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PROJECT ID
82382
SHEET TOTAL
2 2696

ROADWAY (CONT.)

ITEM 203 - EXCAVATION, AS PER PLAN

PREPARATION OF THE FOUNDATION FOR THE GEOFOAM BRIDGE APPROACH EMBANKMENTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 10 OF THE RECOMMENDED EPS-BLOCK GEOFOAM STANDARD FOR LIGHTWEIGHT FILL IN ROADWAY EMBANKMENTS AND BRIDGE APPROACH FILLS ON SOFT GROUND IN NCHRP 529.

THE DEPARTMENT WILL MEASURE FOUNDATION EXCAVATION ACCORDING TO 203.09.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITY AT THE CONTRACT PER CUBIC YARD FOR ITEM 203 - EXCAVATION, AS PER PLAN

ITEM 203 - EMBANKMENT, AS PER PLAN

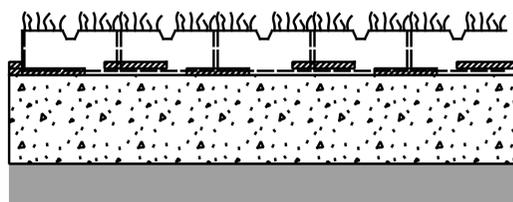
THE MATERIAL USED FOR THIS ITEM SHALL BE RESTRICTED TO NATURAL SOILS WITH CLASSIFICATIONS A-6-a, A-6-b OR A-7-6 TO PROVIDE A COHESIVE SOIL CAP FOR THE GEOFOAM.

ITEM 203 - ROADWAY, MISC.: REINFORCED TURF

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING REINFORCED TURF. THE REINFORCED TURF SHALL BE A PERMEABLE, PLANTABLE, AND FLEXIBLE PAVEMENT CAPABLE OF SUPPORTING AN H-20 LOADING. THE PRODUCT SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:

1. **GEOBLOCK 5150**
MANUFACTURED BY:
PRESTO GEOSYSTEMS
670 N PERKINS ST. P.O. BOX 2399
APPLETON, WI 54912-2399
(800) 548-3424
www.prestogeo.com
2. **DRIVEABLE GRASS**
MANUFACTURED BY:
SOIL RETENTION
1265 CARLSBAD VILLAGE DRIVE, SUITE 100
CARLSBAD, CA 92008
(800) 346-7995
www.soilretention.com
3. **TUFFTRACK GRASS PAVER**
MANUFACTURED BY:
NDS
851 NORTH HARVARD AVENUE
LINDSAY, CA 93247
(888) 825-4716
www.ndspro.com

THE COMPOSITION, DEPTH, AND PREPARATION OF TOPSOIL, POROUS PAVEMENT, ENGINEERED BASE, AND PREPARED SUBGRADE SHALL MEET MANUFACTURER SPECIFICATIONS. ALL COST FOR THIS ITEM OF WORK INCLUDING SUBGRADE PREPARATION, AND BASE MATERIAL, ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS, PER MANUFACTURER REQUIREMENTS SHALL BE INCLUDED IN THE UNIT BID PRICE PER SY FOR: ITEM 203 - ROADWAY, MISC.: REINFORCED TURF.



LEGEND	
	TOPSOIL WITH GRASS
	2" POROUS PAVEMENT
	4" ENGINEERED BASE
	PREPARED SUBGRADE

ITEM 203 - ROADWAY, MISC.: EPS GEOFOAM FILL

FURNISH EPS GEOFOAM BLOCKS PRODUCED BY A MANUFACTURER WITH A QUALITY CONTROL PROGRAM WHICH IS MONITORED AND CERTIFIED BY AN ACCREDITED, THIRD PARTY TESTING ORGANIZATION. SUBMIT TO THE ENGINEER THE FOLLOWING DOCUMENTS:

1. EPS GEOFOAM MANUFACTURERS PRODUCT LITERATURE AND TECH DATA INCLUDING PHYSICAL PROPERTIES IN COMPLIANCE WITH ASTM D 6817 TYPE SPECIFIED AND ASTM C 578 TYPE SPECIFIED.
2. SHOP DRAWINGS SHOWING BLOCK THICKNESS, WIDTH, LENGTH, AND LAYING PATTERN OR SCHEDULE.
3. A SIGNED/NOTARIZED CERTIFICATION FROM THE MANUFACTURER THAT THEIR EPS GEOFOAM MATERIAL MEETS THE PLAN REQUIREMENTS.
4. PRODUCT CERTIFICATE SHOWING EVIDENCE OF THIRD-PARTY QUALITY CONTROL.
5. SUMMARY OF TEST COMPLIANCE WITH SPECIFIED PERFORMANCE CHARACTERISTICS AND PHYSICAL PROPERTIES.

FURNISH EPS GEOFOAM CONFORMING TO ASTM D6817 TYPE EPS 29 GEOFOAM AND ASTM C-578 TYPE IX, RIGID CELLULARPOLYSTYRENE GEOFOAM ACCORDING TO THE GEOFOAM TYPE INDICATED IN THE PLANS AND THE TABLE BELOW.

ASTM TYPE	EPS-29
MINIMUM DENSITY, LB/CU.FT.	1.8
COMPRESSIVE RESISTANCE AT 1% STRAIN, PSI	10.9
AT 5% STRAIN, PSI	24.7
AT 10% STRAIN, PSI	29.0
FLEXURAL STRENGTH, PSI	50.0

ALL EPS GEOFOAM BLOCKS SHALL BE TREATED BY THE MANUFACTURER WITH A TESTED AND PROVEN TERMITE TREATMENT FOR BELOW GRADE APPLICATIONS. THE TREATMENT SHALL BE EPA REGISTERED, MEET REQUIREMENTS OF ICC ES AC239, AND BE RECOGNIZED IN AN ICC ES REPORT.

FURNISH BLOCKS THAT ARE SMOOTH AND FLAT ON ALL SURFACES AND HAVE A DIMENSIONAL TOLERANCE OF +/-0.5 PERCENT.

BEFORE SHIPPING TO THE SITE, ENSURE BLOCKS ARE SEASONED BY STORING THEM AT THE MANUFACTURER'S FACILITY FOR AT LEAST 72 HOURS AT NORMAL AMBIENT ROOM TEMPERATURE AFTER BEING RELEASED FROM THE MOLD. DURING SEASONING, ALLOW ADEQUATE SPACE BETWEEN THE BLOCKS TO ALLOW AIR CIRCULATION SO AS TO FOSTER THE OUTGASSING OF BLOWING AGENT AND TRAPPED CONDENSATE FROM WITHIN THE BLOCKS.

LABEL EACH BLOCK WITH THE MANUFACTURER'S NAME, ASTM EPS TYPE, THE DATE THE BLOCK WAS MOLDED, THE WEIGHT AND THE DENSITY OF THE BLOCK AS MEASURED AFTER SEASONING.

PORTIONS OF THE GEOFOAM FILL THAT ARE NOT BENEATH A CONCRETE DISTRIBUTION SLAB OR CONCRETE APPROACH SLAB MUST BE PROTECTED FROM HYDROCARBON SPILLS (E.G. DIESEL OR GASOLINE) BY COVERING THE GEOFOAM BLOCKS ON THE TOP AND SIDES WITH A GEOMEMBRANE. FURNISH A GEOMEMBRANE MANUFACTURED FROM A TRI-POLYMER MATERIAL CONSISTING OF POLYVINYL CHLORIDE, ETHYLENE INTERPOLYMER ALLOY, AND A POLYURETHANE OR A COMPARABLE POLYMER COMBINATION.

THE MATERIAL SHALL MEET THE FOLLOWING PHYSICAL AND CHEMICAL REQUIREMENTS:

- THICKNESS: MIN. 28 MILS (ATSM D 751)
- UNLEADED GASOLINE VAPOR MAXIMUM 0.40 TRANSMISSION RATE, OZ. PER SQUARE PER 24 HOURS (ASTM D 814)
- GRAB TENSILE STRENGTH: MIN. 600 LB BOTH MACHINE AND CROSS DIRECTION (1" GRIP 4' x 8' SAMPLE ASTM D 571)
- ELONGATION AT BREAK: 20% MIN. (ASTM D 571)

ITEM 203 - ROADWAY, MISC.: EPS GEOFOAM FILL (CONT.)

MATERIAL REQUIREMENTS (CONTINUED):

- TOUGHNESS: 14,000 LB. MIN. (GRAB TENSILE x PERCENT ELONGATION)
- PUNCTURE RESISTANCE: 800 LB. MIN. (ASTM D 751 BALL TIP)
- COLD CRACK: PASS -30° FAHRENHEIT (ASTM D 2136 1" MANDREL, 4 HR)
- FACTORY SEAMS: 2 INCH MIN. BONDED WIDTH
- SHEAR: 320 LB. MIN. (ASTM D 751)

A SIGNED/NOTARIZED CERTIFICATION OF COMPLIANCE SHALL BE FURNISHED BY THE MANUFACTURER STATING THE SELECTED GEOMEMBRANE HAS BEEN TESTED AND MEETS THE ABOVE REQUIREMENTS. JOINTS IN THE GEOMEMBRANE WRAP SHALL BE LAPPED A MINIMUM OF 18 INCHES. PLACE THE BEGINNING OF EACH NEW ROLL BENEATH THE END OF THE PREVIOUS ROLL TO PREVENT THE ADVANCING FILL FROM LIFTING THE GEOMEMBRANE. STAGGER END OVERLAPS AT LEAST 5 FEET FROM THE OTHER END OVERLAPS IN ADJACENT ROLLS.

CARE SHALL BE TAKEN TO PROTECT THE GEOFOAM BLOCKS FROM EXPOSURE TO GASOLINE, SOLVENT NAPHTHA, FUEL OIL, MINERAL OIL, TURPENTINE, OR ANY OTHER ORGANIC OR PETROLEUM BASED SOLVENT. THE BLOCKS SHALL ALSO BE PROTECTED FROM EXPOSURE TO ANY HEAT SOURCE WHICH WOULD REACH 175 DEGREES (F). GEOFOAM SHALL BE STORED ABOVE GROUND AND PROTECTED FROM MOISTURE AND SUNLIGHT PRIOR TO INSTALLATION.

DAMAGE TO GEOFOAM SHALL BE CORRECTED AS FOLLOWS:

- SLIGHT DAMAGE (< 0.12 CUBIC FEET) WITH NO LINEAR DIMENSION GREATER THAN 1 FOOT MAY BE LEFT IN PLACE AS IS.
- MODERATE DAMAGE (< 0.35 CUBIC FEET) WITH NO LINEAR DIMENSION GREATER THAN 1 FOOT SHALL BE FILLED IN WITH SAND.
- GEOFOAM BLOCKS WITH EXCESSIVE DAMAGE (I.E. EXCEEDING THE MODERATE CATEGORY) SHALL BE REPLACED WITH GEOFOAM BLOCKS WHICH MEET THE DAMAGE CRITERIA. GEOFOAM BLOCKS NOT MEETING THE CRITERIA MAY BE CUT TO ELIMINATE THE EXCESSIVE DAMAGE AND THE REMAINING UNDAMAGED PORTION OF THE BLOCK MAY BE USED WITHIN THE FILL, PROVIDED THE UNDAMAGED PORTION OF THE BLOCK MEETS ALL OTHER REQUIREMENTS.

PREPARE THE SURFACE ON WHICH THE FIRST LAYER OF BLOCKS WILL BE PLACED BY STRIPPING ALL VEGETATION AND GRADING SO THAT IT IS LEVEL WITHIN A TOLERANCE OF 1/2" OVER 10 FT DISTANCE. THE GEOFOAM FILL SHALL BE PLACED ON A 2" BASE OF GRANULAR MATERIAL CONFORMING TO SIZE NO. 9 OF TABLE 703.01-1 OF THE CMS. THE GRANULAR BASE SHALL ALSO BE PLACED ALONG THE SIDES OF THE GEOFOAM FILL THAT ARE IN CONTACT WITH SOIL.

SEE SHEET 471A FOR OVEREXCAVATION VOLUME OF EMBANKMENT, AS PER PLAN FOR GRANULAR BASE BELOW EPS GEOFOAM FILL.

PROVIDE TIE DOWN STRAPS, SANDBAGS OR OTHER FLEXIBLE WEIGHTS TO PREVENT BLOCKS FROM BEING DISLODGED BY WIND. DO NOT STORE BLOCKS WHERE THERE IS A POTENTIAL FOR FLOODING.

SEE SHEET 1433 FOR SITE PREPARATION, AREA OF APPLICATION, AND EMBANKMENT TO BE PLACED ON TOP OF THE GEOFOAM BLOCKS.

DESIGN

CONTRACTOR SHALL SUPPLY PROPERLY SCALED SHOP DRAWINGS INDICATING THE PROPOSED LOCATION AND LAYOUT OF EACH EPS BLOCK. IN ADDITION, THE DRAWINGS SHALL INDICATE THE PROPOSED LOCATION AND LAYOUT OF GEOFORM GRIPPER PLATES AND ALL ACCESSORY ITEMS TO BE USED. SUBMITTED PLANS SHALL INCLUDE, BUT NOT BE LIMITED TO, PLANS AND ELEVATION VIEWS WITH ENOUGH DETAIL TO CLEARLY DESCRIBE THE PROPOSED INSTALLATION.

ITEM 203 - ROADWAY, MISC.: EPS GEOFOAM FILL (CONT.)

PLACEMENT

PLACE BLOCKS AS INDICATED ON THE PLANS AND SHOP DRAWINGS. ALL BLOCKS SHALL BE ACCURATELY FIT RELATIVE TO ADJACENT BLOCKS SO THAT ALL VERTICAL AND HORIZONTAL JOINTS BETWEEN BLOCKS ARE TIGHT. GAPS SHALL NOT EXCEED 1 INCH. AVOID CONTINUOUS VERTICAL JOINTS BY OFFSETTING AND ROTATING SUCCESSIVE LAYERS OF BLOCKS. EACH SUBSEQUENT LAYER OF BLOCKS SHALL BE ROTATED ON THE HORIZONTAL PLANE 90 DEGREES FROM THE DIRECTION OF PLACEMENT OF THE PREVIOUS LAYER. OFFSET BLOCKS AT LEAST 2 FEET BETWEEN LAYERS.

THE SURFACE OF EACH LAYER OF BLOCKS ON WHICH ANOTHER LAYER WILL BE PLACED MUST BE LEVEL TO WITHIN 0.5 INCH OVER ANY 10 FOOT INTERVAL. THE CORNER OR EDGE FORMED BY ANY TWO FACES OF A BLOCK SHALL BE PERPENDICULAR. THE DEVIATION OF ANY FACE OF THE BLOCK FROM A THEORETICAL PERPENDICULAR PLANE SHALL NOT EXCEED 1/8 INCH OVER A DISTANCE OF 20 INCHES. ANY ONE FACE OF A BLOCK SHALL NOT DEVIATE FROM A THEORETICAL PLANE BY MORE THAN 1/4 INCH WHEN MEASURED USING A STRAIGHTEDGE WITH A LENGTH OF 10 FEET.

CONSTRUCT THE SURFACE OF THE UPPERMOST LAYER OF BLOCKS TO THE GRADE SHOWN ON THE PLANS TO A TOLERANCE OF ZERO TO MINUS 2.5 INCHES OF THE INDICATED GRADE. THE LONGITUDINAL AXES OF THE UPPERMOST LAYER OF BLOCKS MUST BE PERPENDICULAR TO THE LONGITUDINAL AXIS OF THE ROAD ALIGNMENT.

A MINIMUM OF TWO LAYERS OF BLOCKS SHALL BE USED FOR LIGHTWEIGHT FILL BENEATH ROADWAYS.

CONNECTOR PLATES SHALL BE PLACED BETWEEN HORIZONTAL LAYERS OF BLOCK. A MINIMUM OF TWO CONNECTOR PLATES SHALL BE USED BETWEEN BLOCKS.

CONNECTORS SHALL BE GALVANIZED STEEL OR STAINLESS STEEL TWO SIDED MULTI-BARBED CONNECTORS. EACH CONNECTOR SHALL HAVE A LATERAL HOLDING STRENGTH OF AT LEAST 60 LBS. PROVIDE A SIGNED/NOTARIZED CERTIFICATION FROM THE MANUFACTURER THAT THE CONNECTOR PLATES MEET MATERIAL, DESIGN AND STRENGTH REQUIREMENTS OF THESE PLANS.

BLOCKS SHALL BE CUT USING A SAW OR HOT WIRE.

NO VEHICLE OR CONSTRUCTION EQUIPMENT SHALL TRAVERSE DIRECTLY ON THE EPS BLOCKS OR ON ANY SEPARATION MATERIAL PLACED BETWEEN THE EPS BLOCKS AND THE PAVEMENT SYSTEM. SOIL FOR THE PAVEMENT SYSTEM SHALL BE PUSHED ONTO THE EPS BLOCKS OR SEPARATION LAYER USING APPROPRIATE EQUIPMENT. A MINIMUM OF 12 INCHES OF FILL SHALL COVER THE TOP OF THE GEOFOAM BLOCK OR SEPARATION LAYER BEFORE COMPACTION COMMENCES. THE CONTRACTOR'S EQUIPMENT USED DURING COMPACTION SHALL NOT PLACE A PRESSURE GREATER THAN 18 PSI ON THE GEOFOAM BLOCKS AT ANY TIME DURING CONSTRUCTION. ANY DAMAGE TO THE GEOFOAM BLOCKS RESULTING FROM THE CONTRACTOR'S VEHICLES, EQUIPMENT, OR OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR AT THEIR COST.

THE LIMITS OF THE LIGHTWEIGHT FILL (LWF) SHOWN IN THE CONTRACT DOCUMENTS AND PLANS IS FOR QUANTITATIVE PURPOSES ONLY. THE FINAL LWF CONFIGURATION IS THE RESPONSIBILITY OF THE CONTRACTOR BASED UPON THE FIELD CONDITIONS, THE CONTRACTOR-SUPPLIED SIZES AND INSTALLATION METHODS. THE CONTRATOR IS RESPONSIBLE FOR ALL DETAILED SHOP DRAWINGS NEEDED FOR CONSTRUCTION OF LWF AND PAYMENT WILL BE MADE PER THE CONTRACT DOCUMENTS AND DRAWINGS.

PAYMENT FOR THIS ITEM OF WORK SHALL BE PAID FOR BY THE UNIT PRICE BID PER CUBIC YARD OF ITEM 203 - ROADWAY, MISC.: EPS GEOFOAM FILL, WHICH PRICE AND PAYMENT INCLUDE ALL MATERIALS, SITE PREPARATION (EXCLUDING EXCAVATION), GRANULAR BASE, GEOMEMBRANE WRAP, TOOLS, EQUIPMENT, AND LABOR TO COMPLETE THIS ITEM OF WORK IN PLACE.

DESIGN AGENCY

Michael Baker INTERNATIONAL

DESIGNER

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REVIEWER

KGJ 05/10/24

PROJECT ID

82382

SHEET TOTAL

75 2696

ROADWAY (CONT.)

SUBGRADE TREATMENT ON CITY STREETS

WHERE SOFT SUBGRADE IS ENTOUTERED, THE UNSTABLE MATERIAL SHALL BE EXCAVATED TO THE DEPTH REQUIRED BY THE ENGINEER, AND DISPOSED OF. THE UNDERCUT SUBGRADE SHALL BE REPLACED IN ACCORDANCE WITH ITEM 204. THE AREA SHALL BE PROOF ROLLED TO DETERMINE IF ADEQUATE STABILIZATION WAS ACHIEVED.

WHERE SOFT SUBGRADE IS DUE TO THE FAILURE, NEGLECT, OR ANY OTHER FAULT OF THE CONTRACTOR, THE UNSTABLE CONDITION SHALL BE CORRECTED AS OUTLINED ABOVE AT NO ADDITIONAL EXPENSE TO THE DEPARTMENT.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED FOR USE AS DIRECTED BY THE ENGINEER TO REPAIR UNSUITABLE SUBGRADE FOUND BENEATH THE CITY STREETS.

ITEM 204 - EXCAVATION OF SUBGRADE	3,100 CY
ITEM 204 - GRANULAR MATERIAL, TYPE B	3,100 CY
ITEM 204 - GEOTEXTILE FABRIC	9,300 SY

ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN

THIS ITEM SHALL MEET ALL THE SPECIFICATIONS OF ITEM 606 EXCEPT THAT THE BRIDGE TERMINAL ASSEMBLY SHALL BE THRIE-BEAM PER SCD MGS-3.1. THE BRIDGE TERMINAL ASSEMBLY SHALL BE LOCATED AT END OF PROPOSED CONCRETE PARAPET PER SCD MGS-3.2. NESTED THRIE-BEAM SHALL CONNECT THE BRIDGE TERMINAL ASSEMBLY TO THE EXISTING THRIE-BEAM BRIDGE RAILING AT THE FIRST EXISTING POST AND SHALL BE INCIDENTAL TO THIS ITEM.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE B (MASH 2016)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE MASH 2016 GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

THE FACE OF THE TYPE B IMPACT HEAD SHALL BE COVERED WITH REBOUNDABLE RETROREFLECTIVE SHEETING, PER CMS 730.191.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE B, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING AND ALL RELATED HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH REBOUNDABLE RETROREFLECTIVE SHEETING, PER CMS 730.191.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (MASH 2016) (50 MPH, 69" WIDE) ITEM 606 - IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (MASH 2016) (50 MPH, 90" WIDE)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE MASH 2016 TYPE 2 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE (REFER TO THE POSTED SHOP DRAWINGS FOR THE MOST CURRENT APPROVED PRODUCT MODELS). WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (50 MPH, 69" WIDE), EACH, AND ITEM 606, IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (50 MPH, 90" WIDE), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ITEM 608 - CURB RAMP, AS PER PLAN

ALL CURB RAMPS PROVIDED BY THE CONTRACTOR SHALL MEET ALL ADA REQUIREMENTS AND THE FOLLOWING:

TRUNCATED DOME TILES SHALL BE TINTED RED. CURB RAMPS SHALL CONFORM TO THE CITY OF CLEVELAND STANDARD CONSTRUCTION DRAWING CR-1. THICKNESS OF THE CURB RAMP WALK AND CONCRETE BASE BENEATH THE TRUNCATED DOMES SHALL BE A MINIMUM OF 8 INCHES. IN ADDITION, A 2 INCH COMPACTED SCREENING BED THAT MEETS THE REQUIREMENTS OF 703.10 (LIMITED TO CRUSHED STONE) SHALL BE FURNISHED AND PLACED BENEATH ALL CURB RAMP AREAS.

ITEM 608 - CURB RAMP, AS PER PLAN 2

ALL REQUIREMENTS OF ITEM 608 - CURB RAMP, AS PER PLAN SHALL APPLY EXCEPT THAT NO TRUNCATED DOME TILES SHALL BE INSTALLED WITH ITEM 608 - CURB RAMP, AS PER PLAN 2.

ITEM 608 - 6" CONCRETE WALK, AS PER PLAN
ALL SIDEWALKS SHALL CONFORM TO THE FOLLOWING:

PER 608.03(C), IT IS REQUIRED THAT 1/2" THICK EXPANSION JOINT MATERIAL (705.03) IS INSTALLED BETWEEN THE WALK AND THE BACK OF CURB AND INCH THICK FOR ANY OTHER FIXED OBJECT. IN ADDITION TO THE LOCATIONS SPECIFIED UNDER 608.03(C), TRANSVERSE EXPANSION JOINTS SHALL BE CONSTRUCTED AT INTERVALS OF NOT MORE THAN 25 TO 30 FEET UNLESS OTHERWISE DIRECTED. THE EXPANSION JOINT FILLER 705.03 SHALL BE PLACED AT THE TRANSVERSE EXPANSION JOINTS FOR THE FULL DEPTH/WIDTH OF THE CONCRETE WALK AND SHALL BE TRULY NORMAL TO GRADE. THE TOP 1/2 INCH OF THE EXPANSION JOINT PLACED BETWEEN THE WALK AND BACK OF CURB SHALL BE SEALED WITH 705.04 JOINT SEALER.

FINAL SURFACE FINISH OF WALKS SHALL BE IN ACCORDANCE WITH APPLICABLE MUNICIPAL STANDARDS/ORDINANCES. IN ADDITION, A 2 INCH COMPACTED SCREENING BED THAT MEETS THE REQUIREMENTS OF 703.10 (LIMITED TO CRUSHED STONE) SHALL BE FURNISHED AND PLACED BENEATH ALL SIDEWALK AREAS.

ITEM 618 - RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)

THE FOLLOWING QUANTITY FOR RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE) HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE CONSTRUCTED ALONG INTERIM I.R. 90 WESTBOUND FROM STA. 4006+50 RT. TO STA. 4013+65 RT. AND STA. 4008+50 LT. TO STA. 4013+65 LT.

ITEM 618 - RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	0.23 MILE
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ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE C, AS PER PLAN

THIS ITEM SHALL MEET ALL THE SPECIFICATIONS OF ITEM 622 EXCEPT THAT THE CONCRETE BARRIER SHALL WIDEN FROM 31" (TOE TO TOE) AT RAMP A1 STA. 307+07.08 TO 67 3/8" (TOE TO TOE) AT RAMP A1 STA. 308+45.00 AS SHOWN BY THE TYPICAL SECTION ON SHEET 42. CONCRETE BARRIER FACE SLOPE AND HEIGHT SHALL BE PER SCD RM-4.3.

ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN 2

THIS ITEM SHALL MEET ALL THE REQUIREMENTS OF ITEM 622, CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, EXCEPT THAT THE HEIGHT OF SHALL BE TAPERED OVER 20' TO TRANSITION BETWEEN THE BARRIER TYPES. THE BARRIER END SECTIONS SHALL BE REINFORCED PER SCD RM-4.5, EXCEPT THAT THE SHEER STIRRUPS AND HORIZONTAL REBAR SHALL BE VARIED TO MATCH THE TRANSITION.

PAYMENT FOR ITEM 622, CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN 2, SHALL BE MADE AT THE UNIT PRICE BID, PER EACH, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDNETALS TO BUILD THIS ITEM AS NOTED.

8 ITEM 614 - WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL), AS PER PLAN
8 ITEM 622 - PORTABLE BARRIER, UNANCHORED, AS PER PLAN
ITEM 622 - PORTABLE BARRIER, ANCHORED, AS PER PLAN 2

THESE ITEMS SHALL MEET ALL THE SPECIFICATIONS OF ITEMS 614 & 622 EXCEPT THE PORTABLE BARRIER AND ATTENUATOR SHALL BE LEFT IN PLACE AFTER CONSTRUCTION AND BECOME PROPERTY OF THE DEPARTMENT. THE INDIVIDUAL BARRIER SECTIONS AND ATTENUATORS USED FOR THIS ITEM SHALL BE NEW AND SHALL NOT HAVE BEEN INSTALLED ELSEWHERE ON THIS PROJECT OR ANY OTHER PROJECT PRIOR TO INSTALLATION. SEE PLANS FOR LIMITS OF ANCHORED AND UNANCHORED PORTABLE BARRIERS.

ITEM SPECIAL - LOW DENSITY CELLULAR CONCRETE FILL, CLASS II

THE ITEM SHALL MEET THE SPECIFICATIONS OF SPECIAL PROVISION - LOW DENSITY CELLULAR CONCRETE FILL.

ITEM 623 - MONUMENT, MISC.: CLEVELAND MONUMENT ASSEMBLY

ANY PERSON, CONTRACTOR, UTILITY, OR GOVERNMENTAL AGENCY, HEREIN REFERRED TO AS THE CONTRACTOR, DISTURBING, REMOVING AND/OR REPLACING PAVEMENT IN THE CITY OF CLEVELAND'S PUBLIC RIGHT-OF-WAY SHALL PROVIDE INFORMATION AS TO THE TYPE OF WORK AND THE LIMITS OF THE WORK TO THE CITY OF CLEVELAND CHIEF SURVEYOR THRU SURVEYOR WILL DETERMINE WHICH MONUMENTS, IF ANY WILL BE AFFECTED BY THE WORK.

WHERE NEW MONUMENT ASSEMBLIES ARE TO BE CONSTRUCTED, THE CONTRACTOR SHALL FURNISH THE FOLLOWING FOR EACH ASSEMBLY AS DETAILED ON THE CITY OF CLEVELAND'S MONUMENT BOX & ASSEMBLIES STANDARD CONSTRUCTION DRAWING MB-IC: ONE CLEVELAND MONUMENT BOX ASSEMBLY, ONE (1) ONE INCH DIAMETER EPOXY STEEL DEFORMED REINFORCING BAR THIRTY-SIX INCHES (36") LONG, FLAT ON TOP WITH A ROUND POINTED END.

ALL MONUMENTS EXISTING AND PROPOSED MUST BE REFERENCED PRIOR TO CONSTRUCTION. A MINIMUM OF 3-REF. POINTS PER MONUMENT MUST BE USED AND MUST BE LOCATED OUTSIDE OF THE CONSTRUCTION ZONE (WORK AREA). CARE AND PROTECTIVE MEASURES SHALL BE EMPLOYED BY THE CONTRACTOR TO PRESERVE EXISTING MONUMENTS. ALL MONUMENTS DISTURBED AND/OR DESTROYED SHALL BE RESET AS DETAILED ON THE CITY OF CLEVELAND'S MONUMENT BOX & ASSEMBLIES STANDARD CONSTRUCTION DRAWING MB-IC. THE SUITABLE EQUIPMENT FOR THE WORK REQUIRED BY THIS DETAIL SPECIFICATION.

ALL WORK SHALL BE DONE BY SAID COMPETENT PERSONNEL UNDER DIRECT SUPERVISION OF A PROFESSIONAL SURVEYOR, LICENSED AND REGISTERED TO PRACTICE IN THE STATE OF OHIO. SAID SURVEYOR AND COMPETENT PERSONNEL SHALL BE HIRED BY THE CONTRACTOR.

PRIOR TO BEGINNING ANY WORK, A COPY OF ALL SURVEY AND REFERENCE NOTES IS TO BE SENT THRU ODOT TO THE ATTENTION OF THE CHIEF SURVEYOR AT THE CITY OF CLEVELAND, DEPARTMENT OF THE MAYOR'S OFFICE OF CAPITAL PROJECTS (MOCAP), DIVISION OF ENGINEERING AND CONSTRUCTION, 601 LAKESIDE AVE. ROOM 518, CLEVELAND, OH 44114. (216) 664-3780.

MONUMENT ASSEMBLIES MAY BE FOUND WITHOUT MONUMENTATION INSIDE THE BOXES. IF THE CASTING OF THESE MONUMENTS IS REMOVED DURING CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF CLEVELAND'S SURVEY DEPARTMENT AT (216) 664-2460 PRIOR TO REMOVAL. THE CITY OF CLEVELAND WISHES TO COORDINATE "EXPLORATION FOR LOST MONUMENTATION" WORK WITH THE CONTRACTOR FOR PRIOR TO A PROPOSED MONUMENT ASSEMBLY BEING RESET AT THESE LOCATIONS. IN THE EVENT THE CITY OF CLEVELAND'S EXPLORATION IS UNABLE TO FIND ANY REMAINING MONUMENTATION, THE CITY OF CLEVELAND WILL SET A NEW MONUMENT WITHIN EACH OF THESE MONUMENT ASSEMBLIES. QUESTIONS OR CONCERNS REGARDING THE CITY OF CLEVELAND'S REQUEST SHOULD BE DIRECTED TO THE SURVEY DEPARTMENT (NUMBER ABOVE).

THE CONTRACTOR SHALL REPLACE AT THEIR COST ANY MONUMENTS DISTURBED BY THE CONTRACTOR OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR SHALL PERFORM ALL OTHER OPERATIONS NECESSARY TO COMPLETE THIS WORK ITEM SUCH AS PAVEMENT REMOVAL, EXCAVATION, SETTING THE BOX TO GRADE AND PAVEMENT REPLACEMENT. ALL WORK COMPLETED AND ACCEPTED SHALL BE PAID FOR BY THE UNIT PRICE BID FOR ITEM 623 - MONUMENT, MISC.: CLEVELAND MONUMENT ASSEMBLY.

THE FOLLOWING ESTIMATED CONTINGENCY QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE WORK DESCRIBED ABOVE:

ITEM 623 - MONUMENT, MISC.: CLEVELAND MONUMENT ASSEMBLY	60 EACH
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DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	JTH
REVIEWER	KGJ 05/10/24
PROJECT ID	82382
SHEET	TOTAL
76	2696

DRAINAGE (CONT.)

- ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN**
- ITEM 605 - 6" DEEP PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN**

WHEN PERFORMING EXCAVATIONS BELOW THE WATER TABLE, PROVIDE UNDERDRAINS IN THE CUT SLOPES TO DRAIN GROUNDWATER THAT MAY BE ENCOUNTERED. INSTALL THE UNDERDRAIN IN A TRENCH AT THE HEAD OF THE PROPOSED EXCAVATION.

PIPE UNDERDRAIN SHALL BE PERFORATED CORRUGATED PLASTIC PIPE PER C&MS 707.31. PIPE UNDERDRAIN WITH PREFABRICATED FABRIC SLEEVES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.

PLACE OBSERVATION WELL AND CLEANOUT AT GRADE BREAKS AND AT UNDERDRAIN OUTLET JUNCTIONS AS APPROVED AND DIRECTED BY THE ENGINEER. CONNECT THE OBSERVATION WELL AND CLEANOUT TO THE PERFORATED UNDERDRAIN WITH THE APPROPRIATE MANUFACTURED CONNECTIONS. EXTEND THE OBSERVATION WELL AND CLEANOUT 4 INCHES ABOVE THE SURFACE ELEVATION. CAP THE OBSERVATION WELL AND CLEANOUT WITH A THREADED SCREW CAP. CAP THE ENDS OF PERFORATED UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL AND CLEANOUT OR CONNECTED TO OTHER CONDUITS.

PIPE UNDERDRAINS IN TRENCHES 50 INCHES OR SHALLOWER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN, AS PER PLAN. PIPE UNDERDRAINS IN TRENCHES GREATER THAN 50 INCHES AND UP TO 96 INCHES IN DEPTH SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 605 - 6" DEEP PIPE UNDERDRAIN, AS PER PLAN. THESE PRICES SHALL INCLUDE THE COST FOR MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO INSTALL THE UNDERDRAINS.

GROUNDWATER MANAGEMENT

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES. PERFORM ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS.

AS PART OF THE CONTRACTOR'S MEANS AND METHODS, CONTRACTOR SHALL STABILIZE THE EXISTING SUBGRADE, DIRECT SURFACE RUNOFF AWAY FROM EXCAVATION, AND DEWATER EXCAVATIONS TO THE EXTENT NECESSARY FOR CONSTRUCTION. GROUNDWATER AND STORMWATER RUNOFF SHALL ALSO BE MANAGED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO THE SIGNIFICANT EXCAVATIONS FOR THE LOWERING OF I.R. 90 BETWEEN E. 22ND STREET AND CARNEGIE AVENUE AND CONSTRUCTION OF BRIDGE 13, BRIDGE 14, AND ADJACENT RETAINING WALLS.

GROUNDWATER LEVELS WERE RECORDED FOR 18 MONTHS (BETWEEN MARCH 2021 AND AUGUST 2022) USING VIBRATING WIRE PIEZOMETERS AT SIX LOCATIONS IN THE PROJECT AREA ALONG I.R. 90 WHERE EXCAVATIONS BELOW THE OBSERVED GROUNDWATER LEVEL ARE PROPOSED. SEE DATA IN TABLE TO THE RIGHT.

ADDITIONAL DETAILS OF THE GROUNDWATER LEVEL OBSERVATIONS IN THE PROJECT AREA CAN BE FOUND IN SUBGRADE EXPLORATION AND STRUCTURE FOUNDATION EXPLORATION REPORTS AVAILABLE FROM THE DISTRICT 12 PROJECT ENGINEER.

GROUNDWATER LEVELS FLUCTUATE SEASONALLY AS A FUNCTION OF PRECIPITATION AND OTHER HYDROLOGICAL FACTORS. THEREFORE, THERE MAY BE CONSIDERABLE CHANGE IN THE WATER TABLE OR THE PRESENCE OF WATER WHERE NOT PREVIOUSLY ENCOUNTERED.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE IN MANAGING GROUNDWATER INCLUDING PERCHED WATER AND FOR USE IN INTERCEPTING GROUNDWATER SEEPAGE AT CUT SLOPES AS DIRECTED BY THE ENGINEER:

- ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN 3,700 FT**
- ITEM 605 - 6" DEEP PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN 5,200 FT**

4

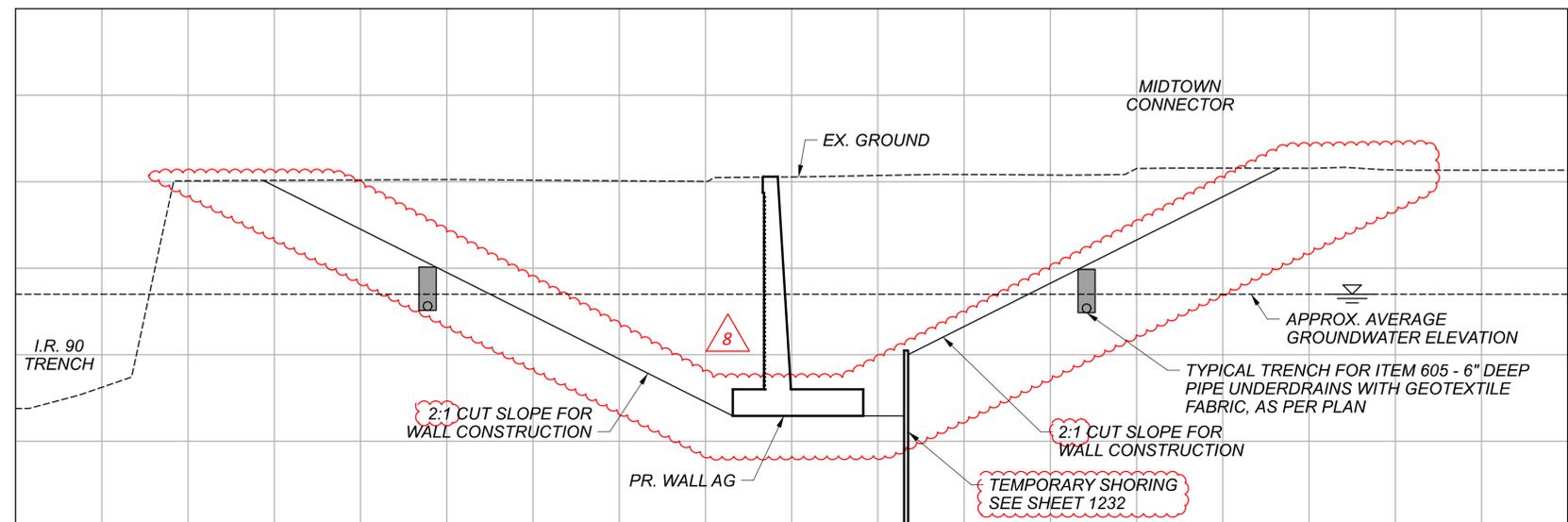
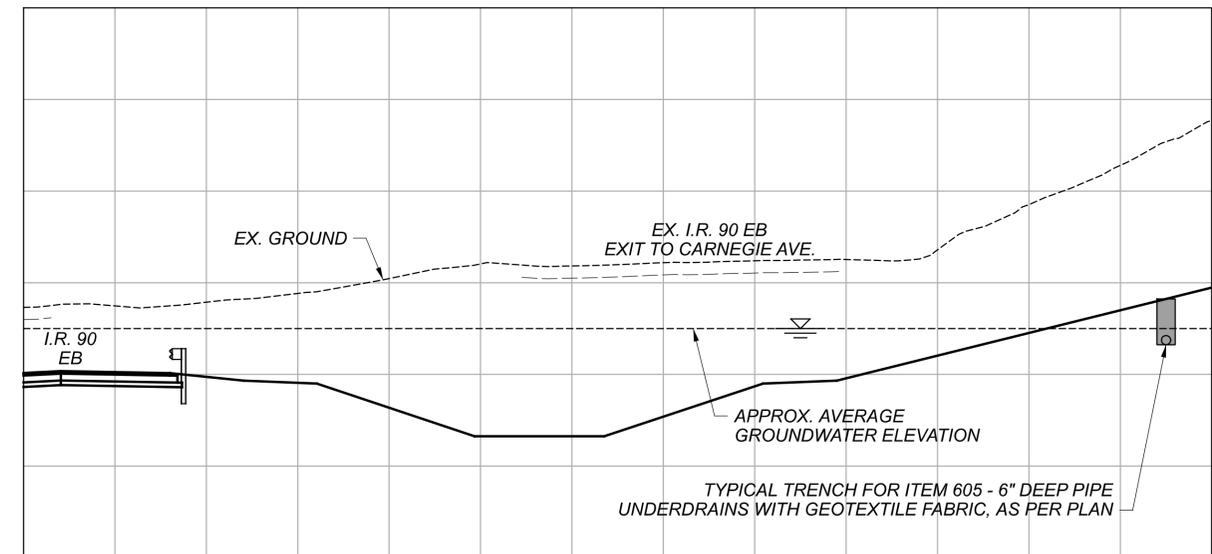
UNRECORDED SEWER CONNECTION

FURNISH A CONTINUANCE FOR ALL UNRECORDED SEWER CONNECTIONS DISTURBED BY THE WORK. FURNISH A CONTINUANCE BY CONNECTING A CONDUIT INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING CONNECTION WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES RIGHT OF WAY USE PERMIT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE. PAYMENT FOR COMPLETED AND ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT PRICE BID:

- ITEM 202 - PIPE REMOVED, 24" DIAMETER AND UNDER 200 FT**
- ITEM 611 - 12" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12 400 FT**
- ITEM 611 - 6" CONDUIT, TYPE E 400 FT**

PIEZOMETER ID	ADJACENT BORING ID	GROUNDWATER READINGS (FT)			SHEET REFERENCES	
		MAXIMUM ELEVATION	MINIMUM ELEVATION	AVERAGE ELEVATION	BORING LOGS	BORING PLANS
P-001	B-085-3-20	648.3	646.7	647.6	2528	2440, 2469, 2483
P-002	B-085-4-20	647.1	645.5	646.4	2529	2440, 2469, 2470, 2483, 2484
P-003	B-085-1-20	646.2	644.6	645.6	2523	2440, 2469, 2470, 2473, 2483
P-004	B-086-1-20	644.7	642.8	643.7	2530, 2531, 2532	2408, 2409, 2416, 2417, 2469, 2470, 2473, 2483
P-005	B-169-4-20	641.2	639.6	640.6	2648, 2649	2410, 2418, 2474, 2475, 2481, 2485, 2486
P-006	B-170-3-20	645.8	644.0	645.1	2663, 2664, 2665	2410, 2411, 2463, 2464, 2474, 2475, 2487, 2488



DESIGN AGENCY

Michael Baker INTERNATIONAL

DESIGNER
JTH

REVIEWER
KGJ 05/10/24

PROJECT ID
82382

SHEET TOTAL
79 2696

MAINTENANCE OF TRAFFIC GENERAL NOTES (CONTINUED)

ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMTUCD INTENDS THAT FLAGGERS BE USED.

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

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

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

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

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

FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURRING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA:

- ON A MULTI-LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY;
- AND,
- AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION;
- AND,
- AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

"WITHOUT POSITIVE PROTECTION" MEANS USE OF DRUMS, CONES, SHADOW VEHICLE, ETC, WITHOUT PROTECTION FROM PORTABLE BARRIER OR OTHER RIGID BARRIER ALONG THE WORK AREA. THIS PHRASE DOES NOT APPLY TO CASES WHERE POSITIVE PROTECTION IS REQUIRED. MOBILE OPERATIONS ARE REGARDED AS "WITHOUT POSITIVE PROTECTION". FOR WORK ZONES USING A COMBINATION OF BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES (CONES, DRUMS, ETC), THE DESIGNATION SHALL BE BASED UPON THE TYPE OF DEVICES USED IN THE AREA THAT WORKERS ARE LOCATED.

IF MULTIPLE ACTIVE LOCALIZED QUALIFYING WORK AREAS OCCUR WITHOUT POSITIVE PROTECTION, PER MAINLINE TRAFFIC DIRECTION, PROVIDE A UNIFORMED LEO AND OFFICIAL PATROL CAR IN ADVANCE OF:

- THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER;
 - OR
 - THE ACTIVE WORK AREA Laterally CLOSE TO THE OPEN TRAVELED LANE;
 - OR
 - OTHER LOCATION AS APPROVED BY THE ENGINEER.
- THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

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.

ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTINUED)

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 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 THAT 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 5000 HOUR

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.

ITEM 614, MAINTAINING TRAFFIC, MISC.: PARTIAL TEMPORARY TRAFFIC SIGNAL

THE CONTRACTOR SHALL MODIFY THE EXISTING TRAFFIC SIGNALS AT THE INTERSECTIONS OF CARNEGIE AVENUE AND E. 14TH STREET AS DETAILED ON SHEET 293, CARNEGIE AVENUE AND E. 18TH STREET AS DETAILED ON SHEET 293, AND CARNEGIE AVENUE AND E. 21ST STREET AS DETAILED ON SHEET 345. THESE PARTIAL TEMPORARY TRAFFIC SIGNALS SHALL MAINTAIN THE CURRENT SIGNAL OPERATION UTILIZING THE EXISTING CONTROLLER CABINET, EXCEPT WHEN NOTED OTHERWISE IN THE TEMPORARY SIGNALS NOTES ON SHEET 345. NO CHANGES TO THE SIGNAL PHASING OR TIMINGS SHALL BE MADE WITHOUT THE APPROVAL OF THE PROJECT ENGINEER AND THE CITY OF CLEVELAND TRAFFIC ENGINEER.

ALL TEMPORARY SIGNAL POLE CALCULATIONS SHALL BE PERFORMED BY THE CONTRACTOR IN ORDER TO DETERMINE THE FINAL LOCATION, TYPE OF WOOD POLE TO BE USED, AND TO DETERMINE IF ADDITIONAL WOOD POLES AND SIGNAL SPANS ARE NECESSARY INSTEAD OF REUSING EXISTING SIGNAL SUPPORT POLES. THE NUMBER, LOCATION, VISIBILITY AND HEIGHT OF ALL TRAFFIC SIGNAL HEADS AND SIGNS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD). THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN CROSSINGS THROUGHOUT CONSTRUCTION WHERE SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS INCLUDING ANY TEMPORARY POLES OR PEDESTRIAN SIGNAL HEADS WHERE NEEDED.

ALL LABOR AND MATERIALS FOR THE TEMPORARY MAINTENANCE OF EXISTING TRAFFIC SIGNALS AND THE IMPLEMENTATION OF THE TEMPORARY SIGNAL PLAN AND NOTES, INCLUDING BUT NOT LIMITED TO THE TEMPORARY SUPPORT POLES, TEMPORARY VEHICULAR AND PEDESTRIAN SIGNAL HEADS, TEMPORARY WIRING, TEMPORARY MESSENGER WIRE, CABINET MODIFICATIONS, AND CONTROLLER PROGRAMMING ADJUSTMENTS, ETC. SHALL BE INCLUDED IN THE UNIT BID PRICE FOR EACH ITEM 614, MAINTAINING TRAFFIC, MISC.: PARTIAL TEMPORARY TRAFFIC SIGNAL. A QUANTITY OF 3 EACH HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS ITEM OF WORK AT THE INTERSECTIONS NOTED ABOVE.

ITEM SPECIAL - SURCHARGE FOR CLASS MS CONCRETE
AT VARIOUS LOCATIONS ALONG THE CORRIDOR AND TIMES DURING CONSTRUCTION CIRCUMSTANCES MAY REQUIRE THE USE OF CLASS MS CONCRETE. THE USE OF MS CONCRETE SHALL BE AT THE DISCRETION AND DIRECTION OF THE ENGINEER AND THE SPECIFICATIONS OUTLINED IN THESE NOTES. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:
ITEM SPECIAL - SURCHARGE FOR CLASS MS CONCRETE 280 CY

RESURFACING OF WORK ZONES

THE CONTRACTOR SHALL RESURFACE THE ROADWAY PAVEMENT LISTED IN THE TABLE BELOW. THIS WORK SHALL OCCUR PRIOR TO IMPLEMENTING A WORK ZONE AND ONCE EACH LOCATION IS NO LONGER PART OF A WORK ZONE AND BEFORE FINAL PAVEMENT MARKINGS ARE PLACED ON THE ROADWAY. ADDITIONAL CONTINGENCY QUANTITIES FOR RESURFACING HAVE BEEN INCLUDED BELOW, TO BE USED AS DIRECTED BY THE ENGINEER.



SINGLE LANE CLOSURES SHALL BE IMPLEMENTED DURING OFF PEAK HOURS (SEE NOTE FOR DETAILS) AND HOLIDAY/SPECIAL EVENT RESTRICTIONS APPLY TO THE CLOSURES. ALL LANE CLOSURES SHOULD BE DONE IN ACCORDANCE WITH OHIO DEPARTMENT OF TRANSPORTATION STANDARDS AS DESCRIBED IN BOTH THE CMS AND STANDARD CONSTRUCTION DRAWINGS. AT THE END OF WORKDAY, TRAFFIC GRADE STEEL PLATES SHALL BE PLACED OVER ANY PORTION OF THE TRENCH NOT RESTORED BACK TO GRADE OR NOT RESTORED BACK TO A MANNER SUITABLE FOR TRAFFIC AND ALL LANES SHALL BE OPENED.

ROADWAY	ALIGNMENT	BEGIN STATION	END STATION	AREA (SF)	BUILD-UP	APP A	APP B	APP C
I.R. 77 NB	@ EX. I.R. 77	55+30	73+65	92,630	ODOT	515	515	
I.R. 77 SB	@ EX. I.R. 77	73+00	73+65	3,470	ODOT	19	19	
I.R. 90	@ EX. I.R. 90	98+48	110+50	152,170	ODOT	845	845	
RAMP E-17	@ EX. RAMP E-17	50+64	68+23	48,490	ODOT	269	269	
RAMP IJ3	@ RAMP IJ3	91+41	101+89	27,350	ODOT	152	152	
CARNEGIE AVE.	@ CONST. CARNEGIE AVE.	35+50	48+00	93,990	CITY			1043
CARNEGIE AVE.	@ CONST. CARNEGIE AVE.	69+25	70+00	4,185	CITY			47
E. 14TH ST. NB	@ E. 14TH ST.	15+33	18+27	6,930	CITY			77
E. 14TH ST. SB	@ E. 14TH ST.	15+33	21+29	16,180	CITY			180
E. 14TH ST.	@ EX. R/W E. 14TH ST.	16+92	18+35	8,575	CITY			95
E. 18TH ST.	@ EX. R/W E. 18TH ST.	4+00	5+00	5,160	CITY			57
E. 19TH ST.	@ EX. R/W E. 19TH ST.	3+87	4+95	4,620	CITY			51
E. 21ST ST.	@ CONST. E. 21ST ST.	100+90	102+68	5,880	CITY			65
E. 22ND ST.	@ CONST. E. 22ND ST.	22+25	29+47	49,390	CITY			548
E. 22ND ST.	@ EX. R/W E. 22ND ST.	28+50	29+56	4,150	CITY			46
COMMUNITY COLLEGE AVE.	@ COMMUNITY COLLEGE AVE.	60+39	62+09	10,710	CITY			119
CENTRAL AVE.	@ EX. R/W CENTRAL AVE.	26+07	26+83	3,030	CITY			34
CEDAR AVE.	@ EX. R/W CEDAR AVE.	23+98	27+50	14,050	CITY			156
CONTINGENCY RESURFACING	AS DIRECTED BY ENGINEER			180,000	ODOT	1,000	1,000	
				120,000	CITY			1,332
TOTAL				504,110	ODOT	APP A	APP B	APP C
				346,850	CITY	2,800	2,800	3,850

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1 (SY)

RESURFACING BUILD-UP - ODOT

- ITEM 442 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M
- ITEM 407 - NON-TRACKING TACK COAT
- ITEM 442 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ITEM 407 - NON-TRACKING TACK COAT
- ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442) (5")
- ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (3.25")
- ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1, AS PER PLAN A
- ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1, AS PER PLAN B

RESURFACING BUILD-UP - CITY

- ITEM 441 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M
- ITEM 407 - NON-TRACKING TACK COAT
- ITEM 441 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- ITEM 407 - NON-TRACKING TACK COAT
- ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN (5")
- ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (3")
- ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1, AS PER PLAN C

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO RESURFACE AND REPAIR PAVEMENT THAT HAS BEEN USED FOR MAINTENANCE OF TRAFFIC:

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442)	300 CY
ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN	400 CY
ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (3")	38,540 SY
ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (3.25")	56,010 SY
ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1, AS PER PLAN A	2,800 SY
ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1, AS PER PLAN B	2,800 SY
ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, TYPE 1, CLASS QC1, AS PER PLAN C	3,850 SY
ITEM 407 - NON-TRACKING TACK COAT	14,180 GAL
ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M	1,340 CY
ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	1,870 CY
ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M	2,330 CY
ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	2,720 CY

DESIGN AGENCY

Michael Baker INTERNATIONAL

DESIGNER

GSH

REVIEWER

DJJ 05/22/24

PROJECT ID

82382

SHEET

TOTAL

87 2696

4

MAINTENANCE OF TRAFFIC GENERAL NOTES (CONTINUED)
LANE VALUE CONTRACT WITH PRORATES

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

CRITICAL WORK IS SHOWN IN THE CRITICAL WORK TABLE.

CRITICAL WORK IS DEFINED AS HAVING THE DESIGNATED SECTIONS OPEN TO UNRESTRICTED TRAFFIC AS SHOWN IN THE TABLE, OR THE ENTIRE PROJECT IF NOT OTHERWISE LISTED.

UNRESTRICTED TRAFFIC IS DEFINED AS ALL TRAFFIC LANES BEING AVAILABLE FOR USE WITH SPECIFIED STRIPING AND SAFETY FEATURES IN PLACE.

DISINCENTIVES WITHIN THE FIRST HOUR AFTER THE LANE VALUE CONTRACT TABLE'S RESTRICTED TIME PERIOD WILL BE PRORATED. THOSE PRORATES WILL BE AS FOLLOWS:

MINUTES AFTER RESTRICTED TIME PERIOD, T*	PRORATE APPLIED TO MAXIMUM DISINCENTIVE, P*
0 - 30	0.25
31-60	0.75
61+	1.00

*THE MAXIMUM DISINCENTIVE IS DETERMINED BY THE LANE VALUE CONTRACT TABLE LOCATED IN THE PLAN GENERAL NOTES. ONLY ONE PRORATE WILL BE APPLIED PER EVENT. FOR ANY CONTRACTOR RESTRICTIONS PRIOR TO THE LANE VALUE CONTRACT TABLE'S RESTRICTED TIME PERIOD, THE CONTRACTOR WILL BE ASSESSED THE MAXIMUM DISINCENTIVES. FOR A SINGLE EVENT, THE TOTAL DISINCENTIVE WILL BE CALCULATED AS SUCH:

$$TD = P \times T \times LV \times L$$

WHERE:

TD = TOTAL DISINCENTIVE, \$
 T = TIME EXCEEDING RESTRICTED TIME PERIOD, MIN
 LV = LANE VALUE MAXIMUM DISINCENTIVE, \$/MIN/LANE
 L = NUMBER OF LANES RESTRICTED, LANE

DISINCENTIVES WILL NOT BE ASSESSED FOR DELAYS OUTSIDE THE CONTRACTOR'S CONTROL OR RESPONSIBILITY, SUCH AS PRIVATE MOTORIST ACCIDENTS, EQUIPMENT BREAKDOWNS, CIVIL DISTURBANCES, OR ENGINEER-ORDERED REVISIONS TO THE WORK. THE DEPARTMENT RESERVES THE RIGHT TO ASSESS THE MAXIMUM DISINCENTIVE WITHOUT PRORATION IF THERE HAVE BEEN THREE OR MORE EVENTS ON THE PROJECT INCLUDING, BUT NOT LIMITED TO, THREE OR MORE EQUIPMENT BREAKDOWNS OR OTHER INCIDENTS WHICH THE CONTRACTOR'S INACTIONS/ACTIONS CONTRIBUTED TO THE EVENT.

PRIOR TO ASSESSING ANY SINGLE DISINCENTIVE AMOUNT EXCEEDING \$50,000, THE RESTRICTION EVENT AND THE PROPOSED DISINCENTIVE WILL BE EVALUATED BY THE MAINTENANCE OF TRAFFIC EXECUTIVE COMMITTEE (MOTEC) TO CONFIRM APPLICABILITY, CALCULATION, AND JUSTIFICATION OF THE ASSESSMENT.

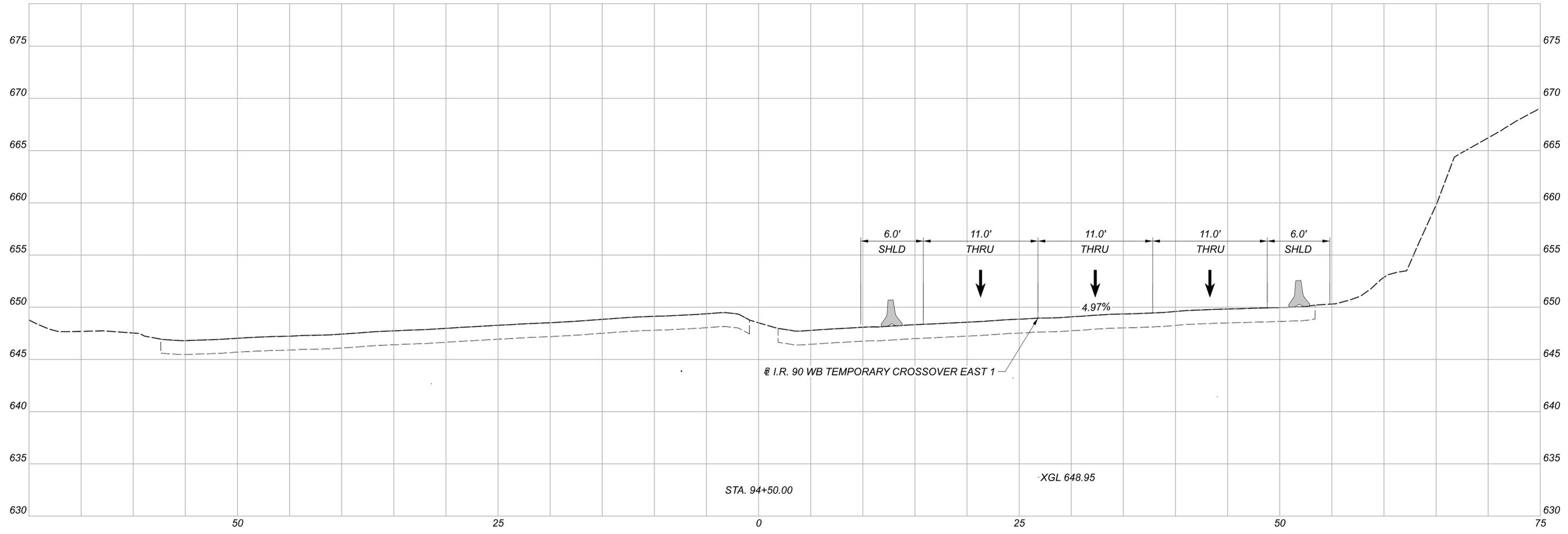
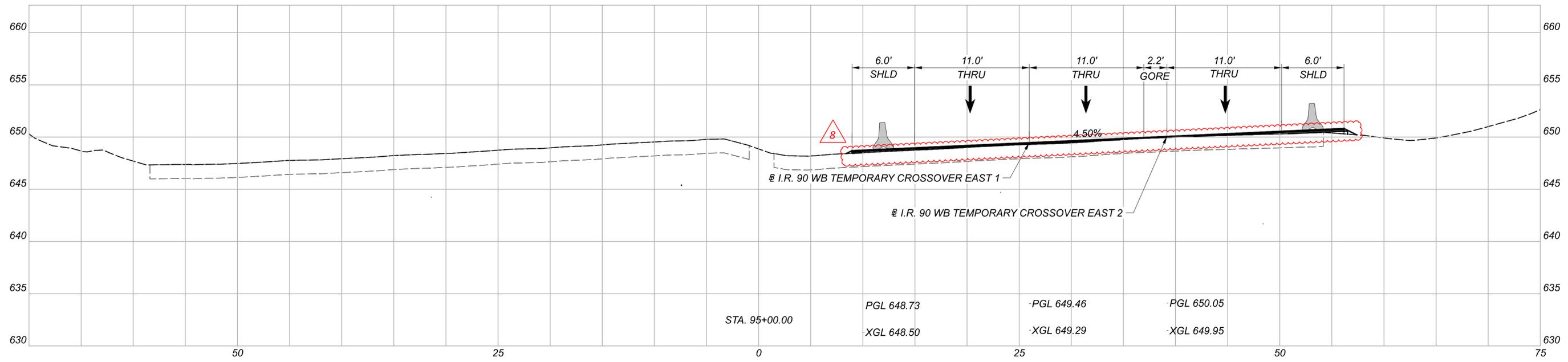
LANE VALUE CONTRACT TABLE

LOCATION	DIRECTION	LANES	1 LANE CLOSED	2 LANES CLOSED	DISINCENTIVE AMOUNTS PER MINUTE PER LANE
I.R. 90					
I.R. 77 TO INNERBELT CURVE	EB/WB	4	8:00 AM MON TO 2:00 PM MON	7:00 PM MON TO 6:00 AM TUE	\$365
			5:30 PM MON TO 7:00 AM TUE		
			8:00 AM TUE TO 2:00 PM TUE	7:00 PM TUE TO 6:00 AM WED	
			5:30 PM TUE TO 7:00 AM WED		
			8:00 AM WED TO 2:00 PM WED	7:30 PM WED TO 6:00 AM THU	
			5:30 PM WED TO 7:00 AM THU		
			8:00 AM THU TO 2:00 PM THU	7:30 PM THU TO 6:00 AM FRI	
			5:30 PM THU TO 7:00 AM FRI		
			8:00 AM FRI TO 2:00 PM FRI	7:30 PM SAT TO 10:30 AM SUN	
			5:30 PM FRI TO 7:00 AM MON		
I.R. 77					
SR-422 UNDERPASS TO I.R. 90 EB	NB	2	10:00 AM MON TO 2:30 PM MON	NA	\$295
			6:00 PM MON TO 6:00 AM TUE		
			10:00 AM TUE TO 2:30 PM TUE		
			6:00 PM TUE TO 6:00 AM WED		
			10:00 AM WED TO 2:30 PM WED		
			6:00 PM WED TO 6:00 AM THU		
			10:00 AM THU TO 2:30 PM THU		
			6:00 PM THU TO 6:00 AM FRI		
			10:00 AM FRI TO 2:30 PM FRI		
			6:00 PM FRI TO 3:30 PM SAT		
			6:00 PM SAT TO 6:00 AM MON		
			8:30 AM MON TO 1:00 PM MON		
			6:30 PM MON TO 7:00 AM TUE		
			8:30 AM TUE TO 1:00 PM TUE		
6:30 PM TUE TO 7:00 AM WED					
8:30 AM WED TO 1:00 PM WED					
6:30 PM WED TO 7:00 AM THU					
8:30 AM THU TO 1:00 PM THU					
6:30 PM THU TO 7:00 AM FRI					
8:30 AM FRI TO 1:00 PM FRI					
6:30 PM FRI TO 7:00 AM MON					
I.R. 90 WB TO CROTON AVE UNDERPASS	SB	2		NA	\$295

CRITICAL WORK TABLE

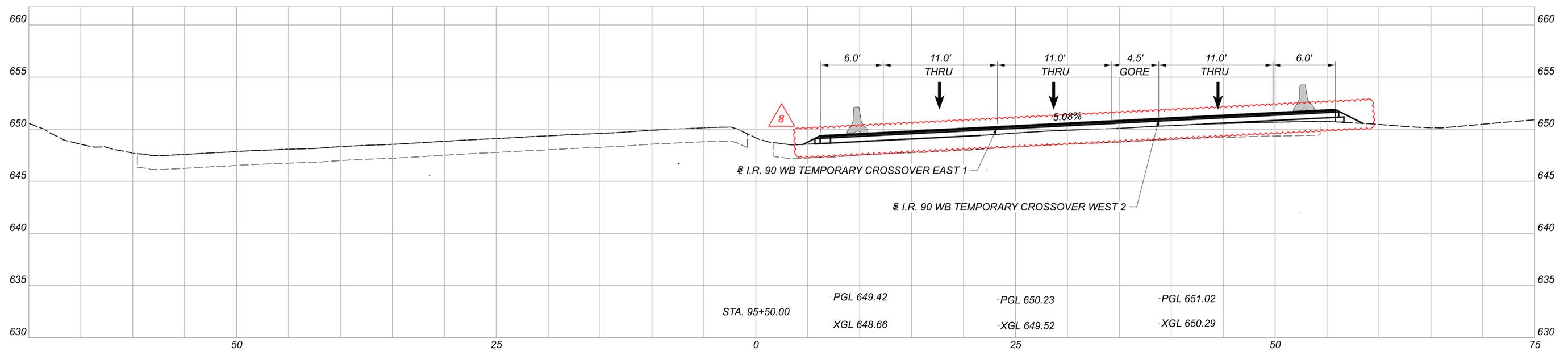
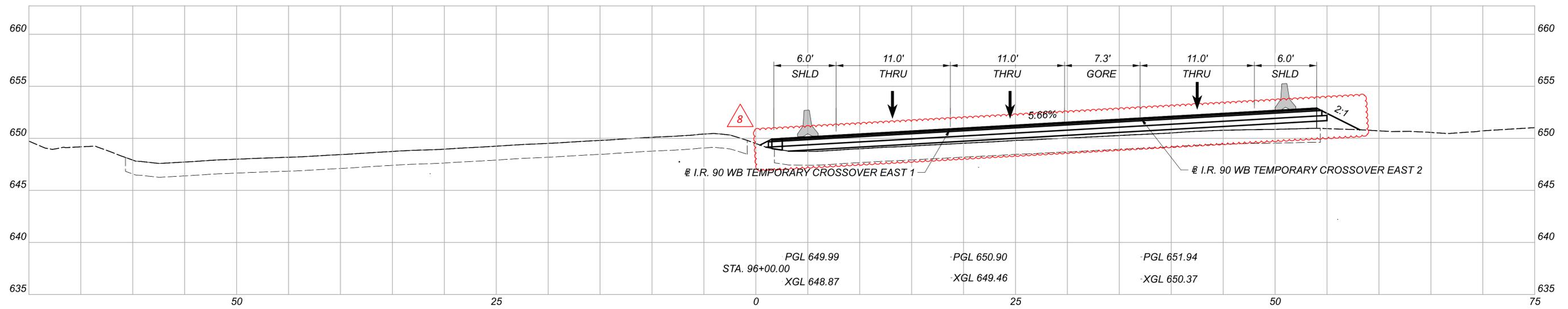
DESCRIPTION OF CRITICAL LANE/RAMP TO BE MAINTAINED	PHASE	RESTRICTED TIME PERIOD	TIME UNIT	AADT	DISINCENTIVE \$ PER TIME UNIT
I.R. 90 EB & WB (CONCURRENTLY) (BETWEEN E. 22ND ST. AND CARNEGIE AVE.)	2, 4, & 7	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	138,000	\$25,100.00
I.R. 90 WB (BETWEEN E. 22ND ST. AND CARNEGIE AVE.)	1, 2, & 7	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	71,760	\$13,052.00
I.R. 90 EB (BETWEEN E. 22ND ST. AND CARNEGIE AVE.)	1, 2, & 7	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	66,240	\$12,048.00
E. 14TH ST. (BETWEEN COMMUNITY COLLEGE AVE. AND CARNEGIE AVE.)	1	90 DAYS	PER HOUR	17,200	\$625.00
E. 14TH ST. (BETWEEN ORANGE AVE. AND COMMUNITY COLLEGE AVE.)	1	150 DAYS	PER HOUR	17,200	\$625.00
COMMUNITY COLLEGE AVE. (BETWEEN E. 14TH ST. AND E. 22ND ST.)	1	90 DAYS	PER HOUR	17,200	\$625.00
I.R. 77 NB TO E. 14TH ST. / E. 22ND ST. EXIT RAMP (EXIT RAMP 162B)	1	150 DAYS	PER HOUR	5,215	\$315.00
E. 22ND ST. (BETWEEN CARNEGIE AVE. AND CENTRAL AVE.)	1 & 2	365 DAYS	PER HOUR	13,400	\$732.00
CEDAR AVE. (BETWEEN E. 28TH ST. AND E. 22ND ST.)	1 & 2	365 DAYS	PER HOUR	8,300	\$732.00
I.R. 90 EB TO E. 9TH ST. EXIT RAMP (EXIT RAMP 172A)	2	120 DAYS	PER HOUR	10,357	\$188.00
CARNEGIE AVE. (BETWEEN E. 22ND ST. AND E. 28TH ST.)	2 - 8	1,200 DAYS	PER HOUR	25,700	\$535.00
PROSPECT AVE. TO I.R. 90 EB RAMP	3 - 8	1,200 DAYS	PER HOUR	3,392	\$68.00
PROSPECT AVE. TO I.R. 90 WB ENTRANCE RAMP	3 - 8	1,200 DAYS	PER HOUR	7,308	\$291.00
E. 21ST ST. TO I.R. 77 SB ENTRANCE RAMP	3 & 4	420 DAYS	PER HOUR	5,600	\$606.00
I.R. 90 EB (BETWEEN E. 9TH ST. AND E. 14TH ST.)	1, 2, & 7	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	66,240	\$1,500.00
I.R. 90 WB (BETWEEN E. 9TH ST. AND E. 14TH ST.)	1, 2, & 7	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	71,760	\$3,251.00
E. 14TH ST. (BETWEEN COMMUNITY COLLEGE AVE. AND CARNEGIE AVE.)	4, 5, 7, & 8	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	17,200	\$625.00
E. 14TH ST. SB	5	70 DAYS	PER HOUR	17,200	\$625.00
I.R. 77 NB TO E. 22ND ST. EXIT RAMP (EXIT RAMP 162B)	6	60 DAYS	PER HOUR	3,700	\$57.00
E. 14TH ST. SB	7	30 DAYS	PER HOUR	17,200	\$625.00
I.R. 90 EB TO E. 9TH ST. NB EXIT RAMP (EXIT RAMP 172A)	8	30 DAYS	PER HOUR	7,600	\$156.00
I.R. 77 NB TO I.R. 90 EB INTERCHANGE RAMP	9	WEEKEND CLOSURES (8:00PM FRIDAY UNTIL 6:00AM MONDAY)	PER HOUR	18,014	\$1000

MAINTENANCE OF TRAFFIC NOTES



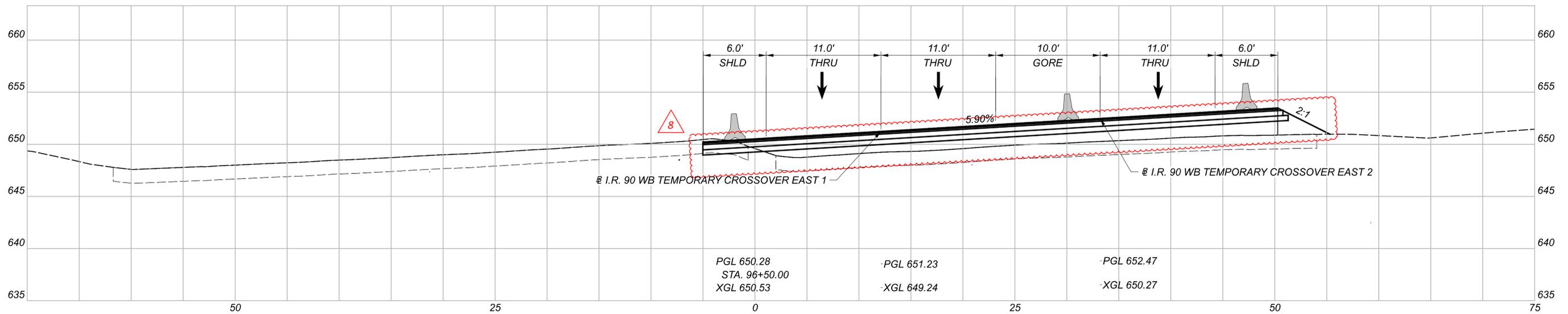
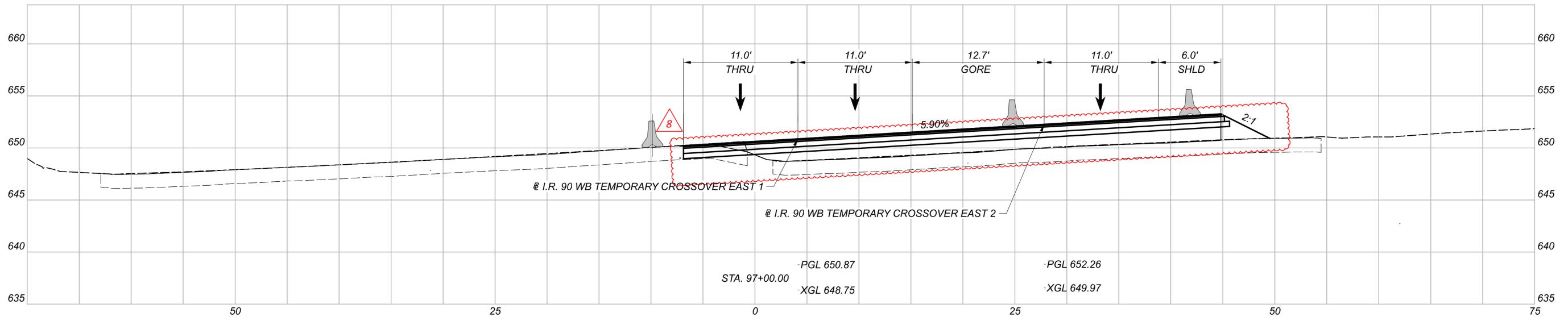
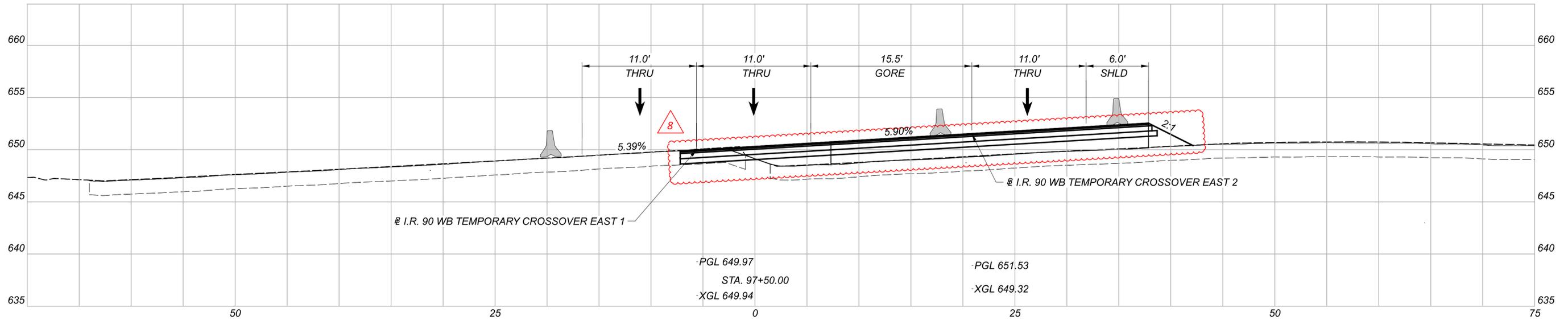
MAINTENANCE OF TRAFFIC - PHASE 4
 CROSS SECTIONS - I.R. 90 WB TEMPORARY PAVEMENT (EAST)

DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
DESIGNER	MZG
REVIEWER	LJS 05/22/24
PROJECT ID	82382
SHEET	229
TOTAL	2696



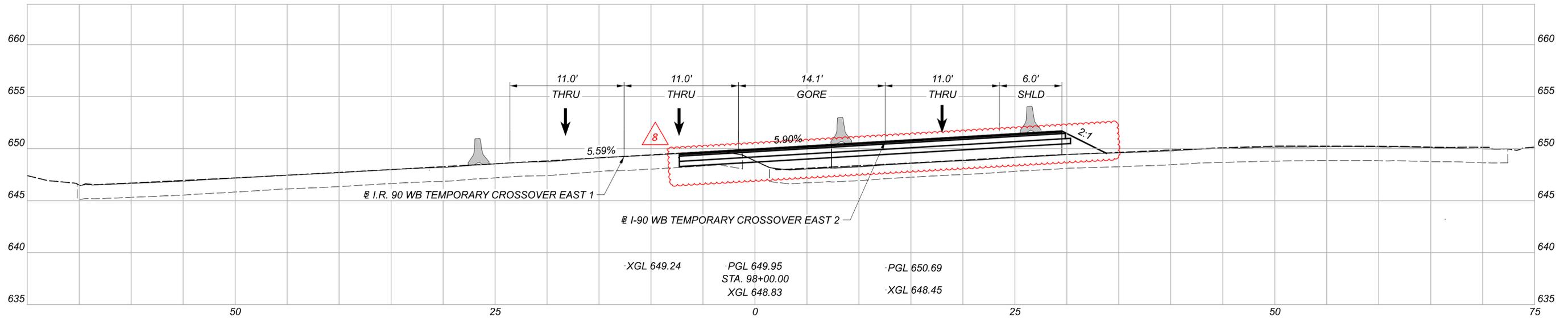
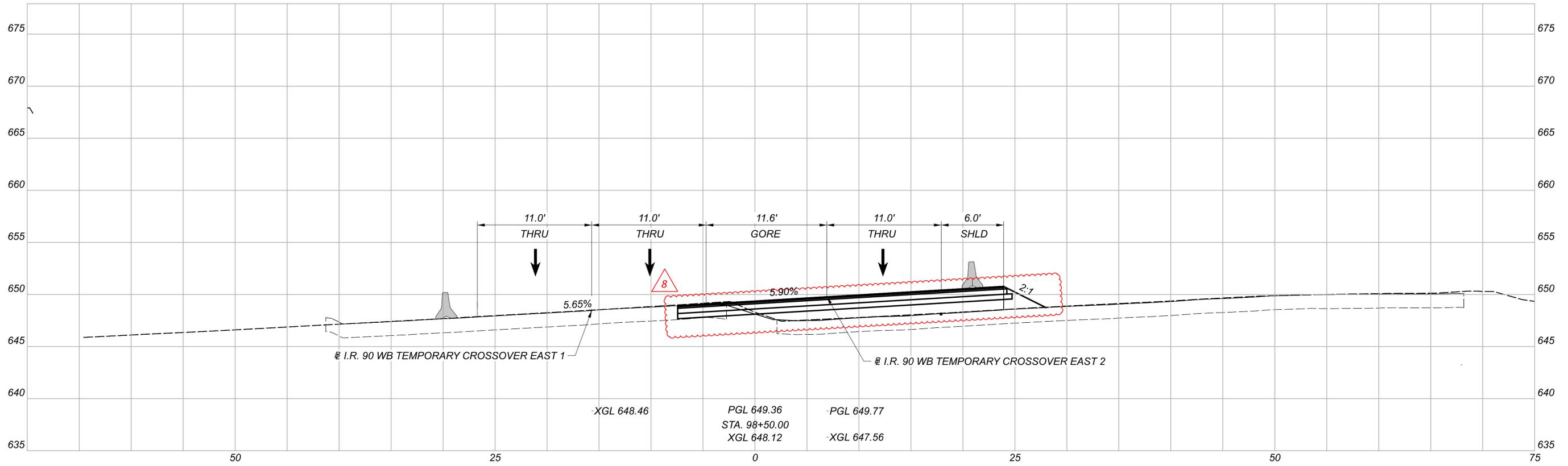
MAINTENANCE OF TRAFFIC - PHASE 4
 CROSS SECTIONS - I.R. 90 WB TEMPORARY PAVEMENT (EAST)

DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	MZG
REVIEWER	LJS 05/22/24
PROJECT ID	82382
SHEET	TOTAL
230	2696



MAINTENANCE OF TRAFFIC - PHASE 4
CROSS SECTIONS - I.R. 90 WB TEMPORARY PAVEMENT (EAST)

DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	MZG
REVIEWER	LJS 05/22/24
PROJECT ID	82382
SHEET	TOTAL
231	2696



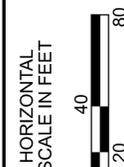
MAINTENANCE OF TRAFFIC - PHASE 4
 CROSS SECTIONS - I.R. 90 WB TEMPORARY PAVEMENT (EAST)

DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
DESIGNER	MZG
REVIEWER	LJS 05/22/24
PROJECT ID	82382
SHEET	TOTAL
232	2696

NOTES:

1. ALL EXISTING LANES OPEN AND EXISTING PAVEMENT MARKINGS UTILIZED ON THIS SHEET UNLESS NOTED OTHERWISE.
2. REFER TO SEQUENCE OF CONSTRUCTION NOTES FOR ORDER OF OPERATIONS FOR INSTALLING WALL AE, WALL AF, WALL AG, AND REMOVAL OF RETAINING WALLS.
3. FOR STAGING DETAILS AND INFORMATION WITHIN THIS AREA DURING THE E. 22ND ST BRIDGE CONSTRUCTION FULL I.R. 90 EB AND WB WEEKEND CLOSURES, SEE SHEETS 177 & 178
4. INSTALL SIGNAL CONDUITS CROSSING E. 22ND ST, CENTRAL AVE AND EXIT RAMP DURING OFF PEAK HOURS AND USE STEEL PLATING FOR TEMPORARY MAINTENANCE.
5. FOR TEMPORARY SIGNAL NOTES SEE SHEET 93
6. THE CONTRACTOR SHALL NOT ACCESS PARCEL 319 UNTIL MARCH 15, 2027, UNLESS AUTHORIZED BY THE ENGINEER. WORK IMPACTED BY THIS ACCESS RESTRICTION INCLUDES CONSTRUCTION OF PORTIONS OF WALL AG, BRIDGE 13, AND CEDAR AVE/MIDTOWN CONNECTOR ROADWAYS.

