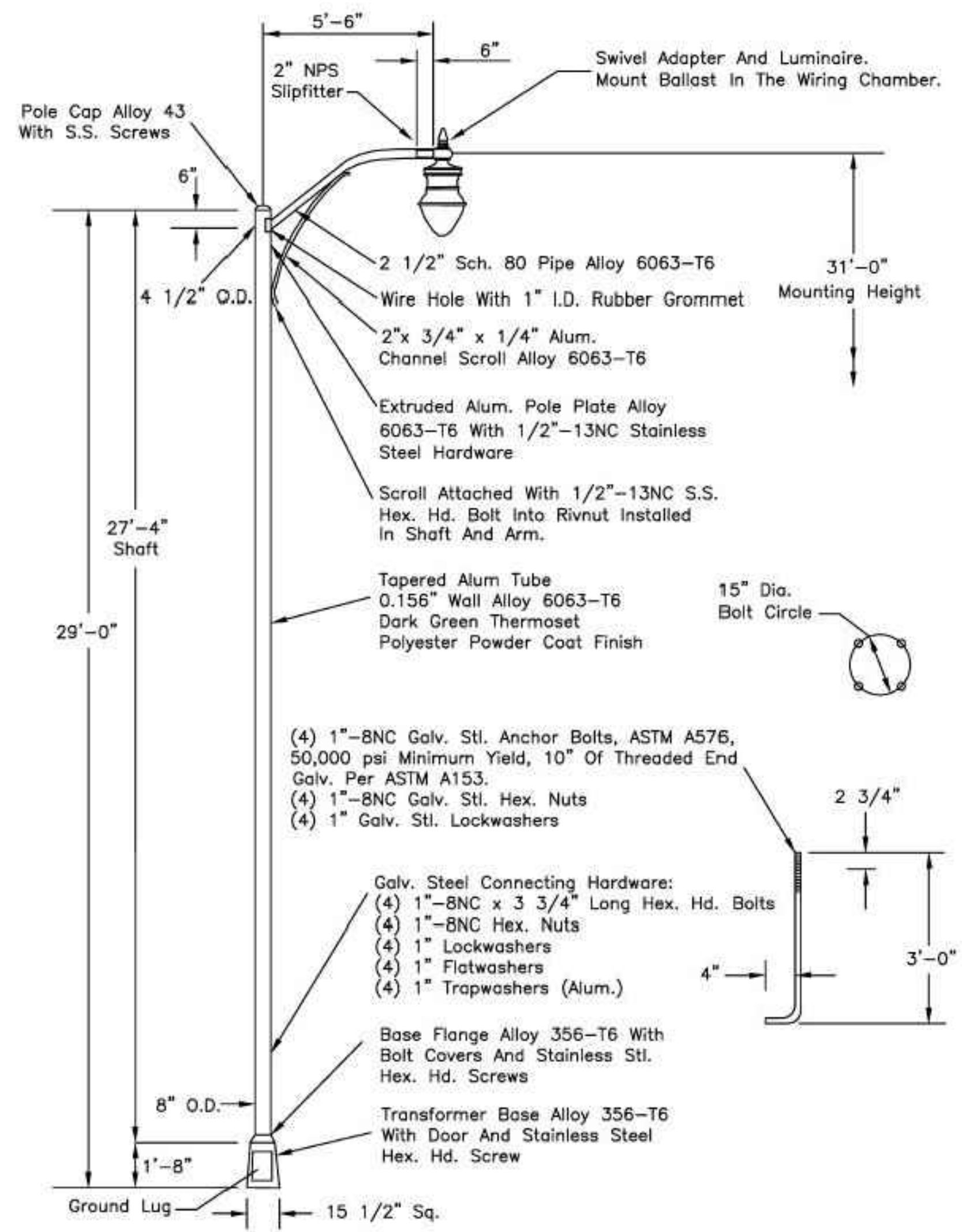
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CALCULATED  
MGS  
CHECKED  
MLS

LIGHTING GENERAL NOTES

FRA-62-30.34

177  
202



TYPICAL LIGHT POLE DETAILS  
(LED TEARDROP STYLE LUMINAIRE)  
N.T.S.

NOTE:  
- ALL STRUCTURAL ELEMENTS REMAIN THE RESPONSIBILITY OF THE MANUFACTURER.  
MATERIAL LISTED ABOVE IS FOR REFERENCE ONLY.

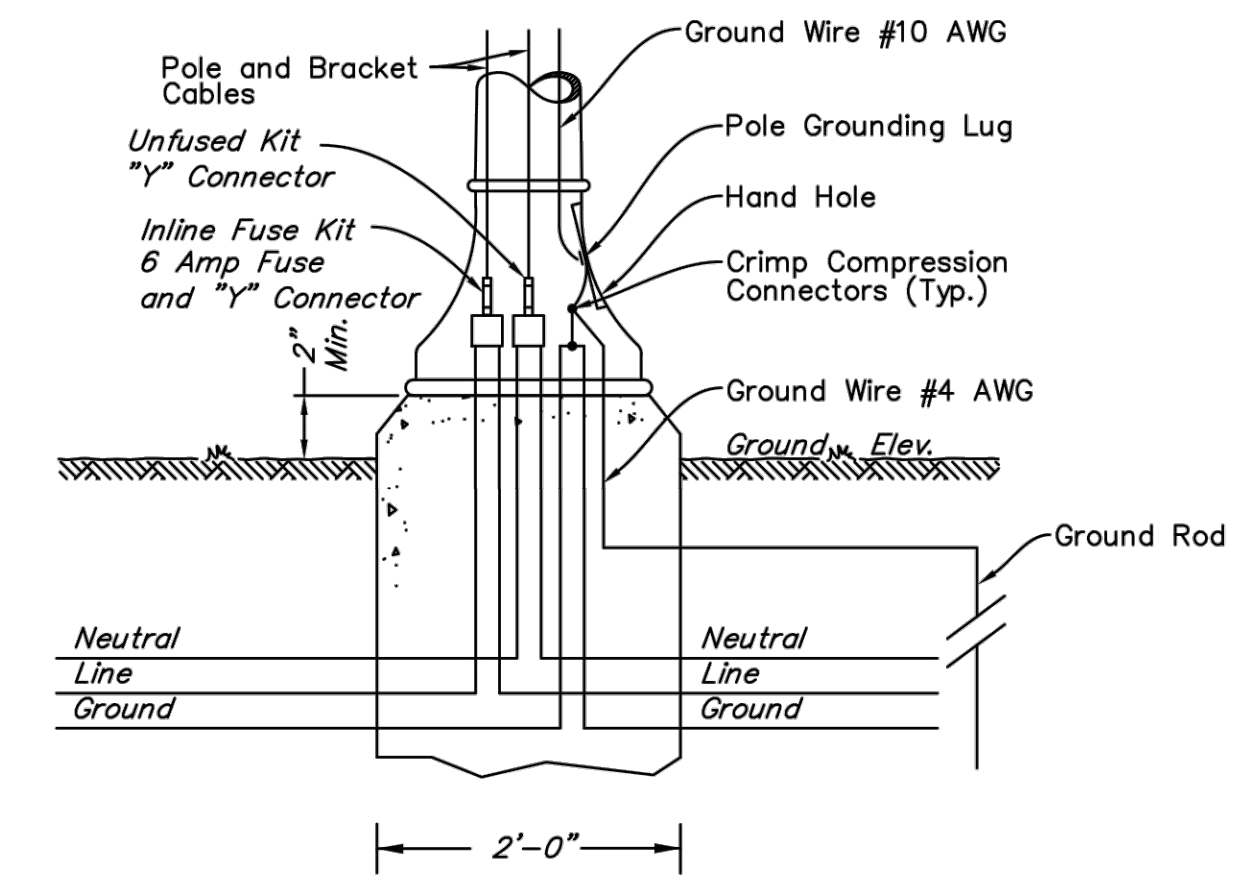
NOTE:  
- CONDUCTORS SHALL BE COLOR CODED AND TAGGED FOR IDENTIFICATION.  
- THE CONTRACTOR SHALL USE "Y-TYPE STREET LIGHT" KITS IN ACCORDANCE WITH HOMAC MANUFACTURING "FLOOD SEAL" FYU-M & DYU-M OR APPROVED EQUAL. THE NEW ALBANY SERVICE DIRECTOR SHALL DETERMINE IF A KIT IS ACCEPTABLE. THE CONTRACTOR SHALL SUBMIT A SAMPLE KIT TO THE SERVICE DIRECTOR FOR ACCEPTANCE, EXAMINATION AND APPROVAL. ANY ADDITIONAL COST TO USE THESE KITS SHALL BE INCLUDED IN THE COST FOR BID ITEM 1001 - POLE TO BE WIRED, AS PER PLAN FOR "FLOOD SEAL" STREET LIGHT KITS.  
- GROUND NEUTRAL #2 IS AN ALTERNATE PATH IN THE EVENT GROUND NEUTRAL #1 SUSTAINS A BREAK. CONNECT GROUND NEUTRAL #1 IN ALL POLES AND CONNECT GROUND NEUTRAL #2 ONLY IN THE POLE BASE AT THE LAST POLE IN EACH CIRCUIT RUN. GROUND NEUTRAL #2 SHALL BE CONNECTED TO GROUND NEUTRAL #1 VIA CRIMP COMPRESSION CONNECTORS, IN THE FINAL POLE OF EACH RUN.

CONTROL CENTER DATA

CONTROL CENTER	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CONDUCTOR SIZE - AWG	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AMPS)	MAINTAINING AGENCY
PROPOSED PS-S (US 62)	480	5.14	#4	60	A	FUTURE			NEW ALBANY
					B	6.3	30	#4	
					C	4.4	30	#4	

PHOTOMETRIC STATISTICS

DESCRIPTION	AVG	MAX	MIN	MAX/MIN	AVG/MIN
US 62	1.2 FC	3.7 FC	0.1 FC	37:1	12:1



POLE TO BE WIRED, AS PER PLAN  
480 VOLT, THREE-WIRE, WITH GROUND AND NEUTRAL  
STREET LIGHT CIRCUIT, 3-#4 AWG, 5KV  
N.T.S.

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SHEET NO.	STATION		SIDE	CALL-OUT	625																	
	FROM	TO			LIGHTING MISC.: CONNECTION, FUSED, PULL APART	LIGHTING MISC.: CONNECTION, UNFUSED, PULL APART	LIGHTING MISC.: CONNECTION, UNFUSED, PERMANENT	LIGHTING MISC.: LIGHT POLE, DECORATIVE, AS PER PLAN	LIGHTING MISC.: LIGHT POLE FOUNDATION, 24" X 6' DEEP	LIGHTING MISC.: NO. 4 AWG 480 VOLT DISTRIBUTION CABLE	LIGHTING MISC.: NO. 10 AWG POLE AND BRACKET CABLE	LIGHTING MISC.: CONDUIT, 2", 725.04	LIGHTING MISC.: CONDUIT, JACKED OR DRILLED: 3" RIGID STEEL	LIGHTING MISC.: DECORATIVE TEARDROP LUMINAIRE, SOLID-STATE (LED), 4000K	LIGHTING MISC.: TRENCH, 24" DEEP	LIGHTING MISC.: PULL BOX, 725.08, 25"X16"	LIGHTING MISC.: STEP DOWN TRANSFORMER, WALL MOUNTED	LIGHTING MISC.: PULL BOX REMOVED	LIGHTING MISC.: GROUND ROD	LIGHTING MISC.: LIGHT POLE REMOVED	LIGHTING MISC.: LIGHT POLE FOUNDATION REMOVED	LIGHTING MISC.: DISCONNECT EXISTING CIRCUIT
					EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	
179	58+02	59+32	RT	B14 - B13						153		143			143							
	59+32	60+82	RT	B13 - B12	1	1		1	1		46			1					1			
	60+82	62+02	RT	B12 - B11	1	1		1	1		46			1					1			
	61+87	63+57	LT	EX - PB1						183		173			173							
	62+02	63+34	RT	B11 - B10	1	1		1	1					1					1			
180	63+14	63+34	LT	B19	1	1		1	1		46			1					1			
	63+34	63+80	RT	B10 - PBB	1	1		1	1		46			1					1			
	63+57	64+27	LT	PB1								3							1			
	63+80	64+27	LT	PB1 - PB4						76				66								
	63+80	64+27	RT	PBB								2							1		1	
	64+27	71+44	LT	PB4 - C28						74		64			64							
	64+27	71+44	LT	PB4 - PB6						738		728			728							
	64+27	71+44	LT	PB4								3							1			
	64+77	66+22	LT	C28	1	1		1	1		46			1					1			
	64+77	66+22	RT	C21	1	1		1	1		46			1					1			
	64+77	66+22	LT	C28 - C27						156		146			146							
	64+77	66+22	RT	C21 - C22						156		146			146							
	66+22	66+80	LT	C27	1	1		1	1		46			1					1			
	66+22	68+87	RT	C22	1	1		1	1		46			1					1			
	66+22	68+87	LT	C27 - PB5						72		62			62							
	66+22	68+87	RT	C22 - PB13						273		263			263							
	66+80	68+87	LT	PB5								2				1	1					
181	68+87	69+23	RT	PB13, PB14						35		25			25	2	1					
	68+87	69+23	RT	PB13 - C23						45		35			35							
	69+23	70+58	LT	C25	1	1		1	1		46			1					1			
	69+23	70+58	RT	C23	1	1		1	1		46			1					1			
	69+23	70+58	LT	C25 - C26						146		136			136							
	69+23	70+58	RT	C23 - C24						146		136			136							
	70+58	71+44	LT	C26	1	1		1	1		46			1					1			
	70+58	71+44	RT	C24	1	1		1	1		46			1					1			
	70+58	71+44	LT	C26 - PB6						102		92			92							
	70+58	71+52	RT	C24 - PB12						109		99			99							
	71+44	71+52	LT	PB6								4				1						
	71+44	72+30	LT/RT	PB6 - PB12						118				108								
	71+44	72+30	LT	PB6 - PB7						95				85								
	71+52	71+61	RT	PB12								3				1						
	71+52	71+61	RT	PB12 - PB15						34		24			24							
	71+61	72+10	RT	PB15								2				1						
	71+61	72+10	RT	PB15 - PB16						56				46								
	72+10	72+52	RT	PB16								2				1						
	72+10	72+52	RT	PB16 - C20						57		47			47							
	72+30	72+38	LT	PB7								2				1						
	72+30	72+38	LT	PB7 - C10						17		7			7							
	72+38	73+63	LT	C10	1	1		1	1		46			1					1			
	72+38	73+63	LT	C10 - C9						145		135			135							
	72+52	73+59	RT	C20	1	1		1	1		46			1					1			
	72+52	73+59	RT	C20 - C19						120		110			110							
TOTALS CARRIED TO GENERAL SUMMARY					15	15	28	15	15	3646	644	3071	305	15	3071	11	2	0	15	0	0	1

CALCULATED  
MGS  
CHECKED  
BDS

LIGHTING SUBSUMMARY

FRA-62-30.34

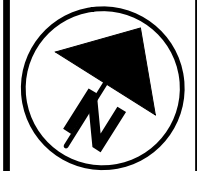
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SHEET NO.	STATION		SIDE	CALL-OUT	625																
	FROM	TO			LIGHTING MISC.: CONNECTION, FUSED, PULL APART	LIGHTING MISC.: CONNECTION, UNFUSED, PULL APART	LIGHTING MISC.: CONNECTION, UNFUSED, PERMANENT	LIGHTING MISC.: LIGHT POLE, DECORATIVE, AS PER PLAN	LIGHTING MISC.: LIGHT POLE FOUNDATION, 24" X 6' DEEP	LIGHTING MISC.: NO. 4 AWG 480 VOLT DISTRIBUTION CABLE	LIGHTING MISC.: NO. 10 AWG POLE AND BRACKET CABLE	LIGHTING MISC.: CONDUIT, 2", 725.04	LIGHTING MISC.: CONDUIT, JACKED OR DRILLED: 3" RIGID STEEL	LIGHTING MISC.: DECORATIVE TEARDROP LUMINAIRE, SOLID-STATE (LED), 400K	LIGHTING MISC.: TRENCH, 24" DEEP	LIGHTING MISC.: PULL BOX, 725.08, 25"X16"	LIGHTING MISC.: STEP DOWN TRANSFORMER, WALL MOUNTED	LIGHTING MISC.: PULL BOX REMOVED	LIGHTING MISC.: GROUND ROD	LIGHTING MISC.: LIGHT POLE REMOVED	LIGHTING MISC.: LIGHT POLE FOUNDATION REMOVED
					EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH
182	73+59		RT	C19	1	1		1	1		46			1						1	
	73+59	74+89	RT	C19 - C18						145		135			135						
	73+63		LT	C9	1	1		1	1		46			1						1	
	73+63	74+89	LT	C9 - C8						145		135			135						
	74+89		LT	C8	1	1		1	1		46			1						1	
	74+89		RT	C18	1	1		1	1		46			1						1	
	74+89	76+14	LT	C8 - C7						146		136			136						
	74+89	76+15	RT	C18 - C17						141		131			131						
	76+14		LT	C7	1	1		1	1		46			1						1	
	76+14	77+38	LT	C7 - C6						156		146			146						
	76+15		RT	C17	1	1		1	1		46			1						1	
	76+15	77+42	RT	C17 - C16						142		132			132						
	77+38		LT	C6	1	1		1	1		46			1						1	
	77+38	78+15	LT	C6 - C5						118		108			108						
	77+42		RT	C16	1	1		1	1		46			1						1	
	77+42	78+19	RT	C16 - C15						87		77			77						
	78+15		LT	C5	1	1		1	1		46			1						1	
	78+15	78+27	LT	C5 - PB8						31		21			21						
	78+07		RT	C15	1	1		1	1		46			1						1	
	78+07	78+30	RT	C15 - PB17						19		9			9						
	78+27		LT	PB8																	
	78+27	78+91	LT	PB8 - PB9						70		60									
	78+30		RT	PB17																	
	78+30	78+96	RT	PB17 - PB18						72		62									
	78+27		LT	PB9												1					
	78+91	79+53	LT	PB9 - C4						80		70			70						
	78+96		RT	PB18												1					
	78+96	79+51	RT	PB17 - PB18						64		54			54						
183	79+51		RT	C14	1	1		1	1		46			1						1	
	79+51	80+60	RT	C14 - C13						119		109			109						
	79+53		LT	C4	1	1		1	1		46			1						1	
	79+53	80+63	LT	C4 - C3						120		110			110						
	80+60		RT	C13	1	1		1	1		46			1						1	
	80+60	81+65	RT	C13 - C12						115		105			105						
	80+63		LT	C3	1	1		1	1		46			1						1	
	80+63	80+77	LT	C3 - PB10						24		14			14						
	80+77		LT	PB10												1					
	80+77	81+34	LT	PB10 - PB11						63		53									
	81+34		LT	PB11												1					
	81+34	81+68	LT	PB11 - C2						44		34			34						
	81+65		RT	C12	1	1		1	1		46			1						1	
	81+65	82+70	RT	C12 - C11						116		106			106						
	81+68		LT	C2	1	1		1	1		46			1						1	
	81+68	82+73	LT	C12 - C11						116		106			106						
	82+70		RT	C11	1	1		1	1		46			1						1	
	82+73		LT	C1	1	1		1	1		46			1						1	
TOTALS CARRIED TO GENERAL SUMMARY					18	18	8	18	18	2133	828	1738	175	18	1738	4	0	0	18	0	0

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SHEET NO.	STATION		SIDE	CALL-OUT	625																	
	FROM	TO			LIGHTING MISC.: CONNECTION, FUSED, PULL APART	LIGHTING MISC.: CONNECTION, UNFUSED, PULL APART	LIGHTING MISC.: CONNECTION, UNFUSED, PERMANENT	LIGHTING MISC.: LIGHT POLE, DECORATIVE, AS PER PLAN	LIGHTING MISC.: LIGHT POLE FOUNDATION, 24" X 6' DEEP	LIGHTING MISC.: NO. 4 AWG 480 VOLT DISTRIBUTION CABLE	LIGHTING MISC.: NO. 10 AWG POLE AND BRACKET CABLE	LIGHTING MISC.: CONDUIT, 2", 725.04	LIGHTING MISC.: CONDUIT, JACKED OR DRILLED: 3" RIGID STEEL	LIGHTING MISC.: DECORATIVE TEARDROP LUMINAIRE, SOLID-STATE (LED), 4000K	LIGHTING MISC.: TRENCH, 24" DEEP	LIGHTING MISC.: PULL BOX, 725.08, 25"X16"	LIGHTING MISC.: STEP DOWN TRANSFORMER, WALL MOUNTED	LIGHTING MISC.: PULL BOX REMOVED	LIGHTING MISC.: GROUND ROD	LIGHTING MISC.: LIGHT POLE REMOVED	LIGHTING MISC.: LIGHT POLE FOUNDATION REMOVED	
	RAMP 'K'																					
184	1138+79	1139+40	RT	PB3			2							1								
	1139+40		RT	PB3 - A1					71		61			61								
	1139+40		RT	A1	1	1				46			1					1				
	1139+40	1139+45	RT	A1 - PB2					22		12			12								
	1139+40	1139+45	RT	EX - PB2					13		3			3								
	1139+45		RT	PB2			3								1							
	1139+45	1146+96	RT	PB2 - PB1					761		751			751								
180	REMOVALS															2		2		2		
181	REMOVALS															4		2		2		
182	REMOVALS															1		1		1		
TOTALS CARRIED TO GENERAL SUMMARY					1	1	5	1	1	867	46	827	0	1	827	2	0	7	1	5	5	

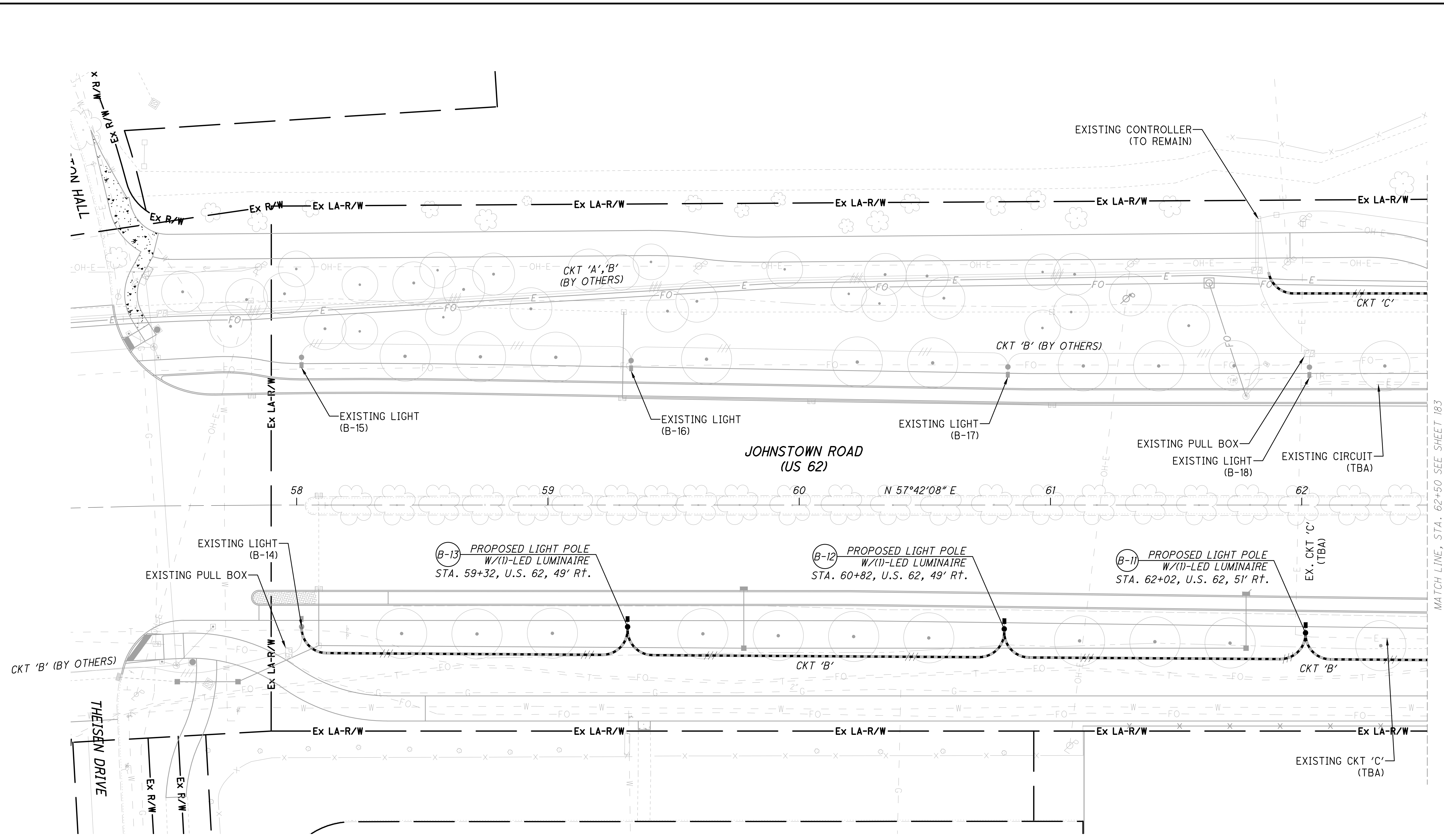


CALCULATED MGS  
CHECKED M.L.S.

**JOHNSTOWN ROAD (US 62) - LIGHTING PLAN**  
**STA. 57+00 TO STA. 62+50**

**FRA-62-30.34**

182  
202

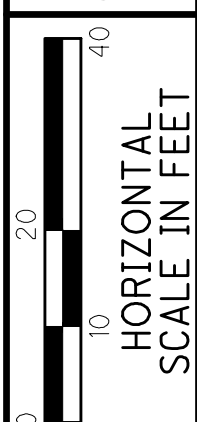


**LEGEND**

- 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)
- 2-INCH CONDUIT, CONCRETE ENCASED, (MIS-700)
- 3-INCH RIGID STEEL WITH 2-INCH CONDUIT, (MIS-702)
- PROPOSED STREET LIGHT POLE, (MIS-55, MIS-201, MIS-305, MIS-501, MIS-801)
- EXISTING STREET LIGHT POLE
- EXISTING STREET LIGHT POLE, TO BE REMOVED
- EXISTING PULL BOX
- EXISTING PULL BOX, TO BE REMOVED
- PROP. PULL BOX, HEAVY DUTY, 25" x 16" x 18", AS PER PLAN

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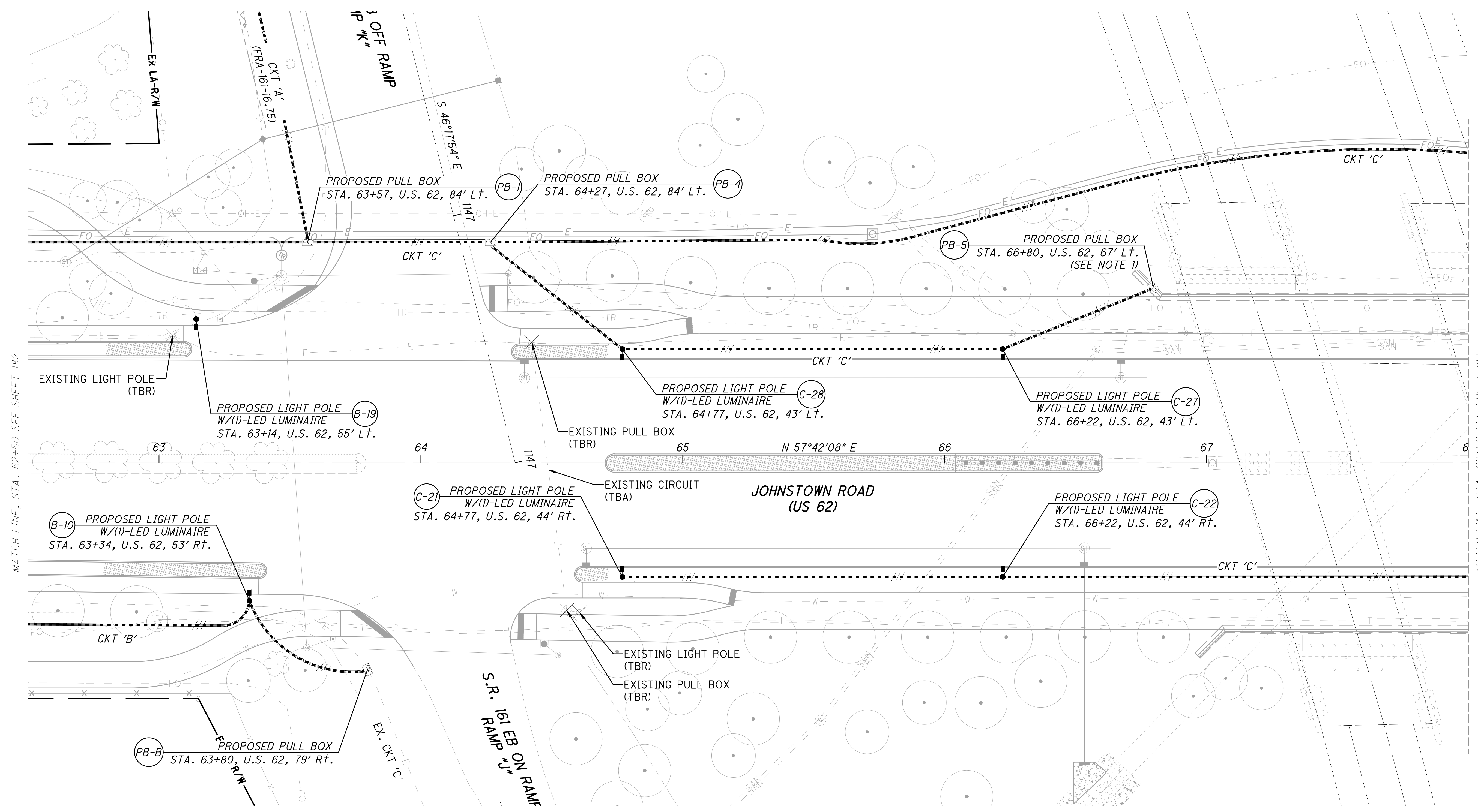
MATCH LINE, STA. 62+50 SEE SHEET 183



CALCULATED MGS  
CHECKED ML/S

**JOHNSTOWN ROAD (US 62) LIGHTING PLAN**  
**STA. 62+50 TO STA. 68+00**

**FRA-62-30.34**



MATCH LINE, STA. 62+50 SEE SHEET 182

MATCH LINE, STA. 62+50 SEE SHEET 184

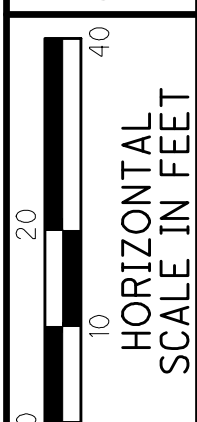
**LEGEND**

- 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)
- 2-INCH CONDUIT, CONCRETE ENCASED, (MIS-700)
- 3-INCH RIGID STEEL WITH 2-INCH CONDUIT, (MIS-702)
- PROPOSED STREET LIGHT POLE, (MIS-55, MIS-201, MIS-305, MIS-501, MIS-801)
- EXISTING STREET LIGHT POLE
- EXISTING STREET LIGHT POLE, TO BE REMOVED
- EXISTING PULL BOX
- EXISTING PULL BOX, TO BE REMOVED
- PROP. PULL BOX, HEAVY DUTY, 25" x 16" x 18", AS PER PLAN

**NOTE:**

1. CONTRACTOR SHALL INSTALL STEP DOWN TRANSFORMER FOR WALL LIGHTING. SEE RETAINING WALL DETAIL (SHEET 108) FOR CONDUIT DETAILS.

