NORTHEAST OHIO REGIONAL SEWER DISTRICT

CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION

PROJECT NO.: 1641

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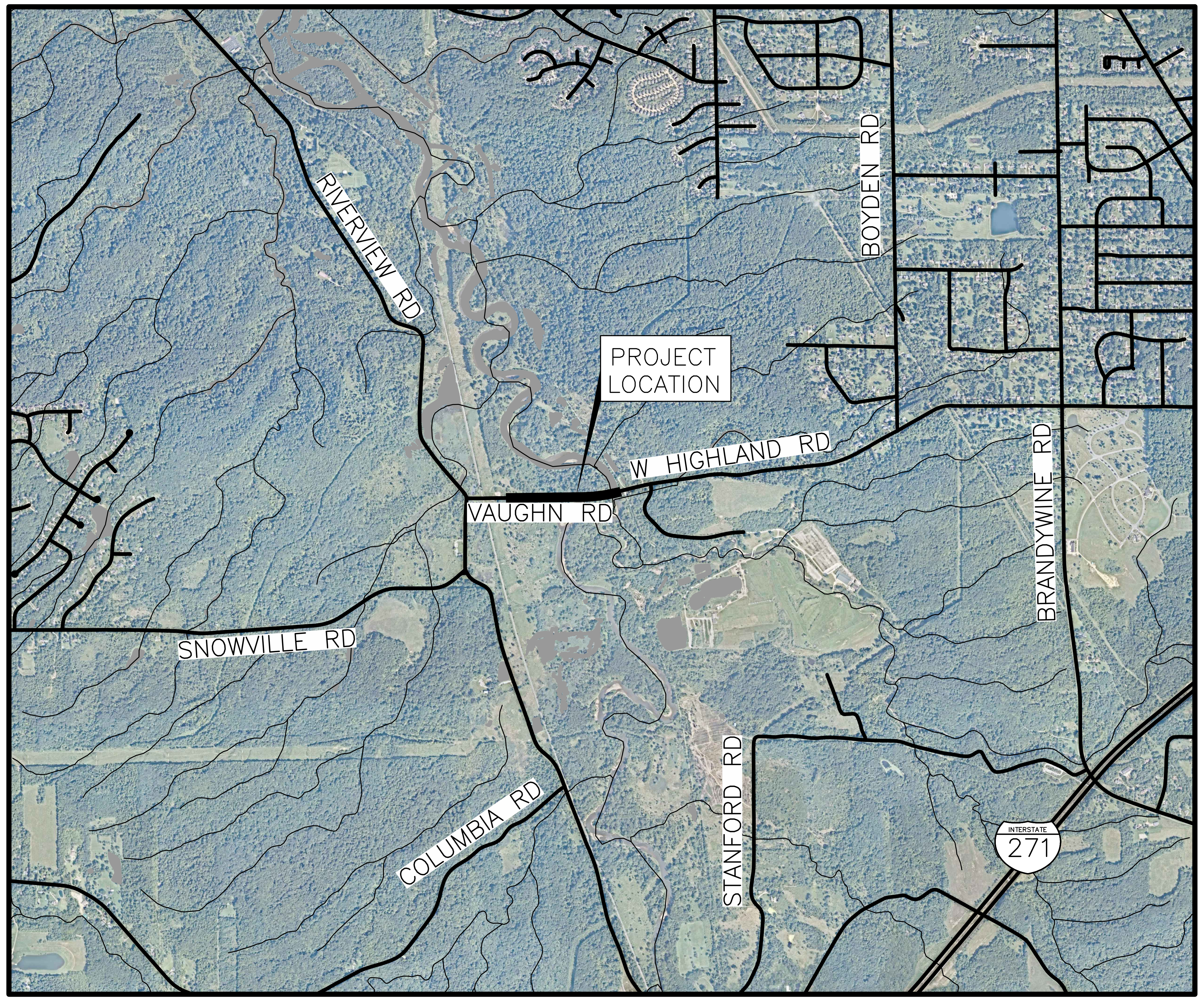
OCTOBER 2022



VICINITY MAP

0 750 1500 3000

1 inch = 1500 feet

APPROVED BY ____________________ DATE __________
KYLE R. DREYFUSS-WELLS
CHIEF EXECUTIVE OFFICER

APPROVED BY ____________________ DATE __________
FRANK GREENLAND, P.E.
DIRECTOR OF WATERSHED PROGRAMS

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PLAN SET DATE
OCTOBER 2022

PROJECT SET: 01 OF 49

G SHEET: 01 OF 10

SHEET NO.:

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2 Xrefs: Vicinity Map, 20210275–T006–CS–REFR–N

LIST OF DRAWINGS AND GENERAL NOTES

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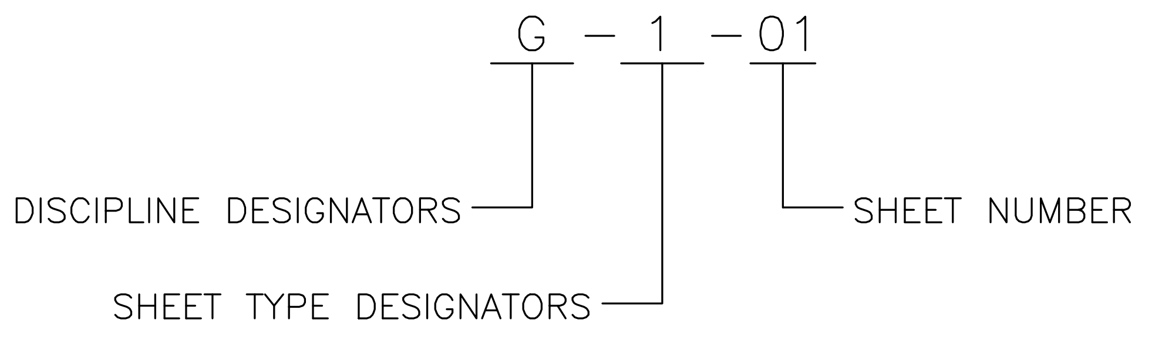

DISCIPLINE DESIGNATORS

PREFIX	DISCIPLINE
G	GENERAL
D	DEMOLITION
C	CIVIL
S	STRUCTURES
T	TRANSPORTATION
L	LANDSCAPE

SHEET TYPE DESIGNATORS

SHEET NO. SERIES	SUBJECT
0	GENERAL (SYMBOLS, LEGENDS, NOTES, ETC.)
1	PLANS (HORIZONTAL VIEWS)
2	ELEVATIONS (VERTICAL VIEWS)
3	SECTIONS (SECTIONAL VIEWS)
4	LARGE SCALE VIEWS (PLANS, ELEVATIONS, OR SECTIONS THAT ARE NOT DETAILS)
5	DETAILS
6	SCHEDULES AND DIAGRAMS

GENERAL NOTES

COMPLETE PROJECT
THE PRICE BID SHALL INCLUDE ALL ITEMS OF LABOR, MATERIALS, TOOLS, EQUIPMENT, INSURANCE, AND OTHER COSTS NECESSARY TO FULLY COMPLETE THE WORK PURSUANT TO THE CONTRACT DOCUMENTS. IT IS THE INTENTION OF THE CONTRACT DOCUMENTS TO PROVIDE AND REQUIRE A COMPLETED PROJECT READY FOR OPERATION. ANY WORK ITEMS AND APPURTENANCES OMITTED FROM THE CONTRACT DOCUMENTS, WHICH ARE CLEARLY NECESSARY FOR THE COMPLETION OF SUCH WORK, SHALL BE CONSIDERED A PART OF SUCH WORK ALTHOUGH NOT DIRECTLY SPECIFIED OR CALLED FOR IN THE CONTRACT DOCUMENTS.

SITE VISIT
THE CONTRACTOR SHALL PERFORM FIELD RECONNAISSANCE PRIOR TO BIDDING TO BECOME ACQUAINTED WITH THE EXISTING SITE CONDITIONS AND THE POTENTIAL EFFECTS UPON THE WORK SCOPE.

SAFETY REQUIREMENTS
THE CONTRACTOR AND SUBCONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.

RIGHTS-OF-WAY
THE CONTRACTOR SHALL OBSERVE AND CONFORM TO THE SPECIFIC REQUIREMENTS OF ALL RIGHTS-OF-WAY INCLUDING EASEMENTS, COURT ENTRIES, RIGHTS-OF-ENTRY OR ACTION FILED IN COURT IN ACCORDANCE WITH THE CODE OF THE APPLICABLE GOVERNING AGENCY. THE COST OF OPERATIONS NECESSARY TO FULFILL SUCH REQUIREMENTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT IMPROVEMENT.

GENERAL NOTES (CONT'D)

ACCESS
ACCESS TO ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

FLOODPLAIN
THE SITE IS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FLOOD INSURANCE RATE MAP (FIRM) FOR CUYAHOGA COUNTY, OHIO AND INCORPORATED AREAS, PANEL NO. 39035C0337E (EFFECTIVE DATE: DECEMBER 3, 2010) AND FOR SUMMIT COUNTY, OHIO AND INCORPORATED AREAS, PANEL NO. 39153C0040F (EFFECTIVE DATE: APRIL 19, 2016). PUBLISHED FLOODPLAIN AND LIMITS EXIST WITHIN PORTIONS OF THE PROJECT AREA (ZONE A). NO WORK BEYOND WHAT IS SHOWN ON THESE PLANS IS PERMISSIBLE WITHIN THESE DESIGNATED FLOOD HAZARD AREAS.

UTILITY PROTECTION
THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WITHIN THE PROJECT LIMITS AND/OR IMPACTING THE WORK WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL CALL, TOLL FREE, THE OHIO UTILITIES PROTECTION SERVICE (1-800-362-2764) 72-HOURS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST 48-HOURS PRIOR TO WORK IN THE VICINITY OF THEIR UNDERGROUND LINES.

THE IDENTITY AND LOCATION OF THE EXISTING UNDERGROUND UTILITY FACILITIES KNOWN TO BE LOCATED IN THE CONSTRUCTION AREA HAVE BEEN SHOWN ON THE PLANS AS ACCURATELY AS PROVIDED BY THE OWNER OF THE UNDERGROUND UTILITY AND THROUGH LEVEL C SUBSURFACE UTILITY ENGINEERING (WHERE NOTED). THE ENGINEER ASSUMES NO RESPONSIBILITY TO THE ACCURACY OF THE LOCATIONS OR THE DEPTHS OF THE UNDERGROUND FACILITIES SHOWN ON THE PLANS.

UTILITY POLES WITHIN THE INFLUENCE OF EARTHWORK OPERATIONS SHALL BE REINFORCED BY THE UTILITY COMPANY PRIOR TO THESE CONSTRUCTION ACTIVITIES. NOTIFICATION OF THE UTILITY COMPANY PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

CLEARING AND GRUBBING
CLEARING AND GRUBBING WITHIN THE CONSTRUCTION WORK LIMITS SHALL BE PERFORMED AS A PART OF THIS PLAN. THE CONTRACTOR SHALL REMOVE THE MINIMUM AMOUNT OF BRUSH AND TREES NECESSARY TO PERFORM THE WORK. TEMPORARY CONSTRUCTION FENCE SHALL BE USED IF DEEMED NECESSARY TO PRESERVE THE MAXIMUM AMOUNT OF EXISTING TREES AND VEGETATION. FELLING OF TREES GREATER THAN 3 INCHES DBH SHALL ONLY BE PERFORMED BETWEEN OCTOBER 1 AND MARCH 31.

MONUMENT RESET
DO NOT DISTURB ANY CUYAHOGA COUNTY CERTIFIED BENCHMARK (VERTICAL AND/OR HORIZONTAL) LOCATED WITHIN THE WORKING LIMITS OF THE PROJECT, UNLESS OTHERWISE NOTED TO DO SO. CONTRACTOR SHALL CONTACT THE CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS (216) 348-3800, PRIOR TO CONSTRUCTION, TO COORDINATE THE PROPER PROCEDURE FOR RESETTING, RELOCATION, OR REPLACEMENT OF ANY CUYAHOGA COUNTY CERTIFIED BENCHMARK OR SURVEY MONUMENT. ANY MONUMENT NEEDING TO BE RESET SHALL BE DONE BY AN OHIO STATE LICENSED SURVEYOR.

ROADWAY PAVEMENT PULVERIZED IN PLACE
CONTRACTOR SHALL PULVERIZE THE EXISTING ROADWAY PAVEMENT WHERE INDICATED WITHIN THE PLANS. ALL EXISTING PAVEMENT AND BASE LAYERS SHALL BE PULVERIZED IN SUCH A MANNER AS TO ALLOW WATER INFILTRATION AND PULVERIZED MATERIALS SHALL BE NO LARGER THAN 2 INCH SIZE. THE PULVERIZED MATERIAL SHALL REMAIN IN PLACE AND SHALL BE PREPARED FOR LAYERS OF FILL MATERIAL TO BE PLACED ON TOP.

REMOVAL AND REPLACEMENT OF SOFT OR UNSUITABLE MATERIALS
AREAS REQUIRING OVER EXCAVATION OR UNDERCUT, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED IN ACCORDANCE WITH SPECIFICATIONS 31 23 00 AND 31 23 13 AND ODOT ITEM 204 EXCAVATION OF SUBGRADE. THE OVER EXCAVATED OR UNDERCUT AREAS ARE TO BE FILLED AS DIRECTED BY THE ENGINEER IN A CONTROLLED MANNER IN ACCORDANCE WITH ODOT CMS 204.07 AND AS FOLLOWS.

PRIOR TO PLACEMENT OF ANY NEW FILL OR PAVEMENT CONSTRUCTION, AREAS OF OVER EXCAVATION OR UNDERCUT ARE TO BE REPLACED WITH FILL COMPRISED OF GEO-GRID TENSAR (BX-1200 OR STRUCTURALLY AND ENGINEER APPROVED EQUAL) AND GRANULAR MATERIAL CONSISTING OF NO. 2 STONE OR NO. 4 STONE MEETING THE REQUIREMENTS OF ODOT CMS 703.01; OR WITH FILL COMPRISED OF GEO-GRID TENSAR (BX-1300 OR STRUCTURALLY AND ENGINEER APPROVED EQUAL) ODOT ITEM 204 GRANULAR MATERIAL, TYPE B; OR WITH PROPERLY COMPACTED NEW FILL MEETING THE REQUIREMENTS OF ODOT ITEM 204 EMBANKMENT; OR WITH EXCAVATIONS SCARIFIED TO PERMIT DRYING AND RECOMPACTED TO THE APPROPRIATE DESIGN UNIT WEIGHT AT THE DISCRETION OF THE ENGINEER.

GEO-GRID SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THEN OVERLAID WITH A MINIMUM OF 12 INCHES OF GRANULAR MATERIAL, TYPE B, OR NO. 2 STONE OR NO. 4 STONE AS DIRECTED BY THE ENGINEER.

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1 Xref: 20210275_T006_BORD

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Northeast Ohio Regional Sewer District

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OCTOBER 2022

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

LIST OF DRAWINGS AND GENERAL NOTES

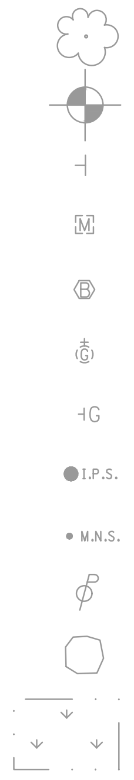
WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT SET: 02 OF 49
G SHEET: 02 OF 10
SHEET NO.:

SYMBOLS, ABBREVIATIONS, AND LEGEND

SYMBOLS

EXISTING



- TREE
- SOIL BORING
- SIGN
- MONUMENT BOX
- BOLLARD/POST
- GAS VALVE
- GAS MARKER
- IRON PIPE SET
- MONUMENT SET
- POWER LIGHT POLE
- ROCK
- WETLAND

PROPOSED

▨ ROCK CHANNEL PROTECTION

TEMPORARY

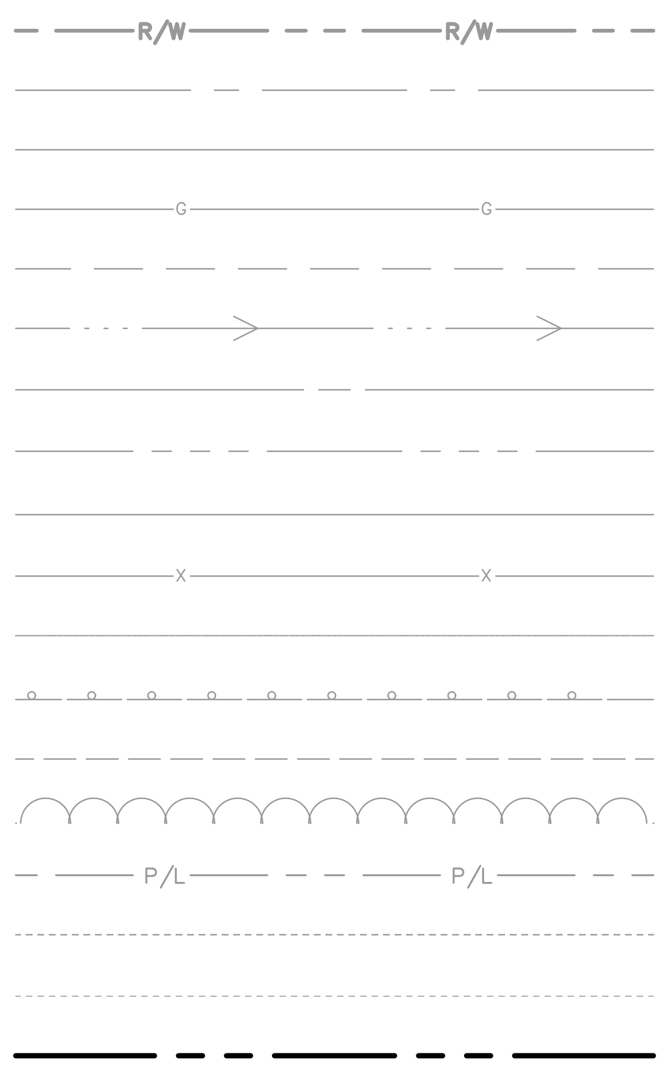
CWA CONCRETE WASHOUT

ABBREVIATIONS

℄	CENTERLINE
DND	DO NOT DISTURB
E/P	EDGE OF PAVEMENT
EX	EXISTING
PROP	PROPOSED
PVC	POLYVINYL CHLORIDE
R/W	RIGHT OF WAY
TBR	TO BE REMOVED
TBRR	TO BE REMOVED AND REPLACED
TEMP	TEMPORARY

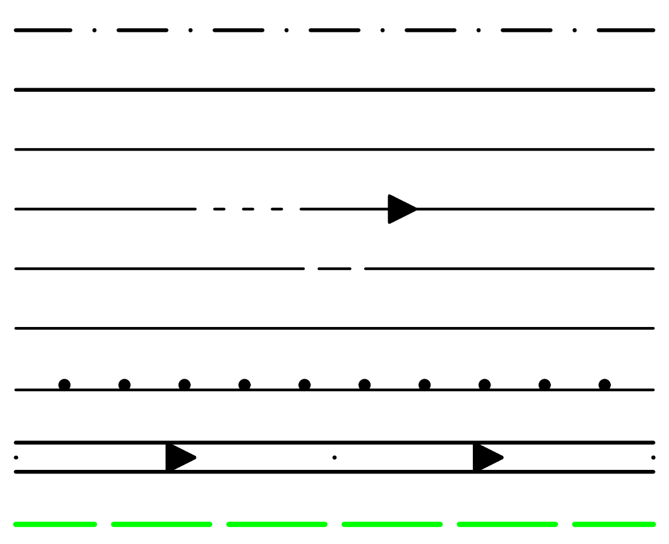
LEGEND

EXISTING



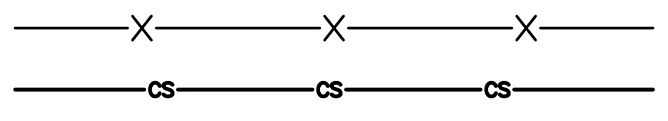
- RIGHT OF WAY
- ROAD CENTERLINE
- ROAD EGDE LINE
- GAS LINE
- FIBER CABLE
- DITCHLINE
- TRAIL CENTERLINE
- EDGE OF WATER
- ROAD SHOULDER
- FENCE
- BERM
- GUARDRAIL
- BRIDGE
- TREELINE/HEDGELINE
- PARCEL BOUNDARY
- MAJOR CONTOUR
- MINOR CONTOUR
- FEMA 100YR FLOODPLAIN

PROPOSED



- LIMITS OF DISTURBANCE
- EDGE OF ROAD
- ROAD SHOULDER
- DITCHLINE
- TRAIL CENTERLINE
- WALL
- GUARDRAIL
- STORM SEWER/CULVERT
- EASEMENT/ACQUISTION AREA

TEMPORARY



- CONSTRUCTION FENCE
- COMPOST FILTER SOCK

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SYMBOLS, ABBREVIATIONS, AND LEGEND

WARNING
0 1/2 1
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PROJECT SET: 03 OF 49
G SHEET: 03 OF 10
SHEET NO.:

BENCHMARK TABLE

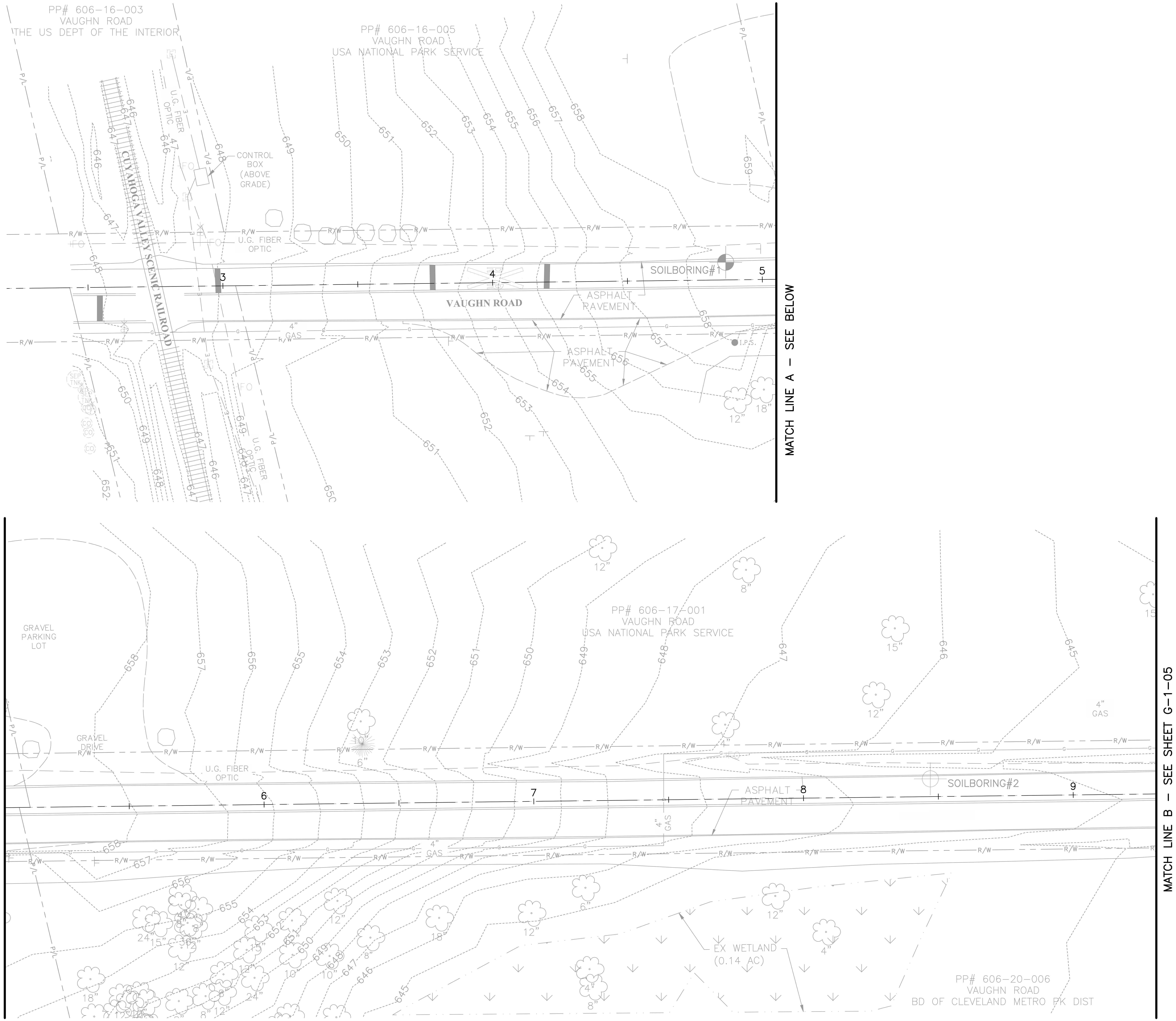
POINT	ELEVATION	DESCRIPTION
BM 100	644.021	½" DIAMETER IRON PIN WITH RED CAP ON NORTH SIDE OF VAUGHN ROAD APPROXIMATELY 90 FEET FROM METROPARKS WILDLIFE REFUGE SIGN ON NORTH SIDE OF ROAD
BM 101	642.892	½" DIAMETER IRON PIN WITH RED CAP ON SOUTH SIDE OF VAUGHN ROAD APPROXIMATELY 425 FEET FROM METROPARKS WILDLIFE REFUGE SIGN ON SOUTH SIDE OF ROAD
BM 102	644.765	1" DIAMETER IRON IN MONUMENT BOX IN CENTER OF VAUGHN ROAD APPROXIMATELY 40 FEET FROM SPEED LIMIT SIGN ON SOUTH SIDE OF ROAD BEFORE GOING EAST OVER CUYAHOGA RIVER BRIDGE
BM 103	649.868	½" DIAMETER IRON PIN WITH RED CAP ON NORTH SIDE OF VAUGHN ROAD APPROXIMATELY 185 FEET FROM WEIGHT LIMIT SIGN ON NORTH SIDE OF ROAD BEFORE GOING WEST OVER CUYAHOGA RIVER BRIDGE

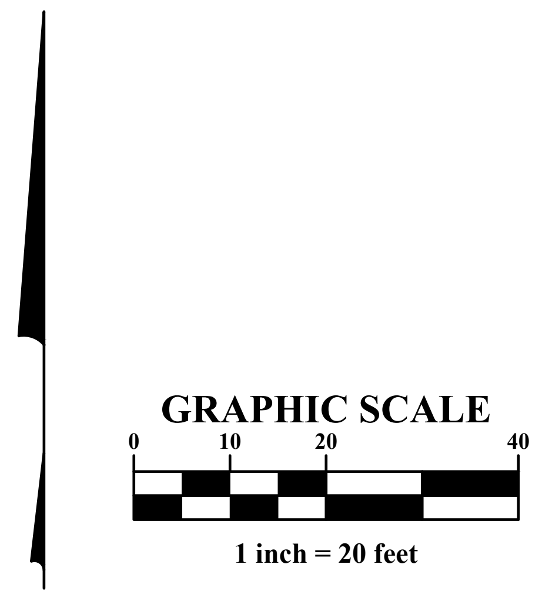
CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
104	592279.3	2224145	642.514	MAGS
105	592285.7	2224267	642.936	MAGS
106	592254.0	2224451	643.619	MAGS
107	592287.4	2224692	639.883	MAGS

UTILITY NOTES:

1. THE UTILITIES AND SEWER INFORMATION SHOWN HEREON EITHER ON OR ABOVE GROUND WAS PHYSICALLY LOCATED IN THE FIELD AND IS ACCURATE. ALL UNDERGROUND INFORMATION SHOWN WAS TAKEN FROM PLANS PROVIDED BY THEIR RESPECTIVE UTILITY COMPANIES. O.U.P.S. WAS CONTACTED ON 10–26–21. WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF ALL UTILITIES. O.U.P.S. No. B129901770–00B
2. NEORSD HAS RECEIVED NO CONFLICT LETTERS FROM DOMINION ENERGY AND LUMEN FOR THIS PROJECT. THE LETTERS ARE INCLUDED IN BID BOOK VOLUME 3 FOR REFERENCE.





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EXISTING SITE PLAN

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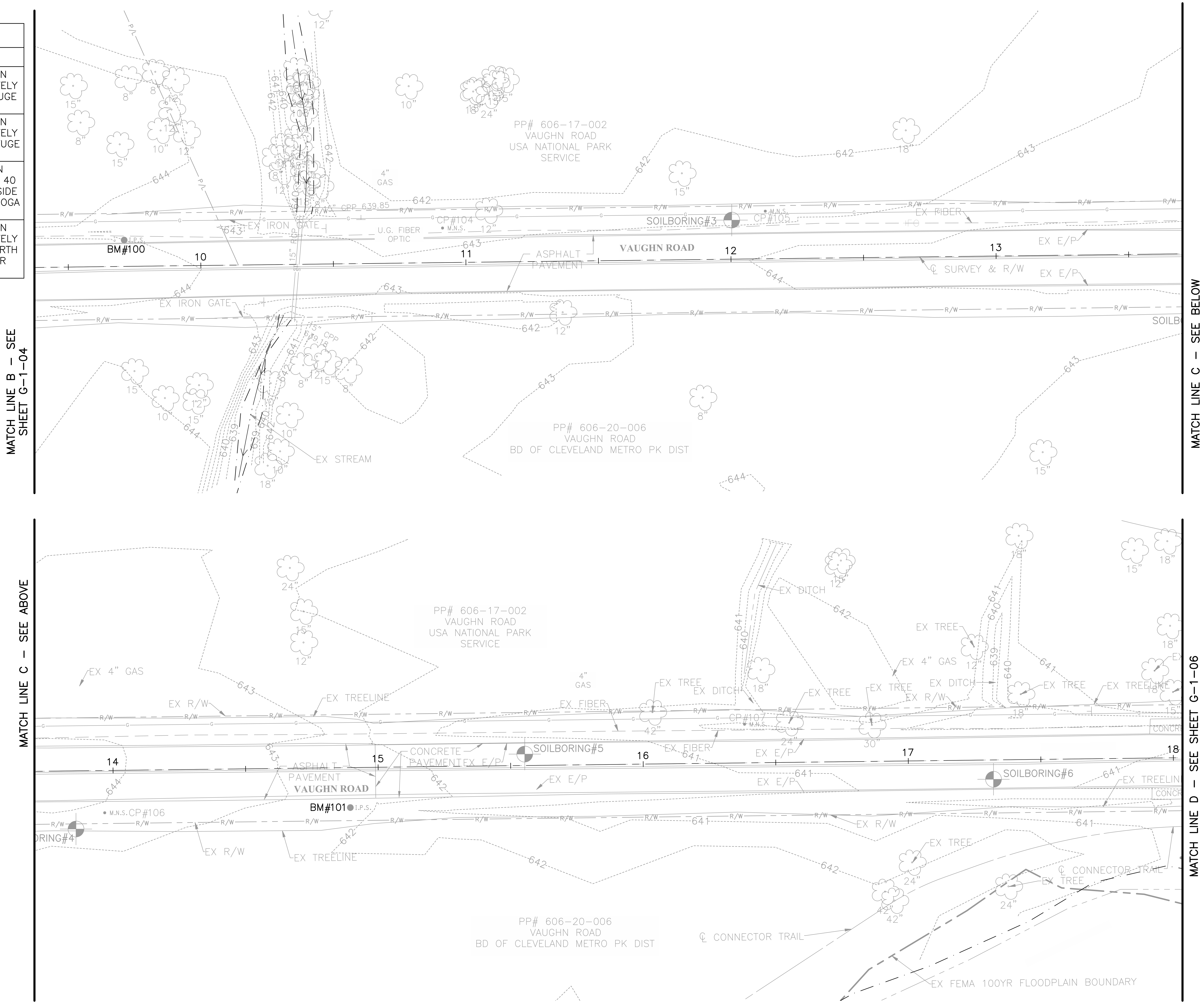

GRAPHIC SCALE
0 10 20 40
1 inch = 20 feet

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EXISTING SITE PLAN

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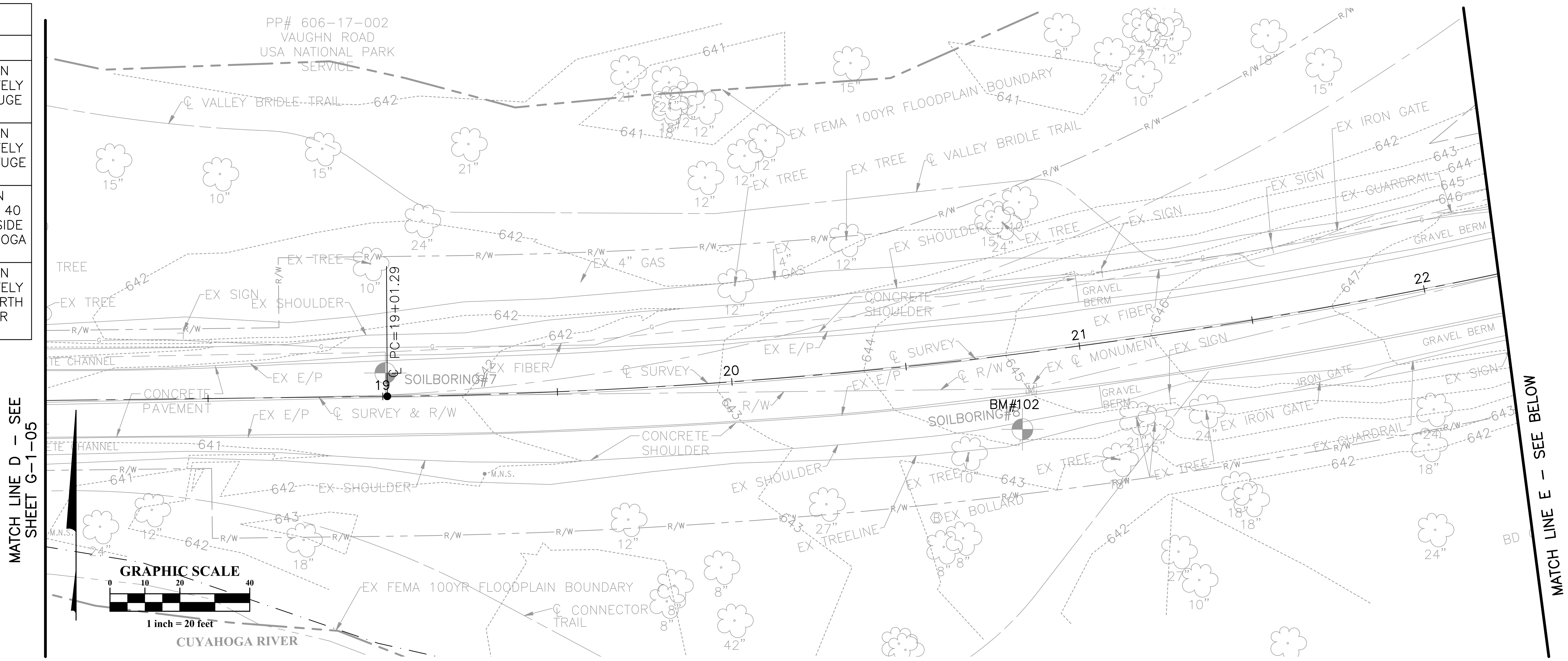
BM 100	644.021	½" DIAMETER IRON PIN WITH RED CAP ON NORTH SIDE OF VAUGHN ROAD APPROXIMATELY 90 FEET FROM METROPARKS WILDLIFE REFUGE SIGN ON NORTH SIDE OF ROAD
BM 101	642.892	½" DIAMETER IRON PIN WITH RED CAP ON SOUTH SIDE OF VAUGHN ROAD APPROXIMATELY 425 FEET FROM METROPARKS WILDLIFE REFUGE SIGN ON SOUTH SIDE OF ROAD
BM 102	644.765	1" DIAMETER IRON IN MONUMENT BOX IN CENTER OF VAUGHN ROAD APPROXIMATELY 40 FEET FROM SPEED LIMIT SIGN ON SOUTH SIDE OF ROAD BEFORE GOING EAST OVER CUYAHOGA RIVER BRIDGE
BM 103	649.868	½" DIAMETER IRON PIN WITH RED CAP ON NORTH SIDE OF VAUGHN ROAD APPROXIMATELY 185 FEET FROM WEIGHT LIMIT SIGN ON NORTH SIDE OF ROAD BEFORE GOING WEST OVER CUYAHOGA RIVER BRIDGE

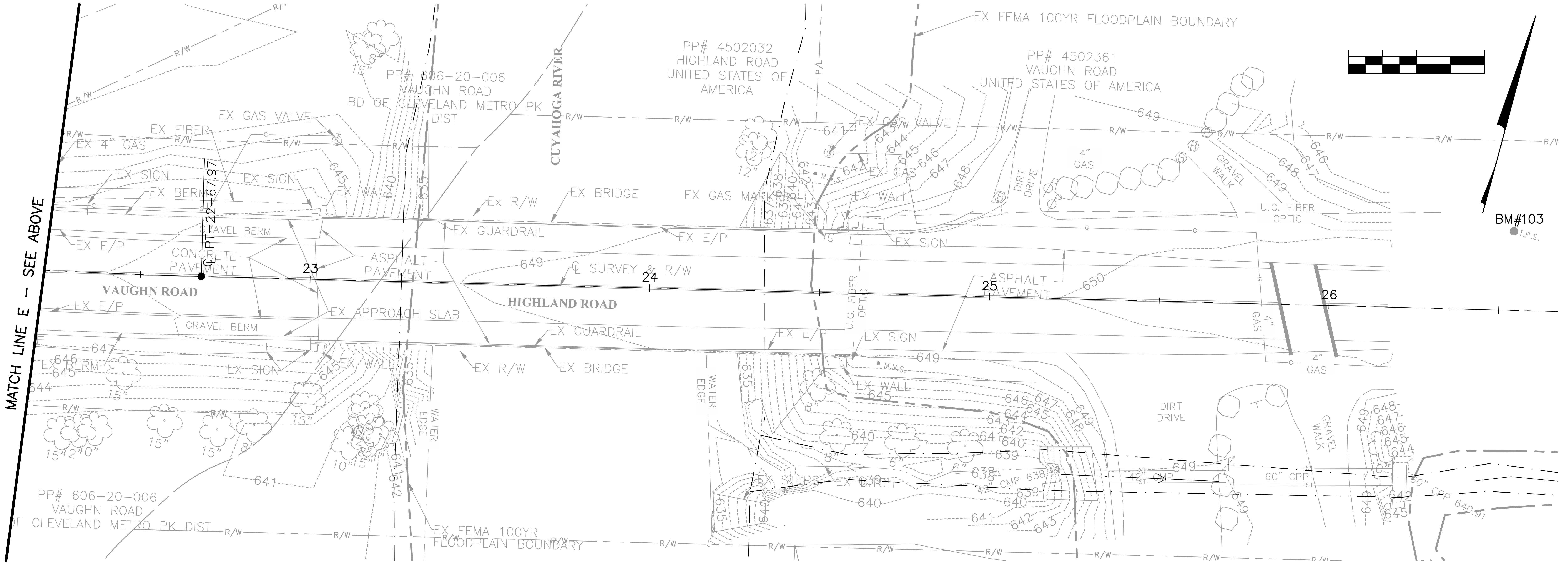
CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
104	592279.3	2224145	642.514	MAGS
105	592285.7	2224267	642.936	MAGS
106	592254.0	2224451	643.619	MAGS
107	592287.4	2224692	639.883	MAGS

UTILITY NOTES:

1. THE UTILITIES AND SEWER INFORMATION SHOWN HEREON EITHER ON OR ABOVE GROUND WAS PHYSICALLY LOCATED IN THE FIELD AND IS ACCURATE. ALL UNDERGROUND INFORMATION SHOWN WAS TAKEN FROM PLANS PROVIDED BY THEIR RESPECTIVE UTILITY COMPANIES. O.U.P.S. WAS CONTACTED ON 10-26-21. WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF ALL UTILITIES. O.U.P.S. No. B129901770-00B
2. NEORSD HAS RECEIVED NO CONFLICT LETTERS FROM DOMINION ENERGY AND LUMEN FOR THIS PROJECT. THE LETTERS ARE INCLUDED IN BID BOOK VOLUME 3 FOR REFERENCE.





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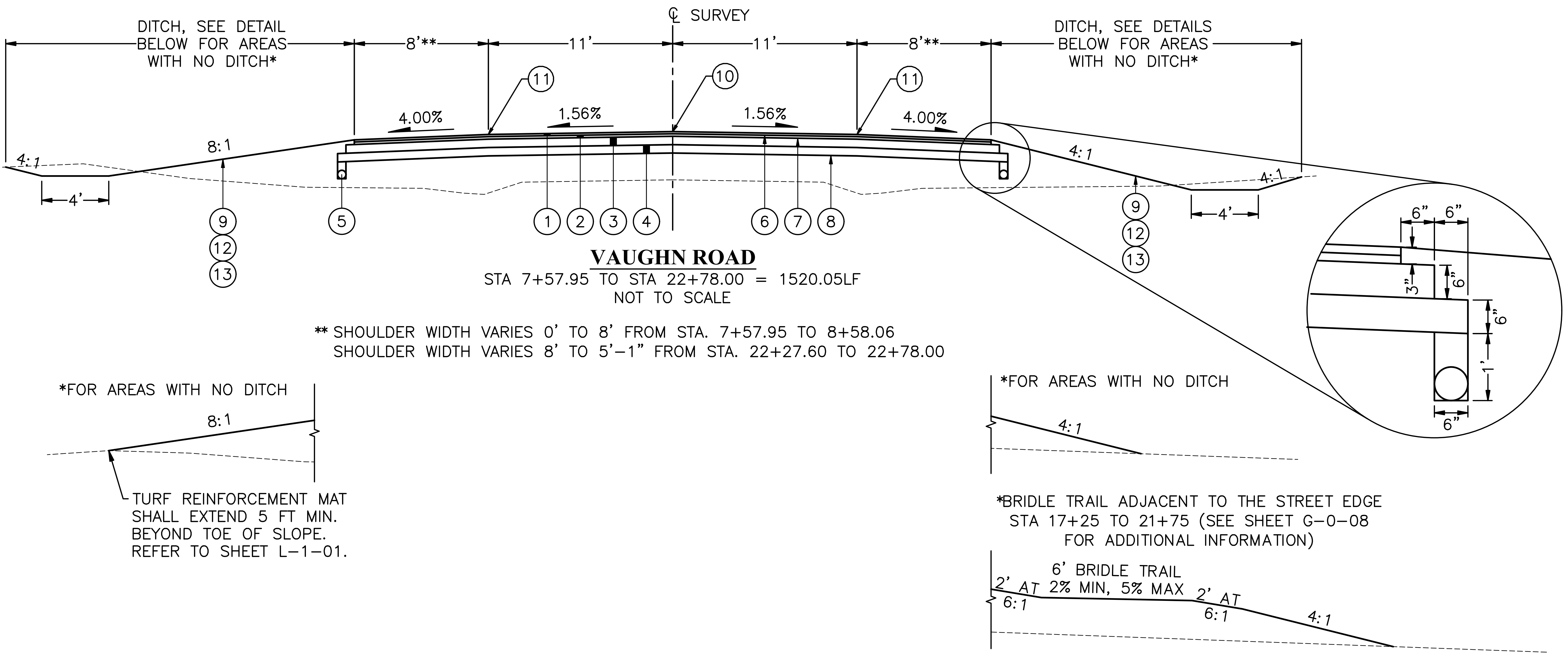
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

EXISTING SITE PLAN

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT SET: 06 OF 49
G SHEET: 06 OF 10
SHEET NO.:

J:\20210275\Dwg\04Sheets\Plan\TO 06 - Vaughn Road (Brecksville)\06 Existing Site Plan.dwg, Last Saved By: ajensen, 10/3/2022 12:04 PM Last Printed By: Arden, Shawn, 10/6/2022 11:06 AM
3 Xrefs: 20210275_T006_BORD, 20210275-T006-CS-REFR-E, 20210275-T006-VS-REFR-0



VAUGHN ROAD
STA 7+57.95 TO STA 22+78.00 = 1520.05LF
NOT TO SCALE

** SHOULDER WIDTH VARIES 0' TO 8' FROM STA. 7+57.95 TO 8+58.06
SHOULDER WIDTH VARIES 8' TO 5'-1" FROM STA. 22+27.60 TO 22+78.00

*FOR AREAS WITH NO DITCH

TURF REINFORCEMENT MAT SHALL EXTEND 5 FT MIN. BEYOND TOE OF SLOPE. REFER TO SHEET L-1-01.

