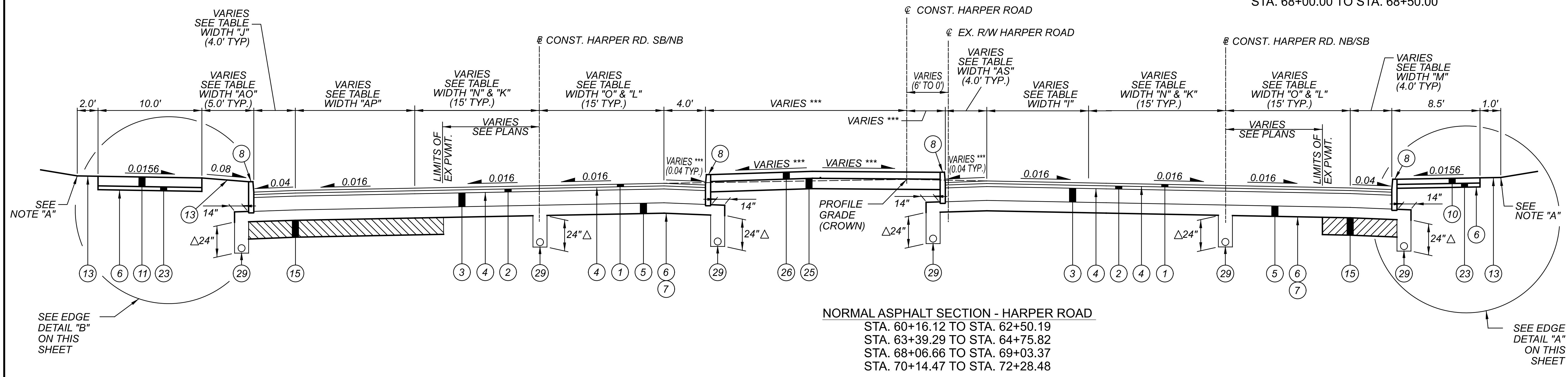
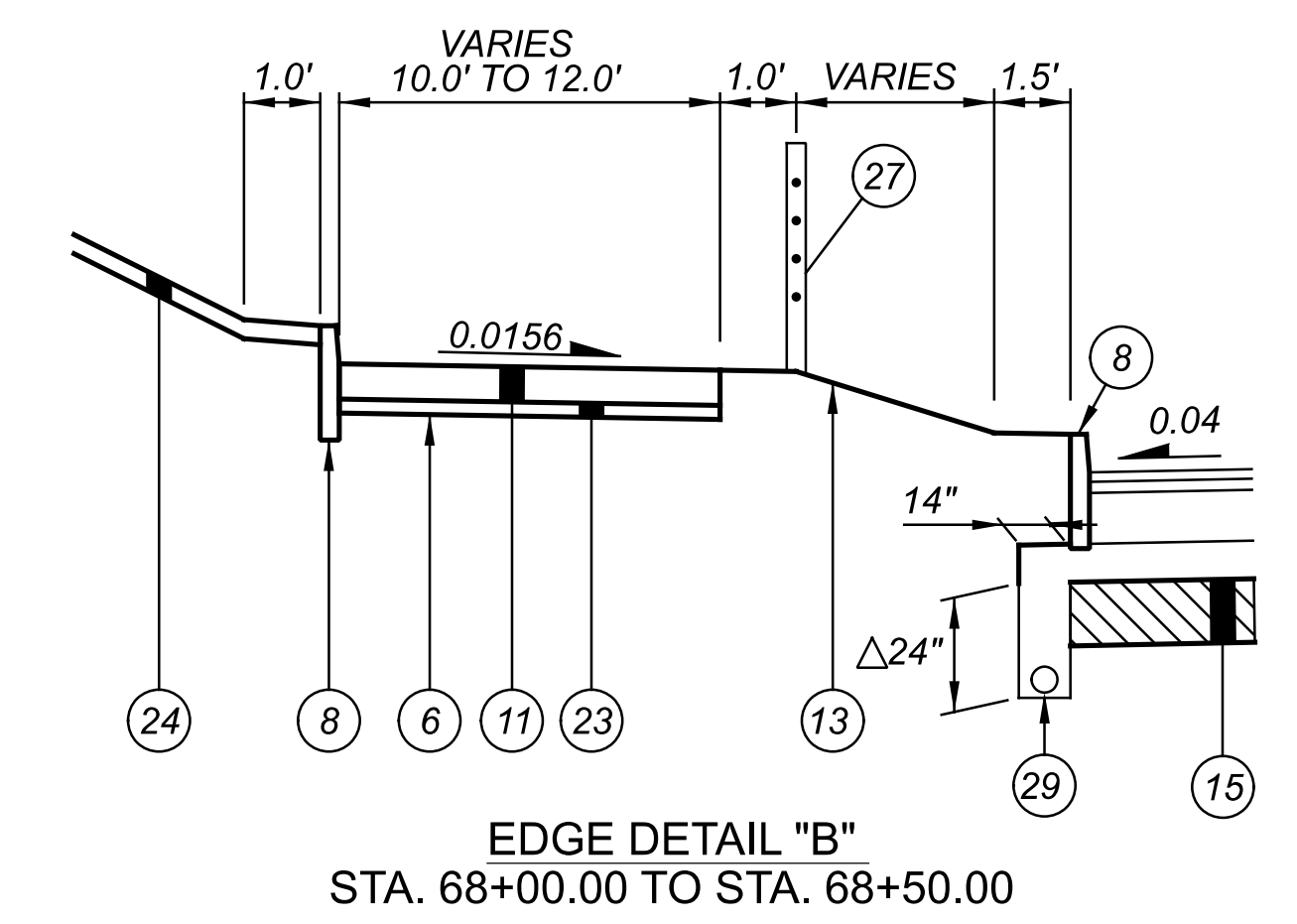
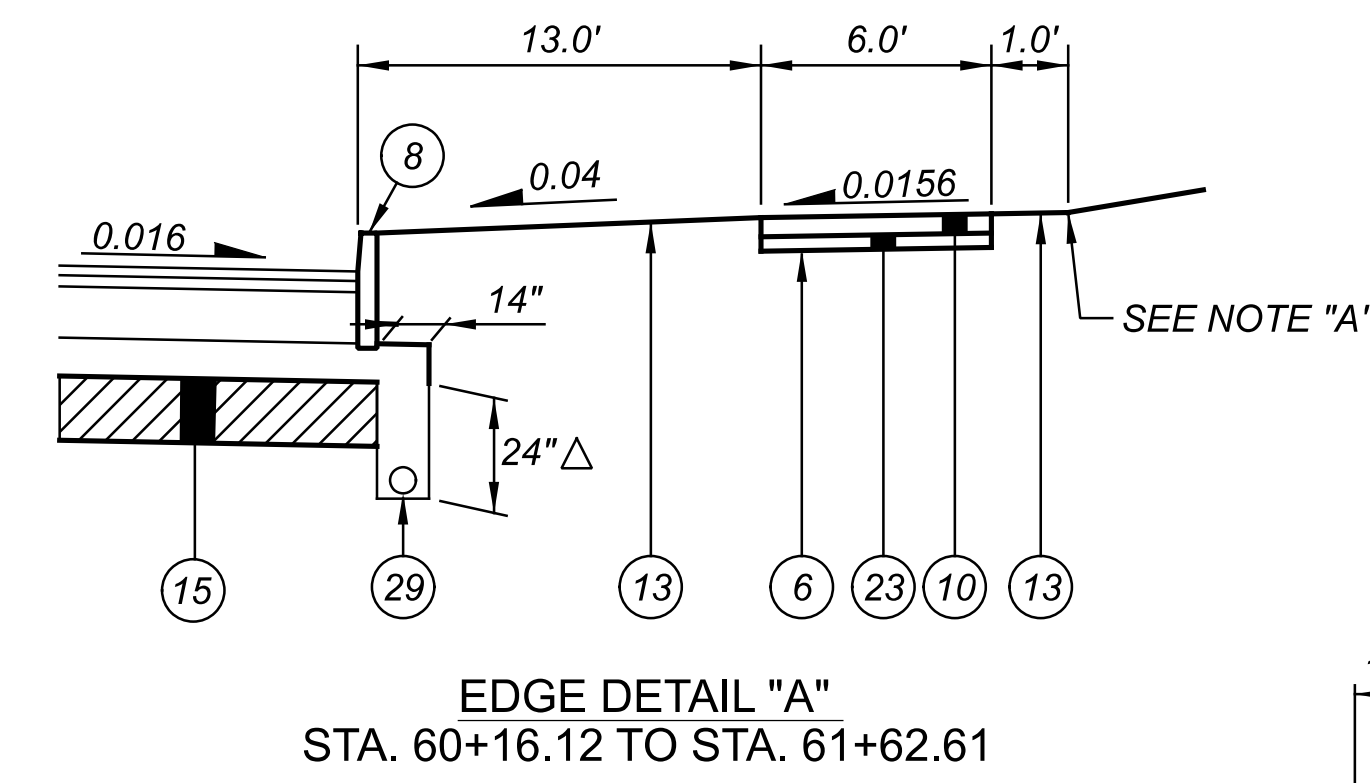
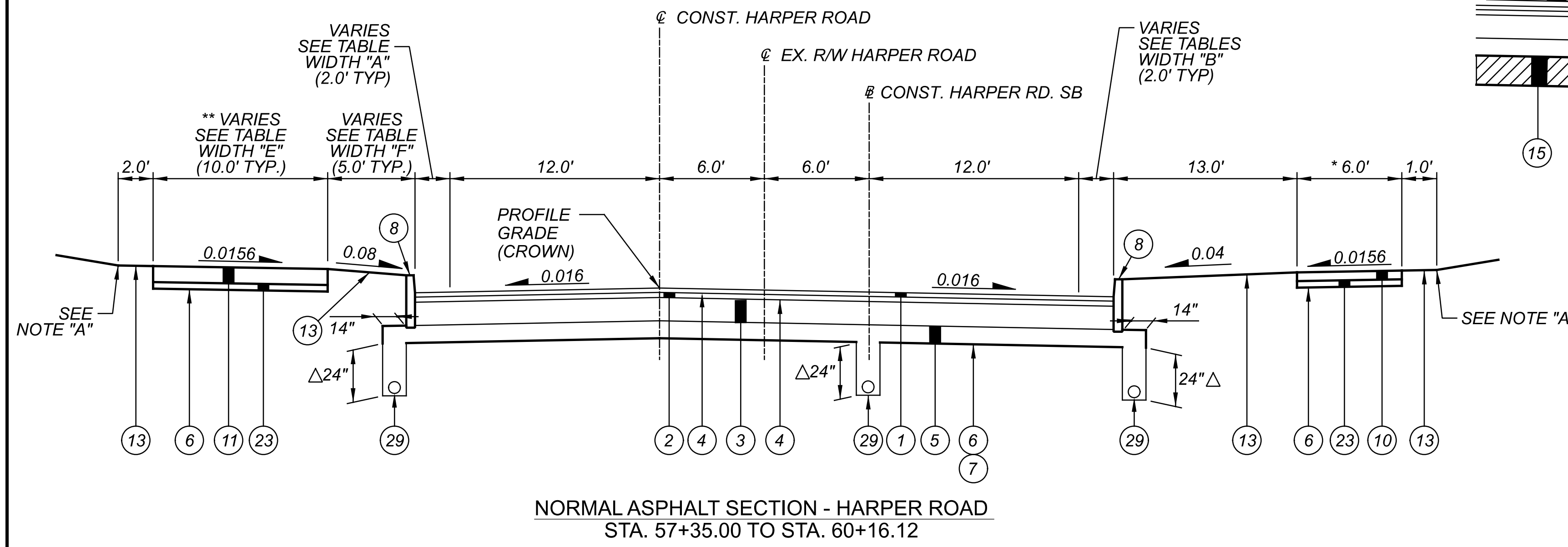