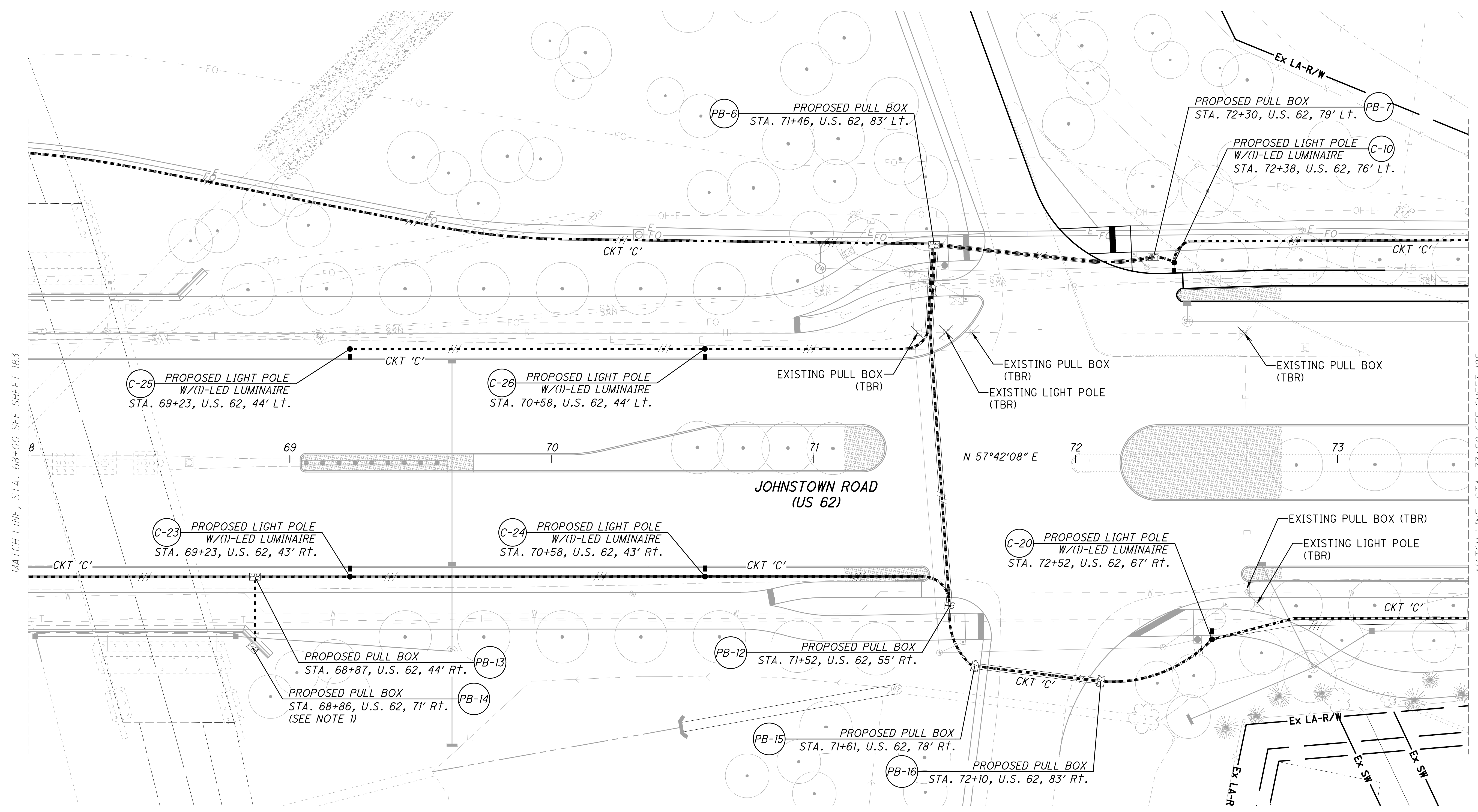
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CALCULATED MGS CHECKED M.L.S.

**JOHNSTOWN ROAD (US 62) - LIGHTING PLAN**  
STA. 68+00 TO STA. 73+50

**FRA-62-30.34**



MATCH LINE, STA. 68+00 SEE SHEET 183

MATCH LINE, STA. 73+50 SEE SHEET 185

**LEGEND**

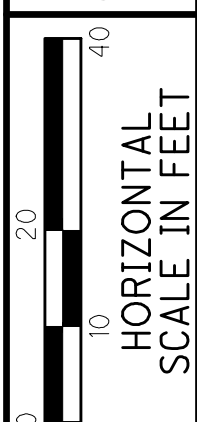
- 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)
- 2-INCH CONDUIT, CONCRETE ENCASED, (MIS-700)
- 3-INCH RIGID STEEL WITH 2-INCH CONDUIT, (MIS-702)
- PROPOSED STREET LIGHT POLE, (MIS-55, MIS-201, MIS-305, MIS-501, MIS-801)
- EXISTING STREET LIGHT POLE
- EXISTING STREET LIGHT POLE, TO BE REMOVED
- EXISTING PULL BOX
- EXISTING PULL BOX, TO BE REMOVED
- PROP. PULL BOX, HEAVY DUTY, 25" x 16" x 18", AS PER PLAN

**NOTE:**

1. CONTRACTOR SHALL INSTALL STEP DOWN TRANSFORMER FOR WALL LIGHTING. SEE RETAINING WALL DETAIL (SHEET 108) FOR CONDUIT DETAILS.

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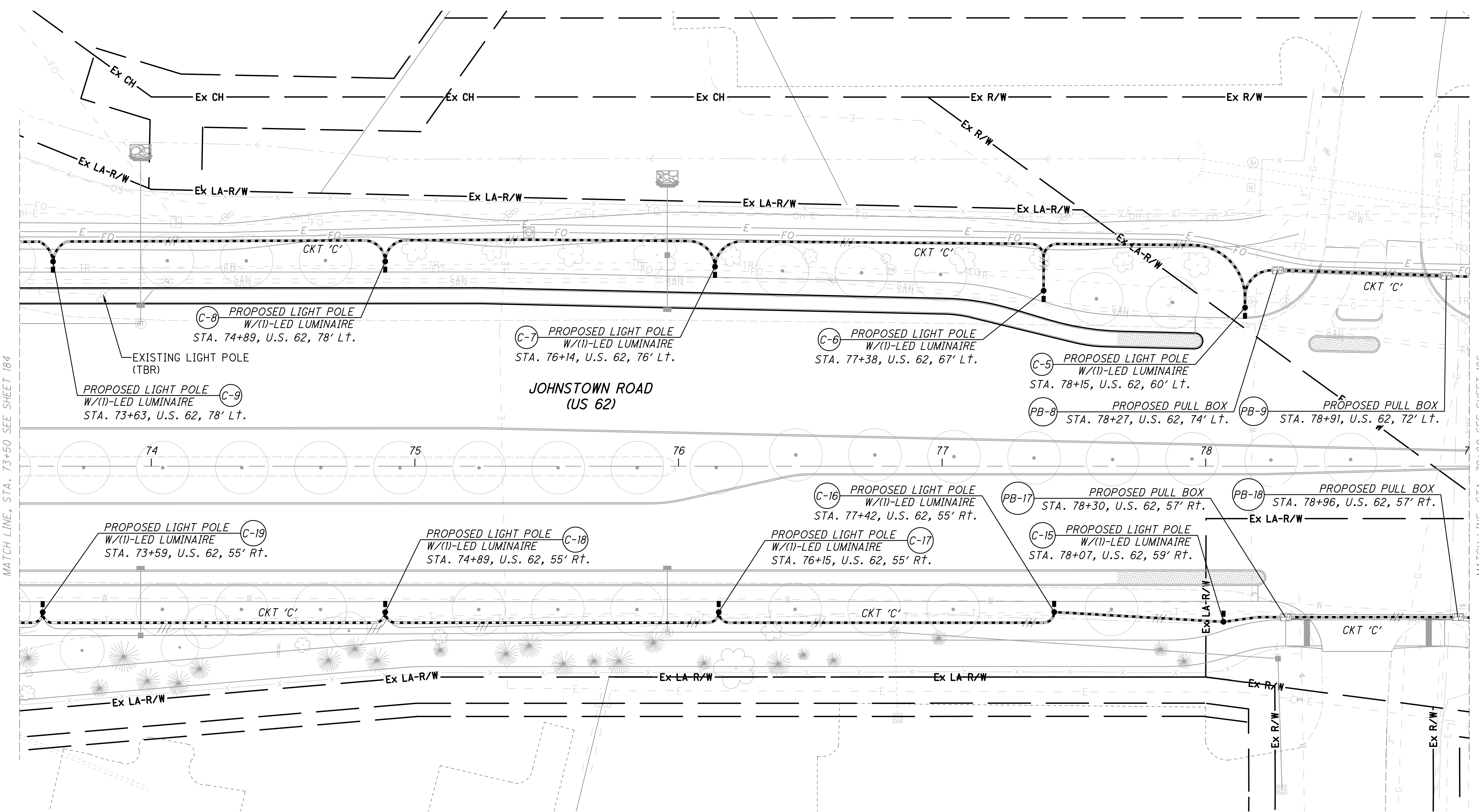


CALCULATED MGS CHECKED M.L.S.

**JOHNSTOWN ROAD (US 62) - LIGHTING PLAN**  
**STA. 73+50 TO 79+00**

**FRA-62-30.34**

185  
202



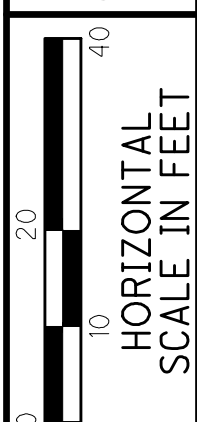
MATCH LINE, STA. 73+50 SEE SHEET 184

MATCH LINE, STA. 79+00 SEE SHEET 186

**LEGEND**

- 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)
- 2-INCH CONDUIT, CONCRETE ENCASED, (MIS-700)
- 3-INCH RIGID STEEL WITH 2-INCH CONDUIT, (MIS-702)
- PROPOSED STREET LIGHT POLE, (MIS-55, MIS-201, MIS-305, MIS-501, MIS-801)
- EXISTING STREET LIGHT POLE
- EXISTING STREET LIGHT POLE, TO BE REMOVED
- EXISTING PULL BOX
- EXISTING PULL BOX, TO BE REMOVED
- PROP. PULL BOX, HEAVY DUTY, 25" x 16" x 18", AS PER PLAN

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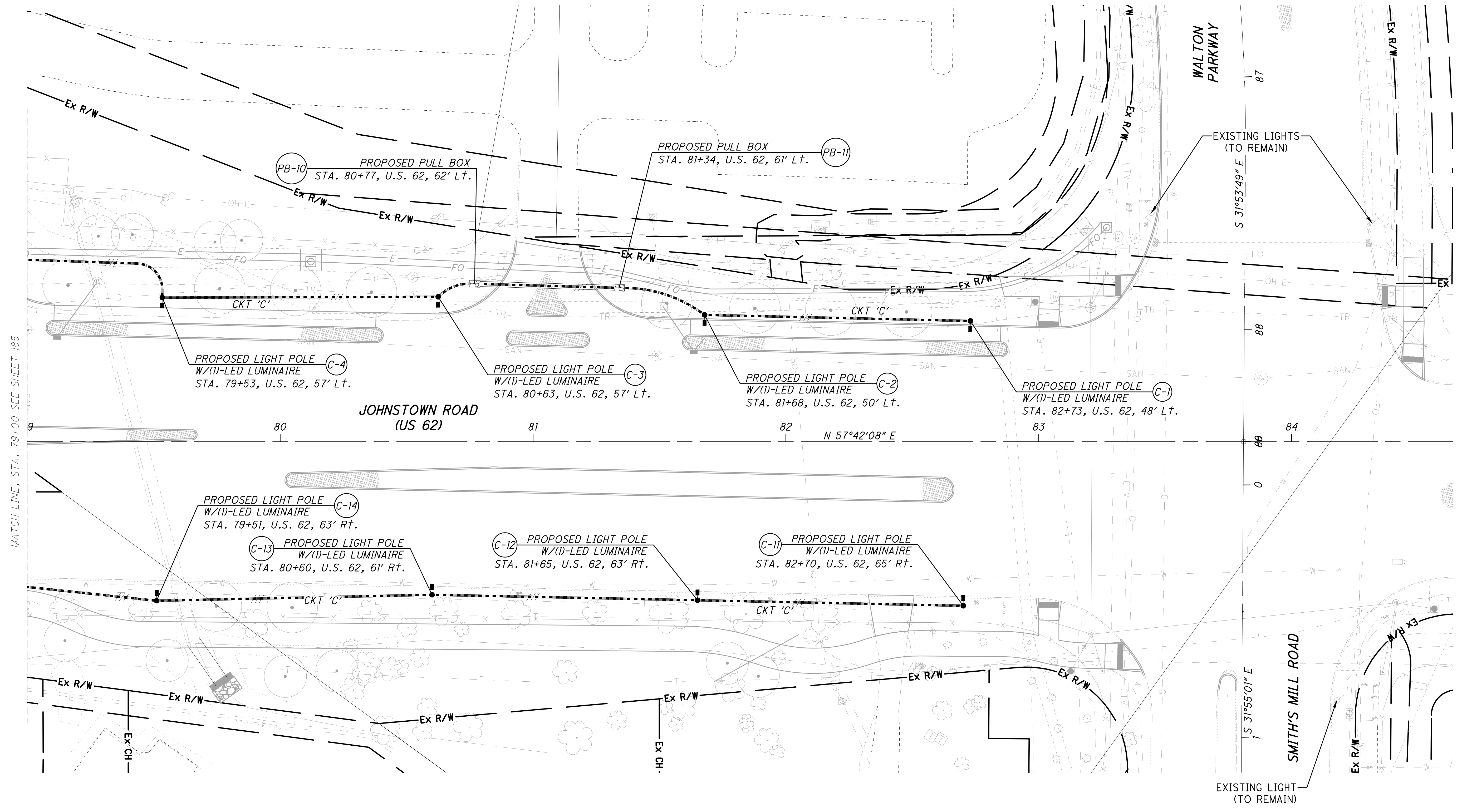


CALCULATED MGS  
CHECKED M.L.S.

**JOHNSTOWN ROAD (US 62) - LIGHTING PLAN**  
STA. 79+00 TO STA. 83+00

**FRA-62-30.34**

186  
202

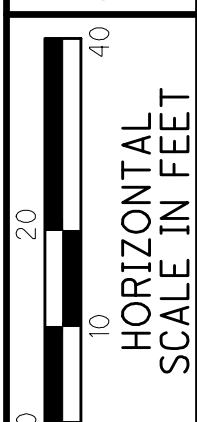


**LEGEND**

- 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)
- 2-INCH CONDUIT, CONCRETE ENCASED, (MIS-700)
- 3-INCH RIGID STEEL WITH 2-INCH CONDUIT, (MIS-702)
- PROPOSED STREET LIGHT POLE, (MIS-55, MIS-201, MIS-305, MIS-501, MIS-801)
- EXISTING STREET LIGHT POLE
- EXISTING STREET LIGHT POLE, TO BE REMOVED
- EXISTING PULL BOX
- EXISTING PULL BOX, TO BE REMOVED
- PROP. PULL BOX, HEAVY DUTY, 25" x 16" x 18", AS PER PLAN

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MATCH LINE, STA. 79+00 SEE SHEET 185



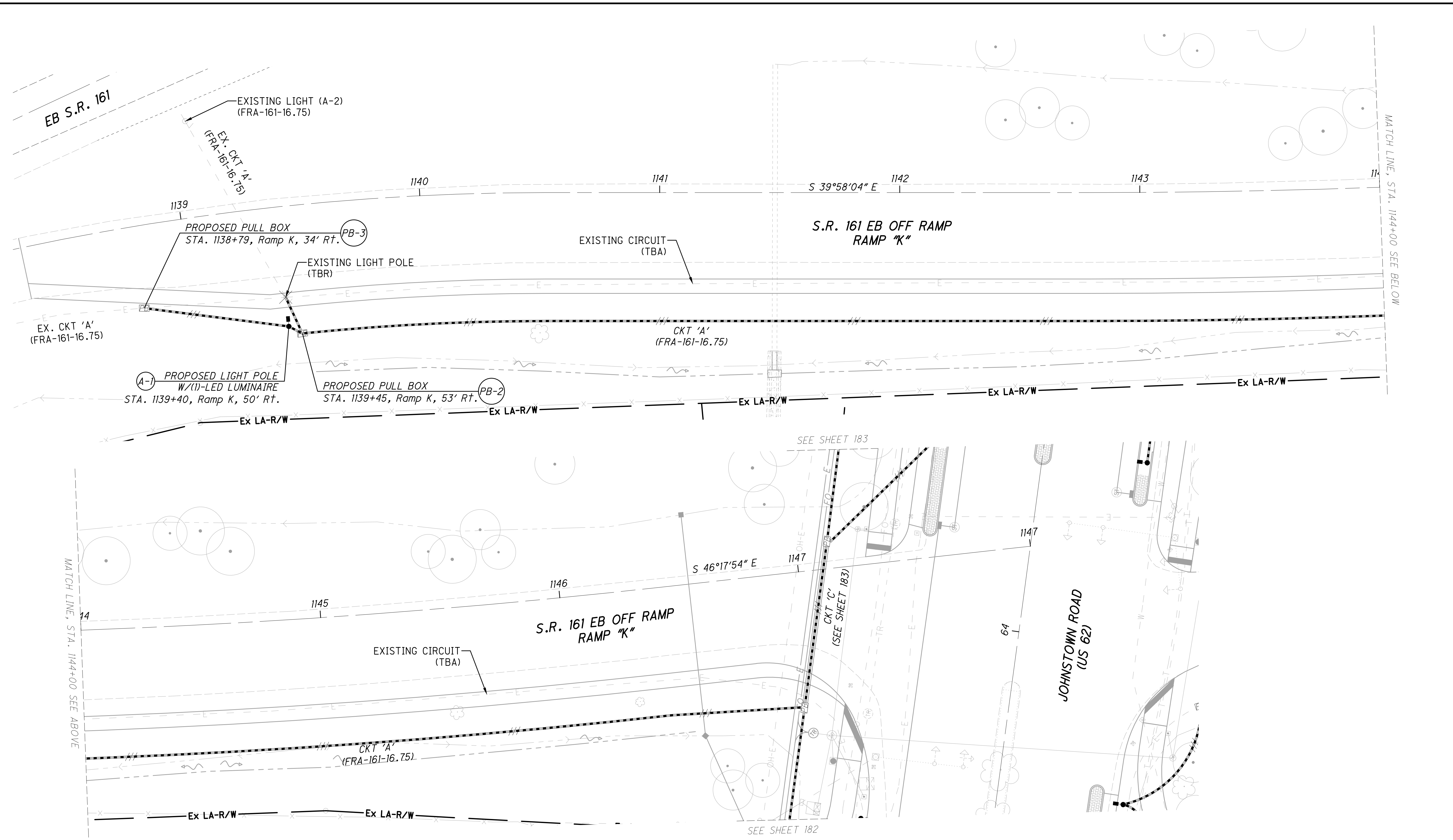
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**JOHNSTOWN ROAD (US 62) - LIGHTING PLAN  
RAMP "K" STA. 1138+50 TO STA. 1147+00**

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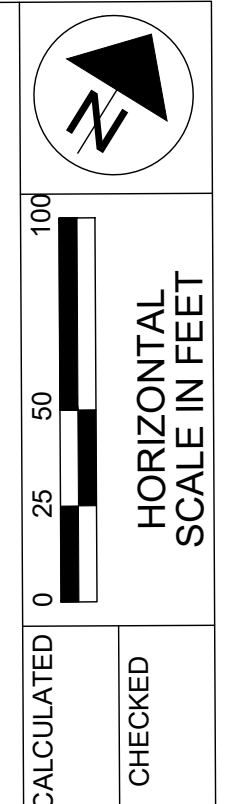
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**LEGEND**

- 3-WIRE UNDERGROUND CIRCUIT, (MIS-404)
- 2-INCH CONDUIT, CONCRETE ENCASED, (MIS-700)
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- PROP. PULL BOX, HEAVY DUTY, 25" x 16" x 18", AS PER PLAN



SR 62 LANDSCAPE IMPROVEMENTS - SPECIFICATIONS

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THE NOTES ON THE FOLLOWING SHEETS CORRESPOND TO THE PAYMENT OF "AS PER PLAN" AND "SPECIAL" ITEMS AS LISTED ON THE SHEET 193 AND SHALL BE FULL PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT FOR THE INSTALLATION OF THESE ITEMS.

**SECTION 01 56 39 – TREE, SOIL AND PLANT PROTECTION**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS  
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY  
A. THIS SECTION INCLUDES THE PROTECTION AND TRIMMING OF EXISTING TREES THAT INTERFERE WITH, OR ARE AFFECTED BY, EXECUTION OF THE WORK, WHETHER TEMPORARY OR PERMANENT CONSTRUCTION.  
B. RELATED SECTIONS INCLUDE THE FOLLOWING:  
1. DIVISION 01 SECTION "SUMMARY" FOR LIMITS PLACED ON CONTRACTOR'S USE OF THE SITE.  
2. DIVISION 01 SECTION "TEMPORARY FACILITIES AND CONTROLS" FOR FENCING.  
3. DIVISION 31 SECTION "EARTHWORK" FOR SITE AND UTILITY TRENCH EXCAVATION, BACKFILLING, COMPACTING AND GRADING REQUIREMENTS, AND SOIL MATERIALS.  
4. DIVISION 31 SECTION "FINISH GRADING."  
5. DIVISION 32 SECTION "PLANTS" FOR TREE AND SHRUB PLANTING.

1.3 DEFINITIONS  
A. CALIPER: DIAMETER OF A TRUNK MEASURED BY A DIAMETER TAPE OR THE AVERAGE OF THE SMALLEST AND LARGEST DIAMETERS AT A HEIGHT 6 INCHES ABOVE THE GROUND FOR TREES UP TO AND INCLUDING 4-INCH SIZE AT THIS HEIGHT AND AS MEASURED AT A HEIGHT OF 12 INCHES ABOVE THE GROUND FOR TREES LARGER THAN 4-INCH SIZE.  
B. TREE-PROTECTION ZONE: AREA SURROUNDING INDIVIDUAL TREES OR GROUPS OF TREES TO BE PROTECTED DURING CONSTRUCTION.  
C. PLANT-PROTECTION ZONE: AREA SURROUNDING INDIVIDUAL TREES, GROUPS OF TREES, SHRUBS, OR OTHER VEGETATION TO BE PROTECTED DURING CONSTRUCTION.  
D. VEGETATION: TREES, SHRUBS, GROUNDCOVERS, GRASS, AND OTHER PLANTS.

1.4 SUBMITTALS  
A. TREE PRUNING SCHEDULE: WRITTEN SCHEDULE FROM CERTIFIED ARBORIST DETAILING SCOPE AND EXTENT OF PRUNING OF TREES TO REMAIN THAT INTERFERE WITH OR ARE AFFECTED BY CONSTRUCTION.  
B. QUALIFICATION DATA: FOR TREE SERVICE FIRM AND CERTIFIED ARBORIST.  
C. CERTIFICATION: FROM ARBORIST, CERTIFYING THAT TREES INDICATED TO REMAIN HAVE BEEN PROTECTED DURING CONSTRUCTION ACCORDING TO RECOGNIZED STANDARDS AND THAT TREES WERE PROMPTLY AND PROPERLY TREATED AND REPAIRED WHEN DAMAGED.  
D. MAINTENANCE RECOMMENDATIONS: FROM CERTIFIED ARBORIST, FOR CARE AND PROTECTION OF TREES AFFECTED BY CONSTRUCTION DURING AND AFTER COMPLETING THE WORK.

1.5 QUALITY ASSURANCE  
A. TREE SERVICE FIRM QUALIFICATIONS: AN EXPERIENCED TREE SERVICE FIRM THAT HAS SUCCESSFULLY COMPLETED TREE PROTECTION AND TRIMMING WORK SIMILAR TO THAT REQUIRED FOR THIS PROJECT AND THAT WILL ASSIGN AN EXPERIENCED, CERTIFIED ARBORIST TO PROJECT SITE DURING EXECUTION OF TREE PROTECTION AND TRIMMING.  
B. CERTIFIED ARBORIST QUALIFICATIONS: AN ARBORIST CERTIFIED BY ISA OR LICENSED IN THE JURISDICTION WHERE PROJECT IS LOCATED.  
C. TREE PRUNING STANDARD: COMPLY WITH ANSI A300 (PART 1), "TREE, SHRUB, AND OTHER WOODY PLANT MAINTENANCE--STANDARD PRACTICES (PRUNING)."  
D. PROTECTION OF TREES DURING CONSTRUCTION STANDARD: COMPLY WITH ANSI A300 (PART 5), "MANAGEMENT OF TREES AND SHRUBS DURING SITE PLANNING, SITE DEVELOPMENT, AND CONSTRUCTION."  
E. TREE MAINTENANCE DURING CONSTRUCTION STANDARD: COMPLY WITH ANSI A300 (PART 6), "PLANTING AND TRANSPLANTING."  
F. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 01 SECTION "PROJECT MANAGEMENT AND COORDINATION."  
1. BEFORE SOIL PRESERVATION/TREE PROTECTION AND TRIMMING OPERATIONS BEGIN, MEET WITH OWNER, LANDSCAPE ARCHITECT TO REVIEW SOIL PRESERVATION/TREE PROTECTION AND TRIMMING

**PROCEDURES AND RESPONSIBILITIES.**

**PART 2 - PRODUCTS**

2.1 SITE ENCLOSURE AND SOIL PRESERVATION/TREE PROTECTION FENCING  
A. HIGH DENSITY POLYETHYLENE FENCING:  
1. 3.5" X 1.5" OPENINGS IN MESH  
2. COLOR: ORANGE  
3. 2" X 6' GALVANIZED STEEL POSTS OR PAINTED 'T' POSTS FOR OPEN LANDSCAPE AREAS.  
4. PROVIDE GALVANIZED STEEL BASES FOR SUPPORTING POSTS IF NEEDED.