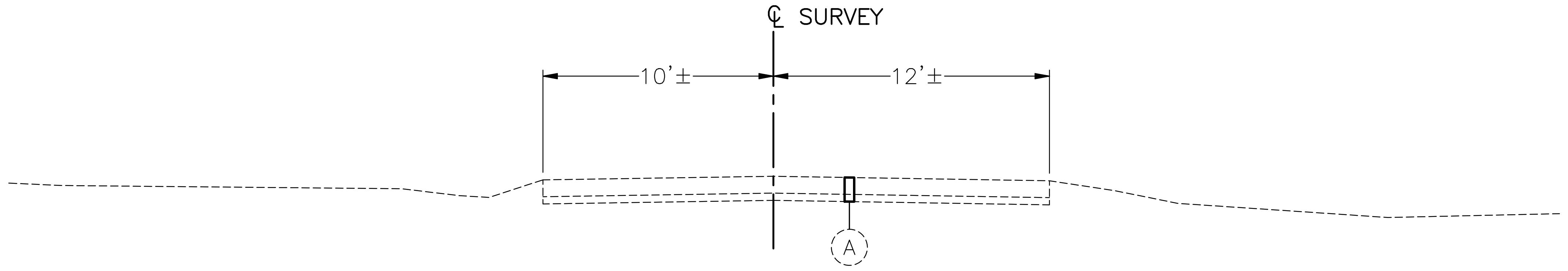
*FOR AREAS WITH NO DITCH

*BRIDLE TRAIL ADJACENT TO THE STREET EDGE
STA 17+25 TO 21+75 (SEE SHEET G-0-08
FOR ADDITIONAL INFORMATION)

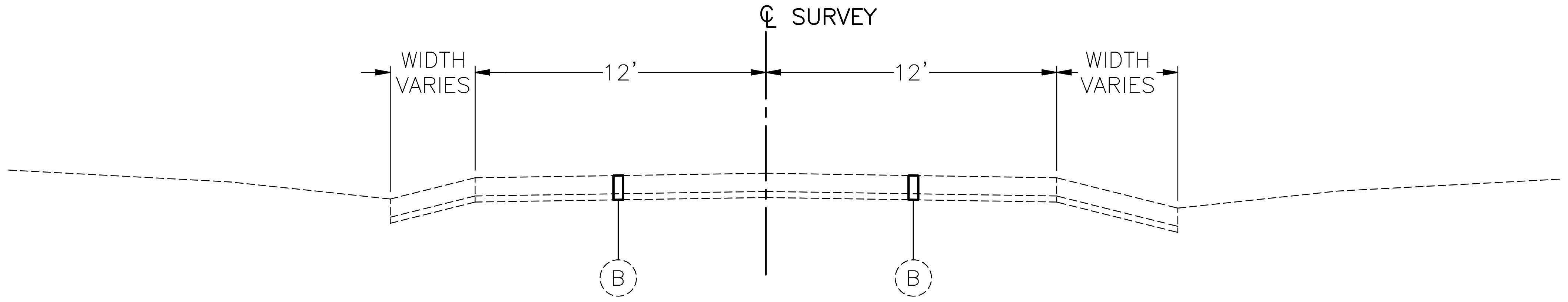
① ITEM 441 – 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448), PG64-22
② ITEM 441 – 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448)
③ ITEM 301 – 6" BITUMINOUS ASPHALT CONCRETE BASE
④ ITEM 304 – 6" AGGREGATE BASE
⑤ ITEM 605 – 6" UNCLASSIFIED PIPE UNDERDRAIN (PERFORATED PVC OR SMOOTH WALLED HDPE, IN FILTER SOCK)
⑥ ITEM 407 – TACK COAT (0.10 GAL./S.Y.)
⑦ ITEM 407 – TACK COAT (0.08 GAL./S.Y.)
⑧ ITEM 204 – SUBGRADE COMPACTION
⑨ OVERTOPPING PROTECTION, PERMANENT COMPOSITE TURF REINFORCEMENT MAT
⑩ ITEM 644 – CENTERLINE, DOUBLE YELLOW
⑪ ITEM 644 – EDGE LINE
⑫ TOPSOIL, FURNISHED AND PLACED (T=4")
⑬ SEEDING AND MULCHING (SEE SHEET L-1-01)

THICKNESS AND COMPOSITION OF EXISTING PAVEMENT:

Ⓐ ASPHALT CONCRETE PAVEMENT WITH AGGREGATE BASE, ASPHALT DEPTH VARIES FROM 4" TO 15". AGGREGATE BASE DEPTH VARIES FROM 0" TO 18".
Ⓑ 9" OF CONCRETE PAVEMENT, 3" OF AGGREGATE BASE
Ⓒ 6" OF CONCRETE PAVEMENT, 6" OF AGGREGATE BASE
Ⓓ 6" THICK AGGREGATE SHOULDER



VAUGHN ROAD - EXISTING CONDITIONS
STA 6+46.74 TO 14+99.00 = 852.26LF
NOT TO SCALE



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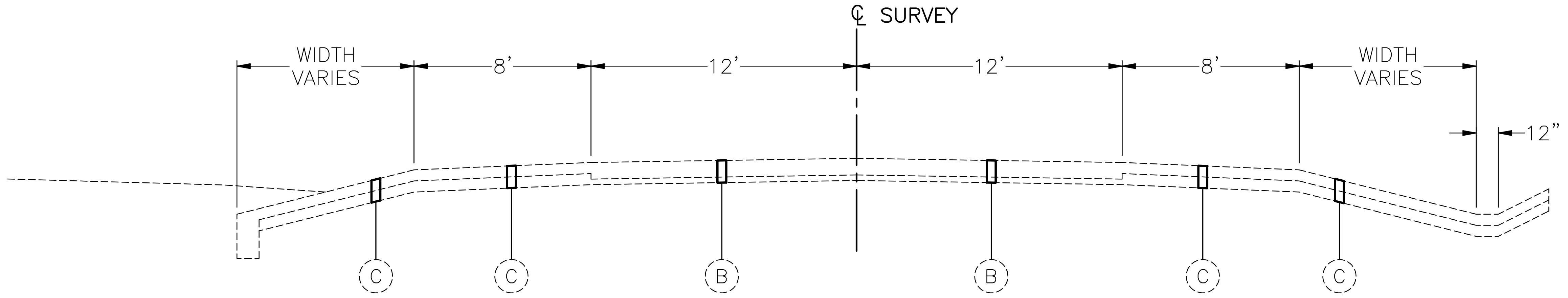
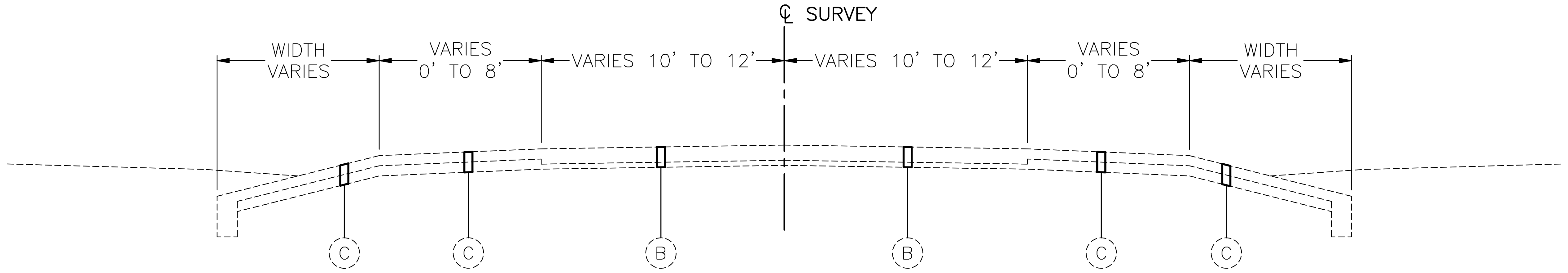
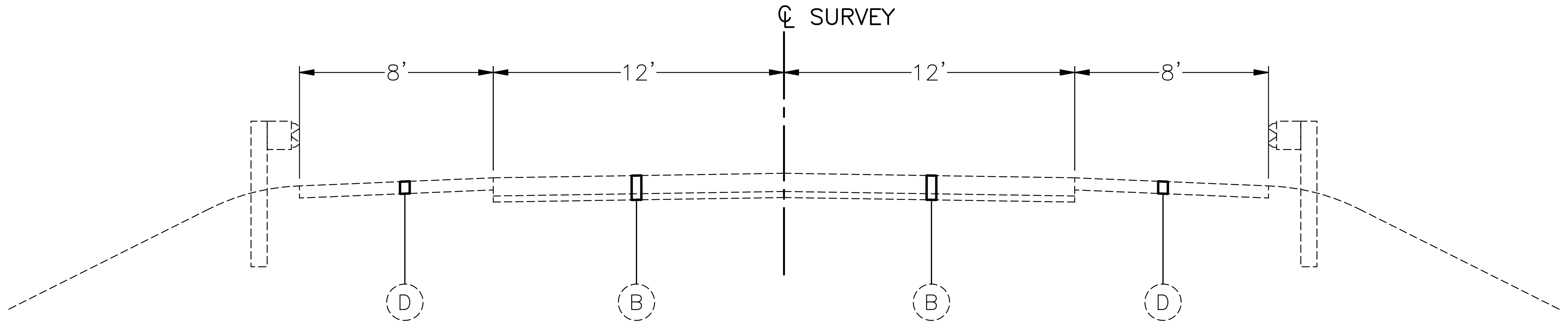
NOT TO SCALE



VAUGHN ROAD - EXISTING CONDITIONS
STA 19+00.00 TO 21+02.79 = 202.79LF
NOT TO SCALE



VAUGHN ROAD - EXISTING CONDITIONS
STA 17+91.47 TO 19+00.00 = 108.53LF
NOT TO SCALE



VAUGHN ROAD - EXISTING CONDITIONS
STA 21+02.79 TO 22+78.00 = 175.21LF
NOT TO SCALE

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PROJECT 1641

TYPICAL SECTION

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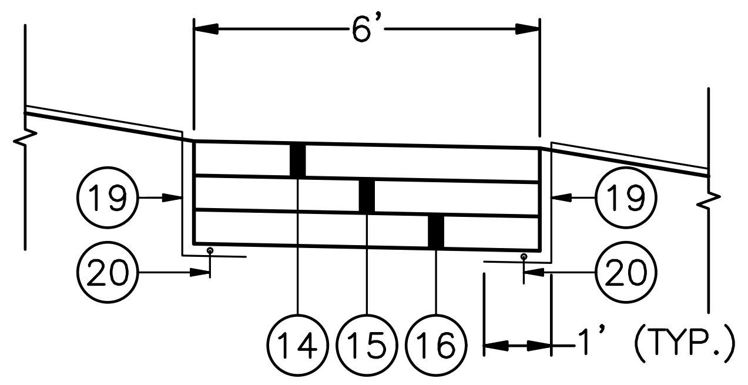
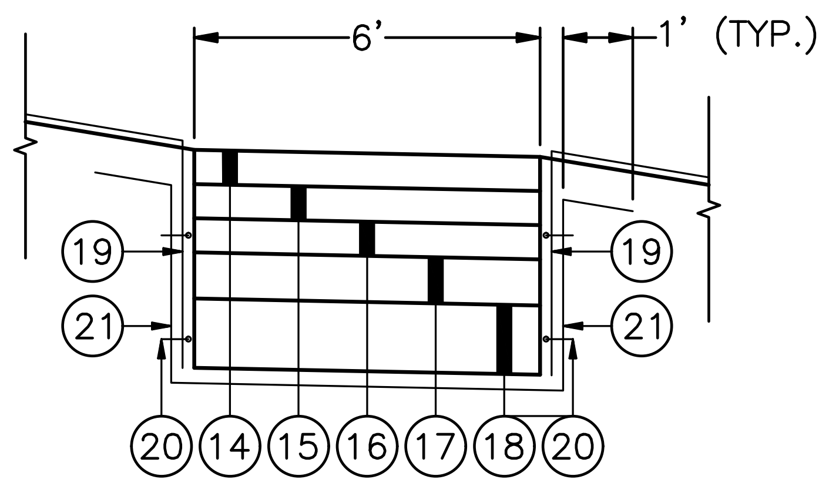
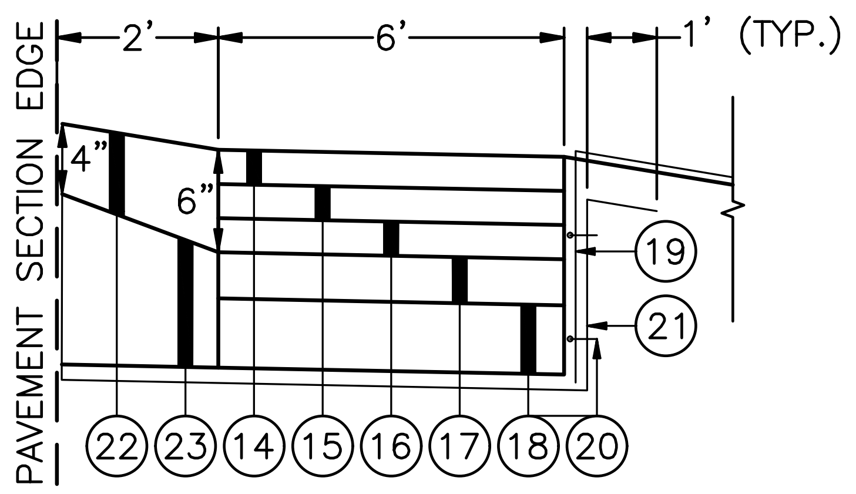
G SHEET: 07 OF 10
SHEET NO.:



BRIDLE TRAIL TYPICAL SECTION
OFF ROADWAY EMBANKMENT
NOT TO SCALE



BRIDLE TRAIL TYPICAL SECTION
ON ROADWAY EMBANKMENT
NOT TO SCALE



BRIDLE TRAIL TYPICAL SECTION
ON ROADWAY EMBANKMENT
ADJACENT TO STREET STA. 17+25 TO 21+75
NOT TO SCALE

⑭	2" MIN. 310 SANDSTONE (TRAIL MIX)
⑮	2" MIN. CRUSHED #57 GRAVEL
⑯	2" MIN. CRUSHED 3X HARD GRAVEL
⑰	4" MIN. #2 GRAVEL
⑱	18" MIN. ROCK CHANNEL PROTECTION, TYPE C
⑲	EROSION CONTROL MAT (TEMPORARY OR PERMANENT, AS SPECIFIED)
⑳	EROSION CONTROL MAT STAPLES, 12" SPACING (SEE SHEET C-5-20)
㉑	FILTER FABRIC
㉒	#2 GRAVEL, THICKNESS VARIES 4" TO 6"
㉓	ROCK CHANNEL PROTECTION, TYPE C, THICKNESS VARIES 22" TO 24"

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PROJECT 1641

BRIDLE TRAIL TYPICAL SECTIONS

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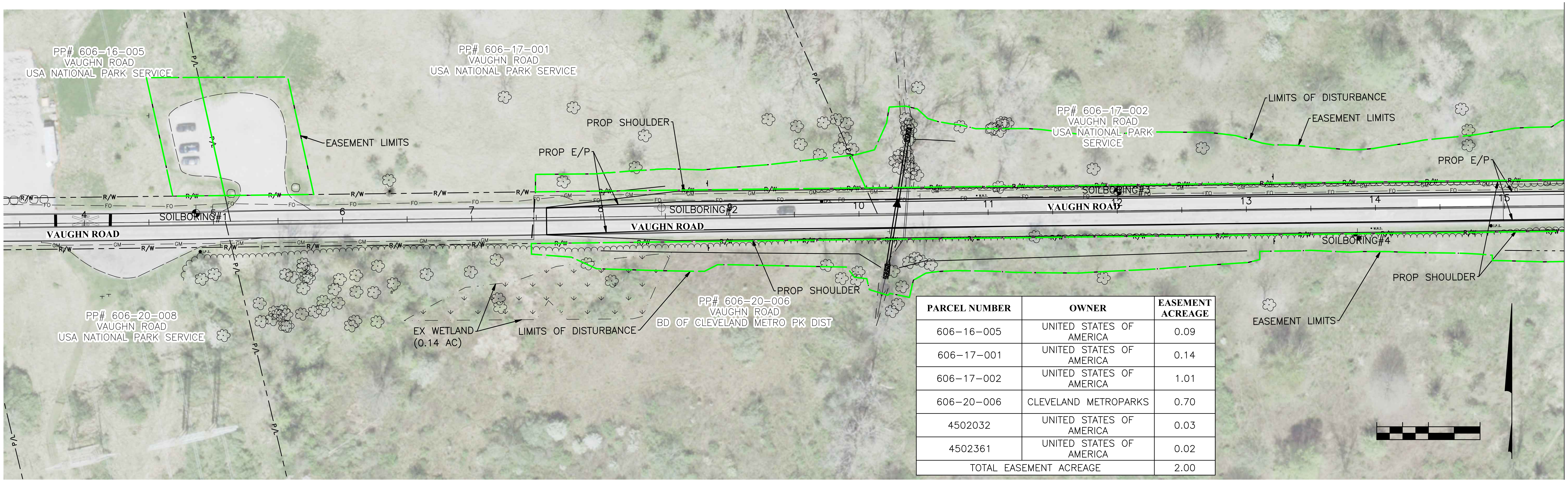
PROJECT SET: 08 OF 49
G SHEET: 08 OF 10
SHEET NO.:



PARCEL NUMBER	OWNER	EASEMENT ACREAGE
606–16–005	UNITED STATES OF AMERICA	0.09
606–17–001	UNITED STATES OF AMERICA	0.14
606–17–002	UNITED STATES OF AMERICA	1.01
606–20–006	CLEVELAND METROPARKS	0.70
4502032	UNITED STATES OF AMERICA	0.03
4502361	UNITED STATES OF AMERICA	0.02
TOTAL EASEMENT ACREAGE		2.00

J:\20210275\Dwg\04Sheets\Plan\TO 06 – Vaughn Road (Brecksville)\08 Easement Plan.dwg, Last Saved By: giensen, 10/3/2022 3:36 PM Last Printed By: Arden, Shawn, 10/6/2022 11:07 AM (No Xrefs)

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EASEMENT PLAN

WARNING
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PROJECT SET: 09 OF 49
G SHEET: 09 OF 10
SHEET NO.:

∗ INSTALL TEMPORARY BARRICADES ACROSS
VAUGHN ROAD WEST OF RAILROAD SIGNAL
FOR EASTBOUND TRAFFIC PER SHEET T-1-02

J:\20210275\Dwg\04Sheets\Plan\TO_06 – Vaughn Road (Brecksville)\09_Staging Area Plan.dwg, Last Saved By: sarden, 10/3/2022 3:58 PM Last Printed By: Arden, Shawn, 10/6/2022 11:07 AM (No Xrefs)

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VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

STAGING AREA PLAN

WARNING
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PROJECT SET: 10 OF 49
G SHEET: 10 OF 10
SHEET NO.:

J:\20210275\Dwg\04Sheets\Plan\TO 06 – Vaughn Road (Brecksville)\10 Vaughn Road Plan & Profile.dwg, Last Saved By: ojensen, 9/30/2022 10:55 AM Last Printed By: Arden, Shawn, 10/6/2022 11:07 AM
9 Xrefs: 20210275-T006-CP-CNTR-N, 20210275-T006-VS-REFR-O (G Drive ex basemap), 20210275-T006-CS-REFR-N, 20210275_T006_BORD, 20210275-T006-CP-PROF-N, 20210275-T006-CG-TOPO-N, 20210275-T006-CS-REFR-E (100 yr floodplain lines only), Erosion Control, Survey Points

** INSTALL TEMPORARY BARRICADES PER SHEET G-1-10 AND T-1-02.

* COORDINATE GATE REINSTALLATION WITH BRECKSVILLE SERVICE DEPARTMENT

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VAUGHN ROAD PLAN & PROFILE

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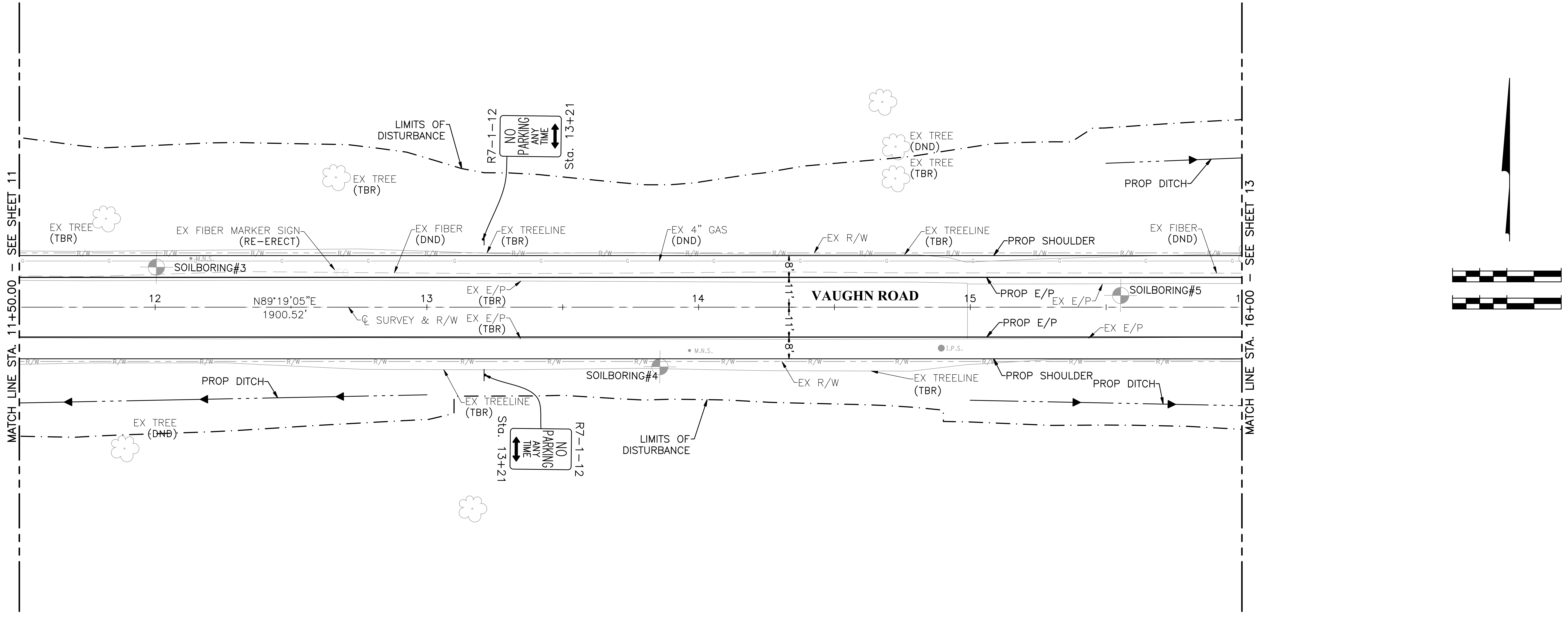

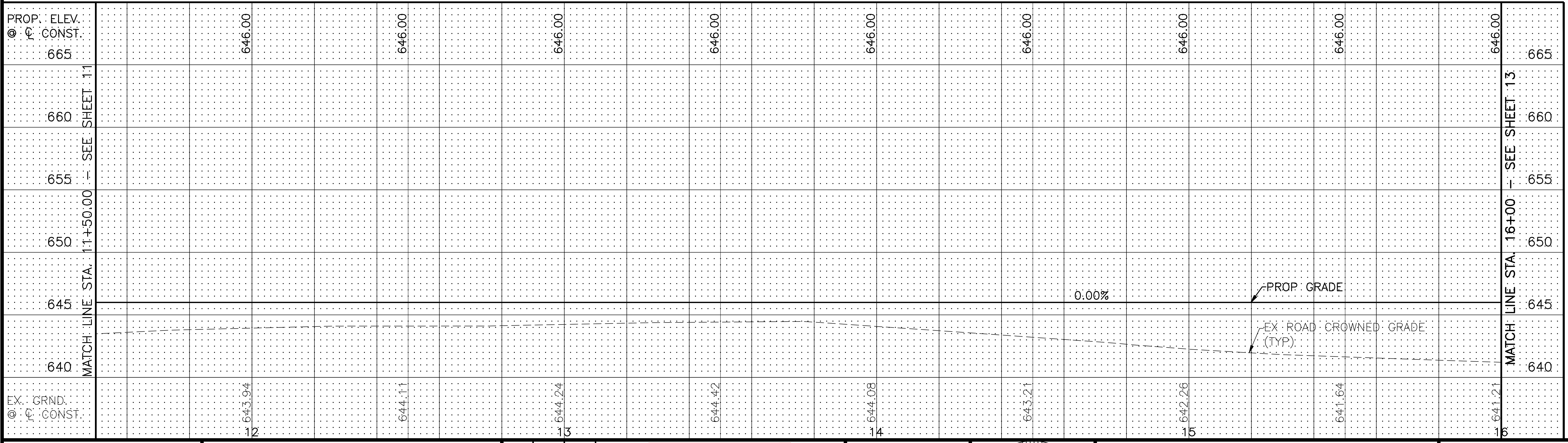

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VAUGHN ROAD PLAN & PROFILE

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PROJECT SET: 12 OF 49
C SHEET: 02 OF 30
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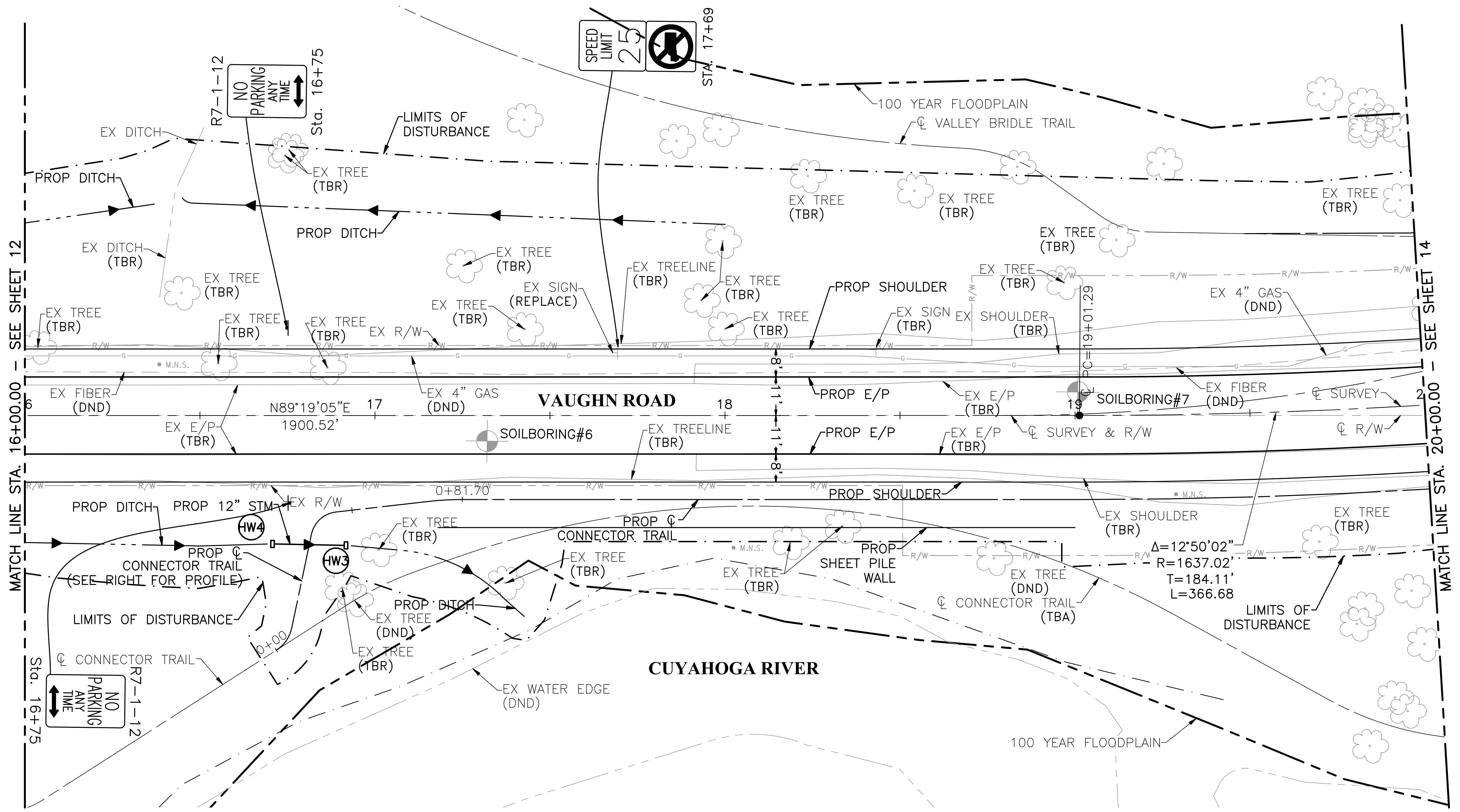
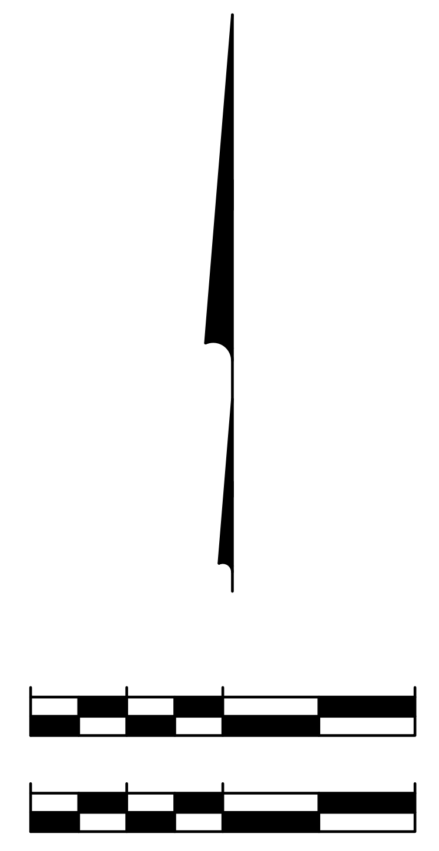
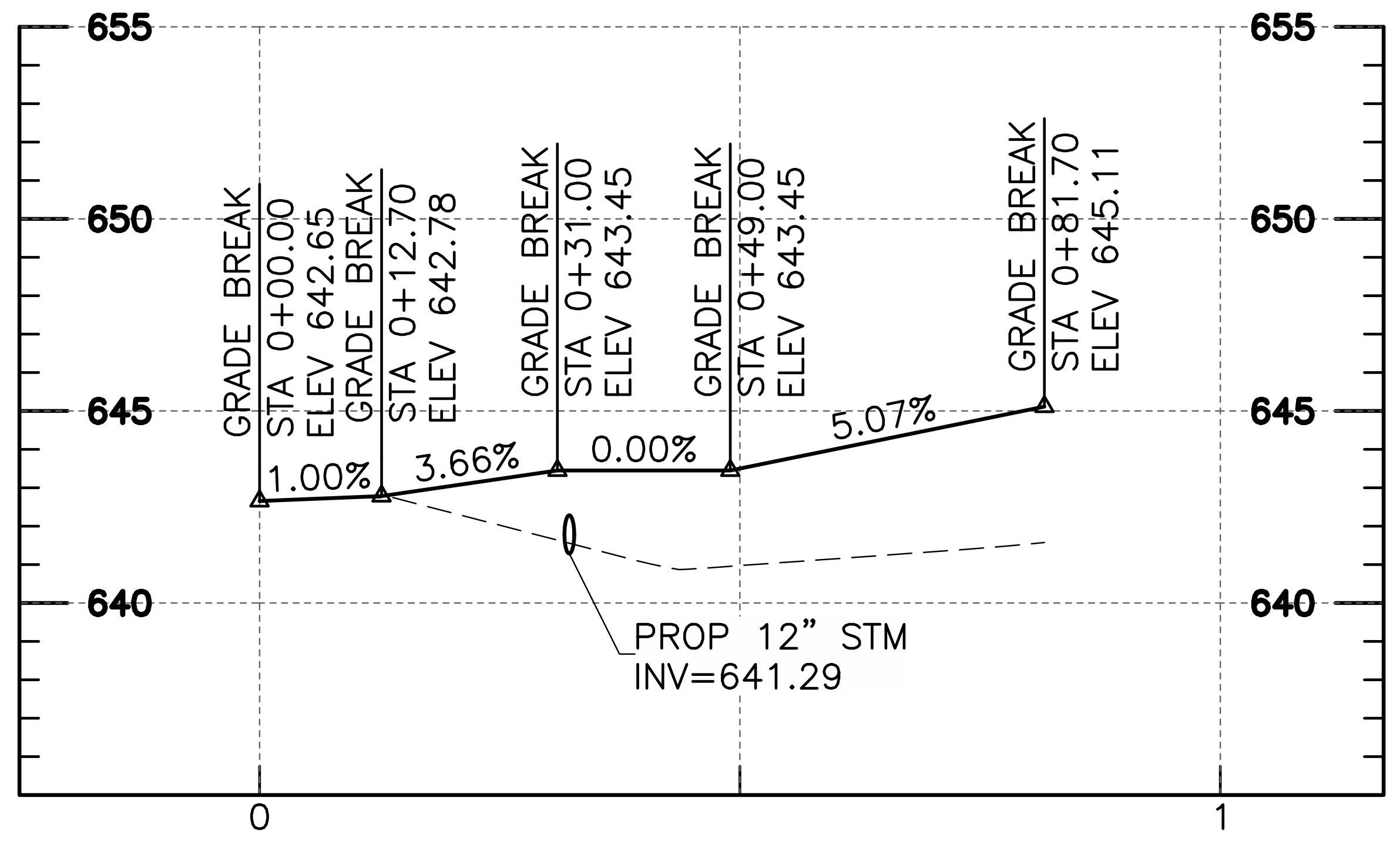
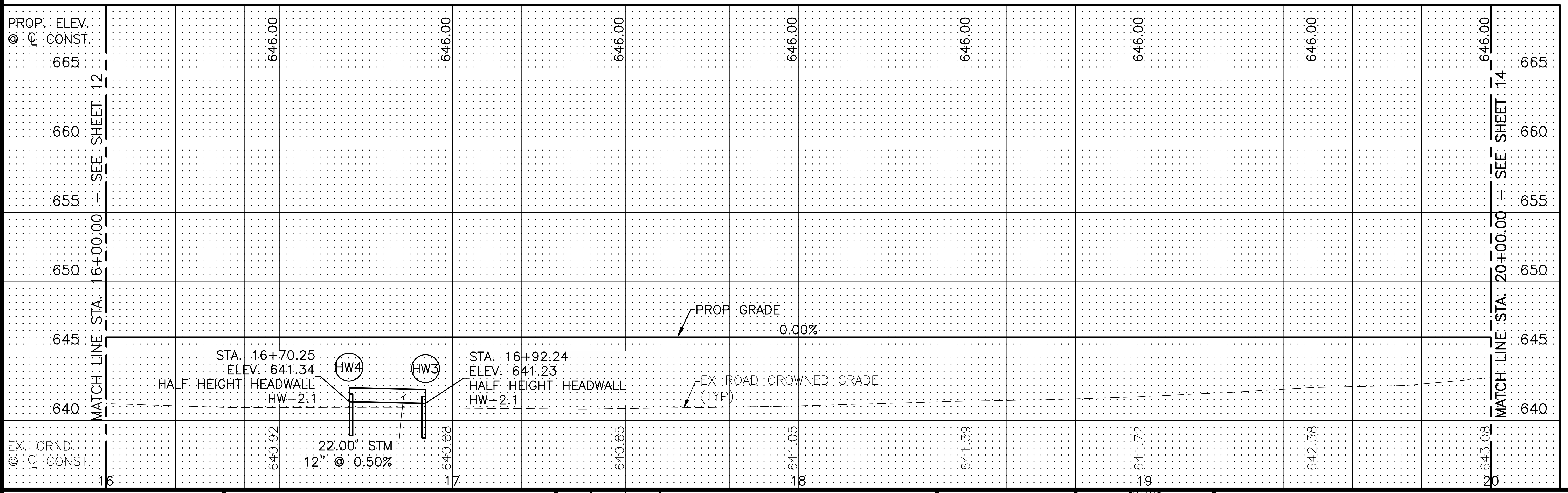
9 Xrefs: 20210275–T006–CP–CNTR–N, 20210275–T006–VS–REFR–O (G Drive ex basemap), 20210275–T006–CS–REFR–N, 20210275_T006_BORD, 20210275–T006–CP–PROF–N, 20210275–T006–CG–TOPO–N, 20210275–T006–CS–REFR–E (100 yr floodplain lines only), Erosion Control, Survey Points







655
650
645
640
GRADE BREAK STA 0+00.00 ELEV 642.65
GRADE BREAK STA 0+12.70 ELEV 642.78
GRADE BREAK STA 0+31.00 ELEV 643.45
GRADE BREAK STA 0+49.00 ELEV 643.45
GRADE BREAK STA 0+81.70 ELEV 645.11
1.00%
3.66%
0.00%
5.07%
PROP 12" STM INV=641.29
0
1



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VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

VAUGHN ROAD PLAN & PROFILE

WARNING
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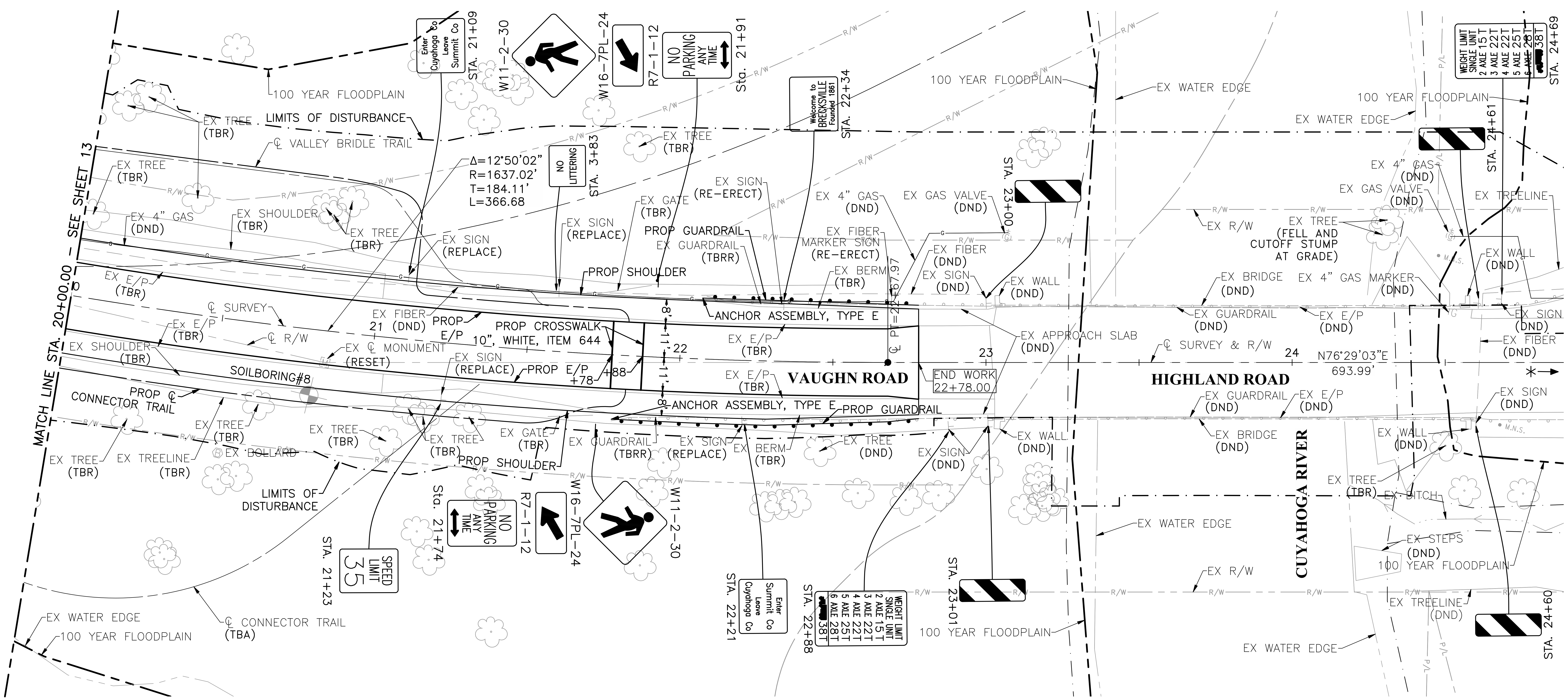
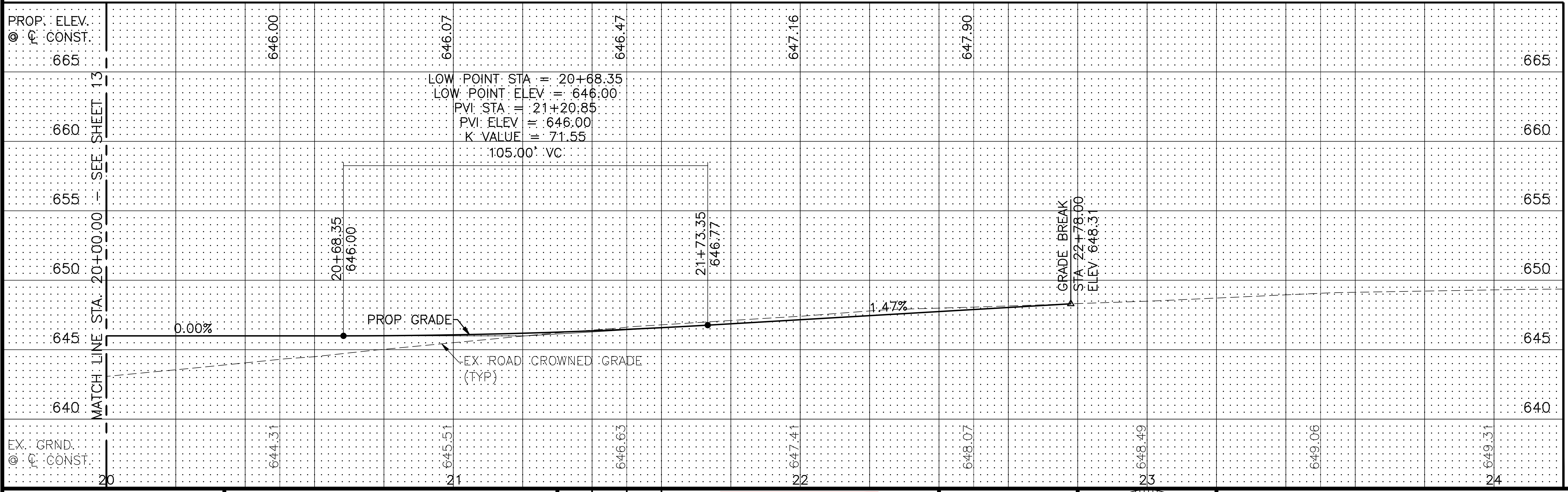
PROJECT SET: 13 OF 49
C SHEET: 03 OF 30
SHEET NO.:



✱ INSTALL TEMPORARY BARRICADES PER SHEET G-1-10 AND T-1-02.



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9 Xrefs: 20210275-T006-CP-CNTR-N, 20210275-T006-VS-REFR-0 (G Drive ex basemap), 20210275-T006-CS-REFR-N, 20210275_T006_BORD, 20210275-T006-CP-PROF-N, 20210275-T006-CG-TOPO-N, 20210275-T006-CS-REFR-E (100 yr floodplain lines only), Erosion Control, Survey Points

NOTES:

ALL ELEVATIONS ON THIS PLAN ARE BASED ON NAVD 1988 DATUM, UNLESS OTHERWISE NOTED.

ALL STREET CROSSINGS SHOWN IN PROFILES ARE PUBLIC STREETS.

