

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

# SCI-23-5.49

## CLAY TOWNSHIP SCIOTO COUNTY

**PROJECT DESCRIPTION**

THIS PROJECT CONSISTS OF A REALIGNMENT OF FEURT HILL ROAD TO IMPROVE SIGHT DISTANCE AND VISIBILITY AT THE INTERSECTION WITH U.S. 23. THE PROJECT WILL INCLUDE MISCELLANEOUS ROADSIDE IMPROVEMENTS ALONG FEURT HILL ROAD AND U.S. 23, SUCH AS DRAINAGE, GUARDRAIL AND CURB AND GUTTER.

**EARTH DISTURBED AREAS**

PROJECT EARTH DISTURBED AREA: 1.48 ACRES  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES  
NOTICE OF INTENT EARTH DISTURBED AREA: 1.73 ACRES

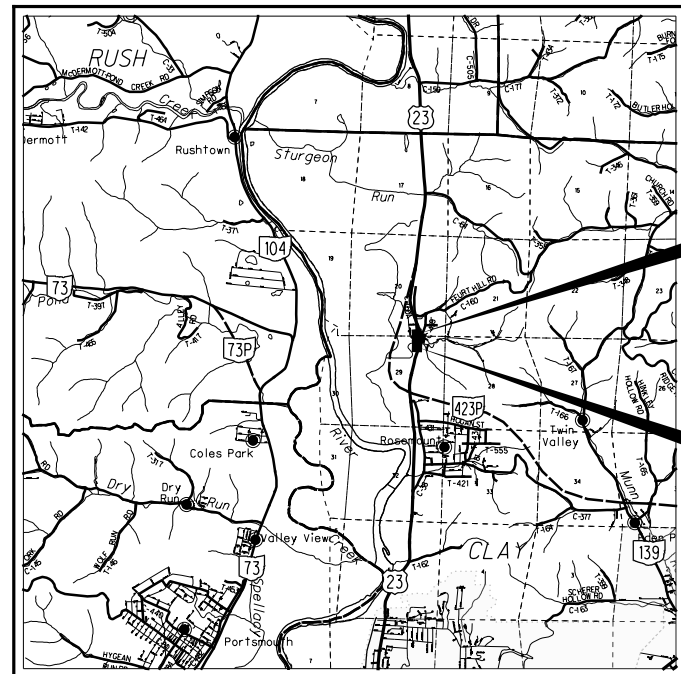
**2019 SPECIFICATIONS**

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

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

APPROVED *Michael J. Lamborn*  
DATE 08-07-2020 DISTRICT DEPUTY DIRECTOR

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DIRECTOR, DEPARTMENT OF TRANSPORTATION



LOCATION MAP

LATITUDE: 38°48'10" LONGITUDE: 82°59'04"



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

<b>DESIGN DESIGNATION</b>	SR 23	FEURT HILL ROAD
CURRENT ADT (2018)	19,501	2,051
DESIGN YEAR ADT (20 )		
DESIGN HOURLY VOLUME (20 )		
DIRECTIONAL DISTRIBUTION	57%	
TRUCKS (24 HOUR B&C)	9%	
DESIGN SPEED	55	40
LEGAL SPEED	55	40
DESIGN FUNCTIONAL CLASSIFICATION:	03 OTHER PRINCIPAL ARTERIAL	07 LOCAL (URBAN)

NHS PROJECT

**DESIGN EXCEPTIONS**

NONE

**INDEX OF SHEETS:**

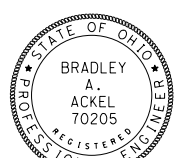
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**UNDERGROUND UTILITIES**  
Contact Two Working Days Before You Dig

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

PLAN PREPARED BY:  
**CARPENTER MARTY** transportation  
10816 MILLINGTON COURT, SUITE 104  
CINCINNATI, OH 45242  
513.734.8542 \* WWW.CMTRAN.COM

ENGINEERS SEAL:



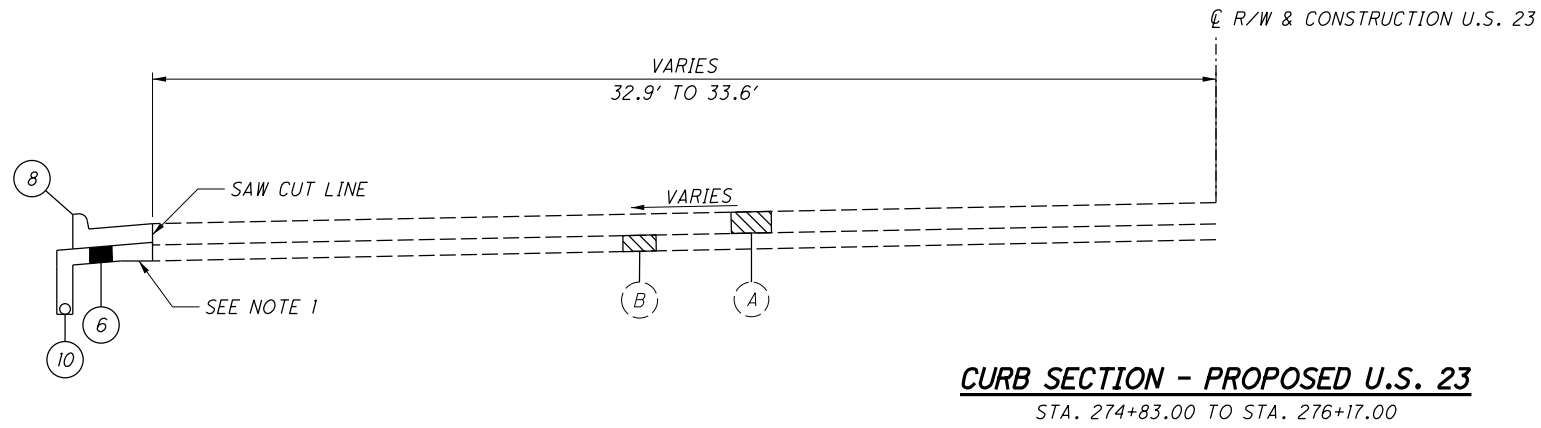
SIGNED: *Bradley A. Ackel*  
DATE: 8/6/2020

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	01/17/20	RM-4.2	4/17/20	TC-41.20	10/18/13	800-2020	7/17/20
BP-5.1	1/18/19			TC-41.30	10/18/13	832	10/19/18
		HW-2.1	7/20/18	TC-42.20	10/18/13	902	7/19/19
CB-2.1	7/20/18	HW-2.2	7/20/18	TC-52.10	10/18/13	961	x/xx/xx
				TC-52.20	7/20/18	1000	x/xx/xx
MH-1.2	1/15/16	MT-95.45	1/17/20	TC-61.30	7/19/19		
		MT-96.11	4/17/20				
DM-1.1	7/21/17	MT-96.20	7/15/16				
DM-1.2	1/18/13	MT-96.26	1/18/19				
DM-4.3	1/15/16	MT-101.70	1/17/20				
DM-4.4	1/15/16	MT-101.75	1/17/20				
		MT-101.90	7/21/17				
MGS-1.1	1/19/18	MT-105.10	1/17/20				
MGS-2.1	1/19/18						
MGS-4.1	1/20/17						
MGS-4.3	1/18/13						

FEDERAL PROJECT NO. E(191) 246  
CONSTRUCTION PROJECT NO. 109917  
RAILROAD INVOLVEMENT NORFOLK SOUTHERN  
SCI-23-5.49  
1/39

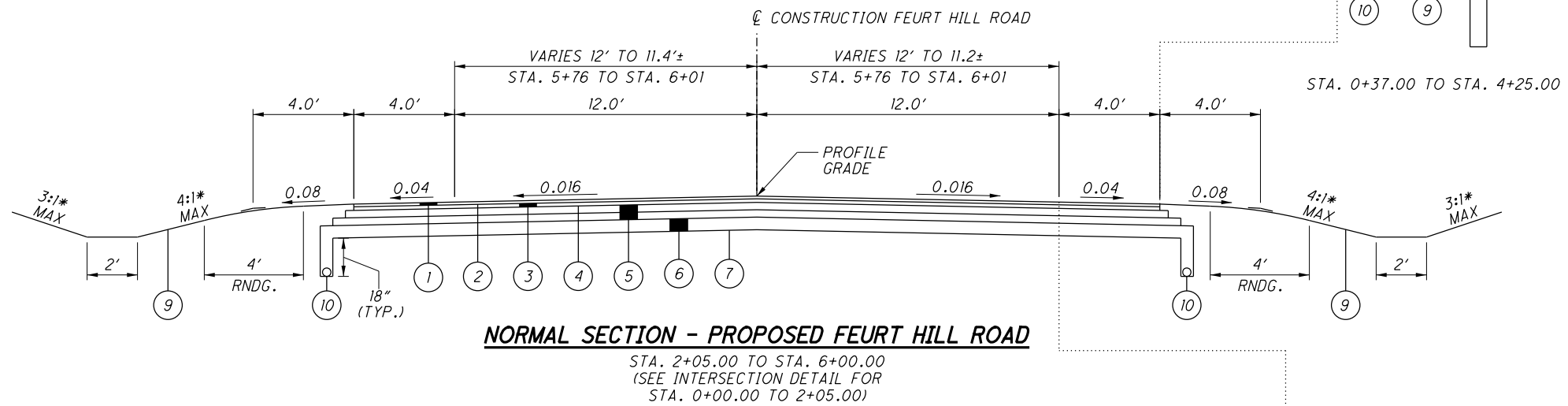
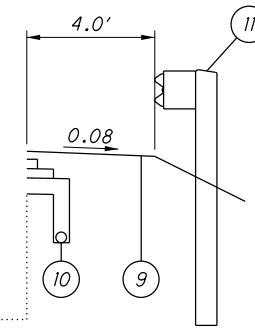
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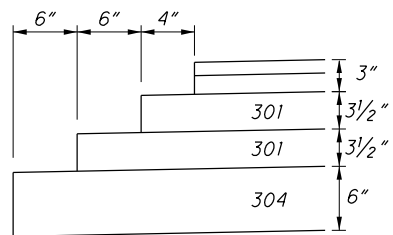


**NOTES**

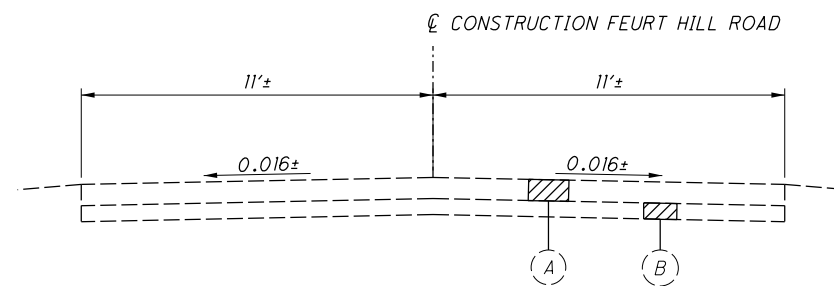
1. THE CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS PROVIDED TO ALLOW FOR WATER TO DRAIN FROM THE EXISTING AGGREGATE BASE LAYER INTO THE PROPOSED AGGREGATE BASE BEFORE DRAINING INTO THE PROPOSED UNDERDRAIN.



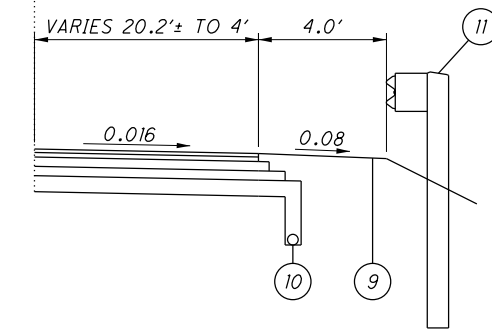
STA. 0+37.00 TO STA. 4+25.00



**STEP DETAIL**



**NORMAL SECTION - EXISTING FEURT HILL ROAD**



STA. 0+31.38 TO STA. 2+05.00

**LEGEND**

- ① ITEM 441 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22
- ② ITEM 407 TACK COAT (0.55 GAL/SY)
- ③ ITEM 441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)
- ④ ITEM 407 TACK COAT (0.085 GAL/SY)
- ⑤ ITEM 301 7" ASPHALT CONCRETE BASE, PG64-22 (TWO EQUAL LIFTS)
- ⑥ ITEM 304 6" AGGREGATE BASE

- ⑦ ITEM 204 SUBGRADE COMPACTION
- ⑧ ITEM 609 COMBINATION CURB AND GUTTER, TYPE 2
- ⑨ ITEM 659 SEEDING AND MULCHING
- ⑩ ITEM 605 BASE PIPE UNDERDRAIN
- ⑪ ITEM 606 GUARDRAIL, TYPE MGS WITH LONG POSTS

- (A) EXISTING ASPHALT PAVEMENT
- (B) EXISTING GRANULAR BASE

\* OR AS SHOWN ON CROSS SECTIONS

TYPICAL SECTIONS

SCI-23-5.49

**UTILITIES**

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

**ELECTRIC:**

AMERICAN ELECTRIC POWER (TRANSMISSION)  
8600 SMITHS HILL ROAD  
NEW ALBANY, OH 43054  
ATTN: MICHAEL CARR  
PHONE: (380) 205-5072  
EMAIL: TL\_PUBLICPROJECTS@AEP.COM

AMERICAN ELECTRIC POWER (DISTRIBUTION)  
850 TECH CENTER DRIVE  
COLUMBUS, OH 43230  
ATTN: PAUL PAXTON  
PHONE: (614) 883-6831  
EMAIL: PTPAXTON@AEP.COM

**SANITARY**

SCIOTO COUNTY SANITARY  
602 SEVENTH STREET  
ROOM 104 COURTHOUSE  
PORTSMOUTH, OH 45662  
ATTN: J.P. PICKELSIMER  
PHONE: (740) 355-8249  
EMAIL: SANITARY@SCIOTOCOUNTY.NET  
JPPICKELSIMER@SCIOTOCOUNTY.NET

**WATER:**

CITY OF PORTSMOUTH - DEPARTMENT OF PUBLIC UTILITIES  
605 WASHINGTON STREET, ROOM 304  
PORTSMOUTH, OH 45662  
ATTN: CRYSTAL WEGHORST  
(740) 354-7515  
EMAIL: CWEGHORST@PORTSMOUTHOH.ORG

CITY OF PORTSMOUTH WATER DEPARTMENT  
4862 GALLIA STREET  
PORTSMOUTH, OH 45662  
ATTN: SAM SUTHERLAND  
(740) 456-4946  
EMAIL: SSUTHERLAND@PORTSMOUTHOH.ORG

**WORK LIMITS**

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

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 7PM AND 7AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

**SURVEYING PARAMETERS**

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE THIS SHEET FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

**PROJECT CONTROL**

POSITIONING METHOD: ODOT VRS  
MONUMENT TYPE: TYPE B

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: GEOID 12B

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAVD83 (2011)  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONFORMAL CONIC  
COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH ZONE  
COMBINED SCALE FACTOR: 1.000034391  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

**SEEDING AND MULCHING**

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

- 659, SEEDING AND MULCHING 6515 SQ. YD.
- 659, TOPSOIL 723.2 CU. YD.
- 659, REPAIR SEEDING AND MULCHING 325.8 SQ. YD.
- 659, COMMERCIAL FERTILIZER 0.88 TON
- 659, LIME 0.15 ACRES
- 659, WATER 35.2 M. GAL.

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

**ROUNDING**

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

**CLEARING AND GRUBBING**

REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	14	----	14

**ENDANGERED BAT HABITAT REMOVAL**

THIS PROJECT IS LCOATED WITHIN THE KNOW 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 NECESSAR 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 PLANY, 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.

CENTERLINE REFERENCES - FUERT HILL ROAD - GROUND COORDINATES

STATION	OFFSET (FT)	SIDE	NORTHING	EASTING	DESCRIPTION
0+00.00	0	℄	292292.39	1830609.18	P.O.T.
0+68.28	0	℄	292310.28	1830543.39	P.C.
1+27.28	20.42	RT	292355.58	1830515.53	P.I.
1+68.26	0	℄	292384.71	1830487.95	P.T.
3+42.35	0	℄	292558.48	1830492.60	P.C.
4+49.25	2.28'	LT	292665.59	1830495.55	P.I.
5+56.02	0	℄	292772.31	1830489.39	P.T.
6+93.22	0	℄	292909.28	1830481.42	P.O.T.

CENTERLINE REFERENCES - U.S. 23 - GROUND COORDINATES

STATION	OFFSET (FT)	SIDE	NORTHING	EASTING	DESCRIPTION
254+52.85	0	℄	290666.49	1830175.29	P.O.T.
261+60.54	0	℄	291356.86	1830330.93	P.C.
268+00.54	0	℄	291972.50	1830505.60	P.T.
268+65.86	0	℄	292028.53	1830524.74	T.S.
272+65.86	0	℄	292412.60	1830637.25	S.C.
278+15.86	0	℄	292958.37	1830637.26	C.S.
282+15.86	0	℄	293342.21	1830525.29	S.T.
290+82.53	0	℄	294161.44	1830243.75	P.O.T.

PROJECT CONTROL

POINT NUMBER	STATION	OFFSET (FT)	PROJECT GROUND COORDINATES		ELEVATION	DESCRIPTION
			NORTH (Y) U.S. FT.	EAST (X) U.S. FT.		
CP01	0+79.15	127.23 (LT)	292197.19	1830482.94	556.690	TYPE 'B' PROJECT CONTROL
CP02	6+76.48	15.47 (RT)	292893.46	1830497.84	555.872	TYPE 'B' PROJECT CONTROL
CP03	3+49.40	202.17 (RT)	292560.83	1830694.99	562.842	TYPE 'B' AZIMUTH CONTROL

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CALCULATED  
DMG  
CHECKED  
MDW

GENERAL NOTES

SCI-23-5.49

**REVIEW OF DRAINAGE FACILITIES**

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

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

**VEGETATED FILTER STRIPS**

THIS PLAN UTILIZES VEGETATED FILTER STRIPS FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660, SODDING OR ITEM 659, SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

**VEGETATED BIOFILTER**

THIS PLAN UTILIZES A VEGETATED BIOFILTER FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AS SHOWN IN THE PLANS TO ANY DISTURBED AREA ON THE SHOULDER AND FORESLOPE DRAINING TO A VEGETATED BIOFILTER. THE DITCH FOR EACH VEGETATED BIOFILTER SHALL BE TRAPEZOIDAL, AS SHOWN IN THE PLANS.

**BENCHING OF FOUNDATION SLOPES**

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

**CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL**

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAILS SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

**CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES**

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

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

**FARM DRAINS**

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE CONSTRUCTION LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

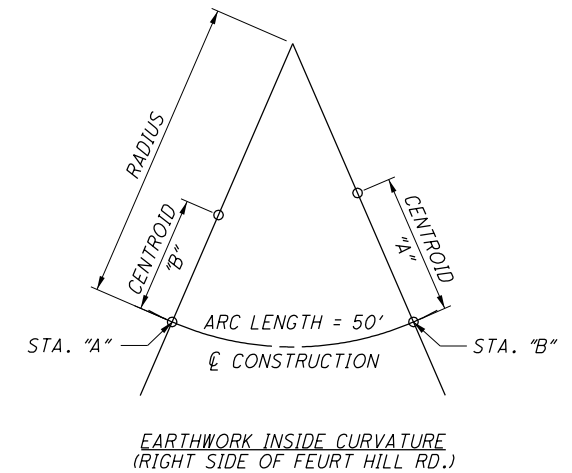
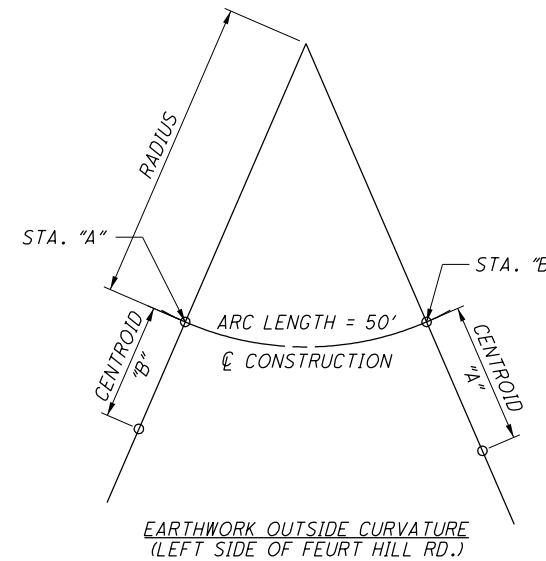
EROSION CONTROL PADS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

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

- ITEM 611 - 12" CONDUIT, TYPE B 50 FT
- ITEM 611 - 6" CONDUIT, TYPE E 50 FT
- ITEM 611 - 6" CONDUIT, TYPE F 50 FT
- ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER 5 CU. YD.

**EARTHWORK CORRECTIONS FOR CURVATURE**

DUE TO THE SMALL RADIUS OF THE CURVATURE ON FEURT HILL ROAD BETWEEN STATIONS 0+50 AND 2+00, THE FOLLOWING CURVATURE CORRECTION METHODOLOGY WAS USED TO DETERMINE THE EARTHWORK QUANTITIES ALONG BOTH SIDES OF FEURT HILL ROAD BETWEEN THIS STATION RANGE. SEE SHEETS 25 - 29 FOR EARTHWORK QUANTITIES.



FEURT HILL ROAD END AREA CENTROID LENGTHS - LEFT				
STA. "A"	CENTROID "A"	STA. "B"	CENTROID "B"	CORRECTED ARC LENGTH
0+50	0.0'	1+00	20.5'	56.83'
1+00	20.5'	1+50	16.2'	62.23'
1+50	16.2'	2+00	14.8'	60.33'

FEURT HILL ROAD END AREA CENTROID LENGTHS - RIGHT				
STA. "A"	CENTROID "A"	STA. "B"	CENTROID "B"	CORRECTED ARC LENGTH
0+50	0.0'	1+00	0.0'	50.00'
1+00	0.0'	1+50	10.1'	46.63'
1+50	10.1'	2+00	25.5'	38.13'

FEURT HILL ROAD END AREA CENTROID LENGTHS - LEFT				
STA. "A"	CENTROID "A"	STA. "B"	CENTROID "B"	CORRECTED ARC LENGTH
0+50	19.0'	1+00	0.0'	56.33'
1+00	0.0'	1+50	0.0'	50.00'
1+50	0.0'	2+00	0.0'	50.00'

FEURT HILL ROAD END AREA CENTROID LENGTHS - RIGHT				
STA. "A"	CENTROID "A"	STA. "B"	CENTROID "B"	CORRECTED ARC LENGTH
0+50	31.5'	1+00	35.4'	27.70'
1+00	35.4'	1+50	43.4'	23.73'
1+50	43.4'	2+00	39.3'	22.43'

EXAMPLE CALCULATION (LEFT SIDE - CUT):

ACTUAL CURVATURE RADIUS: 75'  
 CORRECTED RADIUS: 75' + ((0.0' + 20.5') / 2) = 85.25'  
 ALIGNMENT FACTOR: 85.25' / 75' = 1.1367  
 CORRECTED ARC LENGTH: 50' x 1.1367 = 56.84'

EXAMPLE CALCULATION (RIGHT SIDE - FILL):

ACTUAL CURVATURE RADIUS: 75'  
 CORRECTED RADIUS: 75' + ((31.5' + 35.4') / 2) = 108.45'  
 ALIGNMENT FACTOR: 108.45' / 75' = 1.446  
 CORRECTED ARC LENGTH = 50' x 1.446 = 72.3'

EARTHWORK VOLUME:  
 (((END AREA "A" x END AREA "B") / 2) x CORRECTED ARC LENGTH) x (1 CY / 27 CF)

**ITEM 614 - MAINTAINING TRAFFIC**

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614. IT IS THE INTENT TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY OF, THE CONTRACTOR AND THE TRAVELLING PUBLIC. ANY VARIANCES FROM THE INTENT OF THESE MAINTENANCE OF TRAFFIC NOTES MUST BE APPROVED IN ADVANCE IN WRITING BY ODOT. EXCEPT AS MODIFIED BELOW OR AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS, THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL APPLY.

**FEURT HILL ROAD**

THE FEURT HILL ROAD EXTENSION SHALL BE COMPLETED IN TWO PHASES. IN PHASE 1, NORMAL TRAFFIC PATTERNS SHALL BE MAINTAINED ALONG FEURT HILL ROAD. IN PHASE 2, ONE (1) LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES USING A TWO-WAY, SINGLE-LANE CONFIGURATION WHILE UTILIZING A TEMPORARY SIGNAL TO MAINTAIN TRAFFIC FLOW.

