

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

HAM-VINE STREET NS

VILLAGE OF SAINT BERNARD

HAMILTON COUNTY



LOCATION MAP

LATITUDE: N 39°10'39" LONGITUDE: W 84°29'48"



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

DESIGN DESIGNATION

	VINE STREET	SPRING GROVE AVENUE
CURRENT ADT (2026)	9040	9085
DESIGN YEAR ADT (2046)	9835	9885
DESIGN HOURLY VOLUME (2046)	1005	1060
DIRECTIONAL DISTRIBUTION	59%	61%
TRUCKS (24 HOUR B&C)	6%	8%
DESIGN SPEED	35 MPH	35 MPH
LEGAL SPEED	35 MPH	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION:		
SPRING GROVE AVENUE - MINOR ARTERIAL		
VINE STREET - PRINCIPLE ARTERIAL		
NHS PROJECT	NO	

DESIGN EXCEPTIONS

ADA DESIGN WAIVERS

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:
MEAD & HUNT
4700 LAKEHURST CT, SUITE 110
COLUMBUS OHIO, 43016

INDEX OF SHEETS:

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Checked By

Alejandro Chock - Woolpert

07/02/2024

FEDERAL PROJECT NUMBER

E230012

RAILROAD INVOLVEMENT

NORFOLK SOUTHERN RAILROAD DOT #524743Y

PROJECT DESCRIPTION

UPGRADE MODERNIZATION OF WARNING DEVICES AT THE NS GRADE CROSSING DOT # 524743Y. INSTALLATION WILL INCLUDE ANY ANCILLARY WORK TO MAKE WARNING DEVICES FUNCTION AS DESIGNED, MUTCD COMPLIANT, AND VISIBLE TO ROADWAY USER. INCLUDES CANTS AND TRAFFIC SIGNAL PREEMPTION (VINE STREET/SPRING GROVE ROAD)

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	XX ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	XX ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)

2023 SPECIFICATIONS

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

Tammy K. Campbell
Tammy K. Campbell, P.E.
District 08 Deputy Director

Jack Marchbanks
Jack Marchbanks, PhD
Director, Department of Transportation

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-2.1	1/21/22	MT-97.10	4/19/19		800-2023 1/19/24
BP-3.1	1/19/24	MT-97.12	1/20/17		809 1/19/24
BP-4.1	7/19/13				816 10/18/19
BP-5.1	7/15/22	TC-16.22	7/21/23		819 1/17/20
BP-7.1	1/19/24	TC-21.21	1/20/23		825 4/21/23
CB-3A	7/16/21	TC-22.10	4/21/23		828 1/19/18
CB-6	1/21/22	TC-41.41	7/19/19		832 7/21/23
		TC-52.20	1/15/21		909 1/19/24
		TC-71.10	4/21/23		916 7/21/23
		TC-74.10	7/21/23		919 1/17/20
		TC-83.20	1/19/24		928 1/19/18
		TC-85.20	4/21/23		
		TC-86.10	7/21/23		

TITLE SHEET

HAM-VINE STREET

MODEL: Sheet_SurvFI PAPER SIZE: 17x11 (in.) DATE: 6/28/2024 TIME: 5:54:45 PM USER: c2881 X:\4012500\240092\0111979g_VAR-S-TW General Eng Serv. ORDC\96425_HAM-Vine Final Design\400-Engineering\Roadway\Sheets\96425_GT001.dgn

DESIGN AGENCY
Mead & Hunt
CLIENT

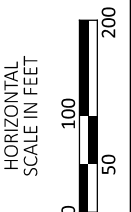
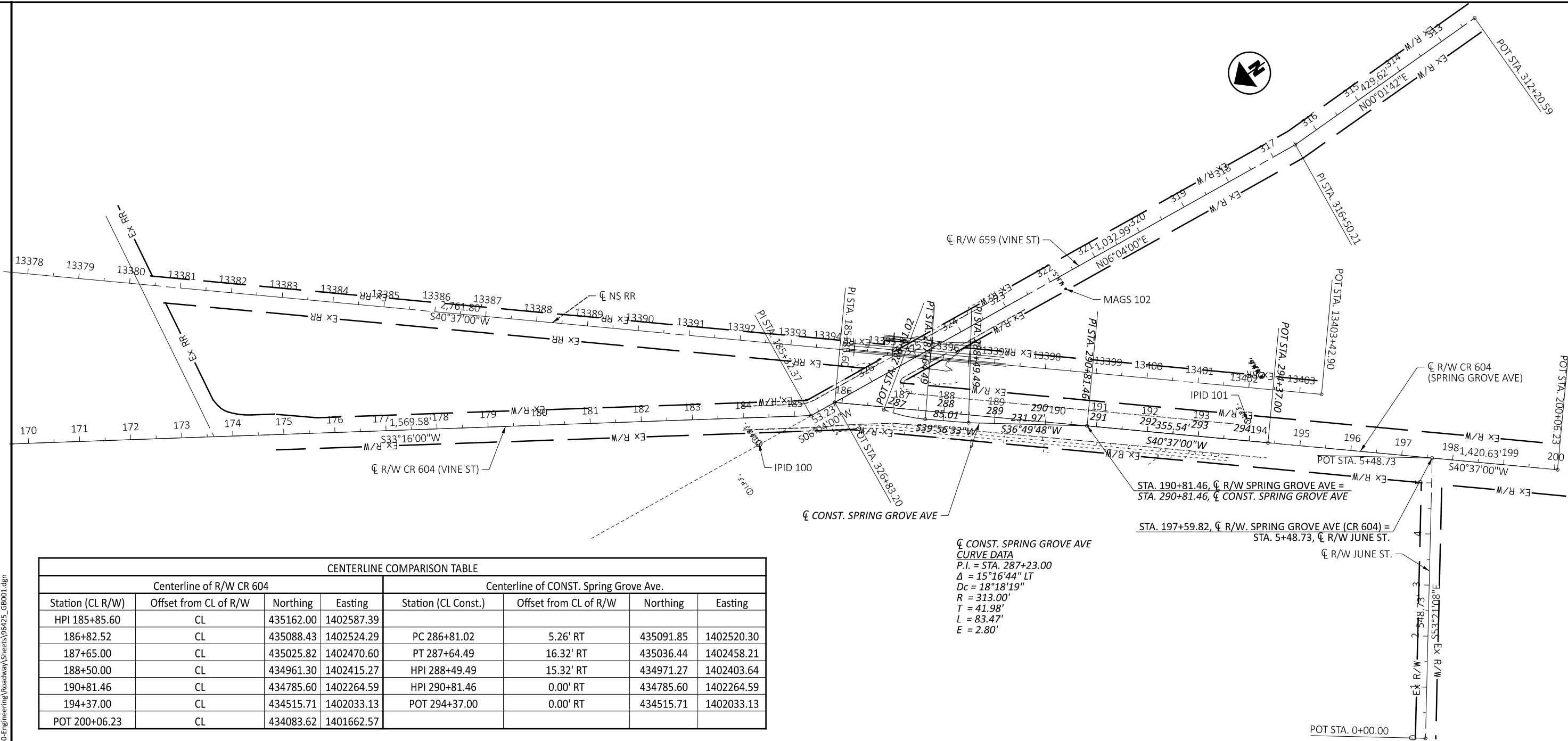


DESIGNER
TK

REVIEWER
SJS 06-28-24

PROJECT ID
96425

SHEET TOTAL
P.01 35



SCHEMATIC PLAN
VINE STREET & SPRING GROVE AVENUE

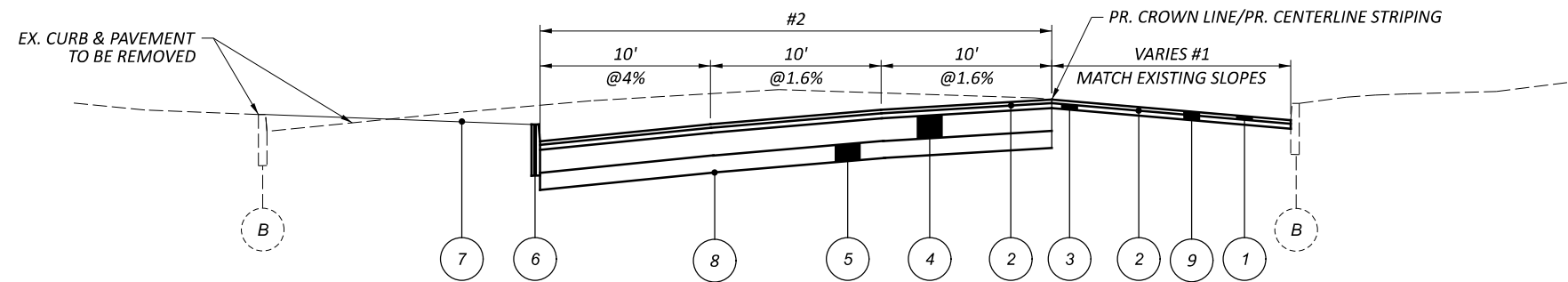
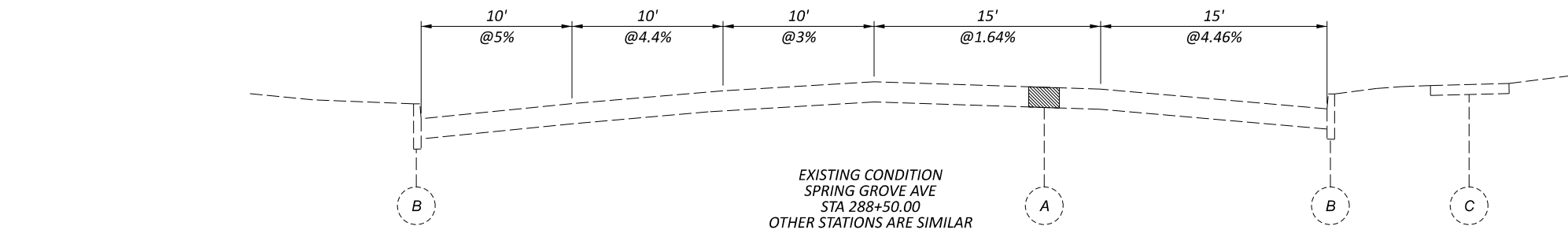
CENTERLINE COMPARISON TABLE							
Centerline of R/W CR 604				Centerline of CONST. Spring Grove Ave.			
Station (CL R/W)	Offset from CL of R/W	Northing	Easting	Station (CL Const.)	Offset from CL of R/W	Northing	Easting
HPI 185+85.60	CL	435162.00	1402587.39				
186+82.52	CL	435088.43	1402524.29	PC 286+81.02	5.26' RT	435091.85	1402520.30
187+65.00	CL	435025.82	1402470.60	PT 287+64.49	16.32' RT	435036.44	1402458.21
188+50.00	CL	434961.30	1402415.27	HPI 288+49.49	15.32' RT	434971.27	1402403.64
190+81.46	CL	434785.60	1402264.59	HPI 290+81.46	0.00' RT	434785.60	1402264.59
194+37.00	CL	434515.71	1402033.13	POT 294+37.00	0.00' RT	434515.71	1402033.13
POT 200+06.23	CL	434083.62	1401662.57				

CONST. SPRING GROVE AVE
CURVE DATA
 P.I. = STA. 287+23.00
 $\Delta = 15^{\circ}16'44''$ LT
 $D_c = 18^{\circ}18'19''$
 $R = 313.00'$
 $T = 41.98'$
 $L = 83.47'$
 $E = 2.80'$

PRIMARY PROJECT CONTROL INFORMATION							
POINT NUMBER	COORDINATES US SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	STATION CENTERLINE R/W	OFFSET	STATION BASELINE OF CONSTRUCTION	DESCRIPTION
	NORTHING	EASTING					
IPID100	435329.622	1402607.123	528.949	SPRING GROVE AVE STA. 184+28.73	51.12 RT		5/8" IRON PIN FOUND
IPID101	434523.652	1402090.716	523.441	SPRING GROVE AVE STA. 193+93.49	38.54 LT	SPRING GROVE AVENUE STA. 293+93.49	5/8" IRON PIN FOUND
MAGS102	434664.883	1402507.504	526.111	VINE STREET STA. 321+80.43	26.90 LT		MAG NAIL SET

DESIGN AGENCY
Mead & Hunt
 CLIENT

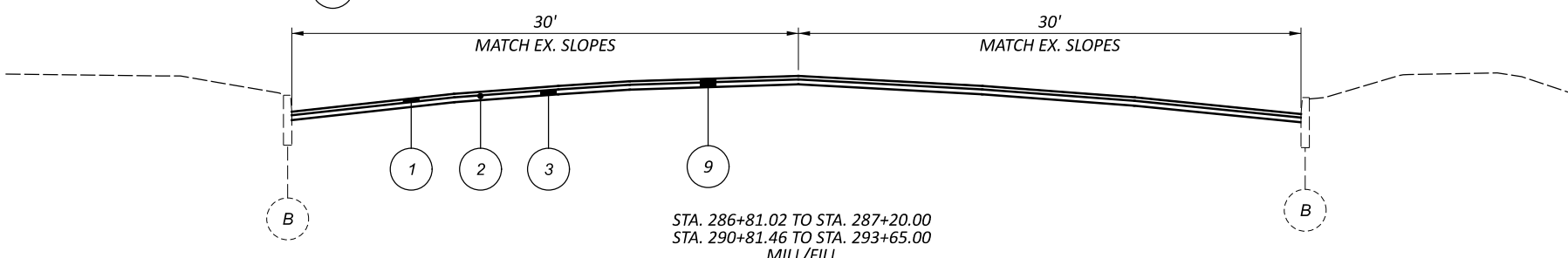
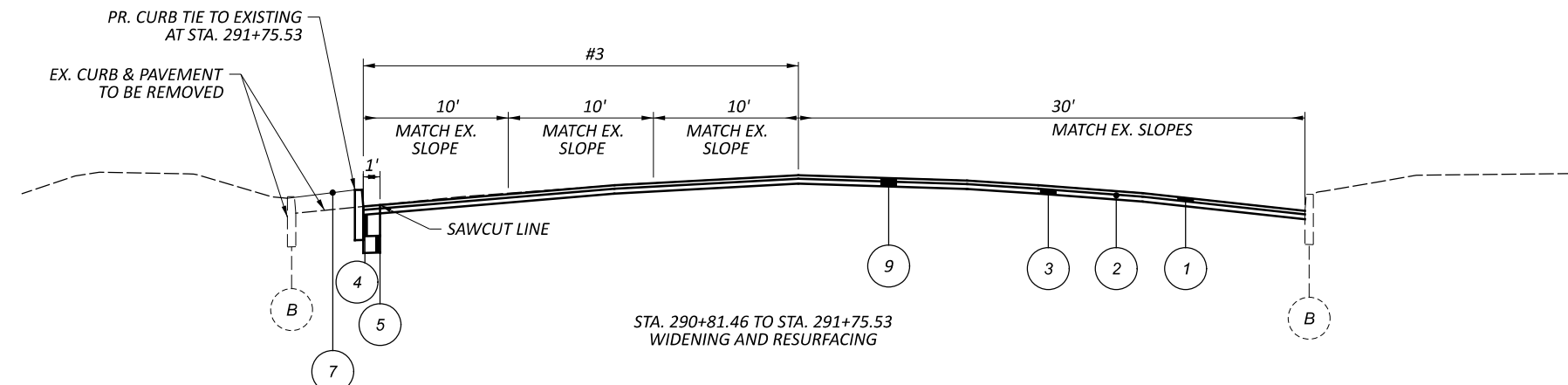
 DESIGNER
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#1:
VARIES FROM 17' AT STA. 287+20.00 TO 13.5' AT 287+64.50
VARIES FROM 13.5' AT 287+64.50 TO 14.5' AT 288+50.00
VARIES FROM 14.5' AT 288+50.00 TO 30' AT 290+81.46

#2:
VARIES FROM 30' AT 287+64.50 TO 26' AT 290+81.46

#3:
VARIES FROM 26' AT 290+81.46 TO 30' AT 291+75.53
30' FROM 291+75.53 TO 293+65.00



LEGEND

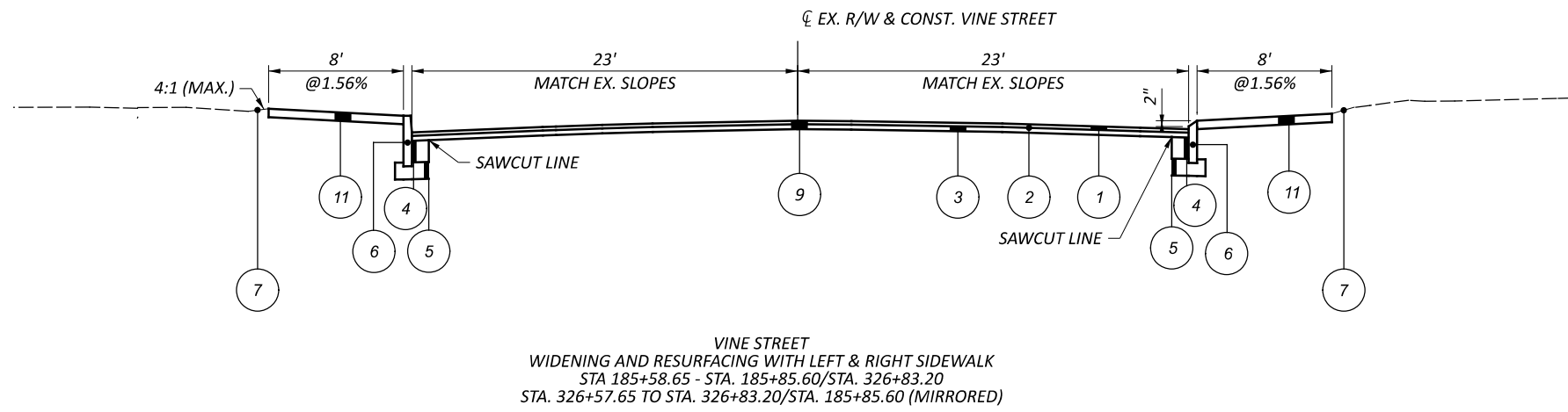
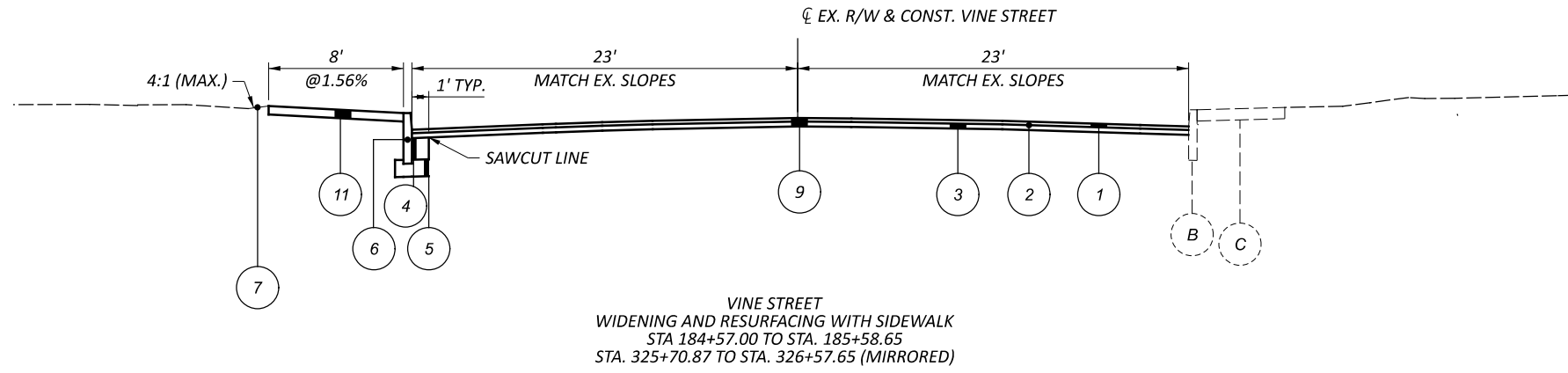
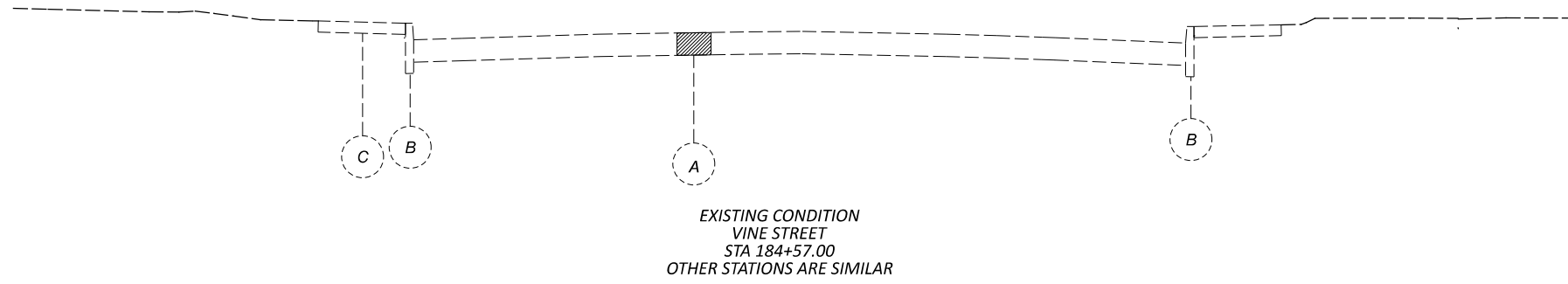
- | | | |
|--|---|--|
| 1 ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449) P64-22 | 6 ITEM 609 - CURB, TYPE 6 | (A) EXISTING ASPHALT PAVEMENT (8" DEPTH ASSUMED) |
| 2 ITEM 407 - NON-TRACKING TACK COAT (REFERENCE THE CMS TABLE 406.06-1 FOR APPLICATION RATES) | 7 ITEM 659 - SEEDING AND MULCHING | (B) EXISTING CURB, TYPE 6 |
| 3 ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449) | 8 ITEM 204 - SUBGRADE COMPACTION | (C) EXISTING CONCRETE WALK |
| 4 ITEM 301 - 8" ASPHALT CONCRETE BASE, PG64-22, (449) | 9 ITEM 254 - PAVEMENT PLANING (3") | |
| 5 ITEM 304 - 6" AGGREGATE BASE | 10 ITEM 254 - PAVEMENT PLANING (VARIABLE DEPTH) | |
| | 11 ITEM 608 - CONCRETE WALK (6") | |

TYPICAL SECTIONS

DESIGN AGENCY
Mead & Hunt
CLIENT



DESIGNER
TK
REVIEWER
SJS 06-28-24
PROJECT ID
96425
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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.