ALL BACKFILL SHALL BE COMPACTED TO THE DENSITY OF THE EXISTING GROUND UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS:

* COMPACTED BACKFILL, PER SPECIFICATIONS

** LOW STRENGTH MORTAR (LSM) BACKFILL (TYPE 2)

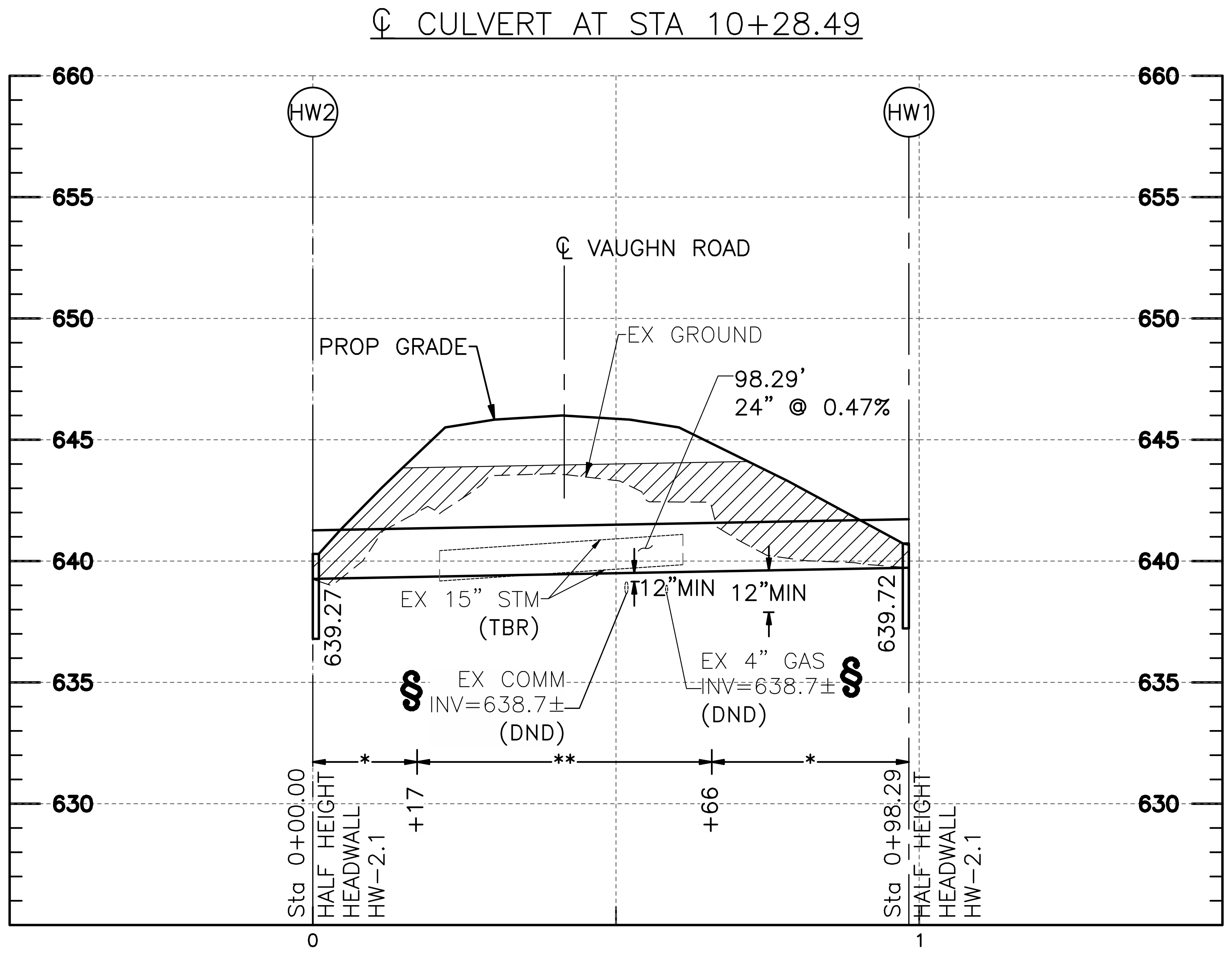
ALL FILLS ARE TO BE PLACED A MINIMUM OF 2.5' ABOVE THE PROPOSED STORM SEWER PRIOR TO THE START OF SEWER CONSTRUCTION PER SPECIFICATIONS

DENOTED THUS: ▨

§ CONTRACTOR TO VERIFY INVERT AND LOCATION OF EXISTING UTILITY BEFORE REMOVING EXISTING CULVERT.

HORIZ 1 inch = 20 Feet 0 10 20 40

VERT 1 inch = 5 Feet 0 2.5 5 10



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VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

STORM PROFILES

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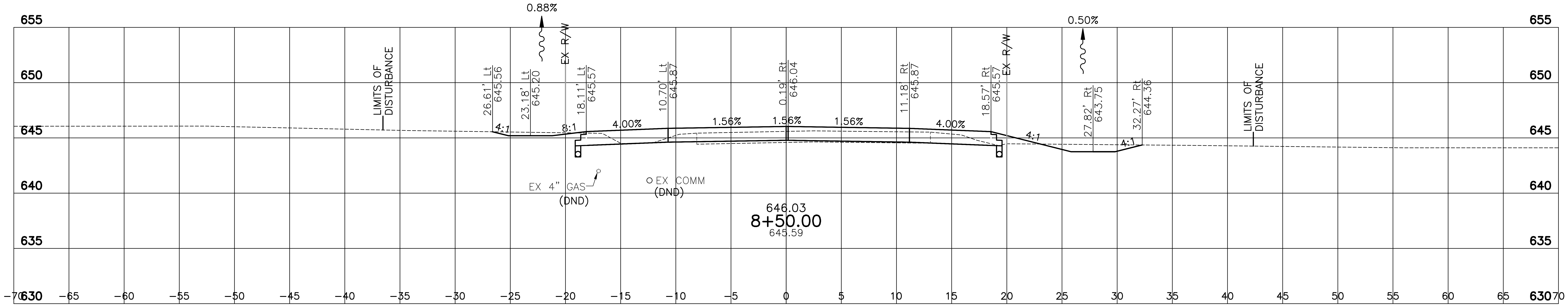
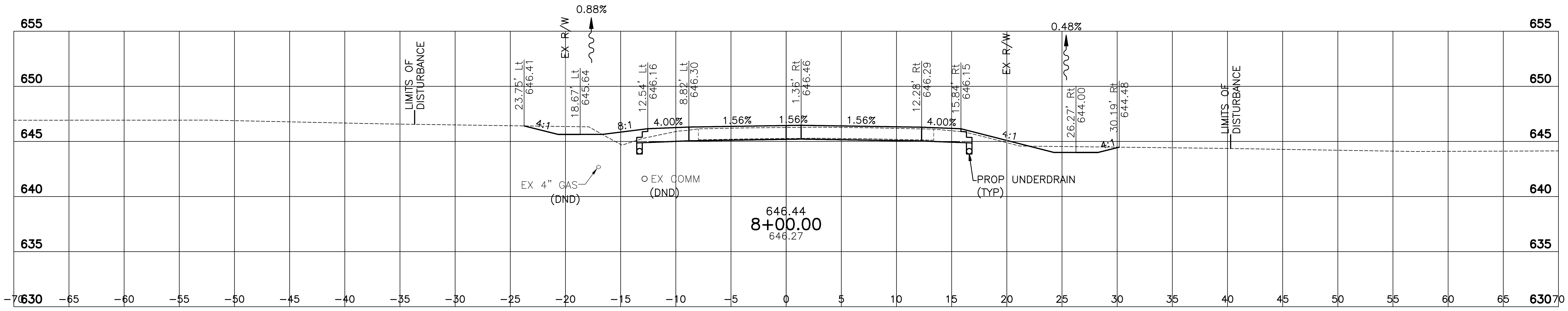
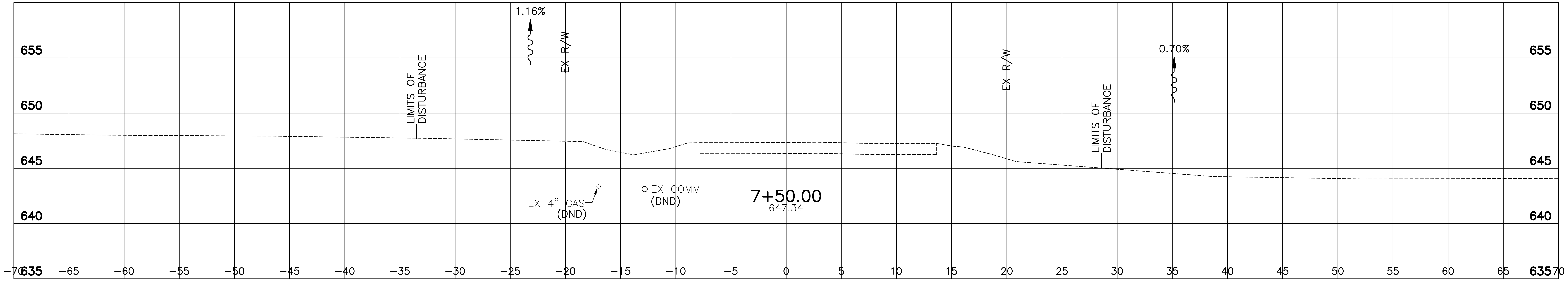
PROJECT SET: 15 OF 49
C SHEET: 05 OF 30
SHEET NO.:







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PROJECT 1641

VAUGHN ROAD CROSS SECTIONS

WARNING
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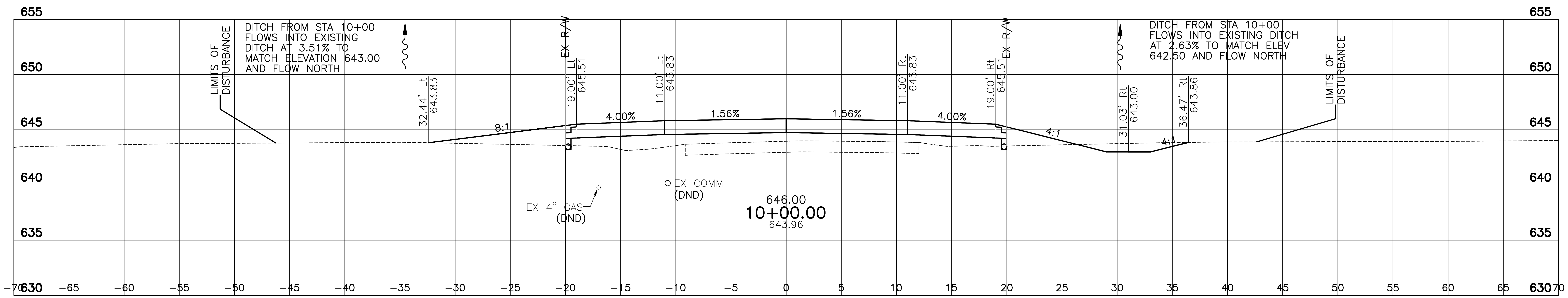
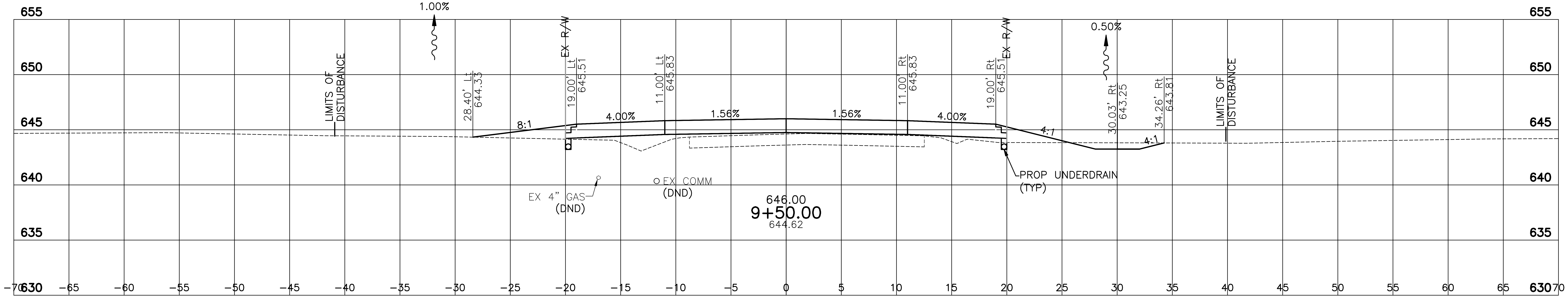
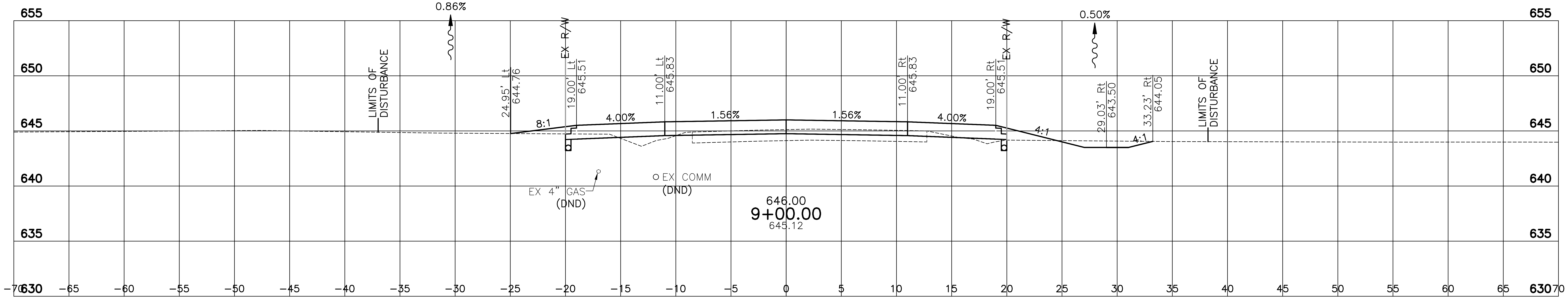
PROJECT SET: 16 OF 49
C SHEET: 06 OF 30
SHEET NO.:







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PROJECT SET: 17 OF 49
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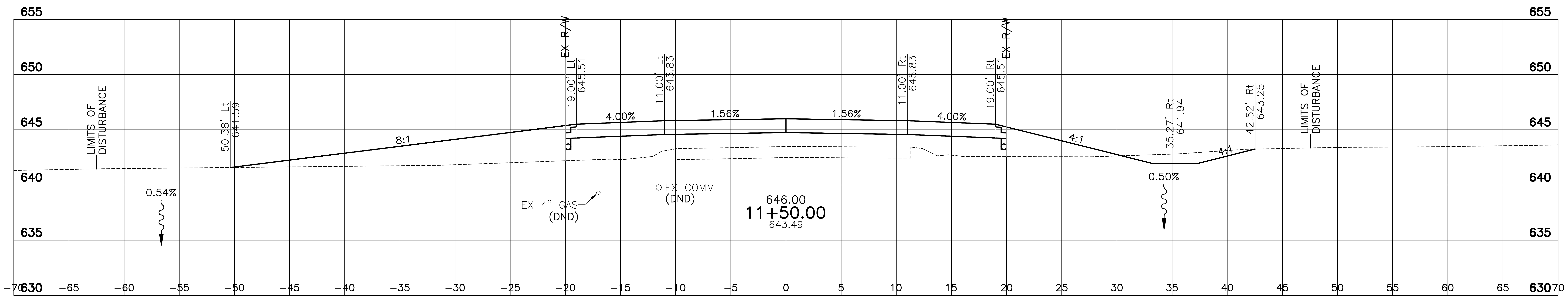

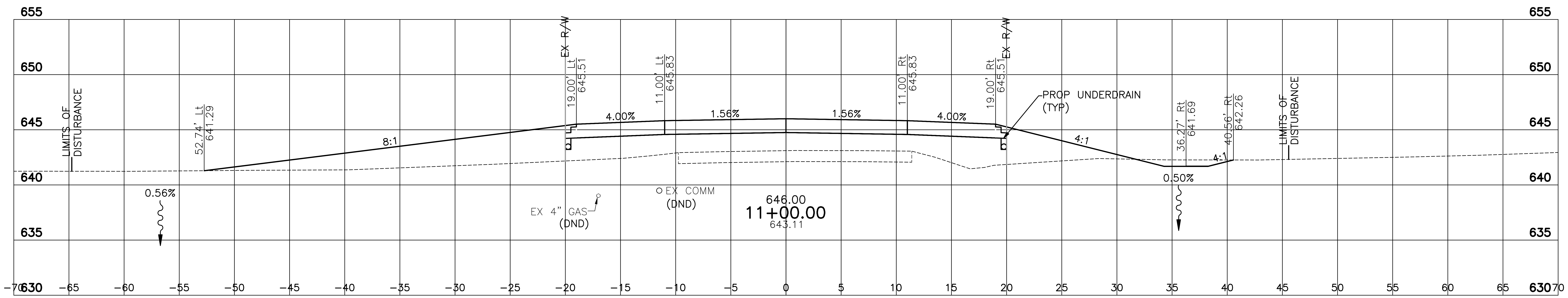

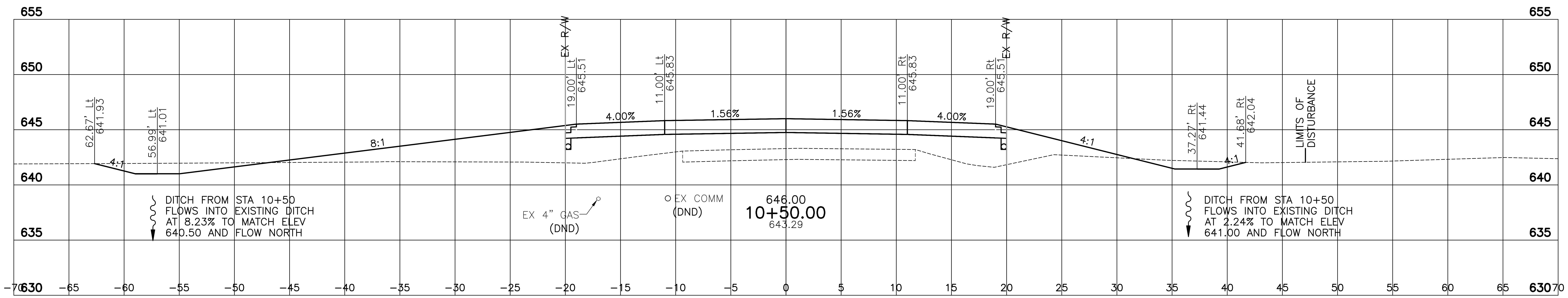

DITCH FROM STA 10+50 FLOWS INTO EXISTING DITCH AT 8.23% TO MATCH ELEV 640.50 AND FLOW NORTH

DITCH FROM STA 10+50 FLOWS INTO EXISTING DITCH AT 2.24% TO MATCH ELEV 641.00 AND FLOW NORTH

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VAUGHN ROAD CROSS SECTIONS

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C SHEET: 08 OF 30
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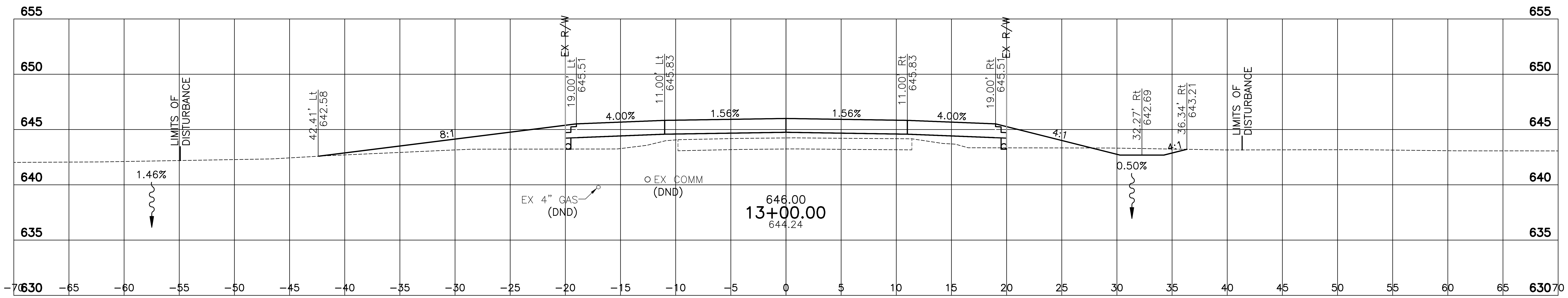

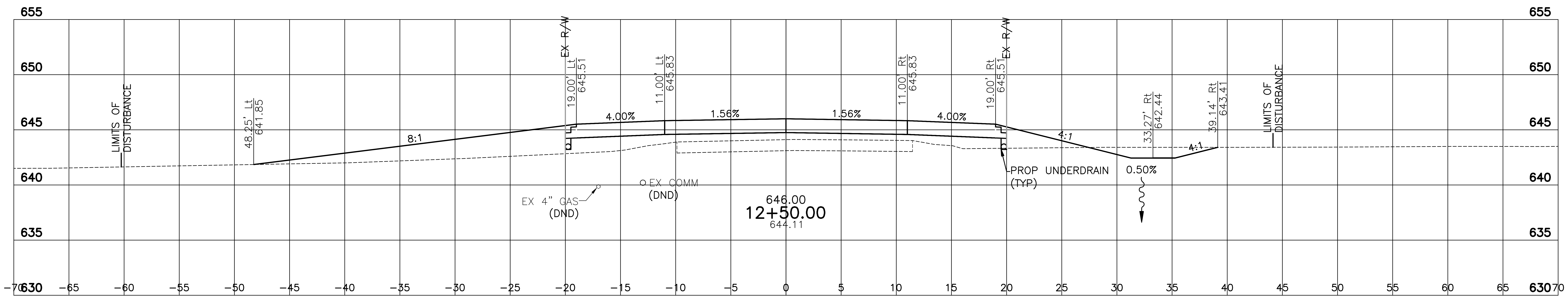

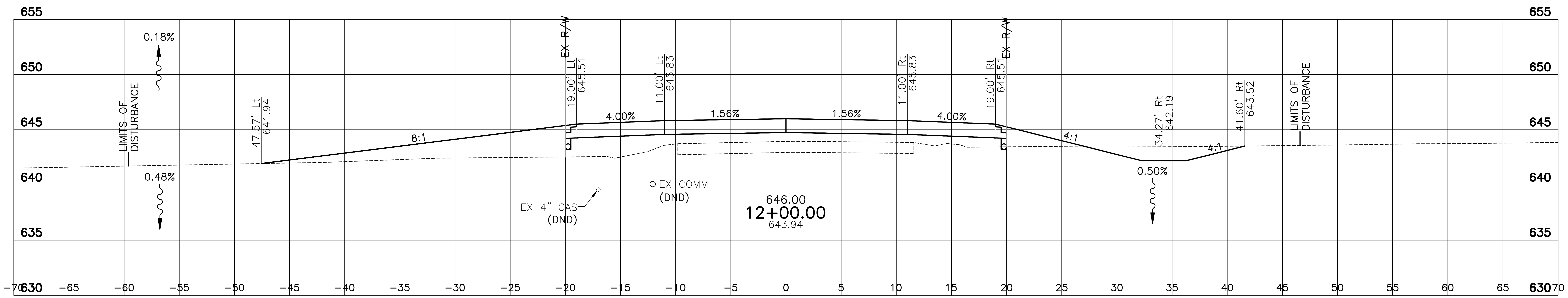

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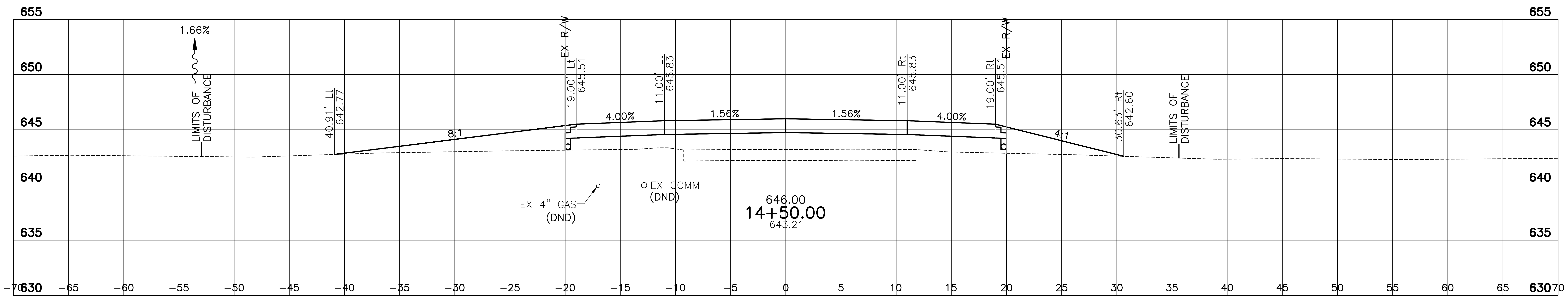
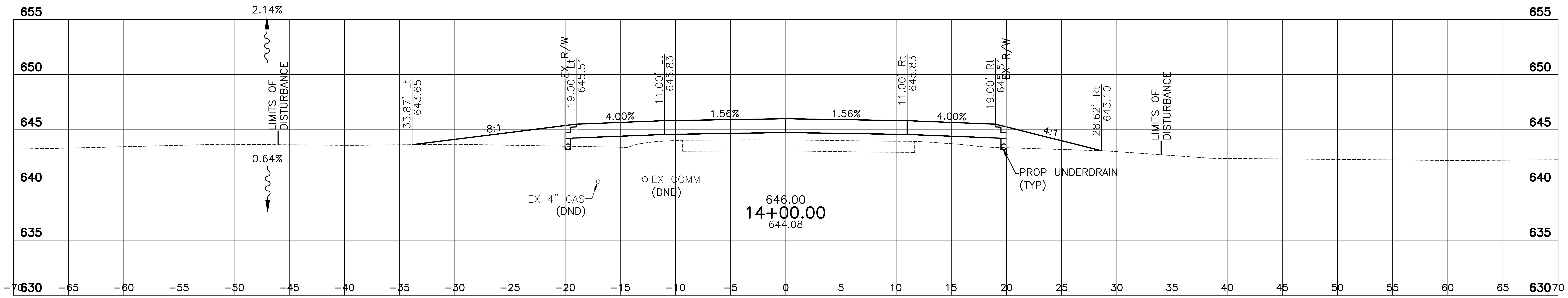
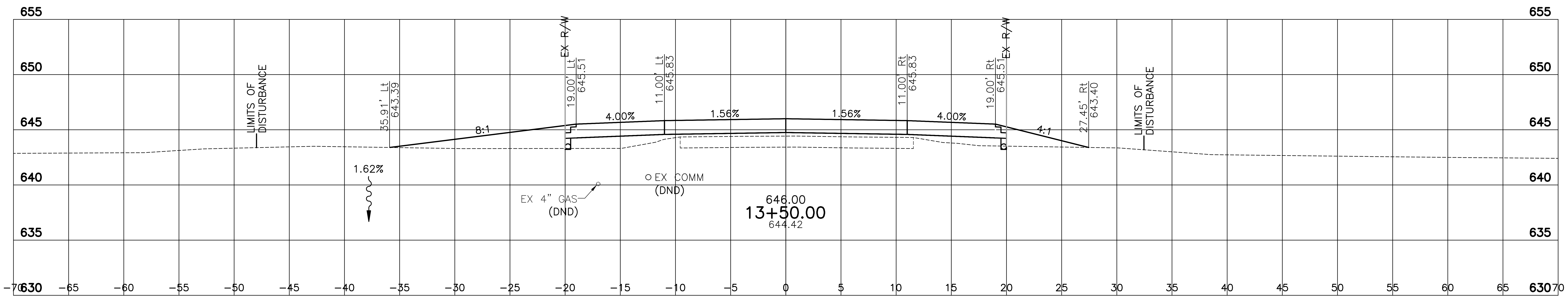
PROJECT SET: 19 OF 49
C SHEET: 09 OF 30
SHEET NO.:







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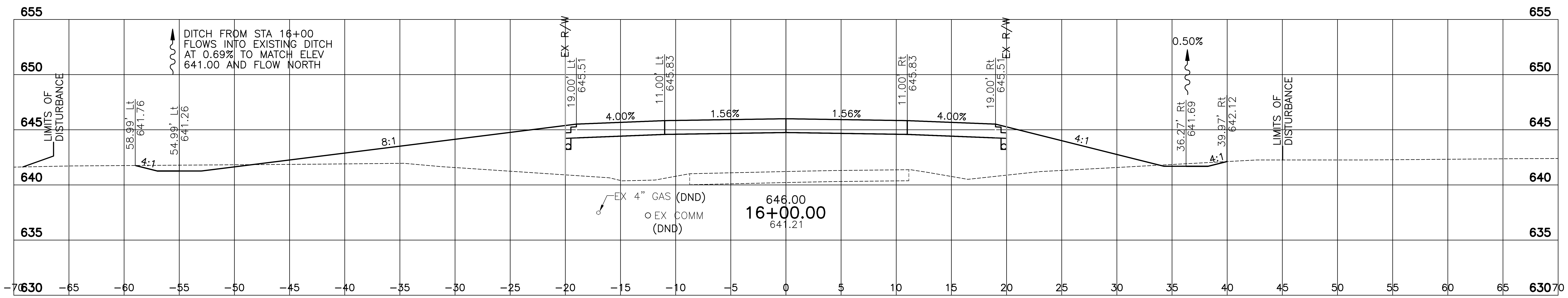
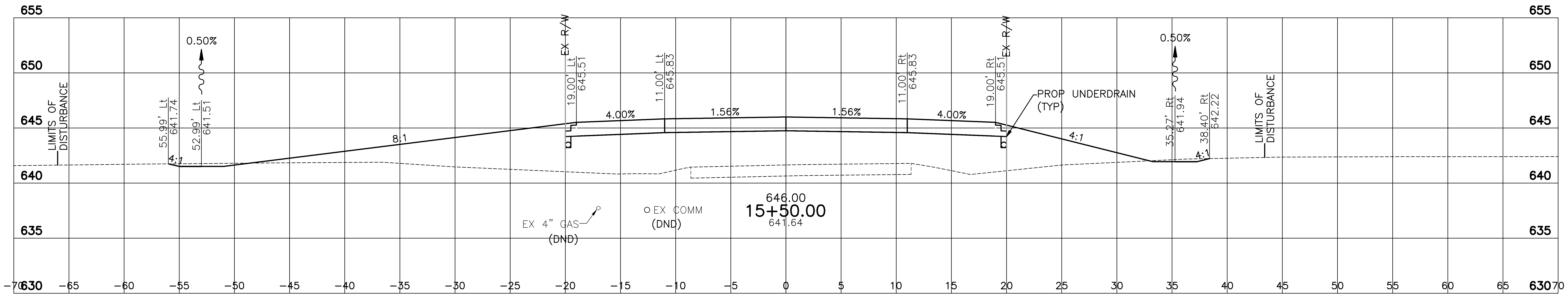
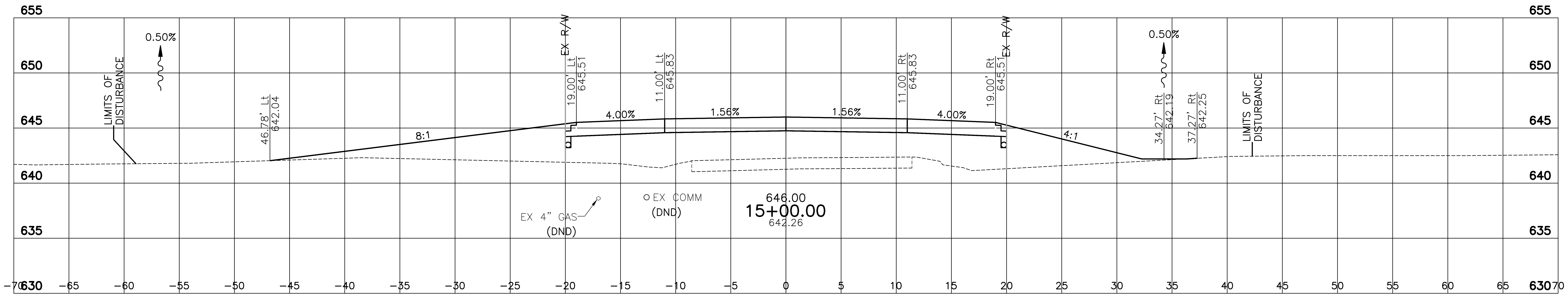
PROJECT SET: 20 OF 49
C SHEET: 10 OF 30
SHEET NO.:







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VAUGHN ROAD CROSS SECTIONS

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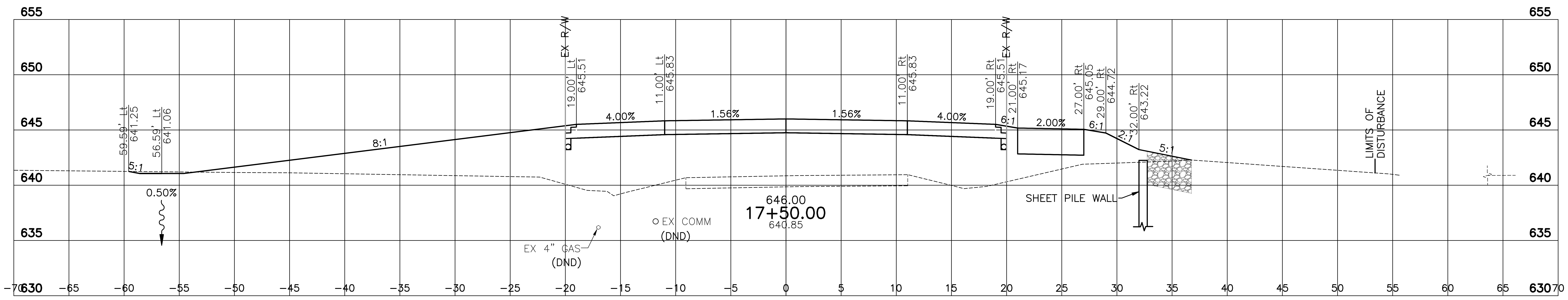
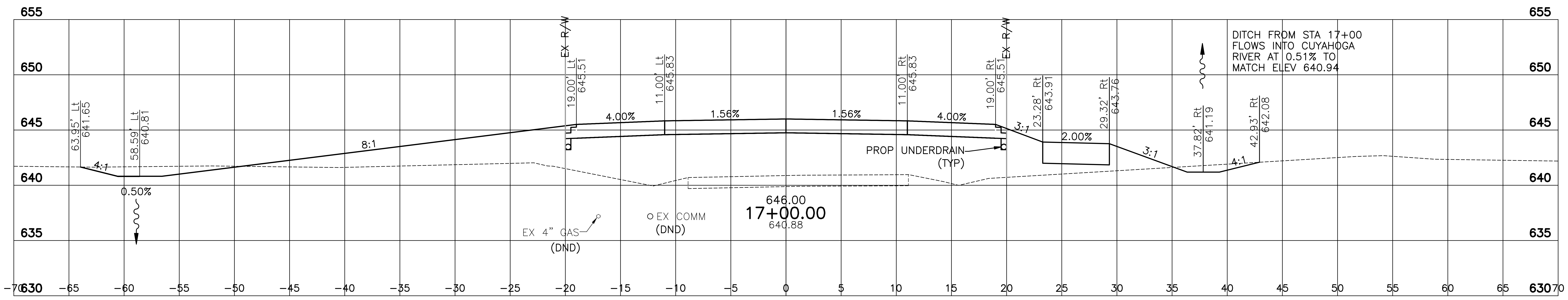
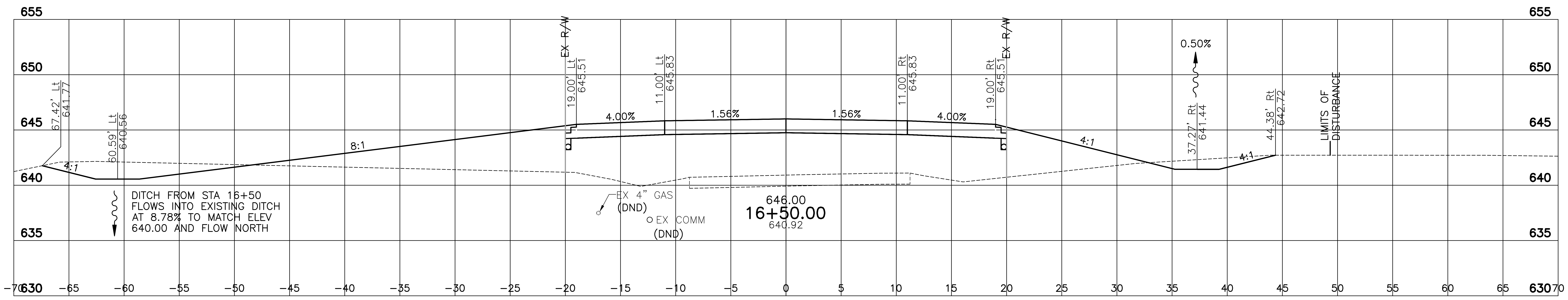
PROJECT SET: 21 OF 49
C SHEET: 11 OF 30
SHEET NO.:







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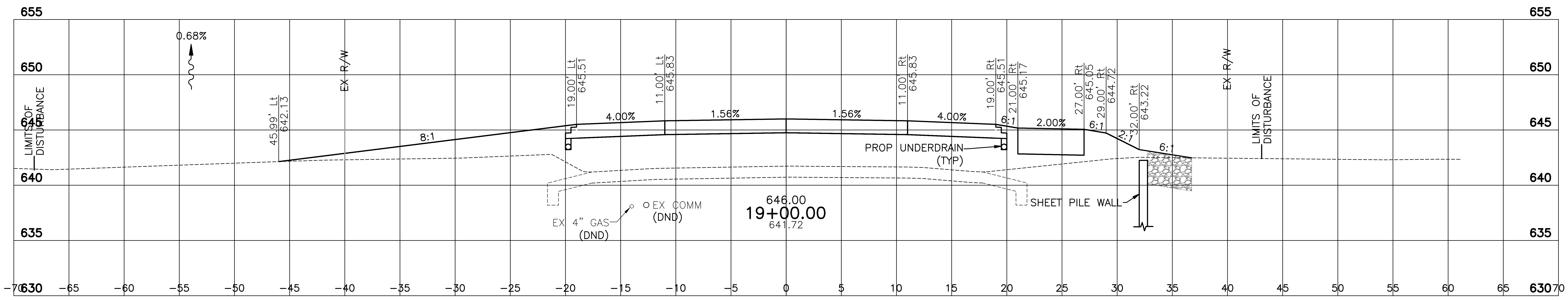
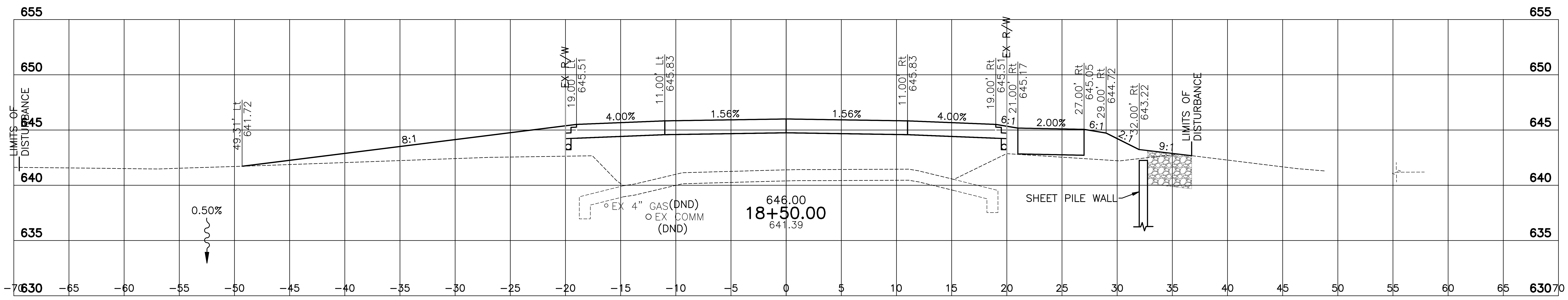
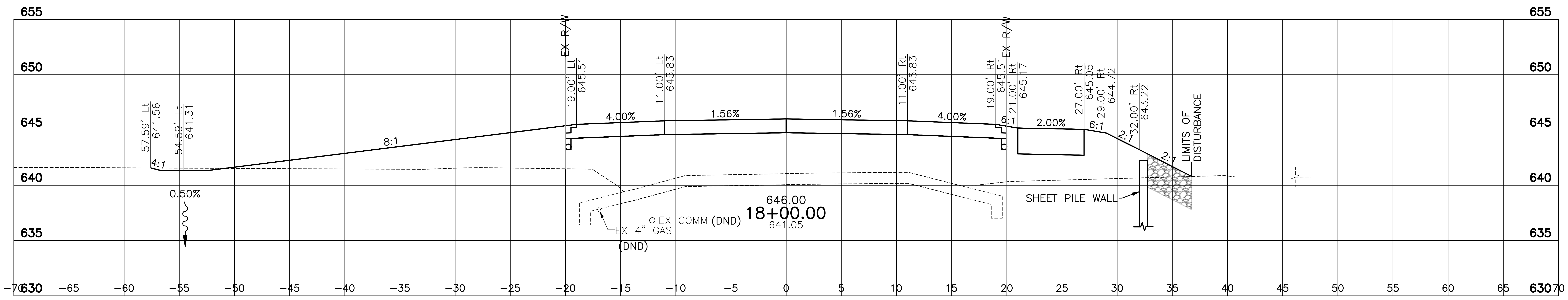
PROJECT SET: 22 OF 49
C SHEET: 12 OF 30
SHEET NO.:







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PROJECT SET: 23 OF 49
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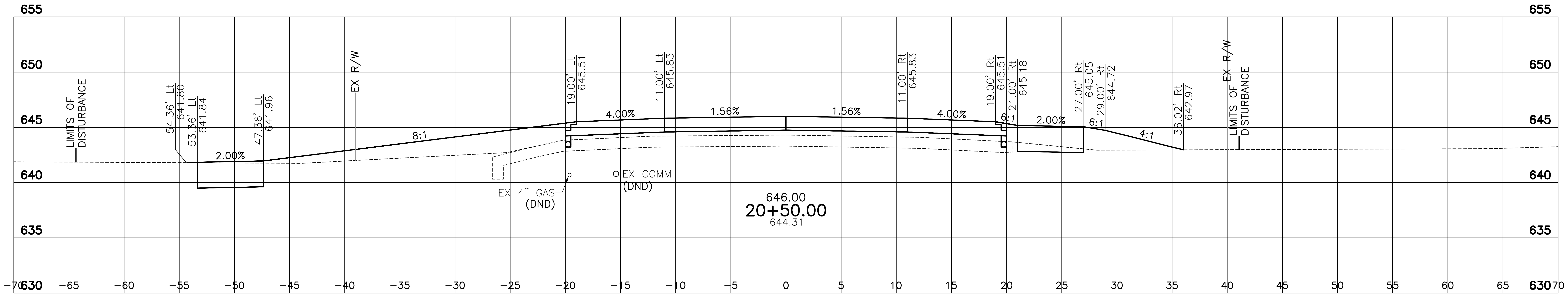