**U.S. 23**

THROUGHOUT THE DURATION OF THE PROJECT, TRAFFIC ALONG U.S. 23, IN BOTH DIRECTIONS, SHALL BE MAINTAINED TO PROVIDE TWO (2) TRAVEL LANES IN EACH DIRECTION. IN ORDER TO PERFORM THE WORK NECESSARY WITH THIS PROJECT, THE OUTSIDE SHOULDER ALONG SOUTHBOUND U.S. 23 SHALL BE CLOSED FOR THE DURATION OF THE PROJECT. THE SHOULDER CLOSURE SHALL BE IN ACCORDANCE WITH STD. DWG. MT-95.45 AND THE DETAILS IN THESE PLANS.

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

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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

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

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE LANE VALUE CONTRACT (PN 127).

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CM&S 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614 - MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLANS.

**SEQUENCE OF CONSTRUCTION**

CONSTRUCTION WORK SHALL BE PERFORMED IN TWO PHASES.

**PHASE 1**

PHASE 1 SHALL CONSIST OF THE CONSTRUCTION OF NEW FEURT HILL ROAD PAVEMENT FROM THE PROPOSED INTERSECTION WITH U.S. 23 TO STA. 5+00. THIS PHASE WILL ALSO INCLUDE NECESSARY DRAINAGE UPGRADES AND MISCELLANEOUS ROADSIDE IMPROVEMENTS AT THE NEW INTERSECTION WITH U.S. 23. DURING PHASE 1, TRAFFIC WILL BE SHIFTED SLIGHTLY ON THE EXISTING FEURT HILL ROAD PAVEMENT BUT WILL OPERATE IN THE EXISTING TRAFFIC PATTERN WITH ONE (1) 11.5 FOOT LANE OF TRAFFIC IN EACH DIRECTION.

**PHASE 2A**

PHASE 2A WILL BE CONSTRUCTED IN TWO PARTS. PHASE 2A WILL CONSIST OF CONSTRUCTING THE WEST SIDE OF FEURT HILL ROAD FROM STATION 5+00 TO STATION 6+03. DURING PHASE 2A, THE EXISTING INTERSECTION OF FEURT HILL ROAD AND U.S. 23 WILL BE CLOSED AND THE NEW INTERSECTION WILL BE OPEN TO TRAFFIC. TRAFFIC WILL BE MAINTAINED USING THE PAVEMENT PLACED IN PHASE 1, THE EXISTING FEURT HILL ROAD PAVEMENT AND TEMPORARY PAVEMENT TO BE PLACED PRIOR TO BEGINNING PHASE 2A. TRAFFIC WILL BE SHIFTED TO THE EAST SIDE OF FEURT HILL ROAD USING ONE (1) 11 FOOT, BI-DIRECTIONAL TRAFFIC LANE. TRAFFIC FLOW WILL BE REGULATED USING A TEMPORARY TRAFFIC SIGNAL IN ACCORDANCE WITH STD. DWG. MT-96.11 AND THESE PLANS.

**PHASE 2B**

PHASE 2B WILL CONSIST OF CONSTRUCTING THE EAST SIDE OF FEURT HILL ROAD BEGINNING AT THE PROPOSED PAVEMENT PLACED IN PHASE 1 TO STATION 6+03. TRAFFIC WILL OPERATE IN A SIMILAR MANNER TO PHASE 2A, HOWEVER, THE ONE (1) 11 FOOT, BI-DIRECTIONAL TRAVEL LANE WILL BE SHIFTED TO THE WEST SIDE OF FEURT HILL ROAD WITH TRAFFIC OPERATING ON THE PROPOSED PAVEMENT PLACED IN PHASE 2A, THE EXISTING FEURT HILL ROAD TO THE NORTH AND A SECTION OF TEMPORARY PAVEMENT TO BE PLACED PRIOR TO BEGINNING PHASE 2B. TRAFFIC FLOW WILL BE REGULATED USING A TEMPORARY TRAFFIC SIGNAL IN ACCORDANCE WITH STD. DWG. MT-96.11 AND THESE PLANS.

DURING PHASE 2, THE CONTRACTOR SHALL ALSO REMOVE THE REMAINING PORTIONS OF THE EXISTING FEURT HILL ROAD THAT ARE TO BE REMOVED AND SHALL CONSTRUCT THE CURB AND GUTTER AND PROPOSED GUARDRAIL ALONG U.S. 23 TO CLOSE OFF THE EXISTING INTERSECTION WITH FEURT HILL ROAD.

**LANE VALUE CONTRACT**

THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE (SHOWN BELOW) FOR EACH UNIT OF TIME THE DESCRIBED CRITICAL LANE IS RESTRICTED FROM FULL USE BY THE TRAVELING PUBLIC WITHIN THE RESTRICTED TIME PERIOD. THE DISINCENTIVES WILL BE ASSESSED FOR ALL RESTRICTIONS OF THE CRITICAL WORK.

THE CONTRACTOR WILL HAVE ALL LANES OPEN TO TRAFFIC ACCORDING TO THE FOLLOWING TABLE:

LANE VALUE CONTRACT TABLE			
DESCRIPTION OF CRITICAL LANE TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE \$ PER TIME UNIT
U.S. 23 (IN EACH DIRECTION) ALL LANES OPEN TO TRAFFIC	6AM-8:30AM & 3:30PM-7PM; M-F	1 MIN.	\$90

**NOTIFICATION OF TRAFFIC RESTRICTIONS**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

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

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

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

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.

**DUST CONTROL**

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

ITEM 616 WATER 11.5 M. GAL.

**FULLY-ACTUATED OPERATION OF WORK ZONE TRAFFIC SIGNAL**

THE WORK ZONE SIGNAL CONTROL REQUIRED FOR THIS PROJECT AND SHOWN ON SHEETS 13, 17 AND ODOT TRAFFIC SCDS MT-96.11, 96.20, AND 96.26 SHALL BE FULLY TRAFFIC ACTUATED AND OPERATE IN A MANNER SIMILAR TO THAT DESCRIBED IN SECTION 733.02 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE INITIAL CONTROLLER TIMING SHALL BE AS FOLLOWS:

	1	2	3	4
	(ALL RED) DUMMY PHASE	MAINLINE (NORTHBOUND)	(ALL RED) DUMMY PHASE	MAINLINE (SOUTHBOUND)
MIN. GREEN EXTENSION		10.0		10.0
MAX. GREEN		3.0		3.0
YELLOW		26.0		26.0
ALL RED	15		15	
RECALL	NO	YES	NO	NO

THE CONTRACTOR SHALL ALSO DESIGN, FURNISH, INSTALL AND MAINTAIN A TRAFFIC DETECTOR ON EACH APPROACH WHICH WILL RELIABLY DETECT ALL LEGAL TRAFFIC APPROACHING (BUT NOT LEAVING) THE SIGNAL AS IT PASSES OR WAITS IN THE DESIGNATED DETECTOR ZONE SHOWN IN THE PLANS. DETECTOR DESIGN WHICH DOES NOT PROVIDE RELIABLE DETECTION, FREE FROM FALSE CALLS, SHALL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.

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MAINTENANCE OF TRAFFIC GENERAL NOTES





SCI-23-5.49

REF NO.	SHEET NO.	STATION TO STATION		ROUTE	SIDE	614	614	614	614	614	614	614	614	615	622	644						
						WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	WORK ZONE EDGE LINE, CLASS 1, 4", 740.06, TYPE 1 (WHITE)	WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT (WHITE)	WORK ZONE CENTER LINE, CLASS 1, 642 PAINT, DOUBLE SOLID	WORK ZONE STOP LINE, CLASS 1, 642 PAINT	BARRIER REFLECTOR, TYPE 1, 1 WAY	BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL	OBJECT MARKER, ONE WAY	OBJECT MARKER, TWO WAY	PORTABLE CHANGEABLE MESSAGE SIGN	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	PORTABLE BARRIER, UNANCHORED	REMOVAL OF PAVEMENT MARKING				
						EACH	MILE	MILE	MILE	FT	EACH	EACH	EACH	EACH	SNMT	SY	FT	FT				
PHASE 1																						
PCB-1	8	270+50.00	TO	273+36.00	U.S. 23	LT	1				6		6				270					
WZEL-1	8	270+00.00	TO	273+70.00	U.S. 23	LT		0.07														
SN-1	9	282+05.00			U.S. 23	LT								1								
WZEL-2	9	4+11.00	TO	5+79.00	FEURT HILL	LT			0.05													
WZSL-1	9	4+46.00	TO	4+82.00	FEURT HILL	RT				38												
WZEL-3	9	5+42.00	TO	5+79.00	FEURT HILL	RT			0.04													
WZCL-1	9	4+82.00	TO	5+79.00	FEURT HILL	℄				0.04												
PCB-2	9	4+89.00	TO	6+06.00	FEURT HILL	℄	2					3	3				120					
PHASE 2A																						
PCB-3	11	274+80.00	TO	277+77.00	U.S. 23	LT	1				6		6				280					
WZEL-4	11	274+80.00	TO	276+22.00	U.S. 23	LT		0.03														
WZEL-5	11	4+32.00	TO	8+12.00	FEURT HILL	℄		0.08												350		
WZEL-6	11	4+58.00	TO	8+12.00	FEURT HILL	RT		0.07														
	11	5+55.00	TO	8+26.00	FEURT HILL	RT										123.7						
PHASE 2B																						
WZEL-7	13-14	3+00.00	TO	6+80.00	FEURT HILL	℄		0.08												500		
WZEL-8	13-14	3+00.00	TO	6+80.00	FEURT HILL	LT		0.08														
	14	6+00.00	TO	6+95.00	U.S. 23	LT										32.6						
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>							4	0.41	0.09	0.04	38	12	3	12	3	1	157	670	850			





CALCULATED DMG CHECKED MDW	<b>MAINTENANCE OF TRAFFIC SUBSUMMARY</b>	<b>SCI-23-5.49</b>	7 39
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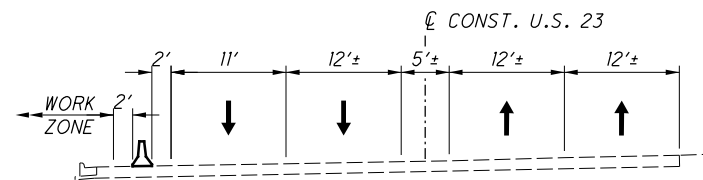
**LEGEND**

-  WORK ZONE AREA
-  PROPOSED PAVEMENT
-  PAVEMENT PLACED IN A PREVIOUS PHASE
-  ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

DRUM SPACING CHART (UNLESS OTHERWISE NOTED)	
TANGENT	80' C/C
TAPER	20' C/C
RADII	10' C/C

-  ITEM 614 - WORK ZONE EDGE LINE
-  ITEM 614 - WORK ZONE CENTERLINE
-  ITEM 614 - WORK ZONE STOP LINE
-  ITEM 622 - PORTABLE BARRIER

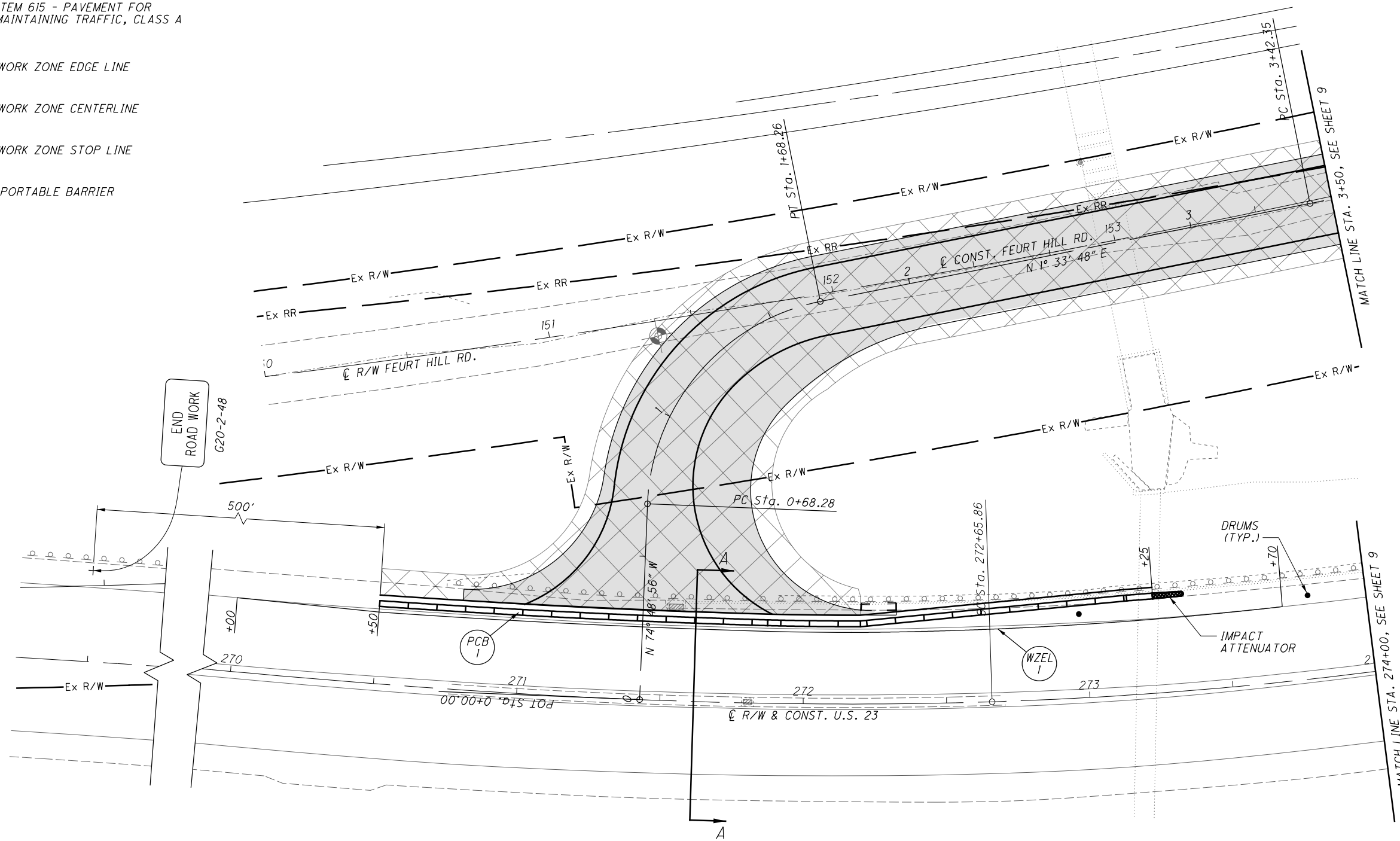
**MAINTENANCE OF TRAFFIC SECTION A-A**



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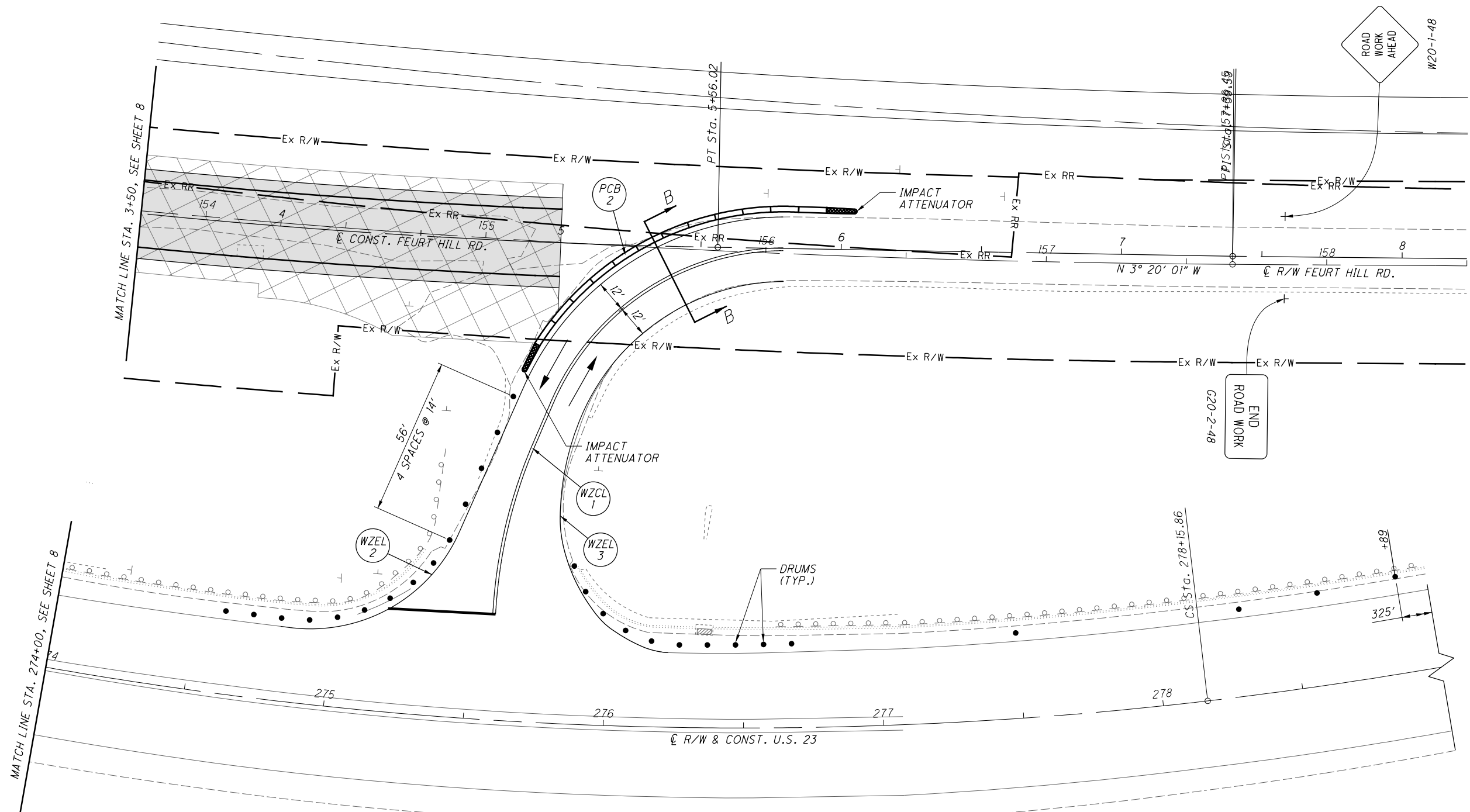


**MAINTENANCE OF TRAFFIC PLAN  
PHASE 1**

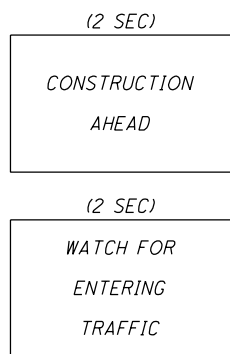
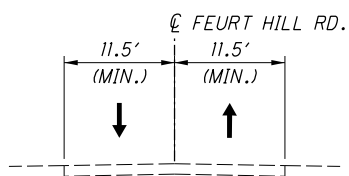
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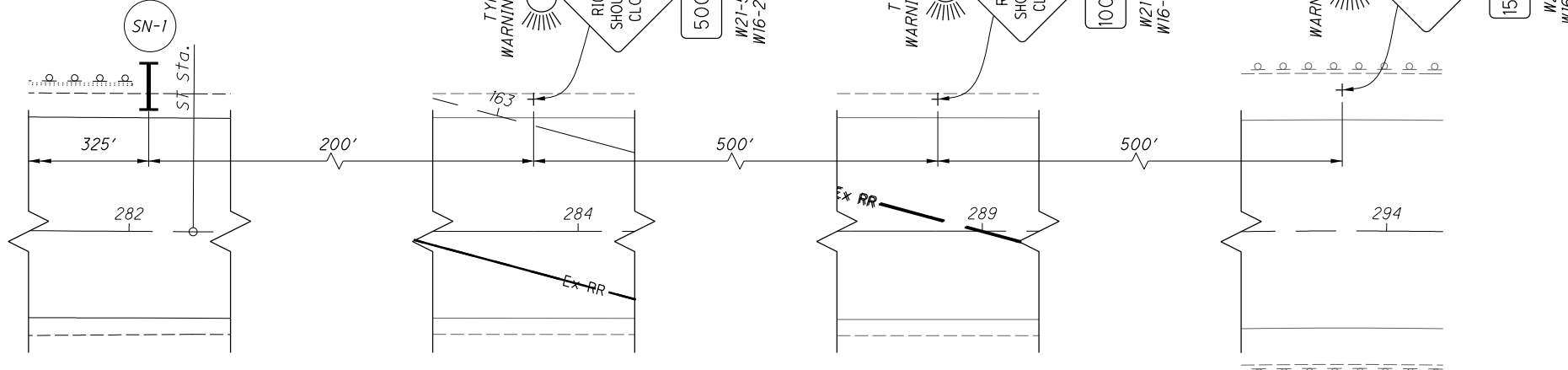
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**MAINTENANCE OF TRAFFIC SECTION B-B**



SN-1



**NOTES**  
 1. SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.



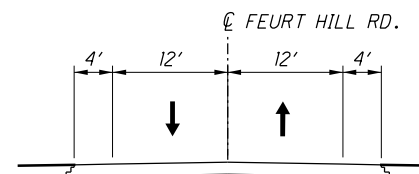
**MAINTENANCE OF TRAFFIC PLAN  
 PHASE 1**

**SCI-23-5.49**

**NOTES**

1. SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.
2. SEE SHEET 13 FOR SIGNING AND TEMPORARY SIGNAL.

**MAINTENANCE OF TRAFFIC SECTION C-C**



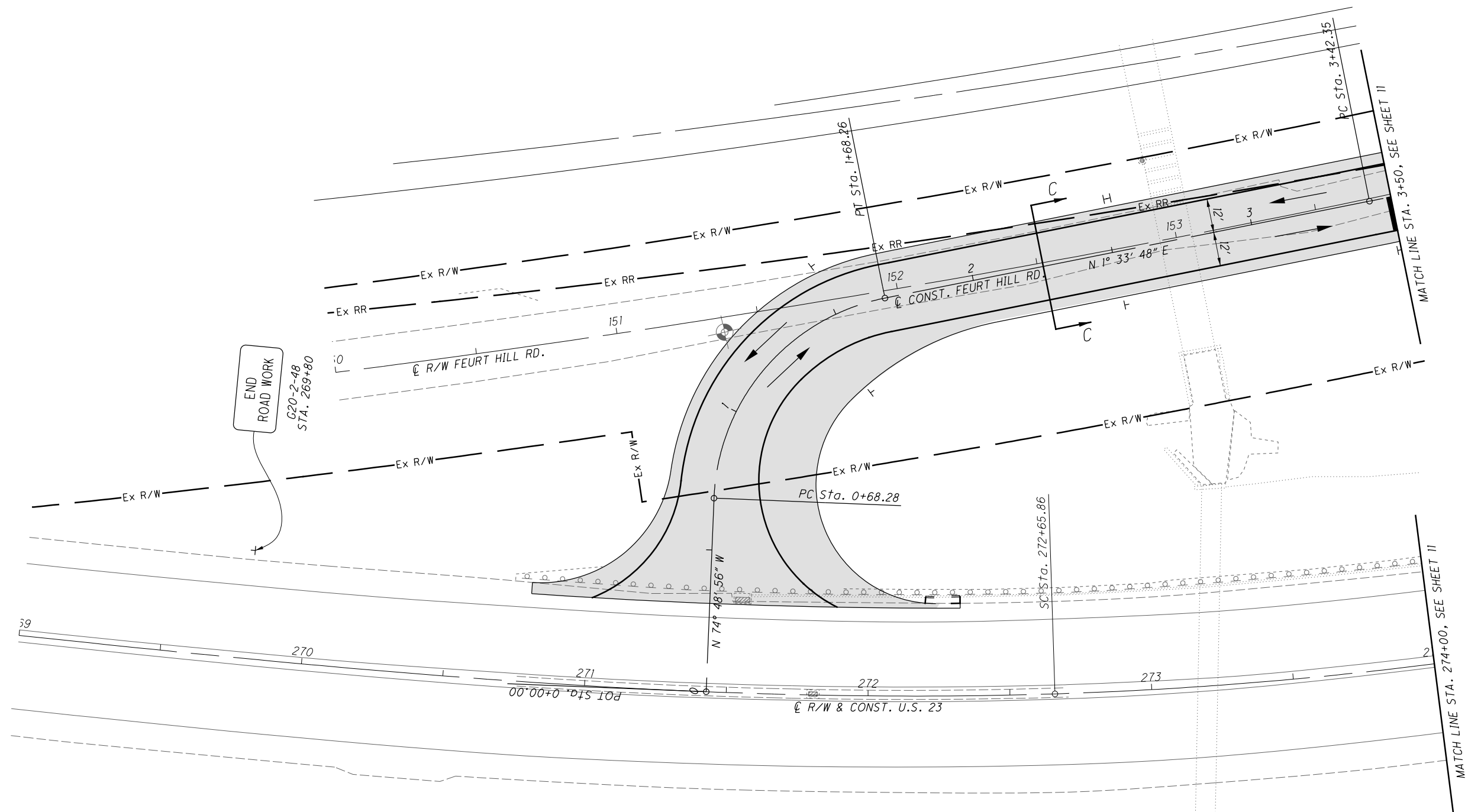
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**MAINTENANCE OF TRAFFIC PLAN  
PHASE 2A**