UTILITIES

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

ATT OHIO

7201 FAR HILLS AVE.
DAYTON OHIO 45459
937-708-1026
ALAN STUTES
AS1634@ATT.COM

BP MIDWEST PRODUCT PL HOLDINGS LLC

30 SOUTH WACKER DRIVE
SUITE 900
CHICAGO, IL 60606
(312) 809-4708
KEITH BOYLE
KEITH.BOYLE@BP.COM
BPIPELINESROW@BP.COM

ALTA FIBER

221 E 4TH STREET (BUILDING 121-900)
CINCINNATI, OH 45202
ROADPROJECTS@ALTA FIBER.COM

GREATER CINCINNATI WATER WORKS

4747 SPRING GROVE AVENUE
CINCINNATI, OH 45232
513-352-3723
DAN LOUIS
DANIEL.LOUIS@GCWW.CINCINNATI-OH.GOV

CINCINNATI METROPOLITAN SEWER DISTRICT

1600 GEST STREET
CINCINNATI, OH 45204
DESIGN: 513-557-7188
ROB FRANKLIN
MSDUTILITYREVIEW@CINCINNATI-OH.GOV

CITY OF CINCINNATI TRAFFIC

801 PLUM ST, ROOM 320
CINCINNATI, OH 45202
513-378-6190
ANDY CARTER
ANDREW.CARTER@CINCINNATI-OH.GOV

DUKE ENERGY – ELECTRIC (DISTRIBUTION)

2010 DANA AVE
CINCINNATI, OH 45207
513-508-9609
SHANE ERHART
SHANE.ERHART@DUKE-ENERGY.COM

DUKE ENERGY – ELECTRIC (TRANSMISSION)

139 E. 4TH ST., RM 552A
CINCINNATI, OH 45202
513-287-1266
TIM MEYER
TIM.MEYER@DUKE-ENERGY.COM

DUKE ENERGY GAS

139 EAST 4TH ST., ROOM 460A
CINCINNATI, OH 45202
OH/KYHOUSEBILL@DUKE-ENERGY.COM

UTILITIES (CONTINUED)

BRIGHTSPEED (FORMERLY LUMEN)

OFFICE :1 980-376-1524
CELL: 513-850-1521
RICHARD PATTERSON
RICHARD.T.PATTERSON@BRIGHTSPEED.COM

MCIVERIZON

8800 GOVERNOR HILL DR
CINCINNATI, OH 45249
614-816-0361
BOB DILLOW
ROBERT.DILLOW@VERIZON.COM

SPRINT – FIBER OPTIC

11370 ENTERPRISE PARK DRIVE
SHARONVILLE, OH 45241
513-459-5796
STEVE HUGHES
STEVEN.HUGHES1@T-MOBILE.COM
DIRECT: (513) 459-5796
(M) : (814) 553-2300

SOUTHWESTERN OHIO WATER COMPANY

600 SHEPHERD AVE., SUITE 1
CINCINNATI, OHIO 45215
513-489-4844
MICHAEL C FLAVIN, PE
MIKE.FLAVIN@FUSE.NET

WINDSTREAM-KDL

65 E. WINNERLINE RD
EATON, OH 45320
937-260-3062
LEON TAYLOR
LEON.TAYLOR@WINDSTREAM.COM

CHARTER COMMUNICATIONS

10920 KENWOOD ROAD
BLUE ASH, OHIO 45242
DL-SOUTHERN-OHIO-OUTSIDE-PLANT@CHARTER.COM

VILLAGE OF ST. BERNARD PUBLIC SAFETY & SERVICE DEPARTMENT

5230 VINE STREET
ST. BERNARD, OH 45217
513-242-7770
THOMAS PAUL
SERVICE@CITYOFSTBERNARD.ORG

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.

DURING SITE INSPECTION, THE CONTRACTOR SHALL CHECK FOR CONFLICTS BETWEEN PROPOSED DESIGN AND EXISTING UTILITY LINES. WHERE SUCH CONFLICTS EXIST, THE CONTRACTOR SHALL PROPOSE A WORK PLAN TO AVOID THE CONFLICTS.

COORDINATION WITH RAILROAD

THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH NORFOLK SOUTHERN RAILROAD ON THIS PROJECT.

THE CONTRACTOR WILL NEED TO COORDINATE WITH NORFOLK SOUTHERN TO DETERMINE THE METHOD AND SCHEDULE OF INTERCONNECTION. AT MINIMUM, THE CONTRACTOR SHALL CONNECT THE PROVIDED INTERCONNECT CABLE TO THE TRAFFIC SIGNAL CONTROL CABINET. IF THE PROVIDED CABLE LENGTH IS NOT ADEQUATE, THE CONTRACTOR SHALL REPLACE IT WITH ONE CONTINUOUS CABLE OF ADEQUATE LENGTH TO COMPLETE THE CONNECTION BETWEEN THE TRAFFIC SIGNAL CONTROLLER CABINET AND THE RAILROAD BUNGALOW IN ACCORDANCE WITH SS819. SPLICES ARE NOT ACCEPTABLE.

ADDITIONAL PROJECT CONTACTS

LISTED BELOW IS INFORMATION FOR ADDITIONAL PROJECT CONTACTS:

Ohio Rail Development Commission
Allen Bell - Safety Manager
614-644-0313
allen.bell@dot.ohio.gov

Ohio Rail Development Commission
Heather Hamilton - Safety Division Coordinator
614-644-0307
heather.hamilton@dot.ohio.gov

Ohio Rail Development Commission Representative
Mott MacDonald
Zoltan Szabo
216-553-4642
zoltan.szabo@mottmac.com

Norfolk Southern Railroad
Aaron Pease
440-429-1960
aaron.pease@nscorp.com

Village of St. Bernard Public Safety & Service Dept.
Thomas Paul
513-242-7770
Service@cityofstbernard.org

SEEDING AND MULCHING

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

659, TOPSOIL	10 CU. YD.
659, SEEDING AND MULCHING	100 SQ. YD.
659, REPAIR SEEDING AND MULCHING	5 SQ. YD.
659, INTER-SEEDING	5 SQ. YD.
659, COMMERCIAL FERTILIZER	0.02 TON
659, LIME	0.02 ACRE
659, WATER	1 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. THE SEEDING AND MULCHING QUANTITIES SHOWN ABOVE HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 608 - CURB RAMP, AS PER PLAN

IN AREAS OF INTERSECTION WHERE CURB IS REPLACED, WHEEL CHAIR RAMPS SHALL BE CONSTRUCTED TO MEET ADA REQUIREMENTS IN ACCORDANCE WITH ODOT STANDARD DRAWING BP-7.1 AND AS DIRECTED BY THE ENGINEER.

THE INTENT OF THIS ITEM IS TO INSTALL ADA CURB RAMPS WHERE INDICATED IN THIS SET OF PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE

FOR REMOVING THE EXISTING WALK AND/OR CURB AND GUTTER IN A MANNER THAT DOES NOT DAMAGE OTHER AREAS MEANT TO REMAIN IN

PLACE (SEE CURRENT STANDARD DRAWING BP-7.1). AS THESE INSTALLATIONS ARE BEING MADE TO FIT EXISTING CONDITIONS, VARIATIONS FROM STANDARD MAY OCCUR. ANY DEVIATIONS FROM DETAIL IN THESE

PLANS MUST FIRST BE APPROVED BY THE ENGINEER. RESTORATION TO EXISTING PAVEMENT AREAS IN FRONT OF THE PROPOSED CURB RAMPS SHALL BE INCLUDED IN THIS ITEM OF WORK. RESTORATION SHALL BE MADE UP TO AND INCLUDE THE SURFACE COURSE. ALL WORK, LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 608, CURB RAMP, AS PER PLAN.

CLEARING AND GRUBBING

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

ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A

TRAFFIC COMPACTED SURFACE MATERIAL, TYPE A SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN THE CONSTRUCTION LIMITS WHERE GRAVEL MATERIAL EXISTED PRIOR TO CONSTRUCTION.

THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

410, TRAFFIC COMPACTED SURFACE, TYPE A 10 CU. YD.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET ___ OF THE PLANS 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: B

VERTICAL POSITIONING ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: 18

HORIZONTAL POSITIONING REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - SOUTH ZONE
COMBINED SCALE FACTOR: 0.999922516
PROJECT ADJUSTMENT FACTOR: 1.00007749
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.

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 10:00 PM AND 7:00 AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

WORK INSPECTION

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



DESIGNER	TK
REVIEWER	SJS
PROJECT ID	96425
SHEET	P.05
TOTAL	35

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION

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

NEW SIGNAL INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

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

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

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

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

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION (CONT)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 6 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 TO 9:00 AM AND 3:00 TO 6:00 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS.

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

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

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

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, FLAGGER CONTROL PER SCD MT-97.10, AND MT-97.12. MAINTAIN A MINIMUM OF 1 SIDEWALK ON EITHER SIDE OF THE ROAD AT ALL TIMES.

LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.

IF IT IS NECESSARY TO STOP ALL TRAFFIC THE WORK SHALL BE SO ARRANGED THAT THE STOPPAGE IS LESS THAN TEN (10) MINUTES IN ANY ONE (1) THIRTY (30) MINUTE PERIOD. NO STOPPAGE OF TRAFFIC SHALL OCCUR FOR THE ERECTION OF SIGNAL SUPPORTS OR HANGING SIGNAL HEADS WITHOUT A LAW ENFORCEMENT OFFICER WITH PATROL CAR AT THE SITE FOR ASSISTANCE IN CONTROLLING TRAFFIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE SERVICES AND SCHEDULING OF SAID LAW ENFORCEMENT OFFICER WITH PATROL CAR.

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

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES) (CONT)

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

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 FRAME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS AND PIO
LANE CLOSURES AND RESTRICTIONS	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION AND 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.

WINDOW CONTRACT TABLE

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.

DESCRIPTION OF CRITICAL WORK	CALENDAR DAYS TO COMPLETE
ALL WORK ON PROJECT	60 DAYS

THE CONSTRUCTION COMPLETION DATE IS 10/31/2025

DUST CONTROL

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

ITEM 616, WATER 1 M. GAL.

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 OMUTCD INTENDS THAT FLAGGERS BE USED.

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

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

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

IN 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.

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 48 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. THE QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.



DESIGNER
DLW

REVIEWER
SJS 06/28/24

PROJECT ID
96425

SHEET TOTAL
P.06 | 35

ITEM 900, SPECIAL - RAILROAD FLAGGING SERVICES

FLAGGING FOR WORK ON RAILROAD RIGHT OF WAY SHALL BE COORDINATED, OBTAINED AND PAID FOR BY THE CONTRACTOR. FLAGGING SHALL BE PROVIDED BY THE CONTRACTOR WHENEVER REQUIRED BY THE NORFOLK SOUTHERN SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTEREST. NORFOLK SOUTHERN SHALL APPROVE THE FLAGGING SERVICE PROVIDER AND THEIR STAFF.

SEE ADDITIONAL NS REQUIREMENTS IN THE "SPECIAL CLAUSES IN THE PROPOSAL". REFER TO DRAWING P6/22 UNDER ITEM 900-SPECIAL-RAILROAD FLAGGING SERVICES.

NORFOLK SOUTHERN HAS THE SOLE AUTHORITY TO DETERMINE THE NEED FOR PROTECTION SERVICES TO PROTECT ITS OPERATIONS IN GENERAL. THE REQUIREMENTS OF SUCH SERVICES WILL BE WHENEVER THE CONTRACTOR'S PERSONNEL OR EQUIPMENT ARE OR ARE LIKELY TO BE, WORKING ON THE RAILROAD'S RIGHT OF WAY, OR ACROSS, OVER, ADJACENT TO, OR UNDER A TRACK, OR WHEN SUCH WORK HAS DISTURBED OR IS LIKELY TO DISTURB A RAILROAD STRUCTURE OR THE RAILROAD ROADBED OR SURFACE AND ALIGNMENT OF ANY TRACK TO SUCH EXTENT THAT THE MOVEMENT OF TRAINS MUST BE CONTROLLED BY FLAGGING.

THE TOTAL DOLLARS IN THE ESTIMATED QUANTITIES IS BASED UPON AN ESTIMATE OF TOTAL FLAGGING DOLLARS NEEDED TO COMPLETE THE PLANNED WORK.

ONLY THE FOLLOWING CERTIFIED FLAGGING PROVIDERS ARE ACCEPTABLE BY NORFOLK SOUTHERN:

R&R CONSULTING TEAM
 DAVID N. CRAFT
 CO-OWNER & PRESIDENT
 R&R CONSULTING TEAM LLC.
 P.O. BOX 4739
 HARRISBURG, PA 17111
 717-497-4373 (CELL)
 775-521-2495 (E-FAX)
 dcrafft@rrconsultingteam.com
 www.rrconsultingteam.com

RAILROAD CONSULTANTS
 STEVE LLOYD (VP BUSINESS DEVELOPMENT)
 (615) 542-8901

RAILPROS
 1320 GREENWAY DR., SUITE 490
 IRVING, TX 75038
 (877) 315-0513
 HTTP://WWW.RAILPROS.COM/SERVICES-CATEGORY/FIELD-SERVICES/

PAYMENT FOR CERTIFIED FLAGGING PROVIDERS WILL BE MADE PER ITEM 900, RAILROAD FLAGGING SERVICES, EACH BASED UPON THE INVOICES RECEIVED FROM THE FLAGGING SERVICE FOR THE DOLLARS USED, INCLUDING A FIVE PERCENT MARKUP FOR CONTRACTOR OVERHEAD FOR ADMINISTERING THE CONTRACT WITH THE FLAGGING SERVICE. AN ESTIMATED QUANTITY OF \$5000 HAS BEEN CARRIED TO THE GENERAL SUMMARY.

IN THE EVENT THE PROJECT IS DELAYED DUE TO RAILROAD FLAGGER AVAILABILITY, THE CONTRACTOR WILL PROVIDE DOCUMENTATION SUPPORTING THEIR EFFORTS TO SCHEDULE A FLAGGER FROM THE FLAGGING SERVICE.

SEQUENCE OF CONSTRUCTION

SPRING GROVE AVENUE CONSTRUCTION SHALL CONSIST OF MILLING AND RESURFACING, FULL DEPTH PAVEMENT REPLACEMENT NEAR THE INTERSECTION, SIDEWALK AND CURB CONSTRUCTION, PAVEMENT REMOVAL, SIGNING AND PAVEMENT MARKING INCLUDING A NEW SIGNAL SYSTEM AND THE EXISTING SIGNAL REMOVED.

SPRING GROVE AVENUE CONSTRUCTION:
 THE CONTRACTOR SHALL CONSTRUCT SPRING GROVE AVENUE IN THREE PHASES USING PART WIDTH CONSTRUCTION METHODS. TWO-WAY, ONE-LANE TRAFFIC WILL BE MAINTAINED PER SCD MT-95.32 AND MT-95.41 DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A MINIMUM TRAVEL LANE WIDTH OF 10 FEET AT ALL TIMES.

PHASE 1 - SPRING GROVE AVENUE
 THE NORTHBOUND TRAFFIC ON SPRING GROVE AVENUE WILL BE REDUCED FROM THREE-LANES TO ONE-LANE OF TRAFFIC IN THE FAR RIGHT LANE (EAST SIDE). SOUTHBOUND SPRING GROVE TRAFFIC SHALL BE SHIFTED TO THE LEFT WHERE TWO-WAY, ONE-LANE TRAFFIC WILL BE MAINTAINED ON THE EAST SIDE OF SPRING GROVE AVENUE.

ONCE TRAFFIC HAS BEEN SHIFTED, THE CONTRACTOR SHALL MILL THE EXISTING PAVEMENT, INSTALL THE ASPHALT WEDGE COURSE AND THE INTERMEDIATE COURSE ON THE WEST SIDE OF SPRING GROVE AVENUE.

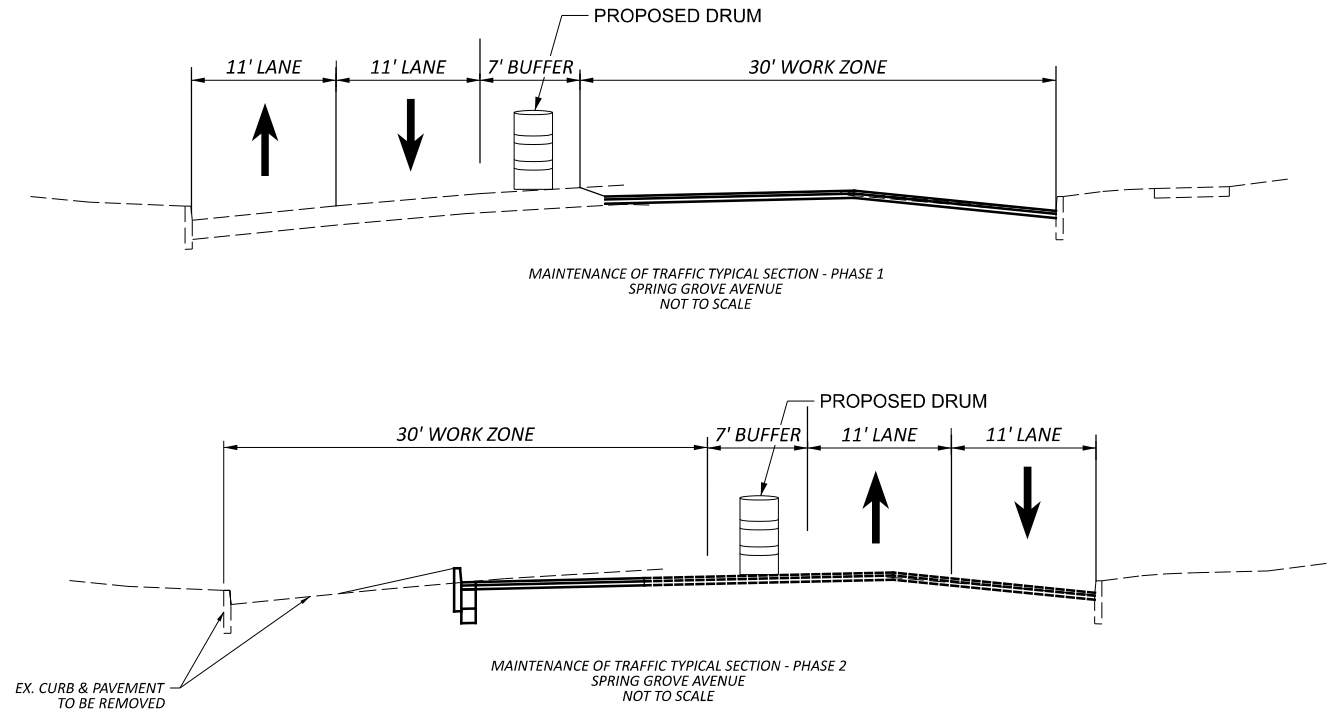
PHASE 2 - SPRING GROVE AVENUE
 THE SOUTHBOUND TRAFFIC SHALL BE SHIFTED TO THE WEST SIDE OF THE ROADWAY. THE NORTHBOUND TRAFFIC WILL BE REDUCED FROM THREE-LANES TO ONE-LANE AND SHIFTED TO THE WEST SIDE OF SPRING GROVE AVENUE WHERE TWO-WAY, ONE-LANE TRAFFIC WILL BE MAINTAINED ON THE WEST SIDE OF SPRING GROVE AVENUE.

ONCE TRAFFIC HAS BEEN SHIFTED THAN THE CONTRACTOR CAN INSTALL THE CONCRETE CURB, PLACE THE WEDGE AND INTERMEDIATE COURSE AND REMOVE EXISTING PAVEMENT AS SHOWN IN THE ROADWAY PLANS.

PHASE 3 - SPRING GROVE AVENUE
 NEXT THE CONTRACTOR SHALL PLACE THE FINAL SURFACE COURSE AND COMPLETE THE SIGNING AND PAVEMENT MARKINGS ON SPRING GROVE AVENUE. TRAFFIC WILL BE MAINTAINED WITH THE USE OF FLAGGERS PER STD. CONSTRUCTION DRAWINGS MT-97.12.

SIGNAL CONSTRUCTION
 THE CONTRACTOR SHALL INSTALL THE PROPOSED SIGNALS AS SHOWN ON THE SIGNAL PLANS WHILE MAINTAINING THE EXISTING SIGNAL OPERATIONS. ONCE COMPLETED THE CONTRACTOR CAN THEN REMOVE THE EXISTING SIGNAL EQUIPMENT.

GENERAL CONSTRUCTION ITEMS:
 THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES. IF THE CONTRACTOR NEEDS TO RESTRICT ACCESS TO A PARCEL, THE PROPERTY OWNER OR TENANT, IF DIFFERENT FROM THE PROPERTY OWNER, SHALL BE NOTIFIED 48 HOURS IN ADVANCE. THE CONTRACTOR SHALL NOT RESTRICT ACCESS MORE THAN 1 HOUR IN A 24 HOUR PERIOD.



NOTE: DRUMS WILL BE USED IF THE DROP-OFF BETWEEN THE EXISTING PAVEMENT AND THE PROPOSED IS 12" OR LESS. IF THE DROPP-OFF IS GREATER THAN 12" - PORTABLE BARRIERS WILL BE NEEDED.