FOR MAINTENANCE OF TRAFFIC LEGEND SEE SHEET 295



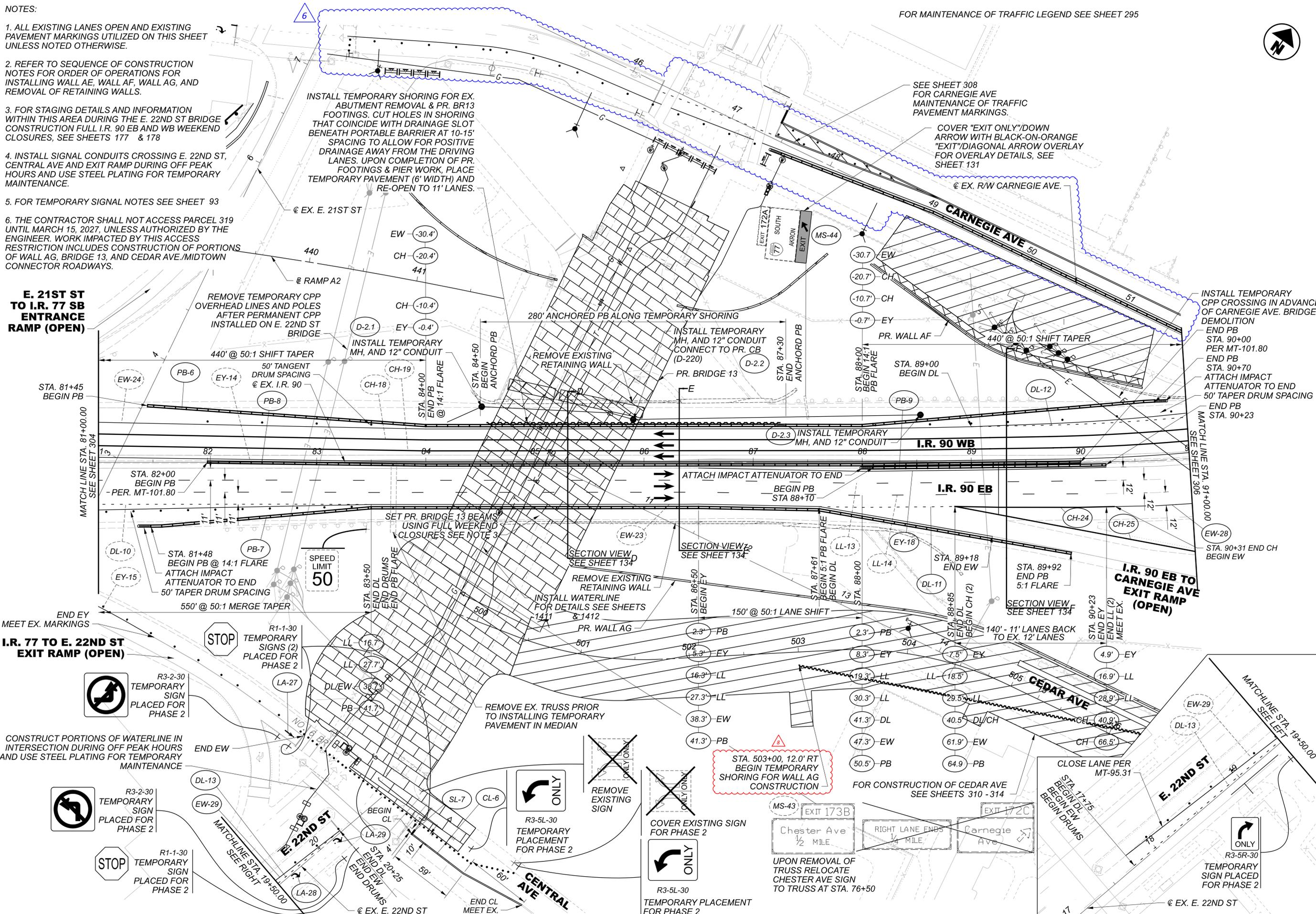
E. 21ST ST TO I.R. 77 SB ENTRANCE RAMP (OPEN)

I.R. 77 TO E. 22ND ST EXIT RAMP (OPEN)

I.R. 90 EB TO CARNEGIE AVE EXIT RAMP (OPEN)

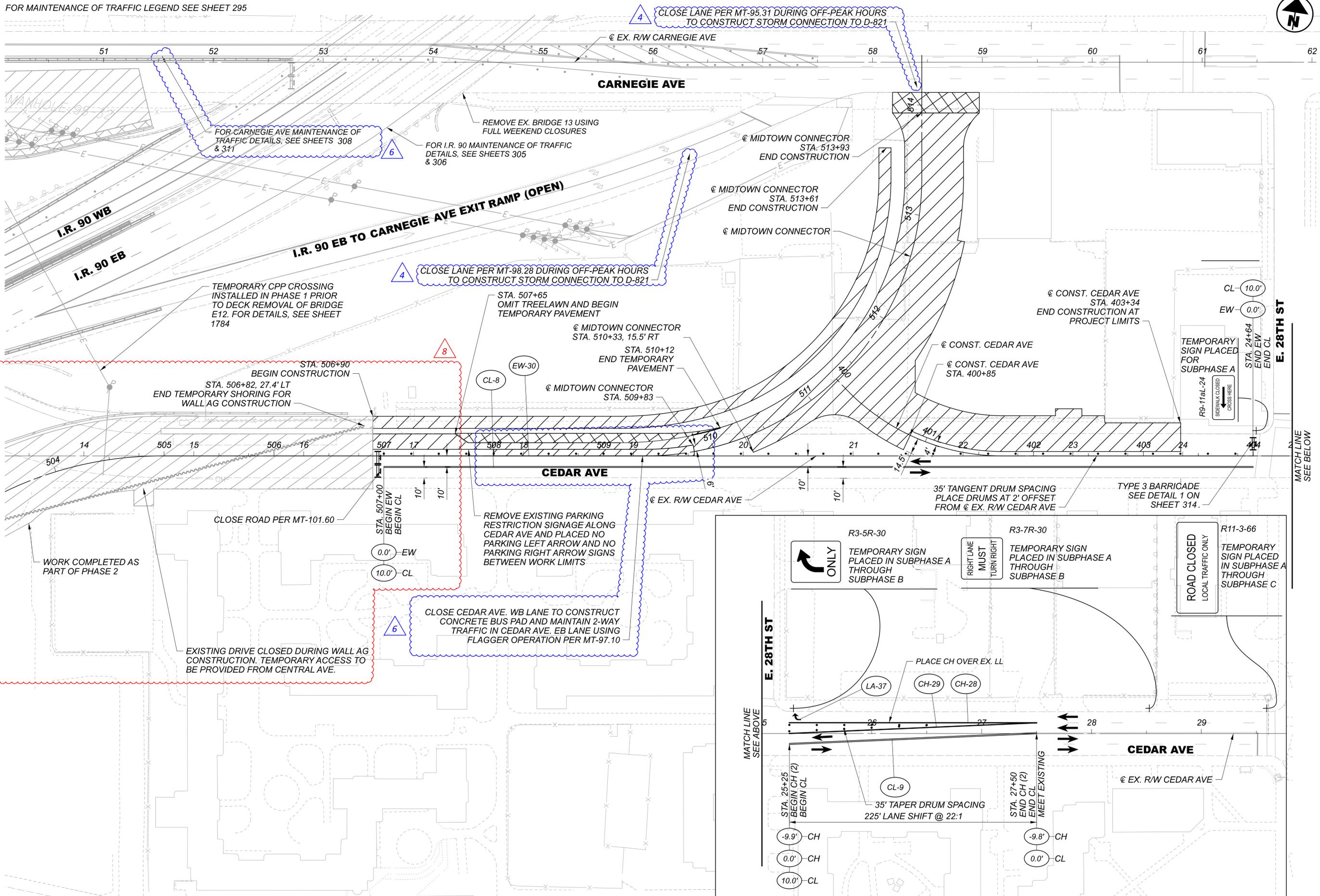
MAINTENANCE OF TRAFFIC - PHASE 2
I.R. 90 - STA. 81+00.00 TO STA. 91+00.00

CUY-90-16.28 (CCG3A)
 MODEL: MP2011 PAPER SIZE: 34x22 (in) DATE: 10/30/2025 TIME: 12:50:06 PM USER: Julie.Ross
 p:\v\mb-us-pw\benley.com\mb-us-pw-03\Documents\Cleveland_OH\IOL\Projects\ODOT\Dist\12\82382_400-Engineering\WOT_Sheets\82382_MP2011.dgn



DESIGN AGENCY	Michael Baker International
DESIGNER	CRK
REVIEWER	GSH 05/22/24
PROJECT ID	82382
SHEET	305
TOTAL	2696

FOR MAINTENANCE OF TRAFFIC LEGEND SEE SHEET 295



MAINTENANCE OF TRAFFIC - PHASE 2 - CEDAR SUBPHASE A
CEDAR AVE - BEGIN TO END

DESIGN AGENCY

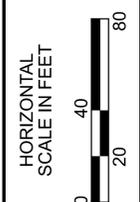
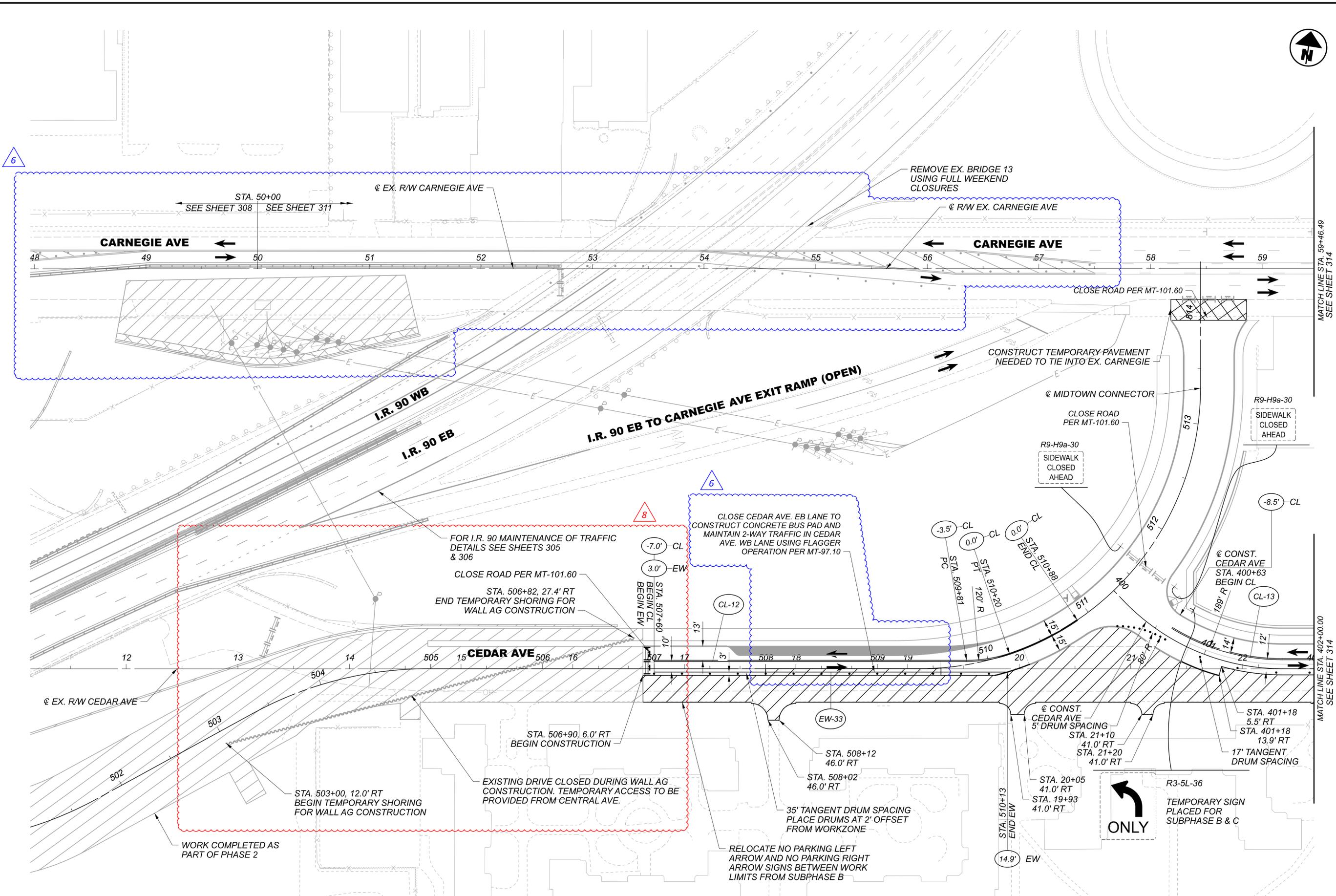
Michael Baker INTERNATIONAL

DESIGNER
CRK

REVIEWER
GSH 05/22/24

PROJECT ID
82382

SHEET TOTAL
310 2696



MAINTENANCE OF TRAFFIC - PHASE 2 - CEDAR SUBPHASE C
CEDAR AVE - BEGIN TO STA. 402+00.00

FOR MAINTENANCE OF TRAFFIC LEGEND SEE SHEET 295

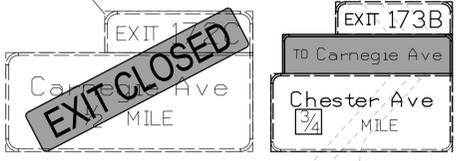
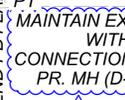
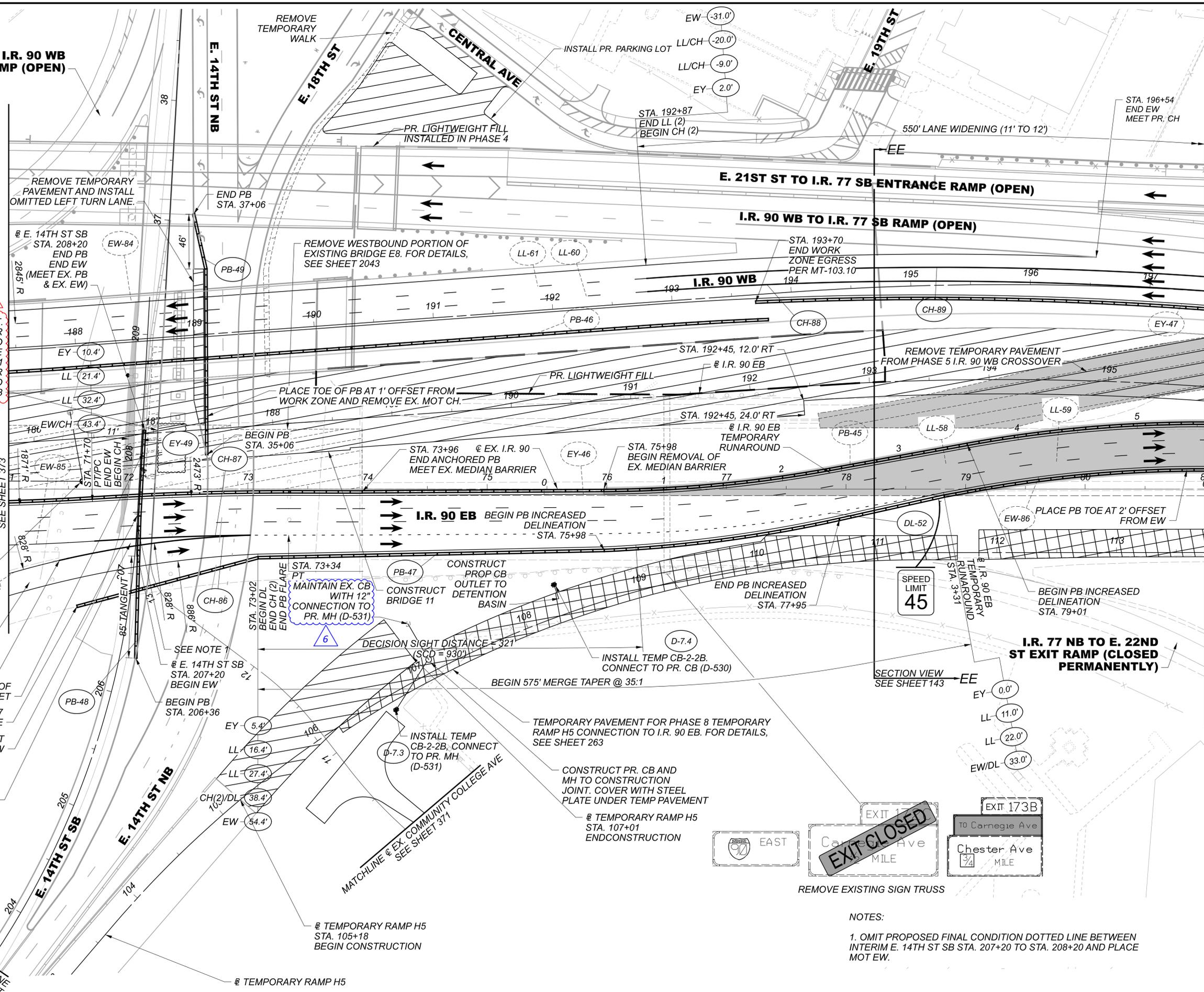
DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	CRK
REVIEWER	GSH 05/22/24
PROJECT ID	82382
SHEET TOTAL	313 2696

E. 14TH ST TO I.R. 90 WB ENTRANCE RAMP (OPEN)

CLOSE E. 14TH ST. SOUTHBOUND LANE FOR 30 CALENDAR DAYS TO CONSTRUCT THE REMAINING BRIDGE 11 PIER COLUMNS. DETOUR E. 14TH ST. SOUTHBOUND TRAFFIC PER SHEET 153

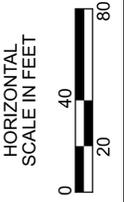
I.R. 77 NB TO I.R. 90 EB RAMP (OPEN)

STA. 71+42
END EY
BEGIN CH
PLACE PB TOE OF BARRIER AT 1' OFFSET
STA. 71+57
BEGIN 4:1 PB FLARE
PLACE EY 11' OFFSET FROM EX. EW
STA. 72+00
END REMOVAL & RESURFACING RUMBLE STRIPS



- NOTES:
- OMIT PROPOSED FINAL CONDITION DOTTED LINE BETWEEN INTERIM E. 14TH ST SB STA. 207+20 TO STA. 208+20 AND PLACE MOT EW.

FOR MAINTENANCE OF TRAFFIC LEGEND SEE SHEET 371



MAINTENANCE OF TRAFFIC - PHASE 7
I.R. 90 - STA. 71+00.00 TO STA. 81+00.00

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	CRK
REVIEWER	GSH 05/22/24
PROJECT ID	82382
SHEET	374
TOTAL	2696

SHEET NUMBER													PARTICIPATION			ALT (X)	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
427	435	470	471A	489	1399								01/IMS /04	02/IMS /10	03/IMS /08							
													LS					ROADWAY				
													LS					CLEARING AND GRUBBING				
				133744									133744					PAVEMENT REMOVED				
				101667									101667					WALK REMOVED				
				509									509					CONCRETE MEDIAN REMOVED				
				4595									6105					CONCRETE BARRIER REMOVED				
				714									714					TRAFFIC ISLAND REMOVED				
				23863									23863					CURB REMOVED				
				7268									7468					PIPE REMOVED, 24" DIAMETER AND UNDER				
				609									609					PIPE REMOVED, OVER 24" DIAMETER				
				6379									6379					GUARDRAIL REMOVED				
				1									1					ANCHOR ASSEMBLY REMOVED, TYPE A				
				2									2					ANCHOR ASSEMBLY REMOVED, TYPE E				
				7									7					ANCHOR ASSEMBLY REMOVED, TYPE T				
				2									2					ANCHOR ASSEMBLY REMOVED, TYPE B				
				6									6					BRIDGE TERMINAL ASSEMBLY REMOVED				
				1									1					BRIDGE TERMINAL ASSEMBLY REMOVED, AS PER PLAN	74			
				2									2					IMPACT ATTENUATOR REMOVED				
				16									16					MANHOLE REMOVED	78			
				63									63					CATCH BASIN REMOVED	78			
				21									21					INLET REMOVED	78			
				11									11					INLET ABANDONED	78			
				21									21					CATCH BASIN ABANDONED	78			
				9									9					MANHOLE ABANDONED	78			
				2317									2317					FILL AND PLUG EXISTING CONDUIT (12" AND UNDER)	78			
				1186									1186					FILL AND PLUG EXISTING CONDUIT (15")	78			
				510									510					FILL AND PLUG EXISTING CONDUIT (18")	78			
				51									51					FILL AND PLUG EXISTING CONDUIT (21")	78			
				255									255					FILL AND PLUG EXISTING CONDUIT (24")	78			
				48									48					FILL AND PLUG EXISTING CONDUIT (30")	78			
				695									695					FILL AND PLUG EXISTING CONDUIT (36")	78			
				475									475					FILL AND PLUG EXISTING CONDUIT (66")	78			
				349									349					FILL AND PLUG EXISTING CONDUIT (NO. 8 BR)	78			
				10915									10915					FENCE REMOVED				
				13									13					GATE REMOVED				
				2									2					REMOVAL MISC.: BILLBOARD	74			
				26									26					REMOVAL MISC.: BOLLARD	74			
				2									2					REMOVAL MISC.: CONCRETE STRUCTURES	74			
				1									1					REMOVAL MISC.: PAY BOX	74			
				1									1					REMOVAL MISC.: UTILITY POLE	74			
				1000									1000					REMOVAL MISC.: BURIED TRACK	74			
				266									266					REMOVAL MISC.: DELINEATOR CURB	74			
				264									264					REMOVAL MISC.: PORTABLE BARRIER	74			
				345447									345447					EXCAVATION				
				35973									35973					EXCAVATION, AS PER PLAN	75			
				85879									85879					EMBANKMENT				
				27322									27322					EMBANKMENT, AS PER PLAN	75			
				99839									99839					ROADWAY, MISC.: EPS GEOFOAM FILL	75			
				110									194					ROADWAY, MISC.: REINFORCED TURF	75			
				70757									70757					SUBGRADE COMPACTION	74			
				272									3372					EXCAVATION OF SUBGRADE				
				3100									3372					GRANULAR MATERIAL, TYPE B				
				3100									3372					PROOF ROLLING	74			
				80									80					GEOTEXTILE FABRIC				
				556									9856					CEMENT				
				1855									1855					CURING COAT				
				75578									75578					CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	74			
				75866									75866					MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS				
				8772.2									8772.2					GUARDRAIL, TYPE MGS				
				5									5					ANCHOR ASSEMBLY, MGS TYPE B (MASH 2016)	76			

DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382
SHEET TOTAL	403 2696

SHEET NUMBER										PARTICIPATION			ALT (X)	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
122	427	428	429	442	447	457	459			01/IMS /04	02/IMS /10	03/IMS /08							
							31			31				836	10000	31	SY	EROSION CONTROL (CONT.) SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1	
																		ENVIRONMENTAL/REMEDATION	
										755				SPECIAL	690E65000	755	TON	WORK INVOLVING NON-REGULATED MATERIALS	78
										7550				SPECIAL	690E65016	7550	TON	WORK INVOLVING PETROLEUM CONTAMINATED SOIL	78
										105000				SPECIAL	690E65022	105000	GAL	WORK INVOLVING NON-REGULATED WATER	78
										42000				SPECIAL	690E65024	42000	GAL	WORK INVOLVING REGULATED WATER	78
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (CARNEGIE AVENUE, CUY-90-1692, SFN 1807897)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E. 22ND STREET, CUY-90-1676, SFN 1807838)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E5, CUY-90-1640, SFN 1807773)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E6, CUY-77-1593, SFN 1806939)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E7, CUY-77-1597L, SFN 1807919)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E8, CUY-90-1651L, SFN 1807900)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E9, CUY-90-1651R, SFN 1807803)	77
										LS				SPECIAL	690E98400	LS		WORK INVOLVING ASBESTOS CONTAINING MATERIALS (E10, CUY-E14TH-0002SN, SFN 1806912)	77
																		DRAINAGE	
										8.5				602	20000	8.5	CY	CONCRETE MASONRY	
										25609				605	11110	25609	FT	6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
										3700				605	11111	3700	FT	6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN	79
										5200				605	12211	5200	FT	6" DEEP PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN	79
										2236				605	13300	2236	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
										40888				605	14020	40888	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
										400				611	01400	400	FT	6" CONDUIT, TYPE E	
										3620				611	01500	3620	FT	6" CONDUIT, TYPE F	
										3386				611	04400	3386	FT	12" CONDUIT, TYPE B	
										2400				611	04401	5831	4 FT 3	12" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	1163
										3431				611	04401	5831	4 FT 3	12" CONDUIT, TYPE B, AS PER PLAN 2, 748.01	1163
										240				611	04401	240	4 FT 3	12" CONDUIT, TYPE B, AS PER PLAN 2, 748.01	1163
										5				611	04600	5	FT	12" CONDUIT, TYPE C	
										184				611	04601	184	4 FT 3	12" CONDUIT, TYPE C, AS PER PLAN 2, 706.08 & 706.12	1163
										46				611	04900	46	FT	12" CONDUIT, TYPE D	
										2847				611	05900	2977	FT	15" CONDUIT, TYPE B	
										193				611	05900	193	FT	15" CONDUIT, TYPE B, 706.02, CLASS V	
										774				611	05901	774	FT	15" CONDUIT, TYPE B, AS PER PLAN	1163
										1158				611	05901	1358	8 FT 3	15" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	1163
										30				611	05901	30	FT	15" CONDUIT, TYPE B, AS PER PLAN 2, 748.01	1163
										2509				611	06100	2509	FT	15" CONDUIT, TYPE C	
										51				611	06101	51	FT	15" CONDUIT, TYPE C, AS PER PLAN	1163
										190				611	06101	190	6 FT 3	15" CONDUIT, TYPE C, AS PER PLAN 2, 706.08 & 706.12	1163
										134				611	06700	134	FT	15" CONDUIT, TYPE F, 707.05 TYPE C, 707.21, OR 707.33	
										742				611	07400	796	FT	18" CONDUIT, TYPE B	
										19				611	07400	19	FT	18" CONDUIT, TYPE B, 707.35	
										5				611	07401	5	FT	18" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	1163
										228				611	07600	228	FT	18" CONDUIT, TYPE C	
										138				611	08200	138	FT	18" CONDUIT, TYPE F, 707.05 TYPE C, 707.21, OR 707.33	
										479				611	08900	484	FT	21" CONDUIT, TYPE B	
										466				611	10400	520	FT	24" CONDUIT, TYPE B	
										225				611	10400	225	FT	24" CONDUIT, TYPE B, 706.02, CLASS V	
										5				611	10401	5	FT 3	24" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	1163
										257				611	10600	257	FT	24" CONDUIT, TYPE C	
										65				611	11900	65	FT	27" CONDUIT, TYPE B	
										147				611	13400	147	FT	30" CONDUIT, TYPE B	
										197				611	13600	197	FT	30" CONDUIT, TYPE C	
										626				611	25201	626	2 FT 3	66" CONDUIT, TYPE B, AS PER PLAN 2, 706.02 & 706.11	1163
										472				611	52902	472	FT	34" X 53" CONDUIT, TYPE B, 706.04	
										90				611	96600	90	FT	CONDUIT, BORED OR JACKED, 15" TYPE B	78
										90				611	96600	90	FT	CONDUIT, BORED OR JACKED, 66" TYPE B	78
										246				611	96600	246	FT	CONDUIT, BORED OR JACKED, 66" TYPE C	78
										7				611	98150	7	EACH	CATCH BASIN, NO. 3	
										33				611	98151	33	EACH	CATCH BASIN, NO. 3, AS PER PLAN	1169

DESIGN AGENCY
Michael Baker INTERNATIONAL

DESIGNER
KJM

REVIEWER
KGJ 05/22/24

PROJECT ID
82382

SHEET TOTAL
405 2696

SHEET NUMBER													PARTICIPATION			ALT (X)	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET	
427	428	429	443	470	1399	1839							01/IMS /04	02/IMS /10	03/IMS /08								
																					PAVEMENT (CONT.)		
				1262									2602				441	50101	2602	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M	80	
				1773									3643				441	50300	3643	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)		
			4	12									12				441	70000	12	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22		
				76									76				441	70201	76	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), AS PER PLAN, PG64-22	80	
				40									40				441	70500	40	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)		
				55									55				441	70700	55	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS)		
				7043									7043				442	00100	7043	CY	ANTI-SEGREGATION EQUIPMENT		
2330				3971									6301				442	10001	6301	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M	80	
2720				4756									7476				442	10100	7476	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)		
64													64				442	22101	64	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (449), AS PER PLAN, PG70-22M	85	
			4	715									715				451	16011	715	SY	12" REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, AS PER PLAN	80	
					6	1015							1015				451	20000	1015	SY	REINFORCED CONCRETE PAVEMENT, MISC.: INTEGRALLY COLORED CONCRETE CROSSWALK	1825	
				61.00									61.00				SPECIAL	451E31000	61.00	FT	PRESSURE RELIEF JOINT, TYPE B	80	
				337									337				452	09010	337	SY	4" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
				1231									1231				452	12010	1231	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
			4	15565									15565				452	14010	15565	SY	10" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
775				51									775				452	14011	775	SY	10" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, AS PER PLAN	80	
			4	2172									2172				609	12000	51	FT	COMBINATION CURB AND GUTTER, TYPE 2		
				67									67				609	14000	67	FT	CURB, TYPE 2-A		
				1766									1766				609	24510	1766	FT	CURB, TYPE 4-C		
750			4	14577									14577				609	26000	14577	FT	CURB, TYPE 6		
				46									46				609	33200	46	FT	CURB, TYPE 10-B		
				366									366				609	72000	366	SY	CONCRETE MEDIAN		
8	1.28												1.28				618	40600	1.28	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	76	
													280				SPECIAL	690E98700	280	CY	SURCHARGE FOR CLASS MS CONCRETE	87	
																					WATER WORK		
				4220									4220				202	98200	4220	8 FT	REMOVAL MISC.: WATER MAIN REMOVED 24" AND UNDER	1376	
				476									476				202	98200	476	FT	REMOVAL MISC.: WATER MAIN REMOVED OVER 24"	1376	
			71										71				638	06713	71	FT	30" STEEL PIPE ENCASEMENT, OPEN CUT, AS PER PLAN	1163	
				15									15				638	10701	15	EACH	FIRE HYDRANT REMOVED AND DISPOSED OF, AS PER PLAN	1376	
				49									49				638	10801	49	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	1384	
				1									1				638	11201	1	EACH	METER, SETTING, STOP AND CHAMBER, AS PER PLAN (CLEVELAND WATER)	1428	
			8	951									951				SPECIAL	638E20172	951	8 FT	12" WATER MAIN DIP CLASS 52 BOLTLESS RESTRAINED JOINTS AND FITTINGS (CLEVELAND WATER)	1376	
				670									670				SPECIAL	638E20174	670	FT	12" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS (CLEVELAND WATER)	1376	
				289									289				SPECIAL	638E20292	289	FT	24" WATER MAIN DIP CLASS 52 BOLTLESS RESTRAINED JOINTS AND FITTINGS (CLEVELAND WATER)	1378	
				252									252				SPECIAL	638E20294	252	FT	24" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS (CLEVELAND WATER)	1378	
				291									291				SPECIAL	638E20336	291	FT	30" WATER MAIN DIP CLASS 52 BOLTLESS RESTRAINED JOINTS AND FITTINGS (CLEVELAND WATER)	1378	
				1225									1225				SPECIAL	638E20338	1225	FT	30" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS (CLEVELAND WATER)	1378	
				40									40				SPECIAL	638E20480	40	FT	48" STEEL PIPE ENCASEMENT, BORED OR JACKED (CLEVELAND WATER)	1385	
				2									2				SPECIAL	638E20580	2	EACH	10" CUTTING IN SLEEVE (CLEVELAND WATER)	1383	
				5									5				SPECIAL	638E20586	5	EACH	12" GATE VALVE WITH VALVE BOX (CLEVELAND WATER)	1381	
				4									4				SPECIAL	638E20596	4	EACH	12" CUTTING IN SLEEVE (CLEVELAND WATER)	1383	
			8	4									4				SPECIAL	638E20598	4	8 EACH	12" CUTTING IN SLEEVE, VALVE WITH VALVE BOX (CLEVELAND WATER)	1383	
				3									3				SPECIAL	638E20746	3	EACH	2" AIR RELEASE VALVE WITH VALVE BOX (CLEVELAND WATER)	1383	
				14									14				SPECIAL	638E20750	14	EACH	6" FIRE HYDRANT, COMPLETE (CLEVELAND WATER)	1383	
				1									1				SPECIAL	638E20762	1	EACH	FIRE HYDRANT SERVICE LINE EXTENDED AND ADJUSTED TO GRADE (CLEVELAND WATER)	1419	
				177									177				SPECIAL	638E20770	177	FT	1" COPPER WATER SERVICE LINE (CLEVELAND WATER)	1384	
				587									587				SPECIAL	638E20794	587	FT	REMOVE WATER SERVICE CONNECTION (CLEVELAND WATER)	1376	
				10									10				SPECIAL	638E20842	10	FT	EXTEND 1-1/2" COPPER WATER SERVICE CONNECTION (CLEVELAND WATER)	1418	
				31									31				SPECIAL	638E20844	31	FT	INSTALL 1-1/2" COPPER WATER SERVICE CONNECTION (CLEVELAND WATER)	1384	
				4									4				SPECIAL	638E20894	4	EACH	1" CORPORATION STOP (CLEVELAND WATER)	1384	
				2									2				SPECIAL	638E20896	2	EACH	1-1/2" CORPORATION STOP (CLEVELAND WATER)	1384	
				1									1				SPECIAL	638E21002	1	EACH	INSTALL 1" METER SETTING, COMPLETE (CLEVELAND WATER)	1384	
				3									3				638	98000	3	EACH	WATER WORK, MISC.: 12" EXPANSION VALVE (BRIDGE)	1378	
				2									2				638	98000	2	EACH	WATER WORK, MISC.: 24" EXPANSION VALVE (BRIDGE)	1380	
				3									3				638	98000	3	EACH	WATER WORK, MISC.: 24" VALVE ASSEMBLY COMPLETE (CLEVELAND WATER)	1381	
				1									1				638	98000	1	EACH	WATER WORK, MISC.: 30" CUTTING IN SLEEVE (CLEVELAND WATER)	1380	

DESIGN AGENCY

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INTERNATIONAL

DESIGNER

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REVIEWER

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82382

SHEET TOTAL

407 2696

SHEET NUMBER													PARTICIPATION			ALT (X)	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET	
428	1399	1400	1688	1689								01/IMS /04	02/IMS /10	03/IMS /08									
																					WATER WORK (CONT.)		
	2											2			638	98000	2	EACH	WATER WORK, MISC.: 30" VALVE ASSEMBLY COMPLETE (CLEVELAND WATER)	1381			
	2											2			638	98000	2	EACH	WATER WORK, MISC.: 36" CUTTING IN SLEEVE (CLEVELAND WATER)	1380			
300000												300000			638	98000	300000	EACH	WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT CHARGES	1374			
	3											3			638	98000	3	EACH	WATER WORK, MISC.: CONCRETE PIER	1426			
	2											2			638	98000	2	EACH	WATER WORK, MISC.: SLEEVE FOR ABUTMENT WALL - 12" DIP LINE (CLEVELAND WATER)	1429			
	2											2			638	98000	2	EACH	WATER WORK, MISC.: SLEEVE FOR ABUTMENT WALL - 24" STEEL LINE (CLEVELAND WATER)	1429			
	2											2			638	98000	2	EACH	WATER WORK, MISC.: STEEL TO DIP TRANSITION (CLEVELAND WATER)	1429			
		507										507			638	98600	507	FT	WATER WORK, MISC.: 12" INSULATION FOR BRIDGE (CLEVELAND WATER)	1381			
		354										354			638	98600	354	FT	WATER WORK, MISC.: 24" INSULATION FOR BRIDGE (CLEVELAND WATER)	1381			
		354										354			638	98600	354	FT	WATER WORK, MISC.: 24" POLYURETHANE COATED CEMENT LINED STEEL	1380			
																					LIGHTING		
			2									2			202	75704	2	EACH	REMOVAL OF EXISTING CONTROL CENTER AND FOUNDATION				
			2									2			202	75800	2	EACH	DISCONNECT EXISTING CIRCUIT				
			12	154								166			625	00450	166	EACH	CONNECTION, FUSED PULL APART				
				77								77			625	00460	77	EACH	CONNECTION, UNFUSED PULL APART				
			15									15			625	00470	15	EACH	CONNECTION, UNFUSED BOLTED				
			123	84								207			625	00480	207	EACH	CONNECTION, UNFUSED PERMANENT				
			4									4			625	10494	4	EACH	LIGHT POLE, LOW MAST, ALM50				
			2									2			625	10494	2	EACH	LIGHT POLE, LOW MAST, ATLM50				
			8	42								8	42		625	10500	8	EACH	LIGHT POLE, MISC.: 15' ROUND TAPERED FIBERGLASS STREETLIGHT	1686			
				35									35		625	10500	35	EACH	LIGHT POLE, MISC.: 30' ROUND TAPERED FIBERGLASS STREETLIGHT	1686			
				32								32			625	10614	32	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE				
			1									1			625	13500	1	EACH	LIGHT TOWER, MISC.: BB80 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			2									2			625	13500	2	EACH	LIGHT TOWER, MISC.: BB100 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			1									1			625	13500	1	EACH	LIGHT TOWER, MISC.: BB110 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			2									2			625	13500	2	EACH	LIGHT TOWER, MISC.: BBB80 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			8									8			625	13500	8	EACH	LIGHT TOWER, MISC.: BBB100 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			1									1			625	13500	1	EACH	LIGHT TOWER, MISC.: BBB120 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			1									1			625	13500	1	EACH	LIGHT TOWER, MISC.: BBBB60 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			1									1			625	13500	1	EACH	LIGHT TOWER, MISC.: BBBB90 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			2									2			625	13500	2	EACH	LIGHT TOWER, MISC.: BBBB100 MODIFIED FOR FAA TYPE L-810 OBSTRUCTION LIGHTING	1685			
			1									1			625	13500	1	EACH	LIGHT TOWER, MISC.: TOWER LIGHTING RING WITH 4 LUMINAIRE MOUNTS	1685			
				58								58			625	14000	58	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP				
			2									2			625	14200	2	EACH	LIGHT POLE FOUNDATION, 24" X 10' DEEP				
			4									4			625	14307	4	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP, AS PER PLAN	1685			
			2									2			625	15000	2	EACH	LIGHT TOWER FOUNDATION, 36" X 15' DEEP				
			10									10			625	15100	10	EACH	LIGHT TOWER FOUNDATION, 36" X 20' DEEP				
			4									4			625	15200	4	EACH	LIGHT TOWER FOUNDATION, 36" X 25' DEEP				
			1									1			625	15400	1	EACH	LIGHT TOWER FOUNDATION, 42" X 25' DEEP				
			1									1			625	15700	1	EACH	LIGHT TOWER FOUNDATION, MISC.: 42" X 20' DEEP	1685			
			2									2			625	15700	2	EACH	LIGHT TOWER FOUNDATION, MISC.: 48" X 25' DEEP	1685			
			4	41650	16375							4	58025		625	23200	4	58025	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE			
				49071									49071		625	23304	49071	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE				
				159									159		625	23308	159	FT	DISTRIBUTION CABLE, MISC.: NO. 4 / 0 AWG 2400 VOLT DISTRIBUTION CABLE	1686			
				900									900		625	23400	900	FT	NO. 10 AWG POLE AND BRACKET CABLE				
				4950									4950		625	23410	4950	FT	NO. 12 AWG POLE AND BRACKET CABLE				
			4	13002								4	13002		625	24320	4	13002	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES			
				1796									1796		625	25012	1796	FT	CONDUIT, 3/4", 725.051				
				1304	1123								2427		625	25300	2427	FT	CONDUIT, 1-1/2", 725.04				
				116									116		625	25404	116	FT	CONDUIT, 2-1/2", 725.04				
					8541								8541		625	25408	8541	FT	CONDUIT, 2", 725.051				
				712									712		625	25504	712	FT	CONDUIT, 3", 725.051				
					43								43		625	25802	43	FT	CONDUIT, CONCRETE ENCASED, 2", 725.051				
					132								132		625	25803	132	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (2-2" CONDUIT, 725.051)	1686			
					1974								1974		625	25803	1974	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (4-2" CONDUIT, 725.051)	1686			
			4	7218								4	7218		625	25902	4	7218	FT	CONDUIT, JACKED OR DRILLED, 725.04, 3"			
					60								60		625	26253	60	8EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN (CPP LED COBRA HEAD)	1686			
			2	64								2	64		625	26263	2	64	EACH	LUMINAIRE, HIGH MAST, SOLID STATE (LED), AS PER PLAN (480V)	1685		
													6		625	26273	6	EACH	LUMINAIRE, LOW MAST, SOLID STATE (LED), AS PER PLAN (480V)	1685			

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SHEET TOTAL
408 2696

SHEET NUMBER													PARTICIPATION			ALT (X)	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
1688	1689	1782											01/IMS /04	02/IMS /10	03/IMS /08							
																					LIGHTING (CONT.)	
													23			625	27503	23	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN (480V)	1685	
													1			625	27503	1	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN (480V, CROSS FRAME MOUNTED)	1685	
		17											17			625	27503	17	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN (CPP LED WALLPACK)	1686	
		51											51			625	27551	51	EACH	LUMINAIRE, DECORATIVE, AS PER PLAN (15' POLES)	1686	
		33											33			625	27551	33	EACH	LUMINAIRE, DECORATIVE, AS PER PLAN (30' POLES)	1686	
													20			625	27600	20	EACH	LUMINAIRE, MISC.: FAA TYPE L-810 OBSTRUCTION LIGHTING, LED (120V)	1685	
	5990	4691											10681			625	29000	10681	FT	TRENCH		
		8											8			625	29900	8	EACH	JUNCTION BOX		
	4												4			625	29930	4	EACH	MEDIAN JUNCTION BOX		
	26												26			625	30700	26	EACH	PULL BOX, 725.08, 18"		
	8	4											12			625	30706	12	EACH	PULL BOX, 725.08, 24"		
	4												4			625	30731	4	EACH	PULL BOX, 725.08, 48", TYPE 1, AS PER PLAN	1685	
		10											10			625	31510	10	EACH	PULL BOX REMOVED		
	17												17			625	31511	17	EACH	PULL BOX REMOVED, AS PER PLAN	1685	
		13											13			625	31600	13	EACH	PULL BOX, MISC.: 6" X 6" PULL BOX	1687	
		87											87			625	31600	87	EACH	PULL BOX, MISC.: 13" X 24" PULL BOX	1687	
	1												1			625	31600	1	EACH	PULL BOX, MISC.: 18" PULL BOX ADJUSTED TO GRADE	1685	
	46	110	8										156			625	32000	156	EACH	GROUND ROD		
	6												6			625	33000	6	EACH	STRUCTURE GROUNDING SYSTEM		
	2	3											5			625	34001	5	EACH	POWER SERVICE, AS PER PLAN	1684	
	2												2			625	34450	2	EACH	CONTROL CENTER CABINET, COMPLETE		
		1											1			625	34451	1	EACH	CONTROL CENTER CABINET, COMPLETE, AS PER PLAN	1687	
	5990	4691											10681			625	36010	10681	FT	UNDERGROUND WARNING/MARKING TAPE		
	11	7											18			625	37101	18	EACH	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN	1684	
	LS												LS			SPECIAL	625E40000	LS		MAINTAIN EXISTING LIGHTING	1684	
	20												20			SPECIAL	625E40010	20	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	1684	
	21												21			625	75350	21	EACH	LIGHT TOWER REMOVED		
		96											96			625	75400	96	EACH	LIGHT POLE REMOVED		
		20											20			625	75500	20	EACH	LIGHT POLE FOUNDATION REMOVED		
		10											10			625	75506	10	EACH	LUMINAIRE REMOVED		
	2												2			625	75510	2	EACH	POWER SERVICE REMOVED		
	21												21			625	75540	21	EACH	LIGHT TOWER FOUNDATION REMOVED		
		10											10			625	75801	10	EACH	DISCONNECT CIRCUIT, AS PER PLAN	1687	
	1	4											1			625	98000	1	EACH	LIGHTING, MISC.: RELOCATE EX. CONTROL CENTER	1685	
	10	19											29			625	98000	29	EACH	LIGHTING, MISC.: TEST NEW CIRCUIT	1684	
	8	1503											1503			632	69300	1503	FT	POWER CABLE, 3 CONDUCTOR, NO. 4 AWG		
		45											45			632	89300	45	EACH	WOOD POLE (30' CLASS III)		
		5											5			632	89300	5	EACH	WOOD POLE (50' CLASS III)		
																				ELECTRICAL		
		13704											13704			625	23308	13704	FT	DISTRIBUTION CABLE, MISC.: 500KCMIL 15KV CU WITH CONCENTRIC NEUTRAL	1778	
		5311											5311			625	23308	5311	FT	DISTRIBUTION CABLE, MISC.: 556KCMIL 15KV SPACER CABLE WITH 0052 AWA MESSENGER	1778	
		6528											6528			625	25721	6528	FT	CONDUIT, AS PER PLAN, 5", 725.04	1787	
		272											272			625	25803	272	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (2-5" CONDUIT, 725.051)	1777	
		368											368			625	25803	368	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (5-5" CONDUIT, 725.051)	1777	
		391											391			625	25803	391	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (7-5" CONDUIT, 725.051)	1777	
		652											652			625	25803	652	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (9-5" CONDUIT, 725.051)	1777	
		8325											8325			625	25911	8325	FT	CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN	1787	
		30											30			625	32001	30	EACH	GROUND ROD, AS PER PLAN	1779	
		196											196			625	98000	196	EACH	LIGHTING, MISC.: 15KV IN-LINE SPLICE	1777	
		12											12			625	98000	12	EACH	LIGHTING, MISC.: 24" SPACER CABLE TANGENT BRACKET	1779	
		1											1			625	98000	1	EACH	LIGHTING, MISC.: DEAD-END ASSEMBLY	1779	
		1											1			625	98000	1	EACH	LIGHTING, MISC.: DOUBLE DEAD-END ASSEMBLY	1779	
		4											4			625	98000	4	EACH	LIGHTING, MISC.: JOINT-USE CONDUIT RISER	1779	
		18											18			625	98000	18	EACH	LIGHTING, MISC.: JOINT-USE MESSENGER ASSEMBLY	1779	
		24											24			625	98000	24	EACH	LIGHTING, MISC.: PRIMARY CONDUIT RISER	1779	
		24											24			625	98000	24	EACH	LIGHTING, MISC.: SPACER CABLE DEADEND ASSEMBLY	1779	
		26											26			625	98000	26	EACH	LIGHTING, MISC.: SPACER CABLE TO SPACER CABLE DOUBLE DEADEND ASSEMBLY	1779	
		1											1			625	98000	1	EACH	LIGHTING, MISC.: TWO-WAY BUCK	1779	
		1538											1538			632	69350	1538	FT	POWER CABLE, MISC.: NO. 2 / 0 AWG CU 15KV OPEN WIRE	1778	

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125	1455	1485	1678	1782						01/IMS /04	02/IMS /10	03/IMS /08							
ELECTRICAL (CONT.)																			
				1						1				632	89300	1	EACH	WOOD POLE (40' CLASS III)	
				1						1				632	89300	1	EACH	WOOD POLE (45' CLASS III)	
				2						2				632	89300	2	EACH	WOOD POLE (50' CLASS II)	
			6	15						6	15			632	89300	6	EACH	WOOD POLE (50' CLASS III)	
			6	6						6	6			632	89300	6	EACH	WOOD POLE (55' CLASS II)	
			6							6				632	89300	6	EACH	WOOD POLE (55' CLASS III)	
				2						2				632	89300	2	EACH	WOOD POLE (70' CLASS H3)	
				2						2				632	89300	2	EACH	WOOD POLE (80' CLASS H6)	
			6	75						6	75			632	89401	6	EACH	DOWN GUY, AS PER PLAN	1779
TRAFFIC SURVEILLANCE																			
			61							61				625	25408	61	FT	CONDUIT, 2", 725.051	
			8108							8108				625	25410	8108	FT	CONDUIT, 2", 725.052	
			32							32				625	25504	32	FT	CONDUIT, 3", 725.051	
			984							984				625	25908	984	FT	CONDUIT, JACKED OR DRILLED, 725.052, 2"	
			989							989				625	29000	989	FT	TRENCH	
			1							1				625	30700	1	EACH	PULL BOX, 725.08, 18"	
			3							3				625	32000	3	EACH	GROUND ROD	
			989							989				625	36010	989	FT	UNDERGROUND WARNING/MARKING TAPE	
			70							70				632	68300	70	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
			500							500				632	69300	500	FT	POWER CABLE, 3 CONDUCTOR, NO. 4 AWG	
			1							1				632	70001	1	EACH	POWER SERVICE, AS PER PLAN 3	1676
			2							2				633	67100	2	EACH	CABINET FOUNDATION	
			1							1				633	67201	1	EACH	CONTROLLER WORK PAD, AS PER PLAN	1676
			8							8				809	00530	8	EACH	ITS JUNCTION BOX, 17x24x6 INCHES	
			9							9				809	02000	9	EACH	32" ITS PULL BOX WITH PAD AND STANDARD LID ASSEMBLY, TYPE 2	
			12128							12128				809	23100	12128	FT	MICRO-DUCT INNERDUCT, 14 / 10	
			1							1				809	60000	1	EACH	CCTV IP-CAMERA SYSTEM, PTZ	
			2							2				809	60070	2	EACH	CCTV IP-CAMERA SYSTEM, WRONG WAY DETECTION	
			1							1				809	61090	1	EACH	CCTV LOWERING UNIT	
			350							350				809	64550	350	FT	ETHERNET CABLE, OUTDOOR-RATED	
			2							2				809	65000	2	EACH	ITS CABINET - GROUND MOUNTED	
			1							1				809	65990	1	EACH	ITS DEVICE, MISC.: REMOVAL OF EXISTING CCTV AND LOWERING UNIT	1676
			1							1				809	65990	1	EACH	ITS DEVICE, MISC.: REMOVAL OF EXISTING CCTV POLE	1676
			4							4				809	65990	4	EACH	ITS DEVICE, MISC.: REMOVAL OF EXISTING POLE-MOUNTED ITS CABINET	1676
			LS							LS				809	70000	LS		MAINTAINING ITS DURING CONSTRUCTION	
TRAFFIC SURVEILLANCE ALTERNATES																			
			1							1			X	809	61040	1	EACH	CCTV POLE, 70' TALL, CONCRETE (ALTERNATE 1)	
			1							1			X	809	61040	1	EACH	CCTV POLE, 70' TALL, STEEL (ALTERNATE 2)	
TRAFFIC CONTROL																			
	44									44				620	00500	44	EACH	DELINEATOR, POST GROUND MOUNTED	
	946									946				621	00100	946	EACH	RPM	
		32								32				625	32000	32	EACH	GROUND ROD	
	38									38				626	00102	38	EACH	BARRIER REFLECTOR, TYPE 1 (BI-DIRECTIONAL)	
	166									166				626	00102	166	EACH	BARRIER REFLECTOR, TYPE 1 (ONE-WAY)	
	14									14				626	00110	14	EACH	BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)	
	103									103				626	00110	103	EACH	BARRIER REFLECTOR, TYPE 2 (ONE-WAY)	
		2037.3								2037.3				630	02100	2037.3	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
		2479.6								2479.6				630	03100	2479.6	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
		491.0								491.0				630	04101	491.0	FT	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN	1449
		350.4								350.4				630	06400	350.4	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, S4X7.7	
		34.0								34.0				630	06500	34.0	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9	
		40.0								40.0				630	07000	40.0	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W8X18	
48.6		54.8								103.4				630	07500	103.4	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X22	
		176.2								176.2				630	07600	176.2	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X12	
		1.0								1.0				630	08002	1.0	FT	ONE WAY SUPPORT, NO. 2 POST	
12.5										12.5				630	08004	12.5	FT	ONE WAY SUPPORT, NO. 3 POST	
		36.1								36.1				630	08100	36.1	FT	ONE WAY SUPPORT, NO. 4 POST	
		148								148				630	08600	148	EACH	SIGN POST REFLECTOR	
		28								28				630	09000	28	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	

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120	125	1455	1468	1485	1493							01/IMS /04	02/IMS /10	03/IMS /08								
				4								4			630	72340	4	EACH	TRAFFIC CONTROL (CONT.)			
				6								6			630	72410	6	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.31, DESIGN 12			
				6								6			630	72420	6	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-15.116, DESIGN 1			
				1								1			630	72430	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-15.116, DESIGN 2			
				1								1			630	72430	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-15.116, DESIGN 3			
				1								1			630	72550	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-16.22, DESIGN 13			
	26			61								87			630	75000	87	EACH	SIGN ATTACHMENT ASSEMBLY			
				2								2			630	79100	2	EACH	SIGN HANGER ASSEMBLY, MAST ARM			
				112								112			630	79500	112	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED			
				18								18			630	79604	18	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 2			
				1								1			630	79610	1	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED			
	146.0			4044.7								4190.7			630	80100	4190.7	SF	SIGN, FLAT SHEET			
				899.5								899.5			630	80200	899.5	SF	SIGN, GROUND MOUNTED EXTRUSHEET			
	1026.0			7235.5								8261.5			630	80224	8261.5	SF	SIGN, OVERHEAD EXTRUSHEET			
	781.3											781.3			630	80300	781.3	SF	SIGN, TEMPORARY OVERLAY			
				6								6			630	80501	6	EACH	SIGN, DOUBLE FACED, STREET NAME, AS PER PLAN	1449		
				5								5			630	84010	5	EACH	CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, TYPE TC-21.50			
	2			28								30			630	84500	30	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION			
				27								27			630	84510	27	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION			
	1				229							230			630	84900	230	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL			
					5							5			630	85000	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE			
					2							2			630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION			
					14							14			630	85400	14	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL			
					198							198			630	86002	198	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL			
					2							2			630	86010	2	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND REERECTION			
	2				28							30			630	86102	30	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL			
					1							1			630	86270	1	EACH	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND STORAGE			
	5											5			630	87000	5	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE			
	5											5			630	87100	5	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION			
	20				69							89			630	87400	89	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL			
					248							248			630	87500	248	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL			
					1							1			630	87510	1	EACH	REMOVAL OF POLE MOUNTED SIGN AND STORAGE			
					3							3			630	87520	3	EACH	REMOVAL OF POLE MOUNTED SIGN AND REERECTION			
					18							18			630	89702	18	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL			
					1							1			630	89804	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-15.115			
	33											33			630	89894	33	EACH	REMOVAL OF TEMPORARY OVERLAY SIGN AND DISPOSAL			
	4											4			630	89898	4	EACH	REMOVAL OF TEMPORARY OVERLAY SIGN AND STORAGE			
95970												95970			642	30000	95970	FT	REMOVAL OF PAVEMENT MARKING			
70												70			642	30020	70	EACH	REMOVAL OF PAVEMENT MARKING			
1.96		7.62		1.33								1.33			644	00100	1.33	MILE	EDGE LINE, 4"			
												9.58			644	00104	9.58	MILE	EDGE LINE, 6"			
0.46				2.04								2.50			644	00200	2.50	MILE	LANE LINE, 4"			
2.20		3.69										5.89			644	00204	5.89	MILE	LANE LINE, 6"			
0.04		0.17		1.56								1.77			644	00300	1.77	MILE	CENTER LINE			
517				5365								5882			644	00400	5882	FT	CHANNELIZING LINE, 8"			
1153		9020										10173			644	00404	10173	FT	CHANNELIZING LINE, 12"			
				1161								1161			644	00500	1161	FT	STOP LINE			
				3092								3145			644	00620	3145	FT	CROSSWALK LINE, 12"			
				1219								1219			644	00621	1219	FT	CROSSWALK LINE, 12", AS PER PLAN			
				2687								4153			644	00700	4153	FT	TRANSVERSE/DIAGONAL LINE	1449		
	74			1026								1573			644	00720	1573	FT	CHEVRON MARKING			
				581								581			644	00900	581	SF	ISLAND MARKING			
				2960								2960			644	01200	2960	FT	PARKING LOT STALL MARKING			
				136								164			644	01300	164	EACH	LANE ARROW			
				2								2			644	01350	2	EACH	LANE REDUCTION ARROW			
				11								11			644	01360	11	EACH	WRONG WAY ARROW			
				2								2			644	01370	2	EACH	TWO WAY LEFT TURN ARROW			
257				3053								3310			644	01500	3310	FT	DOTTED LINE, 4"			
2449		2420										4869			644	01510	4869	FT	DOTTED LINE, 6"			
				1448								1448			644	01514	1448	FT	DOTTED LINE, 8"			

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1455	1468	1642										01/IMS /04	02/IMS /10	03/IMS /08								
										TRAFFIC CONTROL (CONT.)												
1365												1365			644	01520	1365	FT	DOTTED LINE, 12"			
	6											6			644	01630	6	EACH	BIKE LANE SYMBOL MARKING			
	4											4			644	19000	4	EACH	SHARED LANE MARKING			
	38											38			644	50300	38	FT	PAVEMENT MARKING, MISC.: BIKE LANE CROSSWALK	1449		
	1034											1034			644	60000	1034	SF	GREEN COLORED PAVEMENT FOR BIKE LANES			
	0.14											0.14			646	10000	0.14	MILE	EDGE LINE, 4"			
1.90												1.90			646	10010	1.90	MILE	EDGE LINE, 6"			
	0.42											0.42			646	10100	0.42	MILE	LANE LINE, 4"			
1.48												1.48			646	10110	1.48	MILE	LANE LINE, 6"			
	0.35											0.35			646	10200	0.35	MILE	CENTER LINE			
	241											241			646	10300	241	FT	CHANNELIZING LINE, 8"			
3018												3018			646	10310	3018	FT	CHANNELIZING LINE, 12"			
	33											33			646	10400	33	FT	STOP LINE			
	1312											1312			646	10510	1312	FT	CROSSWALK LINE, 12"			
310	188											498			646	10600	498	FT	TRANSVERSE/DIAGONAL LINE			
												222			646	10620	222	FT	CHEVRON MARKING			
222												5			646	20300	5	EACH	LANE ARROW			
2687												2687			646	20504	2687	FT	DOTTED LINE, 6"			
	4											4			646	20600	4	EACH	BIKE LANE SYMBOL MARKING			
	2											2			646	20650	2	EACH	SHARED LANE MARKING			
	876											876			646	60100	876	SF	GREEN COLORED PAVEMENT FOR BIKE LANES			
										TRAFFIC SIGNALS												
	4											4			625	00480	4	EACH	CONNECTION, UNFUSED PERMANENT			
	756											756			625	25408	756	FT	CONDUIT, 2", 725.051			
	448											448			625	25504	448	FT	CONDUIT, 3", 725.051			
	152											152			625	25604	152	FT	CONDUIT, 4", 725.051			
	4010											4010			625	25802	4010	FT	CONDUIT, CONCRETE ENCASED, 4", 725.051			
	675											675			625	25910	675	FT	CONDUIT CLEANED AND CABLES REMOVED			
	2824											2824			625	29000	2824	FT	TRENCH			
	447											447			625	29400	447	FT	TRENCH IN PAVED AREA			
	12											12			625	30510	12	EACH	PULL BOX, 725.06, SIZE 4			
	28											28			625	30530	28	EACH	PULL BOX, 725.06, SIZE 18			
	65											65			625	32000	65	EACH	GROUND ROD			
	3271											3271			625	36011	3271	FT	UNDERGROUND WARNING/MARKING TAPE, AS PER PLAN	1638		
	58											58			630	79101	58	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	1638		
	4											4			630	79500	4	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED			
	254.0											254.0			630	80100	254.0	SF	SIGN, FLAT SHEET			
	30											30			630	80511	30	EACH	SIGN, STREET NAME, AS PER PLAN	1638		
	4											4			632	04000	4	EACH	VEHICULAR SIGNAL HEAD, MISC.: (LED), 3-SECTION, 8" LENS, 1-WAY, POLYCARBONATE, YELLOW (BICYCLE)	1640		
	87											87			632	05006	87	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, YELLOW			
	12											12			632	05086	12	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, YELLOW			
	56											56			632	20731	56	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	1640		
	62											62			632	20750	62	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON			
	103											103			632	25000	103	EACH	COVERING OF VEHICULAR SIGNAL HEAD			
	56											56			632	25010	56	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD			
	8775											8775			632	40300	8775	FT	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG			
	8775											8775			632	40500	8775	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG			
	10250											10250			632	40700	10250	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG			
	30											30			632	64010	30	EACH	SIGNAL SUPPORT FOUNDATION			
	28											28			632	64020	28	EACH	PEDESTAL FOUNDATION			
	8											8			632	64950	8	EACH	TEST HOLE PERFORMED			
	450											450			632	68200	450	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG			
	450											450			632	69200	450	FT	POWER CABLE, 2 CONDUCTOR, NO. 4 AWG			
	7											7			632	70001	7	EACH	POWER SERVICE, AS PER PLAN 2	1639		
	9											9			632	70200	9	EACH	CONDUIT RISER, 1" DIAMETER			
	10											10			632	72111	10	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN	1640		
	8											8			632	72131	8	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12, AS PER PLAN	1640		
	8											8			632	72141	8	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13, AS PER PLAN	1640		

DESIGN AGENCY
Michael Baker INTERNATIONAL
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 82382
 SHEET TOTAL
 412 2696

SHEET NUMBER													PARTICIPATION			ALT (X)	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
429	1642	1806	1839							01/IMS /04	02/IMS /10	03/IMS /08										
TRAFFIC SIGNALS (CONT.)																						
	2									2				632	72151	2	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 14, AS PER PLAN	1640			
	2									2				632	86121	2	EACH	STRAIN POLE, TYPE TC-81.11, DESIGN 8, AS PER PLAN	1640			
	14									14				632	89901	14	EACH	PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN	1640			
	14									14				632	90010	14	EACH	PEDESTAL, MISC.: PEDESTAL 15', TRANSFORMER BASE	1640			
	8									8				632	90101	8	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	1638			
	7									7				633	65511	7	EACH	CABINET, TYPE TS-2, AS PER PLAN	1641			
	7									7				633	67100	7	EACH	CABINET FOUNDATION				
	6									6				633	67200	6	EACH	CONTROLLER WORK PAD				
	7									7				809	69123	7	EACH	ATC CONTROLLER, AS PER PLAN	1641			
TRAFFIC SIGNALS ALTERNATES 1																						
	7									7			X	633	45001	7	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY, AS PER PLAN (GENERIC) (ALTERNATE 1)	1641			
	7									7			X	633	45001	7	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY, AS PER PLAN (ELTEC) (ALTERNATE 2)	1641			
TRAFFIC SIGNALS ALTERNATES 2																						
	20									20			X	809	69101	20	EACH	STOP LINE RADAR DETECTION, AS PER PLAN (GENERIC) (ALTERNATE 1)	1638			
	20									20			X	809	69101	20	EACH	STOP LINE RADAR DETECTION, AS PER PLAN (ITERIS) (ALTERNATE 2)	1638			
LANDSCAPING																						
			26							26				511	53010	26	CY	CLASS QC1 CONCRETE, MISC.: GATEWAY MONUMENT SIGN, FOUNDATION	1827			
			52							52				511	71100	52	CY	CONCRETE, MISC.: CLASS QC SCC CONCRETE WITH QC/QA, GATEWAY MONUMENT SIGN, WALL	1827			
			LS							LS				607	98200	LS		FENCE, MISC.: BRIDGE 13 SCREEN WALL PANELS	1832-1835			
			LS							LS				607	98200	LS		FENCE, MISC.: GATEWAY MONUMENT SIGN SCREEN WALL PANELS	1832			
			923							923				608	98000	923	SF	WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK 1)	1825			
			10437							10437				608	98000	10437	SF	WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK 2)	1825			
			1527							1527				608	98000	1527	SF	WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK 3)	1825			
			743							743				608	98000	743	SF	WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK 4)	1825			
	243									243				661	00501	243	CY	MULCH, AS PER PLAN	1804			
	48400									48400				661	31000	48400	GAL	LANDSCAPE WATERING				
	9									9				661	40100	9	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, AMERICAN SYCAMORE (POC)				
	5									5				661	40100	5	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, BUR OAK (QMA)				
	7									7				661	40100	7	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, CHINESE ELM (ULM)				
	15									15				661	40100	15	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, CHINKAPIN OAK (QMU)				
	11									11				661	40100	11	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, GREEN VASE ZELKOVA (ZSE)				
	18									18				661	40100	18	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, KENTUCKY COFFEETREE (GDI)				
	1									1				661	40100	1	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, LITTLELEAF LINDEN (TCO)				
	19									19				661	40100	19	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, OHIO BUCKEYE (AGL)				
	18									18				661	40100	18	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, SCARLET OAK (QCO)				
	12									12				661	40100	12	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, SOMERSET RED MAPLE (ARS)				
	10									10				661	40100	10	EACH	DECIDUOUS TREE, 2-1/2" CALIPER, THORNLESS HONEYLOCUST (GTR)				
	6									6				661	50160	6	EACH	EVERGREEN TREE, 8' HEIGHT, AMERICAN HOLLY (IOK)				
	26									26				661	50160	26	EACH	EVERGREEN TREE, 8' HEIGHT, AMERICAN HOLLY (IOP)				
	72									72				661	50160	72	EACH	EVERGREEN TREE, 8' HEIGHT, EASTERN REDCEDAR (JVI)				
	58									58				661	50160	58	EACH	EVERGREEN TREE, 8' HEIGHT, PITCH PINE (PRI)				
	53									53				661	99900	53	EACH	PLANTING, MISC.: FLOWERING TREE, 2-1/2" CALIPER, CRABAPPLE SP. (MAL)	1824			
	128									128				661	99900	128	EACH	PLANTING, MISC.: FLOWERING TREE, 2-1/2" CALIPER, EASTERN REDBUD (CCN)	1824			
	43									43				661	99900	43	EACH	PLANTING, MISC.: FLOWERING TREE, 2-1/2" CALIPER, FLOWERING DOGWOOD (CFL)	1824			
	90									90				661	99900	90	EACH	PLANTING, MISC.: FLOWERING TREE, 2-1/2" CALIPER, GREEN HAWTHORN (CVI)	1824			
	33									33				661	99900	33	EACH	PLANTING, MISC.: FLOWERING TREE, 2-1/2" CALIPER, IVORY SILK JAPANESE TREE LILAC (SRE)	1824			
	36									36				661	99900	36	EACH	PLANTING, MISC.: FLOWERING TREE, 2-1/2" CALIPER, KWANZAN FLOWERING CHERRY (PSE)	1824			
	88									88				661	99900	88	EACH	PLANTING, MISC.: FLOWERING TREE, 6-8' HEIGHT, AUTUMN BRILLIANCE SERVICEBERRY (ACA)	1824			
	14									14				661	99900	14	EACH	PLANTING, MISC.: FLOWERING TREE, 6-8' HEIGHT, COMMON WITCH HAZEL (HVI)	1824			
	196									196				661	99900	196	EACH	PLANTING, MISC.: SHRUB, 3 GALLON, SHORE JUNIPER (JCB)	1824			
			9							9				SPECIAL	680E14550	9	EACH	TRASH RECEPTACLE	1826			
			1							1				SPECIAL	680E43100	1	EACH	COMPLETE IRRIGATION SYSTEM	1836			
2										2				SPECIAL	690E98000	2	EACH	BRICK 1 PAVER MOCK UP	1826			
2										2				SPECIAL	690E98000	2	EACH	BRICK 2 PAVER MOCK UP	1826			
2										2				SPECIAL	690E98000	2	EACH	BRICK 3 PAVER MOCK UP	1826			
2										2				SPECIAL	690E98000	2	EACH	BRICK 4 PAVER MOCK UP	1826			
1										1				SPECIAL	690E98000	1	EACH	BRIDGE 13 PLANTER MOCK UP	1831			
1										1				SPECIAL	690E98000	1	EACH	BRIDGE 13 SCREEN WALL MOCK UP	1833			

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120	427	429	435	489	1839								01/IMS /04	02/IMS /10	03/IMS /08										
										LANDSCAPING (CONT.)															
		1											1			SPECIAL	690E98000	1	EACH	GATEWAY MONUMENT SIGN SCREEN WALL MOCK UP	1833				
					21								21			SPECIAL	690E98000	21	EACH	GATEWAY SIGN ALUMINUM LETTERS	1827				
		2											2			SPECIAL	690E98000	2	EACH	INTEGRALLY COLORED CONCRETE CROSSWALK MOCK UP	1825				
					24								24			SPECIAL	690E98000	24	EACH	PARK BENCH	1826				
					159								159			SPECIAL	690E98000	159	EACH	SCREEN WALL COVER PLATE	1826				
					70								70			SPECIAL	690E98000	70	EACH	SKATE GUARD	1826				
		9											9			SPECIAL	690E98000	9	EACH	TREE PROTECTION	1798				
		320											320			SPECIAL	690E98100	320	FT	AIR KNIFE EXCAVATION	1798				
6					1118								1118			SPECIAL	690E98100	1118	FT	METAL EDGING	1826				
		LS											LS			SPECIAL	690E98400	LS		BRIDGE 13 ARCHITECTURAL CONCRETE MIX MOCK UP	1829				
6		LS											LS			SPECIAL	690E98400	LS		CLEVELAND PLANTING	1804				
		LS											LS			SPECIAL	690E98400	LS		GATEWAY MONUMENT SIGN ARCHITECTURAL CONCRETE MIX MOCK UP	1829				
					LS								LS			SPECIAL	690E98400	LS		PLANTER WATERPROOFING SYSTEM	1830				
					29								29			SPECIAL	690E98700	29	CY	PLANTING SOIL FOR BRIDGE 13 PARAPET PLANTERS	1799				
					174								174			SPECIAL	690E98700	174	CY	PLANTING SOIL FOR BRIDGE 13 TREE PLANTERS	1799				
										RETAINING WALLS															
																				RETAINING WALL AC ESTIMATED QUANTITIES	1178				
																				RETAINING WALL AD ESTIMATED QUANTITIES	1195				
																				RETAINING WALL AE ESTIMATED QUANTITIES	1210				
																				RETAINING WALL AF ESTIMATED QUANTITIES	1221				
																				RETAINING WALL AG ESTIMATED QUANTITIES	1233				
																				RETAINING WALL AH ESTIMATED QUANTITIES	1244				
																				RETAINING WALL AI ESTIMATED QUANTITIES	1253				
																				RETAINING WALL AJ ESTIMATED QUANTITIES	1265				
																				RETAINING WALL N ESTIMATED QUANTITIES	1274				
																				RETAINING WALL S ESTIMATED QUANTITIES	1286				
																				RETAINING WALL T ESTIMATED QUANTITIES	1303				
																				RETAINING WALL Y ESTIMATED QUANTITIES	1313				
																				RETAINING WALL Z ESTIMATED QUANTITIES	1322				
																				RAMP A3 BARRIER MOMENT SLAB ESTIMATED QUANTITIES	1335				
																				MEDIAN BARRIER MOMENT SLAB ESTIMATED QUANTITIES	1342				
																				RAMP A2 OVERHEAD SIGN TRUSS ESTIMATED QUANTITIES	1356				
																				RAMP B6 OVERHEAD SIGN TRUSS ESTIMATED QUANTITIES	1362				
					LS								LS							STRUCTURE REMOVED					
					LS								LS							PORTIONS OF STRUCTURE REMOVED					
										BUILDING DEMOLITION															
					LS								LS							202	11000	LS	BUILDING DEMOLISHED (103-13-019 / 320-WL)	74	
6		LS											LS							202	56001	LS	BUILDING DEMOLISHED, AS PER PLAN (103-26-003 / 303)	74	
										STRUCTURES															
					LS								LS							503	21300	LS	UNCLASSIFIED EXCAVATION		
										STRUCTURE OVER 20 FOOT SPAN															
																							STRUCTURE CUY-77-1587 (SFN-1806910 BRIDGE 9) ESTIMATED QUANTITIES	1884	
																							STRUCTURE CUY-90-1653L (SFN-1807901 BRIDGE 10) ESTIMATED QUANTITIES	2041	
																							STRUCTURE CUY-90-1653R (SFN-1807804 BRIDGE 11) ESTIMATED QUANTITIES	2090	
																							STRUCTURE CUY-90-1652S (SFN-1807806 BRIDGE 12) ESTIMATED QUANTITIES	2134	
																							STRUCTURE CUY-90-1678 (SFN-1807839 BRIDGE 13) ESTIMATED QUANTITIES	2188-2189	
																							STRUCTURE CUY-90-1696 (SFN-1807898 BRIDGE 14) ESTIMATED QUANTITIES	2291-2292	
																							STRUCTURE CUY-90-1640 (SFN-1807773 BRIDGE E5) ESTIMATED QUANTITIES	2371	
																							STRUCTURE CUY-77-1593L (SFN-1806939 BRIDGE E6) ESTIMATED QUANTITIES	2378	
																							STRUCTURE CUY-E14th-0002SN (SFN-1806912 BRIDGE E10) ESTIMATED QUANTITIES	2381	
										MAINTENANCE OF TRAFFIC															
		5000											5000							614	11110	5000	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	87
		10555											10555							614	11630	10555	FT	INCREASED BARRIER DELINEATION	85
		42											42							614	12380	42	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	84
				2									2							614	12381	2	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL), AS PER PLAN	76
													LS							614	12420	LS		DETOUR SIGNING	
		62											62							614	12484	62	EACH	WORK ZONE INCREASED PENALTIES SIGN	83
		26											26							614	12500	26	EACH	REPLACEMENT SIGN	83