**SCI-23-5.49**

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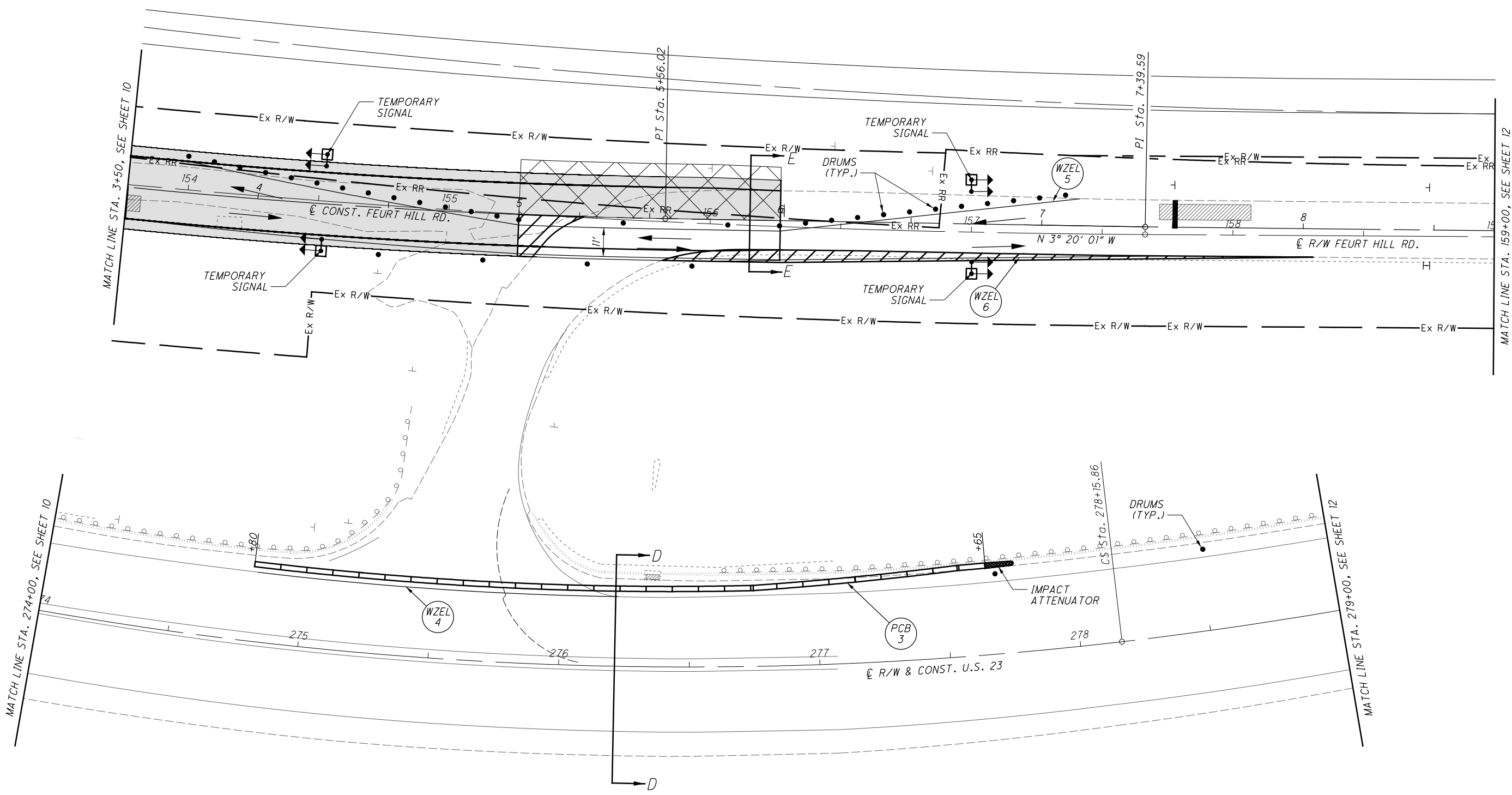
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STA. 269+80



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# MAINTENANCE OF TRAFFIC PLAN PHASE 2A

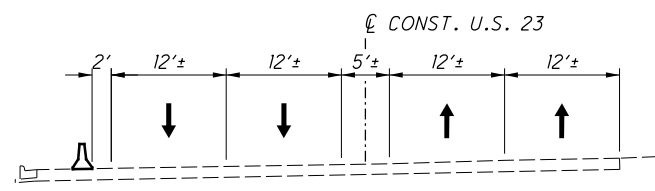
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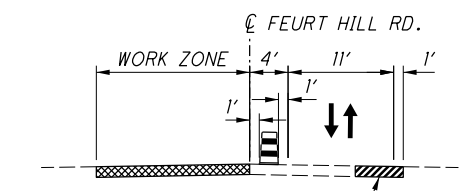
### NOTES

- SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.
- SEE SHEET 13 FOR SIGNING AND TEMPORARY SIGNAL.

MAINTENANCE OF TRAFFIC SECTION D-D

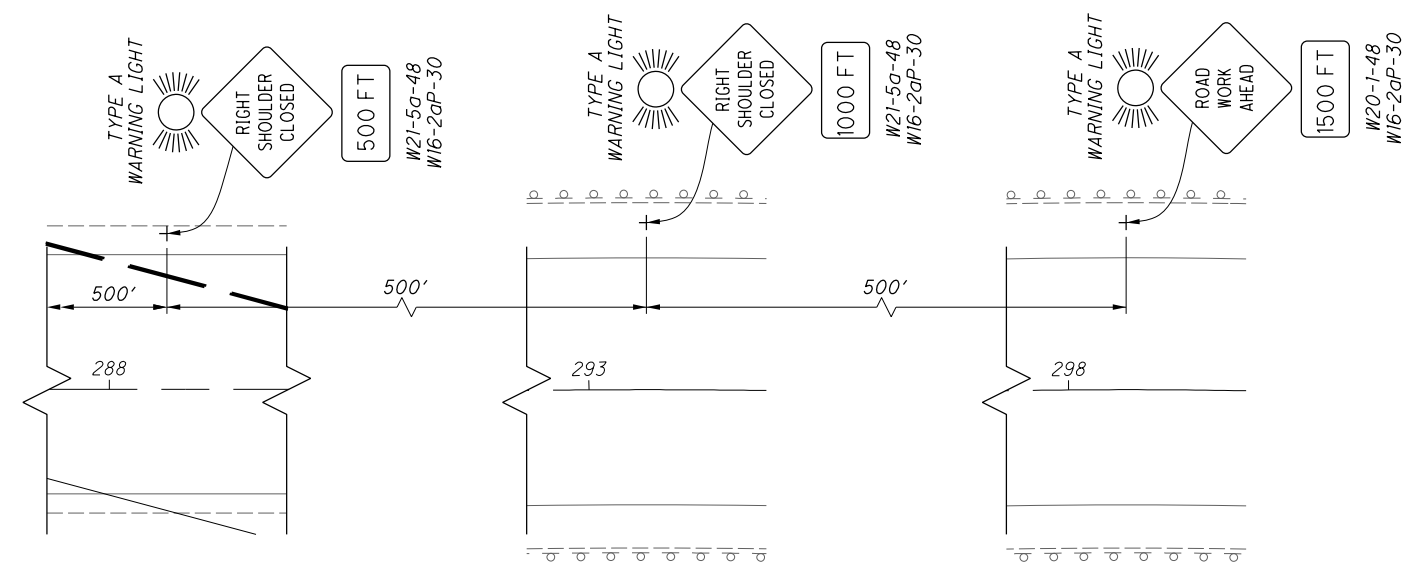
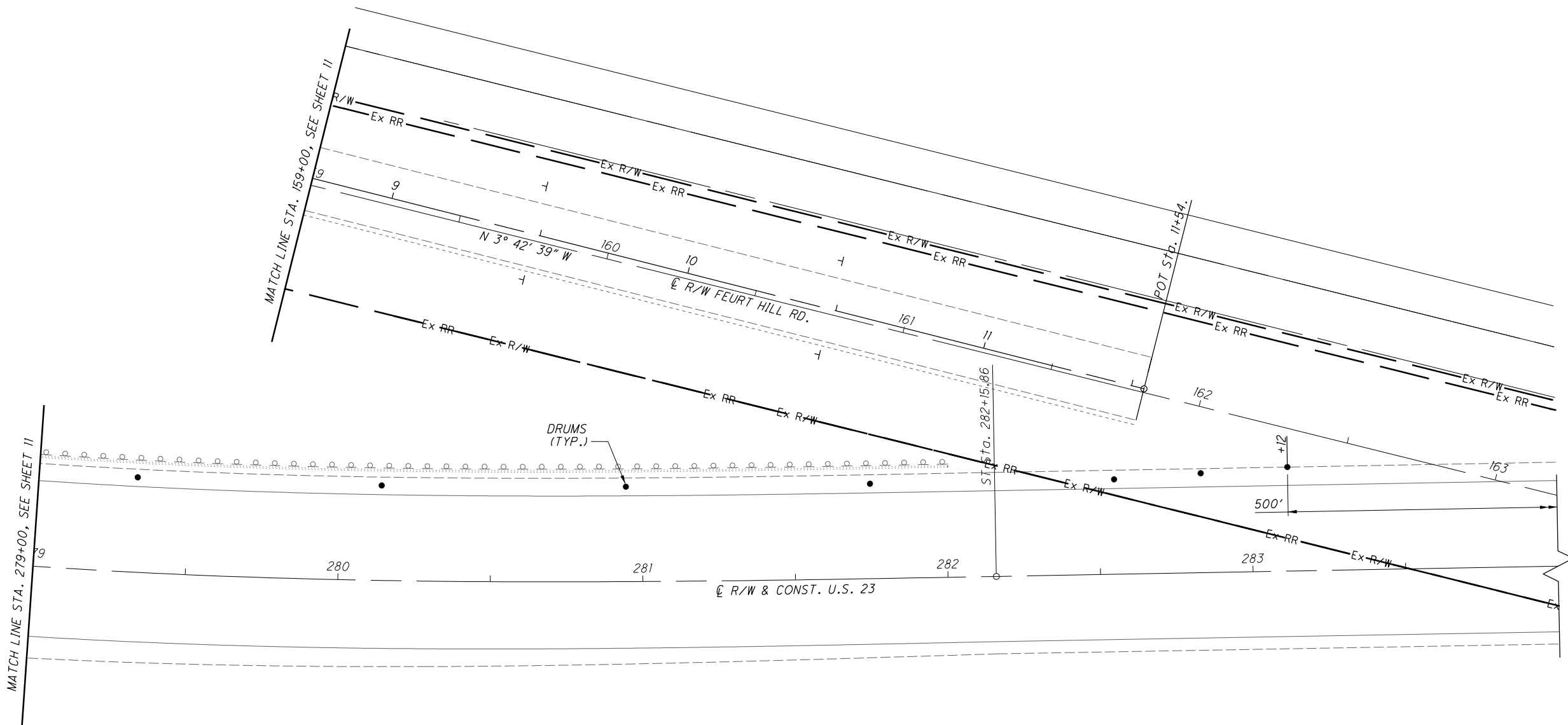


MAINTENANCE OF TRAFFIC SECTION E-E



ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

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**NOTES**

1. SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.
2. SEE SHEET 13 FOR FEURT HILL ROAD SIGNING.

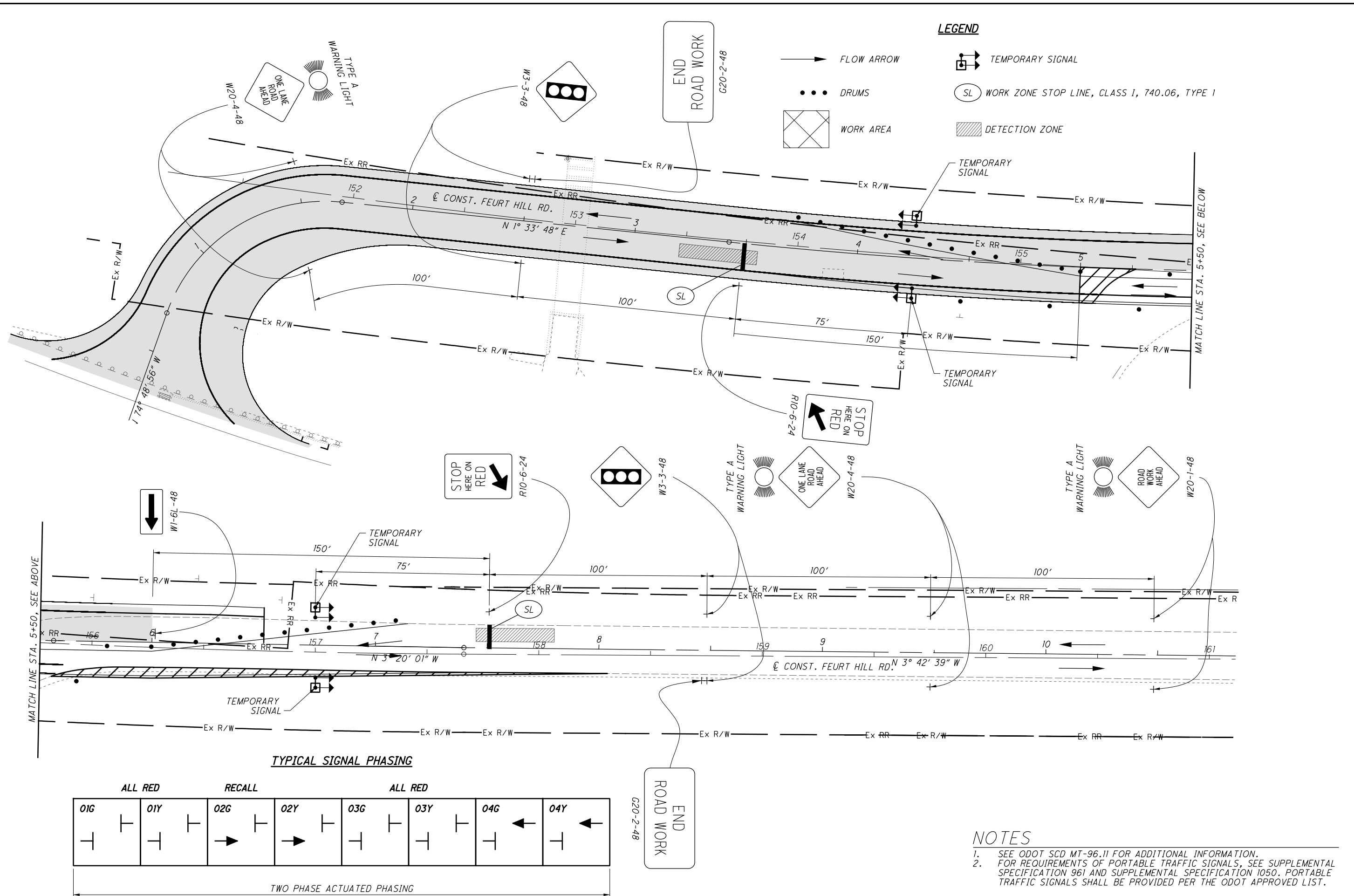
CALCULATED  
 DMG  
 CHECKED  
 MDW

0 10 20 40  
 HORIZONTAL  
 SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 2A**

**SCI-23-5.49**

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**LEGEND**

- FLOW ARROW
- DRUMS
- ⊠ WORK AREA
- ⊠ DETECTION ZONE
- ⊠ TEMPORARY SIGNAL
- SL WORK ZONE STOP LINE, CLASS 1, 740.06, TYPE 1

HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
 PHASE 2A TEMPORARY SIGNAL**

**SCI-23-5.49**

**TYPICAL SIGNAL PHASING**

ALL RED		RECALL		ALL RED			
01G	01Y	02G	02Y	03G	03Y	04G	04Y
⊠	⊠	→	→	⊠	⊠	←	←
TWO PHASE ACTUATED PHASING							

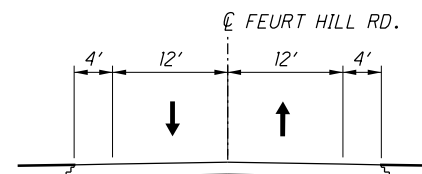
**NOTES**

1. SEE ODOT SCD MT-96.11 FOR ADDITIONAL INFORMATION.
2. FOR REQUIREMENTS OF PORTABLE TRAFFIC SIGNALS, SEE SUPPLEMENTAL SPECIFICATION 961 AND SUPPLEMENTAL SPECIFICATION 1050. PORTABLE TRAFFIC SIGNALS SHALL BE PROVIDED PER THE ODOT APPROVED LIST.

**NOTES**

1. SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.
2. SEE SHEET 17 FOR SIGNING AND TEMPORARY SIGNAL.

**MAINTENANCE OF TRAFFIC SECTION F-F**



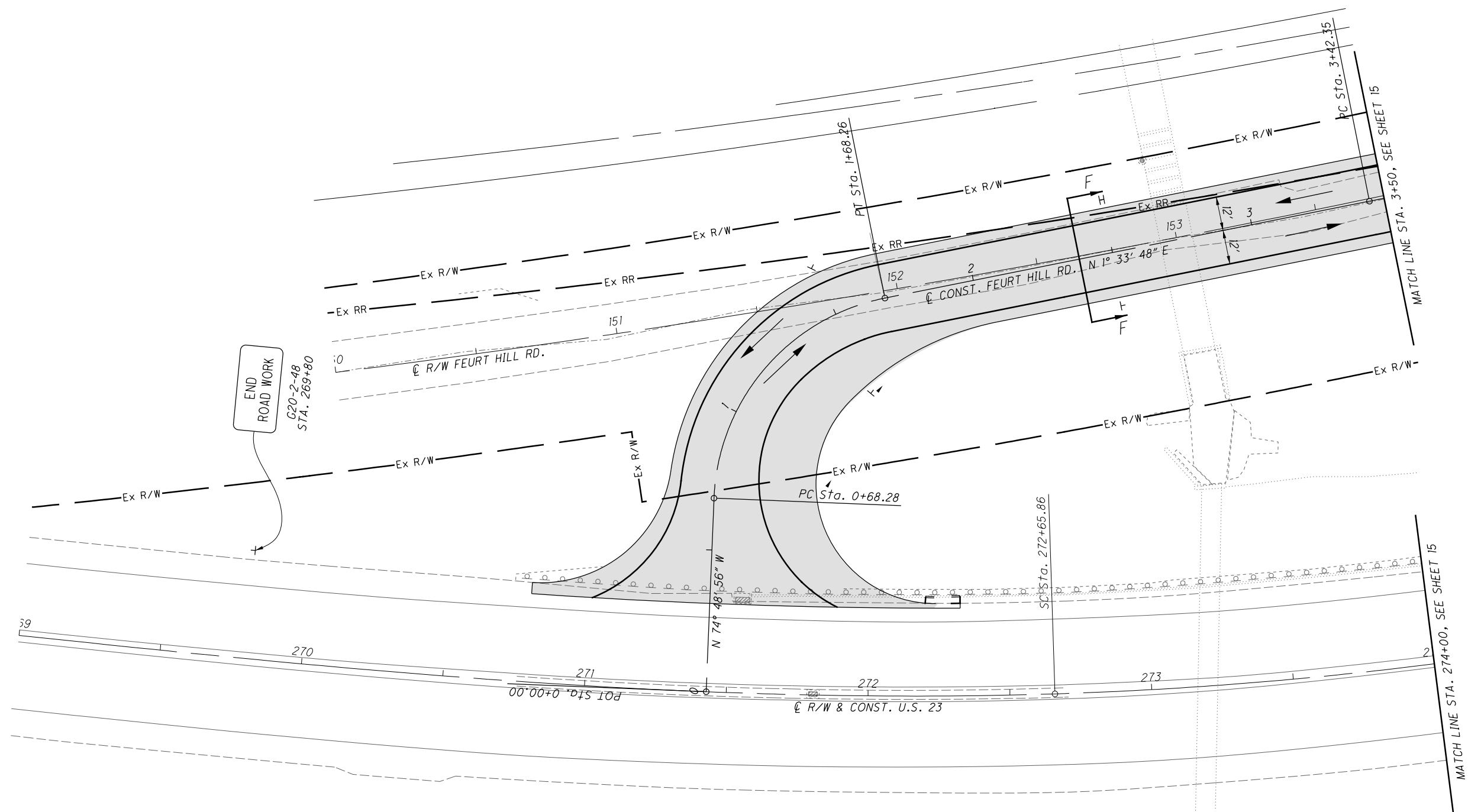
CALCULATED  
DMG  
CHECKED  
MDW

0 20 40  
HORIZONTAL  
SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 2B**

**SCI-23-5.49**

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END  
ROAD WORK  
G20-2-48  
STA. 269+80

MATCH LINE STA. 274+00, SEE SHEET 15

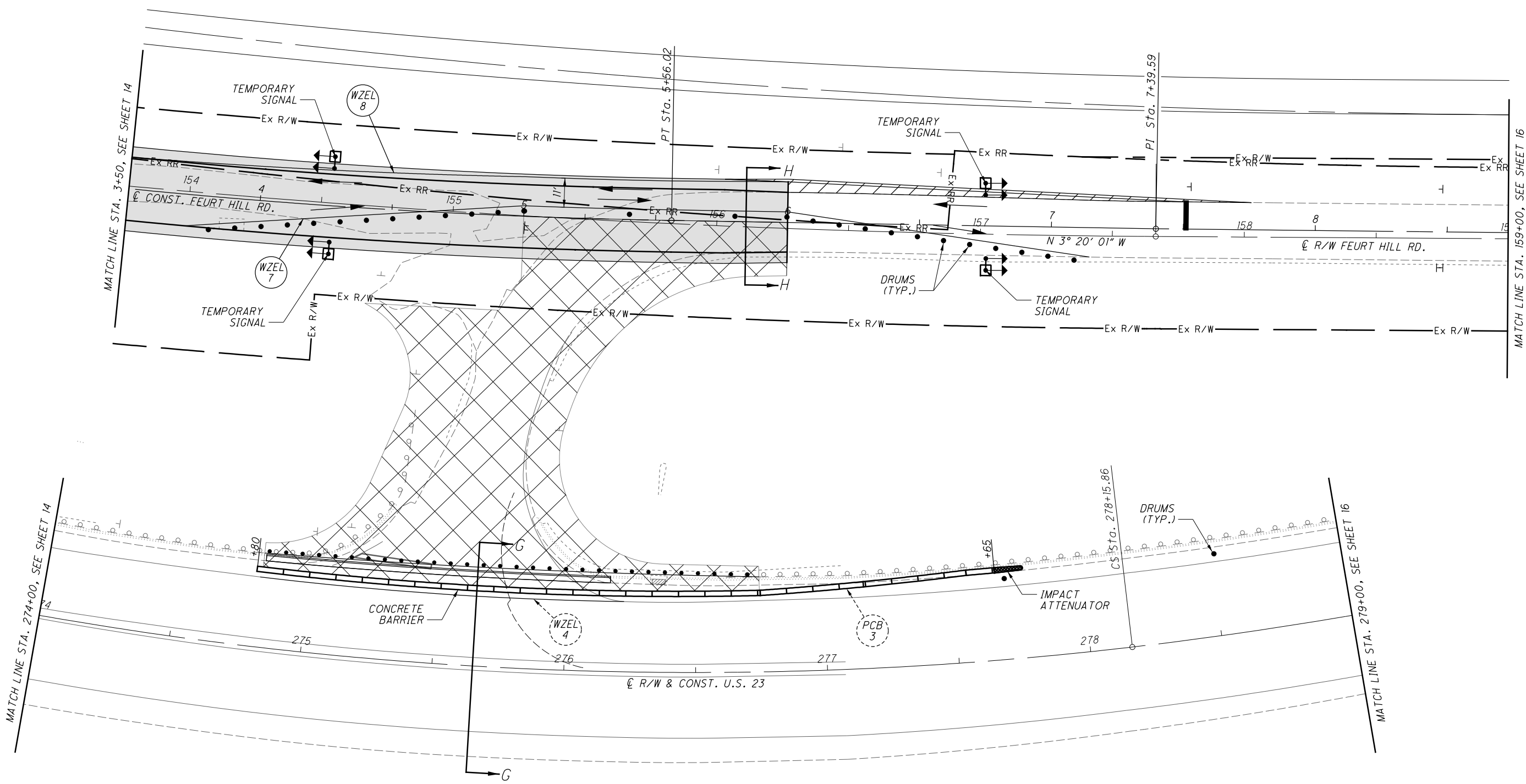
MATCH LINE STA. 3+50, SEE SHEET 15

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 CALCULATED  
 DMG  
 CHECKED  
 MDW

