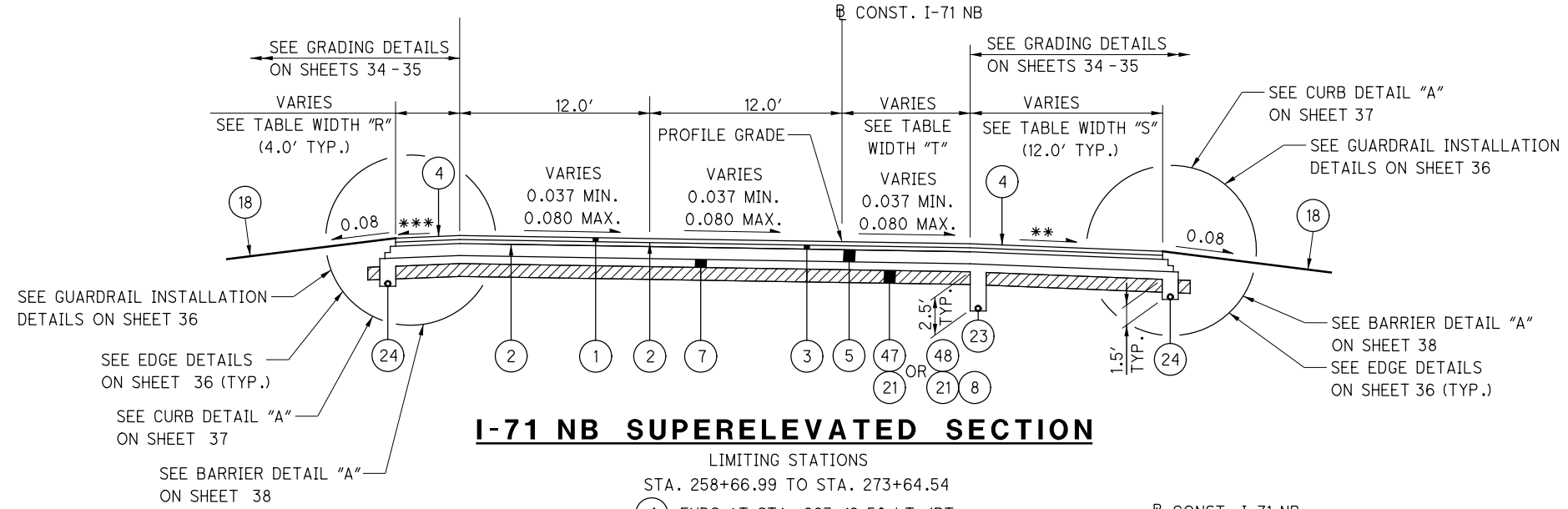
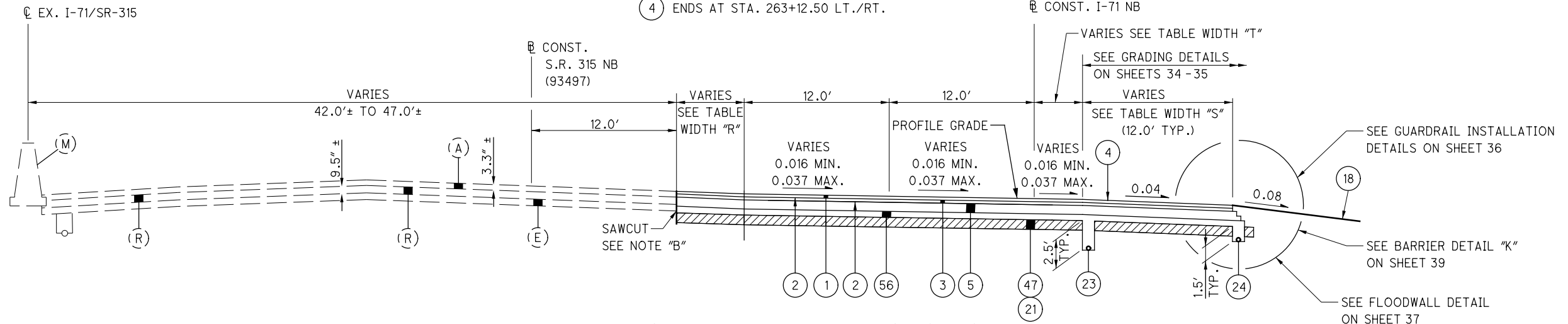


NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021



### I-71 NB SUPERELEVATED SECTION

LIMITING STATIONS  
 STA. 258+66.99 TO STA. 273+64.54  
 (4) ENDS AT STA. 263+12.50 LT./RT.



### I-71 NB SUPERELEVATED SECTION

LIMITING STATIONS  
 STA. 252+86.40 TO STA. 258+66.99 (SEE NOTE "C")

NOTE "B"  
 FRA-71-9.74 (93497) CONSTRUCTED  
 PAVEMENT ALONG I-71/SR-315  
 NORTHBOUND. THE EXISTING PAVEMENT  
 SHALL BE CUT 12.0' RT. OF  $\mathcal{C}$  CONST.  
 SR-315 NB AS PER SPEC 203.04(E)  
 UNLESS OTHERWISE NOTED.

NOTE "C"  
 SAWCUT AND SHOULDER  
 RECONSTRUCTION BEYOND GORE  
 ENDS AT STA. 714+20.10 RT (S.R. 315 NB)  
 SAWCUT AND CURB  
 RECONSTRUCTION BEYOND GORE  
 ENDS AT STA. 715+09.28 RT (S.R. 315 NB)  
 SEE CURB DETAIL "A" ON SHEET 37

I-71 NB WIDTH TABLE

	WIDTH "R"				WIDTH "S"				WIDTH "T"			
	STATION		WIDTH (FT.)		STATION		WIDTH (FT.)		STATION		WIDTH (FT.)	
	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
I-71 NB	252+86.40	254+00.38	0.0	0.0	252+86.40	253+86.40	14.0	10.0	252+86.40	253+86.40	0.0	12.0
	254+00.38	258+66.99	SEE GORE DETAILS		253+86.40	257+13.02	10.0	10.0	253+86.40	257+13.02	12.0	12.0
	258+66.99	273+98.00	4.0	4.0	257+13.02	258+56.79	0.0	0.0	257+13.02	264+34.96	0.0	0.0
					258+56.79	260+86.40	SEE GORE DETAILS		264+34.96	266+34.96	0.0	4.5
					260+86.40	265+60.00	12.0	12.0	266+34.96	269+78.10	4.5	4.5
					265+60.00	266+10.00	12.0	14.0	269+78.10	271+78.10	4.5	0.0
					266+10.00	270+85.00	14.0	14.0	271+78.10	273+64.54	0.0	0.0
					270+85.00	271+35.00	14.0	12.0				
					271+35.00	272+46.93	12.0	12.0				
					272+46.93	273+05.93	12.0	15.5				
					273+05.93	273+47.68	15.5	11.9				

\*\* 0.04 OR RATE OF PAVEMENT  
 SLOPE IF GREATER  
 \*\*\* FOR HIGH SIDE SHOULDER SLOPES,  
 SEE SHOULDER DETAIL "A" ON SHEET 36

FOR SUPERELEVATION TABLES, SEE SHEETS 523 -548  
 FOR PROPOSED LEGEND, SEE SHEET 20  
 FOR EXISTING LEGEND, SEE SHEET 20  
 FOR GORE DETAILS, SEE SHEETS 560-571

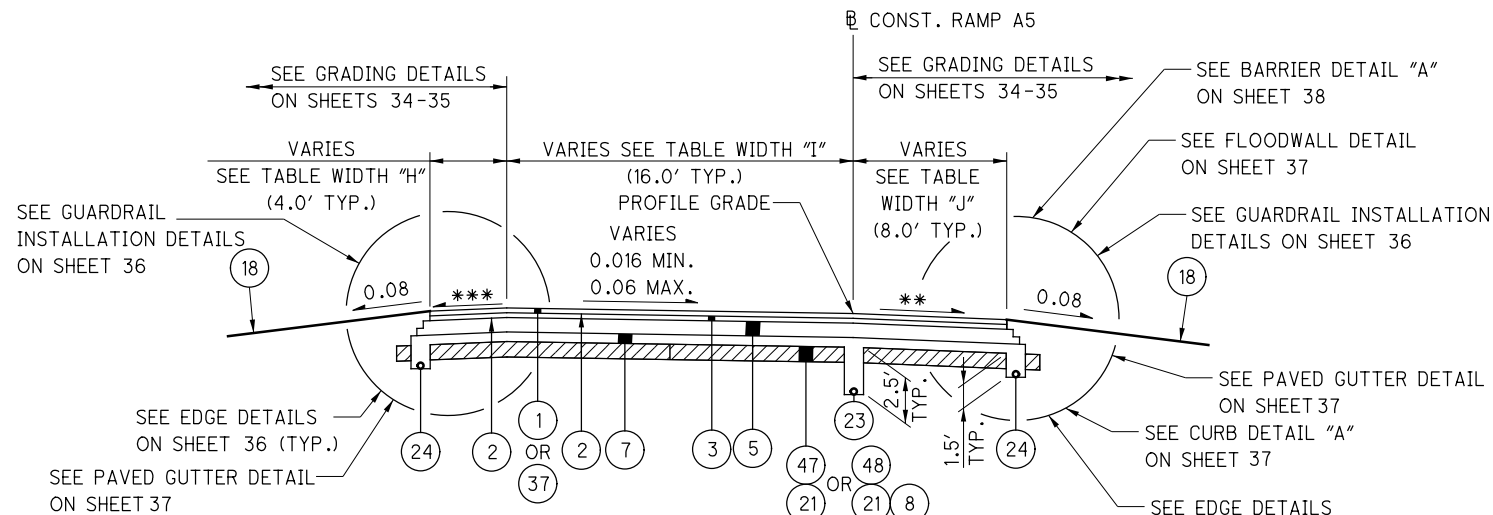
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TYPICAL SECTIONS

FRA-70/71-12.68/14.86

26  
1815

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

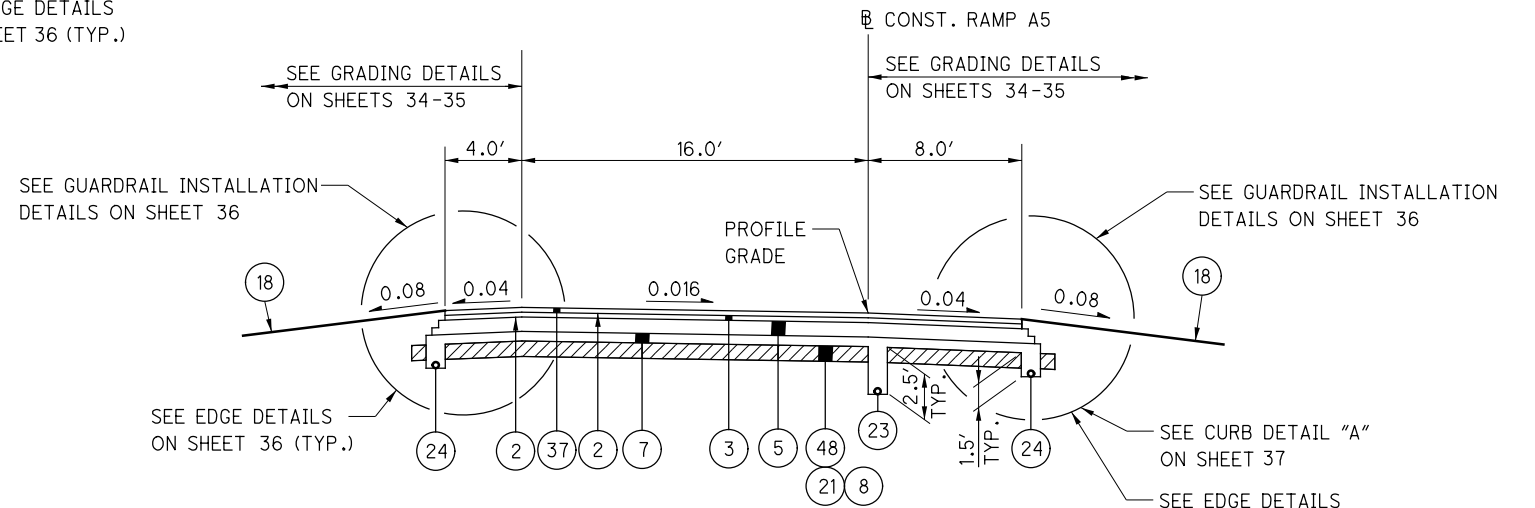


**RAMP A5 SUPERELEVATED SECTION**

LIMITING STATIONS

STA. 5003+23.96 TO STA. 5008+28.11  
 STA. 5011+52.05 TO STA. 5015+06.59

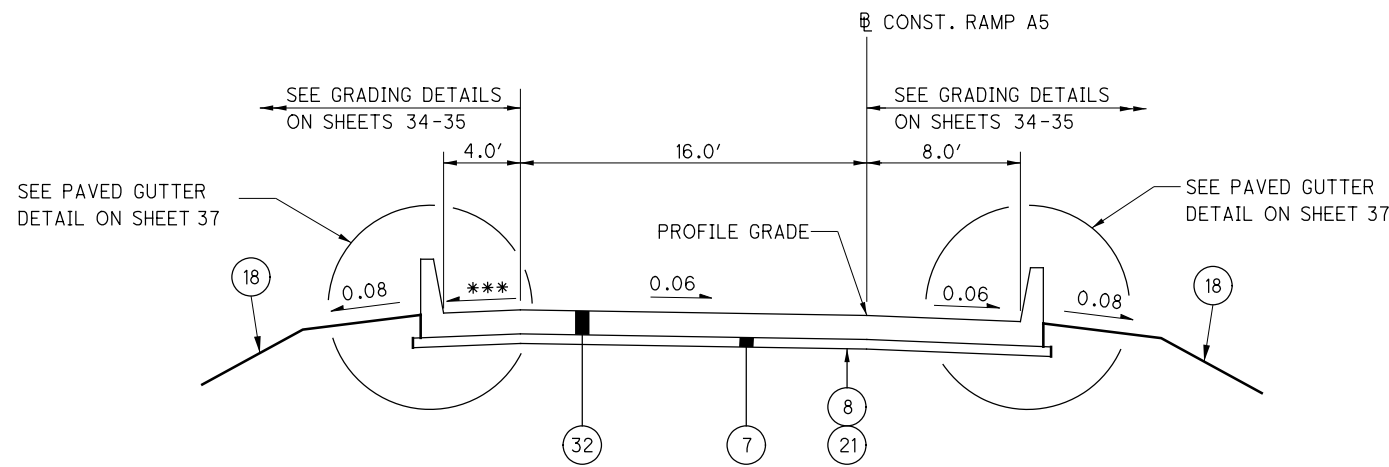
① STA. 5003+23.96 TO STA. 5006+94.28



**RAMP A5 NORMAL SECTION**

LIMITING STATIONS

STA. 5008+28.11 TO STA. 5011+52.05



**RAMP A5 APPROACH SLAB SUPERELEVATED SECTION**

LIMITING STATIONS

STA. 5015+06.59 TO STA. 5015+36.59

**RAMP A5 WIDTH TABLE**

	WIDTH "H"				WIDTH "I"				WIDTH "J"			
	STATION		WIDTH (FT.)		STATION		WIDTH (FT.)		STATION		WIDTH (FT.)	
	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
RAMP A5	5003+23.96	5004+66.41	0.0	0.0	5003+23.96	5004+66.41	12.0	16.0	5003+23.96	5006+94.28	10.0	10.0
	5004+66.41	5006+94.28	SEE GORE DETAILS		5004+66.41	5018+86.40	16.0	16.0	5006+94.28	5007+44.28	10.0	8.0
	5006+94.28	5017+37.12	4.0	4.0					5007+44.28	5018+86.40	8.0	8.0
	5017+37.12	5018+86.40	SEE GORE DETAILS									

STRUCTURE LIMITS  
 FRA-71-1518A  
 STA. 5015+36.59 TO STA. 5017+07.29  
 SEE SHEETS 1333-1363

\*\* 0.04 OR RATE OF PAVEMENT  
 SLOPE IF GREATER  
 \*\*\* FOR HIGH SIDE SHOULDER SLOPES, SEE  
 SHOULDER DETAILS "A" AND "E" ON SHEET 36

FOR SUPERELEVATION TABLES, SEE SHEETS 523-548  
 FOR PROPOSED LEGEND, SEE SHEET 20  
 FOR EXISTING LEGEND, SEE SHEET 20  
 FOR GORE DETAILS, SEE SHEETS 560-571

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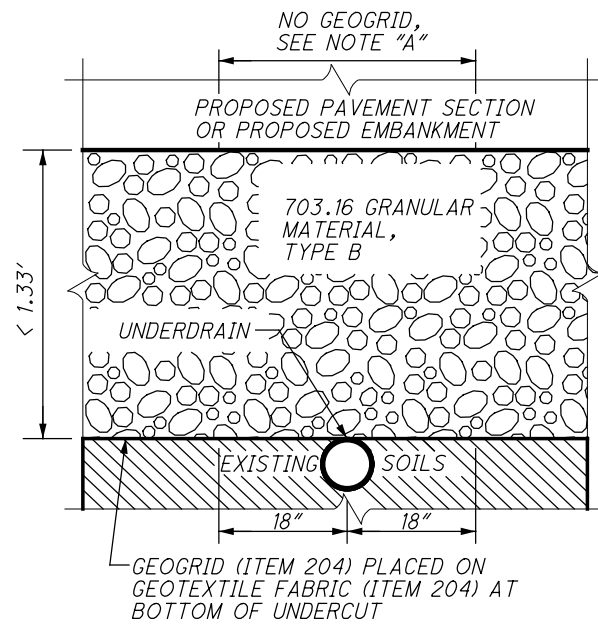
TYPICAL SECTIONS

FRA-70/71-12.68/14.86

**ROADWAY**

**SUBGRADE STABILIZATION**

THIS INVOLVES THE PLACEMENT OF GRANULAR MATERIAL, TYPE B FOR THE LOCATIONS OF UNSUITABLE MATERIALS AS VERIFIED AND DELINEATED BY THE ENGINEER.



**NOTE "A":**

THE CONTRACTOR SHALL SUSPEND THE USE OF GEOTEXTILE FABRIC AND GEOGRID WITHIN 18" OF EITHER SIDE OF A CONFLICTING UNDERDRAIN.

**DETAIL - UNDERCUT/ REPLACEMENT TREATMENT METHOD**  
NOT TO SCALE

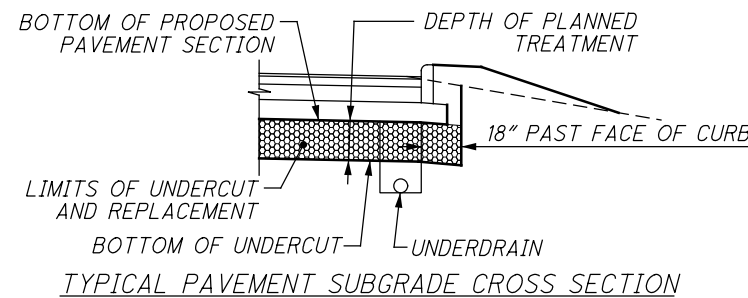
**ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING**

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE COMPACTING THE SUBGRADE WHEN ENCOUNTERED DURING CONSTRUCTION AND AS DIRECTED BY THE ENGINEER. UNSUITABLE SUBGRADE HAS NOT BEEN IDENTIFIED THROUGH THE EXPLORATION PROGRAM. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GRATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05.
- COMPACT THE SUBGRADE ACCORDING TO 204.03.
- APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.
- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
- PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.
- PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

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

SEE PAVEMENT SUBGRADE IMPROVEMENT SCHEDULE ON THIS PAGE FOR LOCATIONS AND STATION LIMITS OF EXCAVATE AND REPLACE STABILIZATION.



**GUARDRAIL/BARRIER WORK AT PROPOSED SIGNS OUTSIDE OF PROJECT LIMITS**

THE TRAFFIC CONTROL PLANS ON SHT. NO. 1014 - 1082A INCLUDE THE CONSTRUCTION OF OVERHEAD SIGNS WHICH ARE LOCATED OUTSIDE OF THE ROADWAY PROJECT AREA. THE PROPOSED SIGN CONSTRUCTION REQUIRES THE REMOVAL AND REPLACEMENT OF THE EXISTING MEDIAN BARRIER AS PER ODOT STANDARD DRAWINGS AND DETAILS ON SHEETS 645 - 646.

**ESTIMATED QUANTITIES FOR SIGNS OUTSIDE OF PROJECT LIMITS**

ITEM	DESCRIPTION	UNIT	SIGN REFERENCE NUMBER			TOTAL
			OSS-201	OSS-203	OSS-204	
202	CONCRETE BARRIER REMOVED	FT	90	90	90	270
622	BARRIER, MISC.: CONCRETE BARRIER, TYPE B	FT	80	80	80	240

**PAVEMENT SUBGRADE IMPROVEMENT SCHEDULE**

ALIGNMENT	BEGIN STATION	END STATION	SUBGRADE METHOD	DEPTH OF TREATMENT	RECONSTRUCTION SIDE
FUTURE I-70 EB	125+96.00	126+97.69	CEMENT	14"	FULL WIDTH
FUTURE I-70 EB	128+26.12	129+50.00	CEMENT	14"	FULL WIDTH
FUTURE I-70 EB	129+50.00	134+05.00	CEMENT	14"	RIGHT
I-70 EB	4157+88.17	4166+21.70	CEMENT	14"	RIGHT
I-70 EB	4158+50.35	4166+01.56	CEMENT	14"	LEFT
I-70 EB	4169+93.98	4172+00.00	CEMENT	14"	FULL WIDTH
I-70 EB	4180+82.06	4186+25.00	CEMENT	14"	FULL WIDTH
I-70 EB	4186+25.00	4205+28.94	CEMENT	14"	RIGHT
I-70 EB	4186+25.00	4208+14.77	CEMENT	14"	LEFT
I-71 NB	252+86.40	259+00.00	CEMENT	14"	FULL WIDTH
I-71 NB	259+00.00	262+00.00	UNDERCUT	12"	FULL WIDTH
I-71 NB	269+00.00	271+50.00	CEMENT	14"	FULL WIDTH
I-71 NB	271+50.00	273+64.54	UNDERCUT	12"	FULL WIDTH
RAMP A5	5003+23.96	5005+09.25	CEMENT	14"	FULL WIDTH
RAMP A5	5005+09.25	5008+50.00	UNDERCUT	12"	FULL WIDTH
RAMP C3	3005+50.00	3009+00.00	CEMENT	14"	FULL WIDTH
RAMP C5	5024+38.21	5031+36.49	CEMENT	14"	FULL WIDTH
RAMP C5	5062+13.35	5064+00.00	CEMENT	14"	FULL WIDTH
FRONT ST.	147+75.00	148+61.92	UNDERCUT	12"	FULL WIDTH
FRONT ST.	151+19.35	152+50.00	UNDERCUT	12"	FULL WIDTH
FRONT ST.	155+13.37	156+03.49	UNDERCUT	12"	INTERSECTION
FULTON ST.	19+58.05	23+15.00	UNDERCUT	12"	FULL WIDTH
MOUND ST.	11+49.86	12+53.78	UNDERCUT	12"	INTERSECTION
SOUDER AVE.	5+61.73	6+12.28	UNDERCUT	12"	RIGHT
SOUDER AVE.	5+63.70	6+13.55	UNDERCUT	12"	LEFT
LIVINGSTON AVE.	200+04.62	202+45.02	UNDERCUT	12"	FULL WIDTH
LIVINGSTON AVE.	204+02.13	207+47.00	UNDERCUT	12"	FULL WIDTH

**ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN**

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT AT THE FOLLOWING LOCATIONS:

RAMP C5 FRA-70-1358A FRA-70-1373A	STA. 5074+10.84 TO STA. 5076+10.84 STA. 5079+95.31 TO STA. 5080+45.86
I-70 EB FRA-70-1373R	STA. 4175+43.32 TO STA. 4175+93.32

**ITEM 203 - EMBANKMENT, AS PER PLAN "A"**

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT AT THE FOLLOWING LOCATIONS:

RAMP C5 FRA-70-1301A FRA-70-1358A FRA-70-1373A	STA. 5039+37.46 TO STA. 5041+87.96 STA. 5069+48.10 TO STA. 5071+48.10 STA. 5081+38.82 TO STA. 5081+88.82
RAMP A5 FRA-71-1518A	STA. 5013+36.09 TO STA. 5015+36.09
I-70 EB FRA-70-1373R	STA. 4176+87.83 TO STA. 4177+37.83

**ITEM 203 - EMBANKMENT, AS PER PLAN "B"**

FOR THE VOID CREATED TO EXCAVATE AND CONSTRUCT THE PROPOSED TYPE D BARRIER, AS PER PLAN ALONG THE RIGHT SIDE OF I-71 NB FROM STA. 252+86.40 TO STA. 256+72.79, UTILIZE THE EXISTING EXCAVATED IMPERVIOUS MATERIAL OR OTHER SUITABLE IMPERVIOUS MATERIAL AS BACKFILL AND COMPACT TO FILL THE VOID CREATED BEHIND THE PROPOSED BARRIER WALL. CONTRACTOR TO MINIMIZE IMPACTS TO THE EXISTING LEVEE DURING CONSTRUCTION ACTIVITIES AS SET FORTH IN THE 408 PERMIT AND THE EMERGENCY ACTION PLAN.

EXCAVATION AND BACKFILL COMPACTION SHALL BE PER ODOT CMS 203 AND THE MOST RECENT USACE STANDARD OPERATING PROCEDURE (SOP) FOR EXCAVATION BENCHING AND/OR BACKFILL COMPACTION FOR LEVEE AND FLOODWALL MODIFICATIONS (14 JUNE 2021 LATEST VERSION). USACE PROCEDURES AND GUIDANCE SHALL SUPERCEDE AND SHALL BE FOLLOWED FOR ALL ALL EXCAVATION BENCHING AND BACKFILL WITHIN THE LEVEE EMBANKMENT AND WITHIN 15 FEET OF THE TOE OF THE LEVEE OR FACE OR FLOODWALL. ALL LEVEE EMBANKMENT MATERIAL AND LEVEE FOUNDATION MATERIAL DISTURBED DURING EXCAVATION FOR THE INSTALLATION OF THE TYPE D BARRIER AND THE OVERLAPPING OF THE I-WALL SECTION SHALL BE REPLACED ACCORDING THE USACE SOP.

ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 - EMBANKMENT, AS PER PLAN "B".

QUANTITIES CARRIED TO GENERAL NOTES SUBSUMMARY ON SHEET 69A

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED 203 NOTES	CWL	11-29-2021
6	REVISED CSS TO UC	CWL	12-3-2021

**GENERAL NOTES**

FRA - 70 / 71 - 12.68 / 14.86

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**ENVIRONMENTAL (CONTINUED)**

**ITEM 208 - VIBRATION CONTROL AND MONITORING, AS PER PLAN**

THE CONTRACTOR SHALL CONTROL AND MONITOR VIBRATIONS WHEN PERFORMING DEMOLITION AND CONSTRUCTION ACTIVITIES NEAR BUILDINGS, STRUCTURES, OR UTILITIES THAT MAY BE SUBJECT TO DAMAGE FROM CONSTRUCTION INDUCED GROUND VIBRATIONS. DEMOLITION ACTIVITIES INCLUDE REMOVAL OF EXISTING BRIDGES, RETAINING WALLS, PAVEMENTS, AND FOUNDATIONS. CONSTRUCTION ACTIVITIES INCLUDE INSTALLATION OF DRILLED SHAFTS, PILE DRIVING, USE OF VIBRATORY ROLLERS, OR ANY OTHER OPERATION THAT CAUSES VIBRATION. VIBRATION CONTROL AND MONITORING SHALL CONFORM TO THE CONSTRUCTION AND MATERIALS SPECIFICATION (CMS) ITEM 208.15, EXCEPT AS MODIFIED BELOW:

1. ALL REFERENCES TO BLASTING SHALL INSTEAD APPLY TO DEMOLITION AND CONSTRUCTION ACTIVITIES.

2. THE VIBRATION SPECIALIST'S EXPERIENCE REQUIREMENT SHALL APPLY FOR VIBRATION MONITORING AND NEED NOT BE SPECIFIC TO ROCK BLASTING PROJECTS.

THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ANY BUILDINGS, STRUCTURES, AND UTILITIES LOCATED WITHIN LIMITS DETERMINED BY THE VIBRATION SPECIALIST AND PROVIDE THE ENGINEER WITH PRE-CONSTRUCTION AUDIO-VIDEO COLOR RECORDING AS FOLLOWS.

A. RECORDING. CONSTRUCTION IN AN AREA SHALL NOT START UNTIL THE AREA HAS BEEN RECORDED AND THE DVDS SUBMITTED TO THE ENGINEER.

B. VISUAL INSPECTION. PRIOR TO RECORDING, ALL AREAS TO BE RECORDED SHALL BE INVESTIGATED VISUALLY WITH NOTATION MADE OF FEATURES NOT READILY VISIBLE BY RECORDING METHODS. THIS WOULD INCLUDE, BUT ARE NOT LIMITED TO, CULVERTS (SIZE, TYPE, AND CONDITION) AND MANHOLES THAT MAY BE PARTIALLY BURIED. RECORD ALL MEASUREMENTS.

C. APPROVALS. ALL RECORDING SHALL BE CONDUCTED IN THE PRESENCE OF THE DEPARTMENT UNLESS WAIVED BY THE ENGINEERS. AT THE START OF RECORDING, THE CONTRACTOR SHALL SUBMIT A SAMPLE RECORDING OF A PORTION OF THIS PROJECT FOR THE ENGINEER TO REVIEW. THE SAMPLE RECORDING SHALL BE APPROVED BEFORE ANY OTHER RECORDING IS ALLOWED.

D. CERTIFICATION. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE CERTIFICATION IN WRITING TO THE ENGINEER THAT ALL REQUIREMENTS OF THE AUDIO-VIDEO COLOR RECORDING FOR THIS PROJECT WERE ACCOMPLISHED IN ACCORDANCE WITH THESE SPECIFICATIONS:

1. IDENTIFICATION. ALL RECORDINGS (DVDS AND CASES) SHALL BE PROPERLY IDENTIFIED BY RECORDING NUMBER, LOCATION, AND PROJECT NAME IN A MANNER ACCEPTABLE TO THE ENGINEER.

2. RECORD. A RECORD OF THE CONTENTS OF EACH RECORDING SHALL BE SUPPLIED ON A RUN SHEET IDENTIFYING EACH SEGMENT IN THE RECORDING NUMBER, LOCATION, AND PROJECT NAME IN A MANNER ACCEPTABLE TO THE ENGINEER.

3. INVENTORY. A BRIEF REPORT AND INVENTORY OF ALL RECORDINGS COMPLETE, REFERENCED BY LOCATION AND RECORDING NUMBER SHALL BE FURNISHED TO THE DEPARTMENT UPON COMPLETION OF THE WORK AND DELIVERY OF THE RECORDINGS. ALL RECORDINGS AND WRITTEN RECORDS SHALL BECOME THE PROPERTY OF THE DEPARTMENT.

THE CONTRACTOR SHALL USE A SURVEY METHOD ACCEPTABLE TO ITS INSURANCE COMPANY. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE RESULTING FROM DEMOLITION AND CONSTRUCTION ACTIVITIES. IF OWNERS OR OCCUPANTS FAIL TO ALLOW ACCESS TO A PROPERTY FOR THE PRE-CONSTRUCTION SURVEY, SEND A CERTIFIED LETTER TO THE OWNER OR OCCUPANT. MAKE THE NOTIFICATION EFFORT AND THE CERTIFIED LETTER PART OF THE PRE-CONSTRUCTION SURVEY RECORDS. DELIVER A COPY OF THE PRE-CONSTRUCTION SURVEY TO THE ENGINEER BEFORE BEGINNING CONSTRUCTION OPERATIONS AT CRITICAL LOCATIONS. CRITICAL LOCATIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO EXISTING BRIDGES, RETAINING WALLS, AND UTILITIES. SUBMIT DELIVERABLES IN ACCORDANCE WITH CMS ITEM 208.

ITEM 208, VIBRATION CONTROL AND MONITORING, AS PER PLAN LUMP SUM

QUANTITIES CARRIED TO GENERAL NOTES SUBSUMMARY ON SHEET 69A

**REGULATED WASTE AND WATER PLAN NOTE**

SUBGRADE EXCAVATIONS FROM THE AREA AS SHOWN IN CROSS-HATCHING ON SHEET 67A MAY CONTAIN REGULATED MATERIALS. REFER TO SOIL BORING PROFILES AND ENVIRONMENTAL STUDIES ENTITLED "PHASE II ENVIRONMENTAL SITE ASSESSMENTS", PREPARED BY DLZ, OHIO, INC. DATED MAY 2009 AND "ADDENDUM REPORT FOR PHASE II ENVIRONMENTAL SITE ASSESSMENTS" PREPARED BY DLZ, OHIO, INC. DATED SEPTEMBER 2009. ALL EXCAVATED MATERIAL FROM THE AREAS IDENTIFIED BY THIS NOTE SHALL BE MANAGED AS REGULATED MATERIALS UNTIL APPROPRIATELY REUSED AS A CONSTRUCTION MATERIAL OR DISPOSED OF IN LICENSED DISPOSAL FACILITY. EXCAVATED MATERIALS GENERATED WITHIN THE CROSS-HATCHING LIMITS, MEETING THE REQUIREMENTS OF ITEM 203, SHALL BE REUSED AS EMBANKMENT WITHIN THE CROSS-HATCHING LIMITS IDENTIFIED BY THIS NOTE. EXCAVATED MATERIALS NOT SUITABLE FOR USE IN ITEM 203 EMBANKMENT SHALL BE TESTED FOR CHARACTERIZATION AND DISPOSED OF IN A LICENSED DISPOSAL FACILITY. EXCAVATED MATERIALS NOT BEING REUSED FOR EMBANKMENT ARE REFERRED TO AS "WASTE MATERIALS" FOR THE REMAINDER OF THIS NOTE.

PROVIDE AN EXCAVATION AND EMBANKMENT PLAN TO THE ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO PERFORMING EXCAVATION WITHIN THE CROSS-HATCHING LIMITS. THE EXCAVATION AND EMBANKMENT PLAN WILL INCLUDE A SCHEDULE OF EXCAVATION/EMBANKMENT ACTIVITIES, A SCHEDULE FOR TESTING AND DISPOSAL OF WASTE MATERIALS, AND IDENTIFY ALL TEMPORARY STOCKPILE LOCATIONS FOR THE EXCAVATED MATERIALS WITHIN THE CROSS-HATCH LIMITS. PROVIDE A SAMPLING AND TESTING PLAN TO THE ENGINEER FOR THE PURPOSES OF CHARACTERIZING THE WASTE MATERIALS FOR PROPER DISPOSAL. PROVIDE THE SAMPLING AND TESTING PLAN TO THE ENGINEER AT THE SAME TIME AS THE EXCAVATION AND EMBANKMENT PLAN.

THE CONTRACTOR SHALL SEGREGATE WASTE MATERIALS INTO INDIVIDUAL STOCKPILES BY THE PARCEL OF GENERATION. EACH STOCKPILE OF WASTE MATERIAL WILL BE SAMPLED AND TESTED FOR PROPER DISPOSAL. PROVIDE THE ENGINEER WITH ALL WASTE MATERIAL SAMPLING RESULTS WITHIN FORTY-EIGHT (48) HOURS OF RECEIVING THE RESULTS. DO NOT MIX WASTE MATERIALS WITH MATERIALS FROM ANY OTHER SOURCE OF GENERATION UNTIL THE WASTE MATERIALS HAVE BEEN CHARACTERIZED.

WASTE MATERIAL NOT CHARACTERIZED AS HAZARDOUS WASTE SHALL BE MANAGED AS SOLID WASTE. TEMPORARY STORAGE OF SOLID WASTE SHALL BE IN COVERED, PORTABLE CONTAINERS FREE FROM HOLES OR DAMAGES. THE CONTRACTOR MAY ALSO UTILIZE TEMPORARY STOCKPILES OF THE SOLID WASTE WITH A SYNTHETIC COVER THAT PREVENTS INFILTRATION FROM RAINWATER AND SURROUNDED BY BERMS THAT PREVENTS CONTACT WITH STORMWATER RUN-ON. PROVIDE PROPER TRANSPORTATION AND DISPOSAL IN A LICENSED SOLID WASTE DISPOSAL FACILITY. THE CONTRACTOR SHALL FILL OUT AND SIGN ALL WASTE DISPOSAL FACILITY FORMS REQUIRED BY THE DISPOSAL FACILITY INCLUDING, BUT NOT LIMITED TO MATERIAL PROFILES, DATA SHEETS AND MATERIAL CERTIFICATIONS. PROVIDE A COPY OF ALL COMPLETED DISPOSAL FACILITY FORMS TO THE ENGINEER.