**PART 3 - EXECUTION**

3.1 PREPARATION  
A. SITE ENCLOSURE, TREE PROTECTION, SOILS PRESERVATION FENCING: INSTALL TEMPORARY FENCING AS INDICATED IN SPECIFICATIONS. MAINTAIN TEMPORARY FENCE AROUND EXISTING TREES IN THE TREE PROTECTION AREAS AND REMOVE WHEN CONSTRUCTION IS COMPLETE. HEDGEROW FENCE TO REMAIN FOR 1 YEAR.  
B. SOIL PRESERVATION/TREE PROTECTION AREAS  
1. PROTECT TREE ROOT SYSTEMS FROM DAMAGE CAUSED BY RUNOFF OR SPILLAGE OF NOXIOUS MATERIALS WHILE MIXING, PLACING, OR STORING CONSTRUCTION MATERIALS. PROTECT ROOT SYSTEMS FROM PONDING, ERODING, OR EXCESSIVE WETTING CAUSED BY DEWATERING OPERATIONS.  
2. DO NOT STORE CONSTRUCTION MATERIALS, DEBRIS, OR EXCAVATED MATERIAL INSIDE SOIL PRESERVATION/TREE PROTECTION AREAS. DO NOT PERMIT VEHICLES OR FOOT TRAFFIC WITHIN SOIL PRESERVATION/TREE PROTECTION AREAS; PREVENT SOIL COMPACTION OVER ROOT SYSTEMS.  
3. MOW AREAS AS REQUIRED TO PREVENT TURFGRASS FROM EXCEEDING 5" IN HEIGHT.  
4. MAINTAIN TREE PROTECTION ZONES FREE OF TRASH AND DEBRIS.  
5. DO NOT ALLOW FIRES WITHIN TREE PROTECTION ZONES.

3.2 EXCAVATION  
A. INSTALL SHORING OR OTHER PROTECTIVE SUPPORT SYSTEMS TO MINIMIZE SLOPING OR BENCHING OF EXCAVATIONS.  
B. DO NOT EXCAVATE WITHIN SOIL PRESERVATION/TREE PROTECTION AREAS UNLESS OTHERWISE INDICATED.  
C. WHERE EXCAVATION FOR NEW CONSTRUCTION IS REQUIRED WITHIN SOIL PRESERVATION/TREE PROTECTION AREAS, HAND CLEAR AND EXCAVATE TO MINIMIZE DAMAGE TO ROOT SYSTEMS. USE NARROW-TINE SPADING FORKS AND COMB SOIL TO EXPOSE ROOTS.  
1. REDIRECT ROOTS IN BACKFILL AREAS WHERE POSSIBLE. IF ENCOUNTERING LARGE, MAIN LATERAL ROOTS, EXPOSE ROOTS BEYOND EXCAVATION LIMITS AS REQUIRED TO BEND AND REDIRECT THEM WITHOUT BREAKING. IF ENCOUNTERED IMMEDIATELY ADJACENT TO LOCATION OF NEW CONSTRUCTION AND REDIRECTION IS NOT PRACTICAL, CUT ROOTS APPROXIMATELY 3 INCHES (75 MM) BACK FROM NEW CONSTRUCTION.  
2. DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PLACING PERMANENT BACKFILL. PROVIDE TEMPORARY EARTH COVER OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN A MOIST CONDITION. TEMPORARILY SUPPORT AND PROTECT ROOTS FROM DAMAGE UNTIL THEY ARE PERMANENTLY RELOCATED AND COVERED WITH SOIL.  
D. WHERE UTILITY TRENCHES ARE REQUIRED WITHIN SOIL PRESERVATION/TREE PROTECTION AREAS, TUNNEL UNDER OR AROUND ROOTS BY DRILLING, AUGER BORING, PIPE JACKING, OR DIGGING BY HAND.  
1. ROOT PRUNING: DO NOT CUT MAIN LATERAL ROOTS OR TAPROOTS; CUT ONLY SMALLER ROOTS THAT INTERFERE WITH INSTALLATION OF UTILITIES. CUT ROOTS WITH SHARP PRUNING INSTRUMENTS; DO NOT BREAK OR CHOP.

3.3 GRADING WITHIN SOIL PRESERVATION AND TREE PROTECTION AREAS  
A. GRADE LOWERING OR GRADE FILL: WHERE NEW FINISH GRADE IS INDICATED BELOW EXISTING GRADE WITHIN SOIL PRESERVATION/TREE PROTECTION AREAS, SLOPE GRADE AS RECOMMENDED BY LANDSCAPE ARCHITECT.  
1. ROOT PRUNING: PRUNE TREE ROOTS EXPOSED DURING GRADE LOWERING. DO NOT CUT MAIN LATERAL ROOTS OR TAPROOTS; CUT ONLY SMALLER ROOTS. CUT ROOTS WITH SHARP PRUNING INSTRUMENTS; DO NOT BREAK OR CHOP.  
B. ALL EXISTING FINISH GRADES AROUND THE POND AREA AND WITHIN THE NO-MOW AREAS SHOULD BE RESTORED TO THE EXISTING FINISH GRADE AFTER DIGGING FOR TREE PLANTINGS OR ANY OTHER EARTH MOVING ACTIVITY WHICH WOULD DISTURB EXISTING GRADES INCLUDING FILLING, EXCAVATING AND COMPACTION.

C. OVER EXCAVATION WILL NOT BE PERMITTED. ALL GRADES TO BE RESTORED TO EXISTING FINISH GRADES ALONG THE EXISTING FENCELINE ALONG BEECH ROAD AND INNOVATION CAMPUS WAY AS WELL AS ALONG THE KDC PARKING LOT.

3.4 TREE PRUNING  
A. PRUNE TREES TO REMAIN-IN-PLACE WITHIN CONTRACT LIMITS.  
1. CORRECTION: TO COMPENSATE FOR ROOT LOSS CAUSED BY DAMAGING OR CUTTING ROOT SYSTEM. PROVIDE SUBSEQUENT MAINTENANCE DURING CONTRACT PERIOD AS RECOMMENDED BY CERTIFIED ARBORIST.  
2. CLEANING, THINNING, AND RAISING: TO CONFORM TO NEW LANDSCAPE CHARACTER, AS DIRECTED BY OWNER. CONTRACTOR IS RESPONSIBLE FOR PRUNING EXISTING TREES WHOSE BRANCHES CONFLICT WITH NEW SITE FEATURES (I.E. LIGHT POLES, SIGNAGE, ETC.)  
B. CUT BRANCHES WITH SHARP PRUNING INSTRUMENTS; DO NOT BREAK OR CHOP.  
C. CHIP REMOVED TREE BRANCHES AND DISPOSE OF OFF-SITE.

3.5 TREES TO BE PROTECTED  
A. EXISTING STREET TREES TO BE PROTECTED ARE LOCATED IN THE FOLLOWING AREAS:  
1. ANY EXISTING TREES WITHIN THE ROW ALONG BEECH ROAD AND INNOVATION CAMPUS WAY.  
2. ANY TREES WITHIN THE HEDGEROW PROTECTION ZONE.  
B. ALL PROTECTED TREES SHALL HAVE FENCING THAT WILL MAINTAIN A MINIMUM RADIUS FROM THE CENTER OF THE EXISTING TREE TO THE EDGE OF EACH INDIVIDUAL DRIP LINE.

3.6 TREE REPAIR AND REPLACEMENT  
A. PROMPTLY REPAIR TREES DAMAGED BY CONSTRUCTION OPERATIONS WITHIN 24 HOURS. TREAT DAMAGED TRUNKS, LIMBS, AND ROOTS ACCORDING TO CERTIFIED ARBORIST'S WRITTEN INSTRUCTIONS.  
B. REMOVE AND REPLACE TREES INDICATED TO REMAIN THAT DIE OR ARE DAMAGED DURING CONSTRUCTION OPERATIONS THAT CERTIFIED ARBORIST, OWNER, AND LANDSCAPE ARCHITECT DETERMINE ARE INCAPABLE OF RESTORING TO NORMAL GROWTH PATTERN.  
1. PROVIDE NEW TREES AS INDICATED ON DRAWINGS.

3.7 DISPOSAL OF WASTE MATERIALS  
A. BURNING IS NOT PERMITTED.  
B. DISPOSAL: REMOVE EXCESS EXCAVATED MATERIAL AND DISPLACED TREES FROM OWNER'S PROPERTY.

END OF SECTION 01 56 39

**SECTION 32 91 13 - LANDSCAPE (PLANTING) SOILS:**

**PART 1 - GENERAL**

1.1 SUMMARY  
A. SECTION INCLUDES:  
1. PLANTING AND LAWN/TURF SOILS.  
B. RELATED SECTIONS:  
1. DIVISION 32 SECTION "PLANTS" FOR INSTALLING PLANT MATERIAL IN LANDSCAPE AREAS.

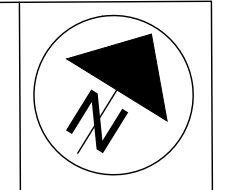
1.2 DEFINITIONS  
A. BACKFILL: THE EARTH USED TO REPLACE OR THE ACT OF REPLACING EARTH IN AN EXCAVATION.  
B. BLENDED SOIL MIX: SOIL MIX COMPRISED OF SAND, TOPSOIL, AND ORGANIC AMENDMENT. ONLY USED IF INDICATED ON THE DRAWINGS.  
C. DUFF LAYER: THE SURFACE LAYER OF NATIVE TOPSOIL THAT IS COMPOSED OF MOSTLY DECAYED LEAVES, TWIGS, AND DETRITUS.  
D. FINISH GRADE: ELEVATION OF FINISHED SURFACE OF PLANTING SOIL.  
E. MANUFACTURED TOPSOIL: SOIL PRODUCED OFF-SITE BY HOMOGENEOUSLY BLENDING MINERAL SOILS OR SAND WITH STABILIZED ORGANIC SOIL AMENDMENTS TO PRODUCE TOPSOIL OR PLANTING SOIL.  
F. PESTICIDE: A SUBSTANCE OR MIXTURE INTENDED FOR PREVENTING, DESTROYING, REPELLING, OR MITIGATING A PEST. THIS INCLUDES INSECTICIDES, MITICIDES, HERBICIDES, FUNGICIDES, RODENTICIDES, AND MOLLUSCICIDES. IT ALSO INCLUDES SUBSTANCES OR MIXTURES INTENDED FOR USE AS A PLANT REGULATOR, DEFOLIANT, OR DESICCANT.  
G. PESTS: LIVING ORGANISMS THAT OCCUR WHERE THEY ARE NOT DESIRED, OR THAT CAUSE DAMAGE TO PLANTS, ANIMALS, OR PEOPLE. THESE INCLUDE INSECTS, MITES, GRUBS, MOLLUSKS (SNAILS AND SLUGS), RODENTS (GOPHERS, MOLES, AND MICE), UNWANTED PLANTS (WEEDS), FUNGI, BACTERIA, AND VIRUSES.  
H. PLANTING AREA: AREAS TO BE PLANTED.

I. SUBGRADE: SURFACE OR ELEVATION OF SUBSOIL REMAINING AFTER EXCAVATION IS COMPLETE, OR THE TOP SURFACE OF A FILL OR BACKFILL BEFORE PLANTING SOIL IS PLACED.  
J. SUBSOIL: ALL SOIL BENEATH THE TOPSOIL LAYER OF THE SOIL PROFILE AND TYPIFIED BY THE LACK OF ORGANIC MATTER AND SOIL ORGANISMS.  
K. SURFACE SOIL: SOIL THAT IS PRESENT AT THE TOP LAYER OF THE EXISTING SOIL PROFILE AT THE PROJECT SITE. IN UNDISTURBED AREAS, THE SURFACE SOIL IS TYPICALLY TOPSOIL; BUT IN DISTURBED AREAS SUCH AS URBAN ENVIRONMENTS, THE SURFACE SOIL CAN BE SUBSOIL.  
L. TOPSOIL: SOIL FROM THE A-HORIZON THAT'S BEEN PULVERIZED TO BE USED AS PLANTING SOIL ON THIS PROJECT AND THAT CONFORMS TO THE DESCRIPTION/SPECIFICATION BELOW FOR TOPSOIL.

1.3 SUBMITTALS  
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING SOILS.  
1. SOILS  
A. FOR EACH BLENDED SOIL MIX COMPONENT: SUBMIT SUPPLIER NAME AND CONTACT INFORMATION, LOCATION OF MATERIAL SOURCES, AGRICULTURAL SOIL TESTING LABORATORY NAME AND CONTACT INFORMATION, AND TEST RESULTS FOR THE FOLLOWING:  
1) SAND: INCLUDE U.S.D.A. SAND PARTICLE SIZE ANALYSIS, SILT & CLAY FRACTIONS, FINENESS MODULUS, UNIFORMITY COEFFICIENT, PH, SOLUBLE SALTS CONTENT AND ORGANIC MATTER CONTENT.  
2) TOPSOIL: INCLUDE PARTICLE SIZE ANALYSIS (% SAND, SILT AND CLAY) AND USDA TEXTURE CLASS, PH, SOLUBLE SALTS CONTENT, AND ORGANIC MATTER CONTENT  
3) ORGANIC AMENDMENT: PRODUCT CERTIFICATE  
B. FOR BLENDED SOIL MIX: SUBMIT MIX SUPPLIER NAME AND CONTACT INFORMATION, LOCATION OF MIXING SITE, AGRICULTURAL SOIL TESTING LABORATORY NAME AND CONTACT INFORMATION, AND TEST RESULTS FOR THE FOLLOWING:  
1) SOIL PH AND BUFFER PH  
2) CATION EXCHANGE CAPACITY  
3) NUTRIENT ANALYSIS (PLANT AVAILABLE PHOSPHORUS, POTASSIUM, CALCIUM, MAGNESIUM, IRON, MANGANESE, ZINC, COPPER AND BORON)  
4) ORGANIC MATTER CONTENT (ASTM D2974-87 METHOD C)  
5) PARTICLE SIZE ANALYSIS (U.S.D.A. SAND PARTICLE SIZE ANALYSIS, SILT & CLAY FRACTIONS)  
6) BLENDED SOIL MIX RECOMMENDATIONS AND SOIL AMENDMENT RECOMMENDATIONS  
C. PRODUCT CERTIFICATES FOR EACH CHEMICAL SOIL AMENDMENT AND FERTILIZER MATERIAL  
D. WRITTEN PLAN FOR, TRANSPORTING, STORING, PLACING AND SETTTLING INSTALLED MATERIALS INCLUDING WHEEL LOAD DATA FOR EARTHWORK EQUIPMENT. PLAN TO BE SUBMITTED TWO WEEKS IN ADVANCE OF SOIL DELIVERY AND INSTALLATION.  
B. QUALIFICATION DATA: FOR QUALIFIED LANDSCAPE INSTALLER. INCLUDE LIST OF SIMILAR PROJECTS COMPLETED BY INSTALLER DEMONSTRATING INSTALLER'S CAPABILITIES AND EXPERIENCE. INCLUDE PROJECT NAMES, ADDRESSES, AND YEAR COMPLETED, AND INCLUDE NAMES AND ADDRESSES OF OWNERS' CONTACT PERSONS.  
C. MAINTENANCE INSTRUCTIONS: RECOMMENDED PROCEDURES TO BE ESTABLISHED BY OWNER FOR MAINTENANCE OF PLANTS DURING A CALENDAR YEAR. SUBMIT BEFORE START OF REQUIRED MAINTENANCE PERIODS.  
D. WARRANTY: 1 YEAR FROM SUBSTANTIAL COMPLETION.  
E. PROCTOR TESTING REPORTS FOR PLANT BEDS GREATER THAN 18" DEEP. ONE TEST TAKEN PER 500 S.F. OF PLANTERS THAT CONTAIN AN EXCESS OF 18" DEPTH.

1.4 QUALITY ASSURANCE  
A. INSTALLER QUALIFICATIONS: A QUALIFIED LANDSCAPE INSTALLER WHOSE WORK HAS RESULTED IN SUCCESSFUL ESTABLISHMENT OF PLANTS.  
1. PROFESSIONAL MEMBERSHIP: INSTALLER SHALL BE A MEMBER IN GOOD STANDING OF EITHER THE PROFESSIONAL LANDSCAPE NETWORK OR THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.  
2. EXPERIENCE: FIVE YEARS' EXPERIENCE IN LANDSCAPE INSTALLATION IN ADDITION TO REQUIREMENTS IN DIVISION 01 SECTION "QUALITY REQUIREMENTS."  
3. INSTALLER'S FIELD SUPERVISION: REQUIRE INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME SUPERVISOR ON PROJECT SITE WHEN WORK IS IN PROGRESS.  
4. PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.  
B. SOIL-TESTING LABORATORY QUALIFICATIONS: AN INDEPENDENT OR UNIVERSITY LABORATORY, RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE, WITH THE EXPERIENCE AND CAPABILITY TO CONDUCT THE TESTING INDICATED AND THAT SPECIALIZES IN TYPES OF TESTS TO BE PERFORMED.

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C. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE PRIOR TO INSTALLATION OF SOIL AND PLANT MATERIAL.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. PACKAGED MATERIALS: DELIVER PACKAGED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS SHOWING WEIGHT, CERTIFIED ANALYSIS, NAME AND ADDRESS OF MANUFACTURER, AND INDICATION OF CONFORMANCE WITH STATE AND FEDERAL LAWS IF APPLICABLE.
B. BULK MATERIALS:
1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
2. PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF BULK MATERIALS, DISCHARGE OF SOIL-BEARING WATER RUNOFF, AND AIRBORNE DUST REACHING ADJACENT PROPERTIES, WATER CONVEYANCE SYSTEMS, OR WALKWAYS.
3. ACCOMPANY EACH DELIVERY OF BULK FERTILIZERS AND SOIL AMENDMENTS WITH APPROPRIATE CERTIFICATES.

1.6 PROJECT CONDITIONS

- A. FIELD MEASUREMENTS: VERIFY ACTUAL GRADE ELEVATIONS, SERVICE AND UTILITY LOCATIONS, IRRIGATION SYSTEM COMPONENTS, AND DIMENSIONS OF PLANTINGS AND CONSTRUCTION CONTIGUOUS WITH NEW PLANTINGS BY FIELD MEASUREMENTS BEFORE PROCEEDING WITH PLANTING WORK.
B. INTERRUPTION OF EXISTING SERVICES OR UTILITIES: DO NOT INTERRUPT SERVICES OR UTILITIES TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SERVICES OR UTILITIES ACCORDING TO REQUIREMENTS INDICATED:
1. DO NOT PROCEED WITH INTERRUPTION OF SERVICES OR UTILITIES WITHOUT OWNER'S WRITTEN PERMISSION.
C. WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.
D. COORDINATION WITH TURF AREAS (LAWNS): PLANT TREES, SHRUBS, AND OTHER PLANTS AFTER FINISH GRADES ARE ESTABLISHED AND BEFORE PLANTING TURF AREAS UNLESS OTHERWISE INDICATED.
1. WHEN PLANTING TREES, SHRUBS, AND OTHER PLANTS AFTER PLANTING TURF AREAS, PROTECT TURF AREAS, AND PROMPTLY REPAIR DAMAGE CAUSED BY PLANTING OPERATIONS.

PART 2 - PRODUCTS

2.1 PLANTING AND TURF SOILS

- A. BASIS OF DESIGN: TOPSOIL WITH COMPOST AMENDMENT (TCA)
1. TOPSOIL: A LOAMY, FRIABLE MINERAL SOIL ESSENTIALLY FREE FROM HEAVY OR STIFF CLAY LUMPS, STONES, CINDERS, CONCRETE, BRICK, ROOTS, STICKS BRUSH, LITTER, PLASTICS, METALS, REFUSE OR OTHER DELETERIOUS MATERIALS IN ACCORDANCE WITH ASTM D 5286-92. THE SOIL SHALL BE FREE OF HERBICIDES, PETROLEUM-BASED MATERIALS OR OTHER SUBSTANCES OF A HAZARDOUS OR TOXIC NATURE WHICH MAY INHIBIT PLANT GROWTH. THE SOIL SHALL BE FREE OF NOXIOUS WEEDS, SEEDS OR VEGETATIVE PARTS OF WEEDY PLANTS THAT CANNOT BE SELECTIVELY CONTROLLED IN THE PLANTING. EQUAL TO KURTZ BROS. GROWER'S BLEND.
2. THE SOIL SHALL BE TAKEN FROM THE A HORIZON OF A WELL-DRAINED SITE AND HAVE A USDA SOIL TEXTURE CLASSIFICATION OF A CLAY LOAM OR LOAM. THE TOPSOIL SHALL HAVE THE FOLLOWING PARTICLE SIZE DISTRIBUTION:

Table with 3 columns: U.S.D.A. PARTICLE NAME, SIZE (MM), ALLOWABLE LIMIT. Rows include GRAVEL (> 2.00), SAND (0.05 - 2.00), SILT (0.002 - 0.05), and CLAY (MINUS 0.002).

- 3. THE TOPSOIL COMPONENT SHALL MEET THE FOLLOWING SPECIFICATIONS. PERFORM THE FOLLOWING TESTS AND SUBMIT TEST REPORTS SHOWING THE FOLLOWING CRITERIA ARE MET:
A. THE PARTICLE SIZE ANALYSIS AS DEFINED ABOVE.
B. THE PH SHALL BE 6.5 TO 8.0
C. THE SOLUBLE SALTS TEST SHALL BE LESS THAN 1.5 MMOH/CM
D. THE ORGANIC MATTER CONTENT SHALL BE 3.0 TO 6.0%
D. PROVIDE CERTIFICATION FROM THE SUPPLIER THAT THE TOPSOIL DOES NOT CONTAIN ANY TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH.
4.ORGANIC AMENDMENT: SEE BELOW.

- 5. RENOVATED EXISTING SOIL FOR SHRUB AREAS
A. SOILS FURNISHED AND TILLED INTO EXISTING SOIL AS PER PLAN.

2.2 COM-TIL

- A. PREMIUM GRADE BIOSOLIDS PRODUCT PRODUCED BY THE OHIO DEPARTMENT OF PUBLIC UTILITIES OR APPROVED EQUAL.
B. BASIS FOR DESIGN: COM-TIL COMPOST - PROCESSED BIOSOLIDS, MIXED AND COMPOSTED WITH WOOD CHIPS AND YARD WASTE. AVAILABLE FROM:
1. CITY OF COLUMBUS, 7000 JACKSON PIKE (S.R. 104), LOCKBOURNE, OH 43137. 614-645-3153.
2. KURTZ BROS, 711 FRANK RD. COLUMBUS, OH 43223. 614-406-7720.
C. SOIL MIX: FOR PURPOSES OF BIDDING, ASSUME 4 PARTS OF APPROVED TOPSOIL AND 1 PART OF COMPOST SHALL COMPRISE THE LAWN AND PLANTING SOIL MIX.
D. TARGET ORGANIC MATTER CONTENT IN FINAL MIX: 3-6%.
E. TARGET PH LEVEL: 5.5 - 7.8
F. THE CONTROLLING FACTOR WILL BE THE PERCENT (%) ORGANIC MATTER BY WEIGHT SPECIFIED FOR TCA SOIL. NOTE THAT THE INTENDED VOLUME RATIOS OF THE ORGANIC AMENDMENT (COMPOST) COMPONENTS WILL BE, IN LARGE PART, DETERMINED BY THE ORGANIC MATTER CONTENT OF THE COMPOST.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. EXAMINE AREAS TO RECEIVE PLANTS FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE.
1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL WITHIN A PLANTING AREA.
2. DO NOT MIX OR PLACE SOILS AND SOIL AMENDMENTS IN FROZEN, WET, OR MUDDY CONDITIONS.
3. SUSPEND SOIL SPREADING, GRADING, AND TILLING OPERATIONS DURING PERIODS OF EXCESSIVE SOIL MOISTURE UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS.
4. UNIFORMLY MOISTEN EXCESSIVELY DRY SOIL THAT IS NOT WORKABLE AND WHICH IS TOO DUSTY.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
C. IF CONTAMINATION BY FOREIGN OR DELETERIOUS MATERIAL OR LIQUID IS PRESENT IN SOIL WITHIN A PLANTING AREA, REMOVE THE SOIL AND CONTAMINATION AS DIRECTED BY ARCHITECT AND REPLACE WITH NEW PLANTING SOIL.

3.2 PREPARATION

- A. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES AND TURF AREAS AND EXISTING PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS.
B. INSTALL EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.

3.3 PLANTING AREA ESTABLISHMENT

- A. LOOSEN SUBGRADE OF PLANTING AREAS TO A DEPTH OF 6 INCHES. REMOVE STONES LARGER THAN 1 INCH IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEIOUS MATTER AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
1. THOROUGHLY BLEND PLANTING SOIL OFF-SITE BEFORE SPREADING.
2. SPREAD PLANTING MIX LIGHTLY IN 8" LIFTS TO A MAXIMUM DEPTH AS SHOWN ON THE SOILS PLAN IN BOTH PLANTING AREAS AND IN TURF AREAS, BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT. DO NOT SPREAD IF PLANTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
B. FINISH GRADING: GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. LIGHTLY ROLL, RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES.
C. CONTRACTOR SHALL TAKE SETTLING AND COMPACTION OF ALL AREAS, ESP. AROUND PLANTED TREES AND MEDIAN LAWN AREAS INTO ACCOUNT. PLANTING SOIL FILL SHALL BE COMPACTED TO 85% PROCTOR DENSITY TO MINIMIZE SETTLING OUTSIDE OF ROOT BALLS. SOIL AREAS SHALL BE BROUGHT UP TO GRADE AND ESTABLISHED AS SHOWN ON THE GRADING PLAN OR AS INDICATED IN THE DETAILS.
D. BEFORE PLANTING, OBTAIN LANDSCAPE ARCHITECT'S ACCEPTANCE OF FINISH GRADING; RESTORE PLANTING AREAS IF

- ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING.
E. SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY NOT BE USED AS PLANTING SOIL.
F. OBSTRUCTIONS: NOTIFY LANDSCAPE ARCHITECT IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES ARE ENCOUNTERED IN EXCAVATIONS.
G. DRAINAGE: NOTIFY LANDSCAPE ARCHITECT IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PLANTING PITS. ALL DIFFERENT TYPICAL PLANTING AREAS, PROPOSED AND EXISTING, ARE REQUIRED TO UNDERGO THE FOLLOWING PERCOLATION TEST TO ENSURE PROPER DRAINAGE.
H. FILL EXCAVATIONS WITH WATER AND ALLOW IT TO PERCOLATE AWAY BEFORE POSITIONING TREES.

END OF SECTION 32 91 13

SECTION 32 92 00 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY

- A. SECTION INCLUDES:
1. LAWN SEEDING
2. NO MOW SEEDING.
B. RELATED SECTIONS:
1. DIVISION 32 SECTION "PLANTS" FOR LANDSCAPE SEEDINGS.

1.3 DEFINITIONS

- A. DUFF LAYER: THE SURFACE LAYER OF NATIVE TOPSOIL THAT IS COMPOSED OF MOSTLY DECAYED LEAVES, TWIGS, AND DETRITUS.
B. FINISH GRADE: ELEVATION OF FINISHED SURFACE OF SEEDING SOIL.
C. MANUFACTURED TOPSOIL: SOIL PRODUCED OFF-SITE BY HOMOGENEOUSLY BLENDING MINERAL SOILS OR SAND WITH STABILIZED ORGANIC SOIL AMENDMENTS TO PRODUCE TOPSOIL OR SEEDING SOIL.
D. PESTICIDE: A SUBSTANCE OR MIXTURE INTENDED FOR PREVENTING, DESTROYING, REPELLING, OR MITIGATING A PEST. THIS INCLUDES INSECTICIDES, MITICIDES, HERBICIDES, FUNGICIDES, RODENTICIDES, AND MOLLUSCICIDES. IT ALSO INCLUDES SUBSTANCES OR MIXTURES INTENDED FOR USE AS A PLANT REGULATOR, DEFOLIANT, OR DESICCANT.
E. PESTS: LIVING ORGANISMS THAT OCCUR WHERE THEY ARE NOT DESIRED OR THAT CAUSE DAMAGE TO PLANTS, ANIMALS, OR PEOPLE. THESE INCLUDE INSECTS, MITES, GRUBS, MOLLUSKS (SNAILS AND SLUGS), RODENTS (GOPHERS, MOLES, AND MICE), UNWANTED PLANTS (WEEDS), FUNGI, BACTERIA, AND VIRUSES.
F. PLANTING SOIL: STANDARDIZED TOPSOIL WITH COMPOST AMENDMENT; EXISTING, NATIVE SURFACE TOPSOIL; EXISTING, IN-PLACE SURFACE SOIL; IMPORTED TOPSOIL; OR MANUFACTURED TOPSOIL THAT IS MODIFIED WITH SOIL AMENDMENTS AND PERHAPS FERTILIZERS TO PRODUCE A SOIL MIXTURE BEST FOR PLANT GROWTH.
G. SUBGRADE: SURFACE OR ELEVATION OF SUBSOIL REMAINING AFTER EXCAVATION IS COMPLETE, OR TOP SURFACE OF A FILL OR BACKFILL BEFORE SEEDING SOIL IS PLACED.
H. SUBSOIL: ALL SOIL BENEATH THE TOPSOIL LAYER OF THE SOIL PROFILE AND TYPIFIED BY THE LACK OF ORGANIC MATTER AND SOIL ORGANISMS.
I. SURFACE SOIL: SOIL THAT IS PRESENT AT THE TOP LAYER OF THE EXISTING SOIL PROFILE AT THE PROJECT SITE. IN UNDISTURBED AREAS, THE SURFACE SOIL IS TYPICALLY TOPSOIL, BUT IN DISTURBED AREAS SUCH AS URBAN ENVIRONMENTS, THE SURFACE SOIL CAN BE SUBSOIL.