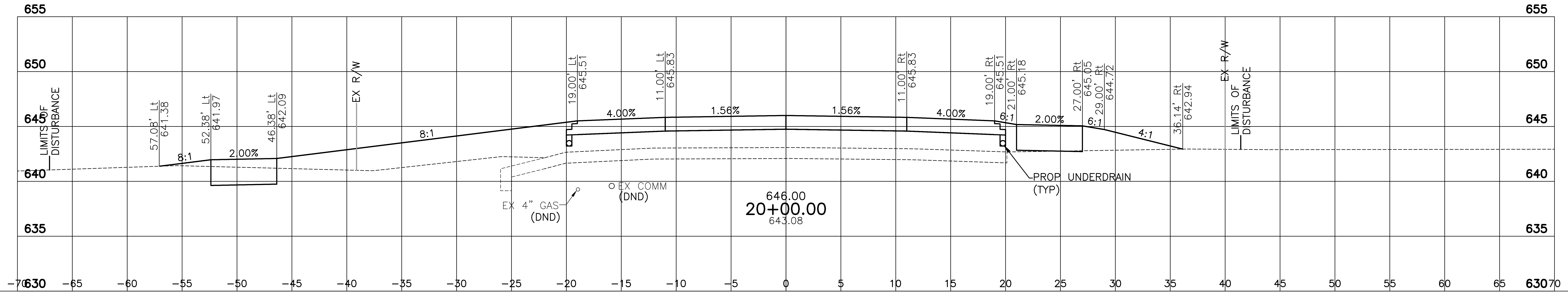

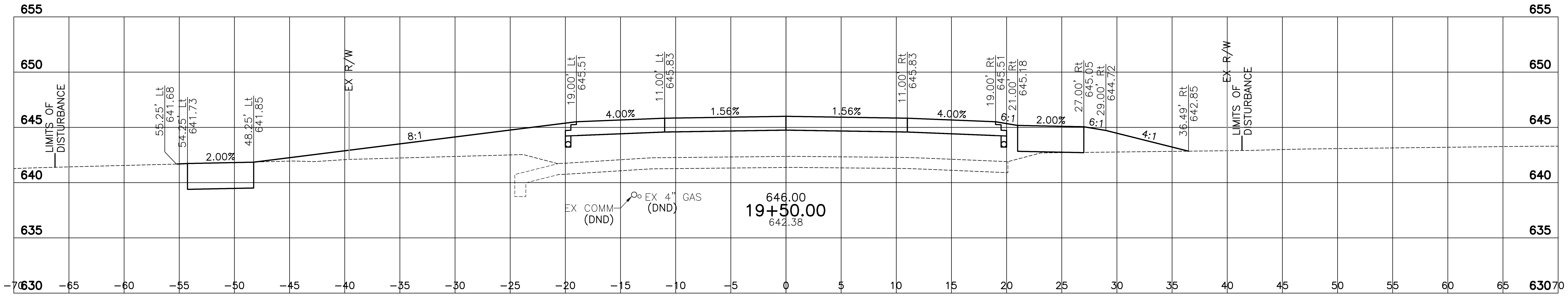

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VAUGHN ROAD CROSS SECTIONS

WARNING
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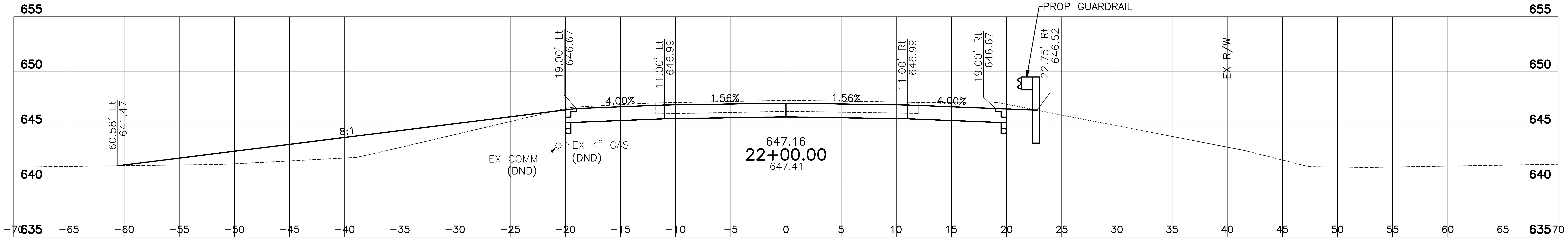
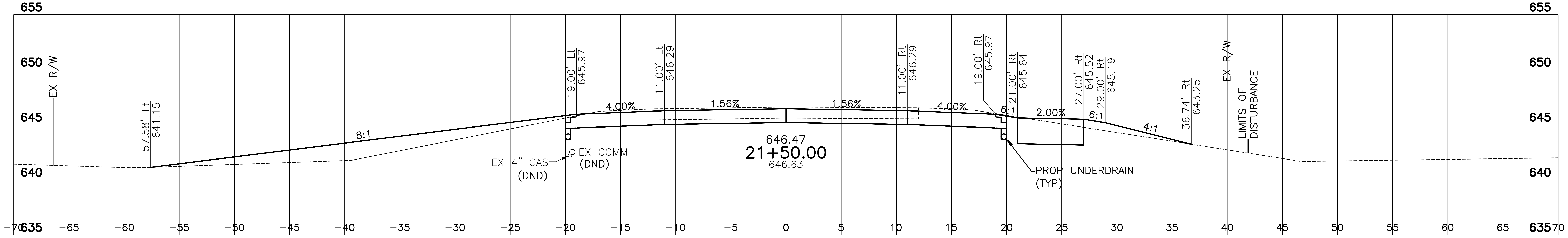
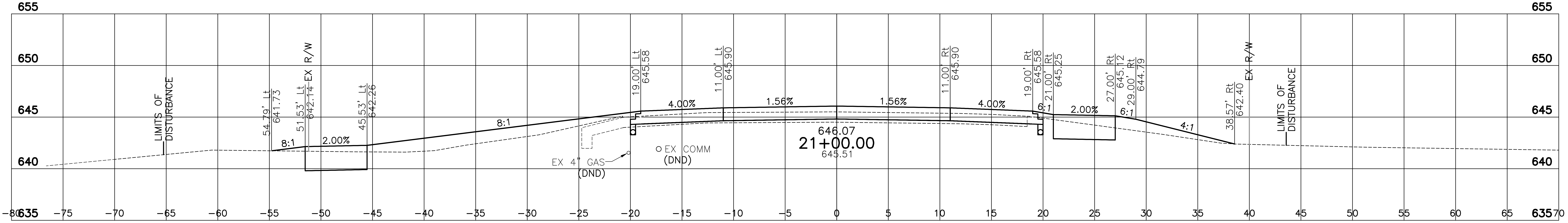
PROJECT SET: 24 OF 49
C SHEET: 14 OF 30
SHEET NO.:







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5 Xrefs: 20210275-T006-CP-CNTR-N, 20210275-T006-CS-REFR-E, 20210275-T006-CS-REFR-N, 20210275-T006_BORD, 20210275-T006-CG-SECT-N

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Northeast Ohio Regional Sewer District

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PLAN SET DATE
OCTOBER 2022

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

VAUGHN ROAD CROSS SECTIONS

WARNING
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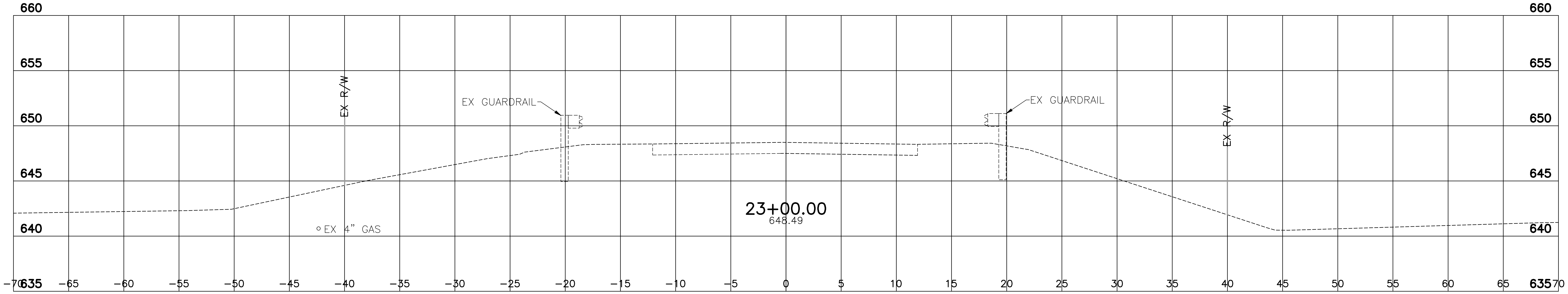
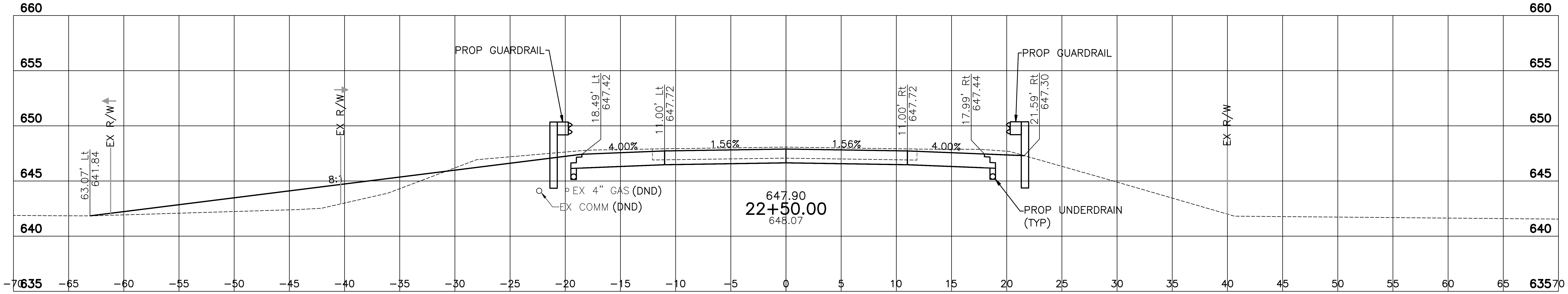
PROJECT SET: 25 OF 49
C SHEET: 15 OF 30
SHEET NO.:





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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

VAUGHN ROAD CROSS SECTIONS

WARNING
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PROJECT SET: 26 OF 49
C SHEET: 16 OF 30
SHEET NO.:

SITE NARRATIVE

PLAN DESIGNER:	EMHT INC. CONSULTING ENGINEERS & SURVEYORS ROBERT FERGUSON, PE 5500 NEW ALBANY ROAD COLUMBUS, OHIO 43054 TEL: (614) 775-4619 RFERGUSON@EMHT.COM
OWNER/DEVELOPER:	NORTHEAST OHIO REGIONAL SEWER DISTRICT 3900 EUCLID AVE CLEVELAND, OH 44115
PROJECT DESCRIPTION:	THE PURPOSE OF THIS PLAN IS TO RAISE THE PROFILE OF VAUGHN ROAD TO MITIGATE FLOODING. THE ROADWAY WILL BE REBUILT FULL DEPTH WITH SHOULDER IMPROVEMENTS MADE.
EXISTING SITE CONDITIONS:	PRE-PROJECT CONDITIONS AT THIS SITE CONSIST OF AN EXISTING ROADWAY IN CLOSE PROXIMITY TO THE CUYAHOGA RIVER WHICH IS ACTIVELY ERODING THE BANK ADJACENT TO THE ROADWAY.
RECEIVING STREAM:	THE CUYAHOGA RIVER.
ADJACENT AREAS:	THE SITE IS BOUNDED TO THE NORTH BY FORESTED AREA AND THE VALLEY BRIDLE TRAIL. THE SITE IS BOUNDED TO THE SOUTH BY THE CUYAHOGA RIVER AND THE CONNECTOR TRAIL. THE SITE IS BOUNDED TO THE WEST BY THE CUYAHOGA VALLEY SCENIC RAILROAD. THE SITE IS BOUNDED TO THE EAST BY THE OHIO & ERIE CANAL TOWPATH TRAIL.
EROSION AND SEDIMENT MEASURES:	EROSION AND SEDIMENT WILL BE CONTROLLED BY USE OF PERIMETER CONTROLS AND DITCH CHECKS TO CONTROL SEDIMENT LADEN RUNOFF.
MAINTENANCE:	ALL EROSION CONTROL DEVICES ARE TO BE INSPECTED BY THE CONSTRUCTION SUPERINTENDENT DAILY AND AFTER SIGNIFICANT RAINFALLS. ANY DAMAGED FACILITIES ARE TO BE REPLACED/REPAIRED IMMEDIATELY AS MAY BE NECESSARY.
CONSTRUCTION SEQUENCE:	1. ENSURE A COPY OF THE NOI, SWPPP, AND OHIO EPA APPROVAL LETTER IS ON-SITE AND AVAILABLE. 2. INSTALL A STABILIZED CONSTRUCTION ENTRANCE, CONCRETE WASHOUT AREA AND STABILIZED CONTRACTOR STAGING AREA. 3. INSTALL PERIMETER CONTROLS AS SHOWN ON THE PLANS. 4. CONSTRUCT THE PROPOSED BRIDGE IMPROVEMENTS, INCLUDING TEMPORARY ACCESS RAMPS AND CONTROL OF WATER MEASURES. REMOVE TEMPORARY WORK WHEN NO LONGER NEEDED. 5. BEGIN DEMOLITION ACTIVITIES OF THE EXISTING ROADWAY. 6. PERFORM SUBGRADE STABILIZATION, GRADING, AND CONSTRUCTION OF THE NEW ROADWAY. 7. PERMANENTLY STABILIZE ALL DISTURBED AREAS, INCLUDING INSTALLATION OF THE SEEDING AND PERMANENT TURF REINFORCEMENT MATTING, VEGETATED BIOFILTERS AND VEGETATED FILTER STRIPS. 8. ONCE PERMANENT VEGETATION IS ESTABLISHED, REMOVE THE TEMPORARY SEDIMENT AND EROSION CONTROLS.
	NOTE: THE CONSTRUCTION SEQUENCE PROVIDED ABOVE IS FOR NPDES PERMIT COVERAGE COMPLIANCE ONLY. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING HIS OWN PROJECT SCHEDULE AND SHALL NOT SOLELY RELY ON THE STATED SEQUENCE OF CONSTRUCTION FOR BIDDING.
SCHEDULE:	THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE OWNER. SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE PLACED IN ACCORDANCE WITH THIS SCHEDULE.
OHIO EPA NPDES FACILITY PERMIT NUMBER:	TO BE DETERMINED
SITE CONTACT:	SARAH REHNER NORTHEAST OHIO REGIONAL SEWER DISTRICT 3900 EUCLID AVENUE CLEVELAND, OHIO 44115 (216) 881-6600 EMAIL: REHNERS@NEORSD.ORG

VEGETATED BIOFILTER

THIS PLAN UTILIZES VEGETATED BIOFILTER(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE 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 EROSION MATTING AS SPECIFIED IN THE PLANS.

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND MATTING TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

SEDIMENT AND EROSION CONTROL NOTES

MAINTENANCE:
IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SEDIMENTATION AND EROSION CONTROL FEATURES ON THIS PROJECT. ANY SEDIMENT OR DEBRIS WHICH HAS REDUCED THE EFFICIENCY OF A CONTROL SHALL BE REMOVED IMMEDIATELY. SHOULD A STRUCTURE OR FEATURE BECOME DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE OWNER.

INSPECTIONS:
THE NPDES PERMIT HOLDER SHALL PROVIDE QUALIFIED PERSONNEL TO CONDUCT SITE INSPECTIONS ENSURING PROPER FUNCTIONALITY OF THE EROSION AND SEDIMENTATION CONTROLS. ALL EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSPECTED ONCE PER EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A 0.5" STORM EVENT OR GREATER THAT OCCURS OVER A 24 HOUR PERIOD. RECORDS OF THE SITE INSPECTIONS SHALL BE KEPT AND MADE AVAILABLE TO JURISDICTIONAL AGENCIES IF REQUESTED.

CONTRACTOR'S RESPONSIBILITIES:
DETAILS HAVE BEEN PROVIDED ON THE PLANS IN AN EFFORT TO HELP THE CONTRACTOR PROVIDE EROSION AND SEDIMENTATION CONTROL. THE DETAILS SHOWN ON THE PLAN SHALL BE CONSIDERED A MINIMUM. ADDITIONAL OR ALTERNATE DETAILS MAY BE FOUND IN THE OHIO EPA MANUAL "RAINWATER AND LAND DEVELOPMENT". THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION AND SEDIMENT RUNOFF FROM THE SITE ALONG WITH PROPER MAINTENANCE AND INSPECTION IN COMPLIANCE WITH THE NPDES GENERAL PERMIT FOR STORM DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.

THE CONSTRUCTION SEQUENCE SHOWN ON THIS PLAN IS PROVIDED TO SATISFY OHIO EPA SWPPP REQUIREMENTS AND FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS REQUIRED TO DEVELOP AND SUBMIT HIS OWN CONSTRUCTION SEQUENCE (SCHEDULE OF OPERATIONS) TO THE OWNER. THE SCHEDULE SHOULD INCLUDE A SEQUENCE OF THE PLACEMENT OF THE SEDIMENTATION AND EROSION CONTROL MEASURES THAT PROVIDES FOR CONTINUAL PROTECTION OF THE SITE THROUGHOUT THE EARTH MOVING ACTIVITIES.

PRIOR TO CONSTRUCTION OPERATIONS IN A PARTICULAR AREA, ALL SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE. FIELD ADJUSTMENTS WITH RESPECT TO LOCATIONS AND DIMENSIONS MAY BE MADE BY THE ENGINEER, NEORSD, AND THE OHIO EPA.

IT MAY BECOME NECESSARY TO REMOVE PORTIONS OF SEDIMENTATION CONTROLS DURING CONSTRUCTION TO FACILITATE THE GRADING OPERATIONS IN CERTAIN AREAS. HOWEVER, THE CONTROLS SHALL BE REPLACED UPON GRADING OR DURING ANY INCLEMENT WEATHER.

THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE THE CURRENT STORM WATER POLLUTION PREVENTION PLAN IMMEDIATELY AVAILABLE OR POSTED ON SITE.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT OFFSITE SOIL BORROW AND EXPORT AREAS HAVE OHIO EPA NPDES PERMIT COVERAGE AND THAT APPROPRIATE EROSION AND SEDIMENT CONTROLS ARE PROPERLY INSTALLED AND MAINTAINED.

STREET CLEANING (ON AN AS-NEEDED BASIS) IS REQUIRED THROUGH THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING AND (IF NECESSARY) MANUAL REMOVAL OF DIRT OR MUD IN THE STREET GUTTERS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT NO SOLID OR LIQUID WASTE IS DISCHARGED INTO STORM WATER RUNOFF. UNTREATED SEDIMENT-LADEN RUNOFF SHALL NOT FLOW OFF OF SITE WITHOUT BEING DIRECTED THROUGH A CONTROL PRACTICE.

DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO THE CITY'S SEWER SYSTEM OR A RECEIVING STREAM IS A VIOLATION OF OHIO EPA AND CITY OF BRECKSVILLE/NEORSD REGULATIONS; THE CONTRACTOR WILL BE HELD LIABLE FOR THE VIOLATION AND SUBSEQUENT FINES.

THE COST FOR TEMPORARY CHANNELS, SEDIMENT DAMS, SEDIMENT BASINS, AND OTHER APPURTENANT EARTH MOVING OPERATIONS SHALL BE INCLUDED IN THE PRICE BID FOR EROSION AND SEDIMENTATION CONTROL QUANTITIES.

THIS PLAN MUST BE POSTED ON-SITE. A COPY OF THE SWPPP PLAN AND THE APPROVED OHIO EPA STORMWATER PERMIT (WITH THE SITE-SPECIFIC NOI NUMBER) SHALL BE KEPT ON-SITE AT ALL TIMES.

PERMANENT AND TEMPORARY SEEDING

THE LIMITS OF SEEDING AND MULCHING ARE AS SHOWN WITHIN THE PLAN AS INDICATED BY THE LIMITS OF DISTURBANCE. ALL AREAS NOT DESIGNATED TO BE SEEDED SHALL REMAIN UNDER NATURAL GROUND COVER. THOSE AREAS DISTURBED OUTSIDE THE SEEDING LIMITS SHALL BE SEEDED AND MULCHED AT THE CONTRACTOR'S EXPENSE.

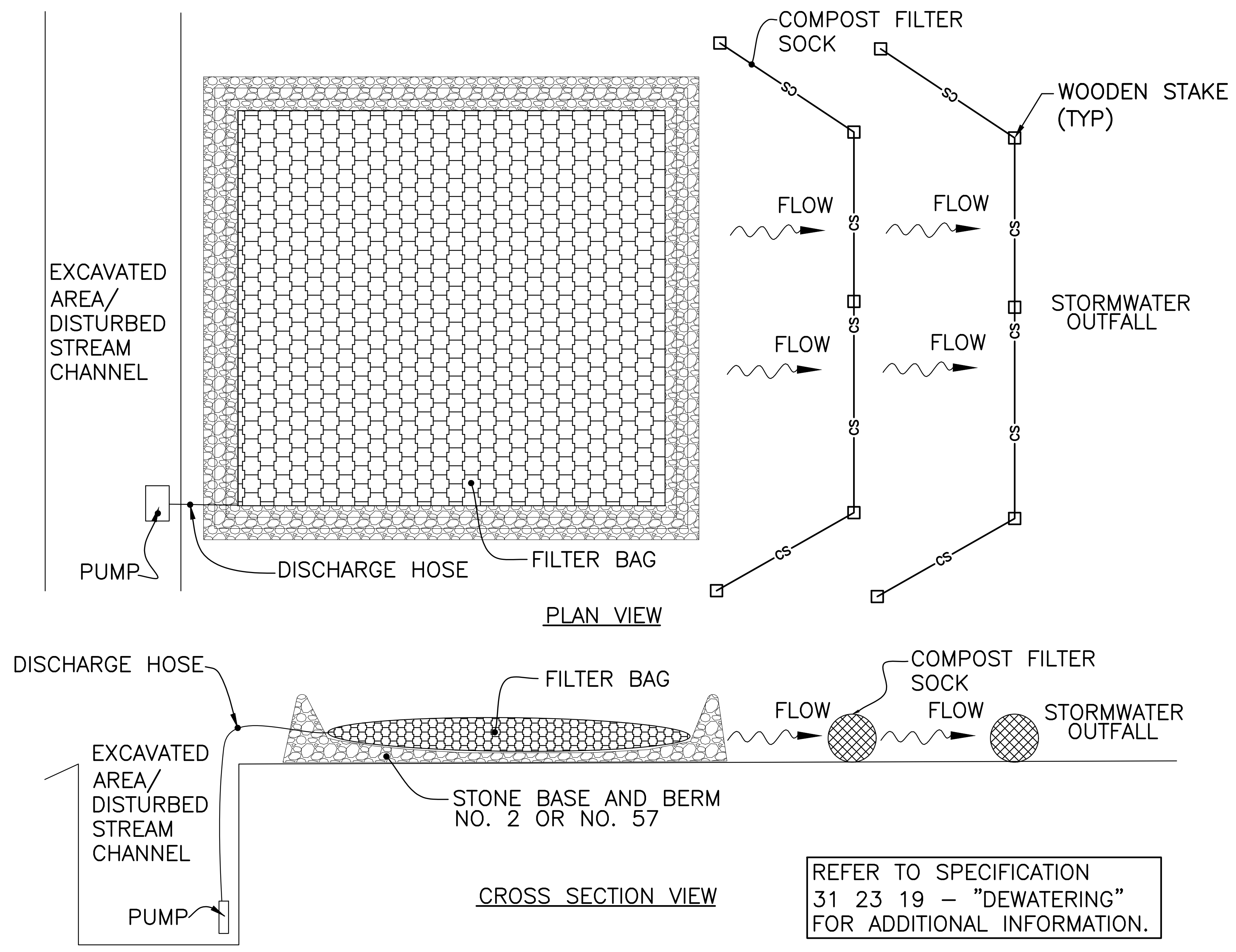
ALL EROSION & SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DIRECTION OF THE CITY OF BRECKSVILLE AND/OR OHIO EPA.

TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TABLE 2: TEMPORARY STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN FOURTEEN DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S)
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER



REFER TO SPECIFICATION 31 23 19 – "DEWATERING" FOR ADDITIONAL INFORMATION.

INSTALLATION:
THE CONTRACTOR SHALL PUMP MUDDY WATER ENCOUNTERED WITHIN EXCAVATED AREAS THAT ARE NOT TRIBUTARY TO SEDIMENT BASINS INTO A FILTER FABRIC BAG. THE BAG SHALL BE PLACED WITHIN A LEVEL UNDISTURBED AREA AS FAR AWAY FROM THE STORMWATER OUTFALL AS POSSIBLE. THE BAG SHALL BE PLACED ON TOP OF A AGGREGATE PAD. ADDITIONALLY, A PERIMETER AGGREGATE BERM SHALL BE CONSTRUCTED AROUND THE BAG. PERIMETER CONTROLS SUCH AS COMPOST FILTER SOCKS SHALL BE UTILIZED ALONG THE DOWNSTREAM SIDE OF THE BAG. THE PERIMETER CONTROLS SHALL BE INSTALLED TO ENSURE THAT THE WATER FLOWING OUT OF THE BAG DOES NOT FLOW AROUND THE ENDS OF THE CONTROLS. UPON COMPLETION, THE BAG SHALL BE REMOVED TO AN AREA AWAY FROM THE STORMWATER OUTFALL AND OPENED. THE ACCUMULATED SEDIMENT SHALL BE SPREAD OUT TO ALLOW TO DRY AND STABILIZED WITH VEGETATION. FILTER BAG SHALL BE SIZED BASED UPON THE PUMPING RATE INTO THE BAG.

MAINTENACE:
THE FILTER BAG SHALL BE REPLACED WHEN THE BAG IS HALF FILLED WITH SEDIMENT.

THE CONTRACTOR SHALL CONTACT THE OWNER/ENGINEER FOR CONSULTATIVE SERVICES IF DEWATERING ACTIVITIES OVERWHELM THE FILTER BAG AND PERIMETER CONTROLS.

DETAIL
DEWATERING FILTER BAG
NOT TO SCALE

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Northeast Ohio Regional Sewer District

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

EROSION CONTROL NOTES

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DIVERSION AND CARE OF WATER NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF WATER OF THE STREAM CHANNELS, AS PER SECTION 31 69 69.
2. CONTRACTOR IS RESPONSIBLE FOR THE WORKMANSHIP, SCHEDULING, SEQUENCING, STAGING, AND PERFORMING WORK IN A MANNER TO AVOID INCREASING THE RISK OF ADVERSE IMPACTS TO ADJACENT PROPERTIES, INFRASTRUCTURE, AND COMPLETED WORK. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING WATER CONTROL PLAN FOR APPROVAL BY NEORSD PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE AND REPAIR OF WATER MANAGEMENT FACILITIES AS PART OF THE BASE BID. NO PAYMENTS FOR REPAIR OF WATER MANAGEMENT FACILITIES NOR COMPLETED WORK WILL BE AUTHORIZED.
4. PROTECT DEWATERING AND DIVERSION MEASURES FROM CONSTRUCTION TRAFFIC.
5. IMMEDIATELY RETURN DIVERTED WATER TO THE STREAM CHANNEL DOWNSTREAM OF THE PROJECT AREA TO MAINTAIN SUFFICIENT FLOW OF WATER TO SUSTAIN AQUATIC LIFE DOWNSTREAM.
6. CONTRACTOR MAY INSTALL A TEMPORARY SUMP AND DAM (CONSTRUCTED OF NON-ERODIBLE MATERIAL) FOR BYPASS PUMPING OPERATIONS.
7. DISCHARGE WATER THROUGH A SEDIMENT CAPTURE DEVICE SUCH AS A SEDIMENT BAG.
8. THE CONTRACTOR MAY INSTALL A TEMPORARY CAUSEWAY OR WORK PLATFORM TO FACILITATE WORK IN THE CUYAHOGA RIVER AT THE EXISTING VAUGHN ROAD BRIDGE.
9. PEAK DISCHARGE ESTIMATES FOR THE EXISTING 15" CULVERT AND STREAM LOCATED AT ROADWAY STATION 10+35 ARE NOT PROVIDED. THE ANNUAL MEAN BASEFLOW RATE IS EXPECTED TO BE LESS THAN 1 CFS BASED ON THE CULVERT SIZE.
10. THE FOLLOWING ARE ESTIMATES OF DISCHARGE AT THE PROJECT SITE FOR THE CUYAHOGA RIVER. PEAK DISCHARGE ESTIMATES FOR THE 2 YEAR AND 10 YEAR EVENTS WERE DEVELOPED BY NEORSD FOR THIS PROJECT THROUGH A STATISTICAL ANALYSIS OF USGS STREAM GAGE RECORDS FOR THE RIVER. REMAINING PEAK DISCHARGE AND BASEFLOW DISCHARGE ESTIMATES ARE BASED ON RECORDS FROM THE USGS STREAM GAGE #04206425 AT JAITE, LOCATED IMMEDIATELY DOWNSTREAM OF VAUGHN ROAD. ACTUAL DISCHARGES MAY BE MORE OR LESS THAN THE ESTIMATED DISCHARGES DEPENDENT ON ANTECEDENT AND OTHER CONDITIONS AT THE TIME OF RAINFALL:

ANNUAL MEAN BASEFLOW: 850 CFS

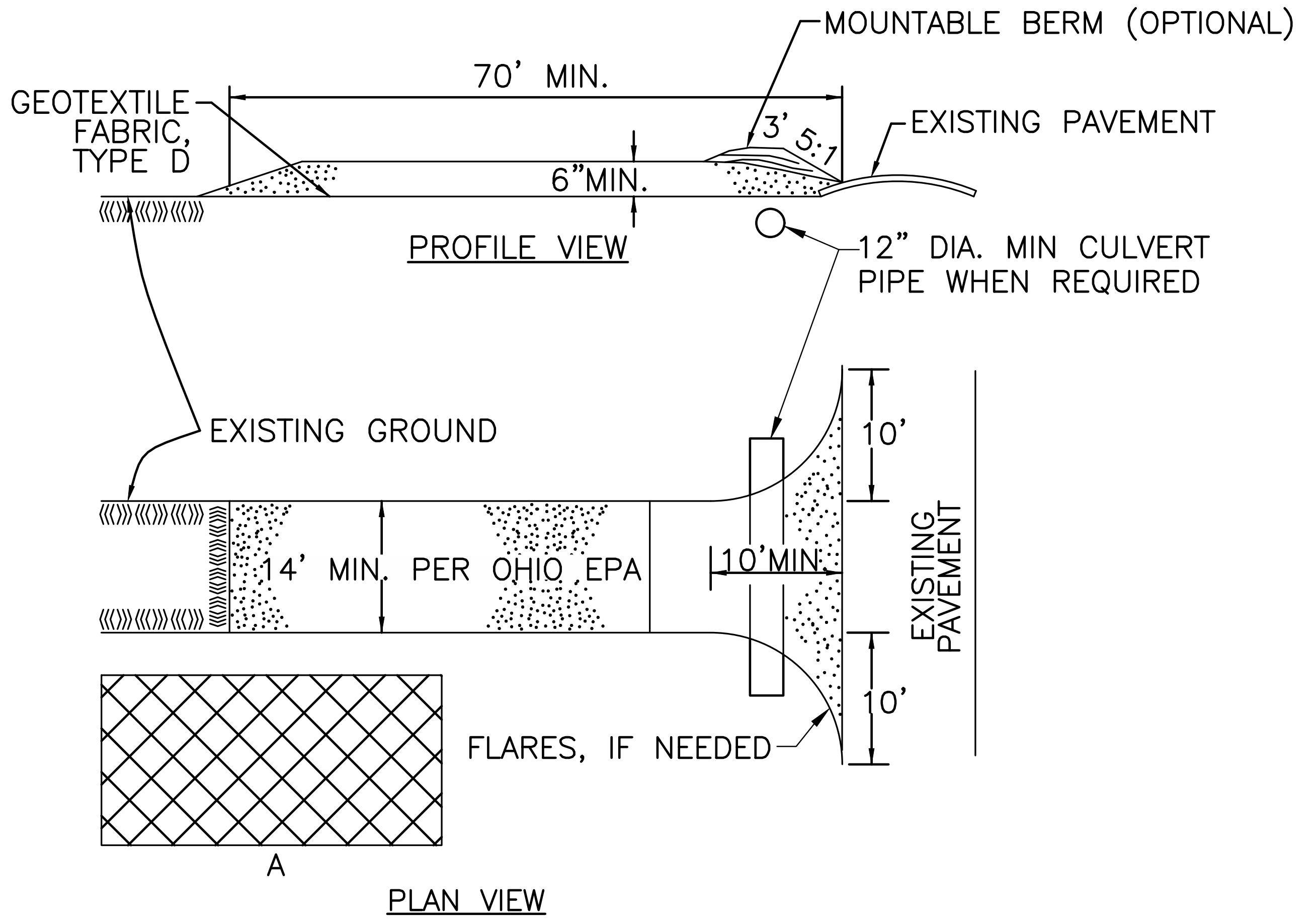
PEAK STREAMFLOW AT PROJECT SITE (CUYAHOGA RIVER)

FLOOD FREQUENCY	PEAK DISCHARGE (CFS)	AVERAGE ANNUAL NUMBER OF OCCURENCES	PEAK WATER DEPTH	PEAK WATER ELEVATION
MEAN	850		3.96	633.8
	2,020	17	6.15	636.0
	3,360	8	8.15	638.0
	4,750	4	10.15	640.0
EXISTING VAUGHN ROAD OVERTOPS			10.95	640.8
2-YEAR	8,600	<1	12.49	642.3
10-YEAR	14,100	<1	14.11	644.0

*PEAK DISCHARGE VALUES AND WATER SURFACE ELEVATIONS ARE REPORTED FROM THE PROJECT STUDIES AND ARE PROVIDED FOR THE CONTRACTOR AS INFORMATION ONLY. NO WARRANTY IS EXPRESSED OR IMPLIED WITH THIS DATA.

**PEAK WATER DEPTH IS MEASURED FROM THE JAITE STREAM GAGE DATUM = 629.85 (NAVD88)

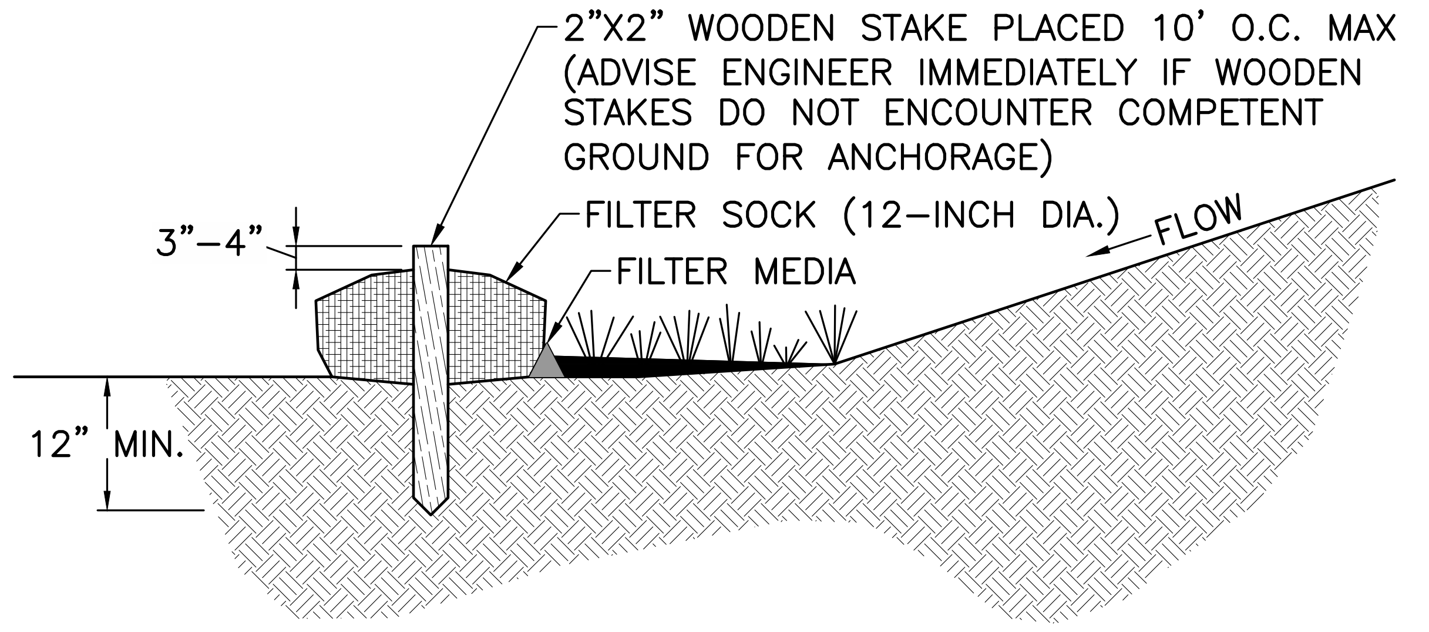
REFER TO THE FOLLOWING SPECIFICATIONS FOR ADDITIONAL INFORMATION:
31 23 19 – "DEWATERING"
31 69 69 – "DIVERSION AND CARE OF WATER"



A: CONTRACTOR LAYDOWN AREA (DUMPSTER, VEHICLE FUELING) LOCATION TO BE DETERMINED IN THE FIELD BY CONTRACTOR.

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT. ITEM 304 OR OTHER FINELY GRADED MATERIAL SHALL NOT BE ADDED TO THE STONE.
2. LENGTH – 70' MINIMUM..
3. THICKNESS – TWELVE (12) INCHES.
4. WIDTH – 14' MIN.
5. GEOTEXTILE FILTER, TYPE D – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN. CONTRACTOR SHALL UTILIZE A VACUUM SWEEPER EQUIPPED WITH A BRUSH WHEN DIRECTED BY THE CITY ENGINEER SHALL SEDIMENT TRACKING ONTO PUBLIC STREETS BECOME AN ISSUE.

DETAIL
STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE


2"X2" WOODEN STAKE PLACED 10' O.C. MAX (ADVISE ENGINEER IMMEDIATELY IF WOODEN STAKES DO NOT ENCOUNTER COMPETENT GROUND FOR ANCHORAGE)
3"–4"
FILTER SOCK (12–INCH DIA.)
FLOW
FILTER MEDIA
12" MIN.

1. MATERIALS – COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN, AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS, OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
2. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

INSTALLATION:

1. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MIDSLOPE.
2. UPON INSTALLATION OF THE FILTER SOCK, ADDITIONAL FILTER MEDIA (MATCHING THE MEDIA INSIDE OF THE SOCK) SHALL BE PLACED ON THE UPLAND SIDE OF THE FILTER SOCK. FILTER MEDIA SHALL EXTEND HALFWAY UP THE SOCK AND SLOPE AT A MAXIMUM OF 45 DEGREES TO EXISTING GROUND ELEVATION.
3. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
4. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.

MAINTENANCE:

1. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
2. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
3. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
4. REMOVAL - FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

DETAIL
COMPOST FILTER SOCK DETAIL NOT TO SCALE

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7 Xrefs: 20210275-T006-CP-CNTR-N, 20210275-T006-VS-REFR-O, 20210275-T006-CS-REFR-N, 20210275-T006_BORD, 08 Vaughn Road Plan & Profile, 20210275-T006-CS-REFR-E, 20210275-T006-CS-REFR-LABL-E

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

EROSION CONTROL DETAILS

WARNING
0 1/2 1
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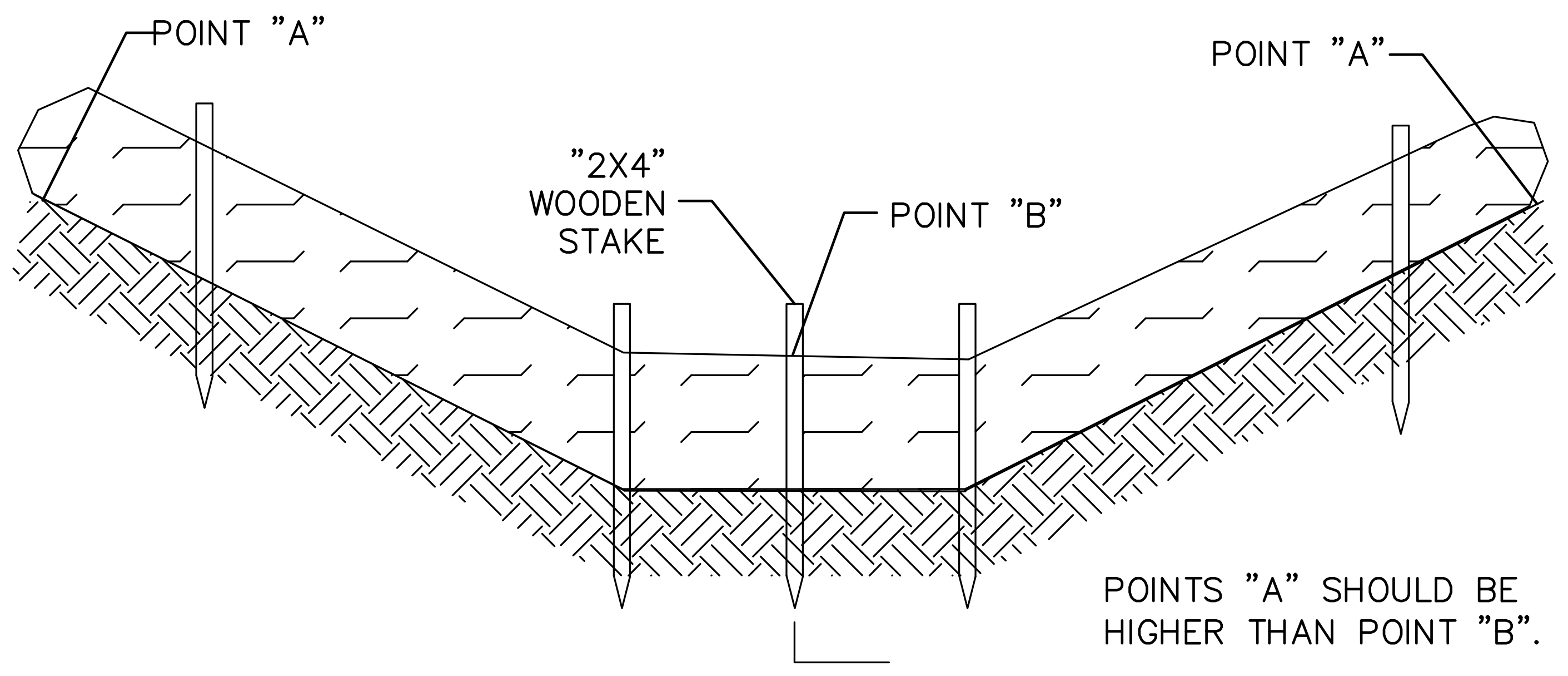
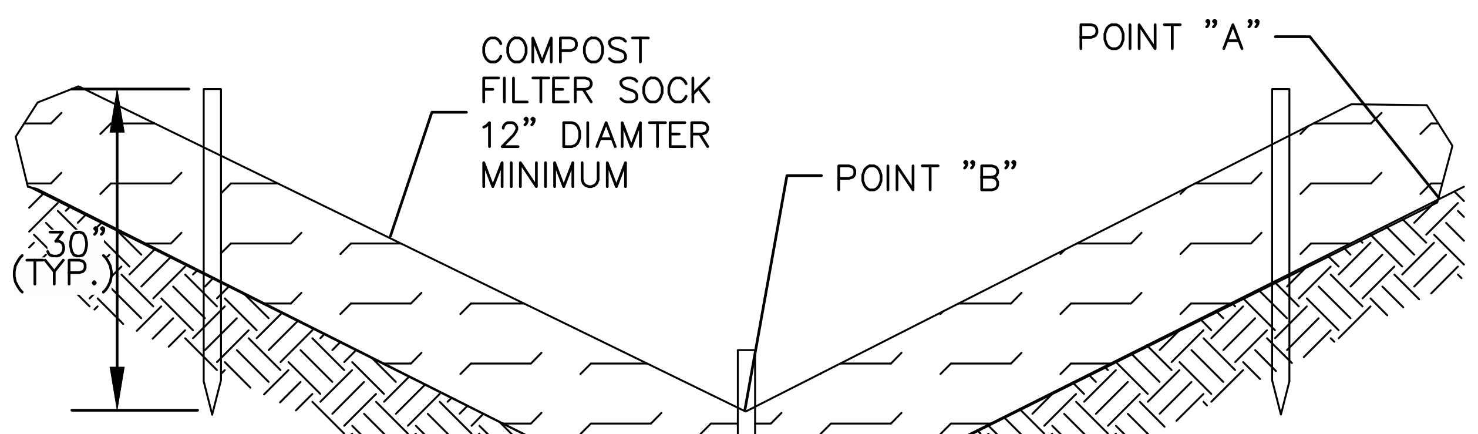
PROJECT SET: 28 OF 49
C SHEET: 18 OF 30
SHEET NO.:



ELEVATION VIEW OF FLAT BOTTOM DITCH



ELEVATION VIEW OF "V" DITCH

NOTES:
COMPOST FILTER SOCK DITCH CHECKS:
MATERIALS: FURNISH COMPOST FILTER SOCK DITCH CHECKS CONSISTING OF THE FOLLOWING MATERIALS:

1. MATERIALS – COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 3/8" TO 2".
2. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

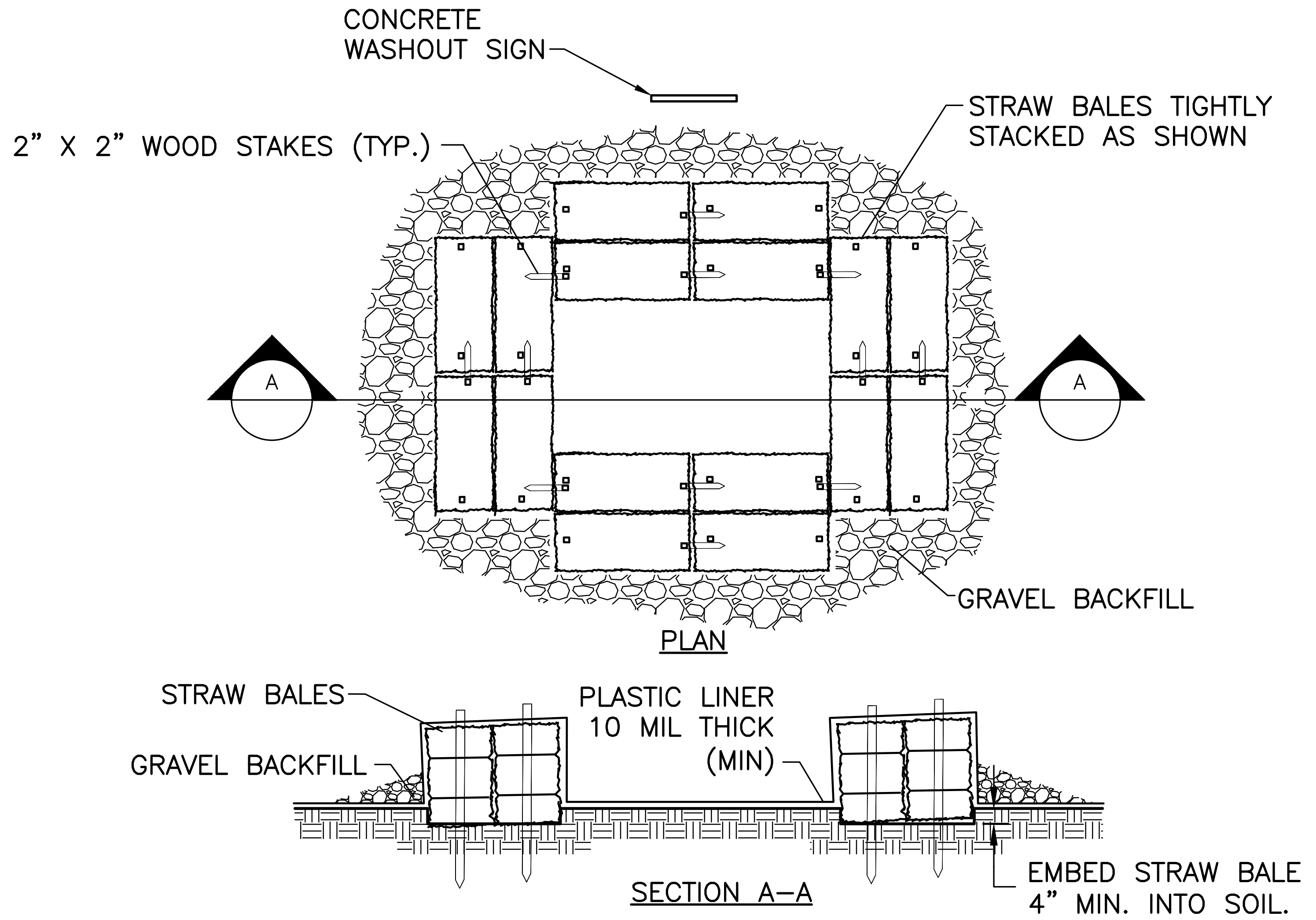
INSTALLATION:
3. PLACE A VERTICAL "2X4" STAKE IN THE CENTER OF THE DITCH WITH THE TOP LEVEL TO THE TOP OF THE FENCE AND AT LEAST 6" BELOW THE BOTTOM OF THE DITCH
4. UPON INSTALLATION OF THE FILTER SOCK, ADDITIONAL FILTER MEDIA (MATCHING THE MEDIA INSIDE OF THE SOCK) SHALL BE PLACED ON THE UPLAND SIDE OF THE FILTER SOCK. FILTER MEDIA SHALL EXTEND HALFWAY UP THE SOCK AND SLOPE AT A MAXIMUM OF 45 DEGREES TO EXISTING GROUND ELEVATION.