WASTE MATERIALS CHARACTERIZED AS HAZARDOUS WASTE SHALL IMMEDIATELY BE PLACED IN AN APPROPRIATE LINED, COVERED CONTAINERS, LABELED AS HAZARDOUS WASTE AND SECURED FOR TEMPORARY STORAGE. NOTIFY THE ENGINEER IMMEDIATELY IF SAMPLING RESULTS INDICATE THAT ANY WASTE MATERIALS ARE CHARACTERIZED AS HAZARDOUS. THE DEPARTMENT WILL SUBMIT A REQUEST FOR A RCRA SUBTITLE C SITE GENERATOR ID FROM OHIO EPA. UTILIZE PROPER HANDLED, STORAGE AND TRANSPORTATION METHODS UNTIL PROPERLY DISPOSED OF IN A LICENSE HAZARDOUS WASTE FACILITY. THE CONTRACTOR SHALL COMPLETE ALL MANIFEST AND PROVIDE THE COMPLETED MANIFESTS TO THE ENGINEER FOR SIGNATURE AS THE GENERATOR. PROVIDE THE ENGINEER WITH A COPY OF THE MANIFEST SIGNED BY THE DESIGNATED HAZARDOUS WASTE DISPOSAL FACILITY. THE CONTRACTOR SHALL FILL OUT AND SIGN ALL WASTE DISPOSAL FACILITY FORMS REQUIRED BY THE DISPOSAL FACILITY INCLUDING, BUT NOT LIMITED TO MATERIAL PROFILES, DATA SHEETS AND MATERIAL CERTIFICATIONS. PROVIDE A COPY OF ALL COMPLETED DISPOSAL FACILITY FORMS TO THE ENGINEER.

IF THE EXCAVATIONS WITHIN THE CROSS-HATCHING LIMITS REQUIRE DEWATERING FOR CONSTRUCTION PURPOSES, THE CONTRACTOR SHALL DEWATER, CONTAINERIZE AND DISPOSE OF THE LIQUID WASTE IN A LICENSED DISPOSAL FACILITY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CONDUCTING ALL TESTING NEEDED TO STORE, TRANSPORT, AND DISPOSE OF THE LIQUID WASTE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. INCLUDE DETAILS OF THE WASTE WATER SAMPLING AND TESTING AS PART OF THE WASTE MATERIAL SAMPLING AND TESTING PLAN. THE CONTRACTOR SHALL FILL OUT AND SIGN ALL LIQUID WASTE DISPOSAL FACILITY FORMS REQUIRED BY THE DISPOSAL FACILITY INCLUDING, BUT NOT LIMITED TO MATERIAL PROFILES, DATA SHEETS AND MATERIAL CERTIFICATIONS. PROVIDE A COPY OF ALL COMPLETED DISPOSAL FACILITY FORMS TO THE ENGINEER.

THE CONTRACTOR SHALL DEVELOP A HEALTH AND SAFETY PLAN PER OSHA REGULATION 1910.120 COVERING THE WORK FOR THIS NOTE.

THE CONTRACTOR SHALL PROVIDE ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY HANDLE, TEMPORARILY STORE, TEST FOR CHARACTERIZATION, HEALTH AND SAFETY PLAN, TRANSPORT, AND DISPOSE OF THE REGULATED MATERIALS, INCLUDING ANY REQUIRED PERMITS OR FEES. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICES BID PER TON AND PER GALLON. THE BASIS FOR CONVERSION OF CUBIC YARDS TO TONS IS 1.5 TON/CUBIC YARD. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE SUBSUMMARY.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED FOR THE WORK NOTED ABOVE:

690E65002 - ITEM SPECIAL - WORK INVOLVING HAZARDOUS WASTE 100 TON

690E65010 - ITEM SPECIAL - WORK INVOLVING SOLID WASTE 500 TON

690E65022 - ITEM SPECIAL - WORK INVOLVING NON-REGULATED WATER 10,000 GAL

690E65024 - ITEM SPECIAL - WORK INVOLVING REGULATED WATER 10,000 GAL

**CONSTRUCTION NOISE**

THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH ALL APPLICABLE CITY OF COLUMBUS ORDINANCES AND REGULATIONS PERTAINING TO CONSTRUCTION NOISE, INCLUDING SECTION 2329.11 OF THE COLUMBUS CITY CODE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL FINES ASSESSED DUE TO NON-COMPLIANCE WITH THE CITY NOISE ORDINANCE.

THE CONSTRUCTION NOISE MITIGATION IDENTIFIED AND LISTED BELOW SHALL BE USED TO MINIMIZE CONSTRUCTION ACTIVITY DURING NIGHTTIME AND WEEKEND OPERATIONS:

A. DIESEL POWERED VEHICLES SHALL NOT IDLE LONGER THAN 3 MINUTES. IDLING TIMES FOR OTHER VEHICLES AND INTERNAL COMBUSTION ENGINE POWERED EQUIPMENT SHALL ALSO BE MINIMIZED.

B. ROUTING CONSTRUCTION EQUIPMENT THOUGH LOCAL STREET NETWORK SHALL BE AVOIDED OR MINIMIZED.

C. FLASHING ARROW PANELS (FAPS AND PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE SOLAR POWERED.

D. JACKHAMMERS OR PAVEMENT BREAKERS SHALL BE OPERATED ELECTRICALLY OR HYDRAULICALLY. PNEUMATIC JACKHAMMERS SHALL ONLY BE USED IF EQUIPPED WITH PNEUMATIC DISCHARGE MUFFLERS, CERTIFIED BY THE MANUFACTURER.

E. EXHAUST MUFFLERS, CERTIFIED BY THE MANUFACTURER, SHALL BE USED ON ALL INTERNAL COMBUSTION ENGINES.

F. USE OF ELECTRIC SAWS RATHER THAN AIR OR GASOLINE POWERED SAWS SHALL BE REQUIRED.

CONSTRUCTION NOISE AND VIBRATION SHALL BE MINIMIZED NEAR THE HISTORIC RESOURCES COVERED BY SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

**WORK ON EXISTING PARCEL 1-WL**

THE CONTRACTOR SHALL MANAGE ALL WORK ON THIS SITE ACCORDING TO THE SITE SPECIFIC RISK MITIGATION PLAN LIBERTY PLACE (RMP). THE RMP HAS BEEN INCLUDED IN THE PROJECT'S REFERENCE MATERIAL. ALL WORK AND COMPLYING WITH THE RMP IS TO BE PAID FOR UNDER THE ORIGINAL BID ITEMS ON EXISTING PARCEL 1-WL (AREA LOCATED TO THE NORTH OF THE EXISTING LIBERTY PLACE FIRE LANE AND TO THE SOUTH OF EXISTING W. FULTON STREET). LIBERTY PLACE PROPERTY IS LOCATED AT 100 LIBERTY STREET.

IF THE DEWATERING IS REQUIRED FOR CONSTRUCTION PURPOSES ON EXISTING PARCEL 1-WL, THE CONTRACTOR SHALL DEWATER, CONTAINERIZE AND DISPOSE OF THE LIQUID WASTE IN A LICENSED DISPOSAL FACILITY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CONDUCTING ALL TESTING NEEDED TO STORE, TRANSPORT, AND DISPOSE OF THE LIQUID WASTE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL FILL OUT AND SIGN ALL LIQUID WASTE DISPOSAL FACILITY FORMS REQUIRED BY THE DISPOSAL FACILITY INCLUDING, BUT NOT LIMITED TO MATERIAL PROFILES, DATA SHEETS AND MATERIAL CERTIFICATIONS. PROVIDE A COPY OF ALL COMPLETED DISPOSAL FACILITY FORMS TO THE ENGINEER.

WATER REMOVED FROM WITHIN THE ABOVE LIMITS WILL FALL INTO ONE OF TWO FOLLOWING CATEGORIES:

1. ITEM 690E65022 - SPECIAL - WORK INVOLVING NON-REGULATED WATER

THE METHOD FOR DISPOSING OF THE NON-REGULATED WATER WILL BE APPROVED BY THE ENGINEER. WORK INVOLVED WITH THIS ITEM SPECIAL INCLUDES COMPLYING WITH THE RMP, HANDLING, STORAGE, AND DISPOSAL OF NON-REGULATED WATER.

2. ITEM 690E65024 - SPECIAL - WORK INVOLVING REGULATED WATER

THE METHOD FOR DISPOSING OF THE REGULATED WATER WILL BE APPROVED BY THE ENGINEER. WORK INVOLVED WITH THIS ITEM SPECIAL INCLUDES COMPLYING WITH THE RMP, HANDLING, STORAGE, AND DISPOSAL OF REGULATED WATER.

THE CONTRACTOR IS TO COMPLETE ALL MANIFEST FOR MATERIAL TO BE TRANSPORTED AND PROVIDE TO THE ENGINEER FOR SIGNATURE. ALL TRANSPORT VEHICLES USED FOR THE MOVEMENT OF REGULATED SOILS OR WATERS SHALL MEET APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS. THE CONTRACTOR WILL MAINTAIN RECORDS, SUCH AS MANIFESTS, LANDFILL TICKETS, DAILY LOGS, ETC., TO DOCUMENT THE SOURCE, MOVEMENT, AND DESTINATION OF EACH TRUCK LOAD OF REGULATED SOILS AND/OR WATERS. ONE COPY OF EACH OF THESE RECORDS WILL BE SUBMITTED TO THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED FOR THE WORK NOTED ABOVE:

690E65022 - ITEM SPECIAL - WORK INVOLVING NON-REGULATED WATER 1,000 GAL

690E65024 - ITEM SPECIAL - WORK INVOLVING REGULATED WATER 1,000 GAL

NO.	DESCRIPTION	REV. BY	DATE
1	ADDED LIBERTY RMP NOTE	CWL	11-4-2021
6	REMOVED NON-REGULATED MATERIAL	CWL	12-3-2021

CALCULATED  
ATR  
CHECKED  
CWL

GENERAL NOTES

FRA - 70/ 71-12.68 / 14.86

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SHEET NO.	201		202		202		204		208		251		SPECIAL		SPECIAL		601		607		605		611		611		611		611	
	CLEARING AND GRUBBING, AS PER PLAN		REMOVAL MISC.: TRASH RECEPTACLES		CONCRETE BARRIER REMOVED		GEOTEXTILE FABRIC		VIBRATION CONTROL AND MONITORING, AS PER PLAN		PARTIAL DEPTH PAVEMENT REPAIR (442)		PAVEMENT OVERLAY FABRIC		SAWING AND SEALING CONCRETE JOINTS		TIED CONCRETE BLOCK MAT, TYPE 1		FENCE, TYPE CL, AS PER PLAN		6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC		CONDUIT, MISC.: SEWER VIDEO INSPECTION		6" CONDUIT, TYPE B		6" CONDUIT, TYPE C		CONDUIT, MISC.: BYPASS PUMPING FOR VIDEO INSPECTION AND PIPE REPAIRS	
	LS		EACH		FT		SY		LS		SY		SY		FT		SY		FT		FT		FT		FT		FT		FT	LS
	01/NHS/PV	01/NHS/PV	01/NHS/PV		01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV		01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	05/NHS/OT/COL	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	
53	LS	LS																												
54			4																											
55											500																			
56					119	151								102	129															
61																														
63																	4	4				88	112		22	28	22	28		
66A									LS	LS																				
67							880	1120													880	1120								
69																								3300						LS
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>	LS	LS	4		119	151	880	1120	LS	LS				500	102	129	368	44	4	4	880	1120	88	112	3300	22	28	22	28	LS
SHEET NO.	611		611		611		611		SPECIAL		622		623		638		SPECIAL		SPECIAL		SPECIAL		SPECIAL		SPECIAL		SPECIAL			
	6" CONDUIT, TYPE E		6" CONDUIT, TYPE F		PRECAST REINFORCED CONCRETE OUTLET		CONDUIT, MISC.: INTERNAL JOINT SEAL		MISCELLANEOUS METAL		BARRIER, MISC.: CONCRETE BARRIER, TYPE B		PROVIDING ELECTRONIC INSTRUMENTATION		WATER WORK, MISC.: SURVEY COORDINATES		SURVEY CONTROL VERIFICATION		WORK INVOLVING HAZARDOUS WASTE		WORK INVOLVING SOLID WASTE		WORK INVOLVING NON-REGULATED WATER		WORK INVOLVING REGULATED WATER					
	FT		FT		EACH		EACH		LB		FT		LS		LS		TON		TON		GAL		GAL							
	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV	01/NHS/PV		
54																LS	LS													
56											106	134																		
58													LS	LS																
63	22	28	110	140	2	2	26	34	440	560																				
66A																					44	56	220	280	4840	6160	4840	6160		
68													LS																	
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>	22	28	110	140	2	2	26	34	440	560	106	134	LS	LS	LS		LS	LS		44	56	220	280	4840	6160	4840	6160			

NO.	DESCRIPTION	REV.	BY	DATE
1	ADDED LIBERTY RMP NOTE		CWL	11-4-2021
3	UPDATED BYPASS NOTE		CWL	11-9-2021
4	FUNDING CODE CHANGE		CWL	11-29-2021
6	REMOVED NON-REGULATED MATERIAL		CWL	12-3-2021

CALCULATED CJC CHECKED CWL  
**GENERAL NOTES SUBSUMMARY**  
**FRA - 70 / 71 - 12.68 / 14.86**  
 69A  
 1815

SHEET NUMBER							PARTICIPATION					ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS	69A	219	220	229	258	01/NHS/PV	01/NHS/PV	01/NHS/PV	04/MPO/OT	05/NHS/OT/COL							
	LS					LS	LS				201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	53	
		48626				25894	21417			1315	202	23000	48626	SY	PAVEMENT REMOVED		
		26655				24043				2612	202	30000	26655	SF	WALK REMOVED		
		4				4					202	30200	4	FT	STEPS REMOVED		
	270	1986				993	1263				202	30700	2256	FT	CONCRETE BARRIER REMOVED		
		4738				2085	2653				202	30800	4738	SY	TRAFFIC ISLAND REMOVED		
		16364				8742	6954			668	202	32000	16364	FT	CURB REMOVED		
		60				60					202	32500	60	FT	CURB AND GUTTER REMOVED		
		4265				1474	1876	915			202	35100	4265	FT	PIPE REMOVED, 24" AND UNDER		
						93	119				202	35200	212	FT	PIPE REMOVED, OVER 24"		
						2812	3579				202	38000	6391	FT	GUARDRAIL REMOVED		
		22				7	9	6			202	58000	22	EACH	MANHOLE REMOVED		
		20				8	11			1	202	58100	20	EACH	CATCH BASIN REMOVED		
		31				14	16			1	202	58200	31	EACH	INLET REMOVED		
		2				1	1				202	58400	2	EACH	INLET ABANDONED		
		3				1	2				202	58401	3	EACH	INLET ABANDONED, AS PER PLAN	63	
						1	2				202	58500	3	EACH	CATCH BASIN ABANDONED		
		1					1				202	58700	1	EACH	MANHOLE ABANDONED		
		2				1	1				202	58701	2	EACH	MANHOLE ABANDONED, AS PER PLAN "A"	63	
		4				2	2				202	58701	4	EACH	MANHOLE ABANDONED, AS PER PLAN "B"	69	
			5208			2105	2679			424	202	75000	5208	FT	FENCE REMOVED		
			1				1				202	75250	1	EACH	GATE REMOVED		
		6						6			202	75610	6	EACH	VALVE BOX REMOVED		
		1								1	202	98100	1	EACH	REMOVAL MISC.: BENCH REMOVED AND RESET	54	
	4					4					202	98100	4	EACH	REMOVAL MISC.: TRASH RECEPTACLES	54	
		4				4					202	98100	4	EACH	REMOVAL MISC.: BOLLARDS		
		2				2					202	98100	2	EACH	REMOVAL MISC.: ROCK ART MONOLITH		
		3				3					202	98100	3	EACH	REMOVAL MISC.: LIGHT POLE		
		2				2					202	98100	2	EACH	REMOVAL MISC.: WOOD POLE		
		359				359					202	98200	359	FT	REMOVAL MISC.: TRAFFIC BOLLARDS REMOVED		
		4262				194				4068	202	98400	4262	SF	REMOVAL MISC.: BRICK PAVERS REMOVED AND SALVAGED	54	
				57763		25416	32347				203	10000	57763	CY	EXCAVATION		
				117790		51828	65962				203	20000	117790	CY	EMBANKMENT		
				44955		19780	25175				203	20001	44955	CY	EMBANKMENT, AS PER PLAN "A"	56	
				87		38	49				203	20001	87	CY	EMBANKMENT, AS PER PLAN "B"	56	
				34372		15124	19248				203	35000	34372	CY	GRANULAR EMBANKMENT		
				4928		2168	2760				203	35001	4928	CY	GRANULAR EMBANKMENT, AS PER PLAN	56	
44900					10059	26571	26091		162	2135	204	10000	54959	SY	SUBGRADE COMPACTION		
				3280		1443	1837				204	13000	3280	CY	EXCAVATION OF SUBGRADE		
				3280		1443	1837				204	30010	3280	CY	GRANULAR MATERIAL, TYPE B		
38						15	20		1	2	204	45000	38	hour	PROOF ROLLING		
6644	2000				1831	7112	1120		162	2081	204	50000	10475	SY	GEOTEXTILE FABRIC		
6644						4401			162	2081	204	51000	6644	SY	GEOGRID		
57						28	29				206	10500	57	TON	CEMENT		
25824						12765	13059				206	11000	25824	SY	CURING COAT		
25824						12765	13059				206	15020	25824	SY	CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP		
	LS					LS	LS				208	14001	LS		VIBRATION CONTROL AND MONITORING, AS PER PLAN	66A	
						24	60				209	60201	84	STA	LINEAR GRADING, AS PER PLAN	57	
			9463			4164	5299				606	15050	9463	FT	GUARDRAIL, TYPE MGS		
			5			2	3				606	26150	5	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	57	
			4			2	2				606	26550	4	EACH	ANCHOR ASSEMBLY, MGS TYPE T		
			19			8	11				606	35002	19	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		
			10			4	6				606	35102	10	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2		
			1			1					606	60040	1	EACH	IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL (50 MPH, 48" WIDTH)	57	
			1				1				606	60040	1	EACH	IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL (50 MPH, 90" WIDTH)	57	
			2			1	1				606	60040	2	EACH	IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL (60 MPH, 48" WIDTH)	57	

NO.	DESCRIPTION	REV. BY	DATE
4	FUNDING CODE CHANGE / UPDATED EARTHWORK	CWL	11-29-2021
6	UPDATED EARTHWORK / REVISED CSS TO UC	CWL	12-3-2021

GENERAL SUMMARY

FRA - 70 / 71 - 12.68 / 14.86

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SHEET NUMBER							PARTICIPATION							ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS	69A	221	229	01/NHS/PV	01/NHS/PV														
EROSION CONTROL																			
315				139	176					601	12001	315	SY	RIPRAP, WITH GROUT, AS PER PLAN	582				
		1127		496	631					601	21000	1127	SY	CONCRETE SLOPE PROTECTION					
	8	223		102	129					601	21050	231	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT					
		243		107	136					601	21060	243	SY	TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT					
		6		3	3					601	32200	6	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER					
		571		251	320					601	37501	571	FT	PAVED GUTTER, TYPE 1-2, AS PER PLAN	65				
			2	1	1					659	00100	2	EACH	SOIL ANALYSIS TEST					
			6130	2697	3433					659	00300	6130	CY	TOPSOIL					
			55225	24299	30926					659	10000	55225	SY	SEEDING AND MULCHING					
			2761	1215	1546					659	14000	2761	SY	REPAIR SEEDING AND MULCHING					
			2761	1215	1546					659	15000	2761	SY	INTER-SEEDING					
			7.70	3.39	4.31					659	20000	7.70	TON	COMMERCIAL FERTILIZER					
			11.41	5.02	6.39					659	31000	11.41	ACRE	LIME					
			306	135	171					659	35000	306	MGAL	WATER					
		95		42	53					660	30000	95	SY	SODDING UNSTAKED					
		2313		1018	1295					670	00700	2313	SY	DITCH EROSION PROTECTION					
		LS		LS	LS					832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN					
		LS		LS	LS					832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS					
		LS		LS	LS					832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE					
		1150000		506000	644000					832	30000	1150000	EACH	EROSION CONTROL					
ENVIRONMENTAL / REMEDIATION																			
	100			44	56					SPECIAL	69065002	100	TON	WORK INVOLVING HAZARDOUS WASTE	66A				
	500			220	280					SPECIAL	69065010	500	TON	WORK INVOLVING SOLID WASTE	66A				
	11000			4840	6160					SPECIAL	69065022	11000	GAL	WORK INVOLVING NON-REGULATED WATER	66A				
	11000			4840	6160					SPECIAL	69065024	11000	GAL	WORK INVOLVING REGULATED WATER	66A				

GENERAL SUMMARY

FRA - 70 / 71 - 12.68 / 14.86

NO.	DESCRIPTION	REV. BY	DATE
1	ADDED LIBERTY RMP NOTE	CWL	11-4-2021
4	FUNDING CODE CHANGE / UPDATED EARTHWORK	CWL	11-29-2021
6	REMOVED NON-REGULATED MATERIAL	CWL	12-3-2021

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SHEET NO.	STATION TO STATION		203	203	203	203	204	204	203	203	659	659	659	659	659	659	659	659	CALCULATED ATR CHECKED CWL
			EXCAVATION CY	EMBANKMENT CY	EMBANKMENT, AS PER PLAN "A" CY	EMBANKMENT, AS PER PLAN "B" CY	GRANULAR MATERIAL, TYPE B CY	EXCAVATION OF SUBGRADE CY	GRANULAR EMBANKMENT CY	GRANULAR EMBANKMENT, AS PER PLAN CY	SEEDING AND MULCHING (SM) SY	SOIL ANALYSIS TEST EACH	TOPSOIL (111*(SM)/1000) CY	REPAIR SEEDING AND MULCHING (0.05*(SM)) SY	INTER-SEEDING (0.05*(SM)) SY	COMM. FERTILIZER [(30*(SM))+ (20*.05*(SM))]*9 /1000*2000 TON	LIME (SM)/(4840) ACRE	WATER [(2*300*(SM)) +(300*.05*(SM))]*9 /1000*1000 MGAL	
EB I-70																			
384	125+96.00	126+50.00	162	0															
385	126+97.68	127+96.26	209	0															
386	128+26.26	129+00.00	198	3															
387	129+50.00	130+50.00	92	6															
388	131+00.00	132+00.00	55	29															
389	132+41.81	133+00.00	47	36															
390	133+50.00	134+05.00	60	9															
391	4158+00.00	4159+00.00	1575	0															
392	4159+50.00	4151+00.00	507	0															
393	4161+50.00	4162+50.00	237	0															
394	4163+00.00	4164+00.00	203	16															
395	4164+50.00	4165+50.00	193	43															
396	4166+00.00	4170+00.00	199	0					697										
397	4170+50.00	4171+00.00	689	0					3508										
398	4171+50.00	4172+00.00	446	0					4768										
399	4172+50.00	4173+00.00	441	0					6283										
400	4173+50.00	4174+00.00	290	0					7694										
401	4174+50.00	4175+00.00	58	0	0				8202	1820									
402	4175+63.96	4175+93.88	0	0	0					0									
403	4176+87.27	4177+17.18	0	109															
404	4177+50.00	4177+77.84	0	131															
405	4178+00.00	4178+50.00	0	908															
406	4179+00.00	4180+00.00	0	538															
407	4180+50.00	4181+50.00	1310	403															
408	4182+00.00	4183+50.00	4289	332															
409	4184+00.00	4185+50.00	3308	6															
410	4186+00.00	4187+00.00	2582	0															
411	4187+50.00	4188+50.00	1399	8															
412	4189+00.00	4190+00.00	199	8															
413	4190+50.00	4191+50.00	256	23															
414	4192+00.00	4193+00.00	219	86															
415	4193+45.18	4194+50.00	622	100															
416	4195+00.00	4196+50.00	563	126															
417	4196+99.64	4198+00.00	114	11															
418	4198+50.00	4200+00.00	113	0															
419	4200+50.00	4202+00.00	175	9															
420	4202+50.00	4204+00.00	197	8															
421	4204+50.00	4205+50.00	88	0															
422	4206+00.00	4207+50.00	60	0															
423	4208+00.00	4208+14.77	4	0															
WB I-70																			
424	160+50.00	161+50.00	2978	0															
425	162+00.00	183+00.00	893	24															
426	183+50.00	185+00.00	55	649															
427	185+50.00	186+50.00	1316	540															
428	187+00.00	188+00.00	1803	0															
429	188+50.00	189+00.00	0	0															
NB I-71																			
430	252+50.00	253+50.00	340			14													
431	254+00.00	255+00.00	586	50		30													
432	255+50.00	257+00.00	761	177		43													
433	257+50.00	258+50.00	494	0															
434	259+00.00	260+00.00	418	78			216	216											
435	260+50.00	262+00.00	79	2710			244	244											
436	262+50.00	264+00.00	65	7596															
437	264+34.96	265+00.00	0	5907															
438	265+50.00	266+34.96	60	7106															
439	266+50.00	267+50.00	0	10836															
440	268+00.00	269+00.00	1658	5273															
<b>SUBTOTALS CARRIED TO SHEET 229</b>			32665	43894		87	460	460	31152	1820	19360								

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED EARTHWORK		11-29-2021
6	UPDATED EARTHWORK		12-3-2021

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SHEET NO.	STATION TO STATION		203	203	203	203	204	204	203	203	659	659	659	659	659	659	659	659	659	CALCULATED ATR CHECKED CWL	
			EXCAVATION CY	EMBANKMENT CY	EMBANKMENT, AS PER PLAN "A" CY	EMBANKMENT, AS PER PLAN "B" CY	GRANULAR MATERIAL, TYPE B CY	EXCAVATION OF SUBGRADE CY	GRANULAR EMBANKMENT CY	GRANULAR EMBANKMENT, AS PER PLAN CY	SEEDING AND MULCHING (SM) SY	SOIL ANALYSIS TEST EACH	TOPSOIL (111*(SM)/1000) CY	REPAIR SEEDING AND MULCHING (0.05*(SM)) SY	INTER-SEEDING (0.05*(SM)) SY	COMM. FERTILIZER [(30*(SM))+ (20*.05*(SM))]*9 /1000*2000 TON	LIME (SM)/(4840) ACRE	WATER [(2*300*(SM)) +(300*.05*(SM))]*9 /1000*1000 MGAL			
NB I-71																					
441	269+50.00	270+50.00	1325	830																	
442	271+00.00	271+50.00	455	136																	
443	272+00.00	272+50.00	276	48																	
444	273+00.00	273+64.54	115	1																	
RAMP A5																					
445	5003+23.96	5004+00.00	439	3																	
446	5004+50.00	5005+50.00	776	139																	
447	5006+00.00	5007+00.00	1170	44																	
448	5007+50.00	5008+00.00	1177	242																	
449	5008+50.00	5009+50.00	62	2737																	
450	5010+00.00	5011+00.00	66	7602																	
451	5011+50.00	5012+18.10	647	7506																	
452	5012+50.00	5013+00.00	41	9024																	
453	5013+50.00	5014+00.00	44																		
454	5014+50.00	5015+00.00	18																		
455	5015+06.59	5015+36.59	13																		
RAMP C3																					
456	3000+16.87	3001+00.00	0	88																	
457	3001+50.00	3002+50.00	7	100																	
458	3003+00.00	3004+00.00	3	533																	
459	3004+50.00	3005+50.00	13	991																	
460	3006+00.00	3007+00.00	27	179																	
461	3007+50.00	3008+50.00	111	14																	
462	3009+00.00	3010+00.00	0	0																	
RAMP C5																					
463	5024+38.21	5026+00.00	169	4																	
464	5026+50.00	5028+00.00	196	439																	
465	5028+50.00	5030+00.00	269	1627																	
466	5030+50.00	5031+36.49	156	2087																	
467	5031+66.55	5032+65.33	58	249																	
468	5033+00.00	5033+50.00	61	311																	
469	5034+00.00	5034+83.94	26	455																	
470	5034+97.48	5035+50.00	2	744																	
471	5036+00.00	5036+50.00	33	911																	
472	5037+00.00	5038+00.00	32	799																	
473	5038+50.00	5039+50.00	18	279																	
474	5040+00.00	5041+17.78	62																		
475	5041+50.00	5042+00.00	132	2060																	
476	5042+50.00	5047+55.00	1371	86																	
477	5061+83.35	5047+72.06	2804	0																	
478	5062+50.00	5063+50.00	5864	670																	
479	5064+00.00	5065+00.00	881	3615																	
480	5065+50.00	5066+50.00	63	6681																	
481	5067+00.00	5068+00.00	58	11034																	
482	5068+50.00	5069+00.00	27	9070																	
483	5069+50.00	5070+00.00	13																		
484	5070+50.00	5071+00.00	0																		
485	5071+18.62	5074+10.30	99																		
486	5074+40.30	5074+50.00	280																		
487	5075+00.00	5075+50.00	170	2																	
488	5076+00.00	5076+08.84	66	0																	
489	5076+50.00	5077+00.00	93	17																	
490	5077+50.00	5078+00.00	68	49																	
491	5078+50.00	5079+00.00	53	24																	
492	5079+12.85	5079+50.00	61	13																	
493	5080+00.00	5080+15.86	52	5																	
494	5080+45.86	5081+38.82	0	11																	
495	5081+68.82	5081+98.63	0	9																	
496	5082+00.00	5082+50.00	0	6																	
<b>SUBTOTALS CARRIED TO SHEET 229</b>			20022	71474	44955		734	734	3220	3108	31176										

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED EARTHWORK	CWL	11-29-2021
6	UPDATED EARTHWORK	CWL	12-3-2021

**EARTHWORK SUBSUMMARY AND CALCULATIONS**

**FRA - 70 / 71-12.68 / 14.86**

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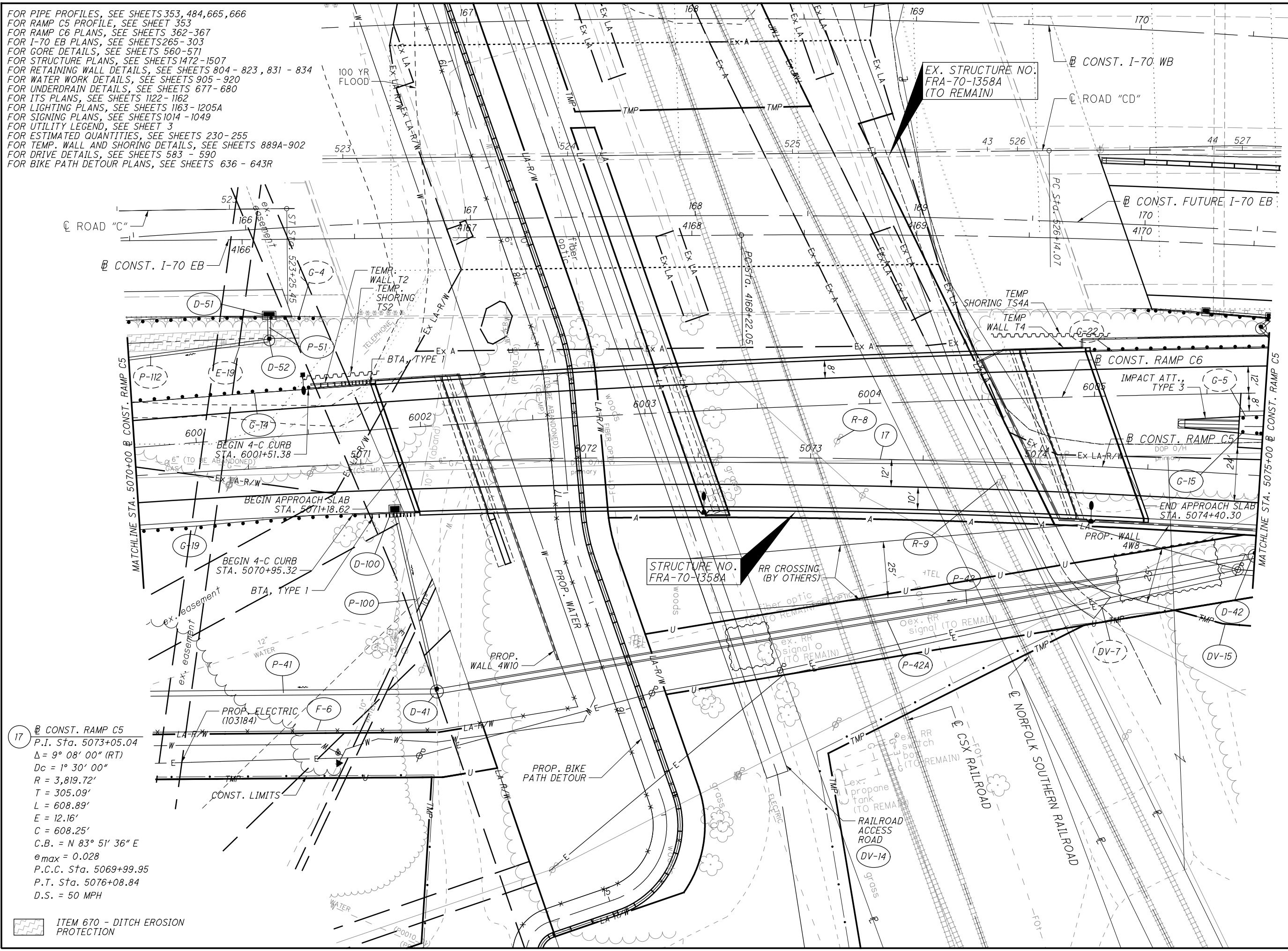
SHEET NO.	STATION TO STATION		203	203	203	203	204	204	203	203	659	659	659	659	659	659	659					
			EXCAVATION	EMBANKMENT	EMBANKMENT, AS PER PLAN "A"	EMBANKMENT, AS PER PLAN "B"	GRANULAR MATERIAL, TYPE B	EXCAVATION OF SUBGRADE	GRANULAR EMBANKMENT	GRANULAR EMBANKMENT, AS PER PLAN	SEEDING AND MULCHING (SM)	SOIL ANALYSIS TEST	TOPSOIL (111*(SM))/(1000)	REPAIR SEEDING AND MULCHING (0.05*(SM))	INTER-SEEDING (0.05*(SM))	COMM. FERTILIZER [(30*(SM))+ (20*.05*(SM))]*9 / (1000*2000)	LIME (SM)/(4840)	WATER [(2*300*(SM)) + (300*.05*(SM))]*9 / (1000*1000)				
			CY	CY	CY	CY	CY	CY	CY	CY	SY	EACH	CY	SY	SY	TON	ACRE	MGAL				
<i>BIKE PATH DETOUR</i>																						
643M	20+00.00	20+50.00	113	168									436									
643N	21+00.00	21+50.00	46	68									262									
643P	22+00.00	22+50.00	38	0									104									
643R	23+00.00		0	0									0									
<b>SUBTOTALS FROM THIS SHEET</b>			197	236									802									
<b>SUBTOTALS FROM SHEET 226</b>			32665	43894		87	460	460	31152	1820			19360									
<b>SUBTOTALS FROM SHEET 227</b>			20022	71474	44955		734	734	3220	3108			31176									
<b>SUBTOTALS FROM SHEET 228</b>			5076	2186			2086	2086					3887									
<b>SUBTOTALS FOR SEEDING &amp; MULCHING CALCULATIONS TOTALS CARRIED TO THE GENERAL SUMMARY</b>			57763	117790	44955	87	3280	3280	34372	4928			55225	2		6130	2761	2761	7.70	11.41	306	

NO.	DESCRIPTION	REV.	BY	DATE
4	UPDATED EARTHWORK		CWL	11-29-2021
6	UPDATED EARTHWORK		CWL	12-3-2021

<b>EARTHWORK SUBSUMMARY AND CALCULATIONS</b>	CALCULATED ATR CHECKED CWL
<b>FRA - 70 / 71-12.68 / 14.86</b>	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <span style="font-size: 10px;">229</span>  <span style="font-size: 10px;">1815</span> </div>