DESIGN AGENCY



CLIENT



DESIGNER

DLW

REVIEWER

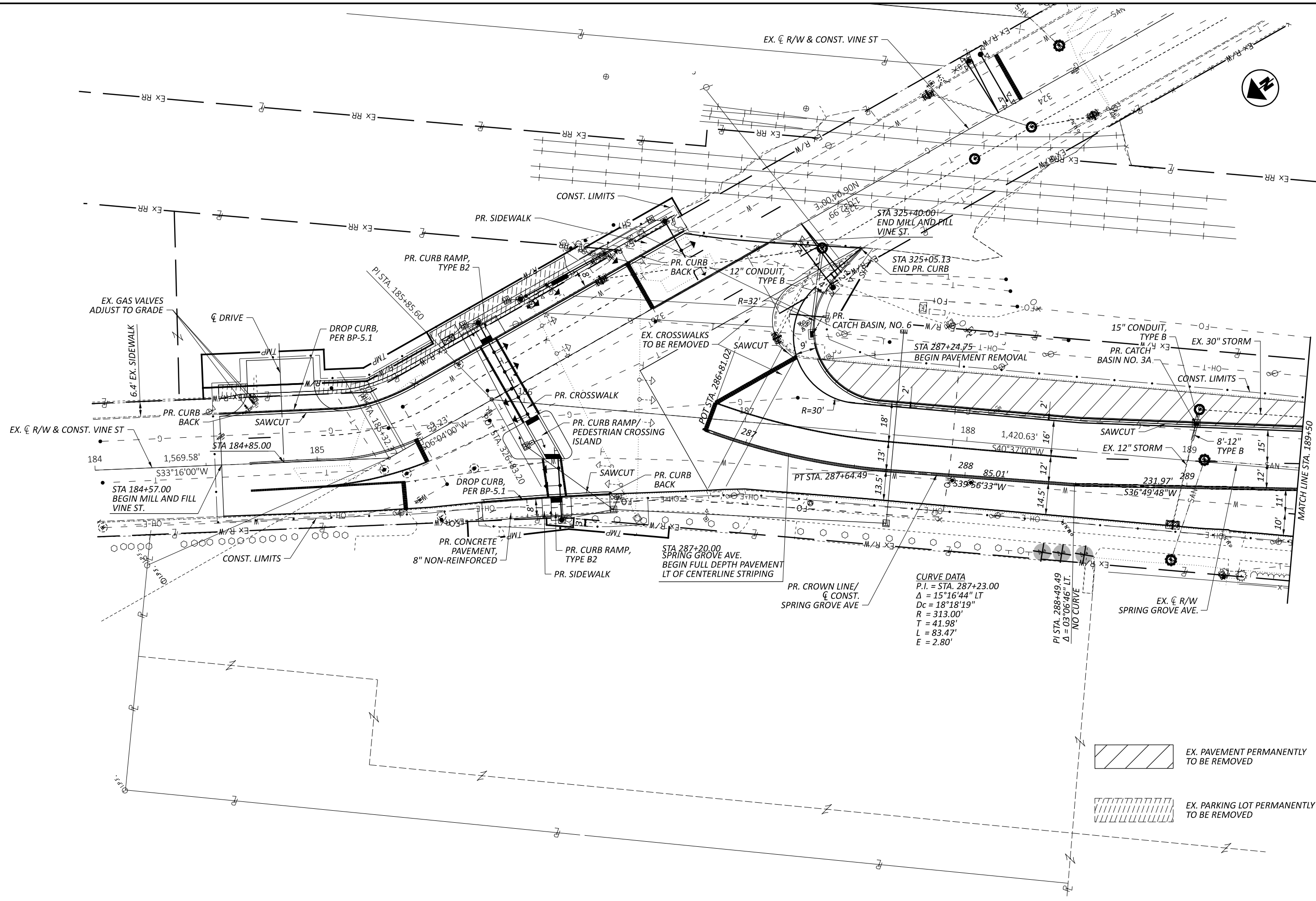
SJS 06/28/24

PROJECT ID

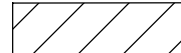
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SHEET TOTAL

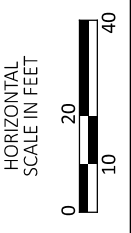
P.07 35



CURVE DATA
 P.I. = STA. 287+23.00
 $\Delta = 15^\circ 16' 44''$ LT
 $D_c = 18^\circ 18' 19''$
 $R = 313.00'$
 $T = 41.98'$
 $L = 83.47'$
 $E = 2.80'$

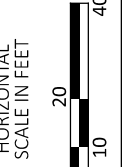
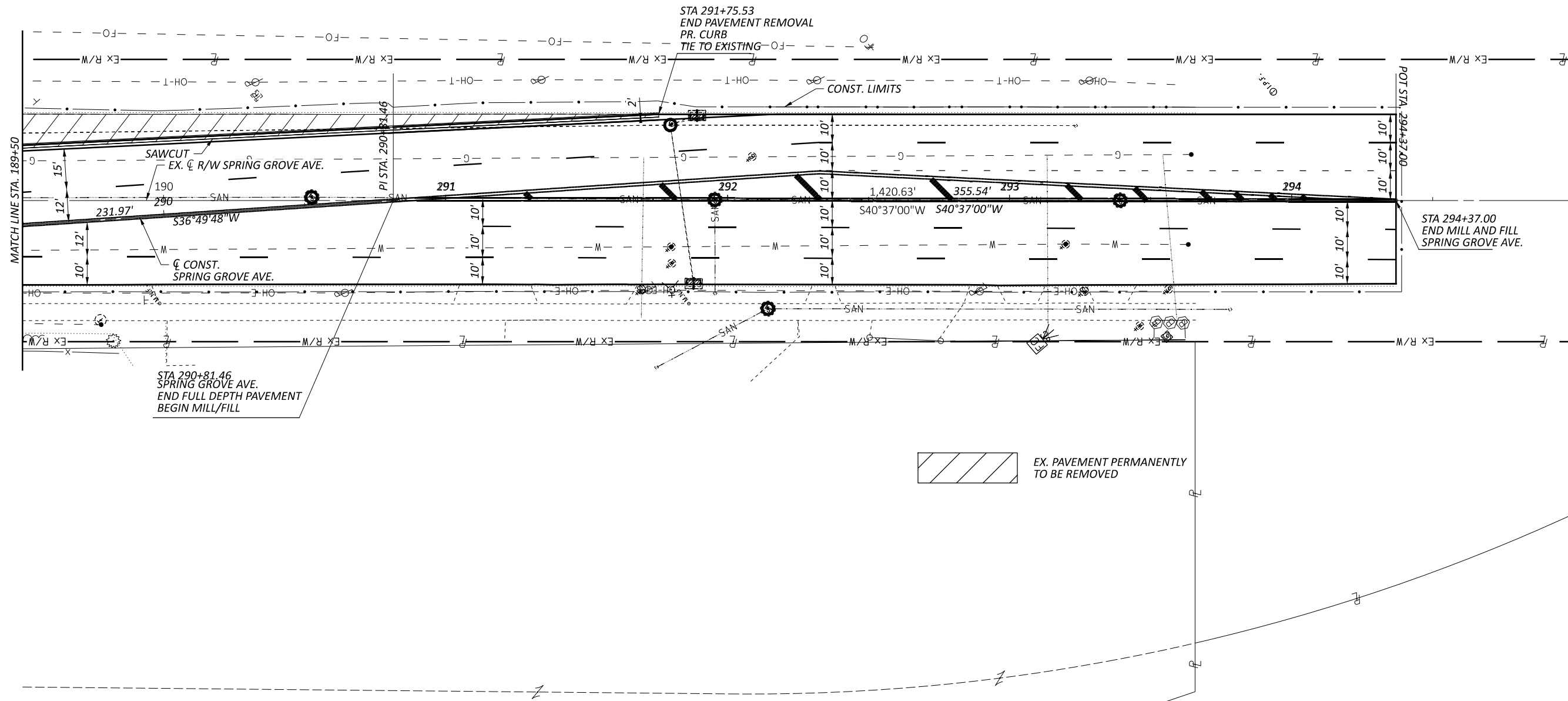
 EX. PAVEMENT PERMANENTLY TO BE REMOVED

 EX. PARKING LOT PERMANENTLY TO BE REMOVED



ROADWAY PLAN SHEET
STA. 184+50.00 TO STA. 189+50

DESIGN AGENCY	
Mead & Hunt	
CLIENT	
	
DESIGNER	TK
REVIEWER	SJS
PROJECT ID	06-28-24
SHEET	96425
TOTAL	
P.08	35



ROADWAY PLAN SHEET
STA. 189+50.00 TO STA. 195+00.00

DESIGN AGENCY
Mead & Hunt
CLIENT



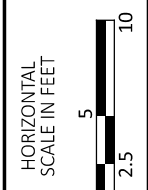
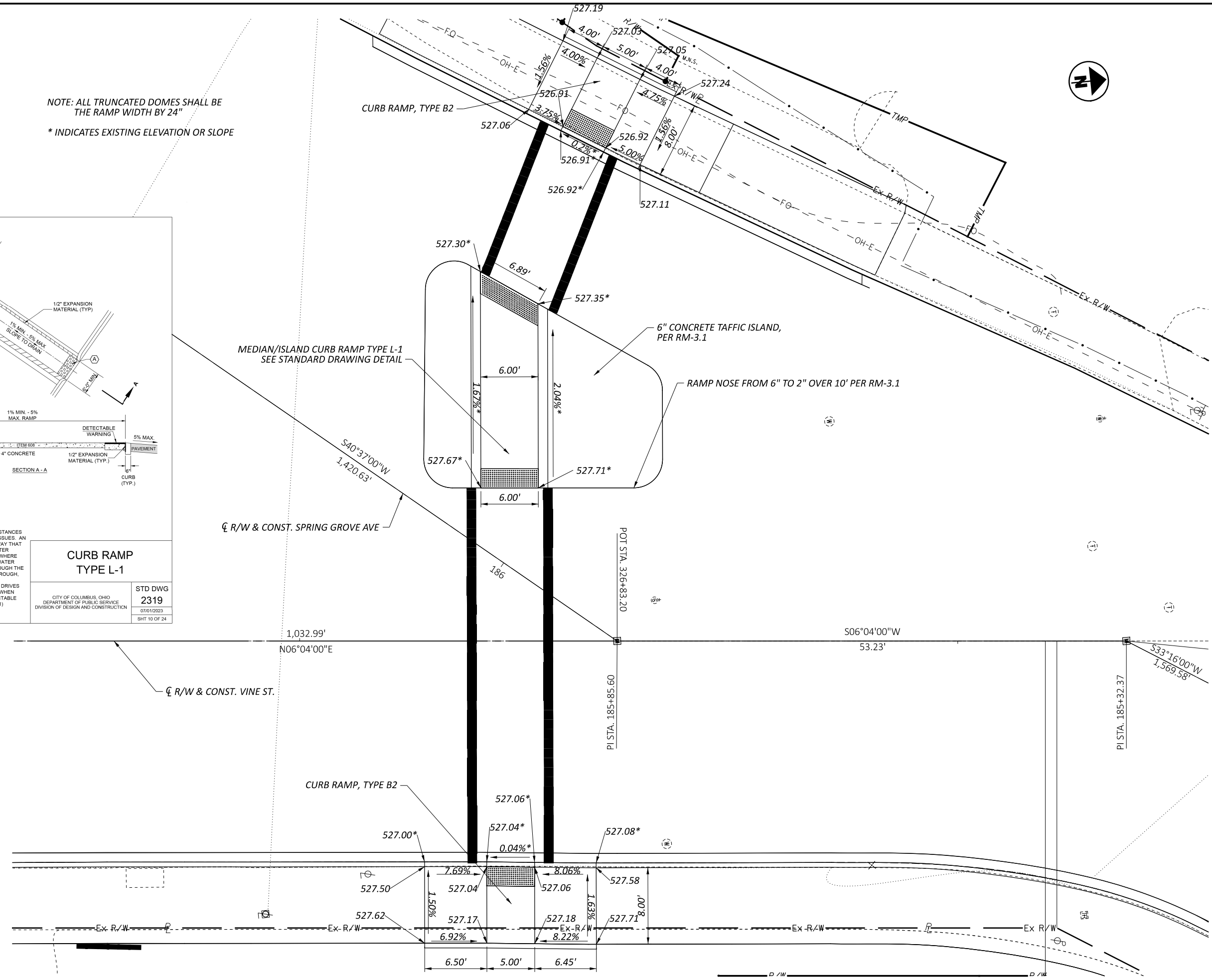
DESIGNER	TK
REVIEWER	SJS
PROJECT ID	06-28-24
SHEET	96425
TOTAL	P.09 / 35

NOTE: ALL TRUNCATED DOMES SHALL BE THE RAMP WIDTH BY 24"
 * INDICATES EXISTING ELEVATION OR SLOPE

CODED NOTES:
 (A) SEE SHEET 21 FOR DETECTABLE WARNING DETAILS

GENERAL NOTES:
 1. SEE SHEET 2 FOR ADDITIONAL DETAILED INFORMATION.
 2. RAMP L-1 SHALL BE USED IN ALL CIRCUMSTANCES WHERE NOT PROHIBITED BY DRAINAGE ISSUES. AN L-1 RAMP SHOULD NOT BE PLACED IN A WAY THAT WOULD CONVEY THE CURB FLOW OF WATER THROUGH THE MEDIAN PASSTHROUGH. WHERE THE ROADWAY CROSS-SLOPE DIRECTS WATER TOWARDS THE MEDIAN AND FLOWS THROUGH THE GUTTER LINE ADJACENT TO THE PASSTHROUGH, USE AN L-2 RAMP.
 3. MEDIANS / ISLANDS WITHIN COMMERCIAL DRIVES REQUIRE DETECTABLE WARNINGS ONLY WHEN OPPOSING CURB RAMPS REQUIRE DETECTABLE WARNINGS. (SEE SHEET 22 OF 24, NOTE 1)

CURB RAMP TYPE L-1	
CITY OF COLUMBUS, OHIO DEPARTMENT OF PUBLIC SERVICE DIVISION OF DESIGN AND CONSTRUCTION	STD DWG 2319 07/01/2023 SHT 10 OF 24



CURB RAMP DETAILS
VINE ST AND SPRING GROVE AVE

DESIGN AGENCY
Mead & Hunt
 CLIENT

DESIGNER
 TK

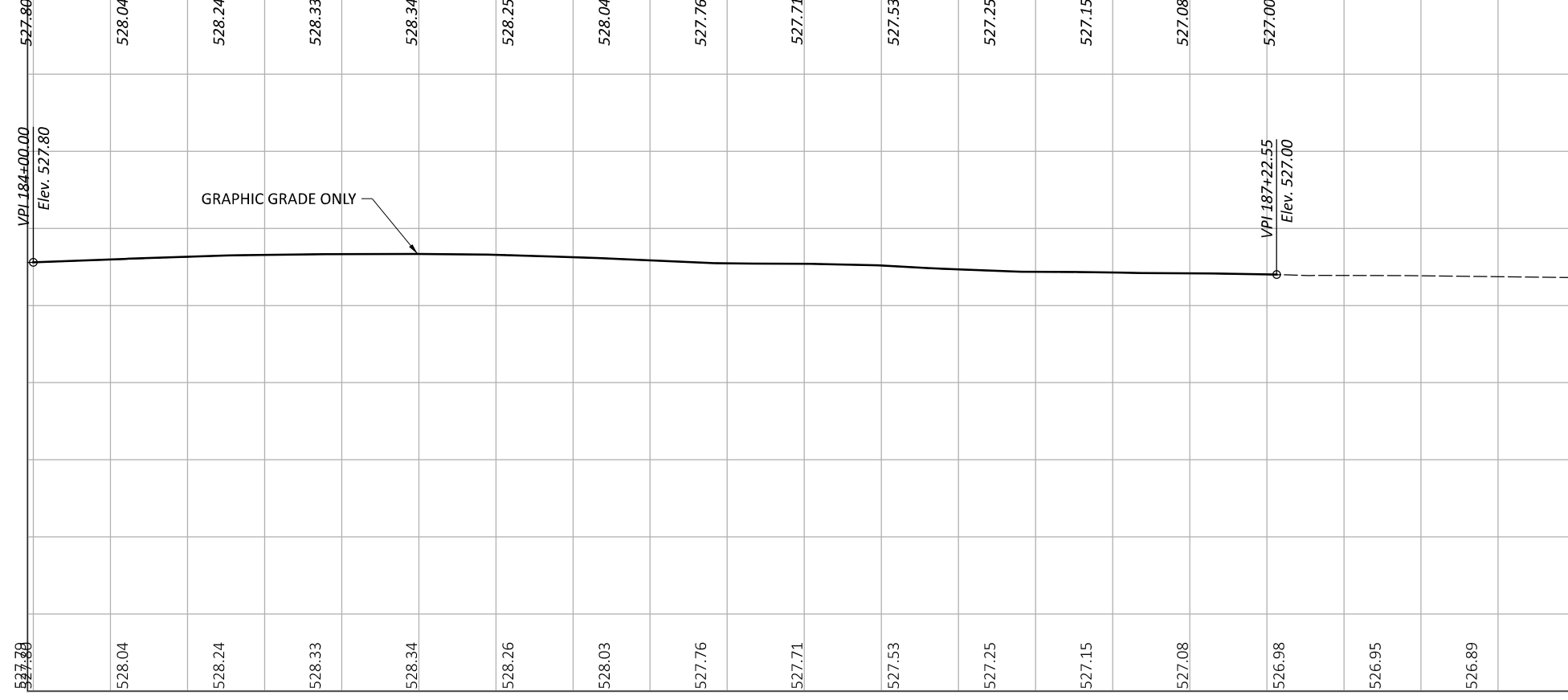
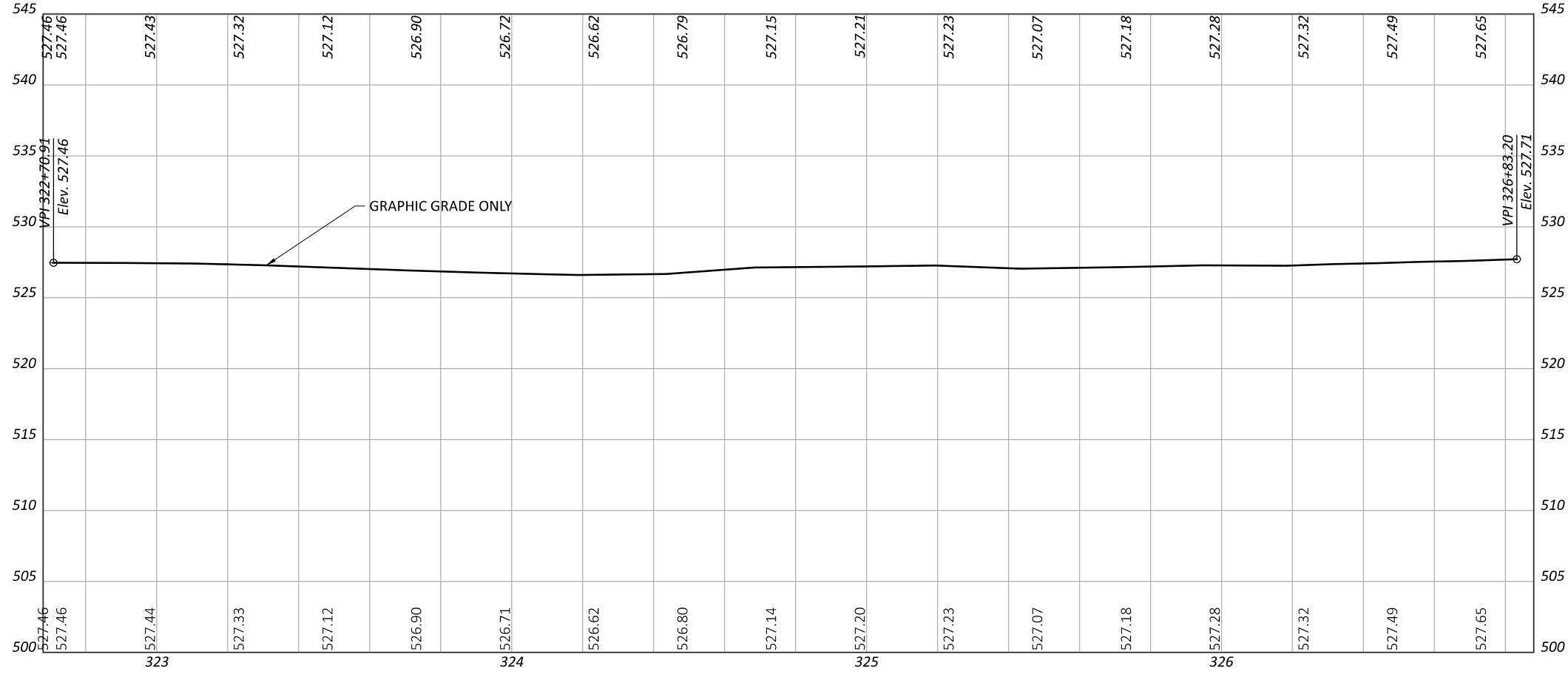
REVIEWER
 SJS 06-28-24

PROJECT ID
 96425

SHEET TOTAL
 P.10 35

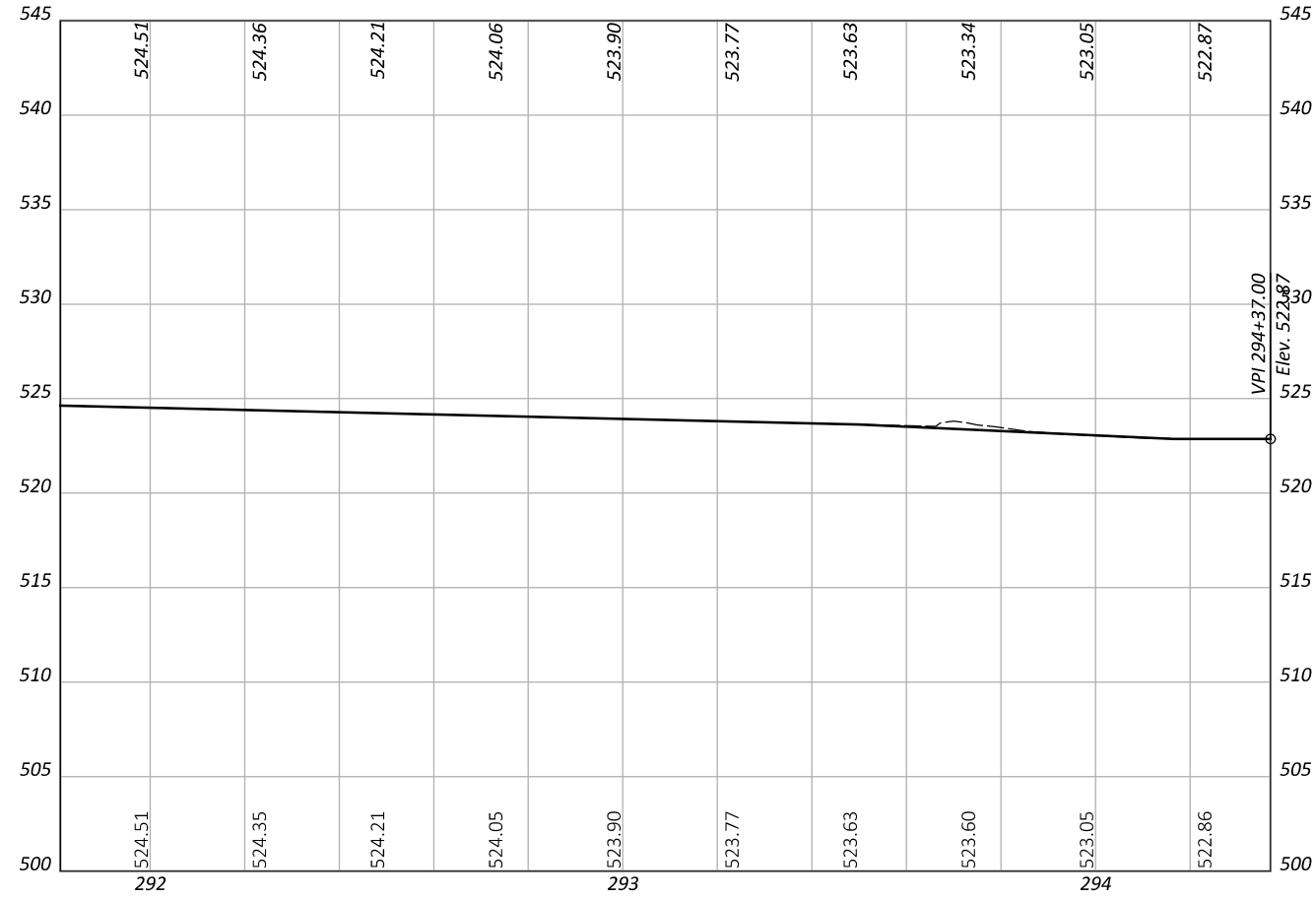
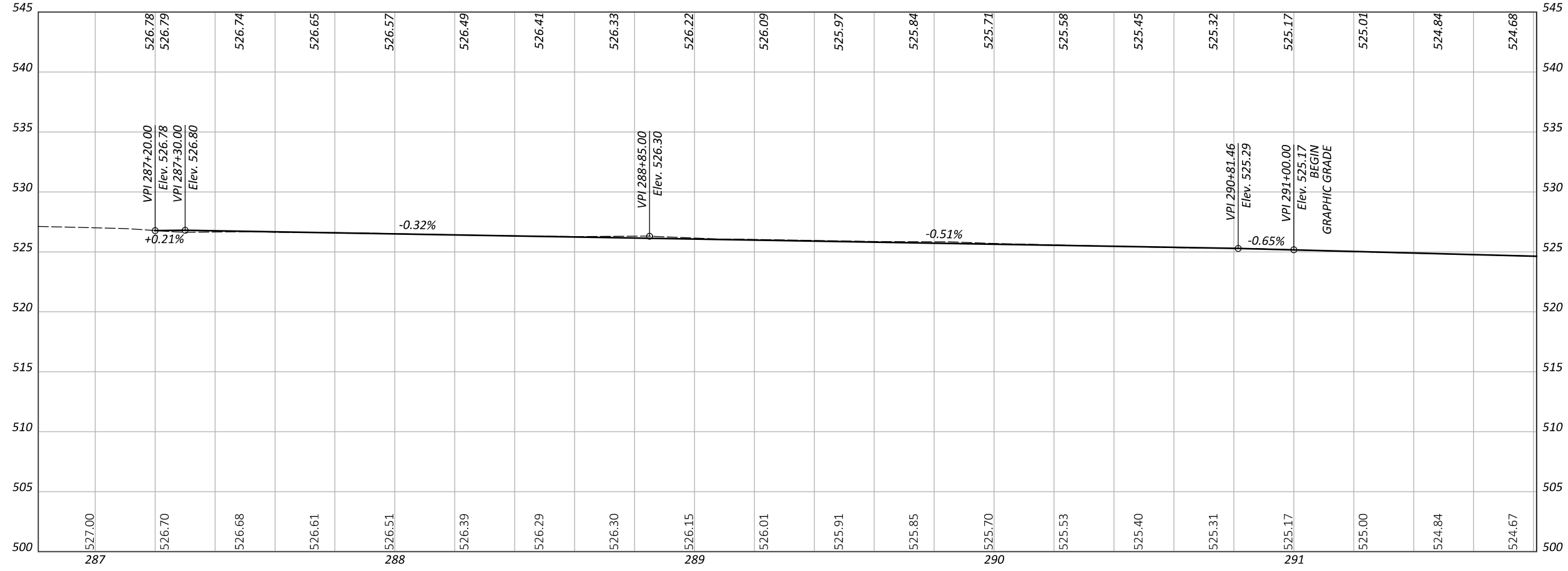
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HAM-VINE STREET