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120	428	429	435	1485							01/IMS /04	02/IMS /10	03/IMS /08										
										MAINTENANCE OF TRAFFIC (CONT.)													
	6										6			614	12756	6	EACH	WORK ZONE CROSSOVER LIGHTING SYSTEM	85				
	3895										3895			614	12801	3895	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	84				
4	1256										1256			614	13310	1256	EACH	BARRIER REFLECTOR, TYPE 1 (ONE WAY)	85				
	1113										1113			614	13350	1113	EACH	OBJECT MARKER, ONE WAY	85				
	42										42			614	13360	42	EACH	OBJECT MARKER, TWO WAY	85				
	3										3			614	18000	3	EACH	MAINTAINING TRAFFIC, MISC.: PARTIAL TEMPORARY TRAFFIC SIGNAL	87				
	1										1			614	18000	1	EACH	MAINTAINING TRAFFIC, MISC.: TEMPORARY TRAFFIC SIGNAL	85				
	200										200			614	18601	200	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	83				
1.04	0.50										1.54			614	20000	1.54	MILE	WORK ZONE LANE LINE, CLASS I, 4"					
8.75	2.50										11.25			614	20010	11.25	MILE	WORK ZONE LANE LINE, CLASS I, 6"					
2.32	0.50										2.82			614	21000	2.82	MILE	WORK ZONE CENTER LINE, CLASS I					
3.63	1.00										4.63			614	22000	4.63	MILE	WORK ZONE EDGE LINE, CLASS I, 4"					
18.26	4.50										22.76			614	22010	22.76	MILE	WORK ZONE EDGE LINE, CLASS I, 6"					
3024	650										3674			614	23000	3674	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8"					
34686	8750										43436			614	23010	43436	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12"					
14781	3650										18431			614	24000	18431	FT	WORK ZONE DOTTED LINE, CLASS I					
1048	150										1198			614	25000	1198	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I					
718	175										893			614	26000	893	FT	WORK ZONE STOP LINE, CLASS I					
657	175										832			614	27010	832	FT	WORK ZONE CROSSWALK LINE, CLASS I, 12"					
92	25										117			614	30000	117	EACH	WORK ZONE ARROW, CLASS I					
2	1										3			614	31000	3	EACH	WORK ZONE WORD ON PAVEMENT, 72", CLASS I					
4	1										5			614	98200	5	EACH	WORK ZONE PAVEMENT MARKING, MISC.: SHARED LANE MARKING	84				
											LS			615	10000	LS		ROADS FOR MAINTAINING TRAFFIC					
30133											30133			615	20000	30133	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	84				
	2285										2285			616	10000	2285	MGAL	WATER					
	150										150			616	20000	150	TON	CALCIUM CHLORIDE					
58608	6										58608			622	41011	58608	FT	PORTABLE BARRIER, 50", AS PER PLAN	84				
3			1150								3			622	41060	3	EACH	DUAL PORTABLE BARRIER TRANSITION/TERMINATION					
2054											1150			622	41101	1150	FT	PORTABLE BARRIER, UNANCHORED, AS PER PLAN	76				
											2054			622	41111	2054	FT	PORTABLE BARRIER, ANCHORED, AS PER PLAN	84				
			190								190			622	41111	190	FT	PORTABLE BARRIER, ANCHORED, AS PER PLAN 2	76				
		64									64			829	00100	64	SNMT	WORK ZONE EGRESS WARNING SYSTEM	84				
		648									648			896	00010	648	SNMT	PORTABLE NON-INTRUSIVE TRAFFIC SENSOR, CLASS I					
		216									216			896	00020	216	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN					
										INCIDENTALS													
											LS			108	10000	LS		CPM PROGRESS SCHEDULE					
											21000			SPECIAL	111E10100	21000	EACH	DEPARTMENTS SHARE FACILITATED PARTNERING COSTS	PN 111				
											LS			614	11000	LS		MAINTAINING TRAFFIC	81				
	72										72			619	16021	72	MNTH	FIELD OFFICE, TYPE C, AS PER PLAN	80A				
											LS			623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING					
											LS			624	10000	LS		MOBILIZATION					
				148							148			990	24500	148		QC / QA					

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SHEET TOTAL
 415 2696

SHEET NO.	201	202	202	202	204	204	204	251	251	254	254	254	255	255	255	255	407	441	441	442	442	442	452	605	605	608	608	609	611	611	611	611	611	611	611	614	614	614	614											
	LS	FT	FT	LS	FT	CY	CY	SY	CY	CY	SY	SY	SY	SY	SY	SY	GAL	CY	CY	CY	CY	CY	SY	FT	FT	SF	SF	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	LB	HOUR	FT	EACH	EACH									
73	LS																																																	
74				LS	1000																																													
76						3100	3100	9300																																										
77																																																		
78																																																		
79			200																																															
80																																																		
83		1510																																																
84																																																		
85																																																		
87																																																		
1371																																																		
1798																																																		
1804																																																		
1825																																																		
1826																																																		
1829																																																		
1831																																																		
1833																																																		
TOTALS CARRIED TO GENERAL SUMMARY	LS	1510	200	LS	1000	3100	3100	9300	480	400	64786	38540	56010	2800	2800	3850	14303	1340	1870	2330	2720	64	775	3700	5200	4500	475	750	400	2400	200	4	4	4	10000	5000	10555	62	26											

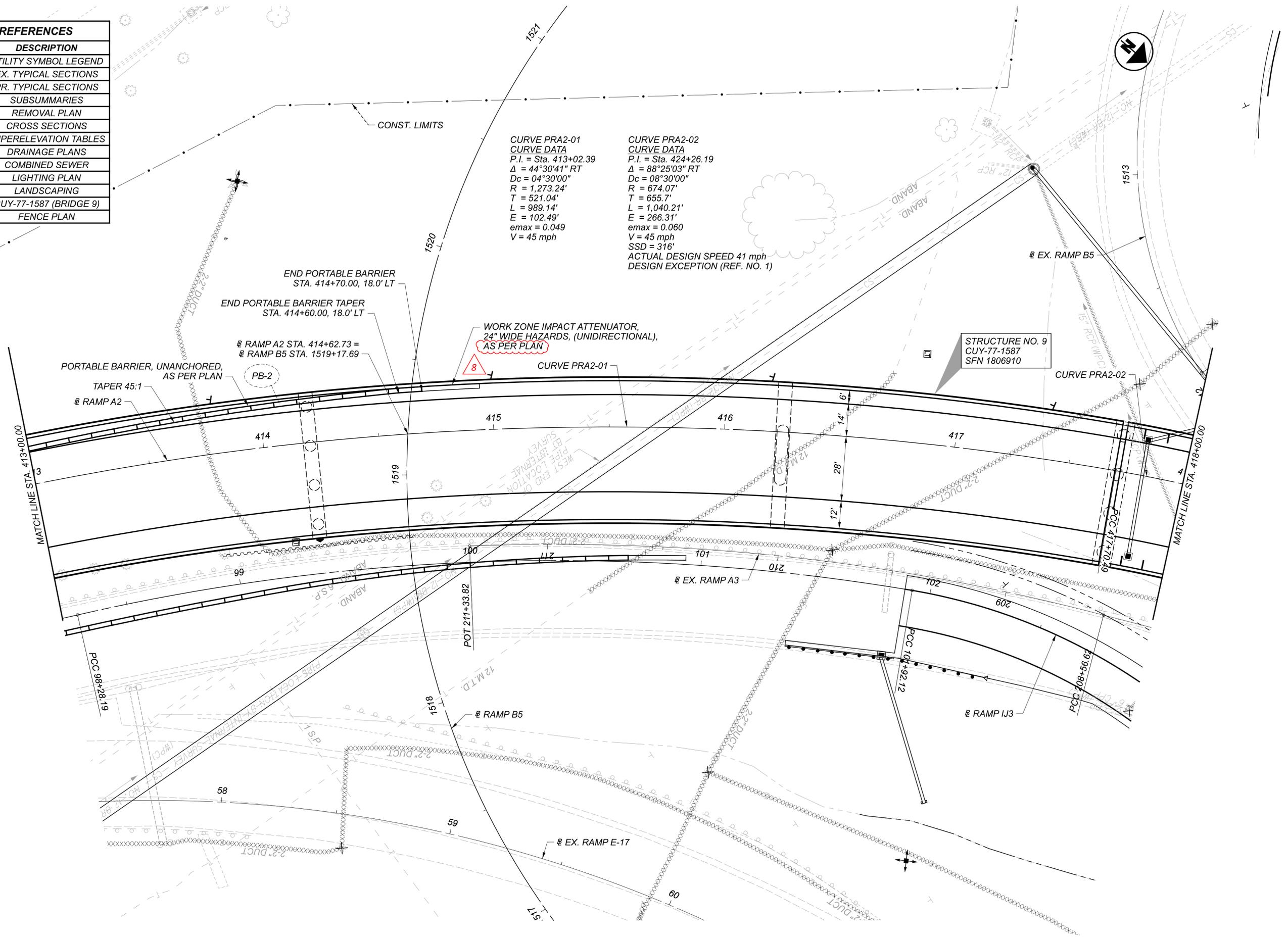
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382
SHEET	427
TOTAL	2696

REF NO.	SHEET NO.	STATION	SIDE	CFN	CONDUIT												CATCH BASIN												MANHOLE												PIPE LINER			
					12" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	12" CONDUIT, TYPE B, AS PER PLAN 2, 748.01	12" CONDUIT, TYPE C, AS PER PLAN 2, 706.08 & 706.12	15" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	15" CONDUIT, TYPE B, AS PER PLAN 2, 748.01	15" CONDUIT, TYPE C, AS PER PLAN 2, 706.08 & 706.12	18" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	21" CONDUIT, TYPE B	24" CONDUIT, TYPE B, AS PER PLAN 2, 706.08 & 706.12	66" CONDUIT, TYPE B, AS PER PLAN 2, 706.02 & 706.11	CONDUIT, BORED OR JACKED, 66" TYPE B	CONDUIT, BORED OR JACKED, 66" TYPE C	CATCH BASIN, NO. 3, AS PER PLAN	CATCH BASIN, NO. 3A, AS PER PLAN	CATCH BASIN, NO. 6, AS PER PLAN 2	CATCH BASIN, NO. 8, AS PER PLAN 2	CATCH BASIN, NO. 2-2A, AS PER PLAN 2	CATCH BASIN, NO. 2-2B, AS PER PLAN 2	CATCH BASIN ADJUSTED TO GRADE	CATCH BASIN RECONSTRUCTED TO GRADE	MANHOLE, NO. 3, AS PER PLAN	MANHOLE, NO. 3, AS PER PLAN 2	MANHOLE ADJUSTED TO GRADE	MANHOLE RECONSTRUCTED TO GRADE	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN 2	CURED-IN-PLACE PIPE LINER, AS PER PLAN, NO. 6 EGG-SHAPED	CURED-IN-PLACE PIPE LINER, AS PER PLAN, NO. 7 EGG-SHAPED	CURED-IN-PLACE PIPE LINER, AS PER PLAN, NO. 10 EGG-SHAPED	CURED-IN-PLACE PIPE LINER, AS PER PLAN, NO. 11 EGG-SHAPED	CURED-IN-PLACE PIPE LINER, AS PER PLAN, NO. 12 EGG-SHAPED									
FROM	TO	CL	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT										
D-784	1118	MIDTOWN CONNECTOR	506+00.00		CL																																							
D-811	1118	MIDTOWN CONNECTOR	507+62.56	MIDTOWN CONNECTOR	508+21.07	RT	62																																					
D-810	1118	MIDTOWN CONNECTOR	507+63.21	MIDTOWN CONNECTOR	508+21.07	LT/RT	62																																					
D-820	1119	MIDTOWN CONNECTOR	508+21.07			RT																																						
D-823	1119	MIDTOWN CONNECTOR	509+99.64	MIDTOWN CONNECTOR	510+51.28	RT	58																																					
D-824	1119	MIDTOWN CONNECTOR	510+51.28			RT																																						
D-816	1119	CEDAR AVE.	400+67.59	CEDAR AVE.	400+80.05	RT/CL	19																																					
D-815	1119	CEDAR AVE.	400+75.46	CEDAR AVE.	400+80.05	LT/CL	23																																					
D-817	1119	CEDAR AVE.	400+80.05	CEDAR AVE.	402+12.96	CL/RT																																						
D-819	1119	CEDAR AVE.	402+12.96			RT																																						
D-818	1119	CEDAR AVE.	402+16.24	CEDAR AVE.	402+12.96	RT	20																																					
CS-1	1366	RAMP A2	414+35.48	RAMP IB5	1712+10.02	RT/LT																													354									
CS-2	1366	E. 14TH ST. NB XOVER	251+96.37	RAMP A2	414+35.48	LT/RT																													241									
CS-3	1367	RAMP H5	978+89.90	E. 14TH ST. NB XOVER	251+96.37	RT/LT																													270									
CS-4	1367	E. 22ND ST.	14+15.87	RAMP H5	978+89.90	RT																													413									
CS-5	1368	I.R. 90 EB	193+29.00	I.R. 90 WB	193+57.00	RT/LT																													176									
CS-6	1368	I.R. 90 EB	194+52.58	I.R. 90 EB	193+29.00	RT																													154									
CS-7	1368	I.R. 90 WB	193+57.00	CENTRAL AVE. CONN.	600+58.32	LT/RT																													326									
CS-8	1368	RAMP B6	1617+74.40	I.R. 90 EB	194+52.58	RT																													101									
CS-9	1368	E. 22ND ST.	30+64.87	RAMP B6	1617+74.70	LT/RT																													358									
TOTALS FROM THIS SHEET							244	-	4104	8132	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	459									
TOTALS FROM SHEET							1014	-	4104	8132	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	656								
TOTALS FROM SHEET							1027	215	53	6209	-	-	108	5	-	251	90	-	246	9	12	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	413						
TOTALS FROM SHEET							1146	25	427	306	8	-	82	-	5	140	-	-	11	12	1	1	1	6	1	2	2	1	1	27	5	16	-	-	-	-	270							
TOTALS CARRIED TO GENERAL SUMMARY							3431	240	184	1158	30	-	190	5	5	5	626	90	246	33	37	1	1	1	6	4	2	1	27	5	16	1	2	1	459	656	413	270	595					

LOCAL DRAINAGE SUBSUMMARY - 4

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	MJB
REVIEWER	KGJ 05/22/24
PROJECT ID	82382
SHEET TOTAL	447 2696

CROSS REFERENCES	
SHEET	DESCRIPTION
73	UTILITY SYMBOL LEGEND
28	EX. TYPICAL SECTIONS
44 - 46	PR. TYPICAL SECTIONS
430 - 489	SUBSUMMARIES
679 - 710	REMOVAL PLAN
679 - 710	CROSS SECTIONS
799 - 817	SUPERELEVATION TABLES
1092 - 1120	DRAINAGE PLANS
1366 - 1367	COMBINED SEWER
1716 - 1723	LIGHTING PLAN
1807 - 1817	LANDSCAPING
1869 - 1873	CUY-77-1587 (BRIDGE 9)
2383 - 2386	FENCE PLAN



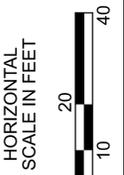
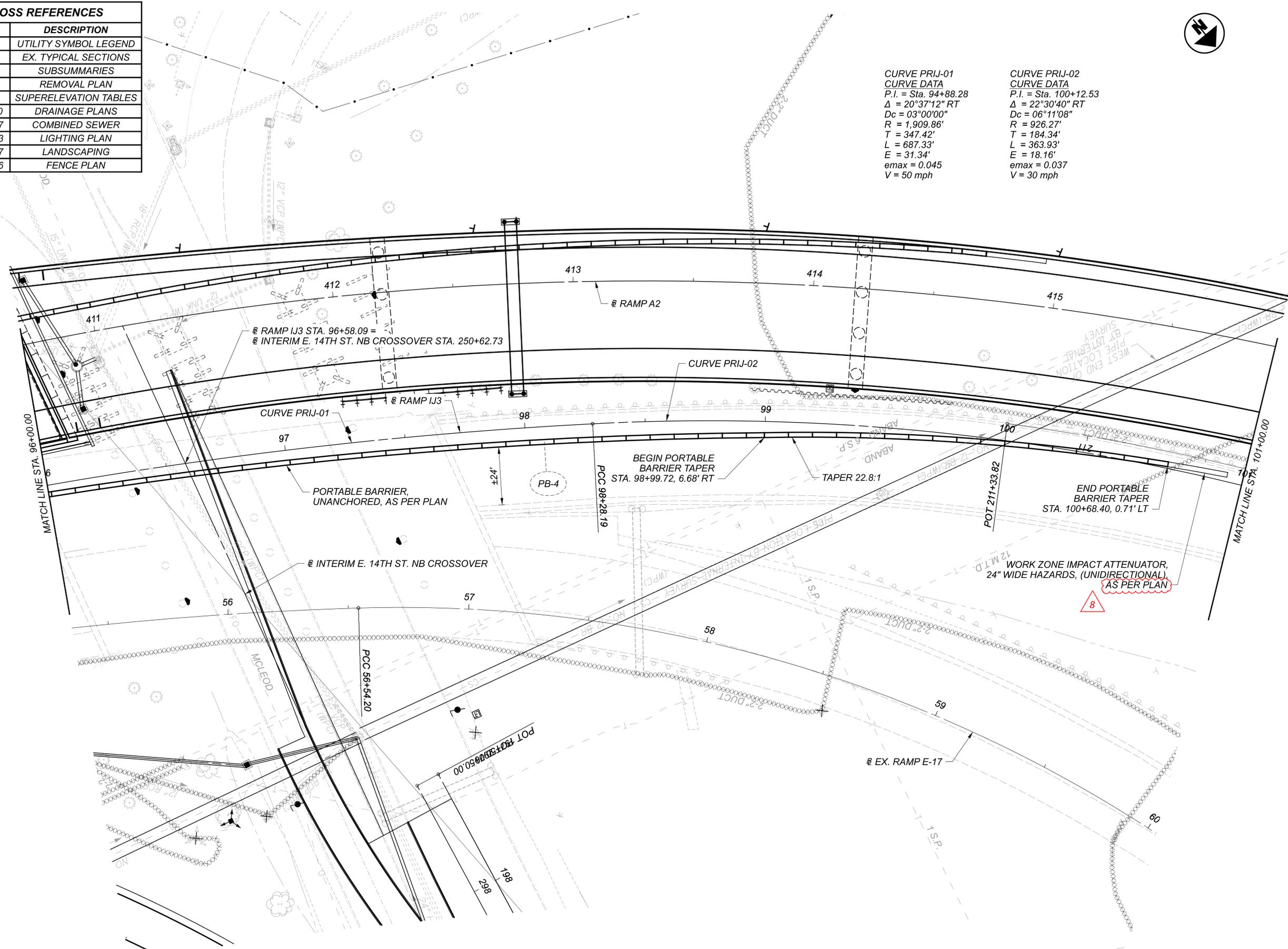
PLAN - RAMP A2
 STA. 413+00.00 TO STA. 418+00.00

DESIGN AGENCY



DESIGNER	BMV
REVIEWER	TJS 04/30/24
PROJECT ID	82382
SHEET	556
TOTAL	2696

CROSS REFERENCES	
SHEET	DESCRIPTION
73	UTILITY SYMBOL LEGEND
28	EX. TYPICAL SECTIONS
430 - 489	SUBSUMMARIES
679 - 710	REMOVAL PLAN
1029	SUPERELEVATION TABLES
1092 - 1120	DRAINAGE PLANS
1366 - 1367	COMBINED SEWER
1716 - 1723	LIGHTING PLAN
1807 - 1817	LANDSCAPING
2383 - 2386	FENCE PLAN



PLAN - RAMP IJ3
 STA. 96+00.00 TO STA. 101+00.00

DESIGN AGENCY



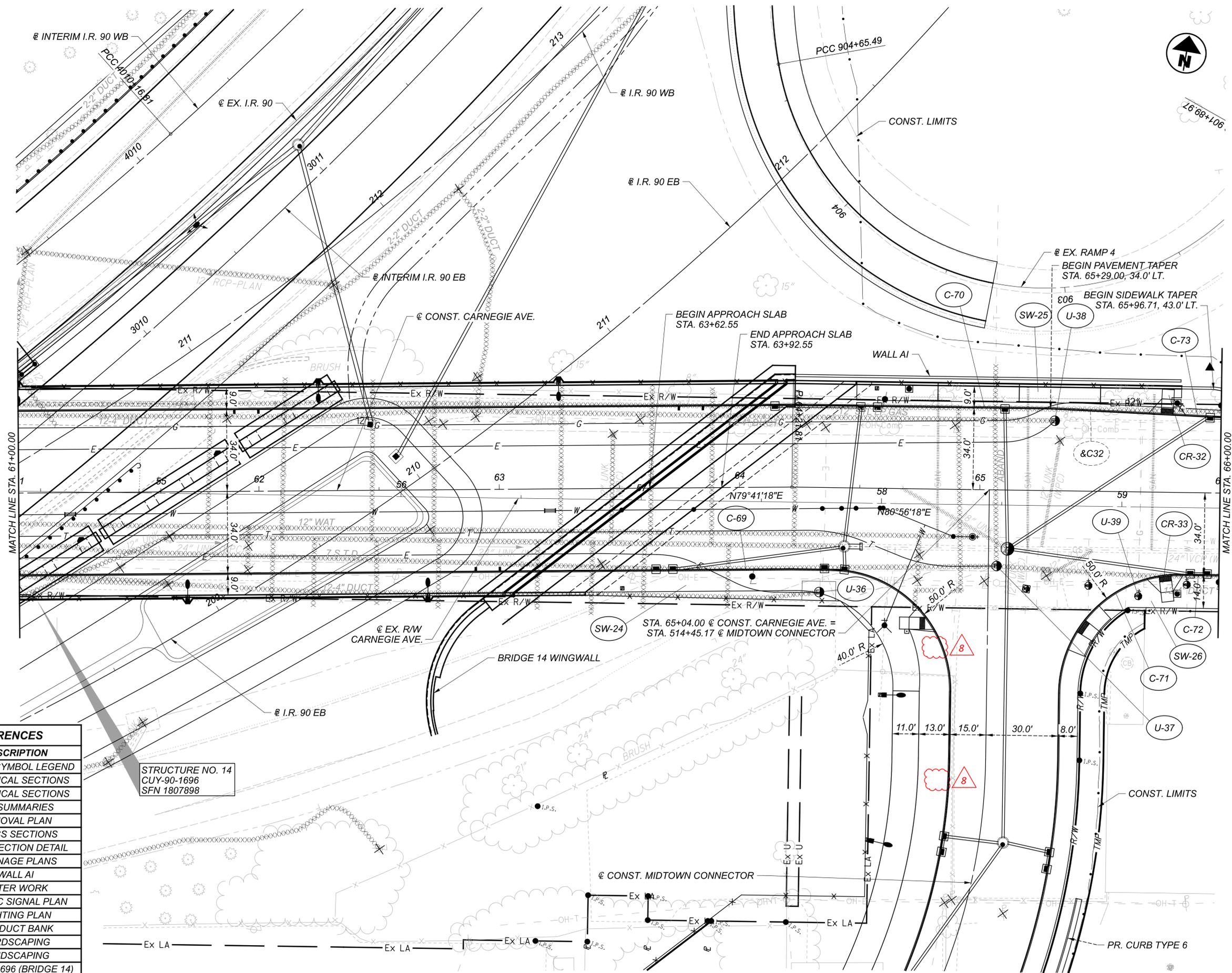
DESIGNER
 BMV

REVIEWER
 TJS 04/30/24

PROJECT ID
 82382

SHEET TOTAL
 620 2696

CROSS REFERENCES	
SHEET	DESCRIPTION
73	UTILITY SYMBOL LEGEND
24	EX. TYPICAL SECTIONS
60 - 61	PR. TYPICAL SECTIONS
430 - 489	SUBSUMMARIES
679 - 710	REMOVAL PLAN
932 - 946	CROSS SECTIONS
1059	INTERSECTION DETAIL
1092 - 1120	DRAINAGE PLANS
1250	WALL AI
1411 - 1413	WATER WORK
1659	TRAFFIC SIGNAL PLAN
1724 - 1741	LIGHTING PLAN
1783 - 1796	CPP DUCT BANK
1840 - 1843	HARDSCAPING
1807 - 1817	LANDSCAPING
2281 - 2282	CUY-90-1696 (BRIDGE 14)
2383 - 2386	FENCE PLAN



PLAN - CARNEGIE AVE.
 STA. 61+00.00 TO STA. 66+00.00

DESIGN AGENCY

Michael Baker INTERNATIONAL

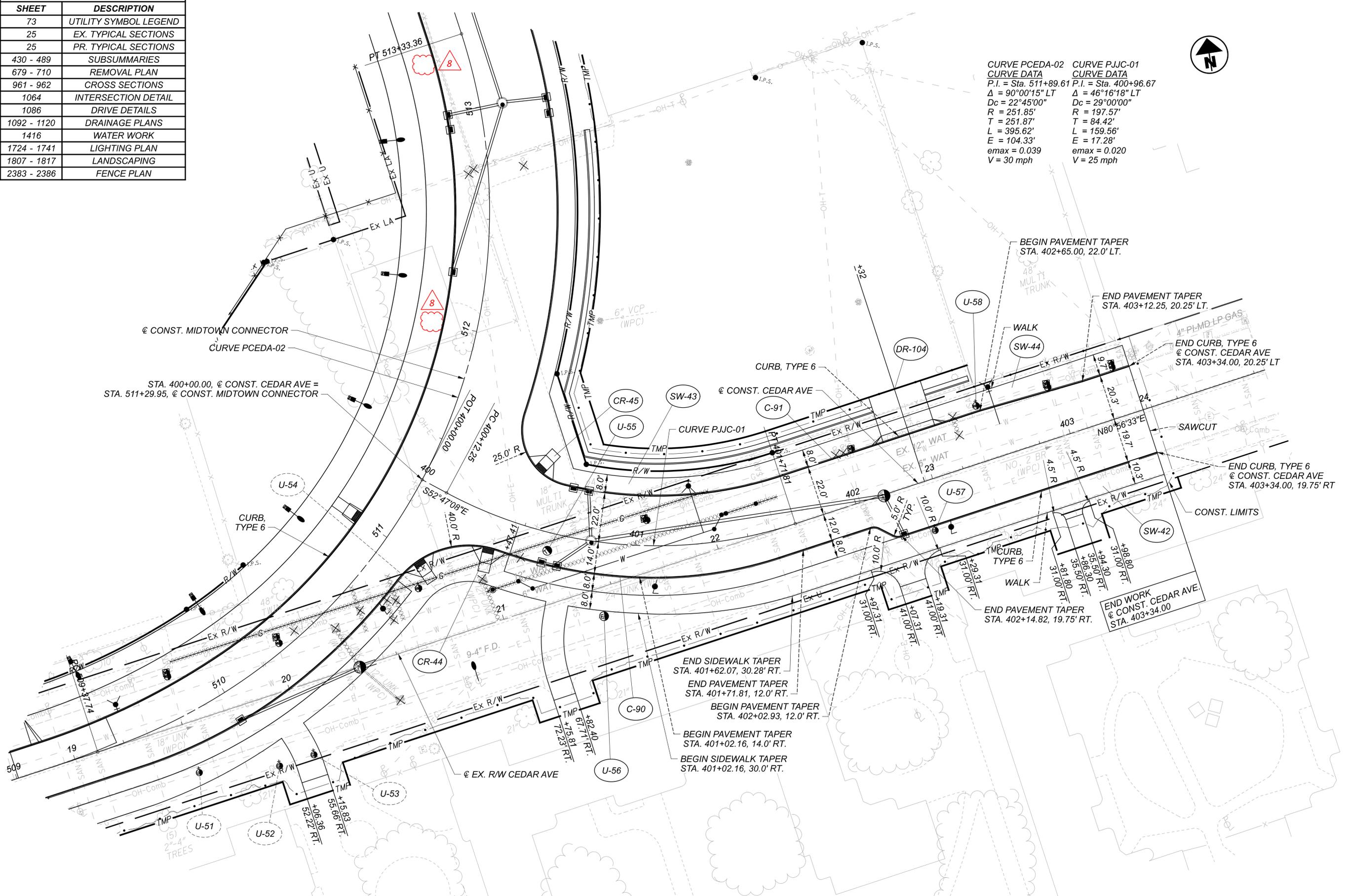
DESIGNER
KJM

REVIEWER
KGJ 05/22/24

PROJECT ID
82382

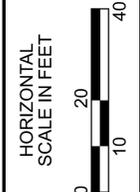
SHEET TOTAL
634 2696

CROSS REFERENCES	
SHEET	DESCRIPTION
73	UTILITY SYMBOL LEGEND
25	EX. TYPICAL SECTIONS
25	PR. TYPICAL SECTIONS
430 - 489	SUBSUMMARIES
679 - 710	REMOVAL PLAN
961 - 962	CROSS SECTIONS
1064	INTERSECTION DETAIL
1086	DRIVE DETAILS
1092 - 1120	DRAINAGE PLANS
1416	WATER WORK
1724 - 1741	LIGHTING PLAN
1807 - 1817	LANDSCAPING
2383 - 2386	FENCE PLAN



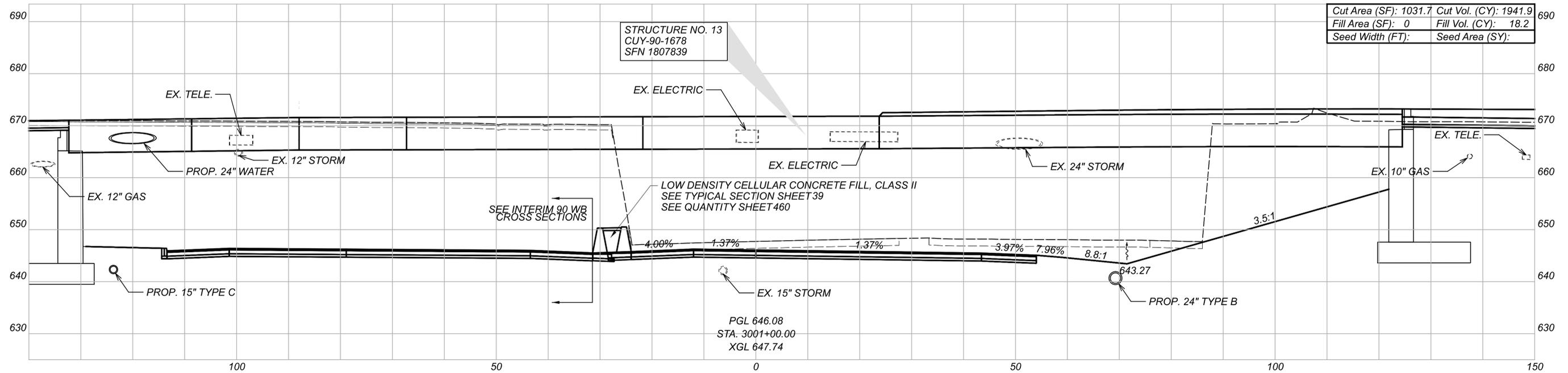
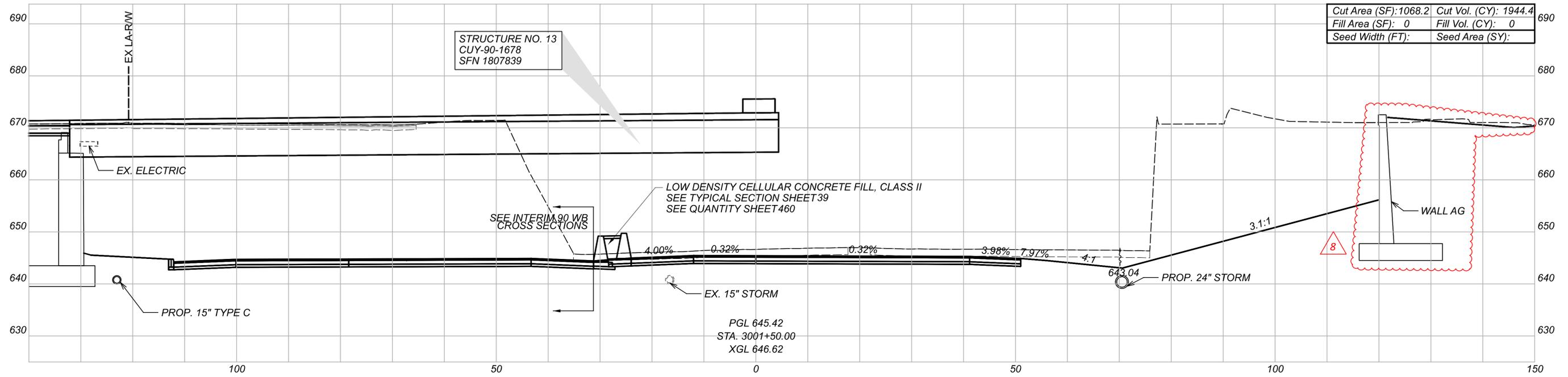
CURVE PCEDA-02
 CURVE DATA
 P.I. = Sta. 511+89.61
 $\Delta = 90^{\circ}00'15''$ LT
 $D_c = 22^{\circ}45'00''$
 $R = 251.85'$
 $T = 251.87'$
 $L = 395.62'$
 $E = 104.33'$
 $e_{max} = 0.039$
 $V = 30$ mph

CURVE PJJC-01
 CURVE DATA
 P.I. = Sta. 400+96.67
 $\Delta = 46^{\circ}16'18''$ LT
 $D_c = 29^{\circ}00'00''$
 $R = 197.57'$
 $T = 84.42'$
 $L = 159.56'$
 $E = 17.28'$
 $e_{max} = 0.020$
 $V = 25$ mph



PLAN - CEDAR AVE.
 STA. 400+00.00 TO END

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382
SHEET	TOTAL
644	2696



CROSS SECTIONS
INTERIM I.R. 90 EB

DESIGN AGENCY



DESIGNER
AJS

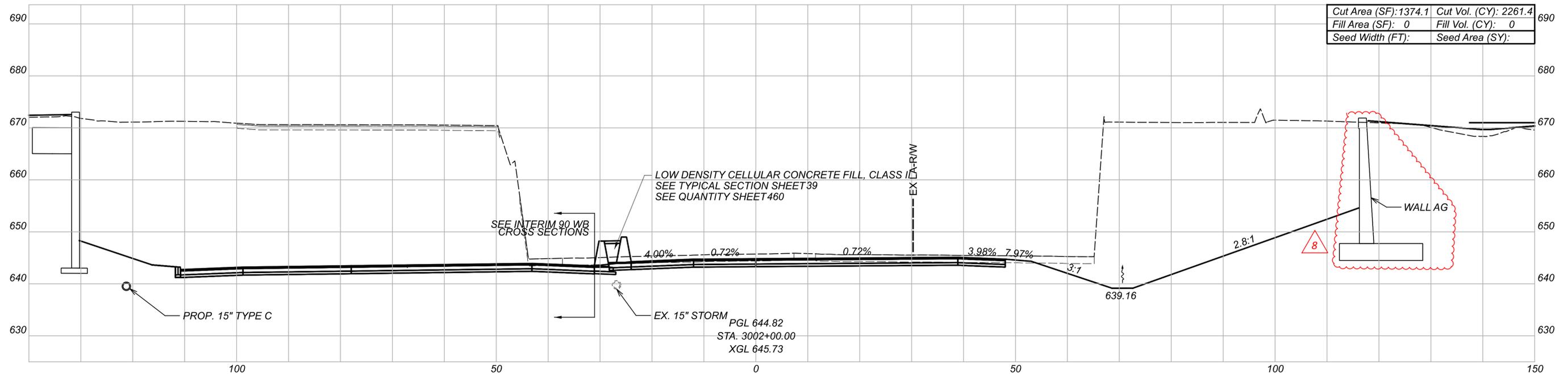
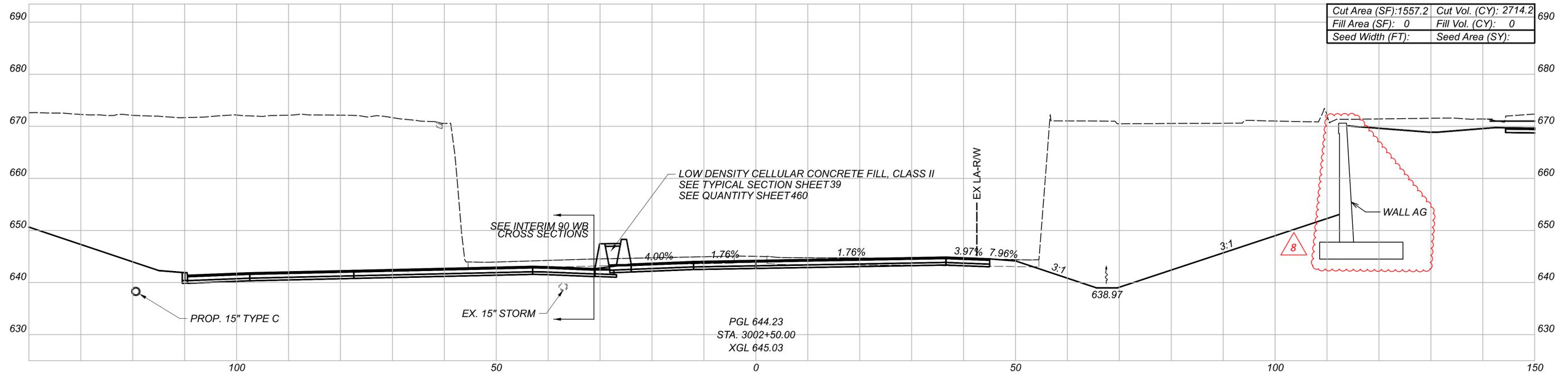
REVIEWER

MRT 05/01/24

PROJECT ID

82832

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	3887	.19	737	2696



CROSS SECTIONS
 INTERIM I.R. 90 EB

DESIGN AGENCY

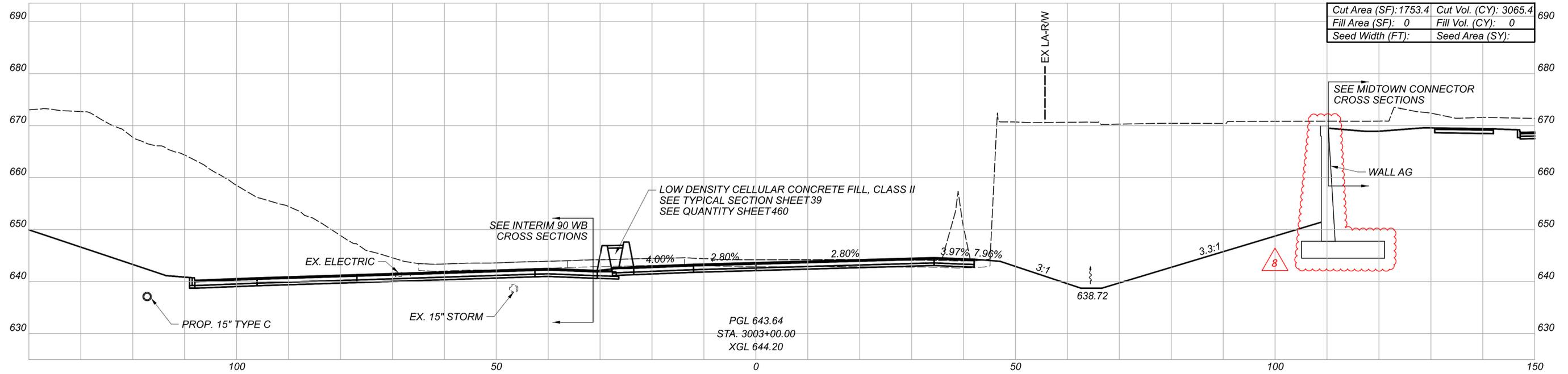
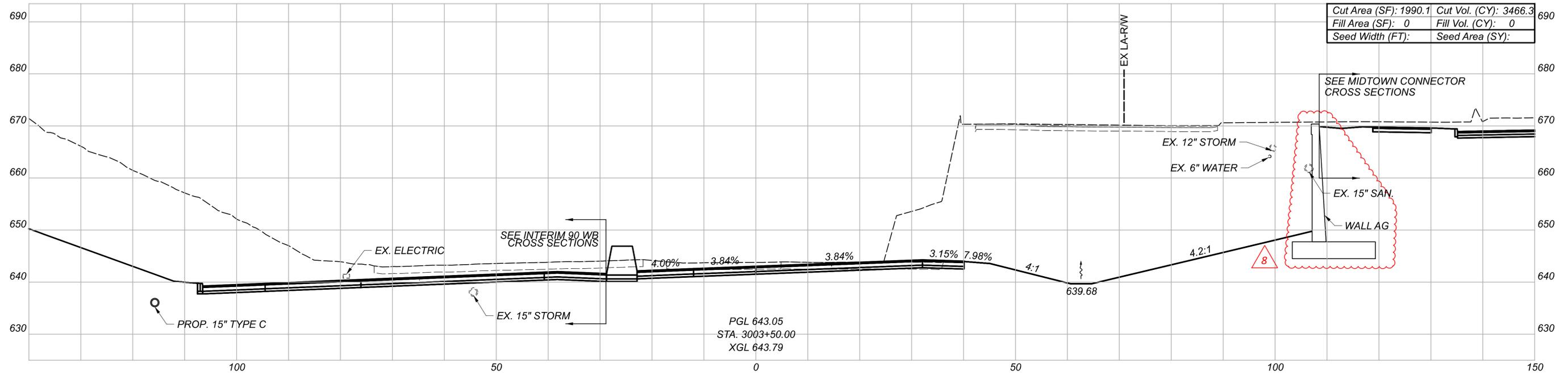


DESIGNER
 AJS

REVIEWER
 MRT 05/01/24

PROJECT ID
 82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	4976	0	738	2696



CROSS SECTIONS
INTERIM I.R. 90 EB

DESIGN AGENCY

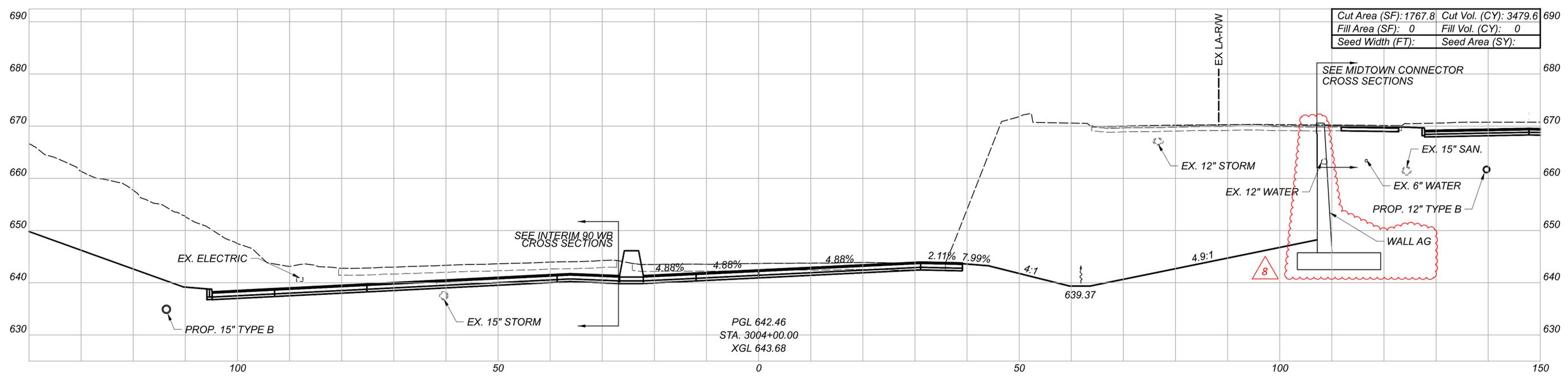
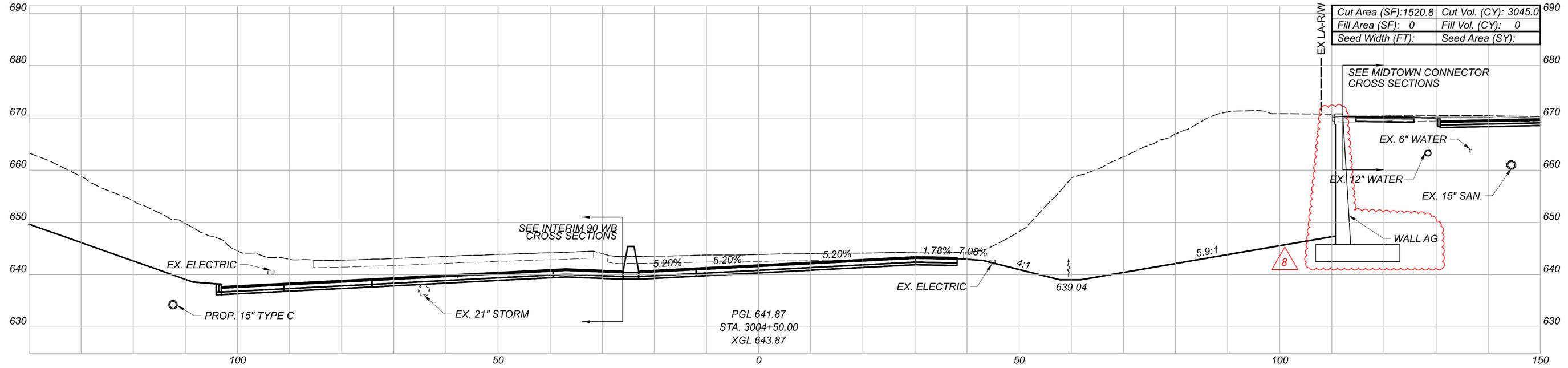


DESIGNER
AJS

REVIEWER
MRT 05/01/24

PROJECT ID
82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
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CROSS SECTIONS
INTERIM I.R. 90 EB

DESIGN AGENCY

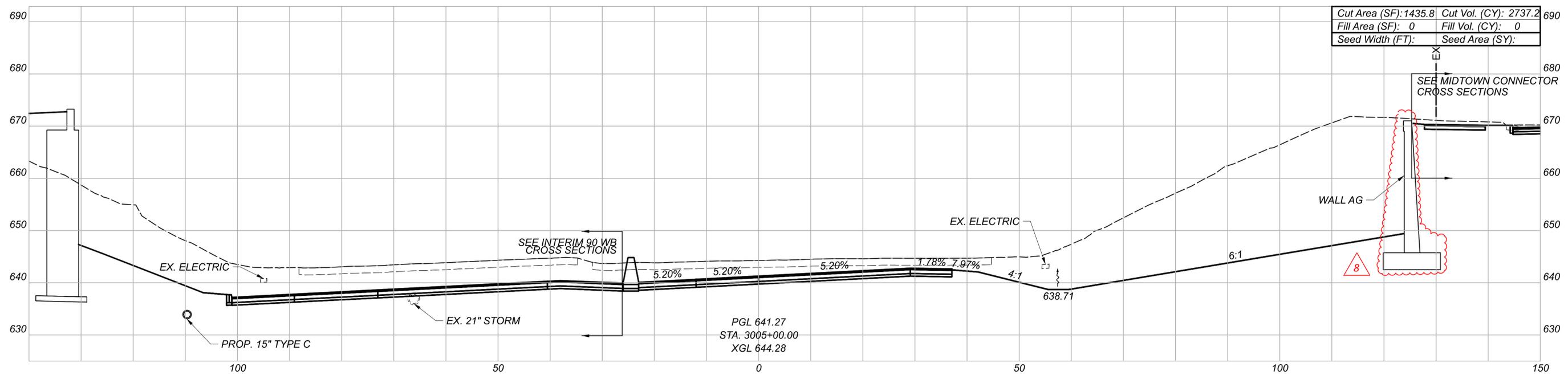
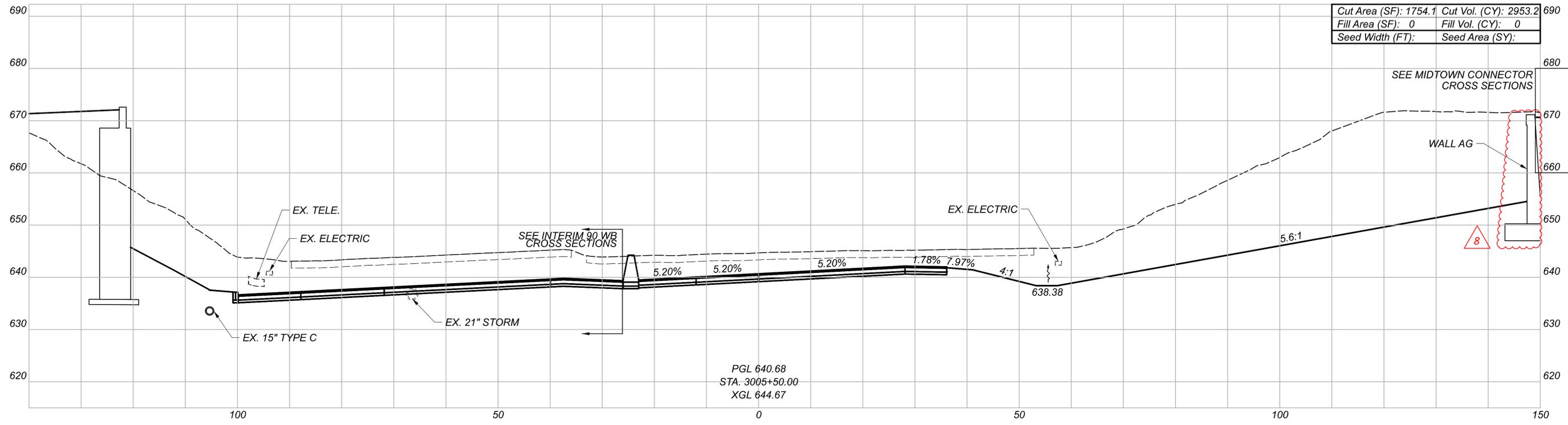


DESIGNER
AJS

REVIEWER
MRT 05/01/24

PROJECT ID
82382

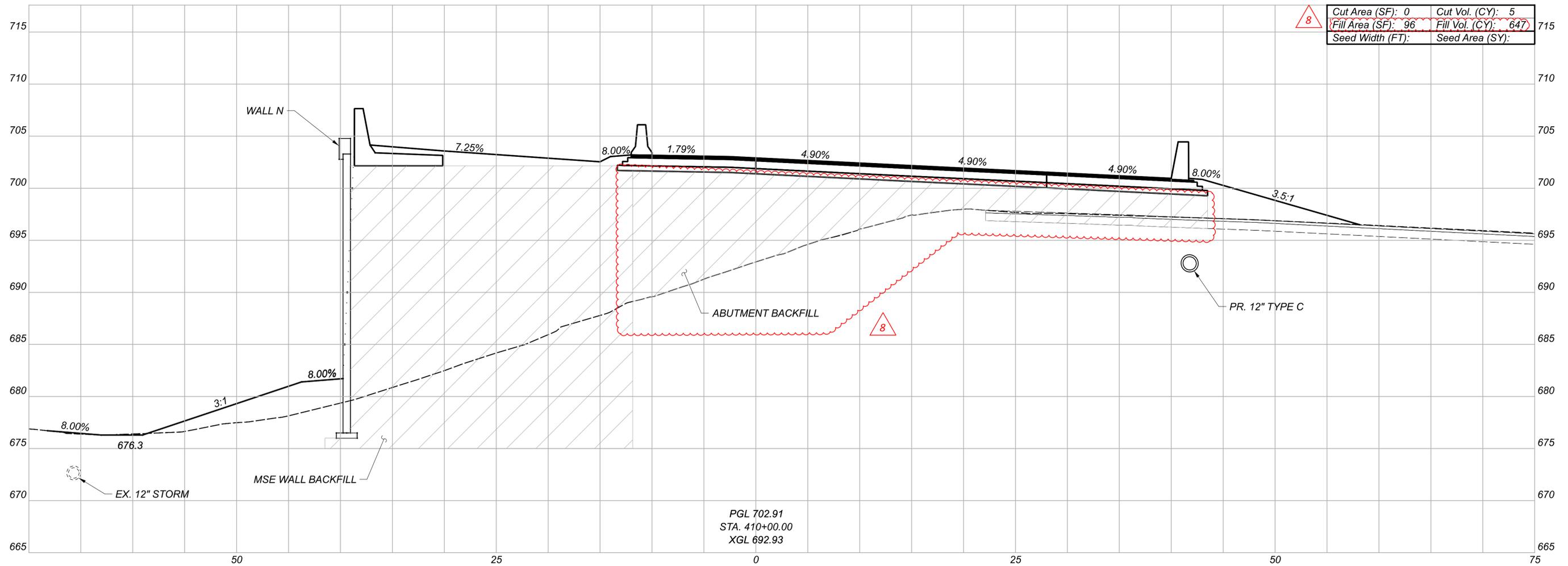
Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	6525	0	740	2696



CROSS SECTIONS
 INTERIM I.R. 90 EB

DESIGN AGENCY
B&N
 burgessniple.com
 DESIGNER
 AJS
 REVIEWER
 MRT 05/01/24
 PROJECT ID
 82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	5691	0	741	2696



PGL 702.91
 STA. 410+00.00
 XGL 692.93

Cut Area (SF): 0	Cut Vol. (CY): 5
Fill Area (SF): 96	Fill Vol. (CY): 647
Seed Width (FT):	Seed Area (SY):

CROSS SECTIONS
 RAMP A2

DESIGN AGENCY



DESIGNER

BMV

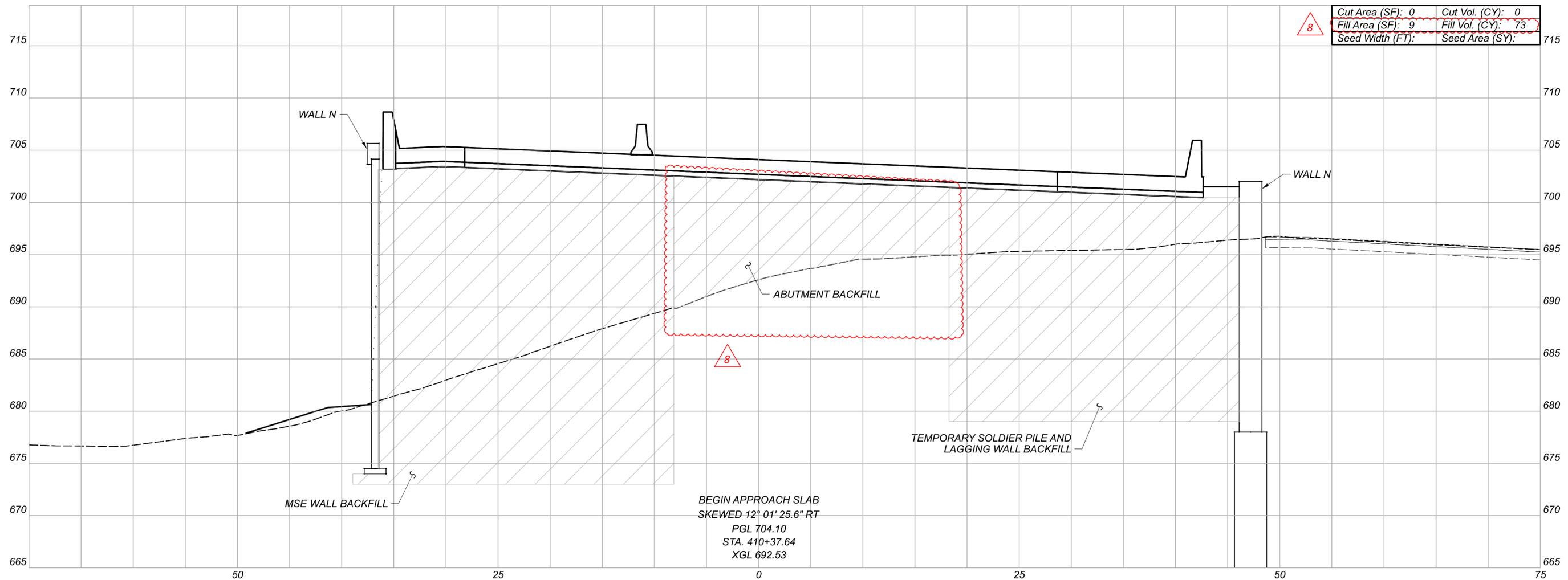
REVIEWER

TJS 04/30/24

PROJECT ID

82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	5	647	807	2696



BEGIN APPROACH SLAB
 SKEWED 12° 01' 25.6" RT
 PGL 704.10
 STA. 410+37.64
 XGL 692.53

Cut Area (SF): 0	Cut Vol. (CY): 0
Fill Area (SF): 9	Fill Vol. (CY): 73
Seed Width (FT):	Seed Area (SY):

CROSS SECTIONS
 RAMP A2

DESIGN AGENCY

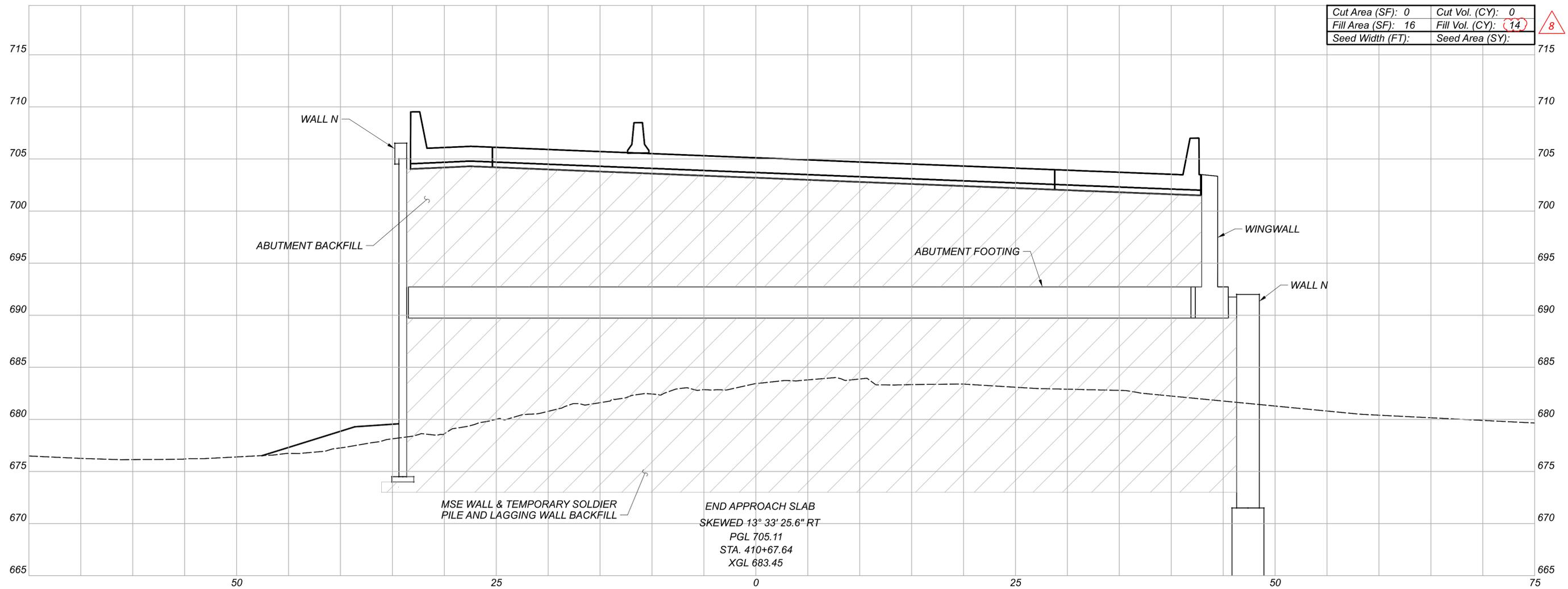


DESIGNER
 BMV

REVIEWER
 TJS 04/30/24

PROJECT ID
 82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
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CROSS SECTIONS
RAMP A2

DESIGN AGENCY

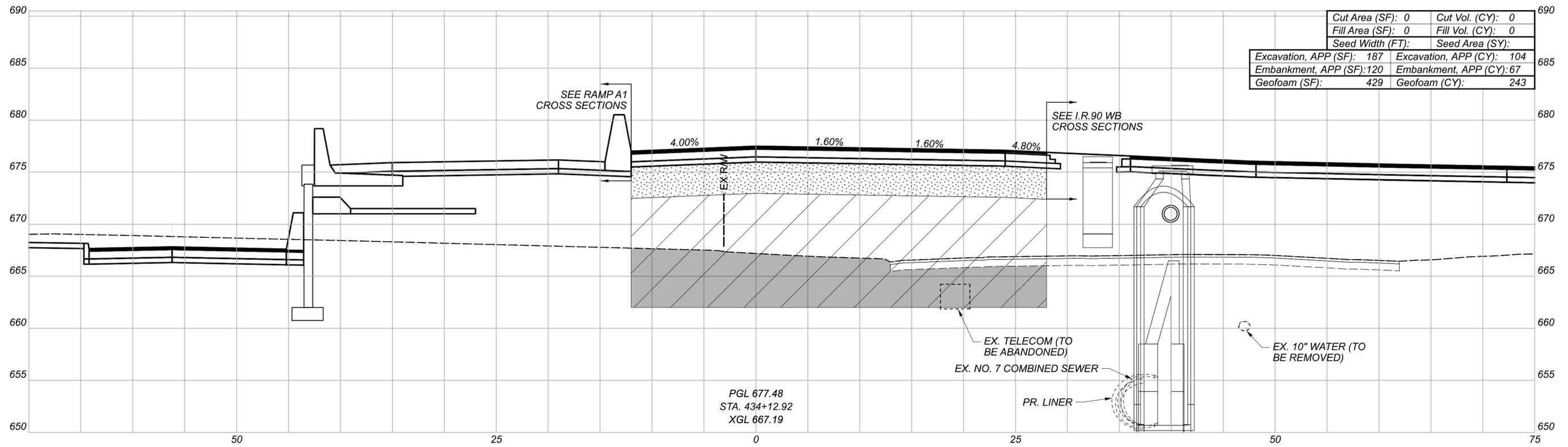


DESIGNER
BMV

REVIEWER
TJS 04/30/24

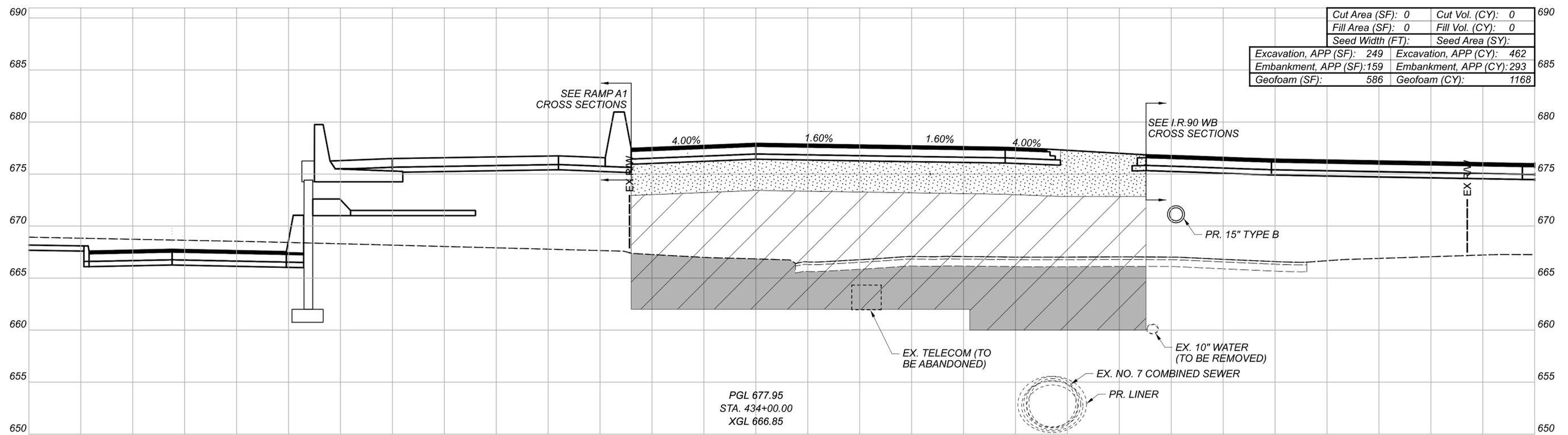
PROJECT ID
82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	0	14	809	2696



Cut Area (SF):	0	Cut Vol. (CY):	0
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	
Excavation, APP (SF):	187	Excavation, APP (CY):	104
Embankment, APP (SF):	120	Embankment, APP (CY):	67
Geofoam (SF):	429	Geofoam (CY):	243

PGL 677.48
 STA. 434+12.92
 XGL 667.19



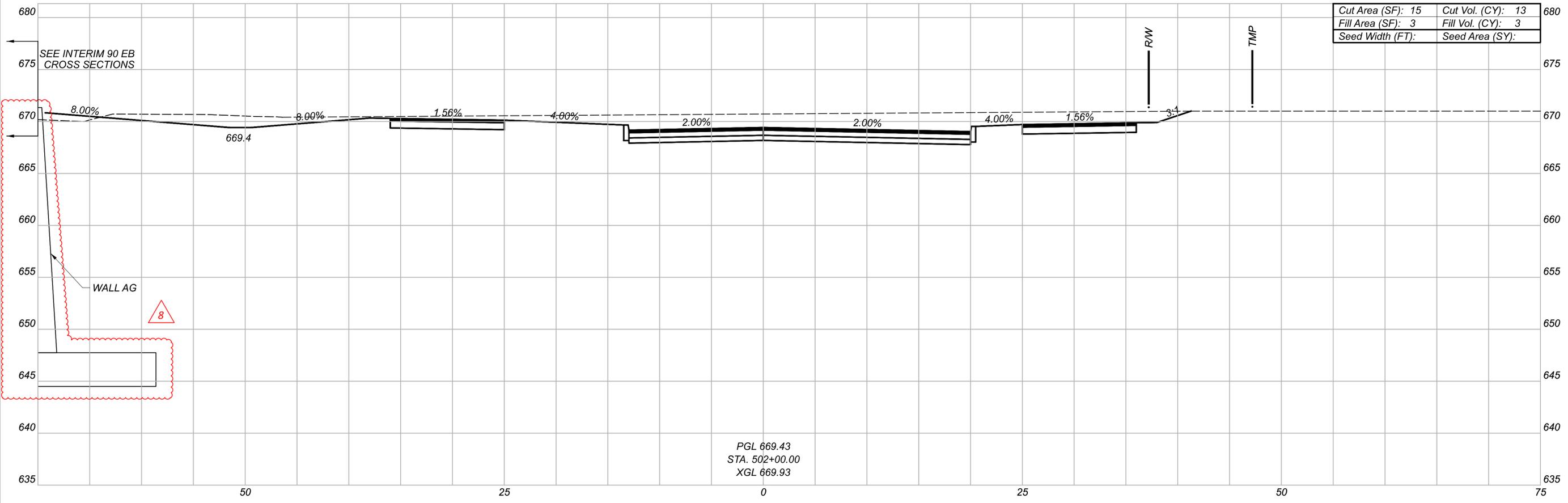
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Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	
Excavation, APP (SF):	249	Excavation, APP (CY):	462
Embankment, APP (SF):	159	Embankment, APP (CY):	293
Geofoam (SF):	586	Geofoam (CY):	1168

PGL 677.95
 STA. 434+00.00
 XGL 666.85

- LEGEND**
- ITEM 203 - EMBANKMENT, AS PER PLAN
 - ITEM 203 - ROADWAY MISC.: EPS GEOFOAM FILL
 - ITEM 203 - EXCAVATION, AS PER PLAN

Sheet Totals			Grand Totals Carried to Subsummary		
Seeding	Cut	Fill	Seeding	Cut	Fill
0	0	0	0	2166	3881
Embankment, APP	Excavation, APP	Geofoam	Embankment, APP	Excavation, APP	Geofoam
360	566	1411	2402	3895	13586

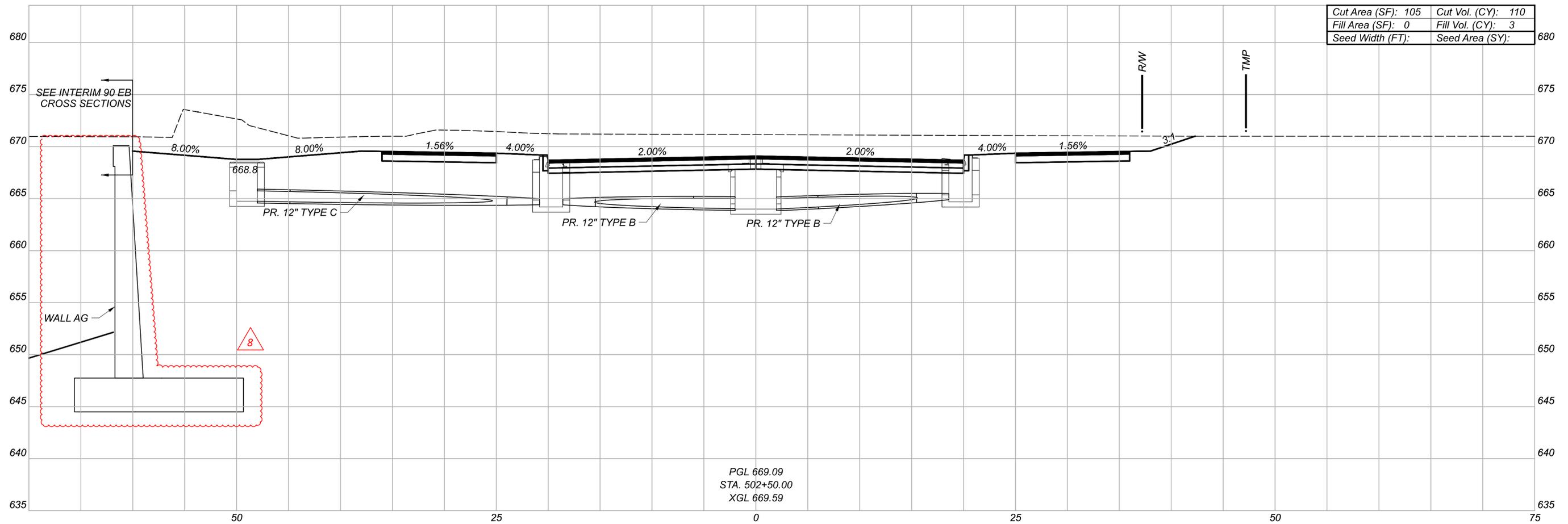
CROSS SECTIONS
 RAMP A2



CROSS SECTIONS
MIDTOWN CONNECTOR

DESIGN AGENCY	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	13	3	948	2696



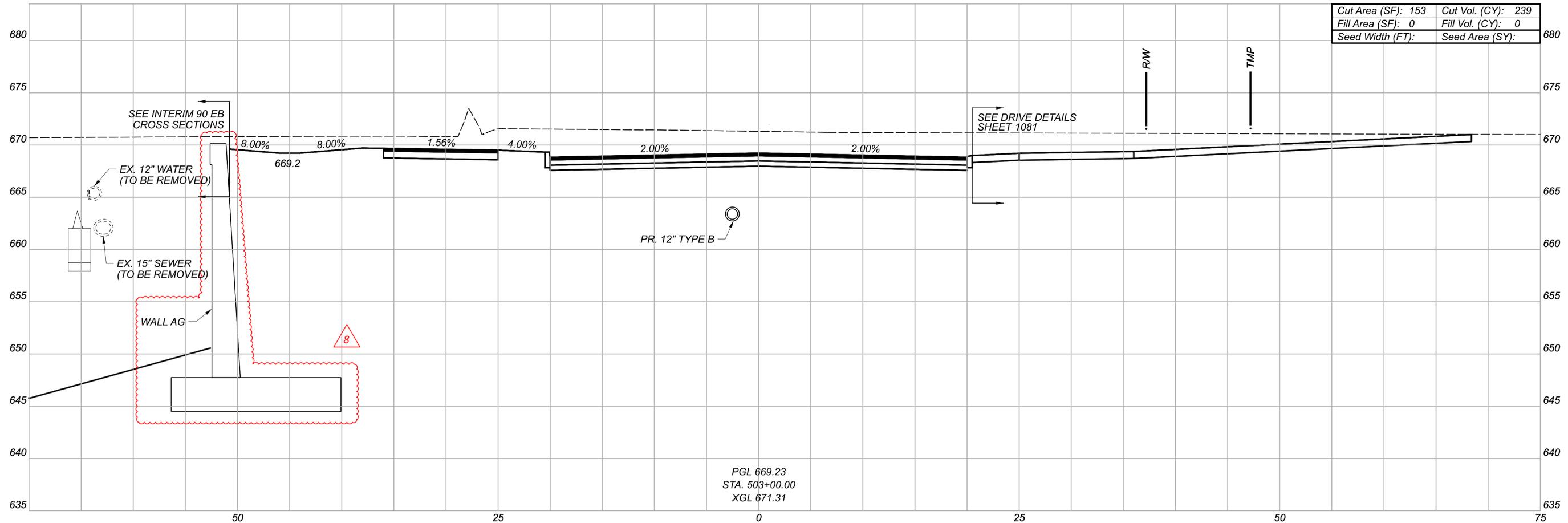
Cut Area (SF):	105	Cut Vol. (CY):	110
Fill Area (SF):	0	Fill Vol. (CY):	3
Seed Width (FT):		Seed Area (SY):	

PGL 669.09
 STA. 502+50.00
 XGL 669.59

Sheet Totals			
Seeding	Cut	Fill	TOTAL
0	110	3	2696

DESIGN AGENCY	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

CROSS SECTIONS
 MIDTOWN CONNECTOR



Cut Area (SF):	153	Cut Vol. (CY):	239
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	

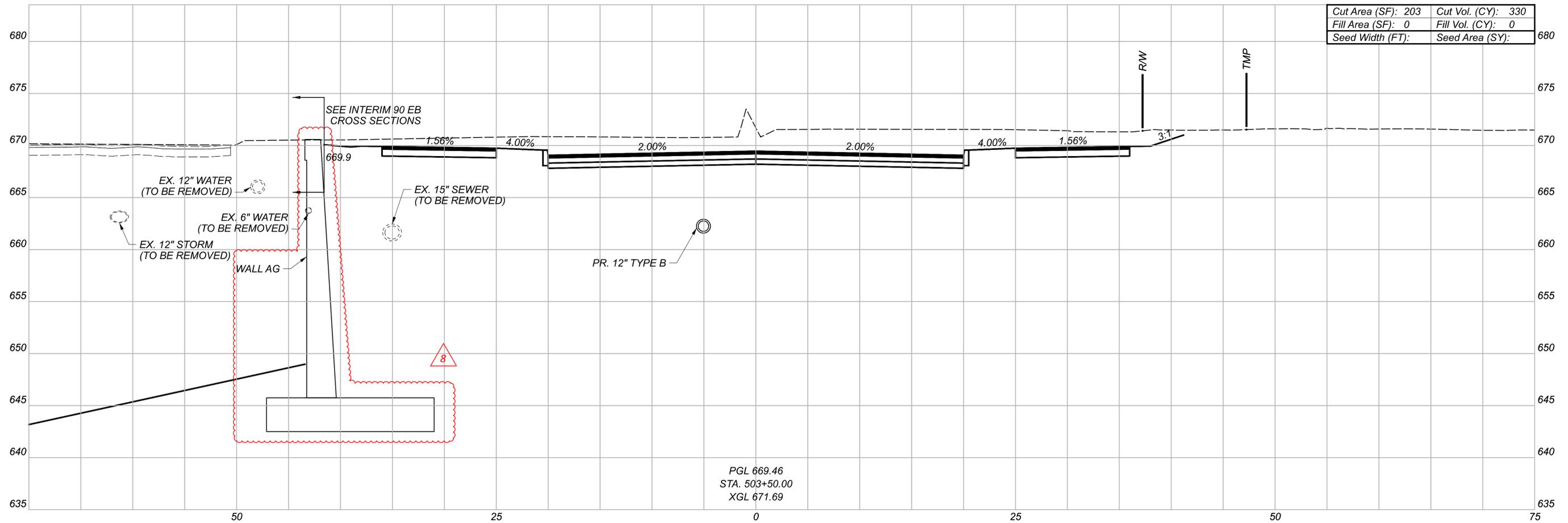
PGL 669.23
 STA. 503+00.00
 XGL 671.31

Sheet Totals			82382	
Seeding	Cut	Fill	SHEET	TOTAL
0	239	0	950	2696

DESIGN AGENCY	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

Michael Baker
 INTERNATIONAL

CROSS SECTIONS
 MIDTOWN CONNECTOR



Cut Area (SF): 203	Cut Vol. (CY): 330
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT):	Seed Area (SY):

PGL 669.46
 STA. 503+50.00
 XGL 671.69

CROSS SECTIONS
 MIDTOWN CONNECTOR

DESIGN AGENCY

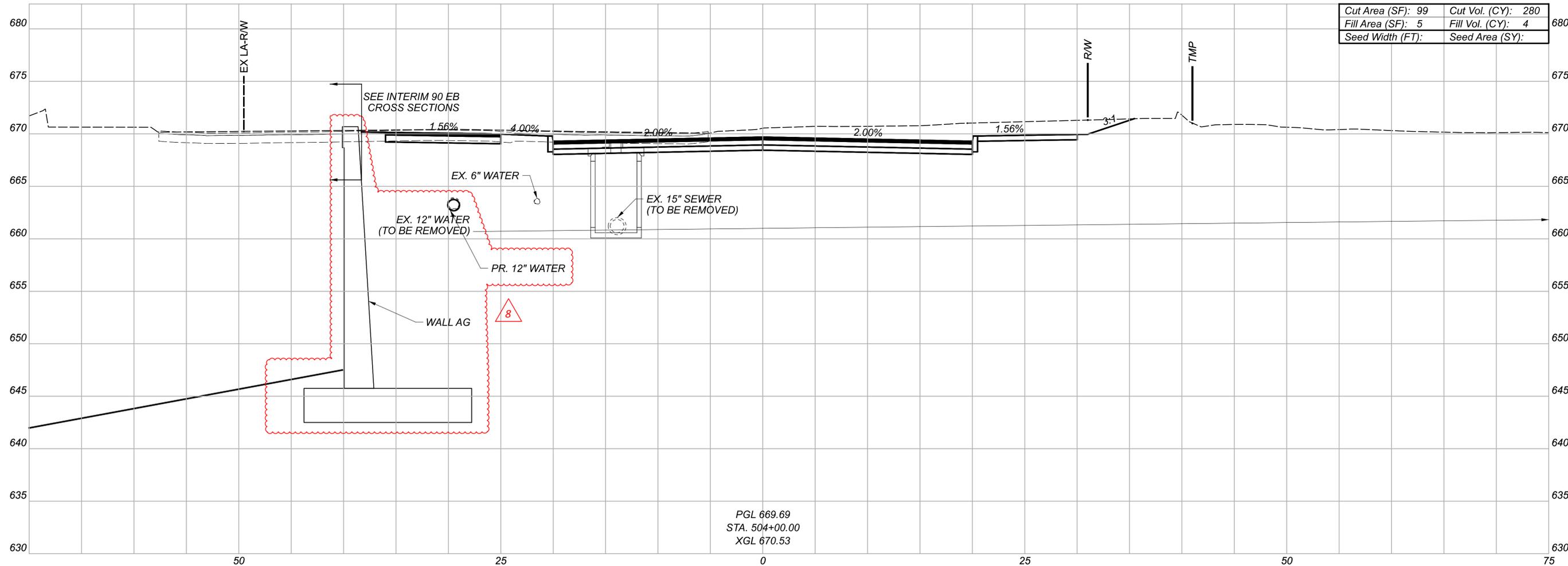
Michael Baker
 INTERNATIONAL

DESIGNER
 KJM

REVIEWER
 KGJ 05/22/24

PROJECT ID
 82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	330	0	951	2696