FOR PIPE PROFILES, SEE SHEETS 353, 484, 665, 666  
 FOR RAMP C5 PROFILE, SEE SHEET 353  
 FOR RAMP C6 PLANS, SEE SHEETS 362-367  
 FOR I-70 EB PLANS, SEE SHEETS 265-303  
 FOR GORE DETAILS, SEE SHEETS 560-571  
 FOR STRUCTURE PLANS, SEE SHEETS 1472-1507  
 FOR RETAINING WALL DETAILS, SEE SHEETS 804 - 823, 831 - 834  
 FOR WATER WORK DETAILS, SEE SHEETS 905 - 920  
 FOR UNDERDRAIN DETAILS, SEE SHEETS 677-680  
 FOR ITS PLANS, SEE SHEETS 1122-1162  
 FOR LIGHTING PLANS, SEE SHEETS 1163-1205A  
 FOR SIGNING PLANS, SEE SHEETS 1014 - 1049  
 FOR UTILITY LEGEND, SEE SHEET 3  
 FOR ESTIMATED QUANTITIES, SEE SHEETS 230-255  
 FOR TEMP. WALL AND SHORING DETAILS, SEE SHEETS 889A-902  
 FOR DRIVE DETAILS, SEE SHEETS 583 - 590  
 FOR BIKE PATH DETOUR PLANS, SEE SHEETS 636 - 643R



17 CONST. RAMP C5  
 P.I. Sta. 5073+05.04  
 $\Delta = 9^\circ 08' 00''$  (RT)  
 $D_c = 1^\circ 30' 00''$   
 $R = 3,819.72'$   
 $T = 305.09'$   
 $L = 608.89'$   
 $E = 12.16'$   
 $C = 608.25'$   
 $C.B. = N 83^\circ 51' 36'' E$   
 $e_{max} = 0.028$   
 P.C.C. Sta. 5069+99.95  
 P.T. Sta. 5076+08.84  
 D.S. = 50 MPH

ITEM 670 - DITCH EROSION PROTECTION

NO.	DESCRIPTION	REV. BY	DATE
4	ADDED TEMP. SHORING TS44 / WIDENED BFD	CWL	11-29-2021
6	RR CROSSING LABEL	CWL	12-3-2021

PLAN - RAMP C5  
 STA. 5070+00.00 TO STA. 5075+00.00

FRA-70/71-12.68/14.86

352  
1815

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SEEDING  
END WIDTH SO. YDS.  
19

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

[#] ITEM 203 - GRANULAR EMBANKMENT

[#] ITEM 206 - CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP

[#] ITEM 202 - PAVEMENT REMOVED

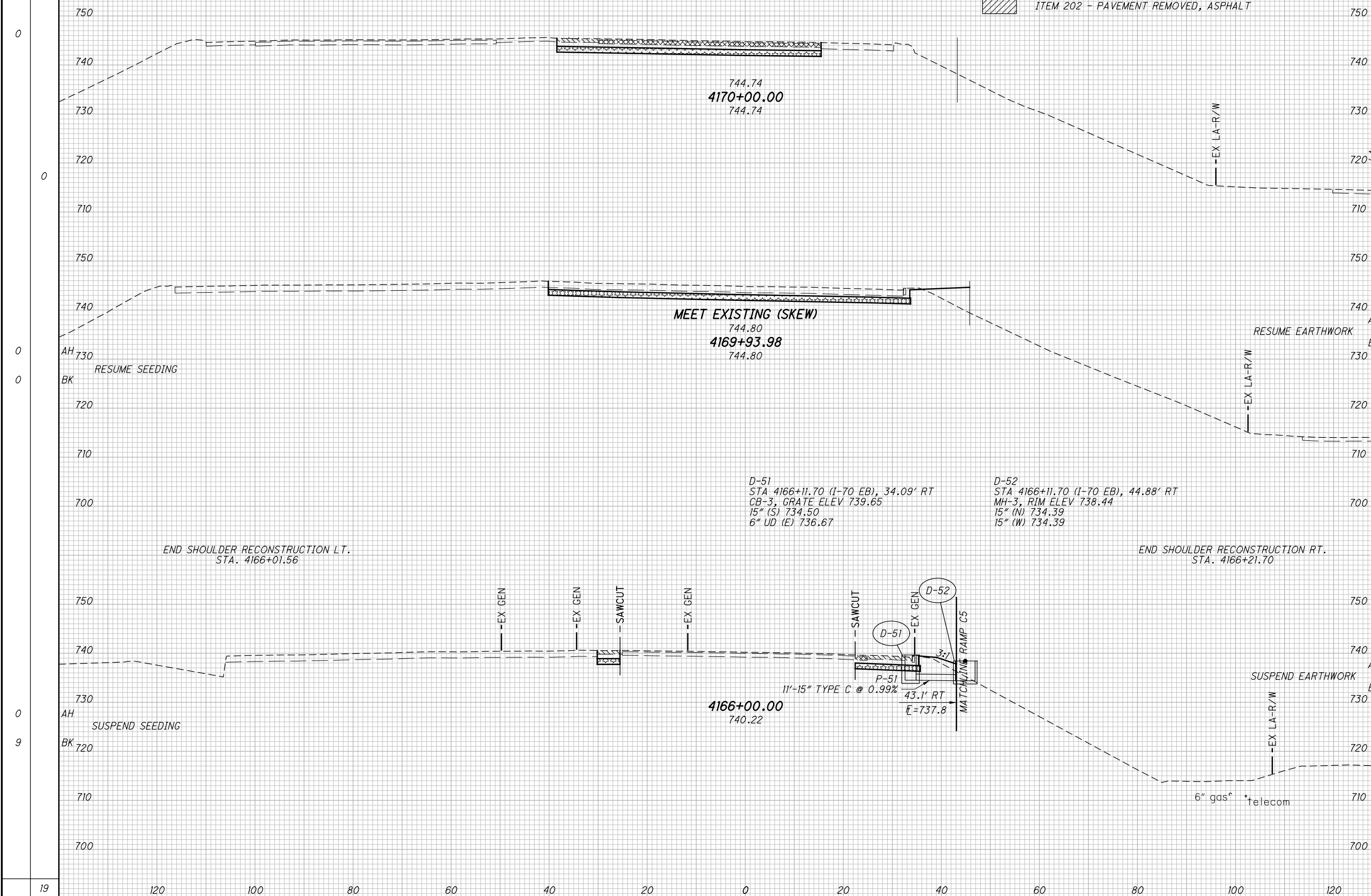
[#] ITEM 202 - PAVEMENT REMOVED, ASPHALT

END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
91	0	175	[694]	
124	0	24	[33]	
0	0	0		
0	0	30		
199	0	199	[697]	

CROSS SECTIONS I-70 EASTBOUND  
STA. 4166+00.00 TO STA. 4170+00.00

FRA -70/ 71-12.68 / 14.86

396  
1815







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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

[#] ITEM 203 - GRANULAR EMBANKMENT

LOAD TRANSFER PLATFORM  
(INCLUDED WITH RETAINING WALL  
ITEM 203 - ROADWAY, MISC.: COLUMN  
SUPPORTED WALLS)

-  SELECT GRANULAR BACKFILL PER SS840  
(INCLUDED IN WALL QUANTITIES)
-  ITEM 206 - CEMENT STABILIZED  
SUBGRADE, 14 INCHES DEEP
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT

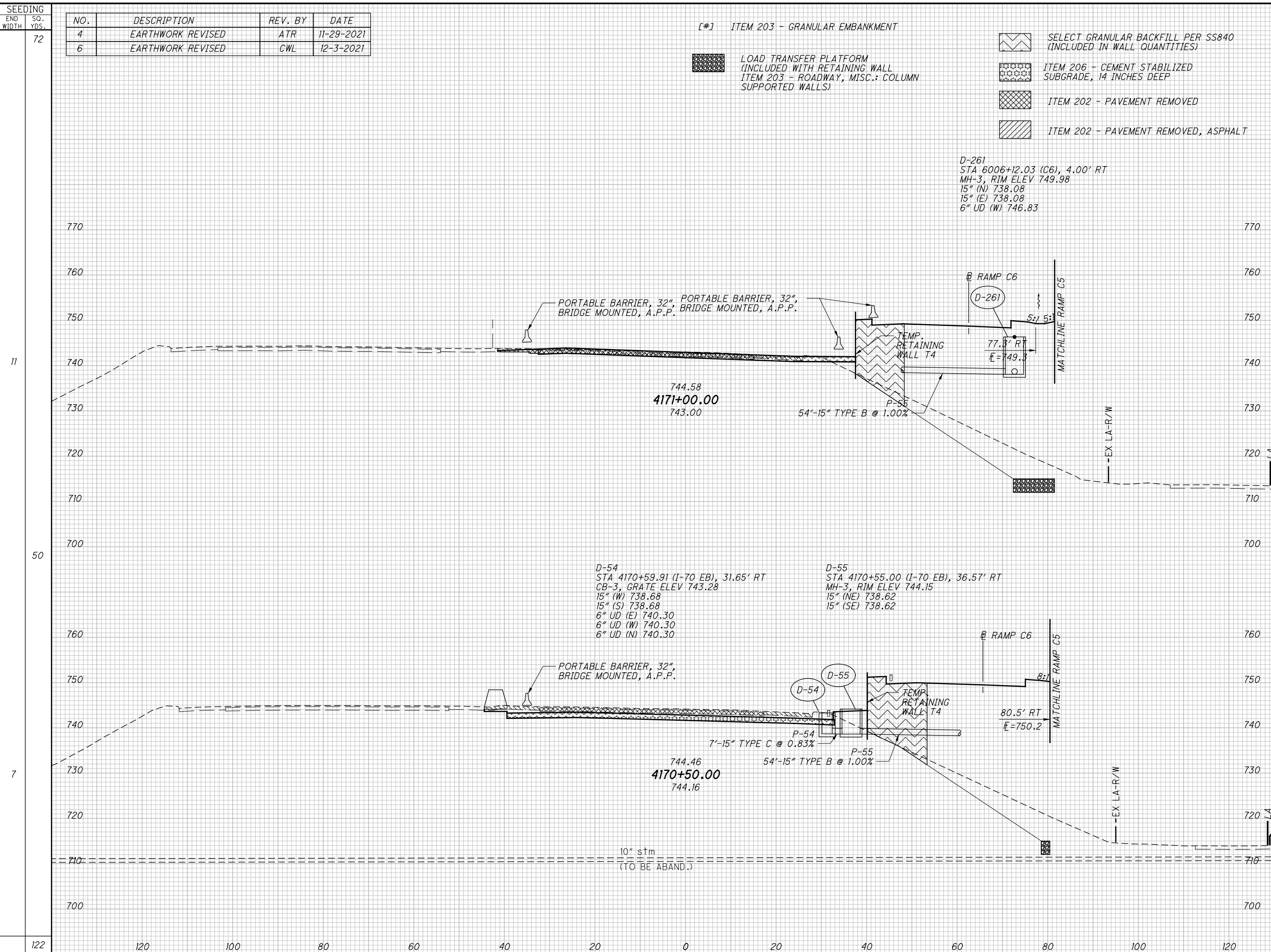
D-261  
STA 6006+12.03 (C6), 4.00' RT  
MH-3, RIM ELEV 749.98  
15" (N) 738.08  
15" (E) 738.08  
6" UD (W) 746.83

END AREA	VOLUME	CALCULATED	CHECKED		
				CUT	FILL
196 [951]	309 [1933]				
380 [1575]					
214 [750]					
689 [3508]					

CROSS SECTIONS I-70 EASTBOUND  
STA. 4170+50.00 TO STA. 4171+00.00

FRA -70/ 71-12.68 / 14.86

397  
1815







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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

[#] ITEM 203 - GRANULAR EMBANKMENT

LOAD TRANSFER PLATFORM  
(INCLUDED WITH RETAINING WALL  
ITEM 203 - ROADWAY, MISC.: COLUMN  
SUPPORTED WALLS)

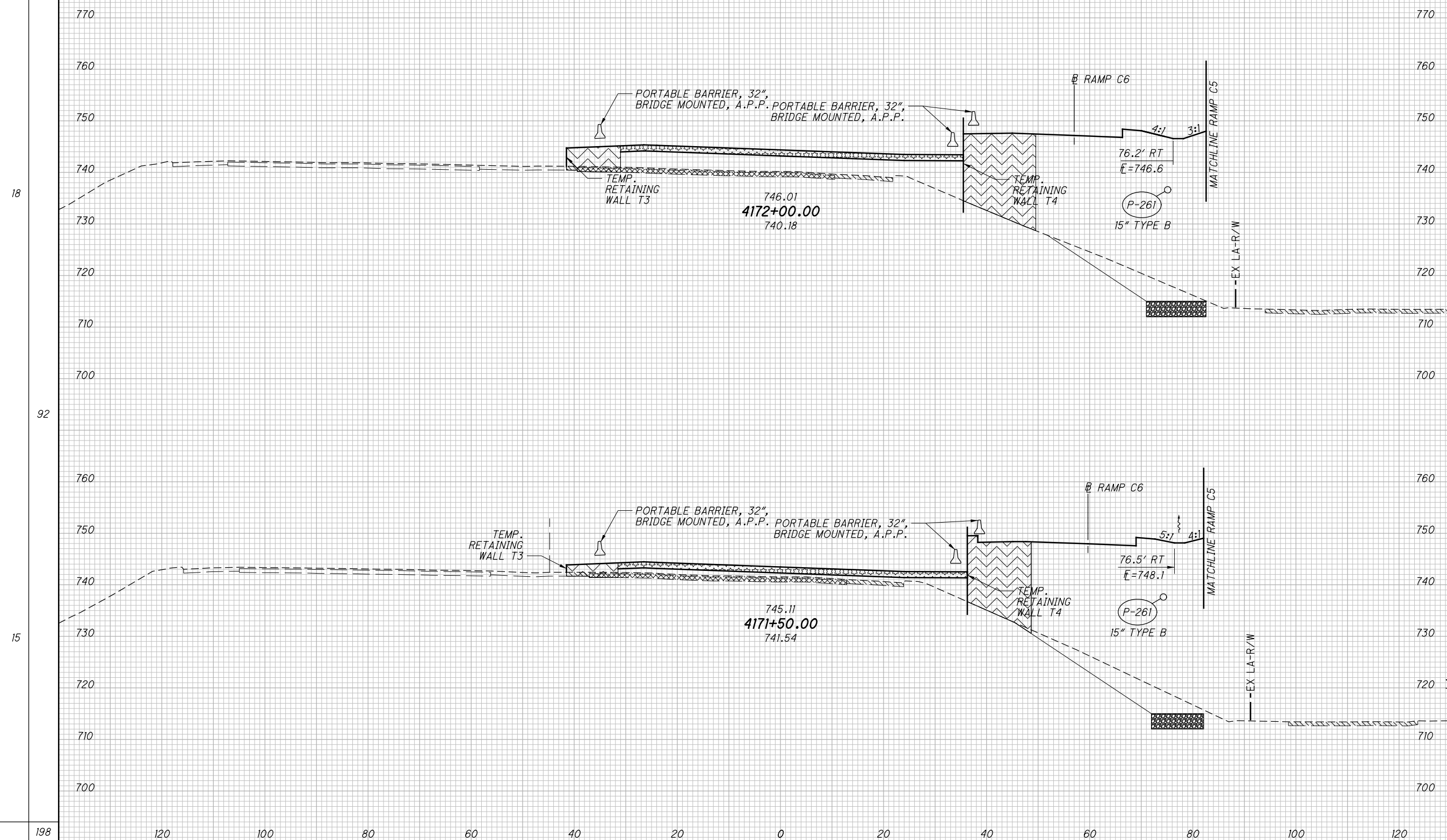
-  SELECT GRANULAR BACKFILL PER SS840 (INCLUDED IN WALL QUANTITIES)
-  ITEM 206 - CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT

END AREA	VOLUME	CALCULATED	CHECKED				
				CUT	FILL	CUT	FILL
114	[2277]	213	[25333]				
138	[1137]	233	[2235]				
446	[4768]						

**CROSS SECTIONS I-70 EASTBOUND  
STA. 4171+50.00 TO STA. 4172+00.00**

**FRA -70/ 71-12.68 / 14.86**

398  
1815



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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

[#] ITEM 203 - GRANULAR EMBANKMENT

LOAD TRANSFER PLATFORM  
(INCLUDED WITH RETAINING WALL  
ITEM 203 - ROADWAY, MISC.: COLUMN  
SUPPORTED WALLS)

ITEM 202 - PAVEMENT REMOVED

ITEM 202 - PAVEMENT REMOVED, ASPHALT

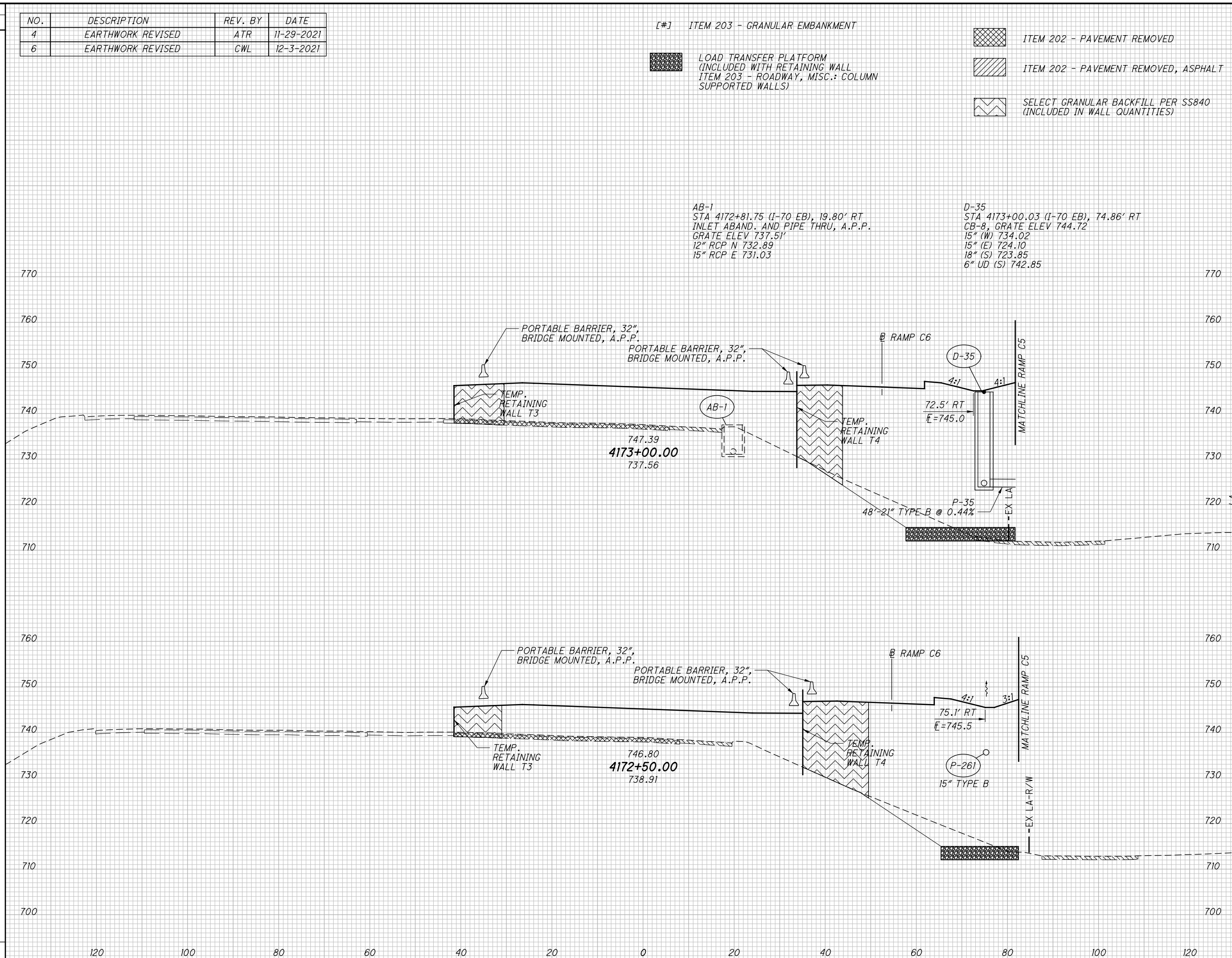
SELECT GRANULAR BACKFILL PER SS840  
(INCLUDED IN WALL QUANTITIES)

END AREA	VOLUME	CALCULATED	CHECKED		
				CUT	FILL
111 [1725]	231 [3335]				
116 [1459]	210 [2948]				
441 [6283]					

AB-1  
STA 4172+81.75 (I-70 EB), 19.80' RT  
INLET ABAND. AND PIPE THRU, A.P.P.  
GRATE ELEV 737.51'  
12" RCP N 732.89  
15" RCP E 731.03

D-35  
STA 4173+00.03 (I-70 EB), 74.86' RT  
CB-8, GRATE ELEV 744.72'  
15" (W) 734.02  
15" (E) 724.10  
18" (S) 723.85  
6" UD (S) 742.85

122  
22  
117  
20  
239



CROSS SECTIONS I-70 EASTBOUND  
STA. 4172+50.00 TO STA. 4173+00.00

FRA - 70/ 71-12.68 / 14.86

399  
1815

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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

[#] ITEM 203 - GRANULAR EMBANKMENT

LOAD TRANSFER PLATFORM  
(INCLUDED WITH RETAINING WALL  
ITEM 203 - ROADWAY, MISC.: COLUMN  
SUPPORTED WALLS)

ITEM 202 - PAVEMENT REMOVED

ITEM 202 - PAVEMENT REMOVED, ASPHALT

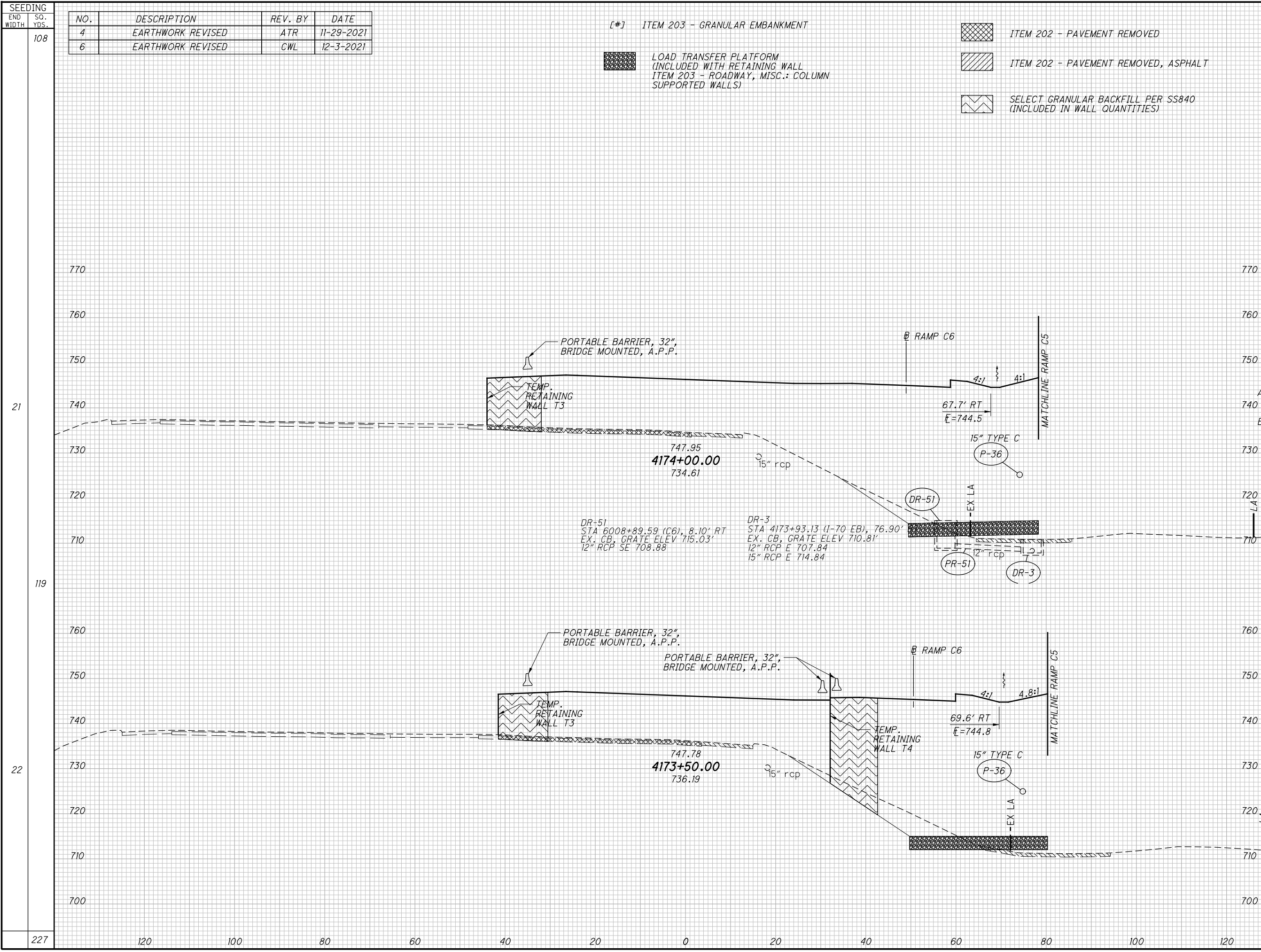
SELECT GRANULAR BACKFILL PER SS840  
(INCLUDED IN WALL QUANTITIES)

END AREA	VOLUME		CALCULATED	CHECKED	
	CUT	FILL			ATR
			110	[414]	
			180	[3553]	
			138	[1877]	
			290	[7694]	

CROSS SECTIONS I-70 EASTBOUND  
STA. 4173+50.00 TO STA. 4174+00.00

FRA -70/ 71-12.68 / 14.86

400  
1815



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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

[#] ITEM 203 - GRANULAR EMBANKMENT      "# ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN

LOAD TRANSFER PLATFORM (INCLUDED WITH RETAINING WALL ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS)

SELECT GRANULAR BACKFILL PER SS840 (INCLUDED IN WALL QUANTITIES)

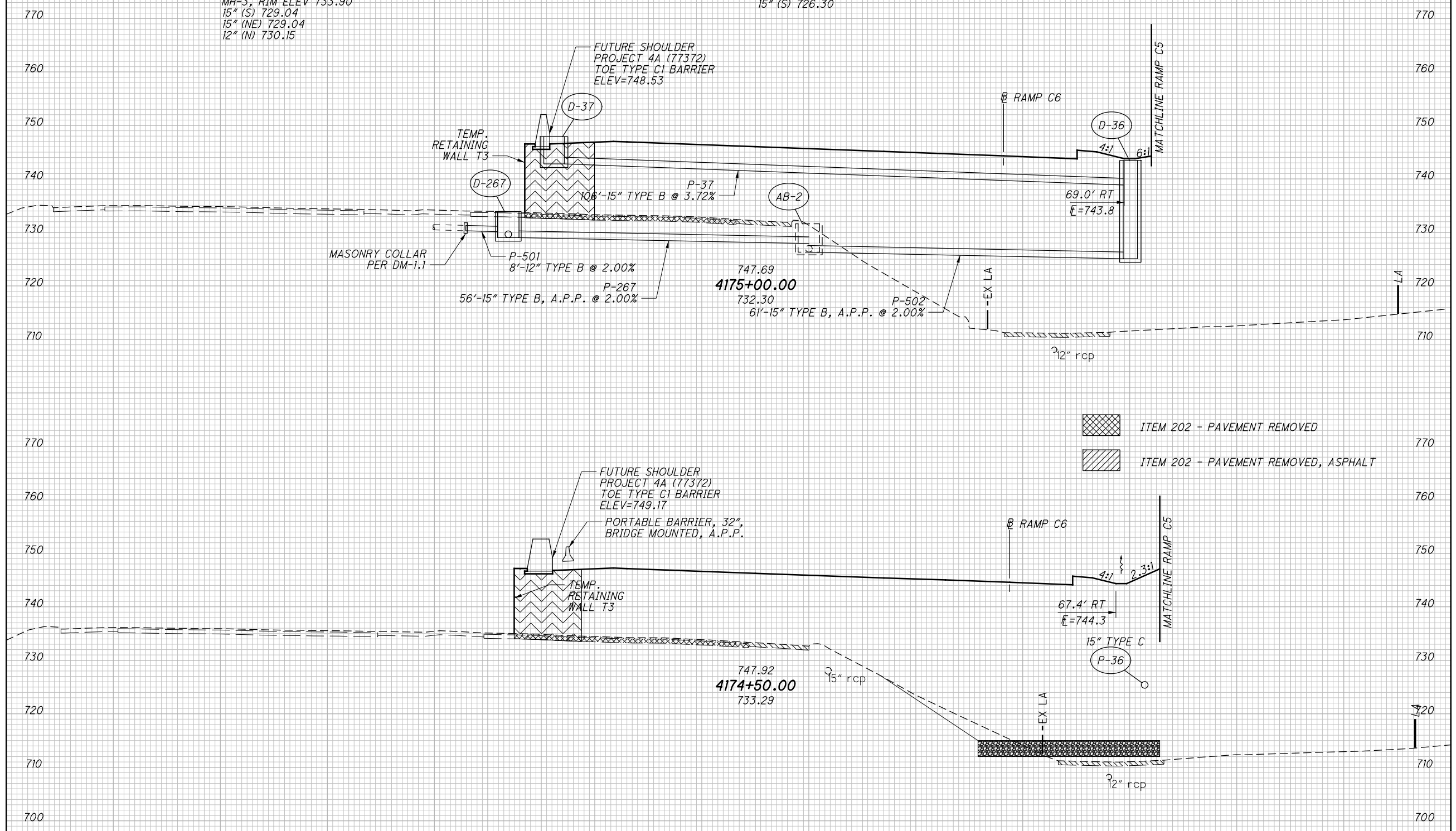
SUSPEND ITEM 203 - GRANULAR EMBANKMENT AH 0 "2409"  
START ITEM 203 - GRANULAR EMBANKMENT, A.P.P. BK 0 [2409]  
STA. 4175+43.32

D-37  
STA 4175+16.35 (I-70 EB), 36.95' LT  
I-3-C1, A.P.P.  
GRATE ELEV 747.91  
15" (S) 742.81  
6" UD (W) 745.20  
6" UD (E) 745.00

AB-2  
STA 4175+04.27 (I-70 EB), 10.27' RT  
INLET ABAND. AND PIPE THRU, A.P.P.  
GRATE ELEV 731.63  
EX. 15" RCP E 726.30  
EX. 15" RCP W 726.63  
15" (N) 727.91  
15" (S) 726.30

D-36  
STA 4175+14.90 (I-70 EB), 70.11' RT  
CB-8, GRATE ELEV 743.45  
15" (NW) 725.08  
15" (N) 738.87  
15" (W) 725.08  
6" UD (N) 740.12

D-267  
STA 4174+99.46 (I-70 EB), 46.17' LT  
MH-3, RIM ELEV 733.90  
15" (S) 729.04  
15" (NE) 729.04  
12" (N) 730.15



END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
	0	1820"		
	0	[2409]		
	0	[3865]		
	0	[2409]		
	58	[4337]		
	63	[2275]		
	58	[8202]	1820"	

CROSS SECTIONS I-70 EASTBOUND  
STA. 4174+50.00 TO STA. 4175+00.00




FRA - 70/ 71-12.68 / 14.86

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1815

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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

-  SELECT GRANULAR BACKFILL PER SS840 (INCLUDED IN WALL QUANTITIES)
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT

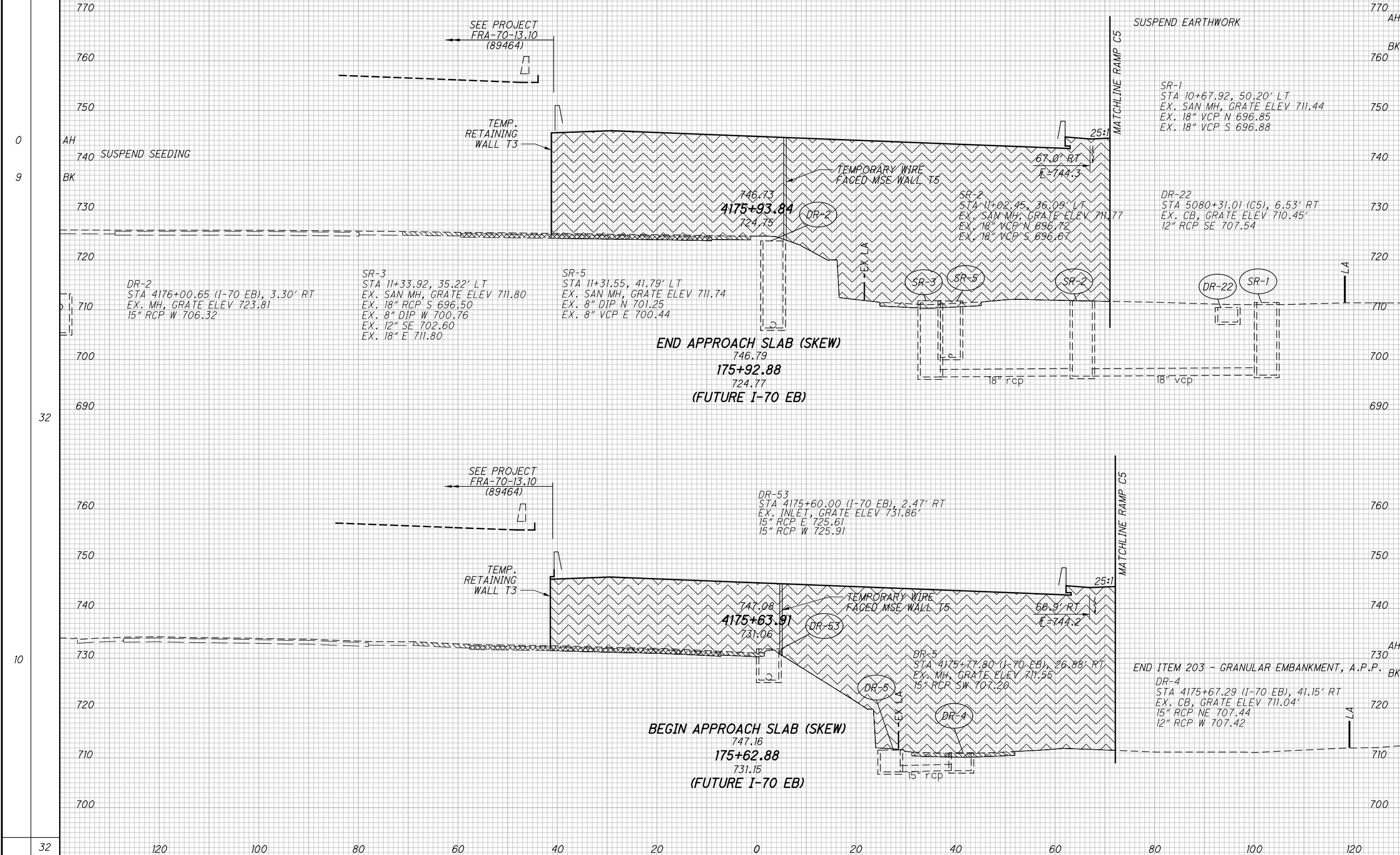
## ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN

END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
770	0	0		
760	0	0		
750				
740				
730				
720				
710				
700				
690				
760	0	0		
750				
740				
730				
720				
710				
700				
730	0	0		
720				
710				
700				
700				