**MAINTENANCE OF TRAFFIC PLAN**  
**PHASE 2B**

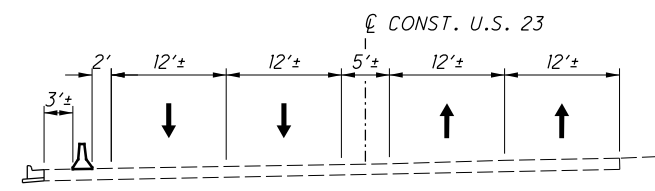
**SCI-23-5.49**



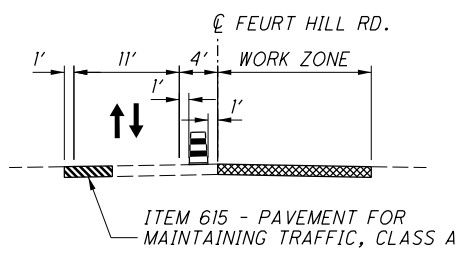
**NOTES**

1. SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.
2. SEE SHEET 17 FOR SIGNING AND TEMPORARY SIGNAL.

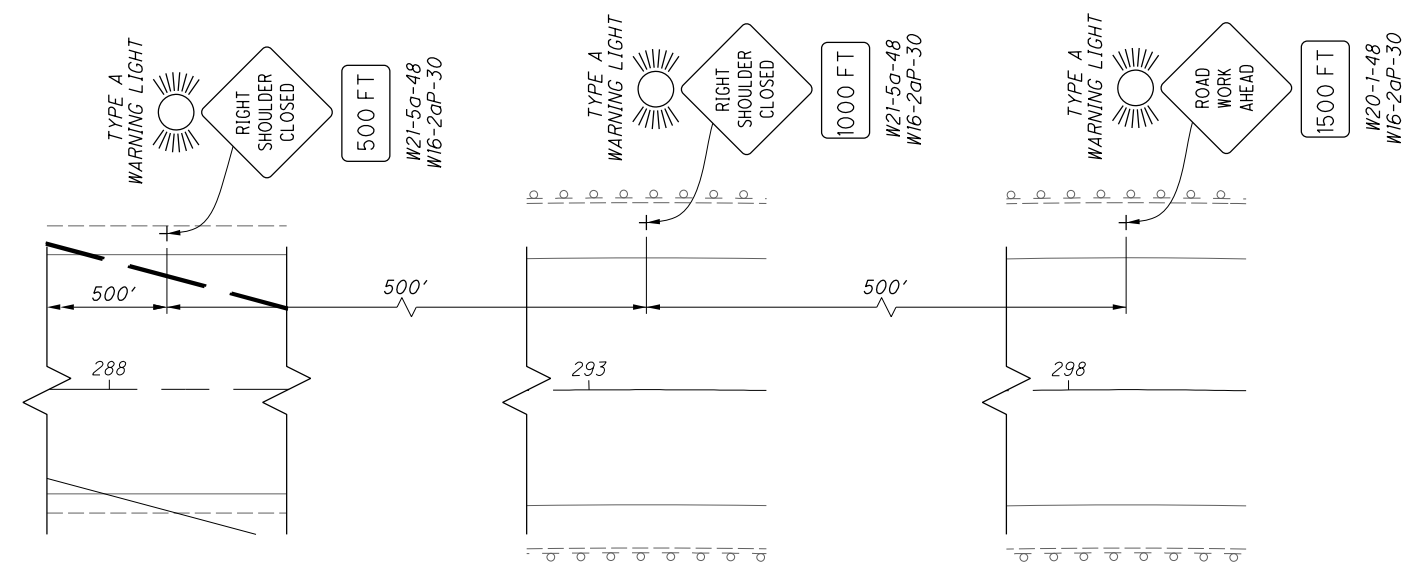
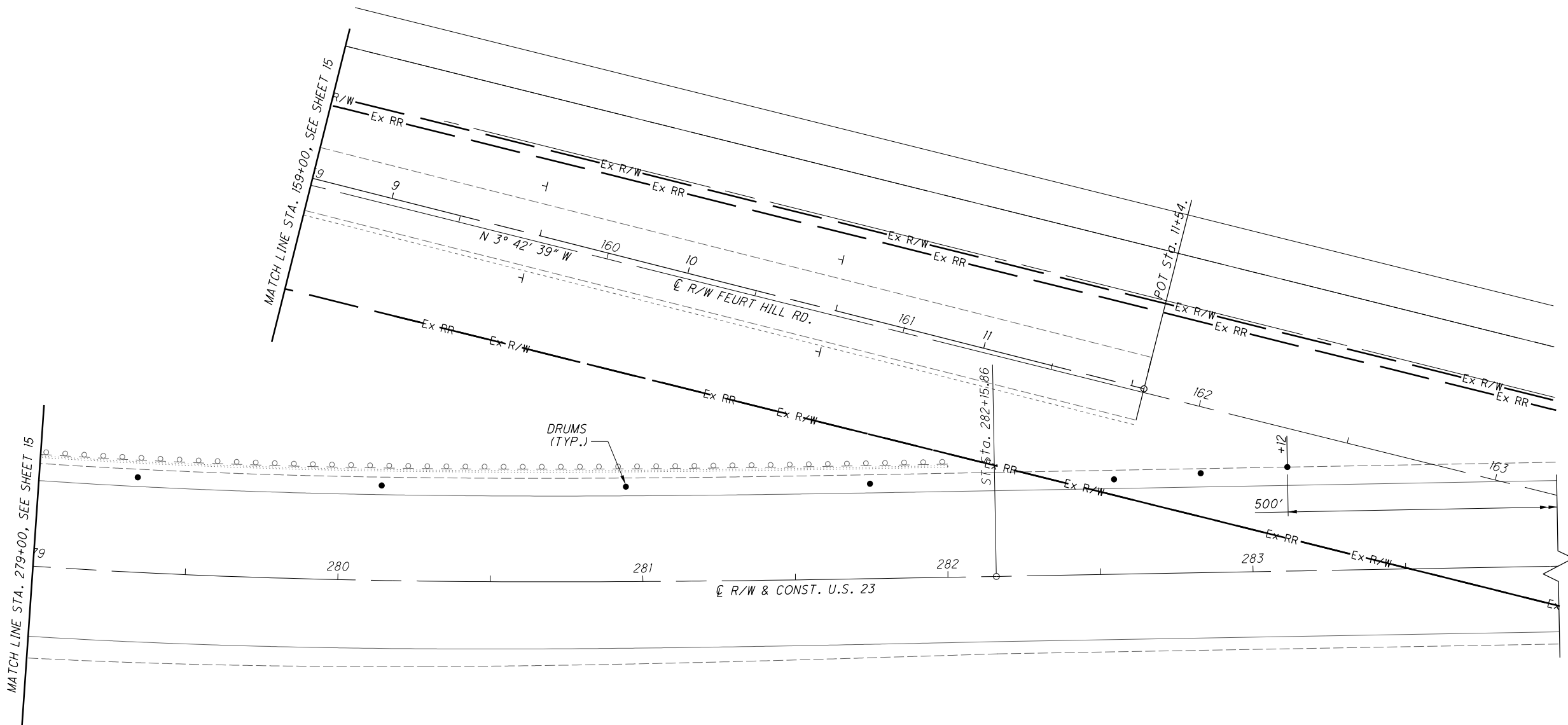
**MAINTENANCE OF TRAFFIC SECTION G-G**



**MAINTENANCE OF TRAFFIC SECTION H-H**







**NOTES**

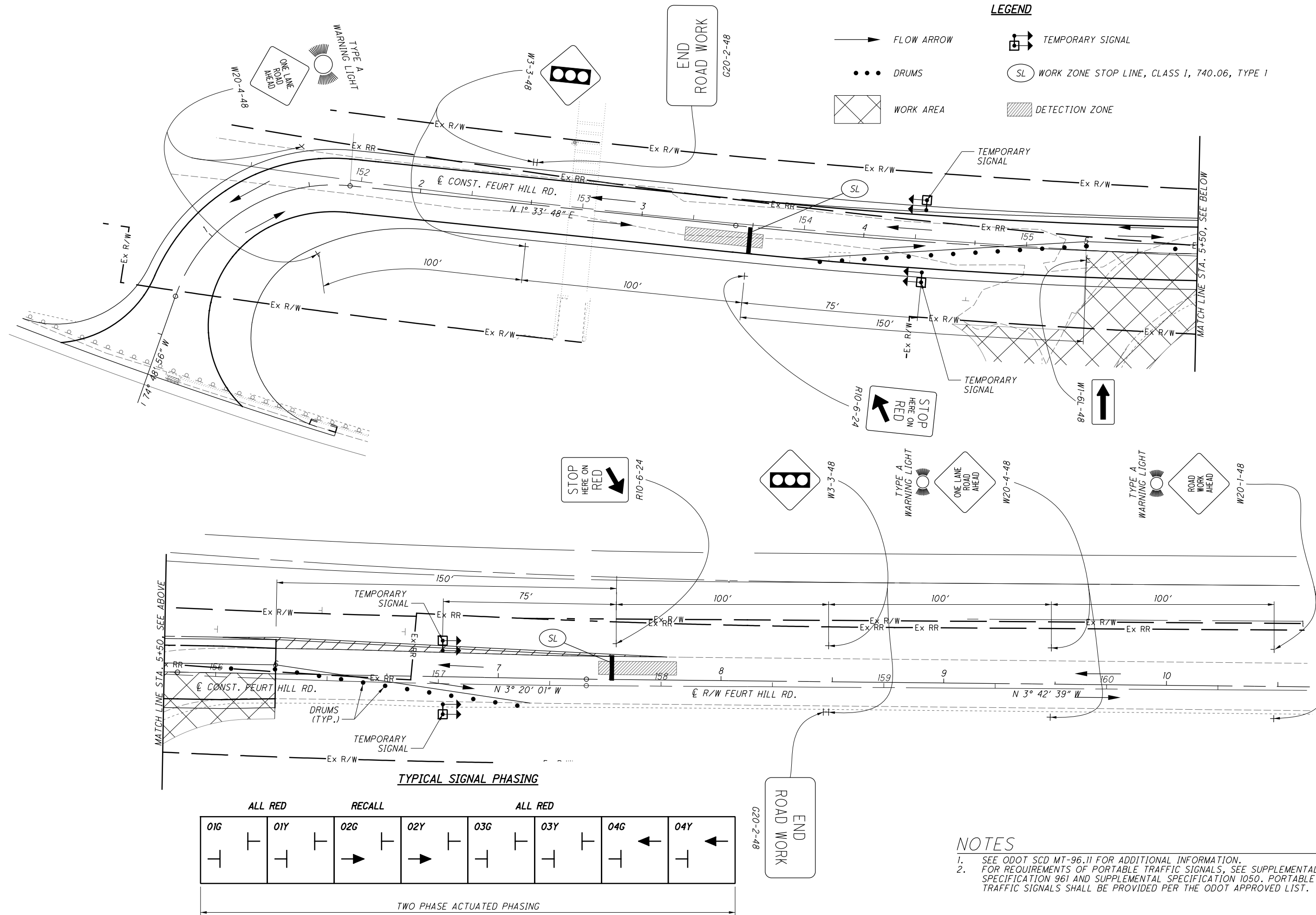
1. SEE SHEET 8 FOR LEGEND AND DRUM SPACING TABLE.
2. SEE SHEET 17 FOR FEURT HILL ROAD SIGNING.

CALCULATED  
DMG  
CHECKED  
MDW

HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 2B**

**SCI-23-5.49**



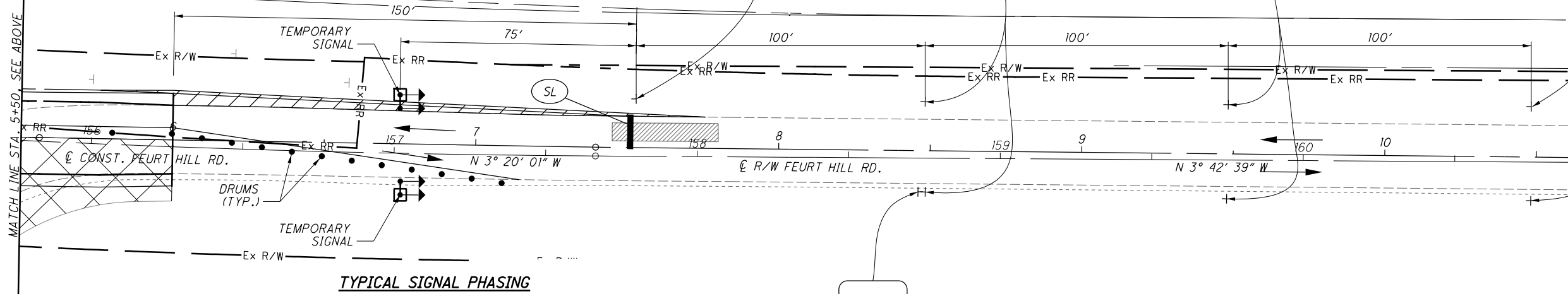
**LEGEND**

- FLOW ARROW
- DRUMS
- ⊠ WORK AREA
- ⊠ DETECTION ZONE
- ⊠ TEMPORARY SIGNAL
- (SL) WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I

0 20 40  
HORIZONTAL SCALE IN FEET

CALCULATED GRS CHECKED MDW

**MAINTENANCE OF TRAFFIC PLAN  
PHASE 2B TEMPORARY SIGNAL**



**TWO PHASE ACTUATED PHASING**

ALL RED		RECALL		ALL RED			
01G	01Y	02G	02Y	03G	03Y	04G	04Y
⊠	⊠	→	→	⊠	⊠	←	←

- NOTES**
- SEE ODOT SCD MT-96.11 FOR ADDITIONAL INFORMATION.
  - FOR REQUIREMENTS OF PORTABLE TRAFFIC SIGNALS, SEE SUPPLEMENTAL SPECIFICATION 961 AND SUPPLEMENTAL SPECIFICATION 1050. PORTABLE TRAFFIC SIGNALS SHALL BE PROVIDED PER THE ODOT APPROVED LIST.

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE	CALCULATED	DMG	CHECKED	MDW
3	4	6	7	18	19	20	21	29	32	34	35	OFFICE		EXT	TOTAL		SHEET NO.						
																		ROADWAY					
LS														201	11000	LS		CLEARING AND GRUBBING	3				
14														201	21800	14	EACH	TREE REMOVED, 18"	3				
				3										202	20010	3	EACH	HEADWALL REMOVED					
				1,693										202	23000	1,693	SY	PAVEMENT REMOVED					
				169										202	32500	169	FT	CURB AND GUTTER REMOVED					
				197										202	35100	197	FT	PIPE REMOVED, 24" AND UNDER					
				260										202	38000	260	FT	GUARDRAIL REMOVED					
				1										202	58100	1	EACH	CATCH BASIN REMOVED					
								1,780	177	433	15			203	10000	2,405	CY	EXCAVATION					
								1,802	37	433	104			203	20000	2,376	CY	EMBANKMENT					
												2,522		204	10000	2,522	SY	SUBGRADE COMPACTION					
				188										606	15050	188	FT	GUARDRAIL, TYPE MGS					
				350										606	15100	350	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS					
				1										606	25000	1	EACH	ANCHOR ASSEMBLY, TYPE A					
														622	41100	670	FT	PORTABLE BARRIER, UNANCHORED					
																		EROSION CONTROL					
	5													601	32200	5	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER					
					17									601	32204	17	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC					
723.2					60									659	00300	783.2	CY	TOPSOIL				3	
6,515														659	10000	6,515	SY	SEEDING AND MULCHING				3	
325.8														659	14000	325.8	SY	REPAIR SEEDING AND MULCHING				3	
														659	20000	0.88	TON	COMMERCIAL FERTILIZER				3	
0.88														659	31000	0.15	ACRE	LIME				3	
0.15														659	35000	35.2	MGAL	WATER				3	
35.2														670	00500	434	SY	SLOPE EROSION PROTECTION					
														670	00700	90	SY	DITCH EROSION PROTECTION					
													LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN					
													LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS					
													LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE					
													21,203	832	30000	21,203	EACH	EROSION CONTROL					
																		DRAINAGE					
					0.9									602	20000	0.9	CY	CONCRETE MASONRY					
					1,160									605	06000	1,160	FT	4" BASE PIPE UNDERDRAINS					
					45									611	00410	45	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET					
	50													611	01400	50	FT	6" CONDUIT, TYPE E				4	
	50													611	01500	50	FT	6" CONDUIT, TYPE F				4	
														611	04400	50	FT	12" CONDUIT, TYPE B				4	
														611	04400	98	FT	12" CONDUIT, TYPE B, 706.01, 706.02, 707.34, 707.35, 707.42, 707.43, 707.45, 707.47, 707.65					
														611	04400	22	FT	12" CONDUIT, TYPE B, 706.02					
														611	05700	111	FT	15" CONDUIT, TYPE A, 706.01, 706.02; 18" 707.01, 707.04, 707.05					
														611	98150	1	EACH	CATCH BASIN, NO. 3					
														611	99574	1	EACH	MANHOLE, NO. 3					
														611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET					
																		PAVEMENT					
													472	301	46000	472	CY	ASPHALT CONCRETE BASE, PG64-22					
													428	304	20000	428	CY	AGGREGATE BASE					
													330	407	10000	330	GAL	TACK COAT					
													82	441	10000	82	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22					
													115	441	50200	115	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)					
													137	609	12000	137	FT	COMBINATION CURB AND GUTTER, TYPE 2					
																		TRAFFIC CONTROL					
				106										620	60000	106	EACH	DELINEATOR, POST SURFACE MOUNTED					
				11										626	00110	11	EACH	BARRIER REFLECTOR, TYPE 2					
														630	03100	70	FT	GROUND MOUNTED SUPPORT, NO. 3 POST					
														630	08600	1	EACH	SIGN POST REFLECTOR					
														630	80100	43	SF	SIGN, FLAT SHEET					

GENERAL SUMMARY

SCI-23-5.49

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE	
3	4	6	7	20	21	22	23	29	32	34	35	OFFICE	01/SAF/ OT	EXT	TOTAL		SHEET			
							11						11	630	84900	11	EACH	TRAFFIC CONTROL (CONT.) REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		
							7						7	630	86002	7	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		
						0.25							0.25	644	00100	0.25	MILE	EDGE LINE, 4"		
						0.11							0.11	644	00300	0.11	MILE	CENTER LINE		
						23							23	644	00500	23	FT	STOP LINE		
			850										850	644	30000	850	FT	REMOVAL OF PAVEMENT MARKING		
		80											80	614	11110	80	HR	MAINTENANCE OF TRAFFIC LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	6	
			4										4	614	12380	4	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	5	
			12										12	614	13310	12	EACH	BARRIER REFLECTOR, TYPE 1, 1 WAY		
			3										3	614	13310	3	EACH	BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL		
			12										12	614	13350	12	EACH	OBJECT MARKER, ONE WAY		
													3	614	13360	3	EACH	OBJECT MARKER, TWO WAY		
			1										1	614	18600	1	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN		
			0.04										0.04	614	21100	0.04	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT		
			0.09										0.09	614	22110	0.09	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT		
			0.41										0.41	614	22200	0.41	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 740.06, TYPE I		
													38	614	26200	38	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT		
													157	615	20000	157	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A		
		11.5											11.5	616	10000	11.5	MGAL	WATER	6	
													LS	LS	614	11000	LS	INCIDENTALS MAINTAINING TRAFFIC		
													4	4	619	16000	4	MNTH	FIELD OFFICE, TYPE A	
													LS	LS	623	10000	LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING		
													LS	LS	624	10000	LS	MOBILIZATION		

GENERAL SUMMARY

SCI-23-5.49

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REF NO.	SHEET NO.	STATION TO STATION		ROUTE SIDE		202	202	202	202	202	202	606	606	606	620	626						
						HEADWALL REMOVED EACH	PAVEMENT REMOVED SY	CURB AND CUTTER REMOVED FT	PIPE REMOVED, 24" AND UNDER FT	GUARDRAIL REMOVED FT	CATCH BASIN REMOVED EACH	GUARDRAIL, TYPE MGS FT	GUARDRAIL, TYPE MGS WITH LONG POSTS FT	ANCHOR ASSEMBLY, TYPE A EACH	DELINEATOR, POST SURFACE MOUNTED EACH	BARRIER REFLECTOR, TYPE 2 EACH						
R1	25	270+72.42	TO	272+25.51	U.S. 23	LT				154.10												
R2	25	270+79.28	TO	272+32.77	U.S. 23	LT		39.8														
R3	25	0+28.81	TO	0+72.19	FEURT	RT	1		41.6		1											
R4	25	271+56.63	TO	272+32.74	U.S. 23	LT			74.6													
R5	25-26	0+31.17	TO	5+26.45	FEURT	CL		884.3														
R6	25-26	3+95.30	TO	5+47.85	FEURT	RT	2		154.8													
R7	25	274+82.19	TO	275+36.17	U.S. 23	LT				92.7												
R8	25	274+83.07	TO	275+31.62	U.S. 23	LT			55.9													
R9	25-26	4+12.42	TO	6+00.00	FEURT	RT		768.1														
R10	26	275+87.24	TO	276+16.95	U.S. 23	LT			37.8													
R11	26	276+61.78	TO	276+74.63	U.S. 23	LT				12.5												
DP1	25	270+76.00	TO	274+99.00	U.S. 23	LT								53								
DP2	25	270+76.00	TO	274+99.00	U.S. 23	RT								53								
GR1	25	0+37.47	TO	4+30.78	FEURT	RT						350	1								8	
GR2	25-26	274+82.19	TO	276+74.63	U.S. 23	LT					187.5											3
<b>TOTALS TO GENERAL SUMMARY</b>							3	1693	169	197	260	1		188	350	1		106				11

CALCULATED	DMG
	CHECKED
MDW	
<b>ROADWAY SUBSUMMARY</b>	
<b>SCI-23-5.49</b>	
20 39	

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REF NO.	SHEET NO.	STATION TO STATION		ROUTE	SIDE	601 ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC 602 CONCRETE MASONRY 605 4" BASE PIPE UNDERDRAINS 611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET 611 15" CONDUIT, TYPE A, 706.01, 706.02; 18" 707.01, 707.04, 707.05 611 12" CONDUIT, TYPE B, 706.02 611 12" CONDUIT, TYPE B, 706.01, 706.02, 707.34, 707.35, 707.42, 707.43, 707.45, 707.47, 707.65 611 CATCH BASIN, NO. 3 611 MANHOLE, NO. 3 611 PRECAST REINFORCED CONCRETE OUTLET 659 TOPSOIL 670 SLOPE EROSION PROTECTION 670 DITCH EROSION PROTECTION													
		CY	TO			FEURT	CY	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	CY	SY	SY
D1	25	0+72.89	TO	1+69.03	FEURT	CL	5.83	0.66			111.00								
D2	25	271+80.58	TO	271+42.95	U.S. 23	LT					22								
D3	25	271+42.95	TO	272+26.56	U.S. 23	LT						83	1						
D4	25	272+26.56	TO	272+27.37	U.S. 23	LT	10.89	0.21				15	1						
UD1	25	0+37.03	TO	2+50.00	FEURT	LT						262.3							
UD2	25	0+35.25	TO	2+50.00	FEURT	RT						197.6							
UD3	25	2+50.00	TO	2+50.00	FEURT	CL				44.4				1					
UD4	25-26	6+00.00	TO	2+50.00	FEURT	LT						348.6							
UD5	25-26	6+00.00	TO	2+50.00	FEURT	RT						351.5							
VFS1	24	5+50.00	TO	5+00.00	FEURT	RT								9.7	86.2				
VFS2	24	5+00.00	TO	4+50.00	FEURT	RT								10.1	90.4				
VFS3	24	4+50.00	TO	4+00.00	FEURT	RT								14.9	133.4				
VFS4	24	1+01.00	TO	0+76.00	FEURT	LT								6.1	54.3				
VFS5	24	0+44.00	TO	0+70.00	FEURT	LT								7.8	69.4				
VBF1	24	1+00.00	TO	2+00.00	FEURT	LT								11.4		89.7			
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>							17.00	0.90	1160	45	111	22	98	1	1	1	60	434	90