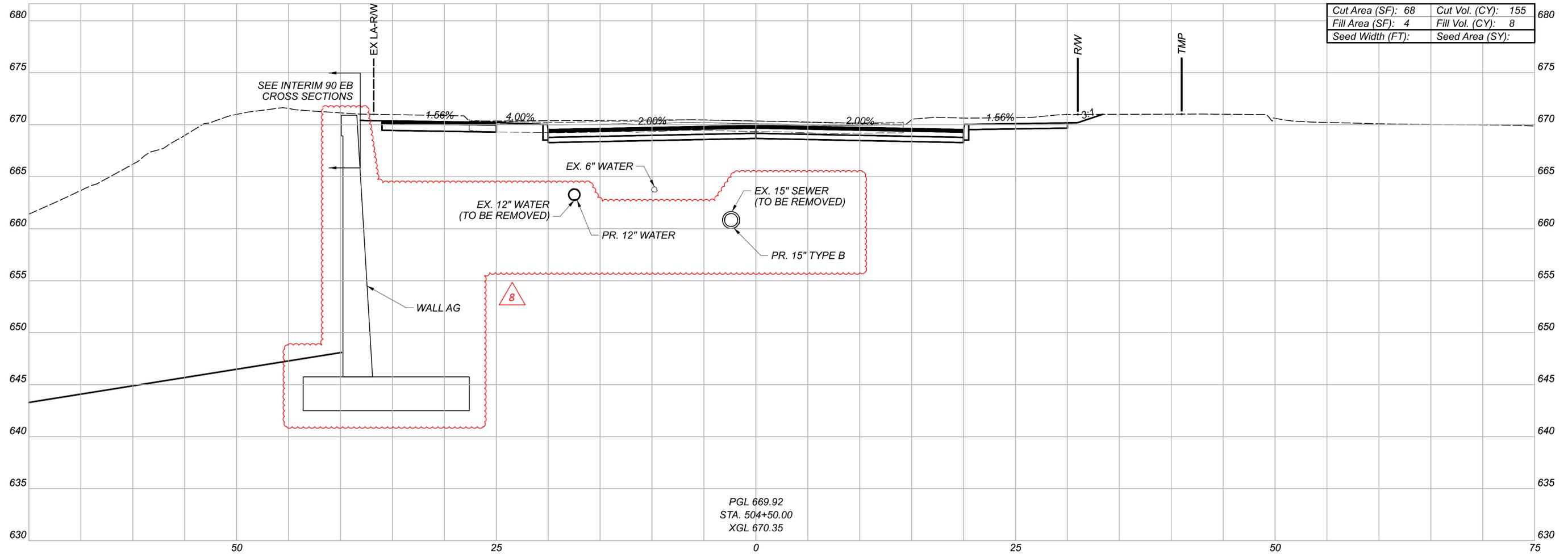
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Fill Area (SF):	5	Fill Vol. (CY):	4
Seed Width (FT):		Seed Area (SY):	

PGL 669.69
 STA. 504+00.00
 XGL 670.53

CROSS SECTIONS
 MIDTOWN CONNECTOR

DESIGN AGENCY	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	280	4	952	2696



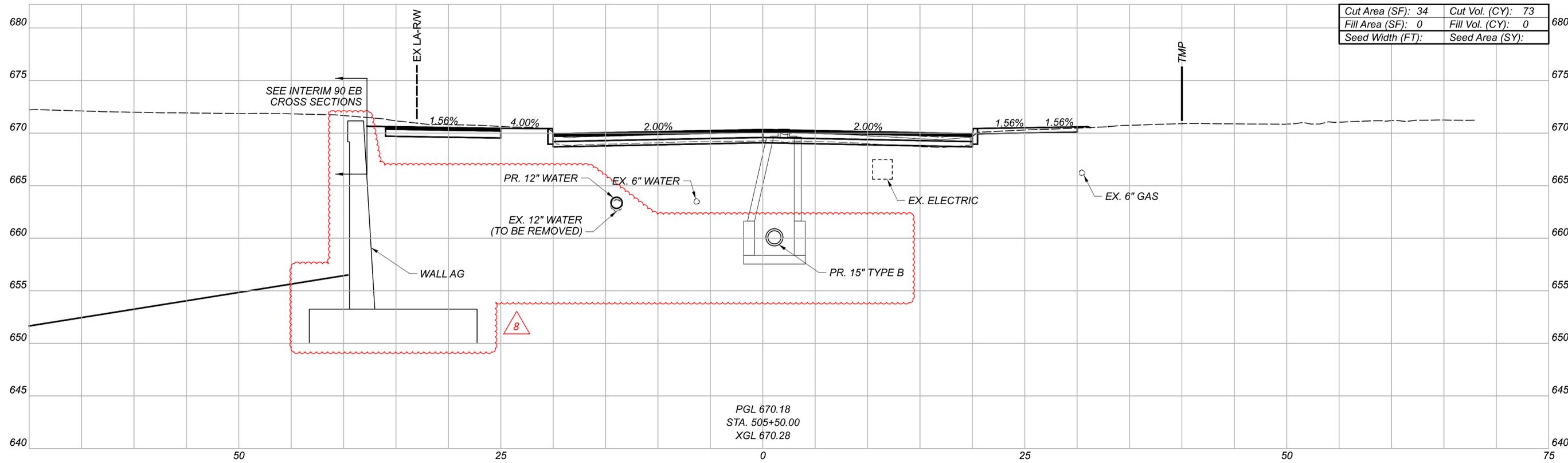
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Fill Area (SF):	4	Fill Vol. (CY):	8
Seed Width (FT):		Seed Area (SY):	

PGL 669.92
 STA. 504+50.00
 XGL 670.35

CROSS SECTIONS
 MIDTOWN CONNECTOR

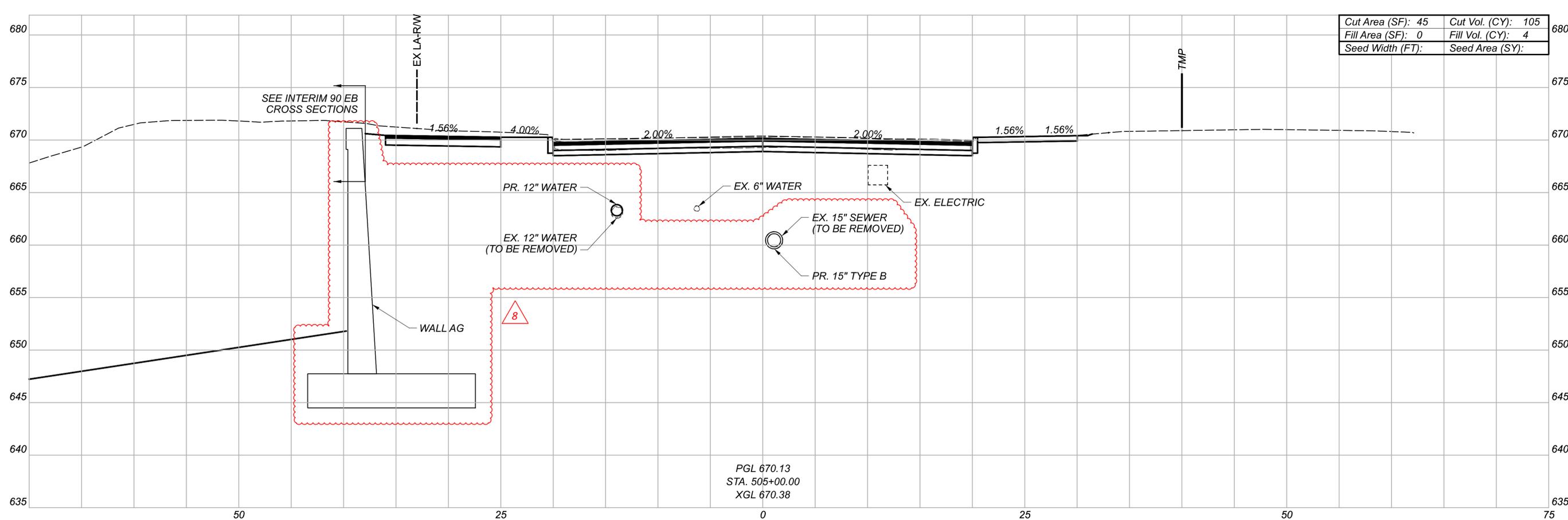
DESIGN AGENCY	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	155	8	953	2696



PGL 670.18
 STA. 505+50.00
 XGL 670.28

Cut Area (SF):	34	Cut Vol. (CY):	73
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	



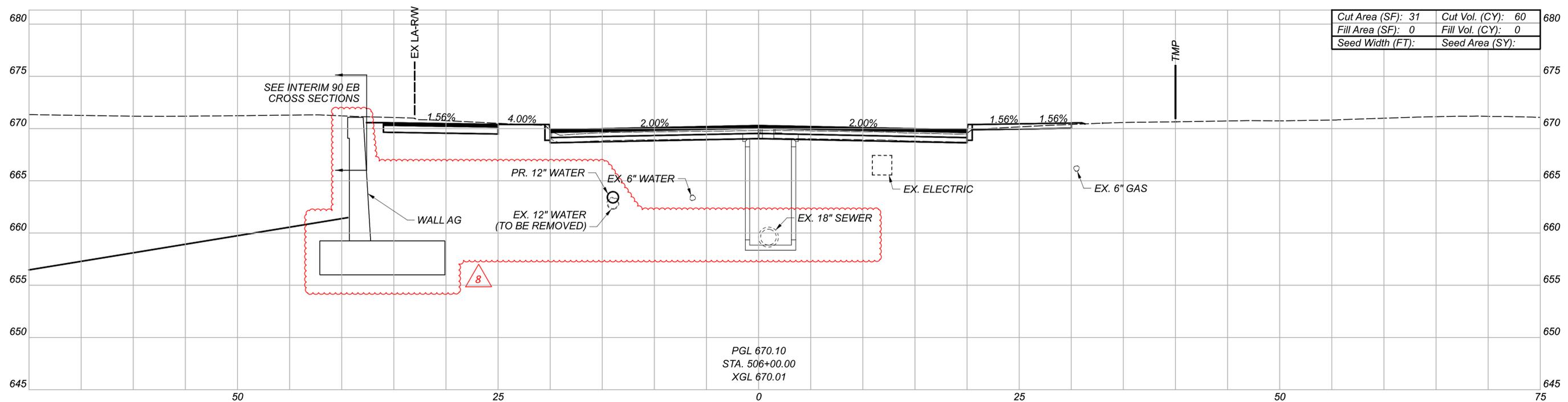
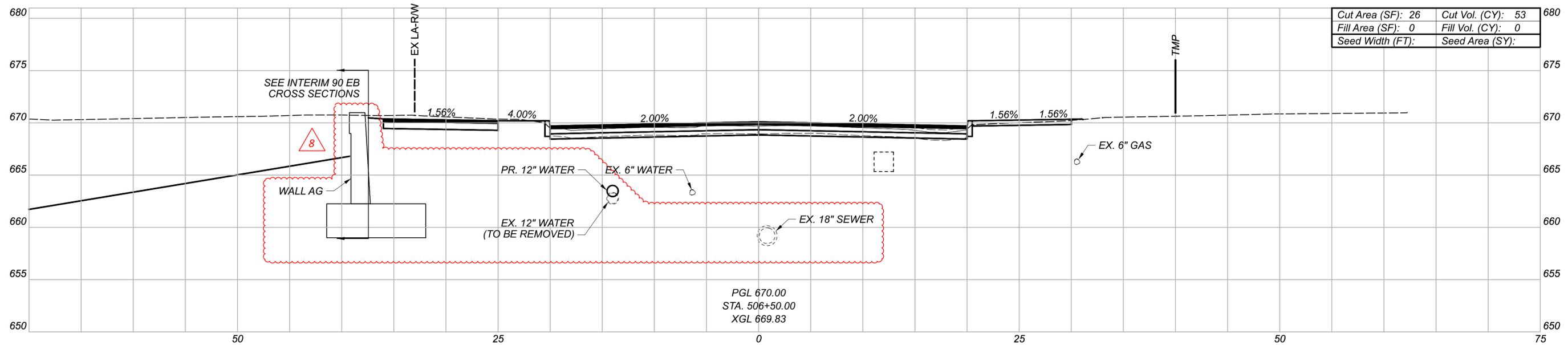
PGL 670.13
 STA. 505+00.00
 XGL 670.38

Cut Area (SF):	45	Cut Vol. (CY):	105
Fill Area (SF):	0	Fill Vol. (CY):	4
Seed Width (FT):		Seed Area (SY):	

CROSS SECTIONS
 MIDTOWN CONNECTOR

DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	178	4	954	2696

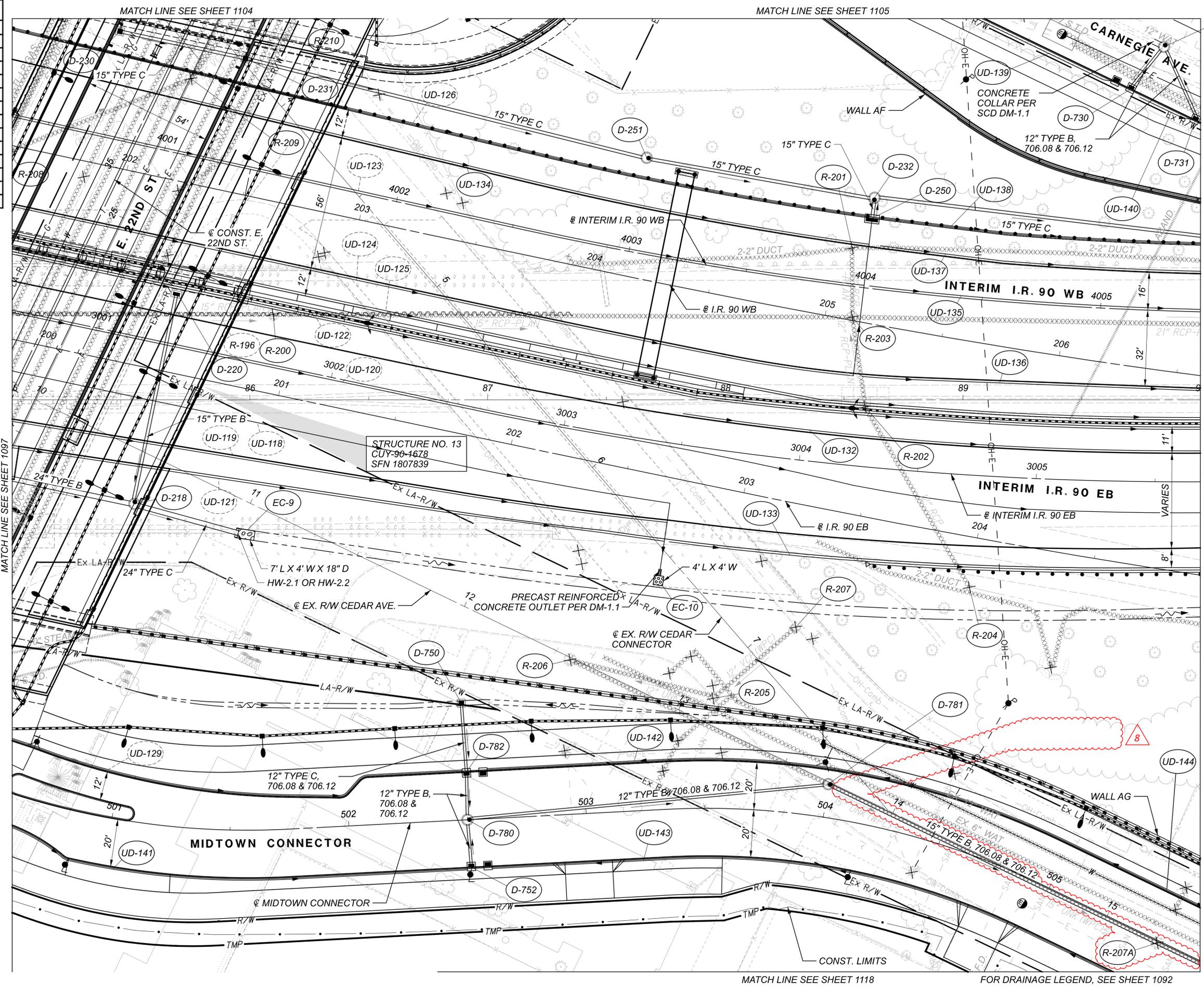


CROSS SECTIONS
 MIDTOWN CONNECTOR

DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
DESIGNER	KJM
REVIEWER	KGJ 05/22/24
PROJECT ID	82382

Sheet Totals			SHEET	TOTAL
Seeding	Cut	Fill		
0	113	0	955	2696

CROSS REFERENCES	
STRUCTURE	SHEET
D-218	1123
D-220	1124
D-230	1125
D-231	1125
D-232	1125
D-250	1127
D-251	1125
D-730	1145
D-731	1145
D-750	1157
D-752	1157
D-780	1158
D-782	1157

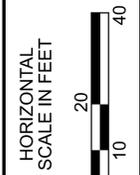


MATCH LINE SEE SHEET 1097

MATCH LINE SEE SHEET 1099

MATCH LINE SEE SHEET 1118

FOR DRAINAGE LEGEND, SEE SHEET 1092

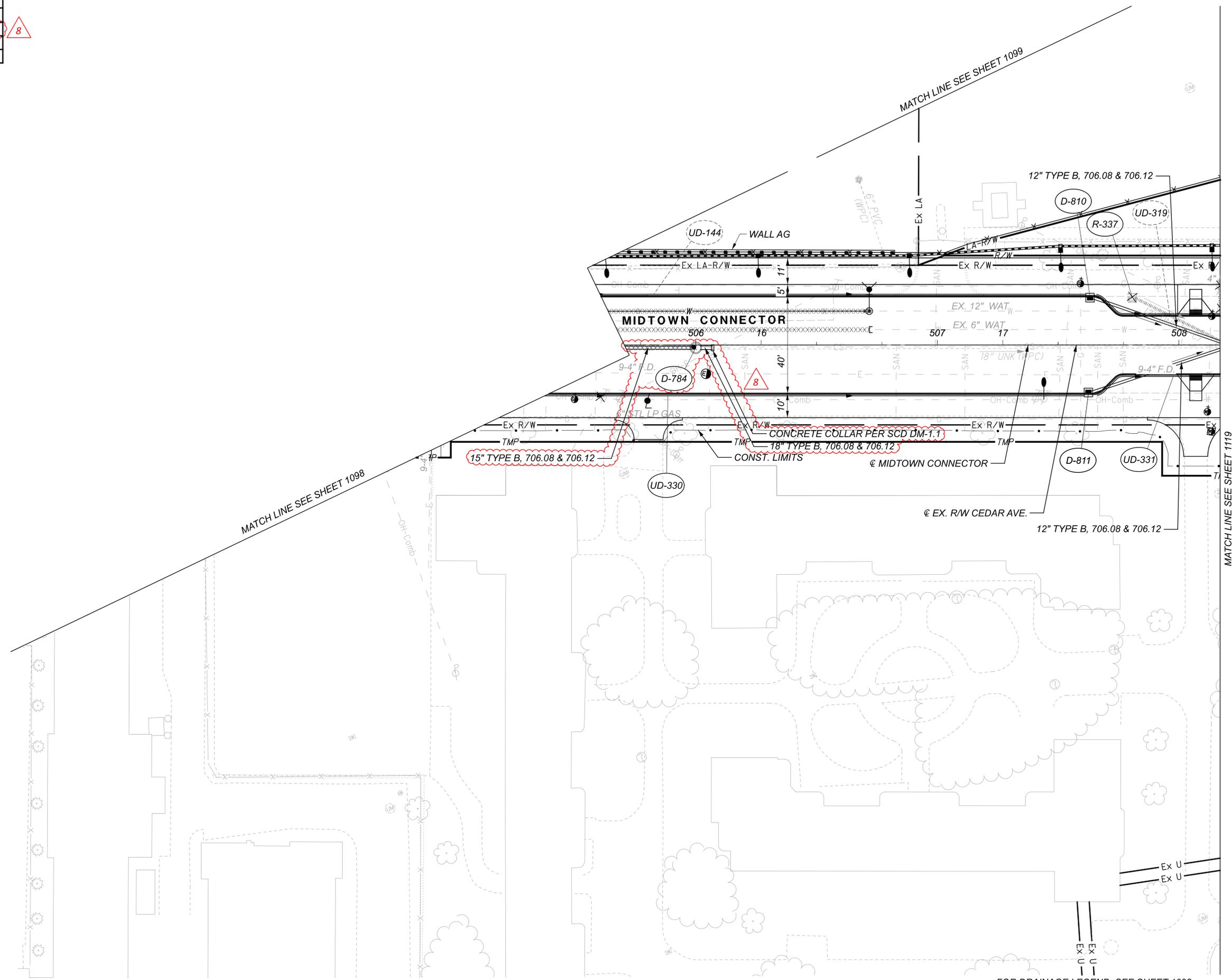


DRAINAGE PLAN
SHEET 6 OF 28

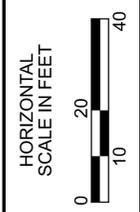
DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	BT
REVIEWER	KGJ 05/22/24
PROJECT ID	82382
SHEET	1098
TOTAL	2696

CROSS REFERENCES	
STRUCTURE	SHEET
D-784	1156
D-810	1148
D-811	1148

8



MATCH LINE SEE SHEET 1119



DRAINAGE PLAN
SHEET 26 OF 28

DESIGN AGENCY

Michael Baker
 INTERNATIONAL

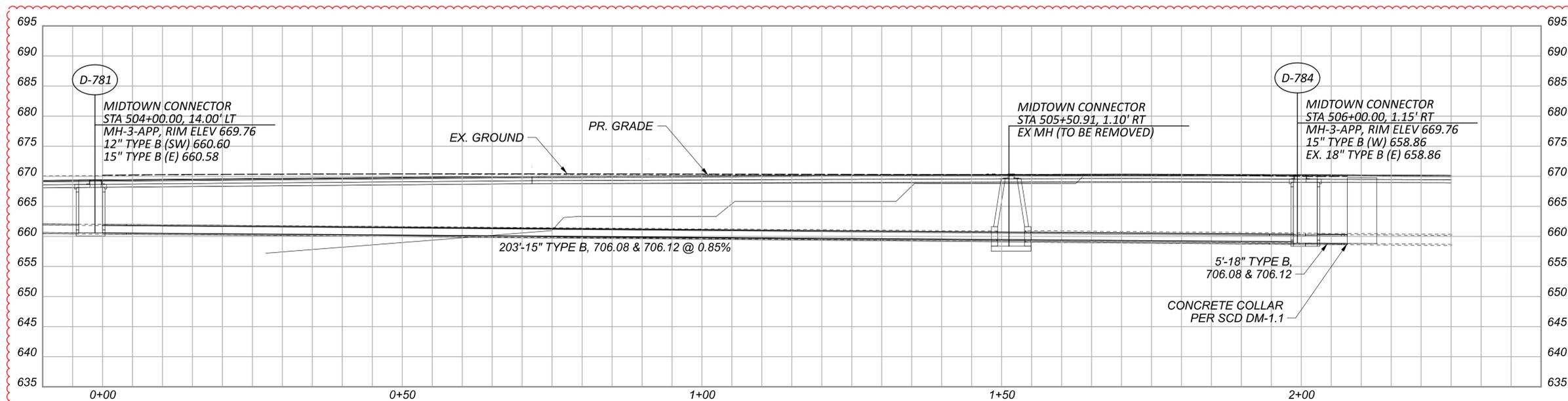
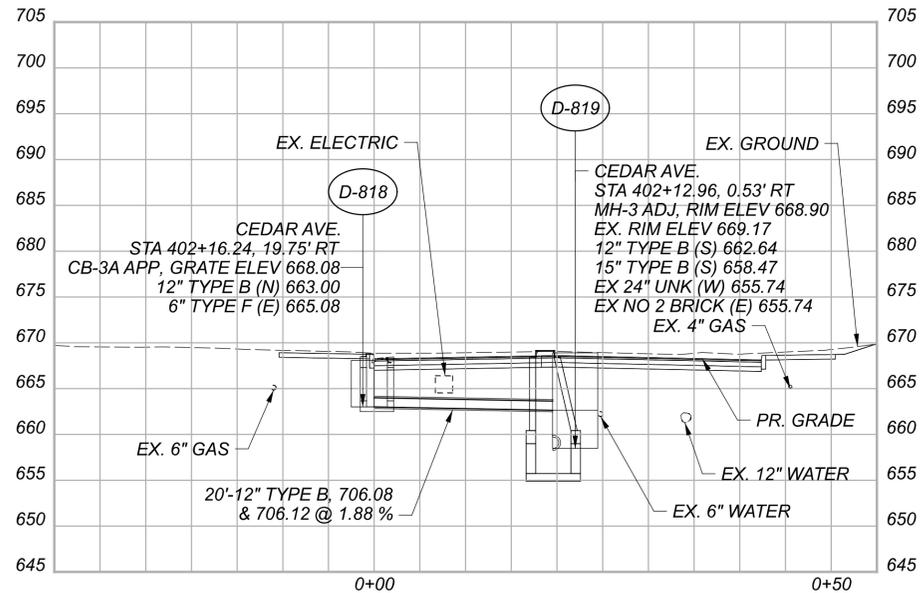
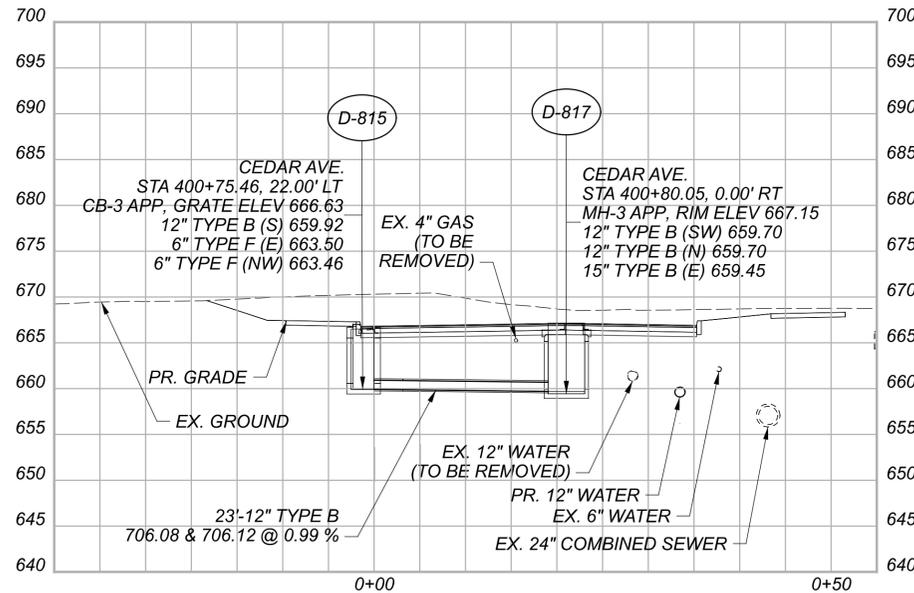
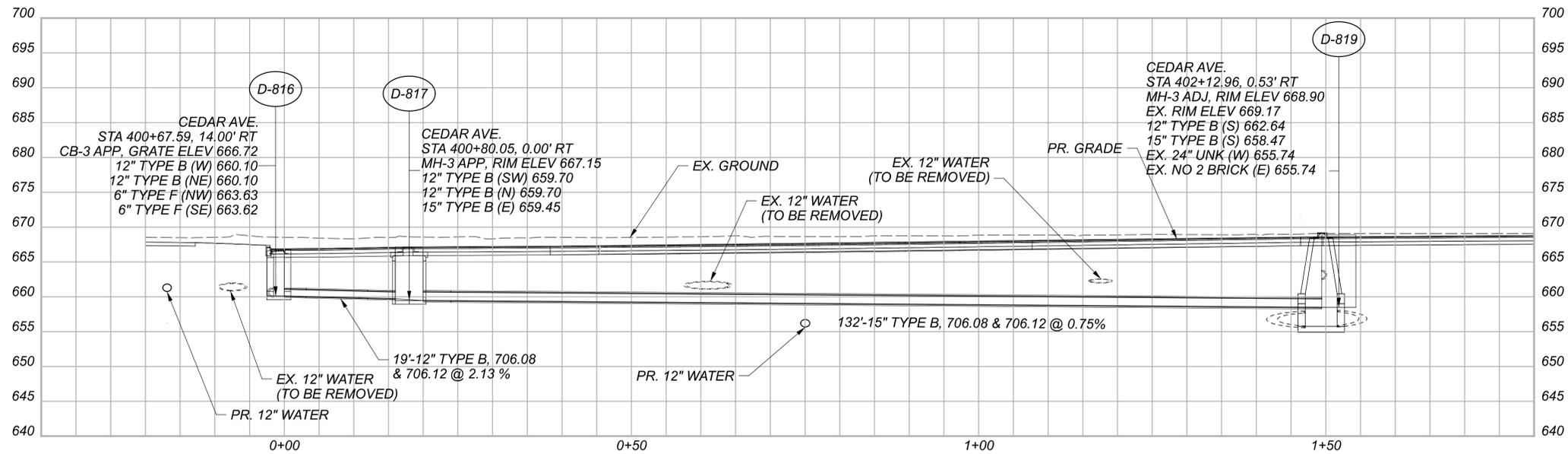
DESIGNER
 BJT

REVIEWER
 KGJ 05/22/24

PROJECT ID
 82382

SHEET	TOTAL
1118	2696

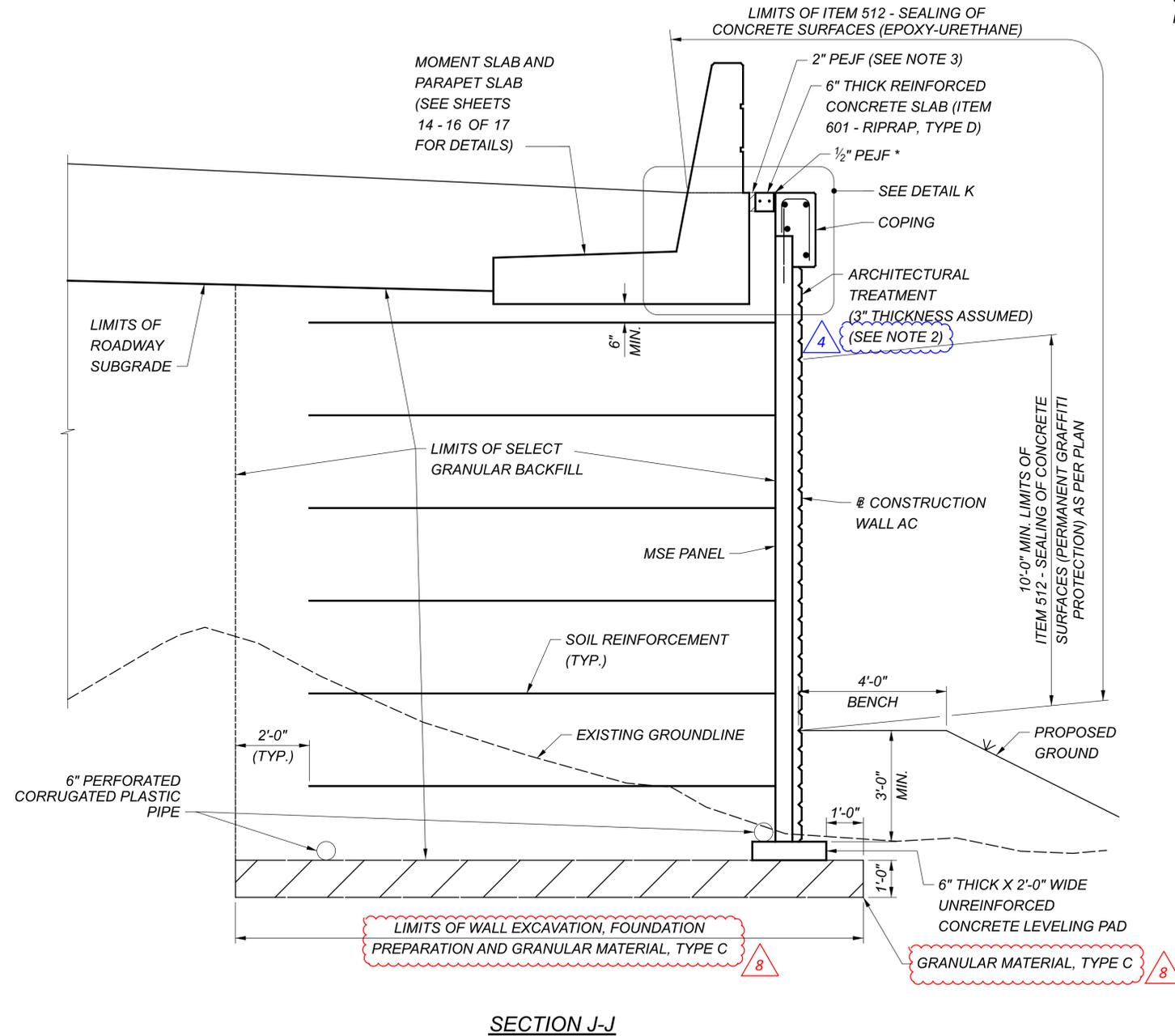
FOR DRAINAGE LEGEND, SEE SHEET 1092



CROSS REFERENCES	
STRUCTURE	SHEET
D-781	1098
D-784	1099
D-815	1119
D-816	1119
D-817	1119
D-818	1119

STORM SEWER PROFILES
 CEDAR AVE.

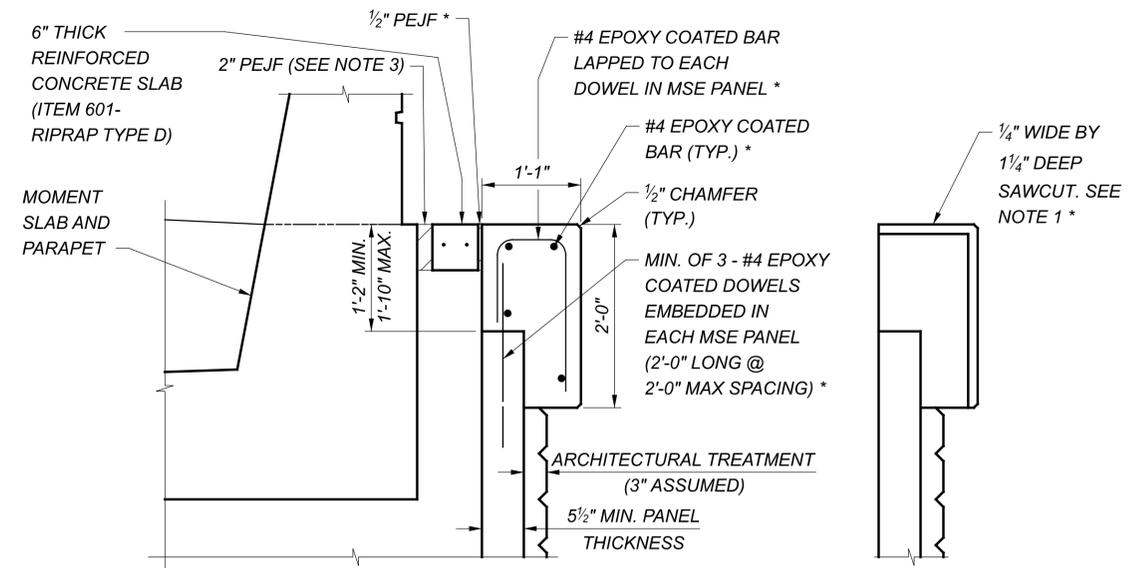
DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	BJT
REVIEWER	KGJ 05/22/24
PROJECT ID	82382
SHEET TOTAL	1156 2696



SECTION J-J

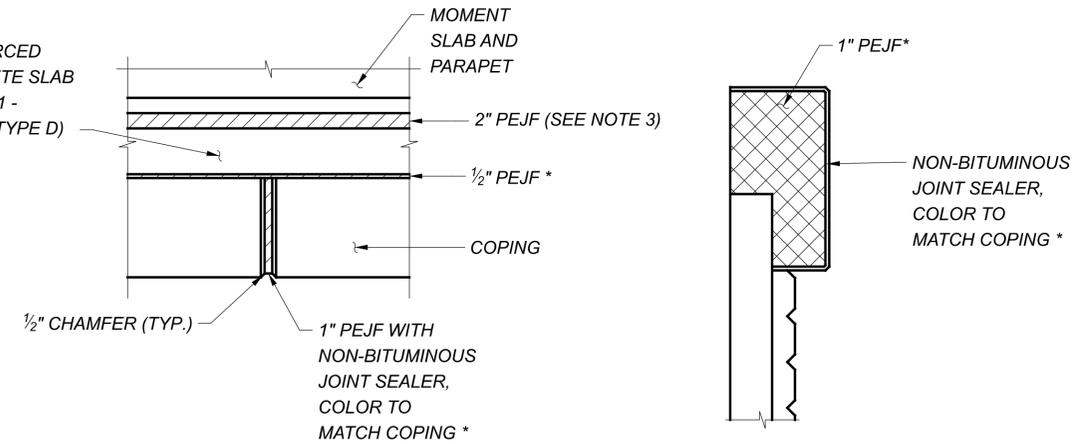
LEGEND:

* = INCLUDE WITH ITEM 840 - CONCRETE COPING, FOR PAYMENT



DETAIL K

SECTION COPING CONTRACTION JOINT



PLAN COPING EXPANSION JOINT

SECTION COPING EXPANSION JOINT

NOTES:

1. CONTRACTION JOINT: SAWCUT 1/4" DEEP CONTROL JOINTS ALONG THE PERIMETER AS SHOWN ON THIS SHEET AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE.

USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON FACES OF THE MSE COPING. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4".

SEAL THE PERIMETER OF THE CONTROL JOINT TO A MINIMUM DEPTH OF 1" WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO C920, TYPE S. LEAVE THE BOTTOM 1/2" OF THE OUTSIDE FACES OF THE COPING UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE. COLOR TO MATCH CONCRETE COPING.

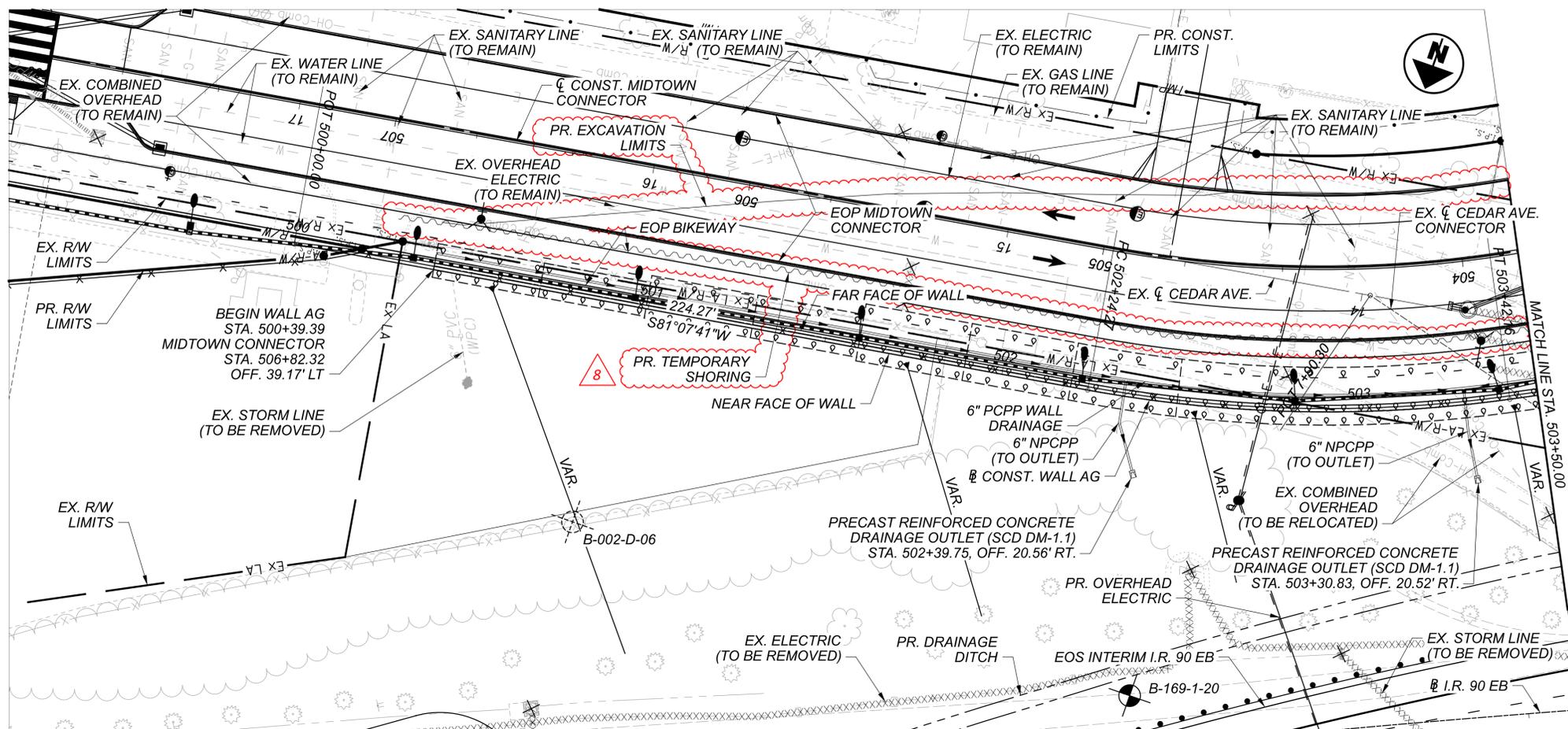
2. SEE SHEET 1865 FOR ARCHITECTURAL TREATMENT (AESTHETIC PATTERNS) ON FACE OF MSE PANELS.

3. 2" PEJF IS INCLUDED WITH CLASS QC2 CONCRETE, MISC.: MOMENT SLAB AND PARAPET WITH QC/QA FOR PAYMENT.

4. SEE SHEETS 1 AND 2 OF 17 FOR LOCATIONS OF SECTION J-J.

SFN	N/A
DESIGN AGENCY	
DESIGNER	CAS
CHECKER	ODW
REVIEWER	DWL
DATE	06/22/22
PROJECT ID	82382
SUBSET	12
TOTAL	17
SHEET	1185
TOTAL	2696





PLAN

BENCHMARK DATA

BM #54 STA. 33+03.27	ELEV. 672.54	OFFSET 36.13 RT.	CUT CROSS
BM #62 STA. 35+24.62	ELEV. 672.11	OFFSET 1174.60 LT.	RR SPIKE
BM #72 STA. 23+49.63	ELEV. 674.06	OFFSET 52.19 LT.	CUT CROSS
BM #73 STA. 37+05.22	ELEV. 671.90	OFFSET 407.77' LT.	CUT CROSS

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 4 / 2696

WALL AG

CURVE DATA

P.I. = Sta. 502+83.72
$\Delta = 18^{\circ}20'06''$ LT
$D_c = 15^{\circ}33'09''$
$R = 368.40'$
$T = 59.45'$
$L = 117.89'$
$E = 4.77'$

MIDTOWN CONNECTOR

CURVE DATA

P.I. = Sta. 504+17.17
$\Delta = 28^{\circ}38'45''$ LT
$D_c = 17^{\circ}30'00''$
$R = 327.40'$
$T = 83.59'$
$L = 163.69'$
$E = 10.50'$

BORING LOCATION*

BORING	STATION	OFFSET	TOP OF ROCK EL.
B-169-1-20	204+59.78	15.18' RT.	-
B-002-D-06	206+03.17	84.37' RT.	-

* = BORING STATION AND OFFSETS ARE FROM I.R. 90 EB

PROPOSED WORK

THE PROPOSED WORK CONSISTS OF CONSTRUCTING A RETAINING WALL ALONG THE RIGHT (SOUTH) SIDE OF I.R. 90 EB ADJACENT TO BRIDGE 13. THE WALL UTILIZES BOTTOM UP CONSTRUCTION CONSISTING OF A CAST-IN-PLACE CANTILEVER WALL.

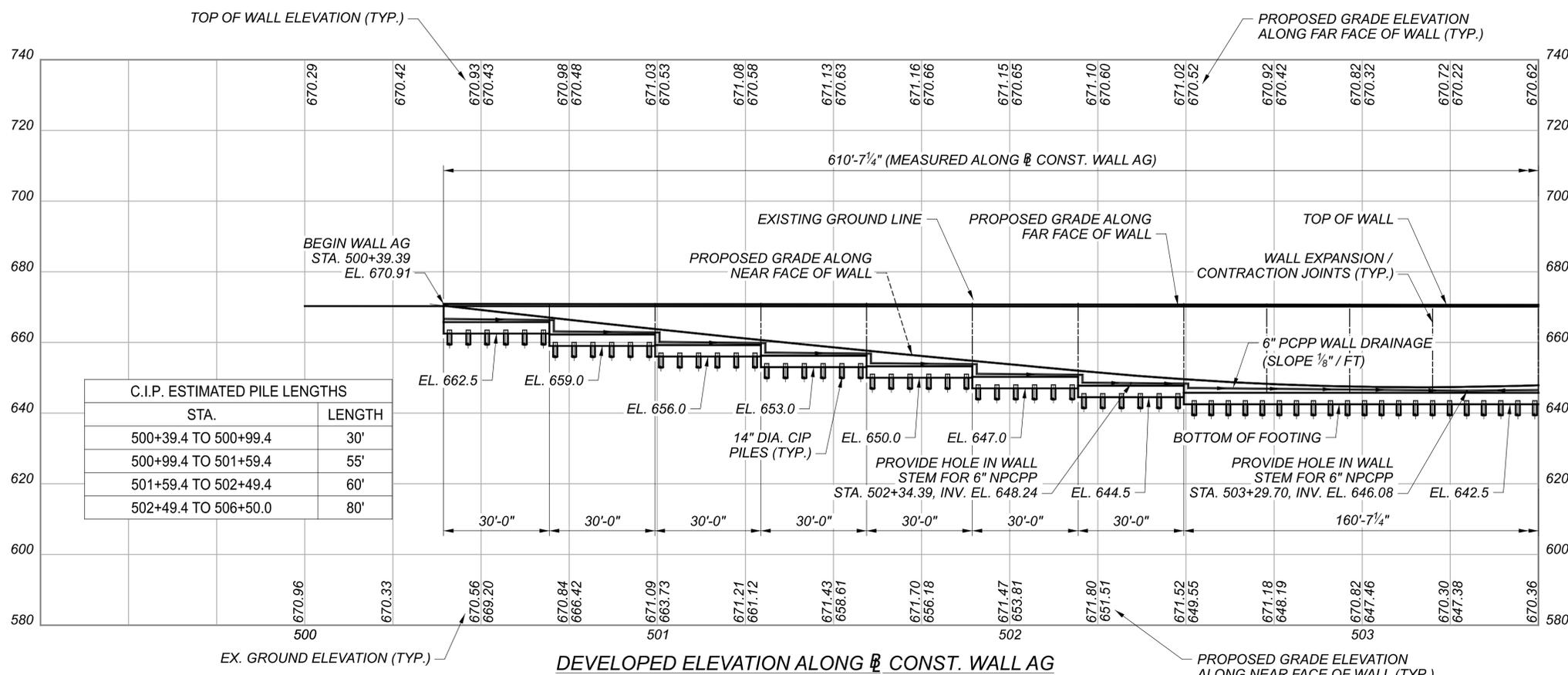
NOTES

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- FOR WALL CROSS SECTIONS, SEE SHEETS:
 INTERIM I.R. 90 EB: 737 / 2696
 MIDTOWN CONNECTOR: 947 TO 960 / 2696
- STATION AND WALL OFFSETS SHOWN AT NEAR FACE OF WALL.

LEGEND

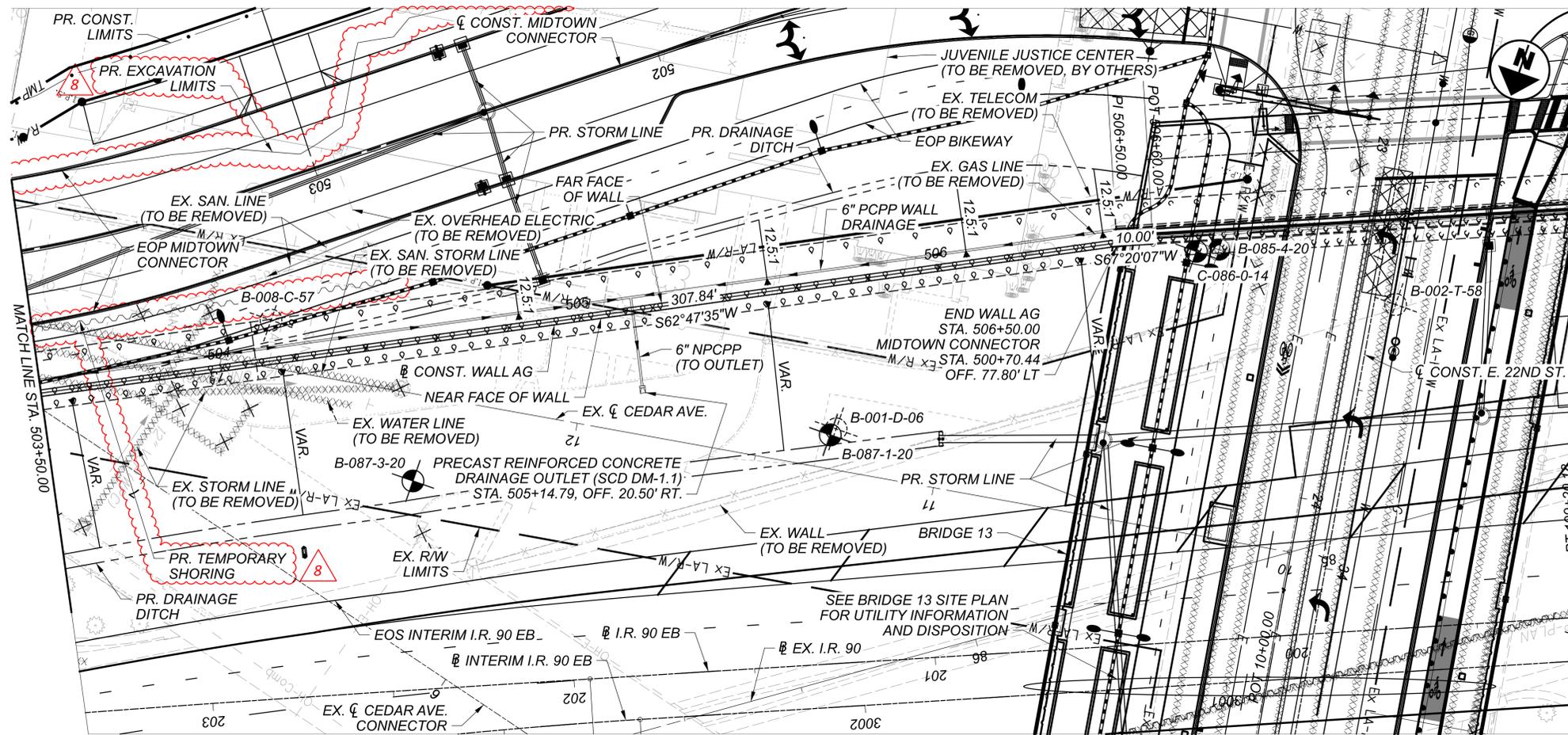
- HISTORIC BORING LOCATIONS
- PROJECT BORING LOCATIONS

CONST. = CONSTRUCTION
 EOP = EDGE OF PAVEMENT
 EOS = EDGE OF SHOULDER

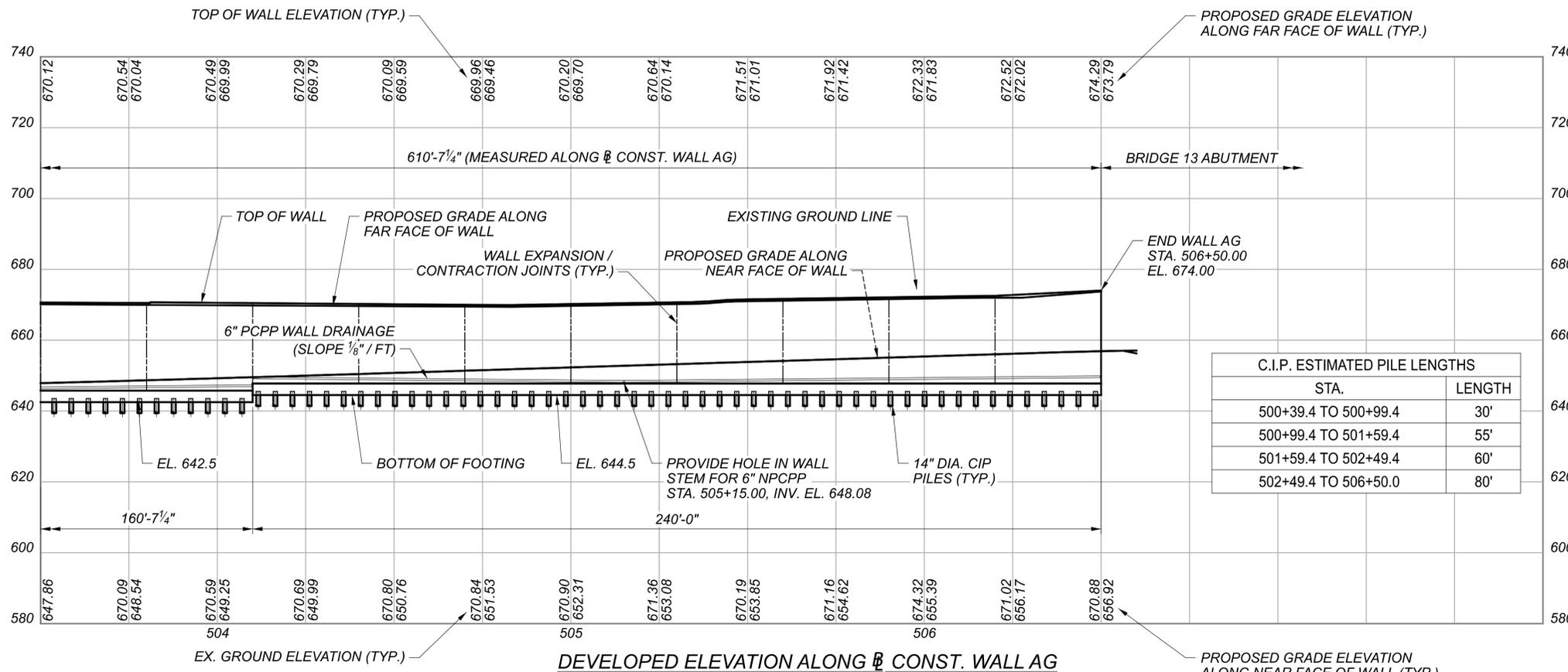


DEVELOPED ELEVATION ALONG CONST. WALL AG

SFN	N/A
DESIGN AGENCY	
Michael Baker	INTERNATIONAL
DESIGNER	CHECKER
SSW	MKB
REVIEWER	
LPC	05-09-24
PROJECT ID	82382
SUBSET	TOTAL
1	12
SHEET	TOTAL
1229	2696



PLAN



C.I.P. ESTIMATED PILE LENGTHS	
STA.	LENGTH
500+39.4 TO 500+99.4	30'
500+99.4 TO 501+59.4	55'
501+59.4 TO 502+49.4	60'
502+49.4 TO 506+50.0	80'

BENCHMARK DATA

BM #54 STA. 33+03.27	ELEV. 672.54	OFFSET 36.13 RT.	CUT CROSS
BM #62 STA. 35+24.62	ELEV. 672.11	OFFSET 1174.60 LT.	RR SPIKE
BM #72 STA. 23+49.63	ELEV. 674.06	OFFSET 52.19 LT.	CUT CROSS
BM #73 STA. 37+05.22	ELEV. 671.90	OFFSET 407.77' LT.	CUT CROSS

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 4 / 2696

MIDTOWN CONNECTOR

CURVE DATA
 P.I. = Sta. 504+17.17
 $\Delta = 28^{\circ}38'45''$ LT
 $D_c = 17^{\circ}30'00''$
 $R = 327.40'$
 $T = 83.59'$
 $L = 163.69'$
 $E = 10.50'$

BORING LOCATION*

BORING	STATION	OFFSET	TOP OF ROCK EL.
B-085-4-20	200+14.75	107.35' RT.	-
B-087-1-20	201+25.11	63.19' RT.	-
B-087-3-20	202+40.86	57.52' RT.	-
B-002-T-58	199+67.00	89.17' RT.	-
B-001-D-06	201+22.78	64.55' RT.	-
B-008-C-57	202+76.93	104.30' RT.	-
C-086-0-14	200+21.04	107.22' RT.	-

* = BORING STATION AND OFFSETS ARE FROM I.R. 90 EB

PROPOSED WORK

THE PROPOSED WORK CONSISTS OF CONSTRUCTING A RETAINING WALL ALONG THE RIGHT (SOUTH) SIDE OF I.R. 90 EB ADJACENT TO BRIDGE 13. THE WALL UTILIZES BOTTOM UP CONSTRUCTION CONSISTING OF A CAST-IN-PLACE CANTILEVER WALL.

NOTES

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- FOR WALL CROSS SECTIONS, SEE SHEETS:
 INTERIM I.R. 90 EB: 737 / 2696
 MIDTOWN CONNECTOR: 947 TO 960 / 2696
- STATION AND WALL OFFSETS SHOWN AT NEAR FACE OF WALL.

LEGEND

- HISTORIC BORING LOCATIONS
- PROJECT BORING LOCATIONS

CONST. = CONSTRUCTION
 EOP = EDGE OF PAVEMENT
 EOS = EDGE OF SHOULDER

DESIGNER	SSW	CHECKER	MKB
REVIEWER	LPC 05-09-24		
PROJECT ID	82382		
SUBSET	2	TOTAL	12
SHEET	1230	TOTAL	2696

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)

APPLY A PERMANENT GRAFFITI COATING MEETING THE REQUIREMENTS OF SUPPLEMENT 1083. THE GRAFFITI COATING MUST BE COMPATIBLE WITH THE UNDERLYING CONCRETE SEALER. APPLY THE GRAFFITI COATING ACCORDING TO THE MANUFACTURE'S REQUIREMENTS. THE ADDITIONAL MATERIAL AND LABOR REQUIRED TO SEAL THE FORM LINER RELIEF SHALL BE INCLUDED IN THIS ITEM. TO ACCOUNT FOR THE SURFACE VARIATIONS DUE TO THE FORM LINERS, AN EXTRA 20 PERCENT HAS BEEN ADDED TO THE SEALING QUANTITIES FOR THE PURPOSE OF ESTIMATING. PROVIDE A COATING THAT MEETS THE REQUIREMENTS LISTED BELOW.

- A. THE MATERIAL SHALL BE A SINGLE COMPONENT, RTV (ROOM TEMPERATURE VULCANIZED) NEUTRAL MOISTURE CURE, PERMANENT (NON-SACRIFICIAL), TYPE III (WATER CLEANABLE) POLYSILOXANE (SILICONE) ANTI-GRAFFITI COATING, FREE OF ANY WAXES, EPOXIES OR POLYURETHANE COMPONENTS.
- B. THE COATING SHALL BE A ONE COAT SYSTEM (NO PRIMER) CAPABLE OF BEING SPRAY APPLIED TO A DRY FILM THICKNESS OF 15 MILS (375 MICRONS) WITHOUT RUNS OR SAGS (MULTIPLE COAT APPLICATION ACCEPTABLE FOR BRUSH/ROLLER USAGE AND PRIMER USAGE ACCEPTABLE FOR SPECIALTY SUBSTRATES SUCH AS GALVANIZED METAL).
- C. THE COATING SHALL EMIT LESS THAN 300 G/L (2.5 POUNDS PER GALLON) OF VOLATILE ORGANIC COMPOUNDS (EPA METHOD 24).
- D. THE COATING SHALL MEET THE FOLLOWING PERFORMANCE REQUIREMENTS:
 1. CLEANABILITY LEVEL 1 (GRAFFITI COMPLETELY REMOVED WITH COLD WATER POWER WASH) AS PER ASTM D7089 WITH LOW PRESSURE (1200 PSI) COLD WATER WASH AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.
 2. GRAFFITI RESISTANCE LESS THAN 7.5 AS PER ASTM D6578 AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.
 3. NO SIGNS OF GRAFFITI OR GRAFFITI STAINING AND MUST BE INTACT AND EXHIBIT NO SIGNS OF STREAKING, CRACKING, PINHOLING, DISCOLORING OR OTHER VISIBLE COATING DEGRADATION UPON CASUAL OBSERVATION WHEN TESTED IN ACCORDANCE WITH TXDOT TEX 890-B, TYPE III METHOD.
 4. BREATHABILITY OF 10 PERMS (+/- 3) PER ASTM D1653 USING "WET CUP METHOD".
 5. ELONGATION AT BREAK GREATER THAN 100% AS PER ASTM D412 (USING DIE "D").
 6. ADHESION RATING OF "8 - DIFFICULT TO REMOVE" AS PER ASTM D6677 (ADHESION BY KNIFE).

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

SEAL SURFACES OF THE CONCRETE FACING AND THE PRECAST CONCRETE LAGGING AS SHOWN IN THE PLANS WITH AN EPOXY-URETHANE SEALER ACCORDING TO C&MS 512. THE FOLLOWING COLORS SHALL BE USED FOR PAINTING AND SEALING STRUCTURAL ELEMENTS:

COPING SEALER:	"ALPACA"	7022
WALL FACING SEALER:	SEE WALL AESTHETIC DETAILS	
PARAPET:	"ALPACA"	7022

ALL COLOR NAME AND NUMBER REFERENCES ARE TAKEN FROM THE SHERWIN WILLIAMS COLOR PALATE. THE CONTRACTOR MAY SUBSTITUTE SIMILAR COLORS FROM ALTERNATIVE SUPPLIER'S COLOR PALATE.

ITEM 607 - VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC, AS PER PLAN

INSTALL VANDAL PROTECTION FENCE ACCORDING TO STD. CONSTRUCTION DRAWING VPF-1-90 AND C&MS 607, EXCEPT AS MODIFIED BELOW.

POSTS, PLATES, TIE WIRES, CAULK AND ADDITIONAL VISIBLE HARDWARE SHALL BE COLOR BLACK (FEDERAL STD. 595C #17038). FENCE FABRIC SHALL BE BLACK VINYL-COATED, CHAIN LINK STYLE. MOUNT FENCING TO TOP OF RETAINING WALL WITH CAST-IN-PLACE ANCHORS.

ITEM 511 - CONCRETE, MISC.: ARCHITECTURAL TREATMENT

THIS WORK CONSISTS OF ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS TO CONSTRUCT THE ARCHITECTURAL TREATMENTS IN THE CONCRETE SURFACE OF THE RETAINING WALL.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE AS FOLLOWS: ITEM 511 CONCRETE, MISC.: ARCHITECTURAL TREATMENT.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

1. THE MINIMUM ELASTIC SECTION MODULUS FOR TEMPORARY CANTILEVERED SHEET PILE WALL (FOR YIELD STRENGTH = 50 KSI) SHALL BE 12.6 IN⁴/FT. THE CHOSEN SHEETING SECTION SHALL HAVE A MINIMUM MOMENT OF INERTIA OF 90 IN⁴/FT.
2. TEMPORARY SHEETING SHALL BE INSTALLED AT LOCATIONS SHOWN IN THE PLANS PRIOR TO CONSTRUCTION OF WALL AG.
3. THE CONTRACTOR MAY PROVIDE AN ALTERNATE MEANS OF SHORING FOR EXCAVATION AND CONSTRUCTION IN ACCORDANCE WITH ITEM 503.
4. ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS NECESSARY TO INSTALL AND SUBSEQUENTLY REMOVE THE TEMPORARY SHORING SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM PRICE BID FOR ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.
5. TEMPORARY SLOPES SHALL BE NO STEEPER THAN 2H:1V.
6. REFER TO CONCEPTUAL SECTION DETAILED BELOW.

WALL AG EXCAVATION AND TEMPORARY SHORING SEQUENCE

1. EXCAVATE ABOVE SHORING ELEVATION BEHIND WALL AG.
2. INSTALL TEMPORARY SHORING.
3. EXCAVATE REMAINING AREA FOR WALL AG CONSTRUCTION.
4. INSTALL TRENCH DRAINS AS INDICATED BELOW. SEE SHEET 79 FOR DETAILS.

SECTION/DETAIL/VIEW CALLOUTS



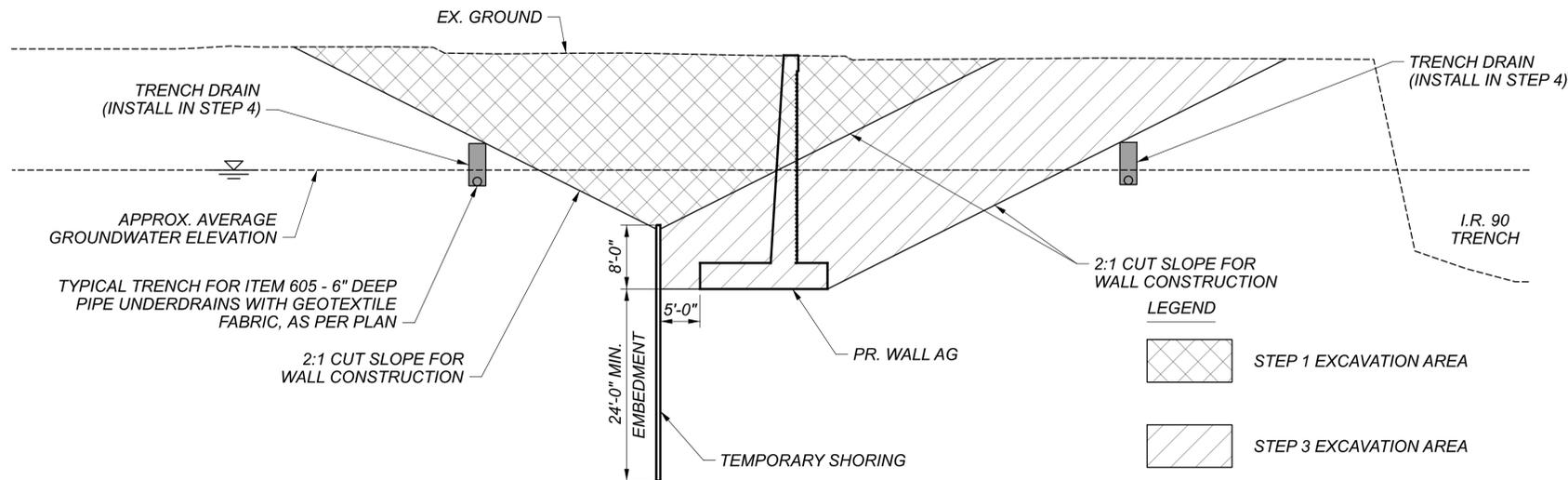
(SEE SECTION A ON SHEET 10)



(SECTION A CUT FROM SHEET 10)

PLAN ABBREVIATIONS:

- | | |
|---|--|
| ABUT. = ABUTMENT
APPR. = APPROACH
B = BOTTOM
@ = BASELINE
BM = BENCHMARK
BOT. OR BTM. = BOTTOM
@ = CENTERLINE
C/C = CENTER TO CENTER
C.I.P. = CAST-IN-PLACE
C.J. = CONSTRUCTION JOINT
CLR. = CLEAR
CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS
CONC. = CONCRETE
CONST. = CONSTRUCTION
DIA. = DIAMETER
DIM. = DIMENSION
DTBD = DISPOSITION TO BE DETERMINED
DWG. = DRAWING
EB = EASTBOUND
E.F. = EACH FACE
EL. OR ELEV. = ELEVATION
EQ. = EQUAL
EST. = ESTIMATED
EX. = EXISTING
F.A. = FORWARD ABUTMENT
F/F = FACE TO FACE
F.F. = FAR FACE
FT. = FOOT OR FEET
FTG. = FOOTING
FWD. = FORWARD
IN. = INCH
JT. = JOINT
LT. = LEFT | MAX. = MAXIMUM
MIN. = MINIMUM
MISC. = MISCELLANEOUS
N = NORTH
NB = NORTHBOUND
N.F. = NEAR FACE
NO. = NUMBER
N.P.C.P.P. = NON-PERFORATED CORRUGATED PLASTIC PIPE
OHWM = ORDINARY HIGH WATER MARK
O/O = OUT TO OUT
P.C.P.P. = PERFORATED CORRUGATED PLASTIC PIPE
P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
PROP. = PROPOSED
PSF = POUNDS PER SQUARE FOOT
R.A. = REAR ABUTMENT
S = SOUTH
SB = SOUTHBOUND
SER. = SERIES
SHLDR = SHOULDER
SPA. = SPACE OR SPACES
STA. = STATION
STD. = STANDARD
STR = STRAIGHT
T = TOP
T&B = TOP & BOTTOM
TBR = TO BE REMOVED
TBRBO = TO BE RELOCATED BY OTHERS
TEMP. = TEMPORARY
TYP. = TYPICAL
U.N.O. = UNLESS NOTED OTHERWISE
VAR. = VARIES
WB = WESTBOUND
WWR = WELDED WIRE REINFORCEMENT |
|---|--|



WALL AG EXCAVATION AND TEMPORARY SHORING DIAGRAM

CUY-90-16.28 (CCG3A)

MODEL: Sheet PAPER/DATE: 10/30/2025 TIME: 1:14:31 PM USER: Victor.Nash
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WALL GENERAL NOTES (2 OF 2)
 WALL AG
 ALONG SOUTH SIDE OF I.R. 90

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
SSW	KAG
REVIEWER	
LPC	05-09-24
PROJECT ID	82382
SUBSET	TOTAL
4	12
SHEET	TOTAL
1232	2696

ESTIMATED QUANTITIES

CALCULATED BY: HNW DATE: 01/26/24
 CHECKED BY: SSW DATE: 05/14/24

PARTICIPATION	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.
01/IMS/04	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
8 01/IMS/04	503	21101	9,626	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	3
01/IMS/04	507	00600	19,665	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	
01/IMS/04	507	00650	21,140	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	
01/IMS/04	509	10000	272,727	LB	EPOXY COATED STEEL REINFORCEMENT	
01/IMS/04	511	46012	1,073	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
01/IMS/04	511	46512	1,101	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
01/IMS/04	511	71200	12,719	SF	CONCRETE, MISC.: ARCHITECTURAL TREATMENT	4
01/IMS/04	512	10001	659	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	4
01/IMS/04	512	10101	1,359	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	4
01/IMS/04	512	33000	154	SY	TYPE 2 WATERPROOFING	
01/IMS/04	516	13600	402	SF	1" PREFORMED EXPANSION JOINT FILLER	
01/IMS/04	518	21200	830	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
01/IMS/04	518	40000	633	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
01/IMS/04	518	40010	100	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
01/IMS/04	523	20001	4	EACH	DYNAMIC LOAD TESTING, AS PER PLAN	3
01/IMS/04	523	20501	4	EACH	RESTRIKE, AS PER PLAN	3
01/IMS/04	SPECIAL	530E00200	LS		STRUCTURES: PRECONSTRUCTION CONDITION SURVEY	3
01/IMS/04	SPECIAL	530E00200	LS		STRUCTURES: VIBRATION MONITORING	3
01/IMS/04	607	39911	614	FT	VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC, AS PER PLAN	4
01/IMS/04	611	99710	3	EACH	PRECAST REINFORCED CONCRETE OUTLET	

ESTIMATED QUANTITIES
 WALL AG
 ALONG SOUTH SIDE OF I.R. 90

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
SSW	KAG
REVIEWER	
LPC	05-09-24
PROJECT ID	82382
SUBSET	TOTAL
5	12
SHEET	TOTAL
1233	2696

ESTIMATED QUANTITIES

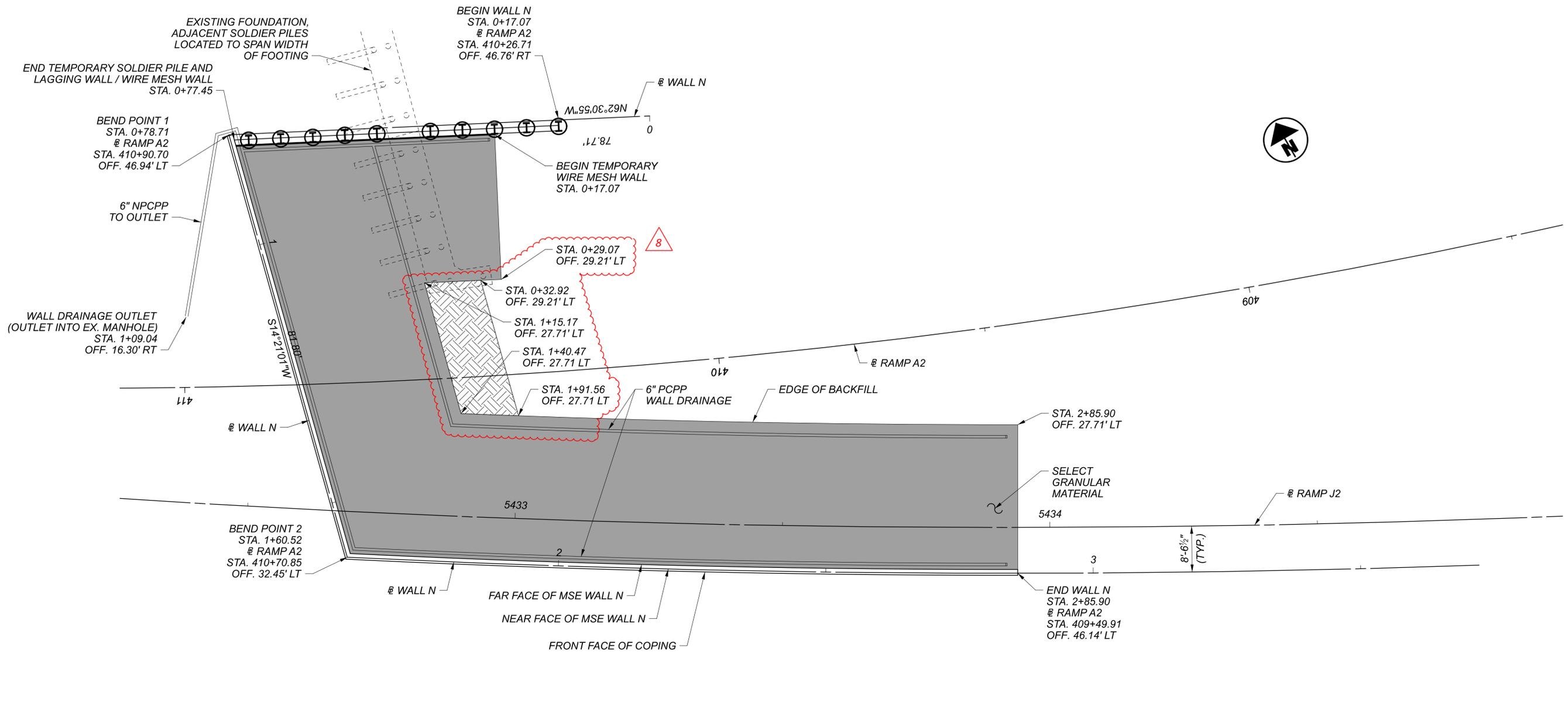
CALCULATED BY: ZES DATE: 04/24/24

CHECKED BY: SSW DATE: 05/14/24

PARTICIPATION	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.	
	01/IMS/04	503	21100	223	CY	UNCLASSIFIED EXCAVATION	
6	01/IMS/04	507	00400	462	FT	STEEL PILES, MISC.: W24x162, FURNISHED	2
	01/IMS/04	507	00400	115	FT	STEEL PILES, MISC.: W24x229, FURNISHED	2
	01/IMS/04	509	10000	12,522	LB	EPOXY COATED STEEL REINFORCEMENT	
	01/IMS/04	511	46013	27	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	9
	01/IMS/04	511	53012	70	CY	CLASS QC2 CONCRETE, MISC.: MOMENT SLAB AND PARAPET WITH QC/QA	2
	01/IMS/04	511	81300	11	EACH	CONCRETE, MISC.: CLASS QC1 CONCRETE FOR RAISED PANEL SEAT	2
	01/IMS/04	512	10001	276	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	2
	01/IMS/04	512	10101	276	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	2
	01/IMS/04	513	90000	526	LB	STRUCTURAL STEEL, MISC.: RETENTION ANGLE	2
	01/IMS/04	516	13600	87	SF	1" PREFORMED EXPANSION JOINT FILLER	
	01/IMS/04	516	13900	276	SF	2" PREFORMED EXPANSION JOINT FILLER	
6	01/IMS/04	516	42000	190	EACH	ELASTOMERIC BEARING PAD, MISC.: 6" x 10" x 3/8" THICK	8
	01/IMS/04	518	21050	102	SY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	01/IMS/04	518	40000	161	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
	01/IMS/04	518	40010	14	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	8
	01/IMS/04	524	94703	391	FT	DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN	2
	01/IMS/04	SPECIAL	530E51010	1,373	SF	RETAINING WALL, PRECAST CONCRETE LAGGING	3
6	01/IMS/04	607	39910	136	FT	VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC	

ESTIMATED QUANTITIES
 WALL AI
 ALONG NORTH SIDE OF CARNEGIE AVE.

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
MKB	YC
REVIEWER	
LPC	05-09-24
PROJECT ID	
82382	
SUBSET	TOTAL
4	12
SHEET	TOTAL
1253	2696



PLAN

WALL N

CURVE DATA
 P.I. = Sta. 2+66.39
 $\Delta = 04^{\circ}44'44''$ LT
 $D_c = 02^{\circ}14'33''$
 $R = 2,555.02'$
 $T = 105.87'$
 $L = 211.62'$
 $E = 2.19'$

RAMP A2

CURVE DATA
 P.I. = Sta. 413+02.39
 $\Delta = 44^{\circ}30'41''$ LT
 $D_c = 04^{\circ}30'00''$
 $R = 1,273.24'$
 $T = 521.04'$
 $L = 989.14'$
 $E = 102.49'$

RAMP J2

CURVE DATA
 P.I. = Sta. 5435+61.54
 $\Delta = 23^{\circ}06'15''$ LT
 $D_c = 02^{\circ}15'00''$
 $R = 2,546.48'$
 $T = 520.50'$
 $L = 1,026.85'$
 $E = 52.65'$

WALL BASELINE GEOMETRY			
	@ WALL N STA.	@ RAMP A2	OFFSET
BEGIN WALL N	0+17.07	410+26.71	46.76' RT
BEND POINT 1 WALL N	0+78.71	410+90.70	46.94' LT
BEND POINT 2 WALL N	1+60.52	410+70.85	32.45' LT
END WALL N	2+85.90	409+49.91	46.14' LT

NOTES

- FOR WALL CROSS SECTIONS, SEE SHEETS 806 TO 809 / 2696
- @ WALL N IS CONCENTRIC WITH @ RAMP J2.

LEGEND

- LIMITS OF SELECT GRANULAR BACKFILL
- LIMITS OF ITEM 203 - EMBANKMENT, AS PER PLAN

SCHEMATIC PLAN

WALL N

UNDER BRIDGE 9 AND ALONG WEST SIDE OF RAMP A2 AND RAMP J2

SFN

N/A

DESIGN AGENCY

Michael Baker
INTERNATIONAL

DESIGNER CHECKER

SSW MKB

REVIEWER

LPC 05-09-24

PROJECT ID

82382

SUBSET TOTAL

2 13

SHEET TOTAL

1271 2696

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD CONSTRUCTION DRAWINGS:

- F-1.1 REVISED 7/19/2013
- DM-1.1 REVISED 1/17/2025

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

- 800 DATED SEE TITLE SHEET
- 840 DATED 7/21/2023
- 878 DATED 1/21/2022 

REFER TO THE FOLLOWING SUPPLEMENTS:

- 1073 DATED 4/21/2023
- 1083 DATED 1/20/2017

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS", 9TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE ODOT BRIDGE DESIGN MANUAL, 2020 (DATED 07-21-23).