CROSS SECTIONS I-70 EASTBOUND  
STA. 4175+63.96 TO STA. 4175+93.88

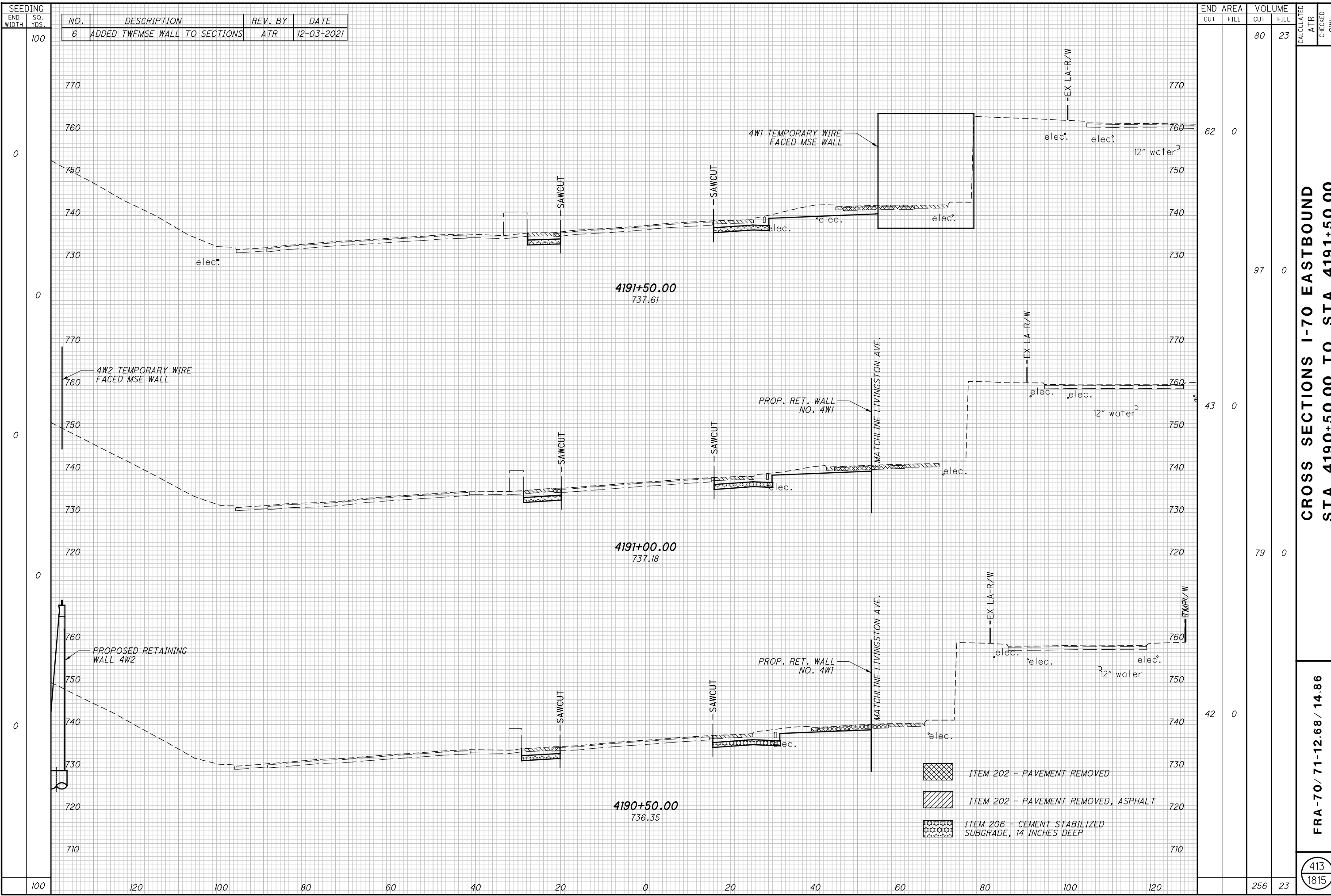
FRA-70/71-12.68/14.86

402  
1815



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**CROSS SECTIONS I-70 EASTBOUND  
 STA. 4190+50.00 TO STA. 4191+50.00**






**FRA-70/71-12.68 / 14.86**

413  
1815

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SEEDING	END WIDTH		SO. YDS.
	NO.	WIDTH	
	24	156	
	17	114	
	78	78	
	11	348	

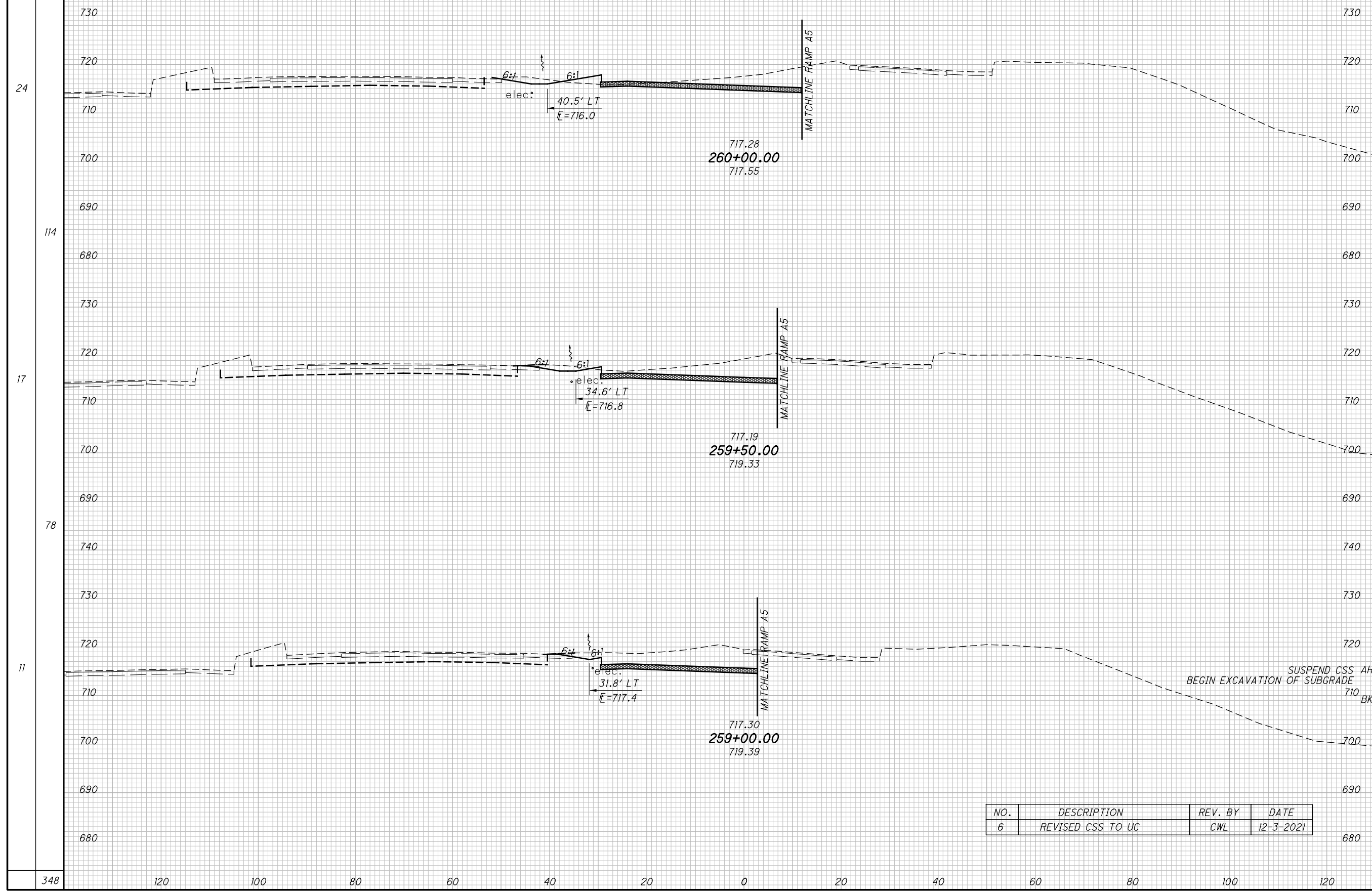
# ITEM 204 - EXCAVATION OF SUBGRADE  
 ITEM 204 - GRANULAR MATERIAL, TYPE B

-  ITEM 204 - EXCAVATION OF SUBGRADE
-  ITEM 204 - GRANULAR MATERIAL, TYPE B
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT
-  FRA-71-9.74 (93497)

END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
63 '41'	14 '41'	97 '82'	64 '82'	
88 '36'	1 '36'	139 '71'	13 '71'	
109 '32'	0 '32'	182 '63'	1 '63'	
418 '216'	78 '216'			

**CROSS SECTIONS - I-71 NORTHBOUND**  
**STA. 259+00.00 TO STA. 260+00.00**  
**FRA-70/71-12.68/14.86**

434  
1815



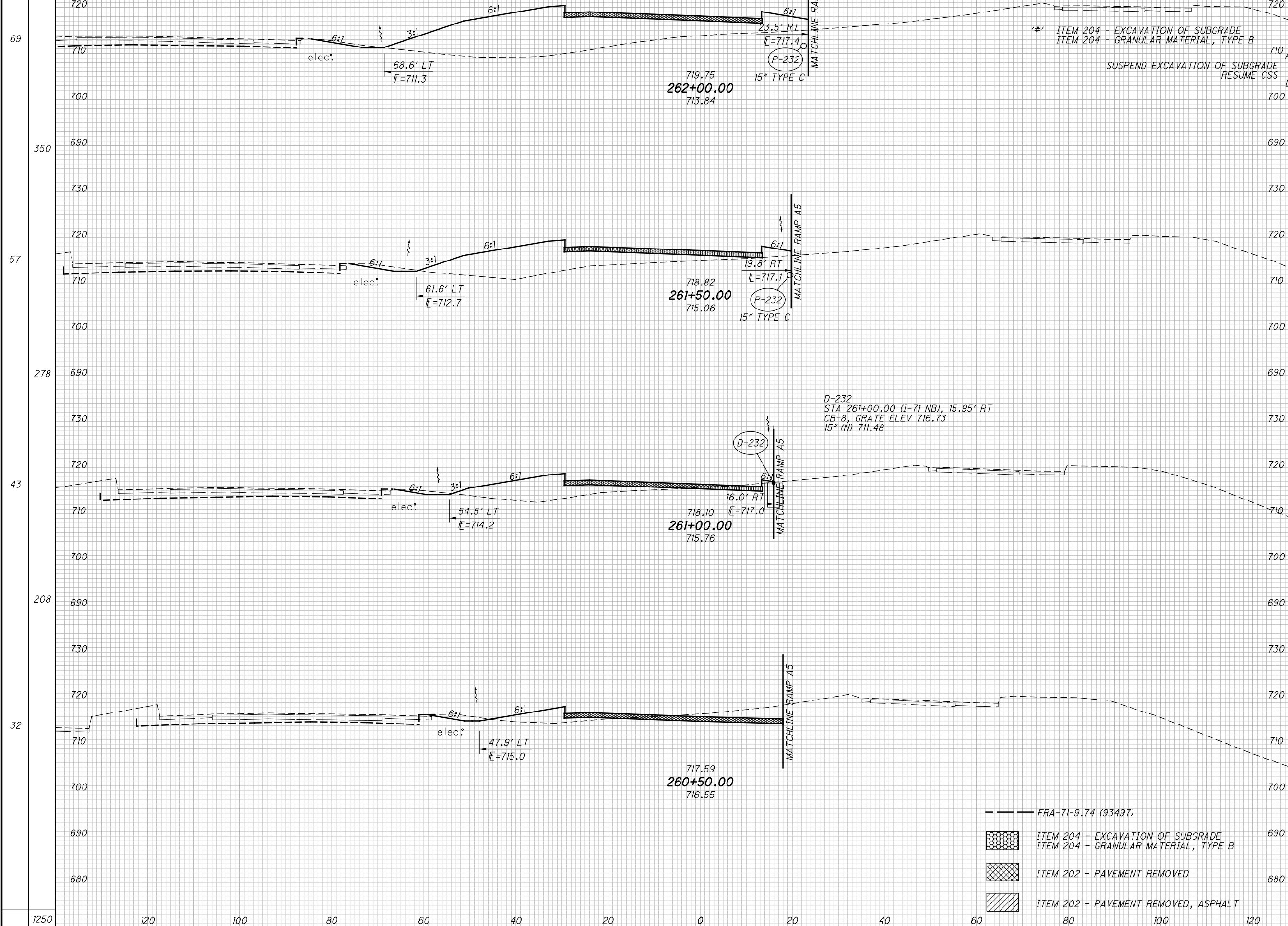
NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

SUSPEND CSS AH  
 BEGIN EXCAVATION OF SUBGRADE  
 BK '0' '0'

SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

END AREA VOLUME  
CUT FILL CUT FILL  
CALCULATED ATR CHECKED CWL



CROSS SECTIONS - I-71 NORTHBOUND  
STA. 260+50.00 TO STA. 262+00.00

FRA-70/71-12.68/14.86

435  
1815

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- FRA-71-9.74 (93497)
- ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B
- ITEM 202 - PAVEMENT REMOVED
- ITEM 202 - PAVEMENT REMOVED, ASPHALT

SEEDING  
END WIDTH SO. YDS.

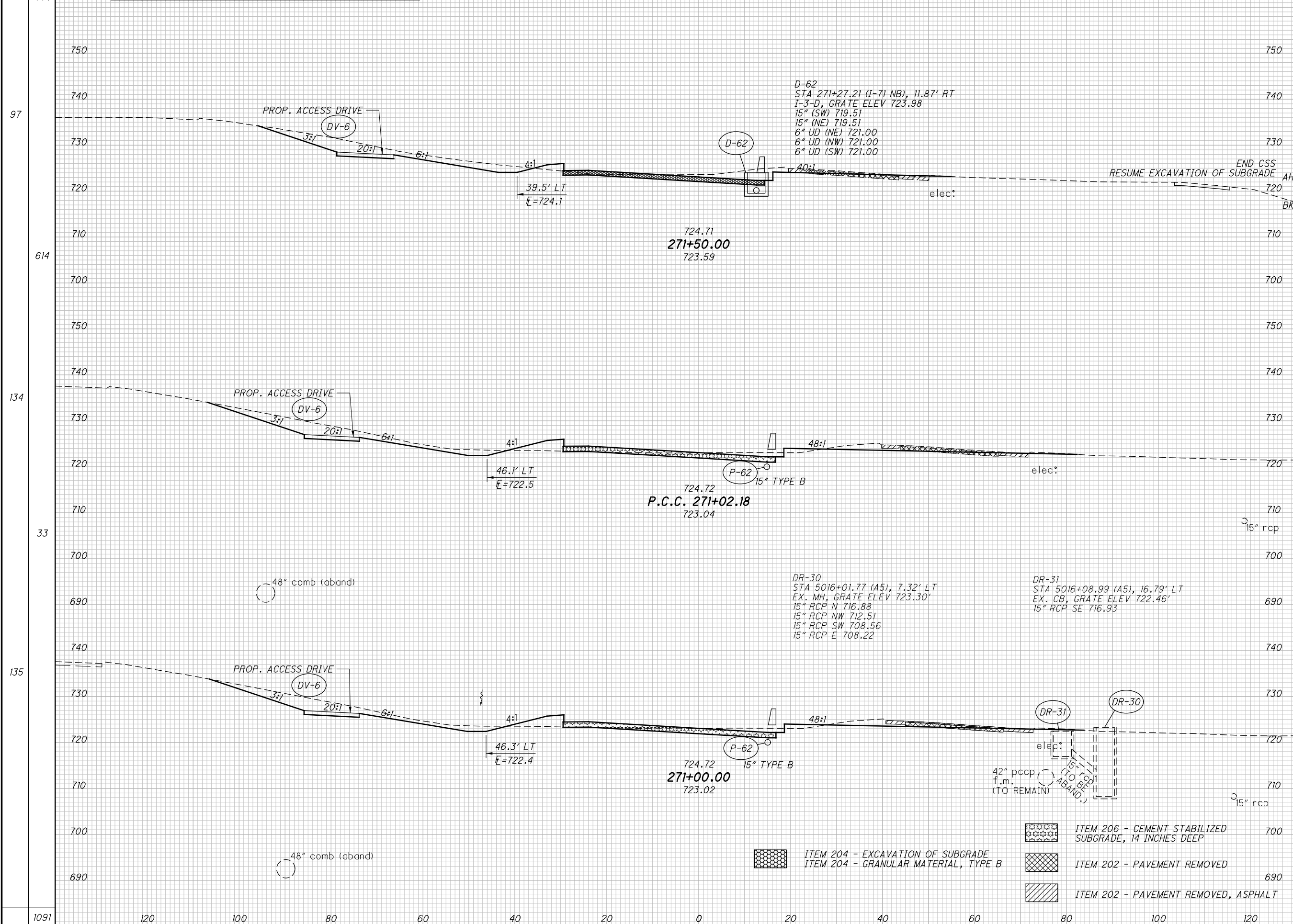
NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

'#/' ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

END AREA	VOLUME	CALCULATED	CHECKED		
				CUT	FILL
129	33				
'44'	'44'				
'0'	'0'				
123	58				
10	5				
120	59				
455	136	442	1815		
'82'	'82'				

CROSS SECTIONS - I-71 NORTHBOUND  
STA. 271+00.00 TO STA. 271+50.00

FRA - 70/ 71-12.68 / 14.86



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SEEDING	
END WIDTH	SO. YDS.
45	208
47	19
47	283
63	510

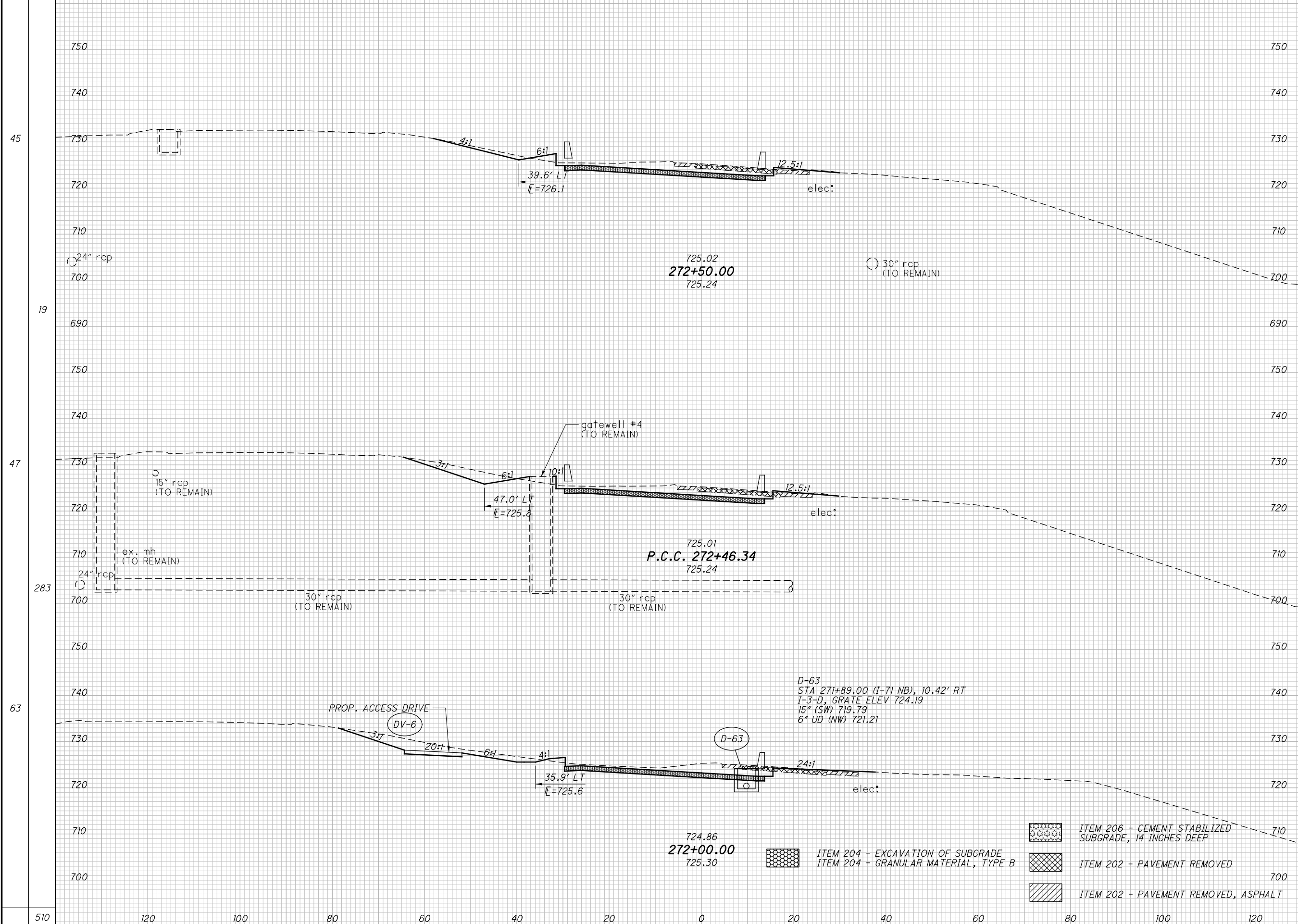
NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

#' ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

END AREA	VOLUME	CALCULATED	CHECKED				
				CUT	FILL	CUT	FILL
55 '44'	14 '44'	105 '84'	13 '84'				
9 '6'	2 '6'						
78 '44'	18 '44'	162 '76'	33 '76'				
111 '44'	21 '44'						
		276 '166'	48 '166'				

CROSS SECTIONS - I-71 NORTHBOUND  
 STA. 272+00.00 TO STA. 272+50.00  
 FRA - 70 / 71 - 12.68 / 14.86

443  
1815







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SEEDING

END SO. NO. WIDTH YDS. 0 7 9 108 30 115

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

# ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

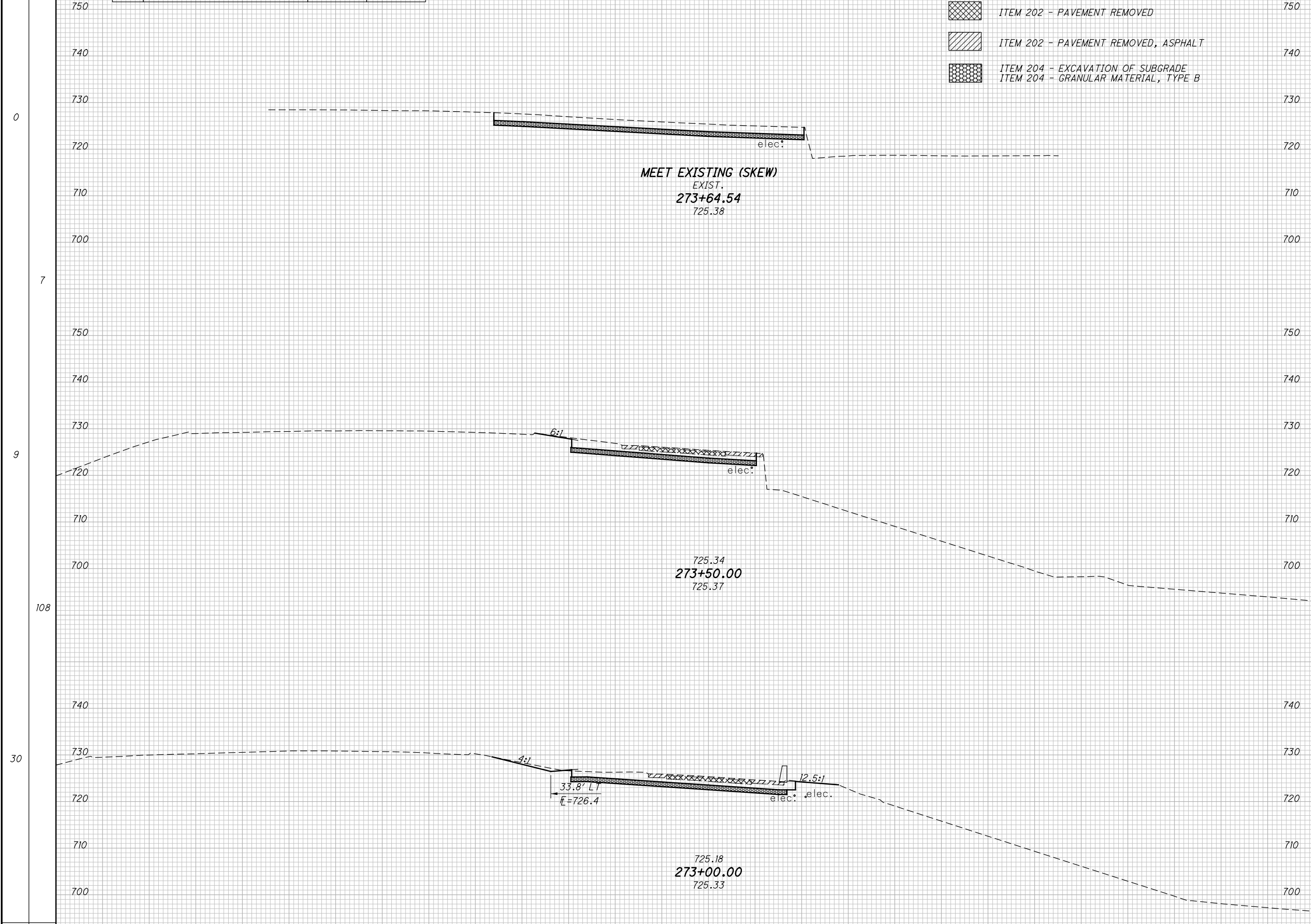
-  ITEM 206 - CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT
-  ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		
47	0	24	0	115	1
'67'	'67'	'29'	'29'		
40	1	91	1		
'40'	'40'	'81'	'81'	115	1
58	0	115	0	115	1
'47'	'47'	'110'	'110'	444	1815

CROSS SECTIONS - I-71 NORTHBOUND  
STA. 273+00.00 TO STA. 273+64.54

FRA -70/ 71-12.68/ 14.86

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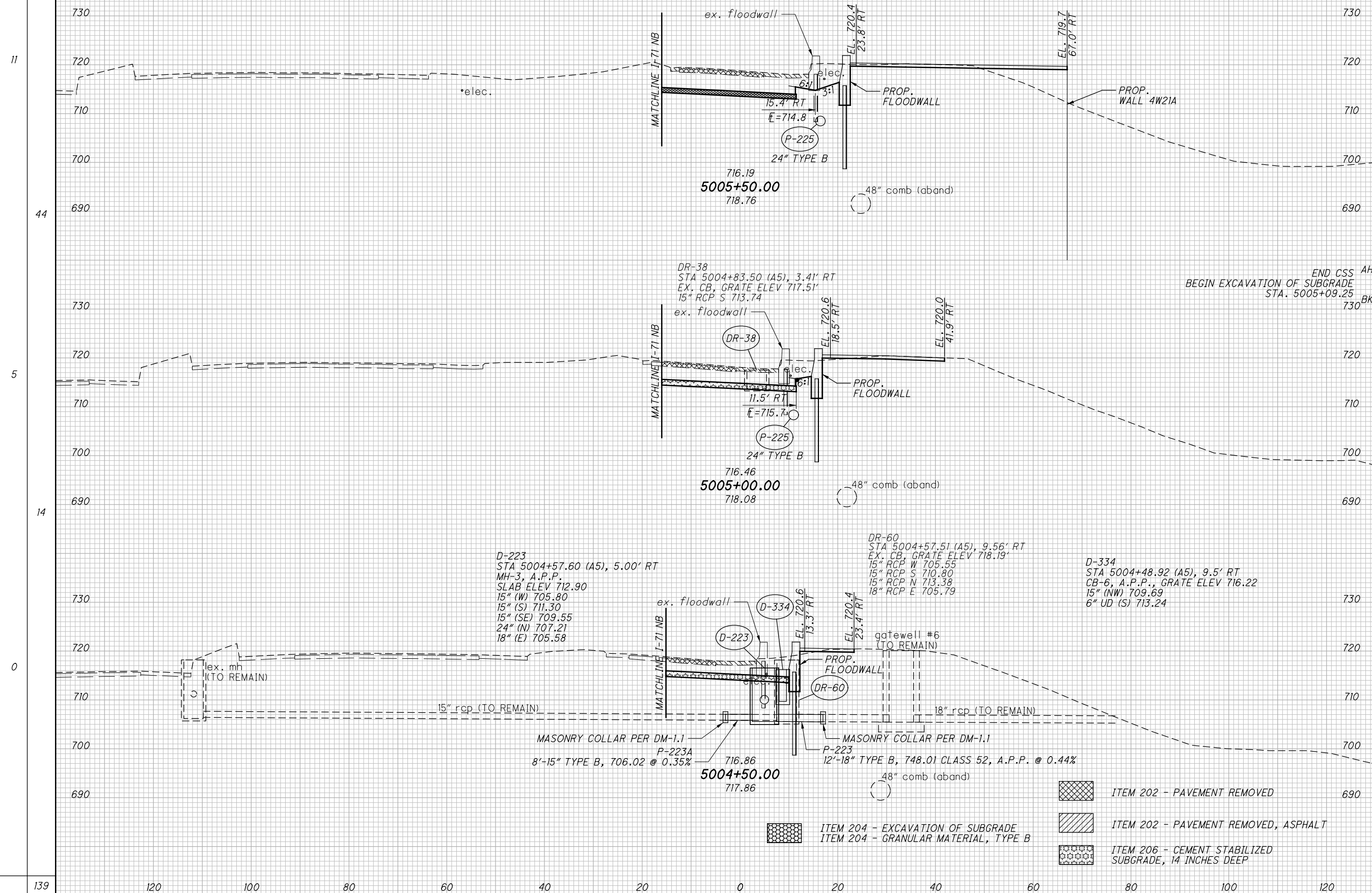


SEEDING  
END WIDTH SO. YDS.  
81

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

#1 ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		
		339	84		
		'52'	'52'		



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		
160	56				
'28'	'28'				
		'42'	'42'		
		256	53		
		'28'	'28'		
		'0'	'0'		
117	1				
		181	2		
78	1				
		776	139		
		'94'	'94'		

CROSS SECTIONS - RAMP A5  
STA. 5004+50.00 TO STA. 5005+50.00

FRA - 70 / 71 - 12.68 / 14.86

446

1815

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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

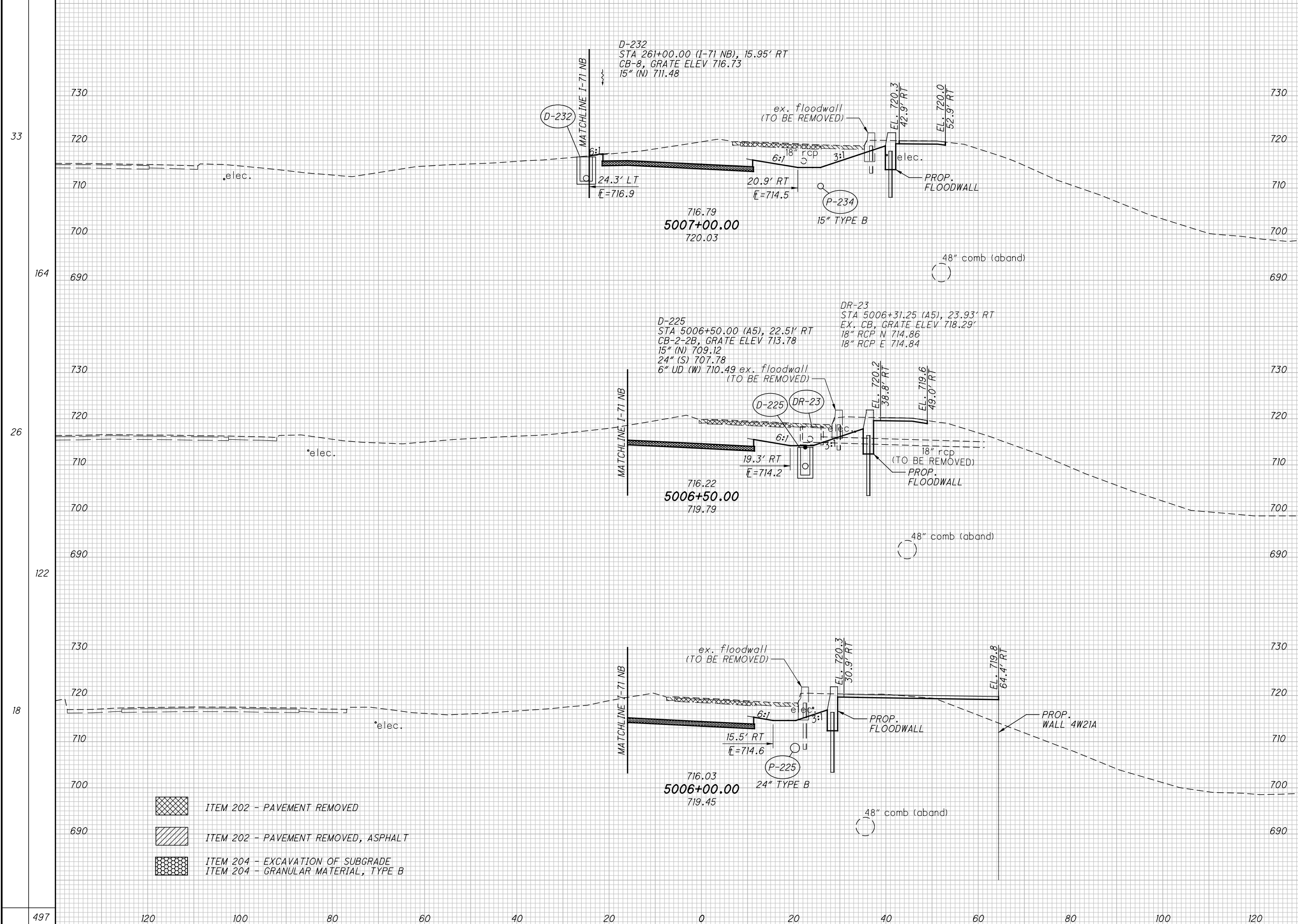
'#' ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
224	0	0	334	12
'33'	'33'	'59'	'59'	'59'
426	0	0	447	44
'57'	'57'	'57'	1815	'168'
410	32	32		
'52'	'52'	'52'		
207	35	35		
'28'	'28'	'28'		
1170	44	44		
'168'	'168'	'168'		

CROSS SECTIONS - RAMP A5  
STA. 5006+00.00 TO STA. 5007+00.00

FRA - 70/ 71-12.68 / 14.86




447  
1815

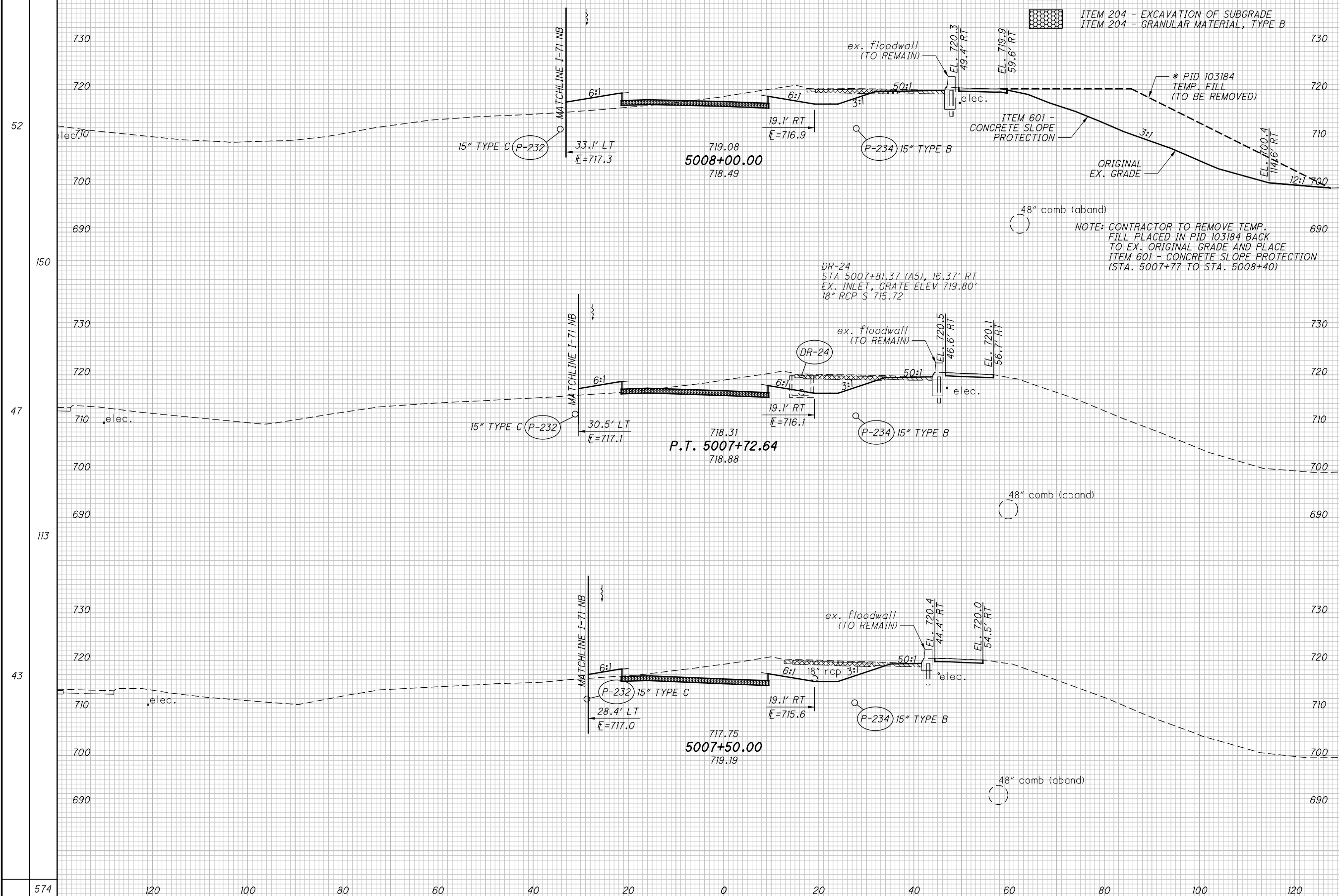


SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

# ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT
-  ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B



END AREA	VOLUME	CALCULATED	CHECKED	CWL					
					CUT	FILL	CUT	FILL	
73 '31'	52 '31'	91	186	57	57				
106 '31'	26 '31'	91	40	31	31				
137 '31'	13 '31'	102	16	26	26				
1177 '114'	242 '114'	1177	242	114	114				