NOTE "A"  
4.0' ROUNDING

\* BEGIN SIDEWALK AT  
STA. 55+50.00 RT

\*\* BEGIN DUAL USE PATH  
AT STA. 55+05.15 LT

\*\*\* SEE INTERSECTION & ISLAND DETAILS FOR  
ADDITIONAL INFORMATION ON SHEETS 341 - 348  
FOR EXISTING LEGEND, SEE SHEET 9  
FOR SUPERELEVATION TABLES, SEE SHEETS 331 - 339.  
FOR INTERSECTION DETAILS, SEE SHEETS 341 - 344.  
FOR ISLAND DETAILS, SEE SHEETS 345 - 348.  
FOR WIDTH TABLES, SEE SHEET 13.  
△ OR AS SHOWN IN UNDERDRAIN PLAN ON SHEETS 368 - 369



**PROPOSED LEGEND**

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>① ITEM 442 - 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)</li> <li>② ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)</li> <li>③ ITEM 302 - 7" ASPHALT CONCRETE BASE, PG64-22, (449)</li> <li>④ ITEM 407 - NON-TRACKING TACK COAT</li> <li>⑤ ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN "A"</li> <li>⑥ ITEM 204 - SUBGRADE COMPACTION</li> <li>⑦ ITEM 204 - PROOF ROLLING</li> <li>⑧ ITEM 609 - CURB, TYPE 6</li> <li>⑨ ITEM 609 - 6" CONCRETE TRAFFIC ISLAND, AS PER PLAN</li> <li>⑩ ITEM 608 - 4" CONCRETE WALK</li> </ul> | <ul style="list-style-type: none"> <li>⑪ ITEM 608 - 6" CONCRETE WALK</li> <li>⑫ ITEM 605 - 6" BASE PIPE UNDERDRAINS, AS PER PLAN</li> <li>⑬ ITEM 659 - SEEDING AND MULCHING, CLASS 1</li> <li>⑭ ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE C1</li> <li>⑮ SUBGRADE STABILIZATION, SEE SHEET 22 FOR LIMITS AND DETAILS</li> <li>⑯ ITEM 617 - COMPACTED AGGREGATE<br/>ITEM 617 - SHOULDER PREPARATION<br/>ITEM 617 - WATER</li> <li>⑰ ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN</li> <li>⑱ ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D</li> <li>⑲ ITEM 609 - CURB, TYPE 7</li> <li>⑳ ITEM 606 - GUARDRAIL, TYPE MGS</li> </ul> | <ul style="list-style-type: none"> <li>㉑ ITEM 441 - 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), (UNDER GUARDRAIL), AS PER PLAN</li> <li>㉒ ITEM 209 - LINEAR GRADING, AS PER PLAN</li> <li>㉓ ITEM 304 - 3" AGGREGATE BASE, AS PER PLAN "B"</li> <li>㉔ ITEM 601 - CONCRETE SLOPE PROTECTION</li> <li>㉕ ITEM 304 - 4" AGGREGATE BASE, AS PER PLAN "A"</li> <li>㉖ ITEM 609 - 4" CONCRETE TRAFFIC ISLAND</li> <li>㉗ ITEM 607 - FENCE, MISC.: WOOD FENCE</li> <li>㉘ ITEM 606 - GUARDRAIL, TYPE MGS, AS PER PLAN</li> <li>㉙ ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS, AS PER PLAN</li> <li>㉚ ITEM 659 - SEEDING AND MULCHING</li> </ul> |
|---|---|--|

CUY-422-16.20 (HARPER ROAD)  
 MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 11:29:04 AM USER: cluzler  
 C:\Clients\ORD\2020\202338\113889\400-Engineering\Roadway\Sheets\113889\_GY010.dgn

PROPOSED TYPICAL SECTIONS

DESIGN AGENCY  
  
 DESIGNER  
 KRM  
 REVIEWER  
 CWL 09/02/21  
 PROJECT ID  
 113889  
 SHEET TOTAL  
 11 481

**PAVEMENT**

**ITEM 304 - AGGREGATE BASE, AS PER PLAN "A"**

THIS ITEM SHALL CONFORM TO ITEM 304 WITH THE EXCEPTION THAT THE AGGREGATE SHALL BE LIMESTONE AND MEET THE FOLLOWING GRADATIONS: PAVEMENT SUBBASE SHALL BE ITEM 304. NO RECYCLED MATERIALS WILL BE PERMITTED.

**ITEM 304 - AGGREGATE BASE, AS PER PLAN "B"**

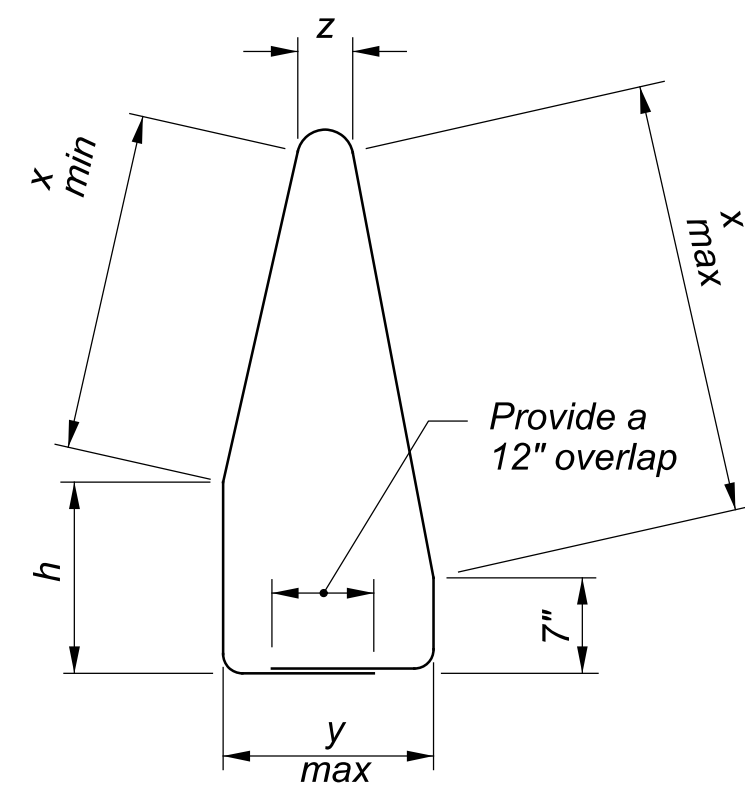
THIS ITEM SHALL CONFORM TO ITEM 304 WITH THE EXCEPTION THAT THE AGGREGATE SHALL BE LIMESTONE AND MEET THE FOLLOWING GRADATIONS: SIDEWALKS, DRIVEWAYS AND MULTI-USE PATHS SHALL BE #57. NO RECYCLED MATERIALS WILL BE PERMITTED.

**ITEM 609 - 6" CONCRETE TRAFFIC ISLAND, AS PER PLAN**

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 609 WITH THE ADDITION OF 1" THICK CMS 705.03 PREFORMED FILLER AT THE INTERFACE OF THE EXISTING BRIDGE PIERS AND ITEM 609 - 6" CONCRETE TRAFFIC ISLAND, AS PER PLAN.

**ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1**

CUY-422 END ANCHORAGES			
STATION	LENGTH (FEET)	"h" (INCH)	"y" (INCH)
268+12.47	15.00	29.37	33.94
268+27.47		29.42	33.95



Y401 #4

**DRAINAGE**

**ROTATE MANHOLE COVERS**

THE CONTRACTOR SHALL ROTATE/ORIENT THE MANHOLE RISER SO THAT THE COVER IS IN THE SHOULDER AT THE FOLLOWING STRUCTURES:

D-18 AND D-63

THE CONTRACTOR SHALL ROTATE/ORIENT THE MANHOLE RISER SO THAT THE COVER IS OUTSIDE THE LIMIT OF THE DUAL-USE PATH AT THE FOLLOWING STRUCTURES:

D-18, D-54, D-56 AND D-60

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

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

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

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

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

**ITEM SPECIAL - MISCELLANEOUS METAL**

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. FURNISH MATERIALS PER ITEM 611 WITH PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MISCELLANEOUS METAL 500 POUNDS

REPLACE CASTINGS DAMAGED BY THE CONTRACTOR NEGLIGENCE, AS DETERMINED BY THE ENGINEER, AT THE EXPENSE OF THE CONTRACTOR.