MAINTENANCE:
5. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
6. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
7. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
8. REMOVAL – FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

DETAIL
COMPOST FILTER SOCK DITCH CHECKS NOT TO SCALE

SPECIFICATIONS FOR CONCRETE WASHOUT
1. THE RESIDUE OR CONTENTS OF ALL CONCRETE MIXERS, DUMP TRUCKS, OTHER CONVEYANCE EQUIPMENT AND FINISHING TOOLS SHALL BE WASHED INTO CONCRETE CLEAN-OUT STRUCTURES CONSISTING OF A STRAW BALE BARRIER WITH GRAVEL BACKFILL. THE LENGTH AND WIDTH OF THESE STRUCTURES SHALL BE AS DETERMINED BY THE CONTRACTOR TO FACILITATE THE PARTICULAR EQUIPMENT USED. THESE STRUCTURES SHALL BE CONSTRUCTED ON LEVEL GROUND AT LEAST 100' FROM THE NEAREST WATERCOURSE, DRAINAGE SWALE OR INLET. AT NO TIME SHALL THE STRUCTURE BE ALLOWED TO BE MORE THAN 50% FULL. THE CONTRACTOR SHALL MAINTAIN THESE PONDS UNTIL ALL CONCRETE PLACEMENT IS COMPLETE FOR THE PROJECT.
2. EMBED THE STRAW BALES 4" INTO THE SOIL. PROVIDE TWO ROWS OF BALES, AS SHOWN ON THE DETAIL, WITH ENDS AND CORNERS TIGHTLY ABUTING. ORIENT THE STRAW BALES LENGTHWISE WITH BINDINGS AROUND THE SIDES OF THE BALES SO THE WIRE DOES NOT CONTACT THE SOIL. DRIVE 2"X2" WOOD STAKES THROUGH EACH BALE, TO SECURELY ANCHOR THE BALE AND CONNECT ADJACENT BALES. GRAVEL BACKFILL SHALL BE PROVIDED AND TAMPED AROUND THE OUTSIDE PERIMETER OF THE BALES TO PREVENT EROSION AND FLOW AROUND THE BALES.
3. THE INTENT OF THESE STRUCTURES IS TO COLLECT ALL CONCRETE WASH OUT WATER AND ALLOW IT TO DRY TO A SOLID MATERIAL. AFTER DRYING, THE SOLID MATERIAL CAN BE REMOVED WITH A LOADER OR EXCAVATOR FOR PROPER DISPOSAL. WASH OUT WILL NOT BE PERMITTED IN ANY OTHER AREAS.
4. USE THE MINIMUM AMOUNT OF WATER TO WASH THE VEHICLES AND EQUIPMENT. NEVER DISPOSE OF WASH OUT INTO THE STREET, STORM INLET, DRAINAGE SWALE OR WATERCOURSE. DISPOSE OF SMALL AMOUNTS OF EXCESS DRY CONCRETE, GROUT AND MORTAR IN THE TRASH. ANY SOAPS THAT ARE UTILIZED SHALL BE PHOSPHATE-FREE AND BIODEGRADABLE.
5. ADDITIONAL CONCRETE CLEAN-OUT STRUCTURES SHALL BE CONSTRUCTED WITHIN THE SPECIFIED AREA AS NEEDED BASED UPON THE VOLUME OF WASH OUT GENERATED DAILY.
6. CONTRACTOR SHALL ERECT TEMPORARY SIGN INDICATING CONCRETE WASHOUT LOCATION.

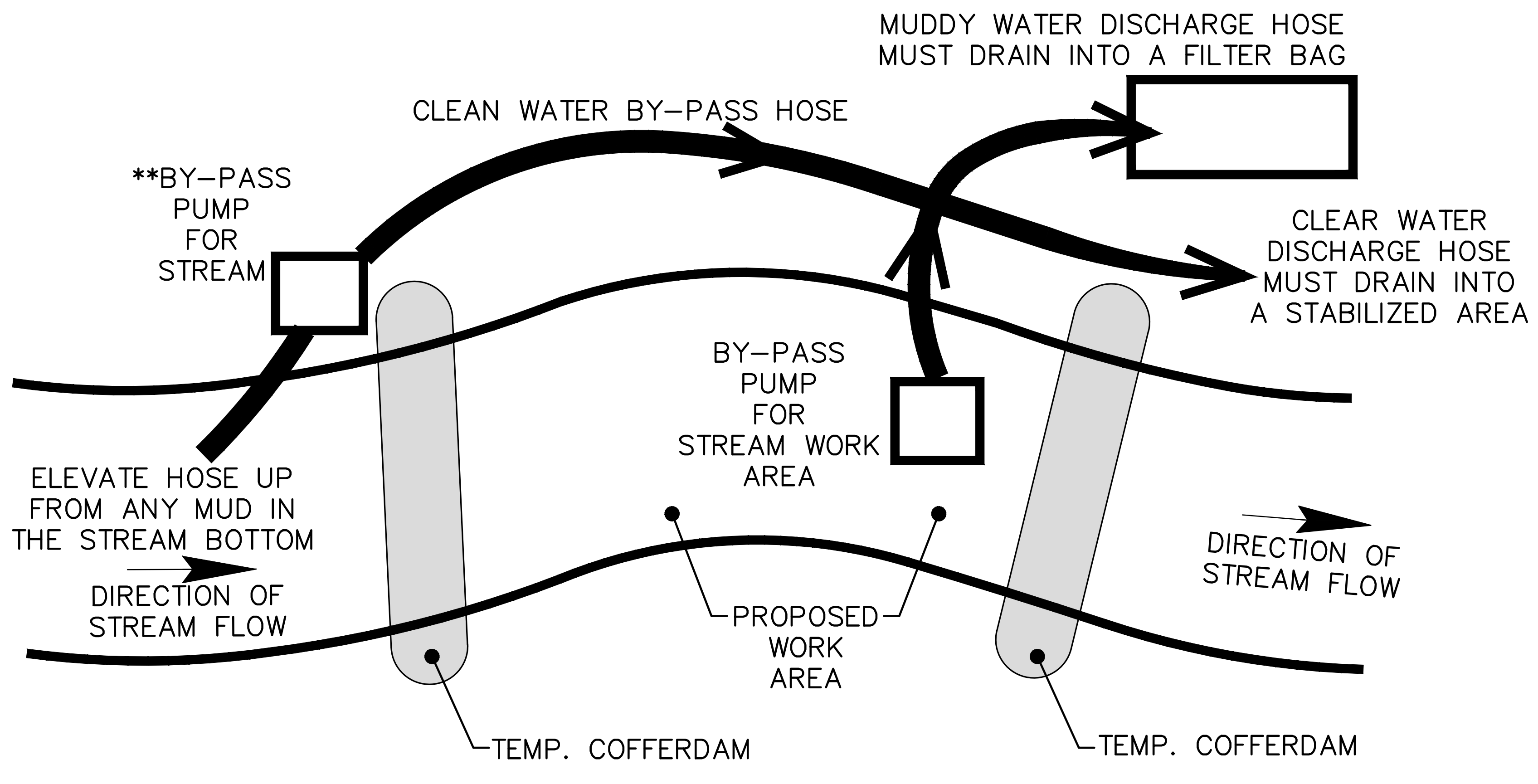
NOTE: AS AN ALTERNATIVE TO THE CONCRETE WASHOUT CONTAINER DEPICTED BELOW, CONTRACTOR MAY USE PORTABLE WASHOUT UNITS.



PLAN

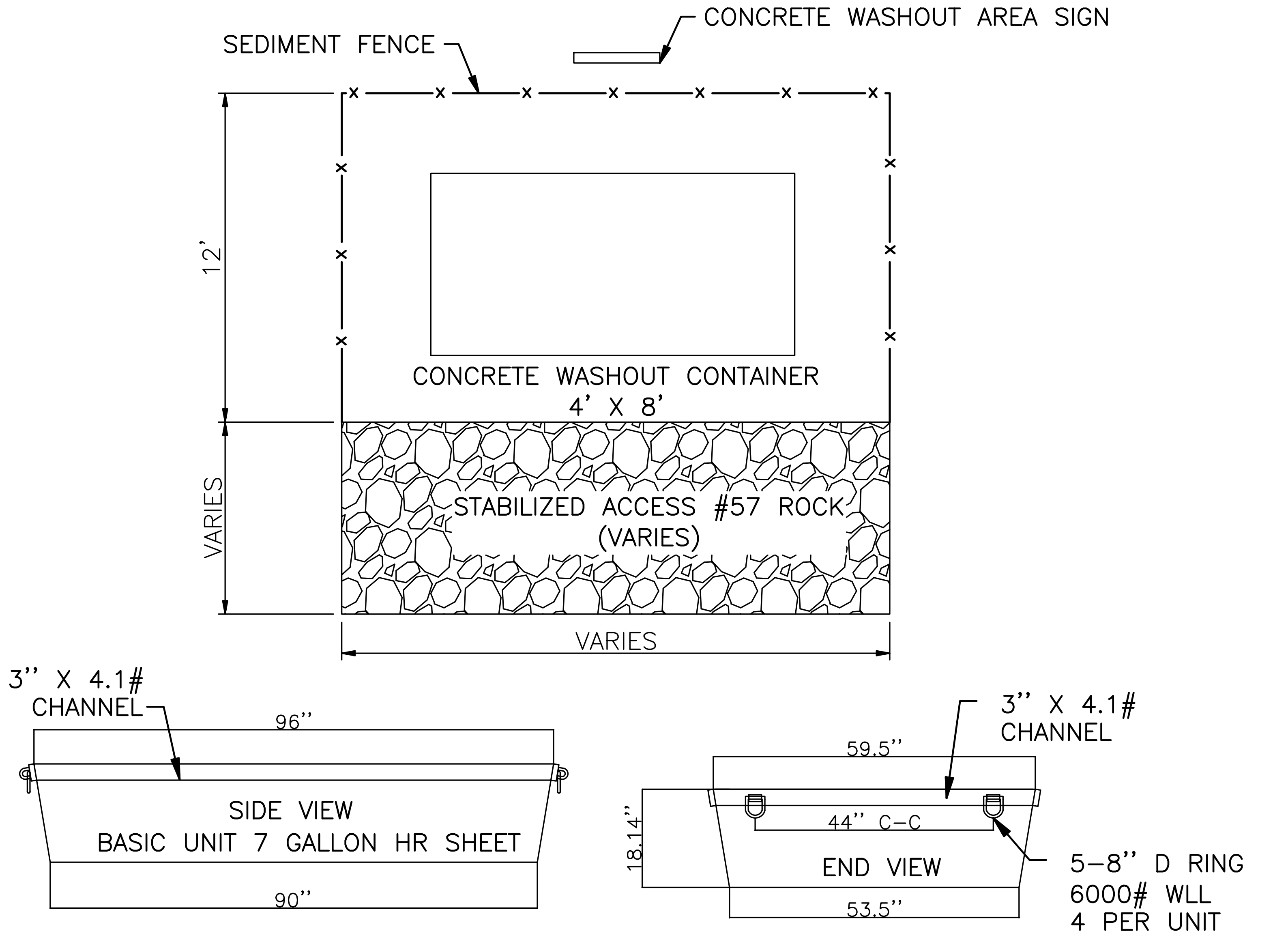
SECTION A-A

DETAIL
CONCRETE WASHOUT NOT TO SCALE



** GRAVITY PIPE MAY BE UTILIZED WHEN FEASIBLE

DETAIL
STREAM PUMP AROUND DETAIL NOT TO SCALE



NOTES:
1. CONCRETE TRUCKS SHALL UTILIZE AREAS TO WASHOUT TRUCKS. ACCUMULATED CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
2. ONCE THE CONTAINER IS FULL THE CONTRACTOR WILL CONTACT THE CONCRETE WASHOUT CONTAINER SUPPLIER TO HAVE THE CONTAINER CLEANOUT/REPLACED.
3. CONTAINER IS NOT TO BE LOCATED NEAR THE STORM SEWER INLET.

DETAIL
PORTABLE CONCRETE WASHOUT CONTAINER NOT TO SCALE

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SHEET NO.:

PERMANENT COMPOSITE TURF REINFORCEMENT MAT INSTALLATION NOTES:

1. IN AREAS OF FILL PLACEMENT, INSTALL 4 INCHES TOPSOIL TO FINAL GRADE. PREPARE EXISTING TOPSOIL TO RECEIVE SEED IN OTHER AREAS TO BE MATTED.
2. INSTALL SEED AND FERTILIZER AS SPECIFIED.
3. SECURE MATTING TO THE SLOPE WITH 12 INCH WIRE "U" STAPLES.
4. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6 INCH DEEP X 6 INCH WIDE TRENCH WITH APPROXIMATELY 12 INCHES OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES APPROXIMATELY 12 INCHES APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED AND FERTILIZER TO THE COMPACTED SOIL AND FOLD THE REMAINING 12 INCH PORTION OF BLANKET BACK OVER THE SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED APPROXIMATELY 12 INCHES APART ACROSS THE WIDTH OF THE BLANKET.
5. ROLL THE BLANKET DOWN THE SLOPE. BLANKET WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKET MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS SHOWN IN THE PATTERN GUIDE.
6. THE EDGES OF PARALLEL SECTIONS OF BLANKET MUST BE STAPLED WITH AN APPROXIMATELY 5 INCH OVERLAP.
7. CONSECUTIVE SECTIONS OF BLANKET SPLICED DOWN THE SLOPE MUST BE END-OVER-END (SHINGLE STYLE) WITH AN APPROXIMATE 3 INCH OVERLAP. STAPLED THROUGH OVERLAPPED AREA, APPROXIMATELY 12 INCHES APART ACROSS ENTIRE BLANKET WIDTH.
8. AT UPSTREAM AND DOWNSTREAM TERMINAL ENDS OF THE BLANKET, PROVIDE AN ANCHOR TRENCH TO KEY BLANKET INTO THE SOIL. PROVIDE A 12 INCH WIDE X 24 INCH DEEP TRENCH WITH A ROW OF STAPLES APPROXIMATELY 12 INCHES APART. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. STAPLE THROUGH THE BLANKET AT THE TOE OF SLOPE, APPROXIMATELY 12 INCHES APART ACROSS ENTIRE BLANKET WIDTH.
10. PRODUCT STANDARD: DETAILS AND NOTES ARE BASED ON THE NORTH AMERICAN GREEN C350 COMPOSITE TURF REINFORCEMENT MATS. SUBSTITUTE PRODUCTS THAT PROVIDE EQUAL EROSION PROTECTION WILL BE CONSIDERED AS OUTLINED IN THE SPECIFICATIONS.

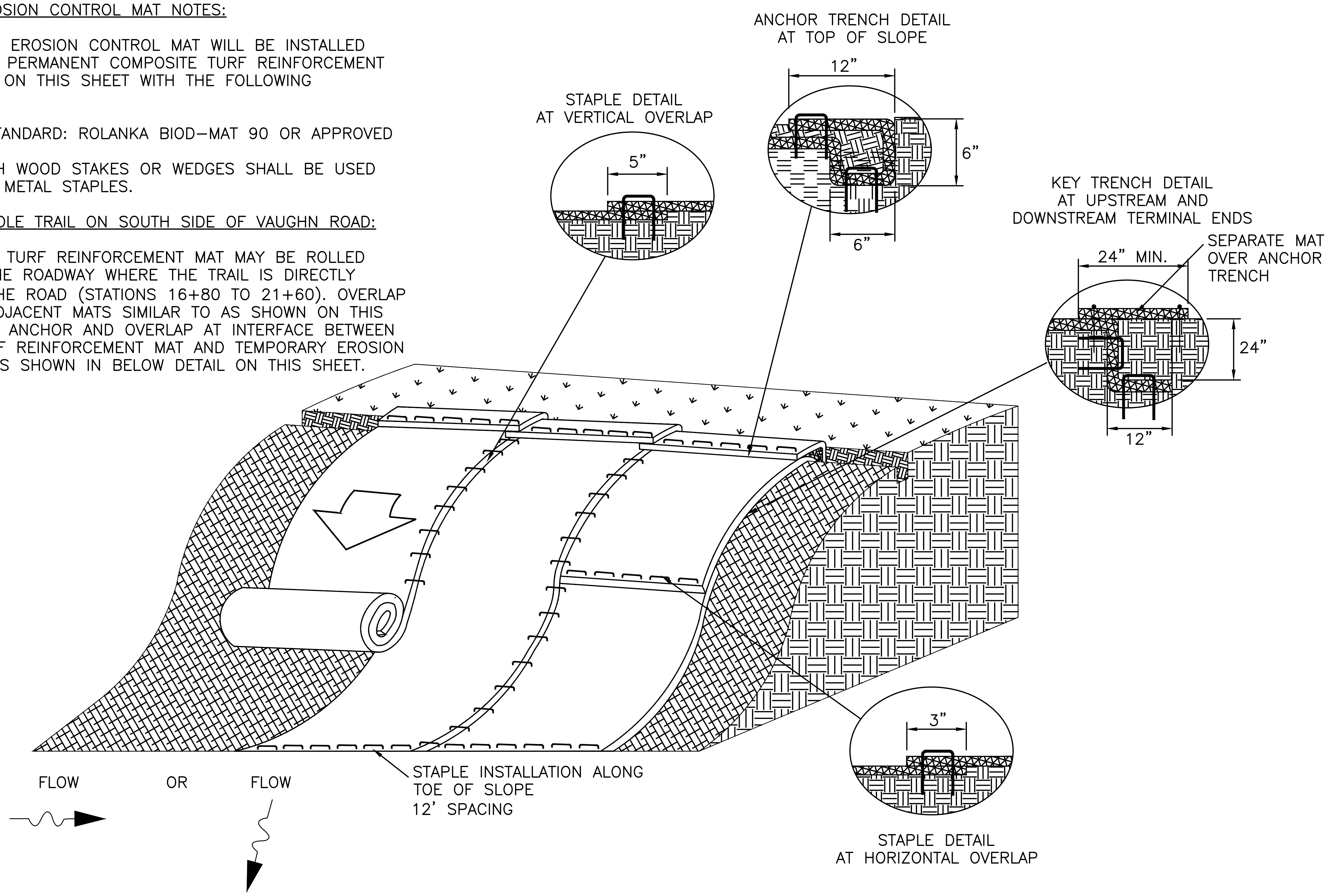
TEMPORARY EROSION CONTROL MAT NOTES:

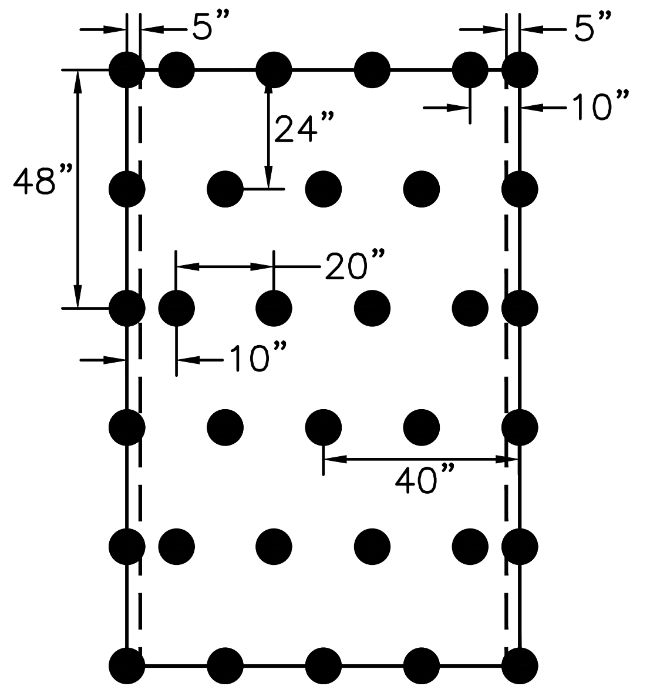
THE TEMPORARY EROSION CONTROL MAT WILL BE INSTALLED SIMILAR TO THE PERMANENT COMPOSITE TURF REINFORCEMENT MAT AS SHOWN ON THIS SHEET WITH THE FOLLOWING MODIFICATIONS:

1. PRODUCT STANDARD: ROLANKA BIOD-MAT 90 OR APPROVED EQUAL.
2. 2x2x12 INCH WOOD STAKES OR WEDGES SHALL BE USED INSTEAD OF METAL STAPLES.

NOTES FOR BRIDLE TRAIL ON SOUTH SIDE OF VAUGHN ROAD:

THE COMPOSITE TURF REINFORCEMENT MAT MAY BE ROLLED PARALLEL TO THE ROADWAY WHERE THE TRAIL IS DIRECTLY ADJACENT TO THE ROAD (STATIONS 16+80 TO 21+60). OVERLAP AND ANCHOR ADJACENT MATS SIMILAR TO AS SHOWN ON THIS SHEET. PROVIDE ANCHOR AND OVERLAP AT INTERFACE BETWEEN COMPOSITE TURF REINFORCEMENT MAT AND TEMPORARY EROSION CONTROL MAT AS SHOWN IN BELOW DETAIL ON THIS SHEET.



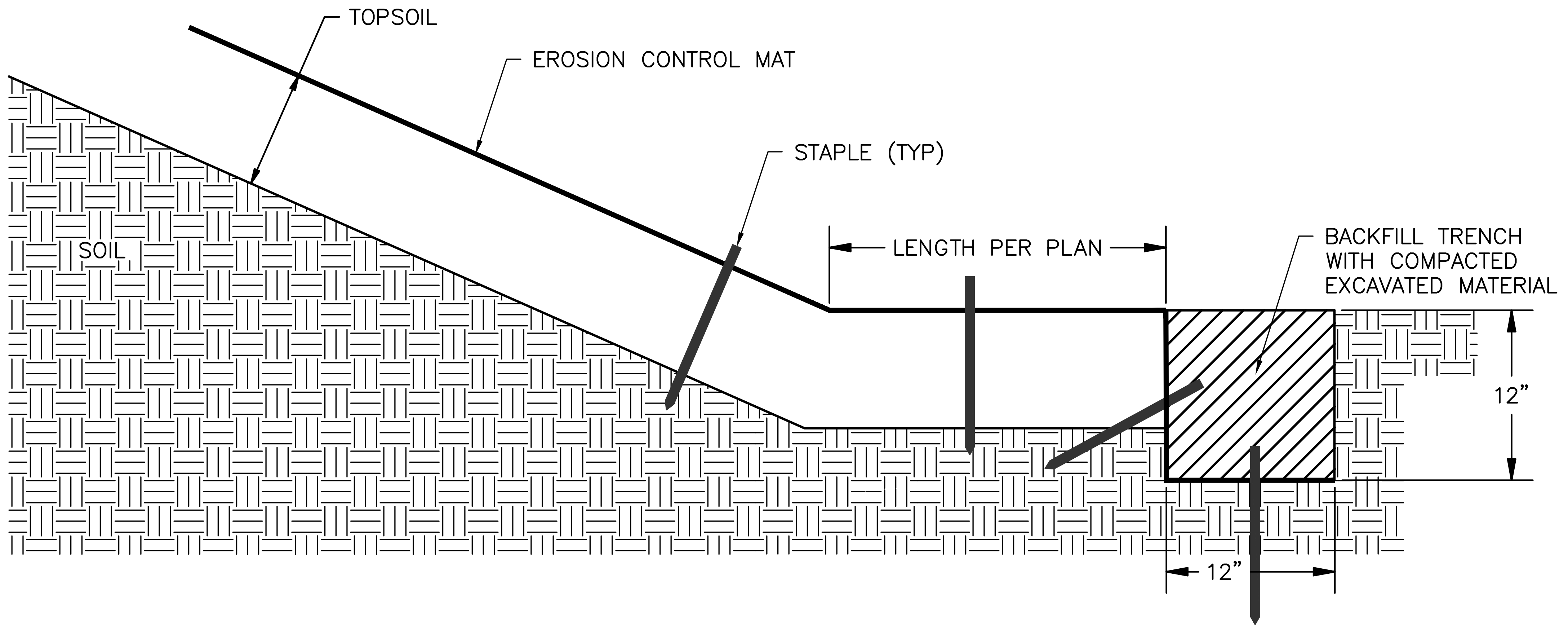


3.75 STAPLES PER SQ YD

STAPLE PATTERN GUIDE DETAIL

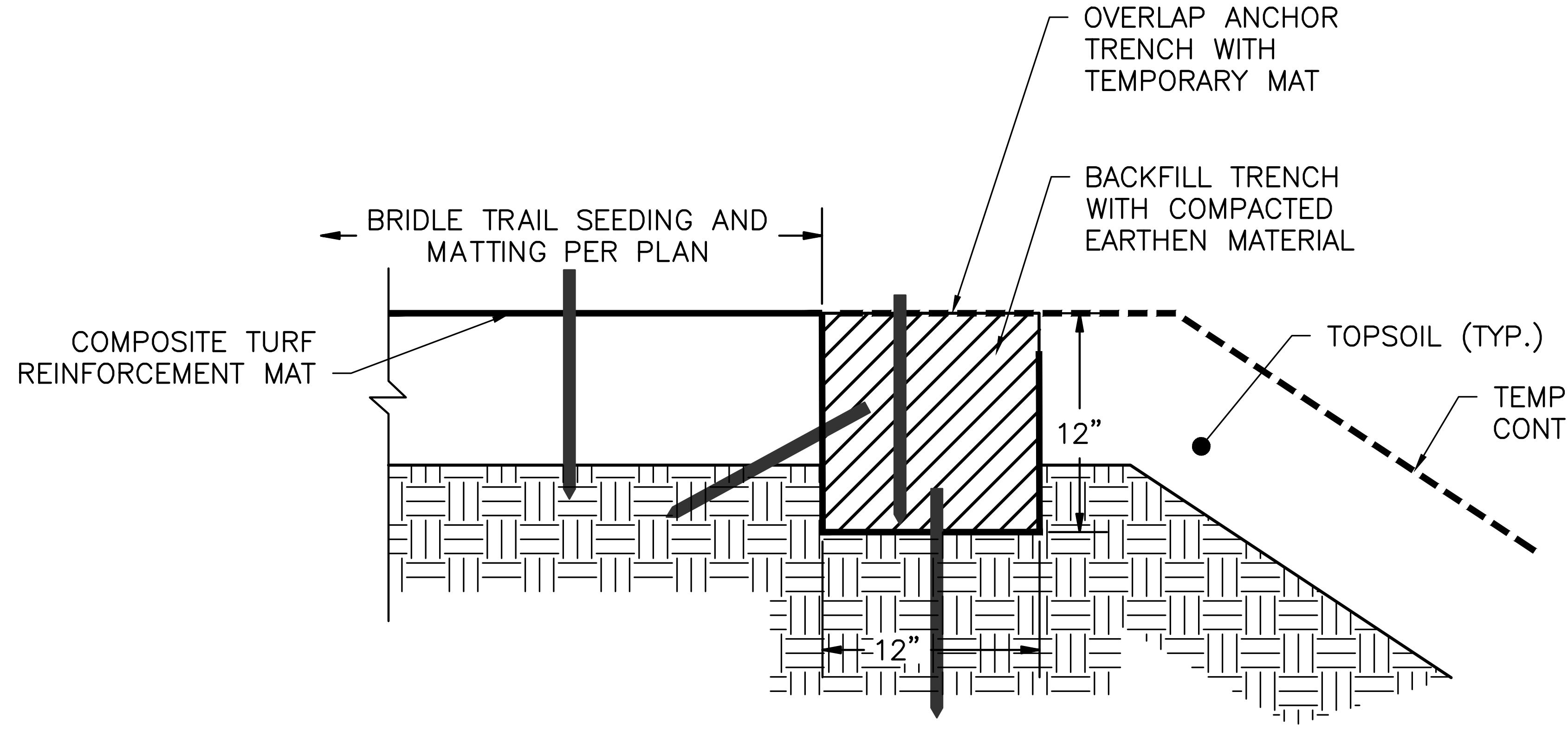
DETAIL
PERMANENT COMPOSITE TURF REINFORCEMENT MAT INSTALLATION DETAIL

Not to Scale



DETAIL
EROSION CONTROL MAT TOE ANCHORAGE DETAIL IN SOIL

Not to Scale



SEE SHEET G-0-08 FOR ADDITIONAL ANCHORAGE DETAILS AT BRIDLE TRAIL

DETAIL
EROSION CONTROL MAT OVERLAP ANCHORAGE DETAIL FOR BRIDLE TRAIL ON SOUTH SIDE OF VAUGHN ROAD

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VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

EROSION CONTROL DETAILS

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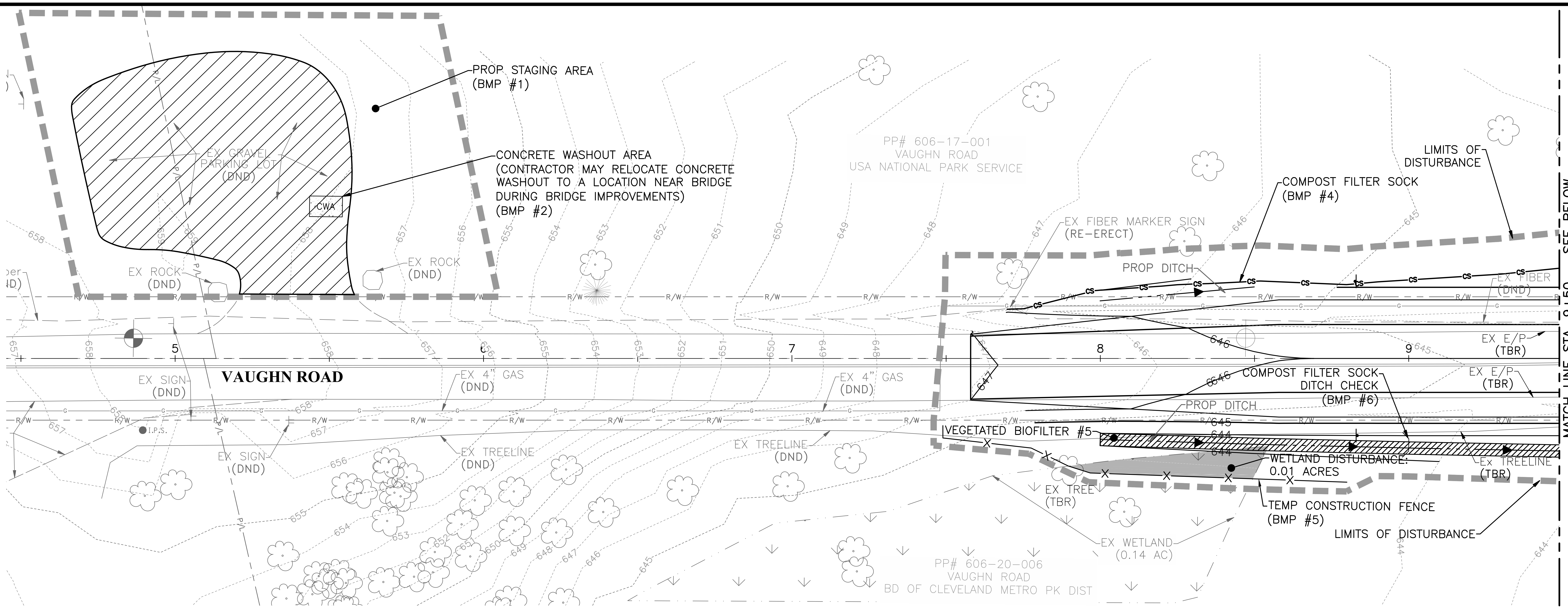
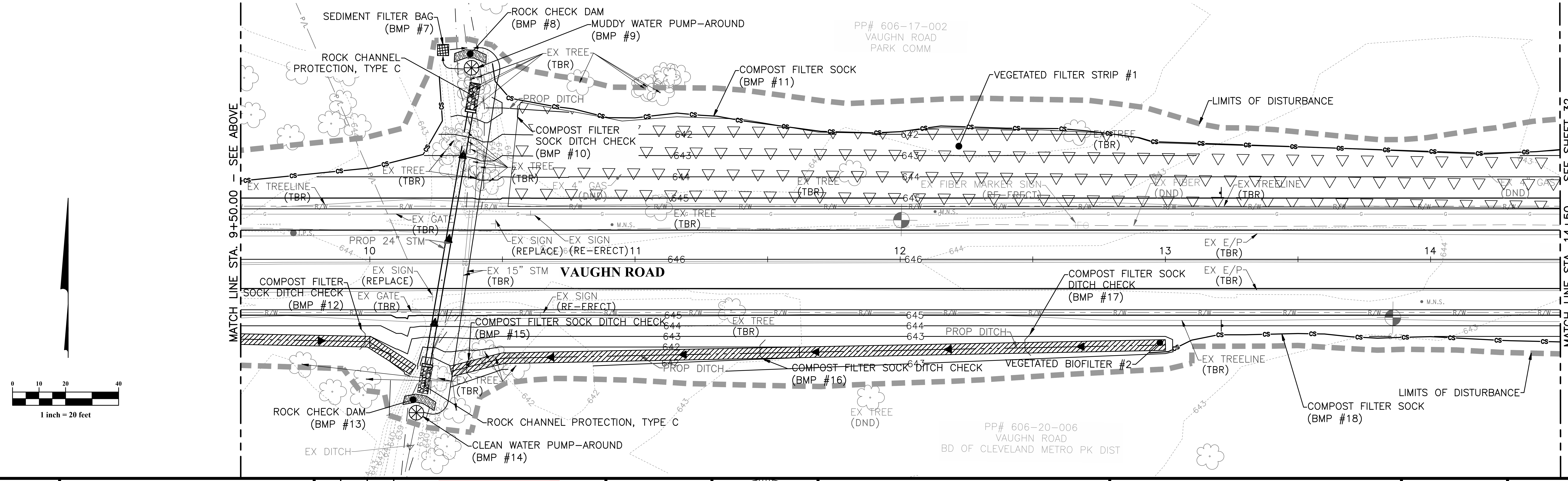
EROSION CONTROL LEGEND

---XX1--- ---XX5---	EXISTING CONTOURS
—XX1— —XX5—	PROPOSED CONTOURS
▬ ▬ ▬	LIMITS OF DISTURBANCE
—CS—	COMPOST FILTER SOCK
—X—	TEMP CONSTRUCTION FENCE
CWA	CONCRETE WASHOUT AREA
︶	COMPOST FILTER SOCK DITCH CHECK
▨	ROCK CHECK DAM
⊛	TEMPORARY PUMP AROUND
▦	SEDIMENT FILTER BAG
▽ ▽ ▽	VEGETATED FILTER STRIP
▨	VEGETATED BIOFILTER


PROP STAGING AREA (BMP #1)
CONCRETE WASHOUT AREA (CONTRACTOR MAY RELOCATE CONCRETE WASHOUT TO A LOCATION NEAR BRIDGE DURING BRIDGE IMPROVEMENTS) (BMP #2)
EX GRAVEL PARKING LOT (DND)
CWA
EX ROCK (DND)
EX ROCK (DND)
PP# 606-17-001 VAUGHN ROAD USA NATIONAL PARK SERVICE
EX FIBER MARKER SIGN (RE-ERECT)
COMPOST FILTER SOCK (BMP #4)
LIMITS OF DISTURBANCE
PROP DITCH
EX FIBER (DND)
EX E/P (TBR)
EX E/P (TBR)
VAUGHN ROAD
EX SIGN (DND)
EX 4" GAS (DND)
EX 4" GAS (DND)
COMPOST FILTER SOCK DITCH CHECK (BMP #6)
PROP DITCH
VEGETATED BIOFILTER #5
EX TREELINE (DND)
EX TREELINE (DND)
EX SIGN (DND)
WETLAND DISTURBANCE: 0.01 ACRES
EX TREELINE (TBR)
EX TREE (TBR)
TEMP CONSTRUCTION FENCE (BMP #5)
LIMITS OF DISTURBANCE
EX WETLAND (0.14 AC)
PP# 606-20-006 VAUGHN ROAD BD OF CLEVELAND METRO PK DIST
I.P.S.
5
6
7
8
9
R/W
MATCH LINE STA. 9+50 – SEE BELOW


SEDIMENT FILTER BAG (BMP #7)
ROCK CHECK DAM (BMP #8)
MUDDY WATER PUMP-AROUND (BMP #9)
ROCK CHANNEL PROTECTION, TYPE C
EX TREE (TBR)
PP# 606-17-002 VAUGHN ROAD PARK COMM
COMPOST FILTER SOCK (BMP #11)
VEGETATED FILTER STRIP #1
LIMITS OF DISTURBANCE
PROP DITCH
COMPOST FILTER SOCK DITCH CHECK (BMP #10)
EX TREE (TBR)
EX TREE (TBR)
EX TREE (TBR)
EX TREELINE (TBR)
EX 4" GAS (DND)
EX TREE (TBR)
EX FIBER MARKER SIGN (RE-ERECT)
EX FIBER (DND)
EX TREELINE (TBR)
EX 4" GAS (DND)
EX GATE (TBR)
EX TREE (TBR)
PROP 24" STM
EX SIGN (REPLACE)
EX SIGN (RE-ERECT)
EX E/P (TBR)
EX E/P (TBR)
EX SIGN (REPLACE)
EX 15" STM (TBR)
VAUGHN ROAD
COMPOST FILTER SOCK DITCH CHECK (BMP #12)
EX GATE (TBR)
EX SIGN (RE-ERECT)
COMPOST FILTER SOCK DITCH CHECK (BMP #17)
COMPOST FILTER SOCK DITCH CHECK (BMP #15)
EX TREE (TBR)
PROP DITCH
PROP DITCH
COMPOST FILTER SOCK DITCH CHECK (BMP #16)
VEGETATED BIOFILTER #2
EX TREELINE (TBR)
EX TREE (TBR)
LIMITS OF DISTURBANCE
COMPOST FILTER SOCK (BMP #18)
ROCK CHECK DAM (BMP #13)
ROCK CHANNEL PROTECTION, TYPE C
CLEAN WATER PUMP-AROUND (BMP #14)
EX DITCH
EX TREE (DND)
PP# 606-20-006 VAUGHN ROAD BD OF CLEVELAND METRO PK DIST
M.N.S.
I.P.S.
10
11
12
13
14
MATCH LINE STA. 9+50.00 – SEE ABOVE
MATCH LINE STA. 14+50 – SEE SHEET 32
0 10 20 40
1 inch = 20 feet

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EROSION CONTROL PLAN

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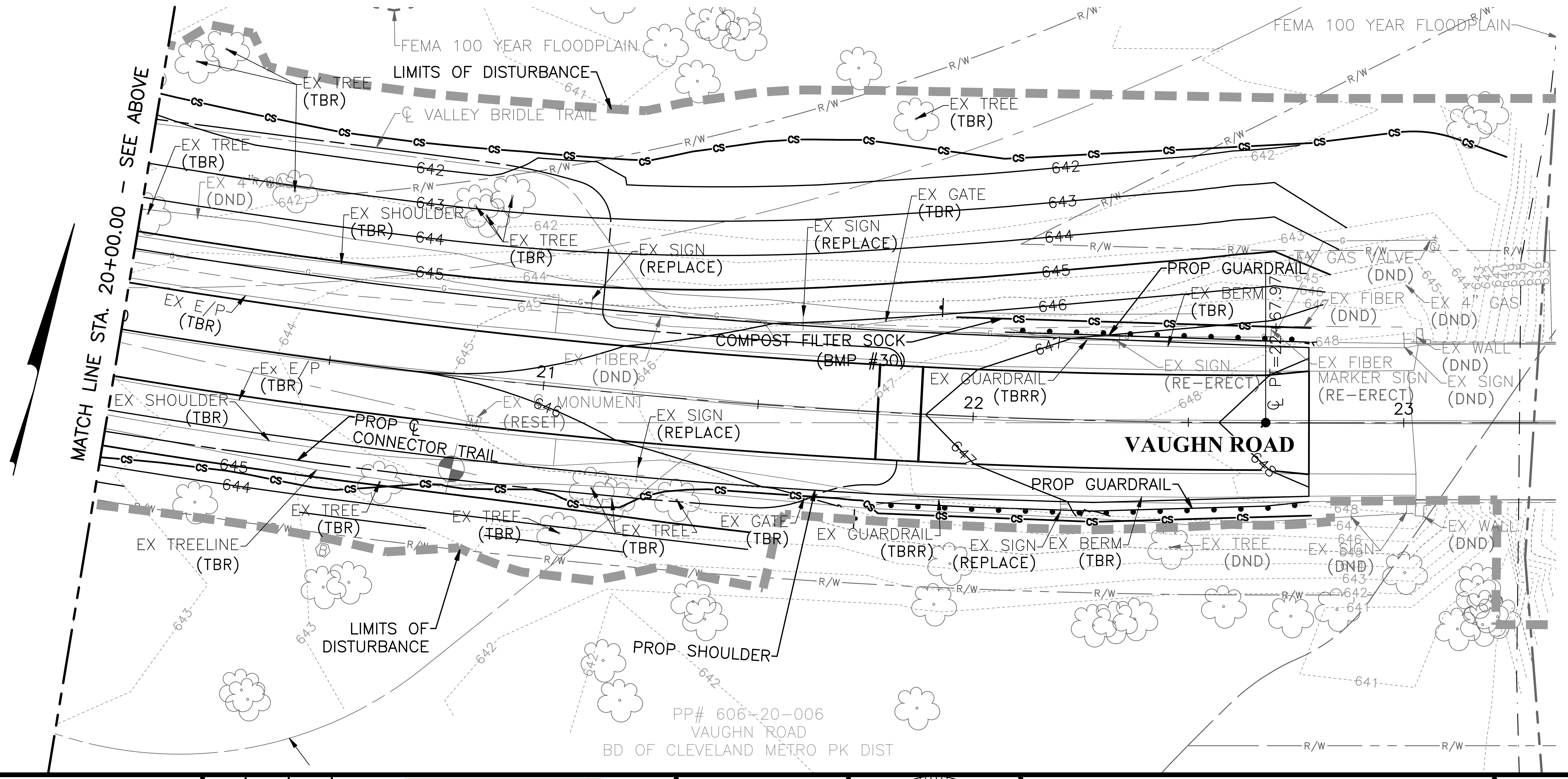

NOTE: REFERENCE SHEET C-1-23 FOR EROSION AND SEDIMENT CONTROL ACTIVITY ASSOCIATED WITH PROPOSED BRIDGE WORK

EROSION CONTROL LEGEND

--xx1--	EXISTING CONTOURS
——xx1——	PROPOSED CONTOURS
▬ ▬ ▬	LIMITS OF DISTURBANCE
——cs——	COMPOST FILTER SOCK
——X——	TEMP CONSTRUCTION FENCE
CWA	CONCRETE WASHOUT AREA
◡	COMPOST FILTER SOCK DITCH CHECK
▨	ROCK CHECK DAM
⊛	TEMPORARY PUMP AROUND
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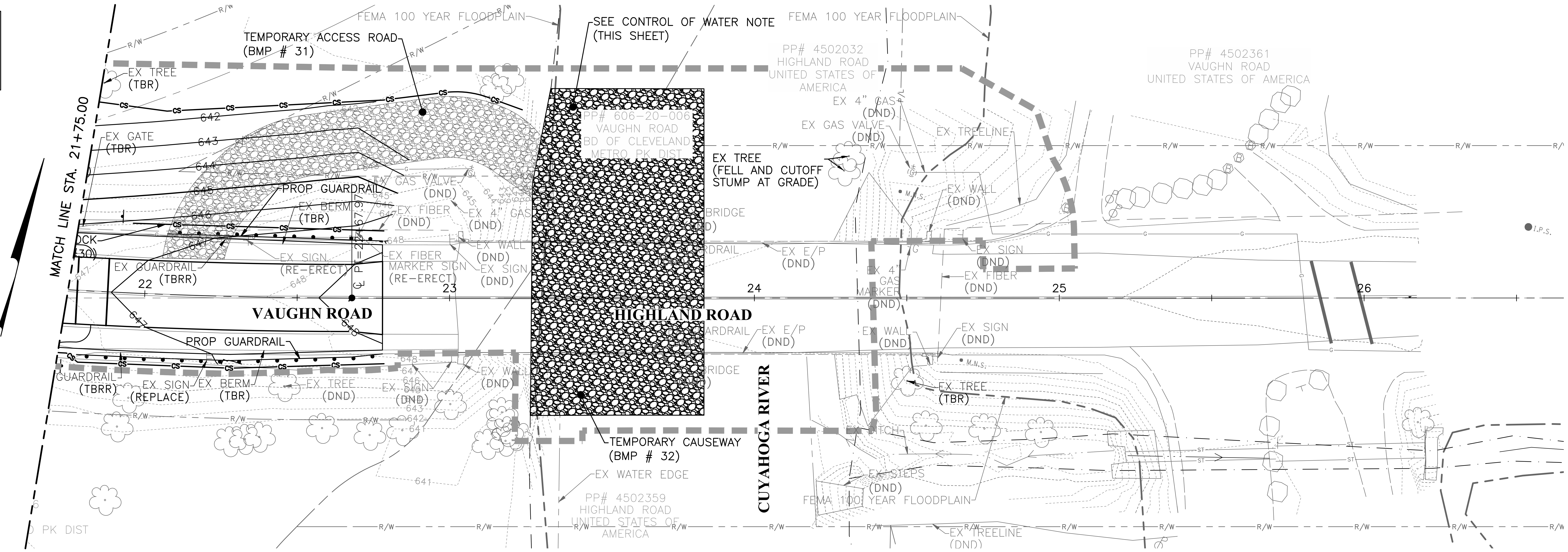
CONTROL OF WATER NOTE: CONTRACTOR SHALL DESIGN AND SUBMIT A CONTROL OF WATER PLAN, INCLUDING BUT NOT LIMITED TO THE DESIGN OF PROPOSED TEMPORARY WORK WITHIN THE CUYAHOGA RIVER, AS REQUIRED BY SECTION 31 69 69 – DIVERSION AND CARE OF WATER.