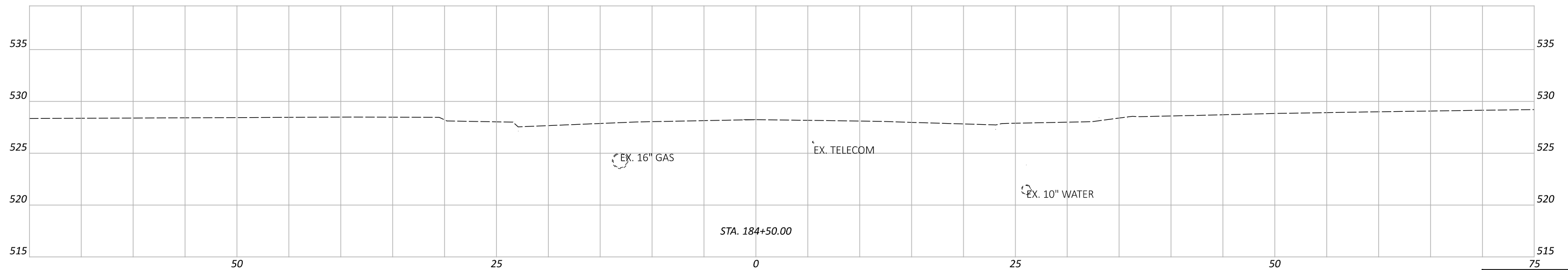
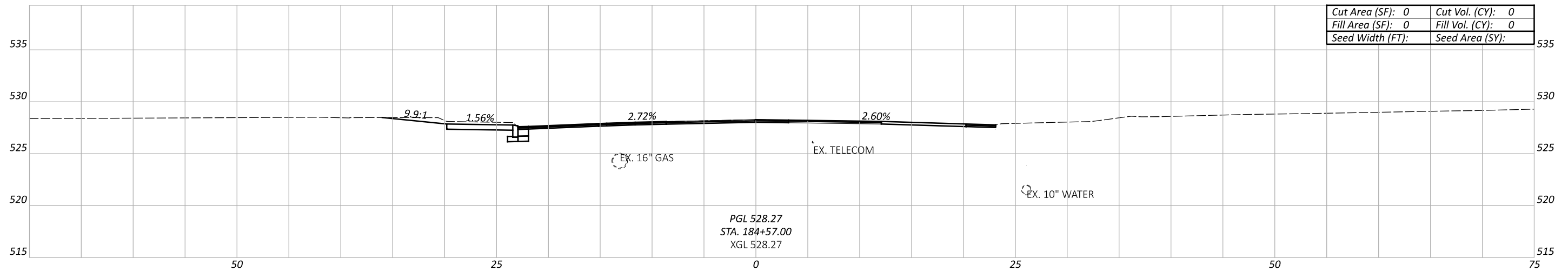
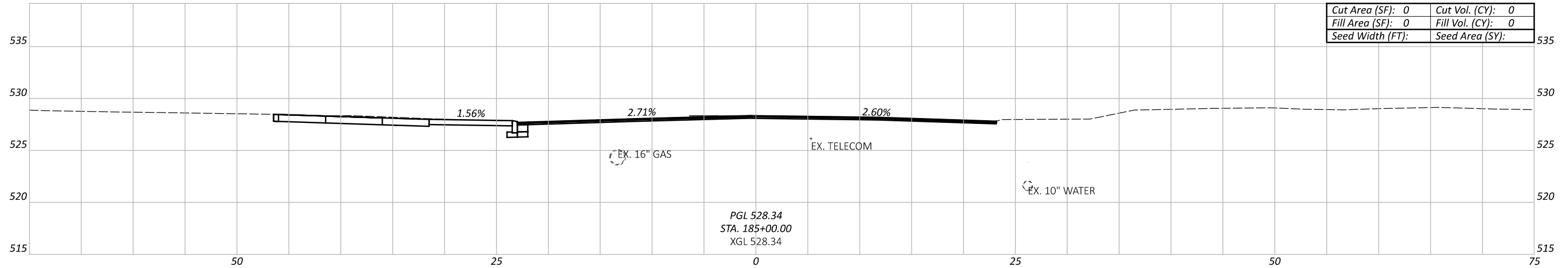
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**PROFILE - SPRING GROVE AVENUE
 STA. 287+20.00 TO STA. 294+37.00**



DESIGN AGENCY	TK
REVIEWER	JJS
PROJECT ID	96425
SHEET	P.12
TOTAL	35



CROSS SECTIONS VINE STREET
STA. 184+50.00 TO STA. 185+00.00

DESIGN AGENCY
Mead & Hunt
CLIENT

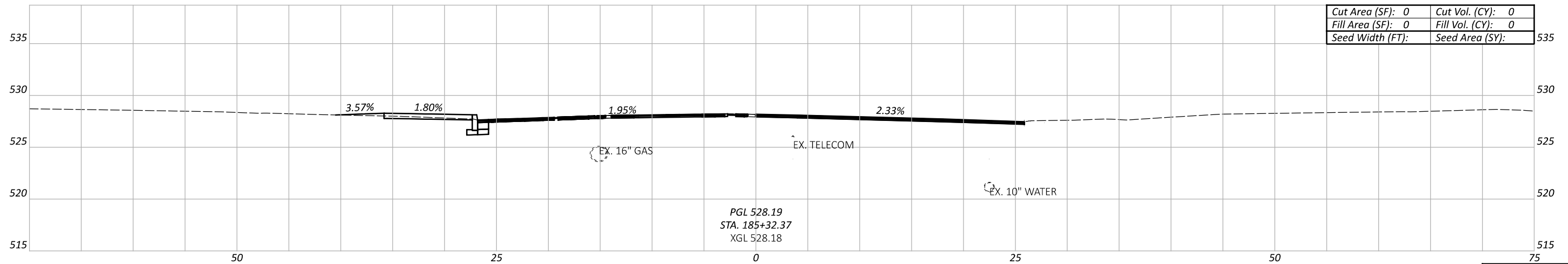
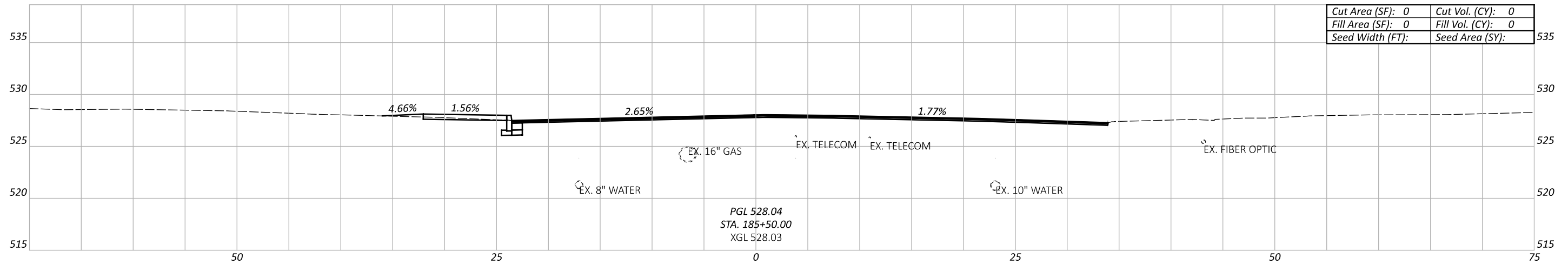
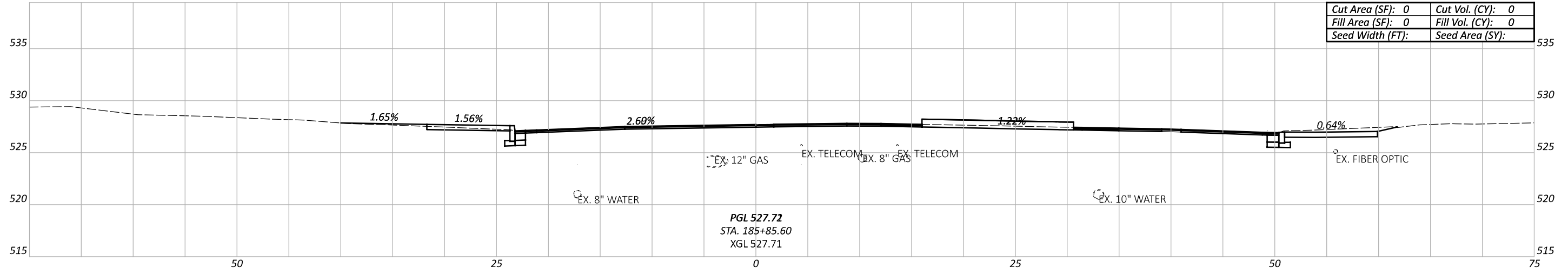


DESIGNER
TK

REVIEWER
SJS 06-28-24

PROJECT ID
96425

Sheet Totals		
Seeding	Cut	Fill
P.13		35



CROSS SECTIONS VINE STREET
 STA. 185+32.37 TO STA. 185+85.60

DESIGN AGENCY
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 CLIENT

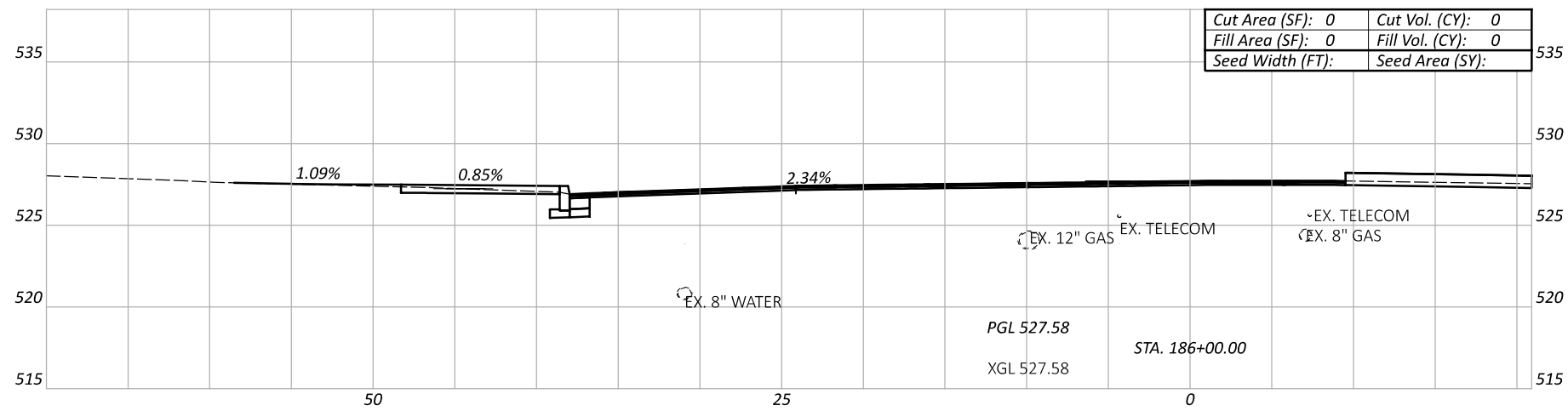
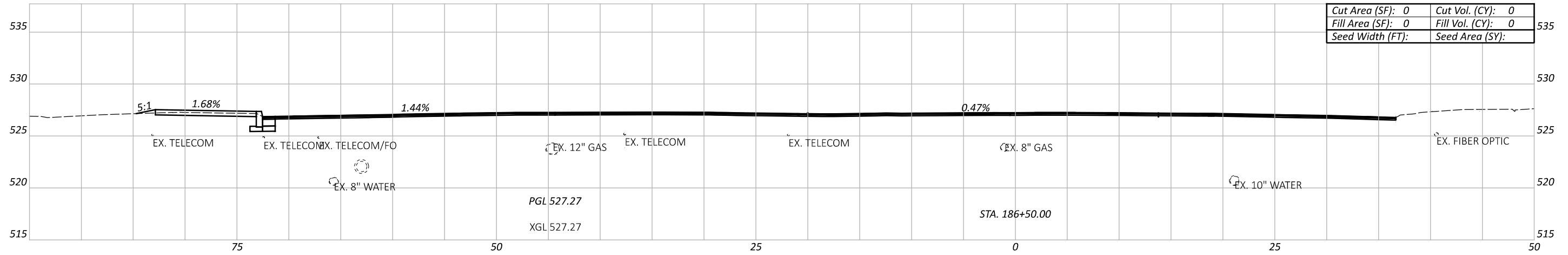


DESIGNER
 TK

REVIEWER
 SJS 06-28-24

PROJECT ID
 96425

Sheet Totals		
Seeding	Cut	Fill
SHEET TOTAL		
P.14		35



CROSS SECTIONS VINE STREET
 STA. 186+00.00 TO STA. 186+50.00

DESIGN AGENCY
Mead & Hunt
 CLIENT

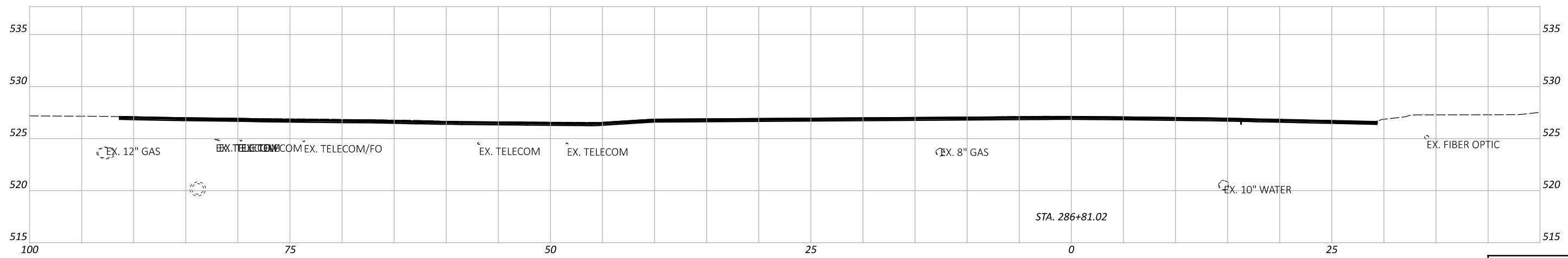
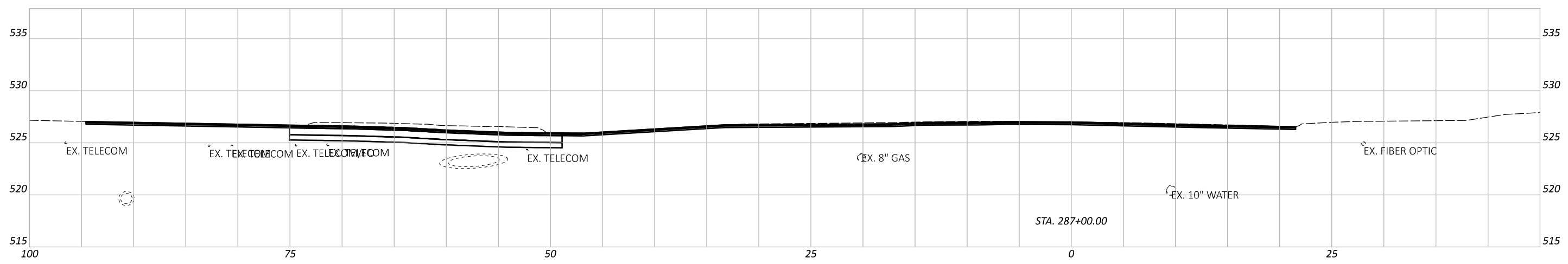
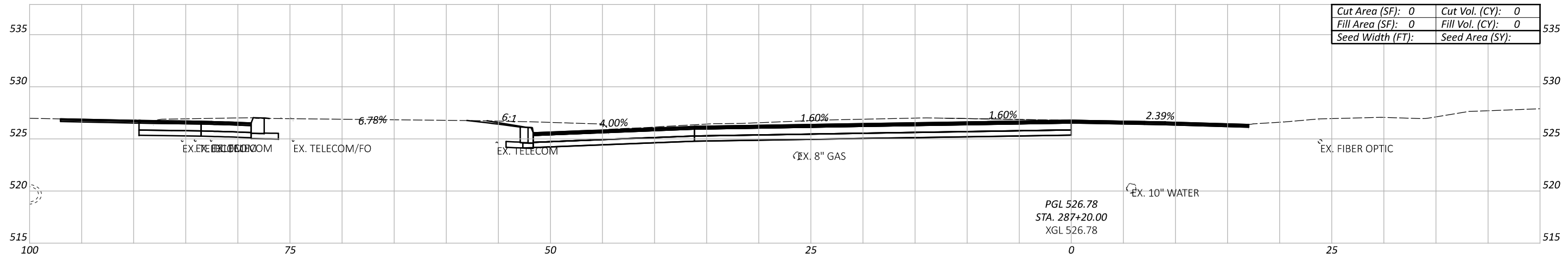


DESIGNER
 TK

REVIEWER
 SJS 06-28-24

PROJECT ID
 96425

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
			P.15	35



CROSS SECTIONS SPRING GROVE AVE
STA. 286+81.02 TO STA. 287+20.00

DESIGN AGENCY
Mead & Hunt



CLIENT
TK

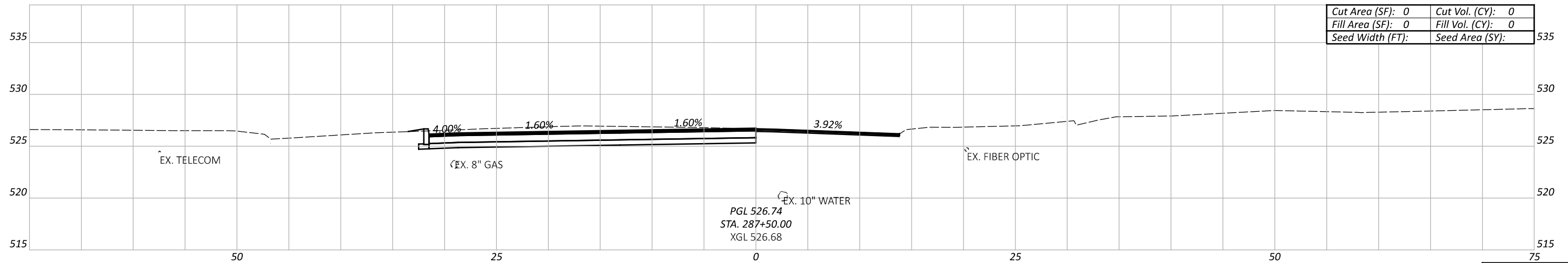
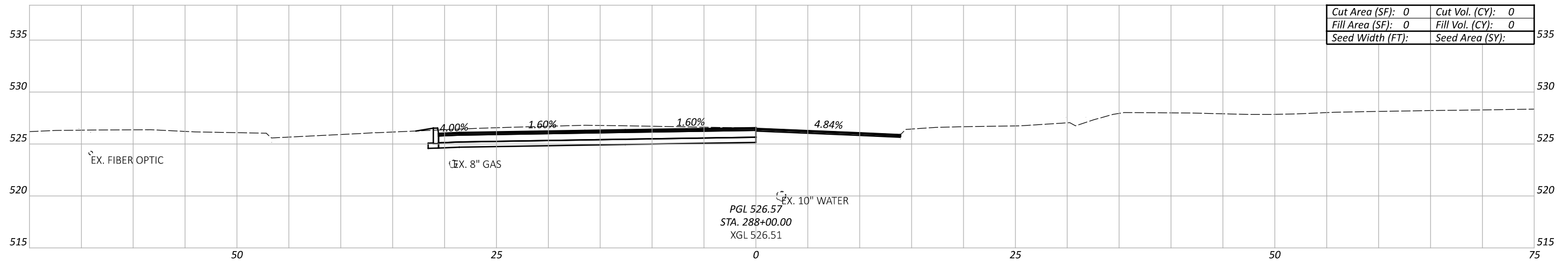
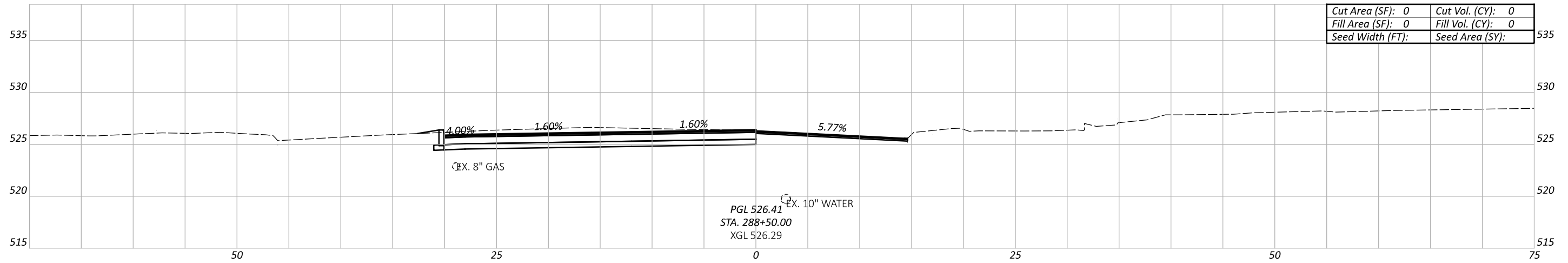
DESIGNER
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REVIEWER
SJS 06-28-24