**REVIEW OF DRAINAGE FACILITIES**

PRIOR TO THE START OF WORK AND AGAIN BEFORE FINAL ACCEPTANCE, PERFORM AN INSPECTION WITH REPRESENTATIVES OF THE STATE, CONTRACTOR, AND LOCAL REPRESENTATIVES OF ALL EXISTING DRAINAGE FACILITIES THAT ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION ARE MAINTAINED BY THE STATE.

CONFIRM ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES ARE MAINTAINED AND LEFT IN A CONDITION COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. THE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY CHANGE IN THE CONDITION RESULTING FROM THEIR OPERATIONS AS DIRECTED AND APPROVED BY THE ENGINEER.

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

**EXISTING SUBSURFACE DRAINAGE**

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE. UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR THE WORK NOTED ABOVE:

601, TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	8 SQ. YD.
611, 6" CONDUIT, TYPE F	40 FT.
611, PRECAST REINFORCED CONCRETE OUTLET	4 EACH
605, 6" UNCLASSIFIED PIPE UNDERDRAINS, AS PER PLAN	40 FT.

**UNRECORDED STORM WATER DRAINAGE**

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

611, 6" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION	200 FT.
611, 6" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION	200 FT.
611, 6" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION	200 FT.
611, 6" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION	200 FT.

**ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS, AS PER PLAN  
 ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS, AS PER PLAN  
 ITEM 605 - 6" BASE PIPE UNDERDRAINS, AS PER PLAN**

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 605 WITH THE EXCEPTION THAT CONDUIT MATERIAL SHALL CONFORM TO CMS 707.41 AND BACKFILL CONFORM TO CMS 703.01.

**ITEM 611 - MANHOLE, NO. 3, AS PER PLAN**

MANHOLES UNDER THIS ITEM HAVE A BASE LARGER THAN 60" AND ARE NOT ADDRESSED IN THE CITY OF SOLON STANDARD CONSTRUCTION DRAWINGS. THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-3 EXCEPT THAT THE MANHOLE BASE SIZE AND TRANSITION FOLLOW ODOT ITEM 611 AND STANDARD CONSTRUCTION DRAWING MH-3. IN ADDITION, A SLOTTED ROUND GRATE SHALL BE INSTALLED WHERE NOTED IN THE PLANS AND SHALL BE EAST JORDAN GRATE 1251M OR GRATE 1450M OR APPROVED EQUIVALENT.

**ITEM 611 - MANHOLE, MISC.: CITY OF SOLON STANDARD MANHOLE, TYPE "C" (ST-3)**

MANHOLES DESIGNATED UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-3, AS SHOWN ON SHEET 370.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - MANHOLE, MISC.: CITY OF SOLON STANDARD MANHOLE, TYPE "C" (ST-3).

**ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD VERTICAL CURB INLET (ST-5B)**

CATCH BASINS DESIGNATED UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-5B, AS SHOWN ON SHEET 370. OFFSETS LISTED IN PLANS ARE TO FACE OF CURB.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD VERTICAL CURB INLET (ST-5B).

**ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD 2-2B CATCH BASIN (ST-6B)**

CATCH BASINS DESIGNATED UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-6B, AS SHOWN ON SHEET 370.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD CATCH BASIN (ST-6B).

**ITEM 611 - CATCH BASIN, NO. 6, AS PER PLAN**

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 AND STANDARD CONSTRUCTION DRAWING CB-6 WITH THE FOLLOWING EXCEPTIONS FROM THE CITY OF SOLON:

1. ALL BRICK SHALL BE RED SHALE BRICK CONFORMING TO ODOT ITEM 704.01 (ASTM C32), UNLESS APPROVED IN WRITING BY THE ENGINEER
2. THE ENTIRE AREA AROUND THE BASIN SHALL BE BACKFILLED WITH ODOT ITEM #304 CRUSHED LIMESTONE, MECHANICALLY COMPACTED IN 12" LIFTS.
3. PRECAST UNITS SHALL BE SET ON 6" - #57 CRUSHED LIMESTONE.
4. ALL SEWER PIPES SHALL HAVE BOOTED CONNECTIONS CAST INTO THE STRUCTURE.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - CATCH BASIN, NO. 6, AS PER PLAN

**ITEM 611 - " CONDUIT, TYPE , AS PER PLAN, 707.65**

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 AND ODOT CMS 707.65 WITH ALL PIPES FROM 30" TO 60" DIAMETERS TO BE TRIPLE WALL PIPE.

DESIGN AGENCY



DESIGNER  
ATR

REVIEWER  
CWL 09/02/21

PROJECT ID  
113889

SHEET TOTAL  
23 481

QUANTITIES CARRIED TO GENERAL NOTES SUBSUMMARY ON SHEET 26

**EROSION CONTROL**

**ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN**

THIS ITEM SHALL CONSIST OF CONSTRUCTING CONCRETE PAVED GUTTER AS PER STANDARD CONSTRUCTION DRAWING DM-2.1 AND THE DETAILS AS SHOWN ON SHEET NO. 18 AT THE LOCATIONS SHOWN IN THE PLANS. THE GUTTER SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN IN THE DETAIL. PEJF (PERFORMED EXPANSION JOINT FILLER) SHALL BE PER CMS 516 AND IS INCLUDED IN THE COST OF THE PAVED GUTTER.

ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE ABOVE-DESCRIBED WORK SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER FOOT FOR ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN.

**ITEM 659 - SEEDING AND MULCHING**

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

ITEM 659, SOIL ANALYSIS TEST	2 EACH
ITEM 659, TOPSOIL	2890 CU. YD.
ITEM 659, SEEDING AND MULCHING, CLASS 1	14259 SQ. YD.
ITEM 659, SEEDING AND MULCHING	11775 SQ. YD.
ITEM 659, REPAIR SEEDING AND MULCHING	1302 SQ. YD.
ITEM 659, INTER-SEEDING	1302 SQ. YD.
ITEM 659, COMMERCIAL FERTILIZER	3.64 TON
ITEM 659, LIME	5.38 ACRES
ITEM 659, WATER	145 M. GAL.
ITEM 659, MOWING	59 MSF.

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

QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. ANY ADDITIONAL AREAS OUTSIDE OF THE AREAS IDENTIFIED THAT ARE DISTURBED BY CONTRACTOR TO FACILITATE CONSTRUCTION MUST BE RESTORED IN ACCORDANCE WITH C&MS 107.10 AND CONSIDERED INCIDENTAL TO THE WORK. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THESE AREAS.

**EARTHWORK SUBSUMMARY**

THE FOLLOWING IS A SUMMARY OF ALL EARTHWORK QUANTITIES. EARTHWORK END AREA CALCULATIONS PROVIDED WITHIN OFFICE CALCULATIONS FOR REFERENCE ONLY.

<b>HARPER RD</b>	
203, EXCAVATION	5222 CU. YD.
203, EMBANKMENT	1536 CU. YD.
204, EXCAVATION OF SUBGRADE	830 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	830 CU. YD.
204, GEOGRID	2491 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	4814 SQ. YD.
<b>RAMP 1A</b>	
203, EXCAVATION	649 CU. YD.
203, EMBANKMENT	207 CU. YD.
204, EXCAVATION OF SUBGRADE	189 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	189 CU. YD.
204, GEOGRID	566 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	2332 SQ. YD.
<b>RAMP 1B</b>	
203, EXCAVATION	1453 CU. YD.
203, EMBANKMENT	210 CU. YD.
204, EXCAVATION OF SUBGRADE	443 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	443 CU. YD.
204, GEOGRID	1329 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	861 SQ. YD.
659, SEEDING AND MULCHING	2608 SQ. YD.
<b>RAMP 2A</b>	
203, EXCAVATION	310 CU. YD.
203, EMBANKMENT	65 CU. YD.
204, EXCAVATION OF SUBGRADE	74 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	74 CU. YD.
204, GEOGRID	221 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	226 SQ. YD.
659, SEEDING AND MULCHING	601 SQ. YD.

**EARTHWORK SUBSUMMARY - CONTINUED**

<b>RAMP 2B</b>	
203, EXCAVATION	254 CU. YD.
203, EMBANKMENT	211 CU. YD.
204, EXCAVATION OF SUBGRADE	120 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	120 CU. YD.
204, GEOGRID	359 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	1289 SQ. YD.
<b>RAMP 3A / EX. RAMP 5</b>	
203, EXCAVATION	1621 CU. YD.
203, EMBANKMENT	794 CU. YD.
204, EXCAVATION OF SUBGRADE	318 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	318 CU. YD.
204, GEOGRID	955 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	314 SQ. YD.
659, SEEDING AND MULCHING	6580 SQ. YD.
<b>RAMP 3B</b>	
203, EXCAVATION	518 CU. YD.
203, EMBANKMENT	203 CU. YD.
204, EXCAVATION OF SUBGRADE	174 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	174 CU. YD.
204, GEOGRID	523 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	1953 SQ. YD.
<b>RAMP 4A</b>	
203, EXCAVATION	124 CU. YD.
203, EMBANKMENT	632 CU. YD.
204, EXCAVATION OF SUBGRADE	153 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	153 CU. YD.
204, GEOGRID	458 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	606 SQ. YD.
<b>RAMP 4B</b>	
203, EXCAVATION	250 CU. YD.
203, EMBANKMENT	348 CU. YD.
204, EXCAVATION OF SUBGRADE	136 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	136 CU. YD.
204, GEOGRID	408 SQ. YD.
659, SEEDING AND MULCHING, CLASS 1	1864 SQ. YD.
<b>RAMP 4</b>	
203, EXCAVATION	469 CU. YD.
203, EMBANKMENT	158 CU. YD.
204, EXCAVATION OF SUBGRADE	159 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	159 CU. YD.
204, GEOGRID	478 SQ. YD.
659, SEEDING AND MULCHING	1986 SQ. YD.