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI
 (CONCRETE COPING, LEVELING PAD, AND PRECAST LAGGING)
 CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFTS)
 REINFORCING STEEL / WELDED WIRE REINFORCEMENT - MINIMUM YIELD STRENGTH 60 KSI
 STEEL SOLDIER PILES - ASTM A572 - YIELD STRENGTH 50 KSI

REINFORCED FILL:

EFFECTIVE INTERNAL FRICTION ANGLE = 30°
 UNIT WEIGHT = 120 pcf
 EFFECTIVE COHESION = N/A

RETAINED FILL

EFFECTIVE INTERNAL FRICTION ANGLE = 30°
 UNIT WEIGHT = 120 pcf
 EFFECTIVE COHESION = N/A

FOUNDATION SOIL - DRAINED CONDITIONS

EFFECTIVE INTERNAL FRICTION ANGLE = 29°
 UNIT WEIGHT = 108 pcf
 EFFECTIVE COHESION = N/A

FOUNDATION SOIL - UNDRAINED CONDITIONS

EFFECTIVE INTERNAL FRICTION ANGLE = 29°
 UNIT WEIGHT = 108 pcf
 EFFECTIVE COHESION = N/A

SURCHARGE LOADS

LIVE LOAD SURCHARGE = 250 psf

THE DESIGN ASSUMES NO WATER PRESSURE ACT ON THE WALL

MSE WALL DESIGN PARAMETERS:

THE MINIMUM SOIL REINFORCEMENT LENGTH IS AT LEAST 8 FEET OR 70% OF THE WALL HEIGHT, WHICHEVER IS GREATER. FOR WALL SECTIONS AROUND ABUTMENTS, THE STRAP LENGTH WILL NEED TO BE 70% OF THE DISTANCE BETWEEN THE TOP OF THE LEVELING PAD AND THE TOP OF THE PAVEMENT.

FACTORED BEARING RESISTANCE = 13.2 ksf

SEQUENCE OF CONSTRUCTION:

CONSTRUCT WALL N DURING MOT PHASE 4.

SEE MAINTENANCE OF TRAFFIC NOTES FOR ADDITIONAL PHASES AND INFORMATION.

PROPRIETARY RETAINING WALL DATA:

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS840 TO RETAIN EARTH FILL AROUND AND BELOW THE ABUTMENT. FOR LOADS AND NOTES PERTAINING TO THE ABUTMENT, SEE THE GENERAL NOTES SHEETS FOR BRIDGE 9, BRIDGE NUMBER CUY-77-1587.

ITEM 203 - EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT.

**ITEM 507 - STEEL PILES, MISC.: W21x101, FURNISHED
ITEM 507 - STEEL PILES, MISC.: W24x192, FURNISHED**

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50 IN ACCORDANCE WITH C&MS 711.01. GALVANIZE SOLDIER PILES AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH C&MS 711.02. DO NOT FIELD WELD OR SPLICE STEEL SOLDIER PILES.

THE DEPARTMENT WILL MEASURE SOLDIER PILES ALONG THE AXIS OF THE SOLDIER PILE FROM THE TOP OF WALL ELEVATION TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR SOLDIER PILES AT THE CONTRACT UNIT PRICE PER FOOT FOR ITEM 507, STEEL PILES, MISC.: W21x101 OR W24x192.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

SEAL SURFACES OF THE PRECAST CONCRETE LAGGING, MSE WALL PANELS, AND COPING AS SHOWN IN THE PLANS WITH AN EPOXY-URETHANE SEALER ACCORDING TO C&MS 512. THE FOLLOWING COLORS SHALL BE USED FOR PAINTING AND SEALING STRUCTURAL ELEMENTS:

	COPING SEALER:	"DOVETAIL"	7018
	WALL FACING SEALER:	"ALPACA"	7022

ALL COLOR NAME AND NUMBER REFERENCES ARE TAKEN FROM THE SHERWIN WILLIAMS COLOR PALATE. THE CONTRACTOR MAY SUBSTITUTE SIMILAR COLORS FROM ALTERNATIVE SUPPLIER'S COLOR PALATE.

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. PROVIDE A COATING THAT MEETS THE REQUIREMENTS LISTED BELOW. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

- A. THE MATERIAL SHALL BE A SINGLE COMPONENT, RTV (ROOM TEMPERATURE VULCANIZED), NEUTRAL MOISTURE CURE, PERMANENT (NON-SACRIFICIAL), TYPE III (WATER CLEANABLE) POLYSILOXANE (SILICONE) ANTI-GRAFFITI COATING, FREE OF ANY WAXES, EPOXIES, OR POLYURETHANE COMPONENTS.
- B. THE COATING SHALL BE A ONE COAT SYSTEM (NO PRIMER) CAPABLE OF BEING SPRAY APPLIED TO A DRY FILM THICKNESS OF 15 MILS (375 MICRONS) WITHOUT RUNS OR SAGS (MULTIPLE COAT APPLICATION ACCEPTABLE FOR BRUSH/ROLLER USAGE AND PRIMER USAGE ACCEPTABLE FOR SPECIALTY SUBSTRATES SUCH AS GALVANIZED METAL).
- C. THE COATING SHALL EMIT LESS THAN 300 G/L (2.5 POUNDS PER GALLON) OF VOLATILE ORGANIZE COMPOUNDS (EPA METHOD 24).
- D. THE COATING SHALL MEET THE FOLLOWING PERFORMANCE REQUIREMENTS:
 - 1. CLEANABILITY LEVEL 1 (GRAFFITI COMPLETELY REMOVED WITH COLD WATER POWER WASH) AS PER ASTM D7089 WITH LOW PRESSURE (1200 PSI) COLD WATER WASH AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.
 - 2. GRAFFITI RESISTANCE LESS THAN 7.5 AS PER ASTM D6578 AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM 4578.
 - 3. NO SIGNS OF GRAFFITI OR GRAFFITI STAINING AND MUST BE INTACT AND EXHIBIT NO SIGNS OF STREAKING, CRACKING, PINHOLING, DISCOLORING, OR OTHER VISIBLE COATING DEGRADATION UPON CASUAL OBSERVATION WHEN TESTED IN ACCORDANCE WITH TXDOT TEX 890-B, TYPE III METHOD.
 - 4. BREATHABILITY OF 10 PERMS (+/- 3) PER ASTM D1653 USING "WET CUP METHOD".
 - 5. ELONGATION AT BREAK GREATER THAN 100% AS PER ASTM D412 (USING DIE "D").
 - 6. ADHESION RATING OF "8 - DIFFICULT TO REMOVE" AS PER ASTM D6677 (ADHESION BY KNIFE).

ITEM 513 - STRUCTURAL STEEL, MISC.: RETENTION ANGLE

PROVIDE RETENTION ANGLES FOR PRECAST LAGGING ON ALL PILES WITHIN THE LIMITS OF THE PRECAST LAGGING, AS SHOWN IN THE PLANS. RETENTION ANGLES MUST BE INSTALLED ON THE PILES PRIOR TO PLACEMENT OF THE PILES. ALL MATERIAL, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE RETENTION ANGLE SHALL BE INCLUDED FOR PAYMENT WITH ITEM 513-STRUCTURAL STEEL, MISC.: RETENTION ANGLE.

ADDITIONALLY, PAYMENT FOR LAGGING SUPPORT ANGLES, AS SHOWN IN PLANS, ARE TO BE INCLUDED WITH ITEM 513-STRUCTURAL STEEL, MISC.: RETENTION ANGLE.

ITEM 524 - DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SOLDIER PILE AND LAGGING WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES INSTEAD OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH C&MS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 1½ INCHES OF THE PLAN LOCATION. PLACE THE SOLDIER PILE WITHIN THE HOLE SO IT IS VERTICAL AND NOT INCLINED MORE THAN 1 INCH BETWEEN TOP TO BOTTOM. PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS QC 5 CONCRETE ACCORDING TO C&MS 511. PLACE CONCRETE TO THE ELEVATION FOR THE TOP OF THE DRILLED SHAFT. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE SOLDIER PILE IS ACCEPTABLE.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE SOLDIER PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES. IF SHOWN ON THE PLANS, FILL THE HOLE ABOVE THE BOTTOM OF THE LAGGING TO THE EXISTING GROUND SURFACE WITH ITEM C&MS 613 LOW STRENGTH MORTAR BACKFILL (LSM).

REMOVE CONCRETE AND LSM AS NECESSARY FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE THE LAGGING. PLACE LAGGING SO THAT THE SOLDIER PILE FLANGE OVERLAPS THE END OF THE LAGGING BY AT LEAST 3 INCHES AT BOTH ENDS OF THE LAGGING. WAIT AT LEAST 12 HOURS AFTER PLACING CONCRETE BEFORE PLACING LAGGING.

SEQUENCE OF INSTALLATION: THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 48-HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THESE CRITERIA IS PERMISSIBLE.

PROTECTION OF UNATTENDED OPEN SHAFTS: CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PREVENT A PERSON OR ANIMAL FROM FALLING IN. NO DRILLED SHAFT EXCAVATION SHALL BE LEFT UN-POURED OVERNIGHT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS AND PLACE LAGGING. ANY TEMPORARY GRADING, EXCAVATION, EMBANKMENT, AGGREGATE, DRAINAGE, SHEETING, ETC. NEEDED TO COMPLETE THE WORK SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE COST OF ANY EXCAVATION AND SUBSEQUENT REPLACEMENT OF EMBANKMENT (PER ITEM 203 EMBANKMENT) SHALL BE INCLUDED IN THE VARIOUS BID ITEMS FOR THE DRILLED SHAFTS AND LAGGING, UNLESS SEPARATELY ITEMIZED. NO SEPARATE PAYMENT WILL BE MADE.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE DRILLED SHAFTS ABOVE BEDROCK, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM THE EXISTING GROUND SURFACE TO THE TOP OF BEDROCK, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL MEASURE DRILLED SHAFTS INTO BEDROCK, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM TOP OF BEDROCK TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER.

PAYMENT IS FULL COMPENSATION FOR CONSTRUCTING THE DRILLED SHAFTS, INCLUDING FURNISHING AND PLACING CONCRETE AND LSM, REMOVAL OF CONCRETE OR LSM FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE LAGGING.

CUY-90-16.28 (CCG3A)

MODEL: Sheet PAPER: 34x22 (in.) DATE: 10/24/2025 TIME: 12:43:37 PM USER: Shana.Weiss
p:\vmb-us-pw-bentley.com\mb-us-pw-03\Documents\Cleveland_OH101_Projects\ODOT\District12\82382\400-Engineering\Structures\WALL_N\W001.dgn

WALL GENERAL NOTES (1 OF 2)
WALL N
UNDER BRIDGE 9 AND ALONG WEST SIDE OF RAMP A2 AND RAMP J2

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
SSW	MKB
REVIEWER	
LPC	05-09-24
PROJECT ID	
82382	
SUBSET	TOTAL
3	13
SHEET	TOTAL
1272	2696

ITEM SPECIAL - RETAINING WALL, PRECAST CONCRETE LAGGING

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST REINFORCED CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED ACCORDING TO SUPPLEMENT 1073. PROVIDE CLASS QC1 CONCRETE ACCORDING TO C&MS 499. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO C&MS 709.00. IN LIEU OF EPOXY COATING, A CORROSION INHIBITING CONCRETE ADMIXTURE MAY BE USED AT THE SPECIFIED DOSAGE RATE. A QUALIFIED PRODUCT LIST OF CORROSION INHIBITING ADMIXTURES IS ON FILE AT THE LABORATORY. MANUFACTURERS SHOULD RECOGNIZE THAT THE CORROSION INHIBITOR MAY AFFECT THE STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE MANUFACTURER'S CHOICE TO USE ONE OF THESE CORROSION INHIBITORS DOES NOT ALLEVIATE MEETING ALL DESIGN REQUIREMENTS. DO NOT ALLOW THE DIMENSIONS OF THE LAGGING OR LOCATION OF THE REINFORCING STEEL TO VARY BY MORE THAN 1/4-INCH. CAST THREADED INSERTS INTO THE TOP OF EACH PANEL FOR LIFTING AND PLACEMENT.

FINISH THE FACES OF THE PRECAST CONCRETE LAGGING PANELS THAT WILL NOT BE EXPOSED TO A UNIFORM SURFACE, FREE OF OPEN POCKETS OF AGGREGATE. *FINISH THE EXPOSED FACE OF THE PANELS TO A SMOOTH SURFACE. SEAL THE FRONT (EXPOSED) FACE AND SIDES OF EACH CONCRETE PANEL WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY URETHANE). THE COLOR OF THE URETHANE SHALL BE SHERWIN WILLIAMS ALABASTER 7008 OR APPROVED EQUAL.

PERMANENTLY MARK EACH PRECAST CONCRETE LAGGING PANEL TO INDICATE WHICH FACE WILL BE PLACED AGAINST THE SOIL. PLACE THE PANEL BETWEEN THE FLANGES OF THE SOLDIER PILES AND BEARING AGAINST THE FLANGES ON THE EXPOSED SIDE OF THE WALL SO THAT THE SOLDIER PILE FLANGE OVERLAPS THE END OF THE LAGGING BY AT LEAST ONE INCH MORE THAN THE CONCRETE COVER OVER THE REINFORCING STEEL AT BOTH ENDS OF THE LAGGING.

HANDLE, STORE, AND SHIP THE PRECAST CONCRETE LAGGING PANELS TO AVOID CHIPPING, CRACKING AND FRACTURING THE PANELS. SUPPORT THE PANELS ON FIRM BLOCKING WHILE STORING AND SHIPPING. DO NOT SHIP PANELS UNTIL CONCRETE HAS ATTAINED THE REQUIRED COMPRESSIVE STRENGTH. SUBMIT SHIPMENT DOCUMENTATION TO THE ENGINEER AS THE PANELS ARE DELIVERED TO THE PROJECT, INCLUDING THE PRECASTER'S RECORD OF FINAL INSPECTION, THE MEASUREMENTS AND TOLERANCES, STRENGTH, AND DIMENSIONS OF EACH PANEL, ALONG WITH THE TE-24 SHIPPING DOCUMENT AND THE DAMAGE SURVEY REPORT FOR ALL WALL PANELS.

INSPECT ALL PRECAST CONCRETE LAGGING PANELS AND REJECT PANELS HAVING ANY OF THE FOLLOWING:

- DEFECTS THAT INDICATE IMPERFECT MOLDING.
- DEFECTS THAT INDICATE HONEYCOMBED OR OPEN TEXTURE CONCRETE.
- DEFECTS IN THE PHYSICAL CHARACTERISTICS OF THE CONCRETE, OR DAMAGE TO THE AESTHETIC SURFACE TREATMENTS.
- CONCRETE CHIPS OR SPALLS THAT ARE LARGER THAN 4 INCHES WIDE OR 2 INCHES DEEP. REPAIR ALL CHIPS AND SPALLS THAT ARE SMALLER.
- STAINED FORM FACES, DUE TO FORM OIL, CURING OR OTHER CONTAMINANTS.
- SIGNS OF AGGREGATE SEGREGATION.
- CRACKS WIDER THAN 0.01 INCH OR PENETRATING MORE THAN 1 INCH OR LONGER THAN 20 PERCENT OF THE LENGTH OF THE FACE CONTAINING THE CRACK.
- PANELS THAT DO NOT MEET THE SPECIFIED DIMENSIONAL TOLERANCES.
- UNUSABLE LIFTING INSERTS.
- EXPOSED REINFORCING STEEL.
- INSUFFICIENT CONCRETE COMPRESSIVE STRENGTH.

EITHER REPLACE DAMAGED PRECAST CONCRETE LAGGING PANELS OR DOCUMENT THE DAMAGE AND PROPOSE TO THE ENGINEER A REPAIR METHOD FOR THE DAMAGED PANEL. PROVIDE ACCEPTABLE REPLACEMENT PANELS FOR ANY THAT ARE REJECTED. WHEN INSTALLING THE PRECAST CONCRETE LAGGING PANELS, PLACE HARDWOOD WEDGES NEAR THE TOP AND BOTTOM ON EACH SIDE TO HOLD THE LAGGING PANELS AGAINST THE FRONT INSIDE FLANGE OF THE STEEL PILES.

PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIAL REQUIRED TO FABRICATE, TRANSPORT, AND INSTALL THE PRECAST REINFORCED CONCRETE PANELS SHALL BE MADE AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR ITEM SPECIAL - RETAINING WALL, PRECAST CONCRETE LAGGING.

ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: WIRE FACED MSE WALL

GENERAL:

THIS WORK CONSISTS OF DESIGNING THE INTERNAL STABILITY OF THE WALL; PREPARING SHOP DRAWINGS; AND FABRICATING AND CONSTRUCTING THE WIRE FACED MSE WALLS.

ALL MSE WALL DESIGN, FABRICATION, ERECTION AND CONSTRUCTION SHALL CONFORM TO ODOT SUPPLEMENTAL SPECIFICATION 840 "MECHANICALLY STABILIZED EARTH WALLS" EXCEPT AS MODIFIED BELOW, AND AS SHOWN IN THE PLANS.

MATERIALS:

MATERIALS SHALL COMPLY WITH 840.03 EXCEPT THAT WIRE FACING AND SOIL RETENTION FABRIC SHALL BE PROVIDED INSTEAD OF PRECAST CONCRETE FACING PANELS.

- WIRE FACING**
THE WIRE FACING SHALL BE WELDED WIRE FABRIC (WWF) SATISFYING THE REQUIREMENTS OF CMS 709.10.
- SOIL RETENTION FABRIC**
THE INSIDE OF THE WIRE FACED MSE WALL SHALL HAVE RETENTION OR FILTER FABRIC PLACED WITHIN THE REINFORCED FILL AS SHOWN IN THE PLANS. RETENTION FABRIC SHALL BE A WOVEN POLYPROPYLENE FABRIC.

MSE WALLS, EXCAVATION, SELECT GRANULAR BACKFILL, AND FOUNDATION PREPARATION WILL BE PAID PER STRAP LENGTH DETERMINED IN THE SUPPLIER'S SHOP DRAWING APPROVED BY THE ENGINEER AS DESCRIBED IN ODOT SUPPLEMENTAL SPECIFICATION 840.



ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. LIMITS OF REMOVAL SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. ITEMS TO BE REMOVED INCLUDE MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. REMOVAL OF THE ELEMENTS SHALL NOT DISTURB THE REMAINDER OF THE EXISTING STRUCTURE THAT IS TO REMAIN IN PLACE. SUBMIT WORKING DRAWINGS AND CALCULATIONS IN ACCORDANCE WITH CMS 501.55.

ALL CONCRETE, REINFORCING STEEL, ASPHALT, ETC. REMOVED FROM THE STRUCTURE AND NOT REUSED SHALL, UNLESS OTHERWISE SPECIFIED, BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM/HER FROM THE SITE. THE MATERIALS SHALL NOT BE PERMITTED TO REMAIN ON SITE, WITHIN THE RIGHT-OF-WAY OR ELSEWHERE UNLESS SPECIFIED BY THE ENGINEER.

THE USE OF EXPLOSIVES AND HEADACHE BALLS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. A LUMP SUM QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.



SECTION/DETAIL/VIEW CALLOUTS



(SEE SECTION A ON SHEET 10)



(SECTION A CUT FROM SHEET 10)

PLAN ABBREVIATIONS:

- ABUT. = ABUTMENT
- APPR. = APPROACH
- B = BOTTOM
- @ = BASELINE
- BM = BENCHMARK
- BOT. OR BTM. = BOTTOM
- @ = CENTERLINE
- C/C = CENTER TO CENTER
- C.I.P. = CAST-IN-PLACE
- C.J. = CONSTRUCTION JOINT
- CLR. = CLEAR
- CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS
- CONC. = CONCRETE
- CONST. = CONSTRUCTION
- DIA. = DIAMETER
- DIM. = DIMENSION
- DTBD = DISPOSITION TO BE DETERMINED
- DWG. = DRAWING
- EB = EASTBOUND
- E.F. = EACH FACE
- EL. OR ELEV. = ELEVATION
- EQ. = EQUAL
- EST. = ESTIMATED
- EX. = EXISTING
- F.A. = FORWARD ABUTMENT
- F/F = FACE TO FACE
- F.F. = FAR FACE
- FT. = FOOT OR FEET
- FTG. = FOOTING
- FWD. = FORWARD
- IN. = INCH
- JT. = JOINT
- LT. = LEFT
- MAX. = MAXIMUM
- MIN. = MINIMUM
- MISC. = MISCELLANEOUS
- N = NORTH
- NB = NORTHBOUND
- N.F. = NEAR FACE
- NO. = NUMBER
- N.P.C.P.P. = NON-PERFORATED CORRUGATED PLASTIC PIPE
- OHWM = ORDINARY HIGH WATER MARK
- O/O = OUT TO OUT
- P.C.P.P. = PERFORATED CORRUGATED PLASTIC PIPE
- P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
- PROP. = PROPOSED
- PSF = POUNDS PER SQUARE FOOT
- R.A. = REAR ABUTMENT
- S = SOUTH
- SB = SOUTHBOUND
- SER. = SERIES
- SHLDR = SHOULDER
- SPA. = SPACE OR SPACES
- STA. = STATION
- STD. = STANDARD
- STR = STRAIGHT
- T = TOP
- T&B = TOP & BOTTOM
- TBR = TO BE REMOVED
- TBRBO = TO BE RELOCATED BY OTHERS
- TEMP. = TEMPORARY
- TYP. = TYPICAL
- U.N.O. = UNLESS NOTED OTHERWISE
- VAR. = VARIES
- WB = WESTBOUND
- WWR = WELDED WIRE REINFORCEMENT

CUY-90-16.28 (CCG3A)

MODEL: Sheet PAPER/DATE: 10/30/2025 TIME: 4:31:41 PM USER: David.Fall
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WALL GENERAL NOTES (2 OF 2)
WALL N
UNDER BRIDGE 9 AND ALONG WEST SIDE OF RAMP A2 AND RAMP J2

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
SSW	MKB
REVIEWER	
LPC 05-09-24	
PROJECT ID	
82382	
SUBSET	TOTAL
4	13
SHEET	TOTAL
1273	2696

ESTIMATED QUANTITIES

CALCULATED BY: ZES DATE: 04/24/24

CHECKED BY: SSW DATE: 05/14/24

PARTICIPATION	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.
01/IMS/04	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	4
01/IMS/04	203	20001	182	CY	EMBANKMENT, AS PER PLAN	3
01/IMS/04	203	35110	672	CY	GRANULAR MATERIAL, TYPE B	
01/IMS/04	503	21100	180	CY	UNCLASSIFIED EXCAVATION	
01/IMS/04	507	00400	194	FT	STEEL PILES, MISC.: W21x101, FURNISHED	3
01/IMS/04	507	00400	210	FT	STEEL PILES, MISC.: W24x192, FURNISHED	3
01/IMS/04	512	10001	279	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	3
01/IMS/04	512	10101	486	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	3
01/IMS/04	513	90000	6,851	LB	STRUCTURAL STEEL, MISC.: RETENTION ANGLE	3
01/IMS/04	516	13600	20	SF	1" PREFORMED EXPANSION JOINT FILLER	
01/IMS/04	516	13900	44	SF	2" PREFORMED EXPANSION JOINT FILLER	
01/IMS/04	516	42000	5	EACH	ELASTOMERIC BEARING PAD, MISC.: 6" x 8" x 3/8" THICK	12
01/IMS/04	516	42000	165	EACH	ELASTOMERIC BEARING PAD, MISC.: 6" x 10" x 3/8" THICK	12
01/IMS/04	524	94703	200	FT	DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN	3
01/IMS/04	SPECIAL	530E51010	1,195	SF	RETAINING WALL, PRECAST CONCRETE LAGGING	4
01/IMS/04	607	23000	62	FT	FENCE, TYPE CLT	
01/IMS/04	840	20000	4,643	SF	MECHANICALLY STABILIZED EARTH WALL	
01/IMS/04	840	20001	823	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: WIRE FACED MSE WALL	4
01/IMS/04	840	21000	2,149	CY	WALL EXCAVATION	
01/IMS/04	840	22000	626	SY	FOUNDATION PREPARATION	
01/IMS/04	840	23000	4,380	CY	SELECT GRANULAR BACKFILL	
01/IMS/04	840	23050	173	CY	NATURAL SOIL	
01/IMS/04	840	25010	424	FT	6" DRAINAGE PIPE, PERFORATED	
01/IMS/04	840	25020	40	FT	6" DRAINAGE PIPE, NON-PERFORATED	
01/IMS/04	840	26000	243	FT	CONCRETE COPING	
01/IMS/04	840	26050	4,643	SF	AESTHETIC SURFACE TREATMENT	
01/IMS/04	840	27000	1	DAY	ON-SITE ASSISTANCE	
01/IMS/04	840	28000	LS		SGB INSPECTION AND COMPACTION TESTING	

ESTIMATED QUANTITIES

WALL N

UNDER BRIDGE 9 AND ALONG WEST SIDE OF RAMP A2 AND RAMP J2

SFN

N/A

DESIGN AGENCY

Michael Baker
INTERNATIONAL

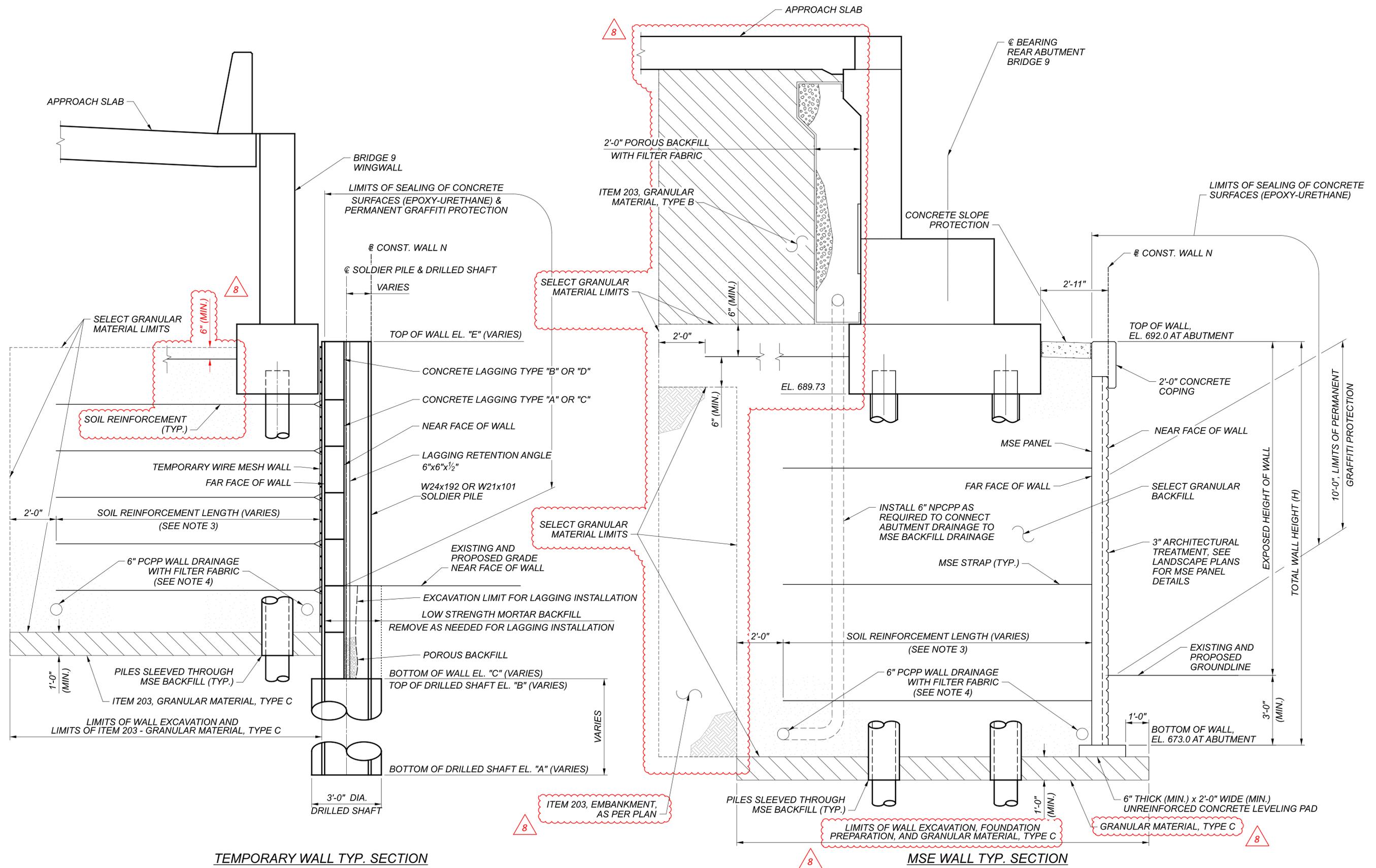
DESIGNER: SSW CHECKER: MKB

REVIEWER: LPC 05-09-24

PROJECT ID: 82382

SUBSET TOTAL: 5 13

SHEET TOTAL: 1274 2696



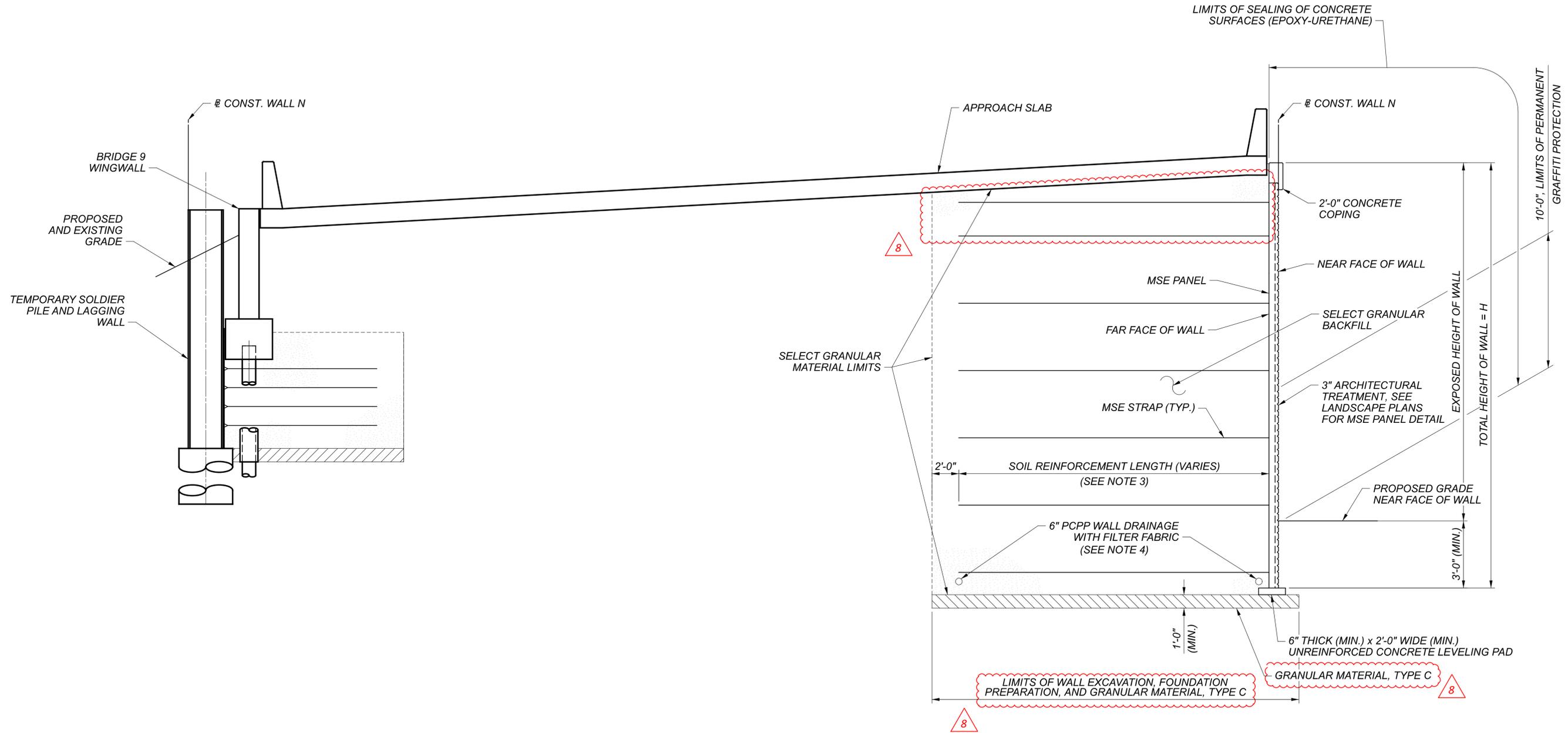
NOTES:

- TEMPORARY SOLDIER PILE AND LAGGING WALL MUST BE BUILT PRIOR TO CONSTRUCTION OF THE TEMPORARY WIRE MESH WALL AND THE BRIDGE 9 REAR ABUTMENT.
- TEMPORARY SOLDIER PILE AND LAGGING WALL TO BE REMOVED IN A FUTURE CONSTRUCTION PROJECT.
- SOIL REINFORCEMENT LENGTH TO BE DETERMINED BY WALL SUPPLIER OF THE APPROVED WALL SYSTEM, BUT SHALL NOT BE LESS THAN 70 PERCENT OF THE DESIGN HEIGHT OF THE WALL OR 8 FT, WHICHEVER IS GREATER.
- FILTER FABRIC IS TO BE INCLUDED WITH ITEM 840 - 6" DRAINAGE PIPE, PERFORATED, FOR PAYMENT.

NOTES:

- MSE WALL PANELS ARE TO BE 5'-0"x5'-0", ARRANGED IN VERTICAL RUNNING BOND.
- SEE LANDSCAPE DETAILS FOR MSE PANEL AESTHETIC TREATMENT DETAILS.
- SOIL REINFORCEMENT LENGTH TO BE DETERMINED BY WALL SUPPLIER OF THE APPROVED WALL SYSTEM, BUT SHALL NOT BE LESS THAN 70 PERCENT OF THE DESIGN HEIGHT OF THE WALL OR 8 FT, WHICH IS EVEN GREATER.
- FILTER FABRIC IS TO BE INCLUDED WITH ITEM 840 - 6" DRAINAGE PIPE, PERFORATED, FOR PAYMENT.

SFN	N/A
DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
CHECKER	MKB
REVIEWER	LPC
PROJECT ID	82382
SUBSET	7
TOTAL	13
SHEET	1276
TOTAL	2696



MSE WALL TYP. SECTION

NOTES:

1. TEMPORARY SOLDIER PILE AND LAGGING WALL MUST BE BUILT PRIOR TO CONSTRUCTION OF THE TEMPORARY WIRE MESH WALL AND THE BRIDGE 9 REAR ABUTMENT.
2. TEMPORARY SOLDIER PILE AND LAGGING WALL TO BE REMOVED IN A FUTURE CONSTRUCTION PROJECT.
3. SOIL REINFORCEMENT LENGTH TO BE DETERMINED BY WALL SUPPLIER OF THE APPROVED WALL SYSTEM, BUT SHALL NOT BE LESS THAN 70 PERCENT OF THE DESIGN HEIGHT OF THE WALL OR 8 FT, WHICH IS EVEN GREATER.
4. FILTER FABRIC IS TO BE INCLUDED WITH ITEM 840 - 6" DRAINAGE PIPE, PERFORATED, FOR PAYMENT.

ESTIMATED QUANTITIES

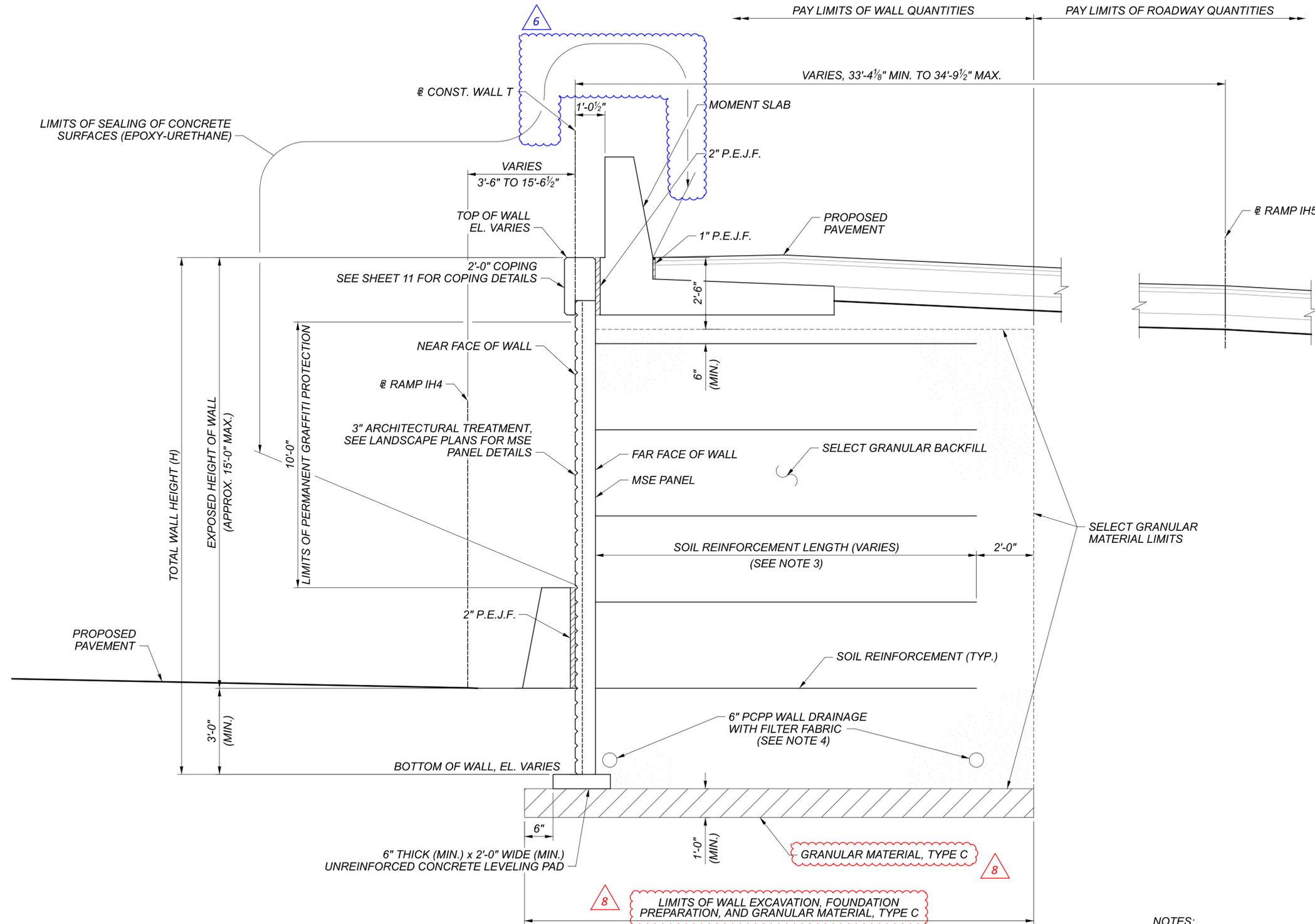
CALCULATED BY: ZES DATE: 04/24/24

CHECKED BY: SSW DATE: 05/14/24

PARTICIPATION	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.
01/IMS/04	503	21100	2,802	CY	UNCLASSIFIED EXCAVATION	
01/IMS/04	507	00400	2,290	FT	STEEL PILES, MISC.: W36x262, FURNISHED	2
01/IMS/04	509	10000	48,626	LB	EPOXY COATED STEEL REINFORCEMENT	
01/IMS/04	509	30020	3,660	FT	NO. 4 DEFORMED GFRP REINFORCEMENT	
01/IMS/04	511	46012	152	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
01/IMS/04	511	53012	138	CY	CLASS QC2 CONCRETE, MISC.: MOMENT SLAB AND BARRIER WITH QC/QA	3
01/IMS/04	511	71200	3,769	SF	CONCRETE, MISC.: ARCHITECTURAL TREATMENT	3
01/IMS/04	512	10001	275	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	3
01/IMS/04	512	10101	496	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	2
01/IMS/04	512	33001	41	SY	TYPE 2 WATERPROOFING, AS PER PLAN	2
01/IMS/04	513	20000	1,116	EACH	WELDED STUD SHEAR CONNECTORS	
01/IMS/04	516	13600	231	SF	1" PREFORMED EXPANSION JOINT FILLER	
01/IMS/04	516	42000	120	EACH	ELASTOMERIC BEARING PAD, MISC.: 6" x 9" x 3/8" THICK	8
01/IMS/04	518	20000	364	SY	PREFABRICATED GEOCOMPOSITE DRAIN	3
01/IMS/04	518	21200	168	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
01/IMS/04	518	40000	273	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
01/IMS/04	518	40010	62	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
01/IMS/04	524	94803	1,512	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN	2
01/IMS/04	SPECIAL	530E51010	743	SF	RETAINING WALL, PRECAST CONCRETE LAGGING	2
01/IMS/04	SPECIAL	530E51020	3,273	SF	RETAINING WALL, TIMBER LAGGING	3

ESTIMATED QUANTITIES
WALL S
ALONG SOUTH SIDE OF I.R. 77

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
SSW	YC
REVIEWER	
LPC	05-09-24
PROJECT ID	82382
SUBSET	TOTAL
4	13
SHEET	TOTAL
1286	2696

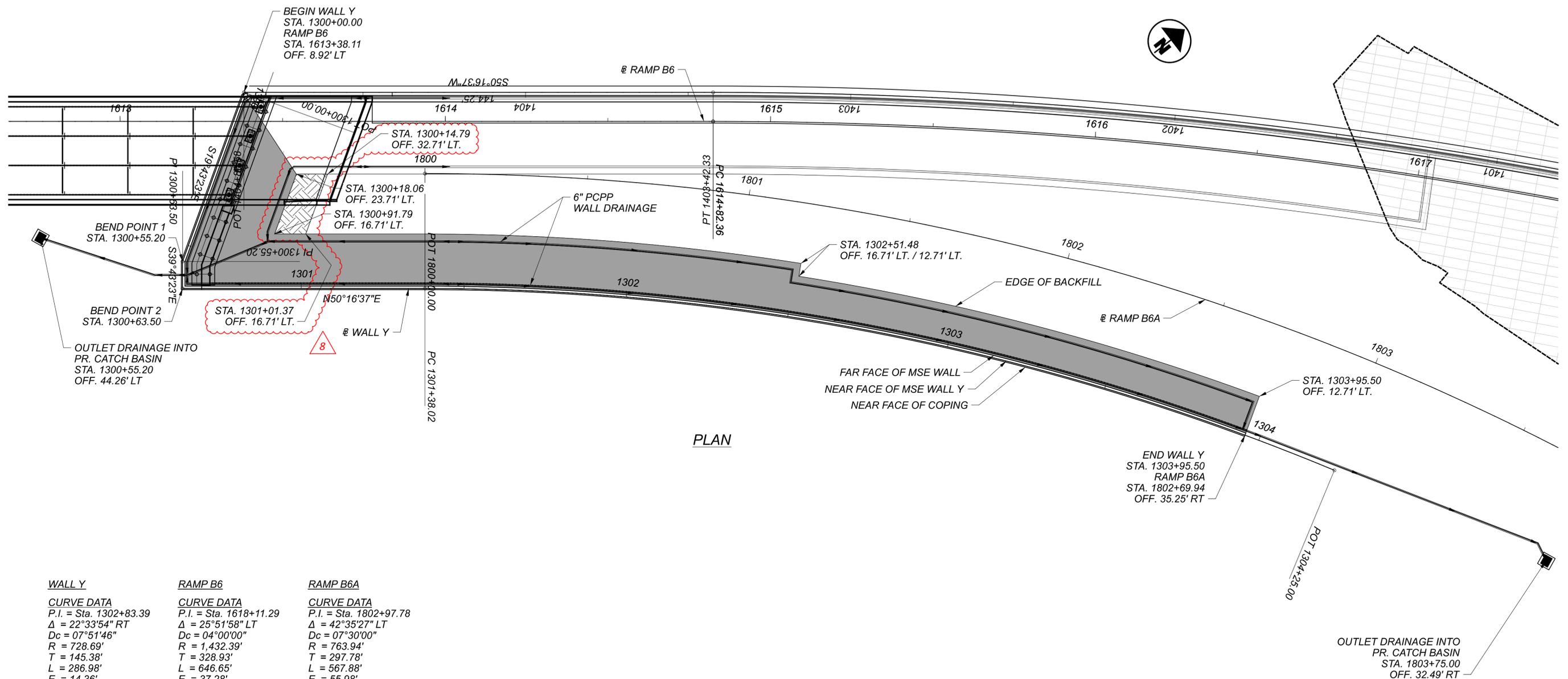


A MSE WALL TYP. SECTION
9 VALID FOR EXPOSED WALL HEIGHTS H < 20'-0"

- NOTES:**
- MSE WALL PANELS ARE TO BE 5'-0" x 5'-0", ARRANGED IN VERTICAL RUNNING BOND.
 - SEE LANDSCAPE DETAILS FOR MSE PANEL AESTHETIC TREATMENT DETAILS.
 - SOIL REINFORCEMENT LENGTH TO BE DETERMINED BY WALL SUPPLIER OF THE APPROVED WALL SYSTEM, BUT SHALL NOT BE LESS THAN 70 PERCENT OF THE DESIGN HEIGHT OF THE WALL OR 8 FT, WHICH EVER IS GREATER.
 - FILTER FABRIC US TO BE INCLUDED WITH ITEM 840 - 6" DRAINAGE PIPE, PERFORATED, FOR PAYMENT.

MSE WALL TYPICAL SECTION
 WALL T
 BETWEEN RAMP IH4 AND RAMP IH5

SFN	N/A
DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	SSW
CHECKER	MKB
REVIEWER	LPC
PROJECT ID	82382
SUBSET	9
TOTAL	14
SHEET	1304
TOTAL	2696



PLAN

WALL Y	RAMP B6	RAMP B6A
CURVE DATA	CURVE DATA	CURVE DATA
P.I. = Sta. 1302+83.39	P.I. = Sta. 1618+11.29	P.I. = Sta. 1802+97.78
$\Delta = 22^\circ 33' 54''$ RT	$\Delta = 25^\circ 51' 58''$ LT	$\Delta = 42^\circ 35' 27''$ LT
$D_c = 07^\circ 51' 46''$	$D_c = 04^\circ 00' 00''$	$D_c = 07^\circ 30' 00''$
R = 728.69'	R = 1,432.39'	R = 763.94'
T = 145.38'	T = 328.93'	T = 297.78'
L = 286.98'	L = 646.65'	L = 567.88'
E = 14.36'	E = 37.28'	E = 55.98'

NOTES:
 1. FOR MSE WALL CROSS SECTIONS, SEE SHEETS:
 RAMP B6: 851 TO 854/ 2696
 RAMP B6A: 860 TO 861/ 2696

LEGEND:

- LIMITS OF SELECT GRANULAR BACKFILL
- LIMITS OF ITEM 203 - EMBANKMENT, AS PER PLAN

	WALL BASELINE GEOMETRY				
	@ WALL Y	@ RAMP B6		@ RAMP B6A	
	STATION	STATION	OFFSET	STATION	OFFSET
BEGIN WALL Y	1300+00.00	1613+38.11	8.92' LT.	-	-
BEND POINT 1 WALL Y	1300+55.20	1613+19.23	42.96' RT.	-	-
BEND POINT 2 WALL Y	1300+63.50	1613+19.23	51.25' RT.	-	-
END WALL Y	1303+95.50	1616+56.83	86.30' RT.	1802+69.94	35.25' RT.

SCHEMATIC PLAN
WALL Y
UNDER BRIDGE 12 AND ALONG SOUTH SIDE OF RAMP B6

SFN	N/A
DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
CHECKER	
REVIEWER	LPC 05-09-24
PROJECT ID	82382
SUBSET	2
TOTAL	7
SHEET	1311
TOTAL	2696

CUY-90-16.28 (CCG3A)

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD CONSTRUCTION DRAWINGS:

- F-1.1 REVISED 7/19/2013
- DM-1.1 REVISED 1/17/2025

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

- 800 DATED SEE TITLE SHEET
- 840 DATED 7/21/2023
- 878 DATED 1/21/2022 8

REFER TO THE FOLLOWING SUPPLEMENT:

- 1083 DATED 1/20/2017

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS", 9TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE ODOT BRIDGE DESIGN MANUAL, 2020 (DATED 07-21-23).

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (CONCRETE COPING AND LEVELING PAD)
REINFORCING STEEL - ASTM A615 OR A996 GRADE 60, MINIMUM YIELD STRENGTH 60 KSI.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED PER CMS 709.00

REINFORCED FILL:

EFFECTIVE INTERNAL FRICTION ANGLE = 34°
UNIT WEIGHT = 120 pcf
EFFECTIVE COHESION = N/A

RETAINED FILL

EFFECTIVE INTERNAL FRICTION ANGLE = 30°
UNIT WEIGHT = 120 pcf
EFFECTIVE COHESION = N/A

FOUNDATION SOIL - DRAINED CONDITIONS

EFFECTIVE INTERNAL FRICTION ANGLE = 30°
UNIT WEIGHT = 115 pcf
EFFECTIVE COHESION = N/A

FOUNDATION SOIL - UNDRAINED CONDITIONS

EFFECTIVE INTERNAL FRICTION ANGLE = 30°
UNIT WEIGHT = 115 pcf
EFFECTIVE COHESION = N/A

SURCHARGE LOADS

LIVE LOAD SURCHARGE = 250 psf

THE DESIGN ASSUMES NO WATER PRESSURE ACT ON THE WALL

MSE WALL DESIGN PARAMETERS:

THE MINIMUM SOIL REINFORCEMENT LENGTH IS AT LEAST 8 FEET OR 70% OF THE WALL HEIGHT, WHICHEVER IS GREATER. FOR WALL SECTIONS AROUND ABUTMENTS, THE STRAP LENGTH WILL NEED TO BE 70% OF THE DISTANCE BETWEEN THE TOP OF THE LEVELING PAD AND THE TOP OF THE PAVEMENT.

FACTORED BEARING RESISTANCE = 11.2 ksf

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

SEAL SURFACES OF THE MSE WALL PANELS AND COPING AS SHOWN IN THE PLANS WITH AN EPOXY-URETHANE SEALER ACCORDING TO C&MS 512. THE FOLLOWING COLORS SHALL BE USED FOR PAINTING AND SEALING STRUCTURAL ELEMENTS:

COPING SEALER:	"DOVETAIL"	7018
WALL FACING SEALER:	"ALPACA"	7022

6

ALL COLOR NAME AND NUMBER REFERENCES ARE TAKEN FROM THE SHERWIN WILLIAMS COLOR PALATE. THE CONTRACTOR MAY SUBSTITUTE SIMILAR COLORS FROM ALTERNATIVE SUPPLIER'S COLOR PALATE.

ITEM 203 - EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT.

8

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. PROVIDE A COATING THAT MEETS THE REQUIREMENTS LISTED BELOW. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

- A. THE MATERIAL SHALL BE A SINGLE COMPONENT, RTV (ROOM TEMPERATURE VULCANIZED), NEUTRAL MOISTURE CURE, PERMANENT (NON-SACRIFICIAL), TYPE III (WATER CLEANABLE) POLYSILOXANE (SILICONE) ANTI-GRAFFITI COATING, FREE OF ANY WAXES, EPOXIES, OR POLYURETHANE COMPONENTS.
- B. THE COATING SHALL BE A ONE COAT SYSTEM (NO PRIMER) CAPABLE OF BEING SPRAY APPLIED TO A DRY FILM THICKNESS OF 15 MILS (375 MICRONS) WITHOUT RUNS OR SAGS (MULTIPLE COAT APPLICATION ACCEPTABLE FOR BRUSH/ROLLER USAGE AND PRIMER USAGE ACCEPTABLE FOR SPECIALTY SUBSTRATES SUCH AS GALVANIZED METAL).
- C. THE COATING SHALL EMIT LESS THAN 300 G/L (2.5 POUNDS PER GALLON) OF VOLATILE ORGANIZE COMPOUNDS (EPA METHOD 24).
- D. THE COATING SHALL MEET THE FOLLOWING PERFORMANCE REQUIREMENTS:
 1. CLEANABILITY LEVEL 1 (GRAFFITI COMPLETELY REMOVED WITH COLD WATER POWER WASH) AS PER ASTM D7089 WITH LOW PRESSURE (1200 PSI) COLD WATER WASH AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.
 2. GRAFFITI RESISTANCE LESS THAN 7.5 AS PER ASTM D6578 AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM 4578.
 3. NO SIGNS OF GRAFFITI OR GRAFFITI STAINING AND MUST BE INTACT AND EXHIBIT NO SIGNS OF STREAKING, CRACKING, PINHOLING, DISCOLORING, OR OTHER VISIBLE COATING DEGRADATION UPON CASUAL OBSERVATION WHEN TESTED IN ACCORDANCE WITH TXDOT TEX 890-B, TYPE III METHOD.
 4. BREATHABILITY OF 10 PERMS (+/- 3) PER ASTM D1653 USING "WET CUP METHOD".
 5. ELONGATION AT BREAK GREATER THAN 100% AS PER ASTM D412 (USING DIE "D").

PROPRIETARY RETAINING WALL DATA:

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS840 TO RETAIN EARTH FILL AROUND AND BELOW THE ABUTMENT. FOR LOADS AND NOTES PERTAINING TO THE ABUTMENT, SEE THE GENERAL NOTES SHEETS FOR BRIDGE 12, BRIDGE NUMBER CUY-90-1652S.

5

MSE WALLS, EXCAVATION, SELECT GRANULAR BACKFILL, AND FOUNDATION PREPARATION WILL BE PAID PER STRAP LENGTH DETERMINED IN THE SUPPLIER'S SHOP DRAWING APPROVED BY THE ENGINEER AS DESCRIBED IN ODOT SUPPLEMENTAL SPECIFICATION 840.

ITEM 607 - FENCE, TYPE CLT, AS PER PLAN

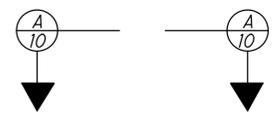
INSTALL CHAIN LINK FENCE ACCORDING TO STD. CONSTRUCTION DRAWING F-1.1 AND C&MS 607, EXCEPT AS MODIFIED BELOW.

POSTS, PLATES, TIE WIRES, CAULK AND ADDITIONAL VISIBLE HARDWARE SHALL BE COLOR BLACK (FEDERAL STD. 595C #17038). FENCE FABRIC SHALL BE BLACK VINYL-COATED, CHAIN LINK STYLE.

CONSTRUCTION SEQUENCE:

1. EXCAVATE TO THE ELEVATION OF THE MSE WALL LEVELING PAD.
2. DRIVE ABUTMENT PILES.
3. PLACE CONCRETE LEVELING PAD.
4. INSTALL MSE WALL UP TO BOTTOM OF FOOTING.
5. CONSTRUCT ABUTMENT FOOTING AFTER WAITING PERIOD (SEE BRIDGE 12 PLANS FOR DETAILS).

SECTION/DETAIL/VIEW CALLOUTS



(SEE SECTION A ON SHEET 10)



(SECTION A CUT FROM SHEET 10)

PLAN ABBREVIATIONS:

- ABUT. = ABUTMENT
- APPR. = APPROACH
- B = BOTTOM
- ⊕ = BASELINE
- BM = BENCHMARK
- BOT. OR BTM. = BOTTOM
- ⊕ = CENTERLINE
- C/C = CENTER TO CENTER
- C.I.P. = CAST-IN-PLACE
- C.J. = CONSTRUCTION JOINT
- CLR. = CLEAR
- CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS
- CONC. = CONCRETE
- CONST. = CONSTRUCTION
- DIA. = DIAMETER
- DIM. = DIMENSION
- DTBD = DISPOSITION TO BE DETERMINED
- DWG. = DRAWING
- EB = EASTBOUND
- E.F. = EACH FACE
- EL. OR ELEV. = ELEVATION
- EQ. = EQUAL
- EST. = ESTIMATED
- EX. = EXISTING
- F.A. = FORWARD ABUTMENT
- F/F = FACE TO FACE
- F.F. = FAR FACE
- FT. = FOOT OR FEET
- FTG. = FOOTING
- FWD. = FORWARD
- IN. = INCH
- JT. = JOINT
- LT. = LEFT
- MAX. = MAXIMUM
- MIN. = MINIMUM
- MISC. = MISCELLANEOUS
- N = NORTH
- NB = NORTHBOUND
- N.F. = NEAR FACE
- NO. = NUMBER
- N.P.C.P.P. = NON-PERFORATED CORRUGATED PLASTIC PIPE
- OHWM = ORDINARY HIGH WATER MARK
- O/O = OUT TO OUT
- P.C.P.P. = PERFORATED CORRUGATED PLASTIC PIPE
- P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
- PROP. = PROPOSED
- PSF = POUNDS PER SQUARE FOOT
- R.A. = REAR ABUTMENT
- S = SOUTH
- SB = SOUTHBOUND
- SER. = SERIES
- SHLDR = SHOULDER
- SPA. = SPACE OR SPACES
- STA. = STATION
- STD. = STANDARD
- STR = STRAIGHT
- T = TOP
- T&B = TOP & BOTTOM
- TBR = TO BE REMOVED
- TBRBO = TO BE RELOCATED BY OTHERS
- TEMP. = TEMPORARY
- TYP. = TYPICAL
- U.N.O. = UNLESS NOTED OTHERWISE
- VAR. = VARIES
- WB = WESTBOUND
- WWR = WELDED WIRE REINFORCEMENT

WALL GENERAL NOTES
WALL Y
UNDER BRIDGE 12 AND ALONG SOUTH SIDE OF RAMP B6

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
SSW	MKB
REVIEWER	
LPC 05-09-24	
PROJECT ID	
82382	
SUBSET	TOTAL
3	7
SHEET	TOTAL
1312	2696

ESTIMATED QUANTITIES

CALCULATED BY: ZES DATE: 04/24/24

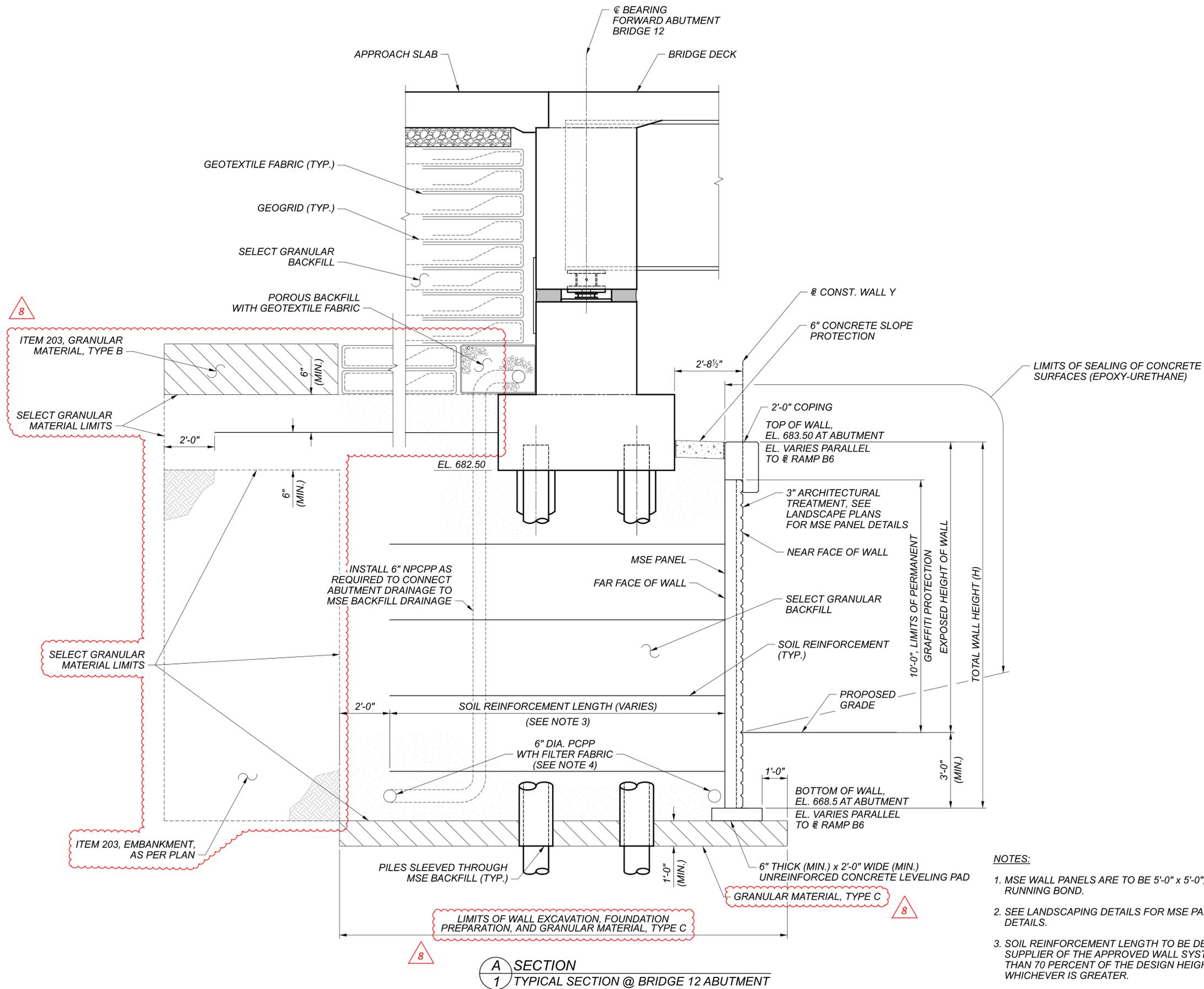
CHECKED BY: SSW DATE: 05/14/24

PARTICIPATION	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.
01//IMS/04	203	20001	95	CY	EMBANKMENT, AS PER PLAN	3
01//IMS/04	203	35110	67	CY	GRANULAR MATERIAL, TYPE B	
01//IMS/04	512	10001	370	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	3
01//IMS/04	512	10101	492	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	3
01//IMS/04	516	13600	251	SF	1" PREFORMED EXPANSION JOINT FILLER	
01//IMS/04	607	23001	325	FT	FENCE, TYPE CLT, AS PER PLAN	3
01//IMS/04	840	20000	5,681	SF	MECHANICALLY STABILIZED EARTH WALL	
01//IMS/04	840	21000	1,390	CY	WALL EXCAVATION	
01//IMS/04	840	22000	716	SY	FOUNDATION PREPARATION	
01//IMS/04	840	23000	2,377	CY	SELECT GRANULAR BACKFILL	
01//IMS/04	840	23050	741	CY	NATURAL SOIL	
01//IMS/04	840	25010	827	FT	6" DRAINAGE PIPE, PERFORATED	
01//IMS/04	840	25020	151	FT	6" DRAINAGE PIPE, NON-PERFORATED	
01//IMS/04	840	26000	401	FT	CONCRETE COPING	
01//IMS/04	840	26050	5,681	SF	AESTHETIC SURFACE TREATMENT	
01//IMS/04	840	27000	1	DAY	ON-SITE ASSISTANCE	
01//IMS/04	840	28000	LS		SGB INSPECTION AND COMPACTION TESTING	

ESTIMATED QUANTITIES

WALL Y
 UNDER BRIDGE 12 AND ALONG SOUTH SIDE OF RAMP B6

SFN	N/A
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	CHECKER
ZES	SSW
REVIEWER	
LPC	05-09-24
PROJECT ID	
82382	
SUBSET	TOTAL
4	7
SHEET	TOTAL
1313	2696

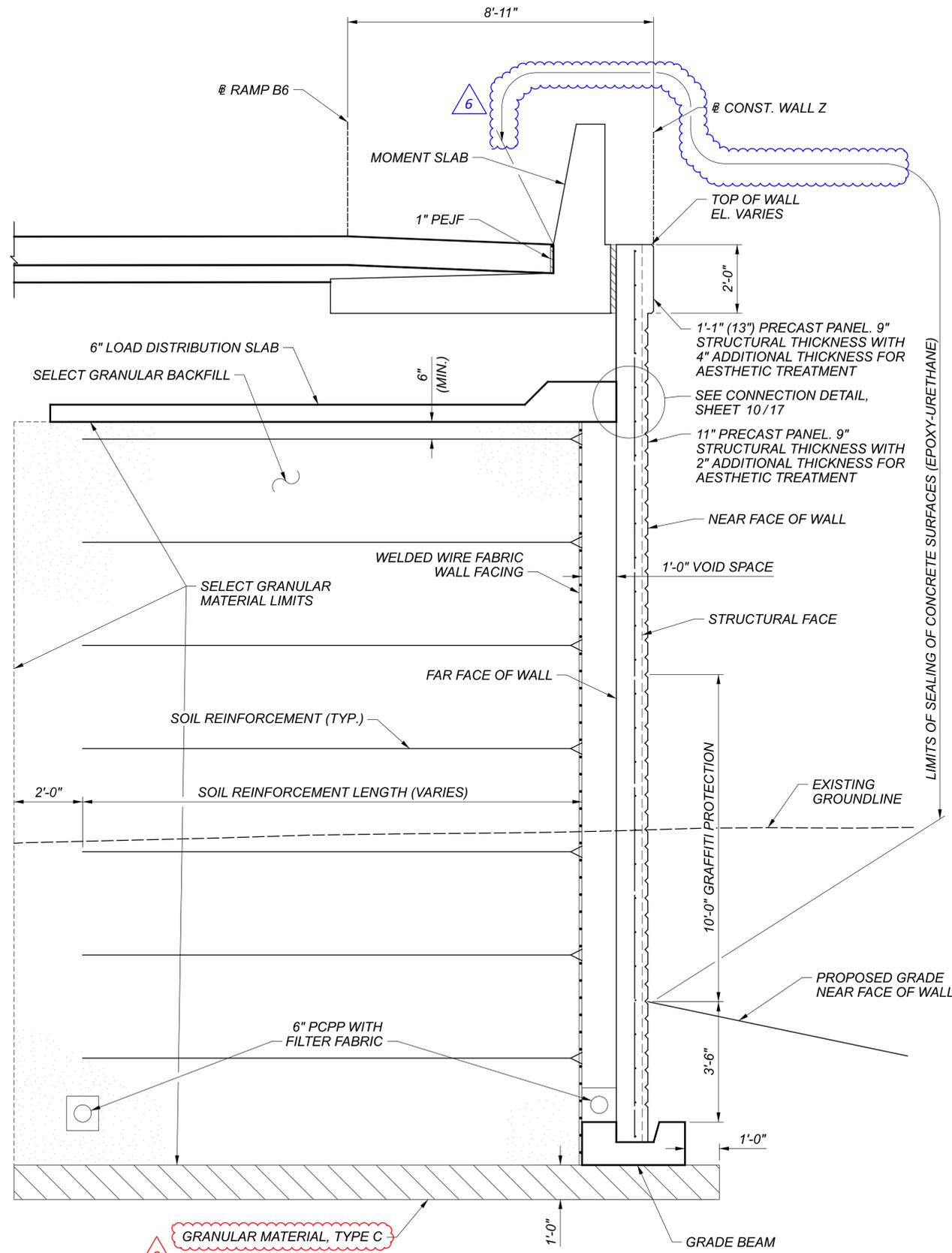


A SECTION
 1 TYPICAL SECTION @ BRIDGE 12 ABUTMENT

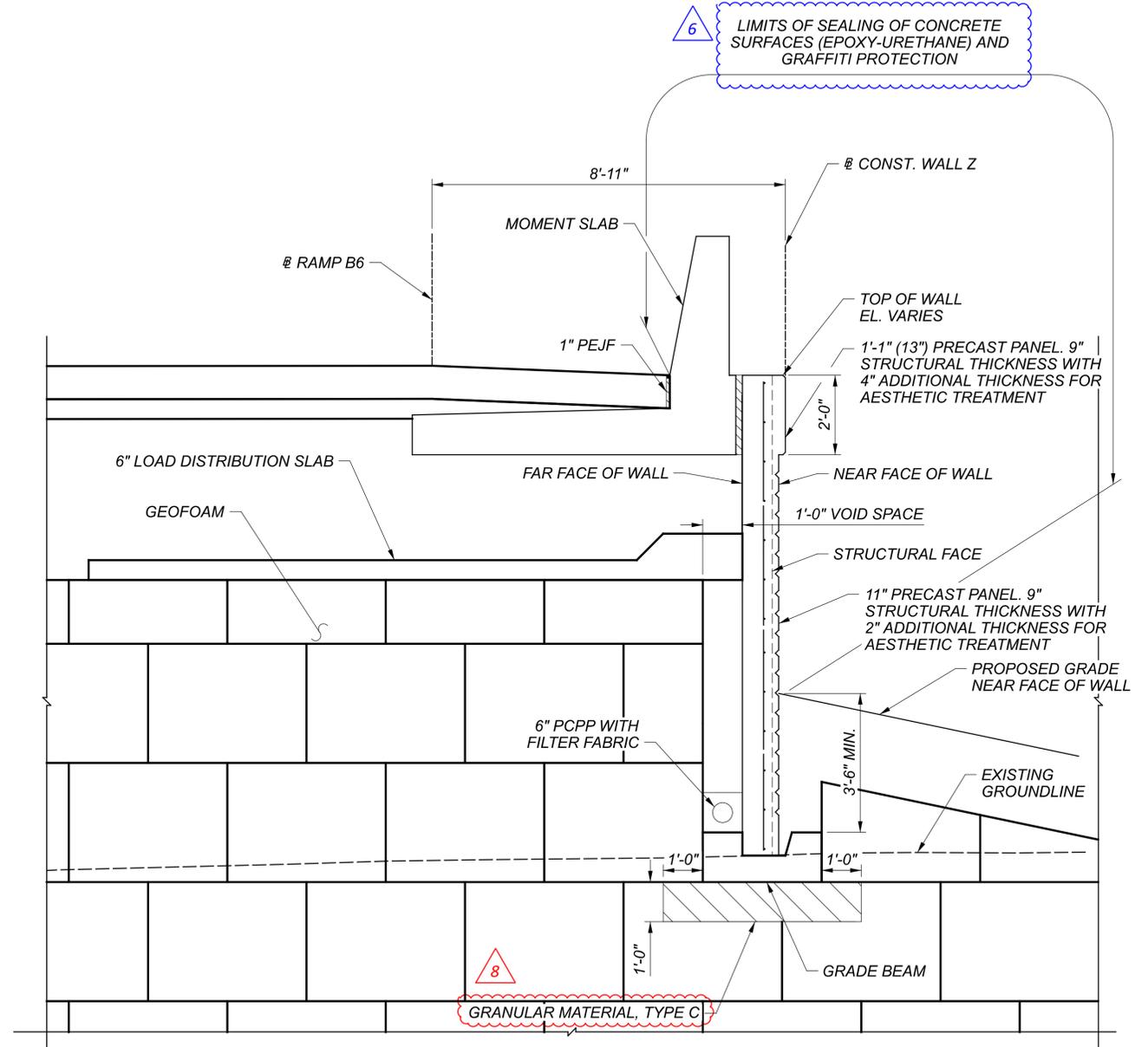
NOTES:

- MSE WALL PANELS ARE TO BE 5'-0" x 5'-0", ARRANGED IN VERTICAL RUNNING BOND.
- SEE LANDSCAPING DETAILS FOR MSE PANEL AESTHETIC TREATMENT DETAILS.
- SOIL REINFORCEMENT LENGTH TO BE DETERMINED BY WALL SUPPLIER OF THE APPROVED WALL SYSTEM, BUT SHALL NOT BE LESS THAN 70 PERCENT OF THE DESIGN HEIGHT OF THE WALL OR 8 FT., WHICHEVER IS GREATER.
- FILTER FABRIC IS TO BE INCLUDED WITH ITEM 840 - 6" DRAINAGE PIPE, PERFORATED, FOR PAYMENT.

SFN	N/A
DESIGN AGENCY	
DESIGNER	CHECKER
SSW	MKB
REVIEWER	
LPC	05-09-24
PROJECT ID	82382
SUBSET	TOTAL
5	7
SHEET	TOTAL
1314	2696



A A TILT-UP PANEL WALL TYP. SECTION
 1 2

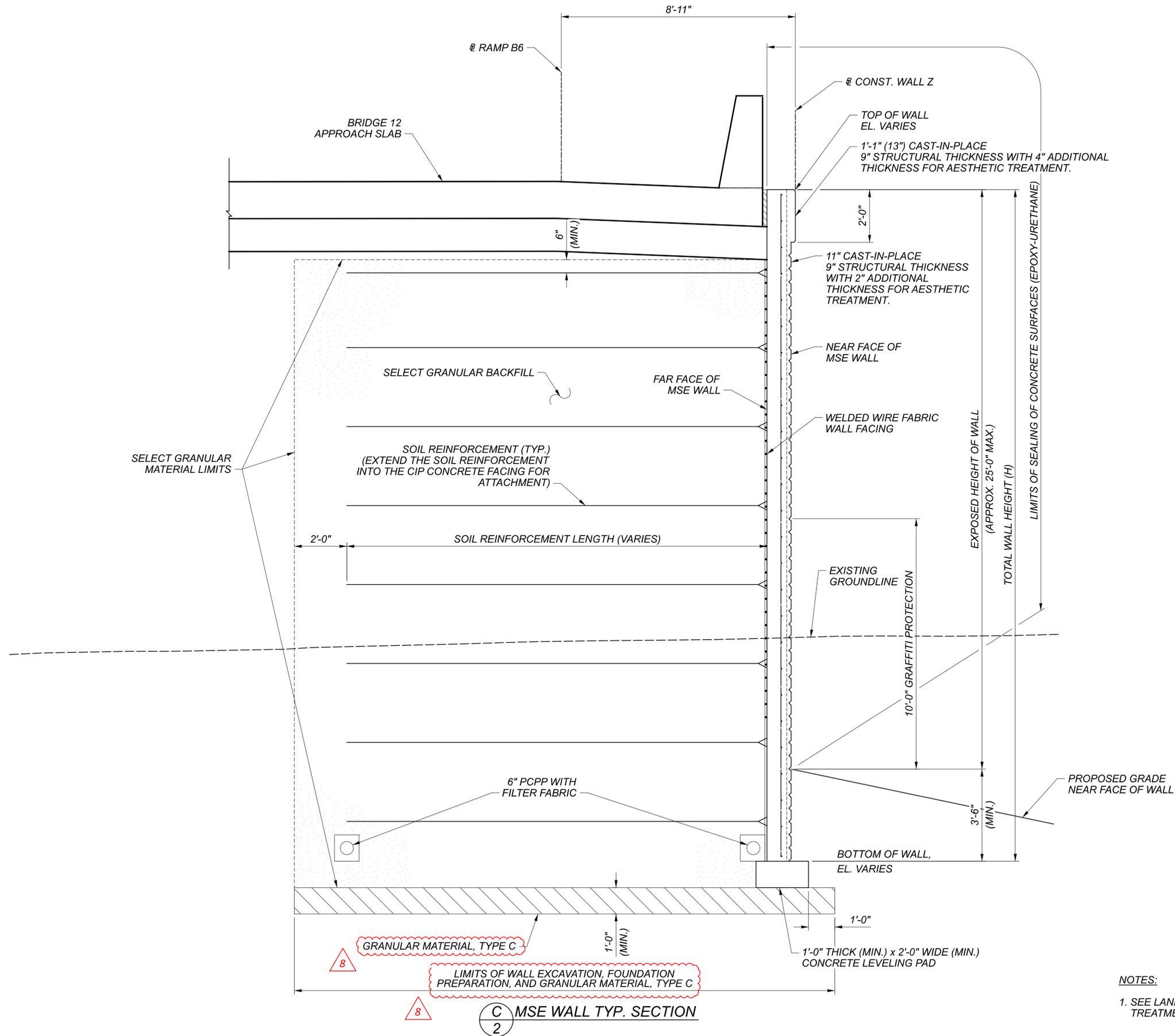


B TILT-UP PANEL WALL TYP. SECTION
 1 OVER EX. CENTRAL AVE. SEWER

NOTES:

- SHIM BOTTOM OF WALL PANELS AS REQUIRED TO ALIGN VERTICAL WALL JOINTS.
- SEE LANDSCAPING PLANS FOR WALL AESTHETIC TREATMENT DETAILS.

SFN	N/A
DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
CHECKER	MKB
REVIEWER	LPC
PROJECT ID	82382
SUBSET	7
TOTAL	17
SHEET	1323
TOTAL	2696



C
2
 MSE WALL TYP. SECTION

NOTES:
 1. SEE LANDSCAPING PLANS FOR WALL AESTHETIC TREATMENT DETAILS.

SFN	N/A
DESIGN AGENCY	
DESIGNER	CHECKER
SSW	MKB
REVIEWER	
LPC	05-09-24
PROJECT ID	82382
SUBSET	TOTAL
8	17
SHEET	TOTAL
1324	2696

CONNECTION OF NEW MAINS

WHEN THE NEW AND/OR RELOCATED WATER MAINS HAVE BEEN TESTED AND CHLORINATED AND ARE READY TO BE CONNECTED TO THE EXISTING MAIN, THE CONTRACTOR SHALL MAKE SUCH CONNECTIONS AT A TIME DESIGNATED BY THE CITY. PRIOR TO SHUTTING DOWN THE EXISTING MAINS, THE CONTRACTOR SHALL TAKE SUITABLE PRECAUTIONS TO ASSURE A MINIMUM INTERRUPTION TO SERVICE, INCLUDING THE FOLLOWING:

- (A) PERFORM ALL NECESSARY EXCAVATION, INCLUDING BELL HOLES, EXPOSING THE EXISTING MAIN SUFFICIENTLY FOR THE OPERATION OF THE PIPE SAW BY THE CITY, OR PIPE CUTTING BY THE CONTRACTOR.
- (B) REMOVE THE CAP OR PLUG FROM THE END OF THE NEW MAIN.
- (C) SWAB THE INSIDE OF ALL PIPES, BENDS, SLEEVES, COUPLINGS AND OTHER FITTINGS TO BE USED IN CONNECTION THOROUGHLY WITH A CHLORINE SOLUTION OF AT LEAST 100 P.P.M.
- (D) MAKE UP AS MUCH OF THE WATER MAIN CONNECTION AS POSSIBLE OUTSIDE THE DITCH TO ELIMINATE THE NEED FOR MAKING MOST OF THE NECESSARY JOINTS DURING THE SHUTDOWN. BY CAREFUL MEASUREMENT ALL PIPE CUTS MAY BE MADE BY THE CONTRACTOR PRIOR TO SHUTTING DOWN.
- (E) HAVE SUFFICIENT MANPOWER AND EQUIPMENT ON THE SITE TO PERFORM THE OPERATION IN A MINIMUM AMOUNT OF TIME.
- (F) PERFORM AS MUCH OF THE SERVICE AND HYDRANT CONNECTION WORK ALONG RELOCATED MAINS AS IS POSSIBLE.