1.4 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
1. PESTICIDES AND HERBICIDES: INCLUDE PRODUCT LABEL AND MANUFACTURER'S APPLICATION INSTRUCTIONS SPECIFIC TO THIS PROJECT.
B. CERTIFICATION OF GRASS SEED: FROM SEED VENDOR FOR EACH GRASS-SEED MONOSTAND OR MIXTURE STATING THE BOTANICAL AND COMMON NAME, PERCENTAGE BY WEIGHT OF EACH SPECIES AND VARIETY, AND PERCENTAGE OF PURITY, GERMINATION, AND WEED SEED. INCLUDE THE YEAR OF PRODUCTION AND DATE OF PACKAGING.
C. QUALIFICATION DATA: FOR QUALIFIED LANDSCAPE INSTALLER.
D. PRODUCT CERTIFICATES: FOR SOIL AMENDMENTS AND FERTILIZERS, FROM MANUFACTURER.

- E. MATERIAL TEST REPORTS: FOR IMPORTED OR MANUFACTURED TOPSOIL.
F. MAINTENANCE INSTRUCTIONS: RECOMMENDED PROCEDURES TO BE ESTABLISHED BY OWNER FOR MAINTENANCE OF TURF DURING A CALENDAR YEAR. SUBMIT BEFORE EXPIRATION OF REQUIRED INITIAL MAINTENANCE PERIODS.

1.5 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: A QUALIFIED LANDSCAPE INSTALLER WHOSE WORK HAS RESULTED IN SUCCESSFUL TURF ESTABLISHMENT.
1. PROFESSIONAL MEMBERSHIP: INSTALLER SHALL BE A MEMBER IN GOOD STANDING OF EITHER THE PROFESSIONAL LANDSCAPE NETWORK OR THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. EXPERIENCE: FIVE YEARS' EXPERIENCE IN TURF INSTALLATION IN ADDITION TO REQUIREMENTS IN DIVISION 1 SECTION "QUALITY REQUIREMENTS."
3. INSTALLER'S FIELD SUPERVISION: REQUIRE INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME SUPERVISOR ON PROJECT SITE WHEN WORK IS IN PROGRESS.
4. MAINTENANCE PROXIMITY: NOT MORE THAN TWO HOURS' NORMAL TRAVEL TIME FROM INSTALLER'S PLACE OF BUSINESS TO PROJECT SITE.
5. PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.
B. SOIL-TESTING LABORATORY QUALIFICATIONS: AN INDEPENDENT LABORATORY OR UNIVERSITY LABORATORY, RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE, WITH THE EXPERIENCE AND CAPABILITY TO CONDUCT THE TESTING INDICATED AND THAT SPECIALIZES IN TYPES OF TESTS TO BE PERFORMED.
C. SOIL ANALYSIS: FOR EACH UNAMENDED SOIL TYPE, FURNISH SOIL ANALYSIS AND A WRITTEN REPORT BY A QUALIFIED SOIL-TESTING LABORATORY STATING PERCENTAGES OF ORGANIC MATTER; GRADATION OF SAND, SILT, AND CLAY CONTENT; CATION EXCHANGE CAPACITY; DELETERIOUS MATERIAL; PH; AND MINERAL AND PLANT-NUTRIENT CONTENT OF THE SOIL.
1. TESTING METHODS AND WRITTEN RECOMMENDATIONS SHALL COMPLY WITH USDA'S HANDBOOK NO. 60.
2. THE SOIL-TESTING LABORATORY SHALL OVERSEE SOIL SAMPLING, WITH DEPTH, LOCATION, AND NUMBER OF SAMPLES TO BE TAKEN PER INSTRUCTIONS FROM ARCHITECT. A MINIMUM OF THREE REPRESENTATIVE SAMPLES SHALL BE TAKEN FROM VARIOUS LOCATIONS FOR EACH SOIL TO BE USED OR AMENDED FOR SEEDING PURPOSES.
3. REPORT SUITABILITY OF TESTED SOIL FOR TURF GROWTH.
A. BASED ON THE TEST RESULTS, STATE RECOMMENDATIONS FOR SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED. STATE RECOMMENDATIONS IN WEIGHT PER 1000 SQ. FT. OR VOLUME PER CU. YD. FOR NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE SATISFACTORY SEEDING SOIL SUITABLE FOR HEALTHY, VIABLE PLANTS.
B. REPORT PRESENCE OF PROBLEM SALTS, MINERALS, OR HEAVY METALS, INCLUDING ALUMINUM, ARSENIC, BARIUM, CADMIUM, CHROMIUM, COBALT, LEAD, LITHIUM, AND VANADIUM. IF SUCH PROBLEM MATERIALS ARE PRESENT, PROVIDE ADDITIONAL RECOMMENDATIONS FOR CORRECTIVE ACTION.
D. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. BULK MATERIALS:
1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
2. PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF BULK MATERIALS, DISCHARGE OF SOIL-BEARING WATER RUNOFF, AND AIRBORNE DUST REACHING ADJACENT PROPERTIES, WATER CONVEYANCE SYSTEMS, OR WALKWAYS.
3. ACCOMPANY EACH DELIVERY OF BULK FERTILIZERS, LIME, AND SOIL AMENDMENTS WITH APPROPRIATE CERTIFICATES.

1.7 PROJECT CONDITIONS

- A. SEEDING RESTRICTIONS: SEED DURING ONE OF THE FOLLOWING PERIODS. COORDINATE SEEDING PERIODS WITH INITIAL MAINTENANCE PERIODS TO PROVIDE REQUIRED MAINTENANCE FROM DATE OF SUBSTANTIAL COMPLETION.
1. SPRING SEEDING: APRIL 1 TO JUNE 1.
2. FALL SEEDING: AUGUST 15 TO SEPT 20.
B. WEATHER LIMITATIONS: PROCEED WITH SEEDING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT SEEDING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

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1.8 MAINTENANCE SERVICE

- A. INITIAL TURF MAINTENANCE SERVICE: PROVIDE FULL MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLER. MAINTAIN AS REQUIRED IN PART 3. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE TURF IS ESTABLISHED BUT FOR NOT LESS THAN THE FOLLOWING PERIODS:
  1. SEEDED NO-MOW AND LAWN TURF: 30 DAYS FROM INSTALLATION

PART 2 - PRODUCTS

2.1 SEED MIX

- A. NO MOW GRASS SEED: FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH ACSA'S "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCES.
- B. GRASS SEED SPECIES: (APPLIES TO BOTH MOWN AND NO MOW AREAS) SPECIES AS FOLLOWS, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PERCENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED:
  1. TURF TYPE TALL FESCUES (TTTF): PROPORTIONED BY WEIGHT AS FOLLOWS:
    - A. 90% OF SEED SHALL CONSIST OF A MIN. 3 IMPROVED VARIETIES OF TTTF WITH A MIN. OVERALL QUALITY RATING OF 6.2 AS RATED FROM NTEP TRIALS IN WEST LAFAYETTE, IN, CENTRAL REGION.
    - B. 10% HYBRID BLUEGRASS

2.2 TOPSOIL

- A. TOPSOIL: FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION, AND OTHER EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH.
  1. TOPSOIL SOURCE: REUSE SURFACE TOPSOIL STOCKPILED ON THE SITE. CLEAN TOPSOIL OF ROOTS, PLANTS, SODS, STONES, CLAY LUMPS, AND OTHER EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH. DISTRIBUTE TOPSOIL IN A UNIFORM DEPTH OVER ALL AREAS TO BE SEEDED.
- B. SOIL AMENDMENTS: SEE SPECIFICATION SECTION 32 91 20.
  1. COM-TIL: PREMIUM GRADE BIOSOLIDS PRODUCT PRODUCED BY THE OHIO DEPARTMENT OF PUBLIC UTILITIES OR APPROVED EQUAL.

2.3 FERTILIZER

- A. COMMERCIAL FERTILIZER: COMMERCIAL-GRADE COMPLETE STARTER FERTILIZER OF NEUTRAL CHARACTER FOR SEED, CONSISTING OF FAST- AND SLOW-RELEASE NITROGEN, 50 PERCENT DERIVED FROM NATURAL ORGANIC SOURCES OF UREA-FORM, PHOSPHOROUS, AND POTASSIUM IN THE FOLLOWING COMPOSITION:
  1. RATE: 1.5 LBS. PER 1000 SQ. FT. THAT WILL PROVIDE ACTUAL PHOSPHORUS.
  2. COMPOSITION: 1% NITROGEN, 2% PHOSPHOROUS, AND 1% POTASSIUM BY WEIGHT FOR ALL SEEDED AND REPAIR AREAS.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. EXAMINE AREAS TO BE PLANTED FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE.
  1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL WITHIN A SEEDING AREA.
  2. DO NOT MIX OR PLACE SOILS AND SOIL AMENDMENTS IN FROZEN, WET, OR MUDDY CONDITIONS.
  3. SUSPEND SOIL SPREADING, GRADING, AND TILLING OPERATIONS DURING PERIODS OF EXCESSIVE SOIL MOISTURE UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS.
  4. UNIFORMLY MOISTEN EXCESSIVELY DRY SOIL THAT IS NOT WORKABLE AND WHICH IS TOO DUSTY.
- B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- C. IF CONTAMINATION BY FOREIGN OR DELETERIOUS MATERIAL OR LIQUID IS PRESENT IN SOIL WITHIN A SEEDING AREA, REMOVE THE SOIL AND CONTAMINATION AS DIRECTED BY ARCHITECT AND REPLACE WITH NEW SEEDING SOIL.

3.2 PREPARATION

- A. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES, TREES, SHRUBS, AND SEEDINGS FROM DAMAGE CAUSED BY SEEDING OPERATIONS.
- B. INSTALL EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.

3.3 TURF AREA PREPARATION

A. LIMIT SUBGRADE PREPARATION TO AREAS THAT WILL BE PLANTED IN THE IMMEDIATE FUTURE.

1. VERIFY THAT SUBGRADE IN MEDIAN AREAS HAS BEEN ESTABLISHED AND COMPACTED TO BE TILLED AND MIXED WITH PROPOSED PLANTING SOIL.
  2. PER THE DETAILS, APPLY 3" OF PLANTING SOIL TO THE MEDIAN AND TILL INTO THE SURFACE OF SUBGRADE TO A DEPTH OF AT LEAST 2 INCHES. APPLY REMAINING SOIL TO THE REQUIRED DEPTH. TIL IN SOIL AMENDMENTS AND INITIAL FERTILIZERS AND MIX THOROUGHLY INTO TOP 4 INCHES OF SOIL. TRIM HIGH AREAS AND FILL IN DEPRESSIONS. TILL SOIL TO A HOMOGENOUS MIXTURE OF FINE TEXTURE. COMPACT TO 85% PROCTOR. FILL AREAS, VOIDS, AND LOW SPOTS WITH ADDITIONAL SOIL UNTIL SECTION MATCHES THE DRAWN DETAILS.
  3. REMOVE WASTE MATERIAL, INCLUDING GRASS, VEGETATION, AND TURF, AND LEGALLY DISPOSE OF IT OFF THE OWNER'S PROPERTY.
  4. AREAS SHALL HAVE A SMOOTH AND CONTINUAL GRADE BETWEEN EXISTING OR FIXED CONTROLS SUCH AS WALKS, CURBS AND ELEVATIONS AT BEFORE SEEDING. ALL SOIL ALONG FIXED OBJECTS SHALL BE FIRM AND SLIGHTLY RAISED TO LIMIT SETTLING. ALL GRADES TO MAINTAIN POSITIVE DRAINAGE FLOW TO AVOID STANDING AND TRAPPING OF WATER.
- B. REPAIR DISTURBED EXISTING LAWN AND GRASS AREAS WITHIN THE LIMIT OF WORK TO A SMOOTH, EVEN SURFACE WITH LOOSE, UNIFORMLY FINE TEXTURE. RE-ESTABLISH EXISTING GRADES BY ROLLING AND/OR RAKING, REMOVING RIDGES, AND FILLING DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINE GRADING TO AREAS THAT CAN BE PLANTED IN THE IMMEDIATE FUTURE. REMOVE TRASH, DEBRIS, STONES LARGER THAN 1-1/2 INCHES IN ANY DIMENSION, AND OTHER OBJECTS THAT MAY INTERFERE WITH SEEDING OR MAINTENANCE OPERATIONS.
  - C. SCARIFY REPAIR AREAS AND APPLY STARTER FERTILIZER AT TIME OF SEEDING AND WEED-N-FEED FERTILIZER 30 DAYS AFTER SEEDING.
  - D. NO HEAVY OBJECTS EXCEPT TURF MAKING EQUIPMENT SHALL BE MOVED OVER TURF AREAS AFTER SOIL IS PREPARED UNLESS IT IS AGAIN LOOSENED AND GRADED. IF SEED BED HAS BECOME MUDDY, HARD OR EXCESSIVELY DRY, RETILL TO A SMOOTH, FRIABLE UNIFORM CONDITION, FREE FROM STONES OR LUMPS. REGRADE ANY SETTLING PRIOR TO SEEDING. SOIL AREAS THAT ARE NOT WELL-LOOSENED TO A DEPTH SPECIFIED PRIOR TO SEEDING SHALL BE SUBJECT TO REJECTION BY THE LANDSCAPE ARCHITECT.
  - E. ALL DISTURBED AREAS ADJACENT TO THE PROJECT AREA AND OTHER AREAS WHICH MAY BE NOTED TO BE DEVELOPED IN THIS PROJECT, NOT SHOWN OR NOTED TO BE DEVELOPED OTHERWISE, SHALL BE CONSIDERED TURF AREAS AND SEEDED AND PREPARED AS SPECIFIED HEREIN.
  - F. MOISTEN PREPARED LAWN AREAS BEFORE SEEDING WHEN SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE SEEDING. DO NOT CREATE MUDDY SOIL.
  - G. RESTORE PREPARED AREAS IF ERODED OR OTHERWISE DISTURBED AFTER FINE GRADING AND BEFORE SEEDING.

3.4 SEEDING

- A. SEED MEDIAN AND REPAIR AREAS AT A MIN. OF 6 LBS / 1000 SF.
- B. PLANT SEED WITH "BRILLION" TYPE SEEDING MACHINE THAT ACCURATELY PLACES SEED AT SPECIFIED DEPTH AND RATE AND ROLLS IN SINGLE OPERATIONS. PLANT SEED NO DEEPER THAN ½ INCH.
- C. HYDROSEEDING IS NOT PERMITTED.
- D. DO NOT DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH.
  1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
  2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
  3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF SEEDING SAUCER.
- E. SOW SEED AT A TOTAL RATE OF 260 LBS. PER ACRE.
- F. PROTECT SEEDED AREAS WITH SLOPES EXCEEDING 1:4 WITH EROSION-CONTROL BLANKETS INSTALLED AND STAPLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- G. PROTECT SEEDED AREAS WITH SLOPES NOT EXCEEDING 1:4 BY SPREADING STRAW MULCH. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS/ACRE TO FORM A CONTINUOUS BLANKET 1-1/2 INCHES IN LOOSE THICKNESS OVER SEEDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT.
  1. BOND STRAW MULCH BY SPRAYING WITH ASPHALT EMULSION AT A RATE OF 10 TO 13 GAL./1000 SQ. FT. TAKE PRECAUTIONS TO PREVENT DAMAGE OR STAINING OF STRUCTURES OR OTHER SEEDINGS ADJACENT TO MULCHED AREAS. IMMEDIATELY CLEAN DAMAGED OR STAINED AREAS.

3.5 TURF ESTABLISHMENT AND MAINTENANCE

- A. PRIOR TO OWNER ACCEPTANCE, MAINTAIN SEEDED AREAS FOR ESTABLISHMENT ONLY. MONITOR SOIL MOISTURE WITHIN THE SEEDBED TO ENSURE ADEQUATE MOISTURE IS MAINTAINED FOR SEED GERMINATION AND FOR AT LEAST 4 WEEKS AFTERWARD.

B. THE DESIGN TEAM AND THE CITY WILL REVIEW THE SEEDED AREAS BETWEEN 4-6 WEEKS AFTER INSTALLATION TO DETERMINE ACCEPTANCE AND WHETHER REMEDIAL WORK WILL NEED TO BE DONE PRIOR TO FINAL ACCEPTANCE.

C. MAINTAIN AND ESTABLISH TURF BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, RESEEDING, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE TURF. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH TURF. PROVIDE MATERIALS AND INSTALLATION THE SAME AS THOSE USED IN THE ORIGINAL INSTALLATION.

1. FILL IN AS NECESSARY SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTLING OR OTHER PROCESSES. REPLACE MATERIALS AND TURF DAMAGED OR LOST IN AREAS OF SUBSIDENCE.
2. IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE OPERATIONS, ADD NEW MULCH AND ANCHOR AS REQUIRED TO PREVENT DISPLACEMENT.
3. APPLY TREATMENTS AS REQUIRED TO KEEP TURF AND SOIL FREE OF PESTS AND PATHOGENS OR DISEASE. USE INTEGRATED PEST MANAGEMENT PRACTICES WHENEVER POSSIBLE TO MINIMIZE THE USE OF PESTICIDES AND REDUCE HAZARDS.

D. WATERING: INSTALL AND MAINTAIN TEMPORARY PIPING, HOSES, AND TURF-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND TO KEEP TURF UNIFORMLY MOIST TO A DEPTH OF 4 INCHES.

1. SCHEDULE WATERING TO PREVENT WILTING, PUDDLING, EROSION, AND DISPLACEMENT OF SEED OR MULCH. LAY OUT TEMPORARY WATERING SYSTEM TO AVOID WALKING OVER MUDDY OR NEWLY PLANTED AREAS.
2. WATER TURF WITH FINE SPRAY AT A MINIMUM RATE OF 1 INCH PER WEEK UNLESS RAINFALL PRECIPITATION IS ADEQUATE.

E. LAWN AREAS INCLUDING THE MEDIAN SHOULD BE MOWN AS SOON AS THERE IS ENOUGH TOP GROWTH TO CUT (MOWING ENCOURAGES SHOOT DEVELOPMENT). REPEAT MOWING AS REQUIRED TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN 1/3 OF THE GRASS HEIGHT. REMOVE NO MORE THAN 1/3 OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL AND SUBSEQUENT MOWINGS TO MAINTAIN A HEIGHT OF 3.5 - 4 INCHES. DO NOT MOW MEDIAN AFTER 12 MONTHS FROM SEEDING COMPLETION.

F. CHEMICAL APPLICATIONS: APPLY FERTILIZER TO LAWN WHEN GRASS IS DRY.

1. HERBICIDES: APPLY 2 APPLICATIONS OF A BROAD SPECTRUM, 3-WAY SELECTIVE HERBICIDE TO LAWN AREAS WITHIN 12 MONTHS AFTER SEEDING. SCHEDULE FIRST APPLICATION NO EARLIER THAN 6 MONTHS AFTER SEEDING.
2. FUNGICIDES AND INSECTICIDES: APPLY AS REQUIRED TO CONTROL DISEASES AND TURFGRASS PESTS ONLY AFTER RECEIVING APPROVAL BY THE LANDSCAPE ARCHITECT.

3.6 TURF ACCEPTANCE

A. INSPECTION TO DETERMINE ACCEPTANCE OF GRASS AREAS WILL BE MADE BY THE LANDSCAPE ARCHITECT AND DESIGNATED CITY OFFICIAL UPON CONTRACTOR'S WRITTEN REQUEST. PROVIDE NOTIFICATION AT LEAST TEN (10) WORKING DAYS BEFORE REQUESTED INSPECTION DATE.

1. CONTRACTOR SHALL BE REQUIRED TO PRODUCE A SATISFACTORY STAND OF SPECIFIED PERENNIAL GRASS IN A CLOSE STAND, HEALTHY, WEED-FREE STATE. AREA TO HAVE NO BARE SPOTS OR SURFACE IRREGULARITIES.
  2. SCATTERED BARE SPOTS NO LARGER THAN FOUR (4) INCHES SQUARE SHALL NOT TOTAL MORE THAN THREE (3) SQUARE FEET IN ANY 100 SQUARE-FOOT AREA. NO INDIVIDUAL AREA OF TURF SHALL HAVE BARE SPOTS OR UNACCEPTABLE COVER TOTALING MORE THAN TWO (2) PERCENT OF THE INDIVIDUAL TURF AREA IN AREAS REQUESTED TO BE INSPECTED.
- B. UPON ACCEPTANCE AFTER THE ESTABLISHMENT PERIOD, THE OWNER WILL ASSUME TURF MOWING MAINTENANCE.

3.7 CLEANUP AND PROTECTION

- A. PROMPTLY REMOVE SOIL AND DEBRIS CREATED BY TURF WORK FROM PAVED AREAS. CLEAN WHEELS OF VEHICLES BEFORE LEAVING SITE TO AVOID TRACKING SOIL ONTO ROADS, WALKS, OR OTHER PAVED AREAS.
- B. ERECT TEMPORARY FENCING OR BARRICADES AND WARNING SIGNS AS REQUIRED TO PROTECT NEWLY PLANTED AREAS FROM TRAFFIC. MAINTAIN FENCING AND BARRICADES THROUGHOUT INITIAL MAINTENANCE PERIOD AND REMOVE AFTER SEEDINGS ARE ESTABLISHED.
- C. REMOVE NONDEGRADABLE EROSION-CONTROL MEASURES AFTER GRASS ESTABLISHMENT PERIOD.

END OF SECTION 32 9200

SECTION 32 93 00 - PLANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES:
  1. PLANTS.
  2. TREE STABILIZATION.
- B. RELATED SECTIONS:
  1. DIVISION 32 SECTION "LANDSCAPE SOILS" FOR SOIL SPECIFICATIONS AND PERCOLATION TESTING.
  2. DIVISION 32 SECTION "TURF AND GRASSES" FOR TURF AND NO MOW, AND EROSION-CONTROL MATERIALS.
- C. PLANTING SOIL: SEE SPECIFICATION SECTION 32 91 13.

1.2 SUBMITTALS

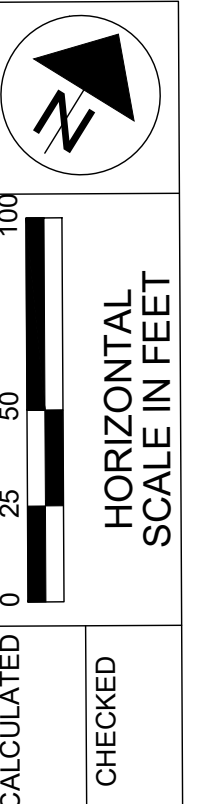
- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING SOILS.
  1. PLANT MATERIALS: INCLUDE QUANTITIES, SIZES, QUALITY, AND SOURCES FOR PLANT MATERIALS.
  2. PESTICIDES AND HERBICIDES: INCLUDE PRODUCT LABEL AND MANUFACTURER'S APPLICATION INSTRUCTIONS SPECIFIC TO THE PROJECT.
  3. PLANT PHOTOGRAPHS: INCLUDE COLOR PHOTOGRAPHS IN DIGITAL FORMAT OF EACH REQUIRED SPECIES AND SIZE OF PLANT MATERIAL AS IT WILL BE FURNISHED TO THE PROJECT. TAKE PHOTOGRAPHS FROM AN ANGLE DEPICTING TRUE SIZE AND CONDITION OF THE TYPICAL PLANT TO BE FURNISHED. INCLUDE A SCALE ROD OR OTHER MEASURING DEVICE IN EACH PHOTOGRAPH. FOR SPECIES WHERE MORE THAN 20 PLANTS ARE REQUIRED, INCLUDE A MINIMUM OF THREE PHOTOGRAPHS SHOWING THE AVERAGE PLANT, THE BEST QUALITY PLANT, AND THE WORST QUALITY PLANT TO BE FURNISHED. IDENTIFY EACH PHOTOGRAPH WITH THE FULL SCIENTIFIC NAME OF THE PLANT, PLANT SIZE, AND NAME OF THE GROWING NURSERY. IMAGES PROVIDED SHOULD BE OF ACTUAL STOCK SELECTED.

1.3 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: A QUALIFIED LANDSCAPE INSTALLER WHOSE WORK HAS RESULTED IN SUCCESSFUL ESTABLISHMENT OF PLANTS.
  1. PROFESSIONAL MEMBERSHIP: INSTALLER SHALL BE A MEMBER IN GOOD STANDING OF EITHER THE PROFESSIONAL LANDSCAPE NETWORK OR THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
  2. PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.
- B. SOIL ANALYSIS SEE SPEC SECTION 32 91 13
- C. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1.
- D. MEASUREMENTS: MEASURE ACCORDING TO ANSI Z60.1. DO NOT PRUNE TO OBTAIN REQUIRED SIZES.
- E. PLANT MATERIAL OBSERVATION: LANDSCAPE ARCHITECT MAY OBSERVE PLANT MATERIAL EITHER AT PLACE OF GROWTH OR AT SITE BEFORE PLANTING FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, CULTIVAR, SIZE, AND QUALITY. LANDSCAPE ARCHITECT RETAINS RIGHT TO OBSERVE TREES AND SHRUBS FURTHER FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEMS, PESTS, DISEASE SYMPTOMS, INJURIES, AND LATENT DEFECTS AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. REMOVE REJECTED TREES OR SHRUBS IMMEDIATELY FROM PROJECT SITE.
  1. NOTIFY LANDSCAPE ARCHITECT OF SOURCES OF PLANTING MATERIALS SEVEN DAYS IN ADVANCE OF DELIVERY TO SITE.
- F. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. PACKAGED MATERIALS: DELIVER PACKAGED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS SHOWING WEIGHT, CERTIFIED ANALYSIS, NAME AND ADDRESS OF MANUFACTURER, AND INDICATION OF CONFORMANCE WITH STATE AND FEDERAL LAWS IF APPLICABLE.
- B. BULK MATERIALS:
  1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
  2. PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF BULK MATERIALS, DISCHARGE OF SOIL-BEARING WATER RUNOFF, AND AIRBORNE DUST REACHING ADJACENT PROPERTIES, WATER CONVEYANCE SYSTEMS, OR WALKWAYS.
  3. ACCOMPANY EACH DELIVERY OF BULK FERTILIZERS AND SOIL AMENDMENTS WITH APPROPRIATE CERTIFICATES.
- C. DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING,



SR 62 LANDSCAPE IMPROVEMENTS - SPECIFICATIONS

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WIND BURN, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE.

D. HANDLE PLANTING STOCK BY ROOT BALL.

E. DELIVER PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND INSTALL IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN SIX HOURS AFTER DELIVERY, SET PLANTS AND TREES IN THEIR APPROPRIATE ASPECT (SUN, FILTERED SUN, OR SHADE), PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.

- 1. SET BALLED AND/OR BALLED AND BURLAPPED STOCK ON GROUND AND COVER BALL WITH SOIL, HARDWOOD MULCH, SAWDUST, OR OTHER ACCEPTABLE MATERIAL.
- 2. WATER ROOT SYSTEMS OF PLANTS STORED ON-SITE DEEPLY AND THOROUGHLY WITH A FINE-MIST SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN A MOIST, BUT NOT OVERLY-WET CONDITION.

1.5 PROJECT CONDITIONS

A. FIELD MEASUREMENTS: VERIFY ACTUAL GRADE ELEVATIONS, SERVICE AND UTILITY LOCATIONS, IRRIGATION SYSTEM COMPONENTS, AND DIMENSIONS OF PLANTINGS AND CONSTRUCTION CONTIGUOUS WITH NEW PLANTINGS BY FIELD MEASUREMENTS BEFORE PROCEEDING WITH PLANTING WORK.