**CROSS SECTIONS - RAMP A5**  
**STA. 5007+50.00 TO STA. 5008+00.00**

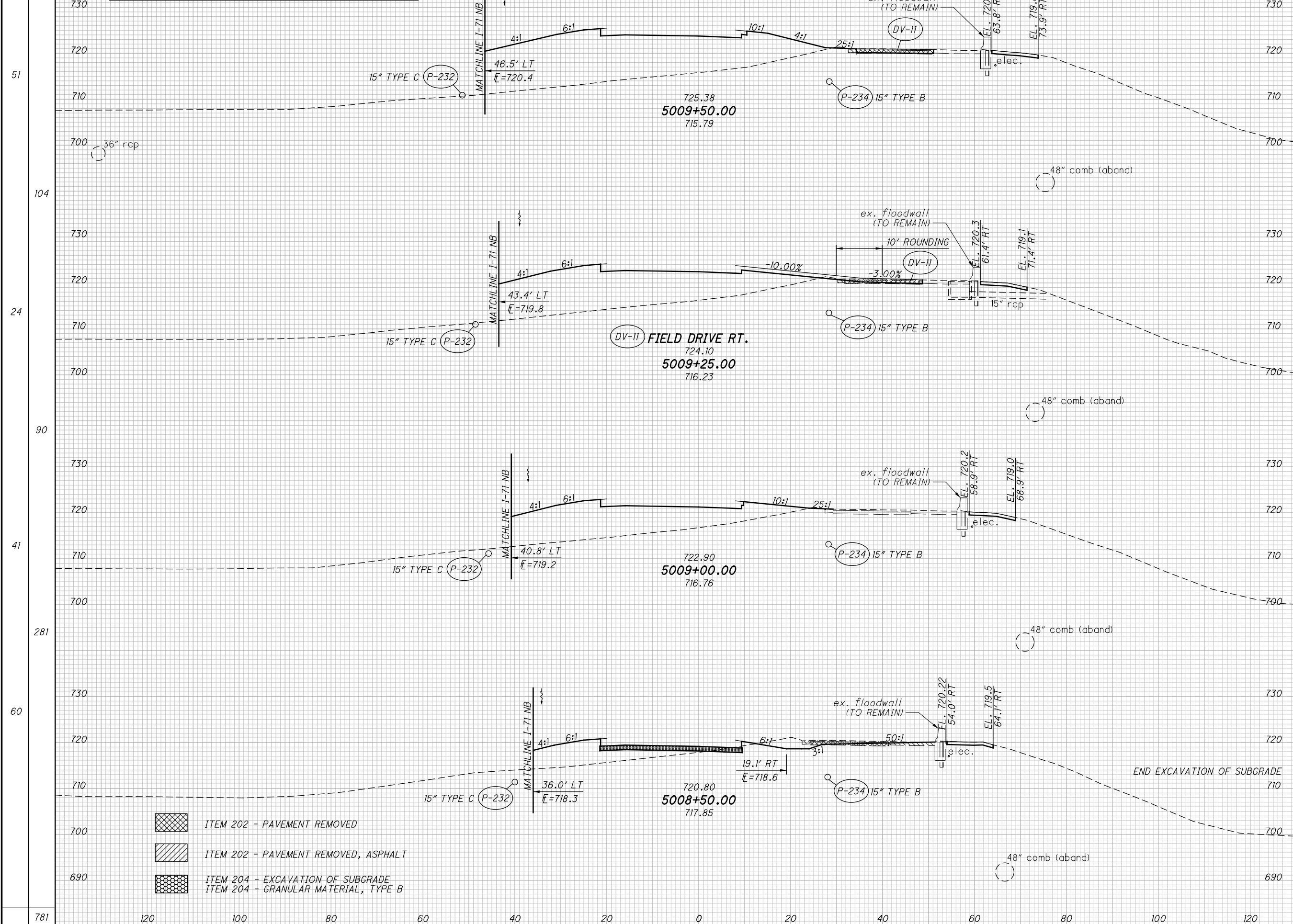
**FRA -70/ 71-12.68 / 14.86**

448  
1815

SEEDING
END WIDTH
SO. YDS.
306
51
104
24
90
41
281
60
781

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED CSS TO UC	CWL	12-3-2021

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		
		18	1399		
7	624				
7	506				
8	468				
7	376				
7	344				
30	456				
25	148				
62	2737				



- ITEM 202 - PAVEMENT REMOVED
- ITEM 202 - PAVEMENT REMOVED, ASPHALT
- ITEM 204 - EXCAVATION OF SUBGRADE  
ITEM 204 - GRANULAR MATERIAL, TYPE B

**CROSS SECTIONS - RAMP A5  
STA. 5008+50.00 TO STA. 5009+50.00**

**FRA-70/71-12.68/14.86**

449  
1815

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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
1	UPDATED HATCH LEGEND	CWL	11-5-2021
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

- GRANULAR BACKFILL, TYPE B (INCLUDED IN WALL QUANTITIES)
- LOAD TRANSFER PLATFORM (INCLUDED WITH RETAINING WALL ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS)
- ITEM 202 - PAVEMENT REMOVED
- ITEM 202 - PAVEMENT REMOVED, ASPHALT

- SELECT GRANULAR BACKFILL PER SS840 (INCLUDED IN WALL QUANTITIES)
- ITEM 203 - GRANULAR MATERIAL, TYPE C (INCLUDED IN THE WALL QUANTITIES)

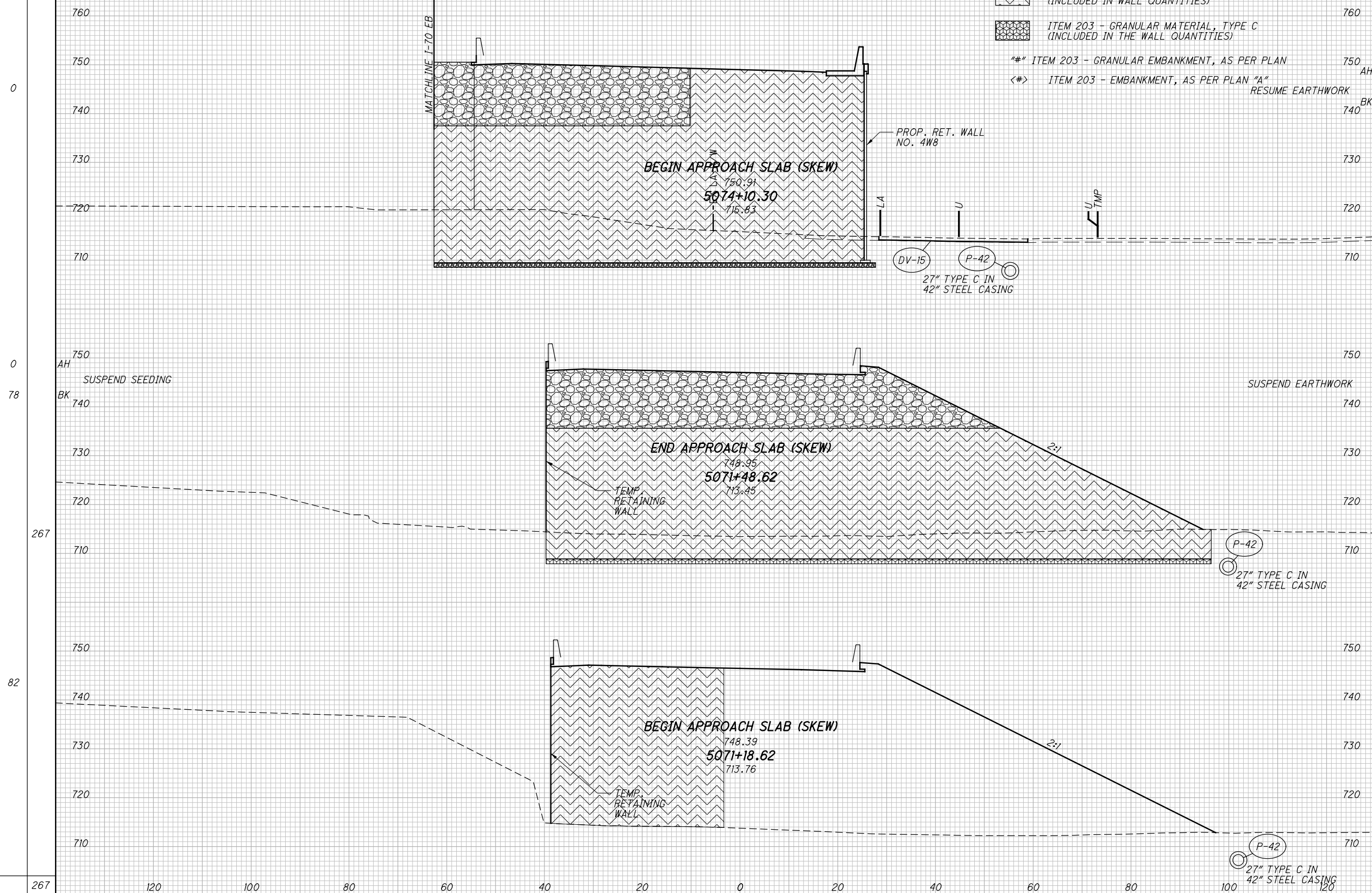
- "#" ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN
- <#> ITEM 203 - EMBANKMENT, AS PER PLAN "A" RESUME EARTHWORK

END AREA	VOLUME	CALCULATED	CHECKED				
				CUT	FILL	CUT	FILL
		99	'461'				
0	<0>						
20	<0>						
0	<0>						
0	<1258>						
0	<2265>						
99	'461'	485	1815				

CROSS SECTIONS - RAMP C5  
STA. 5071+18.62 TO STA. 5074+10.30

FRA - 70/ 71-12.68 / 14.86





485  
1815



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SEEDING  
END WIDTH SO. YDS.

NO.	DESCRIPTION	REV. BY	DATE
1	UPDATED HATCH LEGEND	CWL	11-5-2021
4	EARTHWORK REVISED	ATR	11-29-2021
6	EARTHWORK REVISED	CWL	12-3-2021

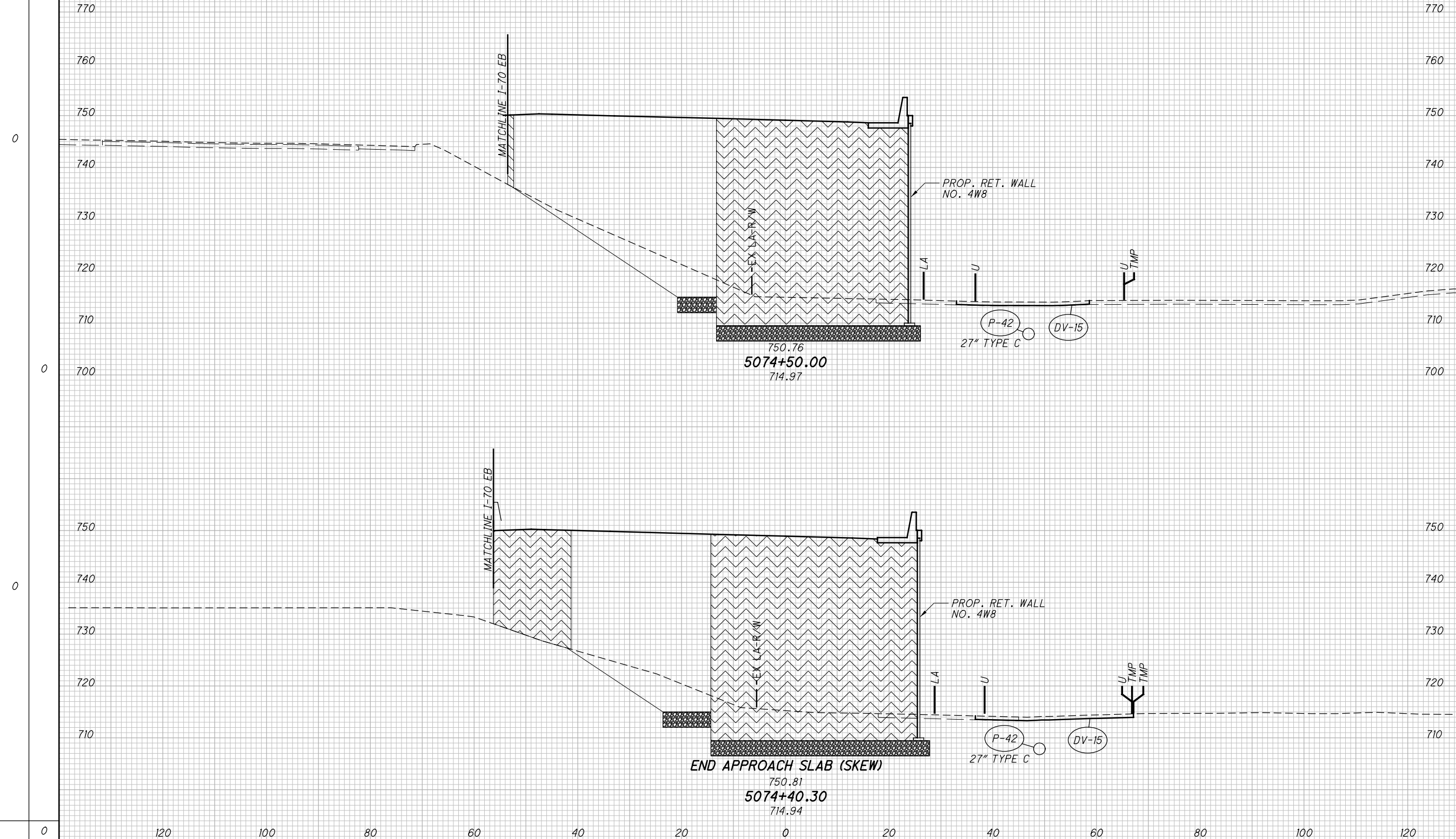
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 202 - PAVEMENT REMOVED, ASPHALT
- "#" ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN
-  SELECT GRANULAR BACKFILL PER SS840 (INCLUDED IN WALL QUANTITIES)
-  LOAD TRANSFER PLATFORM (INCLUDED WITH RETAINING WALL ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS)

END AREA	VOLUME	CALCULATED	CHECKED						
				CUT	FILL	CUT	FILL	ATR	CWL
				220	*1204*				
175	*1033*			60	*335*				
159	*830*								
				280	*1539*				

**CROSS SECTIONS - RAMP C5**  
**STA. 5074+40.30 TO STA. 5074+50.00**

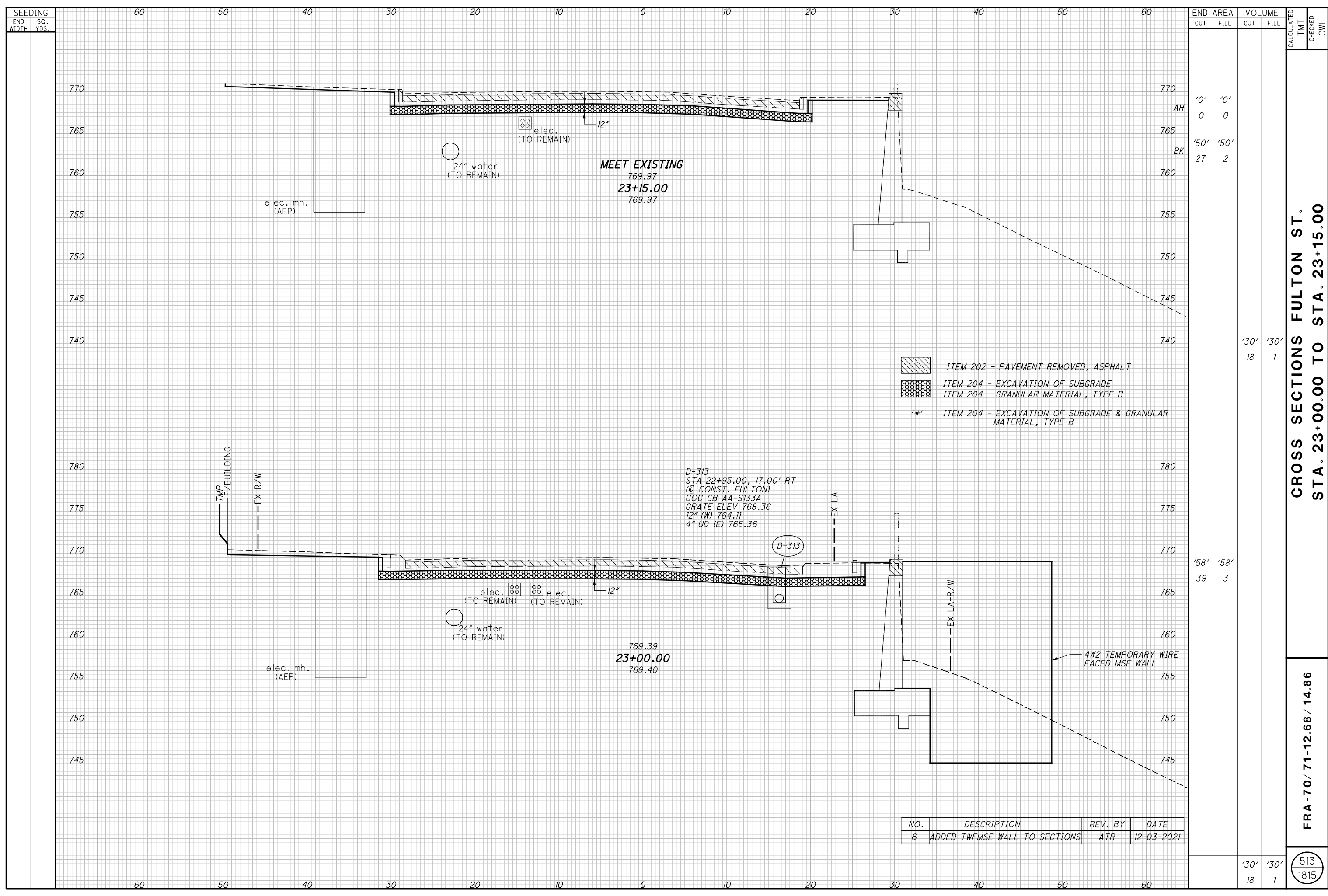
**FRA - 70/ 71-12.68 / 14.86**

486  
 1815



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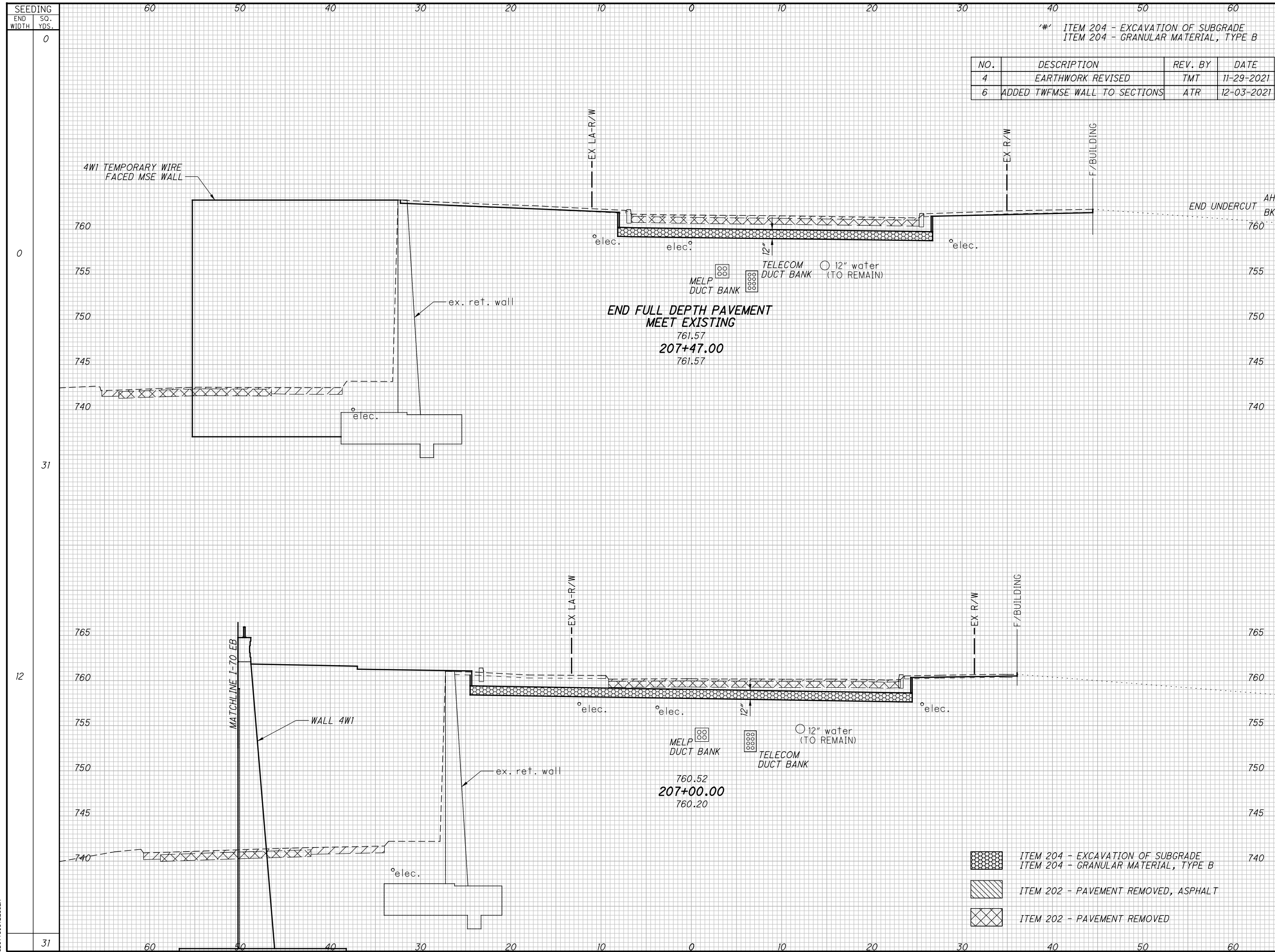
NO.	DESCRIPTION	REV. BY	DATE
6	ADDED TWFMSE WALL TO SECTIONS	ATR	12-03-2021

END STA.	AREA		VOLUME		CALCULATED	TMT	CHECKED	CWL
	CUT	FILL	CUT	FILL				
23+00.00	0'	0'	0	0				
23+15.00	50'	50'	27	2				
23+30.00	30'	30'	18	1				
23+45.00	58'	58'	39	3				
23+60.00	30'	30'	18	1				

**CROSS SECTIONS FULTON ST.  
 STA. 23+00.00 TO STA. 23+15.00**

**FRA - 70 / 71 - 12.68 / 14.86**

513  
 1815



# ITEM 204 - EXCAVATION OF SUBGRADE  
 ITEM 204 - GRANULAR MATERIAL, TYPE B

NO.	DESCRIPTION	REV. BY	DATE
4	EARTHWORK REVISED	TMT	11-29-2021
6	ADDED TWFMSE WALL TO SECTIONS	ATR	12-03-2021

END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
'0'	'0'	'0'		
'35'	'35'	'35'		
22	2			
	'73'	'73'		
44	65			
	'49'	'49'		
28	73			
	'73'	'73'		
45	65			

**CROSS SECTIONS LIVINGSTON AVENUE  
 STA. 207+00.00 TO STA. 207+47.00**

**FRA-70/71-12.68/14.86**

521  
 1815

**ITEM 511 CLASS QC1 CONCRETE, MISC.: SUPPORT BRACKET AND DRILLED SHAFT CAP (4W1, 4W2)**

THIS ITEM SHALL INCLUDE THE CONSTRUCTION OF THE CONCRETE SUPPORT BRACKETS AND CAP OVERLAYING THE TOP OF THE TANGENT AND NON-TANGENT DRILLED SHAFTS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH CMS 511.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE APPROPRIATE CONCRETE ITEM BY THE NUMBER OF CUBIC YARDS DETERMINED BY CALCULATIONS FROM PLAN DIMENSION, IN PLACE, COMPLETED AND ACCEPTED.

PAYMENT: ALL LABOR EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 511-CLASS QC1 CONCRETE, MISC.: SUPPORT BRACKET AND DRILLED SHAFT CAP.

**DRILLED SHAFTS (4W1, 4W2, 4W4)**

CONCRETE FOR THE DRILLED SHAFTS: (4W4) THE COARSE AGGREGATE SIZE FOR ALL DRILLED SHAFTS SHALL BE A MAXIMUM OF NO. 67.

LOADS: THE MAXIMUM FACTORED LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS INDICATED IN THE TABLES BELOW FOR EACH SHAFT SIZE. THIS LOAD IS RESISTED BY SIDE AND TIP RESISTANCE AS NOTED HERE.

FOR THE WALL 4W1 60" DIAMETER NON-TANGENT DRILLED SHAFTS, THE SIDE RESISTANCE IS ASSUMED TO ACT ALONG THE MIDDLE 20 FEET OF THE SHAFT. FOR THE WALL 4W1 72" DIAMETER TANGENT SHAFTS, THE SIDE RESISTANCE IS NEGLECTED.

WALL 4W1				
SHAFT SIZE (DIAMETER)	SHAFT ID	MAX. FACTORED LATERAL LOAD (KIPS)	FACTORED SIDE RESIST. (KIPS)	FACTORED TIP RESIST. (KIPS)
60"	#1 TO #13	160	494	589
72"	#14 TO #29	561	-	848
72"	#30	713	-	848
72"	#31	832	-	848

FOR THE WALL 4W2 60" AND 96" DIAMETER TANGENT DRILLED SHAFTS, THE SIDE RESISTANCE IS NEGLECTED.

WALL 4W2				
SHAFT SIZE (DIAMETER)	SHAFT ID	MAX. FACTORED LATERAL LOAD (KIPS)	FACTORED SIDE RESIST. (KIPS)	FACTORED TIP RESIST. (KIPS)
60"	#22	235	-	588
96"	#1	708	-	1509
96"	#2	725	-	1509
96"	#3 TO #21	892	-	1509
96"	#23 TO #38	1051	-	1509

THE DESIGN OF THE WALL AND TANGENT DRILLED SHAFTS IS GOVERNED BY LATERAL SOIL PRESSURE AND LIVE LOAD SURCHARGE ACTING ON THE SHAFTS. AXIAL LOAD IS NEGLIGIBLE. RESISTANCE IS PROVIDED THROUGH LATERAL SOIL RESISTANCE AND EMBEDMENT OF THE DRILLED SHAFTS. THE MAXIMUM FACTORED LATERAL LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS INDICATED IN THE TABLE BELOW FOR EACH SHAFT SIZE. TIP RESISTANCE IS PROVIDED FOR THE MINIMAL AXIAL LOADS THAT ARE PRESENT, AS INDICATED IN THE TABLE. SIDE RESISTANCE IS NEGLECTED.

WALL 4W4				
SHAFT SIZE (DIAMETER)	SHAFT ID	MAX. FACTORED LATERAL LOAD (KIPS)	FACTORED SIDE RESIST. (KIPS)	FACTORED TIP RESIST. (KIPS)
60"	#1 TO #30	148	-	589
42"	#31 TO #53	75	-	289

**ITEM 511 CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL (4W1, 4W2)**

THIS ITEM SHALL INCLUDE THE CONSTRUCTION OF THE CONCRETE WALL AT THE LOCATIONS INDICATED IN THE PLANS FOR WALLS 4W1 AND 4W2. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH CMS 511. THE SHEAR STUDS INSTALLATION SHALL BE IN ACCORDANCE WITH ITEM 513.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE APPROPRIATE CONCRETE ITEM BY THE NUMBER OF CUBIC YARDS DETERMINED BY CALCULATIONS FROM PLAN DIMENSION, IN PLACE, COMPLETED AND ACCEPTED.

PAYMENT: ALL LABOR EQUIPMENT AND MATERIALS INCLUDING THE SHEAR STUDS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 511-CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL.

- ITEM 524 DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN: (4W4)
- ITEM 524 DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN: (4W1, 4W4)
- ITEM 524 DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN: (4W1)
- ITEM 524 DRILLED SHAFTS, 96" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN: (4W2)

THE DRILLED SHAFT CAP AND P.E.J.F. JOINTS SHALL BE ACCURATELY PLACED ACCORDING TO THE DESIGN PLAN. IF THE LOCATIONS OF THE INSTALLED DRILLED SHAFTS VARY FROM THE DESIGN PLAN AND RESULT IN THE P.E.J.F. IN THE DRILLED SHAFT CAP FALLING OVER A DRILLED SHAFT INSTEAD OF BETWEEN SHAFTS, ALL VERTICAL SHAFT BARS INTERFERING WITH, OR CROSSING, THE CAP JOINT SHALL BE CUT FLUSH WITH THE TOP OF THE DRILLED SHAFT SO THAT BOTH SIDES OF THE CAP ARE NOT TIED TOGETHER BY SHAFT REINFORCING STEEL. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO CUTTING ANY REINFORCING STEEL. THE DEPARTMENT WILL CONSIDER THIS WORK AS INCIDENTAL AND SHALL BE INCLUDED WITH ITEM 524 FOR PAYMENT.

IN ADDITION, FOR THOSE PORTIONS OF THE DRILLED SHAFTS THAT PROJECT ABOVE EXISTING GROUND, AS IN WALL 4W2, DRILLED SHAFT CASINGS CAN BE LEFT IN PLACE FROM 2.0 FEET BELOW EXISTING GROUND UP TO THE TOP OF THE DRILLED SHAFTS. THE COST OF THE CASINGS ARE INCIDENTAL TO ITEM 524.

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NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED NOTES	DJC	12-3-2021

DESIGN AGENCY  
**GPD GROUP**  
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DATE  
 9-6-19

REVIEWED  
 T JW

STRUCTURE FILE NUMBER

DRAWN  
 MOJ

REVISED

DESIGNED  
 DGN

CHECKED  
 RHC

**RETAINING WALL GENERAL NOTES**  
 DRILLED SHAFT AND/OR PRECAST PANEL WALLS

FRA-70/71-12.68 / 14.86

PID No. 105523

8 / 14

705  
 1815

**PROPRIETARY RETAINING WALL DATA (4W5, 4W8, 4W10, 4W11)**

FOR ALL MSE WALL PORTIONS BELOW A BRIDGE ABUTMENT, THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS840 TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE A NOMINAL (I.E. UNFACTORED) HORIZONTAL STRIP LOAD DUE TO FRICTION (FR) FROM THE SUPERSTRUCTURE APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING. SEE BELOW FOR STRIP LOADS AT INDIVIDUAL WALLS/BRIDGES. THIS STRIP LOAD DOES NOT INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL. HOWEVER, THE PROPRIETARY WALL SUPPLIER SHALL INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL IN THE DESIGN CALCULATIONS.

MSE WALL	BRIDGE	NOMINAL HORIZONTAL STRIP LOAD DUE TO FRICTION
4W5	FRA-70-1373A	1.4 K/FT
	FRA-70-1373R	1.2 K/FT
4W8	FRA-70-1358A	1.7 K/FT
	FRA-70-1358R	1.8 K/FT
	FRA-70-1373A	1.4 K/FT
	FRA-70-1373R	1.2 K/FT
4W10	FRA-70-1358A	1.7 K/FT
	FRA-70-1358R	1.8 K/FT
4W11	FRA-71-1518A	2.1 K/FT

**ITEM 840 - MECHANICALLY STABILIZED EARTH WALL (4W10, 4W11, 4W12)**

CONSTRUCTION AND PAYMENT FOR THE MECHANICALLY STABILIZED EARTH (MSE) WALLS SHALL BE IN ACCORDANCE WITH SS840 EXCEPT AS MODIFIED BELOW.

FOR EACH WALL, PROVIDE MINIMUM SOIL REINFORCEMENT LENGTHS AS LISTED IN THE PLAN NOTES ON SHEET 11/14.

**ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: (4W8, 4W20)**

THE CONTRACTOR AND MANUFACTURER SHALL COMPLY WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 840, EXCEPT REFERENCES, MATERIALS, AND PAY ITEMS ASSOCIATED WITH FOUNDATION PREPARATION SHALL BE REPLACED WITH ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS.

FOR EACH WALL, PROVIDE MINIMUM SOIL REINFORCEMENT LENGTHS AS LISTED IN THE PLAN NOTES ON SHEET 11/14.

**ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: (4W5, 4W6)**

THE FOLLOWING COMPONENT ITEMS SHALL BE PROVIDED PER THE PROVISIONS OF ODOT SUPPLEMENTAL SPECIFICATION 840 - "MECHANICALLY STABILIZED EARTH WALL".

- PRECAST CONCRETE FACING PANELS
- SOIL REINFORCEMENT
- BEARING PADS
- FOUNDATION PREPARATION MATERIALS
- CONCRETE COPING
- LEVELING PAD
- CONCRETE SEALER
- PILE SLEEVES
- CAP UNIT ADHESIVE

FOR EACH WALL, PROVIDE MINIMUM SOIL REINFORCEMENT LENGTHS AS LISTED IN THE PLAN NOTES ON SHEET 11/14.

**ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: (4W5, 4W6) (CONTINUED)**

THE CONTRACTOR AND MANUFACTURER SHALL COMPLY WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 840, EXCEPT REFERENCES & PAY ITEMS ASSOCIATED WITH SELECT GRANULAR BACKFILL (SGB) SHALL BE REPLACED WITH THE ENGINEERING FILL (LIGHTWEIGHT CCF) SPECIFICATIONS AND REFERENCES & PAY ITEMS ASSOCIATED WITH FACING PANEL JOINT COVER SHALL BE REPLACED WITH WATERPROOFING FABRIC PER CMS 711.24. SPECIFIC SECTIONS INCLUDE:

- 840.02A - REPLACE SGB WITH CCF
- 840.02B - REPLACE SGB WITH CCF
- 840.02C - REPLACE SGB WITH CCF
- 840.03D - FURNISH A WATERPROOFING FABRIC CONFORMING TO ODOT CMS 711.24. USE AN ADHESIVE THAT SECURES THE FABRIC TO THE WALL DURING THE PLACEMENT OF THE CCF. USE A MINIMUM WATERPROOFING FABRIC WIDTH OF 24 INCHES.
- 840.03E - CONFORM TO ITEM SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL) REQUIREMENTS.
- 840.03F - NOT APPLICABLE
- 840.03K - NOT APPLICABLE
- 840.03L - NOT APPLICABLE
- 840.04A - REPLACE TABLE 840.04-1 PARAMETERS WITH CCF PROPERTIES AND OMIT NOTES 6 AND 7.
- 840.04B.12 - REPLACE SGB WITH CCF
- 840.06A - PROVIDE MIX DESIGN AT PRECONSTRUCTION MEETING IN LIEU OF SGB SAMPLE
- 840.06F - NOT APPLICABLE
- 840.06G - REPLACE SGB WITH CCF AND REPLACE FACING PANEL JOINT COVER WITH WATERPROOFING FABRIC
- 840.06H - REPLACE SGB WITH CCF
- 840.06I - CONFORM TO ITEM SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL) REQUIREMENTS AND REPLACE FACING PANEL JOINT COVER WITH WATERPROOFING FABRIC
- 840.06J - NOT APPLICABLE
- 840.06M - NOT APPLICABLE
- 840.06N - NOT APPLICABLE
- 840.09 - AND REPLACE FACING PANEL JOINT COVER WITH WATERPROOFING FABRIC

THE SOIL REINFORCEMENT USED SHALL BE COMPATIBLE WITH THE CCF AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL SECURE THE SOIL REINFORCEMENT SO THAT IT DOES NOT MOVE WHILE PLACING THE WET CCF.

THE CONTRACTOR SHALL SUBMIT THE PROPOSED MATERIALS, DESIGN, AND PLANS TO THE ENGINEER FOR APPROVAL AT LEAST ONE MONTH PRIOR TO BEGINNING WORK.

**ITEM 840 - 6" DRAINAGE PIPE, NON-PERFORATED (4W8, 4W10)**

BECAUSE THERE IS NOT A VERY GOOD LOCATION TO CONNECT THE WALL 4W8 & 4W10 DRAINAGE THAT IS TO BE CONSTRUCTED IN PROJECT 4A & 6A TO EXISTING DRAINAGE INFRASTRUCTURE, 6" DRAINAGE PIPE, NON-PERFORATED SHALL STUB THROUGH THE TEMPORARY WALL AND BE CAPPED FOR FUTURE PROJECT 4A & 6A DRAINAGE CONNECTION.

**ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL (T2, T3, T4, T5)**

THE CONTRACTOR SHALL DESIGN, PREPARE ENGINEERING DRAWINGS FOR, FABRICATE, AND CONSTRUCT A TEMPORARY WIRE FACED MSE WALL IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 867.

BASIS OF PAYMENT: ALL WORK UNDER SUPPLEMENTAL SPECIFICATION 867 SHALL BE PAID FOR AT THE LUMP SUM CONTRACT BID PRICE UNDER ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL.

**ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: (T6, T7, 4W1 TWFMSE WALL, 4W2 TWFMSE WALL)**

THE FOLLOWING COMPONENT ITEMS SHALL BE PROVIDED PER THE PROVISIONS OF ODOT SUPPLEMENTAL SPECIFICATION 867 - "TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL".

- FACING UNITS
- SOIL REINFORCEMENT
- PILE SLEEVES (IF NOT ALREADY INCLUDED IN ITEM 840)

**ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: (T6, T7, 4W1 TWFMSE WALL, 4W2 TWFMSE WALL) (CONTINUED)**

THE CONTRACTOR AND MANUFACTURER SHALL COMPLY WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 867, EXCEPT REFERENCES & PAY ITEMS ASSOCIATED WITH SELECT GRANULAR BACKFILL (SGB) SHALL BE REPLACED WITH THE ENGINEERING FILL (LIGHTWEIGHT CCF) SPECIFICATIONS AND REFERENCES & PAY ITEMS ASSOCIATED WITH SOIL RETENTION FABRIC SHALL BE REPLACED WITH A SUITABLE CCF CONTAINMENT SYSTEM DESIGNED AND FURNISHED BY THE CONTRACTOR (FROM THIS POINT FORWARD REFERRED TO AS "A CCF CONTAINMENT SYSTEM". SPECIFIC SECTIONS INCLUDE:

- 867.02A - REPLACE SGB WITH CCF
- 867.02B - REPLACE SGB WITH CCF
- 867.02C - REPLACE SGB WITH CCF
- 867.02D - REPLACE SGB WITH CCF
- 867.03B - REPLACE SOIL RETENTION FABRIC WITH A CCF CONTAINMENT SYSTEM
- 867.03D - CONFORM TO ITEM SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL) REQUIREMENTS.
- 867.03E - NOT APPLICABLE
- 867.03F - NOT APPLICABLE
- 867.04A - REPLACE TABLE 867.04-1 PARAMETERS WITH CCF PROPERTIES AND OMIT NOTES 6 AND 7.
- 867.04B.4 - REPLACE SOIL RETENTION FABRIC WITH A CCF CONTAINMENT SYSTEM
- 867.04B.10 - REPLACE SGB WITH CCF
- 867.04B.12 - REPLACE SGB WITH CCF
- 867.06A - PROVIDE MIX DESIGN AT PRECONSTRUCTION MEETING IN LIEU OF SGB SAMPLE
- 867.06E - REPLACE SGB WITH CCF AND REPLACE SOIL RETENTION FABRIC WITH A CCF CONTAINMENT SYSTEM
- 867.06F - REPLACE SGB WITH CCF AND REPLACE SOIL RETENTION FABRIC WITH A CCF CONTAINMENT SYSTEM
- 867.06G - REPLACE SGB WITH CCF
- 867.06H - REPLACE SGB WITH CCF AND CONFORM TO ITEM SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL) REQUIREMENTS. REPLACE SOIL RETENTION FABRIC WITH A CCF CONTAINMENT SYSTEM
- 867.06I - NOT APPLICABLE
- 867.06J - NOT APPLICABLE
- 867.06K - NOT APPLICABLE
- 867.09 - REPLACE SGB WITH CCF AND REPLACE SOIL RETENTION FABRIC WITH A CCF CONTAINMENT SYSTEM

TWFMSE WALLS T6 & T7 SHALL USE CLASS II & CLASS III CCF AS SHOWN IN THE DESIGN PLANS WHILE THE 4W1 & 4W2 TWFMSE WALLS SHALL USE PERVIOUS CCF.

THE SOIL REINFORCEMENT USED SHALL BE COMPATIBLE WITH THE CCF AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL SECURE THE SOIL REINFORCEMENT SO THAT IT DOES NOT MOVE WHILE PLACING THE WET CCF.

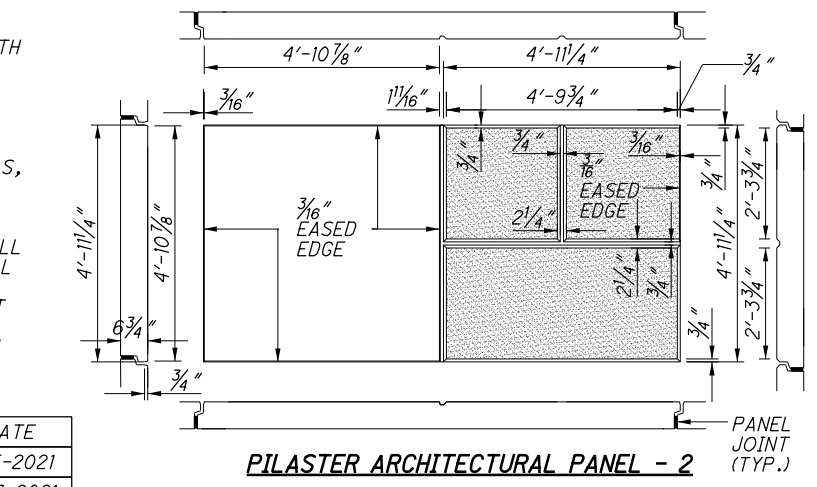
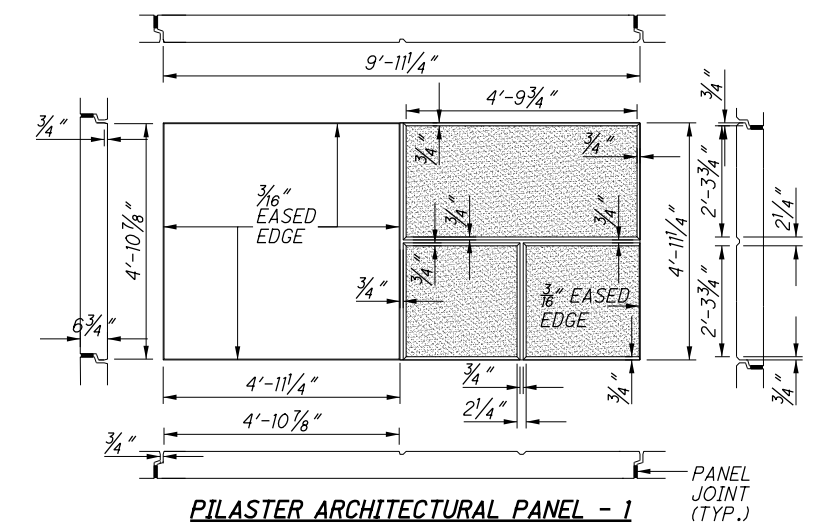
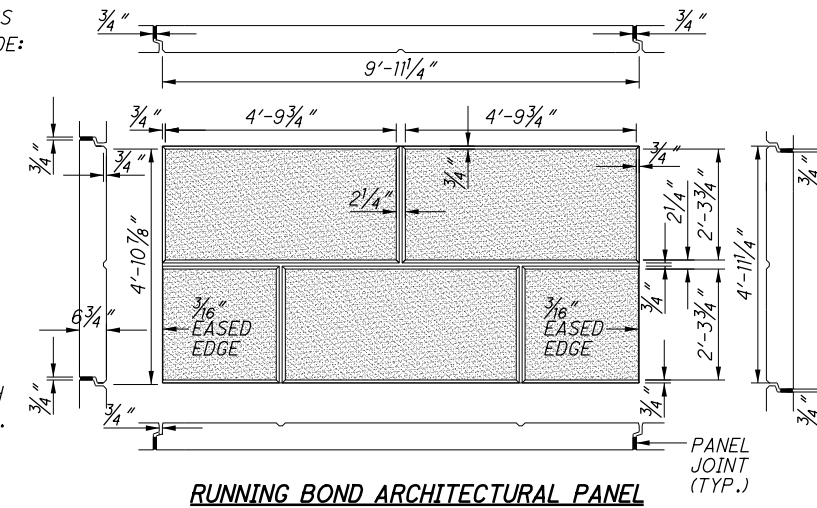
THE CONTRACTOR SHALL SUBMIT THE PROPOSED MATERIALS, DESIGN, AND PLANS TO THE ENGINEER FOR APPROVAL AT LEAST ONE MONTH PRIOR TO BEGINNING WORK.

BASIS OF PAYMENT: CCF FOR TWFMSE WALLS T6 & T7 SHALL BE QUANTIFIED AND PAID FOR WITH WALLS 4W5 & 4W6. ALL OTHER ITEMS & WORK DESCRIBED HEREIN AND IN SUPPLEMENTAL SPECIFICATION 867 SHALL BE PAID FOR AT THE LUMP SUM CONTRACT BID PRICE UNDER ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN.

NO.	DESCRIPTION	REV. BY	DATE
1	UPDATED ITEM	MOJ	11-5-2021
6	UPDATED NOTES	MOJ	12-3-2021

**ITEM 840 AESTHETIC SURFACE TREATMENT: (4W5, 4W8, 4W10, 4W11, 4W12)**

THE ITEM OF WORK SHALL CONSIST OF PROVIDING AESTHETIC TREATMENTS TO THE CONCRETE MSE WALL PANEL SURFACES. THE SURFACE FINISH SHALL BE EITHER A RUNNING BOND AESTHETIC PATTERN & TEXTURE OR A RUNNING BOND AESTHETIC PATTERN & TEXTURE WITH PILASTERS. SEE BELOW FOR DETAILS OF EACH, AND SEE INDIVIDUAL WALL PLANS FOR LOCATION OF VARIOUS SURFACE FINISHES.



DESIGN AGENCY: **GPD GROUP**  
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DATE: 9-6-19  
 REVIEWED: T, J, W  
 DRAWN: MOJ  
 CHECKED: RHC  
 DESIGNED: RHC

STRUCTURE FILE NUMBER

RETAINING WALL GENERAL NOTES  
 MSE WALLS

FRA-70/71-12.68 / 14.86  
 PID No. 105523

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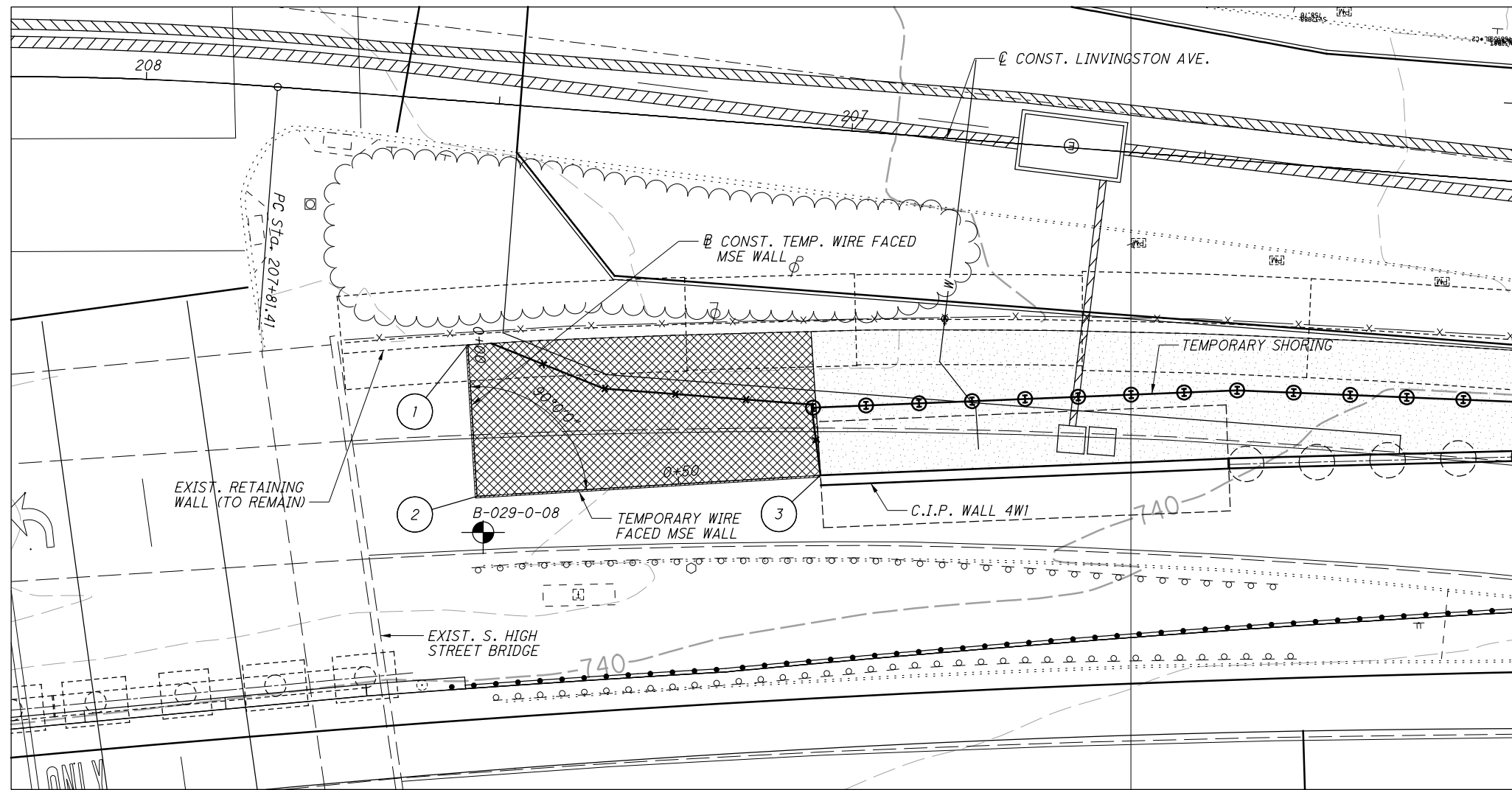
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**ESTIMATED QUANTITIES**

CALCULATED: RHC    DATE: 5/27/19  
 CHECKED: DJC      DATE: 5/31/19

ITEM	EXT.	TOTAL	PARTICIPATION		UNITS	DESCRIPTION	REFERENCE SHEET NO. --- / 1815
			01/NHS/PV	01/NHS/PV			
202	11201	LS	LS	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	700
503	11100	LS	LS	LS		COFFERDAMS AND EXCAVATION BRACING	
503	21100	710	312	398	CY	UNCLASSIFIED EXCAVATION	
509	10000	116,285	51,165	65,120	LB	EPOXY COATED REINFORCING STEEL	
511	34451	42	18	24	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	1746A
511	46012	502	221	281	CY	CLASS QC1 CONCRETE WITH QC/QA RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46513	208	92	116	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING, AS PER PLAN	
511	51513	179	79	100	CY	CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK, AS PER PLAN	1746A
511	53010	240	106	134	CY	CLASS QC1 CONCRETE, MISC.: SUPPORT BRACKET AND DRILLED SHAFT CAP	705
511	53010	16	7	9	CY	CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL	705
512	10050	287	126	161	SY	SEALING CONCRETE SURFACES (NON-EPOXY)	1746A
512	10100	1,069	470	599	SY	SEALING CONCRETE SURFACES (EPOXY-URETHANE)	1746A
512	33000	169	74	95	SY	TYPE 2 WATERPROOFING	
513	10220	201,414	88,622	112,792	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1	
516	13600	286	126	160	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	306	135	171	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	39900	460	202	258	FT	4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
518	40000	417	183	234	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
524	95472	390	172	218	FT	DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	705
524	95492	1,133	499	634	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	705
607	98000	307	135	172	FT	FENCE MISC.: WALL MOUNTED TYPE A (WITH VANDAL MESH)	1746A
867	00101	LS	LS	LS		TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	707
SPECIAL	20302000	1,496	658	838	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, PERVIOUS	702
SPECIAL	53000600	2,066	909	1,157	SF	STRUCTURES: PRECAST FACADE PANELS	706

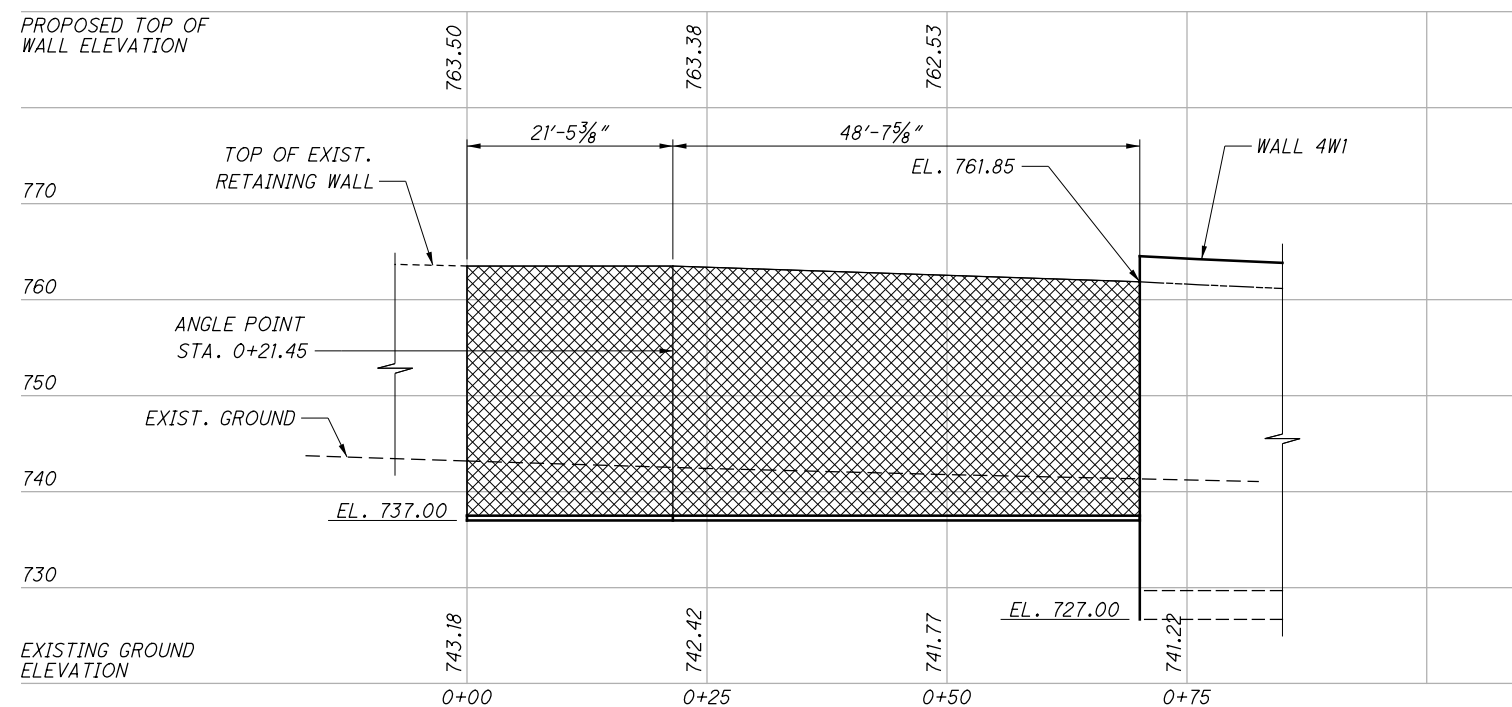
NO.	DESCRIPTION	REV. BY	DATE
4	FUNDING CODE CHANGE	CWL	11-29-2021
6	QUANTITY UPDATE	MOJ	12-3-2021



**LEGEND:**

- PROJECT BORING LOCATION
- LIMITS OF PERVIOUS CELLULAR CONCRETE FILL (SHOWN IN PLAN VIEW ONLY)
- LIMITS OF REINFORCED CELLULAR CONCRETE FILL FOR TEMP. WIRE FACED MSE WALL

**PLAN**



**DEVELOPED ELEVATION**

LOCATION	DESCRIPTION	CONST. WALL		CONST. I-70 EB	
		STATION	OFFSET	STATION	OFFSET
1	BEGIN WALL	0+00.00	0.00'	191+53.52	72.96' RT.
2	ANGLE POINT	0+21.45	0.00'	191+53.70	51.51' RT.
3	END WALL	0+70.09	0.00'	191+05.91	51.48' RT.

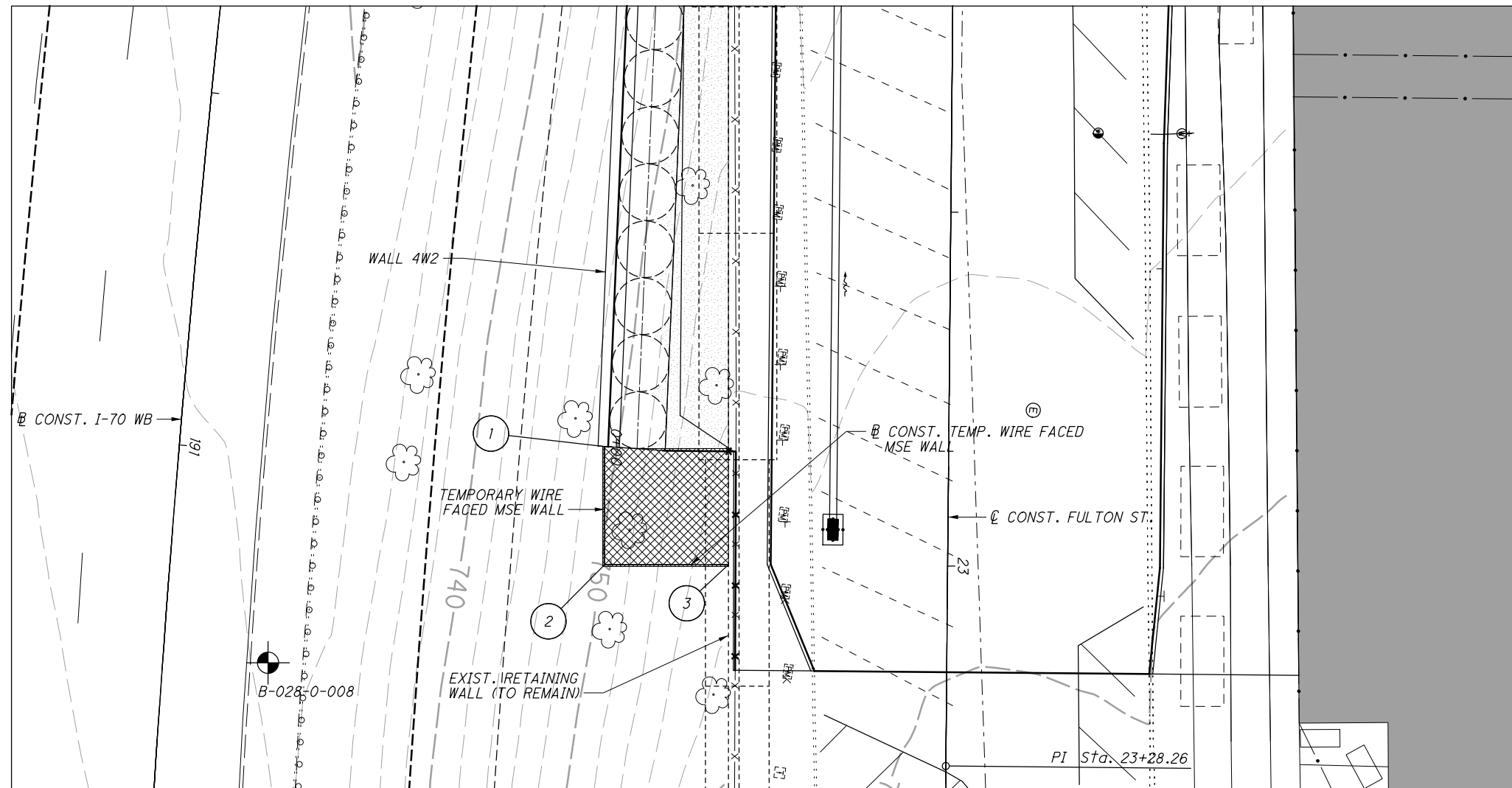
NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED NOTE	MOJ	12-3-2021

**NOTES:**




1. THE TEMPORARY WIRE FACED MSE WALL SHALL PROVIDE TEMPORARY EMBANKMENT TO SUPPORT THE LIVINGSTON AVE. SIDEWALK BETWEEN PROJECTS 4R AND 4H.
2. SEE LIVINGSTON AVE. AND I-70 EB ROADWAY CROSS SECTIONS FOR SECTION VIEWS.
3. FOR ADDITIONAL INFORMATION, SEE SHEET 707 OF 1815.



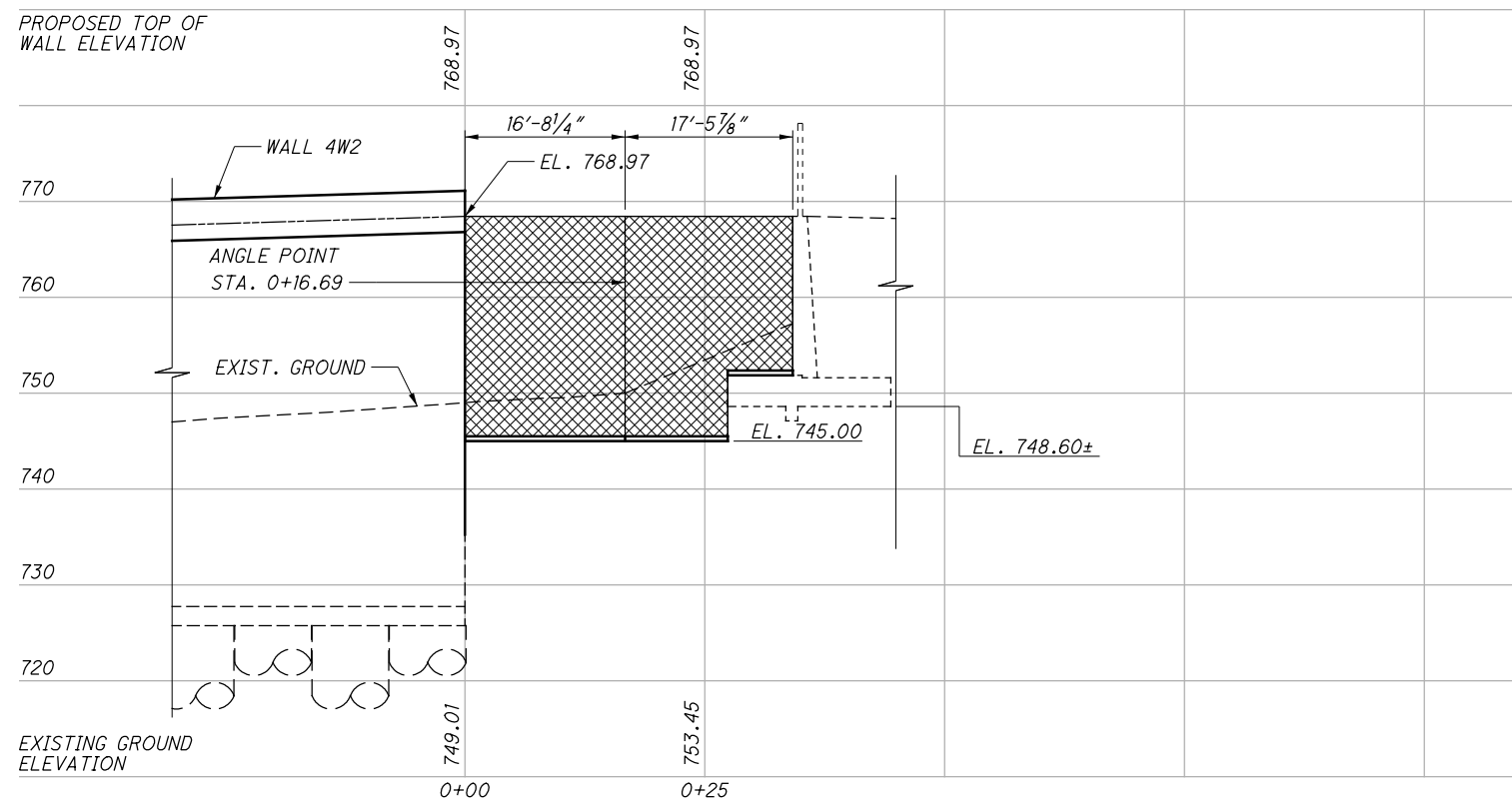
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**LEGEND:**

-  PROJECT BORING LOCATION
-  LIMITS OF PERVIOUS CELLULAR CONCRETE FILL (SHOWN IN PLAN VIEW ONLY)
-  LIMITS OF REINFORCED CELLULAR CONCRETE FILL FOR TEMP. WIRE FACED MSE WALL

**PLAN**



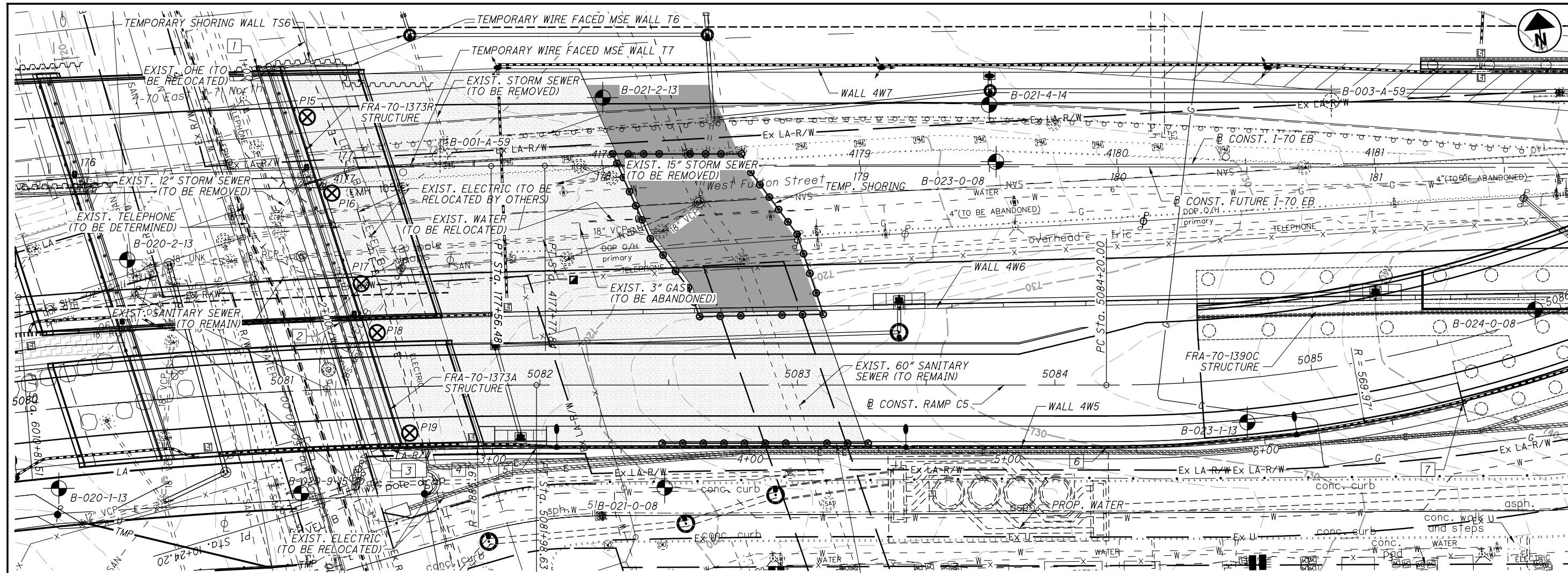
**DEVELOPED ELEVATION**

LOCATION	DESCRIPTION	CONST. WALL		CONST. I-70 WB	
		STATION	OFFSET	STATION	OFFSET
1	BEGIN WALL	0+00.00	0.00'	190+95.15	59.90' LT.
2	ANGLE POINT	0+16.96	0.00'	191+12.16	61.25' LT.
3	END WALL	0+34.45	0.00'	191+10.75	78.69' LT.

NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED NOTE	MOJ	12-3-2021

**NOTES:**

1. THE TEMPORARY WIRE FACED MSE WALL SHALL PROVIDE TEMPORARY EMBANKMENT TO SUPPORT THE FULTON ST. SIDEWALK BETWEEN PROJECTS 4R AND 4H.
2. SEE FULTON ST. AND I-70 EB ROADWAY CROSS SECTIONS FOR SECTION VIEWS.
3. FOR ADDITIONAL INFORMATION, SEE SHEET 707 OF 1815.