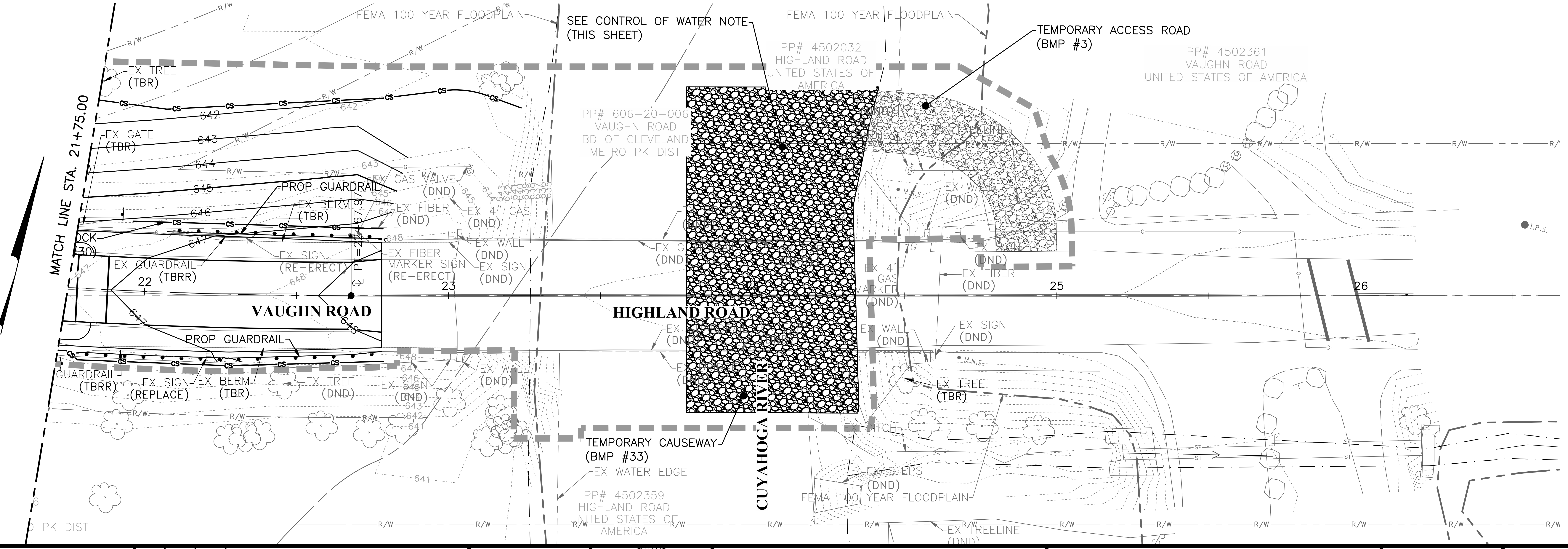
BRIDGE ACCESS - WESTERN PORTION



1 inch = 20 feet

0 10 20 40

BRIDGE ACCESS - EASTERN PORTION



EROSION CONTROL LEGEND

----xx1---- ----xx5----	EXISTING CONTOURS
—xx1— —xx5—	PROPOSED CONTOURS
▬ ▬ ▬	LIMITS OF DISTURBANCE
—cs—	COMPOST FILTER SOCK
—X—	TEMP CONSTRUCTION FENCE
CWA	CONCRETE WASHOUT AREA
⌣	COMPOST FILTER SOCK DITCH CHECK
▨	ROCK CHECK DAM
⊛	TEMPORARY PUMP AROUND
▦	SEDIMENT FILTER BAG
▽ ▽ ▽	VEGETATED FILTER STRIP
▨	VEGETATED BIOFILTER

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7 Xrefs: 20210275-T006-CP-CNTR-N, 20210275-T006-VS-REFR-O, 20210275-T006-CS-REFR-N, 20210275_T006_BORD, 08 Vaughn Road Plan & Profile, 20210275-T006-CS-REFR-E, 20210275-T006-CS-REFR-LABL-E

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VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

EROSION CONTROL PLAN

WARNING
0 1/2 1
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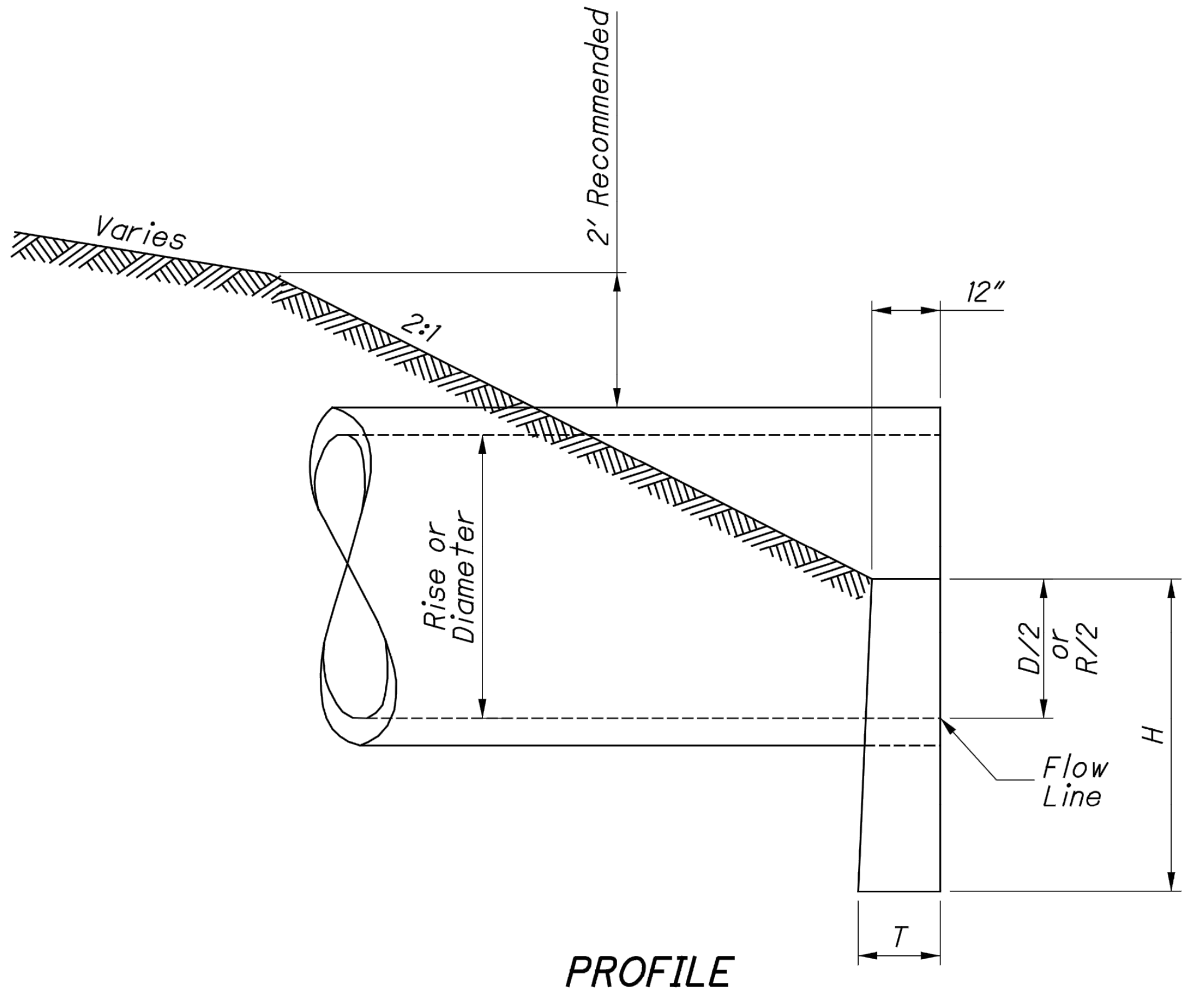
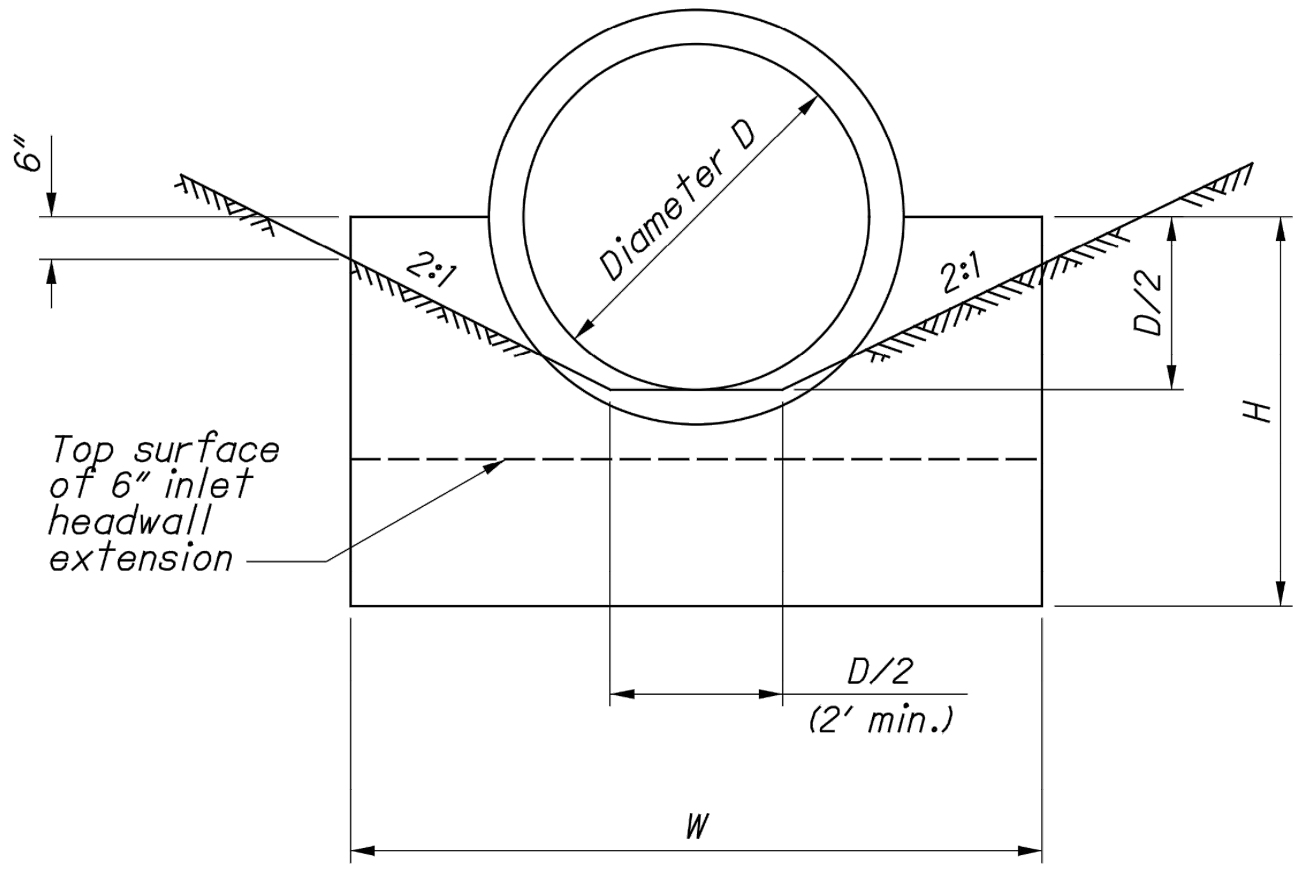
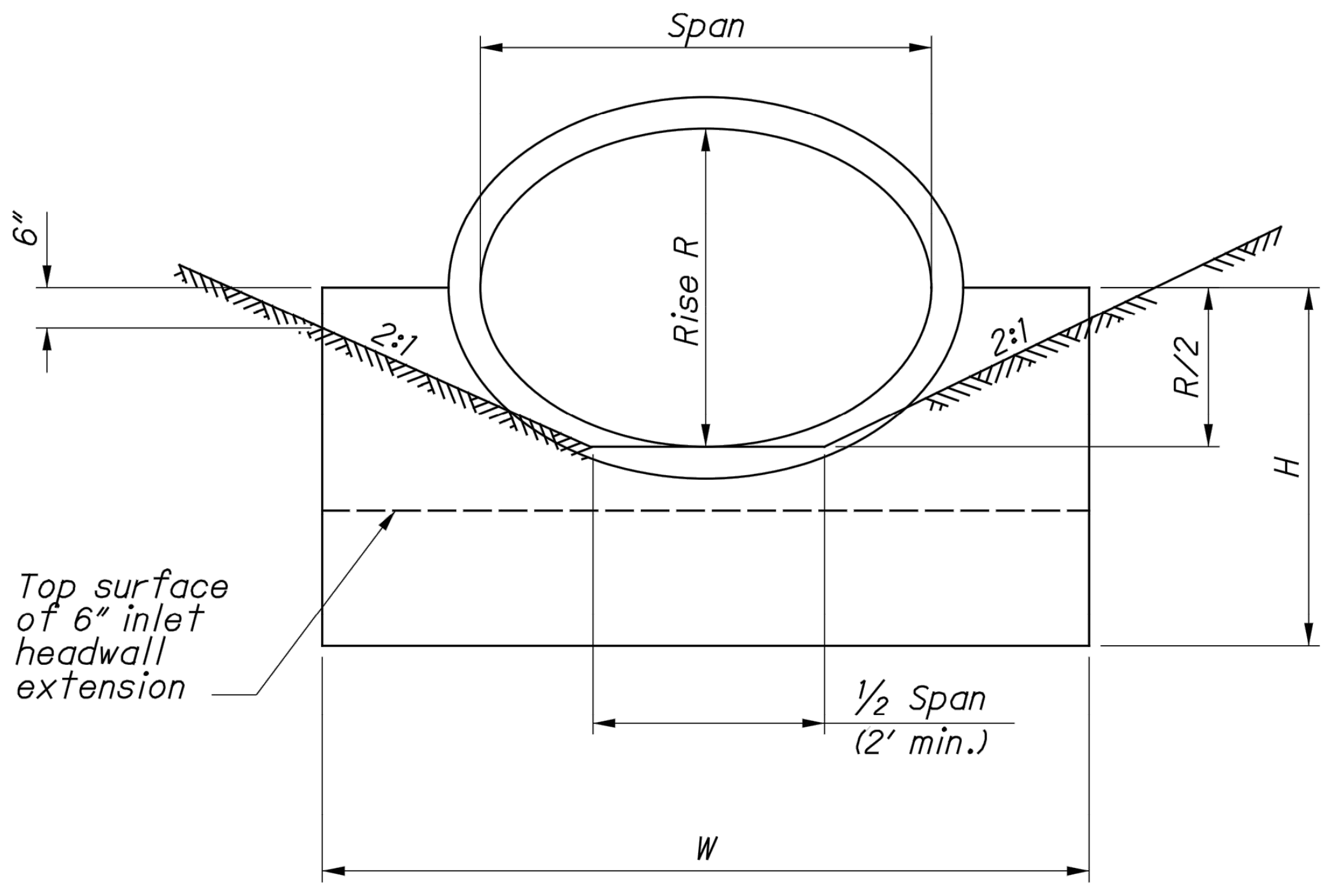
PROJECT SET: 33 OF 49
C SHEET: 23 OF 30
SHEET NO.:



PROFILE



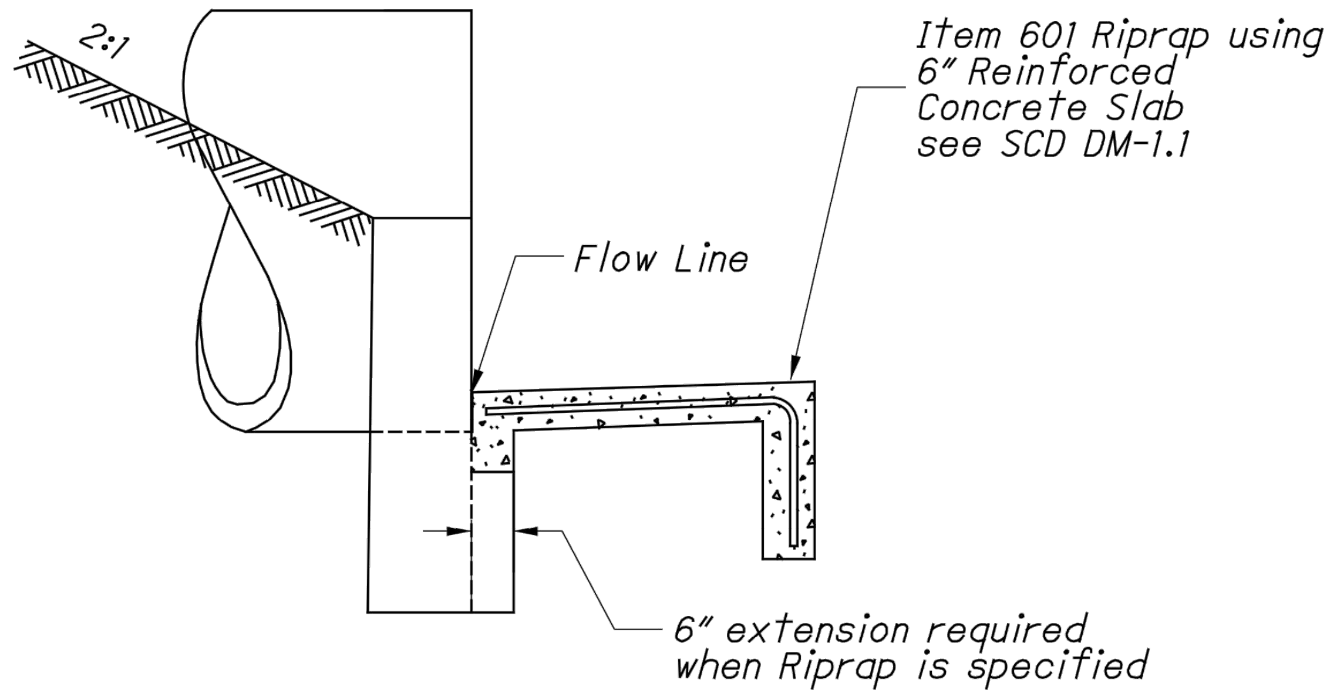
CIRCULAR



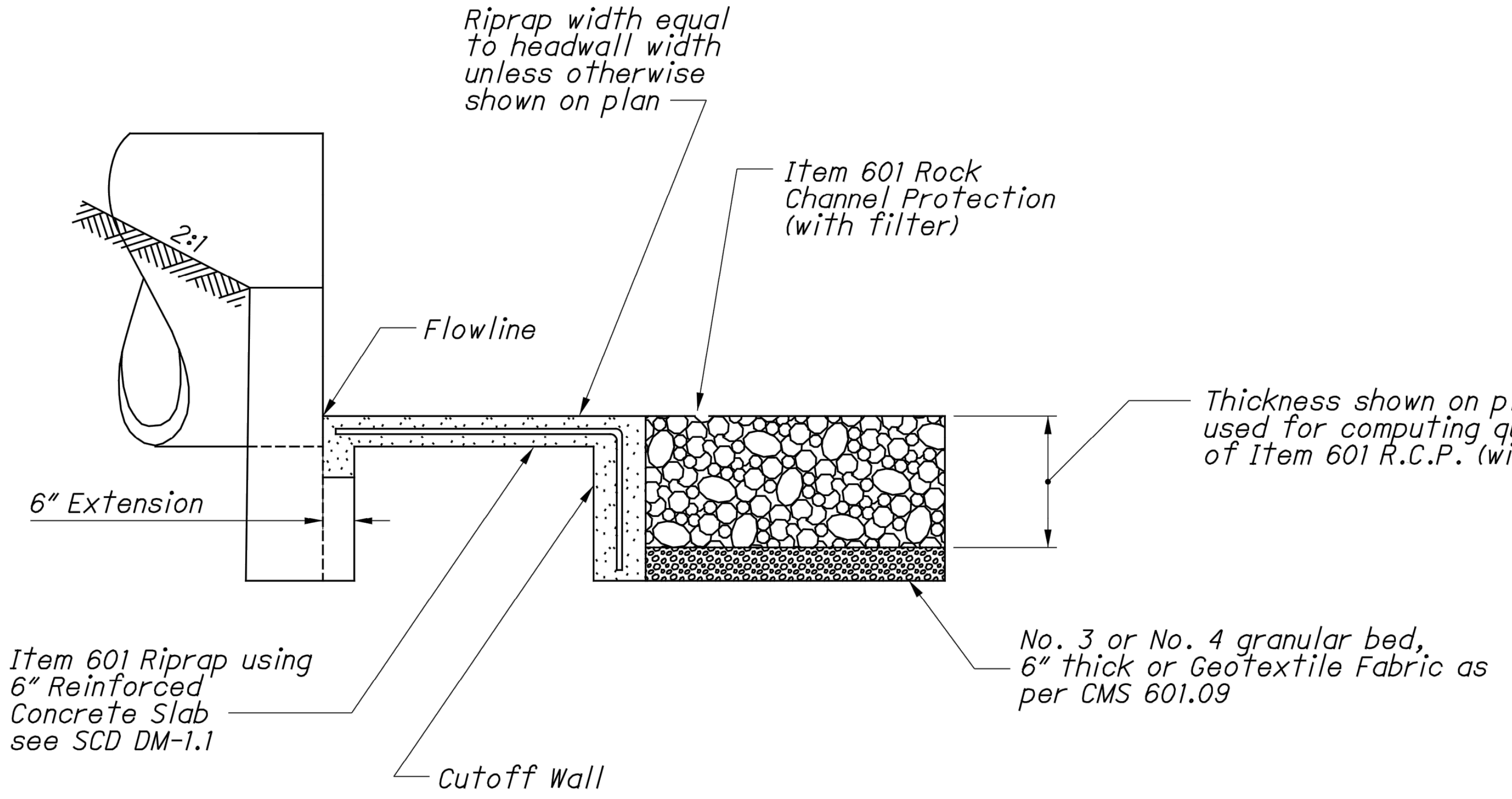
ELLIPTICAL

CONCRETE PIPE

See Sheet 2 of 2 for
Pipe Tables and NOTES.


2:1
Item 601 Riprap using 6" Reinforced Concrete Slab see SCD DM-1.1
Flow Line
6" extension required when Riprap is specified

INLET CHANNEL PROTECTION DETAIL


Riprap width equal to headwall width unless otherwise shown on plan
Item 601 Rock Channel Protection (with filter)
2:1
Flowline
Thickness shown on plan and used for computing quantity of Item 601 R.C.P. (with filter)
6" Extension
Item 601 Riprap using 6" Reinforced Concrete Slab see SCD DM-1.1
No. 3 or No. 4 granular bed, 6" thick or Geotextile Fabric as per CMS 601.09
Cutoff Wall

OUTLET CHANNEL PROTECTION DETAIL

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07-20-2012
01-18-2013
07-17-2015
01-15-2016
07-21-2017
07-20-2018

HW-2.2

STANDARD BRIDGE DRAWING
HALF-HEIGHT HEADWALLS
FOR CONCRETE PIPE

1 / 2

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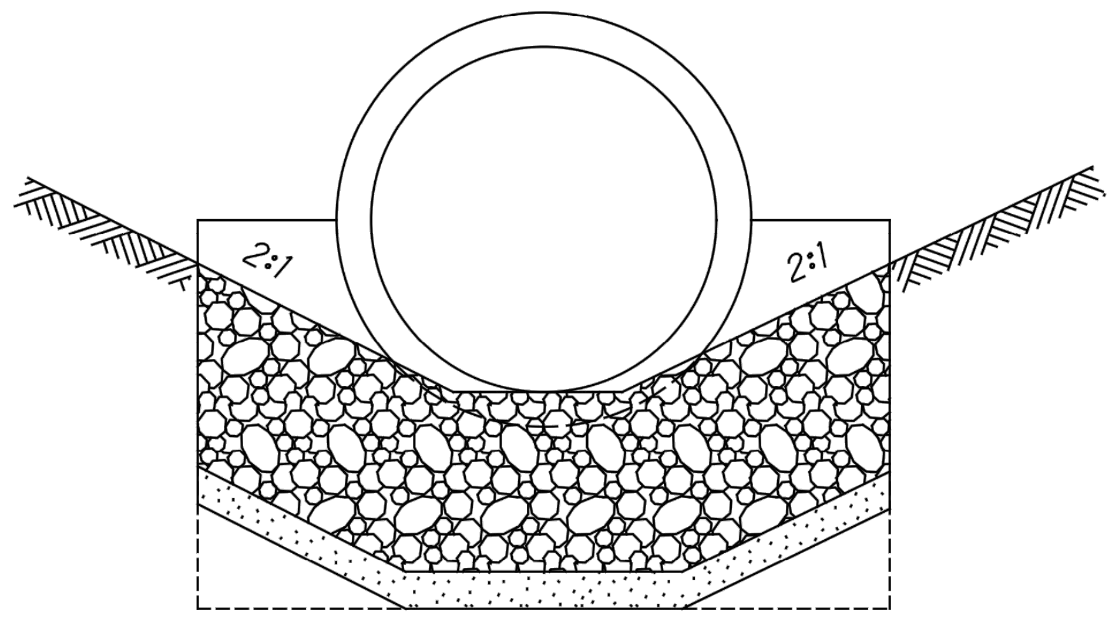

Riprap and rock channel protection width equal to headwall width unless otherwise shown on the plans. (Minimum width 4'-0".)

NOTES

GENERAL: Provide a riprap reinforced concrete slab according to SCD DM-1.1 if the pipe is depressed or it is specified in the plan. Payment for the slab is made per square yard of **Item 601 Riprap Using 6" Reinforced Concrete** Slab and includes the cost of the cutoff wall.

This drawing is for cast in place half-height concrete headwalls. Precast half-height headwalls are only approved for round conduits with a maximum conduit diameter of 78".

CONCRETE: Use 4000 psi compressive strength concrete for headwalls.

Concrete quantities are based on headwalls without the 6" extension under the channel protection.

C.I.P. HEADWALL FOR CONCRETE PIPE (English)

CIRCULAR					ELLIPTICAL					
D	**W**	**H**	**T**	**Conc.** cu. yds.	**Rise**	**Span**	**W**	**H**	**T**	**Conc.** cu. yds.
12"	2'-0"	3'-0"	12"	0.20	--	--	--	--	--	--
15"	2'-6"	3'-2"	12"	0.25	--	--	--	--	--	--
18"	3'-0"	3'-3"	12"	0.31	14"	23"	3'-0"	3'-2"	12"	0.29
21"	3'-6"	3'-4"	12"	0.37	19"	30"	3'-7"	3'-4"	12"	0.35
24"	4'-0"	3'-6"	12"	0.43	22"	34"	3'-11"	3'-5"	12"	0.38
27"	4'-6"	3'-8"	12"	0.49	24"	38"	4'-6"	3'-6"	12"	0.44
30"	5'-0"	3'-9"	12"	0.56	--	--	--	--	--	--
33"	5'-6"	3'-10"	12"	0.62	29"	45"	5'-2"	3'-8"	12"	0.49
36"	6'-0"	4'-0"	12"	0.69	--	--	--	--	--	--
39"	6'-6"	4'-2"	12"	0.77	34"	53"	5'-11"	4'-0"	14"	0.66
42"	7'-0"	4'-3"	12"	0.84	38"	60"	6'-10"	4'-2"	14"	0.82
48"	8'-0"	4'-6"	14"	1.09	43"	68"	8'-0"	4'-4"	16"	1.01
54"	9'-3"	4'-9"	14"	1.32	48"	76"	9'-2"	5'-0"	16"	1.34
60"	10'-6"	5'-6"	16"	1.93	53"	83"	10'-4"	5'-2"	18"	1.65
66"	11'-9"	5'-9"	18"	2.42	58"	91"	11'-6"	5'-5"	18"	1.97
72"	13'-0"	6'-0"	18"	2.77	63"	98"	12'-7"	5'-7"	20"	2.38
78"	14'-3"	6'-3"	20"	3.37	68"	106"	13'-9"	5'-10"	20"	2.69
84"	15'-6"	6'-6"	22"	4.05	72"	113"	14'-9"	6'-0"	22"	3.14
90"	16'-9"	6'-9"	22"	4.51	77"	121"	15'-11"	6'-3"	22"	3.49
96"	18'-0"	7'-0"	24"	5.31	82"	128"	17'-0"	6'-5"	24"	4.04
102"	19'-3"	7'-3"	26"	6.20	87"	136"	18'-2"	6'-8"	24"	4.84
108"	20'-6"	7'-6"	26"	6.78	92"	143"	19'-4"	6'-10"	26"	5.12
114"	21'-9"	7'-9"	28"	7.81	97"	151"	20'-6"	7'-1"	26"	5.42
120"	23'-0"	8'-0"	30"	8.93	106"	166"	22'-7"	7'-5"	28"	6.60
126"	24'-3"	8'-3"	30"	9.57	116"	180"	24'-10"	7'-10"	30"	7.99
132"	25'-6"	8'-6"	32"	10.84	--	--	--	--	--	--
144"	28'-8"	9'-0"	34"	13.00	--	--	--	--	--	--

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HW-2.2

STANDARD BRIDGE DRAWING
HALF-HEIGHT HEADWALLS
FOR CONCRETE PIPE

2 / 2

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PROJECT 1641

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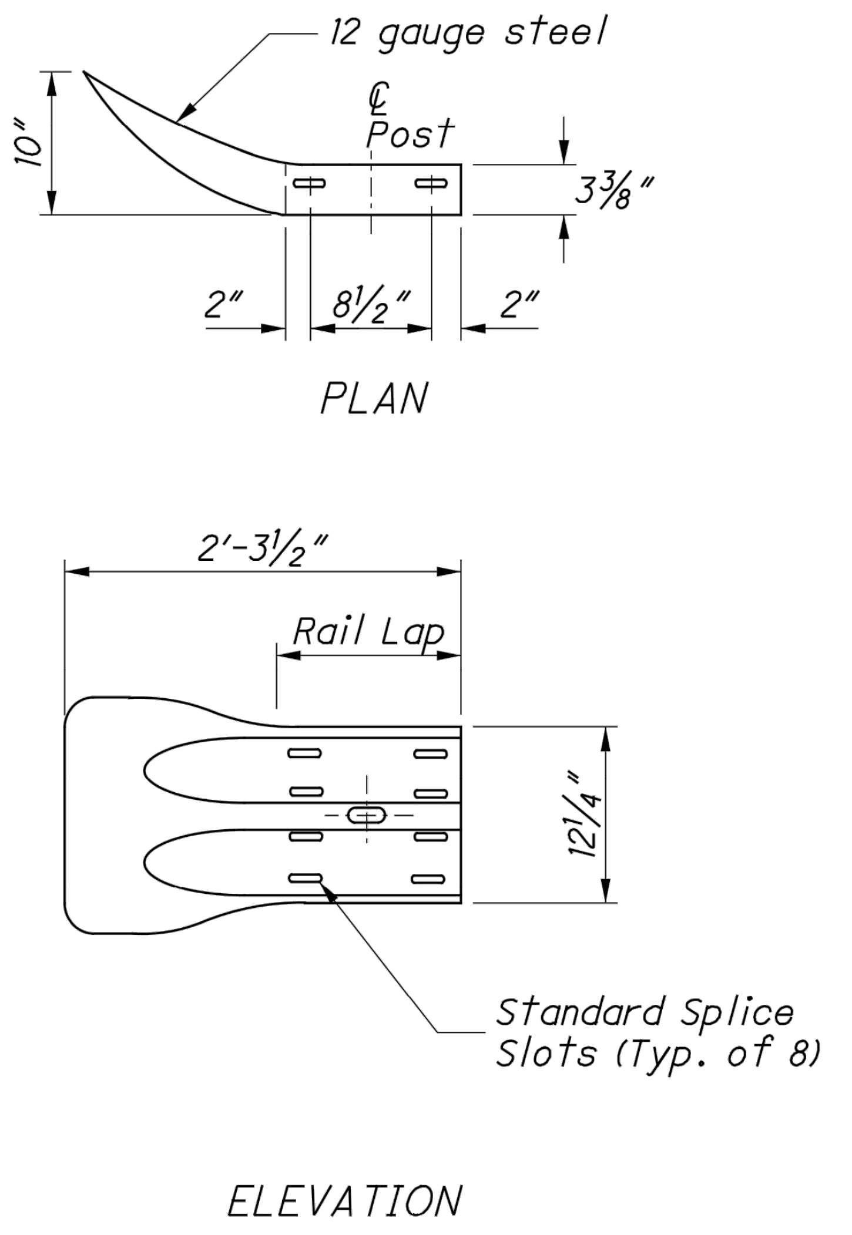
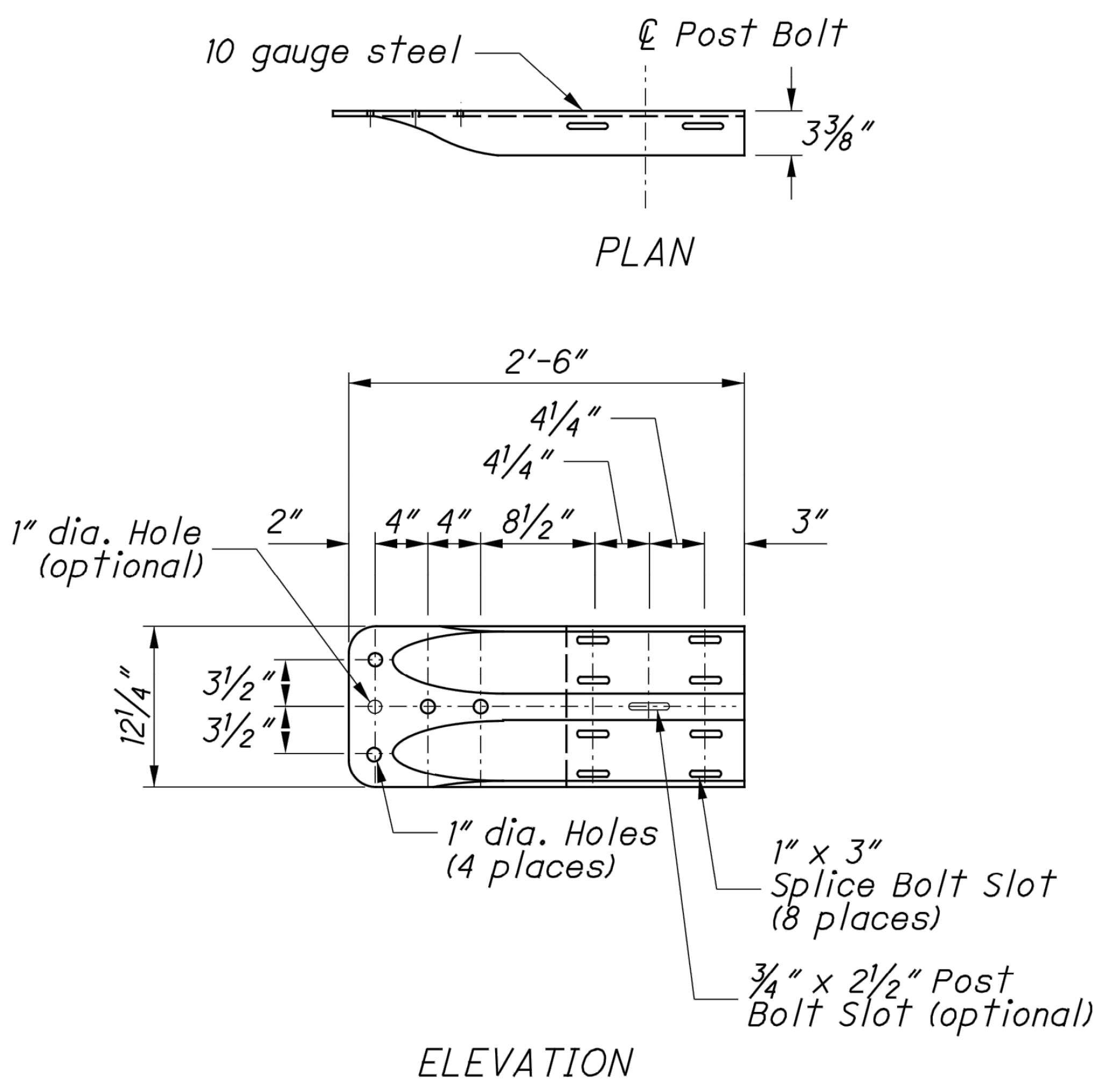
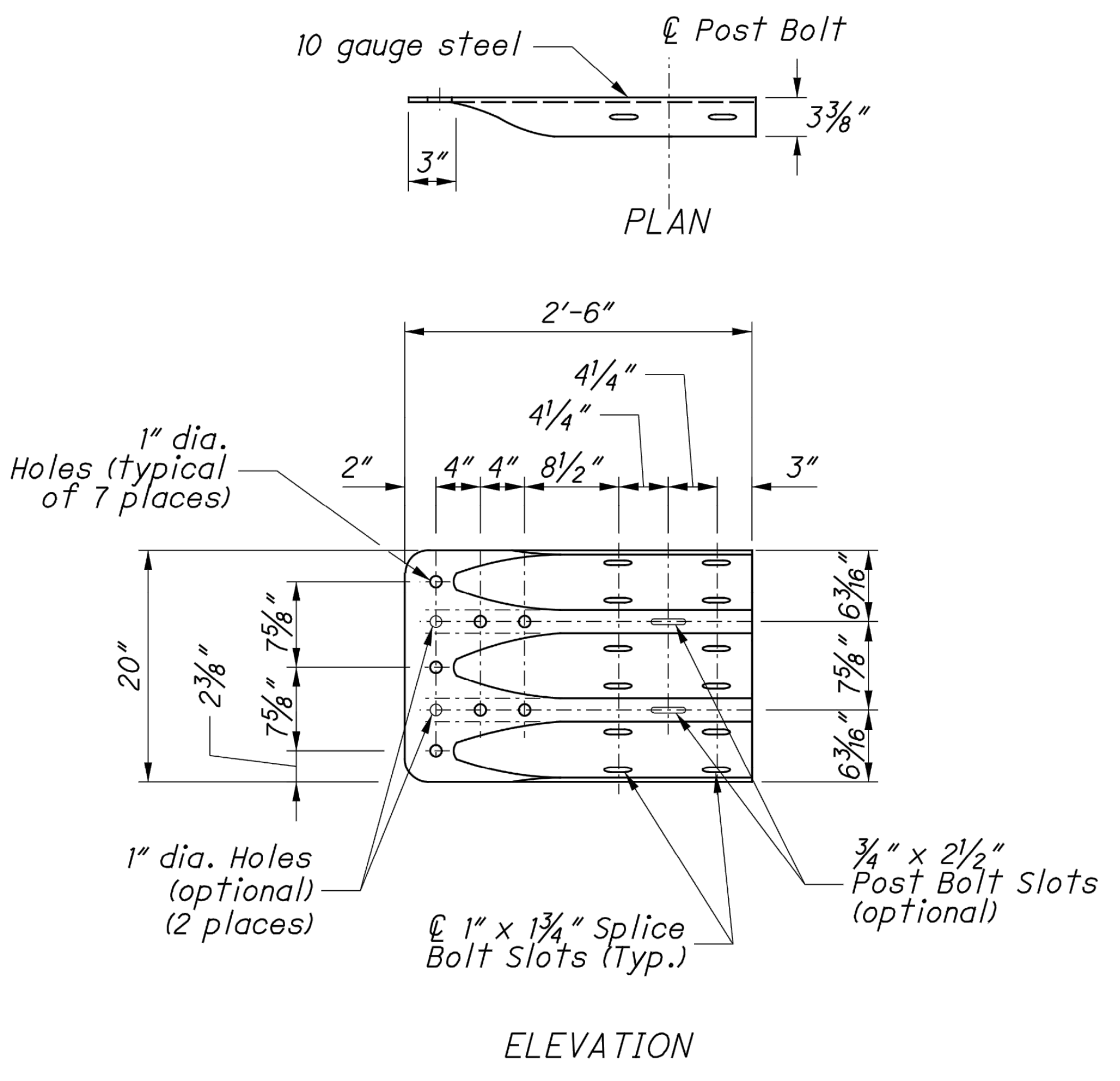