B. INTERRUPTION OF EXISTING SERVICES OR UTILITIES: DO NOT INTERRUPT SERVICES OR UTILITIES TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SERVICES OR UTILITIES ACCORDING TO REQUIREMENTS INDICATED:

- 1. NOTIFY OWNER NO FEWER THAN TWO DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF EACH SERVICE OR UTILITY.
  - 2. DO NOT PROCEED WITH INTERRUPTION OF SERVICES OR UTILITIES WITHOUT OWNER'S WRITTEN PERMISSION.
- C. WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.
- D. COORDINATION WITH TURF AREAS (LAWNS): PLANT TREES AND OTHER PLANTS AFTER FINISH GRADES ARE ESTABLISHED AND BEFORE PLANTING TURF AREAS UNLESS OTHERWISE INDICATED.

1.6 WARRANTY

A. INSTALLER AGREES TO REPAIR OR REPLACE PLANTINGS AND ACCESSORIES THAT FAIL IN MATERIALS, WORKMANSHIP, OR GROWTH WITHIN SPECIFIED WARRANTY PERIOD.

- 1. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
  - A. DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM ABUSE, LACK OF ADEQUATE MAINTENANCE, OR NEGLIGENCE BY CONTRACTOR OR OWNER, OR INCIDENTS THAT ARE BEYOND CONTRACTOR'S CONTROL.
  - B. STRUCTURAL FAILURES INCLUDING PLANTINGS FALLING OR BLOWING OVER.
  - C. FAULTY PERFORMANCE OF TREE STABILIZATION EDGINGS.
  - D. DETERIORATION OF METALS, METAL FINISHES, AND OTHER MATERIALS BEYOND NORMAL WEATHERING.

2. WARRANTY PERIODS FROM DATE OF SUBSTANTIAL COMPLETION:

- A. TREES, 12 MONTHS.
  - B. TURF: UNTIL CONTRACTOR'S TRANSFER OF RESPONSIBILITY TO THE OWNER OR DESIGNATED AGENCY FOR MAINTENANCE.
3. INCLUDE THE FOLLOWING REMEDIAL ACTIONS AS A MINIMUM:
- A. IMMEDIATELY REMOVE DEAD PLANTS AND REPLACE UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON.
  - B. REPLACE PLANTS THAT ARE MORE THAN 25 PERCENT DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD.
  - C. A LIMIT OF ONE REPLACEMENT OF EACH PLANT WILL BE REQUIRED EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.
  - D. PROVIDE EXTENDED WARRANTY FOR PERIOD EQUAL TO ORIGINAL WARRANTY PERIOD, FOR REPLACED PLANT MATERIAL.

1.7 ESTABLISHMENT AND MAINTENANCE SERVICE

A. INITIAL MAINTENANCE SERVICE FOR TREES: PROVIDE MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLER. MAINTAIN AS REQUIRED IN PART 3. BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTS ARE INSTALLED AND CONTINUE UNTIL PLANTINGS ARE ACCEPTABLY HEALTHY AND WELL ESTABLISHED.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. GENERAL: FURNISH NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT SCHEDULE OR PLANT LEGEND SHOWN ON DRAWINGS AND COMPLYING WITH ANSI Z60.1; AND WITH

HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.

- 1. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK ("INCLUDED BARK"); CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN 3/4 INCH IN DIAMETER; OR WITH STEM GIRDLING ROOTS WILL BE REJECTED.
- 2. COLLECTED STOCK: DO NOT USE PLANTS HARVESTED FROM THE WILD, FROM NATIVE STANDS, FROM AN ESTABLISHED LANDSCAPE PLANTING, OR NOT GROWN IN A NURSERY UNLESS APPROVED BY THE CITY AND LANDSCAPE ARCHITECT.

B. PROVIDE PLANTS OF SIZES, GRADES, AND BALL OR CONTAINER SIZES COMPLYING WITH ANSI Z60.1 FOR TYPES AND FORM OF PLANTS REQUIRED. TREES DELIVERED TO THE PROJECT SITE WITH UNDERSIZED ROOTBALLS DEFINED IN EITHER ANSI Z60.1 OR AS/IF INDICATED ON THE DRAWINGS CAN BE GROUNDS FOR REJECTION.

C. ROOT-BALL DEPTH: FURNISH TREES AND SHRUBS WITH ROOT BALLS MEASURED FROM TOP OF ROOT BALL, WHICH SHALL BEGIN AT ROOT FLARE ACCORDING TO ANSI Z60.1. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.

D. LABELING: LABEL EACH PLANT OF EACH VARIETY, SIZE, AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF COMMON NAME AND FULL SCIENTIFIC NAME, INCLUDING GENUS AND SPECIES. INCLUDE NOMENCLATURE FOR HYBRID, VARIETY, OR CULTIVAR, IF APPLICABLE FOR THE PLANT AS SHOWN ON DRAWINGS.

2.2 ORGANIC SOIL AMENDMENTS

A. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, PH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 1/2-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS; AND AS FOLLOWS:

- 1. ORGANIC MATTER CONTENT: 50 TO 60 PERCENT OF DRY WEIGHT.
- 2. FEEDSTOCK: AGRICULTURAL, FOOD, OR INDUSTRIAL RESIDUALS; BIOSOLIDS; YARD TRIMMINGS; OR SOURCE-SEPARATED OR COMPOSTABLE MIXED SOLID WASTE.
- 3. SEE SPECIFICATION SECTION 32 91 13 FOR OTHER ACCEPTABLE SOIL AMENDMENTS.

2.3 PLANTING SOILS

A. SEE SPECIFICATION SECTION 32 91 13.

2.4 MULCHES

- A. ORGANIC MULCH: FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS, CONSISTING OF ONE OF THE FOLLOWING:
  - 1. TYPE: SHREDDED HARDWOOD.
  - 2. SIZE RANGE: 3 INCHES MAXIMUM, 1/2 INCH MINIMUM.
  - 3. COLOR: BLACK.

2.5 PESTICIDES

- A. GENERAL: PESTICIDE REGISTERED AND APPROVED BY EPA, ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND OF TYPE RECOMMENDED BY MANUFACTURER FOR EACH SPECIFIC PROBLEM AND AS REQUIRED FOR PROJECT CONDITIONS AND APPLICATION. DO NOT USE RESTRICTED PESTICIDES UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION.
- B. RE-EMERGENT HERBICIDE (SELECTIVE AND NON-SELECTIVE): EFFECTIVE FOR CONTROLLING THE GERMINATION OR GROWTH OF WEEDS WITHIN PLANTED AREAS AT THE SOIL LEVEL DIRECTLY BELOW THE MULCH LAYER.
- C. POST-EMERGENT HERBICIDE (SELECTIVE AND NON-SELECTIVE): EFFECTIVE FOR CONTROLLING WEED GROWTH THAT HAS ALREADY GERMINATED.

2.6 TREE STABILIZATION MATERIALS

- A. STAKES AND GUYS:
  - 1. UPRIGHT AND GUY STAKES: ROUGH-SAWN, SOUND, NEW HARDWOOD, FREE OF KNOTS, HOLES, CROSS GRAIN, AND OTHER DEFECTS, 2-BY-2-INCH NOMINAL BY LENGTH INDICATED, POINTED AT ONE END.
  - 2. TREE-TIE WEBBING: UV-RESISTANT POLYPROPYLENE OR NYLON WEBBING WITH BRASS GROMMETS.
  - 3. FLAGS: STANDARD SURVEYOR'S PLASTIC FLAGGING TAPE, WHITE, 6 INCHES LONG.

2.7 MISCELLANEOUS PRODUCTS

A. ANTIDESICCANT: WATER-INSOLUBLE EMULSION, PERMEABLE MOISTURE RETARDER, FILM FORMING, FOR TREES AND SHRUBS. DELIVER IN ORIGINAL, SEALED, AND FULLY LABELED CONTAINERS AND MIX ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

- B. BURLAP: NON-SYNTHETIC, BIODEGRADABLE.
- C. MYCORRHIZAL FUNGI: DRY, GRANULAR INOCULANT CONTAINING AT LEAST 5300 SPORES PER LB OF VESICULAR-ARBUSCULAR MYCORRHIZAL FUNGI AND 95 MILLION SPORES PER LB OF ECTOMYCORRHIZAL FUNGI, 33 PERCENT HYDROGEL, AND A MAXIMUM OF 5.5 PERCENT INERT MATERIAL.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. EXAMINE AREAS TO RECEIVE PLANTS FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE.
  - 1. SUSPEND SOIL SPREADING, GRADING, AND TILLING OPERATIONS DURING PERIODS OF EXCESSIVE SOIL MOISTURE UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS.
- B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION

- A. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES AND TURF AREAS AND EXISTING PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS.
- B. INSTALL EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.
- C. LAY OUT PLANTS AT LOCATIONS AS SHOWN. STAKE LOCATIONS OF INDIVIDUAL TREES.
- D. APPLY ANTIDESICCANT TO TREES AND SHRUBS USING POWER SPRAY TO PROVIDE AN ADEQUATE FILM OVER TRUNKS (BEFORE WRAPPING), BRANCHES, STEMS, TWIGS, AND FOLIAGE TO PROTECT DURING DIGGING, HANDLING, AND TRANSPORTATION.
  - 1. IF DECIDUOUS TREES OR SHRUBS ARE MOVED IN FULL LEAF, SPRAY WITH ANTIDESICCANT AT NURSERY BEFORE MOVING AND AGAIN TWO WEEKS AFTER PLANTING.

3.3 EXCAVATION FOR TREES

- A. PLANTING PITS AND TRENCHES: EXCAVATE CIRCULAR PLANTING PITS WITH SIDES SLOPING INWARD AT A 45-DEGREE ANGLE. EXCAVATIONS WITH VERTICAL SIDES ARE NOT ACCEPTABLE. TRIM PERIMETER OF BOTTOM LEAVING CENTER AREA OF BOTTOM RAISED SLIGHTLY TO SUPPORT ROOT BALL AND ASSIST IN DRAINAGE AWAY FROM CENTER. DO NOT FURTHER DISTURB BASE. ENSURE THAT ROOT BALL WILL SIT ON UNDISTURBED BASE SOIL TO PREVENT SETTLING. SCARIFY SIDES OF PLANTING PIT SMEARED OR SMOOTHED DURING EXCAVATION.
  - 1. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER FOR BALLED AND BURLAPPED BALLED STOCK.
  - 2. EXCAVATE AT LEAST 12 INCHES WIDER THAN ROOT SPREAD AND DEEP ENOUGH TO ACCOMMODATE VERTICAL ROOTS FOR BARE-ROOT STOCK.
  - 3. DO NOT EXCAVATE DEEPER THAN DEPTH OF THE ROOT BALL, MEASURED FROM THE ROOT FLARE TO THE BOTTOM OF THE ROOT BALL.
  - 4. IF AREA UNDER THE PLANT WAS INITIALLY DUG TOO DEEP, ADD SOIL TO RAISE IT TO THE CORRECT LEVEL AND THOROUGHLY TAMP THE ADDED SOIL TO PREVENT SETTLING.
  - 5. MAINTAIN REQUIRED ANGLES OF REPOSE OF ADJACENT MATERIALS AS SHOWN ON THE DRAWINGS. DO NOT EXCAVATE SUBGRADES OF ADJACENT PAVING, STRUCTURES, HARDSCAPES, OR OTHER NEW OR EXISTING IMPROVEMENTS.
  - 6. MAINTAIN SUPERVISION OF EXCAVATIONS DURING WORKING HOURS.
  - 7. KEEP EXCAVATIONS COVERED OR OTHERWISE PROTECTED OVERNIGHT AFTER WORKING HOURS WHEN UNATTENDED BY INSTALLER'S PERSONNEL.
  - 8. IF DRAIN TILE IS SHOWN ON DRAWINGS OR REQUIRED UNDER PLANTING AREAS, EXCAVATE TO TOP OF POROUS BACKFILL OVER TILE.
- B. SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY BE USED AS PLANTING SOIL IF AMENDED TO THE QUALITY OF THE 'TOPSOIL WITH COMPOST AMENDMENT' SPECIFICATION.
- C. OBSTRUCTIONS: NOTIFY LANDSCAPE ARCHITECT IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES OR SHRUBS ARE ENCOUNTERED IN EXCAVATIONS.
  - 1. HARDPAN LAYER: DRILL 6-INCH- DIAMETER HOLES, 24 INCHES APART, INTO FREE-DRAINING STRATA OR TO A DEPTH OF 10 FEET, WHICHEVER IS LESS, AND BACKFILL WITH FREE-DRAINING MATERIAL.
- D. DRAINAGE: NOTIFY LANDSCAPE ARCHITECT IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PLANTING PITS. ALL DIFFERENT TYPICAL PLANTING AREAS, PROPOSED AND EXISTING, ARE REQUIRED TO UNDERGO THE FOLLOWING PERCOLATION TEST TO ENSURE

- PROPER DRAINAGE.
  - 1. PERCOLATION TESTING: IMMEDIATELY FOLLOWING ROUGH GRADING OPERATION, IDENTIFY A TYPICAL LOCATION FOR ONE OF THE LARGEST TREES AND OR SHRUBS AND EXCAVATE A PIT PER THE PROJECT DETAILS. FILL THE PIT WITH WATER TO A DEPTH OF 12 INCHES. THE LENGTH OF TIME REQUIRED FOR THE WATER TO PERCOLATE INTO THE SOIL, LEAVING THE PIT EMPTY, SHALL BE MEASURED BY THE OWNER'S REP AND VERIFIED BY THE CONTRACTING OFFICER. WITHIN SIX HOURS OF THE TIME THE WATER HAS DRAINED FROM THE PIT, THE CONTRACTOR, WITH THE CONTRACTING OFFICER AND OWNER'S REP PRESENT, SHALL AGAIN FILL THE PIT WITH WATER TO A DEPTH OF 12 INCHES. IF THE WATER DOES NOT COMPLETELY PERCOLATE INTO THE SOIL WITHIN 9 HOURS, A DETERMINATION SHALL BE MADE WHETHER A DRAINAGE SYSTEM OR A SOIL PENETRANT WILL BE REQUIRED FOR EACH TREE AND OR SHRUB BEING TRANSPLANTED.
- E. FILL EXCAVATIONS WITH WATER AND ALLOW TO PERCOLATE AWAY BEFORE POSITIONING TREES AND SHRUBS.

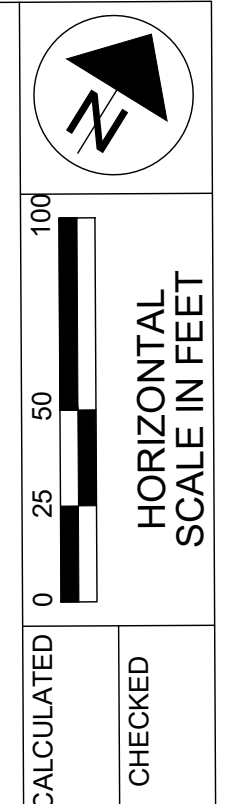
3.4 TREE PLANTING

- A. BEFORE PLANTING, VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL ACCORDING TO ANSI Z60.1. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE THE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS.
- B. REMOVE STEM GIRDLING ROOTS AND KINKED ROOTS. REMOVE INJURED ROOTS BY CUTTING CLEANLY; DO NOT BREAK.
- C. SET BALLED AND BURLAPPED STOCK PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH ROOT FLARE 1 INCH ABOVE ADJACENT FINISH GRADES.
  - 1. USE PLANTING SOIL FOR BACKFILL.
  - 2. AFTER PLACING SOME BACKFILL AROUND ROOT BALL TO STABILIZE PLANT, CAREFULLY CUT AND REMOVE BURLAP, ROPE, AND WIRE BASKETS FROM TOPS OF ROOT BALLS AND FROM SIDES, BUT DO NOT REMOVE FROM UNDER ROOT BALLS. REMOVE PALLETS, IF ANY, BEFORE SETTING. DO NOT USE PLANTING STOCK IF ROOT BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.
  - 3. BACKFILL AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE SOIL AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PLANTING PIT IS APPROXIMATELY ONE-HALF FILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED.
  - 4. PLACE PLANTING TABLETS IN EACH PLANTING PIT WHEN PIT IS APPROXIMATELY ONE-HALF FILLED; IN AMOUNTS RECOMMENDED IN SOIL REPORTS FROM SOIL-TESTING LABORATORY. PLACE TABLETS BESIDE THE ROOT BALL ABOUT 1 INCH FROM ROOT TIPS; DO NOT PLACE TABLETS IN BOTTOM OF THE HOLE.
  - 5. CONTINUE BACKFILLING PROCESS. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF SOIL.
- D. WHEN PLANTING ON SLOPES, SET THE PLANT SO THE ROOT FLARE ON THE UPHILL SIDE IS FLUSH WITH THE SURROUNDING SOIL ON THE SLOPE; THE EDGE OF THE ROOT BALL ON THE DOWNHILL SIDE WILL BE ABOVE THE SURROUNDING SOIL. APPLY ENOUGH SOIL TO COVER THE DOWNHILL SIDE OF THE ROOT BALL.

3.5 SHRUB PLANTING

- A. PREPARATION: TILL AREAS TO RECEIVE SHRUBS TO THE EXTENT AND DEPTH SHOWN IN THE PLANS AND ON DETAIL F.
- B. REMOVE APPROX. 2" OF TILLED MATERIAL IN AREAS TO RECEIVE SHRUBS. PLACE 2" OF TCA SOIL MATERIAL AS SPECIFIED ONTO SHRUB AREAS, TILL INTO TOP 6" OF TILLED SOIL, AND LIGHTLY COMPACT.
- C. DIG HOLES FOR PLACING SHRUBS PER DETAIL F BY MECHANICALLY AUGERING HOLES. COMPACT SOIL AT BOTTOM OF HOLE TO 85% PROCTOR. ADD ADDITIONAL SOIL TO THE BOTTOM OF THIS HOLE AFTER COMPACTION SO THAT THE ROOT BALL IS APPROX. 2" ABOVE SURROUNDING SOIL ELEVATION.
- D. REMOVE SHRUB CONTAINER AND PLACE SHRUB IN HOLE. BACKFILL AROUND ROOTBALL AS SHOWN IN DETAIL F. WATER AROUND EACH SHRUB ENOUGH TO SETTLE THE SOIL AND TO ELIMINATE AIR POCKETS. AFTER WATERING, ADD ADDITIONAL SOIL NEAR ROOTBALLS TO BE FLUSH WITH SURROUNDING GRADE.
- E. MULCHING: ADD MULCHING AS SPECIFIED AND AS SHOWN IN DETAIL F AROUND EACH SHRUB. EXTEND TO APPROX. 18" BEYOND CENTER OF THE SHRUB AFTER PLANTING. THE MULCH SHALL NOT TOUCH THE STEM OR TRUNK OF ANY SHRUB AND SHALL BE MOUNDED AS SHOWN.
- F. WHEN PLANTING ON SLOPES, SET THE PLANT SO THE ROOT FLARE ON THE UPHILL SIDE IS FLUSH WITH THE SURROUNDING SOIL ON THE SLOPE; THE EDGE OF THE ROOT BALL ON THE DOWNHILL SIDE WILL BE ABOVE THE SURROUNDING SOIL. APPLY ENOUGH SOIL TO COVER THE DOWNHILL SIDE OF THE ROOT BALL.

3.6 TREE AND SHRUB PRUNING



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- A. REMOVE ONLY DEAD, DYING OR BROKEN BRANCHES AND STEMS. DO NOT PRUNE FOR SHAPE.
- B. PRUNE, THIN, AND SHAPE TREES, SHRUBS, AND VINES ACCORDING TO STANDARD PROFESSIONAL HORTICULTURAL AND ARBORCULTURAL PRACTICES. UNLESS OTHERWISE INDICATED BY ARCHITECT, DO NOT CUT TREE LEADERS; REMOVE ONLY INJURED, DYING, OR DEAD BRANCHES FROM TREES AND SHRUBS; AND PRUNE TO RETAIN NATURAL CHARACTER.
- C. DO NOT APPLY PRUNING PAINT TO WOUNDS.

3.7 TREE STABILIZATION

- A. STAKING AND GUYING: STAKE AND GUY TREES MORE THAN 14 FEET IN HEIGHT AND MORE THAN 3 INCHES IN CALIPER UNLESS OTHERWISE INDICATED. SECURELY ATTACH NO FEWER THAN THREE GUYS TO STAKES 30 INCHES LONG, DRIVEN TO GRADE.

3.8 TREE AREA MULCHING

- A. MULCH BACKFILLED SURFACES OF PLANTING AREAS AND OTHER AREAS INDICATED.
  - 1. TREES AND TREE-LIKE SHRUBS IN TURF AREAS: APPLY ORGANIC MULCH RING OF 3-INCH AVERAGE THICKNESS, WITH 24-INCH RADIUS AROUND TRUNKS OR STEMS. DO NOT PLACE MULCH WITHIN 3 INCHES OF TRUNKS OR STEMS.

3.9 PLANT MAINTENANCE

- A. MAINTAIN PLANTINGS BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, MULCHING, RESTORING PLANTING SAUCERS, ADJUSTING AND REPAIRING TREE-STABILIZATION DEVICES, RESETTING TO PROPER GRADES OR VERTICAL POSITION, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS. SPRAY OR TREAT AS REQUIRED TO KEEP TREES FREE OF INSECTS AND DISEASE.
- B. FILL IN AS NECESSARY SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTLING OR OTHER PROCESSES. REPLACE MULCH MATERIALS DAMAGED OR LOST IN AREAS OF SUBSIDENCE.
- C. APPLY TREATMENTS AS REQUIRED TO KEEP PLANT MATERIALS, PLANTED AREAS, AND SOILS FREE OF PESTS AND PATHOGENS OR DISEASE. USE INTEGRATED PAST MANAGEMENT PRACTICES WHENEVER POSSIBLE TO MINIMIZE THE USE OF PESTICIDES AND REDUCE HAZARDS. TREATMENTS INCLUDE PHYSICAL CONTROLS SUCH AS HOSING OFF FOLIAGE, MECHANICAL CONTROLS SUCH AS TRAPS, AND BIOLOGICAL CONTROL AGENTS.
- D. WATERING: ALL INSTALLED TREES REQUIRED TO HAVE TREE BLADDERS. TREE BLADDERS SHALL REMAIN FULL AT ALL TIMES—FILL BAS AS REQUIRED.

3.10 PESTICIDE APPLICATION

- A. APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED.
- B. PRE-EMERGENT HERBICIDES (SELECTIVE AND NON-SELECTIVE): APPLY TO TREE AREAS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. DO NOT APPLY TO SEEDED AREAS.
- C. POST-EMERGENT HERBICIDES (SELECTIVE AND NON-SELECTIVE): APPLY ONLY AS NECESSARY TO TREAT ALREADY-GERMINATED WEEDS AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

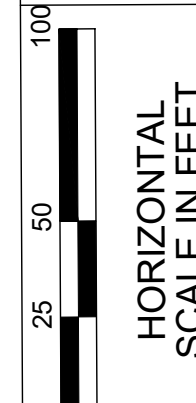
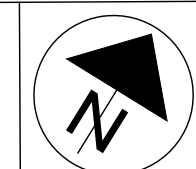
3.11 CLEANUP AND PROTECTION

- A. DURING PLANTING, KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION.
- B. PROTECT PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND OPERATIONS OF OTHER CONTRACTORS AND TRADES. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.
- C. AFTER INSTALLATION AND BEFORE SUBSTANTIAL COMPLETION, REMOVE NURSERY TAGS, NURSERY STAKES, TIE TAPE, LABELS, WIRE, BURLAP, AND OTHER DEBRIS FROM PLANT MATERIAL, PLANTING AREAS, AND PROJECT SITE.

3.12 DISPOSAL

- A. REMOVE SURPLUS SOIL AND WASTE MATERIAL INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH, AND DEBRIS AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

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SR 62 LANDSCAPE IMPROVEMENTS - SPECIFICATIONS

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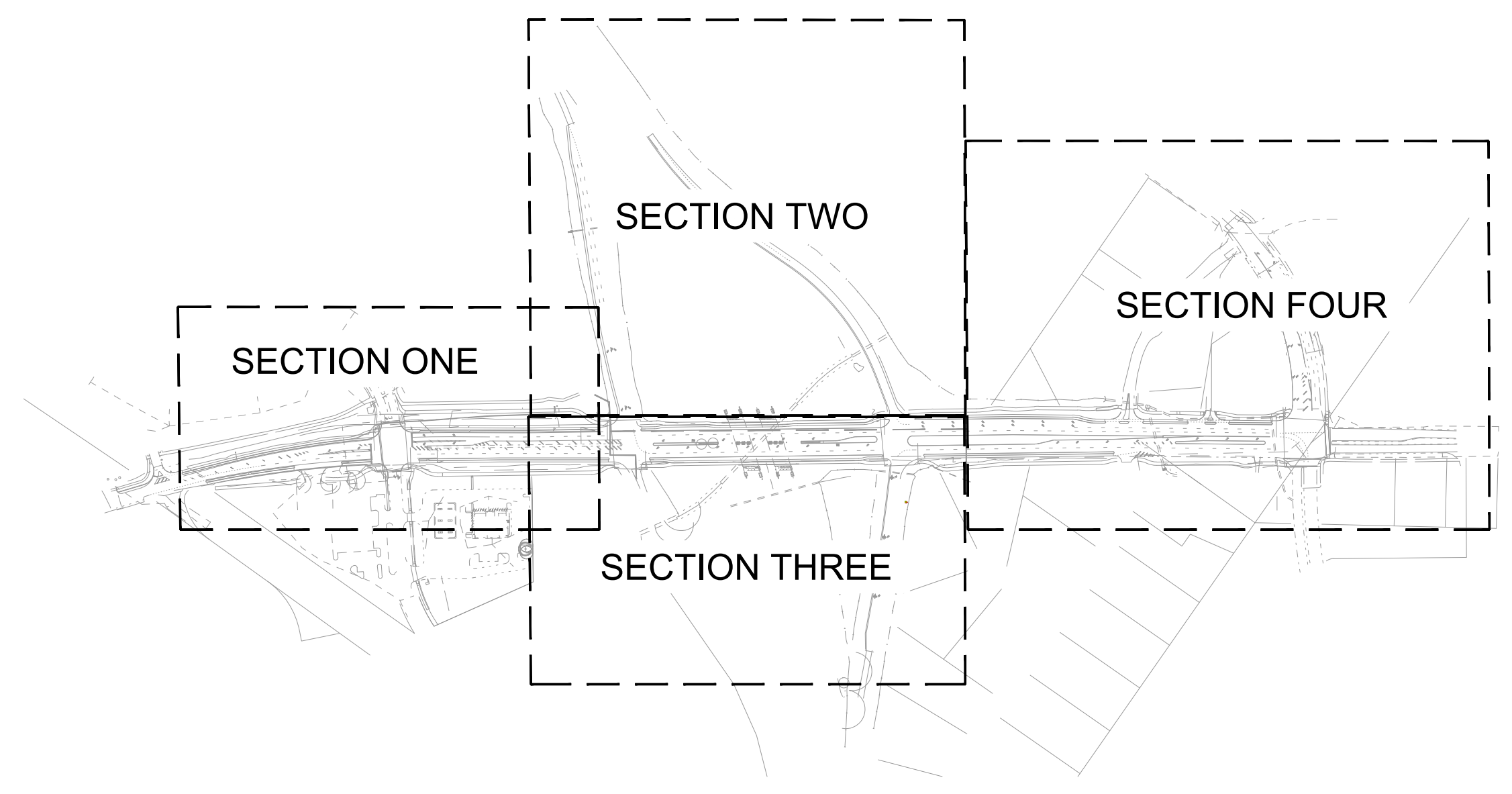
LANDSCAPE GENERAL SUMMARY

PLAN SHEET NUMBER				PARTICIP.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	DETAIL SHEET NO.
1	2	3	4							
2,583	8,091	4,012	5,981		659	10001	20,667	SY	SEEDING AND MULCHING, AS PER PLAN	
	35	14			661	00501	49	CY	MULCH, AS PER PLAN	
	78	38			661	20061	136	EACH	DECIDUOUS SHRUB, 36" HEIGHT, HAMAMELIS VERNALIS - WITCH HAZEL, AS PER PLAN	
	180	65			661	20021	215	EACH	DECIDUOUS SHRUB, 18" HEIGHT, JUNIPERUS CHINENSIS 'SEA GREEN' - SEA GREEN JUNIPER, AS PER PLAN	
	150	75			661	20001	255	EACH	DECIDUOUS SHRUB, 15" HEIGHT, RHUS AROMATICA 'GRO-LOW' - GRO-LOW FRAGRANT SUMAC, AS PER PLAN	
2		3	2		661	40081	7	EACH	DECIDUOUS TREE, 2" CALIPER, CRATAEGUS VIRIDIS 'WINTER KING'- WINTER KING HAWTHORN, AS PER PLAN	
15	4	3	22		661	40121	44	EACH	DECIDUOUS TREE, 3" CALIPER, ACER RUBRUM 'RED SUNSET' - RED SUNSET RED MAPLE, AS PER PLAN	
2		1	10		661	40121	13	EACH	DECIDUOUS TREE, 3" CALIPER, ACER SACCHARUM 'GREEN MOUNTAIN'- GREEN MOUNTAIN SUGAR MAPLE, AS PER PLAN	
	17	15	9		661	40121	41	EACH	DECIDUOUS TREE, 3" CALIPER, GLEDITSIA T.I. 'SKYLINE'- SKYLINE HONEY LOCUST, AS PER PLAN	
2	8		3		661	40121	13	EACH	DECIDUOUS TREE, 3" CALIPER, QUERCUS ACUTISSIMA - SAWTOOTH OAK, AS PER PLAN	
4	5	12	29		661	40121	50	EACH	DECIDUOUS TREE, 3" CALIPER, ULMUS X 'FRONTIER' - FRONTIER ELM, AS PER PLAN	