THE FOLLOWING GRAND TOTAL HAS BEEN CARRIED TO THE GENERAL NOTES SUBSUMMARY:

203, EXCAVATION	10870 CU. YD.
203, EMBANKMENT	4364 CU. YD.
204, EXCAVATION OF SUBGRADE	2596 CU. YD.
204, GRANULAR MATERIAL, TYPE B AS PER PLAN	2596 CU. YD.
204, GEOGRID	7788 SQ. YD.

**ENVIRONMENTAL**

**WETLAND AND ENVIRONMENTAL IMPACTS/AVOIDANCE**

THIS PROJECT WILL IMPACT A TOTAL OF 0.20 ACRES OF WETLANDS, 0 LINEAR FEET OF STREAMS AND 0.00 ACRES OF IMPOUNDMENTS. THIS PROJECT WILL IMPACT WETLAND/STREAM/IMPOUNDMENTS AT THE FOLLOWING LOCATION:

<b>WETLAND 1:</b>	
US 422 STA. 825+41	0.00 ACRES
<b>WETLAND 2:</b>	
RAMP 1B STA. 441+54	0.00 ACRES
<b>WETLAND 3:</b>	
RAMP 1B STA. 446+16	0.05 ACRES
<b>WETLAND 4:</b>	
RAMP 3A STA. 650+67	0.00 ACRES
<b>WETLAND 5:</b>	
RAMP 3A STA. 656+46	0.00 ACRES
<b>WETLAND 6:</b>	
RAMP 4A STA. 351+00	0.15 ACRES
	0.20 ACRES TOTAL
<b>STREAM 1:</b>	
RAMP 2A STA. 646+15	0 LIN. FT.
<b>STREAM 2:</b>	
RAMP 1B STA. 437+59	0 LIN. FT.
<b>STREAM 3:</b>	
HARPER RD STA. 70+58	0 LIN. FT.
	0 LIN. FT. TOTAL
<b>IMPOUNDMENT 1:</b>	
HARPER RD STA. 57+02	0.00 ACRES
	0.00 ACRES TOTAL

UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR IMPACT THE REMAINING WETLANDS/STREAMS/IMPOUNDMENTS INDICATED ON THE PLAN. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE EQUIPMENT AND/OR MATERIALS WITHIN THESE WETLANDS.

TO PROTECT AND DELINEATE THE BOUNDARY OF THE EXISTING REMAINING WETLANDS, TEMPORARY CONSTRUCTION FENCE AND FILTER FABRIC FENCE 1500 LINEAR FEET, PAYMENT FOR THIS ITEM WILL BE MADE UNDER ITEM 832, EROSION CONTROL) SHALL BE INSTALLED ALONG THE PROPOSED CONSTRUCTION LIMITS WITHIN THE WETLANDS AREA BY THE CONTRACTOR PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES WITHIN THESE LIMITS AND ADJACENT AREA AND MAINTAINED BY CONTRACTOR THROUGHOUT PROJECT CONSTRUCTION.

**BEST MANAGEMENT PRACTICES/SOIL EROSION AND SEDIMENTATION CONTROL**

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE IN PLACE PRIOR TO ANY CLEARING AND GRUBBING EXCAVATION, GRADING OR FILLING OPERATIONS AND INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. THEY SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

**ENDANGERED BAT HABITAT REMOVAL**

NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM MARCH 16 THROUGH NOVEMBER 14. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM NOVEMBER 15 THROUGH MARCH 15. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO FEDERALLY AND STATE LISTED BAT SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSE OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

**WATER QUALITY**

**POST CONSTRUCTION STORM WATER TREATMENT**

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

**VEGETATED FILTER STRIPS**

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

**VEGETATED BIOFILTER**

THIS PLAN UTILIZES VEGETATED BIOFILTER(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AS SHOWN IN THE PLANS TO ANY DISTURBED AREA ON THE SHOULDER AND FORESLOPE DRAINING TO A VEGETATED BIOFILTER. THE DITCH FOR EACH VEGETATED BIOFILTER IS TRAPEZOIDAL, AS SHOWN IN THE PLAN CROSS SECTIONS. PROVIDE ITEM 670 AS SPECIFIED IN THE PLANS.

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET TOTAL

24 481

QUANTITIES CARRIED TO GENERAL NOTES SUBSUMMARY ON SHEET 26

**WATER WORK**

**CLEVELAND WATER DEPARTMENT FEES AND CHARGES**

THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CLEVELAND WATER DEPARTMENT FEES AND CHARGES ASSOCIATED WITH THIS PROJECT. A LINE ITEM WITH A FIXED AMOUNT HAS BEEN ADDED TO THE BID FORM. A COPY OF THE CHARGE LETTER WILL BE PROVIDED UPON RECEIPT. PAYMENT WILL BE BASED ON THE CONTRACTOR'S PAID INVOICE TO CLEVELAND WATER DEPARTMENT. FOR BIDDING PURPOSES, THE FOLLOWING FEES AND CHARGES HAVE BEEN ESTIMATED: \$20,000. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 638 - WATER WORK, MISC. CLEVELAND WATER DEPARTMENT FEES AND CHARGES 20,000 EACH

**CLEVELAND WATER DEPARTMENT AS-BUILTS**

THIS ITEM SHALL INCLUDE ALL NECESSARY LABOR AND MATERIAL TO PROVIDE THE CITY OFFICIALS AND THE CITY OF CLEVELAND DIVISION OF WATER WITH ACCURATE AS-BUILT DRAWINGS. THESE DRAWINGS SHALL INCLUDE THE EXACT LOCATION OF ALL NEW VALVES AND HYDRANTS INSTALLED. THE DATE OF VALVE AND HYDRANT INSTALLATION SHALL BE INDICATED ON THE DRAWINGS. THE DRAWINGS SHALL SHOW THE EXACT LIMITS OF THE PIPE THAT WAS INSTALLED. ALL EXCAVATIONS SHALL BE RECORDED WITH LOCATION AND DIMENSIONS, DATE OPENED, DATE BACKFILLED, DATE PAVED AND SHALL BE SHOWN ON THE AS-BUILTS. A REGISTERED PROFESSIONAL ENGINEER SHALL SEAL THE DRAWINGS. AS-BUILTS WILL BE REQUIRED PRIOR TO DISINFECTING THE WATER MAIN. ALL WORK REQUIRED SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR "AS-BUILT DRAWINGS." THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 638 - WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT AS-BUILT DRAWINGS LS

**ITEM SPECIAL - 6" FIRE HYDRANT (CLEVELAND)**

ALL HYDRANTS SHALL BE "MUELLER-CENTURION", "KENNEDY-GUARDIAN", OR AN APPROVED EQUAL (PAINTED YELLOW). THIS ITEM SHALL INCLUDE ALL NECESSARY EXCAVATION, EMBANKMENT, DEWATERING, SHEETING, PREPARATION OF THE TRENCH BOTTOM, ROCK EXCAVATION, VALVE, VALVE BOX, HYDRANT, 12"x6" TEE, JOINT MATERIAL, BLOCKING, ADJUSTMENT, BEDDING, BACKFILL, TESTING, DISPOSAL OF WASTE AND ALL OTHER EXPENSES WHETHER SPECIFICALLY MENTIONED OR NOT, FOR THE INSTALLATION OF A 6" HYDRANT ASSEMBLY IN ACCORDANCE WITH CLEVELAND WATER DEPARTMENT STANDARDS. SEE SHEETS 373 AND 374 FOR CLEVELAND WATER DEPARTMENT STANDARD CONSTRUCTION DRAWING STD-H06 AND STD-H08.

HYDRANT ASSEMBLIES SHALL BE EQUIPPED WITH A 4" HPHA HARRINGTON PERMANENT HYDRANT STORZ COUPLING AS MANUFACTURED BY HARRINGTON, INC.

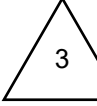
THREADS ON HYDRANTS MUST BE CLEVELAND STANDARD THREAD AND MUST BE APPROVED BY THE FIRE CHIEF. THE CONTRACTOR IS REQUIRED TO SCHEDULE AN INSPECTION WITH THE FIRE CHIEF TO REVIEW FUNCTIONALITY OF ALL HYDRANTS PRIOR TO RECEIVING FINAL APPROVAL.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR EACH HYDRANT ASSEMBLY INSTALLED COMPLETE, TESTED, DISINFECTED, AND READY FOR SERVICE INCLUDING PERMANENT ADAPTERS.

**TEMPORARY WATER CONNECTIONS AT STOFFER'S-NESTLE / WATER SERVICE COORDINATION**

THE CONTRACTOR SHALL SUBMIT A TEMPORARY WATER SERVICE PLAN TO THE CITY OF SOLON ENGINEER AND THE CITY OF CLEVELAND WATER DEPARTMENT AS APPLICABLE PRIOR TO ANY WORK ON THE WATER SYSTEMS THAT MAY AFFECT CONTINUOUS WATER SERVICE TO THE STOFFER'S/NESTLE COMPLEX. ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PROVIDE TEMPORARY CONNECTION IS CONSIDERED INCIDENTAL TO THE PROPOSED WORK.

WORK THAT MAY INTERRUPT ANY OTHER WATER SERVICE CONNECTION SHALL BE COORDINATED WITH THE PROPERTY OWNER, CITY OF SOLON ENGINEER AND CITY OF CLEVELAND WATER DEPARTMENT PRIOR TO STARTING THE WORK WITH SERVICE DISRUPTIONS HELD TO A MINIMUM.