PROJECT ID
96425

Sheet Totals		
Seeding	Cut	Fill

SHEET	TOTAL
P.16	35



CROSS SECTIONS SPRING GROVE AVE
 STA. 287+50.00 TO STA. 288+50.00

DESIGN AGENCY
Mead & Hunt
 CLIENT

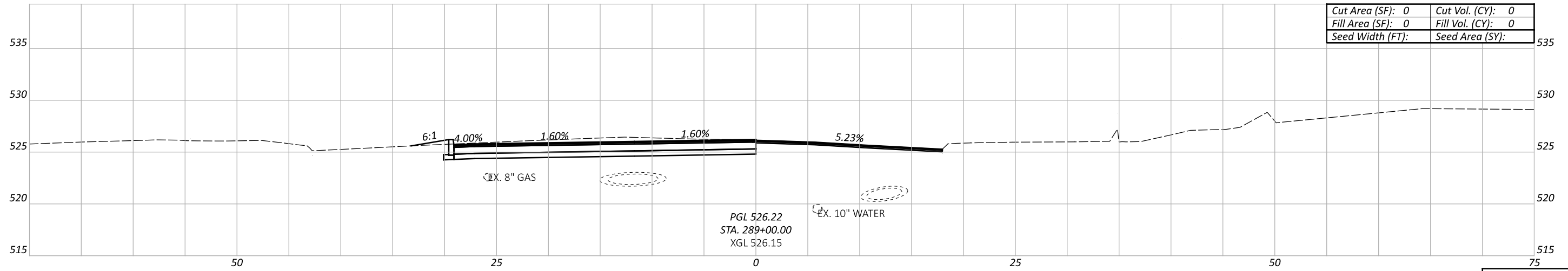
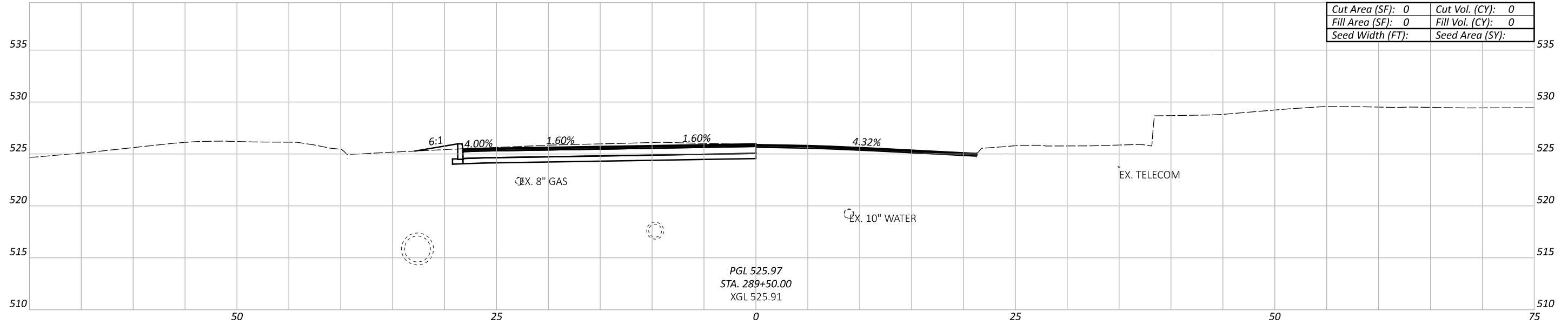
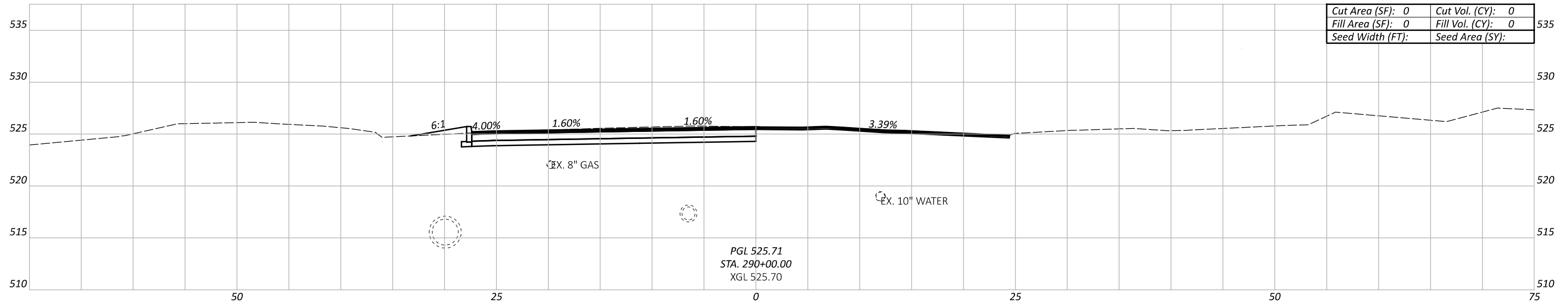


DESIGNER
 TK

REVIEWER
 SJS 06-28-24

PROJECT ID
 96425

Sheet Totals		
Seeding	Cut	Fill
SHEET TOTAL		
P.17		35



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS SPRING GROVE AVE
STA. 289+00.00 TO STA. 290+00.00

DESIGN AGENCY
Mead & Hunt
CLIENT

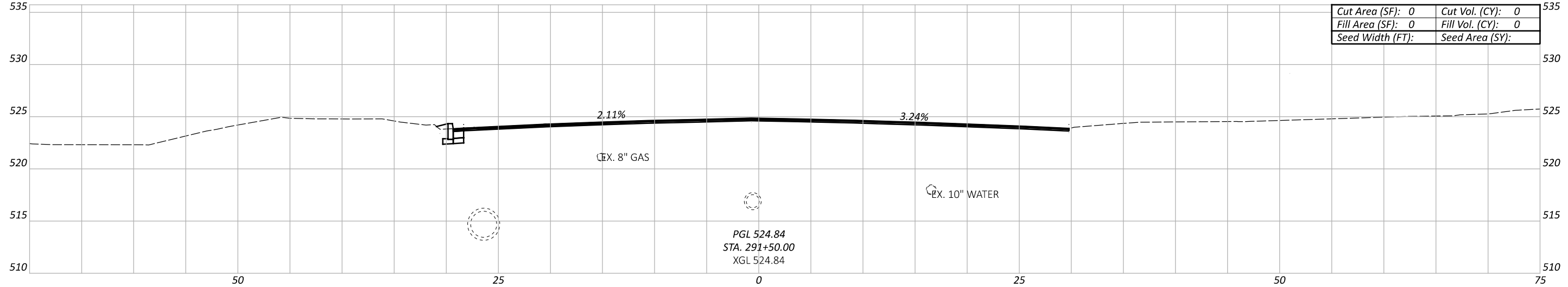


DESIGNER
TK

REVIEWER
SJS 06-28-24

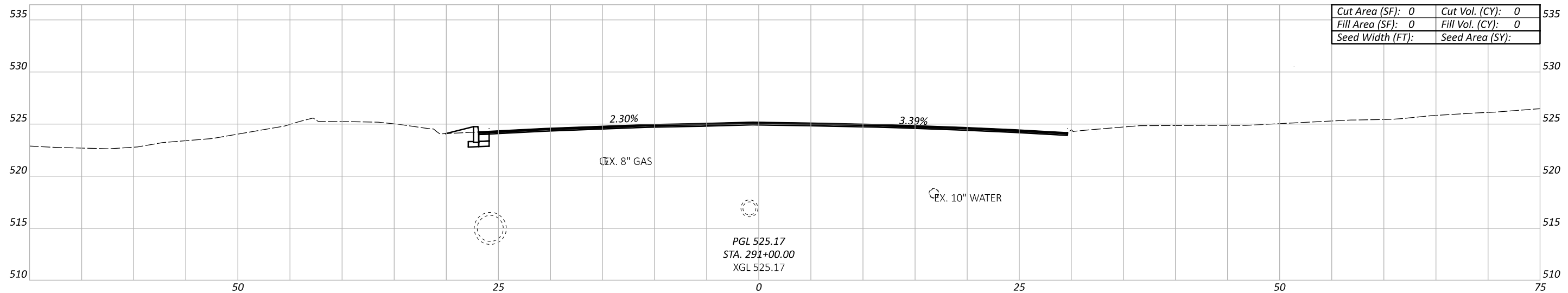
PROJECT ID
96425

SHEET TOTAL
P.18 35



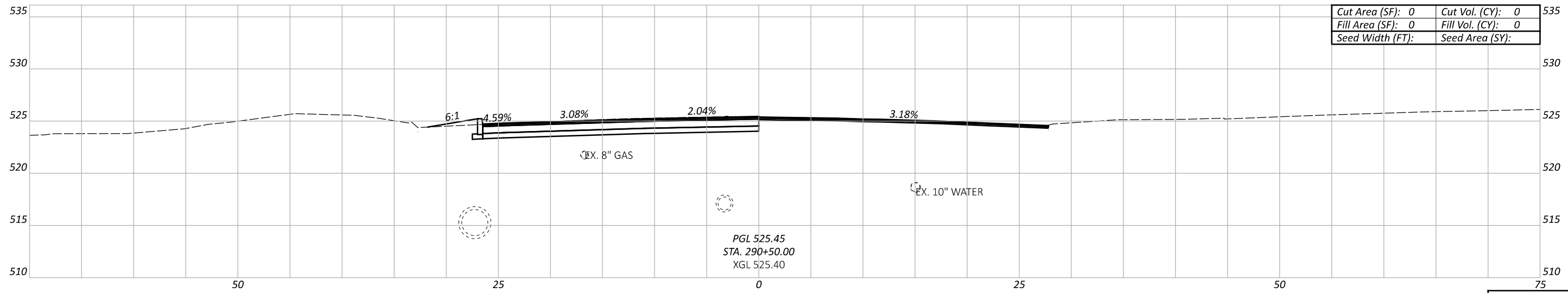
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Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	

PGL 524.84
 STA. 291+50.00
 XGL 524.84



Cut Area (SF):	0	Cut Vol. (CY):	0
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	

PGL 525.17
 STA. 291+00.00
 XGL 525.17



Cut Area (SF):	0	Cut Vol. (CY):	0
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PGL 525.45
 STA. 290+50.00
 XGL 525.40

CROSS SECTIONS SPRING GROVE AVE
 STA. 290+50.00 TO STA. 291+50.00

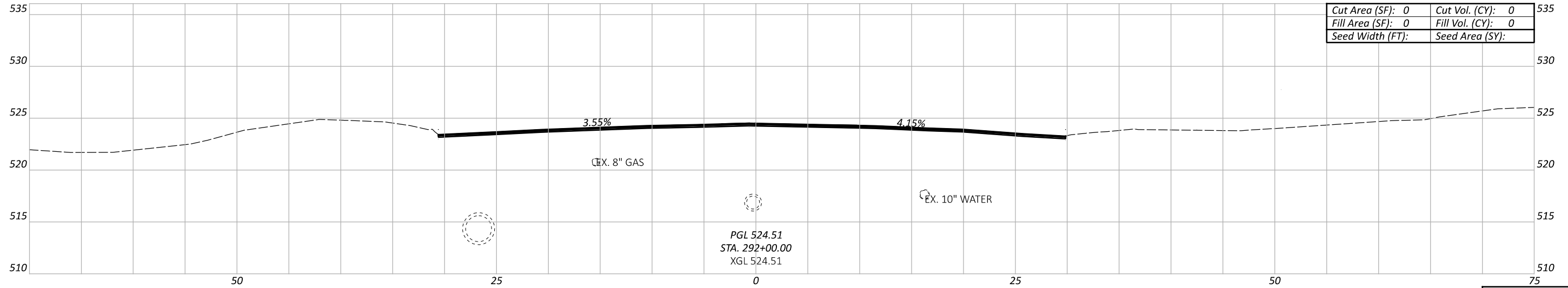
DESIGN AGENCY
Mead & Hunt
 CLIENT



DESIGNER
 TK
 REVIEWER
 SJS 06-28-24

PROJECT ID
 96425

Sheet Totals		
Seeding	Cut	Fill
SHEET	TOTAL	
P.19	35	



PGL 524.51
STA. 292+00.00
XGL 524.51

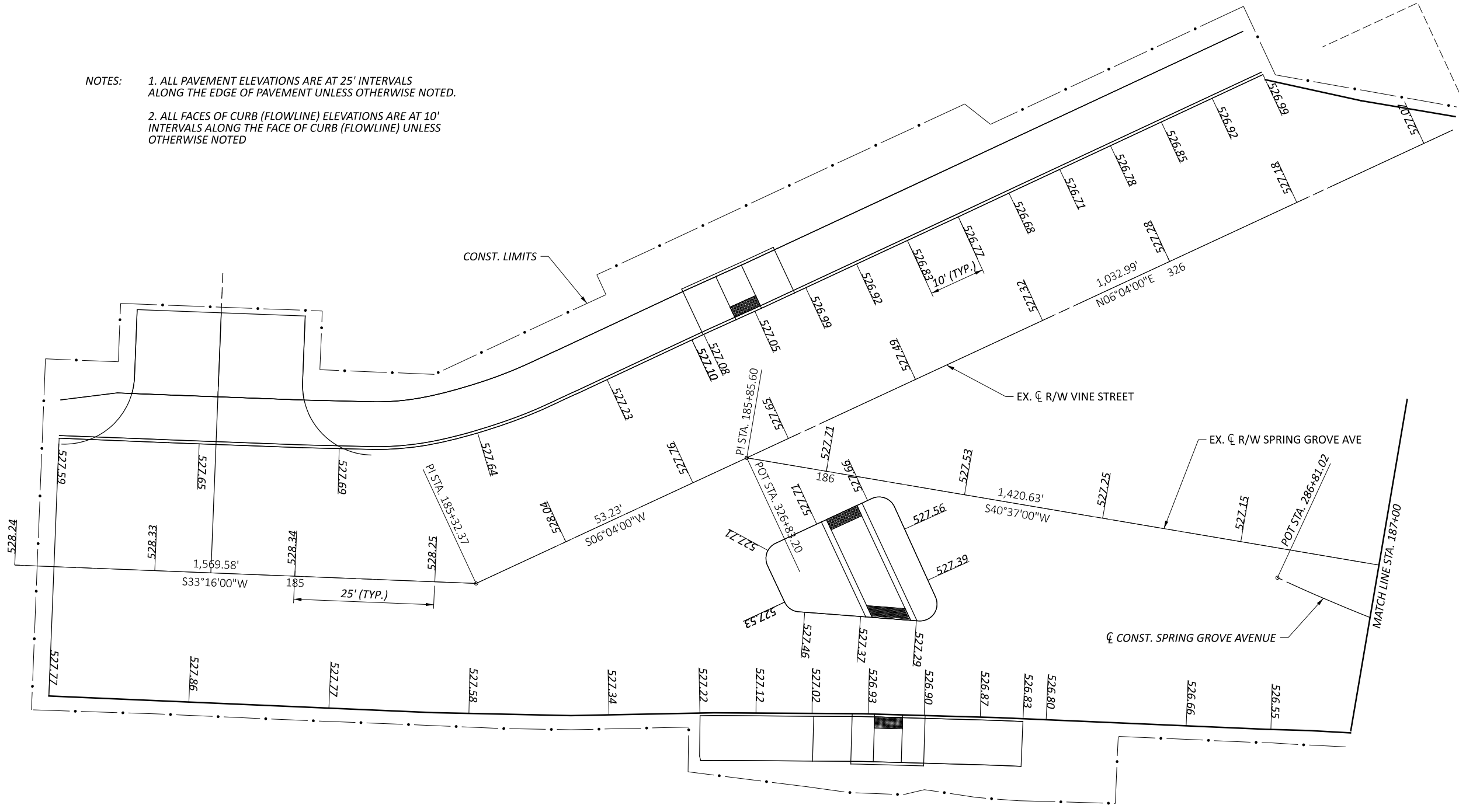


DESIGN AGENCY
TK

REVIEWER
SJS 06-28-24

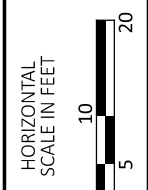
PROJECT ID
96425

Sheet Totals		
Seeding	Cut	Fill
SHEET TOTAL		TOTAL
P.20		35



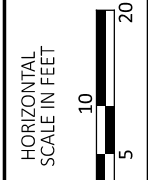
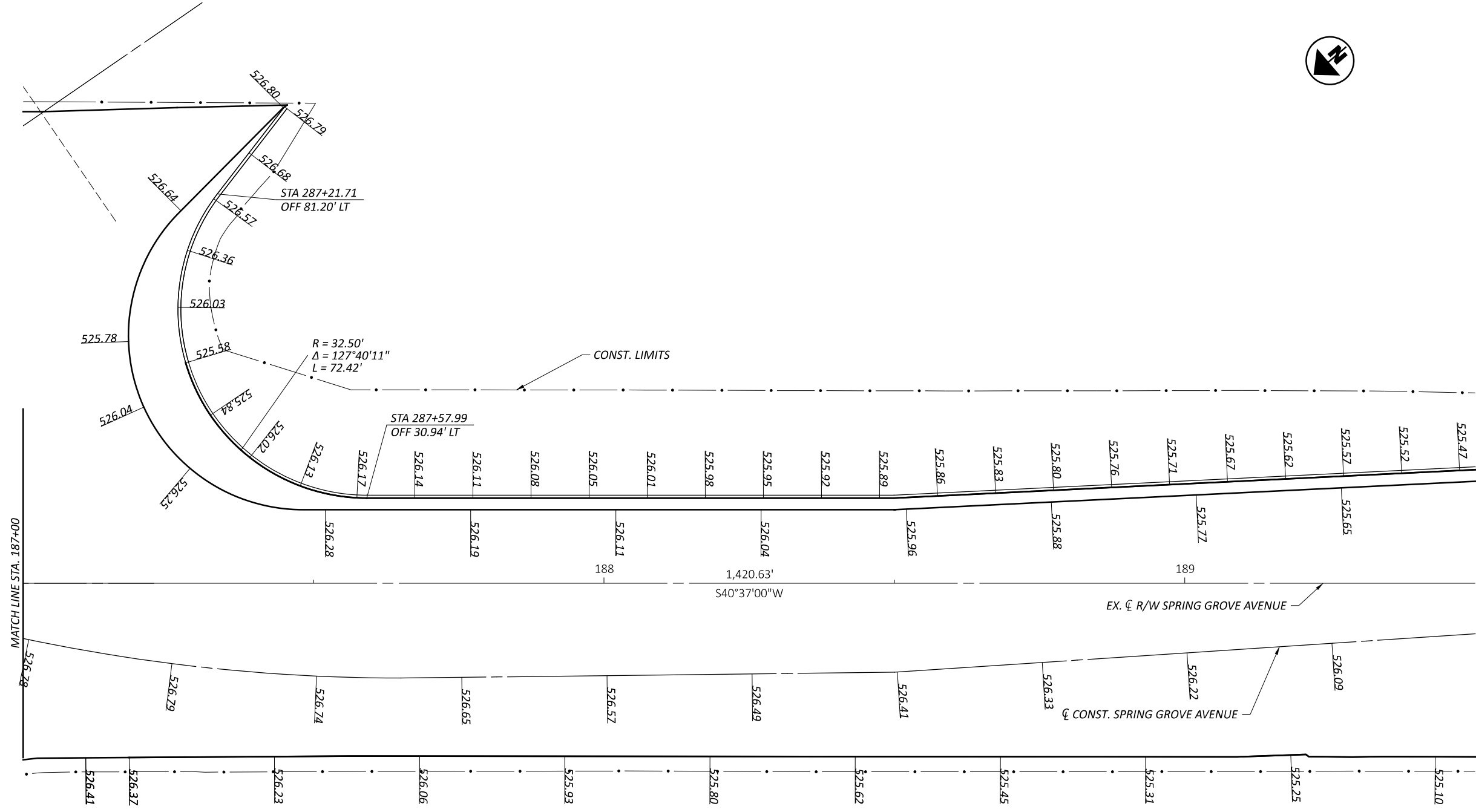
- NOTES:
1. ALL PAVEMENT ELEVATIONS ARE AT 25' INTERVALS ALONG THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 2. ALL FACES OF CURB (FLOWLINE) ELEVATIONS ARE AT 10' INTERVALS ALONG THE FACE OF CURB (FLOWLINE) UNLESS OTHERWISE NOTED

CURVE DATA
 P.I. = STA. 287+23.00
 $\Delta = 15^{\circ}16'44''$ LT
 $D_c = 18^{\circ}18'19''$
 $R = 313.00'$
 $T = 41.98'$
 $L = 83.47'$
 $E = 2.80'$