SOILS GENERAL SUMMARY - AVENUES

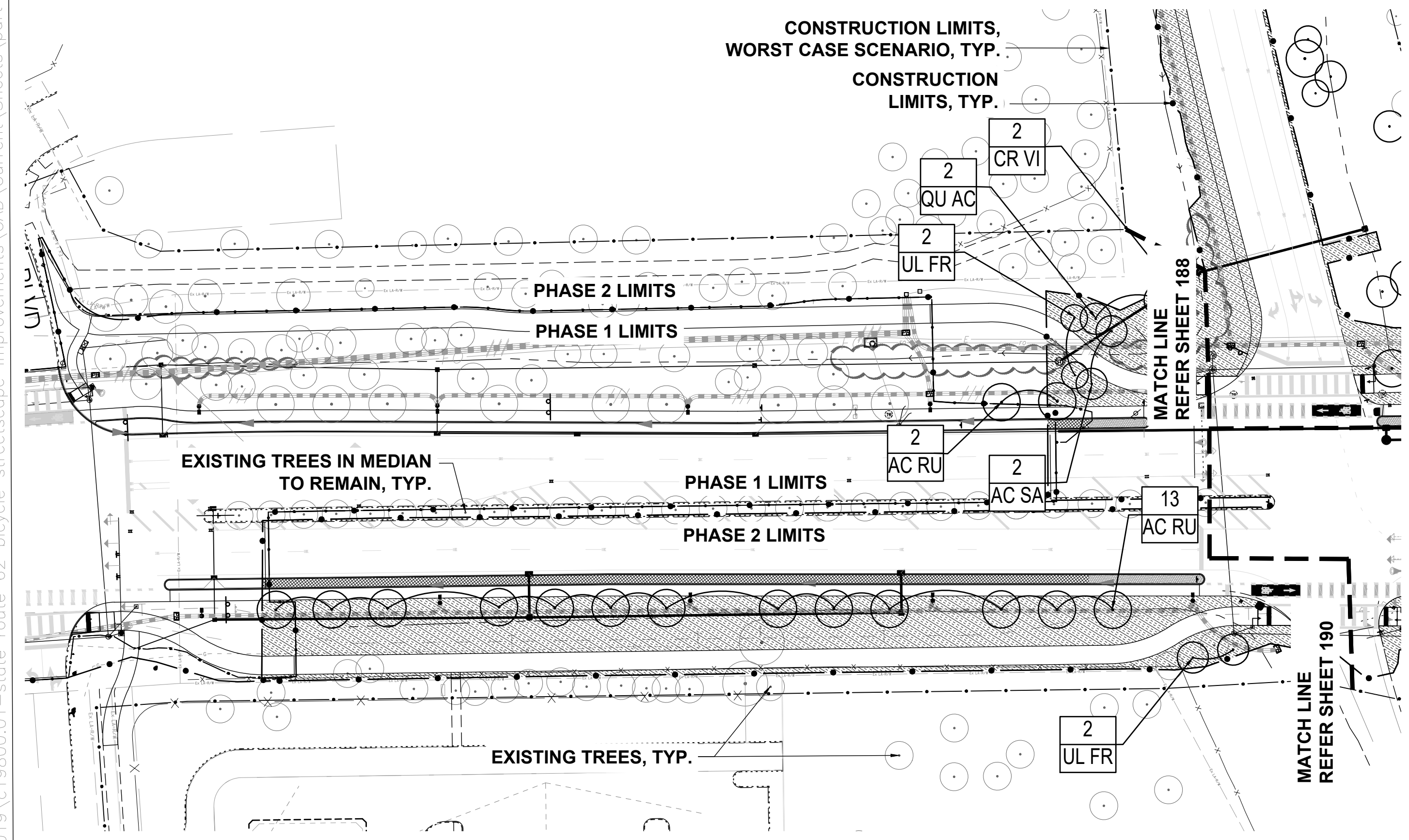
PLAN SHEET NUMBER				PARTIC.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	DETAIL SHEET NO.
1	2	3	4							
79	107	107	236		SPECIAL	690E98700	529	CY	SPECIAL- TREE SOIL MIX FURNISHED & PLACED, AS PER PLAN (36" DEPTH UPPER HORIZON)	
	35	14			SPECIAL	690E98700	49	CY	SPECIAL- SHRUBS AMENDED SOILS FURNISHED & PLACED, AS PER PLAN (2" DEPTH LOWER HORIZON)	
287	899	446	665		SPECIAL	690E98700	2,297	CY	SPECIAL- LAWN SOIL MIX FURNISHED & PLACED, AS PER PLAN (4" DEPTH LOWER HORIZON)	

KEY PLAN



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LANDSCAPE PLAN- PART TWO STAGE THREE - SECTION 1

**LEGEND**

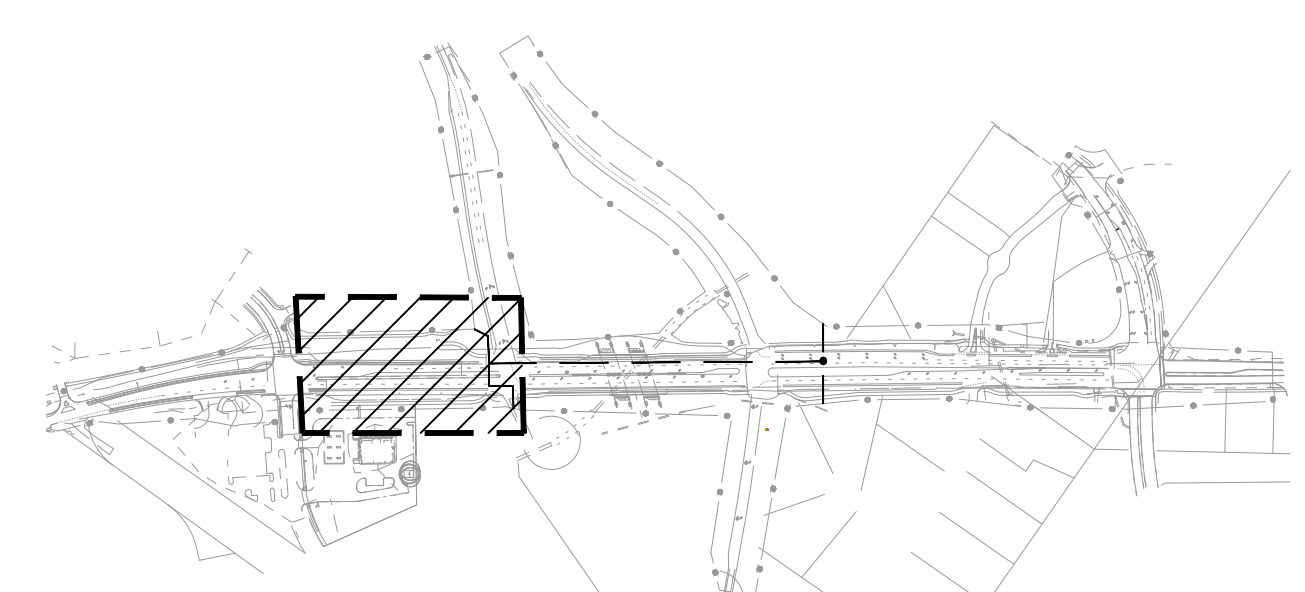
2,336 SY		ITEM 659. SEEDING AND MULCHING (TURF AREAS TO BE MOWED) ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION PER SPECIFICATIONS.
247 SY		ITEM 659. SEEDING AND MULCHING (NO MOW LAWN AREAS)
		SPEC. BRICK PAVERS - REFER CIVIL FOR SPECIFICATIONS AND LAYOUT, REFER SHEET 196 FOR PATTERN DETAIL

		BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
15	AC RU	<i>Acer rubrum 'Red Sunset'</i>	Red Sunset Red Maple	3" cal	B&B	30' o.c.
2	AC SA	<i>Acer saccharum 'Green Mountain'</i>	Green Mountain Sugar Maple	3" cal	B&B	Per Plans
2	CR VI	<i>Crataegus viridis 'Winter King'</i>	Winter King Hawthorn	2" cal	B&B	Per Plans
2	QU AC	<i>Quercus acutissima</i>	Sawtooth Oak	3" cal	B&B	Per Plans
4	UL FR	<i>Ulmus x 'Frontier'</i>	Frontier Elm	3" cal	B&B	Per Plans

SOILS NOTES:

1. ALL TREES TO RECEIVE PLANTING SOILS MIX PER SPECIFICATIONS.

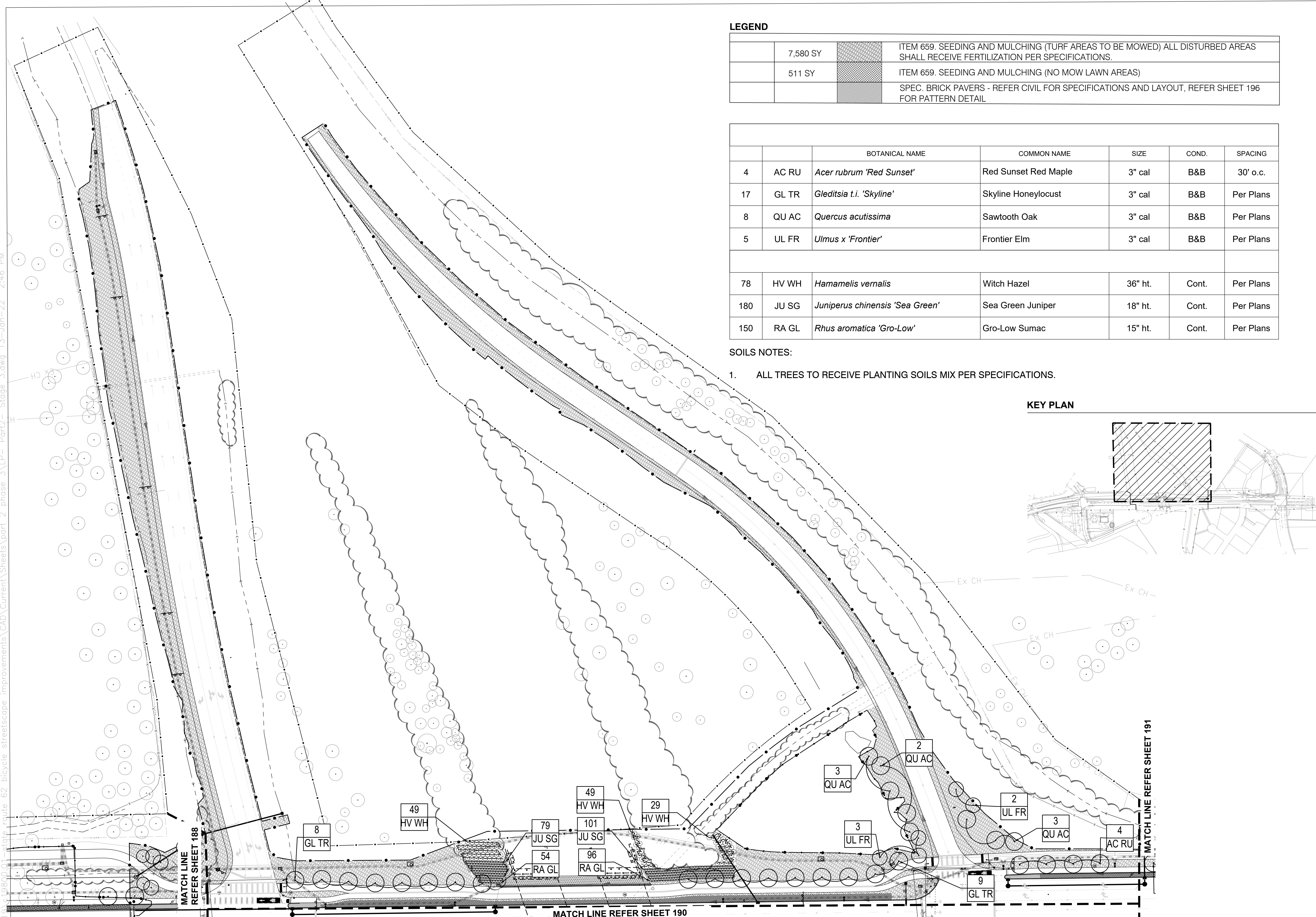
KEY PLAN



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SR 62 LANDSCAPE IMPROVEMENTS - PLANTING

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**LEGEND**

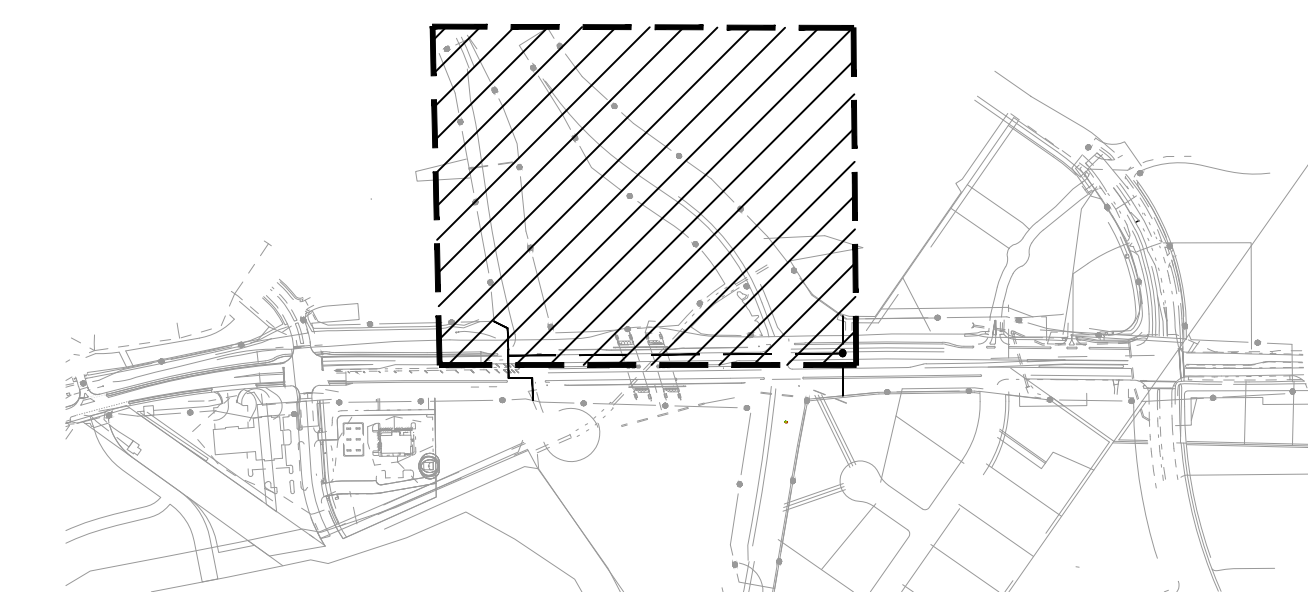
7,580 SY	[Hatched Pattern]	ITEM 659. SEEDING AND MULCHING (TURF AREAS TO BE MOWED) ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION PER SPECIFICATIONS.
511 SY	[Dotted Pattern]	ITEM 659. SEEDING AND MULCHING (NO MOW LAWN AREAS)
	[Cross-hatched Pattern]	SPEC. BRICK PAVERS - REFER CIVIL FOR SPECIFICATIONS AND LAYOUT, REFER SHEET 196 FOR PATTERN DETAIL

		BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
4	AC RU	<i>Acer rubrum</i> 'Red Sunset'	Red Sunset Red Maple	3" cal	B&B	30' o.c.
17	GL TR	<i>Gleditsia t.i.</i> 'Skyline'	Skyline Honeylocust	3" cal	B&B	Per Plans
8	QU AC	<i>Quercus acutissima</i>	Sawtooth Oak	3" cal	B&B	Per Plans
5	UL FR	<i>Ulmus x 'Frontier'</i>	Frontier Elm	3" cal	B&B	Per Plans
78	HV WH	<i>Hamamelis vernalis</i>	Witch Hazel	36" ht.	Cont.	Per Plans
180	JU SG	<i>Juniperus chinensis</i> 'Sea Green'	Sea Green Juniper	18" ht.	Cont.	Per Plans
150	RA GL	<i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Sumac	15" ht.	Cont.	Per Plans

**SOILS NOTES:**

1. ALL TREES TO RECEIVE PLANTING SOILS MIX PER SPECIFICATIONS.

**KEY PLAN**



SR 62 LANDSCAPE IMPROVEMENTS - PLANTING

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**LANDSCAPE PLAN- PART TWO STAGE THREE - SECTION 2**

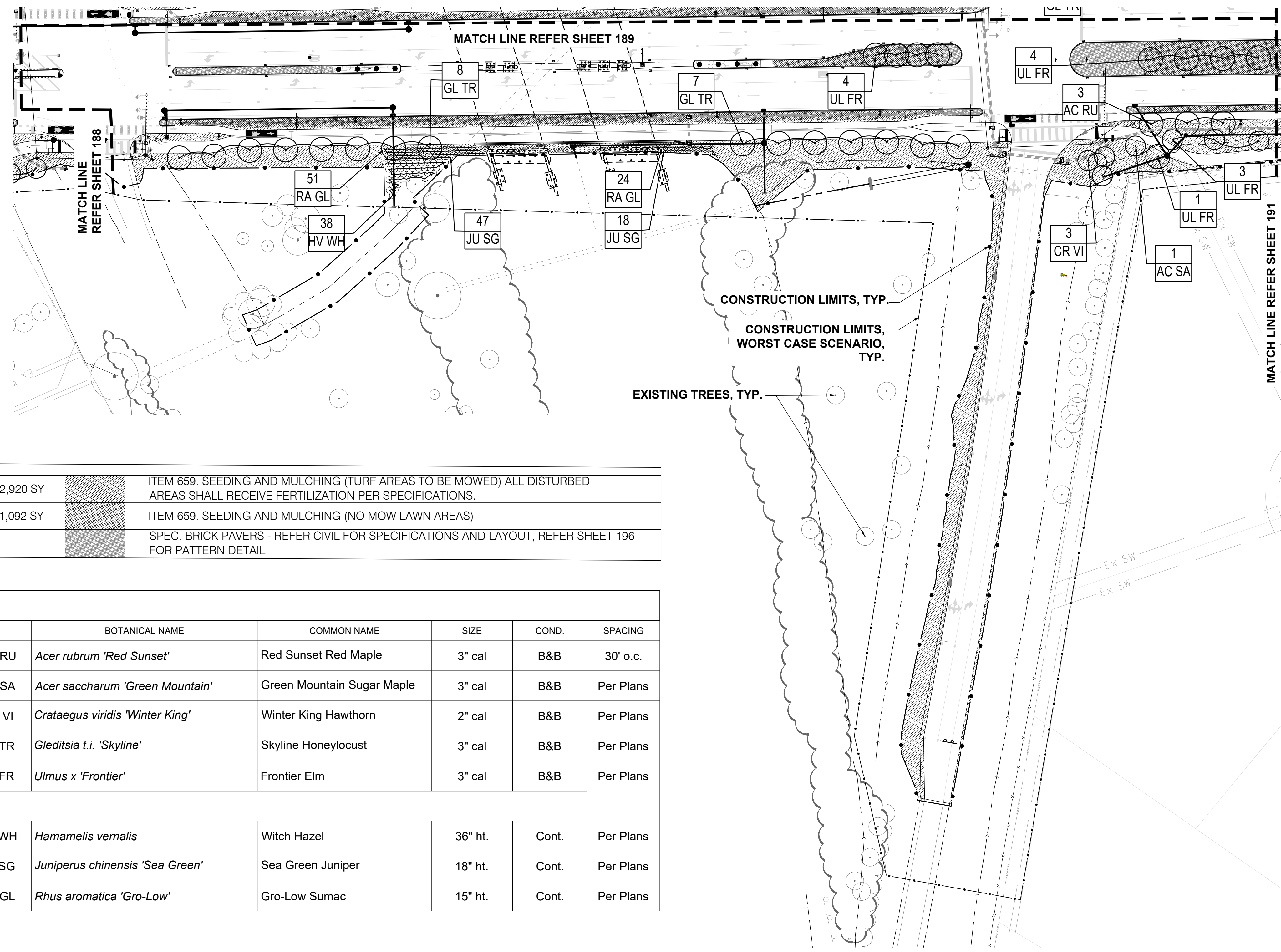
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SR 62 LANDSCAPE IMPROVEMENTS - PLANTING

FRA-62-30.34



LEGEND

2,920 SY		ITEM 659. SEEDING AND MULCHING (TURF AREAS TO BE MOWED) ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION PER SPECIFICATIONS.
1,092 SY		ITEM 659. SEEDING AND MULCHING (NO MOW LAWN AREAS)
		SPEC. BRICK PAVERS - REFER CIVIL FOR SPECIFICATIONS AND LAYOUT, REFER SHEET 196 FOR PATTERN DETAIL

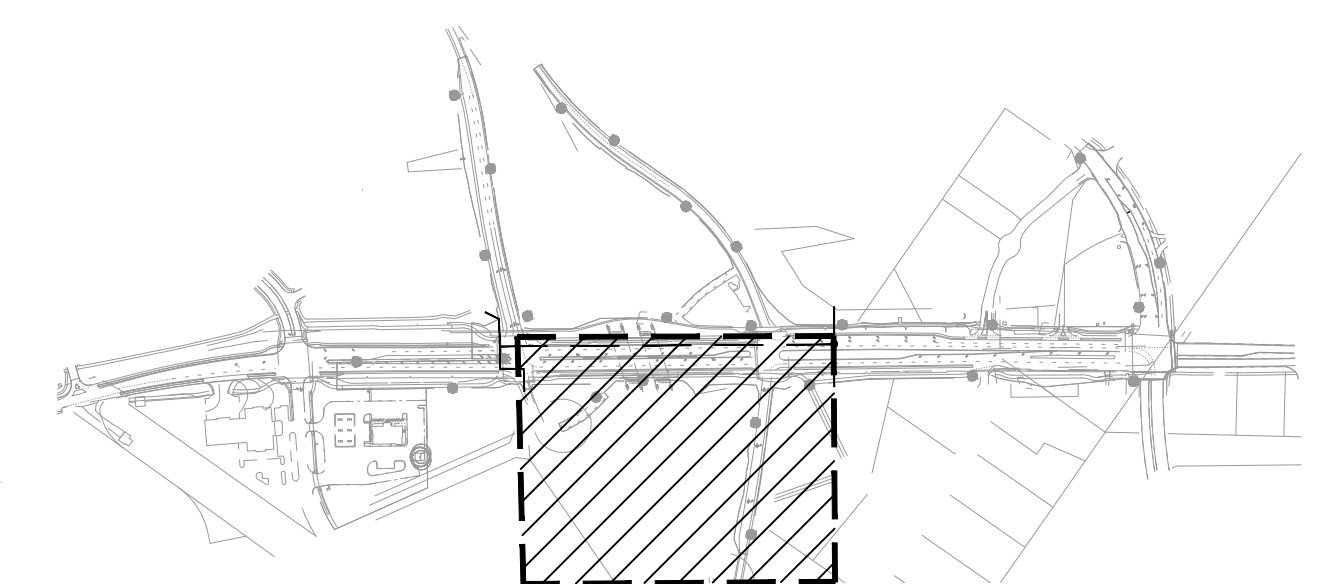
		BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
3	AC RU	<i>Acer rubrum</i> 'Red Sunset'	Red Sunset Red Maple	3" cal	B&B	30' o.c.
1	AC SA	<i>Acer saccharum</i> 'Green Mountain'	Green Mountain Sugar Maple	3" cal	B&B	Per Plans
3	CR VI	<i>Crataegus viridis</i> 'Winter King'	Winter King Hawthorn	2" cal	B&B	Per Plans
15	GL TR	<i>Gleditsia t.i.</i> 'Skyline'	Skyline Honeylocust	3" cal	B&B	Per Plans
12	UL FR	<i>Ulmus x</i> 'Frontier'	Frontier Elm	3" cal	B&B	Per Plans
38	HV WH	<i>Hamamelis vernalis</i>	Witch Hazel	36" ht.	Cont.	Per Plans
65	JU SG	<i>Juniperus chinensis</i> 'Sea Green'	Sea Green Juniper	18" ht.	Cont.	Per Plans
75	RA GL	<i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Sumac	15" ht.	Cont.	Per Plans

SOILS NOTES:

- ALL TREES TO RECEIVE PLANTING SOILS MIX PER SPECIFICATIONS.