**ITEM 638 - WATER WORK, MISC.: METER REMOVED AND RESET (CLEVELAND)**

REMOVE AND RESET THE EXISTING WATER METER PER CITY OF CLEVELAND SPECIFICATIONS AND STANDARDS. CONTRACTOR SHALL INCLUDE 20' OF 2" TYPE K COPPER AND ALL COUPLERS TO RECONNECT TO THE SERVICE LINE.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 638 - WATER WORK, MISC.: METER REMOVED AND RESET (CLEVELAND)

**ITEM SPECIAL - FIRE HYDRANT SERVICE LINE EXTENDED AND ADJUSTED TO GRADE (CLEVELAND)**

**ITEM SPECIAL - FIRE HYDRANT SERVICE LINE SHORTENED AND ADJUSTED TO GRADE (CLEVELAND)**

ALL HYDRANTS SHALL BE "MUELLER-CENTURION", "KENNEDY-GUARDIAN", OR AN APPROVED EQUAL (PAINTED YELLOW). THIS ITEM SHALL INCLUDE ALL NECESSARY EXCAVATION, EMBANKMENT, DEWATERING, SHEETING, PREPARATION OF THE TRENCH BOTTOM, ROCK EXCAVATION, HYDRANT, JOINT MATERIAL, BLOCKING, ADJUSTMENT, BEDDING, BACKFILL, TESTING, DISPOSAL OF WASTE AND ALL OTHER EXPENSES WHETHER SPECIFICALLY MENTIONED OR NOT, FOR THE INSTALLATION OF A 6" HYDRANT ASSEMBLY IN ACCORDANCE WITH CLEVELAND WATER DEPARTMENT STANDARDS. SEE SHEET 373 FOR CLEVELAND WATER DEPARTMENT STANDARD CONSTRUCTION DRAWING STD-H02.

HYDRANT ASSEMBLIES SHALL BE EQUIPPED WITH A 4" HPHA HARRINGTON PERMANENT HYDRANT STORZ COUPLING AS MANUFACTURED BY HARRINGTON, INC.

THREADS ON HYDRANTS MUST BE CLEVELAND STANDARD THREAD AND MUST BE APPROVED BY THE FIRE CHIEF. THE CONTRACTOR IS REQUIRED TO SCHEDULE AN INSPECTION WITH THE FIRE CHIEF TO REVIEW FUNCTIONALITY OF ALL HYDRANTS PRIOR TO RECEIVING FINAL APPROVAL.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR EACH HYDRANT ASSEMBLY EXTENDED, SHORTENED AND ADJUSTED TO GRADE COMPLETE, TESTED, DISINFECTED, AND READY FOR SERVICE INCLUDING PERMANENT ADAPTERS.

**ITEM SPECIAL - 12" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS (CLEVELAND)**

THIS ITEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH CLEVELAND WATER DEPARTMENT STANDARDS. SEE SHEET 373 FOR CLEVELAND WATER DEPARTMENT STANDARD CONSTRUCTION DRAWING STD-008 FOR SPOOL PIECE INSTALLATION.

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET TOTAL

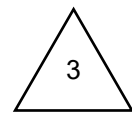
25 481

QUANTITIES CARRIED TO GENERAL NOTES SUBSUMMARY ON SHEET 26

**CUY-422-16.20 (HARPER RD)**

MODEL: Sheet PAPER:SIZE: 34x22 (in.) DATE: 2/14/2024 TIME: 11:50:21 AM USER: cluzler  
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SHEET NO.	201			203	203	204	204	204		601		605		611	611	611	611		611		SPECIAL	
	CLEARING AND GRUBBING			EXCAVATION	EMBANKMENT	EXCAVATION OF SUBGRADE	GRANULAR MATERIAL, TYPE B, AS PER PLAN	GEOGRID		TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT		6" UNCLASSIFIED PIPE UNDERDRAINS, AS PER PLAN		6" CONDUIT, TYPE B	6" CONDUIT, TYPE C	6" CONDUIT, TYPE E	6" CONDUIT, TYPE F		PRECAST REINFORCED CONCRETE OUTLET		MISCELLANEOUS METAL	
	LS			CY	CY	CY	CY	SY		SY		FT		FT	FT	FT	FT		EACH		LB	
21	LS																					
23										8		40		200	200	200	240		4		500	
24				10870	4364	2596	2596	7788														
TOTALS CARRIED TO GENERAL SUMMARY		LS		10870	4364	2596	2596	7788		8		40		200	200	200	240		4		500	
SHEET NO.	638	638				659	659	659	659	659	659	659	659	659	659			SPECIAL		623	623	623
	WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT FEES AND CHARGES	WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT AS-BUILT DRAWINGS				SEEDING AND MULCHING, CLASS 1	SEEDING AND MULCHING	SOIL ANALYSIS TEST	TOPSOIL	REPAIR SEEDING AND MULCHING	INTER-SEEDING	COMMERCIAL FERTILIZER	LIME	WATER	MOWING			SURVEY CONTROL VERIFICATION		MONUMENT ASSEMBLY, TYPE C, AS PER PLAN	REFERENCE MONUMENT, TYPE A	RIGHT-OF-WAY MONUMENT, TYPE B
	EACH	LS				SY	SY	EACH	CY	SY	SY	TON	ACRE	MGAL	MSF			LS		EACH	EACH	EACH
21																		LS		1	5	21
24						14259	11775	2	2890	1302	1302	3.64	5.38	145	59							
25	20000	LS																				
TOTALS CARRIED TO GENERAL SUMMARY		20000	LS			14259	11775	2	2890	1302	1302	3.64	5.38	145	59			LS		1	5	21



**GENERAL NOTES SUBSUMMARY**

DESIGN AGENCY  
  
 GPD GROUP  
 DESIGNER  
 NRB  
 REVIEWER  
 CWL 6-8-23  
 PROJECT ID  
 113889  
 SHEET TOTAL  
 26 481

CUY-422-16.20 (HARPER ROAD)

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 12:14:19 PM USER: cluzier  
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SHEET NUM.								PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS	26	167	170	182	187	01/SAF/21	02/NFP/21								
<b>PAVEMENT</b>															
5,082						5,082		302	56000	5,082	CY	ASPHALT CONCRETE BASE, PG64-22, (449)			
4,716						4,716		304	20001	4,716	CY	AGGREGATE BASE, AS PER PLAN "A"	23		
		321				375		304	20001	375	CY	AGGREGATE BASE, AS PER PLAN "B"	23		
2,862					7	2,869		407	20000	2,869	GAL	NON-TRACKING TACK COAT			
					4	4		441	70500	4	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)			
					6	6		441	70700	6	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS)			
40						40		441	70801	40	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), (UNDER GUARDRAIL), AS PER PLAN	22		
1,078						1,078		442	10000	1,078	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)			
1,264						1,264		442	10100	1,264	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)			
					65	65		452	10050	65	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS			
					270	270		452	12050	270	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS			
6,905		26				6,931		609	26000	6,931	FT	CURB, TYPE 6			
		322				322		609	28000	322	FT	CURB, TYPE 7			
920						920		609	50000	920	SY	4" CONCRETE TRAFFIC ISLAND			
167						167		609	54001	167	SY	6" CONCRETE TRAFFIC ISLAND, AS PER PLAN	23		
72						72		617	10100	72	CY	COMPACTED AGGREGATE			
1,284						1,284		617	20000	1,284	SY	SHOULDER PREPARATION			
4						4		617	25000	4	MGAL	WATER			
<b>WATER WORK</b>															
					1	1		611	99654	1	EACH	MANHOLE ADJUSTED TO GRADE			
					4	4		638	10480	4	EACH	FIRE HYDRANT REMOVED			
					16	16		638	10800	16	EACH	VALVE BOX ADJUSTED TO GRADE			
					5	5		SPECIAL	63820168	5	FT	12" WATER MAIN DIP CLASS 52 MECHANICAL JOINTS AND FITTINGS (CLEVELAND)	25		
					2	2		SPECIAL	63820750	2	EACH	6" FIRE HYDRANT (CLEVELAND)	25		
					1	1		SPECIAL	63820762	1	EACH	FIRE HYDRANT SERVICE LINE EXTENDED AND ADJUSTED TO GRADE (CLEVELAND)	25		
					1	1		SPECIAL	63820764	1	EACH	FIRE HYDRANT SERVICE LINE SHORTENED AND ADJUSTED TO GRADE (CLEVELAND)	25		
					1	1		638	98000	1	EACH	WATER WORK, MISC.: METER REMOVED AND RESET (CLEVELAND)	25		
						20,000		638	98000	20,000	EACH	WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT FEES AND CHARGES	25		
						20,000		638	98100	20,000	EACH	WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT AS-BUILT DRAWINGS	25		
<b>SANITARY SEWER</b>															
					4	4		611	99654	4	EACH	MANHOLE ADJUSTED TO GRADE			
					2	2		611	99660	2	EACH	MANHOLE RECONSTRUCTED TO GRADE			

3

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER  
TMT

REVIEWER  
CWL 6-8-23

PROJECT ID  
113889

SHEET TOTAL  
162 481

CUY-422-16.20 (HARPER ROAD)