INTERSECTION DETAILS
 VINE STREET STA. 184+50.00 TO STA. 187+00.00

DESIGN AGENCY	
Mead & Hunt	
CLIENT	
DESIGNER	TK
REVIEWER	SJS
PROJECT ID	06-28-24
SHEET	96425
TOTAL	P.21
	35

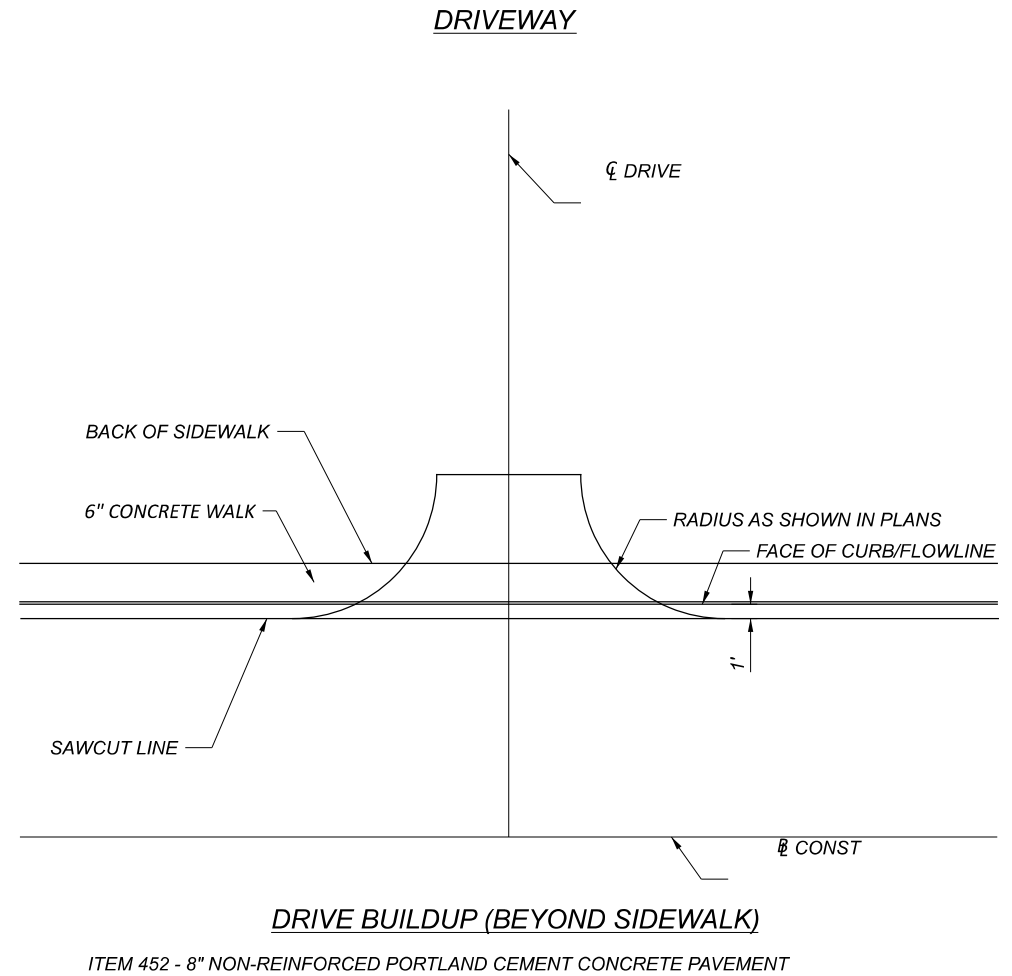
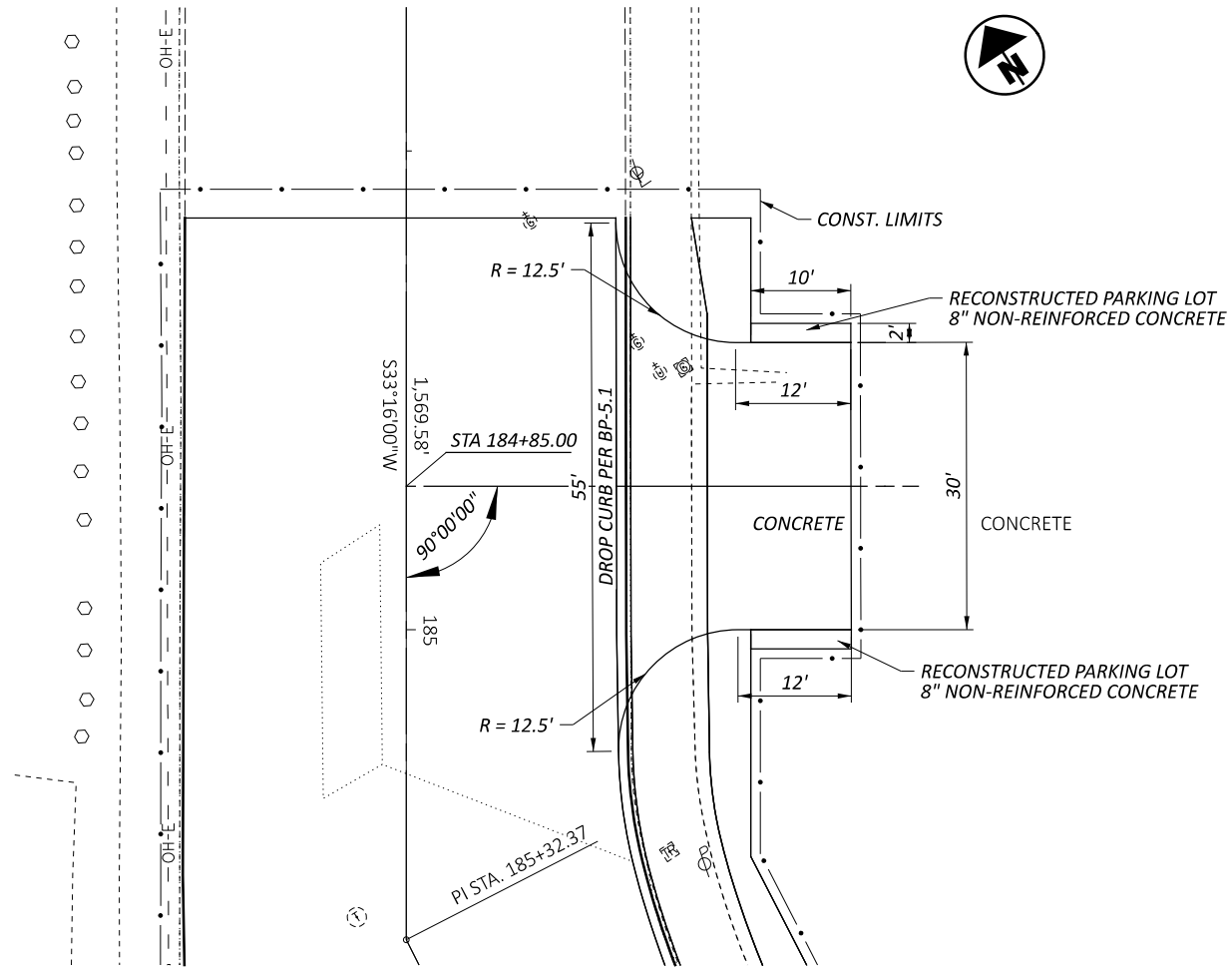
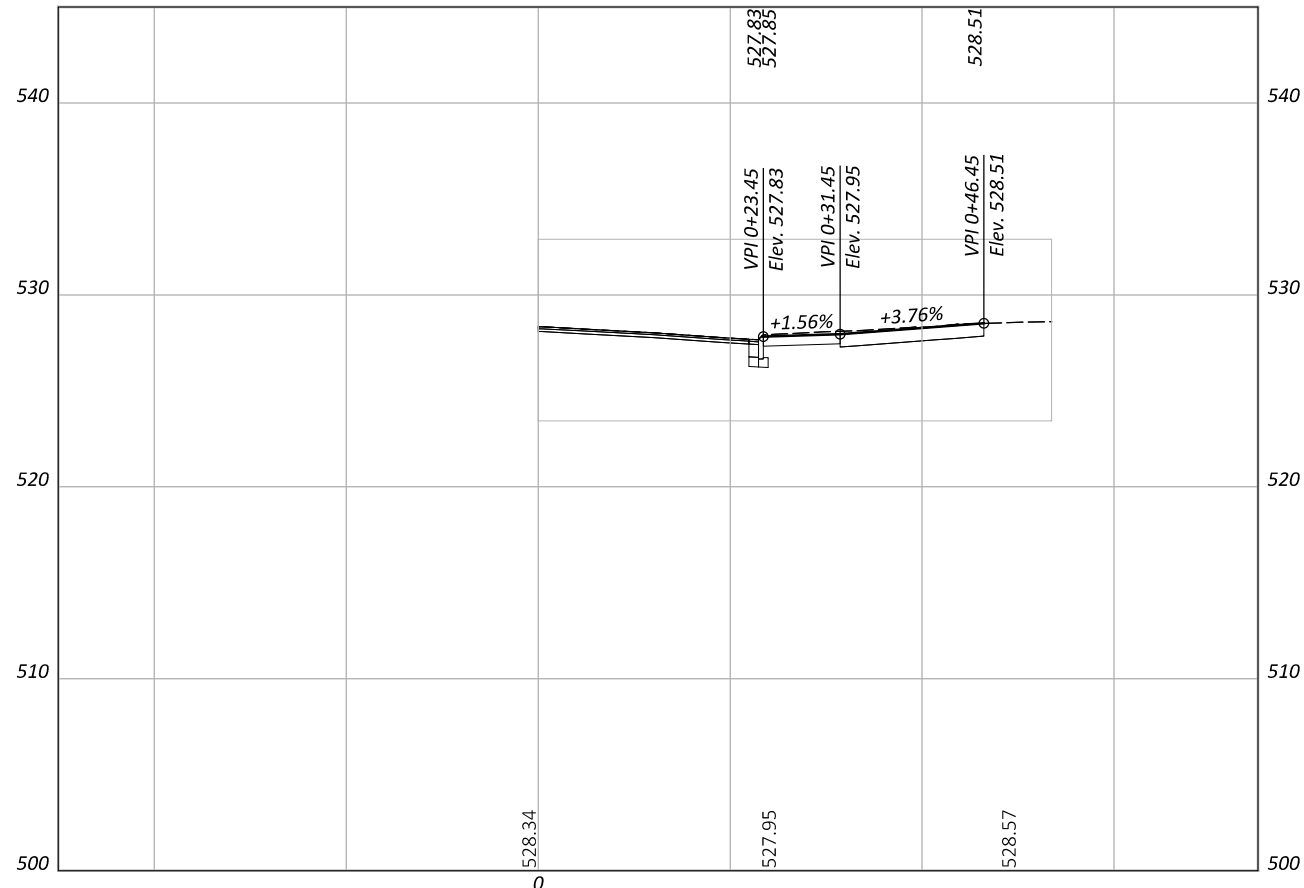


INTERSECTION DETAILS
 SPRING GROVE AVENUE - STA. 187+00.00 TO STA. 189+50.00

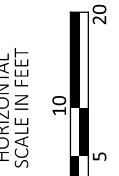
DESIGN AGENCY
Mead & Hunt
 CLIENT

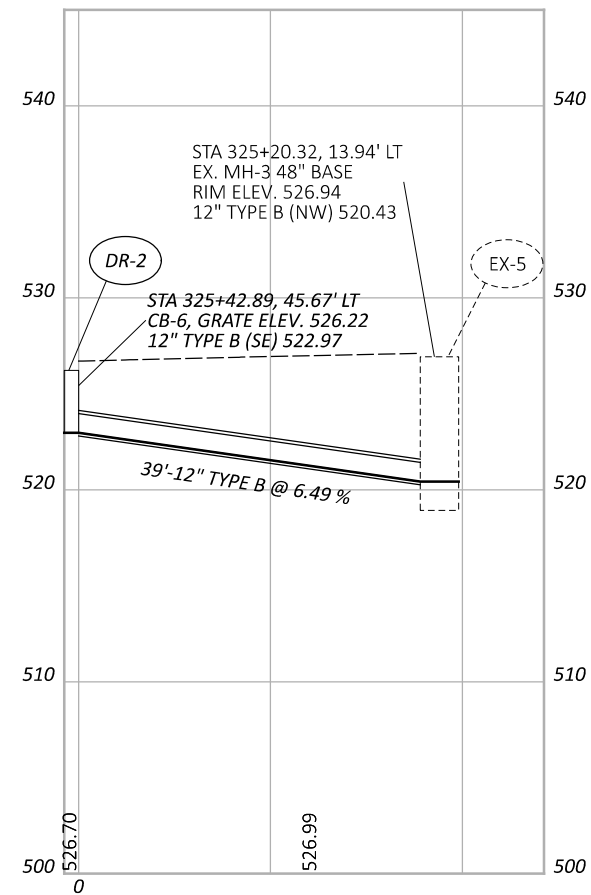
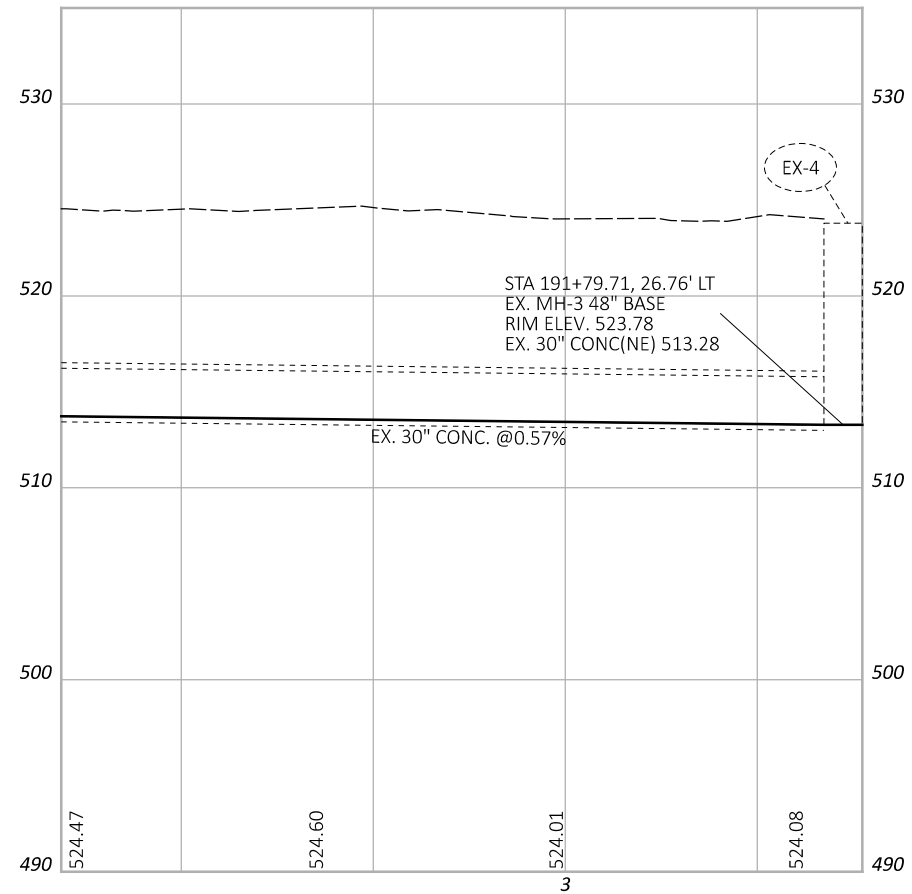
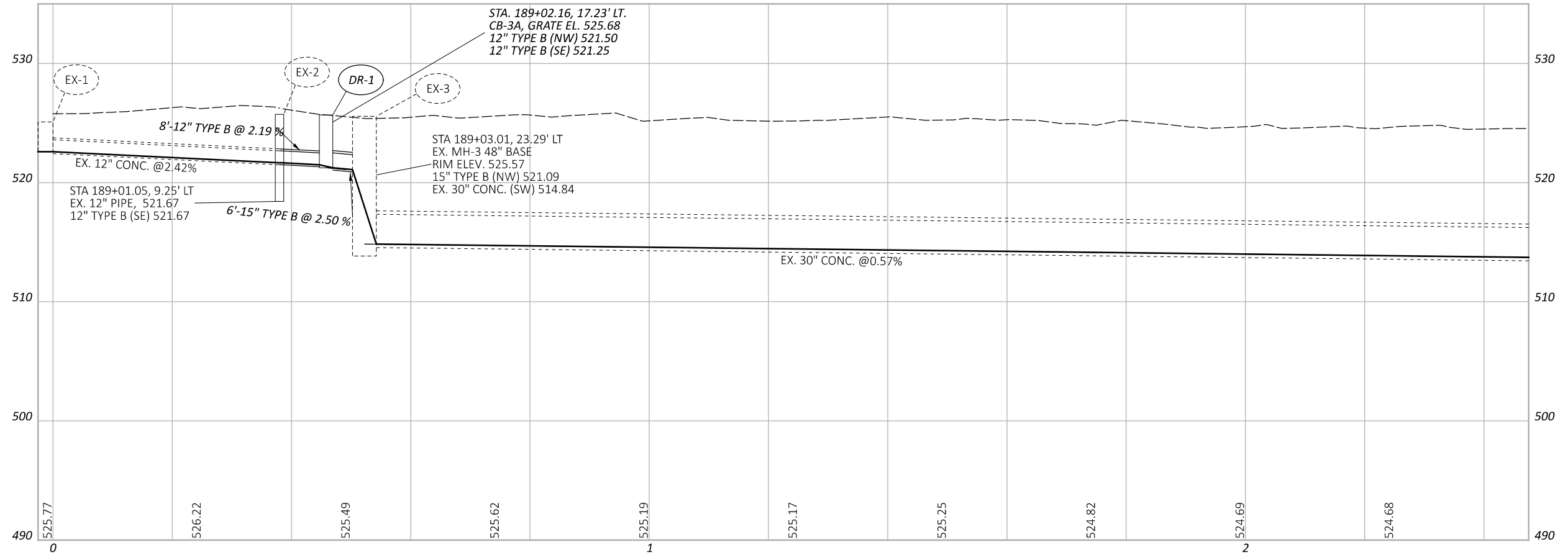


DESIGNER	TK
REVIEWER	JJS
PROJECT ID	06-28-24
SHEET	96425
TOTAL	P.22
	35



DRIVE DETAILS
 VINE STREET - STA. 184+85.00



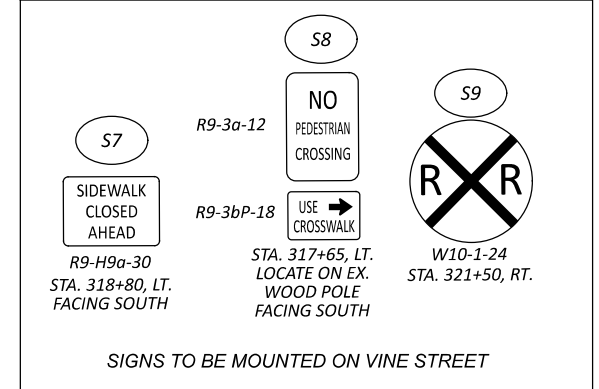


STORM SEWER PROFILES
EX-1 TO EX-4, DR-2 TO EX-5

Have truck templates been run through this curvature?

Continue stop bar to proposed curb line.

consider transverse striping for excess right turn lane pavement

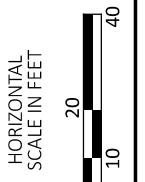


LEGEND

SL	STOP LINE	DLW	DOTTED LINE (WHITE)
CW	CROSSWALK LINE, 12"	DLY	DOTTED LINE (YELLOW)
CL	CENTERLINE DOUBLE YELLOW	LL	LANE LINE
A	LANE ARROW	R	SIGN, REMOVED
TL	TRANSVERSE/DIAGONAL LINE	S	SIGN, PROPOSED
LL	LANE LINE, 6"		EXISTING SIGN
CH	CHANNELIZING LINE, 12"		EXISTING SIGN TO BE REMOVED
EL	EDGE LINE, (WHITE)		

PROPOSED ± EXISTING ±

ONE POST SIGN, GROUND MOUNTED
TWO POST SIGN, GROUND MOUNTED



VINE STREET & SPRING GROVE AVENUE
SIGNING & PAVEMENT MARKING PLAN
BEGIN TO STA. 189+50

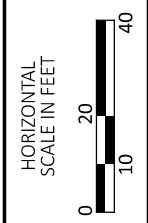
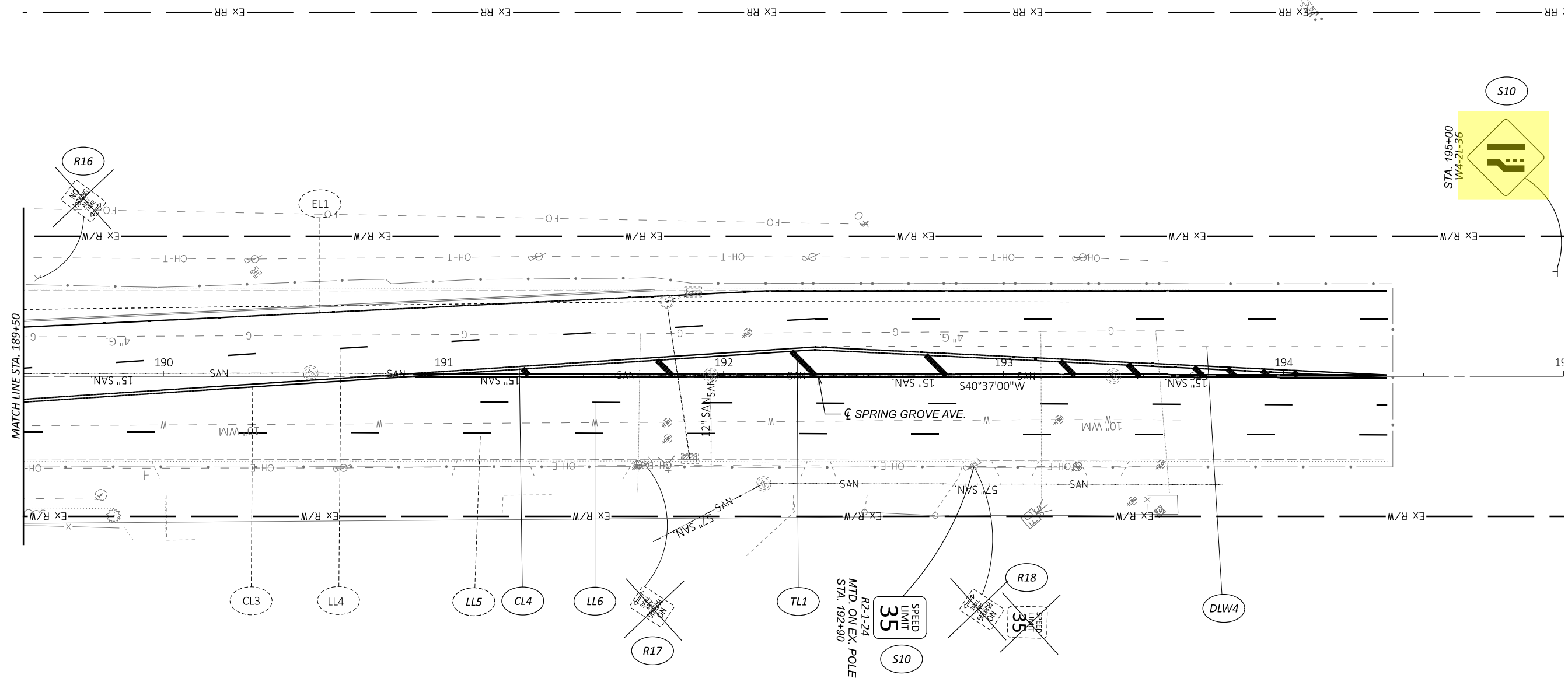
DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DLW

REVIEWER
SJS 06-28-24

PROJECT ID
96425

SHEET TOTAL
P.25 34



VINE STREET & SPRING GROVE AVENUE
 SIGNING & PAVEMENT MARKING PLAN
 STA. 189+50 TO END

DESIGN AGENCY
Mead & Hunt
 CLIENT



DESIGNER
 DLW

REVIEWER
 SJS 06-28-24

PROJECT ID
 96425

SHEET TOTAL
 P.26 | 34

SIGNAL ACTIVATION

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

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

GUARANTEE

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

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/ INTERCONNECT EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

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

625 ARC FLASH CALCULATIONS AND LABEL, SIGNAL CONTROLLER

FOR THE FOLLOWING LOCATION(S), PERFORM AND SUBMIT ARC FLASH HAZARD CALCULATIONS, PREPARE THE NECESSARY LABEL, AND AFIX THE LABEL TO THE ELECTRICAL DEVICE PER SS 825.

LOCATIONS:
- SIGNAL CONTROLLER AT VINE STREET/SPRING GROVE AVENUE

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM DUKE ENERGY AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120/240 VOLTS FOR THE SIGNALS.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:
ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL

- A. 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.

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.

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

- E. 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.

- F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

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 SWITCH 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.

- A. 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:

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

GROUNDING AND BONDING (CONT)

- II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

- III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

- IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

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

4. GROUND ROD.

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

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

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

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

6. POWER SERVICE AND DISCONNECT SWITCH.

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

- B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

- I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

GROUNDING AND BONDING (CONT)

- II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

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

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, SIGNAL SUPPORTS, CABINET, CONTROLLER ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. POWER SERVICE SHALL BE REMOVE IN ACCORDANCE WITH C&MS 625.21.F.

REMOVED ITEMS LISTED BELOW SHALL BE DELIVERED TO THE VILLAGE OF SAINT BERNARD FACILITY PROVIDED HERE.

SIGNAL HEADS
CABINET
CONTROLLER

REMOVED ITEMS SHALL BE DELIVERED TO THE VILLAGE OF SAINT BERNARD FACILITY WHOSE ADDRESS IS LISTED BELOW:

SAINT BERNARD SERVICE GARAGE
5230 VINE STREET
ST. BERNARD, OHIO 45217
ATTN: THOMAS PAUL
DIRECTOR OF PUBLIC SAFETY AND SERVICE
PHONE: 513-242-7770

IN THE EVENT THE ITEMS LISTED HERE FOR SALVAGE ARE NOT WANTED BY THE LOCAL AGENCY, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

SIGNAL INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER, VILLAGE TRAFFIC ENGINEER AND ORDC WITH 72-HOUR NOTICE OF THE FINAL SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE. THIS IS FOR THE PURPOSE OF TESTING THE TRAFFIC SIGNAL AND THE RAILROAD SIGNAL EQUIPMENT INTERFACE. A REPRESENTATIVE FROM ORDC SHALL BE ON SITE TO OVERSEE THE FINAL INSPECTION AND CONFIRM THAT THE TRAFFIC SIGNAL AND THE RAILROAD DEVICES ARE WORKING PER THE REQUIREMENTS SET FORTH IN THE TEM FOR RAILROAD PREEMPTION.