CALCULATED DMG CHECKED MDW	SCI-23-5.49 <b>DRAINAGE SUBSUMMARY</b>
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REF NO.	SHEET NO.	STATION TO STATION			ROUTE	SIDE	644	644	644												
		EDGE LINE, 4"	CENTER LINE	STOP LINE			MILE	MILE	FT												
EL-1	38-39	0+31.57	TO	6+00.00	FEURT HILL	LT	0.11														
EL-2	38-39	0+31.65	TO	6+00.00	FEURT HILL	RT	0.11														
EL-3	39		TO		U.S. 23	LT	0.03														
DY-1	38-39	0+44.59	TO	6+00.00	FEURT HILL	€		0.11													
SL-1	38	0+44.59	TO	0+44.59	FEURT HILL	LT			23.00												
<b>SUBTOTALS</b>							0.25	0.11	23.00												
<b>TOTALS TO SHEET</b>							0.25	0.11	23												

<b>SCI-23-5.49</b>	CALCULATED
	DMG CHECKED MDW

**PAVEMENT MARKING SUBSUMMARY**



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REF NO.	SHEET NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630	630	630	630	630										
							GROUND MOUNTED SUPPORT, NO. 3 POST	SIGN POST REFLECTOR	SIGN, FLAT SHEET	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	FT	EACH	SF	EACH	EACH					
S1	38	U.S. 23	270+04	LT	M3-3-36 M1-4-36-2	24" x 12" 24" x 24"	12.0		2.0 4.0												
S2	38	FEURT HILL RD	0+49	LT	R1-1-36 D3-1-60 D3-1-60	36" x 36" 60" x 12" 60" x 12"	13.0	1	9.0 5.0 5.0												
S3	38	FEURT HILL RD	0+88	LT	W1-8L-18	18" x 24"	11.0		3.0												
S4	38	FEURT HILL RD	1+28	LT	W1-8L-18	18" x 24"	11.0		3.0												
S5	38	FEURT HILL RD	1+68	LT	W1-8L-18	18" x 24"	11.0		3.0												
S6	38	FEURT HILL RD	2+50	LT	W1-2L-36	36" x 36"	12.0		9.0												
S7	39	U.S. 23	274+25	LT						1	2										
S8	39	U.S. 23	275+02	LT						2	2										
S9	39	U.S. 23	275+15	LT						1	2										
S10	39	U.S. 23	275+95	LT						1	3										
S11	39	FEURT HILL RD	5+75	LT						1	1										
S12	39	FEURT HILL RD	6+58	LT						1	1										
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>							70	1	43		7	11									

<b>SIGNING SUBSUMMARY</b>	CALCULATED
	DMG CHECKED MDW
SCI-23-5.49	23 39

VEGETATED FILTER STRIP LOCATIONS

	BEGIN	END	ROUTE	WIDTH	T AREA	NORTHING	EASTING
VFS #1	5+50.00, 29.0' RT.	5+00.00, 31.5' RT.	FEURT HILL	15.5'	0.04 AC	292741.67	1830514.25
VFS #2	5+00.00, 31.5' RT.	4+50.00, 33.6' RT.	FEURT HILL	16.3'	0.04 AC	292691.55	1830516.97
VFS #3	4+50.00, 33.6' RT.	4+00.00, 47.0' RT.	FEURT HILL	24'	0.05 AC	292638.97	1830521.73
VFS #4	1+01.00, 32.5' LT.	0+76.00, 39.2' LT.	FEURT HILL	19.5'	0.03 AC	292295.68	1830512.92
VFS #5	0+62.00, 46.8' LT.	0+70.00, 42.9' LT.	FEURT HILL	24'	0.05 AC	292277.21	1830541.69

VEGETATED BIOFILTER LOCATION

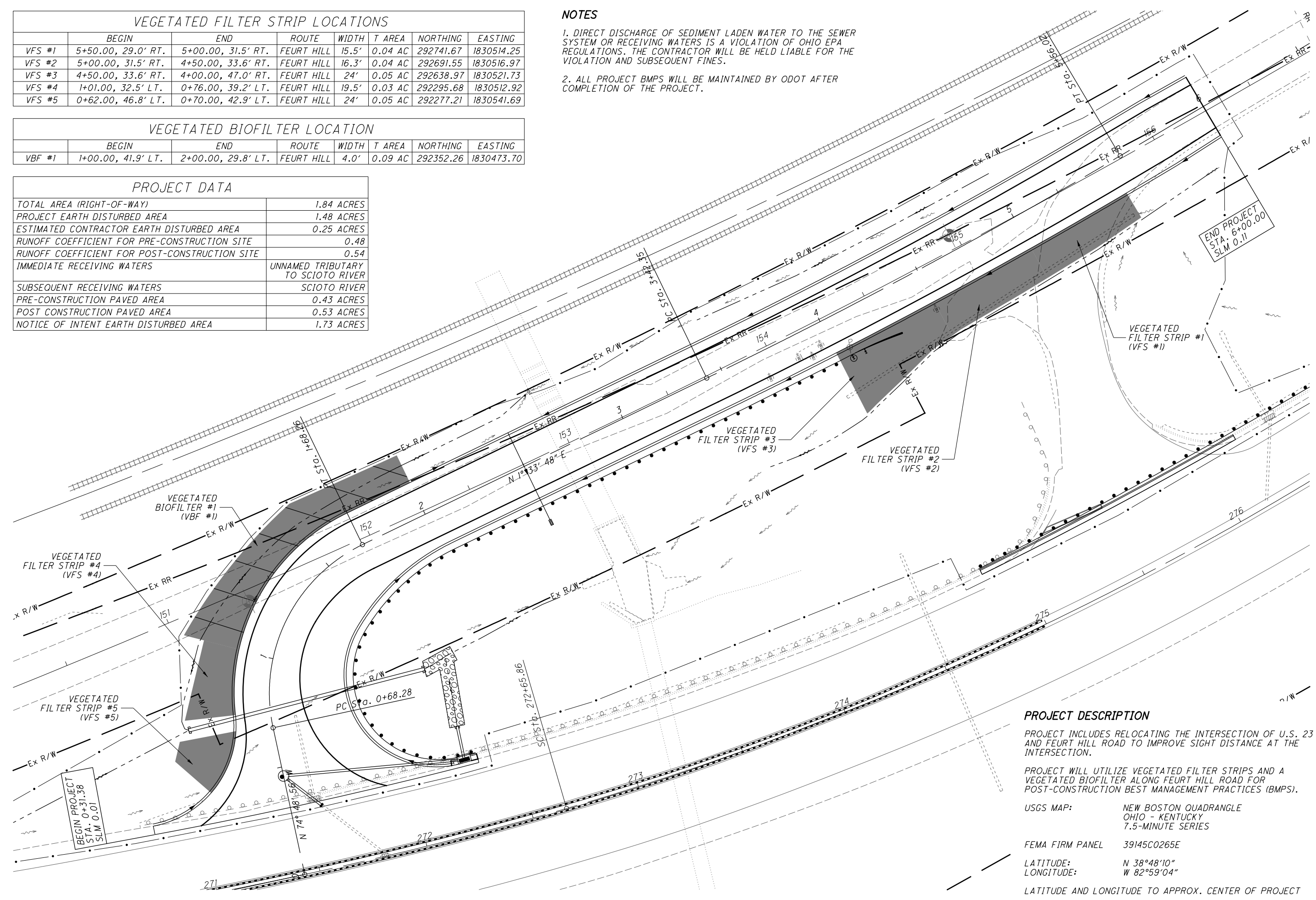
	BEGIN	END	ROUTE	WIDTH	T AREA	NORTHING	EASTING
VBF #1	1+00.00, 41.9' LT.	2+00.00, 29.8' LT.	FEURT HILL	4.0'	0.09 AC	292352.26	1830473.70

PROJECT DATA

TOTAL AREA (RIGHT-OF-WAY)	1.84 ACRES
PROJECT EARTH DISTURBED AREA	1.48 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.25 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.48
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.54
IMMEDIATE RECEIVING WATERS	UNNAMED TRIBUTARY TO SCIOTO RIVER
SUBSEQUENT RECEIVING WATERS	SCIOTO RIVER
PRE-CONSTRUCTION PAVED AREA	0.43 ACRES
POST CONSTRUCTION PAVED AREA	0.53 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	1.73 ACRES

NOTES

1. DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO THE SEWER SYSTEM OR RECEIVING WATERS IS A VIOLATION OF OHIO EPA REGULATIONS. THE CONTRACTOR WILL BE HELD LIABLE FOR THE VIOLATION AND SUBSEQUENT FINES.
2. ALL PROJECT BMPS WILL BE MAINTAINED BY ODOT AFTER COMPLETION OF THE PROJECT.



PROJECT DESCRIPTION

PROJECT INCLUDES RELOCATING THE INTERSECTION OF U.S. 23 AND FEURT HILL ROAD TO IMPROVE SIGHT DISTANCE AT THE INTERSECTION.

PROJECT WILL UTILIZE VEGETATED FILTER STRIPS AND A VEGETATED BIOFILTER ALONG FEURT HILL ROAD FOR POST-CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPS).

USGS MAP: NEW BOSTON QUADRANGLE  
OHIO - KENTUCKY  
7.5-MINUTE SERIES

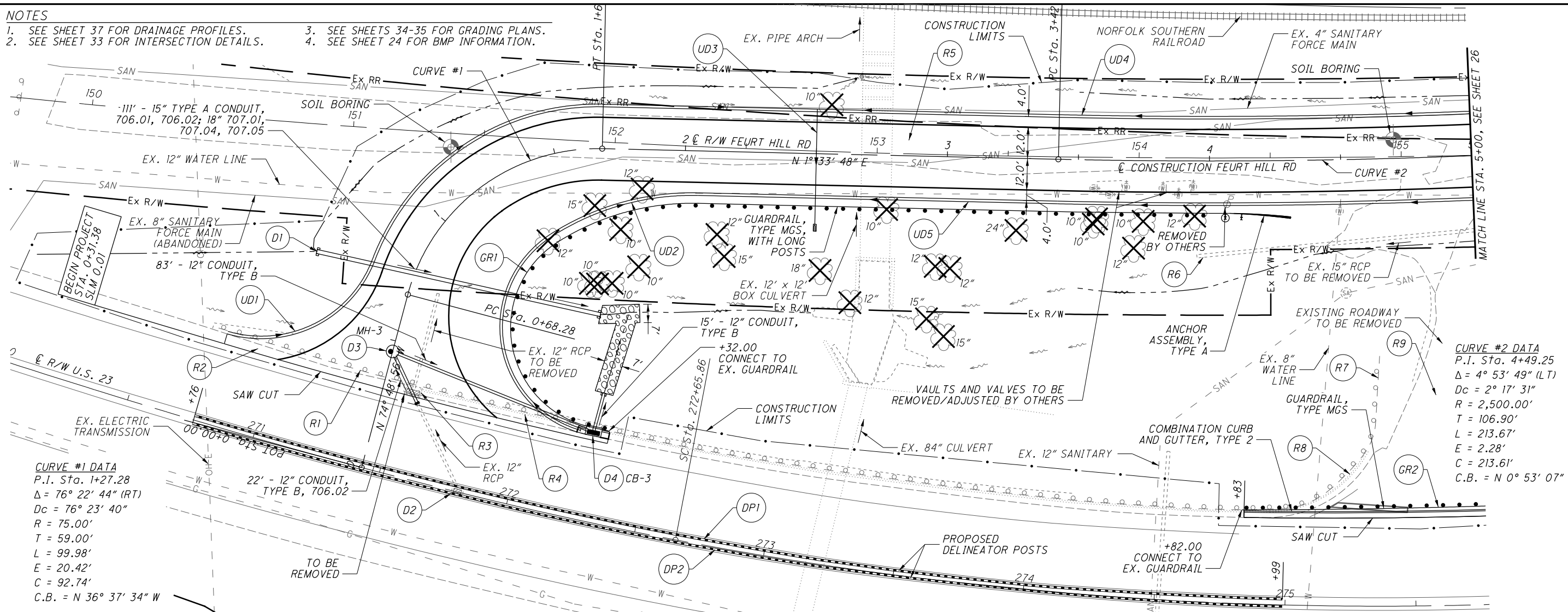
FEMA FIRM PANEL 39145C0265E

LATITUDE: N 38°48'10"  
LONGITUDE: W 82°59'04"

LATITUDE AND LONGITUDE TO APPROX. CENTER OF PROJECT

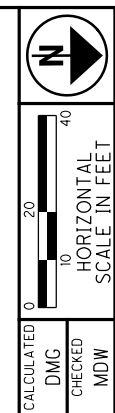
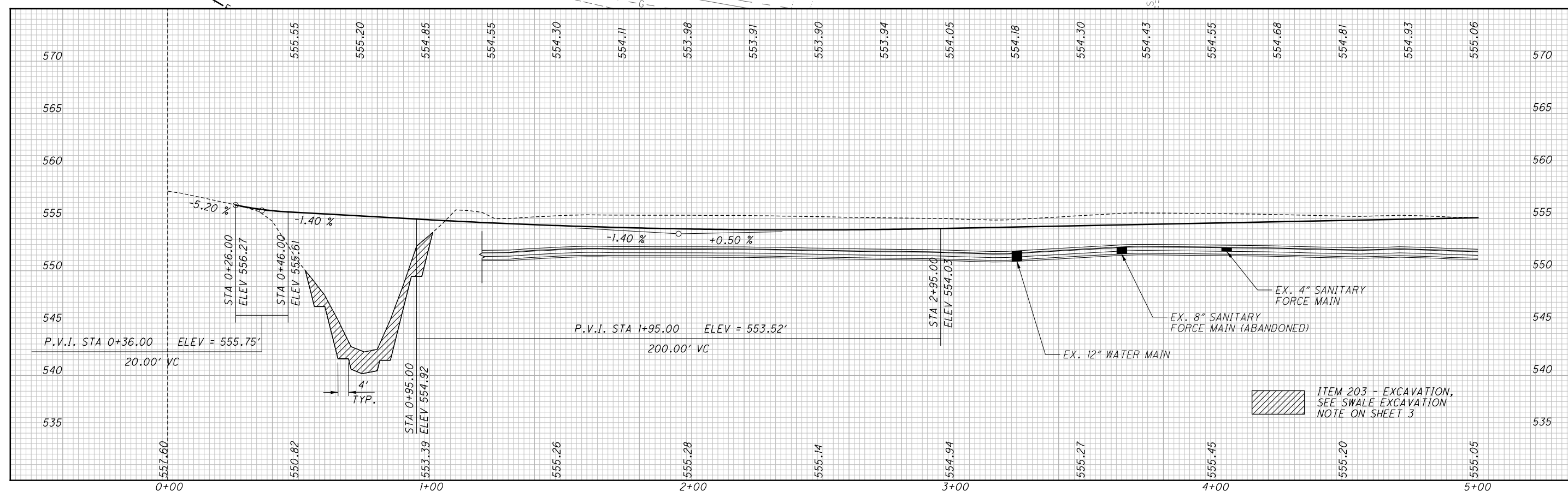
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- NOTES**
- SEE SHEET 37 FOR DRAINAGE PROFILES.
  - SEE SHEET 33 FOR INTERSECTION DETAILS.
  - SEE SHEETS 34-35 FOR GRADING PLANS.
  - SEE SHEET 24 FOR BMP INFORMATION.



**CURVE #1 DATA**  
 P.I. Sta. 1+27.28  
 $\Delta = 76^\circ 22' 44''$  (RT)  
 $D_c = 76^\circ 23' 40''$   
 $R = 75.00'$   
 $T = 59.00'$   
 $L = 99.98'$   
 $E = 20.42'$   
 $C = 92.74'$   
 C.B. = N 36° 37' 34" W

**CURVE #2 DATA**  
 P.I. Sta. 4+49.25  
 $\Delta = 4^\circ 53' 49''$  (LT)  
 $D_c = 2^\circ 17' 31''$   
 $R = 2,500.00'$   
 $T = 106.90'$   
 $L = 213.67'$   
 $E = 2.28'$   
 $C = 213.61'$   
 C.B. = N 0° 53' 07" W

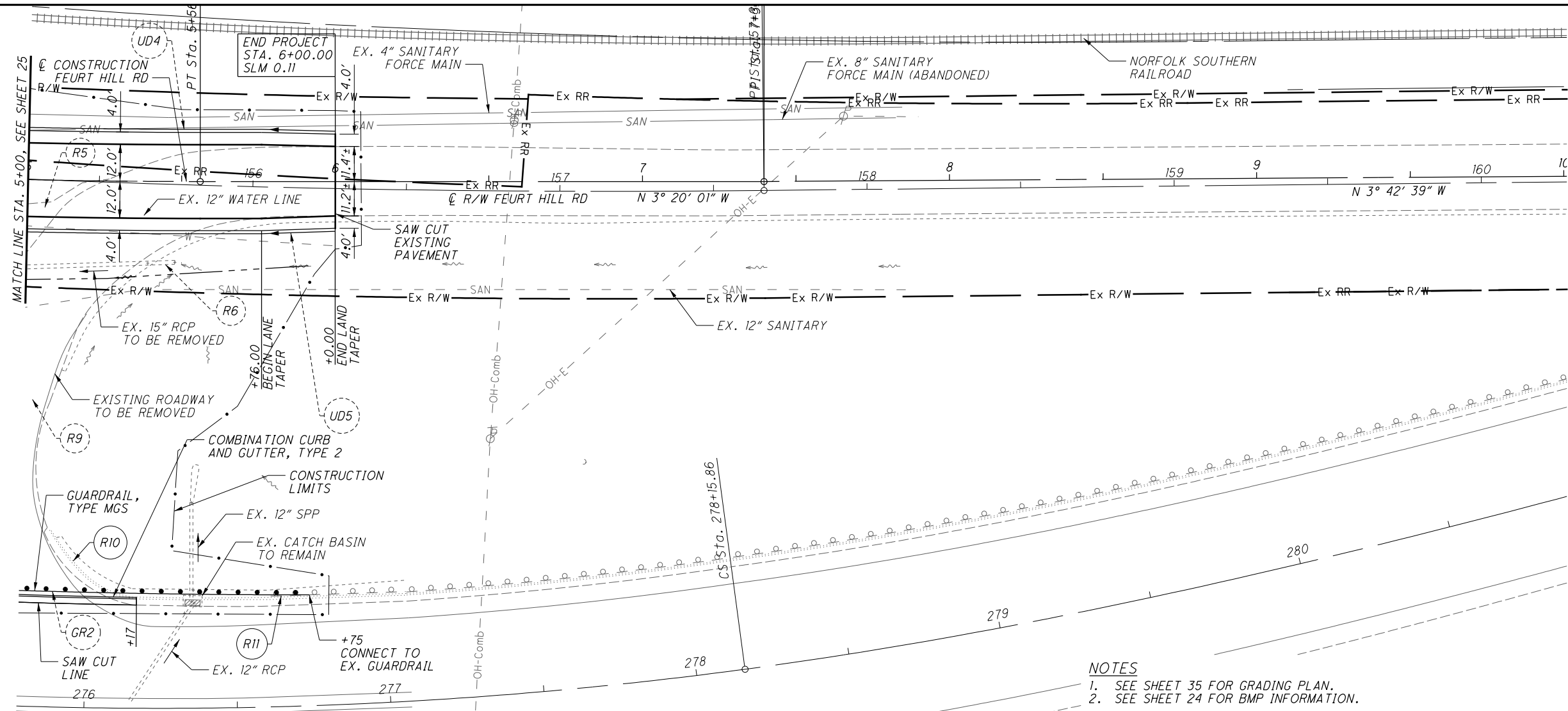


**PLAN AND PROFILE**  
**STA. 0+00.00 TO STA. 5+00.00**

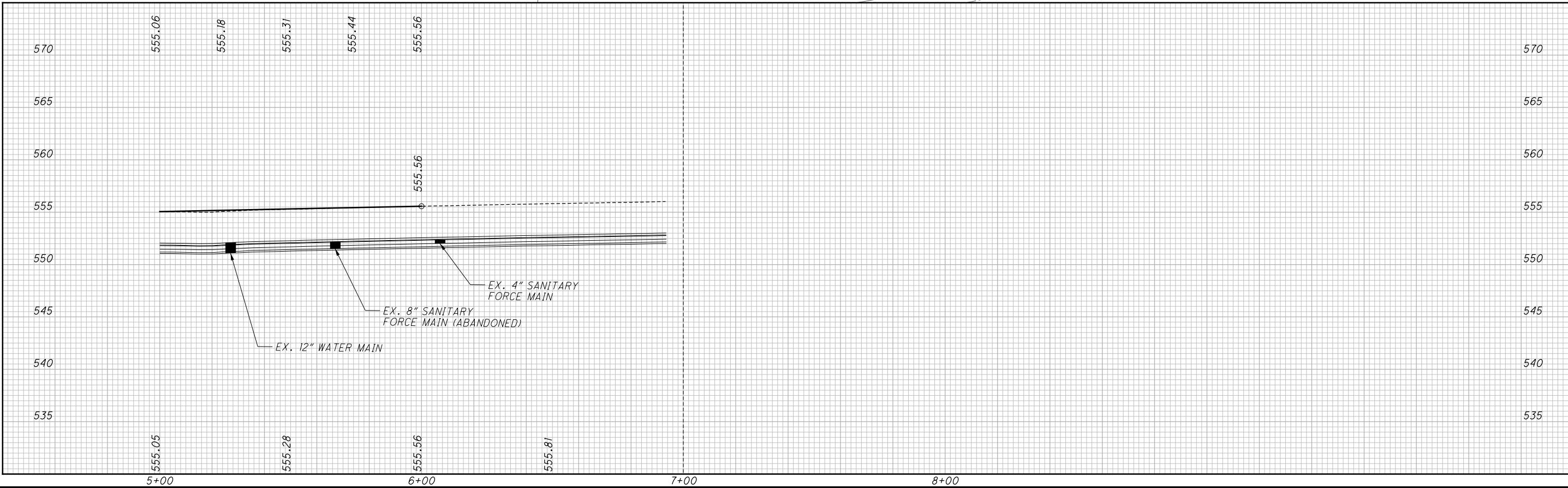
**SCI-23-5.49**

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**NOTES**  
 1. SEE SHEET 35 FOR GRADING PLAN.  
 2. SEE SHEET 24 FOR BMP INFORMATION.