8 (G) IN THE TIME PERIOD FROM APRIL 1, THRU TO NOVEMBER 1 THE CONTRACTOR IS REQUIRED TO COORDINATE SHUTDOWN TIMES WITH THE CITY.

PAINTING

- (A) IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE THAT ALL METAL WORK SUBJECT TO CORROSION SHALL BE SATISFACTORILY PROTECTED BY A DURABLE COATING OF PAINT OR OTHER APPROVED MATERIAL AND THAT ALL METAL SURFACES NOT BURIED IN EARTH, OR IN CONCRETE SHALL BE LEFT CLEAN AND WELL PAINTED AT THE COMPLETION OF THE CONTRACT. UNLESS OTHERWISE SPECIFIED, THE PROTECTION SHALL BE AT LEAST THAT GIVEN BY THREE (3) COATS OF APPROVED PAINT. THE FIRST COAT IS TO BE APPLIED AT THE SHOP BEFORE THE METAL HAS RUSTED AND AFTER ALL GREASE, DIRT AND SCALE HAS BEEN REMOVED. BOLTS AND NUTS SHALL NOT BE SHOP COATED, BUT SHALL RECEIVE THREE (3) COATS OF APPROVED PAINT AFTER INSTALLATION.
- (B) ALL METAL WORK WHICH HAS NOT BEEN COATED BEFORE THE ARRIVAL ON THE JOB SHALL BE GIVEN A TEMPORARY PROTECTIVE COATING OF SUCH A NATURE AS TO PERMIT THE READY ADHERENCE OF FUTURE COATINGS. THE TEMPORARY COATING SHALL BE A GOOD GRADE ASPHALTIC PAINT OR OTHER APPROVED MATERIAL. THE TEMPORARY PROTECTION SHALL APPLY PARTICULARLY TO THE VALVE BOXES AND COVERS, MANHOLE RINGS AND COVERS, LADDERS AND LADDER RUNGS, DRESSER TYPE/VICTAULIC TYPE COUPLINGS AND ELSEWHERE WHEN IN THE OPINION OF THE CITY, SUCH PROTECTION IS NECESSARY.
- (C) ALL SURFACES OF METAL WHICH WILL BE IN CONTACT AFTER ASSEMBLING SHALL BE PAINTED, AT LEAST ONE (1) COAT, BEFORE ASSEMBLING. THE FINAL COAT OF PAINT ON ALL EXPOSED WORK SHALL BE GIVEN SHORTLY BEFORE THE COMPLETION OF THE CONTRACT.
- (D) WHERE PAINTING CLAUSES APPEAR HEREINAFTER, THEY SHALL TAKE PRECEDENCE OVER THIS SECTION, EXCEPT THAT TEMPORARY PROTECTION HEREIN DESCRIBED MAY BE REQUIRED.
- (E) ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE PARTICULAR ITEM REQUIRING THE PAINTING.

TESTS, INSPECTION AND REPORTS

NOTWITHSTANDING THE REQUIREMENTS OF ANY OTHER PROVISIONS OF THESE SPECIFICATIONS, THE CONTRACTOR SHALL ARRANGE FOR AND PAY ALL COSTS INVOLVED FOR SHOP INSPECTION OF ALL MATERIALS FURNISHED, MANUFACTURE OF ALL PIPE, VALVES, FITTINGS, ETC., FIELD AND SHOP WELDS AND WELDING, AND FURNISH TO THE STATE AND THE CITY OF CLEVELAND COPIES OF ALL SHOP, FABRICATION, MANUFACTURE AND OTHER RELATED INSPECTION REPORTS OF MATERIALS FURNISHED. THIS INSPECTION SHALL BE DONE BY A RECOGNIZED INSPECTION LABORATORY APPROVED BY THE CITY OF CLEVELAND. IN THE CASE OF ANY ITEM NOT SPECIFICALLY MENTIONED IN THE "WATER WORK NOTES," OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS - JANUARY 1, 2023 SHALL GOVERN.

HANDLING PIPE AND ACCESSORIES

- (A) UNLOADING PIPE, FITTINGS, VALVES, HYDRANTS, AND OTHER ACCESSORIES SHALL, UNLESS OTHERWISE DIRECTED, BE UNLOADED AT THE POINT OF DELIVERY, HAULED TO AND DISTRIBUTED AT THE SITE OF THE PROJECT BY THE CONTRACTOR. THEY SHALL AT ALL TIMES BE HANDLED WITH CARE TO AVOID DAMAGE. IN LOADING AND UNLOADING, THEY SHALL BE LIFTED BY HOISTS OR SLID, OR ROLLED ON SKIDWAYS IN SUCH MANNER AS TO AVOID SHOCK. UNDER NO CIRCUMSTANCES SHALL THEY BE DROPPED. PIPE HANDLED ON SKIDWAYS MUST NOT BE SKIDDED OR ROLLED AGAINST PIPE ALREADY ON THE GROUND.
- (B) AT SITE OF WORK: IN DISTRIBUTING THE MATERIAL AT THE SITE OF THE WORK, EACH PIECE SHALL BE UNLOADED OPPOSITE OR NEAR THE PLACE WHERE IT IS TO BE LAID IN THE TRENCH.
- (C) PROTECTION OF PIPE COATING: PIPE SHALL BE HANDLED IN SUCH MANNER THAT A MINIMUM AMOUNT OF DAMAGE TO THE COATING WILL RESULT. ANY PIPE OR FITTING, THE COATING OF WHICH HAS BEEN DAMAGED IN SHIPPING OR HANDLING, SHALL HAVE THE DAMAGED PORTION WELL CLEANED AND COATED IN THE SHOP WITH A MATERIAL EQUAL TO THAT APPLIED TO THE PIPE AND FITTINGS AND APPROVED BY THE CITY BEFORE BEING PLACED IN THE WORK. THE CONTRACTOR SHALL THOROUGHLY COAT ALL EXPOSED PARTS OF BOLTS AND NUTS WITH AN APPROVED ASPHALT PAINT, AFTER ALL PIPE HAS BEEN LAID AND BEFORE BACKFILLING HAS BEEN PLACED. ALL FIELD COATINGS SHALL BE FURNISHED AND APPLIED BY THE CONTRACTOR.
- (D) PROTECTION OF CONCRETE PIPE: IF, IN THE PROCESS OF MANUFACTURE, TRANSPORTATION, OR HANDLING, ANY CONCRETE PIPE, FITTING OR SPECIAL RECEIVES ANY INDENTATION OR DEFORMATION TO THE CONCRETE, STEEL ENDS OR CONNECTIONS, THE REMOVAL OF WHICH WILL IN ANY DEGREE INJURE IT, SUCH PIPE, FITTING OR SPECIAL SHALL BE REJECTED AND REPLACED WITH NEW MATERIAL TO THE SATISFACTION OF THE CITY AT THE CONTRACTOR'S EXPENSE.
- (E) PIPE KEPT CLEAN: THE INTERIOR OF THE PIPE, FITTINGS, AND OTHER ACCESSORIES SHALL BE KEPT FREE FROM DIRT AND FOREIGN MATTER AT ALL TIMES.
- (F) FROST PROTECTION: VALVES AND HYDRANTS BEFORE INSTALLATION SHALL BE DRAINED AND STORED IN A MANNER THAT WILL PROTECT THEM FROM DAMAGE BY FREEZING.

CHANGES IN WATER MAINS

WHEREVER IT BECOMES NECESSARY, IN THE OPINION OF THE ENGINEER OR THE CITY TO CHANGE THE LOCATION OR ELEVATION OF WATER MAINS AND HYDRANTS AND WHERE WATER MAIN CONNECTIONS ARE TO BE MADE BETWEEN EXISTING DISTRIBUTION MAINS AND WATER MAINS INSTALLED UNDER THIS CONTRACT, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING LINE MATERIALS AS REQUIRED IN ORDER TO RECONNECT THE WATER MAIN AND SHALL FURNISH AND INSTALL COMPLETE, ALL NEW WATER MAIN MATERIALS INCLUDING PIPE, FITTINGS AND VALVES TO MAKE THE CONNECTIONS INDICATED, EXCEPT BRANCH SLEEVES AND VALVES WHICH SHALL BE FURNISHED BY THE CONTRACTOR BUT WILL BE INSTALLED BY THE CITY, EXCEPT WHERE OTHERWISE SPECIFIED UNDER THE SECTION ENTITLED "WORK TO BE DONE BY THE CITY."

THE CONTRACTOR SHALL ALSO FURNISH ALL NECESSARY LABOR, MATERIALS, TOOLS AND EQUIPMENT AND MAKE THE EXCAVATION, BACKFILL AND REPAVING FOR SUCH CONNECTIONS. PAYMENT FOR THIS SHALL BE INCLUDED IN PRICE BID UNDER THE APPROPRIATE ITEM FOR SIZE OF WATER MAIN OR CONNECTION TO BE INSTALLED. ALL WATER MAIN MATERIALS, VALVES, AND APPURTENANCES REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR. (SEE WORK TO BE DONE BY THE CITY).

WORK TO BE DONE BY THE CITY

- (A) TAPPING MAINS: THE CONTRACTOR SHALL FURNISH ALL BRANCH SLEEVES, TAPPING SADDLES AND TAPPING VALVES OF THE SIZES AND TYPES INDICATED ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL DO ALL THE NECESSARY EXCAVATION, BACKFILLING, SEEDING OR SODDING AND REPAVING REQUIRED THEREFORE. THE CONTRACTOR SHALL ALSO FURNISH ALL EQUIPMENT, TOOLS AND INCIDENTALS, INCLUDING AIR COMPRESSOR, REQUIRED TO DO THIS WORK.
- 1) THE CITY WILL INSTALL ALL BRANCH SLEEVES, TAPPING SLEEVES AND TAPPING VALVES ON ALL CAST IRON, DUCTILE IRON AND CONCRETE PIPE OF ALL SIZES.
- 2) THE CITY WILL MAKE THE PRESSURE TAPS ON CAST IRON OR DUCTILE IRON WATER MAINS FOR TAP SIZES UP TO AND INCLUDING 16-INCHES, AND ON CONCRETE WATER MAINS FOR TAP SIZES UP TO AND INCLUDING 12-INCHES.

WORK TO BE DONE BY THE CITY (CONTINUED)

- 3) THE CONTRACTOR SHALL ARRANGE FOR AND SHALL PAY FOR ALL PRESSURE TAPS OF 20-INCH AND LARGER ON CAST IRON OR DUCTILE IRON WATER MAINS AND FOR ALL PRESSURE TAPS OF 16-INCH AND LARGER ON CONCRETE AND STEEL WATER MAINS. THE CONTRACTOR'S COSTS FOR SUCH ARRANGEMENTS FOR PRESSURE TAPPING SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM.
 - 4) THE CITY WILL NOT OPERATE EQUIPMENT PROVIDED BY THE CONTRACTOR. HOWEVER, THE CITY WILL INSTALL ALL BRANCH SLEEVES, TAPPING SADDLES AND TAPPING VALVES AS INDICATED HEREIN AND WILL ASSIST IN MAKING THE PRESSURE TAP WHERE PRESSURE TAPPING IS PROVIDED BY THE CONTRACTOR. THE CITY WILL ONLY OPERATE EQUIPMENT BELONGING TO THE CITY. ALL LABOR COSTS INCURRED BY THE CITY FOR WORK REQUIRED TO BE DONE BY THE CITY IN THE TAPPING OF WATER MAINS WILL BE CHARGED TO THE CONTRACTOR IN ACCORDANCE WITH THE FEE SCHEDULE APPEARING ELSEWHERE IN THESE NOTES. THE CITY, DIVISION OF WATER, WILL CHARGE TO THE CONTRACTOR A "TAPPING FEE" FOR DIVISION OF WATER LABOR INCURRED IN THE WORK, PAYABLE TO THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER BEFORE ANY WORK IS PERFORMED.
 - (B) PIPE CUTTING: IN LOCATIONS WHERE BRANCH SLEEVES AND VALVES CANNOT BE INSTALLED, THE CONTRACTOR WILL BE REQUIRED TO CUT IN TEES AND SLEEVE-IN THE REMAINDER OF THE CUT SECTION OF THE EXISTING MAIN, OR, WHEN OTHERWISE REQUIRED WHERE THE CONTRACTOR MUST MAKE PIPE CUTS, IT IS CALLED TO THE CONTRACTOR'S ATTENTION THAT THE DIVISION OF WATER HAS ON HAND AT HARVARD YARDS MOTOR OPERATED PIPE CUTTERS WHICH ARE AVAILABLE FOR CUTTING PIPE BY CITY FORCES.
- THE COSTS CHARGED FOR PIPE CUTTING BY CITY FORCES MAY BE OBTAINED FROM THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER, PUBLIC UTILITIES BUILDING, 1201 LAKESIDE AVENUE, CLEVELAND, OHIO 44114. THE CONTRACTOR SHALL DO ALL NECESSARY EXCAVATION, BACKFILLING AND REPAVING AND ALL AIR COMPRESSOR AND CRANE SERVICE SHALL BE FURNISHED BY THE CONTRACTOR. THE CITY, DIVISION OF WATER, WILL CHARGE TO THE CONTRACTOR A "PIPE CUTTING FEE" FOR DIVISION OF WATER LABOR INCURRED IN THE WORK, PAYABLE TO THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER BEFORE ANY WORK IS PERFORMED.

ITEM 638 - WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT CHARGES

THE CITY, DIVISION OF WATER, WILL CHARGE TO THE CONTRACTOR CERTAIN CHARGES PURSUANT TO SECTION 531.03(a) OF THE CODIFIED ORDINANCES OF THE DIVISION OF WATER, AS AMENDED BY ORDINANCE 1043-75 AND ADOPTED BY THE CITY OF CLEVELAND BOARD OF CONTROL RESOLUTION NO: 003-82, AND PER ORDINANCE NO: 2661-81, FOR DIVISION OF WATER LABOR REQUIRED IN THE WORK, PAYABLE TO THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER BEFORE ANY WORK IS PERFORMED. NOTE THAT THE CHARGES INDICATED HEREIN ARE SUBJECT TO CHANGE AND THAT THE CONTRACTOR SHALL VERIFY THE LATEST PRICES WITH THE DIVISION OF WATER, PERMITS AND SALES SECTION.

NO CONTRACTOR'S MARKUP ALLOWED ON BID ITEM 638 - WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT CHARGES. THIS IS AN ALLOWANCE SET UP FOR THE CONTRACTOR TO PAY FOR PERMITS, FEES, AND OTHER CHARGES TO BE REIMBURSED BY THE OHIO DEPARTMENT OF TRANSPORTATION THROUGH THIS PAY ITEM.

ALL PERMITS, FEES AND C.W.D. CHARGES AND THEIR ASSOCIATED COSTS SHALL BE INCLUDED IN THE CONTRACT ALLOWANCE FOR THIS COST. CITY OF CLEVELAND DIVISION OF WATER (C.W.D.) CHARGES AND FEES MAY BE OBTAINED FROM THE DIVISION OF WATER, PERMIT AND SALES SECTION AT (216)664-2444 X 5203

FOR CURRENT CWD SERVICES AND ASSOCIATED FEES SEE: <http://www.clevelandwater.com/construction/construction-fees>

ITEM 638 - WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT CHARGES 300,000 EACH

EXCAVATION

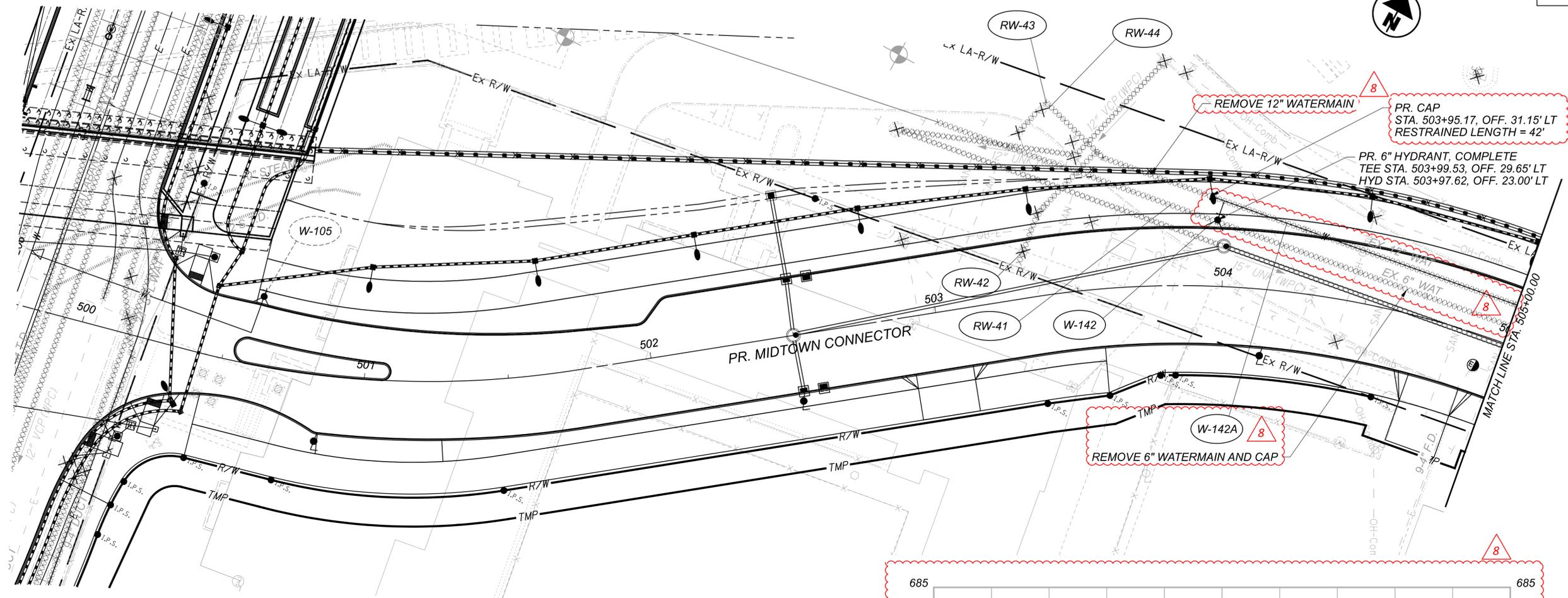
- (A) THE CONTRACTOR SHALL REMOVE ALL EXISTING STRUCTURES, ROADWAYS, DRIVEWAYS AND OTHER SIMILAR MATERIALS AND MAKE ALL EXCAVATION NECESSARY FOR THE PROPER CONSTRUCTION OF THE WATER MAIN, PIPE CONNECTIONS AND APPURTENANT STRUCTURES, INCLUDING TUNNEL AND SHAFT EXCAVATION. THE EXCAVATION SHALL INCLUDE THE REMOVAL, HANDLING, REHANDLING AND DISPOSAL OF MATERIALS ENCOUNTERED IN THE WORK AND SHALL INCLUDE ALL PUMPING, BAILING, DRAINAGE, SHEETING AND BRACING. MOREOVER, THE CONTRACTOR MUST ASSUME ALL RESPONSIBILITY FOR ANY ADDED EXPENSE OR OTHER LIABILITY WHICH MAY ARISE BY MEANS OF QUICKSAND, OBSTACLES OR CONDITIONS FORESEEN AND UNFORESEEN OR ENCOUNTERED IN THE WORK OF THIS CONTRACT.
- (B) TRENCHES SHALL IN EVERY CASE BE OF SUFFICIENT WIDTH TO PERMIT SOLID PACKING OF BACKFILL UNDER AND AROUND PIPES, AND SATISFACTORY CONSTRUCTION OF ALL APPURTENANCES AND FOR SUCH SHEETING AND SHORING, PUMPING AND DRAINING AS MAY BE NECESSARY.
- (C) THE TRENCH SHALL BE DUG TO THE ALIGNMENT AND DEPTH REQUIRED AND ONLY SO FAR IN ADVANCE OF PIPE LAYING AS THE ENGINEER SHALL PERMIT. THE TRENCH SHALL BE SO BRACED AND DRAINED THAT WORKMEN MAY WORK THEREIN SAFELY AND EFFICIENTLY. IT IS ESSENTIAL THAT THE DISCHARGE FROM PUMPS BE LED TO NATURAL DRAINAGE CHANNELS, TO DRAINS, OR TO SEWERS.
- (D) THE TRENCH WIDTH MAY VARY WITH AND DEPEND UPON THE DEPTH OF TRENCH AND THE NATURE OF THE EXCAVATED MATERIAL ENCOUNTERED, BUT IN ANY CASE SHALL BE OF AMPLE WIDTH TO PERMIT THE PIPE TO BE LAID AND JOINTED PROPERLY AND OF THE BACKFILL TO BE PLACED AND COMPACTED PROPERLY. THE MINIMUM WIDTH OF UNSHEETED TRENCH SHALL BE EIGHTEEN (18) INCHES LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE EXCEPT BY CONSENT OF THE CITY; THE MAXIMUM CLEAR WIDTH OF TRENCH SHALL BE NOT MORE THAN TWO (2) FEET GREATER THAN THE OUTSIDE PIPE DIAMETER. WHEN SHEETING AND BRACING IS USED, THE TRENCH WIDTH SHALL BE INCREASED ACCORDINGLY.
- (E) THE TRENCH, UNLESS OTHERWISE SPECIFIED, SHALL HAVE A FLAT BOTTOM CONFORMING TO THE GRADE TO WHICH THE PIPE IS TO BE LAID. THE PIPE SHALL BE LAID UPON SOUND SOIL CUT TRUE AND EVEN, SO THAT THE BARREL OF THE PIPE WILL HAVE A BEARING FOR ITS FULL LENGTH.
- (F) ANY PART OF THE TRENCH EXCAVATED BELOW GRADE SHALL BE CORRECTED WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.
- (G) WHEN THE UNCOVERED TRENCH BOTTOM AT SUBGRADE IS SOFT AND IN THE OPINION OF THE ENGINEER CANNOT SUPPORT THE PIPE, A FURTHER DEPTH AND OR WIDTH SHALL BE EXCAVATED AND BACKFILLED TO PIPE FOUNDATION GRADE AS REQUIRED UNDER (F), OR OTHER APPROVED MEANS SHALL BE ADOPTED TO ASSURE A FIRM FOUNDATION FOR THE PIPE.
- (H) LEDGE ROCK, BOULDERS, LARGE STONES, AND SHALE SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST SIX (6) INCHES BELOW ALL PARTS OF THE PIPE, VALVES, OR FITTINGS AND A CLEAR WIDTH OF NINE (9) INCHES ON EACH SIDE OF ALL IRON PIPE, CONCRETE PIPE, AND STEEL PIPE SHALL BE PROVIDED.
- (I) EXCAVATION BELOW SUBGRADE IN ROCK, SHALE OR IN BOULDERS SHALL BE BACKFILLED TO SUBGRADE WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.
- (J) BELL HOLES OF AMPLE DIMENSIONS SHALL BE DUG IN EARTH TRENCHES AT EACH JOINT TO PERMIT THE JOINTING TO BE MADE PROPERLY. ADEQUATE CLEARANCE FOR PROPER JOINTING OF PIPE LAID IN ROCK SHALL BE PROVIDED AT BELL HOLES.
- (K) THE USE OF EXCAVATING MACHINERY WILL BE PERMITTED EXCEPT IN PLACES WHERE ITS OPERATION WILL CAUSE DAMAGE TO TREES, BUILDINGS, OR EXISTING STRUCTURES ABOVE OR BELOW GROUND, IN WHICH CASE HAND METHODS SHALL BE EMPLOYED.
- (L) TREES, FENCES, POLES AND ALL OTHER PROPERTY SHALL BE PROTECTED UNLESS THEIR REMOVAL IS AUTHORIZED. ANY PROPERTY DAMAGED SHALL BE SATISFACTORILY RESTORED BY THE CONTRACTOR.
- (M) HYDRANTS UNDER PRESSURE, VALVE PIT COVERS, VALVE BOXES, CURB STOP BOXES FIRE OR POLICE CALL BOXES, OR OTHER UTILITY CONTROLS SHALL BE LEFT UNOBSTRUCTED AND ACCESSIBLE DURING THE CONSTRUCTION PERIOD.
- (N) THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATIONS IN GOOD ORDER DURING THE CONSTRUCTION, SO AS NOT TO HINDER OR INJURE THE PIPE LAYING, MASONRY OR OTHER WORK. HE SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT MOVEMENT OF THE SIDES OF SUCH EXCAVATION, AND SHALL REMOVE AT HIS OWN EXPENSE ANY MATERIAL SLIDING INTO THE EXCAVATION.

DESIGN AGENCY
Michael Baker INTERNATIONAL
DESIGNER
SMP
REVIEWER
SM 05/15/24
PROJECT ID
82382
SHEET TOTAL
1374 2696

RESTRAINED LENGTH SHOWN IS THE MINIMUM RESTRAINED LENGTH FOR EACH SIDE OF BEND.

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EX. SANITARY LATERALS WITHIN WORK LIMITS.

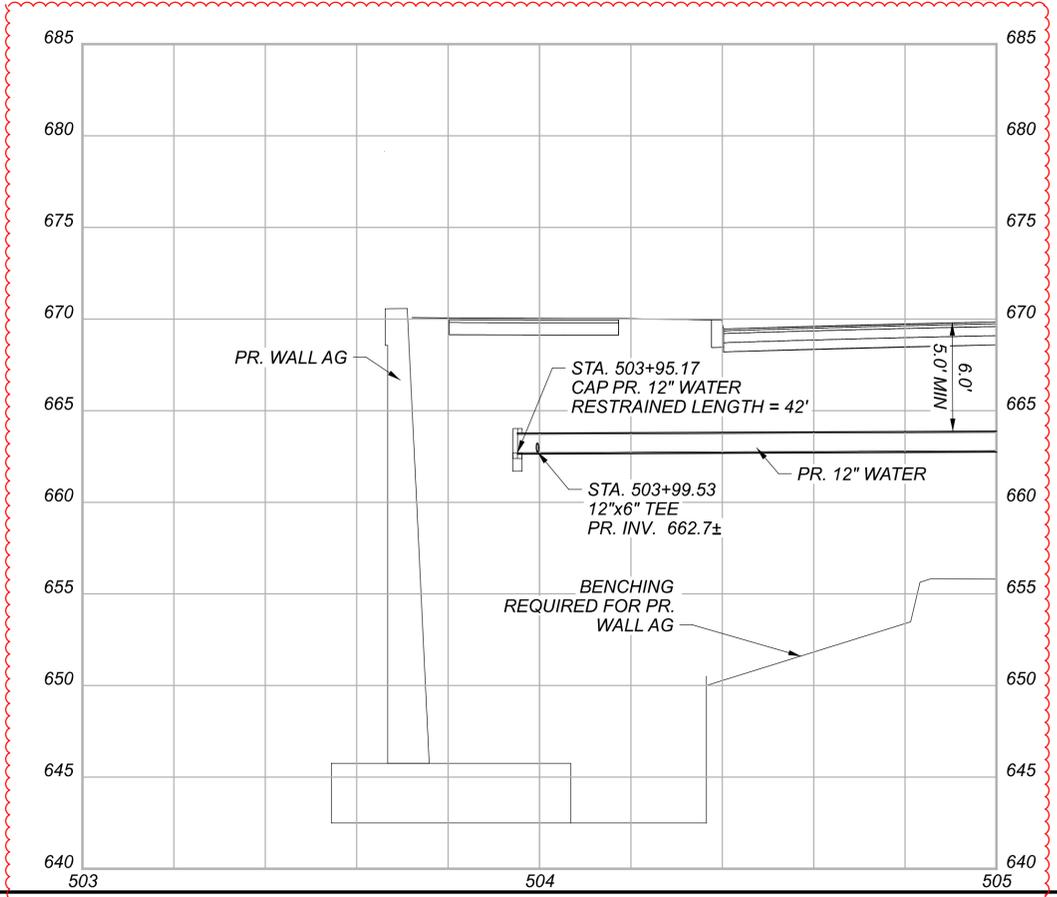
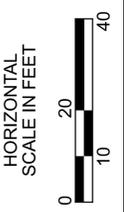
LATERALS DEEMED IN CONFLICT WILL BE ABANDONED OR RECONSTRUCTED PER DETAILS IN THE DRAINAGE PLANS AT THE DIRECTION OF THE ENGINEER.



WATER LEGEND

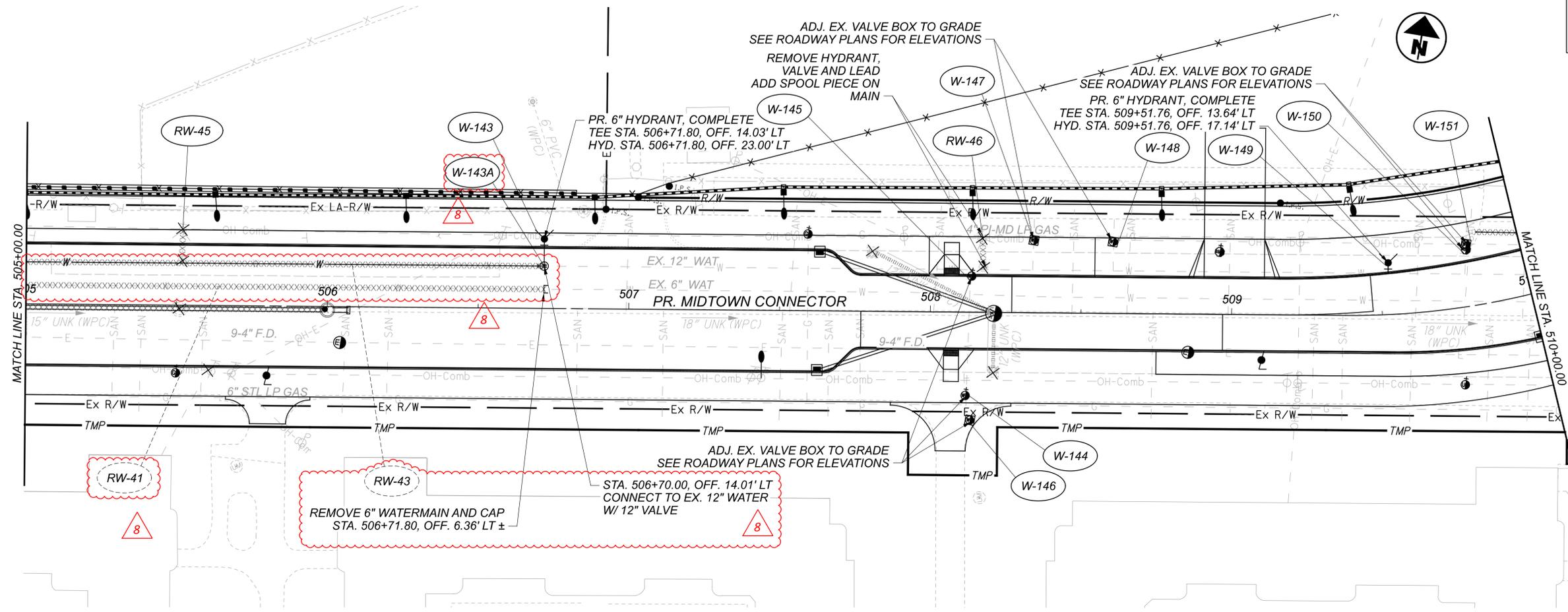
----- WATER REMOVED

× WATER STRUCTURE



12" WATERLINE PLAN AND PROFILE (MIDTOWN CONNECTOR)
 BEGIN TO STA. 505+00.00

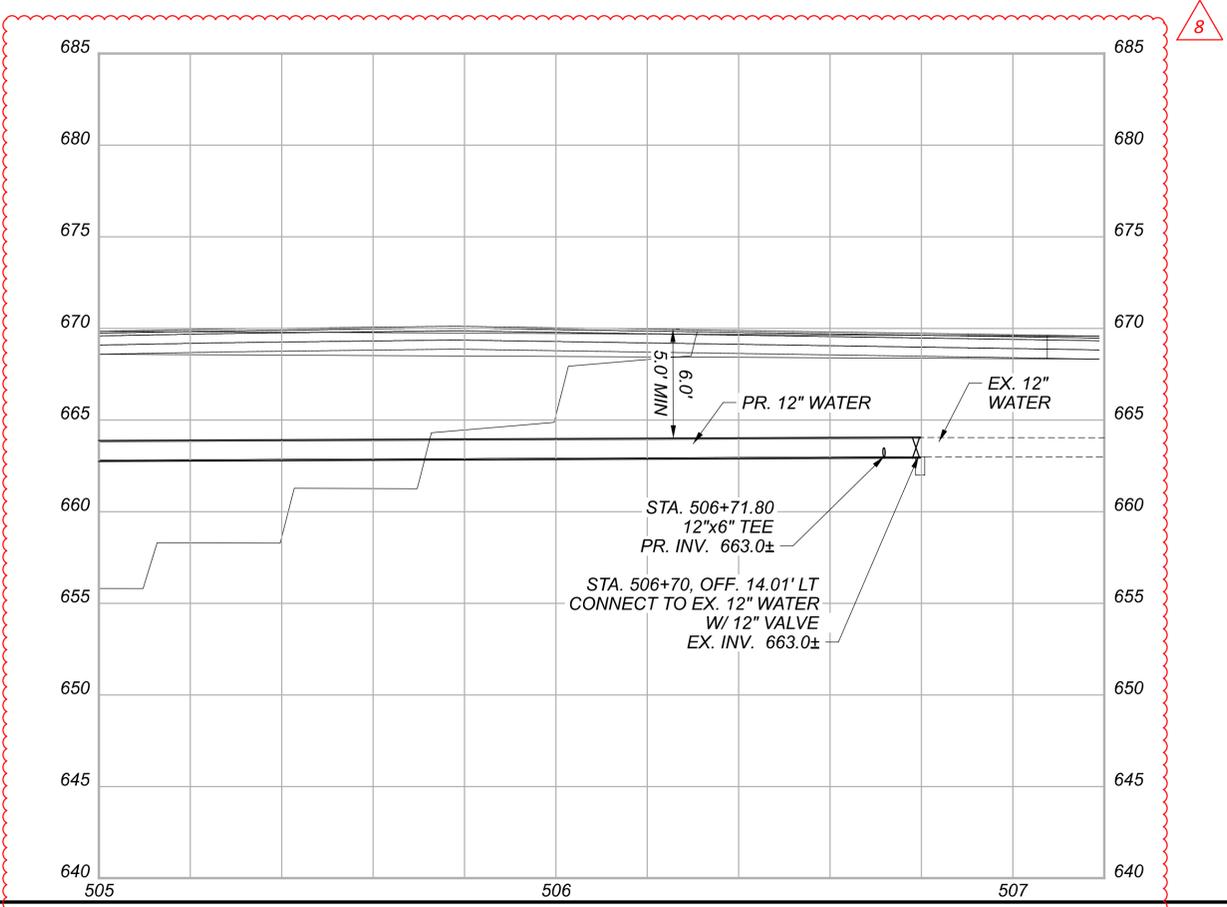
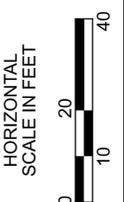
DESIGN AGENCY	
DESIGNER	SMP
REVIEWER	SM 05/15/24
PROJECT ID	82382
SHEET TOTAL	1414 2696



WATER LEGEND

XXXXX WATER REMOVED

X WATER STRUCTURE



12" WATERLINE PLAN AND PROFILE (MIDTOWN CONNECTOR)
 STA. 505+00.00 TO STA. 510+00.00

RESTRAINED LENGTH SHOWN IS THE MINIMUM RESTRAINED LENGTH FOR EACH SIDE OF BEND.

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EX. SANITARY LATERALS WITHIN WORK LIMITS.

LATERALS DEEMED IN CONFLICT WILL BE ABANDONED OR RECONSTRUCTED PER DETAILS IN THE DRAINAGE PLANS AT THE DIRECTION OF THE ENGINEER.

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	SMP
REVIEWER	SM 05/15/24
PROJECT ID	82382
SHEET TOTAL	1415 2696

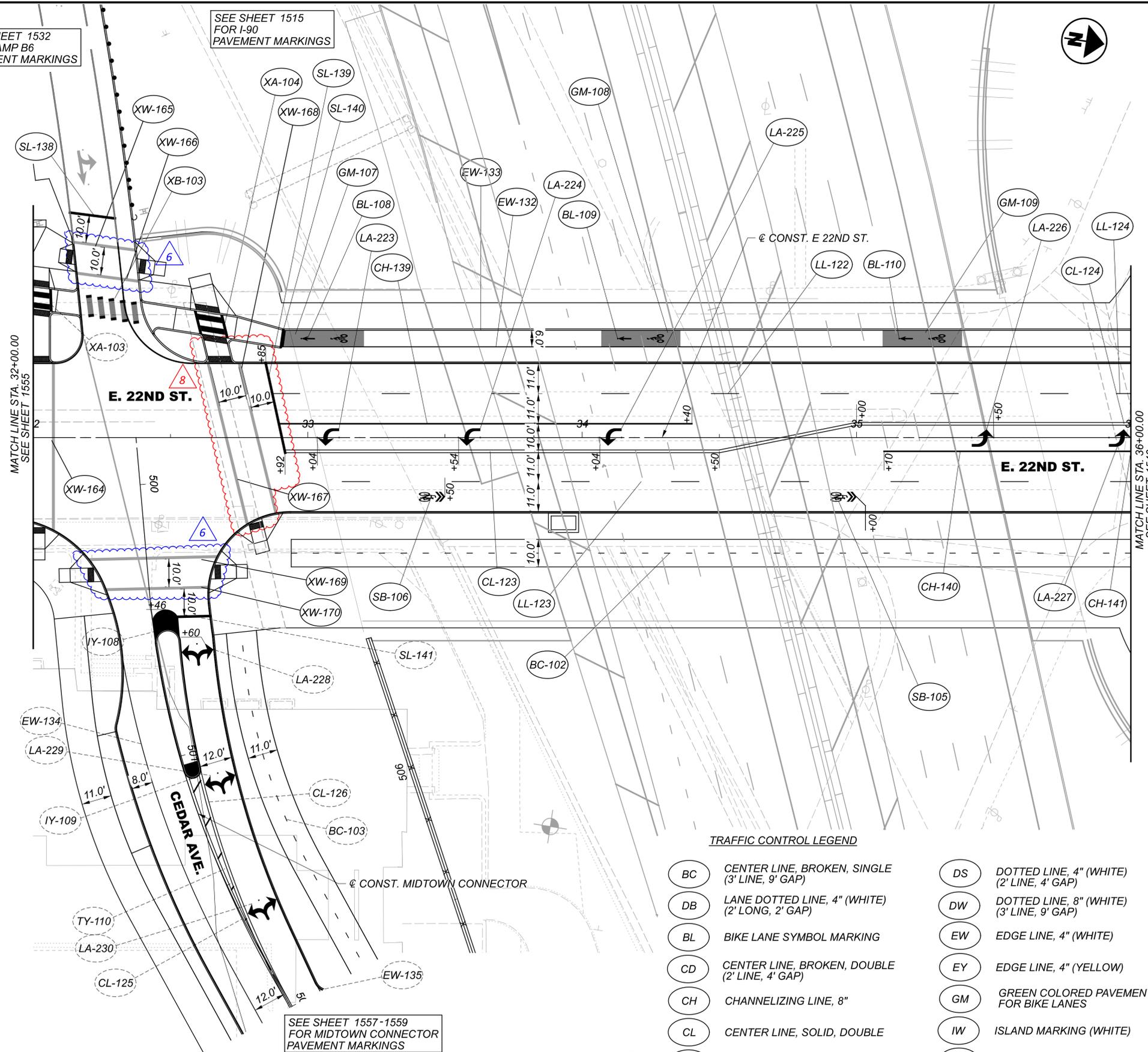
SEE SHEET 1532 FOR RAMP B6 PAVEMENT MARKINGS

SEE SHEET 1515 FOR I-90 PAVEMENT MARKINGS

SEE SHEET 1557-1559 FOR MIDTOWN CONNECTOR PAVEMENT MARKINGS

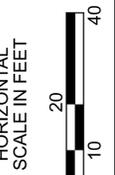
SEE SHEETS 1842 AND 1843 FOR INTEGRALLY COLORED CROSSWALK DETAIL AT E. 22ND ST. AND CEDAR AVE. INTERSECTION

- NOTES:**
- ALL PAVEMENT MARKINGS ON CONCRETE SHALL BE ITEM 646 - EPOXY AND ALL PAVEMENT MARKINGS ON ASPHALT SHALL BE ITEM 644 - THERMOPLASTIC.
 - PAVEMENT MARKINGS FOR E. 22ND ST. LANES ARE DIMENSIONED OFF ϕ CONST. 22ND ST.
 - PAVEMENT MARKINGS FOR MIDTOWN CONNECTOR ARE DIMENSIONED OFF ϕ MIDTOWN CONNECTOR



TRAFFIC CONTROL LEGEND

BC	CENTER LINE, BROKEN, SINGLE (3' LINE, 9' GAP)	DS	DOTTED LINE, 4" (WHITE) (2' LINE, 4' GAP)	LR	LANE REDUCTION ARROW
DB	LANE DOTTED LINE, 4" (WHITE) (2' LONG, 2' GAP)	DW	DOTTED LINE, 8" (WHITE) (3' LINE, 9' GAP)	PL	PARKING LOT STALL MARKING
BL	BIKE LANE SYMBOL MARKING	EW	EDGE LINE, 4" (WHITE)	SB	SHARED LANE MARKING
CD	CENTER LINE, BROKEN, DOUBLE (2' LINE, 4' GAP)	EY	EDGE LINE, 4" (YELLOW)	SL	STOP LINE, 24"
CH	CHANNELIZING LINE, 8"	GM	GREEN COLORED PAVEMENT FOR BIKE LANES	TW	TRANSVERSE/DIAGONAL LINE (24") (WHITE)
CL	CENTER LINE, SOLID, DOUBLE	IW	ISLAND MARKING (WHITE)	TY	TRANSVERSE/DIAGONAL LINE (24") (YELLOW)
CP	CENTER LINE, BROKEN AND SOLID, DOUBLE	IY	ISLAND MARKING (YELLOW)	XW	CROSSWALK LINE, 12"
CV	CHEVRON MARKING	LA	LANE ARROW	XA	CROSSWALK LINE, 12", AS PER PLAN
DL	DOTTED LINE, 4" (WHITE) (3' LINE, 9' GAP)	LL	LANE LINE, 4" (WHITE)	XB	PAVEMENT MARKING, MISC.: BIKE LANE CROSSWALK

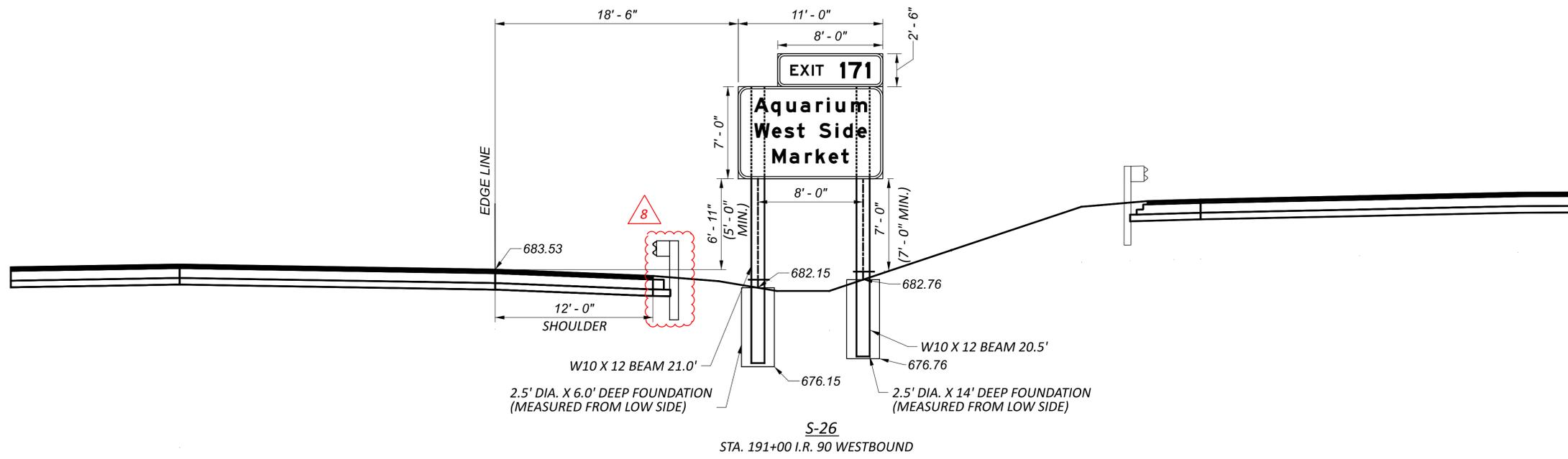


**PAVEMENT MARKING PLAN - E. 22ND ST.
 STA. 32+00.00 TO STA. 37+00.00**

DESIGN AGENCY

Michael Baker INTERNATIONAL

DESIGNER: RBK
 REVIEWER: GSH 05/22/24
 PROJECT ID: 82382
 SHEET TOTAL: 1556 / 2696



OVERHEAD SIGN ELEVATION DETAILS

DESIGN AGENCY

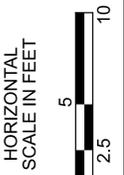
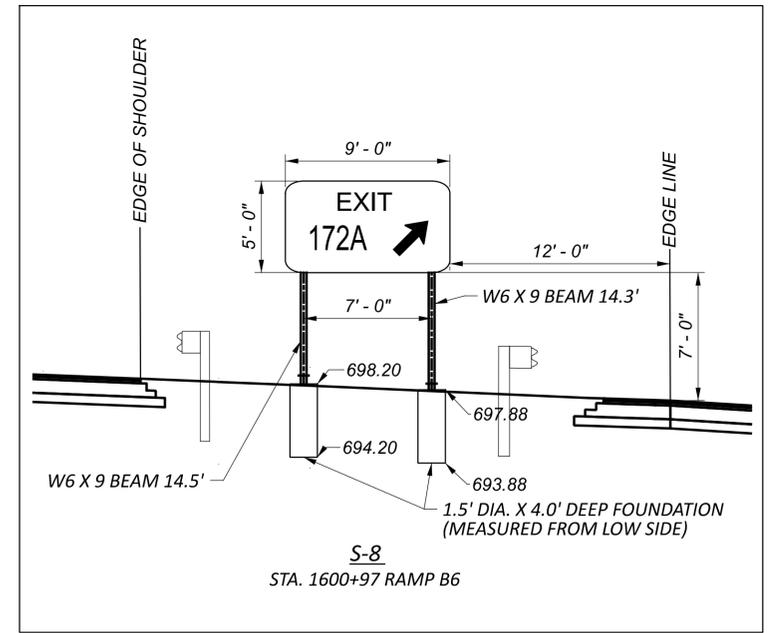
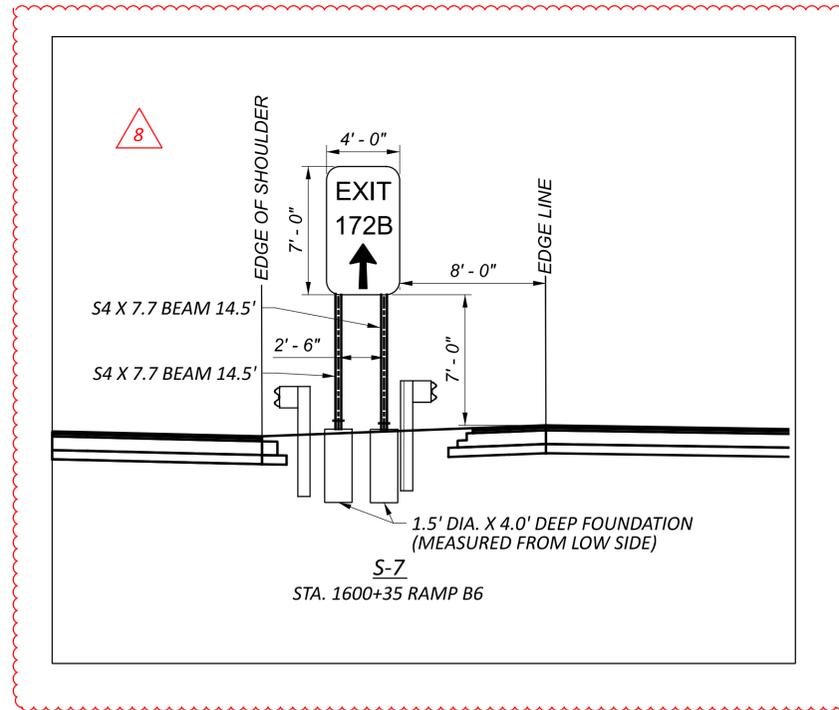
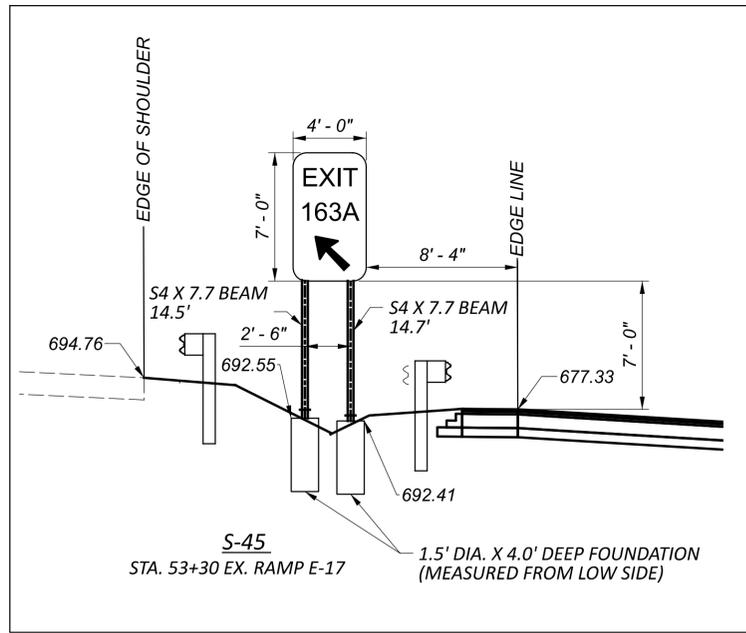
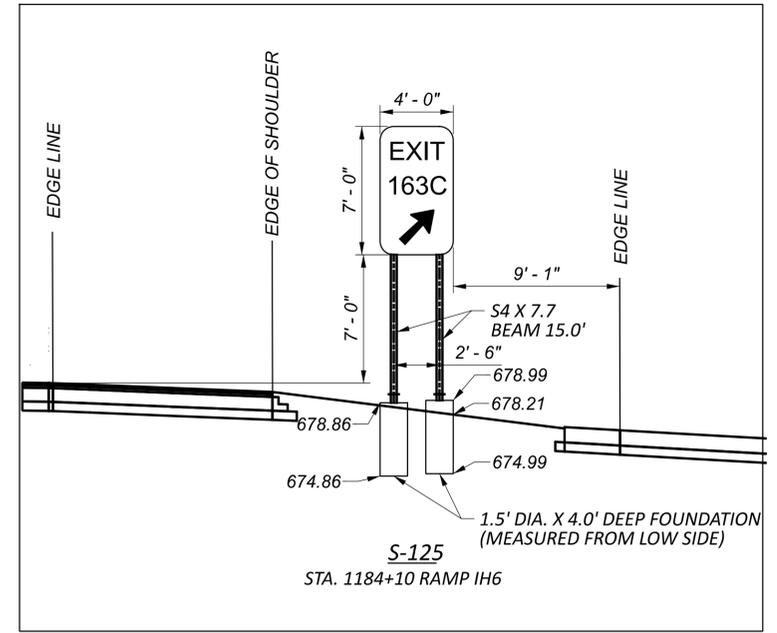
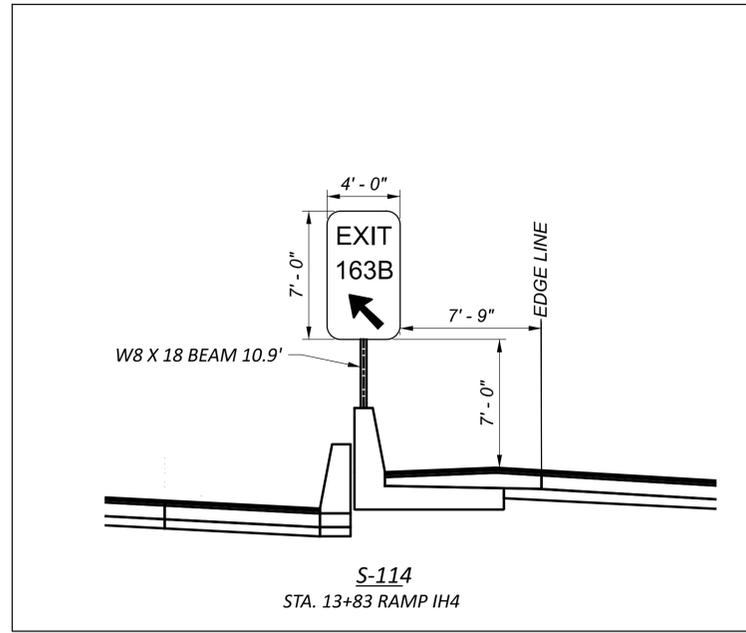
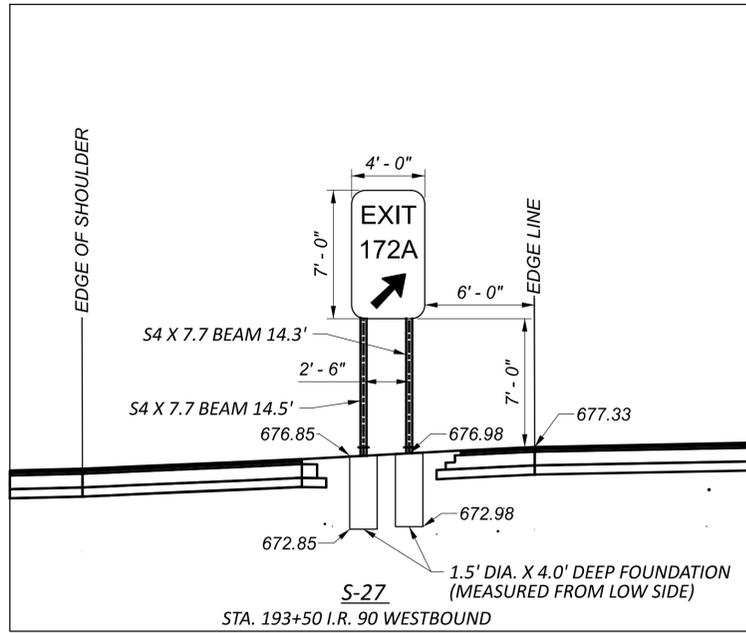


DESIGNER
AJS

REVIEWER
KEH 05/01/24

PROJECT ID
82382

SHEET	TOTAL
1594	2696



OVERHEAD SIGN ELEVATION DETAILS

DESIGN AGENCY



DESIGNER
AJS

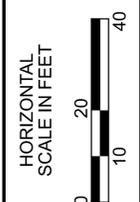
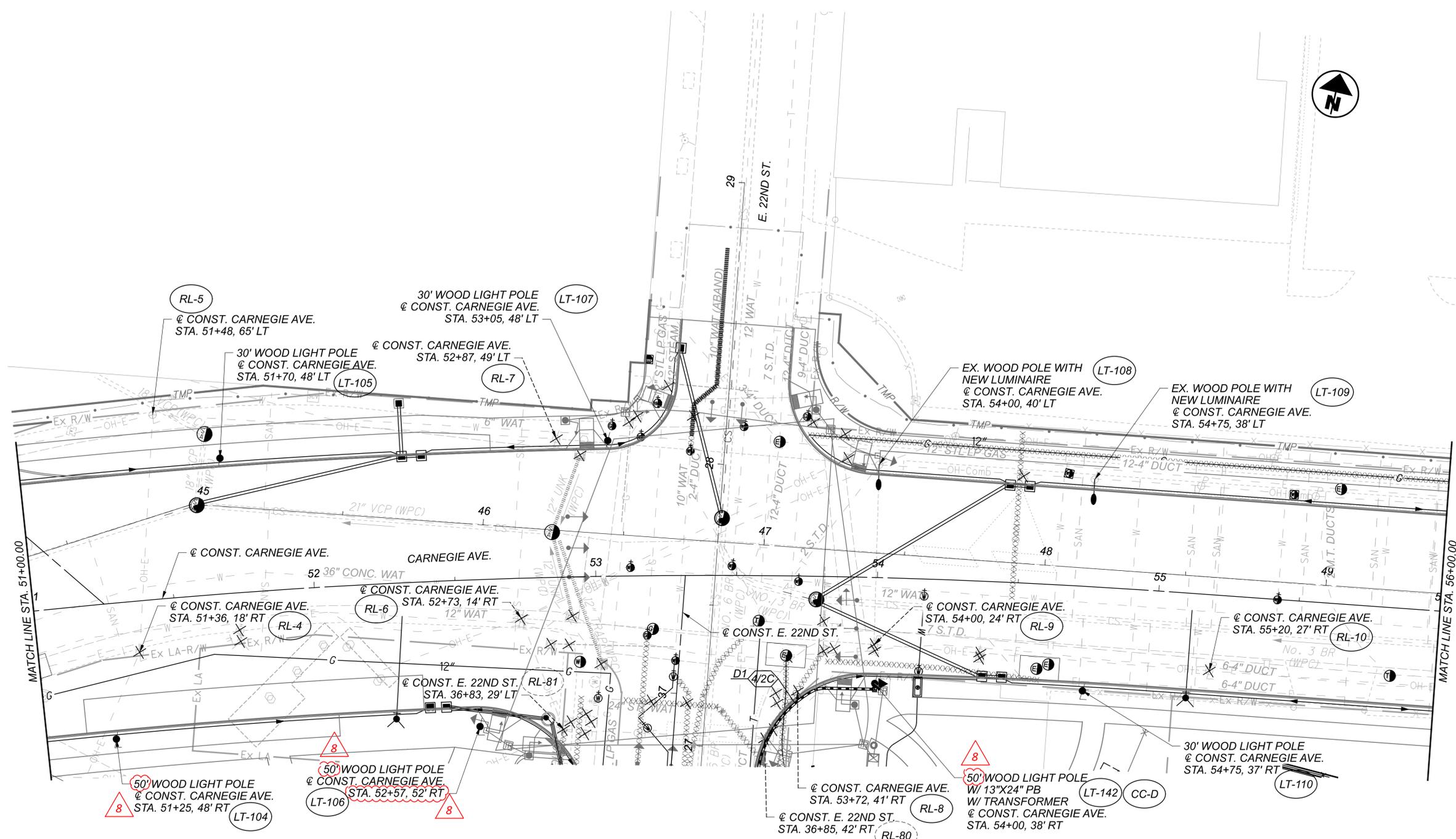
REVIEWER
KEH 05/01/24

PROJECT ID
82382

SHEET TOTAL
1609 2696

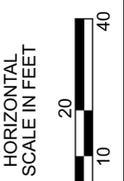
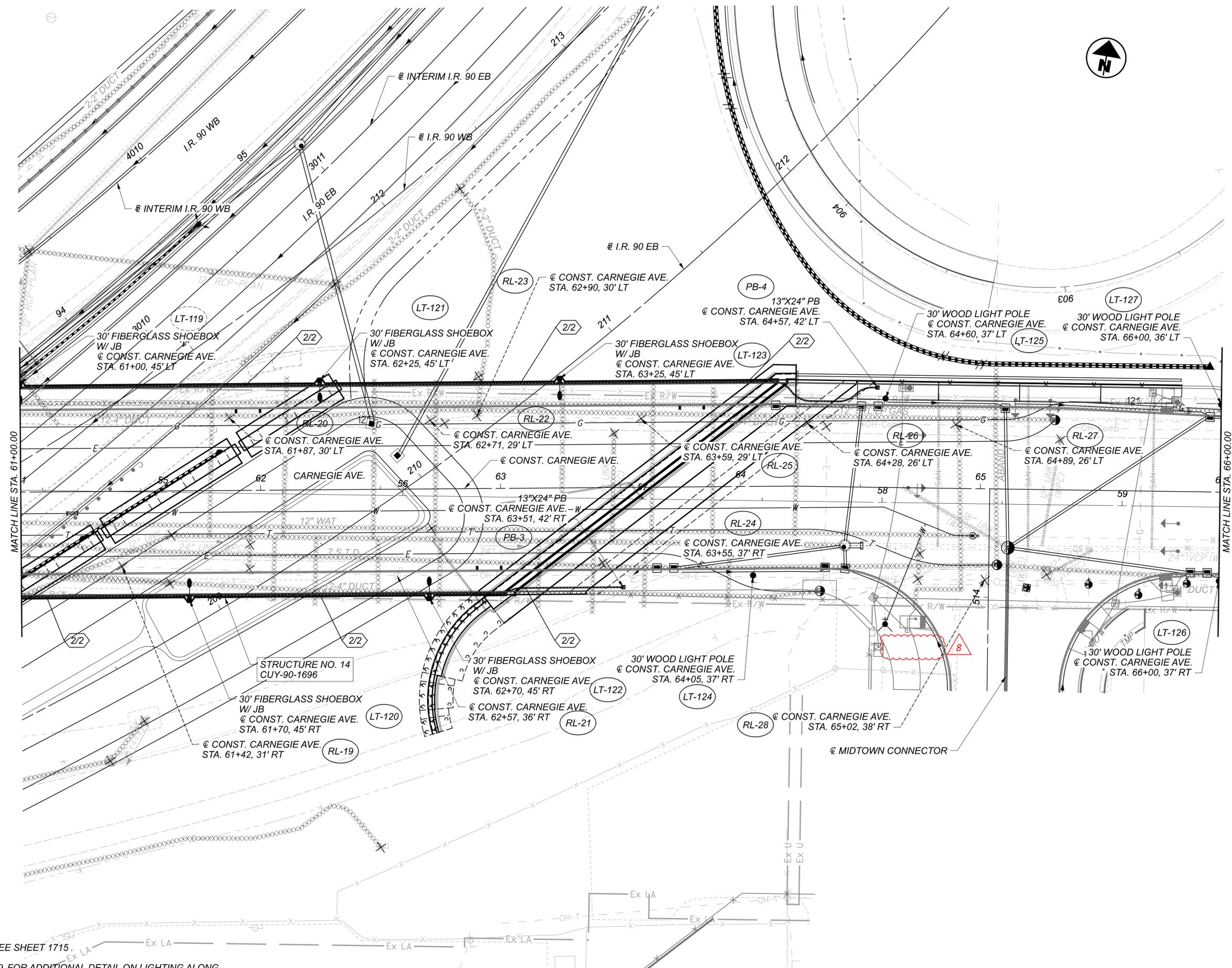
SHEET NUMBER																				ITEM	CARRIED TO GENERAL SUMMARY	UNIT	DESCRIPTION	
1704	1705	1706	1707	1708	1709	1710	1711	1712	1713	1714														
LIGHTING																								
8	8		12	10	20	24	20	26	26											625	154	EACH	CONNECTION, FUSED PULL APART	
4	4		6	5	10	12	10	13	13											625	77	EACH	CONNECTION, UNFUSED PULL APART	
		12	51	21																625	84	EACH	CONNECTION, UNFUSED PERMANENT	
					6	2	10	13	11											625	42	EACH	LIGHT POLE, MISC.: 15' ROUND TAPERED FIBERGLASS STREETLIGHT	
4	4		6	5	4	10			2											625	35	EACH	LIGHT POLE, MISC.: 30' ROUND TAPERED FIBERGLASS STREETLIGHT	
16	16																			625	32	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE	
			6	5	10	6	5	13	13											625	58	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
	932	1353	6395	2784	1434	3477														625	16375	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
					17907	7239	14634	3978	5313												625	49071	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE
					159																625	159	FT	DISTRIBUTION CABLE, MISC.: NO. 4 / 0 AWG 2400 VOLT DISTRIBUTION CABLE
360	360		540	450	630	990	450	585	585											625	4950	FT	NO. 12 AWG POLE AND BRACKET CABLE	
					94	558	1144														625	1796	FT	CONDUIT, 3/4", 725.051
	253	30	810	30																	625	1123	FT	CONDUIT, 1-1/2", 725.04
1172	1087				2074	1844	1010	563	791												625	8541	FT	CONDUIT, 2", 725.051
					43																625	43	FT	CONDUIT, CONCRETE ENCASED, 2", 725.051
					30	102															625	132	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (2-2" CONDUIT, 725.051)
		198	502	481	428	365															625	1974	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN (4-2" CONDUIT, 725.051)
17	8	14		8				2	8	3											625	60	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN (CPP LED COBRA HEAD)
	6	2	9																		625	17	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN (CPP LED WALLPACK)
					6	2	17	13	13												625	51	EACH	LUMINAIRE, DECORATIVE, AS PER PLAN (15' POLES)
4	4		6	5	4	10															625	33	EACH	LUMINAIRE, DECORATIVE, AS PER PLAN (30' POLES)
14	12	198	502	481	1165	523	442	563	791												625	4691	FT	TRENCH
4	4																				625	8	EACH	JUNCTION BOX
					3	1															625	4	EACH	PULL BOX, 725.08, 24"
1		5		4																	625	10	EACH	PULL BOX REMOVED
					2	1	10														625	13	EACH	PULL BOX, MISC.: 6" X 6" PULL BOX
2	2	1	12	7	15	15	7	13	13												625	87	EACH	PULL BOX, MISC.: 13" X 24" PULL BOX
14	5	14	6	13	10	6	5	15	19	3											625	110	EACH	GROUND ROD
1				1	1																625	3	EACH	POWER SERVICE, AS PER PLAN
				1																	625	1	EACH	CONTROL CENTER CABINET, COMPLETE, AS PER PLAN
14	12	198	502	481	1165	523	442	563	791												625	4691	FT	UNDERGROUND WARNING/MARKING TAPE
	2	2	3																		625	7	EACH	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN
17	13	3	3	16	3	2		21	9	9											625	96	EACH	LIGHT POLE REMOVED
1		7	4	7	1																625	20	EACH	LIGHT POLE FOUNDATION REMOVED
5	3																				625	10	EACH	LUMINAIRE REMOVED
5	3																				625	10	EACH	DISCONNECT CIRCUIT, AS PER PLAN
				2	16																625	19	EACH	LIGHTING, MISC.: TEST NEW CIRCUIT
		1503																			632	1503	FT	POWER CABLE, 3 CONDUCTOR, NO. 4 AWG
7	5	14		8				2	6	3											632	45	EACH	WOOD POLE (30' CLASS III)
5																					632	5	EACH	WOOD POLE (50' CLASS III)

- NOTES:
 1. FOR LEGEND SEE SHEET 1715.
 2. SEE SHEET 1736 FOR ADDITIONAL DETAIL ON LIGHTING ALONG E. 22ND STREET AND THE ADJACENT PEDESTRIAN AREAS.



CPP LIGHTING PLAN - CARNEGIE AVE.
 STA. 51+00.00 TO STA. 56+00.00

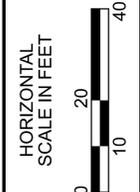
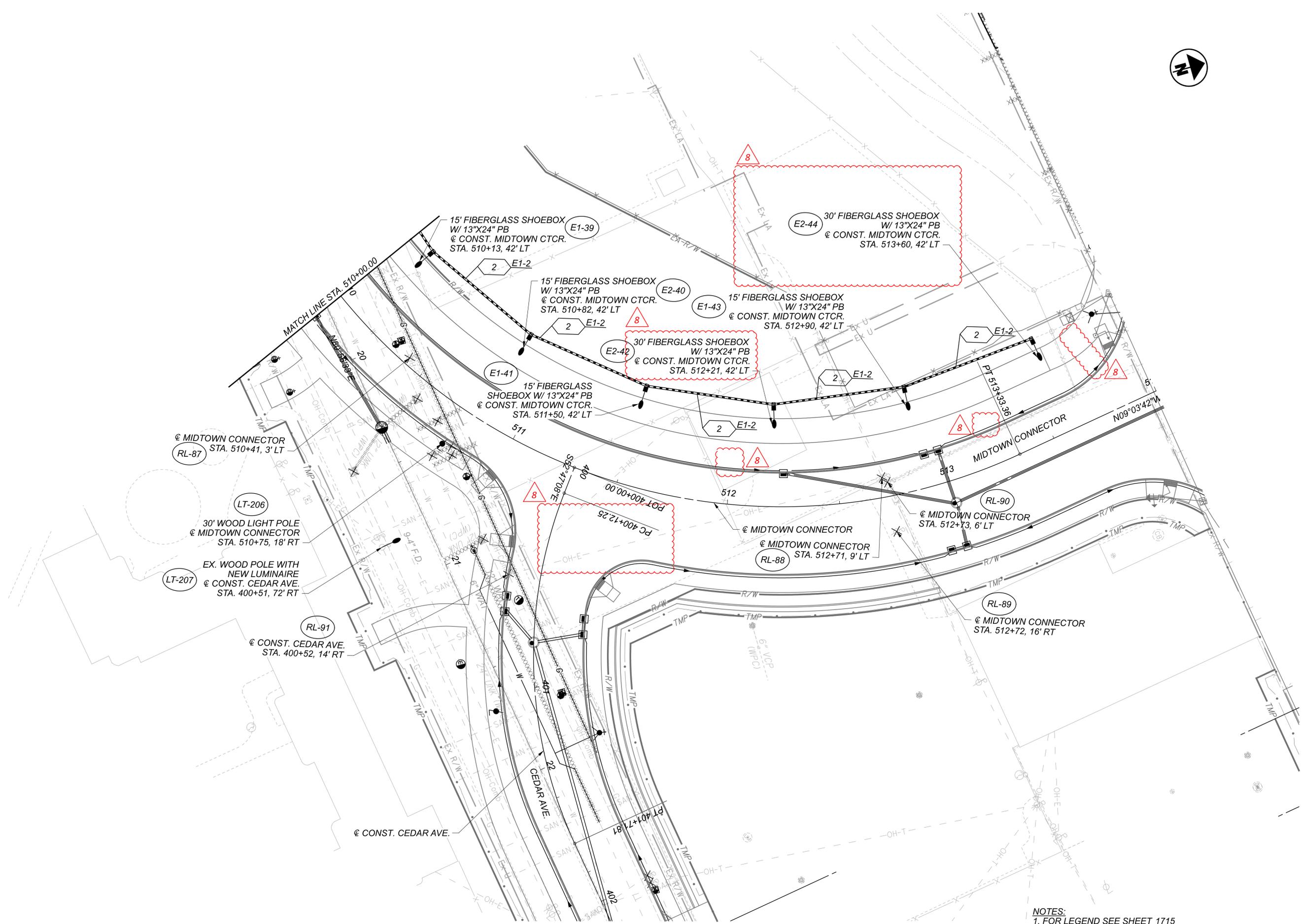
DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	JLD
REVIEWER	SM 05/22/24
PROJECT ID	82382
SHEET TOTAL	1725 2696



- NOTES:
- FOR LEGEND SEE SHEET 1715.
 - SEE SHEET 1739 FOR ADDITIONAL DETAIL ON LIGHTING ALONG MIDTOWN CONNECTOR AND THE ADJACENT SHARED-USE PATH.

CPP LIGHTING PLAN - CARNEGIE AVE.
 STA. 61+00.00 TO STA. 66+00.00

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	JLD
REVIEWER	SM 05/22/24
PROJECT ID	82382
SHEET TOTAL	1727 2696



CPP LIGHTING PLAN - MIDTOWN CONNECTOR
STA. 510+00.00 TO END

NOTES:
1. FOR LEGEND SEE SHEET 1715
2. SEE LANDSCAPING DRAWINGS FOR ADDITIONAL INFORMATION.

DESIGN AGENCY	
Michael Baker INTERNATIONAL	
DESIGNER	JTP
REVIEWER	MMC 05/22/24
PROJECT ID	82382
SHEET	TOTAL
1739	2696

CONTACT OHIO UTILITIES PROTECTION SERVICE, TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION. IN OHIO, CALL TOLL FREE 1-800-362-2764. IT'S THE LAW.

UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATION, AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THIS PLAN OR NOT.

ALL POWER CONDUIT RUNS ARE TO BE CONSTRUCTED BY USING 2", 4", 5", OR 6" PVC TYPE EB CONDUITS, AS DEPICTED ON THE PLANS, ENCASED WITH A 3" CONCRETE ENVELOPE AND 2" SPACING BETWEEN CONDUITS, UNLESS OTHERWISE NOTED ON THE PLANS OR SPECIFICATIONS. THE CONCRETE USED SHALL CONFORM TO ODOT CLASS QC 1 PER C&MS 499.

A RUGGED POLYETHYLENE MATERIAL WARNING TAPE CAPABLE OF RESISTING HIGH OR LOW PH CONDITIONS MUST BE PLACED ABOVE THE ELECTRICAL CONDUIT BANK. THIS WARNING TAPE IS TO BE SIX INCHES WIDE, RED IN COLOR, AND IMPRINTED WITH THE WORDS, "DANGER - BURIED HIGH VOLTAGE CABLES BELOW". THIS TAPE IS TO BE PLACED 6" ABOVE THE NEWLY INSTALLED DUCT BANK. THIS SHALL CONFORM WITH THE STANDARDS AS SET BY OHIO UTILITIES PROTECTION SERVICE. WARNING TAPE PAYMENT INCLUDED IN APPROPRIATE CONDUIT, PAY ITEM.

AS AN OPTION, CONTRACTOR MAY ELECT TO ENCASE CPP'S CONDUITS IN RED CONCRETE. BOTH METHODS ARE APPROVED BY CLEVELAND PUBLIC POWER AND ARE RECOMMENDED BY OHIO UTILITIES PROTECTION SERVICE. PAYMENT FOR TINTED DUCT CONCRETE, OR TINTED CONCRETE PROTECTIVE SLABS INCLUDED IN APPROPRIATE CONDUIT PAY ITEM.

THE TOP OF THE CONCRETE ENCASED CONDUIT SHALL BE INSTALLED AT A MINIMUM DEPTH OF 3'-0" BELOW THE EXISTING AND/OR PROPOSED GRADES. THE TOTAL TRENCH DEPTH WILL BE BASED UPON THE CONDUIT FORMATION. SEE DRAWINGS ISSUED BY CLEVELAND PUBLIC POWER FOR DETAILS.

VERTICAL AND HORIZONTAL CURVES SHALL HAVE A MINIMUM RADIUS OF NO LESS THAN 30 FEET. THESE CURVES ARE TO BE CONDUITS AS NOTED CONSTRUCTED BY USING THE APPROPRIATE 5" COUPLINGS, AND ASSOCIATED CHORD LENGTHS AS SHOWN ON THE CONDUIT CURVE CONSTRUCTION CHART. ANY OTHER CURVE DESIGN, FIELD CHANGES, OR THE USE OF PREFORMED RADIUS BENDS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER.

ALL MANHOLES OUTSIDE WALLS AND CONDUIT RUNS ARE TO HAVE A MINIMUM CLEARANCE OF 5' (FACE TO FACE), HORIZONTALLY FROM ALL WATER LINES. VERTICAL CLEARANCE SHALL BE AT A MINIMUM OF 1'-6". CLEARANCE BETWEEN OTHER UTILITIES SHALL BE 1 FOOT, UNLESS NOTED OTHERWISE. CPP'S DUCT BANK SHALL CROSS OVER OR UNDER OTHER UTILITIES AT AN ANGLE OF NO MORE THAN 45°.

ANY CONDUIT RUNS THAT ARE CROSSING ANY STEAM LINES SHALL HAVE A MINIMUM CLEARANCE OF 5', OR BE INSTALLED PER THE CPP ENGINEERING DEPARTMENT. IN THE EVENT THAT THIS CAN'T BE ACCOMPLISHED, NOTIFY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER PRIOR TO THE INSTALLATION OF CONDUITS.

EACH NEWLY CONSTRUCTED MANHOLE SHALL BE FREE OF ALL FOREIGN OBJECTS AND DEBRIS. THE CONTRACTOR SHALL ALSO PROVIDE A PULLING LINE IN EACH OF THE NEW CONDUITS. ALL MANHOLE COVERS SHOULD BE INSCRIBED WITH THE CLEVELAND PUBLIC POWER LOGO "CPP".

THE CONTRACTOR SHALL PROVIDE CLEVELAND PUBLIC POWER WITH AS-BUILT PLANS OF THE NEWLY INSTALLED CONDUIT SYSTEM, SHOWING BOTH VERTICAL AND HORIZONTAL LOCATIONS. THESE LOCATIONS SHALL BE AT 50' INTERVALS. ALL ELEVATIONS ARE TO BE BASED ON HORIZONTAL AND VERTICAL STATE PLANE COORDINATES. PAYMENT INCLUDED IN APPROPRIATE CONDUIT PAY ITEM. IN ADDITION, THE CONTRACTOR SHALL PROVIDE AS-BUILTS OF THE MANHOLES, INCLUDING AS-BUILTS PHOTOGRAPHS OF ALL INTERIOR SURFACES (WALLS, FLOOR, CEILING).

BACKFILL MATERIAL AND BACKFILLING PROCEDURES

FOR ALL BACKFILL UNDER ROADWAY PAVEMENT, REFER TO FLOWABLE FILL SPECIFICATIONS IN THIS SHEET. FOR ALL OTHER LOCATIONS, THE BACKFILL MATERIAL USED SHALL BE CRUSHED LIMESTONE OR GRAVEL AS PER ODOT ITEM 304-AGGREGATE BASE. CRUSHED AIR-COOLED SLAG MEETING #304 GRADATION MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER. THE USE OF SAND OR #57 AGGREGATE AS A PREMIUM BACKFILL IS PROHIBITED. SAND MAY ONLY BE USED AS INDICATED ON THE PLAN DETAILS FOR ITEMS SUCH AS CONDUIT COVER. THE SAND MATERIAL SHALL BE NATURAL RIVER OR BANK SAND; FREE OF SILT, CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER. THE BACKFILL SHALL BE INSTALLED IN 4 INCH (4") LIFTS AND COMPACTED USING MECHANICAL MEANS ONLY. COMPACT TO WITHIN 12" OF SUBGRADE

AND EACH LAYER OF BACKFILL TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR TEST (ASTM D698). THE USE OF WATER FOR COMPACTION IS PROHIBITED, E.G. FLOODING OR PUDDLING. SAND USED AS EMBANKMENT CONSTRUCTION AND AS BACKFILL AROUND STRUCTURES SHALL BE ODOT ITEM 203- EMBANKMENT OR MEETING THE REQUIREMENTS OF 703 - SPECIAL BACKFILL MATERIAL OF THE SECTION.