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 12:17:04 PM USER: cluzier  
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SHEET NO.	202		202		202		202		202		202		202		202		202		204										
	PAVEMENT REMOVED	SY	WALK REMOVED	SF	CONCRETE MEDIAN REMOVED	FT	TRAFFIC ISLAND REMOVED	SY	CURB REMOVED	FT	CONCRETE SLOPE PROTECTION REMOVED	SY	GUTTER REMOVED	FT	PIPE REMOVED, 24" AND UNDER	FT	PIPE REMOVED, OVER 24"	FT	GUARDRAIL REMOVED	FT	CATCH BASIN REMOVED	EACH	MANHOLE REMOVED	EACH	FENCE REMOVED	FT	SUBGRADE COMPACTION	SY	
171															01/SAF/21	02/NFP/21	01/SAF/21	02/NFP/21											
173																						01/SAF/21	02/NFP/21						
175																			2287							462			
178															686	1180	18	1000											
183		25131		7489		475	390		5039		1200		32																
186																												3838	
TOTALS CARRIED TO GENERAL SUMMARY		25131	7489	475	390	5039		1200	32	686	1180	18	1000	2287	23	3			8						462		3838		
SHEET NO.	304		606	606	606	606	606	606	606				607	607					608	608	608	608	608	609	609	626*	626*		
	AGGREGATE BASE, AS PER PLAN "B"		GUARDRAIL, TYPE MGS	GUARDRAIL, TYPE MGS, AS PER PLAN	ANCHOR ASSEMBLY, MGS TYPE B	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	ANCHOR ASSEMBLY, MGS TYPE T	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	IMPACT ATTENUATOR, TYPE 2, (BIDIRECTIONAL), (35 MPH, 24" WIDTH)	FENCE, TYPE CLT	FENCE, MISC.; WOOD FENCE		4" CONCRETE WALK	6" CONCRETE WALK	6" CONCRETE WALK, AS PER PLAN	8" CONCRETE WALK, AS PER PLAN	CURB RAMP	CURB, TYPE 6	CURB, TYPE 7	BARRIER REFLECTOR, TYPE 1, ONE-WAY	BARRIER REFLECTOR, TYPE 2, ONE-WAY								
	CY		EACH	FT	EACH	EACH	EACH	EACH	EACH			SF	SF	SF	SF	SF	FT	FT	EACH	EACH									
175			375	388	1	3	2	1	2																	9	18		
186	321													12199	15682	500	1113	4322	26	322									
* QUANTITY CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY ON SHEET 161																													
TOTALS CARRIED TO GENERAL SUMMARY		321	375	388	1	3	2	1	2					12199	15682	500	1113	4322	26	322	9	18							

ROADWAY SUBSUMMARY

DESIGN AGENCY



DESIGNER

TMT

REVIEWER

CWL 6-8-23

PROJECT ID

113889

SHEET

167

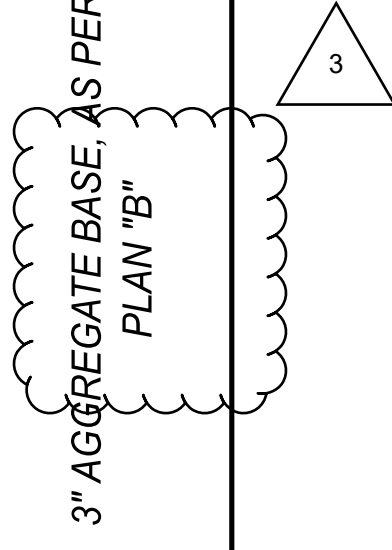
TOTAL

481

CUY-422-16.20 (HARPER ROAD)

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 12:17:45 PM USER: cluzier  
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STATION TO STATION		SIDE	LENGTH	AVERAGE WIDTH W	CURVE CORRECTION	SURFACE AREA A A=LxW	CADD AREAS	204	304	608	608	608	608	608	609	609
FROM	TO							SY	CY	SF	SF	SF	SF	SF	SF	FT
<b>HARPER RD CL</b>																
55+05.15	55+08.18	LT	3.03	2.39		7.25		0.81	0.07		7.25					
55+08.18	55+20.00	LT	11.82	5.39		63.75		7.08	0.59		63.75					
55+20.00	55+40.00	LT	20.00	6.00		120.00		13.33	1.11		120.00					
55+40.00	55+65.00	LT	25.00	8.00		200.00		22.22	1.85		200.00					
55+65.00	58+51.14	LT	286.14	10.00		2861.40		317.93	26.49		2861.40					
58+51.14	58+79.14	LT	28.00	10.00		280.00		31.11	2.59			280.00				
58+79.14	59+38.63	LT	59.49	10.00		594.90		66.10	5.51		594.90					
59+38.63	59+43.63	LT	5.00	9.75		48.75		5.42	0.45		48.75					
59+43.63	59+47.99	LT	4.36	9.72		42.37		4.71	0.39		42.37					
59+47.99	59+48.63	LT	0.64	9.97		6.38		0.71	0.06			6.38				
59+48.63	59+69.99	LT	21.36	10.00		213.60		23.73	1.98			213.60				
59+69.99	60+16.12	LT	46.13	10.00		461.30		51.26	4.27		461.30					
55+50.00	56+00.00	RT	50.00	5.63		281.25		31.25	2.60	281.25						
56+00.00	58+73.26	RT	273.26	6.00		1639.56		182.17	15.18	1639.56						
58+73.26	59+08.53	RT	35.27	6.00		211.62		23.51	1.96			211.62				
59+08.53	60+14.74	RT	106.21	6.00		637.26		70.81	5.90	637.26						
60+14.74	60+49.51	RT	34.77	6.00		208.62		23.18	1.93			208.62				
60+49.51	60+68.39	RT	18.88	6.00		113.28		12.59	1.05		113.28					
258+72.89 (@ DV-1)		RT			CADD		143.26	15.92	1.33	143.26					26.00	
<b>HARPER RD NB BL</b>																
160+16.12	160+80.22	LT	64.10	10.00	0.9117	584.40		64.93	5.41		584.40					
160+80.22	161+13.57	LT	33.35	10.00	0.9033	301.25		33.47	2.79			301.25				
161+13.57	161+47.75	LT	34.18	10.00	1.1450	391.36		43.48	3.62			391.36				
161+47.75	161+54.32	LT	6.57	10.00	1.1450	75.23		8.36	0.70		75.23					
161+54.32	161+77.99	LT			CADD		262.88	29.21	2.43		262.88					
161+77.99	161+96.20	LT			CADD		215.58	23.95	2.00		215.58					20.41
170+98.13	171+18.46	LT			CADD		253.17	28.13	2.34		253.17					
171+18.46	171+50.22	LT	31.76	10.00	1.2050	382.71		42.52	3.54		382.71					
171+50.22	171+85.33	LT	35.11	10.00	0.8676	304.61		33.85	2.82		304.61					
171+85.33	171+90.88	LT	5.55	9.75	0.8721	47.19		5.24	0.44		47.19					
171+90.88	171+96.32	LT	5.44	9.75	0.8735	46.33		5.15	0.43		46.33					
171+96.32	172+12.15	LT	15.83	10.00	0.8765	138.75		15.42	1.28		138.75					
172+12.15	173+95.60	LT	183.45	10.00		1834.50		203.83	16.99		1834.50					
173+95.60	174+45.60	LT	50.00	7.92		395.75		43.97	3.66		395.75					
164+12.74	164+73.03	RT			CADD		516.86	57.43	4.79	516.86						
164+73.03	165+17.35	RT	44.32	8.00	0.9251	328.00		36.44	3.04	328.00						
165+17.35	165+36.25	RT	18.90	8.00	0.9945	150.37		16.71	1.39	150.37						
165+36.25	167+34.80	RT	198.55	8.00	0.9946	1579.82		175.54	14.63	1579.82						
167+34.80	167+72.31	RT	37.51	8.00	0.9944	298.40		33.16	2.76	298.40						
167+72.31	168+34.45	RT			CADD		466.21	51.80	4.32	466.21						
<b>HARPER RD NB BL - PRIVATE WALK</b>																
173+20.94	173+95.60	LT	74.66	5.00		373.30		41.48	3.46	373.30						
173+95.60	174+45.60	LT	50.00	4.96		247.75		27.53	2.29	247.75						
SUBTOTALS CARRIED TO SHEET							186	1926	161	6663	9055	500	1113	26	21	



WALK CALCULATIONS

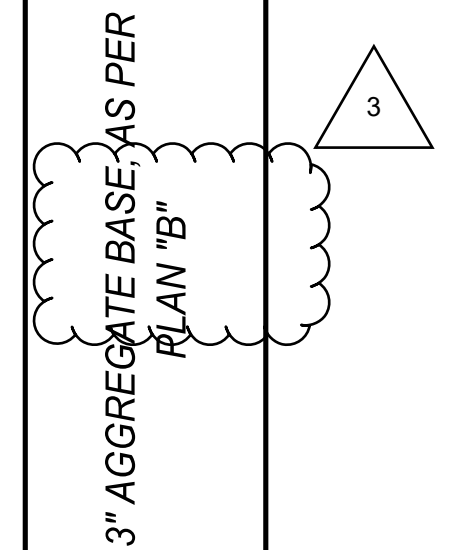
DESIGN AGENCY  
  
 DESIGNER  
 NRB  
 REVIEWER  
 CWL 6-8-23  
 PROJECT ID  
 113889  
 SHEET TOTAL  
 184 481



CUY-422-16.20 (HARPER ROAD)