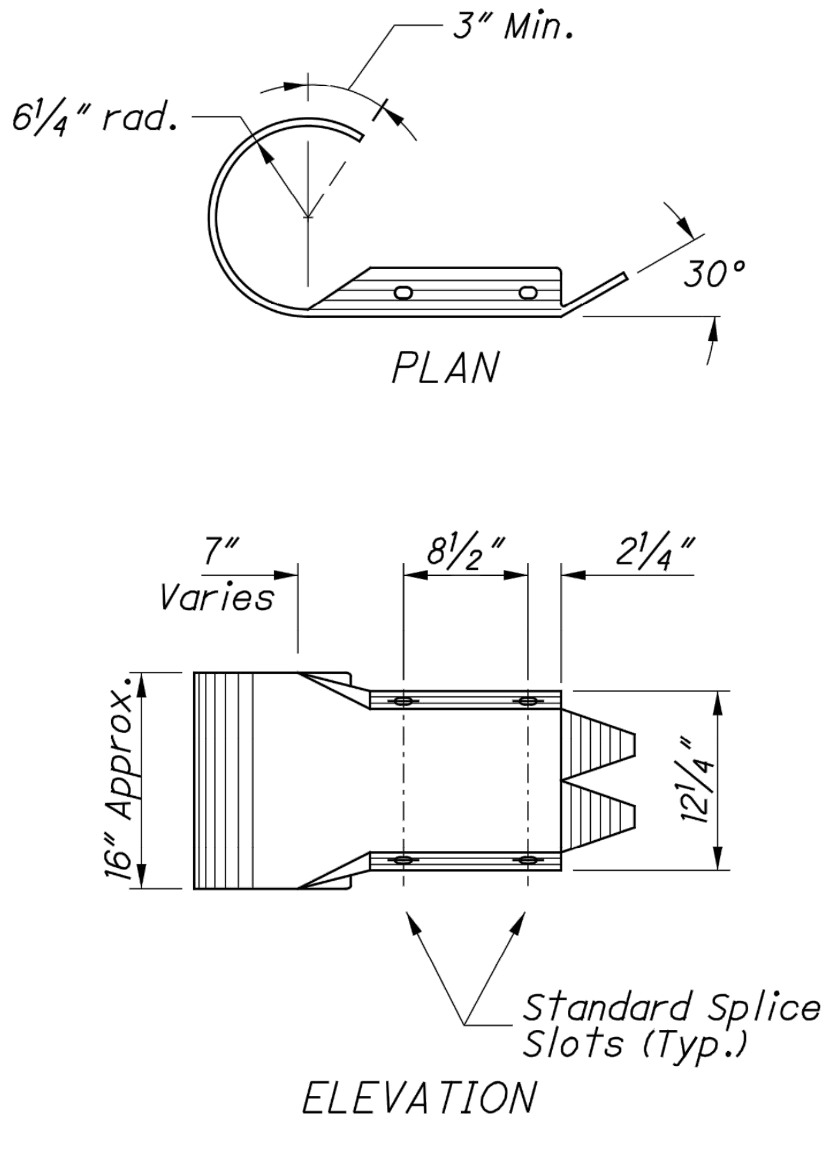
W-BEAM FLARED END SECTION



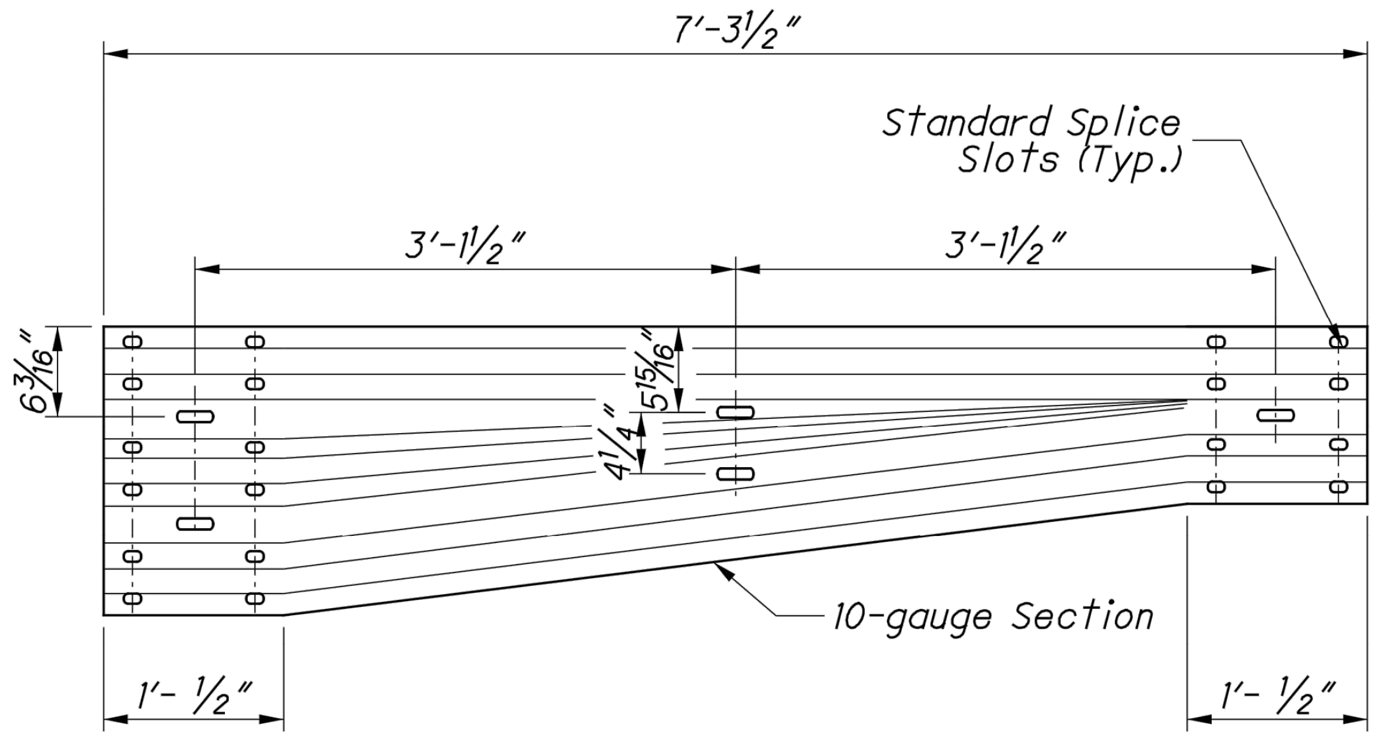
W-BEAM TERMINAL CONNECTOR


10 gauge steel
℄ Post Bolt
3″
3⅜″
PLAN
2′-6″
4¼″
4¼″
1″ dia. Holes (typical of 7 places)
2″
4″
4″
8½″
3″
20″
2⅜″
7⅝″
7⅝″
6 3/16″
7⅝″
7⅝″
6 3/16″
1″ dia. Holes (optional) (2 places)
℄ 1″ x 1¾″ Splice Bolt Slots (Typ.)
¾″ x 2½″ Post Bolt Slots (optional)
ELEVATION

THRIE-BEAM TERMINAL CONNECTOR



ROUNDED W-BEAM END SECTION



ASYMMETRIC TRANSITION SECTION

(W to Thrie-Beam)

(For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180 Figure 5.)

NOTES

GENERAL: Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

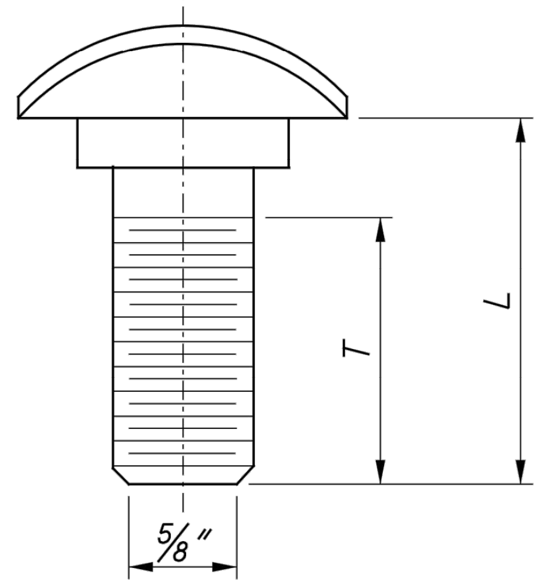
See CMS 606 for guardrail specifications not covered on these drawings.

Refer to AASHTO M 180-12 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-Beam to Thrie-Beam Transition sections. Beam washers are not to be used. Bolts grade shall be ASTM A307.

RAIL ELEMENTS: Unless otherwise specified, W-Beam Rail is 12 gauge steel with an effective length of 12′-6″ or 25′-0″, with 29/32″x1⅛″ splice bolt slots, and ¾″ x 2½″ post bolt slots on 3′-1½″″ centers regardless of post spacing. Field punch or drill bolt holes or slots for irregularly spaced posts as specified in CMS 606.04.

Substituting one 10 guage steel beam element where two nested 12 guage steel beams are specified is permitted (both W-beam and Thrie-beam).

RAIL SPLICES: Lap splices between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the flared end sections in the direction of traffic.

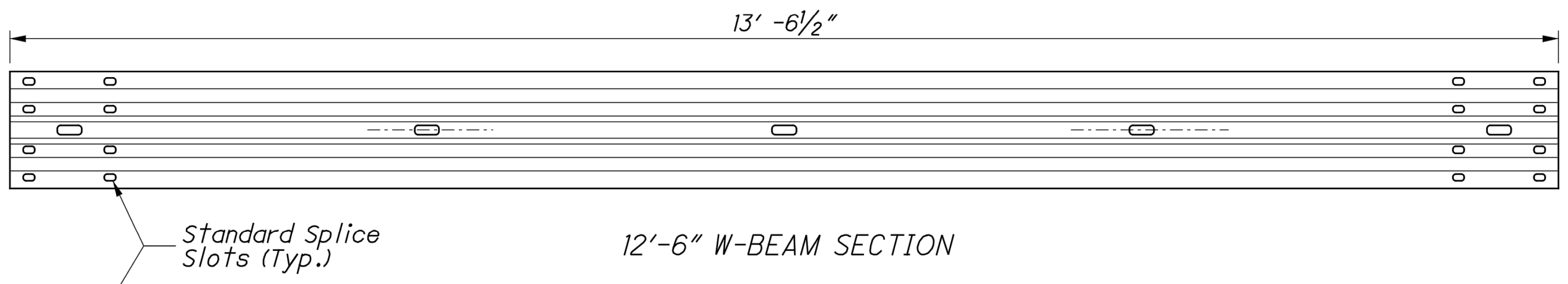


GUARDRAIL BOLT
(For Post and Splice Bolts)

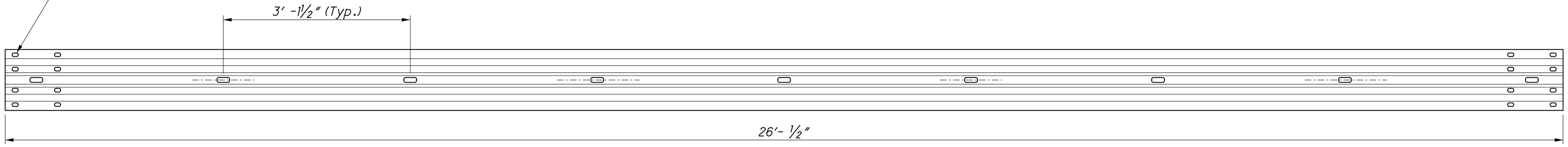
L	T min.	Bolt Use
22″ (Standard Rail)	4″	Type MGS: WP/WB, PB
34″ (Barrier Rail)		
14″	4″	Type MGS: SP/WB, PB
1¼″	1⅛″	Splice Bolt

WP = Wood Post
SP = Steel Post
WB = Wood Blockout
PB = Plastic Blockout

Longer Bolt may be needed for round Wood Post larger than 8″ dia.



12′-6″ W-BEAM SECTION



25′-0″ W-BEAM SECTION

REVISION DATE 7-16-2021

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR
Brenton L. Bogard

STDS. ENGINEER
D. Fisher

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING
MIDWEST GUARDRAIL SYSTEM
GUARDRAIL DETAILS
(Rail Components)

SCD NUMBER
MGS-1.1

1/3

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PROJECT 1641

CIVIL DETAILS

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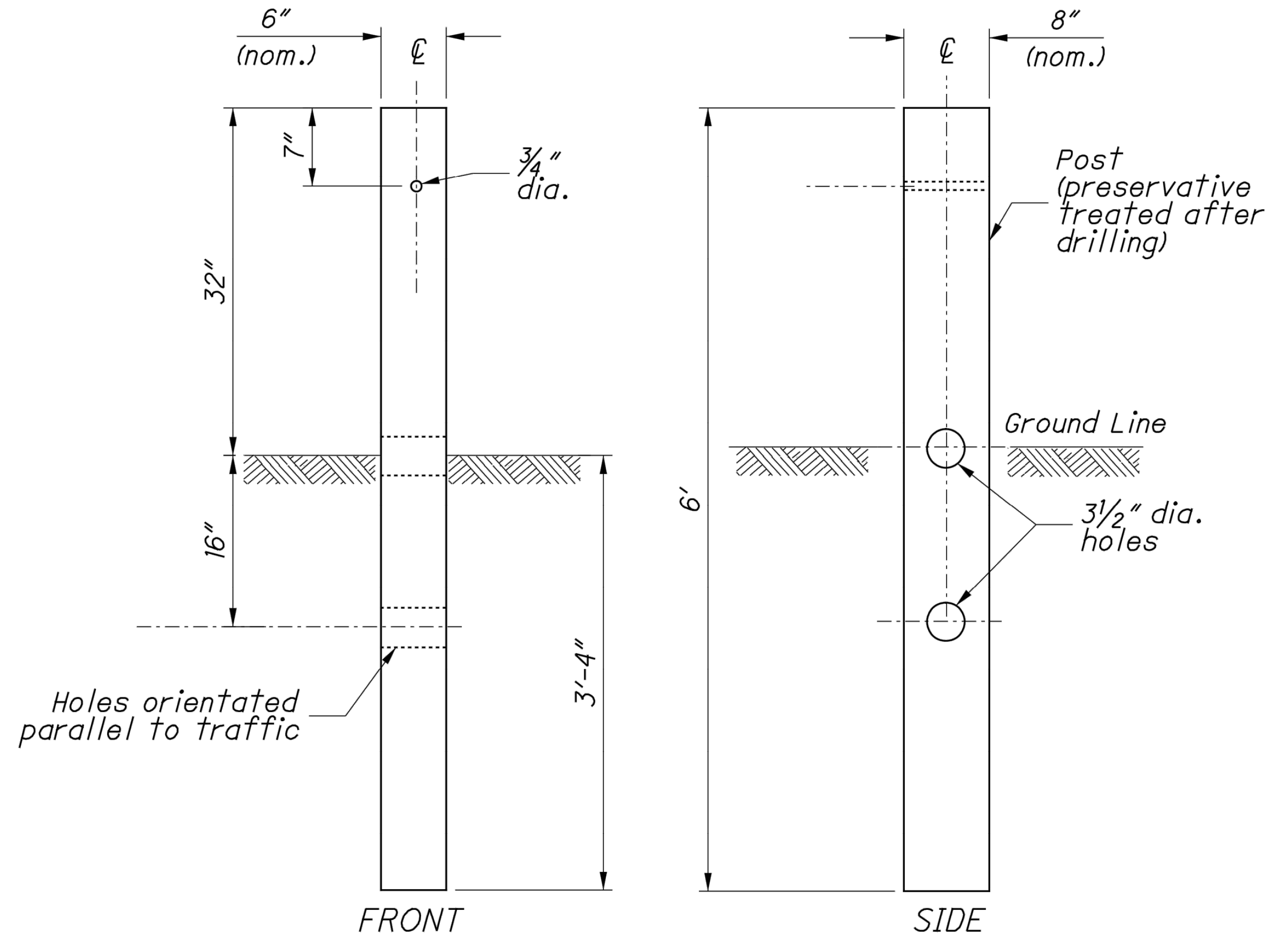
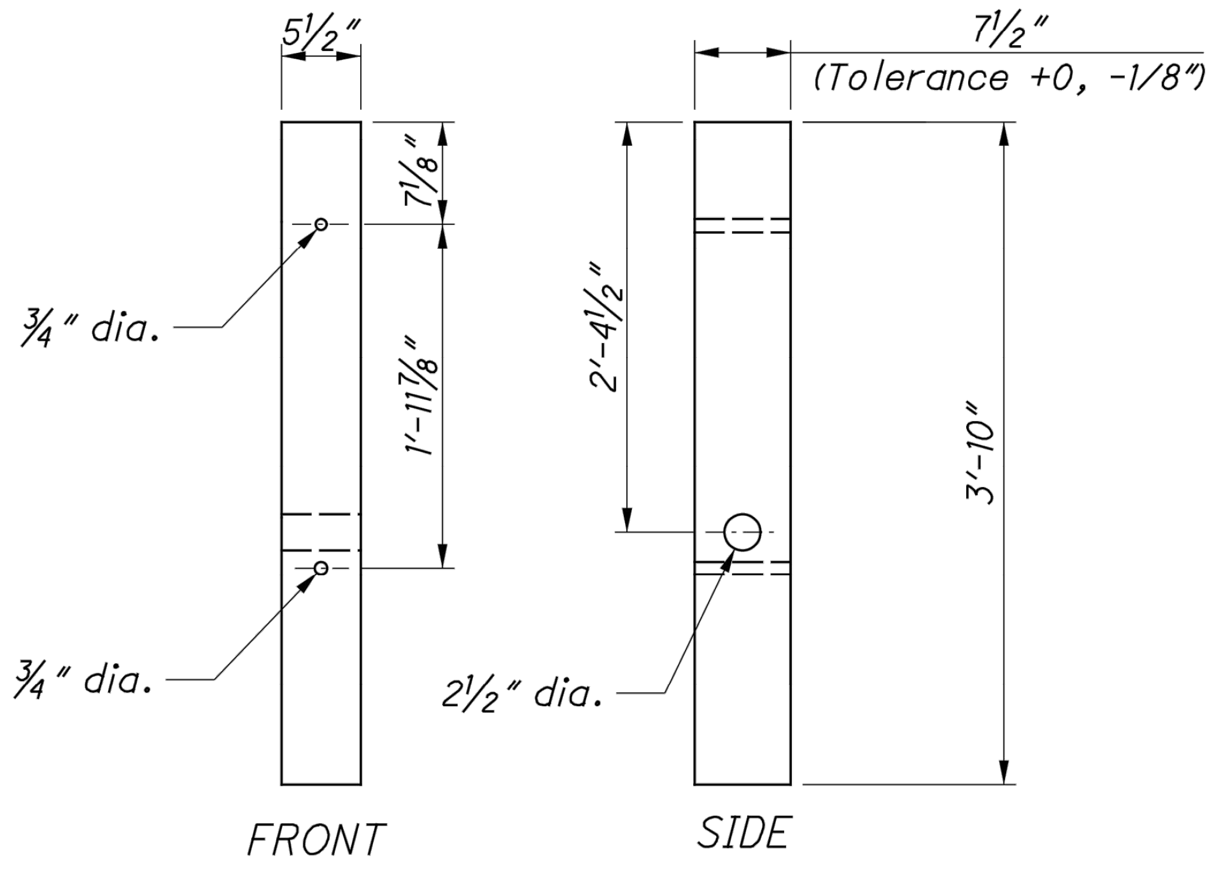
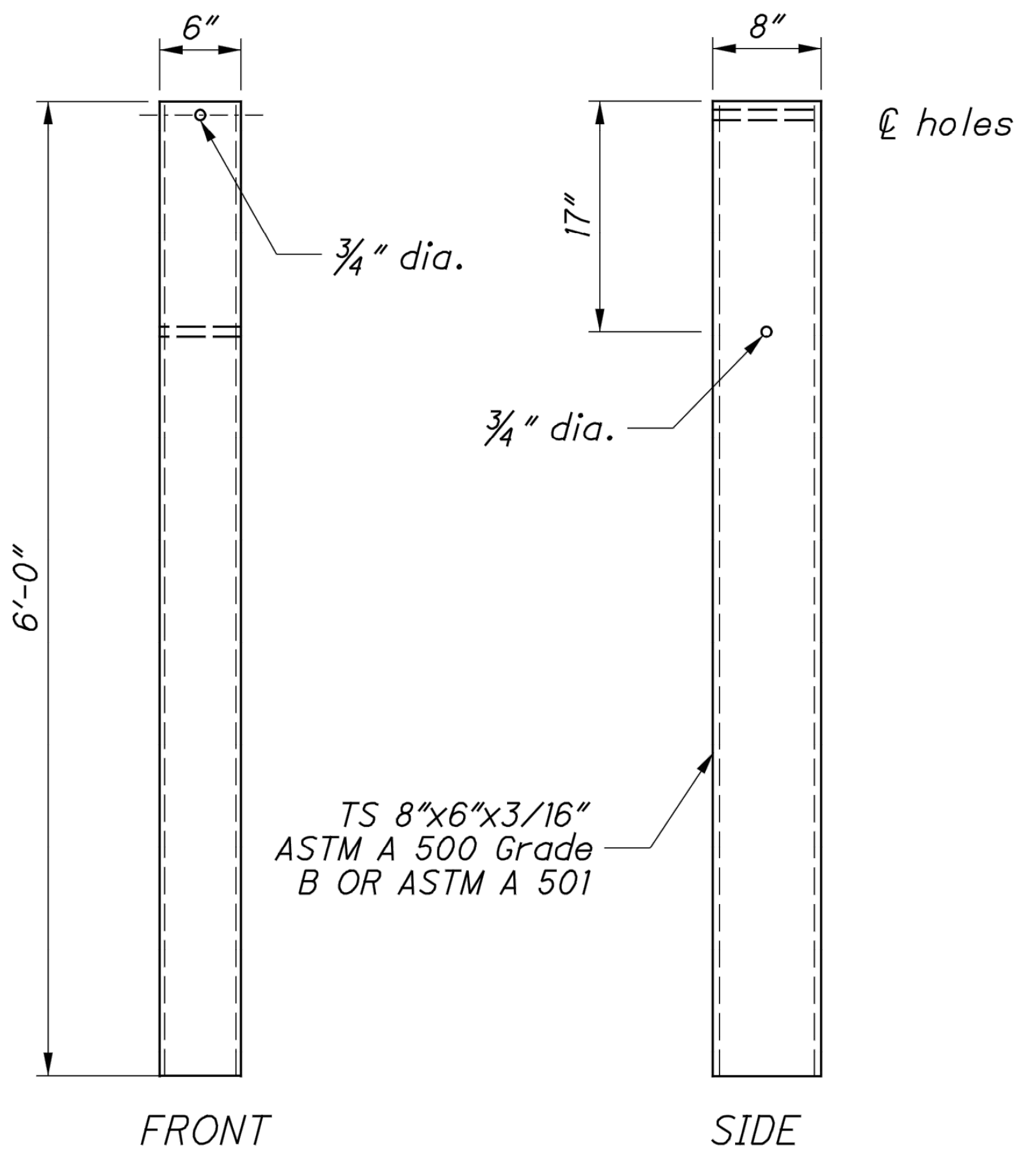
PROJECT SET: 36 OF 49
C SHEET: 26 OF 30
SHEET NO.:


6″ (nom.)
℄
8″ (nom.)
℄
7″
¾″ dia.
32″
16″
6′
3′-4″
Post (preservative treated after drilling)
Ground Line
3½″ dia. holes
Holes orientated parallel to traffic
FRONT
SIDE

TYPE 1 BREAKAWAY CRT POST

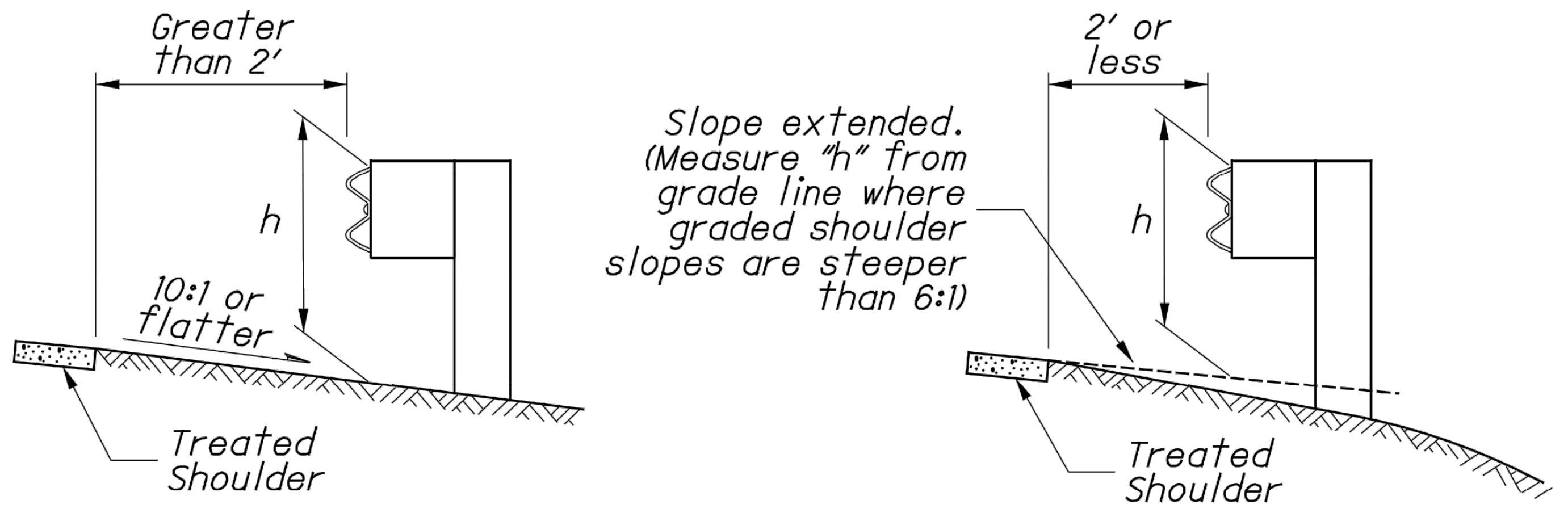


TYPE 2 BREAKAWAY BCT TIMBER POST

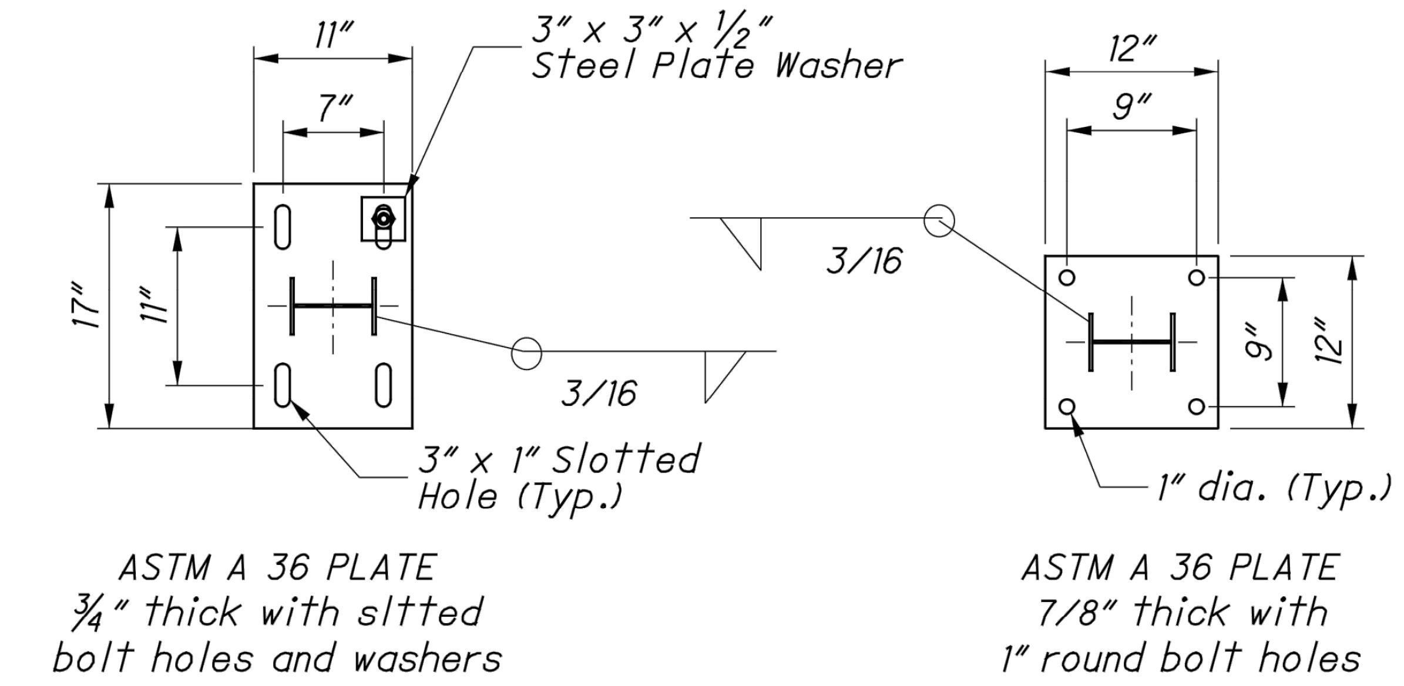


STEEL GROUND FOUNDATION TUBE

STEEL BEAM POSTS				
Size	Beam depth	Flange width	Flange thickness	Web thickness
Rolled W6x8.5	5.8″	3.94″	0.193″	0.170″
Rolled W6x9	5.9″	3.94″	0.215″	0.170″
Welded 6x8.5	6.0″	3.94″	0.193″	0.170″
Welded 6x9	6.0″	3.94″	0.215″	0.170″


Greater than 2′
h
10:1 or flatter
Treated Shoulder
Slope extended. (Measure "h" from grade line where graded shoulder slopes are steeper than 6:1)
2′ or less
h
Treated Shoulder

MEASURING GUARDRAIL HEIGHT



ASTM A 36 PLATE
¾″ thick with sltted
bolt holes and washers

ASTM A 36 PLATE
7/8″ thick with
1″ round bolt holes

NOTES

GUARDRAIL HEIGHT: For initial installation, construct the guardrail within ± 1″ of the standard 31″ height to the top of W-Beam rail. When subsequent projects, such as resurfacings, affect the height of existing guardrail, adjustment is not required if the finished height is within ±3″ of the standard height.

POSTS: The Standard Post Length is 6′-0″ (+3″,-0″ tolerance). Wood Posts are permitted instead of Standard Steel Posts per CMS 710.11.

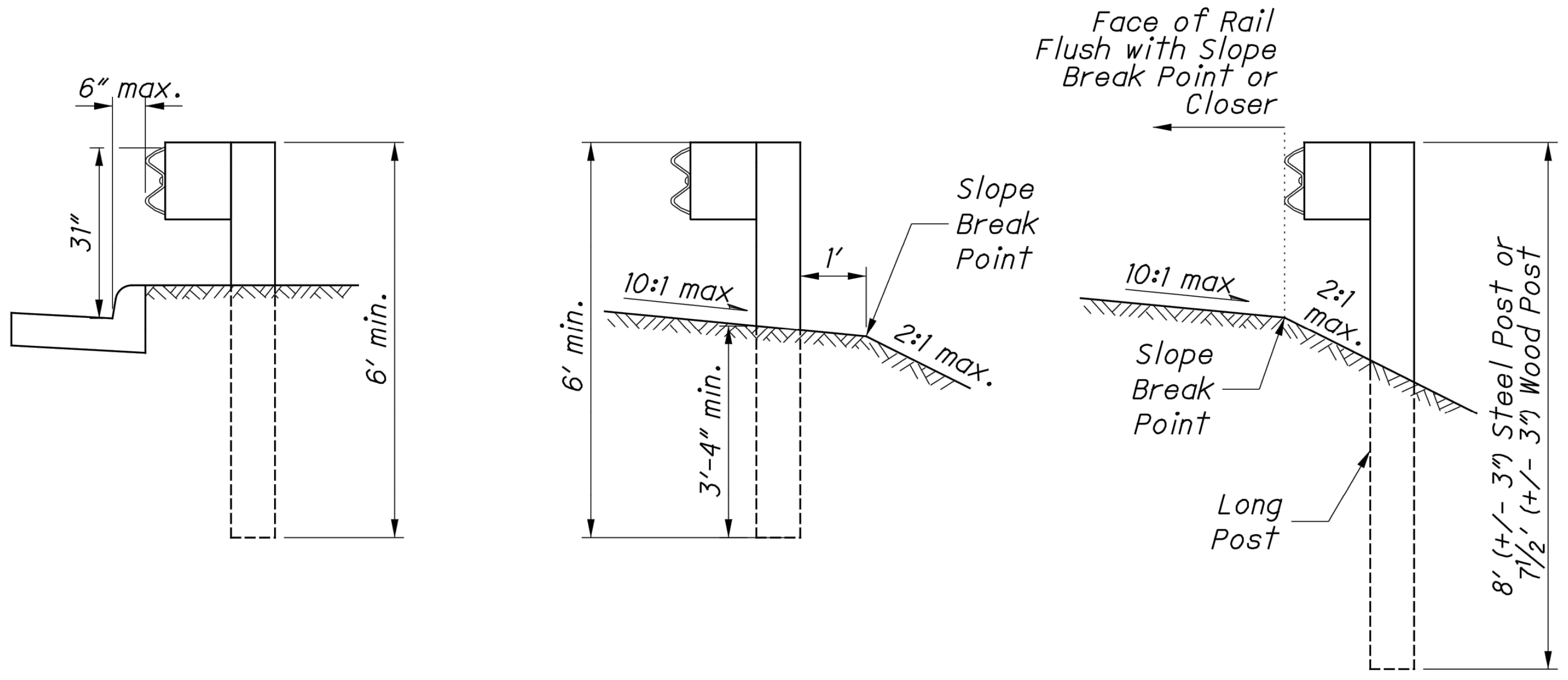
POST EMBEDMENT DEPTH: Standard embedment depth is 3′-4″ minimum. Embedment depth shall be 37″ when using the round wooden post option. Do not drive posts located over a culvert with less than 4′-3″ of cover; instead set in drilled or dug holes. Where site constraints prohibit the post from being placed at least one foot in front of the slope break point, use longer posts as shown in the Guardrail Post Length and Position Detail. The face of the rail may not be beyond the slope break point.

SPECIAL POST MOUNTINGS: Install posts located over a drainage inlet or structure with a cover of less than 3′-4″ as shown in the FOOTING ANCHOR Detail.

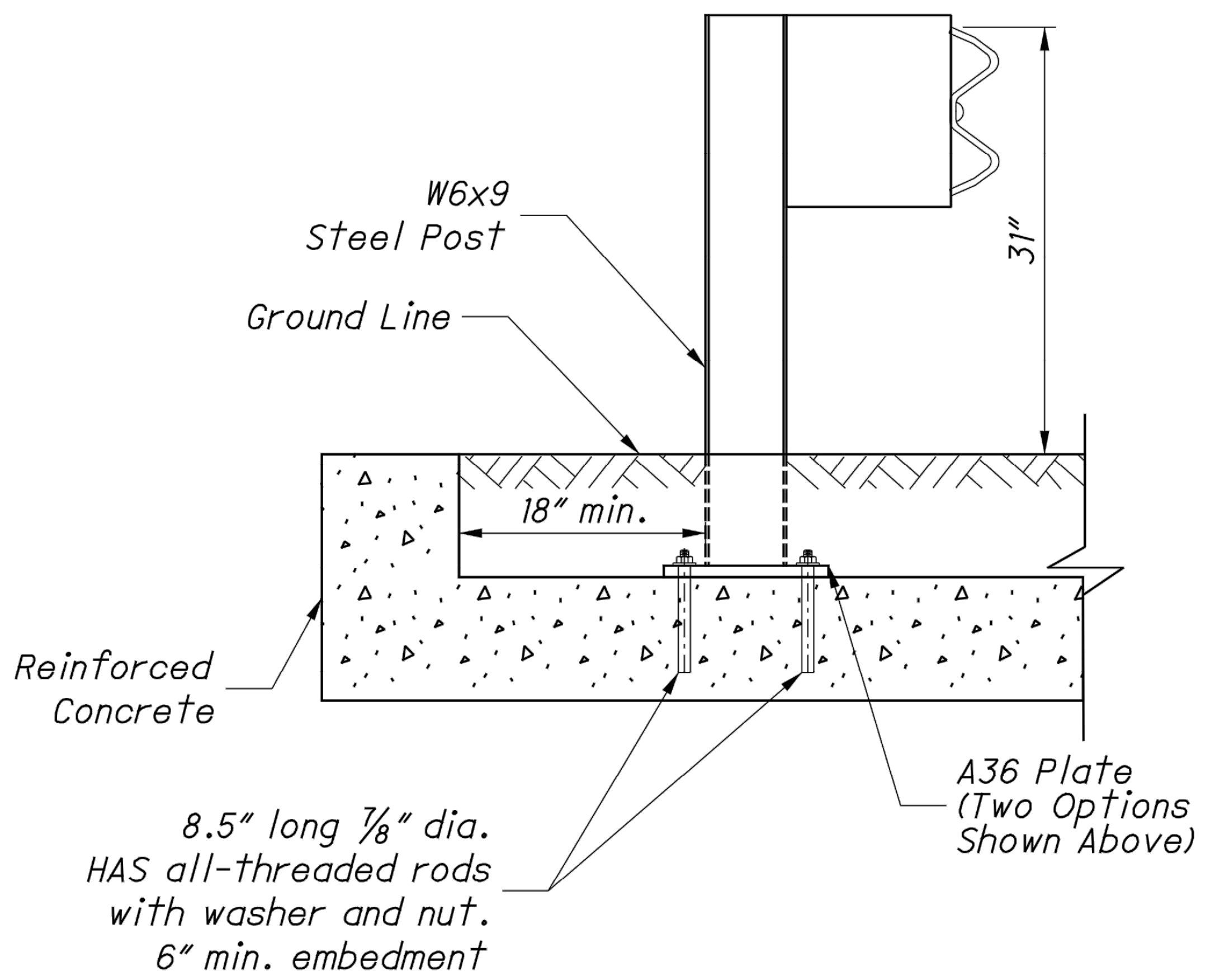
ANCHORS: Holes shall comply with CMS 510. Use non-shrink, nonmetallic grout per CMS 705.20.

PROTECTIVE COATING: In lieu of the complying with CMS 710.06, coat expansion shields, anchors and concrete insert anchor assemblies embedded in concrete in accordance with ASTM A 153 or be of stainless steel. Any bolts screwed into these devices shall meet CMS 710.06.

PAYMENT: Payment for standard guardrail is measured in feet as **Item 606 - Guardrail, Type MGS**. Runs with longer posts should be paid as **Item 606 - Guardrail, Type MGS With Long Posts,** also measured in feet. All costs associated with special post mountings are included in the unit price bid of Item 606 Guardrail of the type specified in the plans.