EMPLOY A PLACEMENT METHOD THAT DOES NOT DISTURB OR DAMAGE CONDUIT ENCASEMENT.

DO NOT BACKFILL OVER WET, FROZEN OR UNSTABLE SUBGRADE SURFACES.

FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES

PART I CERTIFICATE OF COMPLIANCE

MATERIAL MUST COME FROM A PLANT WITH A CURRENT CERTIFICATE OF COMPLIANCE DEMONSTRATING THE ABILITY OF THE MIX DESIGN TO MEET THE SPECIFIED REQUIREMENTS. CERTIFICATES IN EXCESS OF ONE YEAR WILL NOT BE ACCEPTED. CERTIFICATES MUST CONTAIN THE NAME OF SUPPLIER, DATE, CONTRACT NUMBER AND MIX DESIGN DATA ON EACH DELIVERY TICKET.

PART II MATERIALS

ALL MATERIALS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS STATED HERIN.

1. CEMENT SHALL BE ASTM C-150 TYPE I.
2. THE USE OF FLY ASH IS STRICTLY PROHIBITED.
3. FINE AGGREGATE SHALL CONFORM TO ODOT SPECIFICATION 703.03. FINE AGGREGATE FOR MORTAR OR GROUT. (ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS MOST CURRENT EDITION). THE USE OF SPENT FOUNDRY SAND OR CORE SAND IS STRICTLY PROHIBITED.

PART III PERFORMANCE ENHANCING ADMIXTURE

AN AIR-ENHANCING ADMIXTURE SHALL BE INCORPORATED IN THE MIX THAT WILL HAVE THE EFFECT OF LOWERING THE WATER/CEMENT RATIO TO BETWEEN 95 AND 105 LBS/CUBIC FOOT. THE AIR ENTRAINED CONTENT FOR THE MIX SHALL BE 30% TO ELIMINATE/MINIMIZE THE EXCESSIVE WATER AND SEGREGATION. COMPRESSIVE STRENGTHS SHALL HAVE A RANGE OF 50 PSI TO 80 PSI AT 28 DAYS WILL BE REQUIRED IF ADDITIONAL EXCAVATION BY MACHINE OR HAND IS REQUIRED.

SPECIFICATIONS

ALL WORK IN THIS CONTRACT SHALL CONFORM TO THE LATEST STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIALS SPECIFICATIONS, NATIONAL ELECTRIC SAFETY CODE FOR INSTALLATION BEFORE METER, NATIONAL ELECTRIC CODE FOR INSTALLATION AFTER METER AND OSHA REQUIREMENTS, EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT, IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN.

SCOPE OF WORK

- A. THE CONTRACTOR SHALL RELOCATE OR REMOVE ALL CLEVELAND PUBLIC POWER (CPP) FACILITIES AS INDICATED ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PROPERLY COMPLETED, INCLUDING INCIDENTALS, AS SHOWN ON THE DRAWINGS AND HEREINAFTER SPECIFIED.
- B. THE MAJOR ITEMS OF WORK TO BE FURNISHED AND INSTALLED BY THE CONTACTOR SHALL BE AS FOLLOWS.

WORK BY CONTRACTOR (E. 22ND ST.)

THE CONTRACTOR SHALL PROVIDE TEMPORARY PRIMARY ELECTRIC FACILITIES TO RE-ROUTE POWER OFF THE 22ND STREET BRIDGE DURING THE DEMOLITION AND REPLACEMENT OF THE BRIDGE. FOLLOWING CONSTRUCTION OF THE NEW BRIDGE, PERMANENT UNDERGROUND FACILITIES WILL BE PLACED ON THE BRIDGE, THE TEMPORARY FACILITIES WILL BE REMOVED AND PERMANENT CONNECTIONS MADE. THIS WORK INCLUDES:

- FURNISHING AND INSTALLING CONCRETE ENCASED PVC AND FRE DUCT BANKS OF VARIOUS ARRANGEMENTS.
- INSTALLING TEMPORARY WOODEN POWER POLES AND OVERHEAD ELECTRICAL CABLE SPANS OVER INTERSTATE 90.
- INSTALLING ELECTRICAL CABLES IN DUCTS AND INSTALLING CABLE ID TAGS
- INSTALLING DUCT BANK SYSTEM ACROSS BRIDGE INCLUDING BEAM SUPPORT SYSTEM
- TESTING ELECTRICAL SYSTEM
- FURNISHING AND INSTALLING ELECTRICAL VAULT/MANHOLE RACKING SYSTEMS WITHIN VAULTS OR MANHOLES.
- FURNISHING AND INSTALLING ELECTRICAL SPLICES, TRAINING AND BONDING WITHIN VAULTS OR MANHOLES.
- COORDINATING WITH CPP AND ITS CONTRACTORS
- REMOVAL OF EXISTING ELECTRICAL CABLES.

WORK BY CONTRACTOR (CARNEGIE AVE.)

THE CONTRACTOR SHALL PROVIDE TEMPORARY PRIMARY ELECTRIC FACILITIES TO RE-ROUTE POWER OFF THE CARNEGIE AVENUE BRIDGE DURING THE DEMOLITION AND REPLACEMENT OF THE BRIDGE. FOLLOWING CONSTRUCTION OF THE NEW BRIDGE, PERMANENT UNDERGROUND FACILITIES WILL BE PLACED ON THE BRIDGE, THE TEMPORARY FACILITIES WILL BE REMOVED AND PERMANENT CONNECTIONS MADE. THIS WORK INCLUDES:

- FURNISHING AND INSTALLING CONCRETE ENCASED PVC AND FRE DUCT BANKS OF VARIOUS ARRANGEMENTS.
- FURNISHING AND INSTALLING TEMPORARY WOODEN POWER POLES AND OVERHEAD ELECTRICAL CABLE SPANS OVER INTERSTATE 90.
- FURNISHING AND INSTALLING ELECTRICAL CABLES IN DUCTS AND INSTALLING CABLE ID TAGS
- FURNISHING AND INSTALLING DUCT BANK SYSTEM ACROSS BRIDGE INCLUDING BEAM SUPPORT SYSTEM
- TESTING ELECTRICAL SYSTEM
- FURNISHING AND INSTALLING ELECTRICAL VAULT/MANHOLE RACKING SYSTEMS WITHIN VAULTS OR MANHOLES.
- FURNISHING AND INSTALLING ELECTRICAL SPLICES, TRAINING AND BONDING WITHIN VAULTS OR MANHOLES.
- COORDINATING WITH CPP AND ITS CONTRACTORS
- REMOVAL OF EXISTING ELECTRICAL CABLES.

WORK BY CPP

- ENERGIZING ELECTRICAL SYSTEM
- DE-ENERGIZING OF EXISTING ELECTRICAL CABLES WITHIN DUCTS

ALONG PORTIONS OF THE CORRIDOR THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE EXISTING UNDERGROUND ELECTRICAL SERVICE UNTIL COMPLETION AND ACTIVATION OF THE PROPOSED UNDERGROUND POWER SYSTEM. THE CONTRACTOR SHALL COORDINATE THE DETAILS OF THIS WORK WITH CPP.

CABLE MARKING

FEEDER CABLE LOCATION IN CONDUIT BANK SHALL BE ASSIGNED BY CPP. EACH CABLE UPON ENTERING AND LEAVING MANHOLES SHALL BE MARKED WITH TAGS, INDICATING THE FEEDER NUMBER AND CABLE SIZE. THE LETTER SIZE SHALL BE A MINIMUM OF 1/2 IN., 1 IN. HIGH IS PREFERRED.

SUBMITTALS

IN ADDITION TO THE REQUIREMENTS OF CMS105 THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIAL FURNISHED AND REQUIRED TO PERFORM THE WORK.

DEFINITIONS

WHENEVER IN THESE SPECIFICATIONS OR IN ANY DOCUMENT OR INSTRUCTIONS ON CONSTRUCTION WHERE THESE SPECIFICATIONS GOVERN, THE FOLLOWING TERMS (OR PRONOUNS IN PLACE OF THEM) ARE USED, THE INTENT AND MEANING SHALL BE INTERPRETED AS FOLLOWS:

THE CITY OR THE CITY OF CLEVELAND, IS THE DIRECTOR OF THE CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES.

STATUS OF CITY INSPECTOR

INSPECTORS AS DESIGNATED BY THE CITY OF CLEVELAND SHALL BE AUTHORIZED TO INSPECT ALL WORK DONE AND MATERIALS FURNISHED. SUCH INSPECTING MAY EXTEND TO ALL OR ANY PART OF THE WORK, AND TO THE PREPARATION OR MANUFACTURE OF THE MATERIALS TO BE USED IN THE WORK. THE CITY INSPECTOR AS DESIGNATED BY THE DIRECTOR OF PUBLIC UTILITIES SHALL GIVE WORK INSTRUCTIONS THROUGH THE PROJECT ENGINEER.

ITEM 625 - CONDUIT, CONCRETE ENCASED, AS PER PLAN (XX) - 5" PVC

A. WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT TO MANHOLES, AS SHOWN ON THE PLANS OR AS DIRECTED, ALL NON-REINFORCED AND REINFORCED CONCRETE-ENCASED PVC (EB) CONDUIT AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT. ALL CONDUITS SHALL BE ENCASED IN CONCRETE UNLESS NOTED OTHERWISE.

B. CONDUIT AND FITTINGS

1. POLYVINYL CHLORIDE (PVC) EB 20 CONDUIT SHALL CONFORM TO THE UL651 STANDARDS, 5 INCH INSIDE DIAMETER WITH CONCRETE ENCASEMENT AS DETAILED ON PLANS, COUPLINGS SHALL BE SOCKET TYPE, END BELLS AT MANHOLE ENTRANCE, 5 DEGREE SWEEPS, 11-1/4 DEGREE TO 90 DEGREES INCLUDING FILED DEGREES ANGLE COUPLINGS, STANDARD COUPLINGS, VARIOUS BENDS AND PLUGS OR CAPS TO CLOSE UNUSED CONDUITS, SHALL BE MADE OF THE SAME MATERIAL AS THE

CONDUIT. CONDUIT SPACERS SHALL BE AS SHOWN IN THE PLAN DETAILS. CONCRETE BLOCK SPACERS WILL NOT BE ACCEPTED. CONTRACTOR SHALL CONTACT CPP BEFORE CONCRETE ENCASEMENT ANY BENDS IN CONDUITS

2. FIBERGLASS REINFORCED EPOXY CONDUIT SHALL CONFORM TO UL 1684 AND UL1684A. FIBERGLASS CONDUIT SHALL HAVE A MINIMUM WALL THICKNESS OF 0.095". FIBERGLASS CONDUIT SHALL HAVE 5 INCH INSIDE DIAMETER EITHER CONCRETE ENCASED OR RACK MOUNTED AS INDICATED ON THE DRAWINGS. COUPLINGS SHALL HAVE BELL ON ONE END AND A SPIGOT ON THE OTHER END. ALL COUPLINGS SHALL BE MADE OF THE SAME MATERIAL. EXPANSION FITTINGS SHALL BE PROVIDED ON ALL EXPOSED CONDUIT RUNS.

C. CONCRETE

CONCRETE USED FOR ENCASEMENT OF CONDUITS SHALL CONFORM TO ODOT CLASS QC 1 PER C&MS 499.

D. INSTALLATION

CONDUIT SHALL BE INSTALLED BY THE BUILT-UP METHOD WITH JOINTS IN ADJACENT DUCTS STAGGERED. NECESSARY SPACERS SHALL BE PLACED NO GREATER THAN 8-FEET INTERVALS TO HOLD DUCTS IN THE DESIRED CONFIGURATION, WITH THE DUCT BANK BRACED SECURELY TO KEEP IT FROM SHIFTING AND FLOATING WHILE CONCRETE IS POURED. SEALER COMPOUND FURNISHED BY THE CONDUIT AND EACH SECTION SHALL BE TAPPED SECURELY INTO PLACE IN THE PREVIOUS COUPLING TO OBTAIN JOINTS THAT ARE TIGHT AND LEAK-PROOF.

1. CONCRETE SHALL BE WORKED INTO THE SPACES BETWEEN DUCTS SO THAT THE CONDUIT BANK IS EFFECTIVELY ENCASED IN CONCRETE WITHOUT VOIDS OR EMPTY SPACES. REINFORCING RODS SHALL BE INSTALLED AS REQUIRED AND WHERE SHOWN ON THE PLANS.

2. CONDUIT WHICH IS CUT TO FIT SHORT SECTIONS SHALL BE DEBURRED ON THE DUCT END AND THE END OF THE BELL SHALL BE REAMED IN THE INSIDE DIAMETER FOR EACH ENTRY OF THE DUCT INTO COUPLING TO PRODUCE THE SAME JOINTING CONDITIONS AS PROVIDED BY FACTORY-MADE CONDUIT SECTIONS.

3. THE END BELLS SHALL BE GROUTED IN PLACE.

E. BACKFILLING

REFER TO NOTES "BACKFILL MATERIAL AND BACKFILLING PROCEDURES" AND "FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES".

F. MEASUREMENT

THE NUMBER OF FEET OF CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET FURNISHED AND PLACED AND ACCEPTED IN ACCORDANCE WITH THESE SPECIFICATIONS, AS MEASURED ALONG THE AXIS OF THE CONDUIT LINE, INCLUDING FITTINGS.

G. PAYMENT

THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE AID FOR AT THE CONTRACTOR PRICE BID PER FOOT UNDER ITEM 625 AS DESCRIBED BELOW, CLASSIFIED AS TO SIZE AND TYPE, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR EXCAVATING AND FOR FURNISHING, HAULING, PLACING THE CONDUIT, FITTINGS, CAPPING, SPACERS, CONCRETE, REINFORCING STEEL, SHEETING AND BRACING, BACKFILL, PLASTIC CAUTION TAPE (OR RED TINTED CONCRETE), INCIDENTAL CONCRETE, REMOVAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIAL, BREAKING AND RESTORATION OF EXISTING MANHOLE WALLS AND ALL LABOR EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

THESE ITEMS AS MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR UNDER:

ITEM	UNIT	DESCRIPTION
625	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN, (XX)-5" PVC
625	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN, (XX) -5" FRE
625	FT	CONDUIT, RACK MOUNTED, AS PER PLAN, (XX) -5" FRE

DESIGN AGENCY



DESIGNER
JCS

REVIEWER
WH 05/17/24

PROJECT ID
82382

SHEET TOTAL
1777 2696

**ITEM 659 - SEEDING AND MULCHING, CLASS 1, AS PER PLAN
ITEM 659 - SEEDING AND MULCHING, CLASS 2, AS PER PLAN
ITEM 659 - SEEDING AND MULCHING, CLASS 5B, AS PER PLAN
(CONT.)**

MAINTENANCE OF LAWNS (CONT.)

MAINTENANCE SHALL INCLUDE RESEEDING, MOWING, WATERING, WEEDING, FERTILIZING A MINIMUM OF TWO TIMES IN ADDITION TO THE FERTILIZER INCORPORATED BY HARROWING INTO THE SPREAD LOAM, AND RESETTING AND STRAIGHTENING OF PROTECTIVE BARRIERS. LAWN WORK MAINTENANCE SHALL ALSO INCLUDE FUNGUS AND/OR PEST CONTROL (TREATMENT AS REQUIRED AND APPROVED BY RESIDENT ENGINEER).

DURING THE MAINTENANCE PERIOD, ANY DECLINE IN THE CONDITION OF SEEDED AREAS SHALL REQUIRE IMMEDIATE ACTION TO IDENTIFY POTENTIAL PROBLEMS AND TO UNDERTAKE CORRECTIVE MEASURES.

WATERING SHALL BE DONE IN A MANNER THAT WILL PROVIDE UNIFORM COVERAGE, PREVENT EROSION DUE TO APPLICATION OF EXCESSIVE QUANTITIES OVER SMALL AREAS, AND PREVENT DAMAGE TO THE FINISHED SURFACE BY THE WATERING EQUIPMENT.

THE CONTRACTOR SHALL PROVIDE ALL LABOR AND ARRANGE FOR ALL WATERING NECESSARY TO ESTABLISH AN ACCEPTABLE LAWN. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 2 INCHES FOR SEEDED AREAS AND 4 INCHES FOR SODDED AREAS. AT NO TIME SHALL A TANK TRUCK BE ALLOWED ON THE SEEDED AND/OR SODDED SURFACE.

WATERING SHALL BE DONE IN A MANNER THAT WILL PROVIDE UNIFORM COVERAGE, PREVENT EROSION DUE TO APPLICATION OF EXCESSIVE QUANTITIES OVER SMALL AREAS, AND PREVENT DAMAGE TO THE FINISHED SURFACE BY THE WATERING EQUIPMENT. THE CONTRACTOR SHALL FURNISH SUFFICIENT WATERING EQUIPMENT TO APPLY WATER TO THE REQUIRED SOIL DEPTHS EACH 8-HOUR PERIOD.

LAWN AREAS SHALL BE PROTECTED BY A 6-FOOT HIGH STANDARD CHAIN LINK BARRIER SET 18 EIGHTEEN INCHES (18") IN THE GROUND AT TEN FOOT (10') INTERVALS AND CONNECTED BY NO. TEN (10) WIRE. FLAGS OF WHITE CLOTH SHALL BE SECURED TO THE WIRE AT CENTER POINTS BETWEEN STAKES.

BARRIERS MUST BE RAISED IMMEDIATELY AFTER LAWN CONSTRUCTION AND SHALL BE MAINTAINED UNTIL ACCEPTANCE. BARRIERS SHALL BE REMOVED AND DISCARDED AS DIRECTED BY THE OWNERSHIP.

BIRD AND ANIMAL CONTROL SHALL BE INSTALLED AS NECESSARY TO ESTABLISH LAWN AND MEADOW AREAS AS SPECIFIED HEREIN. CONTRACTOR SHALL PROPOSE LEGAL BIRD AND ANIMAL CONTROL METHODS FOR APPROVAL BY RESIDENT ENGINEER.

AFTER THE GRASS IN SEEDED AREAS HAS GERMINATED, RESEED ALL AREAS AND PARTS OF AREAS THAT FAIL TO SHOW A UNIFORM STAND OF GRASS. RESEED SUCH AREAS AND PARTS OF AREAS REPEATEDLY UNTIL ALL AREAS ARE COVERED WITH A SATISFACTORY GROWTH OF GRASS WITH NO LESS THAN 20 GRASS SHOOTS PER SQUARE INCH AND 2880 GRASS SHOOTS PER SQUARE FOOT. RESEEDING TOGETHER WITH NECESSARY GRADING, FERTILIZING, AND TRIMMING SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL KEEP LAWN AREAS MOWED UNTIL ACCEPTANCE OF THE CONTRACT BY CUTTING TO A HEIGHT OF 2 INCHES WHEN GROWTH REACHES 3 INCHES OR AS DIRECTED BY THE RESIDENT ENGINEER.

AT EACH MOWING, ALL EDGES OF WALKS, DRIVES, PLANT BEDS AND OTHER BORDER CONDITIONS SHALL BE EDGE TRIMMED BY HAND OR MACHINE TO PRODUCE STRAIGHT AND UNIFORM EDGE CONDITIONS.

**ITEM 659 - SEEDING AND MULCHING, CLASS 1, AS PER PLAN
ITEM 659 - SEEDING AND MULCHING, CLASS 2, AS PER PLAN
ITEM 659 - SEEDING AND MULCHING, CLASS 5B, AS PER PLAN
(CONT.)**

MAINTENANCE OF LAWNS (CONT.)

REMOVE AND DISCARD FROM PAVED AREAS ONLY CLIPPINGS AND DEBRIS GENERATED BY EACH MOWING AND EDGING OPERATION LEGALLY OFF-SITE. RESIDENT ENGINEER, IF PRACTICAL AND AESTHETIC, MAY ALLOW SWEEPING (NOT BLOWING) CLIPPINGS BACK INTO GRASS. MOWERS SHALL BE EQUIPPED WITH MULCHING BLADES. DO NOT REMOVE FROM GRASS AREAS ANY CLIPPINGS THAT HAVE BEEN GENERATED BY MOWING OPERATIONS. DO NOT MOW GRASS WHEN WET.

NATIVE WILDFLOWER MIX MOWING

FIRST GROWING SEASON:

DURING THE FIRST GROWING SEASON, WHENEVER CANOPY HEIGHT (OVERALL VEGETATION) REACHED 18"-24", USE A BRUSH HOG MOWER OR STRING TRIMMER TO TRIM THE MEADOW TO A HEIGHT OF 8". TRIMMING SHOULD CEASE BY MID-SEPTEMBER.

SECOND AND SUBSEQUENT GROWING SEASONS:

PRIOR TO NEW SPRING GROWTH REACHING A HEIGHT OF 2" (MARCH-APRIL), TRIM ANY MATERIAL STANDING FROM THE PREVIOUS YEAR CLOSE TO THE GROUND, APPROXIMATELY 2".

APPLICATIONS OF FERTILIZER SHALL BE APPLIED TO SEEDED AREAS AT INSTALL, AT THE TIME OF THE FIRST MOWING, AND TWO MONTHS AFTER SECOND APPLICATION AND SHALL BE PERFORMED AND PAID FOR UNDER THIS ITEM. FIRST APPLICATION OF FERTILIZER SHALL BE AS RECOMMENDED BY SOIL TESTING. SECOND APPLICATION SHALL BE APPLIED AT A RATE THAT ENSURES THAT ONE-HALF POUND OF NITROGEN IS APPLIED PER 1,000 SQUARE FEET. PHOSPHORUS AND POTASSIUM SHALL BE APPLIED PROPORTIONALLY IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOIL TESTS AND THE QUANTITIES PREVIOUSLY INTEGRATED INTO THE SOIL DURING THE FIRST APPLICATION.

A THIRD APPLICATION OF NITROGEN FERTILIZER SHALL BE APPLIED TO SEEDED AREAS APPROXIMATELY TWO MONTHS AFTER THE SECOND APPLICATION AND SHALL BE PAID FOR UNDER THIS SECTION. THIS THIRD APPLICATION SHALL CORRESPOND TO THE FOLLOWING APPLICATION RATES DEPENDENT UPON THE MONTH OF APPLICATION.

MAY 1-15: APPLY 1.0 POUND OF NITROGEN PER 1,000 SQUARE FEET.

JUNE 15-30: APPLY 1.0 POUND OF NITROGEN PER 1,000 SQUARE FEET.

AUGUST 15 THROUGH SEPTEMBER 15: APPLY 1.0 POUND OF NITROGEN PER 1,000 SQUARE FEET.

NOVEMBER 1-15: APPLY 1.5 POUNDS OF NITROGEN PER 1,000 SQUARE FEET

NITROGEN FERTILIZER SHALL BE COMPOSED OF 50 PERCENT SLOW RELEASE NITROGEN FERTILIZER.

PROMPTLY REMOVE SOIL AND DEBRIS CREATED BY LAWN WORK FROM PAVED AREAS. CLEAN WHEELS OF VEHICLES BEFORE LEAVING SITE TO AVOID TRACKING SOIL ONTO ROADS, WALKS, OR OTHER PAVED AREAS.

ERECT BARRICADES, PROTECTION, AND WARNING SIGNS AS REQUIRED TO PROTECT NEWLY PLANTED AREAS FROM TRAFFIC AND ANIMALS. MAINTAIN BARRICADES THROUGHOUT MAINTENANCE PERIOD AND REMOVE AFTER LAWN IS ESTABLISHED.

FOLLOWING THE MINIMUM REQUIRED MAINTENANCE PERIODS FOR LAWNS, THE CONTRACTOR SHALL REQUEST THE ENGINEER IN WRITING FOR A FORMAL INSPECTION OF COMPLETED WORK. REQUEST FOR INSPECTION SHALL BE RECEIVED BY THE ENGINEER AT LEAST 10 DAYS BEFORE ANTICIPATED DATE OF INSPECTION.

**ITEM 659 - SEEDING AND MULCHING, CLASS 1, AS PER PLAN
ITEM 659 - SEEDING AND MULCHING, CLASS 2, AS PER PLAN
ITEM 659 - SEEDING AND MULCHING, CLASS 5B, AS PER PLAN
(CONT.)**

NATIVE WILDFLOWER MIX MOWING (CONT.)

AT THE END OF THE MAINTENANCE PERIOD, SEEDED AREAS SHALL HAVE A CLOSE STAND OF GRASS AS DEFINED ABOVE WITH NO WEEDS PRESENT AND NO BARE SPOTS GREATER THAN 3 INCHES IN DIAMETER OVER GREATER THAN 5 PERCENT OF THE OVERALL SEEDED AREA. AT LEAST 90 PERCENT OF THE GRASS ESTABLISHED SHALL BE PERMANENT GRASS SPECIES. IF SEEDED AREAS ARE DEFICIENT, THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF ALL SEEDED AREAS SHALL BE EXTENDED UNTILL DEFICIENCIES ARE CORRECTED. SEEDED AREAS TO BE CORRECTED SHALL BE PREPARED AND RESEDED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.

AT THE TIME OF ACCEPTANCE, THE CONTRACTOR SHALL REMOVE TEMPORARY BARRIERS USED TO PROTECT LAWN AREAS.

FURNISH FULL AND COMPLETE WRITTEN INSTRUCTIONS FOR MAINTENANCE OF THE LAWNS TO THE ENGINEER AT THE TIME OF ACCEPTANCE IN CONFORMANCE WITH SUBMITTALS REQUIREMENTS.

ENGINEER'S INSPECTION SHALL DETERMINE WHETHER MAINTENANCE SHALL CONTINUE.

ALL AREAS WITHIN CONSTRUCTION LIMITS WITHOUT A SPECIFIED GROUND TREATMENT SHALL RECEIVE ITEM 659, SEEDING AND MULCHING, CLASS 1, AS PER PLAN

SEEDED LAWN SHALL BE MEASURED FOR PAYMENT PER SQUARE YARD COMPLETE IN-PLACE AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN TO CONSIST OF ALL LABOR MATERIALS AND EQUIPMENT, MAINTENANCE, FERTILIZER APPLICATIONS, HERBICIDE AND PESTICIDE TREATMENTS, INSTALLATION AND REMOVAL OF ALL PROTECTION FENCING, AND ALL OTHER INCIDENTALS.

METHOD OF MEASUREMENT:

SEEDED AND MULCHING SHALL BE MEASURED AS INDICATED FOR EACH PAY ITEM LISTED. REFER TO PLANTING SOILS SECTION FOR METHOD OF MEASUREMENT FOR SOIL MIXES REQUIRED FOR SEEDED AREAS.

A. ITEM 659 - SOIL ANALYSIS TEST	10 EACH
B. ITEM 659 - REPAIR SEEDING AND MULCHING	6926 SY
C. ITEM 659 - INTER-SEEDING	6926 SY
D. ITEM 659 - COMMERCIAL FERTILIZER	19.32 TON
E. ITEM 659 - LIME	28.62 ACRE
F. ITEM 659 - WATER	767 M GAL
G. ITEM 659 - MOWING	312 MSF

**ITEM 601 - ROCK CHANNEL PROTECTION, TYPE D,
WITH FILTER, AS PER PLAN**

ROCK CHANNEL PROTECTION SHALL BE SANDSTONE MATERIAL ONLY, MATCHING THE GRADATION AND OTHER REQUIREMENTS OF ITEM 601.

ITEM SPECIAL - TREE PROTECTION

CONTRACTOR SHALL PROTECT TREES INDICATED IN THE PLANS AS "TO BE PROTECTED" PER SPECIAL PROVISION - TREE PROTECTION DATED JUNE 16, 2022.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - TREE PROTECTION 9 EACH

ITEM SPECIAL - AIR KNIFE EXCAVATION

CONTRACTOR SHALL PERFORM AIR KNIFE EXCAVATION ALONG EXPOSED ROOTS OF TREES TO REMAIN ON THE NORTH SIDE OF CARNEGIE AND AS DIRECTED BY THE ENGINEER PER SPECIAL PROVISION - AIR KNIFE EXCAVATION DATED JUNE 16, 2022.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - AIR KNIFE EXCAVATION 320 FT

DESIGN AGENCY

Michael Baker
INTERNATIONAL

DESIGNER

BDC

REVIEWER

JCF 01/10/24

PROJECT ID

82382

SHEET

TOTAL

1798 | 2696

ITEM 659 - TOPSOIL, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS TO ITEM 659, TOPSOIL, FOLLOW TOPSOIL SPECIFICATIONS IN "PLANTING SOILS" SECTION 2.2 TOPSOIL COMPONENT AND "PLANTING SOILS" SECTION 2.3 ORGANIC COMPONENT.

8

ITEM 659 - TOPSOIL, AS PER PLAN IS TO BE USED IN AREAS QUANTIFIED IN THE LANDSCAPING SUBSUMMARY ALONG CARNEGIE AVE., CEDAR AVE., MIDTOWN CONNECTOR, E. 22ND ST., E. 14TH ST., E. 18TH ST., CEDAR CONNECTOR, AND CENTRAL AVE.

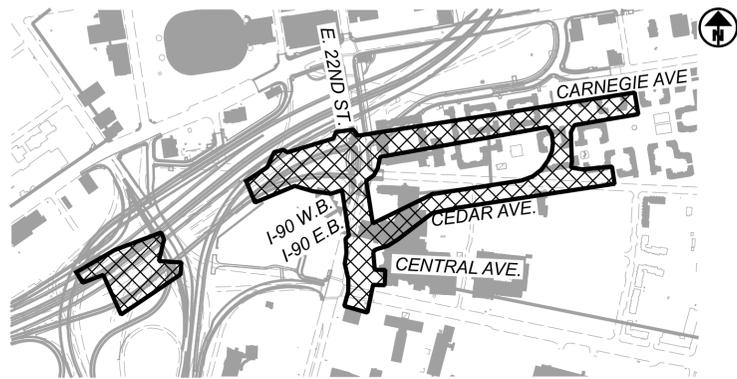
ITEM 661 - MULCH, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS TO ITEM 659, TOPSOIL, FOLLOW TOPSOIL SPECIFICATIONS IN "PLANTING SOILS" SECTION 2.2C ORGANIC MULCH.

ITEM SPECIAL - CLEVELAND PLANTING

PERFORM ADDITIONAL PLANTING/LANDSCAPE WORK PER THE REQUIREMENTS OF THE SPECIAL PROVISION - CLEVELAND PLANTING, DATED AUGUST 22, 2024, INCLUDING THE 24-MONTH GUARANTEE PERIOD DESCRIBED IN SECTION D-14 AND D-22 FOR ALL ITEM 661 WORK WITHIN THE HATCHED LIMITS SHOWN BELOW.

ITEM SPECIAL - CLEVELAND PLANTING LS



 AREA OF SPECIAL PROVISION

DESIGN AGENCY

Michael Baker
INTERNATIONAL

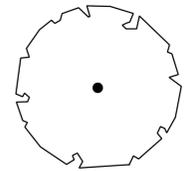
DESIGNER
BDC

REVIEWER
JCF 01/10/24

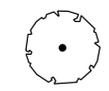
PROJECT ID
82382

SHEET	TOTAL
1804	2696

LEGEND



ITEM 661 - DECIDUOUS TREE



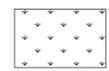
ITEM 661 - DECIDUOUS TREE (FLOWERING)



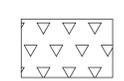
ITEM 661 - EVERGREEN TREE



ITEM 661 - DECIDUOUS SHRUBS



ITEM 659 - CLASS 1 SEEDING (LAWN MIXTURE)

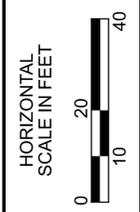
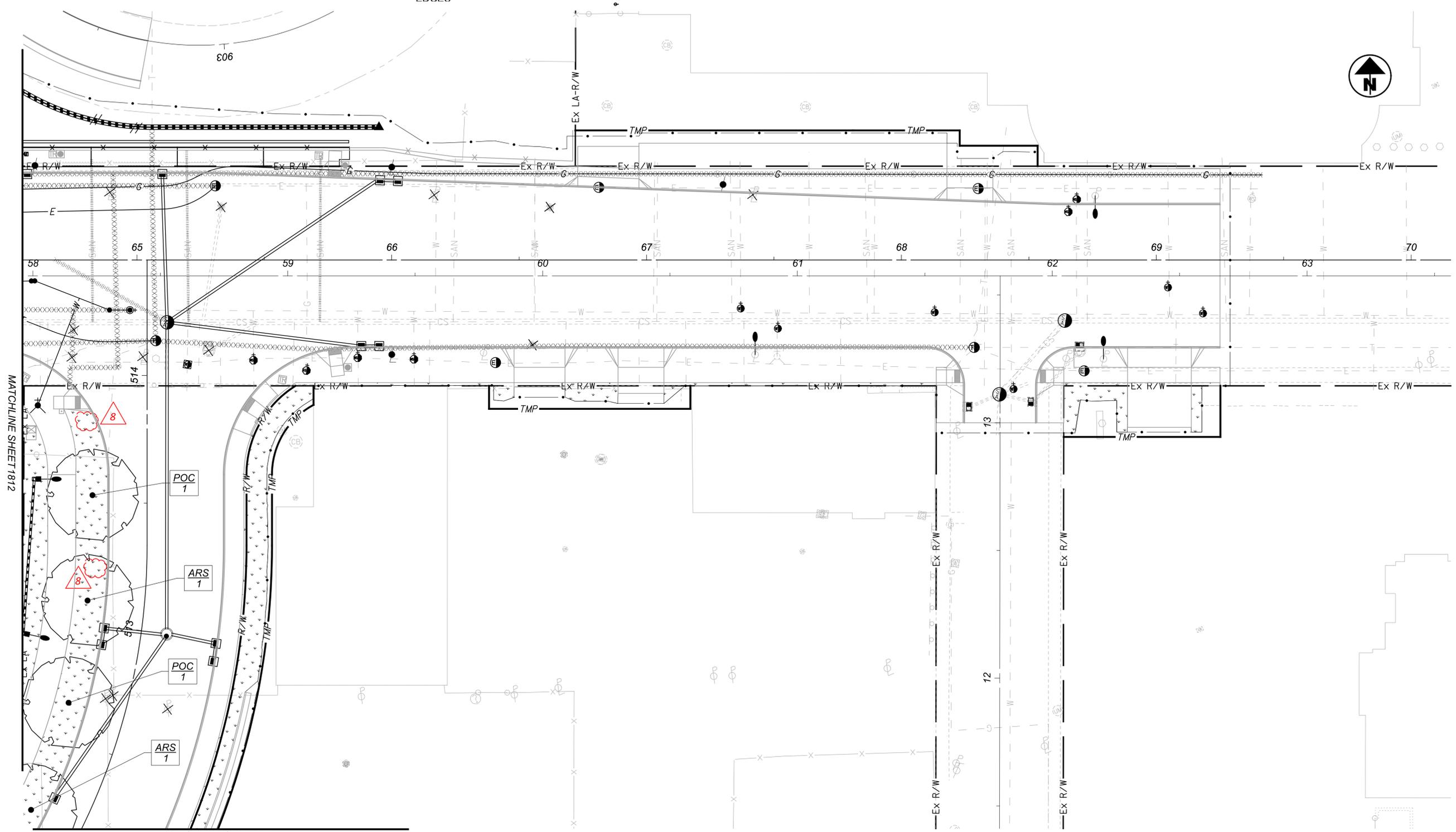


ITEM 659 - CLASS 2 (ROADSIDE MIXTURE)

TYP 30' OFFSET OF PAVEMENT EDGES



ITEM 659 - CLASS 5B SEEDING (NATIVE WILDFLOWER MIX)



PLANTING PLAN
 SHEET 06

DESIGN AGENCY

Michael Baker
 INTERNATIONAL

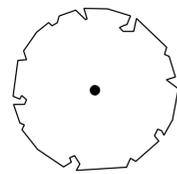
DESIGNER
 BDC

REVIEWER
 JCF 01/10/24

PROJECT ID
 82382

SHEET	TOTAL
1813	2696

LEGEND



ITEM 661 - DECIDUOUS TREE



ITEM 661 - DECIDUOUS TREE (FLOWERING)



ITEM 661 - EVERGREEN TREE



ITEM 661 - DECIDUOUS SHRUBS



ITEM 659 - CLASS 1 SEEDING (LAWN MIXTURE)



ITEM 659 - CLASS 2 (ROADSIDE MIXTURE)

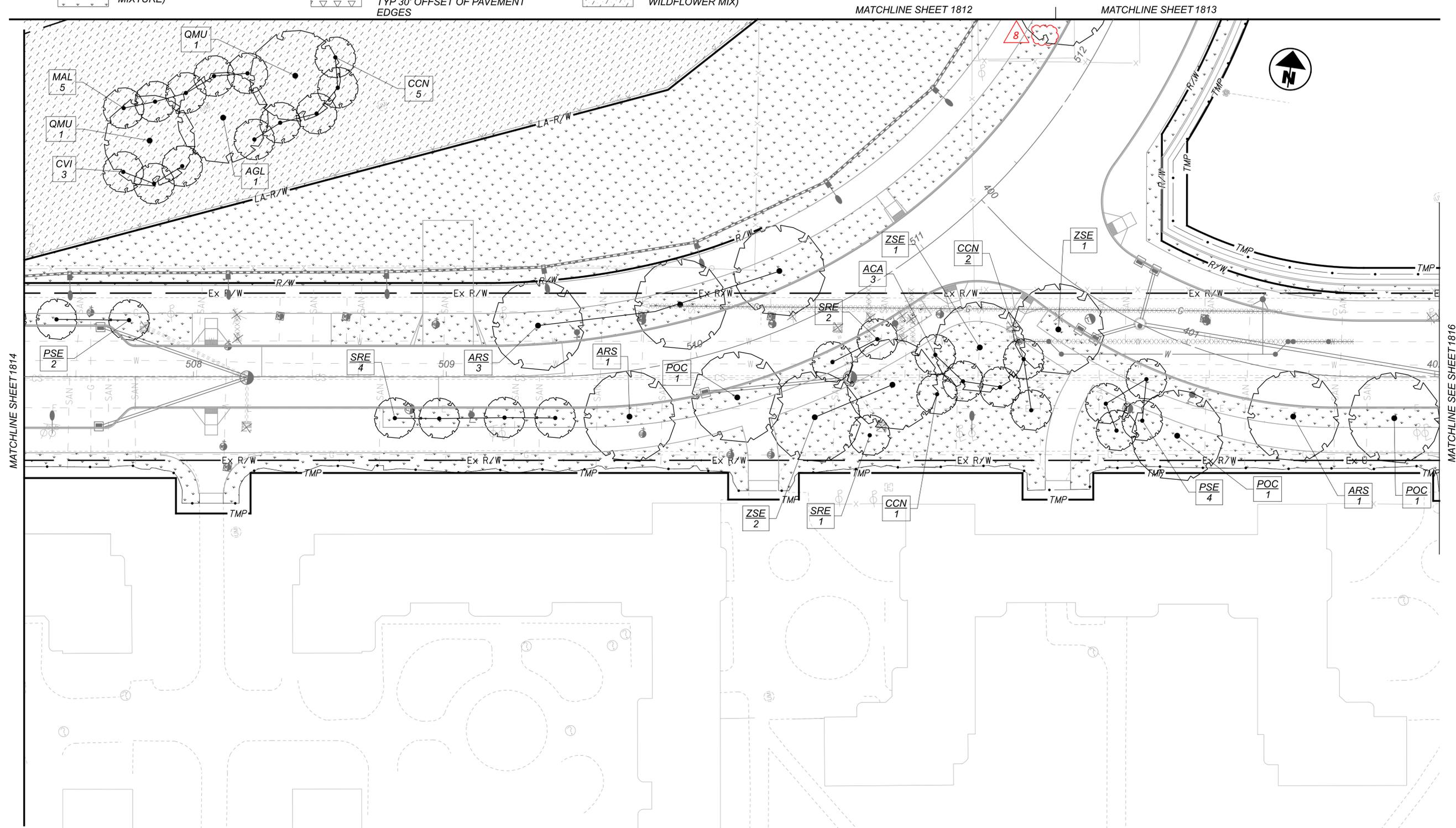
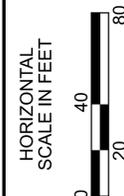
TYP 30' OFFSET OF PAVEMENT EDGES



ITEM 659 - CLASS 5B SEEDING (NATIVE WILDFLOWER MIX)

NOTES:

1. FOR STREETSCAPES: TREES SHALL BE PLANTED A MINIMUM OF 4'-0" FROM BACK OF CURB



PLANTING PLAN
SHEET 08

DESIGN AGENCY

Michael Baker INTERNATIONAL

DESIGNER
BDC

REVIEWER
JCF 01/10/24

PROJECT ID
82382

SHEET	TOTAL
1815	2696

ITEM SPECIAL - BRICK 1 PAVER MOCK UP

THIS ITEM CONSISTS OF BUILDING A MOCK UP OF BRICK PAVERS FOR ENGINEERS REVIEW AND APPROVAL OF PATTERN, COLOR, AND JOINTS UPON ENGINEERS APPROVAL OF FINISH AND COLOR SAMPLES SUBMITTED AS PER ITEM 608 PAVERS OVER CONCRETE (BRICK 1), CONTRACTOR SHALL CAST AND CONSTRUCT MOCK UP SECTION OF CROSSWALK TO DEMONSTRATE TYPICAL PATTERN, TEXTURE, SURFACE FINISH, COLOR, JOINTS, AND STANDARD OF WORKMANSHIP.

MOCK UP SHALL BE 60 BY 60 INCHES AND DEMONSTRATE TYPICAL PATTERN, TEXTURE, SURFACE FINISH, COLOR, JOINTS, AND STANDARD OF WORKMANSHIP OF ALL PORTIONS OF PAVER CONSTRUCTION. MOCK UP SHALL INCLUDE CONCRETE BASE. BUILD MOCK UP IN THE LOCATION DIRECTED BY THE ENGINEER. THE MOCK UP SHALL BE REVIEWED BY THE ENGINEER FOR COLOR AND TEXTURE, AESTHETIC QUALITIES OF WORKMANSHIP, AND OTHER MATERIAL AND CONSTRUCTION QUALITIES.

IF DIRECTED BY THE ENGINEER, CONSTRUCT ONE ADDITIONAL MOCK UP TO ACHIEVE THE DESIRED RESULTS. DO NOT ORDER MATERIALS IN EXCESS OF MATERIALS REQUIRED TO CONSTRUCT THE MOCK UP. RETAIN AND MAINTAIN ACCEPTED SAMPLE PAVEMENT DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A CRITERION FOR JUDGING THE ACCEPTANCE OF THE BEING PERFORMED. UPON COMPLETION OF THE PROJECT, REMOVE AND DISPOSE OF THE MOCK UPS PER CMS 202.

THIS ITEM INCLUDES ALL LABOR, EQUIPMENT, TOOLS, SUBMITTALS, INCIDENTALS AND MATERIALS REQUIRED TO CONSTRUCT AND DISPOSE OF THE MOCK UP(S).

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - BRICK 1 PAVER MOCK UP 2 EACH

**ITEM SPECIAL - BRICK 2 PAVER MOCK UP
ITEM SPECIAL - BRICK 3 PAVER MOCK UP**

THIS ITEM CONSISTS OF BUILDING A MOCK UP OF BRICK PAVERS FOR ENGINEERS REVIEW AND APPROVAL OF PATTERN, COLOR, AND JOINTS UPON ENGINEERS APPROVAL OF FINISH AND COLOR SAMPLES SUBMITTED AS PER ITEM 608 PAVERS OVER CONCRETE (BRICK 2 AND BRICK 3), CONTRACTOR SHALL CAST AND CONSTRUCT MOCK UP SECTION OF CROSSWALK TO DEMONSTRATE TYPICAL PATTERN, TEXTURE, SURFACE FINISH, COLOR, JOINTS, AND STANDARD OF WORKMANSHIP.

MOCK UP SHALL BE 60 BY 60 INCHES AND DEMONSTRATE TYPICAL PATTERN, TEXTURE, SURFACE FINISH, COLOR, JOINTS, AND STANDARD OF WORKMANSHIP OF ALL PORTIONS OF PAVER CONSTRUCTION. THE MOCK UP SHALL INCLUDE TYPE 2 AND 3 PAVERS IN SAME SECTION. MOCK UP SHALL INCLUDE CONCRETE BASE, TYPE 10-B CURB, PAVERS ON SAND, ROADWAY CURB, AND 1" DIA WEEP CONDUIT. BUILD MOCK UP IN THE LOCATION DIRECTED BY THE ENGINEER. THE MOCK UP SHALL BE REVIEWED BY THE ENGINEER FOR COLOR AND TEXTURE, AESTHETIC QUALITIES OF WORKMANSHIP, AND OTHER MATERIAL AND CONSTRUCTION QUALITIES.

IF DIRECTED BY THE ENGINEER, CONSTRUCT ONE ADDITIONAL MOCK UP TO ACHIEVE THE DESIRED RESULTS. DO NOT ORDER MATERIALS IN EXCESS OF MATERIALS REQUIRED TO CONSTRUCT THE MOCK UP. RETAIN AND MAINTAIN ACCEPTED SAMPLE PAVEMENT DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A CRITERION FOR JUDGING THE ACCEPTANCE OF THE BEING PERFORMED. UPON COMPLETION OF THE PROJECT, REMOVE AND DISPOSE OF THE MOCK UPS PER CMS 202.

THIS ITEM INCLUDES ALL LABOR, EQUIPMENT, TOOLS, SUBMITTALS, INCIDENTALS AND MATERIALS REQUIRED TO CONSTRUCT AND DISPOSE OF THE MOCK UP(S).

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

**ITEM SPECIAL - BRICK 2 PAVER MOCK UP 2 EACH
ITEM SPECIAL - BRICK 3 PAVER MOCK UP 2 EACH**

ITEM SPECIAL - BRICK 4 PAVER MOCK UP

THIS ITEM CONSISTS OF BUILDING A MOCK UP OF BRICK PAVERS FOR ENGINEERS REVIEW AND APPROVAL OF PATTERN, COLOR, AND JOINTS UPON ENGINEERS APPROVAL OF FINISH AND COLOR SAMPLES SUBMITTED AS PER ITEM 608 PAVERS OVER CONCRETE (BRICK 4), CONTRACTOR SHALL CAST AND CONSTRUCT MOCK UP SECTION OF CROSSWALK TO DEMONSTRATE TYPICAL PATTERN, TEXTURE, SURFACE FINISH, COLOR, JOINTS, AND STANDARD OF WORKMANSHIP.

MOCK UP SHALL BE 60 BY 60 INCHES AND DEMONSTRATE TYPICAL PATTERN, TEXTURE, SURFACE FINISH, COLOR, JOINTS, AND STANDARD OF WORKMANSHIP OF ALL PORTIONS OF PAVER CONSTRUCTION. MOCK UP SHALL INCLUDE CONCRETE BASE. BUILD MOCK UP IN THE LOCATION DIRECTED BY THE ENGINEER. THE MOCK UP SHALL BE REVIEWED BY THE ENGINEER FOR COLOR AND TEXTURE, AESTHETIC QUALITIES OF WORKMANSHIP, AND OTHER MATERIAL AND CONSTRUCTION QUALITIES.

IF DIRECTED BY THE ENGINEER, CONSTRUCT ONE ADDITIONAL MOCK UP TO ACHIEVE THE DESIRED RESULTS. DO NOT ORDER MATERIALS IN EXCESS OF MATERIALS REQUIRED TO CONSTRUCT THE MOCK UP. RETAIN AND MAINTAIN ACCEPTED SAMPLE PAVEMENT DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A CRITERION FOR JUDGING THE ACCEPTANCE OF THE BEING PERFORMED. UPON COMPLETION OF THE PROJECT, REMOVE AND DISPOSE OF THE MOCK UP S PER CMS 202.

THIS ITEM INCLUDES ALL LABOR, EQUIPMENT, TOOLS, SUBMITTALS, INCIDENTALS AND MATERIALS REQUIRED TO CONSTRUCT AND DISPOSE OF THE MOCK UP(S).

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - BRICK 4 PAVER MOCK UP 2 EACH

ITEM SPECIAL - PARK BENCH

CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, MATERIALS, INCIDENTALS, AND INSTALLATION NECESSARY FOR A COMPLETE AND FULLY FUNCTIONAL BENCH AS SHOWN ON DRAWINGS. THIS ITEM INCLUDES ALL LABOR, EQUIPMENT, TOOLS, SUBMITTALS, INCIDENTALS AND MATERIALS REQUIRED TO CONSTRUCT THIS ITEM AND SHALL BE PAID BY EACH UNDER ITEM SPECIAL - PARK BENCH.

CONTRACTOR TO SELECT FROM THE TWO BENCHES LISTED BELOW OR SUPPLY AN APPROVED EQUAL.

- 1. BENCH 270-60I MANUFACTURED BY DUMOR, LENGTH 6', CAST ALUMINUM FRAME BENCHES WITH IPE SLATS. FRAME COLOR: BLACK, POWDER COATED.
- 2. TRIO BENCH, BACKED WITH ARMRESTS BY FORMS+SURFACES, LENGTH 6'. SURFACE MOUNTED, CAST ALUMINUM FRAME BENCHES WITH IPE SLATS. FRAME COLOR: BLACK, POWDER COATED

REFER TO DETAIL ON SHEET 1847 FOR ADDITIONAL REQUIREMENTS.

ITEM SPECIAL - SCREEN WALL COVER PLATE

THIS ITEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S RECOMMENDED INSTALLATION. PAYMENT FOR THIS ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR SITE PREPARATION, SHOP DRAWINGS, AND ANY OTHER INCIDENTAL WORK RELATING TO THE COMPLETE IN PLACE INSTALLATION OF THE COVER PLATES CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PROJECT ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.



FINISH: 316 STAINLESS STEEL WITH BRUSHED FINISH, 1/4" THICKNESS. HOLES SHALL BE PRE-DRILLED PRIOR TO INSTALLATION ON RECESSED AREAS. FIELD CUT BASE OF COVER PLATE TO 1/2" OF FINISHED GRADE AT TOP OF PAVERS.

SCREEN WALL HARDWARE AND METAL ANGLES ARE INCIDENTAL TO COVER PLATE PAY ITEM. FINISH FOR ALL COVER PLATE HARDWARE SHALL BE 316 GRADE STAINLESS STEEL.

REFER TO DETAIL ON SHEET 1847 FOR ADDITIONAL REQUIREMENTS.

ITEM SPECIAL - SKATE GUARD

THIS ITEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S RECOMMENDED INSTALLATION. PAYMENT FOR THIS ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR SITE PREPARATION, SHOP DRAWINGS, AND ANY OTHER INCIDENTAL WORK RELATING TO THE COMPLETE IN PLACE INSTALLATION OF THE SKATE GUARDS. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PROJECT ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. FINISH SHALL BE MILLED ALUMINUM.

ALT. 1:
45 DEGREE CHAMFER ANTI-SKATEBOARD GUARDS. BC SITE SERVICE ITEM NUMBER 101002 OR APPROVED EQUAL BY LANDSCAPE ARCHIECT. WWW.BCSITESERVICE.COM

ALT. 2:
SKATEBOARD PREVENTION DEVICES FOR CHAMFERED EDGES. SETON WWW.SETON.COM

REFER TO DETAIL ON SHEET 1847 FOR ADDITIONAL REQUIREMENTS.

ITEM SPECIAL - TRASH RECEPTACLE

THIS ITEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S RECOMMENDED INSTALLATION. PAYMENT FOR THIS ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR SITE PREPARATION, SHOP DRAWINGS, BLACK PLASTIC PLASTIC LINER, AND ANY OTHER INCIDENTAL WORK RELATING TO THE COMPLETE IN PLACE INSTALLATION OF THE TRASH RECEPTACLE. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PROJECT ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. COLOR SHALL BE SILVER, APPROVED MODELS, AND MANUFACTURERS/SALES REPRESENTATIVE

ALT. 1:
LANDSCAPE FORMS CHASE PARK 24"x39" SIDE OPENING TRASH RECEPTACLE, WITH LOACKABLE LATCH, POWDER COATED BLACK. CONTACT: LANDSCAPE FORMS, 431 LAWNSDALE AVENUE, KALAMAZOO, MI 49048, KS 66062. PHONE 1-800-430-6209. WWW.LANDSCAPEFORMS.COM

ALT. 2:
VICTOR STANLEY TRASH RECEPTACLE MODEL DSC-36, POWDER COATED SILVER CONTACT: VICTOR STANLEY, P.O. BOX DRAWER 330, DUNKIRK, MD 20754
PHONE: 1-800-368-2573, WWW.VICTORSTANLEY.COM

REFER TO DETAIL ON SHEET 1847 FOR ADDITIONAL REQUIREMENTS

ITEM SPECIAL - BOLLARD

THIS ITEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S RECOMMENDED INSTALLATION. PAYMENT FOR THIS ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR SITE PREPARATION, SHOP DRAWINGS, AND ANY OTHER INCIDENTAL WORK RELATING TO THE COMPLETE IN PLACE INSTALLATION OF THE BOLLARDS. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PROJECT ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

ALT 1:
FORMS + SURFACES "LIGHT COLUMN BOLLARD" (UN-LIT), 6" DIAMETER, SURFACE MOUNT. STAINLESS STEEL FINISH. WWW.FORMS-SURFACES.COM

ALT 2:
LANDSCAPE FORMS ANNAPOLIS BOLLARD (UN-LIT) 6" DIAMETER, SURFACE MOUNT. POWDER COAT SILVER. WWW.LANDSCAPEFORMS.COM

NOTE: ALT 2 WILL REQUIRE ALTERNATIVE BOLT PATTERN TO MOUNT TO BRIDGE DECK TO BE DESIGNED BY CONTRACTOR.

REFER TO DETAIL ON SHEET 2267 FOR ADDITIONAL REQUIREMENTS.

ITEM SPECIAL - METAL EDGING

THIS ITEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S RECOMMENDED INSTALLATION. PAYMENT FOR THIS ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR SITE PREPARATION, SHOP DRAWINGS, AND ANY OTHER INCIDENTAL WORK RELATING TO THE COMPLETE IN PLACE INSTALLATION OF THE METAL EDGING. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PROJECT ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

ALT. 1:
PERMALOC CLEANLINE EDGING, 3/16" X 4". BLACK ANODIZED ALUMINUM FINISH. WWW.PERMALOC.COM 616-399-9600

ALT. 2:
SURELOC SURE-EDGE, 3/16" X 4". BLACK ANODIZED ALUMINUM FINISH. WWW.SURELOCEDGING.COM 1 (800) 787-3562

REFER TO DETAIL ON SHEET 1848 FOR ADDITIONAL REQUIREMENTS.

DESIGN AGENCY

Michael Baker
INTERNATIONAL

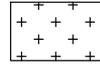
DESIGNER
BDC

REVIEWER
JCF 01/10/24

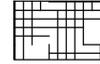
PROJECT ID
82382

SHEET TOTAL
1826 | 2696

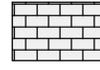
LEGEND



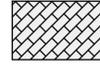
ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.: INTEGRALLY COLORED CONCRETE CROSSWALK



ITEM 608 - WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK #1)



ITEM 608 - WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK #2)

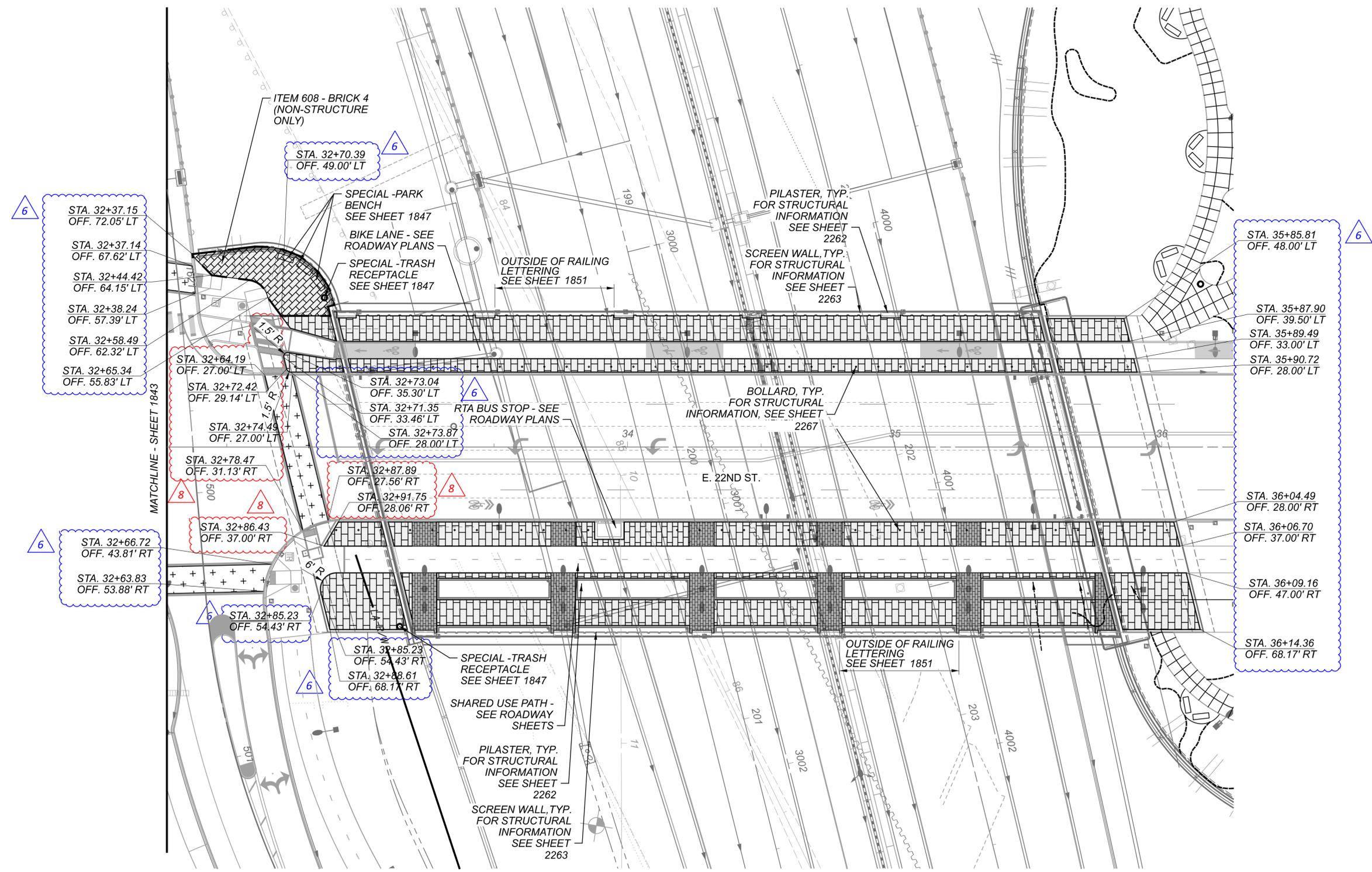


ITEM 608 - WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK #4)



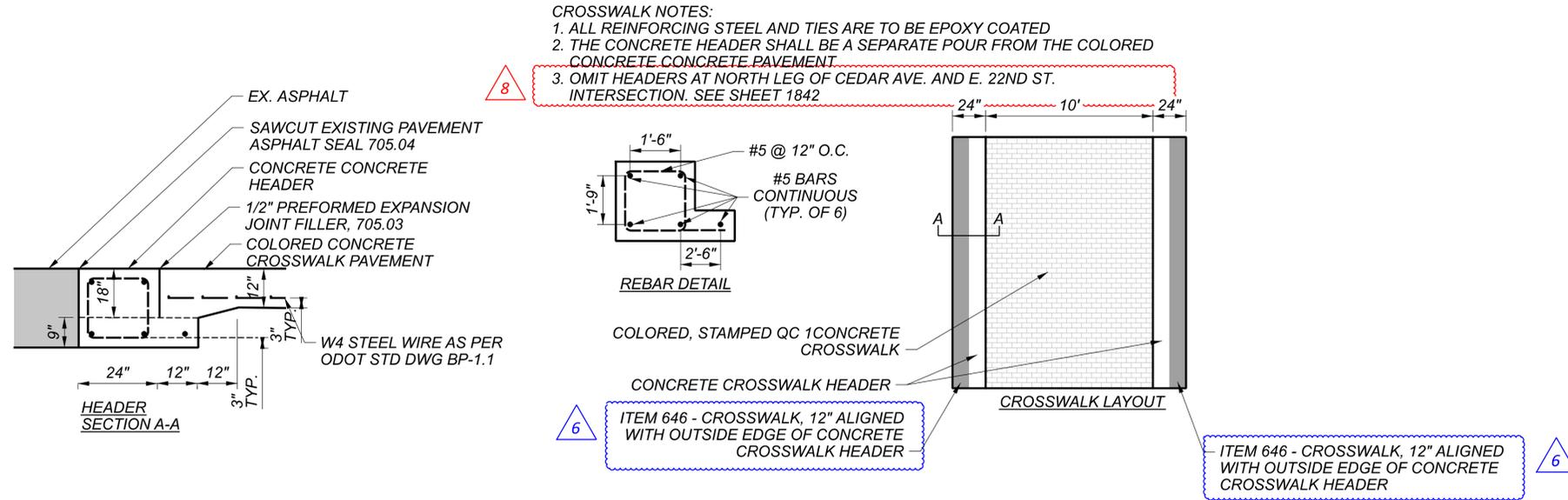
ITEM 608 - WALKWAY, MISC.: PAVERS OVER CONCRETE (BRICK #3)

6



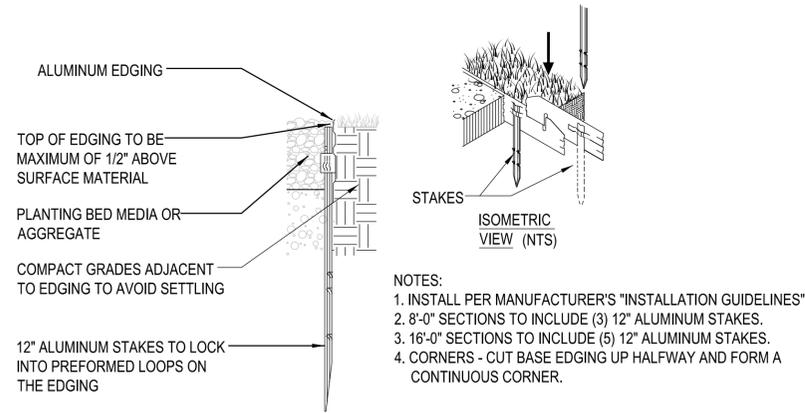
HARDSCAPE PLAN SHEET 02

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	BDC
REVIEWER	JCF 01/10/24
PROJECT ID	82382
SHEET TOTAL	1842 2696



ITEM 451 - REINFORCED CONCRETE. MISC.: INTEGRALLY COLORED CONCRETE CROSSWALK

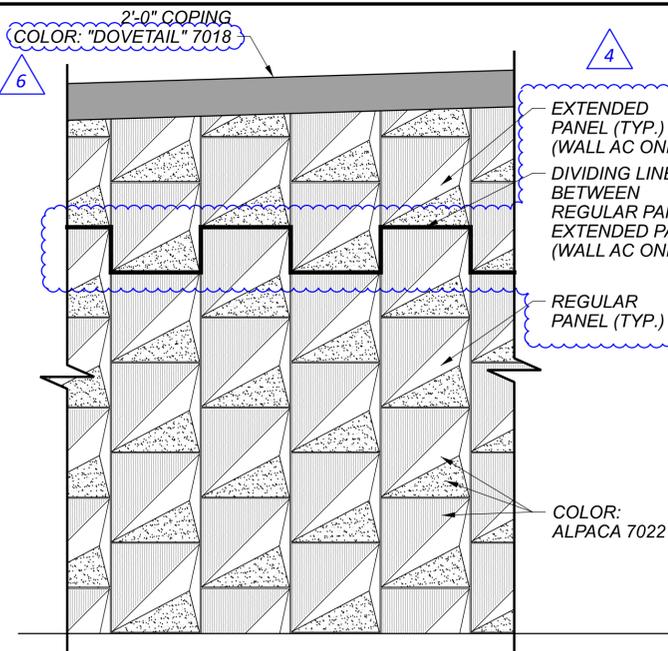
SCALE: NTS



ITEM SPECIAL - METAL EDGING

SCALE: 3"=1'-0"





APPLY TO WALLS:

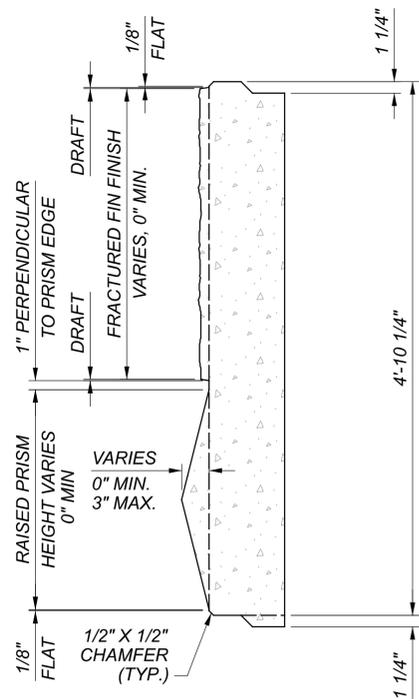
- N MSE WALL WITH REGULAR RAISED PRISM PANELS
- S RAISED PRISM TILED FORMLINER
- T MSE WALL WITH REGULAR RAISED PRISM PANELS
- Y MSE WALL WITH REGULAR RAISED PRISM PANELS
- AC RAISED PRISM TILED FORMLINER (ANCHORED SOLDIER PILE WALL PORTION) REGULAR AND EXTENDED RAISED PRISM PANELS (MSE WALL PORTION) SEE NOTES 1 AND 2.
- AD RAISED PRISM TILED FORMLINER SEE NOTE 3.
- BRIDGE 10 WINGWALL A RAISED PRISM TILED FORMLINER

NOTES:

1. THE TOP ROW OF PRISM PANELS SHALL BE EXTENDED TO MEET THE COPING PER WALL AC PLANS. TOP PANELS MUST ACCOMMODATE AT LEAST ONE ROW OF SOIL REINFORCEMENT STRAPS BELOW THE MOMENT SLAB.
2. THE ARCHITECTURAL TREATMENT SHALL BE REPLICATED ON THE EXTENDED PANELS. DO NOT ALTER GEOMETRY OR SCALE OF PATTERN.
3. CONTRACTOR MAY SCALE TYPICAL PRISM FORMLINER PATTERN PROPORTIONALLY IN HORIZONTAL DIRECTIONS. BUT SHALL MAINTAIN ORIGINAL AMOUNT OF VERTICAL RELIEF AS SHOWN IN THE "VERTICAL PRISM SECTION: REGULAR PANEL" DETAIL.

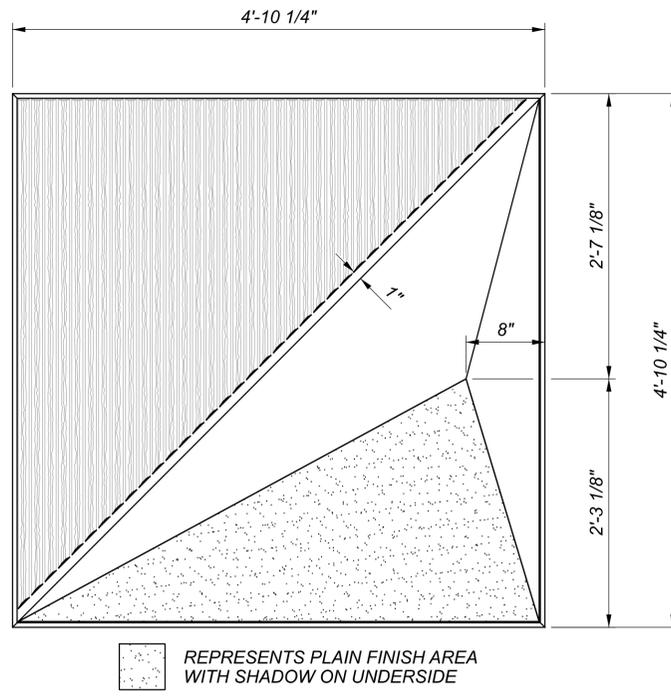
MECHANICALLY STABILIZED EARTH WALL WITH RAISED PRISM ARCHITECTURAL TREATMENT

SCALE: NTS



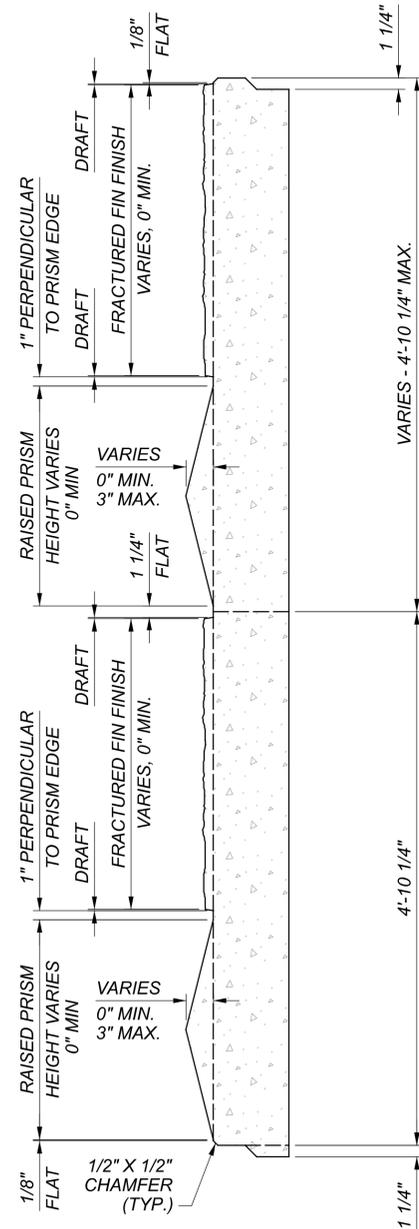
VERTICAL PRISM SECTION: REGULAR PANEL

SCALE: NTS



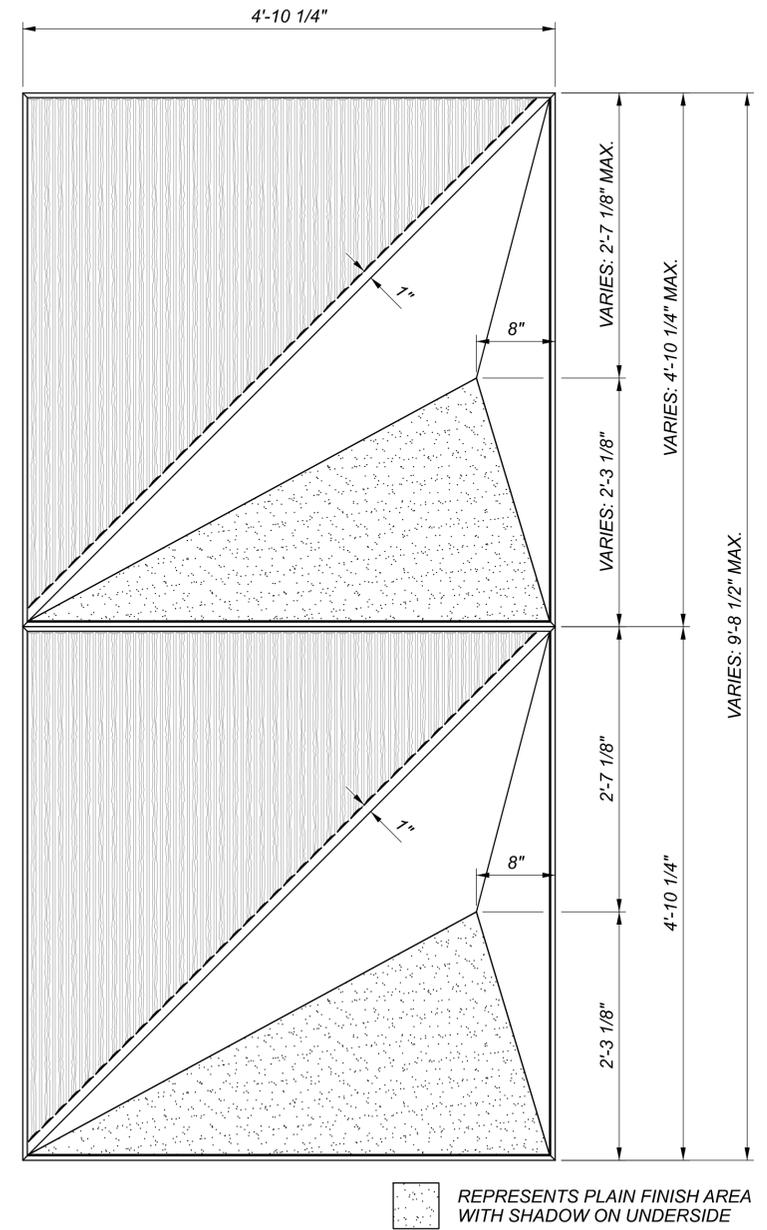
TYPICAL PRISM DETAIL: REGULAR PANEL

SCALE: NTS



VERTICAL PRISM SECTION: EXTENDED PANEL

SCALE: NTS



TYPICAL PRISM DETAIL: EXTENDED PANEL

SCALE: NTS



WALL AESTHETIC DETAILS
SHEET 01

DESIGN AGENCY

Michael Baker INTERNATIONAL

DESIGNER BDC

REVIEWER JCF 01/10/24

PROJECT ID 82382

SHEET TOTAL 1865 2696

ESTIMATED QUANTITIES

CALCULATED BY: NJH/JML DATE: May-2024
 CHECKED BY: DGJ DATE: May-2024

PARTICIPATION	ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL	SHEET REF.
03/IMS/08	203	20001	756	CY	EMBANKMENT, AS PER PLAN	756				12 / 167
03/IMS/08	503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN				LS	14 / 167
03/IMS/08	503	21100	5173	CY	UNCLASSIFIED EXCAVATION	225	4948			
03/IMS/08	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION				LS	
03/IMS/08	507	00500	6435	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	6435				
03/IMS/08	507	00550	6735	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	6735				
03/IMS/08	507	00600	13760	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN		13760			
03/IMS/08	507	00650	14760	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		14760			
03/IMS/08	507	00700	16690	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN		16690			
03/IMS/08	507	00750	17760	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		17760			
03/IMS/08	507	92201	446	FT	PREBORED HOLES, AS PER PLAN	446				13 / 167
03/IMS/08	509	10000	2309681	LB	EPOXY COATED STEEL REINFORCEMENT	68448	930999	1310234		
03/IMS/08	509	30020	63147	FT	NO. 4 GFRP DEFORMED BARS			63147		
03/IMS/08	511	34446	3826	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			3826		
03/IMS/08	511	34450	626	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			626		
03/IMS/08	511	41012	342	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS		342			
03/IMS/08	511	44112	437	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING	437				
03/IMS/08	511	45602	1908	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA (4 KSI)		1908			
03/IMS/08	511	45602	187	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA (6 KSI)		187			
03/IMS/08	511	46512	1460	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	179	1281			
03/IMS/08	512	10001	622	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	51	571			15 / 167
03/IMS/08	512	10100	8194	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	432	3426	4336		
03/IMS/08	512	33000	56	SY	TYPE 2 WATERPROOFING	56				
03/IMS/08	513	10301	7945900	LB	STRUCTURAL STEEL MEMBERS, LEVEL 5, AS PER PLAN			7945900		
03/IMS/08	513	20000	32600	EACH	WELDED STUD SHEAR CONNECTORS			32600		
03/IMS/08	514	00060	391000	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			391000		
03/IMS/08	514	00066	391000	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			391000		
03/IMS/08	516	10010	149	FT	ARMORLESS PREFORMED JOINT SEAL				149	
03/IMS/08	516	13900	168	SF	2" PREFORMED EXPANSION JOINT FILLER	146		22		
03/IMS/08	SPECIAL	51612400	209	FT	MODULAR EXPANSION JOINT			209		14 / 167
03/IMS/08	518	12301	16	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			16		120 / 167
03/IMS/08	518	21200	81	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	81				
03/IMS/08	518	40000	214	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	214				
03/IMS/08	518	51101	460	FT	8" PIPE DOWNSPOUT, INCLUDING SPECIALS, AS PER PLAN	226	234			120 / 167 AND 123 / 167
03/IMS/08	523	20001	10	EACH	DYNAMIC LOAD TESTING, AS PER PLAN	2	8			13 / 167
03/IMS/08	523	20501	10	EACH	RESTRIKE, AS PER PLAN	2	8			13 / 167
03/IMS/08	524	94946	471	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK		471			
03/IMS/08	524	94989	440	FT	DRILLED SHAFTS, 90" DIAMETER, ABOVE BEDROCK, AS PER PLAN		440			12 / 167
03/IMS/08	524	95000	88	FT	DRILLED SHAFTS, MISC.: 90" DIAMETER DEMONSTRATION DRILLED SHAFT		88			12 / 167
03/IMS/08	524	95100	6	EACH	DRILLED SHAFTS, MISC.: CSL TESTING, 90" DIA. SHAFT		6			12 / 167 AND 13 / 167
03/IMS/08	524	95100	12	EACH	DRILLED SHAFTS, MISC.: HIGH-STRAIN DYNAMIC TESTING OF DRILLED SHAFTS		12			12 / 167 AND 13 / 167
03/IMS/08	524	95100	1	EACH	DRILLED SHAFTS, MISC.: BI-DIRECTIONAL TESTING OF DRILLED SHAFTS		1			13 / 167
03/IMS/08	526	30010	483	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17")				483	
03/IMS/08	526	90030	149	FT	TYPE C INSTALLATION				149	
03/IMS/08	SPECIAL	53000200	LS		SPECIAL - STRUCTURES MISC.: VIBRATION MONITORING				LS	13 / 167
03/IMS/08	SPECIAL	53000200	LS		SPECIAL - STRUCTURES MISC.: PRECONSTRUCTION CONDITION SURVEY				LS	13 / 167
03/IMS/08	601	21001	18	SY	CONCRETE SLOPE PROTECTION, AS PER PLAN	18				35 / 167
03/IMS/08	855	00010	12136	LB	POST-TENSIONING STRAND TENDON		12136			
03/IMS/08	869	00101	100	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN			100		68 / 167 TO 70 / 167
03/IMS/08	894	10000	12	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST		12			12 / 167 AND 13 / 167

8

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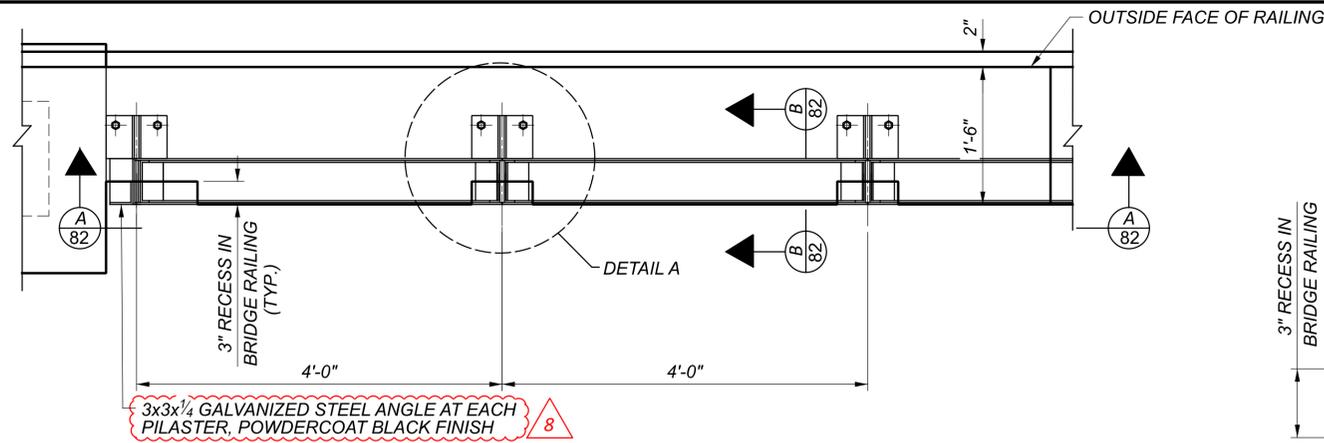
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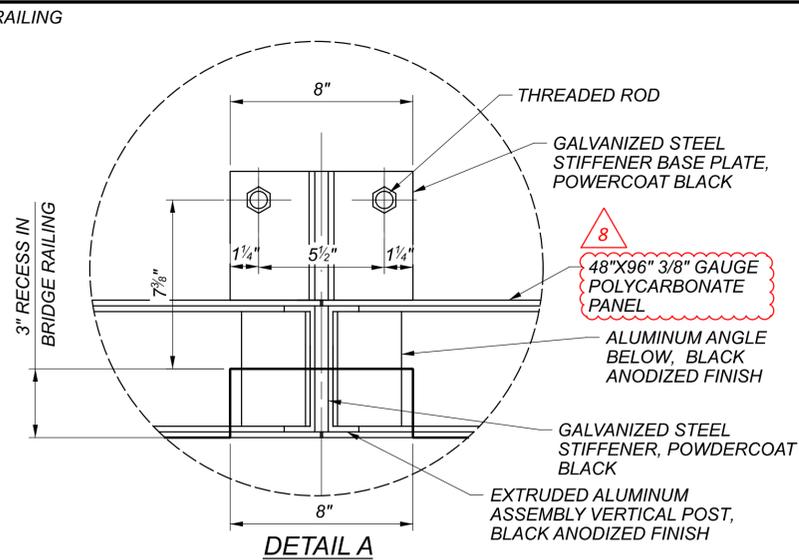
ESTIMATED QUANTITIES
 CUY-77-1587 (BRIDGE 9)
 I.R. 77 SB OVER I.R. 90 AND CR-721 (E. 14TH ST.)