**LEGEND:**

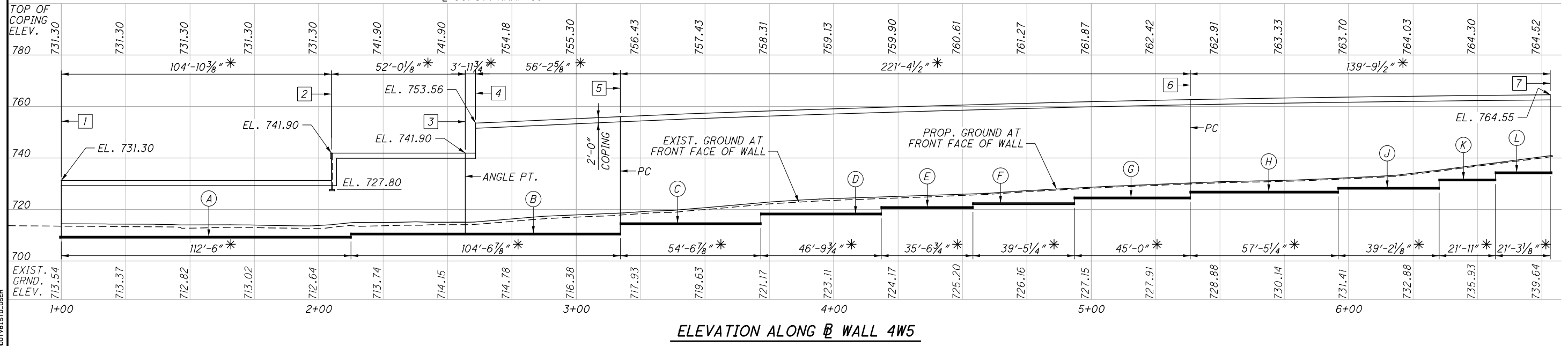
- 1 BEGIN WALL  
 STA. 1+00.00, 0.00  
 CONST. WALL 4W5  
 STA. 176+66.37, 39.84 LT.  
 CONST. FUTURE I-70 EB
- 2 STA. 2+04.86, 0.00  
 CONST. WALL 4W5  
 STA. 176+96.98, 60.48 RT.  
 CONST. FUTURE I-70 EB  
 STA. 5081+23.39, 25.73 LT.  
 CONST. RAMP C5
- 3 ANGLE PT  
 STA. 2+56.87, 0.00  
 CONST. WALL 4W5  
 STA. 177+12.77, 110.15 RT.  
 CONST. FUTURE I-70 EB  
 STA. 5081+37.65, 24.29 RT.  
 CONST. RAMP C5
- 4 STA. 2+60.86, 0.00  
 CONST. WALL 4W5  
 STA. 177+16.87, 110.06 RT.  
 CONST. FUTURE I-70 EB  
 STA. 5081+41.69, 24.29 RT.  
 CONST. RAMP C5
- 5 PC  
 STA. 3+17.07, 0.00  
 CONST. WALL 4W5  
 STA. 177+74.22, 109.35 RT.  
 CONST. FUTURE I-70 EB  
 STA. 5081+98.63, 24.29 RT.  
 CONST. RAMP C5
- 6 PC  
 STA. 5+38.45, 0.00  
 CONST. WALL 4W5  
 STA. 179+95.59, 109.05 RT.  
 CONST. FUTURE I-70 EB  
 STA. 5084+20.00, 24.29 RT.  
 CONST. RAMP C5
- 7 END WALL  
 STA. 6+78.23, 0.00  
 CONST. WALL 4W5  
 STA. 181+33.96, 91.81 RT.  
 CONST. FUTURE I-70 EB  
 STA. 5085+53.83, 24.29 RT.  
 CONST. RAMP C5

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED SHORING	MOJ	12-3-2021

- TEMP. SHORING**
- ⊗ SETTLEMENT PLATFORM
  - LIMITS OF GEOFOAM BACKFILL FOR STATION LOCATIONS SEE SHT. NO. 14/26.
  - ▨ LIMITS OF CELLULAR CONCRETE FILL
  - \* MEASURED ALONG CONST. WALL 4W5 (FRONT FACE OF WALL)
  - EXIST. 18" SANITARY SEWER (TO BE ABANDONED & RELOCATED IN PROJECT 2B)
  - PROJECT BORING LOCATION
  - HISTORIC BORING LOCATION

**TOP OF LEVELING PAD ELEVATION TABLE**

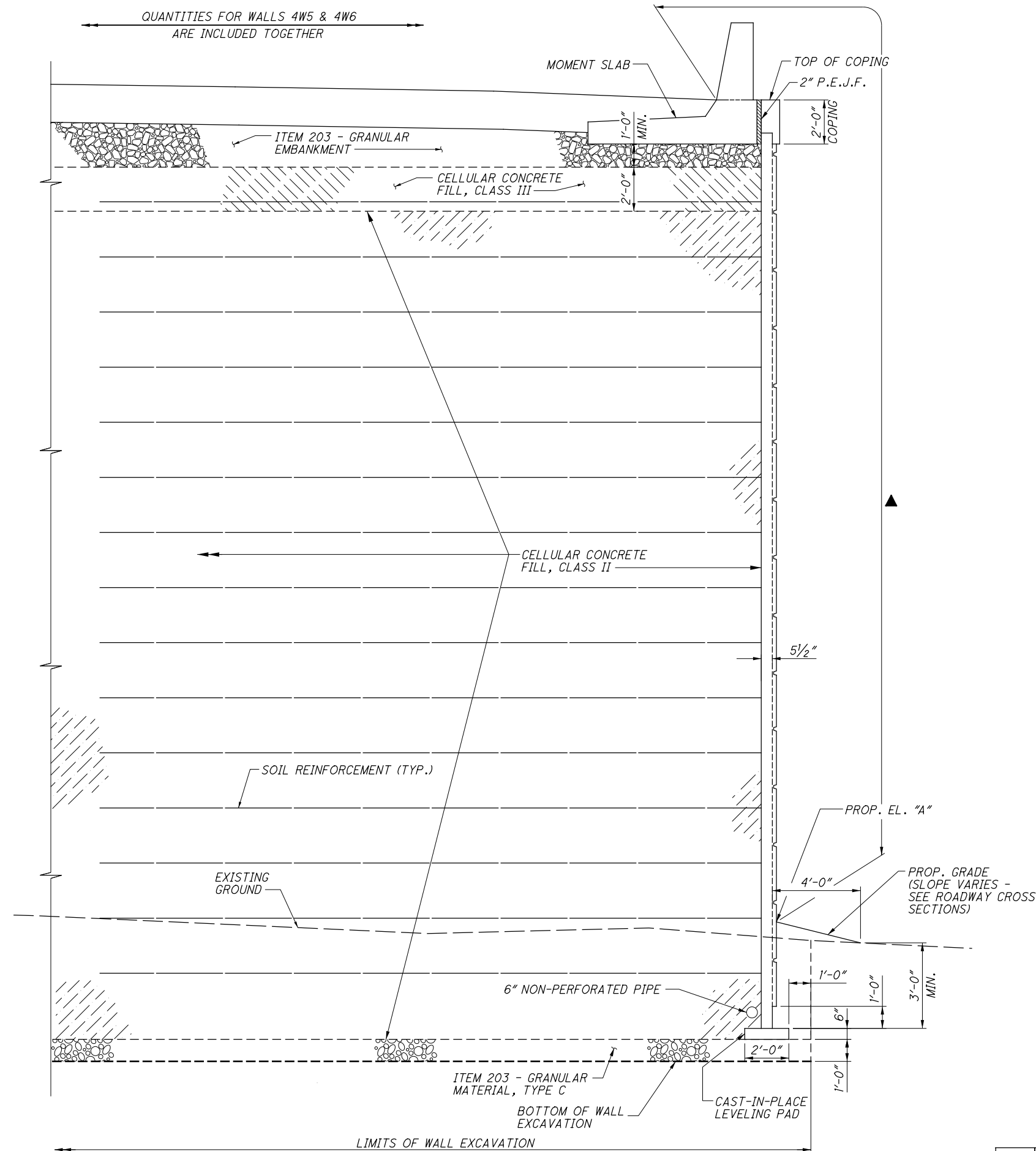
(A)	EL. 709.50	(G)	EL. 724.75
(B)	EL. 710.75	(H)	EL. 727.00
(C)	EL. 714.75	(J)	EL. 728.50
(D)	EL. 718.50	(K)	EL. 731.75
(E)	EL. 721.00	(L)	EL. 734.50
(F)	EL. 722.50		



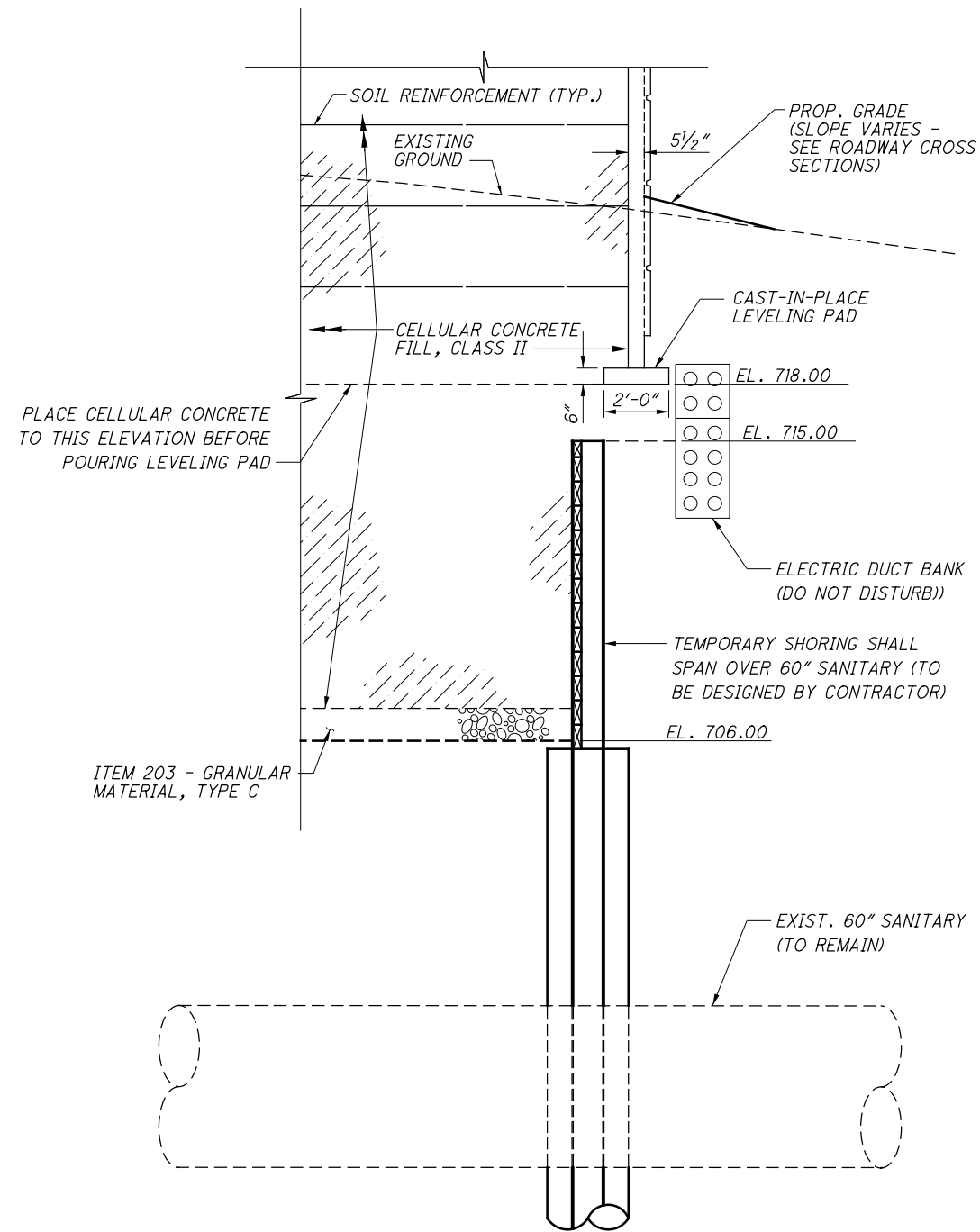
**ELEVATION ALONG WALL 4W5**

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**SECTION C**  
 FROM STA. 5081+41.69 TO STA. 5083+26.67 ( @ CONST. RAMP C5)



**SECTION C**  
 PARTIAL SECTION AT TEMPORARY SHORING

**LEGEND:**  
 ▲ INDICATES LIMITS OF ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)"

NO.	DESCRIPTION	REV. BY	DATE
6	SHORING CLARIFICATION	MOJ	12-3-2021

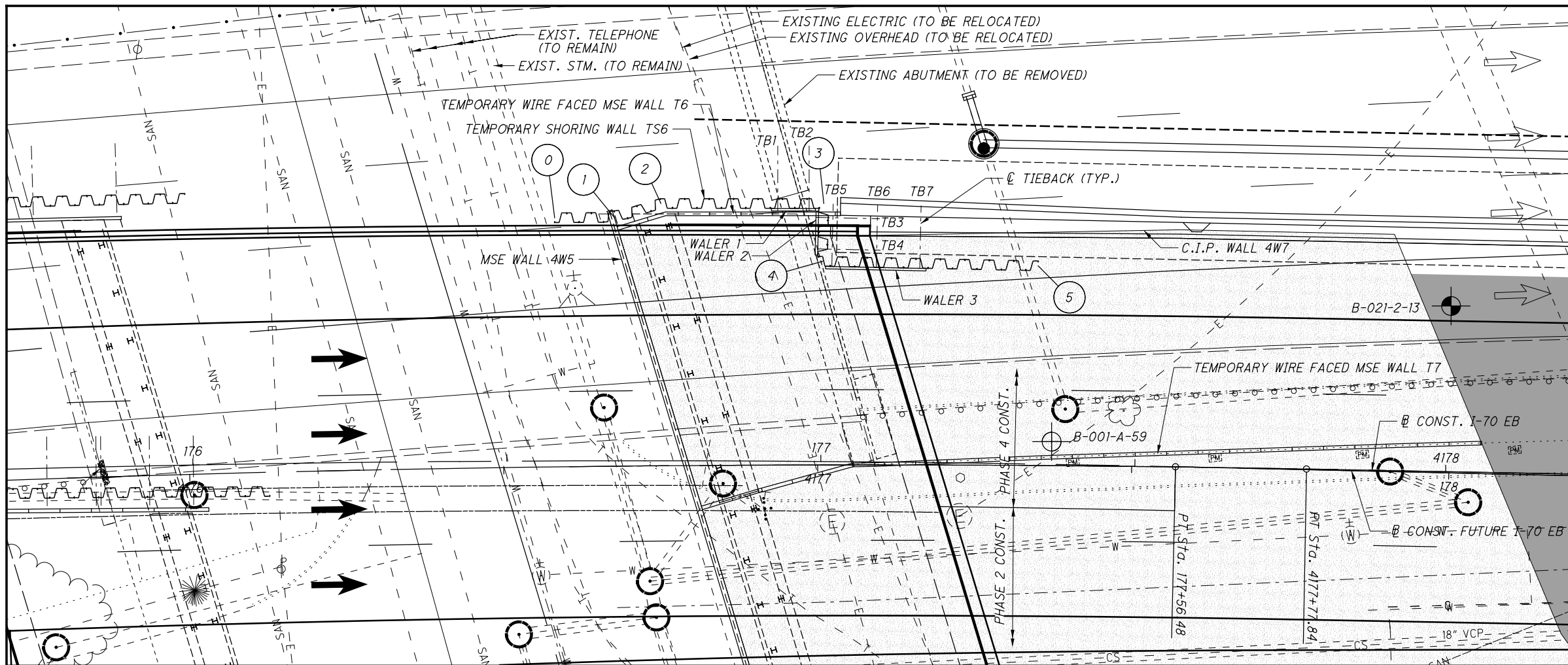
DESIGN AGENCY  
**GPD GROUP**  
 G.P. Design, Inc. 1801 Watermark Drive, Suite 210, Columbus, Ohio 43215 614.210.0731  
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DATE: 9-6-19  
 REVIEWED: TJW  
 STRUCTURE FILE NUMBER:  
 DRAWN: RPR  
 REVISED:  
 DESIGNED: RPR  
 CHECKED: DGN

**MSE WALL SECTION - WALL 4W5**  
 MSE WALLS 4W5 & 4W6  
 FROM FRA-70-1373R/FRA-70-1373A TO FRA-70-1390C

FRA-70/71-12.68 / 14.86  
 PID No. 105523

10 / 26  
 773  
 1815



PLAN

**LEGEND:**

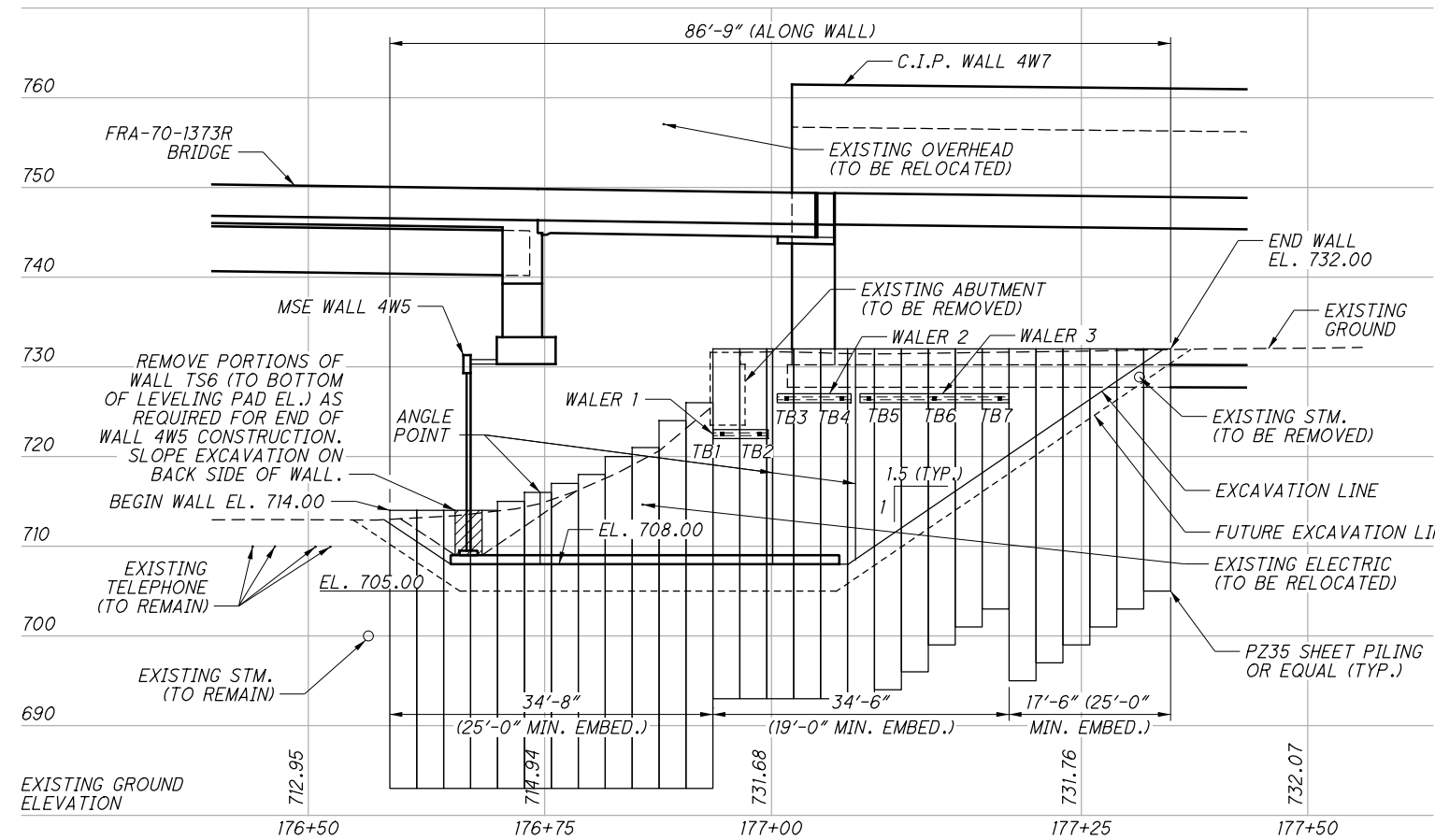
- PROJECT BORING LOCATION
- HISTORIC BORING LOCATION
- LIMITS OF GEOFOAM BACKFILL (SHOWN IN PLAN VIEW ONLY)
- LIMITS OF CELLULAR CONCRETE FILL (SHOWN IN PLAN VIEW ONLY)

WALER NO.	TIEBACK NO.	TIEBACK ELEVATION	TIEBACK INCLINATION ANGLE (DEGREE)	TIEBACK HORIZONTAL SKEW ANGLE (DEGREE)	TIEBACK UNBONDED LENGTH (FEET)	TIEBACK LOCK OFF LOAD (KIPS)	TIEBACK PROOF TEST LOAD (KIPS)	TIEBACK ANCHOR DIAMETER (INCH)
1	1	722.50	15	0	17	104	139	1.25
	2	722.50	15	0	17	104	139	1.25
2	3	726.50	15	0	17	104	139	1.25
	4	726.50	15	0	17	104	139	1.25
3	5	726.50	15	0	17	104	139	1.25
	6	726.50	15	0	17	104	139	1.25
	7	726.50	15	0	17	104	139	1.25

**NOTES:**

- ALL STATIONS AND OFFSETS ARE FROM @ CONST. FUTURE I-70 EB.
- TO FACILITATE THE EXCAVATION FOR AND CONSTRUCTION OF MSE WALL 4W5, TEMPORARY SHORING WALL TS6 SHALL BE DRIVEN TO RETAIN THE EXISTING SOIL SURROUNDING THE LIMITS OF MSE WALL 4W5.
- HORIZONTAL LIMITS SHALL EXTEND FROM THE END OF MSE WALL 4W5 TO JUST SHY OF THE END OF CAST-IN-PLACE WALL 4W7 WHERE IT SHALL TURN SOUTH THEN EAST SO IT WRAPS AROUND C.I.P. WALL 4W7 FOOTING AND EXTENDS FAR ENOUGH EAST TO SLOPE THE EXCAVATION BACK TO EXISTING. VERTICAL LIMITS SHALL EXTEND FROM THE BOTTOM OF MSE WALL 4W5 SELECT GRANULAR BACKFILL TO THE TOP OF EXISTING GRADE.
- EXCEPT FOR PORTIONS OF WALL TS6 REQUIRED TO BE REMOVED FOR MSE WALL 4W5 LEVELING PAD CONSTRUCTION, ALL OF TEMPORARY SHORING WALL TS6 SHALL BE LEFT IN PLACE. THE EASTERN PORTION WILL BE BURIED IN THE SURROUNDING CCF, AND THE WESTERN PORTION SHALL REMAIN TO FACILITATE FUTURE WALL AND BRIDGE CONSTRUCTION IN PROJECT 6A - 89464.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE NECESSARY ANCHOR BOND LENGTHS BASED ON THE INSTALLATION METHODS USED. ANCHOR BOND LENGTHS PROVIDED SHALL DEVELOP ADEQUATE CAPACITIES TO SATISFY THE SPECIFIED ANCHOR TEST LOADS. ANCHOR STRESSING AND PROOF TESTING SHALL COMPLY WITH SECTION 6 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 4TH EDITION.
- FOR ADDITIONAL INFORMATION, SEE SHEET 893/1815.

LOCATION	DESCRIPTION	STATION	OFFSET
0	BEGIN WALL	176+57.74	38.74' LT.
1	ANGLE POINT	176+67.16	38.76' LT.
2	ANGLE POINT	176+74.50	40.99' LT.
3	ANGLE POINT	177+00.15	41.10' LT.
4	ANGLE POINT	177+00.02	31.89' LT.
5	END WALL	177+34.08	31.58' LT.



DEVELOPED ELEVATION  
UTILITY ELEVATIONS APPROXIMATED

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED WALL DETAILS	MOJ	12-3-2021

01:2012:2012048 FRA\105523\STRUCTURES\WALL\_TS6\SHEETS\105523\_TS6WP001.DGN  
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SHEET NUMBER				PARTICIPATION				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
1098		1099		01/NHS/PV	01/NHS/PV	05/NHS/OT/COL	06/ENH/OT/COL						
7							7	625	17961	7	EACH	BRACKET ARM, 8', AS PER PLAN	1085
1								625	18501	1	EACH	BRACKET ARM, 25', AS PER PLAN	1085
2287					1006	1281		625	23001	2287	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	1084
2763					1216	1547		625	23304	2763	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	1084
789					347	442		625	23400	789	FT	NO. 10 AWG POLE AND BRACKET CABLE	
312					137	175		625	25408	312	FT	CONDUIT, 2", 725.051	
56					25	31		625	25504	56	FT	CONDUIT, 3", 725.051	
1035					455	580		625	25802	1035	FT	CONDUIT, CONCRETE ENCASED, 2", 725.051	
1356					411	524	421	625	25920	1356	FT	CONDUIT, MISC.: ENCASED INTERCONNECT CONDUIT BANK, 4-3", 1-1.5", TC-2, SCH 40	1091
106					47	59		625	25920	106	FT	CONDUIT, MISC.: ENCASED INTERCONNECT CONDUIT BANK, 4-3", 2-2", 1-1.5", TC-2, SCH 40	1091
31					14	17		625	25920	31	FT	CONDUIT, MISC.: ENCASED INTERCONNECT CONDUIT BANK, 8-3", 1-1.5", TC-2, SCH 40	1091
203					89	114		625	25920	203	FT	CONDUIT, MISC.: 1.5", FIBERGLASS REINFORCED, ATTACHED TO STRUCTURE	1085
622					274	348		625	25920	622	FT	CONDUIT, MISC.: 2", FIBERGLASS REINFORCED, ATTACHED TO STRUCTURE	1085
1624					715	909		625	25920	1624	FT	CONDUIT, MISC.: 3", FIBERGLASS REINFORCED, ATTACHED TO STRUCTURE	1085
2179					959	1,220		625	29001	2179	FT	TRENCH, AS PER PLAN	1084
2					1	1		625	31600	2	EACH	PULL BOX, MISC.: 12"x18"	1083, 1084
1					625	31600		625	31600	1	EACH	PULL BOX, MISC.: CONCRETE 27"	1083, 1084
9					3	4	2	625	31600	9	EACH	PULL BOX, MISC.: CONCRETE 32"	1083, 1084
7					3	3	1	625	31600	7	EACH	PULL BOX, MISC.: CONCRETE 48"	1083, 1084
20					9	11		625	32000	20	EACH	GROUND ROD	
2					1	1		625	98000	2	EACH	LIGHTING, MISC.: PHOTO CELL	1085
7							7	625	98000	7	EACH	LIGHTING, MISC.: LUMINAIRE, 150 W LED, 120 V, TEARDROP, BLACK	1085
5					2	3		630	97700	5	EACH	SIGNING, MISC.: TRAFFIC SIGNAL SIGNS	1085
3					1	2		632	04911	3	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, ALUMINUM, AS PER PLAN	1085
15					7	8		632	05007	15	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	1086
1					1	1		632	05081	1	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, ALUMINUM, AS PER PLAN	1085
2					1	1		632	05087	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	1086
16					7	9		632	20731	16	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	1086
23					10	13		632	25001	23	EACH	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN	1086
16					7	9		632	25011	16	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD, AS PER PLAN	1086
8					4	4		632	26001	8	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	1086
244					107	137		632	29901	244	FT	MESSENGER WIRE, 7 STRAND, 1/4" DIAMETER WITH ACCESSORIES, AS PER PLAN	1091
3139					1381	1758		632	40700	3139	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
912					401	511		632	40900	912	FT	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG	
3					632	62820		632	62820	3	EACH	INTERCONNECT, MISC.: FIBER OPTIC SPLICE ENCLOSURE, CLAMSHELL, 288 SPLICE	1092
4					2	2		632	64011	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	1086
4					2	2		632	64020	4	EACH	PEDESTAL FOUNDATION	
1027					452	575		632	65200	1027	FT	LOOP DETECTOR LEAD-IN CABLE	
90					40	50		632	68200	90	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
135					59	76		632	68300	135	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
2					1	1		632	70001	2	EACH	POWER SERVICE, AS PER PLAN	1085
2					1	1		632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER	
7							7	632	81700	7	EACH	COMBINATION SIGNAL SUPPORT, MISC.: CITY OF COLUMBUS DESIGN 4	1088
1							1	632	81700	1	EACH	COMBINATION SIGNAL SUPPORT, MISC.: CITY OF COLUMBUS DESIGN 13	1088
2					1	1		632	89300	2	EACH	WOOD POLE	
			1					632	89400	1	EACH	DOWN GUY	
			8				8	632	90010	8	EACH	PEDESTAL, MISC.: PEDESTAL, 10.7'	1088
			5					632	90101	5	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	1086
			1					632	90104	1	EACH	REUSE OF TRAFFIC CONTROL ITEM: VIDEO DETECTION CAMERA AND BRACKET ARM	1085
			4					632	90201	4	EACH	REUSE OF VEHICULAR SIGNAL HEAD, AS PER PLAN	1085
			8					632	90400	8	EACH	SIGNALIZATION, MISC.: COVERING OF PEDESTRIAN PUSHBUTTON	1086
			1				1	632	90400	1	EACH	SIGNALIZATION, MISC.: MAST ARM (ARM ONLY)	1087
			7					632	90400	7	EACH	SIGNALIZATION, MISC.: FOUNDATION PRE-EXCAVATION	1086
			4					632	90400	4	EACH	SIGNALIZATION, MISC.: PEDESTAL ATTACHED TO BRIDGE STRUCTURE	1086
			4					632	90400	4	EACH	SIGNALIZATION, MISC.: SIGNAL SUPPORT ATTACHED TO BRIDGE STRUCTURE	1086
			2					632	90400	2	EACH	SIGNALIZATION, MISC.: STOP LINE RADAR DETECTION SYSTEM	1088
			1					632	90400	1	EACH	SIGNALIZATION, MISC.: POWER METER CABINET, BASE MOUNT, WITH FOUNDATION	1088
			2					633	67101	2	EACH	CABINET FOUNDATION, AS PER PLAN	1089
			2					633	99000	2	EACH	CONTROLLER ITEM, MISC.: CONTROLLER UNIT TS2/A2, W/ CABINET 16CH, SIZE 6, GROUND MOUNTED	1092
			4					633	99000	4	EACH	CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET TRANSCEIVER, SHORT RANGE	1092
			2					633	99000	2	EACH	CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH	1092
			202					804	32060	202	FT	DROP CABLE, 24 FIBER	
			2					804	34022	2	EACH	FIBER TERMINATION PANEL, 24 FIBER	1090
			1					809	60001	1	1	CCTV IP-CAMERA SYSTEM, DOME-TYPE, AS PER PLAN	1090

CALCULATED	MSS	CHECKED	KMG

TRAFFIC SIGNAL GENERAL SUMMARY

FRA - 70 / 71 - 12.68 / 14.86

SHEET	LOCATION	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	630	
		BRACKET ARM, 8', AS PER PLAN	BRACKET ARM, 25', AS PER PLAN	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	CONDUIT, 2", 725.051	CONDUIT, 3", 725.051	CONDUIT, CONCRETE ENCASED, 2", 725.051	CONDUIT, MISC.: ENCASED INTERCONNECT CONDUIT BANK, 4-3", 1-1.5", TC-2, SCH 40	CONDUIT, MISC.: ENCASED INTERCONNECT CONDUIT BANK, 4-3", 2-2", 1-1.5", TC-2, SCH 40	CONDUIT, MISC.: ENCASED INTERCONNECT CONDUIT BANK, 8-3", 1-1.5", TC-2, SCH 40	CONDUIT, MISC.: 1.5", FIBERGLASS REINFORCED, ATTACHED TO STRUCTURE	CONDUIT, MISC.: 2", FIBERGLASS REINFORCED, ATTACHED TO STRUCTURE	CONDUIT, MISC.: 3", FIBERGLASS REINFORCED, ATTACHED TO STRUCTURE	TRENCH, AS PER PLAN	PULL BOX, MISC.: 12"x18"	PULL BOX, MISC.: CONCRETE 27"	PULL BOX, MISC.: CONCRETE 32"	PULL BOX, MISC.: CONCRETE 48"	GROUND ROD	LIGHTING, MISC.: PHOTO CELL	LIGHTING, MISC.: LUMINAIRE, 150 W LED, 120 V, TEARDROP, BLACK	SIGNING, MISC.: TRAFFIC SIGNAL SIGNS
		EACH	EACH	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
1100	S. FRONT ST. AT RAMP C5 / W. FULTON ST.	3	1	1020	1503	345	146	22	372						444	257	1			2	9	1	3	1
1104	FULTON ST. AT S. HIGH ST.			193					52							52				1			1	
1107	S. FRONT ST. AT MOUND ST.																						1	
1111	S. FRONT ST. AT W. LIVINGSTON AVE.	4		1074	1260	444	166	34	589					178	366	1	1	1	1	10	1	4	1	
1115	S. HIGH ST. AT LIVINGSTON AVE.																						1	
	INTERCONNECT								22	1356	106	31	203		1624	1504		8	4					
<b>TOTALS CARRIED TO TRAFFIC SIGNAL GENERAL SUMMARY</b>		<b>7</b>	<b>1</b>	<b>2287</b>	<b>2763</b>	<b>789</b>	<b>312</b>	<b>56</b>	<b>1035</b>	<b>1356</b>	<b>106</b>	<b>31</b>	<b>203</b>	<b>622</b>	<b>1624</b>	<b>2179</b>	<b>2</b>	<b>1</b>	<b>9</b>	<b>7</b>	<b>20</b>	<b>2</b>	<b>7</b>	<b>5</b>

NO.	DESCRIPTION	REV. BY	DATE
3	UPDATED QUANTITIES	KMG	11-19-2021
6	UPDATED QUANTITIES	KMG	12-3-2021

SHEET	LOCATION	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632	632
		VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, ALUMINUM, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, ALUMINUM, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN	COVERING OF PEDESTRIAN SIGNAL HEAD, AS PER PLAN	PEDESTRIAN PUSHBUTTON, AS PER PLAN	MESSENGER WIRE, 7 STRAND, 1/4" DIAMETER WITH ACCESSORIES, AS PER PLAN	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG	INTERCONNECT, MISC.: FIBER OPTIC SPLICE ENCLOSURE, CLAMSHELL, 288 SPLICE	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	PEDESTAL FOUNDATION	LOOP DETECTOR LEAD-IN CABLE	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	POWER SERVICE, AS PER PLAN	CONDUIT RISER, 2" DIAMETER	COMBINATION SIGNAL SUPPORT, MISC.: CITY OF COLUMBUS DESIGN 4	COMBINATION SIGNAL SUPPORT, MISC.: CITY OF COLUMBUS DESIGN 13	WOOD POLE
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	EACH	EACH	EACH	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH
1100	S. FRONT ST. AT RAMP C5 / W. FULTON ST.		6		1	8	7	8	4		1273	337		1	2	530	35	135	1		2	1	
1104	FULTON ST. AT S. HIGH ST.		2				2				249			1						1			
1107	S. FRONT ST. AT MOUND ST.	1		1			4				309												
1111	S. FRONT ST. AT W. LIVINGSTON AVE.		7		1	8	8	8	4		1011	575		2	2	497	55		1		4		
1115	S. HIGH ST. AT LIVINGSTON AVE.	2					2				88	298											1
	INTERCONNECT										156		3						2				1
<b>TOTALS CARRIED TO TRAFFIC SIGNAL GENERAL SUMMARY</b>		<b>3</b>	<b>15</b>	<b>1</b>	<b>2</b>	<b>16</b>	<b>23</b>	<b>16</b>	<b>8</b>	<b>244</b>	<b>3139</b>	<b>912</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>1027</b>	<b>90</b>	<b>135</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>2</b>



SHEET NUM.									PART.					ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED	JCS	CHECKED	LH
1165	1166	1167	1168	1169	1170	1171	1172	1202	01/NHS/PV	01/NHS/PV	04/MPO/OT	05/NHS/OT/COL	06/ENH/OT/COL										
12		26	24	27					39	50				625	00450	89	EACH	CONNECTION, FUSED PULL APART					
3			6	3					5	7				625	00470	12	EACH	CONNECTION, UNFUSED BOLTED					
12		21	3	6	15				18	24	15			625	00480	57	EACH	CONNECTION, UNFUSED PERMANENT					
			1							1				625	10490	1	EACH	LIGHT POLE, CONVENTIONAL, DESIGN AT15B40					
3			4						3	4				625	10490	7	EACH	LIGHT POLE, CONVENTIONAL, DESIGN AT18B40					
		3							1	2				625	10490	3	EACH	LIGHT POLE, CONVENTIONAL, DESIGN ST10B40					
		4							2	2				625	10490	4	EACH	LIGHT POLE, CONVENTIONAL, DESIGN ST12B40					
			1							1				625	10490	1	EACH	LIGHT POLE, CONVENTIONAL, DESIGN ST15B40					
			2	9					5	6				625	10490	11	EACH	LIGHT POLE, CONVENTIONAL, DESIGN A12B40					
1										1				625	10490	1	EACH	LIGHT POLE, CONVENTIONAL, DESIGN A18B40					
				3					1	2				625	10494	3	EACH	LIGHT POLE, LOW MAST, DESIGN ALM40					
2									1	1				625	10494	2	EACH	LIGHT POLE, LOW MAST, DESIGN ALM50					
			4						2	2				625	10494	4	EACH	LIGHT POLE, LOW MAST, DESIGN ATLM50					
4		28	12	48					40	52				625	10614	92	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE					
		2							1	1				625	13200	2	EACH	LIGHT TOWER, BBBB100					
1										1				625	13210	1	EACH	LIGHT TOWER, BBBB130					
			5						4	4				625	14100	8	EACH	LIGHT POLE FOUNDATION, 24" X 8' DEEP					
3			4						2	2				625	14200	4	EACH	LIGHT POLE FOUNDATION, 24" X 10' DEEP					
2									1	1				625	14306	2	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP					
1		2							1	2				625	15300	3	EACH	LIGHT TOWER FOUNDATION, 36" X 30' DEEP					
1										1				625	15500	1	EACH	LIGHT TOWER FOUNDATION, 42" X 30' DEEP					
					1,650				726	924				625	22900	1,650	FT	NO. 1/0 AWG 2400 VOLT DISTRIBUTION CABLE					
1,766		8,010	7,437	12,066	1,761				12,542	15,963	2,535			625	23200	31,040	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE					
996		1,074	1,938	1,764					2,540	3,232				625	23400	5,772	FT	NO. 10 AWG POLE AND BRACKET CABLE					
101									44	57				625	24100	101	FT	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 2400 VOLT CABLES					
3,183		1,172	947						2,333	2,969				625	24320	5,302	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES					
131		1,251	547	2,843	23				2,110	2,685				625	25400	4,795	FT	CONDUIT, 2", 725.04					
161		280	546	802	785				787	1,002	785			625	25500	2,574	FT	CONDUIT, 3", 725.04					
71									31	40				625	25900	71	FT	CONDUIT, JACKED OR DRILLED, 3"					
						847	2,065		1,281	1,631				625	25910	2,912	FT	CONDUIT CLEANED AND CABLES REMOVED					
		7	8	9					11	13				625	26253	24	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, 133W, TYPE II	1163				
4									2	2				625	26253	4	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, 133W, TYPE III	1163				
12		20							14	18				625	26263	32	EACH	LUMINAIRE, HIGH MAST, SOLID STATE (LED), AS PER PLAN, 209W, TYPE V	1163				
			4						2	2				625	26273	4	EACH	LUMINAIRE, LOW MAST, SOLID STATE (LED), AS PER PLAN, 209W, TYPE III	1163				
2				3					2	3				625	26273	5	EACH	LUMINAIRE, LOW MAST, SOLID STATE (LED), AS PER PLAN, 209W, TYPE V	1163				
					44				19	25				625	27503	44	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN, 67W	1163				
		3	3						3	3				625	27503	6	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN, 45W	1163				
					169				74	95				625	27504	169	EACH	LUMINAIRE, TUNNEL, SOLID STATE (LED), 240W	1163				
2,945		1,436	1,493	612	631				2,864	3,645	608			625	29000	7,117	FT	TRENCH					
			1	1					1	1				625	29910	2	EACH	TRANSITION JUNCTION BOX					
2		8	6	13	3				13	16	3			625	29920	32	EACH	STRUCTURE JUNCTION BOX					
1			3						2	2				625	29930	4	EACH	MEDIAN JUNCTION BOX					
				2					1	1				625	29940	2	EACH	BARRIER JUNCTION BOX					
5		3	3	2	2				5	7	3			625	30700	15	EACH	PULL BOX, 725.08, 18"					
		2		1	2				2	3				625	30706	5	EACH	PULL BOX, 725.08, 24"					
									4	6				625	31510	10	EACH	PULL BOX REMOVED					
		10	4	9	10		6	4	15	18				625	32000	33	EACH	GROUND ROD					
		1	2	3	1				3	4				625	33000	7	EACH	STRUCTURE GROUNDING SYSTEM					
		2		1	2				2	3				625	34001	5	EACH	POWER SERVICE, AS PER PLAN			1163		
		1								1				625	35020	1	EACH	RE-ERECT EXISTING LIGHT TOWER					
		2,945	1,436	1,493	612	631			2,864	3,645	608			625	36010	7,117	FT	UNDERGROUND WARNING/MARKING TAPE					
			1	1	3				2	3				625	37101	5	EACH	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN			1163		
							9	1	4	6				625	39520	10	EACH	PULL BOX CLEANED					
									LS	LS				SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING			1163		
							2		1	1				625	75350	2	EACH	LIGHT TOWER REMOVED					