LANDSCAPE PLAN- PART TWO STAGE THREE - SECTION 3

KEY PLAN



**LEGEND**

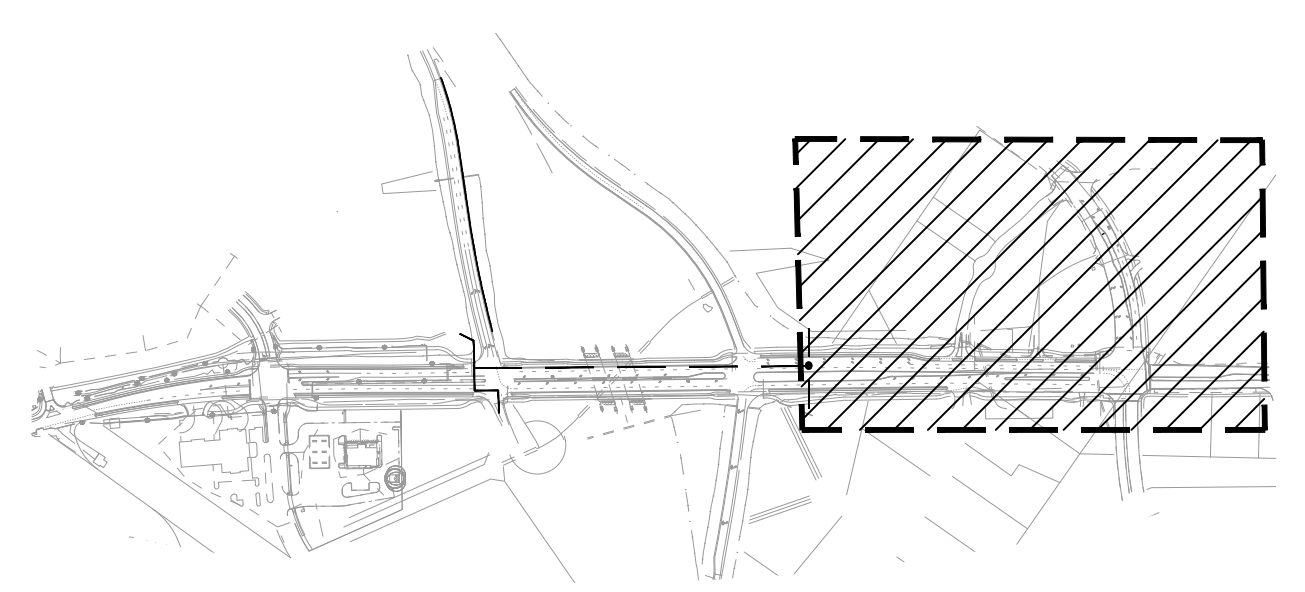
4,093 SY		ITEM 659. SEEDING AND MULCHING (TURF AREAS TO BE MOWED) ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION PER SPECIFICATIONS.
1,888 SY		ITEM 659. SEEDING AND MULCHING (NO MOW LAWN AREAS)
		SPEC. BRICK PAVERS - REFER CIVIL FOR SPECIFICATIONS AND LAYOUT, REFER SHEET 196 FOR PATTERN DETAIL

		BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
22	AC RU	<i>Acer rubrum</i> 'Red Sunset'	Red Sunset Red Maple	3" cal	B&B	Per Plans
10	AC SA	<i>Acer saccharum</i> 'Green Mountain'	Green Mountain Sugar Maple	3" cal	B&B	Per Plans
2	CR VI	<i>Crataegus viridis</i> 'Winter King'	Winter King Hawthorn	2" cal	B&B	Per Plans
9	GL TR	<i>Gleditsia t.i.</i> 'Skyline'	Skyline Honeylocust	3" cal	B&B	Per Plans
3	QU AC	<i>Quercus acutissima</i>	Sawtooth Oak	3" cal	B&B	Per Plans
29	UL FR	<i>Ulmus x 'Frontier'</i>	Frontier Elm	3" cal	B&B	Per Plans

**SOILS NOTES:**

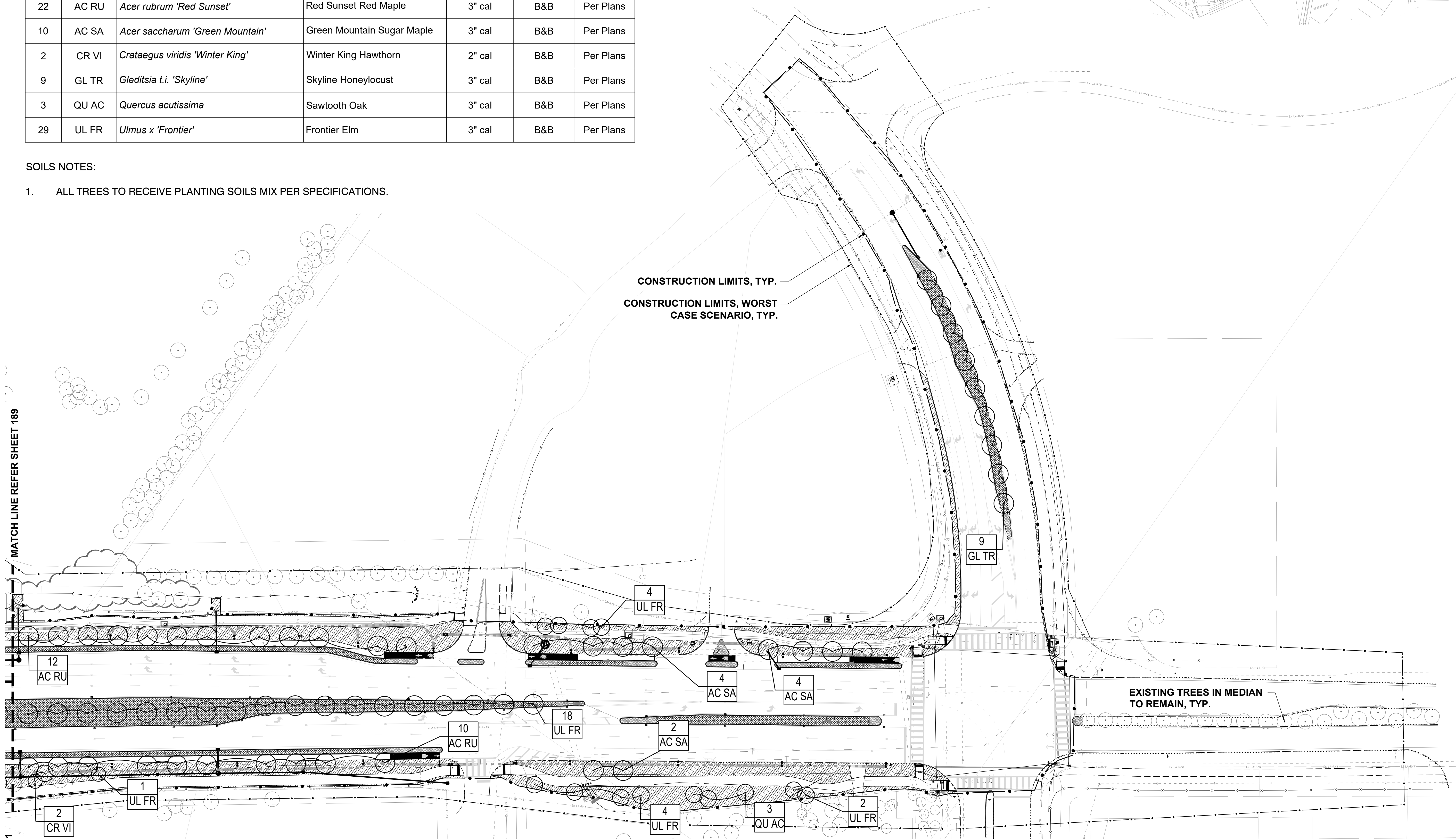
- ALL TREES TO RECEIVE PLANTING SOILS MIX PER SPECIFICATIONS.

**KEY PLAN**







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MATCH LINE REFER SHEET 189



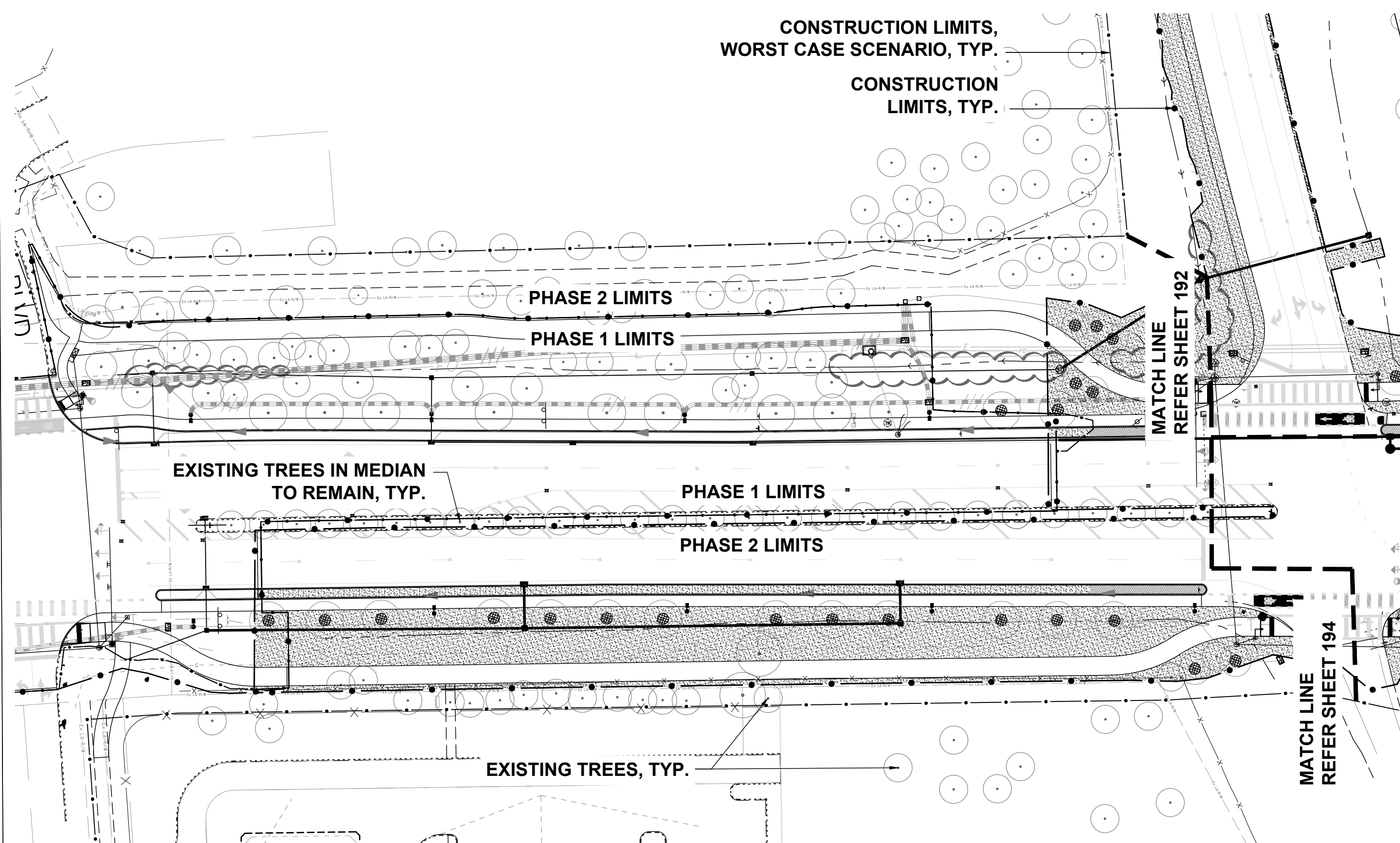
**LANDSCAPE PLAN- PART TWO STAGE THREE - SECTION 4**

LEGEND - SOILS PLAN

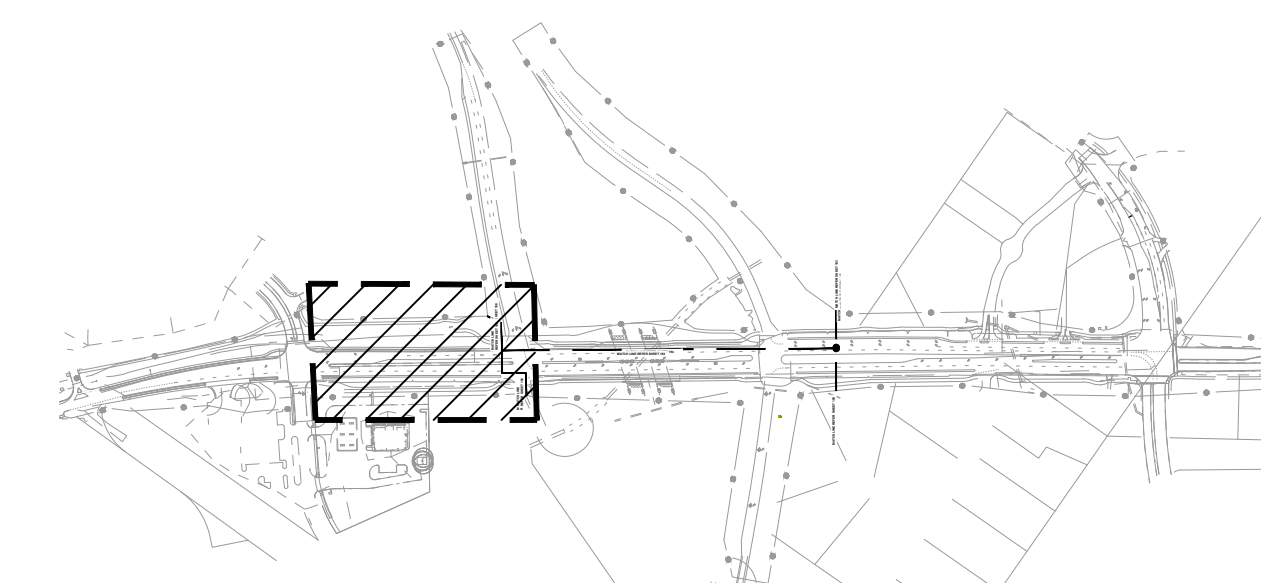
287 cu yd		TYPE 1 - TURF GRASS SOIL AND NO MOW LAWN AREAS, 4" DEPTH, MIN.	
79 cu yd		TYPE 2 - TREE PLANTING SOIL, 36" DEPTH, MIN.	

SOILS NOTES:

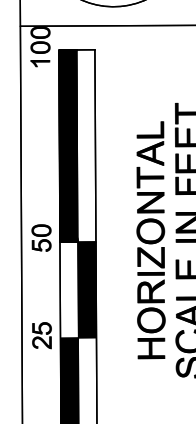
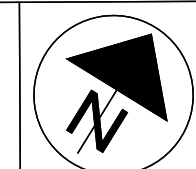
1. ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION AT TURF GRASS AND NO MOW LAWN AREAS, PER SPECIFICATIONS



KEY PLAN



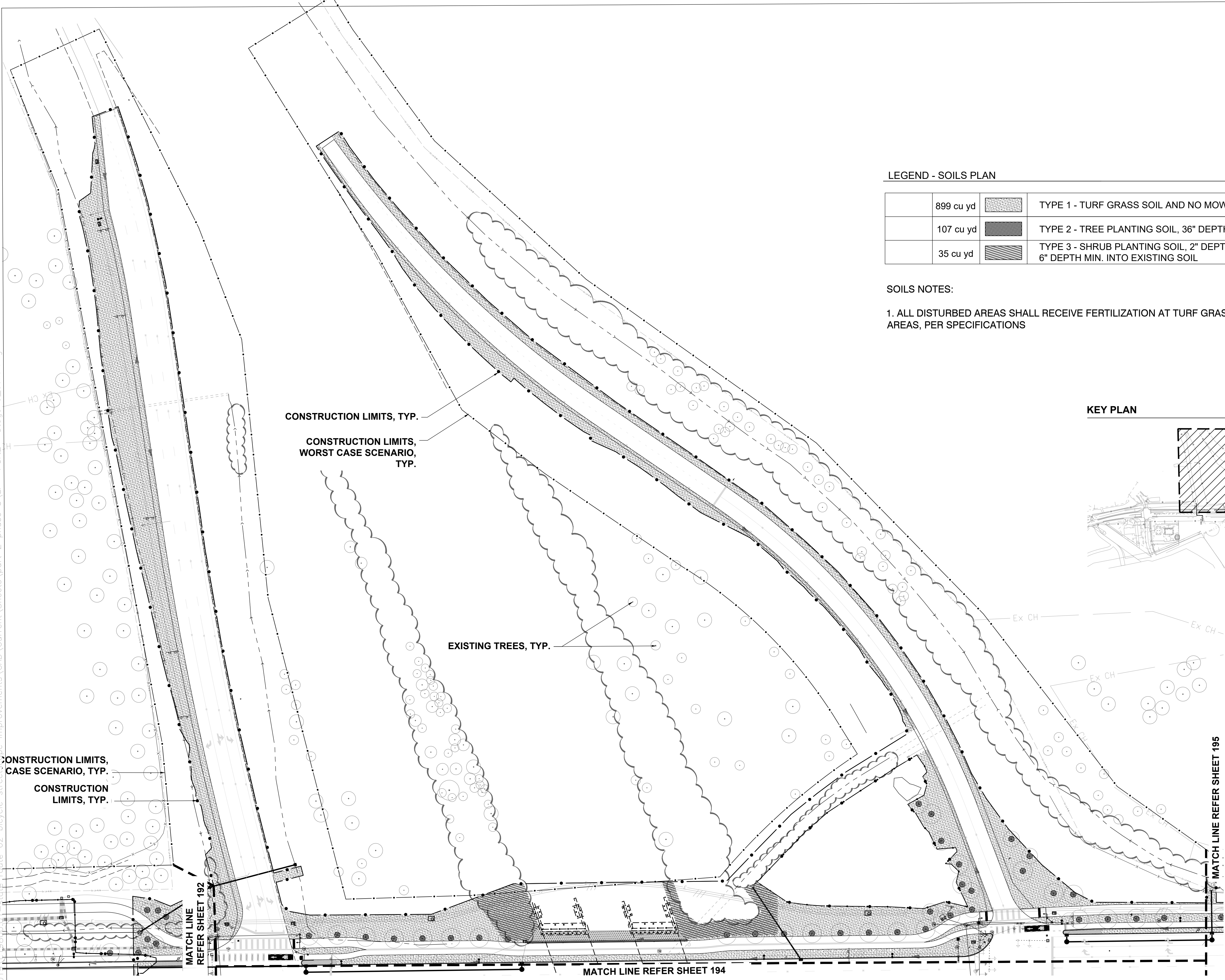
SOILS PLAN- PART TWO STAGE THREE - SECTION 1



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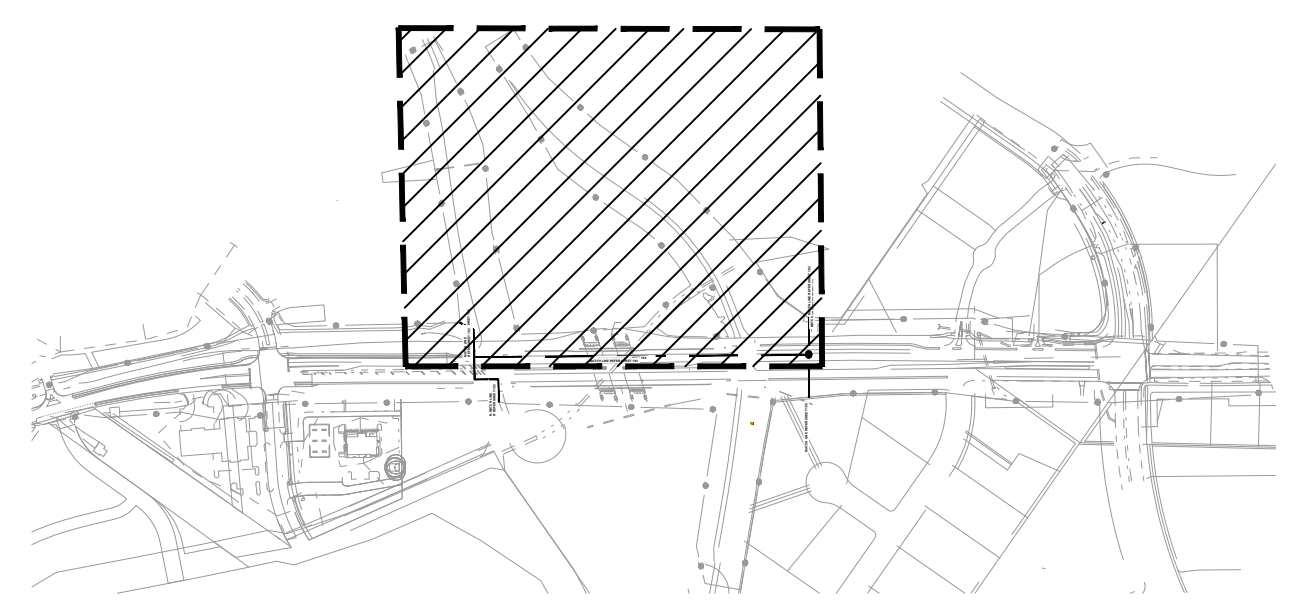
**LEGEND - SOILS PLAN**

899 cu yd		TYPE 1 - TURF GRASS SOIL AND NO MOW LAWN AREAS, 4" DEPTH, MIN.	<table border="1"><tr><td>C</td></tr><tr><td>196</td></tr></table>	C	196
C					
196					
107 cu yd		TYPE 2 - TREE PLANTING SOIL, 36" DEPTH, MIN.	<table border="1"><tr><td>B</td></tr><tr><td>196</td></tr></table>	B	196
B					
196					
35 cu yd		TYPE 3 - SHRUB PLANTING SOIL, 2" DEPTH MIN. OF AMENDMENT, TILLED 6" DEPTH MIN. INTO EXISTING SOIL	<table border="1"><tr><td>F</td></tr><tr><td>196</td></tr></table>	F	196
F					
196					

**SOILS NOTES:**

1. ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION AT TURF GRASS AND NO MOW LAWN AREAS, PER SPECIFICATIONS

**KEY PLAN**



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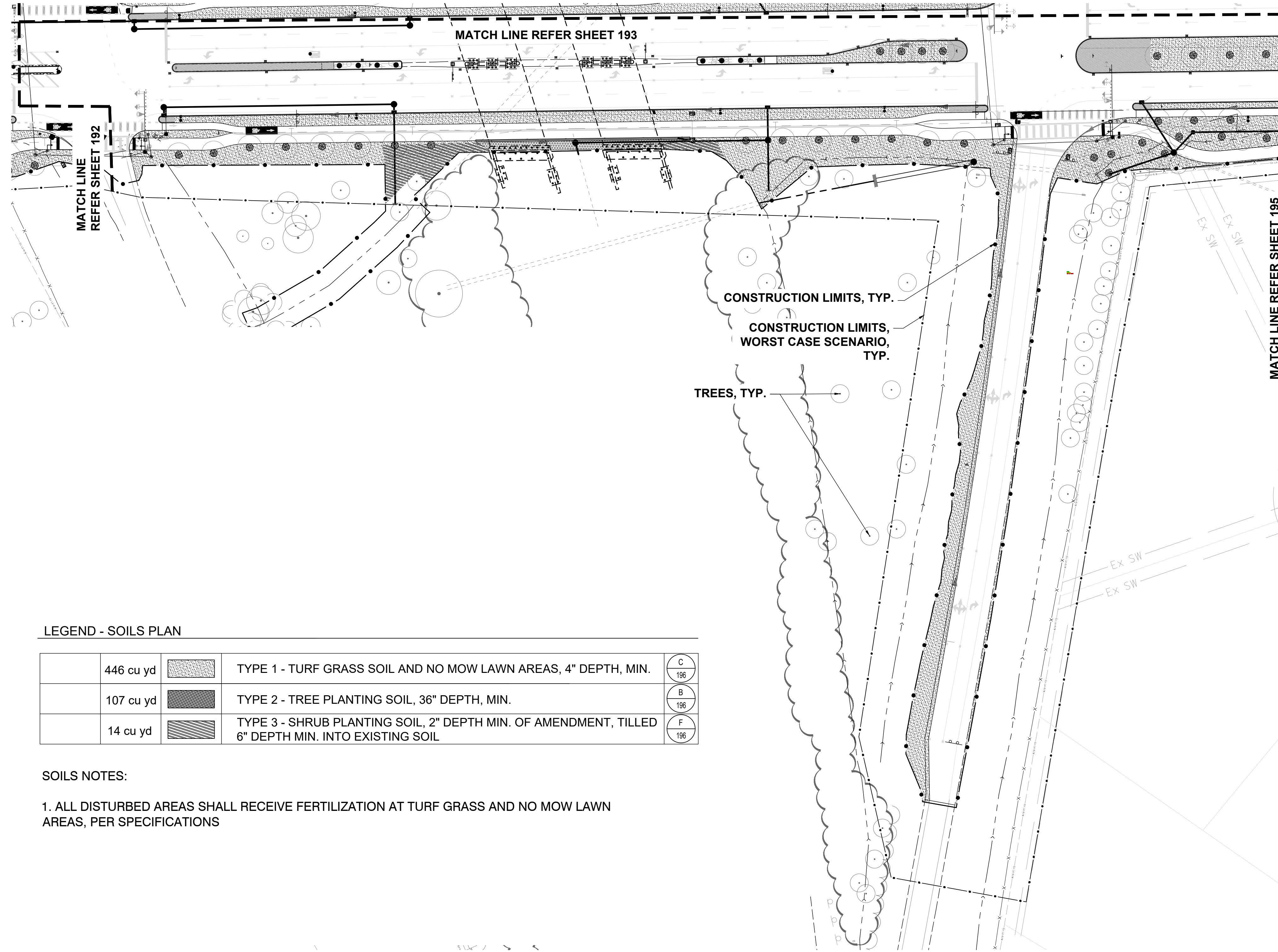
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SR 62 LANDSCAPE IMPROVEMENTS - SOILS

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**SOILS PLAN- PART TWO STAGE THREE - SECTION 2**

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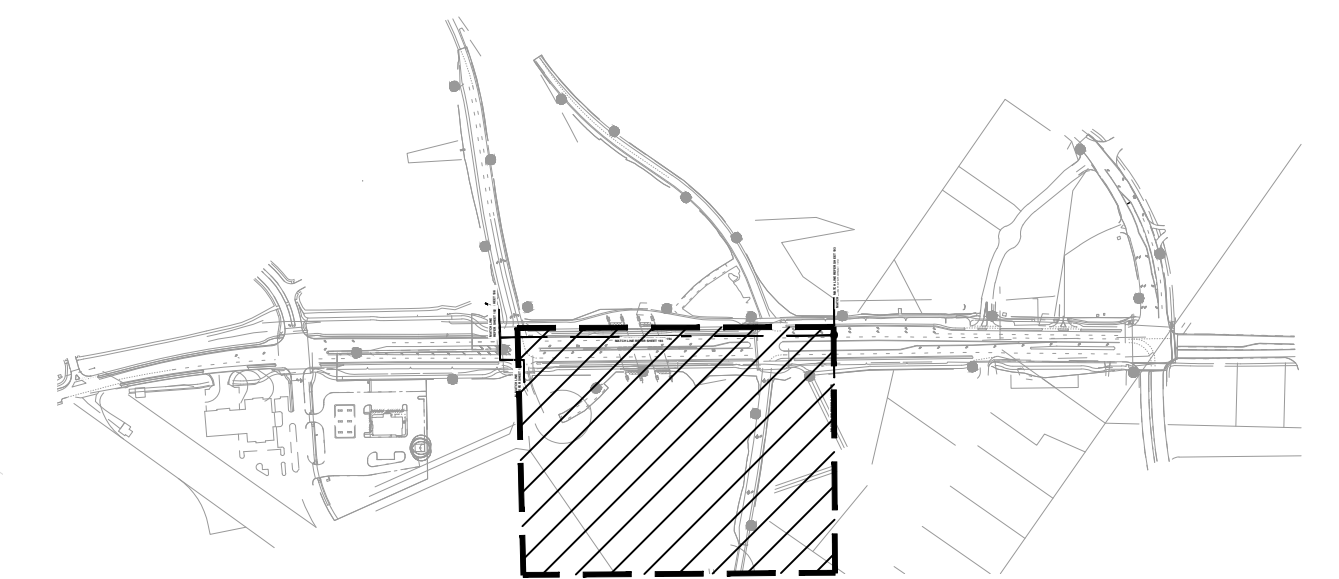
LEGEND - SOILS PLAN

446 cu yd		TYPE 1 - TURF GRASS SOIL AND NO MOW LAWN AREAS, 4" DEPTH, MIN.	
107 cu yd		TYPE 2 - TREE PLANTING SOIL, 36" DEPTH, MIN.	
14 cu yd		TYPE 3 - SHRUB PLANTING SOIL, 2" DEPTH MIN. OF AMENDMENT, TILLED 6" DEPTH MIN. INTO EXISTING SOIL	

SOILS NOTES:

1. ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION AT TURF GRASS AND NO MOW LAWN AREAS, PER SPECIFICATIONS

KEY PLAN



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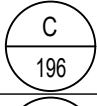

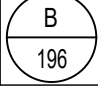
SR 62 LANDSCAPE IMPROVEMENTS - SOILS

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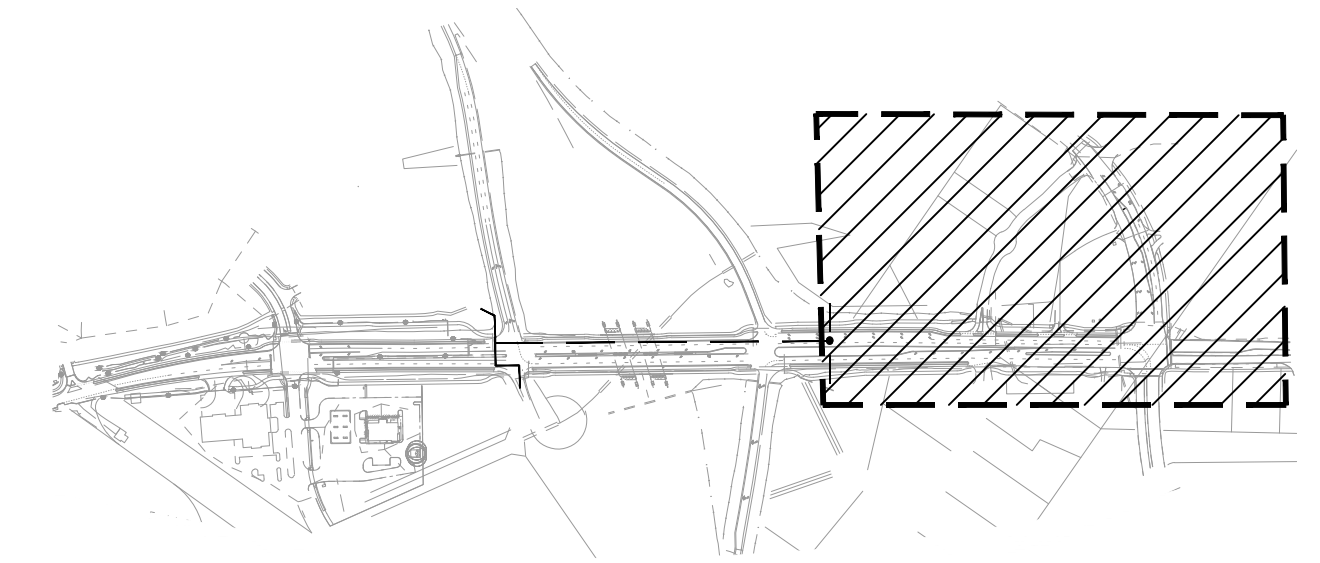
LEGEND - SOILS PLAN

665 cu yd		TYPE 1 - TURF GRASS SOIL AND NO MOW LAWN AREAS, 4" DEPTH, MIN.	
236 cu yd		TYPE 2 - TREE PLANTING SOIL, 36" DEPTH, MIN.	