SFN 1806910
 DESIGN AGENCY

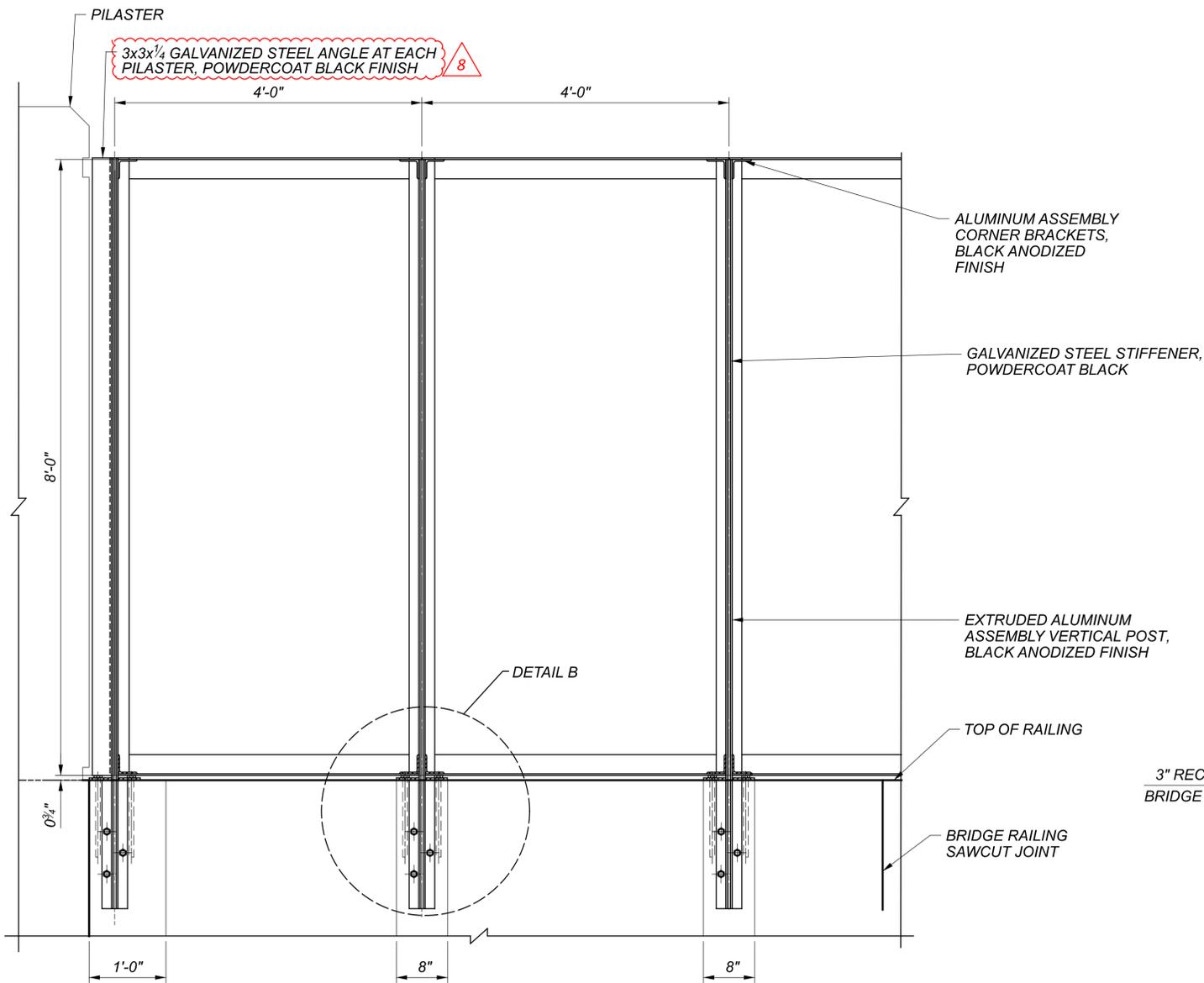
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 BTA JS
 REVIEWER
 DWW 01/11/24
 PROJECT ID
 82382
 SUBSET TOTAL
 16 167
 SHEET TOTAL
 1884 2696



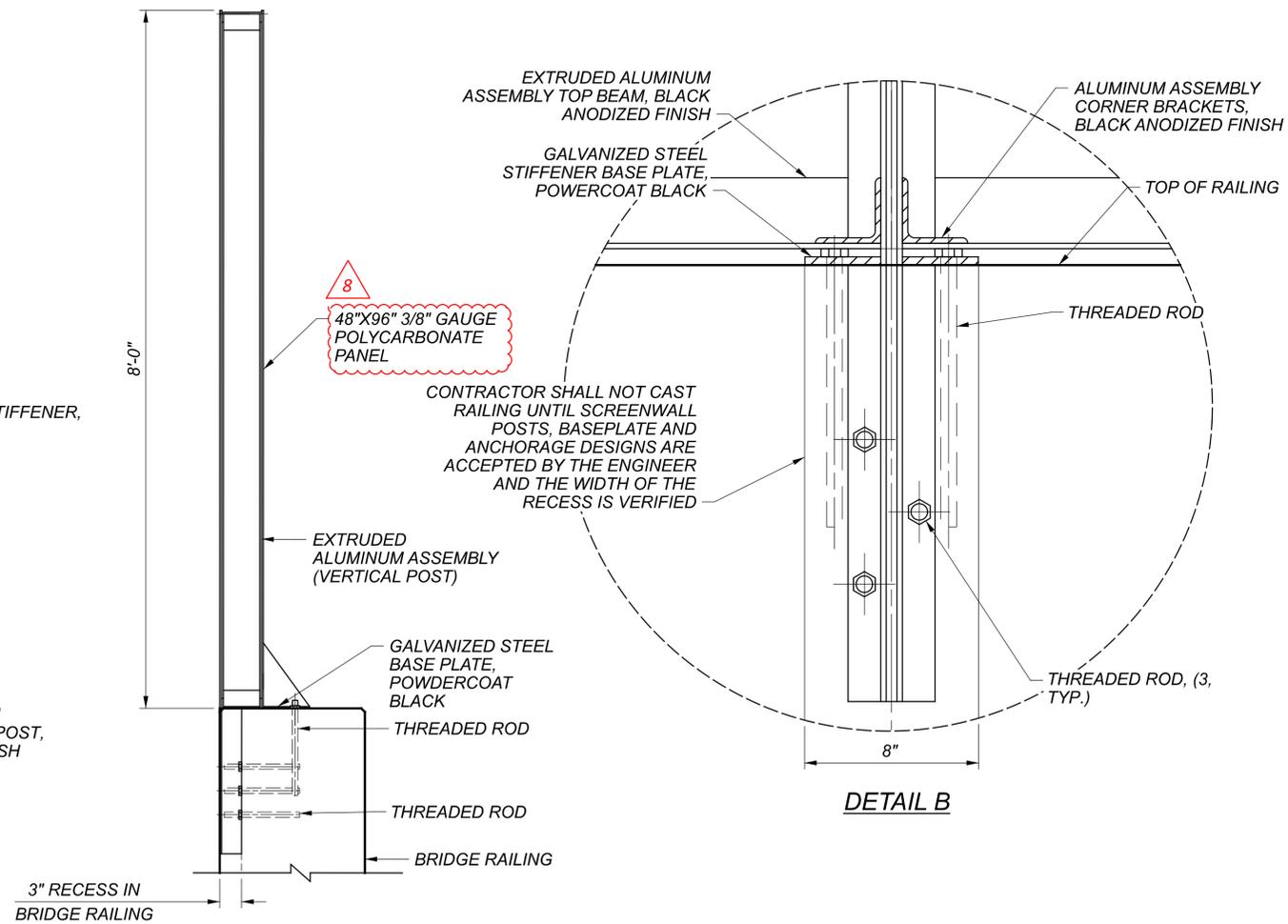
SCREEN WALL FRAMING - TOP PLAN



DETAIL A



SCREEN WALL FRAMING - TYPICAL ELEVATION



B SCREEN WALL - TYPICAL SECTION

- NOTES:
1. SCREEN WALL POSTS SHALL BE PLUMB.
 2. FOR ADDITIONAL SCREEN WALL DESIGN NOTES, SEE 4/99.
 3. SEE HARDSCAPING SCREENWALL AESTHETIC LIGHTING DETAILS SHEET 1832 FOR LED STRIP LIGHT SPECIFICATIONS AND ADDITIONAL INFORMATION.
 4. SEE ADDITIONAL LANDSCAPING DETAIL SHEETS FOR ADDITIONAL SCREEN WALL DETAILS AND PAYMENT FOR THIS ITEM.
 5. THREADED ROD DETAILS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ANCHORAGE DESIGN.
 6. THE THREADED RODS SHALL BE DESIGNED AS ADHESIVE ANCHORS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATION SECTION 5.13. SEE THE ADHESIVE ANCHOR/DOWEL SYSTEM ON SHEET 4/99 FOR ADDITIONAL REQUIREMENTS.

SFN	1807839
DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
CHECKER	SWB MKB
REVIEWER	CDC 05/10/24
PROJECT ID	82382
SUBSET	82
TOTAL	99
SHEET	2263
TOTAL	2696

8

CONSTRUCTION CONSTRAINTS:

THE CONTRACTOR IS ADVISED THAT THE PROPOSED DRILLED SHAFT INSTALLATIONS MAY REQUIRE ADVANCING SHAFTS THROUGH OBSTRUCTIONS SUCH AS EXISTING FOUNDATIONS AND PILES. EXISTING FOUNDATION AND PILE LOCATIONS ARE DEPICTED IN ACCORDANCE WITH AVAILABLE EXISTING PLAN INFORMATION.

THE PROPOSED DRILLED SHAFT ARRANGEMENT WAS DEVELOPED WITH THE INTENT TO ELIMINATE OR MINIMIZE CONFLICTS BETWEEN THE PROPOSED DRILLED SHAFTS AND IDENTIFIED OBSTRUCTIONS. COMPLETE ELIMINATION OF ALL CONFLICTS BETWEEN THE PROPOSED DRILLED SHAFTS AND OBSTRUCTIONS WAS NOT POSSIBLE.

THE CONTRACTOR IS ADVISED THAT THEY MUST ADAPT THEIR PROPOSED MEANS AND METHODS FOR INSTALLING DRILLED SHAFTS IN CONFLICT WITH OBSTRUCTIONS. SUCH MEANS AND METHODS MAY INCLUDE, BUT ARE NOT LIMITED TO, SPECIALIZED CUTTING HEADS, DOWN DRIVE HAMMERS, ETC.

THE INTENT OF THIS PLAN NOTE IS TO IDENTIFY POTENTIAL CONFLICTS WITH DRILLED SHAFT INSTALLATION SO THAT THE IMPACT TO THE PROJECT CAN BE MITIGATED AS MUCH AS POSSIBLE. IF OBSTRUCTIONS SUCH AS EXISTING FOUNDATIONS AND PILES ARE ENCOUNTERED DURING INSTALLATION OF DRILLED SHAFTS, THE CONTRACTOR SHALL FOLLOW THE PROVISIONS IN C&MS 104.02.B. IMMEDIATELY NOTIFY THE ENGINEER OF THE ENCOUNTER SO THAT THE CONDITIONS CAN BE INVESTIGATED AND ANY REQUIRED CONTRACT MODIFICATIONS CAN BE DETERMINED.

CONTRACTOR'S INSTALLATION PLAN:

THE CONTRACTOR SHALL PROVIDE AN INSTALLATION PLAN AS REQUIRED BY ODOT C&MS SECTION 524.03. THE INSTALLATION PLAN SHALL ALSO INCLUDE:

1. CONTRACTOR'S PROPOSED METHODS TO ADVANCE DRILLED SHAFTS THROUGH OBSTRUCTIONS (CONFLICTING PILES, EXISTING FOUNDATIONS, ETC.)

MAINTENANCE OF TRAFFIC

MAINTENANCE OF TRAFFIC FOR THE STRUCTURE WORK SHALL BE COORDINATED WITH THE OVERALL PROJECT. REFER TO MAINTENANCE OF TRAFFIC NOTES AND DETAILS ELSEWHERE IN PLANS.

UTILITY LINES

THE UTILITIES SHALL BEAR ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER PARTY WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS, SECTIONS 102.05, 105.02, AND 513.04. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

STRUCTURE GROUNDING

STRUCTURE TO BE GROUNDED AS PER LIGHTING GENERAL NOTES SHEET 1684. QUANTITY CARRIED TO LIGHTING SUBSUMMARY.

ITEM 511 - CLASS QC2 CONCRETE, DECK, AS PER PLAN

LOCATE THE LOWER CONTACT POINT OF THE OVERHANG FALSEWORK A MAXIMUM OF 18 INCHES ± 2 INCHES ABOVE THE TOP OF THE GIRDER'S BOTTOM FLANGE. THE BRACING CONTACT POINT REQUIREMENTS OF C&MS 508 DO NOT APPLY.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

TEMPORARY EXCAVATIONS SHALL MAINTAIN A MINIMUM OF A 2.5:1 SLOPE. REFER TO THE GEOTECHNICAL REPORTS FOR ADDITIONAL DETAILS.

GROUND WATER LEVELS FLUCTUATE SEASONALLY AS A FUNCTION OF THE PRECIPITATION AND OTHER HYDROLOGICAL FACTORS. THEREFORE, THERE MAY BE CONSIDERABLE CHANGE IN THE WATER TABLE OR THE OCCURRENCE OF WATER WHERE NOT PREVIOUSLY ENCOUNTERED. THE CONTRACTOR SHALL DEWATER ALL EXCAVATIONS AS NECESSARY TO PERFORM THE PROPOSED WORK.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.84 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE FINISHING MACHINE OF 103 INCHES.

A MAXIMUM SPACING OF OVERHANG BRACKETS OF 18 INCHES.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 66¼ INCHES.

CONCRETE SHALL BE PLACED PARALLEL ON A SKEW AS INDICATED IN THE PROPOSED DECK PLACEMENT SEQUENCE ON SHEET / AND SHALL BE PLACED AND FINISHED FULL-WIDTH. DO NOT PERMIT A DIFFERENCE OF MORE THAN TEN (10) FEET LONGITUDINALLY IN PLACEMENT OF CONCRETE FROM ONE SIDE OF THE BRIDGE TO THE OTHER AT ANY TIME. FINISHING OF THE CONCRETE SHALL BE PERPENDICULAR TO THE CARNEGIE AVENUE CONSTRUCTION CENTERLINE.

ALLOW 48 HOURS OF PROPER CURING TO ELAPSE FROM THE COMPLETION OF ONE DECK PLACEMENT BEFORE BEGINNING THE NEXT PLACEMENT.

63 90

PLACE CONCRETE IN THE SEQUENCE AND DIRECTIONS INDICATED ON THE PROPOSED DECK PLACEMENT SEQUENCE ON SHEET /

GIRDER ERECTION AND FIT-UP:

GIRDERS, CROSSFRAMES, DIAPHRAGMS AND CONNECTION PLATES SHALL BE DETAILED FOR THE "STEEL DEAD LOAD FIT" (SDLF) OR "ERECTED FIT" CONDITION. GIRDER WEBS SHALL BE PLUMB AFTER ERECTION OF STRUCTURAL STEEL IS COMPLETE. HLMR BEARINGS SHALL BE DESIGNED TO ACCOMMODATE GIRDER ROLL AND LAYOVER DURING THE ERECTION PROCESS AND PLACEMENT OF COMPOSITE DEAD LOADS.-

FINISH COLORS:

63 90

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN

PAINT COLORS SHALL BE AS FOLLOWS:

BLACK FOX (SW 7020) - FASCIA GIRDERS (OUTER FACE AND BOTTOM FLANGE ONLY)

ALABASTER (SW 7008) - INSIDE GIRDERS, BRACING MEMBERS AND INSIDE FACE OF FASCIA GIRDERS

ITEM - 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

CONCRETE SEALER COLORS SHALL BE AS FOLLOWS:

ALABASTER (SW 7008) - SUBSTRUCTURE - PIERS, ABUTMENTS AND ABUTMENT WALLS

6

ALPACA (SW 7022) - ABUTMENT, WINGWALL, AND PARAPETS ACCENTS

ALL COLOR NAME AND NUMBER REFERENCES ARE TAKEN FROM THE SHERWIN WILLIAMS COLOR PALATE. THE CONTRACTOR MAY SUBSTITUTE SIMILAR COLORS FROM ALTERNATIVE SUPPLIER'S COLOR PALATE.

ITEM SPECIAL - PERMANENT SHORING PRECAST CONCRETE LAGGING

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST REINFORCED CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED ACCORDING TO SUPPLEMENT 1073. PROVIDE CLASS QC1 CONCRETE ACCORDING TO C&MS

499. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO C&MS 709.00. IN LIEU OF EPOXY COATING, A CORROSION INHIBITING CONCRETE ADMIXTURE MAY BE USED AT THE SPECIFIED DOASAGE RATE. A QUALIFIED PRODUCT LIST OF CORROSION INHIBITING ADMIXTURES IS ON FILE AT THE LABORATORY. MANUFACTURERS SHOULD RECOGNIZE THAT THE CORROSION INHABITOR MAY AFFECT THE STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC OF THEIR CONCRETE MIXES. THE MANUFACTURER'S CHOICE TO USE ONE OF THESE CORROSION INHIBITORS DOES NOT ALLEVIATE MEETING ALL DESIGN REQUIREMENTS. DO NOT ALLOW THE DIMENSIONS OF THE LAGGING OR LOCATION OF THE REINFORCEMENT STEEL TO VARY BY MORE THAN 1/4-INCH. CAST THREADED INSERTS INTO THE TOP OF EACH PANEL FOR LIFTING AND PLACEMENT.

FINISH THE FACES OF THE PRECAST CONCRETE LAGGING PANELS TO A UNIFORM SURFACE, FREE OF OPEN POCKETS OF AGGREGATE.

PERMANENTLY MARK EACH PRECAST CONCRETE LAGGING PANEL TO INDICATE WHICH FACE WILL BE PLACED AGAINST THE SOIL. PLACE THE PANEL ON THE FRONT COVER PLATES OF THE SOLDIER PILES AND BEARING AGAINST THE FLANGES ON THE EXPOSED SIDE OF THE WALL SO THAT THE SOLDIER PILE FLANGE OVERLAPS THE END OF THE LAGGING BY AT LEAST ONE INCH MORE THAN THE CONCRETE COVER OVER THE REINFORCING STEEL AT BOTH ENDS OF THE LAGGING.

HANDLE, STORE, AND SHIP THE PRECAST CONCRETE LAGGING PANELS TO AVOID CHIPPING CRACKING AND FRACTURING THE PANELS. SUPPORT THE PANELS ON FIRM BLOCKING WHILE STORING AND SHIPPING. DO NOT SHIP PANELS UNTIL CONCRETE HAS ATTAINED THE REQUIRED COMPRESSIVE STRENGTH. SUBMIT SHIPMENT DOCUMENTATION TO THE ENGINEER AS THE PANELS ARE DELIVERED TO THE PROJECT, INCLUDING THE PRECASTER'S RECORD OF INSPECTION, THE MEASUREMENT AND TOLERANCES, STRENGTH, AND DIMENSIONS OF EACH PANEL, ALONG WITH THE TE-24 SHIPPING DOCUMENT.

INSPECT ALL PRECAST CONCRETE PANELS AND REJECT PANELS HAVING ANY OF THE FOLLOWING:

1. DEFECTS THAT INDICATE IMPERFECT MOLDING.
2. DEFECTS THAT INDICATE HONEYCOMB OR OPEN TEXTURE CONCRETE.
3. DEFECTS IN THE PHYSICAL CHARACTERISTICS OF THE CONCRETE, OR DAMAGE TO THE AESTHETIC SURFACE TREATMENT.
4. CONCRETE CHIPS OR SPALLS THAT ARE LARGER THAN 4 INCHES WIDE OR 2 INCHES DEEP. REPAIR ALL CHIPS AND SPALLS THAT ARE SMALLER.
5. STAINED FORM FACES, DUE TO FORM OIL, CURING OR OTHER CONTAMINANTS.
6. SIGNS OF AGGREGATE SEGREGATION.
7. CRACKS WIDER THAN 0.01 INCH OR PENETRATING MORE THAN 1 INCH OR LONGER THAN 20 PERCENT OF THE LENGTH OF THE FACE CONTAINING THE CRACK.
8. PANELS THAT DO NOT MEET THE SPECIFIED DIMENSIONAL TOLERANCES.
9. UNUSABLE LIFTING INSERTS.
10. EXPOSED REINFORCING STEEL.
11. INSUFFICIENT CONCRETE COMPRESSIVE STRENGTH.

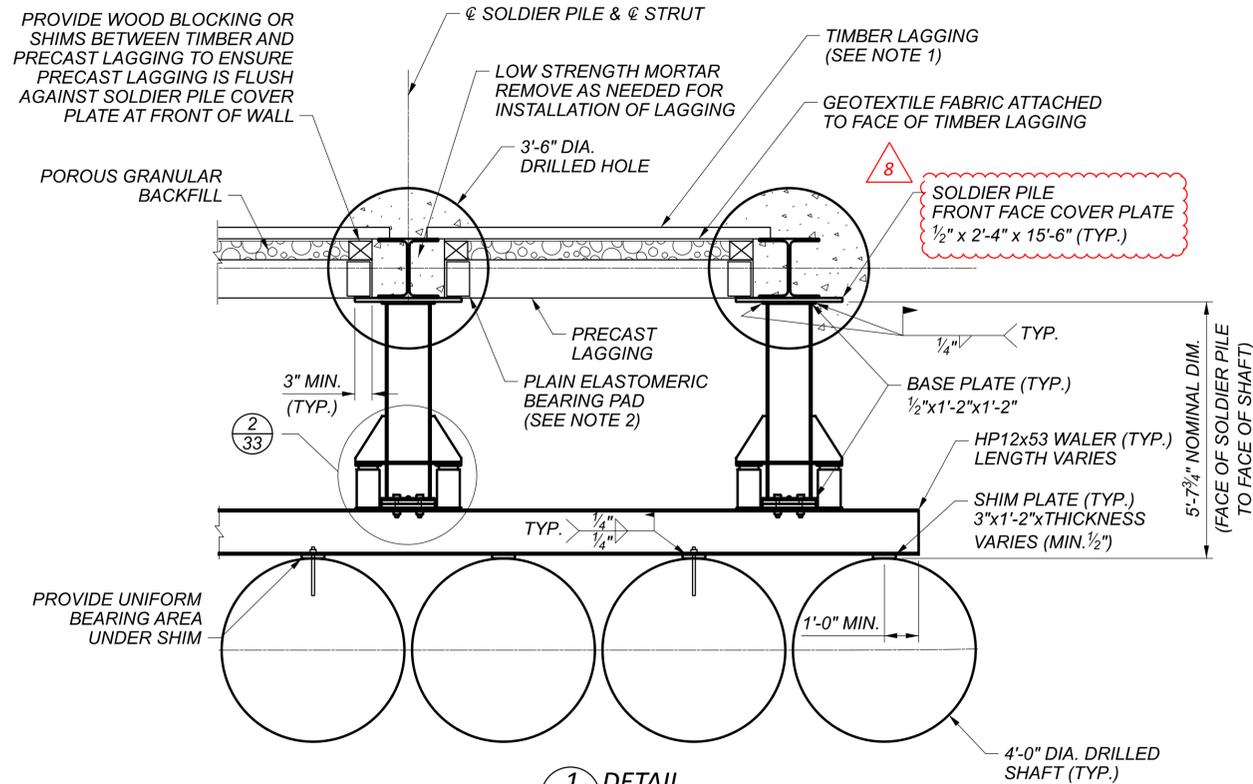
EITHER REPLACE DAMAGED PRECAST CONCRETE LAGGING PANELS OR DOCUMENT AND PROPOSE TO THE ENGINEER A REPAIR METHOD FOR THE DAMAGED PANEL. PROVIDE ACCEPTABLE REPLACEMENT PANELS FOR ANY THAT ARE REJECTED.

WHEN INSTALLING THE PRECAST CONCRETE LAGGING PANELS, PLACE HARDWOOD WEDGES NEAR THE TOP AND BOTTOM ON EACH SIDE TO HOLD THE LAGGING PANELS ON THE FRONT COVER PLATES OF THE STEEL PILES.

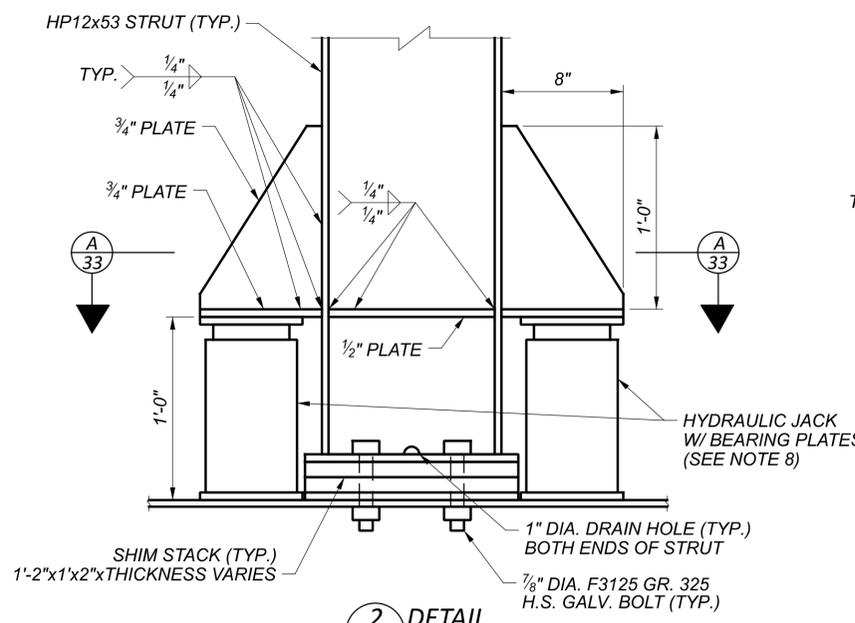
PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIAL REQUIRED TO FABRICATE, TRANSPORT, AND INSTALL THE PRECAST REINFORCED CONCRETE PANELS SHALL BE MADE AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR ITEM 530-SPECIAL-PERMANENT SHORING, PRECAST CONCRETE LAGGING.

GENERAL NOTES (3 OF 7)
CUY-90-1696 (BRIDGE 14)
CR-722 (CARNEGIE AVE.) OVER I.R. 90

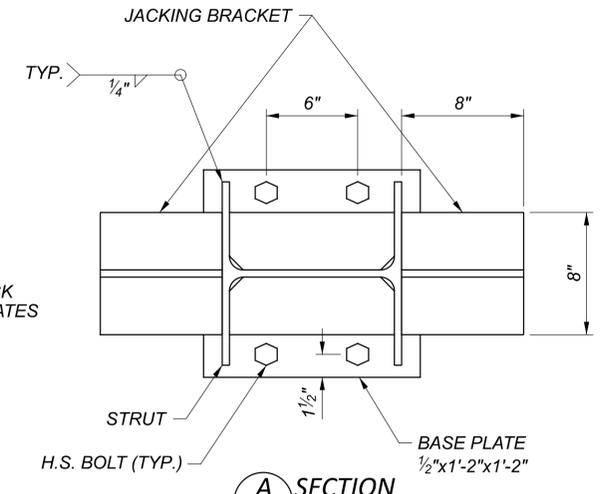
SFN	1807898
DESIGN AGENCY	
Michael Baker	INTERNATIONAL
DESIGNER	CHECKER
ZES	MKB
REVIEWER	
KAG	12/26/23
PROJECT ID	82382
SUBSET	TOTAL
6	90
SHEET	TOTAL
2286	2696



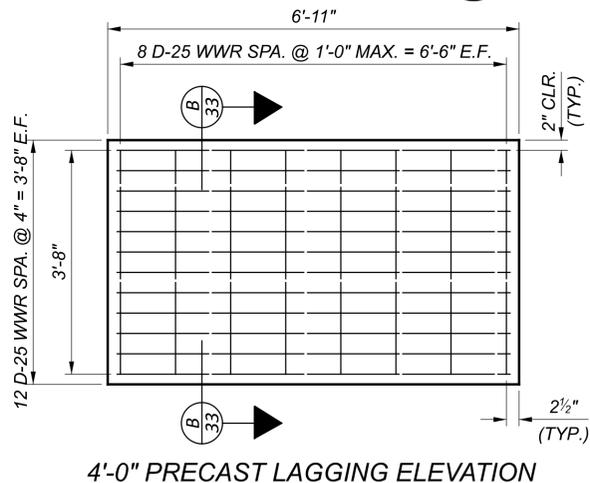
1 DETAIL
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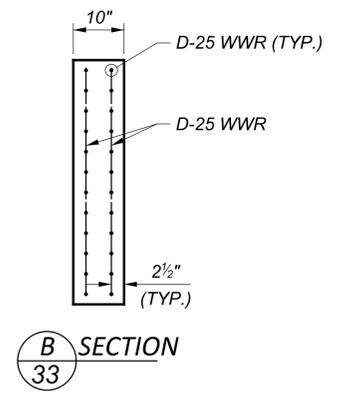
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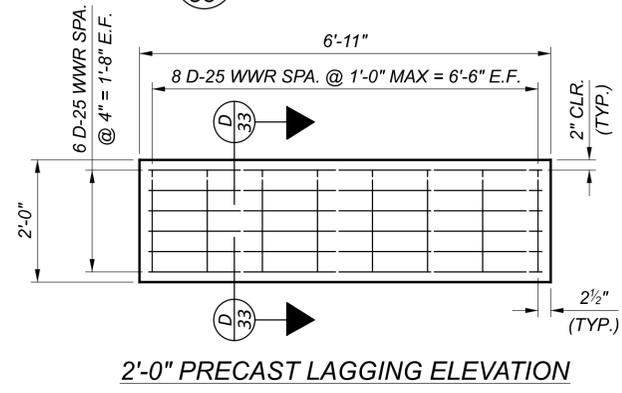
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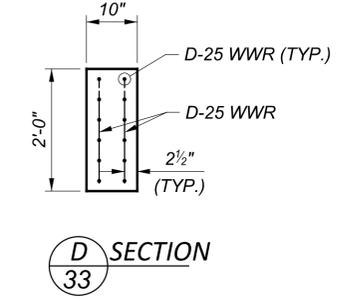
4'-0" PRECAST LAGGING ELEVATION



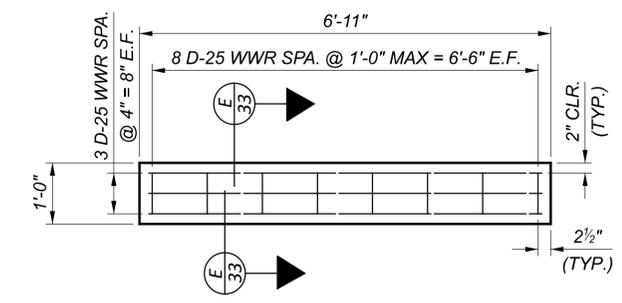
B SECTION
33



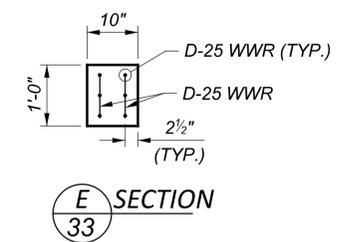
2'-0" PRECAST LAGGING ELEVATION



D SECTION
33



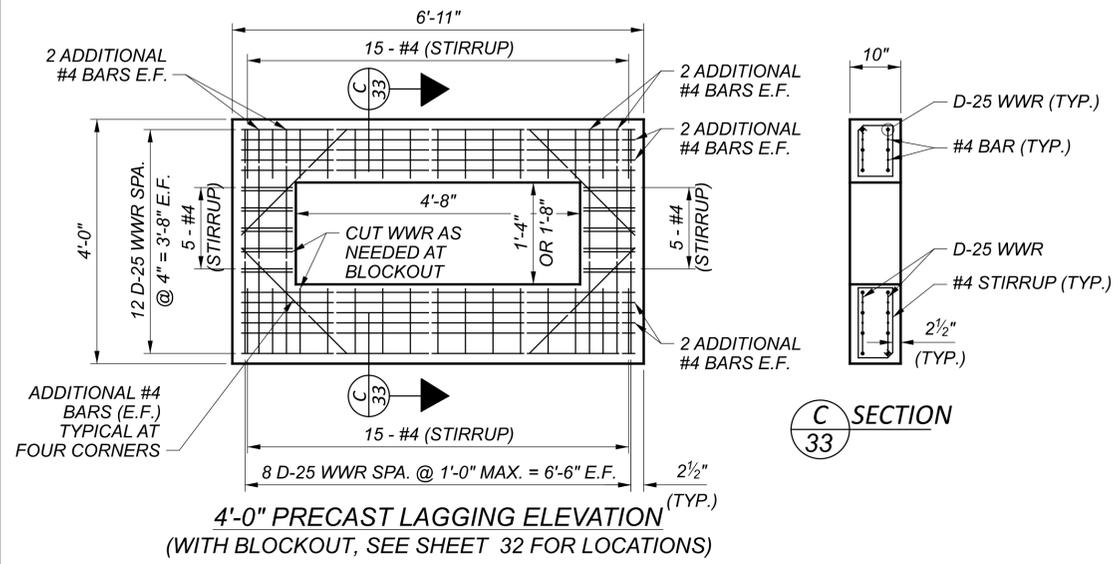
1'-0" PRECAST LAGGING ELEVATION



E SECTION
33

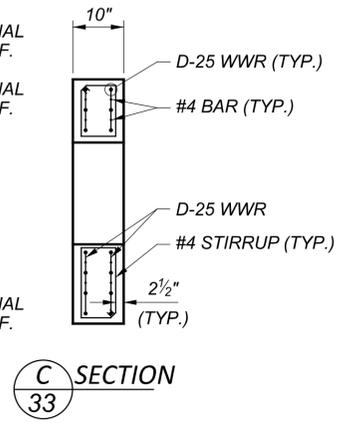
NOTES:

1. PROVIDE TIMBER LAGGING AS REQUIRED WITH TIMBER BLOCKS BETWEEN INDIVIDUAL LAGGING TIMBERS. BLOCKS SHALL BE AT LEAST 3" LONG x 3" WIDE x 3/8" TALL. TIMBER LAGGING DESIGN BY CONTRACTOR. SEE SHEET 7 / 90 FOR ADDITIONAL NOTES.
2. INSTALL ELASTOMERIC BEARING PAD UNDER BOTTOM PANEL AND BETWEEN INDIVIDUAL PANELS. ELASTOMERIC BEARING PADS SHALL BE 6"x9"x3/8" AND SHALL BE NEOPRENE HARDNESS OF 55+/- 5, HIGH DENSITY POLYETHYLENE PADS WITH A MINIMUM DENSITY OF 59 pcf OR EQUIVALENT. SUPPLY CERTIFIED TEST DATA TO THE ENGINEER UPON DELIVERY OF THE MATERIAL TO THE PROJECT. BEARING PADS WILL BE PAID FOR UNDER ITEM 516 ELASTOMERIC BEARING PAD, MISC.
3. REINFORCEMENT IN PRECAST LAGGING PANELS SHALL BE INCLUDED WITH ITEM 530 - STRUCTURES: PERMANENT SHORING PRECAST CONCRETE LAGGING FOR PAYMENT.
4. PROVIDE 1" x 1" CHAMFER AT EXPOSED TOP AND BOTTOM EDGE OF LAGGING PANELS.
5. CENTER LAGGING PANELS BETWEEN PILES WEBS.
6. PRELOAD EACH STRUT TO 65 KIPS / STRUT IN CONSTRUCTION STEP 3a. PERFORM JACKING AT STRUTS IN CONSTRUCTION STEPS 3b, 3c, AND 3d AS SHOWN IN THE CONSTRUCTION DETAILS. JACK AND SHIM AS NEEDED TO MAINTAIN MINIMUM OF 65 KIPS/STRUT REACTION.
7. JACKS SHALL BE MINIMUM 25 ton CAPACITY. PAIRS OF JACKS AT AN INDIVIDUAL STRUT SHALL BE OPERATED SIMULTANEOUSLY
8. DESIGN OF HYDRAULIC JACK SYSTEM AND JACK BEARING PLATES IS BY THE CONTRACTOR. CONTRACTOR SHALL CONFIRM JACKING BRACKET DETAILS ARE COMPATIBLE WITH ACTUAL JACKS PROVIDED.
9. ALL STRUCTURAL STEEL MEMBERS OF THE STRUT & WALER, INCLUDING HP SECTIONS, PLATES, AND SHIMS SHALL BE GALVANIZED. SEE ITEM 513 - STRUCTURAL STEEL MEMBERS, SOLDIER PILE STRUT & WALER, AS PER PLAN.



4'-0" PRECAST LAGGING ELEVATION

(WITH BLOCKOUT, SEE SHEET 32 FOR LOCATIONS)



C SECTION
33

SFN	1807898
DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
CHECKER	
DBW	MKB
REVIEWER	KAG
PROJECT ID	82382
SUBSET	33
TOTAL	90
SHEET	2313
TOTAL	2696

ITEM 524 - DRILLED SHAFTS, MISC.: DEMONSTRATION DRILLED SHAFT

PART 1: DESCRIPTION

THIS WORK CONSISTS OF ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS TO CONSTRUCT A DEMONSTRATION DRILLED SHAFT FOR TESTING AND EVALUATION TO VERIFY THE PROPOSED CONSTRUCTION METHODS FOR THE PRODUCTION DRILLED SHAFTS.

5

COMPLETE THE INSTALLATION OF THE DEMONSTRATION DRILLED SHAFT A MINIMUM OF 30 DAYS PRIOR TO THE START OF CONSTRUCTION OF THE PRODUCTION DRILLED SHAFTS. THE DEPARTMENT WILL CONSIDER THE DEMONSTRATION DRILLED SHAFT INSTALLATION COMPLETE AFTER RECEIVING WRITTEN ACCEPTANCE FROM THE ENGINEER.

IF THE VERTICAL DEFLECTION OF THE DEMONSTRATION DRILLED SHAFT DURING LOAD TESTING IS LESS THAN 5% OF THE DRILLED SHAFT NOMINAL DIAMETER, IT MAY BE REUSED AS A PRODUCTION DRILLED SHAFT.

PART 2: MATERIALS

THE DEMONSTRATION DRILLED SHAFT SHALL USE THE SAME CONCRETE MIX DESIGN AND STEEL REINFORCEMENT AS THE PRODUCTION DRILLED SHAFTS.

PART 3: EXECUTION

SUBMIT A DRILLED SHAFT INSTALLATION PLAN TO THE ENGINEER FOR ACCEPTANCE IN ACCORDANCE WITH THE REQUIREMENTS OF C&MS 524.03. CONSTRUCT AT LEAST ONE DEMONSTRATION DRILLED SHAFT WHERE DESIGNATED ON THE PLANS AND IN ACCORDANCE WITH THE ACCEPTED WRITTEN INSTALLATION. UPON CONSTRUCTION OF THE DEMONSTRATION DRILLED SHAFT, AND RECEIPT OF TESTING AND EVALUATION RESULTS CONFIRMING THE DEMONSTRATION DRILLED SHAFT HAS BEEN INSTALLED IN ACCORDANCE WITH CONTRACT DOCUMENTS, THE ENGINEER WILL ISSUE A LETTER ACCEPTING THE INSTALLATION PLAN FOR THE CONSTRUCTION OF THE SUBSEQUENT PRODUCTION DRILLED SHAFTS.

5

IF ANY MODIFICATIONS TO THE INSTALLATION PLAN ARE MADE, WHETHER DUE TO TESTING AND EVALUATION RESULTS OR FOR ANY OTHER REASON, THE DEPARTMENT WILL NOT REQUIRE CONSTRUCTION OF AN ADDITIONAL DEMONSTRATION SHAFT UNLESS REQUIRED BY THE ENGINEER. IF AN ADDITIONAL DEMONSTRATION DRILLED SHAFT IS REQUIRED BY THE ENGINEER IT WILL BE PAID FOR UNDER THE PAY ITEMS FOR DEMONSTRATION DRILLED SHAFT AND TESTING, AS LONG AS THE INSTALLATION AND TESTING ARE SUCCESSFUL, OTHERWISE IT WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT.

7

THE DIAMETER, REINFORCING, INSTALLATION METHODS, AND OTHER MISCELLANEOUS DETAILS OF THE DEMONSTRATION SHAFT SHALL BE THE SAME AS THE PRODUCTION DRILLED SHAFTS.

SUBMIT THE LOCATION OF THE DEMONSTRATION SHAFT TO THE ENGINEER FOR ACCEPTANCE. A PRODUCTION DRILLED SHAFT SHALL BE USED AS THE DEMONSTRATION SHAFT.

LOCATE THE DEMONSTRATION DRILLED SHAFT SO THAT TESTING DOES NOT DAMAGE THE WALKER WEEKS BUILDING.

TEST THE DEMONSTRATION DRILLED SHAFT; BY CROSSHOLE SONIC LOGGING (CSL) ACCORDING TO ASTM D6760, BY HIGH-STRAIN DYNAMIC TESTING ACCORDING TO ASTM D4945, AND BY BI-DIRECTIONAL STATIC AXIAL COMPRESSIVE LOAD TESTING ACCORDING TO ASTM D8169.

2

PART 4: MEASUREMENT AND PAYMENT

THE DEPARTMENT WILL MEASURE DEMONSTRATION DRILLED SHAFT BY THE ACTUAL NUMBER COMPLETED AND ACCEPTED.

ITEM 524 - DRILLED SHAFTS, MISC.: DEMONSTRATION DRILLED SHAFT, CONTINUED

IN ADDITION TO THE PROVISIONS OF C&MS 524.17, THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES OF DEMONSTRATION DRILLED SHAFT AFTER INSTALLATION OF THE DEMONSTRATION SHAFT AND AFTER BEING PROVIDED WITH WRITTEN TESTING AND EVALUATION RESULTS ACCEPTABLE TO THE ENGINEER.

THE CONTRACT PRICE IS FULL COMPENSATION FOR FURNISHING AND INSTALLING DRILLED SHAFTS IN ACCORDANCE WITH THE ABOVE REQUIREMENTS, INCLUDING MOBILIZATION AND SITE ACCESS.

THE DEPARTMENT WILL PAY FOR TESTING AND EVALUATION OF THE ACCEPTED DEMONSTRATION SHAFT SEPARATELY.

THE DEPARTMENT WILL NOT PAY FOR TESTING AND EVALUATION FOR ADDITIONAL DEMONSTRATION DRILLED SHAFTS.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE AS FOLLOWS: ITEM 524 - DRILLED SHAFTS, MISC.: DEMONSTRATION DRILLED SHAFT.

ITEM 524 - DRILLED SHAFTS, MISC.: CSL TESTING, 48" DIA. SHAFT

PERFORM CROSSHOLE SONIC LOGGING TESTING ON THE DEMONSTRATION DRILLED SHAFT AT THE REAR ABUTMENT. PERFORM CROSSHOLE SONIC LOGGING PER PROJECT SPECIAL PROVISIONS.

ITEM 524 - DRILLED SHAFTS, MISC.: BI-DIRECTIONAL TESTING OF DRILLED SHAFTS

PERFORM FIELD VERIFICATION OF AXIAL RESISTANCE ON THE DEMONSTRATION DRILLED SHAFT AT THE REAR ABUTMENT BY BI-DIRECTIONAL STATIC AXIAL COMPRESSIVE LOAD TESTING. PERFORM BI-DIRECTIONAL STATIC AXIAL COMPRESSIVE LOAD TESTING PER ASTM D8169 AND THE PROJECT SPECIAL PROVISIONS.

ITEM 524 - DRILLED SHAFTS, MISC.: HIGH-STRAIN DYNAMIC TESTING OF DRILLED SHAFTS

PERFORM FIELD VERIFICATION OF NOMINAL AXIAL RESISTANCE ON 3 OF THE DRILLED SHAFTS AT THE REAR ABUTMENT BY HIGH-STRAIN DYNAMIC TESTING. PERFORM HIGH STRAIN DYNAMIC TESTING PER ASTM D4945, "STANDARD TEST METHOD FOR HIGH-STRAIN DYNAMIC TESTING OF DEEP FOUNDATIONS" AND THE PROJECT SPECIAL PROVISIONS. PERFORM HIGH-STRAIN DYNAMIC TEST ON THE DEMONSTRATION SHAFT AND TWO ADDITIONAL DRILLED SHAFTS PRIOR TO BEGINNING EXCAVATION AT ANY DRILLED SHAFT LOCATION. HIGH STRAIN DYNAMIC LOAD TESTING OF TWO (2) PRODUCTION REAR ABUTMENT DRILLED SHAFTS SHALL BE PERFORMED. THE PRODUCTION DRILLED SHAFTS TO BE TESTED SHALL BE FARTHEST AWAY FROM THE BUILDING AND THE TEST SHAFTS SHALL BE A MINIMUM OF 48 FEET AWAY FROM EACH OTHER. WING WALL DRILLED SHAFTS (DS01-DS04) SHALL NOT BE TESTED.

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)

APPLY A PERMANENT GRAFFITI COATING MEETING THE REQUIREMENTS OF SUPPLEMENT 1083. THE GRAFFITI COATING MUST BE COMPATIBLE WITH THE UNDERLYING CONCRETE SEALER. APPLY THE GRAFFITI COATING ACCORDING TO THE MANUFACTURE'S REQUIREMENTS. THE ADDITIONAL MATERIAL AND LABOR REQUIRED TO SEAL THE FORM LINER RELIEF SHALL BE INCLUDED IN THIS ITEM. TO ACCOUNT FOR THE SURFACE VARIATIONS DUE TO THE FORM LINERS, AN EXTRA 20 PERCENT HAS BEEN ADDED TO THE SEALING QUANTITIES FOR THE PURPOSE OF ESTIMATING. PROVIDE A COATING THAT MEETS THE REQUIREMENTS LISTED BELOW.

THE MATERIAL SHALL BE A SINGLE COMPONENT, RTV (ROOM TEMPERATURE VULCANIZED) NEUTRAL MOISTURE CURE, PERMANENT (NON-SACRIFICIAL), TYPE III (WATER CLEANABLE) POLYSILOXANE (SILICONE) ANTI-GRAFFITI COATING, FREE OF ANY WAXES, EPOXIES OR POLYURETHANE COMPONENTS.

THE COATING SHALL BE A ONE COAT SYSTEM (NO PRIMER) CAPABLE OF BEING SPRAY APPLIED TO A DRY FILM THICKNESS OF 15 MILS (375 MICRONS) WITHOUT RUNS OR SAGS (MULTIPLE COAT APPLICATION ACCEPTABLE FOR BRUSH/ROLLER USAGE AND PRIMER USAGE ACCEPTABLE FOR SPECIALTY SUBSTRATES SUCH AS GALVANIZED METAL).

THE COATING SHALL EMIT LESS THAN 300 G/L (2.5 POUNDS PER GALLON) OF VOLATILE ORGANIC COMPOUNDS (EPA METHOD 24).

THE COATING SHALL MEET THE FOLLOWING PERFORMANCE REQUIREMENTS:

CLEANABILITY LEVEL 1 (GRAFFITI COMPLETELY REMOVED WITH COLD WATER POWER WASH) AS PER ASTM D7089 WITH LOW PRESSURE (1200 PSI) COLD WATER WASH AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.

GRAFFITI RESISTANCE LESS THAN 7.5 AS PER ASTM D6578 AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.

NO SIGNS OF GRAFFITI OR GRAFFITI STAINING AND MUST BE INTACT AND EXHIBIT NO SIGNS OF STREAKING, CRACKING, PINHOLING, DISCOLORING OR OTHER VISIBLE COATING DEGRADATION UPON CASUAL OBSERVATION WHEN TESTED IN ACCORDANCE WITH TXDOT TEX 890-B, TYPE III METHOD.

BREATHABILITY OF 10 PERMS (+/- 3) PER ASTM D1653 USING "WET CUP METHOD".

ELONGATION AT BREAK GREATER THAN 100% AS PER ASTM D412 (USING DIE "D").

ADHESION RATING OF "8 - DIFFICULT TO REMOVE" AS PER ASTM D6677 (ADHESION BY KNIFE).

ITEM 518 - PREFABRICATED GEOCOMPOSITE DRAIN

THIS WORK CONSISTS OF FURNISHING AND PLACING PREFABRICATED GEOCOMPOSITE DRAIN (PGD) AGAINST THE TANGENT DRILLED SHAFTS.

FURNISH PGD CONSISTING OF A DRAINAGE CORE WITH A GEOTEXTILE FABRIC BONDED TO AT LEAST ONE SIDE. USE CORE MATERIAL THAT CONSISTS OF A STABLE, POLYMER PLASTIC MATERIAL WITH A CUSPATED OR GEONET STRUCTURE. THE CORE MATERIAL SHALL HAVE SUFFICIENT FLEXIBILITY TO WITHSTAND BENDING AND HANDLING DURING INSTALLATION WITHOUT DAMAGE. FURNISH GEOTEXTILE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS FORMED INTO A WOVEN OR NON-WOVEN FABRIC. FURNISH PGD CONFORMING TO THE FOLLOWING REQUIREMENTS. FURNISH MANUFACTURER'S CERTIFIED TEST DATA.

CORE	PROPERTY	TEST METHOD	VALUE
	THICKNESS	ASTM D5199	0.4 INCH
	COMPRESSIVE STRENGTH	ASTM D1621	13,650 PSF MIN.
	FLOW RATE	ASTM D4716	9 TO 25 GPM/FT.
FABRIC	APPARENT OPENING SIZE	ASTM D4751	0.3 MM MAX.
	FLOW RATE	ASTM D4491	40 GPM/ SQ.FT. MIN.
	GRAB TENSILE STRENGTH	ASTM D4632	90 LBS MIN.
	CBR PUNCTURE	ASTM D6241	65 LBS MIN.

PLACE PGD BETWEEN THE DRILLED SHAFTS. PLACE THE SIDE FACED WITH THE GEOTEXTILE AGAINST THE DRILLED SHAFTS, FACING TOWARDS THE RETAINED GROUND, AND SECURE THE PGD TO THE SACRIFICIAL PLYWOOD FORMS BETWEEN THE DRILLED SHAFTS.

SPLICE ABUTTING SECTIONS TOGETHER BY OVERLAPPING THE GEOTEXTILE FLAP (IF PROVIDED) ON ONE SECTION WITH THE ADJACENT SECTION OF PGD. OVERLAP THE GEOTEXTILE IN A SHINGLED OVERLAP SO THAT THE UPPER GEOTEXTILE IS ON TOP OF THE LOWER GEOTEXTILE. IF A GEOTEXTILE FLAP IS NOT PROVIDED, COVER THE SEAM WITH A 12 INCH WIDE STRIP OF GEOTEXTILE FABRIC CENTERED OVER THE SEAM AND SECURED IN PLACE USING 3 INCH WIDE WATERPROOF PLASTIC TAPE.

SEAL ALL EXPOSED EDGES OF THE CORE MATERIAL TO PREVENT SOIL INTRUSION. SEAL EXPOSED EDGES BY FOLDING THE GEOTEXTILE FLAPS OVER AND AROUND THE PGD OR, IF A FLAP IS NOT PROVIDED, COVERING THE EXPOSED EDGE WITH A 12 INCH WIDE STRIP OF GEOTEXTILE FABRIC, TAPING THE STRIP TO THE PGD GEOTEXTILE 8 INCHES FROM THE EXPOSED EDGE, AND FOLDING THE REMAINING 4 INCHES OVER AND AROUND THE PGD. SECURE LOOSE EDGES OF THE GEOTEXTILE FABRIC WITH 3 INCH WIDE WATERPROOF PLASTIC TAPE.

REPAIR ANY DAMAGE TO THE GEOTEXTILE FABRIC BY COVERING WITH A PATCH WHICH OVERLAPS THE DAMAGED AREA AND EXTENDS AT LEAST 6 INCHES BEYOND THE EDGE OF THE DAMAGED AREA. TAPE THE EDGES OF THE PATCH IN PLACE USING 3 INCH WIDE WATERPROOF PLASTIC TAPE. IF THE CORE OF THE PGD IS DAMAGED, REPLACE IT WITH A NEW SECTION OF PGD AND SPLICE AS DESCRIBED ABOVE.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN (SOLDIER PILE STRUT AND WALER)

MISCELLANEOUS STRUCTURAL STEEL MEMBERS SHALL BE FABRICATED, DELIVERED AND INSTALLED IN ACCORDANCE WITH ALL PROVISIONS OF ODOT C&MS ITEM 513.

FURNISH STEEL MEMBERS THAT MEET THE REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50 IN ACCORDANCE WITH C&MS 711.01. GALVANIZE STEEL MEMBERS AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH C&MS 711.02. THESE MISCELLANEOUS STRUCTURAL STEEL MEMBERS INCLUDE:

- WALER MEMBERS
- STRUT MEMBERS
- SHIM PLATES
- ALL MISCELLANEOUS METAL, REINFORCEMENT PLATES, CONNECTIONS, FABRICATIONS, BEARING PLATES, HYDRAULIC JACKS AND PUMPS, ETC. NECESSARY TO COMPLETE THE WALER AND STRUT INSTALLATION AND JACKING.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE PER POUND FOR ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN (SOLDIER PILE STRUT & WALER). PRICE SHALL CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO FURNISH, DELIVER AND INSTALL THE PROPOSED STRUCTURAL STEEL MEMBERS AND COMPLETE THE JACKING TO THE SPECIFIED LOADS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES HP16x101

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES AND INCLUDES MONITORING PLUMBNESS. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572 GRADE 50 IN ACCORDANCE WITH C&MS 711.01. GALVANIZE SOLDIER PILES AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH C&MS 711.02. DO NOT FIELD WELD OR SPLICE STEEL SOLDIER PILES. THE ANCHOR DETAIL WHERE THE TIE BACK ANCHOR PASSES THROUGH THE FLANGES AND WEB SHALL BE SHOP FABRICATED AND NOT BE WELDED ON SITE.

MEASUREMENT FOR PAYMENT WILL BE THE DISTANCE FROM THE TOP OF THE PILE TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. PAYMENT IS FULL COMPENSATION FOR FURNISHING AND PLACING THE SOLDIER PILES AND MONITORING THEIR PLUMBNESS UNTIL BACKFILL IN FRONT OF THE SOLDIER PILE WALL IS COMPLETE. THE DEPARTMENT WILL PAY FOR SOLDIER PILES AT THE CONTRACT UNIT PRICE PER FOOT OF ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES HP16x101.

ITEM SPECIAL - PERMANENT SHORING TIMBER LAGGING

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING UNTREATED HARDWOOD LAGGING TO SERVE AS TEMPORARY LAGGING FOR THE SOLDIER PILE WALL. THE LAGGING SHALL CONSIST OF HARDWOOD TIMBER WITH 3 INCH BY 8 INCH DIMENSIONS AND SHALL BE OF A GRADE AND TYPE WITH AN ALLOWABLE EXTREME FIBER STRESS IN BENDING OF A MINIMUM OF 1 KSI. THE TIMBER MATERIAL SHALL BE DOUGLASS FIR-LARCH DENSE NO. 1, SELECT STRUCTURAL OR DENSE SELECT STRUCTURAL. THE WOOD SHALL BE SEASONED, SOUND, AND FREE FROM DECAY AND INSECT ATTACK, WITH NO LOOSE AND/OR CLUSTER KNOTS. THE ENDS OF THE TIMBER SHALL BE SAWED SQUARE WITH THE AXIS OF THE TIMBER. THE TIMBER MEMBERS SHALL ALSO CONFORM TO C&MS 711.26. PROVIDE CERTIFICATION THAT THE TIMBER CONFORMS TO THE GRADE, SPECIES AND OTHER SPECIFIED REQUIREMENTS.

LAGGING SHALL BE PLACED IN A TOP-DOWN MANNER AS EXCAVATION PROCEEDS DOWNWARD. AT NO TIME SHOULD MORE THAN 3 FEET OF UNSUPPORTED EXCAVATION BE PERMITTED. REDUCE THE UNSUPPORTED HEIGHT AS NECESSARY TO PREVENT CAVING AND SLOUGHING OF THE SOIL BETWEEN THE SOLIDER PILES. PROVIDE WOOD SPACERS TO PROVIDE HORIZONTAL JOINT SPACING BETWEEN THE LAGGING BOARDS TO PERMIT DRAINAGE.

THE CONTRACTOR SHALL SUBMIT ENGINEERED DRAWINGS FOR COFFERDAM AND EXCAVATION BRACING DESIGNS PER C&MS SECTION 501.05.

8

SFN	1807898
DESIGN AGENCY	
Michael Baker	INTERNATIONAL
DESIGNER	CHECKER
ZES	MKB
REVIEWER	
KAG	12/26/23
PROJECT ID	82382
SUBSET	TOTAL
7	90
SHEET	TOTAL
2287	2696

ESTIMATED QUANTITIES

CALCULATED BY: ZES DATE: 03/20/24
 CHECKED BY: DAF DATE: 05/15/24

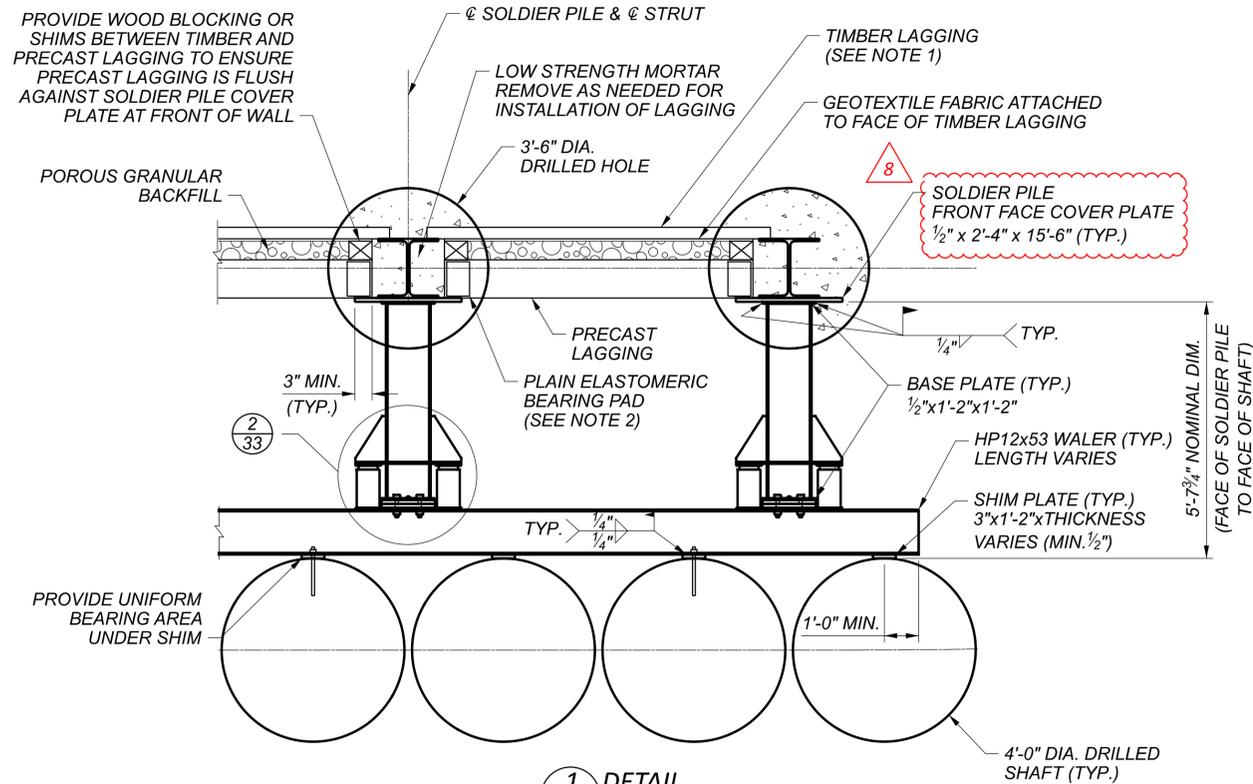
PARTICIPATION	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTR.	GENERAL	SHEET REF.
02/IMS/10	518	20000	888	SY	PREFABRICATED GEOCOMPOSITE DRAIN				888	
02/IMS/10	518	21101	232	CY	POROUS BACKFILL, AS PER PLAN	5	232		5	30
02/IMS/10	518	21200	618	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC				618	
02/IMS/10	518	40000	907	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		907			
02/IMS/10	518	40010	658	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		658			
02/IMS/10	518	43300	185	FT	6" PIPE DOWNSPOUT, INCLUDING SPECIALS		101	84		
02/IMS/10	523	20001	4	EACH	DYNAMIC LOAD TESTING, AS PER PLAN				4	4
02/IMS/10	523	20501	2	EACH	RESTRIKE, AS PER PLAN				2	4
02/IMS/10	524	94803	238	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN				238	8
02/IMS/10	524	94901	4,750	FT	DRILLED SHAFTS, 48" DIAMETER, AS PER PLAN				4,750	5
02/IMS/10	524	95100	2	EACH	DRILLED SHAFTS, MISC.: BI DIRECTIONAL TESTING OF DRILLED SHAFTS				2	7
02/IMS/10	524	95100	1	EACH	DRILLED SHAFTS, MISC.: CSL TESTING, 48" DIA. SHAFT				1	7
02/IMS/10	524	95100	1	EACH	DRILLED SHAFTS, MISC.: DEMONSTRATION DRILLED SHAFT				1	7
02/IMS/10	524	95100	3	EACH	DRILLED SHAFTS, MISC.: HIGH STRAIN DYNAMIC TESTING OF DRILLED SHAFTS				3	7
02/IMS/10	526	30011	592	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17"), AS PER PLAN				592	8
02/IMS/10	526	90010	321	FT	TYPE A INSTALLATION				321	
02/IMS/10	SPECIAL	530E00200	LS		STRUCTURES: PRECONSTRUCTION/POST CONSTRUCTION CONDITION SURVEY				LS	4-5
02/IMS/10	SPECIAL	530E00200	LS		STRUCTURES: VIBRATION MONITORING				LS	4
02/IMS/10	SPECIAL	530E00600	1,349	SF	STRUCTURES: PERMANENT SHORING PRECAST CONCRETE LAGGING				1,349	6
02/IMS/10	SPECIAL	530E00600	1,516	SF	STRUCTURES: PERMANENT SHORING TIMBER LAGGING				1,516	7-8
02/IMS/10	607	39910	1,180	FT	VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC				1,180	
02/IMS/10	625	25920	2,863	FT	CONDUIT, MISC.: AT&T 4" CONDUIT INSTALLATION			2,863		9
02/IMS/10	625	25920	5,726	FT	CONDUIT, MISC.: CEI 4" CONDUIT INSTALLATION			5,726		9
02/IMS/10	625	25920	5,726	FT	CONDUIT, MISC.: CPP 4" CONDUIT INSTALLATION			5,726		9
02/IMS/10	SPECIAL	690E98000	36	EACH	ROLLER SUPPORTS (GAS LINE)				36	9
02/IMS/10	SPECIAL	690E98000	29	EACH	UTILITY SUPPORTS (AT&T DUCTS)				29	9
02/IMS/10	SPECIAL	690E98000	29	EACH	UTILITY SUPPORTS (CEI DUCTS)				29	9
02/IMS/10	SPECIAL	690E98000	29	EACH	UTILITY SUPPORTS (CPP DUCTS)				29	9
02/IMS/10	SPECIAL	690E98000	31	EACH	UTILITY SUPPORTS (WATER LINE)				31	9
02/IMS/10	846	00110	134	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				134	
02/IMS/10	866	00101	14	EACH	GROUND ANCHOR, AS PER PLAN, 159 KIP MAX LOAD TEST (SOLIDER PILE AND LAGGING WALL)				14	10
02/IMS/10	866	00101	100	EACH	GROUND ANCHOR, AS PER PLAN, 159 KIP MAX LOAD TEST (TANGENT WALL)				100	10
02/IMS/10	866	00400	6	EACH	PERFORMANCE TEST				6	
02/IMS/10	866	00500	6	EACH	EXTENDED CREEP TEST				6	
02/IMS/10	869	00100	30	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS				30	

CUY-90-16.28 (CCG3A)

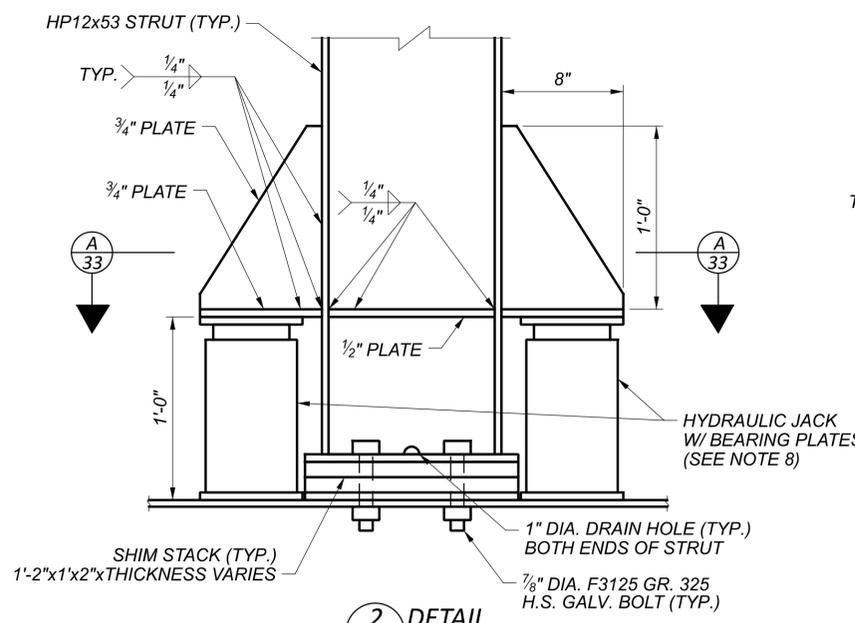
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ESTIMATED QUANTITIES (2 OF 2)
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 CR-722 (CARNEGIE AVE.) OVER I.R. 90

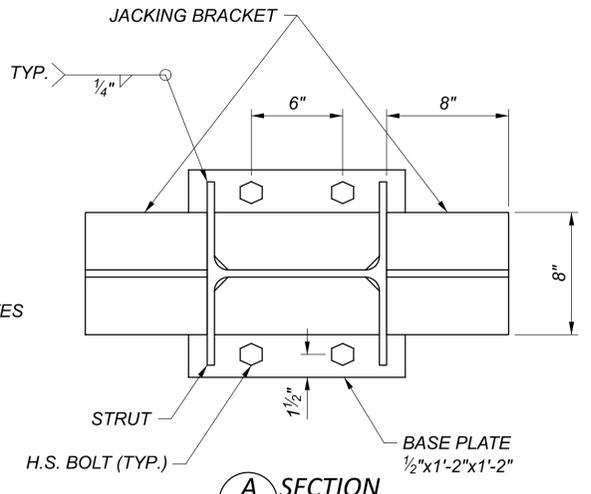
SFN	1807898
DESIGN AGENCY	
Michael Baker	INTERNATIONAL
DESIGNER	CHECKER
DBW	MKB
REVIEWER	
KAG	12/26/23
PROJECT ID	82382
SUBSET	TOTAL
12	90
SHEET	TOTAL
2292	2696



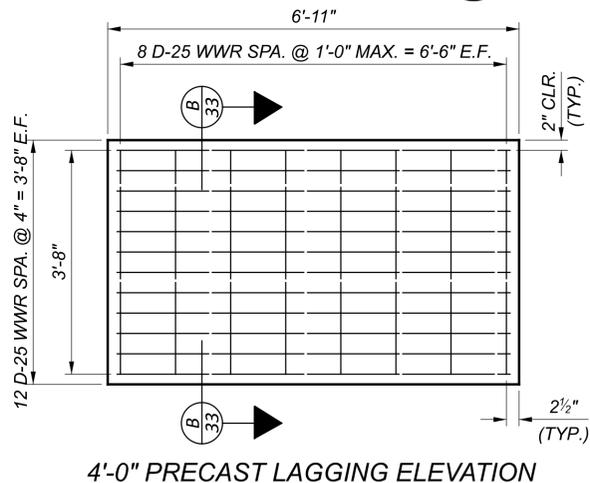
1 DETAIL
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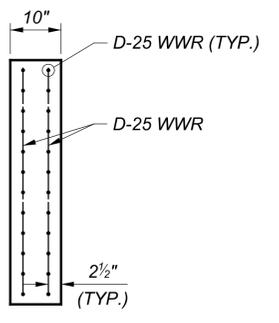
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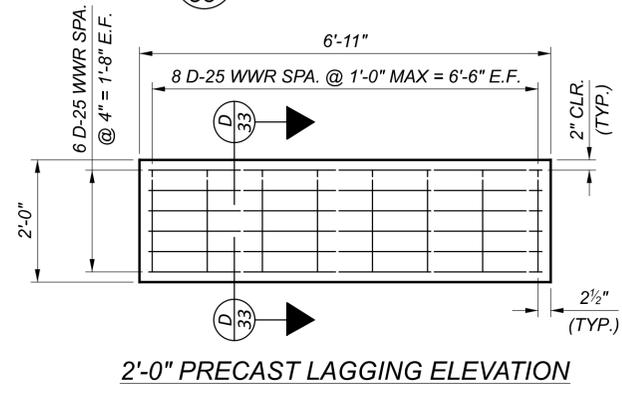
A SECTION
33



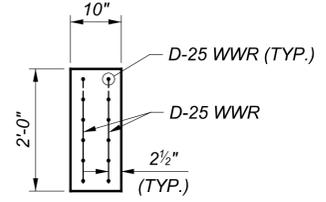
4'-0" PRECAST LAGGING ELEVATION



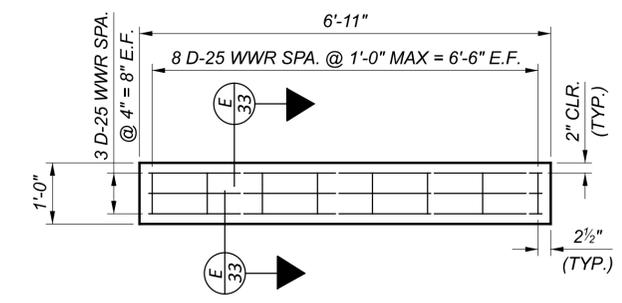
B SECTION
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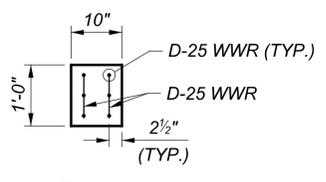
2'-0" PRECAST LAGGING ELEVATION



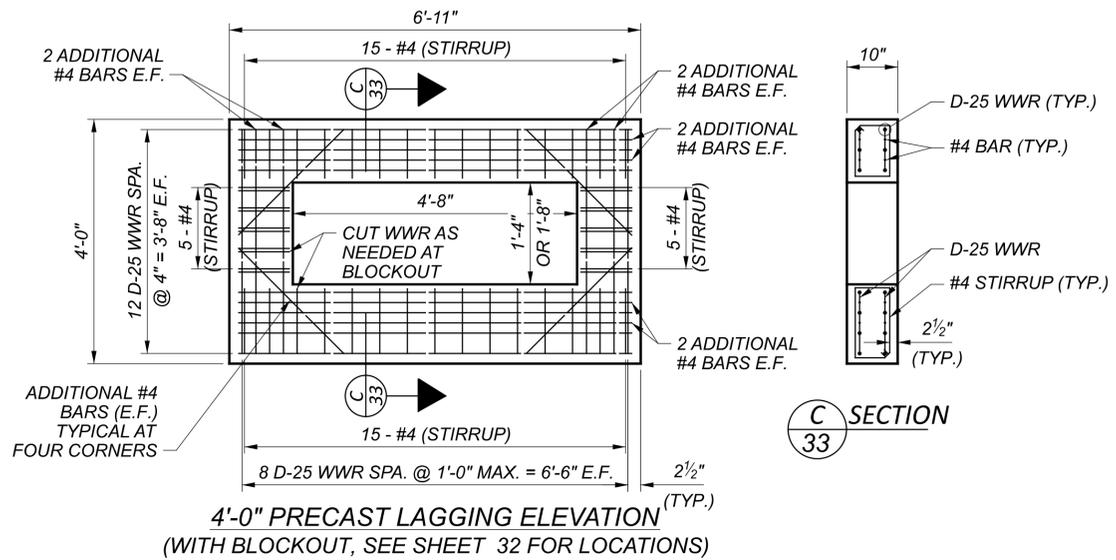
D SECTION
33



1'-0" PRECAST LAGGING ELEVATION



E SECTION
33



4'-0" PRECAST LAGGING ELEVATION
(WITH BLOCKOUT, SEE SHEET 32 FOR LOCATIONS)

C SECTION
33

NOTES:

1. PROVIDE TIMBER LAGGING AS REQUIRED WITH TIMBER BLOCKS BETWEEN INDIVIDUAL LAGGING TIMBERS. BLOCKS SHALL BE AT LEAST 3" LONG x 3" WIDE x 3/8" TALL. TIMBER LAGGING DESIGN BY CONTRACTOR. SEE SHEET 7 / 90 FOR ADDITIONAL NOTES.
2. INSTALL ELASTOMERIC BEARING PAD UNDER BOTTOM PANEL AND BETWEEN INDIVIDUAL PANELS. ELASTOMERIC BEARING PADS SHALL BE 6"x9"x3/8" AND SHALL BE NEOPRENE HARDNESS OF 55+/- 5, HIGH DENSITY POLYETHYLENE PADS WITH A MINIMUM DENSITY OF 59 pcf OR EQUIVALENT. SUPPLY CERTIFIED TEST DATA TO THE ENGINEER UPON DELIVERY OF THE MATERIAL TO THE PROJECT. BEARING PADS WILL BE PAID FOR UNDER ITEM 516 ELASTOMERIC BEARING PAD, MISC.
3. REINFORCEMENT IN PRECAST LAGGING PANELS SHALL BE INCLUDED WITH ITEM 530 - STRUCTURES: PERMANENT SHORING PRECAST CONCRETE LAGGING FOR PAYMENT.
4. PROVIDE 1" x 1" CHAMFER AT EXPOSED TOP AND BOTTOM EDGE OF LAGGING PANELS.
5. CENTER LAGGING PANELS BETWEEN PILES WEBS.
6. PRELOAD EACH STRUT TO 65 KIPS / STRUT IN CONSTRUCTION STEP 3a. PERFORM JACKING AT STRUTS IN CONSTRUCTION STEPS 3b, 3c, AND 3d AS SHOWN IN THE CONSTRUCTION DETAILS. JACK AND SHIM AS NEEDED TO MAINTAIN MINIMUM OF 65 KIPS/STRUT REACTION.
7. JACKS SHALL BE MINIMUM 25 ton CAPACITY. PAIRS OF JACKS AT AN INDIVIDUAL STRUT SHALL BE OPERATED SIMULTANEOUSLY
8. DESIGN OF HYDRAULIC JACK SYSTEM AND JACK BEARING PLATES IS BY THE CONTRACTOR. CONTRACTOR SHALL CONFIRM JACKING BRACKET DETAILS ARE COMPATIBLE WITH ACTUAL JACKS PROVIDED.
9. ALL STRUCTURAL STEEL MEMBERS OF THE STRUT & WALER, INCLUDING HP SECTIONS, PLATES, AND SHIMS SHALL BE GALVANIZED. SEE ITEM 513 - STRUCTURAL STEEL MEMBERS, SOLDIER PILE STRUT & WALER, AS PER PLAN.

SFN	1807898
DESIGN AGENCY	
DESIGNER	Michael Baker INTERNATIONAL
CHECKER	
DBW	MKB
REVIEWER	KAG
PROJECT ID	82382
SUBSET	33
TOTAL	90
SHEET	2313
TOTAL	2696