LIGHTING GENERAL SUMMARY

FRA-70/71-12.68 / 14.86

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SHEET NO.	SIDE	ROADWAY	STATION TO STATION	CIRCUIT NODES	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625							
					CONNECTION, UNFUSED PERMANENT	NO. 4 AWG 2400V DISTRIBUTION CABLE	NO. 1/0 AWG 2400V DISTRIBUTION CABLE	CONDUIT 2", 725.04	CONDUIT 3", 725.04	LUMINAIRE, UNDERPASS, SOLID STATE (LED), 67W, AS PER PLAN	LUMINAIRE, TUNNEL, SOLID STATE (LED), 240W, AS PER PLAN	LUMINAIRE, DECORATIVE, RECESSED WALL LIGHT, 9W, AS PER PLAN	LUMINAIRE, DECORATIVE, LED TAPE LIGHT, 3W, AS PER PLAN	LUMINAIRE, DECORATIVE, LINEAR LED, 6W, AS PER PLAN	TRENCH	STRUCTURE JUNCTION BOX	PULL BOX, 18", 725.08	PULL BOX, 24", 725.08	STRUCTURE GROUNDING SYSTEM	POWER SERVICE, AS PER PLAN	UNDERGROUND WARNING/MARKING TAPE	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN	LIGHTING MISC.: SERVICE TO DECORATIVE LIGHTING	LIGHTING MISC.: SERVICE TO TUNNEL LIGHTING																
1188	LT	I-70 EB	STA. 190+93.4 TO STA. 191+62.9	CJ-16 TO E.MJB		237																																		
1188	CL	FRONT ST.	STA. 149+00	STRUCTURE																			1																	
1190	RT	SOUDER AVE.	STA. 31+16.5	UNDERPASS																																				
1191	RT	I-70 EB	STA. 186+58.9	UNDERPASS																																				
1191	LT	I-70 EB	STA. 186+41.5	UNDERPASS																																				
1191	RT	RAMP 5C	STA. 5090+93.6	UNDERPASS																																				
1191	LT	I-70 WB	STA. 184+16.6 TO STA. 183+31.5	UP TO PB-14		99		23																																
1191	LT	I-70 WB	STA. 183+31.5	PB-14																																				
1192	RT	LIVINGSTON AVE.	STA. 202+24.7	PWR SVC 'Y'																																				
1192	RT	LIVINGSTON AVE.	STA. 202+24.7 TO STA. 203+36.9	P.S. 'Y' TO PB-15		225	225		65																															
1192	RT	LIVINGSTON AVE.	STA. 203+36.9	PB-15		3																																		
1192	RT	LIVINGSTON AVE.	STA. 203+36.9 TO STA. 203+83.0	PB-15 TO PB-16		315	315		95																															
1192	RT	LIVINGSTON AVE.	STA. 203+83.0	PB-16		3																																		
1192	RT	LIVINGSTON AVE.	STA. 203+83.0 TO STA. 207+40.9	PB-16 TO PB-17			1110		360																															
1192	RT	LIVINGSTON AVE.	STA. 207+40.9	PB-17																																				
1192	RT/LT	LIVINGSTON/FRONT	STA. 203+36.9 TO STA. 149+27.7	PB-15 TO SJB-8		243			71																															
1192	LT	FRONT ST.	STA. 149+27.7	SJB-8		3																																		
1192	LT	FRONT ST.	STA. 149+27.7 TO STA. 150+26.5	SJB-8 TO SJB-7		351			107																															
1192	LT	FRONT ST.	STA. 150+26.5	SJB-7		3																																		
1192	RT	LIVINGSTON/FRONT	STA. 203+71.6 TO STA. 149+20.0	PB-16 TO SJB-9		291			87																															
1192	RT	FRONT ST.	STA. 149+20.0	SJB-9		3																																		
1193	LT	FRONT ST.	STA. 149+27.7	SJB-8 (DEC.LT)																																				
1193	LT	FRONT ST.	STA. 150+26.5	SJB-7 (DEC.LT)																																				
1193	RT	FRONT ST.	STA. 149+19.0	SJB-9 (DEC.LT)																																				
1194	LT/RT	I-70	TUNNEL LIGHTING SYSTEM	TUNNEL																																				
<b>TOTALS CARRIED TO LIGHTING GENERAL SUMMARY</b>					15	1761	1650	23	785	44	169	0	0	0	631	3	2	2	1	2	631	3	3	1																

CALCULATED	JCS
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<b>LIGHTING SUBSUMMARY</b>	
<b>FRA-70/71-12.68 / 14.86</b>	
1170 1815	

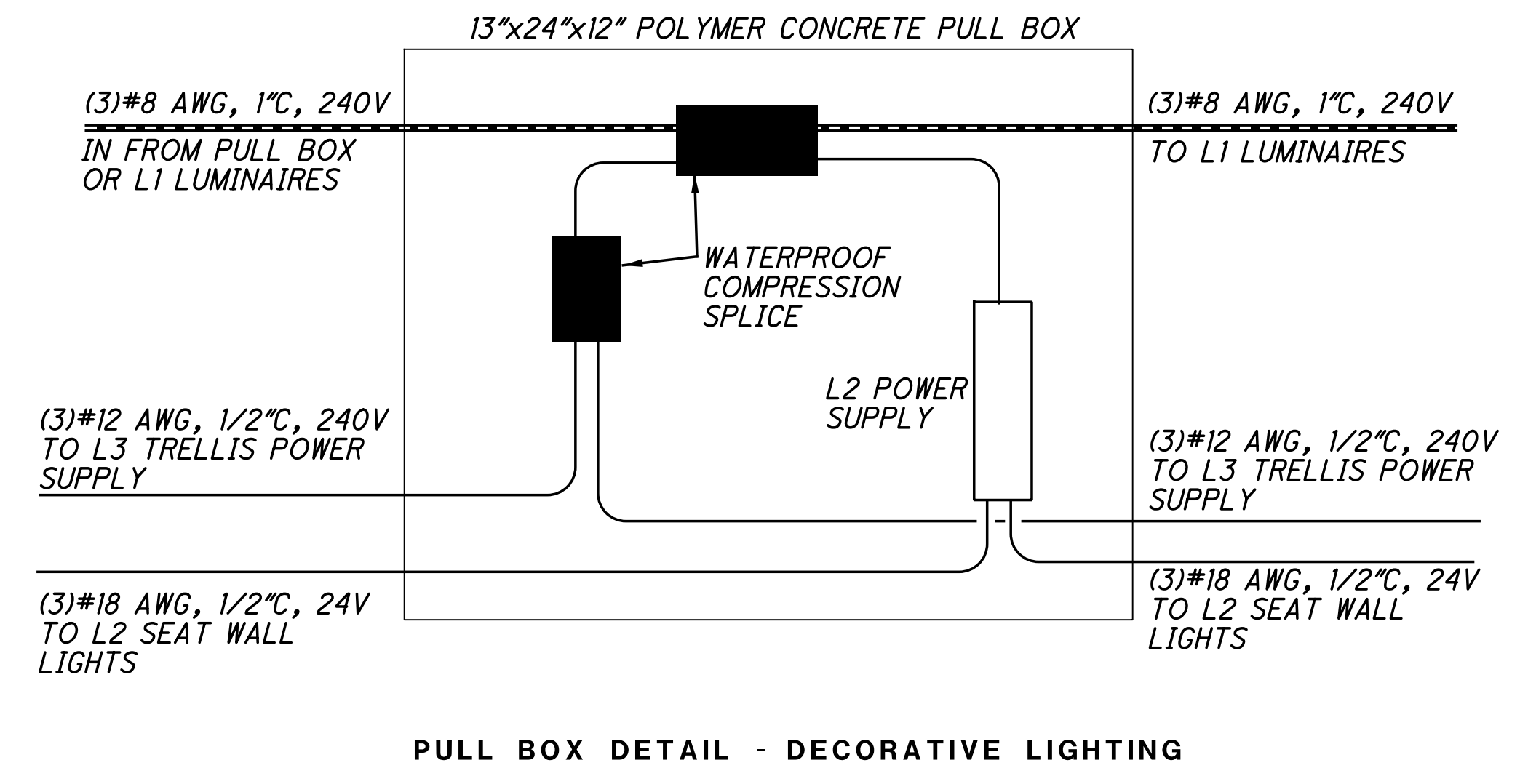
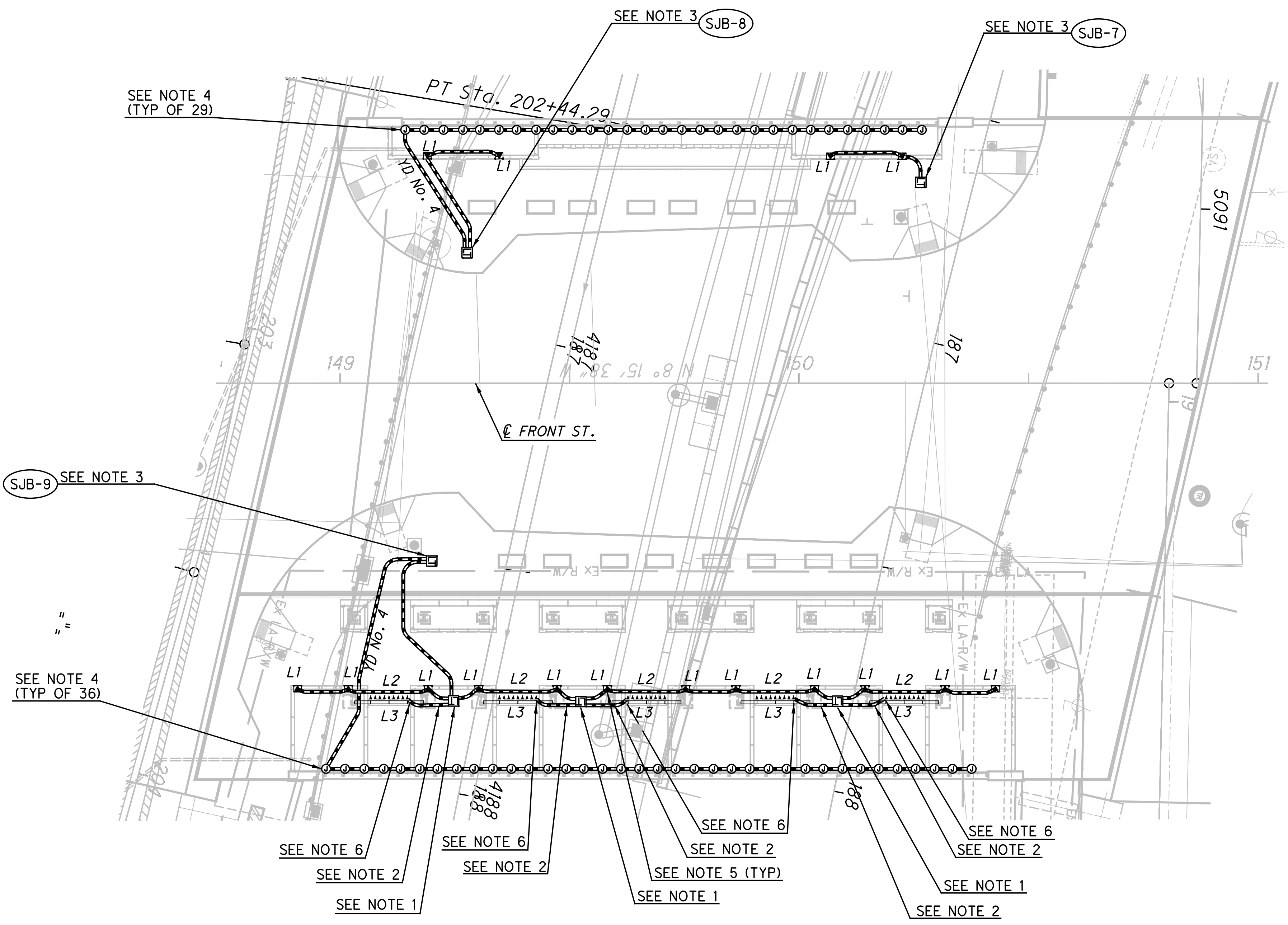


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DECORATIVE LIGHTING PLAN - FRONT ST.  
STA. 148+00 TO STA. 151+50

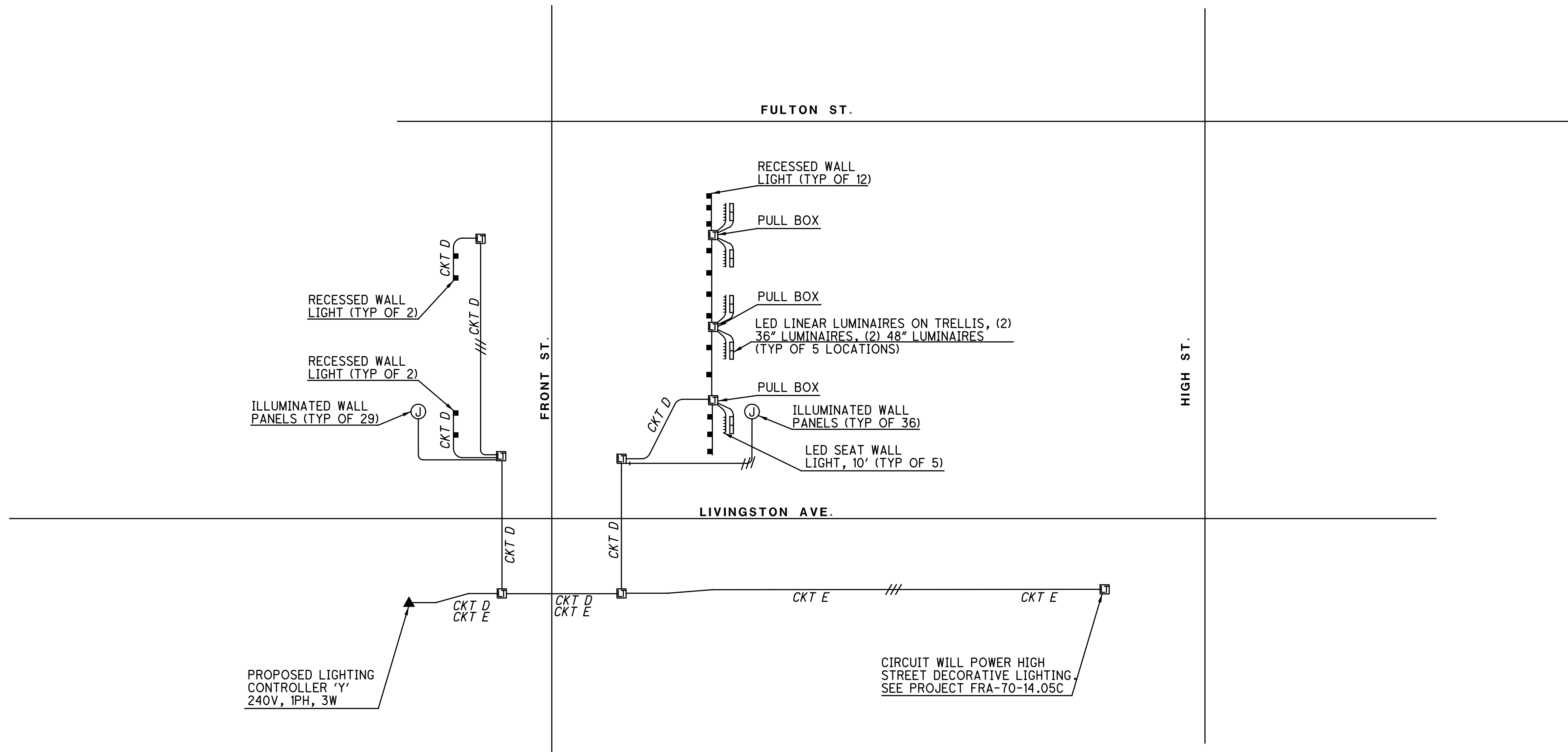
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1193  
1815



DECORATIVE LIGHTING LEGEND	
■	L1 LUMINAIRE, DECORATIVE, RECESSED WALL LIGHT, 3.8W, 329 LUMENS, 240V, APP RECESSED WALL LIGHT WITH HOUSING CAST INTO PRECAST PLANTER WALLS, WITH INTEGRAL DRIVER. BEGA MODEL #33 166, 3.8W, 240V
.....	L2 LUMINAIRE, DECORATIVE, LED SEAT WALL LIGHT, 3.5W/FT, 294 LUMENS PER FOOT, 24V DC, APP LED LIGHT FIXTURE, MOUNTED TO UNDERSIDE OF PRECAST SEATWALL, WITH REMOTE DRIVER IN POLYMER CONCRETE PULL BOX (LOCATION AS NOTED). KENDO M WET, MODEL #KMW-XX-HE48MO-30K-F-FC-BK/PDCU-W-3X96W-24
———	L3 LUMINAIRE, DECORATIVE, LINEAR LED, 3.5W/FT, 974 LUMENS, APP LINEAR LED LUMINAIRE WITH REMOTE POWER SUPPLY (SIZE AS NOTED), INSIGHT MEDLEY X, 36" LENGTH: MODEL #MX/LO/35K/1560/D/SMS/36/REM/TBR; 48" LENGTH: #MX/LO/35K/1560/D/SMS/48/REM/TBR, 3.5W/FT
⊙	8-1/2" X 4-1/2" X 4" DEEP CAST IRON JUNCTION BOX, MOUNTED ON BRIDGE WALL FOR WIRING TO TRANSLUCENT WALL PANELS.

- GENERAL NOTES:
- ALL CONDUIT INDICATED ON THIS PLAN IS 725.04, 1" WITH THREE No. 8 AWG CONDUCTORS, UNLESS NOTED OTHERWISE. ALL CONDUCTORS IN CONDUITS ON THIS PLAN SHALL BE 600V INSULATED CONDUCTORS.
  - 480V LIGHTING CONDUITS THAT FEED STREET LIGHTING ARE NOT SHOWN ON THIS PLAN FOR CLARITY. REFER TO SHEET 1204 FOR ROADWAY LIGHTING PLAN.
  - PULL BOXES SHALL BE AT GRADE AND FLUSH WITH PAVEMENT, OR SOIL IF LOCATED IN PLANTER BED. PULL BOX COVERS SHALL BE LABELED 'LIGHTING'.
  - REFER TO AESTHETIC ENHANCEMENT PLANS FOR ADDITIONAL INFORMATION. SEE SHEETS 1748-1815.
  - LUMINAIRES ARE QUANTIFIED IN AESTHETIC ENHANCEMENT PLANS. SEE SHEETS 1748-1815.
  - ALL ELECTRICAL CONDUIT SHOWN ON THE PLAN IS SCHEMATIC IN NATURE. CONTRACTOR SHALL COORDINATE EXACT CONDUIT ROUTING WITH AESTHETIC ENHANCEMENT PLANS, CONCRETE STRUCTURES AND PLANTER BEDS.

- NOTES:
- POLYMER CONCRETE PULL BOX, 13"x24"x12", BETWEEN TRELLIS STRUCTURES. SPLICE TO 240V FEED FOR TYPE 'L1' LINEAR LUMINAIRES, TO 24V POWER SUPPLY FOR L2 SEAT WALL LIGHT, AND TO REMOTE POWER SUPPLY ON BACK OF TRELLIS FOR L3 LUMINAIRES. SEE DETAIL THIS SHEET.
  - TWO CONDUITS, 725.04. ONE (1) 1/2" CONDUIT, 725.04 WITH THREE (3) No. 12 AWG CONDUCTORS, 240V, TO TRELLIS. CONNECT TO DRIVER MOUNTED ON REAR OF TRELLIS STRUCTURE. ONE (1) 1/2" CONDUIT, 725.04 WITH TWO (2) #18AWG 24V CONDUCTORS TO LED SEAT WALL LIGHTS.
  - CONNECT TO CIRCUIT YD IN STRUCTURE JUNCTION BOX. 240V, 1PH, 3W.
  - PROVIDE JUNCTION BOXES MOUNTED ON BRIDGE WALL CAP, FOR CONNECTION TO LIGHTED WALL PANELS. EXTEND (3) #12 AWG CONDUCTORS FROM EACH JUNCTION BOX TO LIGHTING DRIVER IN WALL PANELS. SEE AESTHETIC ENHANCEMENT PLANS FOR ADDITIONAL INFORMATION.
  - PROVIDE JUNCTION BOX AT REAR OF L1 RECESSED WALL LIGHTS FOR SPLICING TO LUMINAIRE, AS REQUIRED.
  - PROVIDE POWER SUPPLY, INSIGHT CE-320, FOR TRELLIS LINEAR LED LUMINAIRES, MOUNTED TO REAR OF TRELLIS. CONNECT TO CIRCUIT FROM PULL BOX, AND PROVIDE CONNECTION FROM POWER SUPPLY TO LUMINAIRES. EACH TRELLIS WILL HAVE FOUR (4) L3 LUMINAIRES: TWO (2) 36" IN LENGTH, AND TWO (2) 48" IN LENGTH. SEE AESTHETIC ENHANCEMENT PLANS FOR FURTHER INFORMATION.



PROPOSED LIGHTING CONTROLLER 'Y' 240V, 1PH, 3W

CIRCUIT WILL POWER HIGH STREET DECORATIVE LIGHTING. SEE PROJECT FRA-70-14.05C

POWER SERVICE DATA									
POWER SERVICE/ CONTROL CENTER	LINE VOLTAGE, PHASE	CONNECTED LOAD (KVA)	ENCLOSURE RATING (AMPS)	ENTRANCE CONDUCTOR SIZE (AWG)	CIRCUIT NAME	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
PROPOSED 'Y'	120/240V 1 PHASE 3 WIRE	7.381 KVA	100A	#1/0 AWG	D	30.8 A	45A	#4 AWG	CITY OF COLUMBUS DEPT OF PUBLIC SERVICE
					E	0	50A	#1/0 AWG	CITY OF COLUMBUS DEPT OF PUBLIC SERVICE

CALCULATED  
JCS  
CHECKED  
LH

LIGHTING CIRCUIT DIAGRAM - CONTROLLER 'Y'

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- B. TRELLIS FIN AND PANEL MATERIAL SHALL MEET THE FOLLOWING MINIMUM GUIDELINES:
- RATE OF BURNING (ASTM D 635). MATERIAL MUST ATTAIN CC2 RATING FOR A NOMINAL THICKNESS OF 1.5 MM (0.060 IN.) AND GREATER.
  - SELF-IGNITION TEMPERATURE (ASTM D 1929). MATERIAL MUST HAVE A SELF-IGNITION TEMPERATURE GREATER THAN 850 DEGREES F.
  - DENSITY OF SMOKE (ASTM D 2843). MATERIAL MUST HAVE A SMOKE DENSITY LESS THAN 10%.
  - COLOR INFUSION MUST USE WATER SOLUBLE DYES AND PENETRATE AT LEAST 150 MICRONS INTO MATERIAL.
  - APPLIED COATINGS MUST BE LOW-VOC, CONTAIN NON-TOXIC PIGMENTS, NOT CONTAIN ANY HEAVY METALS AND BE APPROVED FOR EXTERIOR USE.
  - MATTE SURFACE SHALL BE COMPLETELY RENEWABLE ONSITE.
  - PANELS TO CONTAIN A MINIMUM 38% RECYCLED CONTENT WITH A MINIMUM AT LEAST OF 9% POST CONSUMER CONTENT PLUS THE BALANCE WITH AT LEAST 29% PRE-CONSUMER RECYCLE CONTENT AND PASS LEED 2009 CREDIT COMPLIANT BEING CERTIFIED BY A 3RD PARTY SCS CERTIFICATION.
  - PANELS TO BE ACCREDITED FOR EPD LEED V4- 3RD PARTY VERIFIED BY NSF INTERNATIONAL.
  - PANELS AND ALL MATERIALS USED IN PANELS TO BE AMERICAN SOURCING OF MATERIAL AND USA-FABRICATED THRU ENTIRE MANUFACTURE PROCESS.
  - PANELS TO BE RECLAIMED AT END-OF-LIFE PROGRAM THRU ORIGINAL MANUFACTURER'S RECLAIM RECYCLE PROGRAM.
  - PANELS TO BE RECYCLABLE WHERE FACILITIES EXIST.
  - PANELS TO BE GREENGUARD GOLD CERTIFIED UL2818-2013 GOLD STANDARD FOR CHEMICAL EMISSIONS FOR BUILDING MATERIALS, FINISHES, AND FURNISHINGS.

2.6 SCREEN WALL PANEL SUPPORT SYSTEM:

THE SUPPORT SYSTEM FOR THE PANELS SHALL BE A FABRICATED ALUMINUM FRAMEWORK WITH STEEL STRUCTURAL SUPPORTS.

2.7 SCREEN WALL PANEL SUPPORT SYSTEM COMPONENTS:

- ALUMINUM FRAMEWORK TO BE 6063-T6 WITH 70% RECYCLED CONTENT FINISHED WITH ARCHITECTURAL TWO - STEP BLACK ELECTROLYTE PLATING IN CHANNEL SHAPE TO CONCEAL RECESSED LED LIGHTING.
- STEEL STIFFENERS TO BRACE ALUMINUM FRAMEWORK SHALL BE MILD STEEL HOT DIP GALVANIZED AND POWDERCOATED BLACK SHERWIN WILLIAMS GRAPHITE BLACK RAL 9011 (RBS8-00006).
- PANELS SHALL BE FASTENED TO ALUMINUM FRAMEWORK USING CAPS MANUFACTURED FROM 316 STAINLESS STEEL WITH (2) FASTENING HOLES LOCATED AT THE SIDE OF THE CAP FOR USE WITH DRILL MOUNT CAP INSTALLATION TOOL.
- STEEL STIFFENER SHALL BE MOUNTED TO CONCRETE PARAPET THROUGH COMBINATION OF WEDGE ANCHORS AT VERTICAL FACE AND EPOXY ANCHORS AT TOP OF PARAPET; ALUMINUM FRAMEWORK SHALL BE BOLTED TO STEEL STIFFENERS AND VISUALLY COVER ANCHORS AT VERTICAL FRONT FACE OF PARAPET.
- CONTINUOUS DRIP CAP ALONG TOP OF ASSEMBLIES TO BE 6063-T6 WITH 70% RECYCLED CONTENT FINISHED WITH ARCHITECTURAL TWO - STEP BLACK ELECTROLYTE PLATING, OVERLAP DRIP CAPS AT SEAMS.
- CONTINUOUS T-SLOT TYPE GASKET AMESBURY 32007 IN WHITE COLOR SHALL BE PROVIDED AROUND PANEL EDGES.

2.8 SCREEN WALL LED BACK-LIGHTING:

- BASIS OF DESIGN: TRAXON TECHNOLOGIES PROPOINT KONTOUR SERIES LOW PROFILE LED LIGHT BARS WITH WET LOCATION RATING AND UL OR EQUIVALENT RATING:
  - BEAM ANGLE TO BE 25°
  - LIGHTING COLOR TO BE 3500°K WHITE.
- LIGHTING BARS SHALL RECESS IN ALUMINUM STRUCTURE AND MOUNT DIRECTLY TO ALUMINUM STRUCTURE WITH LIGHT BEAM DIRECTED TOWARDS THE CENTER OF THE ASSEMBLY.
- SUPPLIER TO PROVIDE 100W DRIVER IP67 / IP65 EXTERIOR RATED AS WELL AS MC CABLING AND PLUG AND PLAY CONNECTIONS FOR JOINING THE ASSEMBLIES ALONG THE SIDE OF THE BRIDGE CONTINUOUSLY.
- ALL ELECTRICAL COMPONENTS TO BE PRE-ASSEMBLED AND INSTALLED PRIOR TO DELIVERY TO JOB SITE.
- QUICK DISCONNECT BETWEEN DRIVER AND LINE VOLTAGE TO BE PROVIDED WITHIN THE DRIVER JUNCTION BOX, OR RATED ACCORDINGLY IF WET LOCATION DRIVER USED. #8 AWG MAINLINE TO BE USED TO PROVIDE POWER TO AREAS BETWEEN PILASTERS, WITH #12 AWG MC TO BE USED FROM MAIN LINE TO INDIVIDUAL ASSEMBLIES BETWEEN PILASTERS.
- DRIVERS, AND CABLING SHALL ALL NEST WITHIN RECESSES OF ALUMINUM FRAMEWORK AND NOT SHADOW OR IMPEDE LIGHTING OF PANELS.
- LIGHTING PULL BOXES SHALL BE LABELED "LIGHTING".
- FIXTURE FINISH: WHITE

2.9 LIGHT TYPE 1: RECESSED WALL LIGHT

- BASIS OF DESIGN: BEGA MODEL 33 166 LED RECESSED WALL LUMINAIRE.
- INTEGRAL 120V-277V ELECTRONIC DRIVER
- LED 3000K, 3.8W, 329 LUMENS.
- ENCLOSURE MATERIALS: ONE PIECE, DIE CAST ALUMINUM FACEPLATE, 1/8 INCH THICK. CLEAR TEMPERED GLASS WITH TRANSLUCENT WHITE COATING. FACEPLATE SECURED BY TWO (2) SOCKET HEAD, STAINLESS STEEL, CAPTIVE SCREWS THREADED INTO STAINLESS STEEL INSERTS IN THE HOUSING CASTING. CONTINUOUS HIGH TEMPERATURE O-RING GASKET FOR WEATHER TIGHT OPERATION.
- SIZE: 12-1/2 INCHES LONG, 2-3/4 INCHES HIGH, 5 INCHES DEEP.
- POLYESTER POWDER COATING, 3 MIL THICKNESS, BLACK COLOR.
- UL LISTED FOR WET LOCATION AND FOR INSTALLATION WITHIN 3 FEET OF GROUND. TYPE NON-IC. PROTECTION CLASS: IP 65.
- CUSTOM BACK BOX ASSEMBLY: SUPPLY MODIFIED BACK BOX TO PRECAST WALL FABRICATOR FOR CASTING INTO PLANTER WALL PANELS.

2.10 LIGHT TYPE 2: SEAT WALL LIGHT

- BASIS OF DESIGN: LUMINII KENDO M WET LINEAR ILLUMINATION SYSTEM. MODEL #KMW-XX-HE48MO-30K-F-FC/PDCU-W-3X96W-24
- REMOTE LED DRIVER MOUNTED IN STRUCTURE JUNCTION BOX
- LED 3000K, MEDIUM OUTPUT, 3.8W/FT., 294 LUMENS.
- ENCLOSURE MATERIALS: EXTRUDED ALUMINUM WITH FIXED LINEAR FROSTED LENS AND FIXED MOUNTING CLIPS. E. SIZE: 0.70 INCHES WIDE, 0.63 INCHES TALL, 112 INCHES NOMINAL (111-1/16 INCH ACTUAL) LENGTH.
- POLYESTER POWDER COATING, 3 MIL THICKNESS, BLACK COLOR.
- UL LISTED FOR WET LOCATIONS, CLASS 2, IP 68.

2.11 LIGHT TYPE 3: FRONT STREET TRELLIS LIGHT

- BASIS OF DESIGN: INSIGHT MEDLEY X SERIES, (2) 36" IN LENGTH: MX/LO/35K/1560/D/SMS/36/REM/TBR (2) 48" IN LENGTH: MX/LO/35K/1560/D/SMS/48/REM/TBR TO MATCH LONG STREET BRIDGE TRELLIS.
- REMOTE LED DRIVER MODEL RPS96 BACK MOUNTED AT EACH FIXTURE.
- LED 3500K, 3.5W/FT., 974 LUMENS.
- ENCLOSURE MATERIALS: EXTRUDED ALUMINUM WITH CAST ALUMINUM END CAPS AND TEMPERED GLASS LENS, FROSTED WHITE.
- SIZE: 3-1/4 INCHES WIDE, 3-1/4 INCHES TALL, 14' FEET TOTAL LENGTH AT EACH LOCATION CONSISTING OF TWO-3' FEET SEGMENTS AT OUTSIDE OF SPAN AND TWO- 4' FEET SEGMENTS AT INSIDE OF SPAN.
- POLYESTER POWDER COATING, 3 MIL THICKNESS, BLACK COLOR (FIXTURE AND POWER SUPPLY). ALL EXPOSED CONDUITS TO BE FIELD PAINTED TO MATCH.
- UL LISTED FOR WET LOCATIONS.

3.0 FABRICATION:

COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR FABRICATION.

3.1 MACHINING:

ACCEPTABLE MEANS OF MACHINING ARE LISTED BELOW. ENSURE THAT MATERIAL IS NOT CHIPPED OR WARPED BY MACHINING OPERATIONS.

- SAWING: SELECT EQUIPMENT AND BLADES SUITABLE FOR TYPE OF CUT REQUIRED.
- DRILLING: DRILLS SPECIFICALLY DESIGNED FOR USE WITH PLASTIC PRODUCTS.
- FORMING: FORM PRODUCTS TO SHAPES INDICATED USING THE APPROPRIATE METHOD LISTED BELOW. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- COLD BENDING, HOT BENDING, THERMOFORMING IS ACCEPTABLE ONLY ON UNCOATED MATERIAL.
- DRAPE FORMING, MATCHED MOLD FORMING, MECHANICAL FORMING, LAMINATING: LAMINATE TO SUBSTRATES INDICATED USING ADHESIVES AND TECHNIQUES RECOMMENDED BY MANUFACTURER.

3.2 MISCELLANEOUS MATERIALS:

- GENERAL: PROVIDE PRODUCTS OF MATERIAL, SIZE, AND SHAPE REQUIRED FOR APPLICATION INDICATED, AND WITH A PROVEN RECORD OF COMPATIBILITY WITH SURFACES CONTACTED IN INSTALLATION.
- CLEANER: TYPE RECOMMENDED BY MANUFACTURER.
- FASTENERS: USE SCREWS DESIGNED SPECIFICALLY FOR PLASTICS. PROVIDE THREADED METAL INSERTS FOR APPLICATIONS REQUIRING FREQUENT DISASSEMBLY SUCH AS LIGHT FIXTURES.
- BONDING CEMENTS: MAY BE ACHIEVED WITH SOLVENTS OR ADHESIVES, SUITABLE FOR USE WITH PRODUCT AND APPLICATION.

E. EXTRA MATERIALS:

- TWO (2) SETS OF WRENCHES PER SCREEN WALL.
- TWENTY (20) REPLACEMENT THREADED PANEL CAPS FOR EACH FINISH SPECIFIED.
- SPARE LIGHT FIXTURES AND LED DRIVERS:
- ONE (1) LED DRIVER.
- 10% OF INSTALLED BALLAST.
- 5% OF LIGHT STRIPS.
- 5% OF TRELLIS LIGHTING.
- 5% OF WALL LIGHTING.

3.3 EXAMINATION:

- EXAMINE SUBSTRATES, AREAS, AND CONDITIONS WHERE INSTALLATION OF PLASTIC FABRICATIONS WILL OCCUR, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH MANUFACTURER'S REQUIREMENTS. VERIFY THAT SUBSTRATES AND CONDITIONS ARE SATISFACTORY FOR INSTALLATION AND COMPLY WITH REQUIREMENTS SPECIFIED.

3.4 INSTALLATION:

- MANUFACTURER'S SHOP TO FABRICATE ITEMS TO THE GREATEST DEGREE POSSIBLE.
- INSTALLATION TO BE PERFORMED BY AN AUTHORIZED MANUFACTURER PARTNER.
- UTILIZE FASTENERS, ADHESIVES AND BONDING AGENTS RECOMMENDED BY MANUFACTURER FOR TYPE OF INSTALLATION INDICATED.
- MATERIAL THAT IS CHIPPED, WARPED, HAZED OR DISCOLORED AS A RESULT OF INSTALLATION OR FABRICATION METHODS WILL BE REJECTED.
- INSTALL COMPONENTS PLUMB, LEVEL AND RIGID, SCRIBED TO ADJACENT FINISHES, IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND PRODUCT DATA.
- FORM FIELD JOINTS USING MANUFACTURER'S RECOMMENDED PROCEDURES.
- LOCATE SEAMS IN PANELS SO THAT THEY ARE NOT DIRECTLY IN LINE WITH SEAMS IN SUBSTRATES.

3.5 CLEANING AND PROTECTION:

- PROTECT SURFACES FROM DAMAGE UNTIL DATE OF SUBSTANTIAL COMPLETION. REPAIR WORK OR REPLACE DAMAGED WORK, WHICH CANNOT BE REPAIRED TO PROJECT ENGINEER'S SATISFACTION.

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED AESTHETIC LIGHT TYPES 1, 2, & 3 MODEL NOS.	MKSK/ LHW	12.03.2021