SOILS NOTES:

1. ALL DISTURBED AREAS SHALL RECEIVE FERTILIZATION AT TURF GRASS AND NO MOW LAWN AREAS, PER SPECIFICATIONS

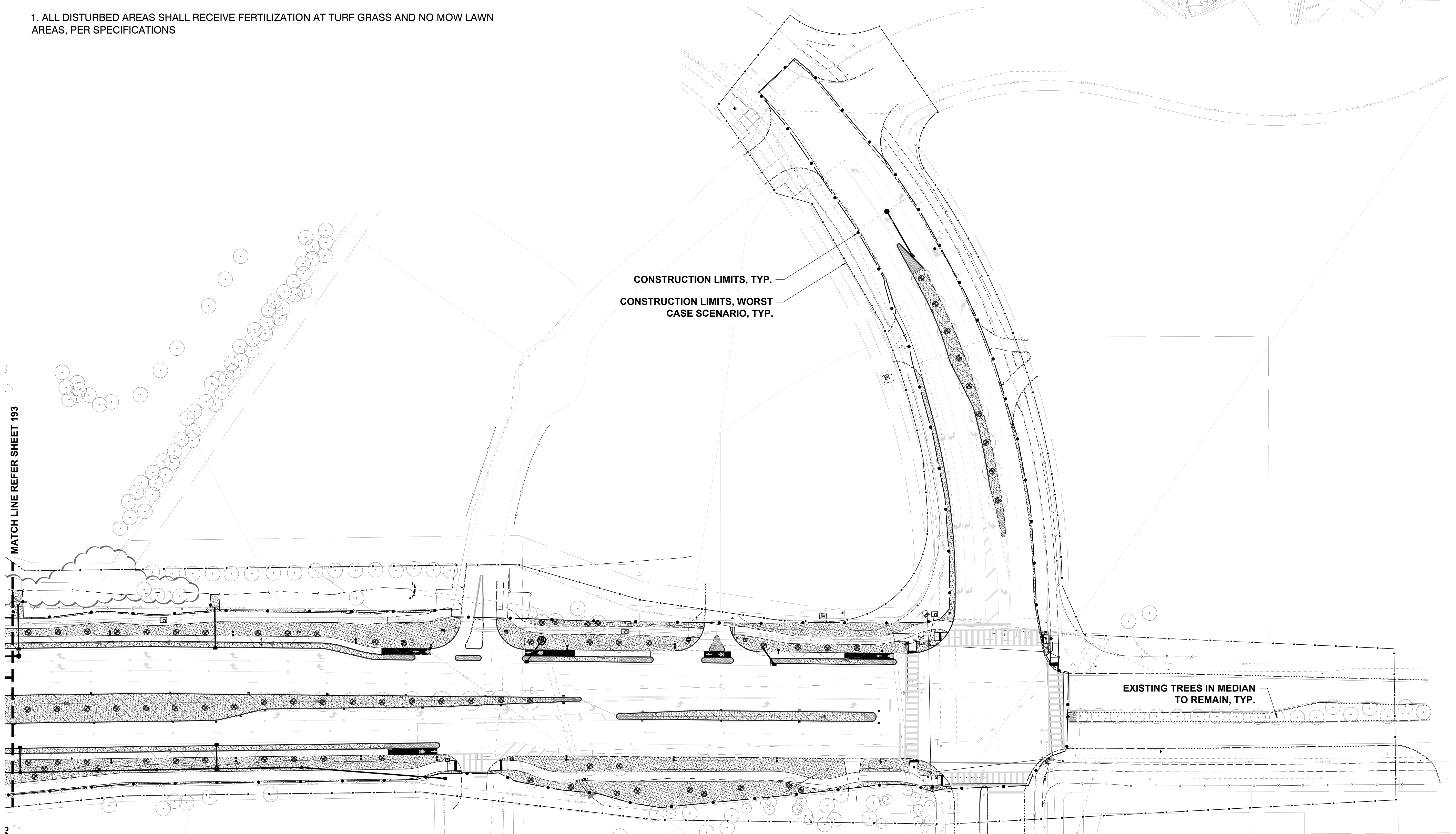
KEY PLAN



CALCULATED 0 25 50 100  
 HORIZONTAL SCALE IN FEET  
 CHECKED

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MATCH LINE REFER SHEET 193



SOILS PLAN- PART TWO STAGE THREE - SECTION 4

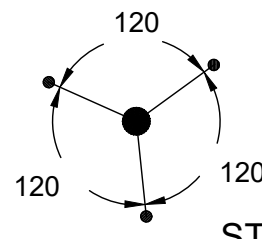
SR 62 LANDSCAPE IMPROVEMENTS - SOILS

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201  
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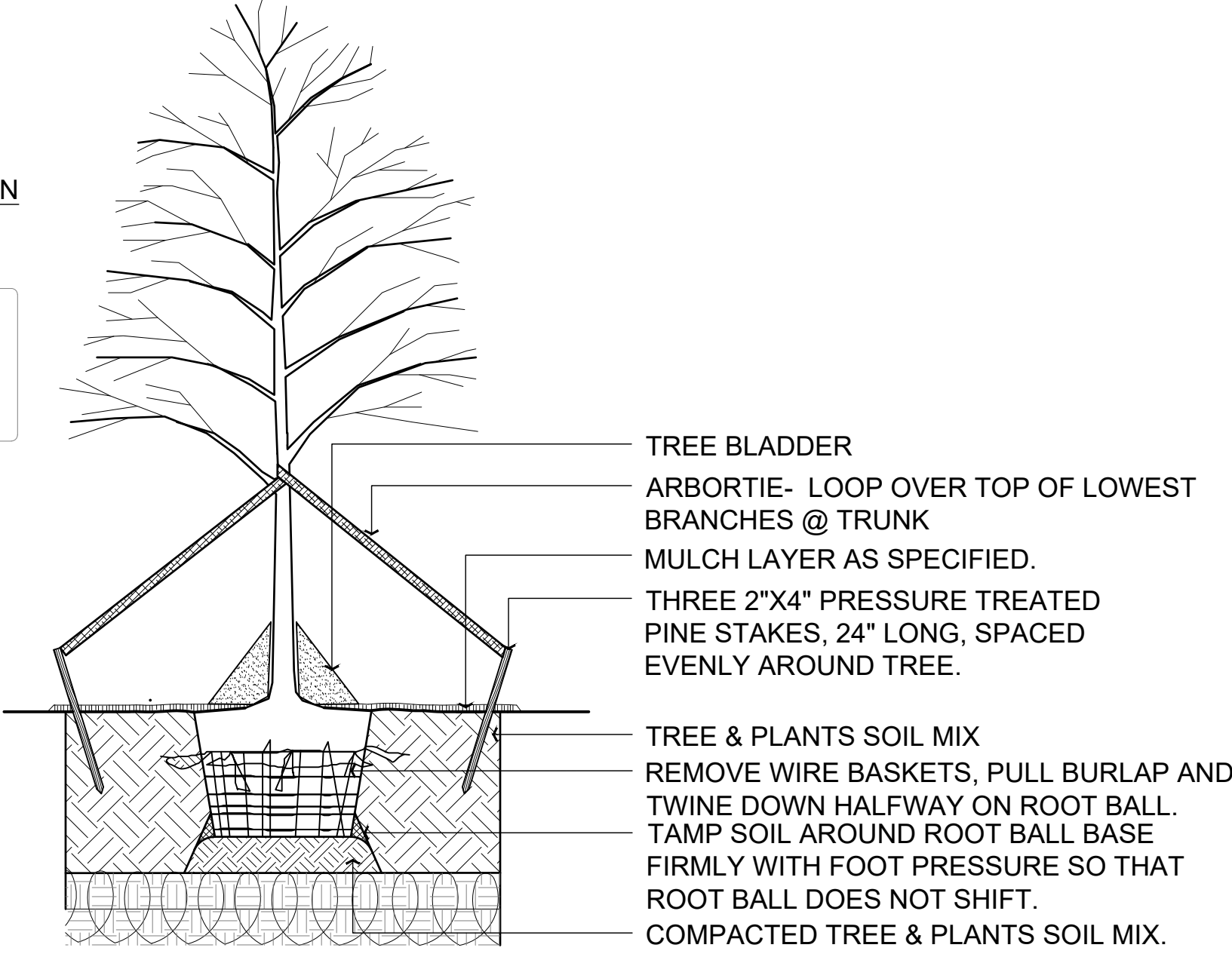
NOTE:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. FINAL TREE STAKING PLACEMENT TO BE APPROVED BY LANDSCAPE ARCHITECT.
3. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
4. MARK THE NORTH SIDE OF THE TREE IN THE NURSERY, AND ROTATE TREE TO FACE NORTH AT THE SITE WHEN EVER POSSIBLE.
5. IF PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, CUT THE WIRE BASKET IN FOUR PLACES AND FOLD DOWN (8 IN.) INTO PLANTING HOLE.
6. REMOVE ALL TWINE, ROPE, WIRE AND BURLAP FROM TOP HALF OF ROOTBALL.
7. SET TREE PLUMB IN PLANTING PIT.
8. EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

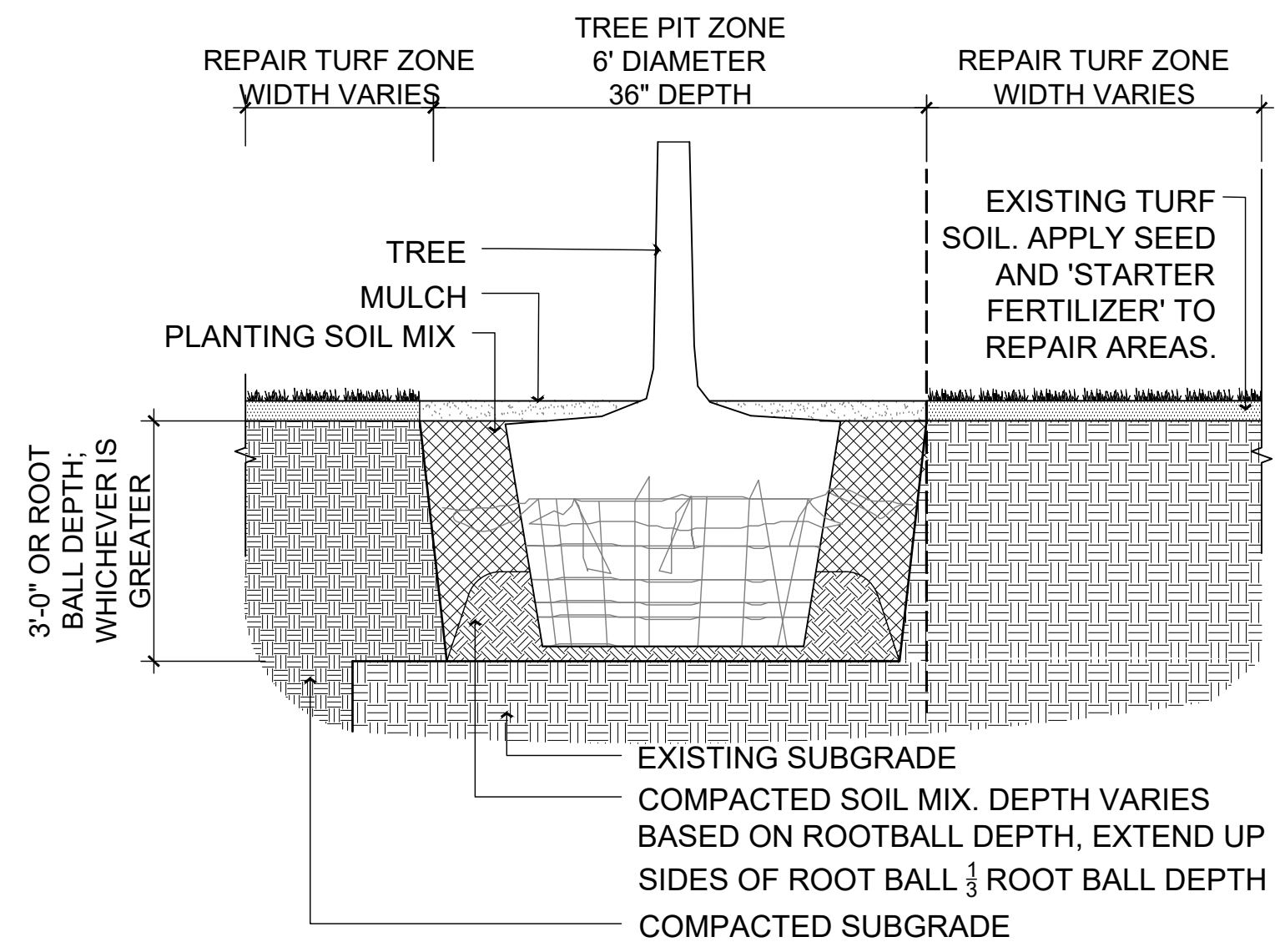


STAKING PLAN

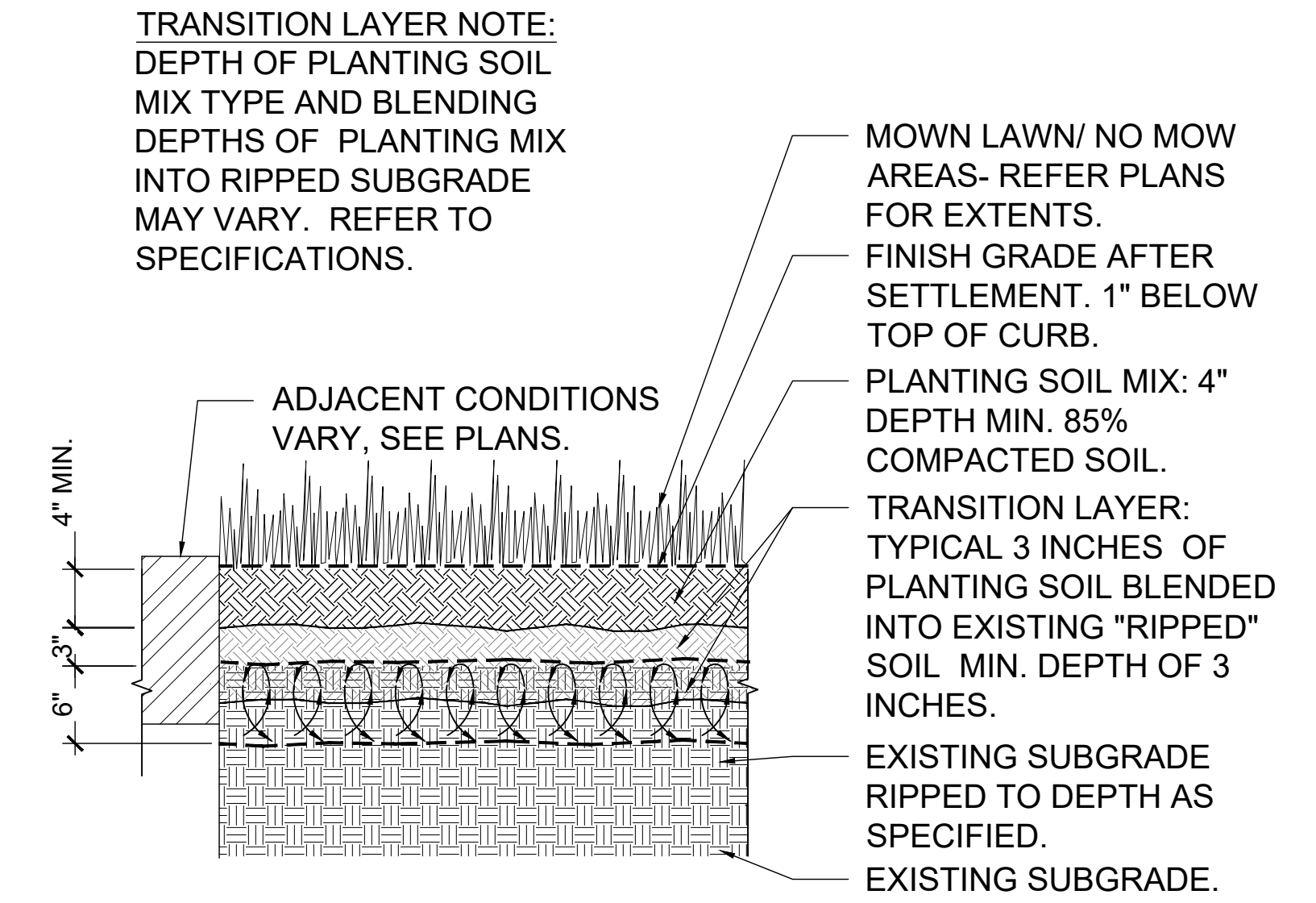
NOTE:  
REFER TO SOILS PLAN  
AND DETAILS FOR DEPTH  
OF SOIL MIX.



A TREE PLANTING  
SCALE: 1/2" = 1'-0"



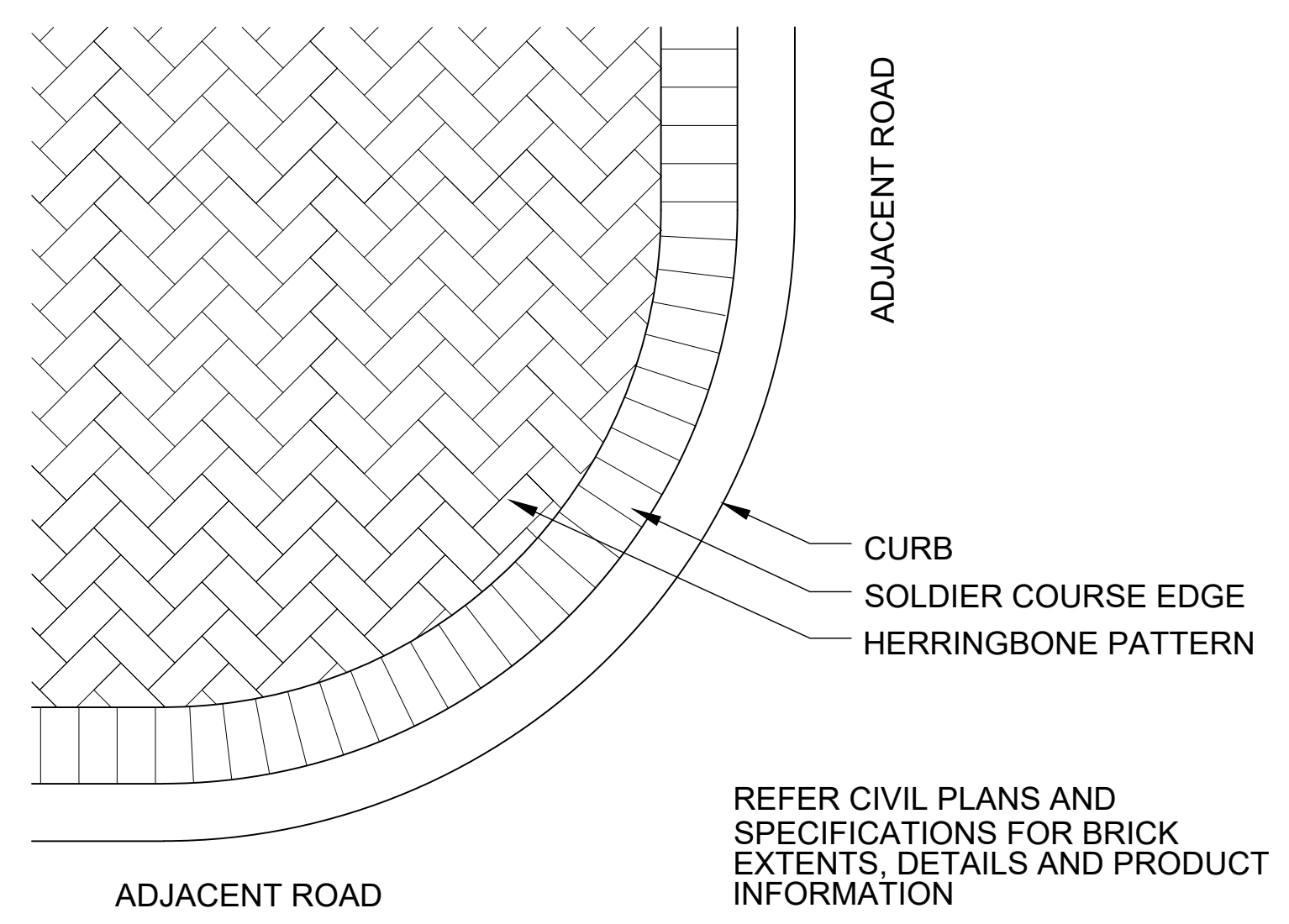
B SOILS PROFILE - NEW TREES AND DISTURBED SOIL  
SCALE: 1/2" = 1'-0"



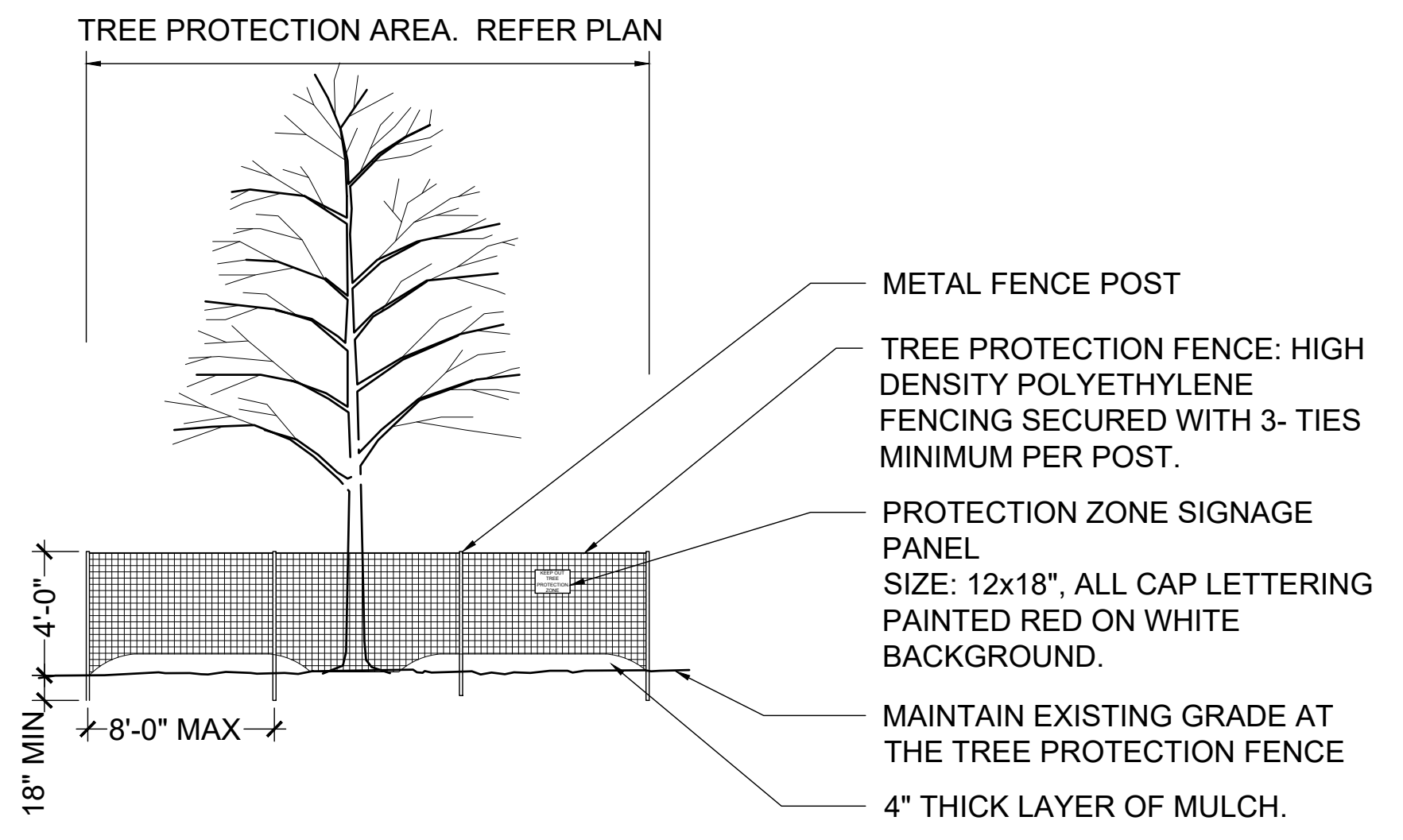
C TURF GRASS AND NO MOW LAWN AREA SOIL  
SCALE: 1" = 1'-0"  
S-002

NOTE:

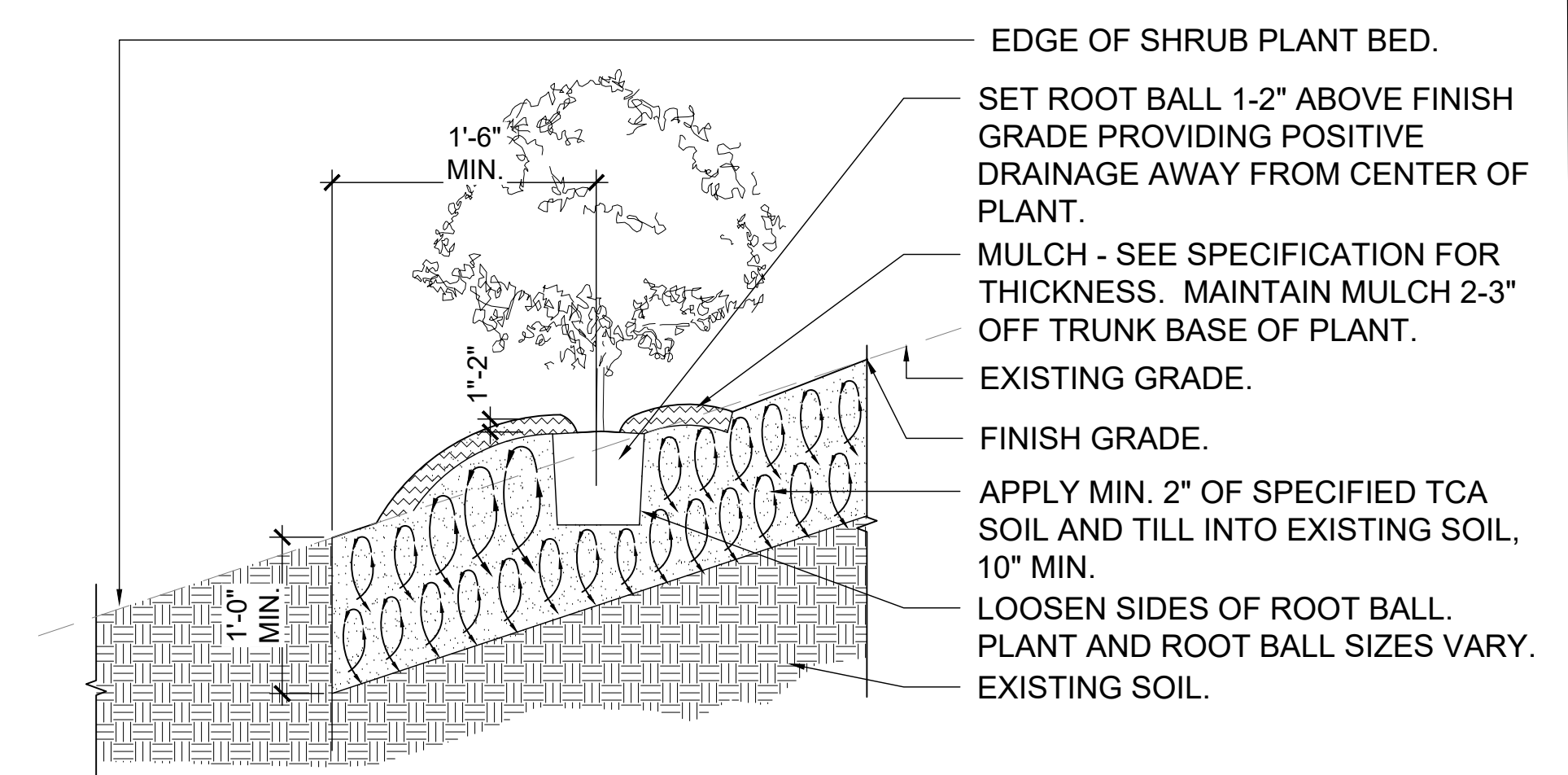
1. SEE SECTION 01 56 39 - TEMPORARY TREE AND PLANT PROTECTION FOR FENCING AND PRUNING REQUIREMENTS.
2. LIMB AND PRUNING OF TREES SHALL BE PERMITTED ONLY AT THE DIRECTION OF THE APPROVED AND CERTIFIED ARBORIST.
3. NO EQUIPMENT SHALL BE PERMITTED INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL
4. FENCE TO REMAIN IN PLACE THROUGH ENTIRETY OF CONSTRUCTION.



D BRICK PAVER PATTERNS IN MEDIAN, TYP.  
SCALE: 3/4" = 1'-0"



E TREE PROTECTION ZONE  
SCALE: N.T.S.  
PL-001



F SHRUB PLANTING DETAIL ON SLOPE (INDIVIDUAL PLANTING)  
SCALE: 1" = 1'-0"  
PL-041

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