THIS INSPECTION WILL BE IN ADDITION TO THE FINAL SIGNAL INSPECTION. PAYMENT FOR THE SECOND INSPECTION SHALL BE INCLUDED IN PAYMENT WITH ITEM 819 RAILROAD PREEMPTION INTERFACE.

DESIGN AGENCY



CLIENT



DESIGNER

DLW

REVIEWER

SJS 06-28-24

PROJECT ID

96425

SHEET TOTAL

P.27 35

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8-INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE CITY TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

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

THE CABINET SHALL HAVE A DOOR STOP MECHANISM AND THERMOSTATICALLY CONTROLLED FAN. ADDITIONALLY, THE CABINET SHALL BE BUILT WITH ALL BATTERIES ALWAYS BELOW THE INVERTER TO AVOID POTENTIAL FUTURE BATTERY LEAKAGE ISSUES. THE CABINET SHALL INCLUDE A BATTERY BALANCING DEVICE THAT REGULATES THE BATTERIES AND OPTIMIZES PERFORMANCE.

AFTER FOUR (4) HOURS OF BATTERY RUNTIME, THE SYSTEM SHALL BE PROGRAMMED TO SWITCH THE INTERSECTION FROM FULL OPERATION TO CONTROLLER AUTOMATIC FLASH OPERATION THROUGH THE MONITOR. THE CONTROLLER SHALL BE PROGRAMMED SO THAT FLASH OPERATION SHALL BEGIN ONCE THE INTERSECTION RUNS MINOR STREET GREEN (TYP. PH. 4 & 8), ALL-RED CLEARANCE, AND THEN FLASH OPERATION.


THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL OR THROUGH THE CONTROLLER WITH A C11 TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

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

828 LED BLANKOUT SIGN (NO TURN - TRAIN)

THE CONTRACTOR SHALL PROVIDE AND INSTALL A SOLID FILLED RED SYMBOL, SOLID FILLED WHITE ARROW NO RIGHT TURN SYMBOL SIGN ON THE TRAFFIC SIGNAL MAST ARM AT THE LOCATIONS INDICATED ON THE PLANS. THE SYMBOL SIGN SHALL BE A WEATHER TIGHT NEMA ENCLOSURE. THE FOLLOWING SPECIFICATIONS SHALL APPLY:

VOLTAGE: 120V
 ILLUMINATION: LED
 SYMBOL HEIGHT: 20.0"
 CABINET SIZE: 30"H x 24"W x 5.5" D
 FINISH: BLACK
 WARRANTY: 5 YEARS



R3-1-24

THE SIGNS SHALL BE WIRED TO ACTIVATE DURING THE RAILROAD PREEMPTION PHASES AND REMAIN ON FOR THE ENTIRE RAILROAD PREEMPTION CYCLE.

THE MAST ARM MOUNTING BRACKET SHALL BE SUPPLIED BY THE SIGN MANUFACTURER AND INSTALLED BY THE CONTRACTOR. THE SIGN SHALL BE ACTIVATED (ON) WHEN THE CONTROLLER RECEIVES A RAILROAD PREEMPTION CALL. THE REMAINING TIME THE SIGN SHALL BE BLANK OR OFF.

PAYMENT FOR THE ABOVE ITEM SHALL BE PAID AT THE UNIT PRICE BID PER EACH FOR ITEM 828, LED BLANKOUT SIGN, LED BLANKOUT SIGN COMPLETE. PRICE SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, MOUNTING HARDWARE FOR RIGID MOUNTING, POWER CABLE AND ALL INCIDENTALS TO COMPLETE THE WORK.

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

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITC SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04. THE CONTRACTOR SHALL PROVIDE THE CITY OF FRANKLIN ENGINEER, IN WRITING, WITH THE LED MANUFACTURER NAME SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

632 SIGNAL SUPPORT FOUNDATION

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

DUE TO THE FURTHER POSSIBILITY OF CONFLICT WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATION FOR THIS ITEM, AND CONSEQUENTLY, THE DESIGN OF THE SUPPORT AND/OR ARMS, THE CONTRACTOR SHALL NOT PLACE FINAL ORDERS FOR THE ITEM UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED, AT FINAL GRADE, AND THE CONTRACTOR HAS RECEIVED, FROM ENGINEER, WRITTEN NOTICE TO PROCEED WITH THE ORDERS FOR THE ITEM.

IF ANY FOUNDATION LOCATIONS MUST BE ADJUSTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND MAINTAINING AGENCY, WHO WILL DETERMINE THE REVISED LOCATION AND IF NEEDED, THE SUPPORT DESIGN. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DETERMINING THE REVISED DESIGN. THE ENGINEER WILL INFORM THE CONTRACTOR OF ANY CHANGES NECESSARY AND AUTHORIZE THE CONTRACTOR TO ORDER THE SUPPORT.

THE CONTRACTOR SHALL, WHEN DEVELOPING THE PROGRESS SCHEDULE, AND THOSE OF SUBCONTRACTORS, ENSURE THAT THE FOUNDATIONS ARE INSTALLED AT THE EARLIEST TIME AS IS FEASIBLE AND PRACTICAL, AND SHALL INCLUDE SUFFICIENT TIME IN THE PROGRESS SCHEDULE FOR ORDERING, MANUFACTURING, DELIVERY, AND INSTALLATION OF THE SUPPORT ITEMS AFTER THE FOUNDATIONS ARE IN PLACE.

NO PAYMENTS FOR DELIVERED MATERIALS FOR THE FOUNDATION OR SUPPORT ITEMS SHALL BE MADE UNTIL THE FOUNDATIONS ARE IN PLACE, AND IF CHANGES IN THE DESIGN OF THIS ITEM ARE REQUIRED, NO PAYMENT SHALL BE MADE FOR THE ITEMS MANUFACTURED TO THE ORIGINAL DESIGN.

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

819 RAILROAD PREEMPTION INTERFACE

INSTALL AN INDICATOR PANEL PER CMS 819.09 ON PROPOSED SIGNAL POLE SP-1 AT THE INTERSECTION OF VINE STREET AND SPRING GROVE AVENUE. THE INDICATOR PANEL SHALL BE FACING THE TRAFFIC SIGNAL CABINET. MOUNT THE INDICATOR PANEL NO LESS THAN TEN FEET ABOVE THE ROADWAY LEVEL. ALSO, LOCATE THE INDICATORS SO AS TO PROVIDE MINIMAL VISIBILITY TO ROADWAY USERS AT OR APPROACHING THE INTERSECTION.

THE CONTRACTOR SHALL SCHEDULE A FINAL FIELD TEST, AFTER THE 10-DAY SIGNAL BURN TEST, WITH THE RAILROAD OWNER, OHIO RAIL DEVELOPMENT COMMISSION REPRESENTATIVE AND THE SIGNAL CONTRACTOR. THE FINAL FIELD TEST SHALL INCLUDE CHECKING THAT THE SIGNAL IS CONNECTED TO THE RAILROAD CONTROLLER AND OPERATES PER THE PLANS DURING A PREEMPTION CALL.

PAYMENT- ALL MATERIALS AND COST FOR THIS ITEM SHALL BE COMPLETE AND INCLUDED IN ITEM 819 - RAILROAD PREEMPTION INTERFACE, 1 EACH.

UNDERDRAINS FOR PULL BOXES

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

ITEM 611 4" CONDUIT, TYPE E 100 FT.

This should say "In addition to the requirements of ODOT Supplemental Specification 819..." to reduce the likelihood that this is read to only require the indicator panel, which has happened before.

809 STOP-LINE RADAR DETECTION, AS PER PLAN

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

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER. 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.
4. 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 (MINIMUM 7 FEET).
5. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
6. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
7. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

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

809 ATC CONTROLLER, AS PER PLAN

THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS 809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER SHALL BE AN ECONOLITE COBALT AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER, ORDC AND THE VILLAGE OF SAINT BERNARD ENGINEER WITH 72-HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITES SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

633 CABINET, TYPE 332, AS PER PLAN

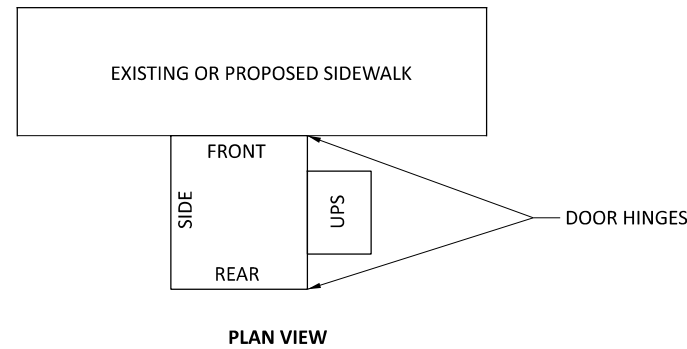
THE CABINET SHALL BE FURNISHED AND INSTALLED ACCORDING TO CMS 633 AND 733, AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS LIST (TAP).

THE CABINET SHALL BE FURNISHED WITH AN EDI MONITOR AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST.

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED AND SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS FOLLOWING PLAN INSERT SHEET 203324.

PAYMENT FOR ITEM 633 CABINET, TYPE 332, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

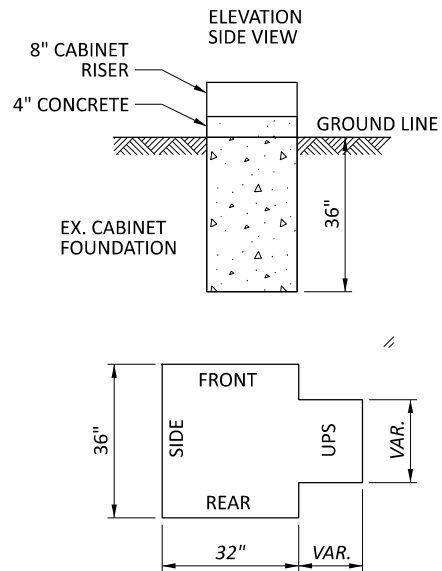
MODEL 332 CABINET DETAIL (TYP.)



633 CABINET FOUNDATION, AS PER PLAN

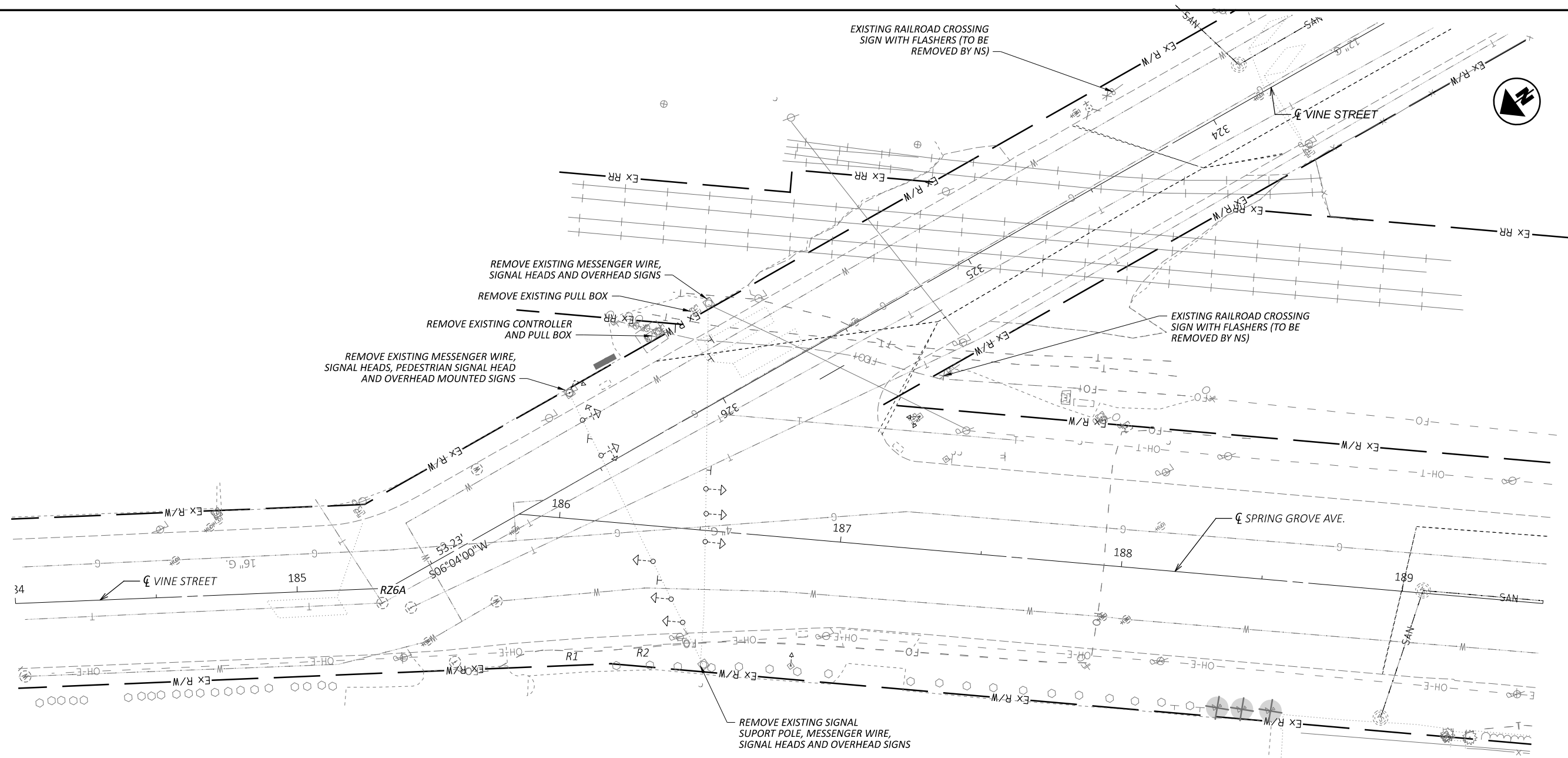
THE CABINET FOUNDATION SHALL BE ORIENTED WITH RESPECT TO THE INTERSECTION IN A MANNER THAT WILL PROVIDE MAINTENANCE PERSONNEL WITH A VIEW OF THE INTERSECTION WHILE WORKING ON THE CONTROLLER.

UPS FOUNDATION DETAIL



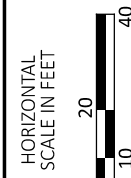
NOTES:

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



LEGEND

TRAFFIC SIGNAL, 3 UNIT HEAD, 12"	EXIST.
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	
TRAFFIC SIGNAL, 5 UNIT HEAD, 12"	
SIGNAL SUPPORT POLE	
PEDESTRIAN HEAD	
PEDESTRIAN PUSH BUTTON	
PEDESTAL SUPPORT	
TS-2 CONTROLLER AND WORK PAD	
TRAFFIC PULL BOX	



**VINE STREET & SPRING GROVE AVENUE
SIGNAL REMOVAL PLAN**

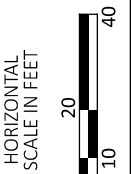
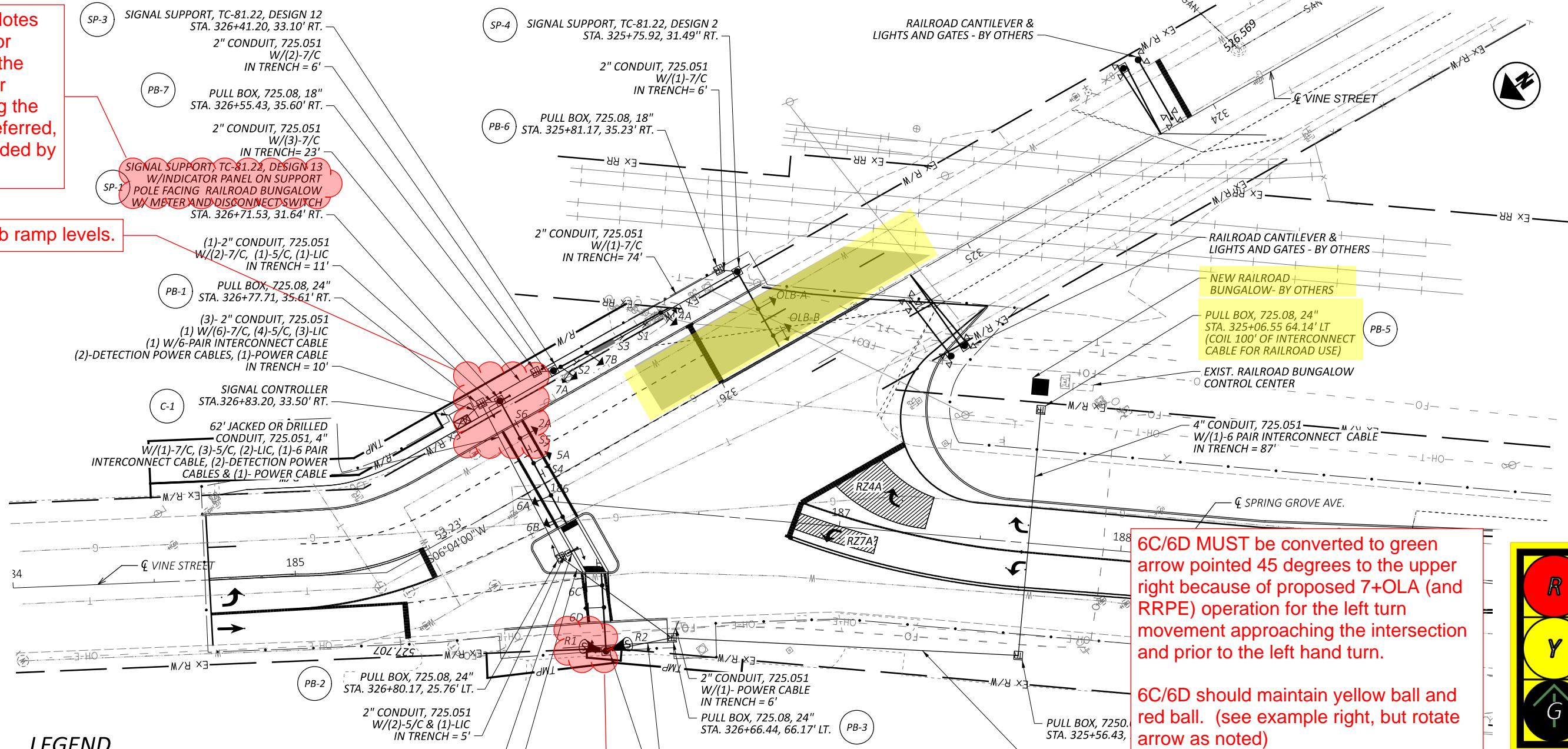
DESIGN AGENCY
Mead & Hunt
CLIENT



DESIGNER
DLW
REVIEWER
SJS 06-28-24
PROJECT ID
96425
SHEET TOTAL
P.30 35

Traffic Signal Notes say the indicator panel will face the signal controller cabinet. Facing the controller is preferred, and recommended by SS 819.

Turn on curb ramp levels.



G GROVE AVENUE
SIGNAL PLAN

LEGEND

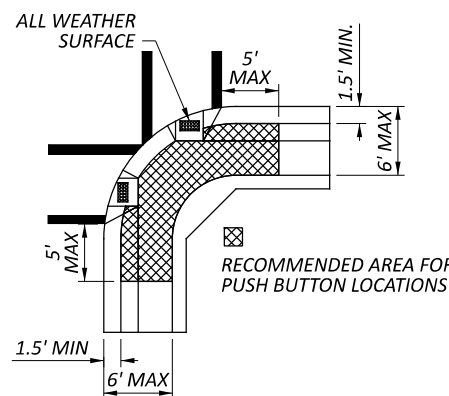
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"	PR.	EX.
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS		
TRAFFIC SIGNAL, 5 UNIT HEAD, 12"		
SIGNAL SUPPORT POLE		
PEDESTRIAN HEAD		
PEDESTRIAN PUSH BUTTON		
PEDESTAL SUPPORT		
TS-2 CONTROLLER AND WORK PAD		
TRAFFIC PULL BOX		
STOP LINE RADAR DETECTION UNIT		
DETECTION ZONE		
AREA FOR OPTICALLY PROGRAMMABLE SIGNAL HEAD VISIBILITY		

PED-1
PEDESTAL, 10'
STA. 326+77.14, 25.66' LT.
W/(1) PUSHBUTTON &
(2) PEDESTRIAN SIGNAL HEADS

42" JACKED OR DRILLED CONDUIT, 725.051, 4"
W/(1)-7/C, (1)-5/C, (1)-LIC
(2)-DETECTION POWER CABLES
(1)- 6 PAIR INTERCONNECT CABLE
(1)-POWER CABLE

Unused detector

ADA PUSHBUTTON & STRUCTURE DIAGRAM



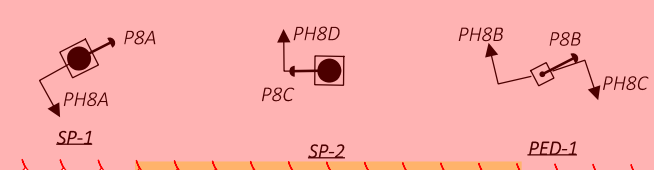
PUSH BUTTON HEIGHT 42-48" WITH SIGN PARALLEL TO CROSSWALK.

IF TWO PUSHBUTTONS ARE ON THE SAME CORNER, THEY SHOULD BE SEPERATED BY A MINIMUM OF 10 FT.

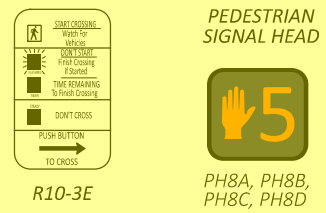
SEE OMUTCD FIG. 4E-4 FOR TYPICAL PUSHBUTTON LOCATIONS.

NOTE: ODOT INTERSECTIONS REQUIRE ACCESSIBLE PED PUSHBUTTONS

SIGNAL & PEDESTRIAN POLE DETAILS

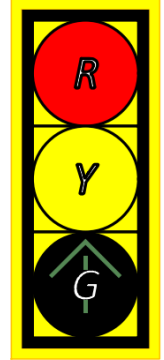


PEDESTRIAN SIGNS

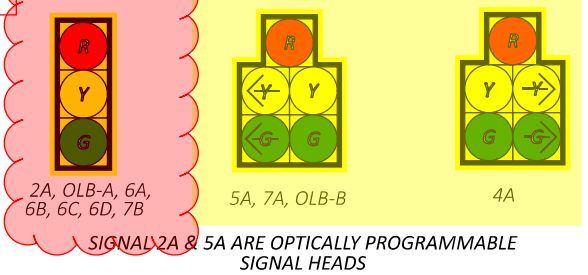


6C/6D MUST be converted to green arrow pointed 45 degrees to the upper right because of proposed 7+OLA (and RRPE) operation for the left turn movement approaching the intersection and prior to the left hand turn.