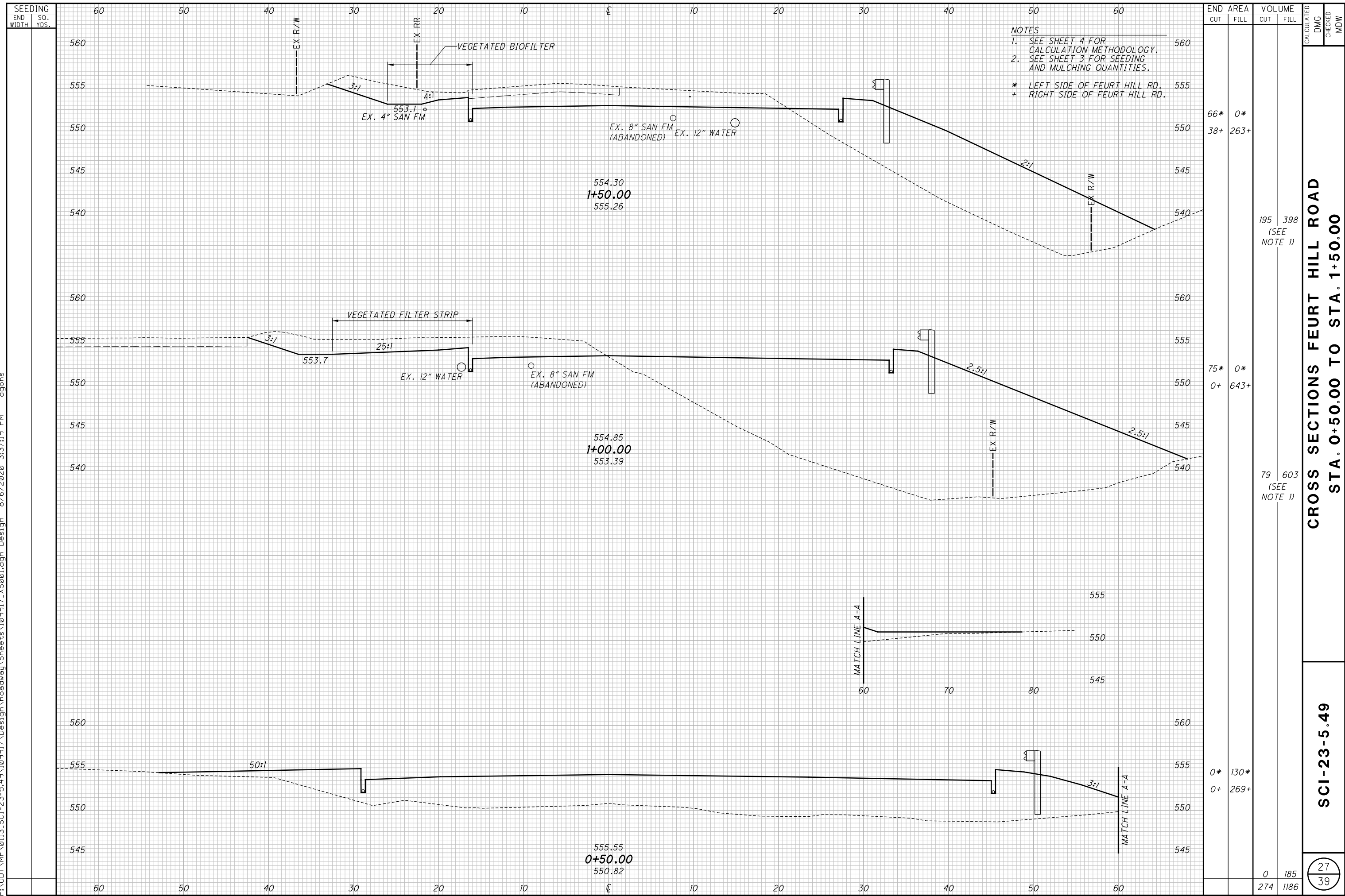


CALCULATED  
 DMG  
 CHECKED  
 MDW

**PLAN AND PROFILE**  
**STA. 5+00.00 TO STA. 8+75.00**

**SCI-23-5.49**

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END AREA	VOLUME		CALCULATED	CHECKED	MDW
	CUT	FILL			
66*	0*				
38+	263+				
		195	398		
		(SEE NOTE 1)			
75*	0*				
0+	643+				
		79	603		
		(SEE NOTE 1)			
0*	130*				
0+	269+				
		0	185		
		274	1186		

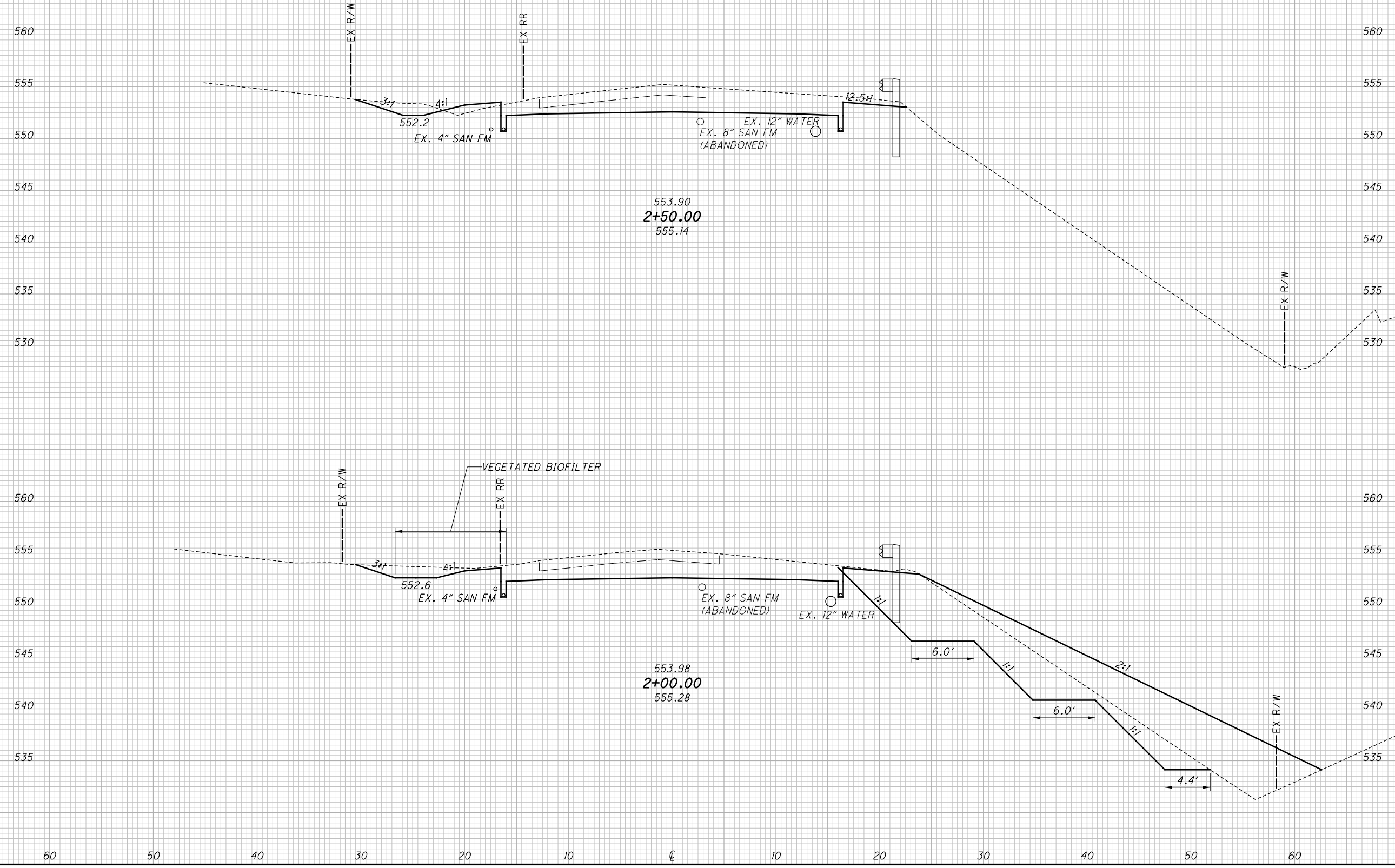
**CROSS SECTIONS FEURT HILL ROAD**  
**STA. 0+50.00 TO STA. 1+50.00**

**SCI-23-5.49**

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SEEDING	
END WIDTH	SO. YDS.
60	50
50	40
40	30
30	20
20	10
10	0
0	10
10	20
20	30
30	40
40	50
50	60

NOTES  
 1. SEE SHEET 4 FOR CALCULATION METHODOLOGY.  
 2. SEE SHEET 3 FOR SEEDING AND MULCHING QUANTITIES.  
 \* LEFT SIDE OF FEURT HILL RD.  
 + RIGHT SIDE OF FEURT HILL RD.

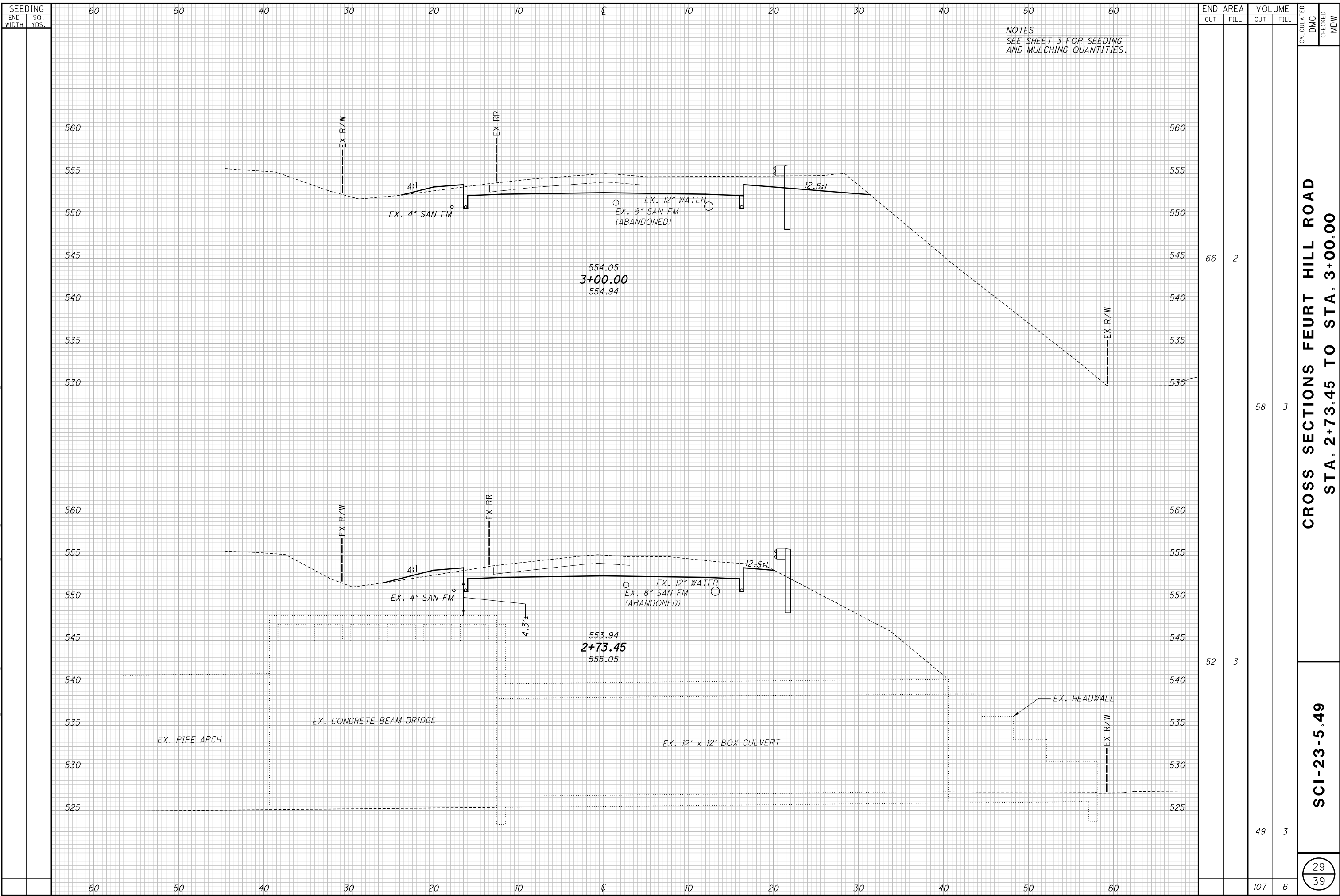


END AREA		VOLUME		CALCULATED DMG	CHECKED MDW
CUT	FILL	CUT	FILL		
60	3	216	213		
46*	0*	145+	226+		
		254	203		
		(SEE NOTE 1)			
		470	416		

CROSS SECTIONS FEURT HILL ROAD  
 STA. 2+00.00 TO STA. 2+50.00

SCI-23-5.49

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NOTES  
SEE SHEET 3 FOR SEEDING  
AND MULCHING QUANTITIES.

END STA.	AREA		VOLUME		CALCULATED	CHECKED	MDW
	CUT	FILL	CUT	FILL			
3+00.00	66	2					
2+73.45	52	3	49	3			
TOTAL	118	5	49	3			

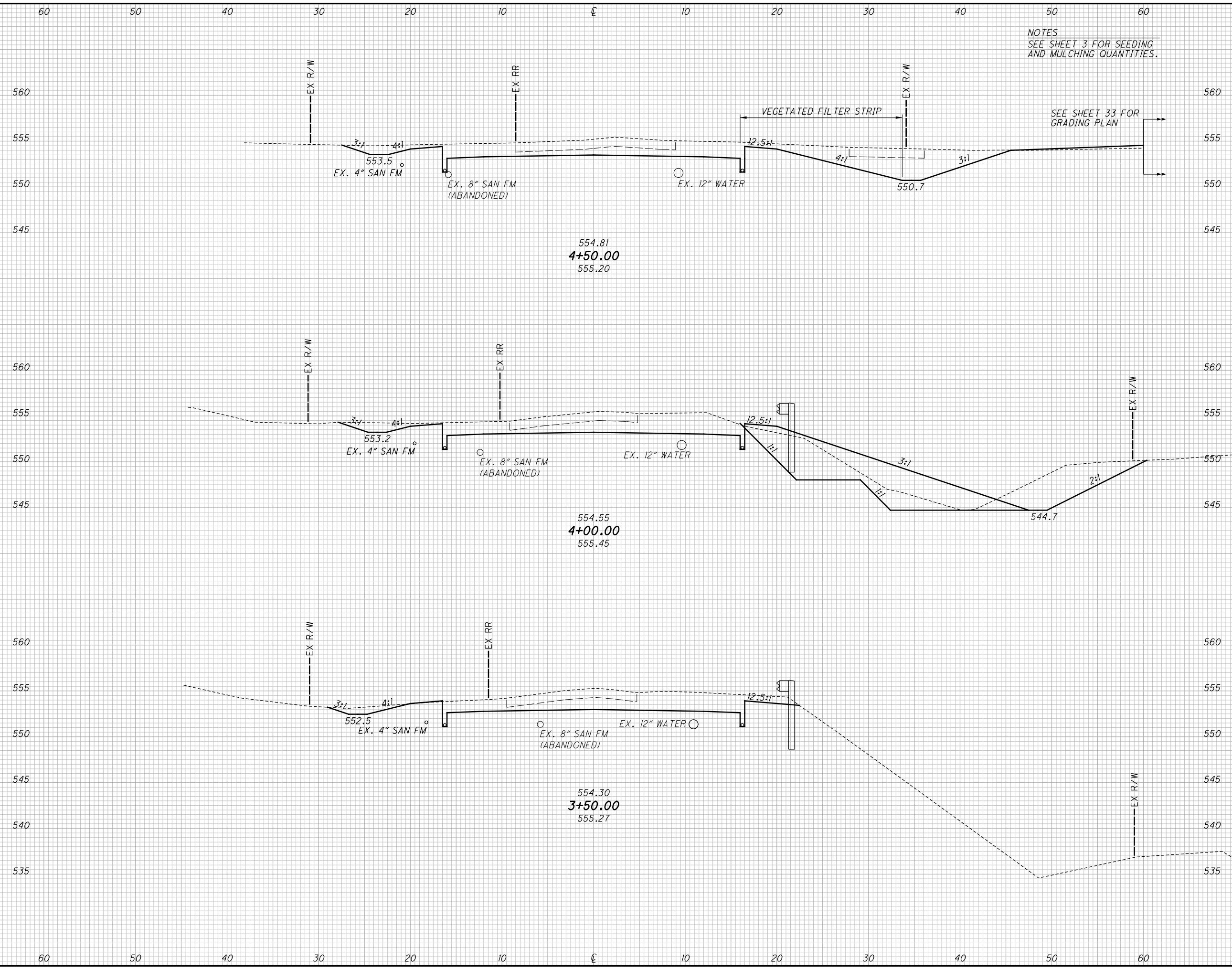
**CROSS SECTIONS FEURT HILL ROAD  
STA. 2+73.45 TO STA. 3+00.00**

**SCI-23-5.49**



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SEEDING	
END WIDTH	SO. YDS.
60	50
50	40
40	30
30	20
20	10
10	0
0	10
10	20
20	30
30	40
40	50
50	60



NOTES  
SEE SHEET 3 FOR SEEDING  
AND MULCHING QUANTITIES.

SEE SHEET 33 FOR  
GRADING PLAN

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	DMG	MDW
88	3	213	91		
142	95	182	88		
55	0	111	2		
		506	181		

**CROSS SECTIONS FEURT HILL ROAD**  
**STA. 3+50.00 TO STA. 4+50.00**

**SCI-23-5.49**

30  
39

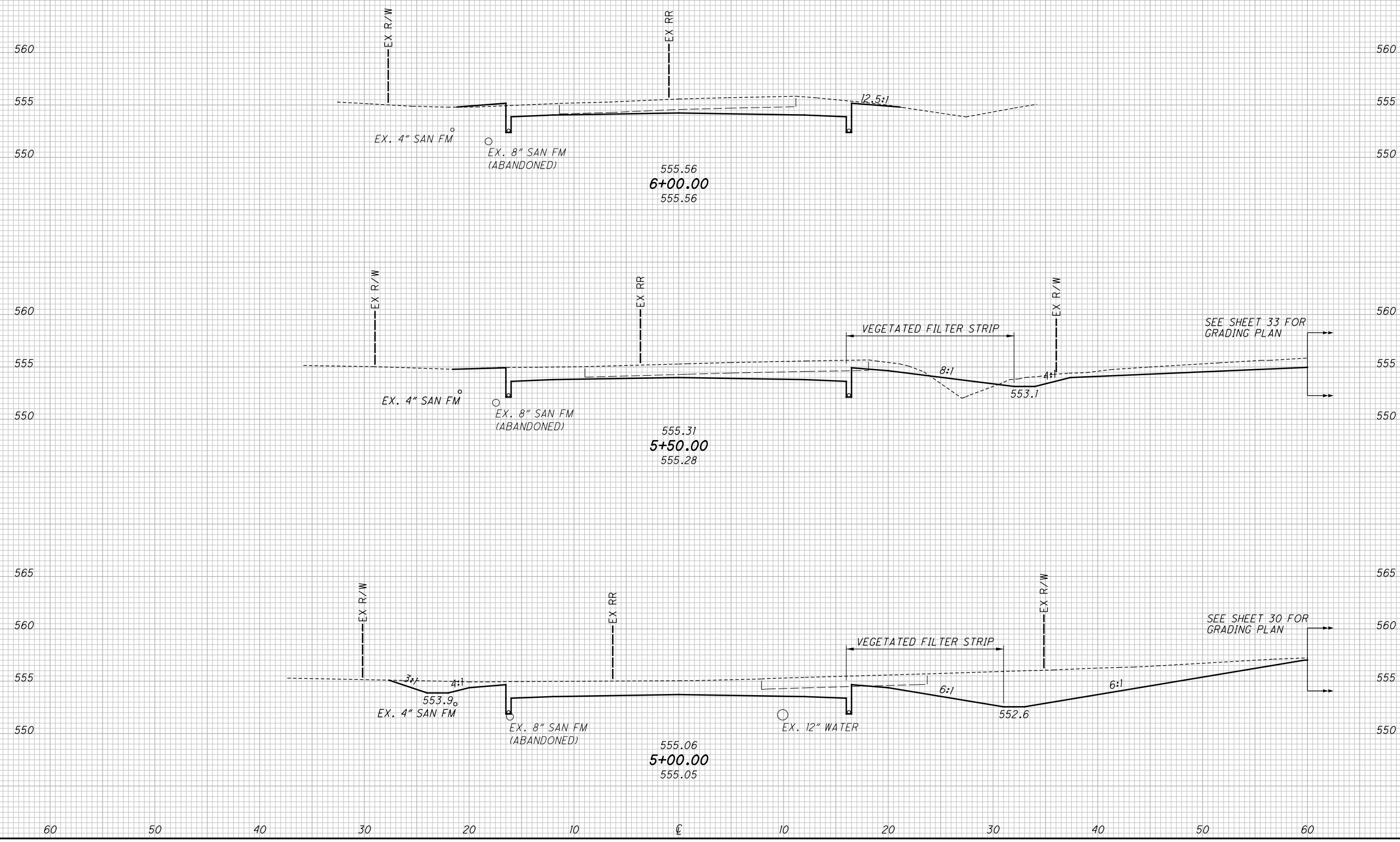
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SEEDING	
END WIDTH	SO. YDS.
60	50
50	40
40	30
30	20
20	10
10	0
0	10
10	20
20	30
30	40
40	50
50	60

EARTHWORK QUANTITY SUB-SUMMARY			
STATION FROM	STATION TO	203	
		EXCAVATION	EMBANKMENT
		CU YD	CU YD
0+50.00	1+50.00	274	1186
2+00.00	2+50.00	470	416
2+73.45	3+00.00	107	6
3+50.00	4+50.00	506	181
5+00.00	6+00.00	423	13
TOTALS TO GENERAL SUMMARY		1780	1802

NOTES  
SEE SHEET 3 FOR SEEDING  
AND MULCHING QUANTITIES.

END AREA	VOLUME	CALCULATED	DMG	CHECKED	MDW
23	1				
65	6				
47	6				
160	5				
126	0				
198	2				

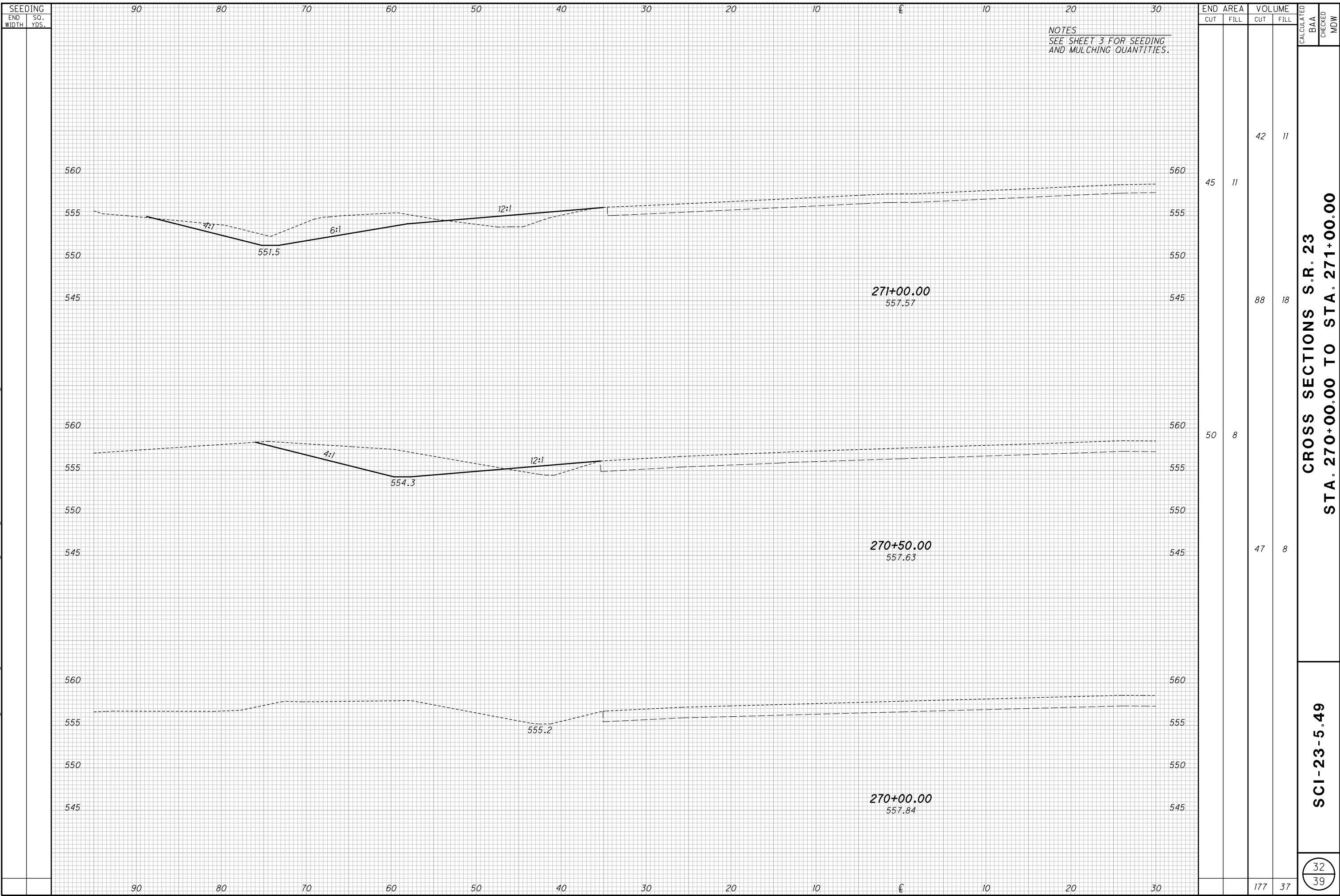


CROSS SECTIONS FEURT HILL ROAD  
STA. 5+00.00 TO STA. 6+00.00

SCI-23-5.49

31  
39

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NOTES  
SEE SHEET 3 FOR SEEDING  
AND MULCHING QUANTITIES.