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 12:18:26 PM USER: cluzier  
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STATION TO STATION		SIDE	LENGTH	AVERAGE WIDTH W	CURVE CORRECTION	SURFACE AREA A A=LxW	CADD AREAS	204	304	608	608	608	608	608	609	609
FROM	TO							SUBGRADE COMPACTION	3" AGGREGATE BASE, AS PER PLAN "B"	4" CONCRETE WALK	6" CONCRETE WALK	6" CONCRETE WALK, AS PER PLAN	8" CONCRETE WALK, AS PER PLAN	CURB RAMP	CURB, TYPE 6	CURB, TYPE 7
							SY	CY	SF	SF	SF	SF	SF	FT	FT	
<b>HARPER RD SB BL</b>																
264+05.44	264+46.39	LT			CADD		475.35		52.82	4.40						
264+46.39	264+85.79	LT	39.40	10.00	1.1450	451.13			50.13	4.18						
264+85.79	265+05.39	LT	19.60	10.00	0.9033	177.05			19.67	1.64						
265+05.39	266+14.84	LT					1224.96		136.11	11.34						
266+14.84	268+79.17	LT					3180.94		353.44	29.45						270.28
260+68.39	261+58.06	RT					527.97		58.66	4.89						
270+54.52	271+07.00	RT					501.06		55.67	4.64						
271+07.00	271+29.61	RT	22.61	8.00	1.1175	202.13			22.46	1.87						
271+29.61	271+78.58	RT	48.97	8.00	0.9277	363.44			40.38	3.37						
271+78.58	274+40.58	RT	262.00	8.00		2096.00			232.89	19.41						
274+40.58	274+50.58	RT	10.00	7.00		70.00			7.78	0.65						
<b>RAMP 1A BL</b>																
	345+32.07	LT					104.73		11.64	0.97						104.73
345+34.65	345+58.12	LT	23.47	6.00	0.8400	118.29			13.14	1.10						
	345+32.07	RT					250.72		27.86	2.32						
<b>WALK FROM RAMP 1A TO RAMP 1B</b>																
	CURB RAMP 1A LT.						775.44		86.16	7.18						
	CURB RAMP 1B RT.															
<b>RAMP 1B BL</b>																
	446+03.85	LT					278.34		30.93	2.58						278.34
	446+03.85	RT					141.50		15.72	1.31						141.50
446+17.38	446+41.73	RT	24.35	8.00	0.9060	176.49			19.61	1.63						176.49
<b>RAMP 2A BL</b>																
	549+87.85	LT					137.72		15.30	1.28						137.72
550+00.87	550+13.12	LT	12.25	8.00	0.9150	89.67			9.96	0.83						89.67
	549+87.85	RT					249.80		27.76	2.31						249.80
<b>WALK FROM RAMP 2A TO RAMP 2B</b>																
	CURB RAMP 2A LT.						519.80		57.76	4.81						519.80
	CURB RAMP 2B RT.															
<b>RAMP 2B BL</b>																
	650+57.17	LT					265.80		29.53	2.46						265.80
	650+57.17	RT					140.12		15.57	1.30						140.12
650+71.19	650+84.91	RT	13.72	8.00	0.8657	95.02			10.56	0.88						95.02
<b>SUBTOTALS CARRIED TO SHEET</b>							<b>186</b>		<b>1402</b>	<b>117</b>		<b>5536</b>	<b>5510</b>		<b>1569</b>	<b>271</b>



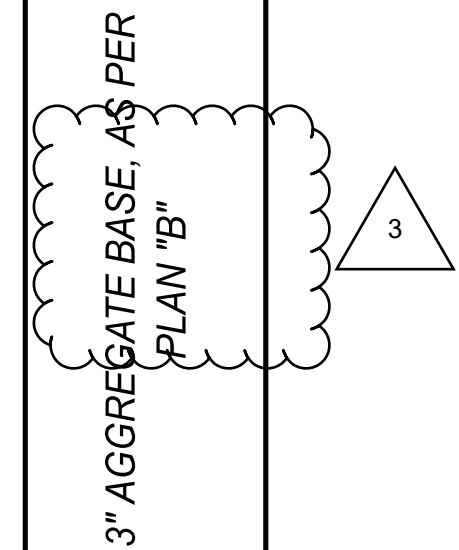
WALK CALCULATIONS

DESIGN AGENCY  
  
 GPD GROUP  
 DESIGNER: NRB  
 REVIEWER: CWL 6-8-23  
 PROJECT ID: 113889  
 SHEET TOTAL: 185 481

CUY-422-16.20 (HARPER ROAD)

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 12:19:09 PM USER: cluzier  
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STATION TO STATION		SIDE	LENGTH	AVERAGE WIDTH W	CURVE CORRECTION	SURFACE AREA A A=LxW	CADD AREAS	204	304	608	608	608	608	608	609	609		
FROM	TO							SY	CY	SF	SF	SF	SF	SF	FT	FT		
<b>RAMP 3A BL</b>																		
643+93.69	644+04.05	LT	10.36	11.25	0.9242	107.72		11.97	1.00		107.72					9.18		
	644+29.75	LT			CADD		404.18	44.91	3.74					404.18				
	644+29.75	RT			CADD		359.02	39.89	3.32					359.02				
<b>WALK FROM RAMP 3A TO RAMP 3B</b>																		
CURB RAMP 3A LT.					CADD		393.77	43.75	3.65		393.77							
<b>RAMP 3B BL</b>																		
	544+36.73	LT			CADD		467.90	51.99	4.33					467.90				
544+00.67	544+11.01	RT	10.34	10.00	0.9067	93.75		10.42	0.87		93.75							
544+11.01	544+21.32	RT	10.31	12.25	0.9142	115.46		12.83	1.07		115.46							
	544+36.73	RT			CADD		309.10	34.34	2.86					309.10				
<b>RAMP 4A BL</b>																		
	350+91.00	LT			CADD		247.55	27.51	2.29					247.55				
350+57.01	350+64.89	RT	7.88	10.00	0.8600	67.77		7.53	0.63		67.77							
350+64.89	350+75.36	RT	10.47	12.25	0.8713	111.75		12.42	1.03		111.75							
	350+91.00	RT			CADD		300.60	33.40	2.78					300.60				
<b>WALK FROM RAMP 4A TO RAMP 4B</b>																		
CURB RAMP 4A					CADD		714.61	79.40	6.62		0.00							
<b>RAMP 4B BL</b>																		
450+13.62	450+25.34	LT	11.72	10.00	0.9300	109.00		12.11	1.01		109.00					10.60		
450+25.34	450+35.57	LT	10.23	12.25	0.9356	117.25		13.03	1.09		117.25					9.26		
	450+50.88	LT			CADD		313.28	34.81	2.90					313.28				
	450+50.88	RT			CADD		350.83	38.98	3.25					350.83				
<b>WALK AT DRIVE 1 (HARPER ROAD)</b>																		
	258+72.89	RT			CADD													
SUBTOTALS THIS SHEET								510	43		1117			2753		30		
SUBTOTALS SHEET							184	1926	161		6663	9055		500	1113	26	21	
SUBTOTALS SHEET							185	1402	117		5536	5510			1569		271	
SUBTOTALS CARRIED TO SUBSUMMARY SHEET							167	3838	321		12199	15682		500	1113	4322	26	322