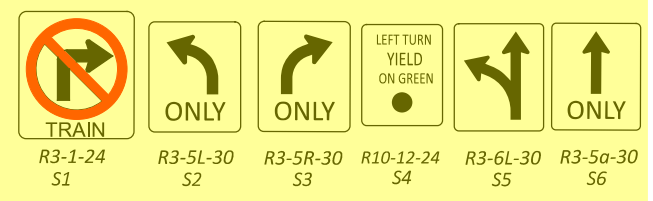
6C/6D should maintain yellow ball and red ball. (see example right, but rotate arrow as noted)



SIGNAL HEADS



MAST ARM MTD SIGNS



DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DLW

REVIEWER
SJS 06-28-24

PROJECT ID
96425

SHEET TOTAL
P.30 34

RADAR DETECTION CHART

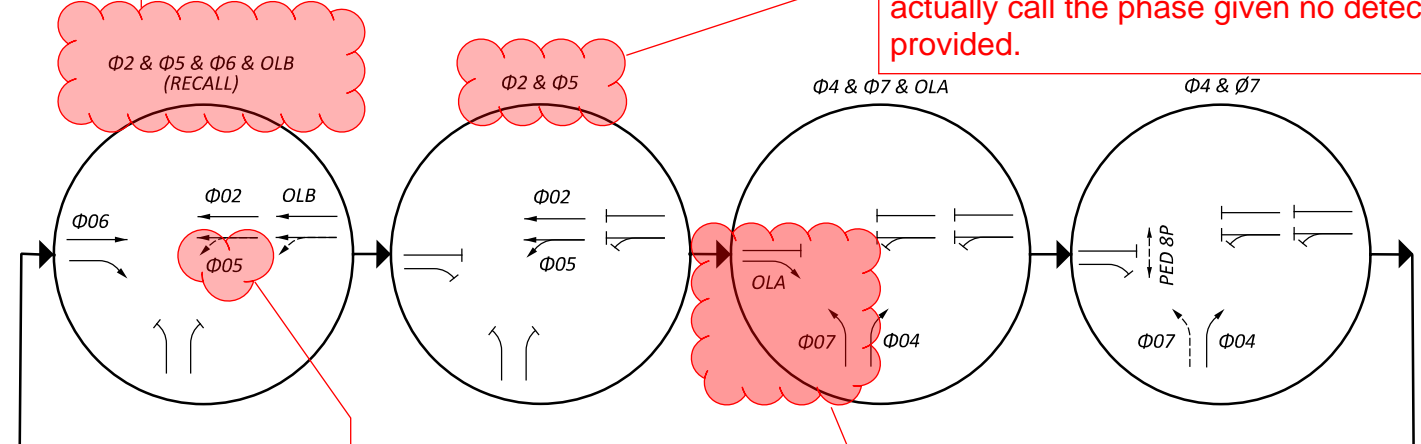
DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY PROGRAMMED IN CONTROLLER (SEC.)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)	DETECTOR NO.	PURPOSE	DETECTION ZONE LENGTH (FT)
RZ4A	EB RIGHT	PRESENCE	4	5		R2	CALL	30
RZ7A	EB LEFT	PRESENCE	7			R2	CALL	30

ADVANCED DILEMMA ZONE SPEED THRESHOLD PURPOSE = STOP LINE OR ADVANCED ≥ 35 MPH

Remove Phase 5 from call out.

See comments below left about Phase 5 likely needing some kind of recall in order to actually call the phase given no detector provided.

PHASING DIAGRAM



Phase 5 does not operate in this part of the sequence.

SIGNAL TIMING CHART

See comments below right on detection/recall.

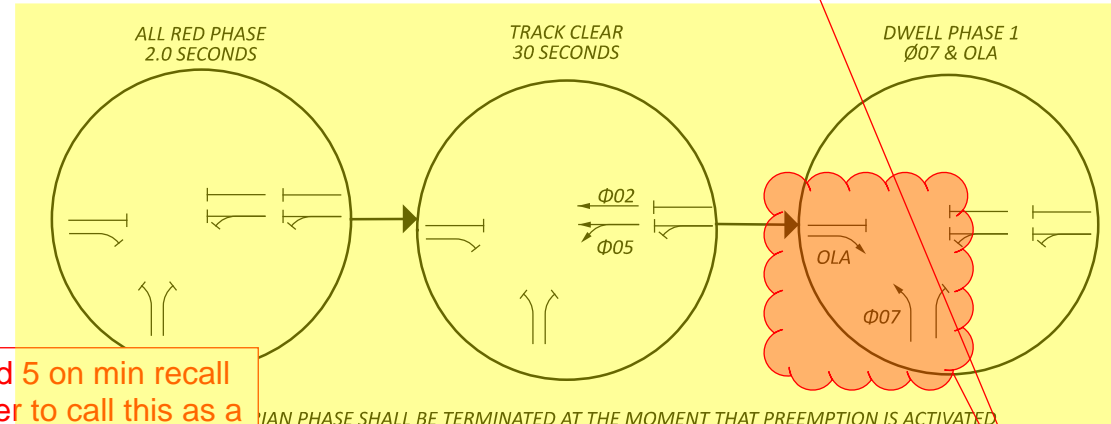
INTERSECTION: VINE STREET & SPRING GROVE
MAINTAINING AGENCY:

START UP		DUAL ENTRY: YES	PHASES:				2+5+6		
START IN: YELLOW/RED FLASH		REST IN RED:	RING 1	-	RING 2	-			
TIME FOR FLASH OR ALL RED: 4 sec		OVERLAP	A	B	C	D			
FIRST PHASE(S): 2+6		PHASES	-	-	-	-			
COLOR DISPLAYED: YELLOW									
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		OLB	2	3	4	5	6	7	8
DIRECTION		NB	NB	-	EB	NB LT	SB	EB LT	-
MINIMUM GREEN (INITIAL) (SEC.)		35	35	-	12	10	35	12	-
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		-	-	-	2	2	-	-	-
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		45	45	-	35	15	45	35	-
MAXIMUM GREEN II (SEC.)		-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)		4	4	-	4	4	4	4	-
ALL RED CLEARANCE (SEC.)		2	2	-	1	1	2	1	-
WALK (SEC.)		-	-	-	-	-	-	-	7
PEDESTRIAN CLEARANCE (SEC.)		-	-	-	-	-	-	-	20
RECALL	MAXIMUM (ON/OFF)	-	OFF	-	OFF	OFF	OFF	OFF	ON
	MINIMUM (ON/OFF)	-	OFF	-	OFF	OFF	OFF	OFF	OFF
	PEDESTRIAN (ON/OFF)	-	OFF	-	OFF	OFF	OFF	OFF	ON
MEMORY (ON/OFF)		-	OFF	-	OFF	OFF	OFF	OFF	OFF

***VOLUME DENSITY CONTROLS**

- NOTES:
- COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER OMTCD FIGURE 4E-2.
 - FOR ANY ENTRY TO FLASHING OPERATION, PROGRAMMING SHALL RUN MINOR STREET GREEN (TYP. Φ7 & Φ7), ALL-RED CLEARANCE, AND THEN FLASHING OPERATION.
 - NEW PRE-SIGNAL (SP-4) WILL OPERATE UNDER "OLB" EXCEPT DURING PREEMPTION OPERATION. DURING PREEMPTION THE SIGNAL WILL DISPLAY ALL RED.

RAILROAD PREEMPTION PHASING DIAGRAM

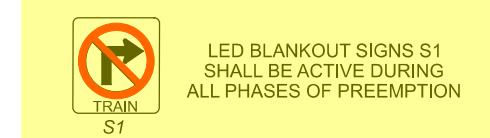


Probably need 5 on min recall as well in order to call this as a lagging phase because the lane assignment is thru-left, not exclusive. It will max out on the max or on a call to 4+7.

In the original discussion on signal operations here, M&H noted (6/19 email) that a detector would be used for Phase 5.

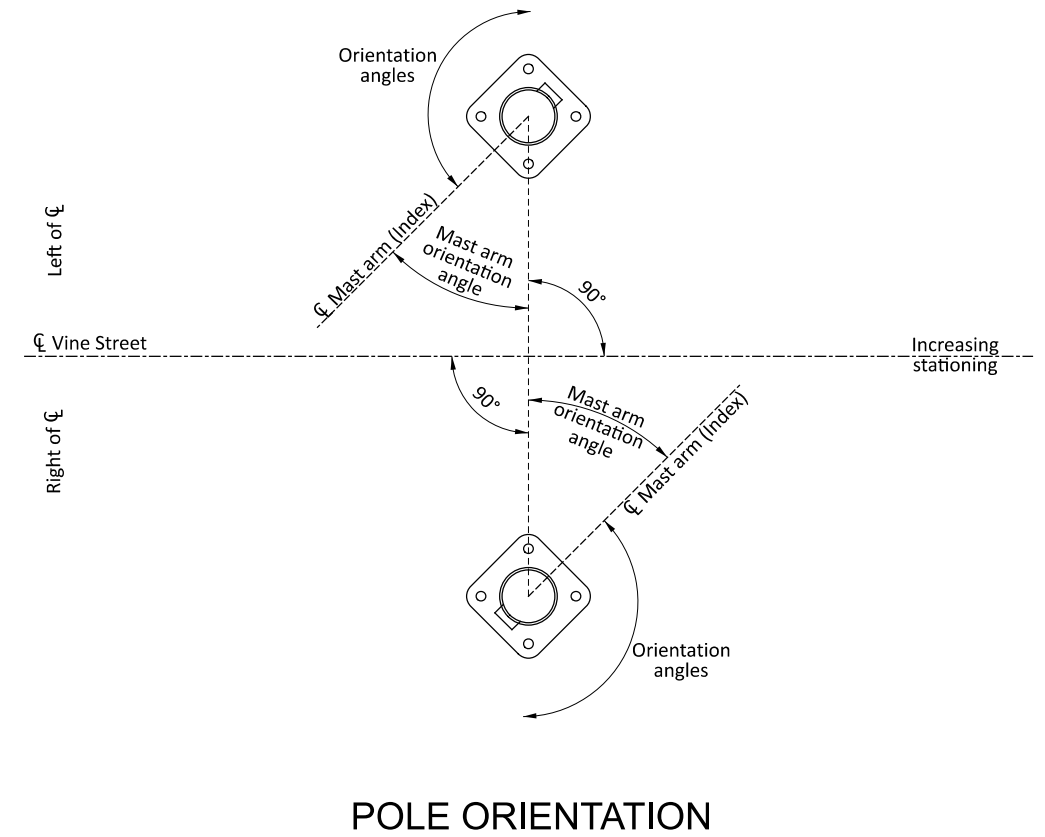
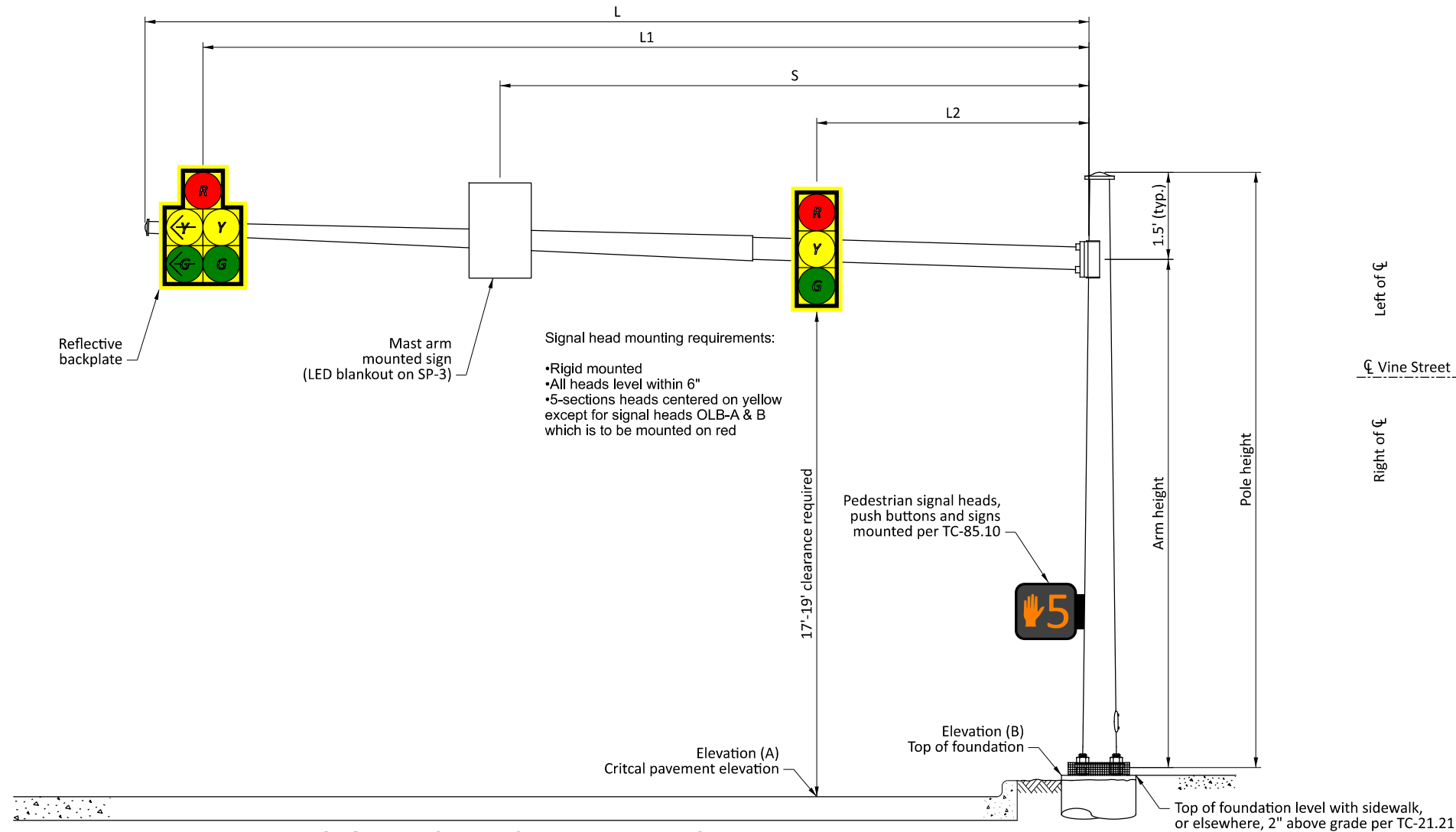
Consider min recall for 2+6+OLB, will time out at the max or on a call to 4+7.

See comment on previous sheet noting the need to change 6C/6D signal heads for this operation during preemption.



LEGEND

VEHICLE Φ	→
PERMITTED Φ	→
PEDESTRIAN Φ	→

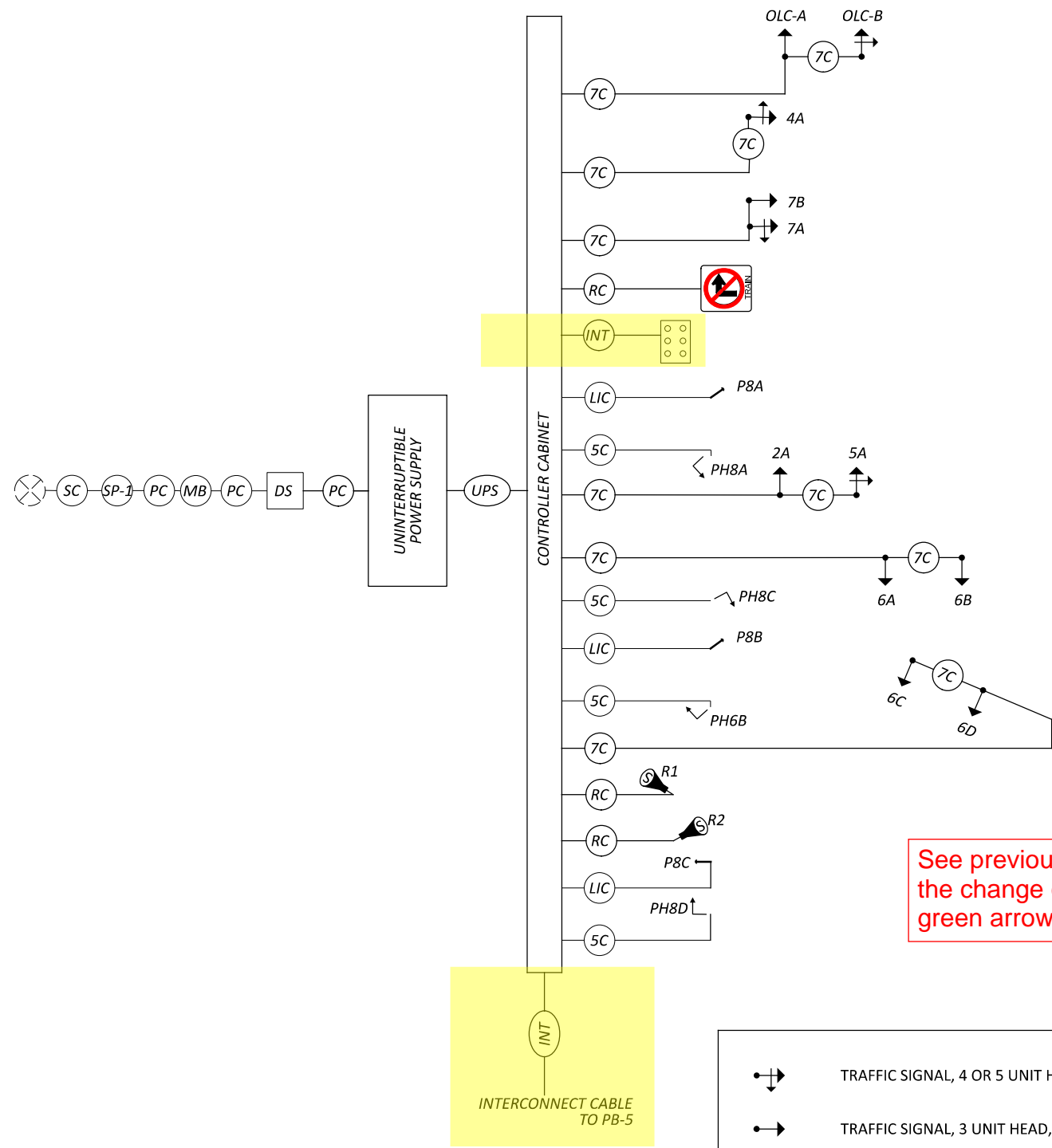


MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	TEM Fig. 498-37: Plan Details for Signal Supports - Arm Lengths														TEM Fig. 498-38: Plan Details for Signal Supports - Mast Arm Orientation							
			ELEVATION		SIGNAL SUPPORT DETAILS												ORIENTATION ANGLES FROM MAST ARM A							
			A (Pavt. Elev.)	B (Top of Found.)	DESIGN TYPE	DESIGN NO.*	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	S1	S2	S3	MAST ARM A ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN PUSHBUTTON	POWER SERVICE	HANDHOLE	CABLE ENTRANCE 12" FROM TOP		
FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	DEG	DEG				
SP-1	326+71.53	31.64' RT.	527.71	527.65	TC-81.22	13	22	20.5	50	47	38	25	15	30	20	9	-	-	90	360	-	-	180	-
SP-2	326+81.44	60.83' LT.	527.25	527.77	TC-81.22	2	21	19.5	27	23	15	-	-	-	-	-	-	-	270	270	-	-	180	-
SP-3	326+41.20	33.10' RT.	527.40	527.58	TC-81.22	12	21.5	20	47	43	13	3	-	36	26	8	-	-	-	-	-	90	-	
SP-4	325+75.92	31.49' RT.	527.12	526.74	TC-81.22	2	22	20.5	31	26	15	-	-	-	-	-	-	-	-	-	-	180	-	
PED-1	326+77.14	25.66' LT.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10/190	360	-	-	-	-

*Existing signal plans are not available. Existing pole design numbers assumed based on 15" measured bolt circle on all poles.
 **Existing mast arms to remain. Lengths listed here are per field measurements.

WIRING DIAGRAM



FIELD WIRING HOOKUP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A (NB)	R	PH2R	R	7A (EB LT)	R	PH7R & LS 14R (DWELL)	R
	Y	PH2Y & LS 12Y (TRACK CLEAR)			Y	PH7Y & LS 14Y (DWELL)	
	G	PH2G & LS 12G (TRACK CLEAR)			G	PH7G & LS 14G (DWELL)	
	-	-			<-Y-->	PH7Y & LS 14Y (DWELL)	
					<-G-->	PH7G & LS 14G (DWELL)	
7B (EB)	R	PH7R & LS 14R (DWELL)	R	OLB-B (NB LT)	R	PH-OLB R	R
	Y	PH7Y & LS 14Y (DWELL)			Y	PH-OLB Y	
	G	PH7R & LS 14G (DWELL)			G	PH-OLB G	
5A (NB LT)	R	PH2R & LS 12R (TRACK CLEAR)	R	6C, 6D (SB RT)	R	PH6R & LS 14R (DWELL)	R
	Y	PH2Y & LS 12Y (TRACK CLEAR)			Y	PH6Y & LS 14Y (DWELL)	
	G	PH2G & LS 12G (TRACK CLEAR)			G	PH6R & LS 14G (DWELL)	
	<-Y-->	PH5Y & LS 15Y (TRACK CLEAR)					
					<-G-->	PH5G & LS 15G (TRACK CLEAR)	
6A, 6B (SB)	R	PH6R	R	OVERLAPS			
	Y	PH6Y					
	G	PH6R					
4A (EB RT)	R	PH7R	R	OLA	R	LS 13R	
	Y	PH4Y			Y	LS 13Y	
	G	PH4G			G	LS 13G	
	<-Y-->	PH4Y					
					<-G-->	PH4G	
OLB-A (NB)	R	PH-OLB R	-				
	Y	PH-OLB Y					
	G	PH-OLB G					
PEDESTRIAN MOVEMENTS							
PED 8	W	8 PED / LS 10 G	OUT				
	DW	8 PED / LS 10 R					
LED BLANKOUT SIGNS							
				S1	-	LS 11R	OUT

LS 14 ONLY ACTIVATED DURING THE DWELL OF PREEMPTION - LED GREEN/YELLOW BALL & LED GREEN/YELLOW LEFT ARROWS
 LS 12 ONLY ACTIVATED DURING TRACK CLEAR OF THE PREEMPTION - LED GREEN/YELLOW LEFT ARROW & GREEN/YELLOW BALL
 LS 11 ONLY ACTIVATED DURING ALL PHASES OF PREEMPTION - LED BLANKOUT SIGNS S1

See previous comments necessitating the change of 6C/6D from green ball to green arrow.

Should OLB be in the overlaps section?

LEGEND

	TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		2/C NO. 14 AWG (LEAD-IN CABLE)		SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG
	TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG		POWER CABLE, 2 CONDUCTOR, NO. 4 AWG
	TRAFFIC SIGNAL, PROTECTED LEFT, 3 UNIT HEAD, 12"		SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		METER BASE
	PEDESTRIAN SIGNAL		RADAR DETECTION CABLE		SIGNAL DISCONNECT SWITCH
	PEDESTRIAN PUSH BUTTON		6-PAIR INTERCONNECT CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE
	STOP LINE RADAR DETECTION UNIT		POWER SOURCE		SIGNAL SUPPORT POLE
	LED BLANKOUT SIGN (NO LEFT TURN)		RAILROAD INDICATOR PANEL		