CROSS SECTIONS S.R. 23  
STA. 270+00.00 TO STA. 271+00.00

SCI-23-5.49

32  
39

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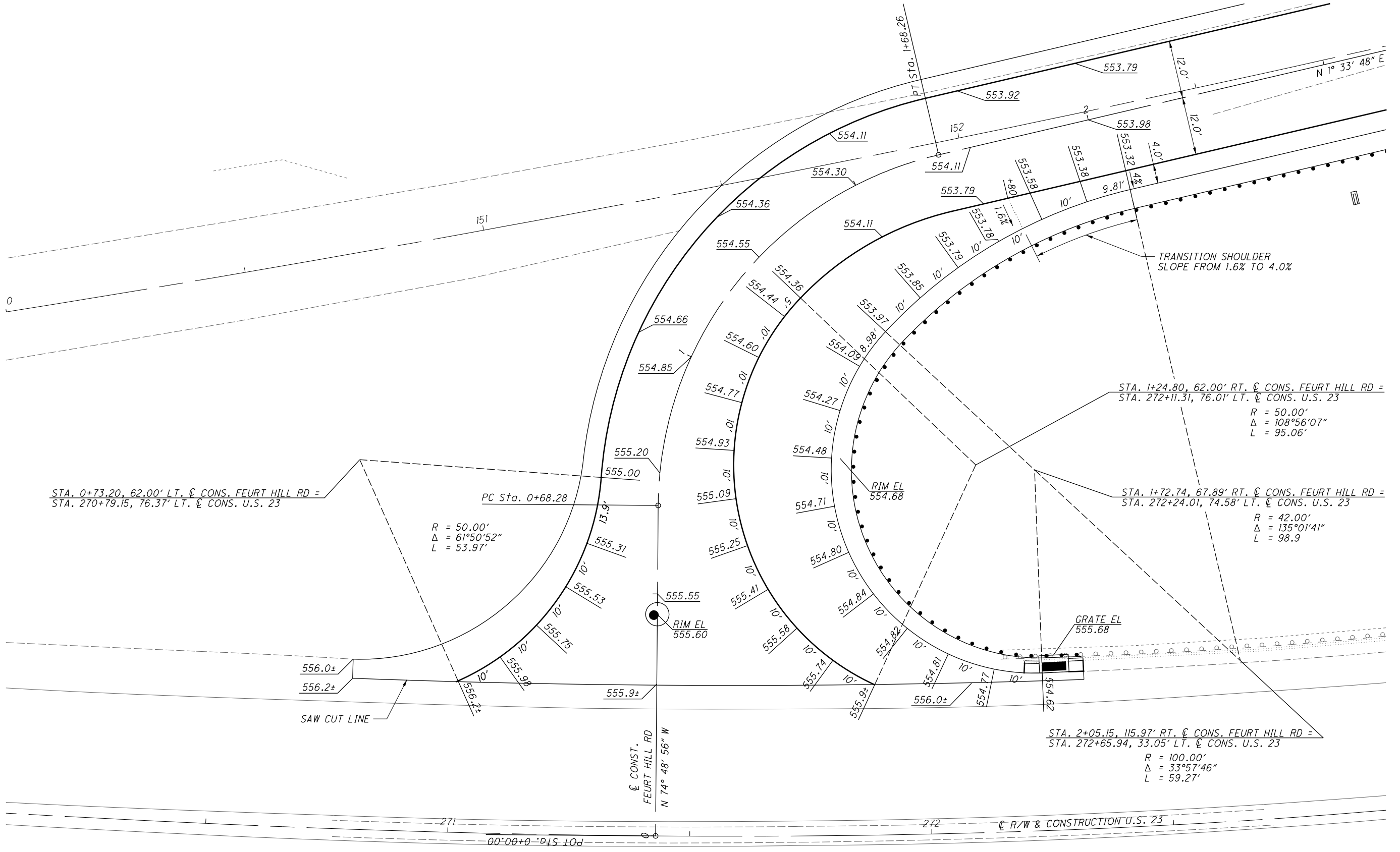
0 5 10 20  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
BTP  
CHECKED  
MDW

INTERSECTION DETAIL  
U.S. 23 / FEURT HILL RD

SCI-23-5.49

33  
39



STA. 0+73.20, 62.00' LT.  $\bar{C}$  CONS. FEURT HILL RD =  
STA. 270+79.15, 76.37' LT.  $\bar{C}$  CONS. U.S. 23

$R = 50.00'$   
 $\Delta = 61^{\circ}50'52''$   
 $L = 53.97'$

STA. 1+24.80, 62.00' RT.  $\bar{C}$  CONS. FEURT HILL RD =  
STA. 272+11.31, 76.01' LT.  $\bar{C}$  CONS. U.S. 23  
 $R = 50.00'$   
 $\Delta = 108^{\circ}56'07''$   
 $L = 95.06'$

STA. 1+72.74, 67.89' RT.  $\bar{C}$  CONS. FEURT HILL RD =  
STA. 272+24.01, 74.58' LT.  $\bar{C}$  CONS. U.S. 23  
 $R = 42.00'$   
 $\Delta = 135^{\circ}01'41''$   
 $L = 98.9'$

STA. 2+05.15, 115.97' RT.  $\bar{C}$  CONS. FEURT HILL RD =  
STA. 272+65.94, 33.05' LT.  $\bar{C}$  CONS. U.S. 23  
 $R = 100.00'$   
 $\Delta = 33^{\circ}57'46''$   
 $L = 59.27'$

$\bar{C}$  CONST.  
FEURT HILL RD  
N 74° 48' 56" W

$\bar{C}$  R/W & CONSTRUCTION U.S. 23

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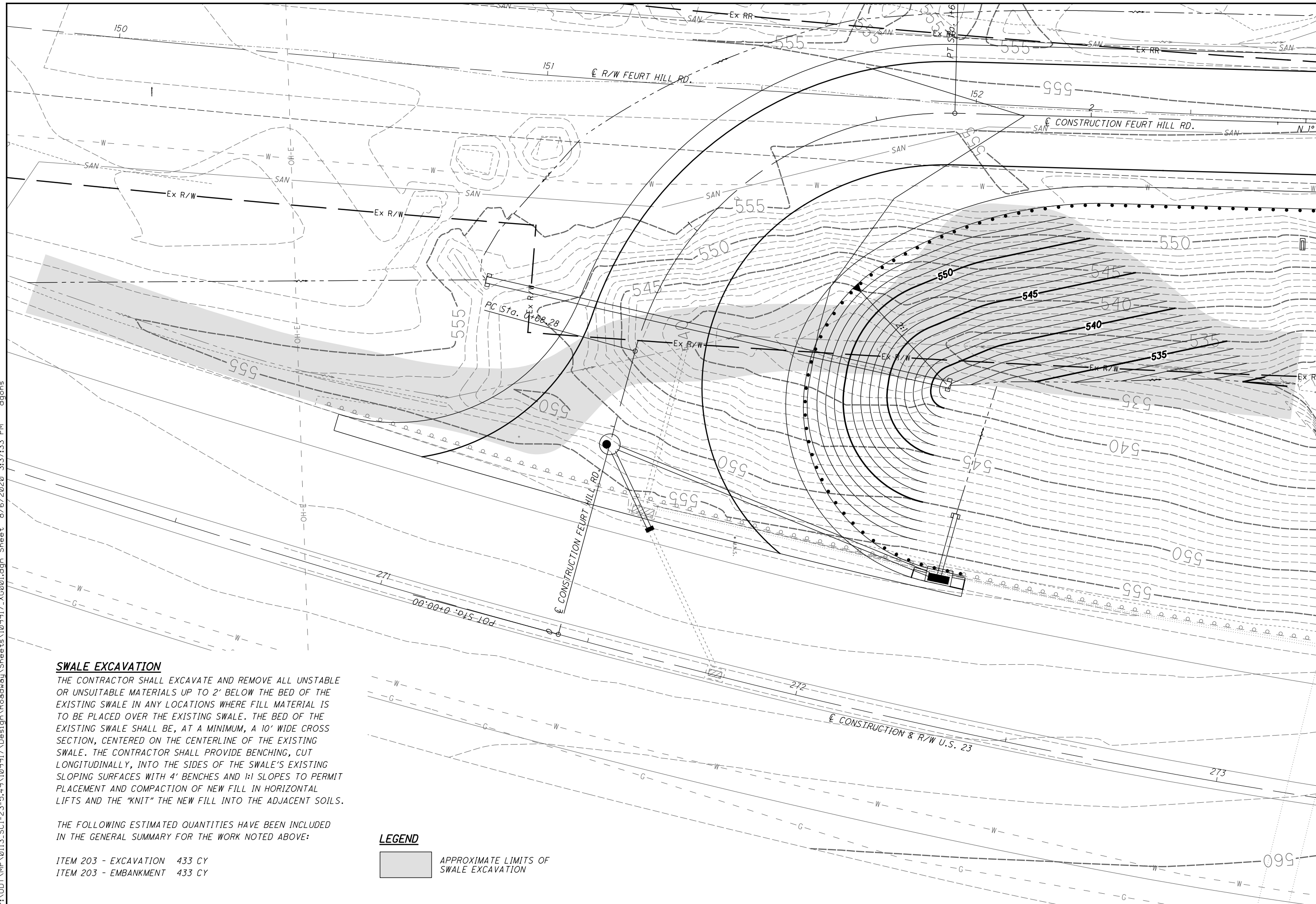
0 5 10 20  
HORIZONTAL SCALE IN FEET

CALCULATED  
DMG  
CHECKED  
MDW

**INTERSECTION  
GRADING PLAN**

**SCI-23-5.49**

34  
39



**SWALE EXCAVATION**

THE CONTRACTOR SHALL EXCAVATE AND REMOVE ALL UNSTABLE OR UNSUITABLE MATERIALS UP TO 2' BELOW THE BED OF THE EXISTING SWALE IN ANY LOCATIONS WHERE FILL MATERIAL IS TO BE PLACED OVER THE EXISTING SWALE. THE BED OF THE EXISTING SWALE SHALL BE, AT A MINIMUM, A 10' WIDE CROSS SECTION, CENTERED ON THE CENTERLINE OF THE EXISTING SWALE. THE CONTRACTOR SHALL PROVIDE BENCHING, CUT LONGITUDINALLY, INTO THE SIDES OF THE SWALE'S EXISTING SLOPING SURFACES WITH 4' BENCHES AND 1:1 SLOPES TO PERMIT PLACEMENT AND COMPACTION OF NEW FILL IN HORIZONTAL LIFTS AND THE "KNIT" THE NEW FILL INTO THE ADJACENT SOILS.

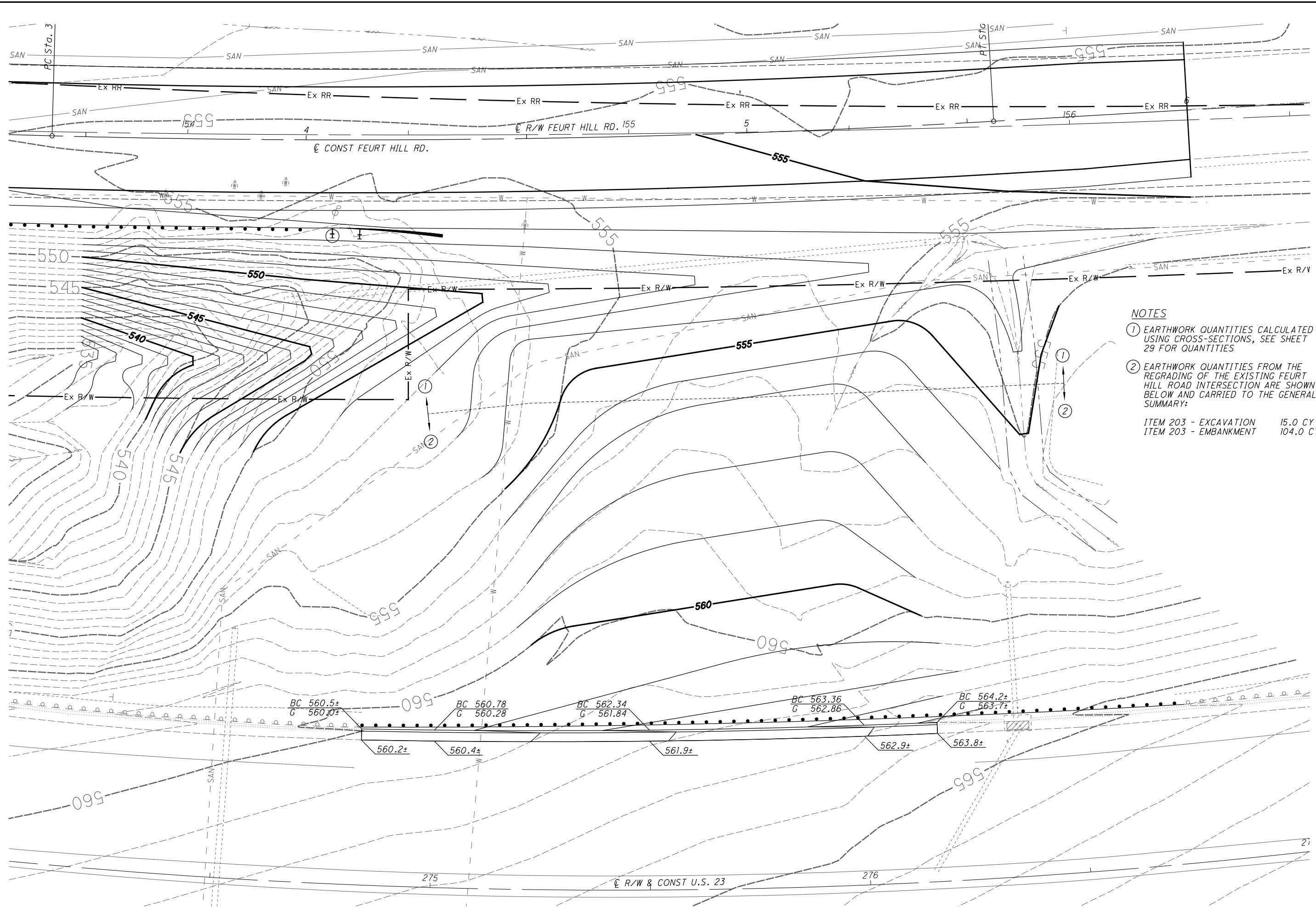
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

- ITEM 203 - EXCAVATION 433 CY
- ITEM 203 - EMBANKMENT 433 CY

**LEGEND**

APPROXIMATE LIMITS OF SWALE EXCAVATION

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**NOTES**

- ① EARTHWORK QUANTITIES CALCULATED USING CROSS-SECTIONS, SEE SHEET 29 FOR QUANTITIES
- ② EARTHWORK QUANTITIES FROM THE REGRADING OF THE EXISTING FEURT HILL ROAD INTERSECTION ARE SHOWN BELOW AND CARRIED TO THE GENERAL SUMMARY:

ITEM 203 - EXCAVATION	15.0 CY
ITEM 203 - EMBANKMENT	104.0 CY

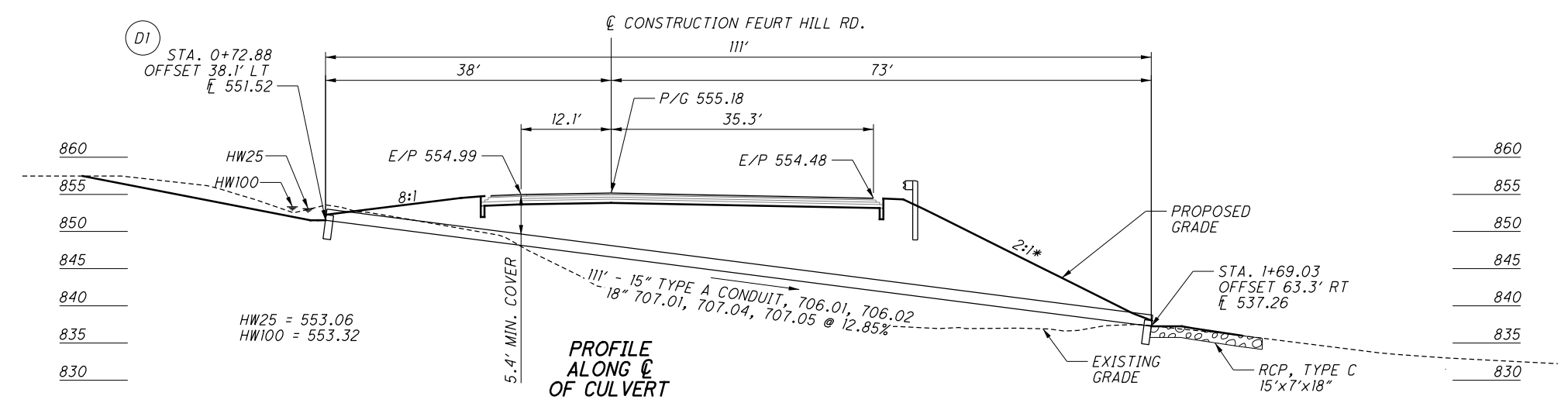
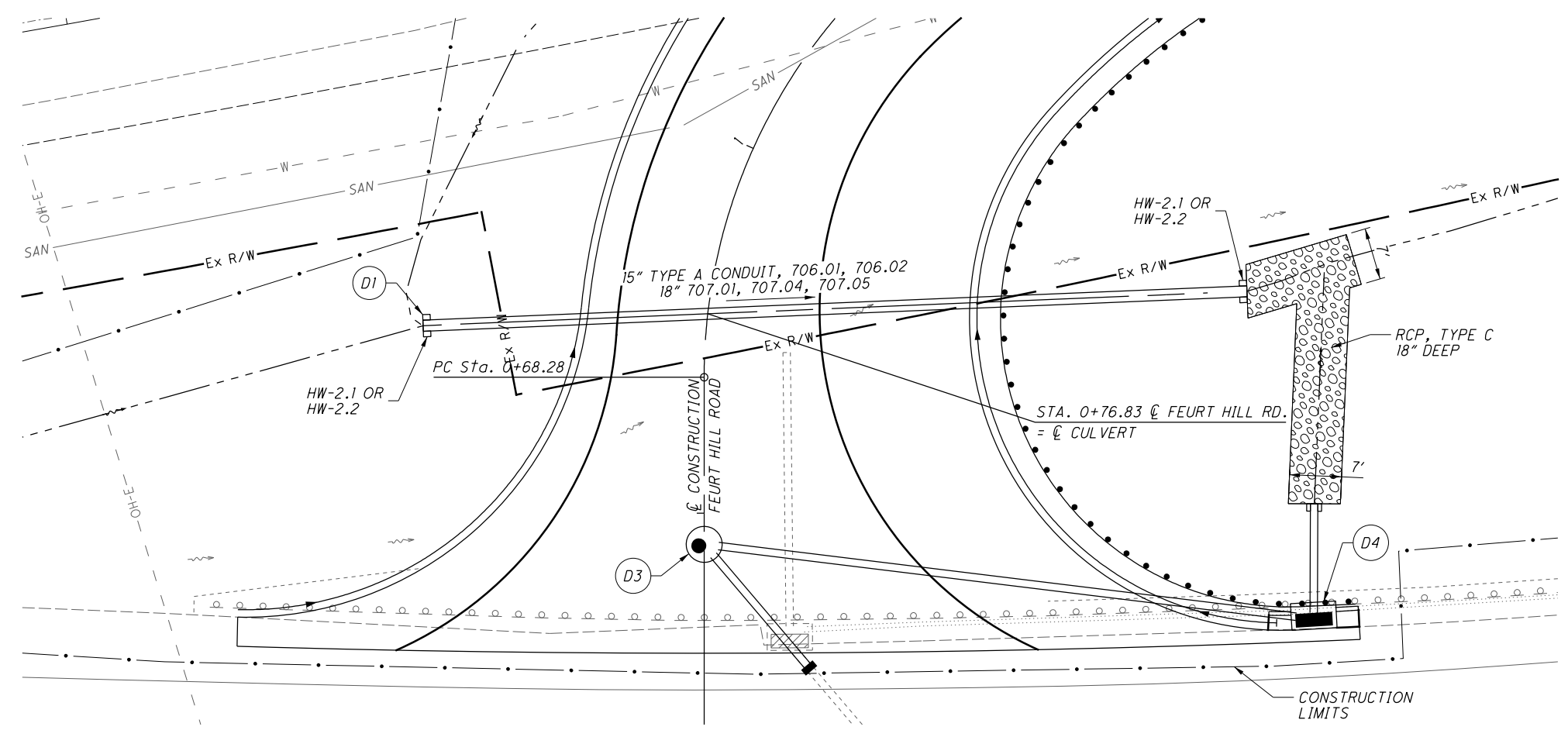
CALCULATED  
DMG  
CHECKED  
MDW

0 5 10 20  
HORIZONTAL SCALE IN FEET

**N**

**PAVEMENT REMOVAL GRADING PLAN**

**SCI-23-5.49**

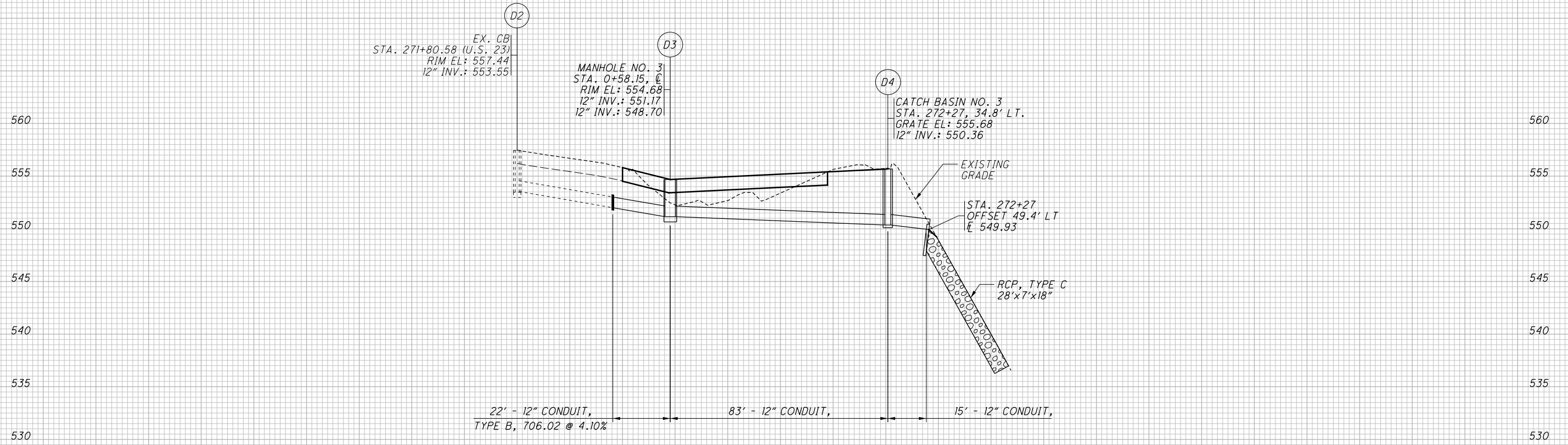


HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 0.74 acre
Q25	= 5.7 cfs
Q100	= 6.9 cfs
V25	= 9.65 fps
V100	= 10.15 fps
HW25	= 553.06
HW100	= 553.32







PROPOSED STRUCTURE	
TYPE:	TYPE A CONDUIT
SIZE:	15" 706.01, 706.02; OR 18" 707.01, 707.04, 707.05, 111' LONG
SKEW:	9°00' R.F.
ALIGNMENT:	TANGENT
CFN:	xxxxxxx
DESIGN SERVICE LIFE:	20 YEARS
STREAM pH:	N/A
ABRASION LEVEL:	x