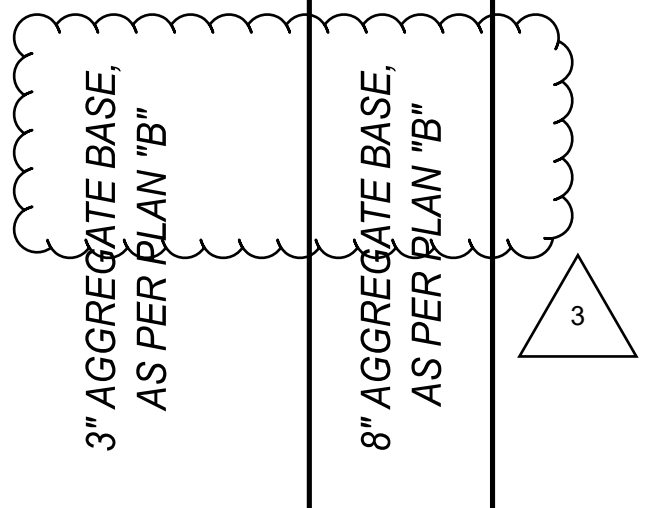
WALK CALCULATIONS

DESIGN AGENCY  
  
 GPD GROUP  
 DESIGNER: NRB  
 REVIEWER: CWL 6-8-23  
 PROJECT ID: 113889  
 SHEET: 186 TOTAL: 481

**CUY-422-16.20 (HARPER ROAD)**

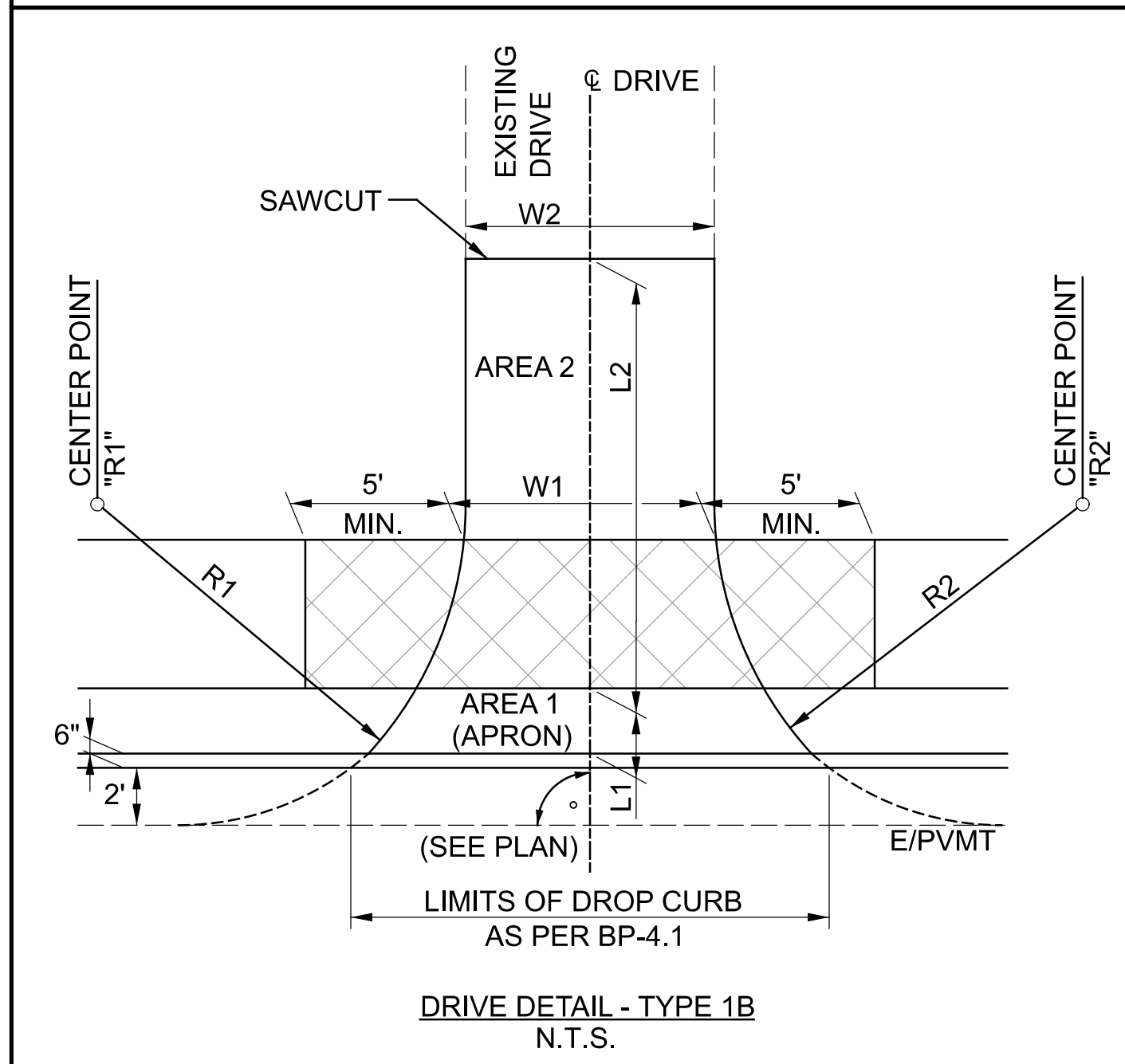
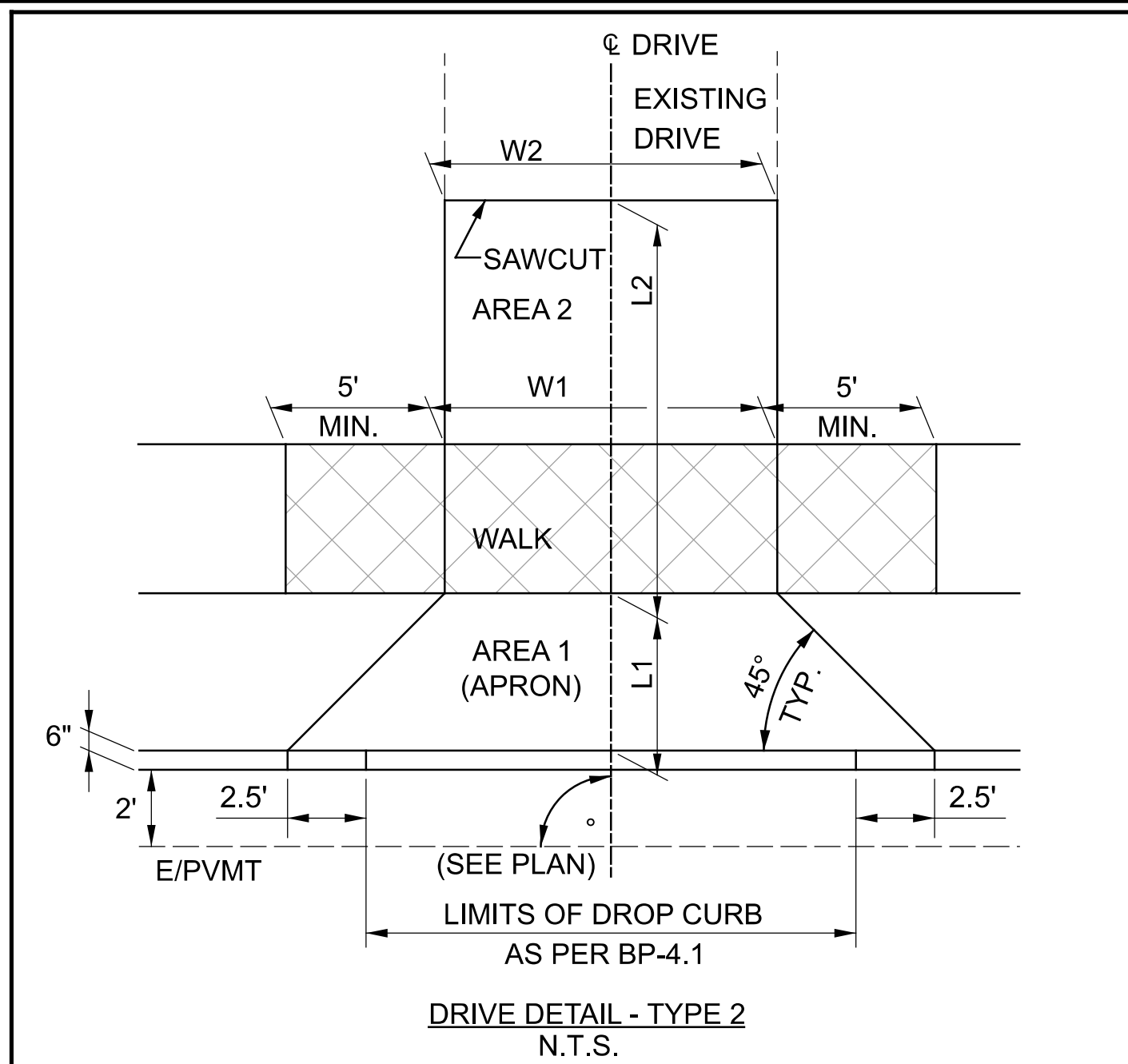
MODEL: Sheet PAPER: 34x22 (in.) DATE: 2/14/2024 TIME: 12:19:55 PM USER: cluzier  
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REFERENCE NO.	SHEET NO.	STATION	ALIGNMENT	SIDE	USAGE	DRIVE TYPE	EXISTING MATERIAL	SURFACE AREA 1 (CADD AREA)		204		304		304	SPECIAL	407	441	441	452		452							
								SF	SF	SY		CY		CY					EACH	GAL	CY	CY	SY		SY			
										A1	A2	A1	A2	A2					A1	A2	A1	A2						
DV-1	190	58+90.89	HARPER RD	RT	COMM.	1B	ASPH.	402.28	623.79	44.70	69.31	3.72		15.40														
DV-2	190	60+32.62	HARPER RD	RT	COMM.	1B	ASPH.	408.53	453.18	45.39	50.35	3.78		11.19														
DV-3	190	58+65.14	HARPER RD	LT	RES.	2	CONC.	103.50	288.77	11.50	32.09	0.96	2.67		1					11.50	32.09							
DV-4	190	59+58.99	HARPER RD	LT	RES.	2	CONC.	76.50	116.07	8.50	12.90	0.71	1.07		1					8.50	12.90							
DV-5	190	61+04.12	HARPER RD	LT	COMM.	1B	CONC.	294.44	1321.56	32.72	146.84	2.73	12.24								32.72	146.84						
TOTALS CARRIED TO GENERAL SUMMARY										454		54			2					7		4		6	65		270	



**DRIVE CALCULATIONS**

DESIGN AGENCY  
  
 GPD GROUP  
 DESIGNER: NRB  
 REVIEWER: CWL 6-8-23  
 PROJECT ID: 113889  
 SHEET: 187 TOTAL: 481



ITEM 608 - 6"/8" CONCRETE WALK, AS PER PLAN. WALK THICKNESS SHALL BE 6" AT RESIDENTIAL APRONS AND 8" AT COMMERCIAL APRONS, AND CONCRETE CLASS QC MS.

EXISTING MATERIALS	USAGE	INSIDE LIMITS OF APRON (AREA 1)	OUTSIDE LIMITS OF APRON (AREA 2)
CONCRETE	RESIDENTIAL	6" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 3" ITEM 304 AGGREGATE BASE, AS PER PLAN "B" ITEM 204 SUBGRADE COMPACTION	SAME COMPOSITION AS AREA 1
ASPHALT	COMMERCIAL	8" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 3" ITEM 304 AGGREGATE BASE, AS PER PLAN "B" ITEM 204 SUBGRADE COMPACTION	1 1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS) ITEM 407 NON-TRACKING TACK COAT 1 3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS) 8" ITEM 304 AGGREGATE BASE, AS PER PLAN "B"
CONCRETE			SAME COMPOSITION AS AREA 1

SHEET NO.	REFERENCE NO.	STATION	DRIVE PROFILE SHEET NO.	SIDE	USAGE	TYPE	EXISTING MATERIAL	APRON LENGTH "L1"	DRIVEWAY LENGTH "L2"	WIDTH "W1"	WIDTH "W2"	RADIUS "R1" (LEFT FACING DRIVE)	CENTER POINT "R1"	RADIUS "R2" (RIGHT FACING DRIVE)	CENTER POINT "R2"	LENGTH OF CURB DROP TRANSITION
								FT.	FT.	FT.	FT.	FT.	STA./OFFSET	FT.	STA./OFFSET	FT.
190	DV-1	58+90.89 (HARPER RD)	358	RT	COMM.	1B	ASPH.	12.50	32.00	24.00	23.92	20.00	59+22.89/44.00' RT	20.00	58+58.89/44.00' RT	15.00
190	DV-2	60+32.62 (HARPER RD)	358	RT	COMM.	1B	ASPH.	12.50	24.50	24.50	24.47	20.00	60+64.87/44.00' RT	20.00	60+00.37/44.00' RT	15.00
190	DV-3	58+65.14 (HARPER RD)	358	LT	RES.	2	CONC.	4.50	26.00	18.00	18.31	-	-	-	-	2.50
190	DV-4	59+58.99 (HARPER RD)	359	LT	RES.	2	CONC.	4.50	21.00	12.00	9.10	-	-	-	-	2.50
190	DV-5	61+04.12 (HARPER RD)	359	LT	COMM.	1B	CONC.	4.74	61.60	39.85	22.54	50.00	60+42.37/65.19' LT	40.00	61+55.87/81.89' LT	20.00

FOR CITY OF SOLON SCD,  
SEE SHEET 361