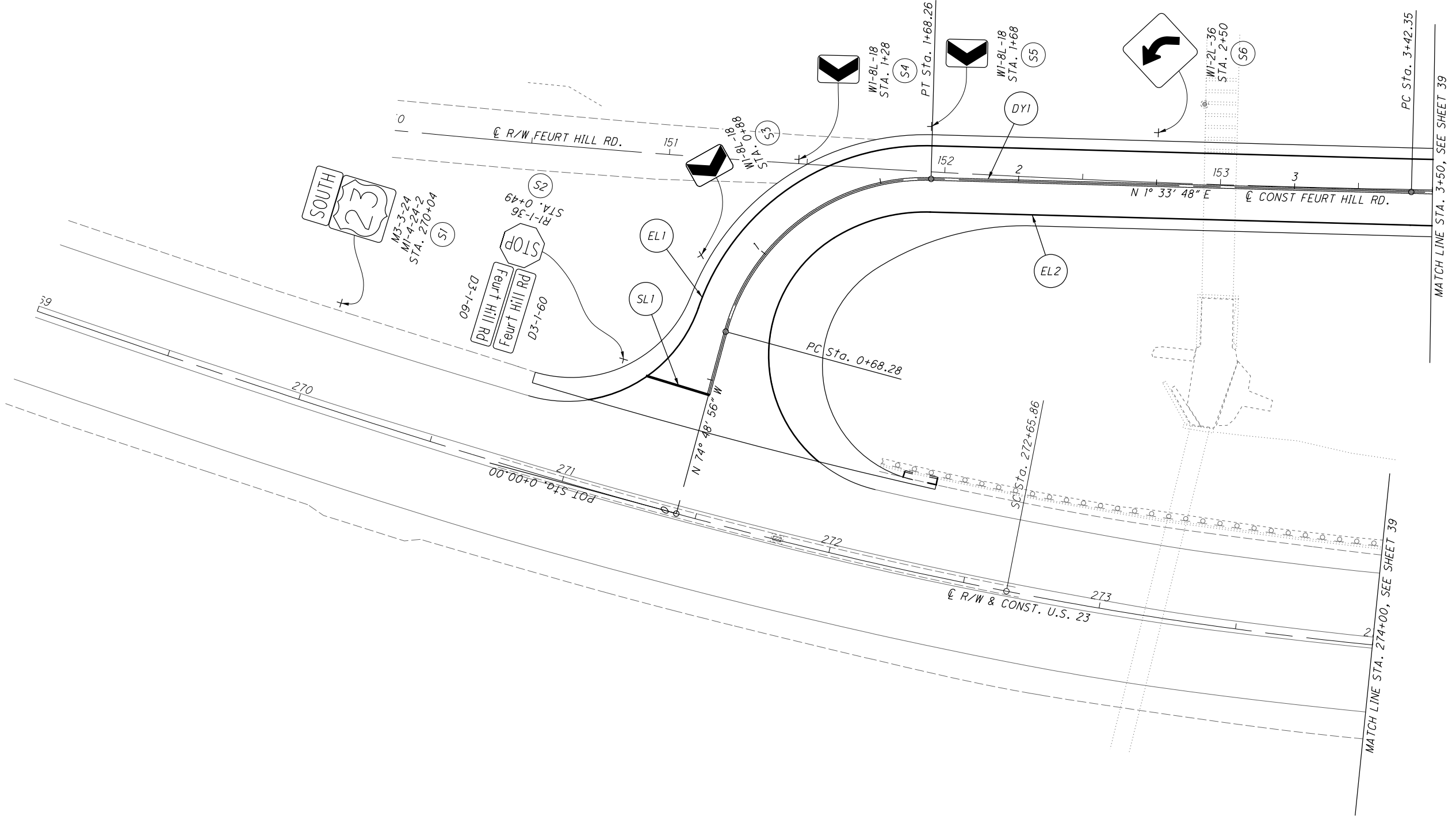
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LEGEND

- |  |   |
|--|---|
|  <b>DYx</b> CENTERLINE, DOUBLE YELLOW |  EXISTING SIGN TO REMAIN     |
|  <b>ELx</b> EDGE LINE                 |  EXISTING SIGN TO BE REMOVED |
|  <b>SLx</b> STOP LINE                 |  PROPOSED SIGN               |



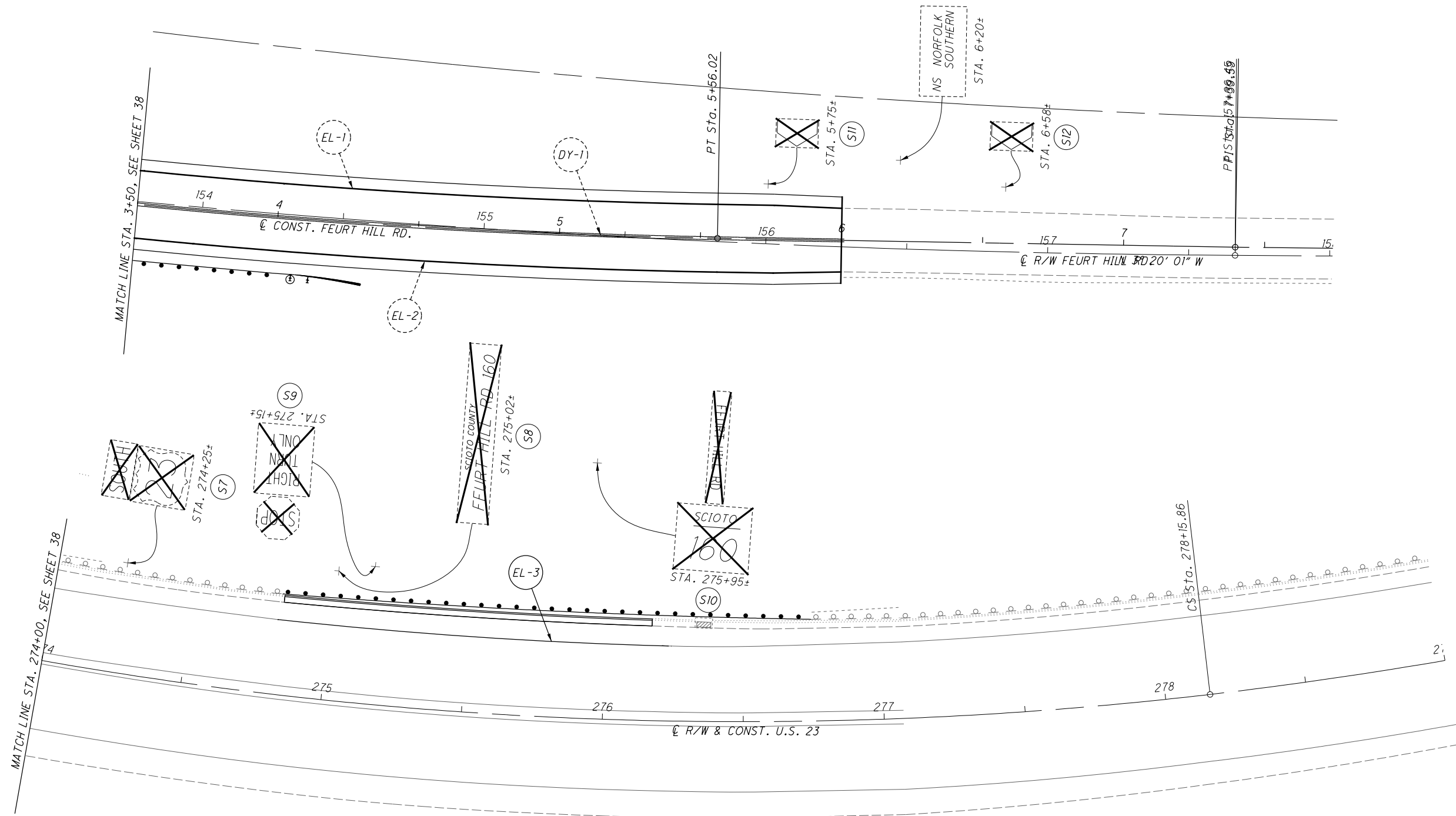
CALCULATED BTP CHECKED MDW

0 20 40  
HORIZONTAL SCALE IN FEET



TRAFFIC CONTROL  
SIGNING AND PAVEMENT MARKING PLAN

SCI-23-5.49



NOTE  
SEE SHEET 38 FOR LEGEND.

CALCULATED	BTP
CHECKED	MDW

0 20 40  
HORIZONTAL SCALE IN FEET

**TRAFFIC CONTROL  
SIGNING AND PAVEMENT MARKING PLAN**

**SCI-23-5.49**

**PROJECT DESCRIPTION**

TO PROVIDE IMPROVED SIGHT DISTANCE, THE EXISTING INTERSECTION OF SR 23 AND FEURT HILL ROAD IN SCIOTO COUNTY, OHIO, WILL BE RELOCATED ROUGHLY 400 TO 500 FEET TO THE SOUTH. AN ABANDONED ROADWAY ALIGNMENT LOCATED ROUGHLY 150 FEET WEST OF EXISTING US 23 WILL BE USED TO EXTEND EXISTING FEURT HILL ROAD TO THE SOUTH TO CONNECT WITH EXISTING US 23.

**HISTORIC RECORDS**

NO HISTORIC GEOTECHNICAL INFORMATION WAS LOCATED FOR THIS SITE.

**GEOLOGY**

THE PROJECT SITE IS WITHIN A PORTION OF OHIO WHICH HAS NOT BEEN GLACIATED, AND IN THE SHAWNEE-MISSISSIPPIAN PLATEAU PHYSIOGRAPHIC REGION. SOIL OVERBURDEN IN UPLAND AREAS TYPICALLY CONSISTS OF COLLUVIUM, WHEREAS THE LOWLAND AREAS OF THE SCIOTO RIVER VALLEY CONTAIN PLEISTOCENE-AGE SANDY OUTWASH AND TEAYS-AGE LACUSTRINE DEPOSITS (MINFORD CLAY). DEVONIAN AND MISSISSIPPIAN AGE SHALE, SILTSTONE, AND LOCALLY THICK SANDSTONE ARE GENERALLY PRESENT AT SHALLOW DEPTHS IN THE UPLAND AREAS, WHEREAS THE DEPTH TO SHALE IN THE SCIOTO RIVER VALLEY MAY BE IN EXCESS OF 40 TO 50 FEET BELOW THE GROUND SURFACE. THIS PROJECT IS NOT IN AN AREA OF OHIO KNOWN TO CONTAIN KARST FEATURES AND NO ABANDONED MINES ARE MAPPED NEAR THE PROJECT SITE. THIS SITE IS IN AN AREA OF MODERATE INCIDENCE AND LOW SUSCEPTIBILITY TO LANDSLIDES. LONG TERM CREEP OF HILLSIDES IS COMMON IN THIS AREA, PARTICULARLY IN THE PRESENCE OF MINFORD CLAY.

**RECONNAISSANCE**

A SITE RECONNAISSANCE VISIT WAS MADE BY S&ME PERSONNEL ON AUGUST 31, 2019, TO OBSERVE THE PROJECT SITE AND FIELD MARK THE PLANNED ROADWAY BORING LOCATIONS. THE EXISTING, ABANDONED PAVEMENT TO THE WEST OF US 23, AND THE PORTION OF FEURT HILL ROAD NEAR THE ABANDONED ROADWAY WAS NOTED TO BE IN FAIR TO POOR CONDITION. THE EXISTING SWALE BETWEEN THE ABANDONED ROADWAY AND EXISTING US 23 WAS HEAVILY OVERGROWN.

**SUBSURFACE EXPLORATION**

TWO (2) BORINGS (NUMBERED B-001-0-19 AND B-002-0-19) WERE PERFORMED TO INVESTIGATE THE SUBGRADE SOIL FOR THE PROPOSED INTERSECTION RELOCATION. THE BORINGS WERE PERFORMED BY AN ATV-MOUNTED DRILLING RIG USING A 4 1/2-INCH O.D. CONTINUOUS-FLIGHT AUGER TO ADVANCE THE BORINGS BETWEEN SAMPLING ATTEMPTS. DISTURBED BUT REPRESENTATIVE SOIL SAMPLES WERE OBTAINED BY REMOVING THE AUGER FROM THE BORING, LOWERING A 2-INCH O.D. SPLIT-BARREL SAMPLER TO THE BOTTOM OF THE BORING, AND THEN DRIVING THE SAMPLER INTO THE SOIL WITH BLOWS FROM A 140-POUND HAMMER FREELY FALLING 30 INCHES (AASHTO T206 - STANDARD PENETRATION TEST). IN EMBANKMENT BORING B-001-0-19, SPT SAMPLES WERE PERFORMED AT 2 1/2-FOOT INTERVALS TO A DEPTH OF 10 FEET. IN SUBGRADE BORING B-002-0-19, SIX FEET OF CONTINUOUS SPT SAMPLING WAS PERFORMED BEGINNING AT THE APPROXIMATE SUBGRADE LEVEL. IN ACCORDANCE WITH THE CURRENT ODOT SGE, THE HAMMER SYSTEM ON THE DRILL RIG WAS CALIBRATED IN ACCORDANCE WITH ASTM D 4633 TO DETERMINE THE DRILL ROD ENERGY RATIO (73.2%). AT THE COMPLETION OF DRILLING, THE BORINGS WERE BACKFILLED WITH CUTTINGS MIXED WITH BENTONITE CHIPS. THE EXISTING PAVEMENT WAS REPAIRED WITH AND EQUIVALENT THICKNESS OF COLD PATCH ASPHALT.

**EXPLORATION FINDINGS**

BORING B-001-0-19 ENCOUNTERED AN EXISTING PAVEMENT SECTION CONSISTING OF 4 INCHES OF ASPHALT AND 4 INCHES OF GRANULAR BASE OVER 4 INCHES OF BRICK AND AN ADDITIONAL 8 INCHES OF GRANULAR FILL. BORING B-002-0-19 ENCOUNTERED 3 INCHES OF ASPHALT OVER 8 INCHES OF GRANULAR FILL.

BENEATH THE EXISTING PAVEMENT MATERIALS, THE BORINGS ENCOUNTERED 3.8 TO 4.6 OF EXISTING FILL/POSSIBLE FILL DESCRIBED AS VERY-STIFF TO HARD DARK-GRAY, BROWN, AND GREENISH-GRAY SILT AND CLAY (A-6a). THIS STRATUM CONTAINED A BITUMEN ODOR AND A FEW COBBLES IN BORING B-001-0-19, AND SLAG AND BRICK FRAGMENTS IN BORING B-002-0-19. BENEATH THE FILL, BORING B-001-0-19 WAS TERMINATED AFTER PENETRATING 4.5 FEET INTO STIFF TO VERY-STIFF GRAYISH-BROWN SILTY CLAY (A-6b) WHICH CONTAINED A FEW ROOTS BELOW 8.5 FEET. BORING B-002-0-19 WAS TERMINATED AFTER ENCOUNTERING 1.5 FEET OF STIFF TO VERY-STIFF BROWN SILT AND CLAY (A-6a).

NO GROUNDWATER SEEPAGE WAS NOTED IN EITHER BORING DURING DRILLING AND THE BOREHOLES WERE DRY AT COMPLETION.

**SPECIFICATIONS**

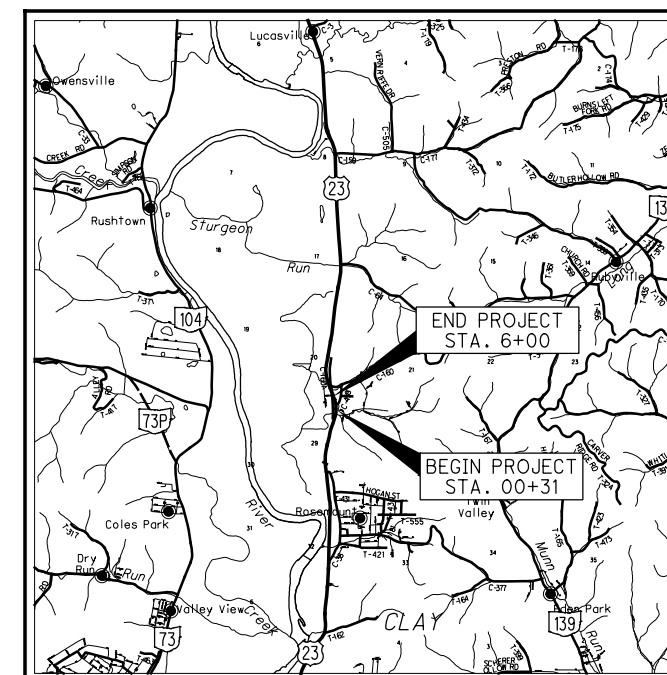
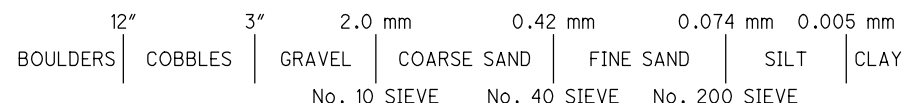
THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN GENERAL ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, "SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS", DATED JULY 2019.

**AVAILABLE INFORMATION**

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THESE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT 9 DEPUTY DIRECTOR'S OFFICE, OR THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET, COLUMBUS, OHIO.

DESCRIPTION		ODOT CLASS	CLASSIFIED MECH./VISUAL	
	SILT AND CLAY	A-6a	4	2
	SILTY CLAY	A-6b	--	2
	TOTAL		4	4
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	BORING LOCATION - PLAN VIEW			
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC	INDICATES WATER CONTENT IN PERCENT.			
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
*	INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.			
SS	INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.			

**PARTICLE SIZE DEFINITIONS**



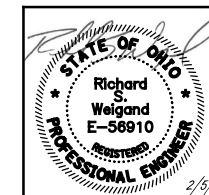
LOCATION MAP  
SCALE IN MILES

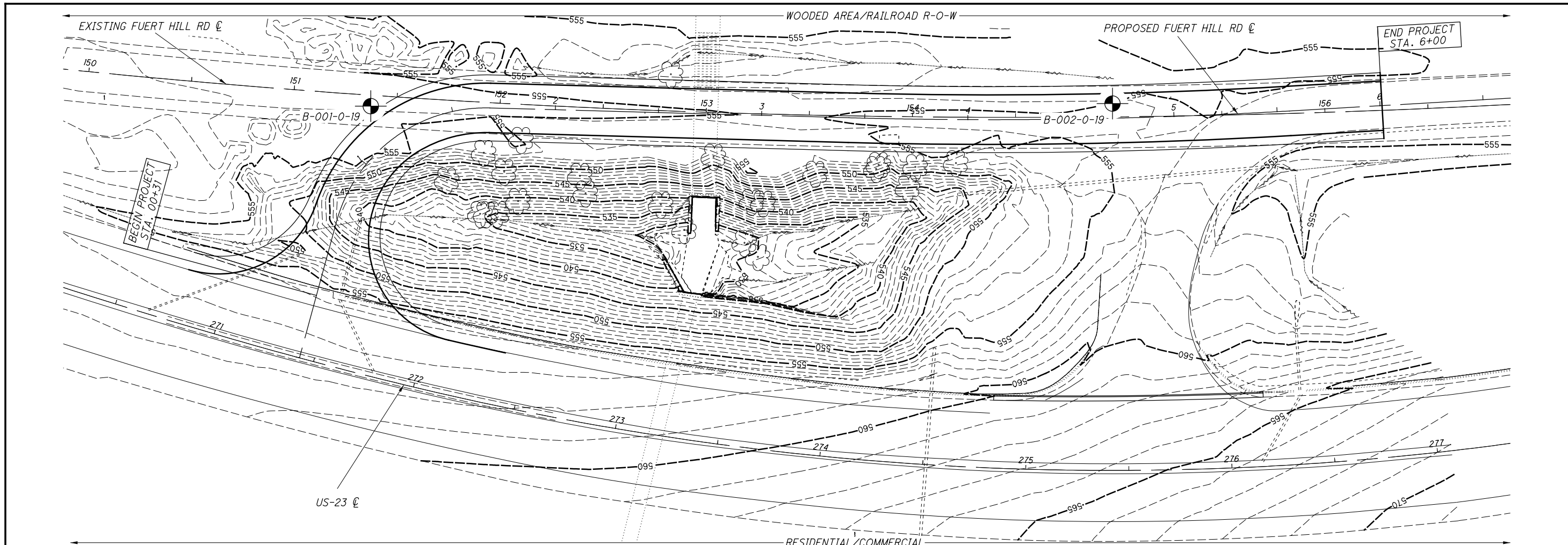
INDEX OF SHEETS					
LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET	CUT MAX.	FILL MAX.
FEURT HILL ROAD 0+00 6+00	2	2	--	1.5 FT.	13 FT.

**SUMMARY OF SOIL TEST DATA  
U.S. 23/FEURT HILL ROAD**

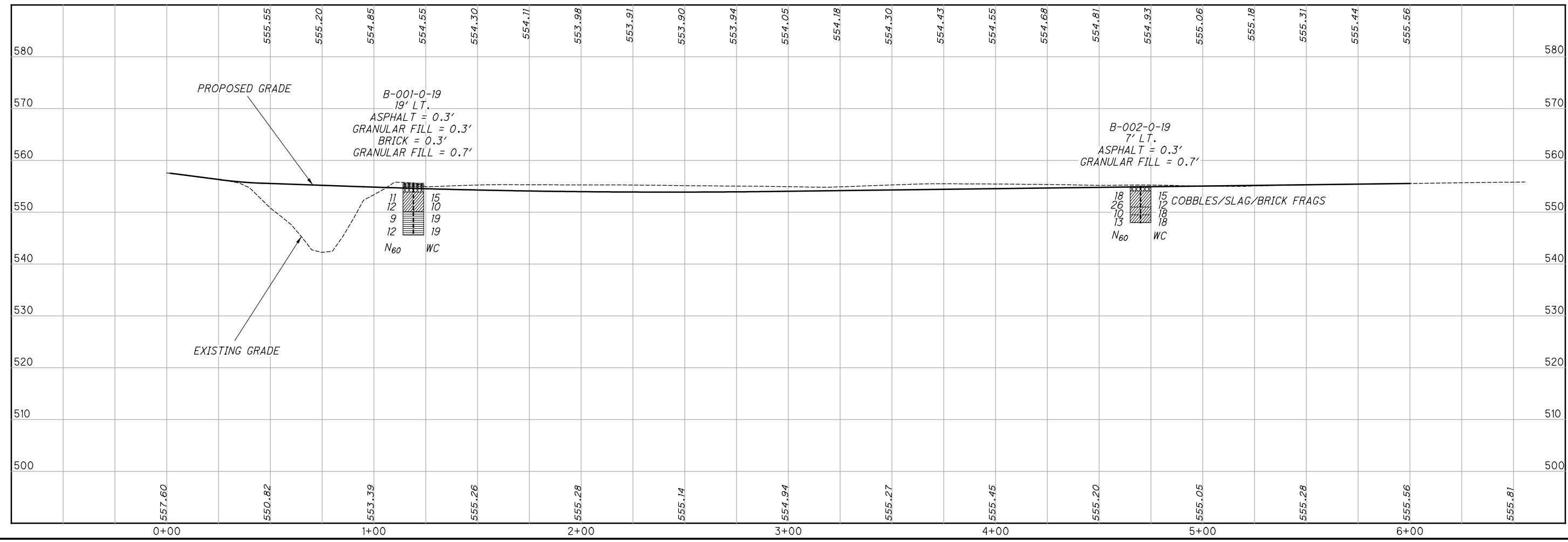
EXPLORATION ID., STATION & OFFSET	FROM - TO	SAMPLE ID	N <sub>60</sub>	% REC	% tsf HP	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO <sub>4</sub>	
B-001-0-19 STA. 1+19, 19' LT.	2.0 - 3.5	SS-1	11	72	2.0-3.5	19	11	10	30	30	32	17	15	15	A-6a (7) *	<40	
LATITUDE = 38.801568	3.5 - 5.0	SS-2	12	56	2.0-3.0	31	10	9	33	17	28	17	11	10	A-6a (3) *		
LONGITUDE = -82.984500	6.0 - 7.5	SS-3	9	61	2.0-3.0	Stiff to very-stiff greenish-brown SILTY CLAY										19	A-6b (V)
	8.5 - 10.0	SS-4	12	72	2.5-4.0	SAME AS SS-3										19	A-6b (V)
B-002-0-19 STA. 4+70, 7' LT.	1.0 - 2.5	SS-1	18	78	2.0-4.5	12	9	8	41	30	31	18	13	15	A-6a (8) *	140	
LATITUDE = 38.802550	2.5 - 4.0	SS-2	26	78	4.5	21	9	8	40	22	28	16	12	12	A-6a (6) *		
LONGITUDE = -82.984511	4.0 - 5.5	SS-3	10	72	2.0-4.0	Very-stiff brown SILT AND CLAY (Fill)										18	A-6a (V)
	5.5 - 7.0	SS-4	13	78	1.5-3.0	Stiff to very-stiff brown SILT AND CLAY										18	A-6a (V)

- RECON. - S&ME 8/31/19
- DRILLING - S&ME 9/30/19
- DRAWN - KAH 11/26/19 - 12/17/19, 2/5/20
- REVIEWED - RSW 12/13/19 - 12/16/19, 2/4/20

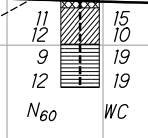




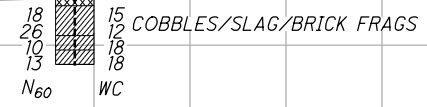
DRAWN: KAH  
 CHECKED: RSW  
**SOIL PROFILE**  
**STA. 0+00 TO STA. 6+00 FUERT HILL ROAD**



B-001-0-19  
 19' LT.  
 ASPHALT = 0.3'  
 GRANULAR FILL = 0.3'  
 BRICK = 0.3'  
 GRANULAR FILL = 0.7'



B-002-0-19  
 7' LT.  
 ASPHALT = 0.3'  
 GRANULAR FILL = 0.7'



**SCI-23-5.69**