GUARDRAIL POST LENGTH AND POSITION


W6x9 Steel Post
Ground Line
31″
18″ min.
Reinforced Concrete
8.5″ long ⅞″ dia. HAS all-threaded rods with washer and nut. 6″ min. embedment
A36 Plate (Two Options Shown Above)

FOOTING ANCHOR DETAIL

REVISION DATE
7-16-2021

STATE OF OHIO DEPARTMENT OF
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Brenton L. Bogard

STDS. ENGINEER
D. Fisher

OFFICE OF
ROADWAY
ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING
MIDWEST GUARDRAIL SYSTEM
GUARDRAIL DETAILS
(Rail Components)

SCD NUMBER
MGS-1.1

2/3

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

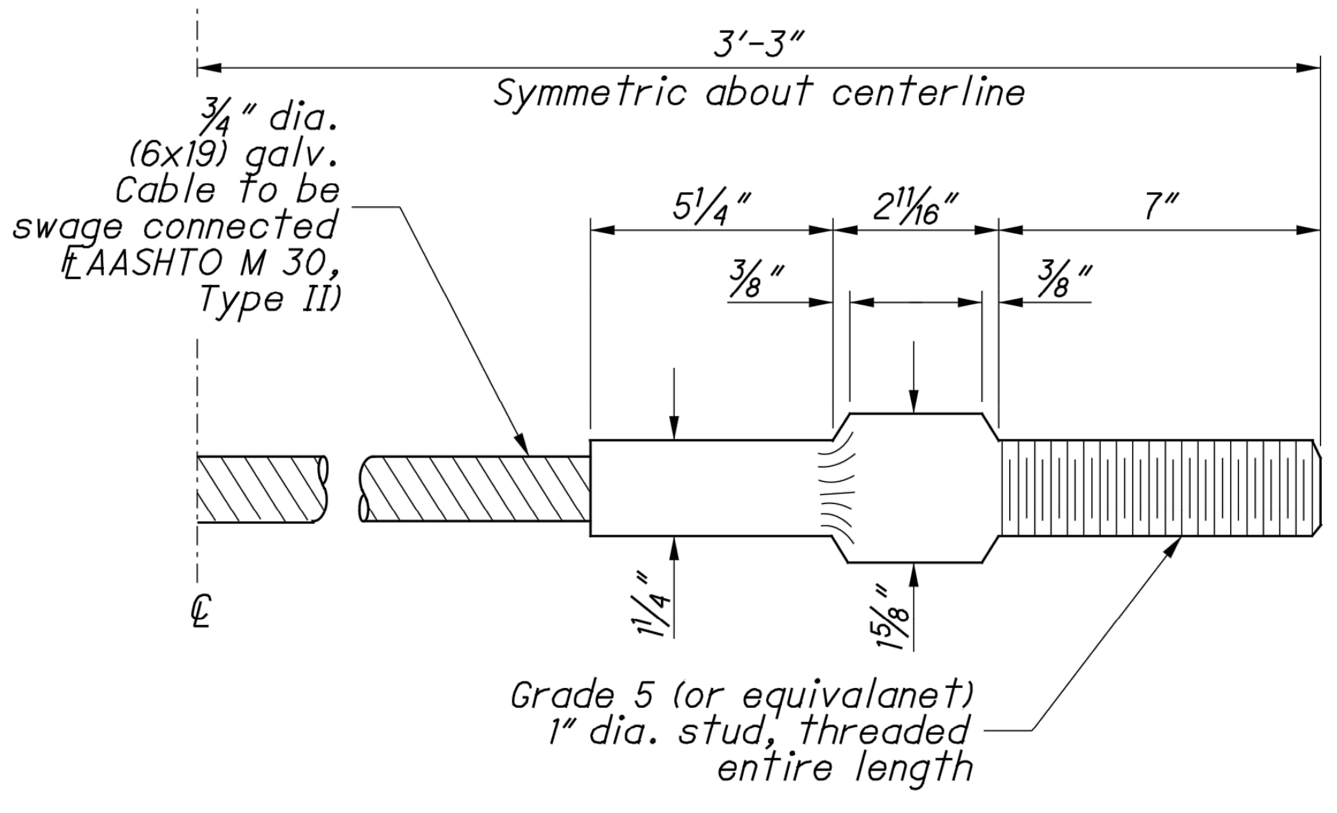
CIVIL DETAILS

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT SET: 37 OF 49

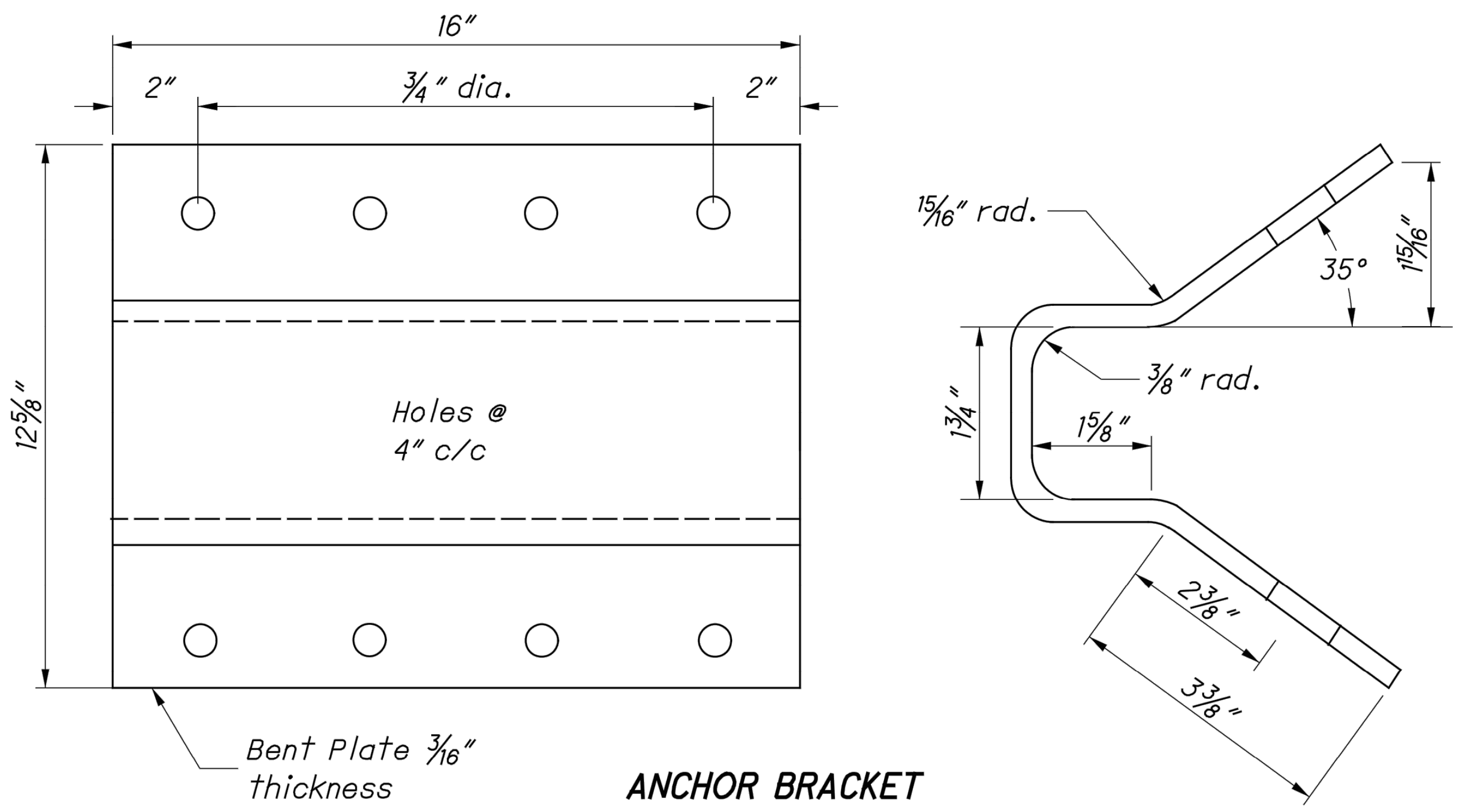
C SHEET: 27 OF 30

SHEET NO.:

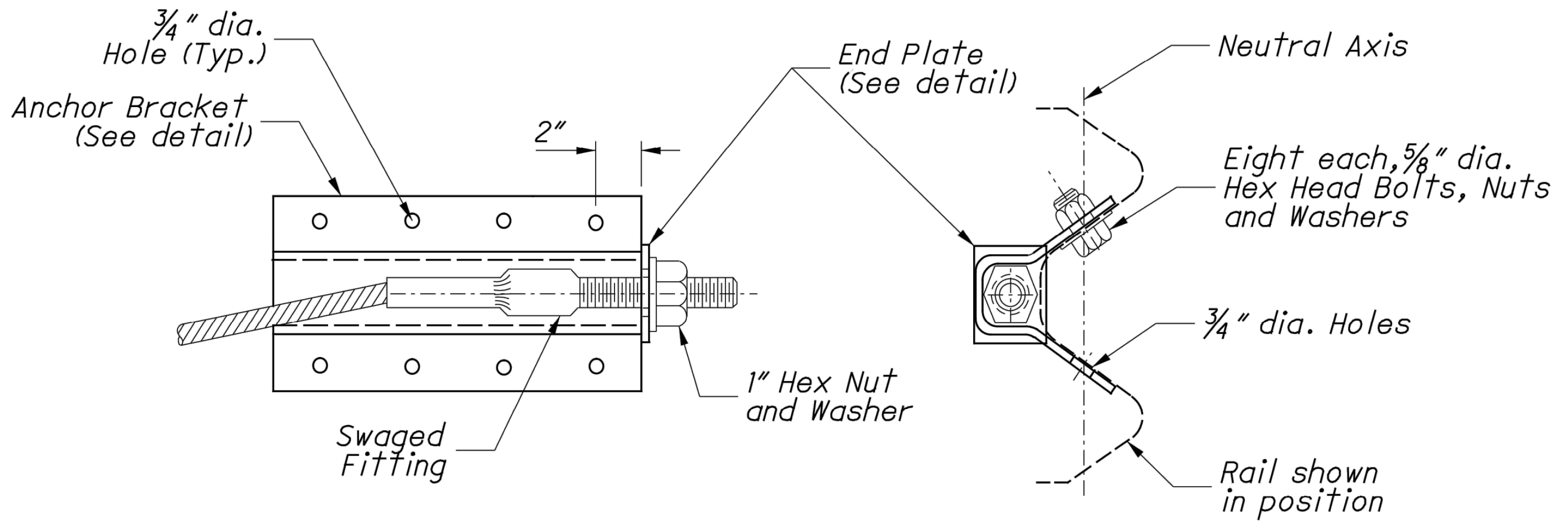


STANDARD SWAGED FITTING AND STUD

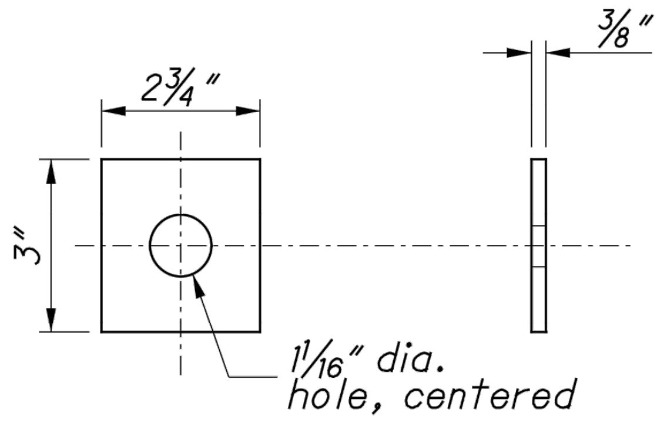
CABLE ANCHOR



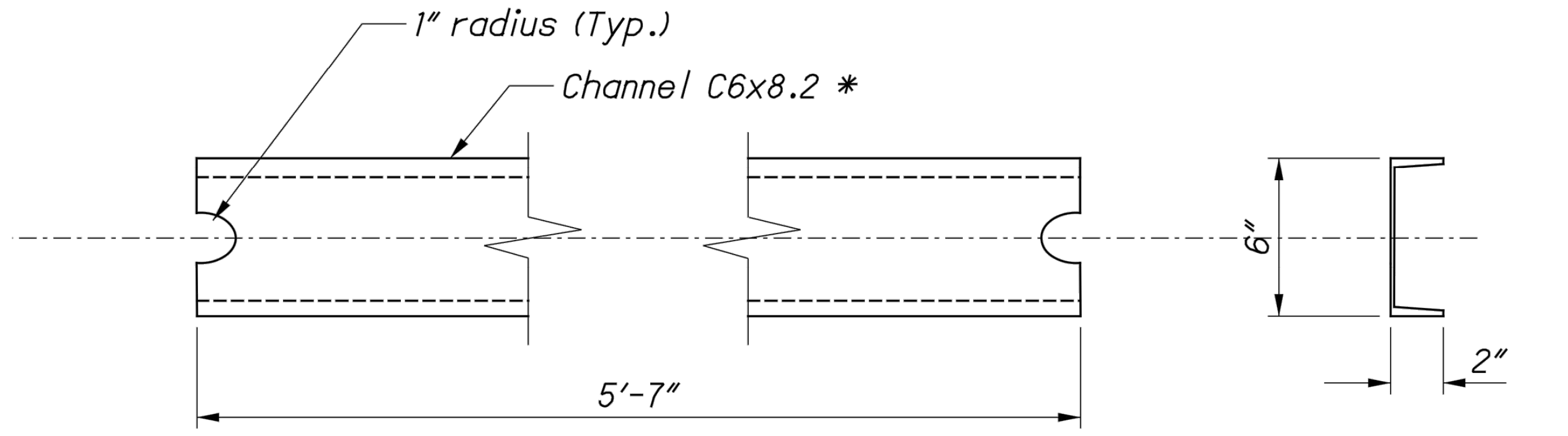
ANCHOR BRACKET



ANCHOR BRACKET ASSEMBLY DETAILS

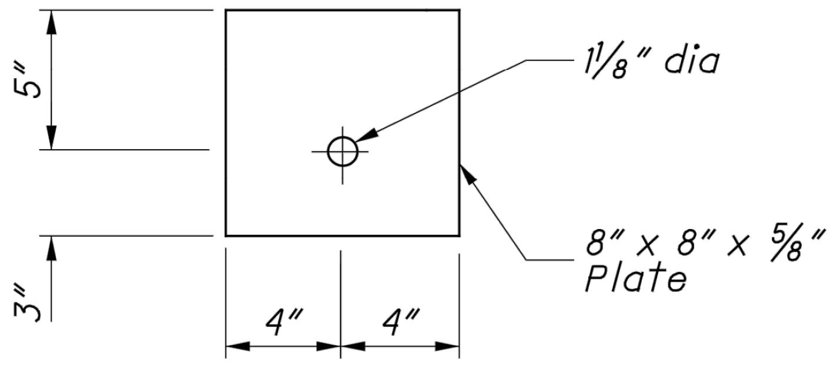


END PLATE

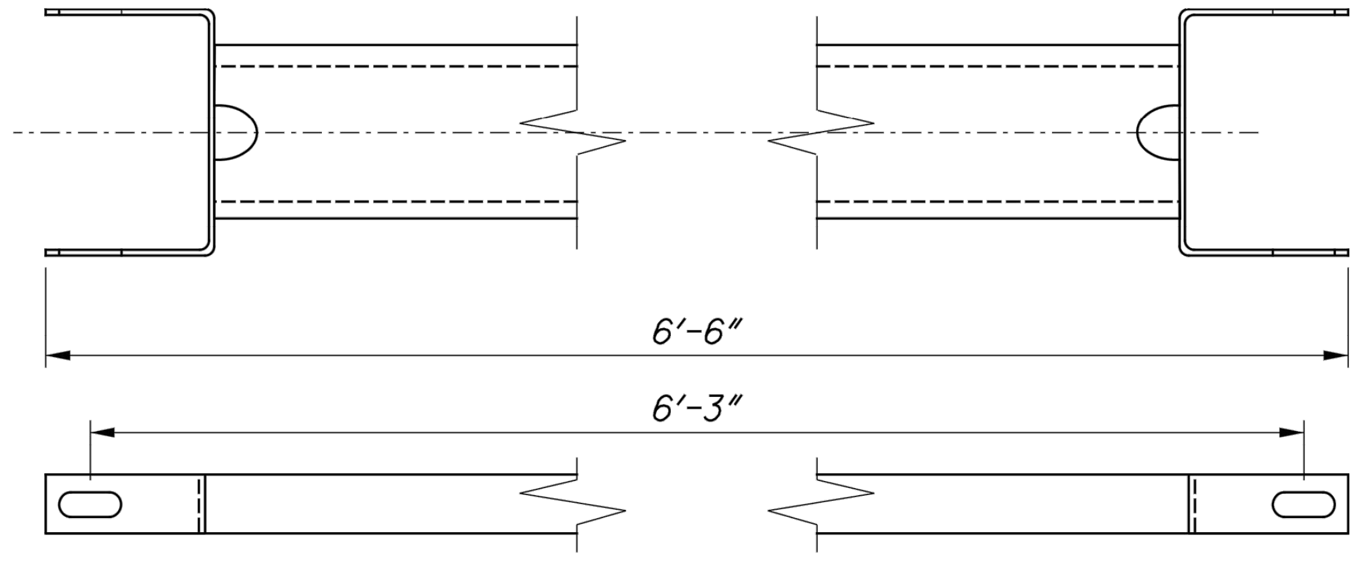


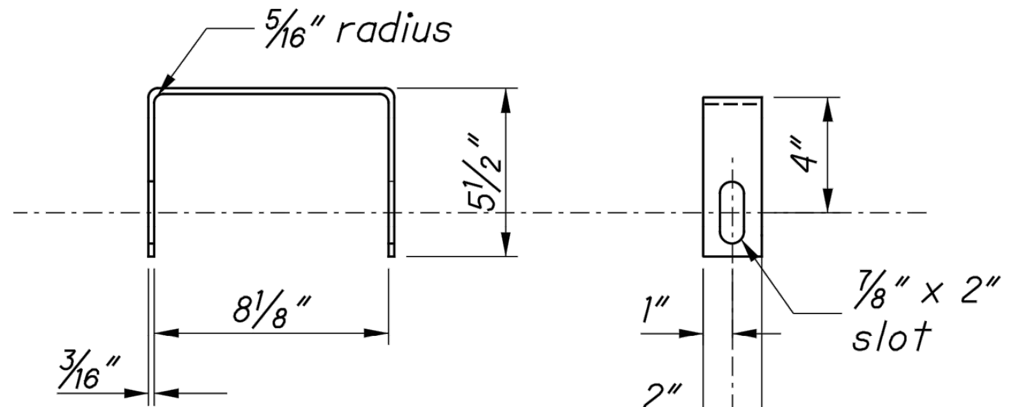
STRUT

* A 6″x3″ 10 Gauge Bent Plate Strut
may be substituted for the C-Channel



BEARING PLATE





YOKE

Two required in Assembly

Channel legs shown down. For opposite hand, install Channel legs up.

STRUT AND YOKE ASSEMBLY

REVISION DATE
7-16-2021

STATE OF OHIO DEPARTMENT OF
TRANSPORTATION ADMINISTRATOR
Brenton L. Bogard

STDS. ENGINEER
D. Fisher

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING

MIDWEST GUARDRAIL SYSTEM GUARDRAIL DETAILS (Rail Components)

SCD NUMBER
MGS-1.1

3 / 3

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

Northeast Ohio Regional Sewer District

REV NO	DATE	ISSUED BY	REMARKS

PRELIMINARY
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PLAN SET DATE
OCTOBER 2022

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
ISSUED DATE:

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

CIVIL DETAILS

WARNING
0 1/2 1
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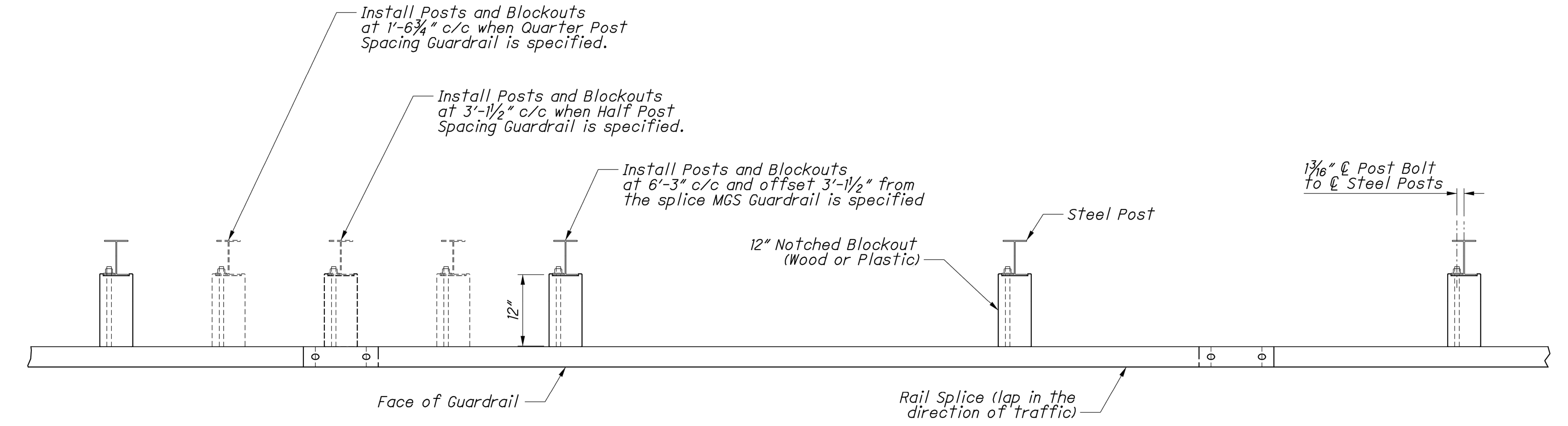
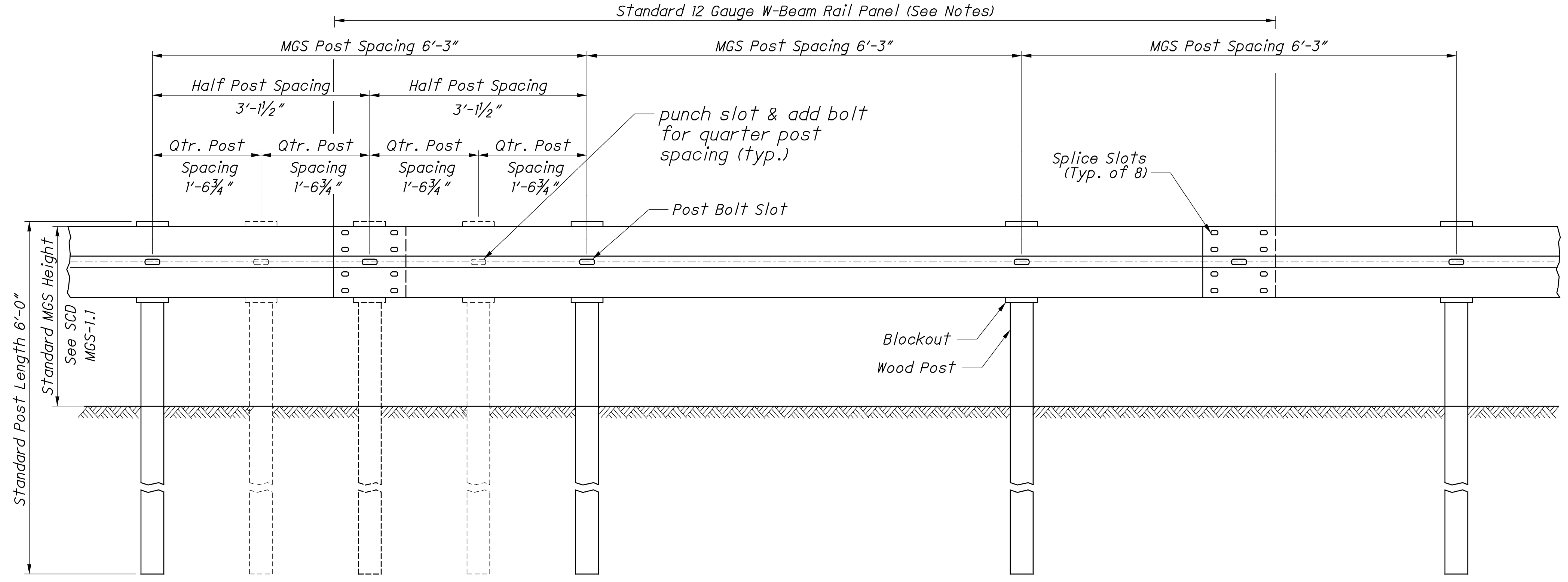
PROJECT SET: 38 OF 49
C SHEET: 28 OF 30
SHEET NO.:

J:\20210275\Dwg\04Sheets\Plan\TO_06 – Vaughn Road (Brecksville)\ODOT Detail Sheets.dwg, Last Saved By: jboscarello, 8/15/2022 11:57 AM Last Printed By: Arden, Shawn, 10/6/2022 11:12 AM (No Xrefs)


Install Posts and Blockouts at 1'-6¾" c/c when Quarter Post Spacing Guardrail is specified.
Install Posts and Blockouts at 3'-1½" c/c when Half Post Spacing Guardrail is specified.
Install Posts and Blockouts at 6'-3" c/c and offset 3'-1½" from the splice MGS Guardrail is specified
12" Notched Blockout (Wood or Plastic)
Steel Post
1⁵⁄₁₆" ℄ Post Bolt to ℄ Steel Posts
12"
Face of Guardrail
Rail Splice (lap in the direction of traffic)

PLAN VIEW

(Steel Posts shown)



ELEVATION

(Wood Posts shown)

NOTES

RAIL: Use W-Beam rail meeting AASHTO M 180-12 Type II Class A, as specified in CMS 606. Either 13'-6½" long (12'-6" between splices) or 26'-½" long (25'-0" between splices) rail sections may be used.

POSTS: Posts may be constructed of wood or steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

Wood post shall be fabricated and pressure-treated for approved species as per CMS 710.12. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

See SCD MGS-1.1 for Standard Steel Posts.

All rectangular posts are 6'-0" long (+3", -0 tolerance) unless otherwise in the Contract Document. Posts may be drilled holes or may be driven to grade. Embedment depth shall be 37" when using the round wooden post option.

BLOCKOUTS: Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved Alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the Office of Roadway Engineering.

When terminating double-sided barrier guardrail with an impact attenuator, use reduced 8" deep blockouts on the last # posts on the barrier design to accomodate the narrower widths of the attenuators.

WASHERS: Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts. Beam washers are not to be used.

DELINEATION: For Barrier Reflectors see CMS 626.

MISCELLANEOUS: For other guardrail details, see SCD MGS-1.1.

PAYMENT: Guardrail is paid in feet per
ITEM 606 - Guardrail, Type MGS.
Half or Quarter Post Spacing Guardrail per
ITEM 606 - Guardrail, Type MGS Half Post Spacing
ITEM 606 - Guardrail, Type MGS Quarter Post Spacing

REVISION DATE
1-19-2018

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR
David L. Holstein

STDS. ENGINEER
D. Fisher

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING
MIDWEST GUARDRAIL SYSTEM, STANDARD TYPE MGS
Regular, Half, & Quarter Post Spacing

THIS DRAWING REPLACES MGS-2.1 DATED 7-19-2013

SCD NUMBER
MGS-2.1

1/2

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

Northeast Ohio Regional Sewer District

REV NO	DATE	ISSUED BY	REMARKS

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

PLAN SET DATE
OCTOBER 2022

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
ISSUED DATE:

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

CIVIL DETAILS

WARNING
0 1/2 1
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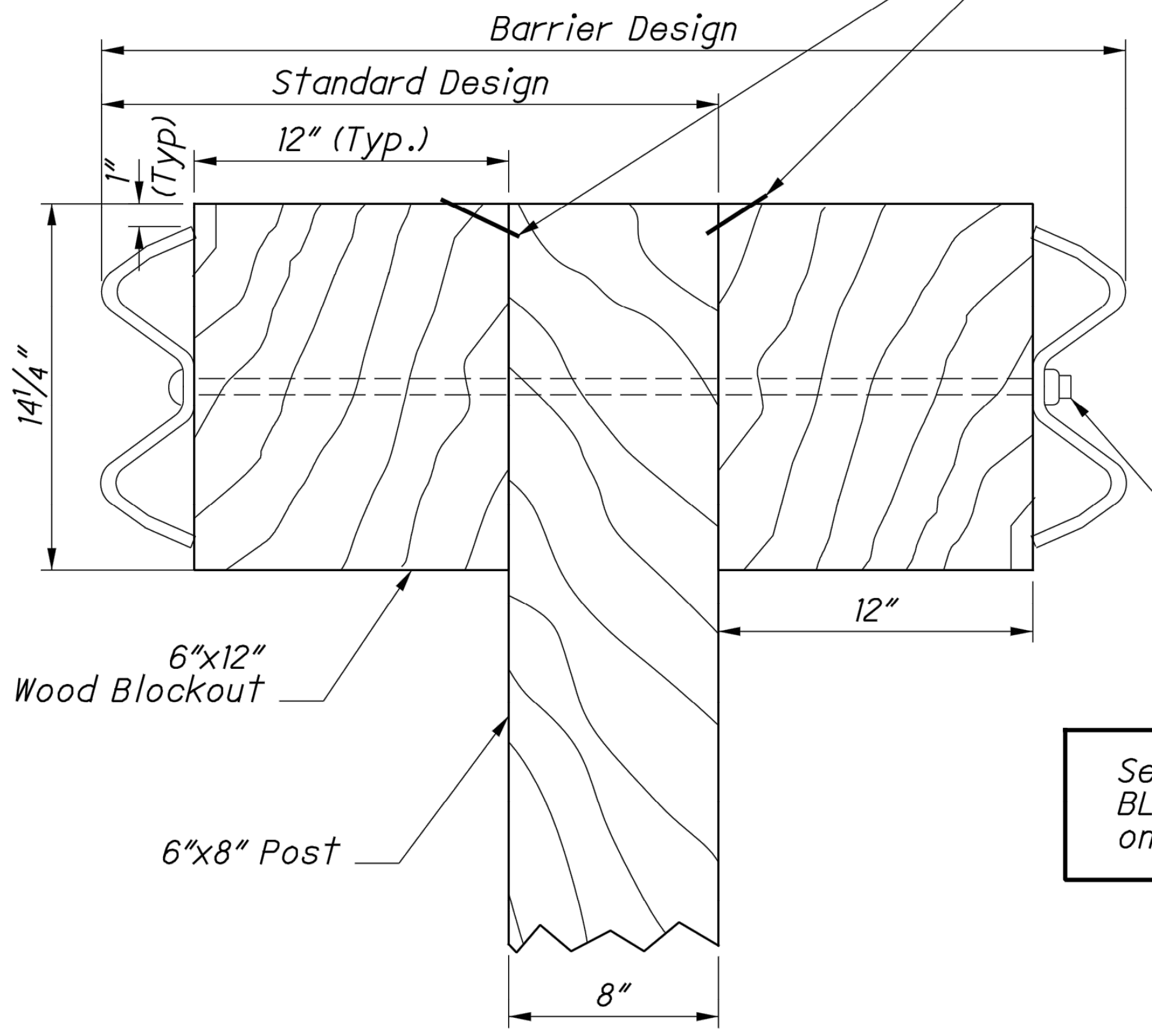
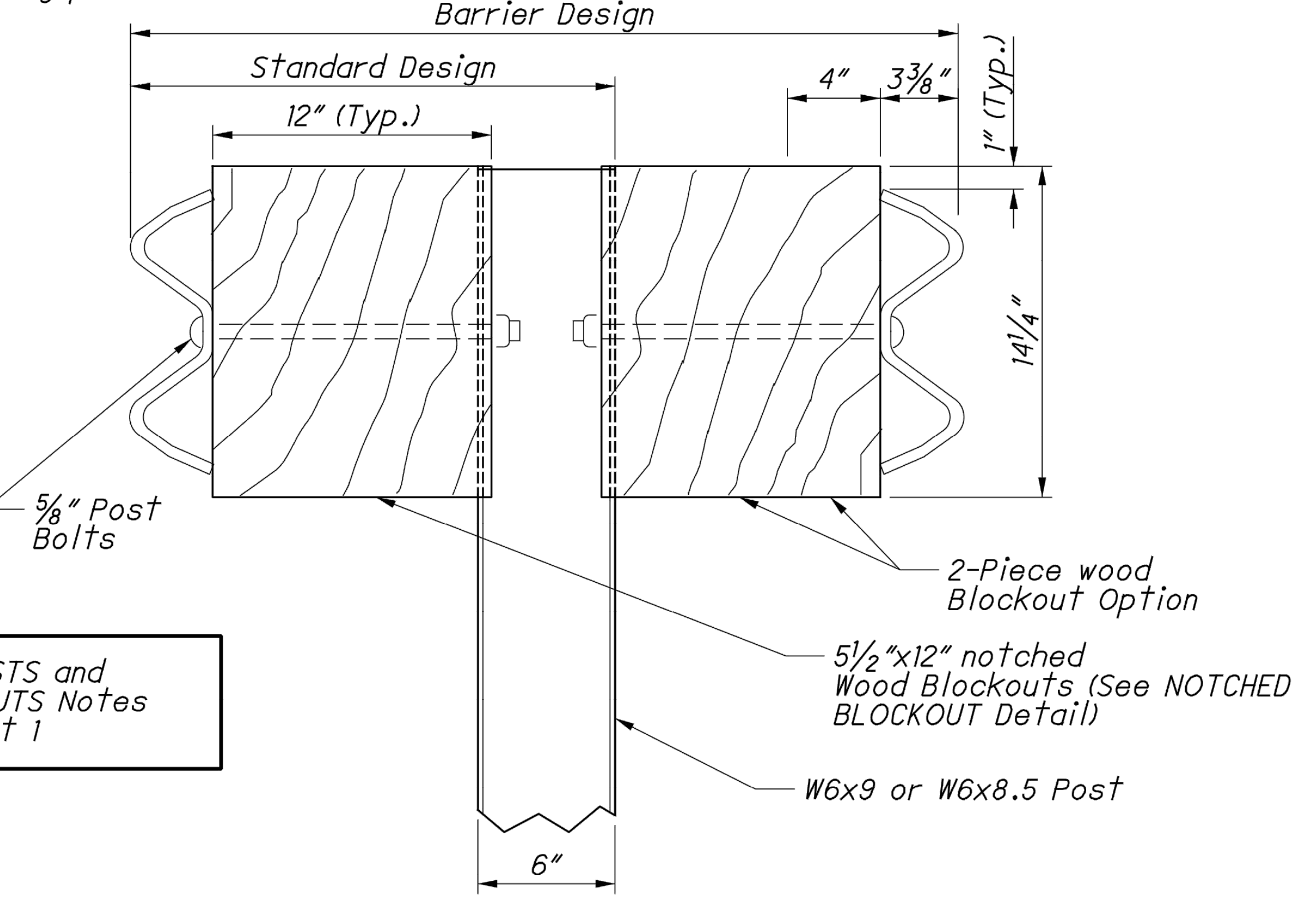
PROJECT SET: 39 OF 49
C SHEET: 29 OF 30
SHEET NO.:


10d Common Coated Nail to prevent blockout rotation (drive at center of Block and Post after installing post bolt).
Barrier Design
Standard Design
12″ (Typ.)
1″ (Typ)
14 1/4″
12″
6″x12″ Wood Blockout
6″x8″ Post
8″

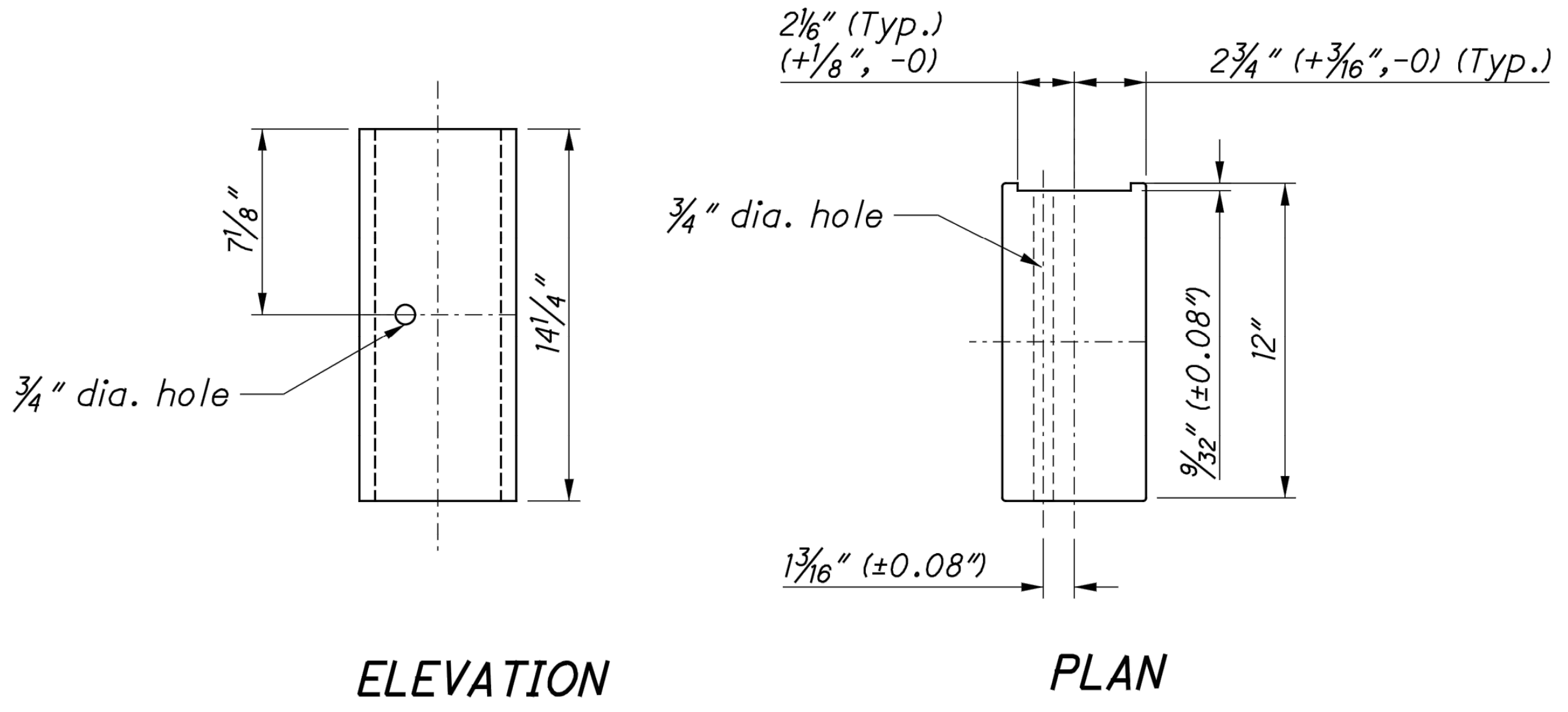
SQUARE WOOD POST

See POSTS and BLOCKOUTS Notes on Sheet 1



STEEL POST

See POSTS Note, Sheet 1

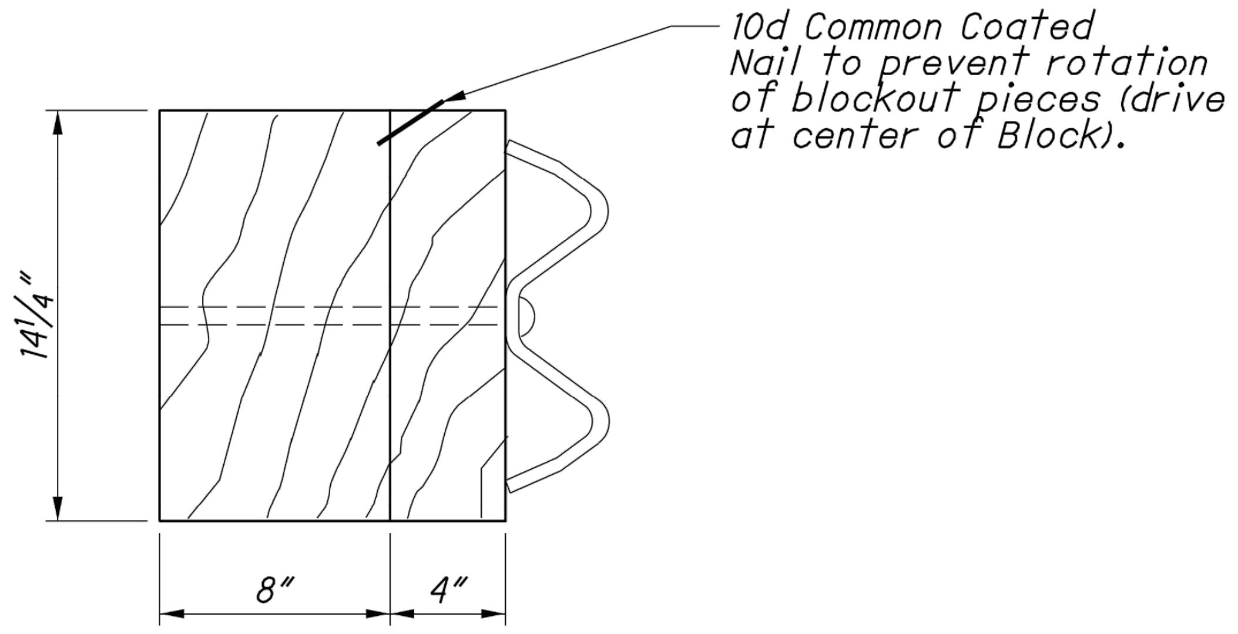


ELEVATION

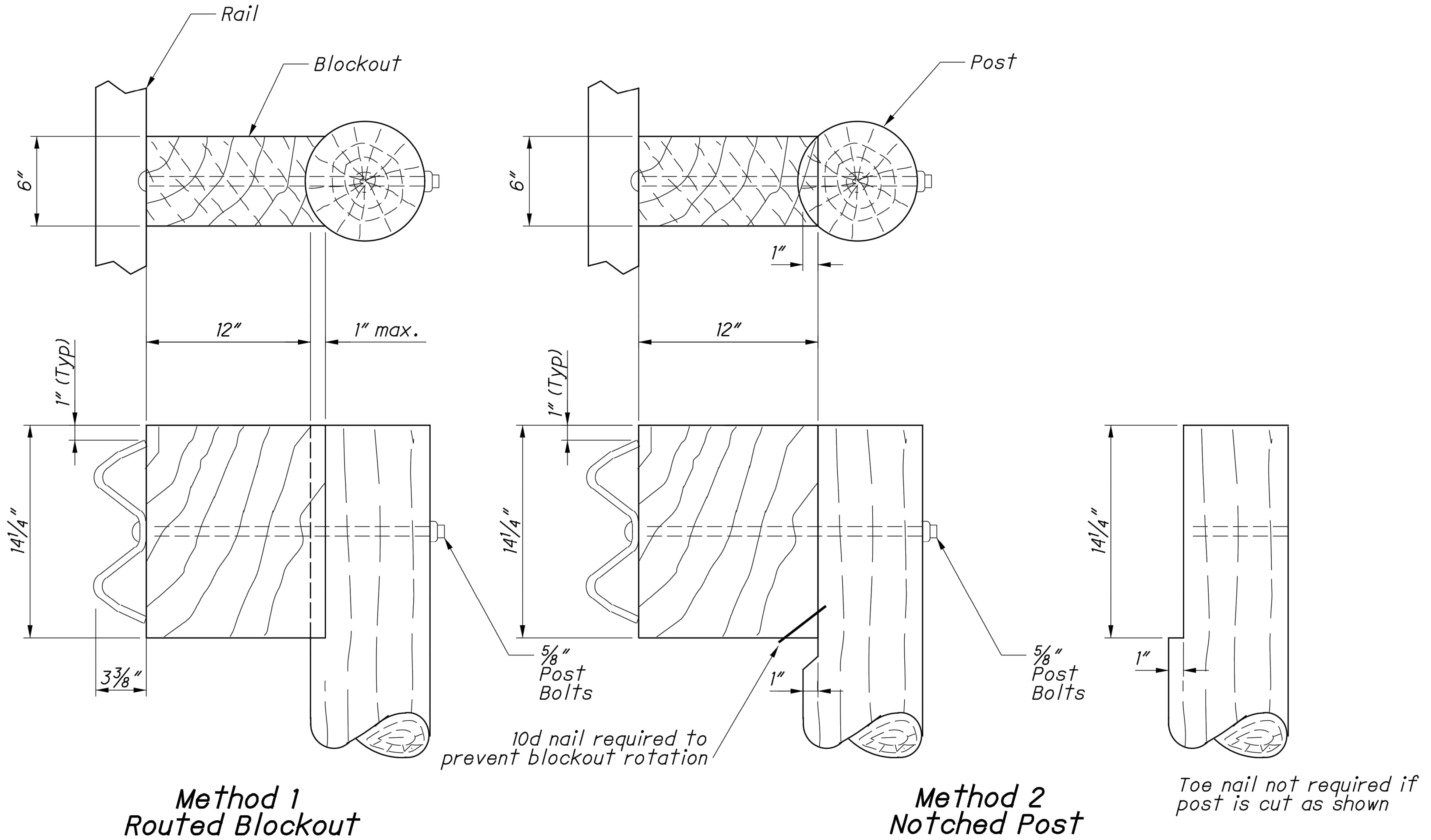
PLAN

NOTCHED BLOCKOUTS FOR STEEL POSTS

See BLOCKOUTS Note on Sheet 1


10d Common Coated Nail to prevent rotation of blockout pieces (drive at center of Block).
14 1/4″
8″
4″

TWO-PIECE WOOD BLOCKOUT OPTION



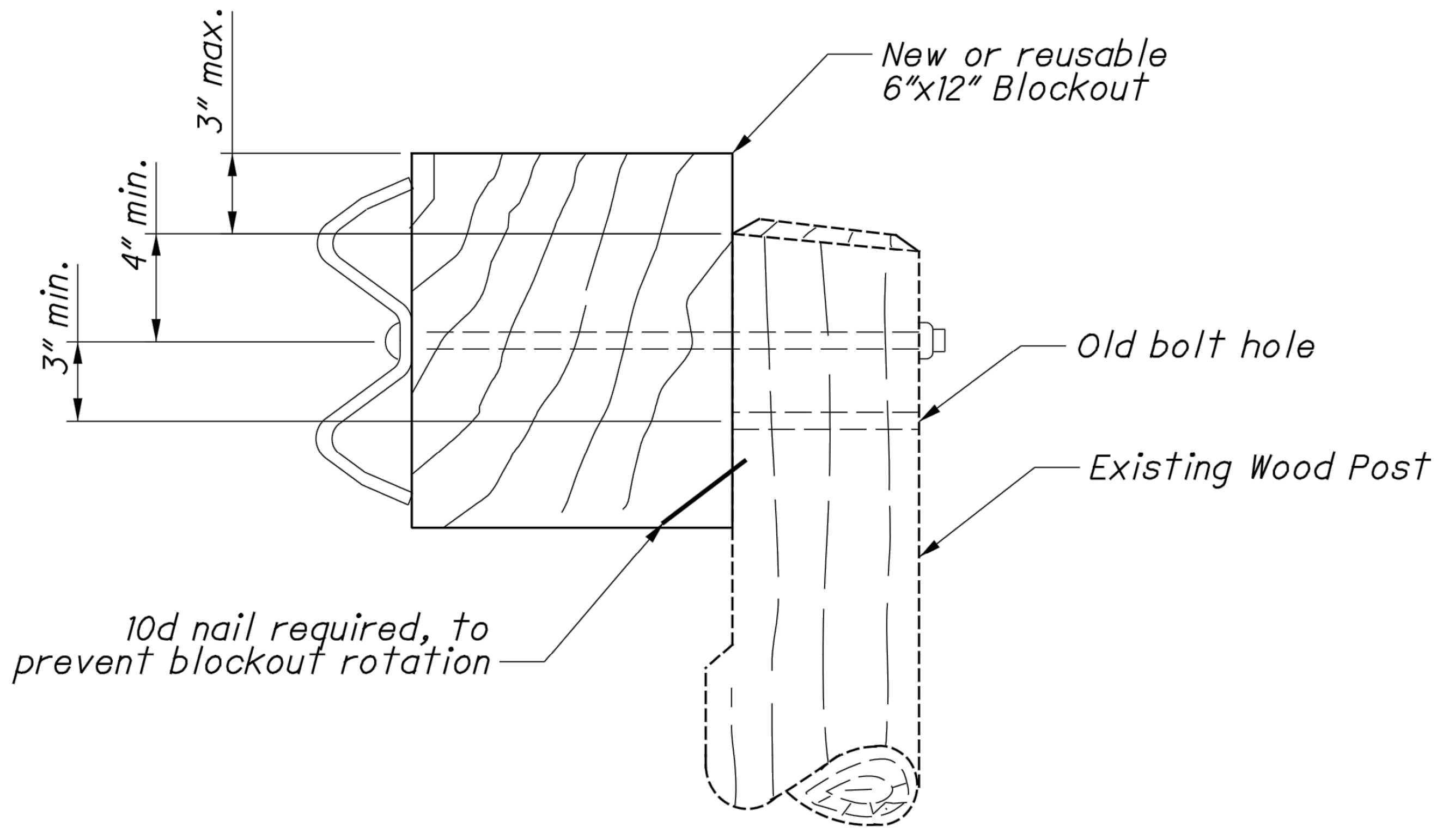
Method 1
Routed Blockout

Method 2
Notched Post

Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

ROUND WOOD POSTS

Single Sided runs only (Standard Design)


3″ max.
4″ min.
3″ min.
New or reusable 6″x12″ Blockout
Old bolt hole
Existing Wood Post
10d nail required, to prevent blockout rotation

RAISING EXISTING GUARDRAIL HEIGHT

REVISION DATE
1-19-2018

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR
David L. Holstein

STDS. ENGINEER
D. Fisher

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING
MIDWEST GUARDRAIL SYSTEM,
STANDARD TYPE MGS
Regular, Half, & Quarter Post Spacing

THIS DRAWING REPLACES MGS-2.1 DATED 7-19-2013

SCD NUMBER
MGS-2.1

2/2

J:\20210275\Dwg\04Sheets\Plan\TO_06 – Vaughn Road (Brecksville)\ODOT Detail Sheets.dwg Last Saved By: jboscarello, 8/15/2022 11:57 AM Last Printed By: Arden, Shawn, 10/6/2022 11:12 AM (No Xrefs)

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PROJECT 1641

CIVIL DETAILS

WARNING
0 1/2 1
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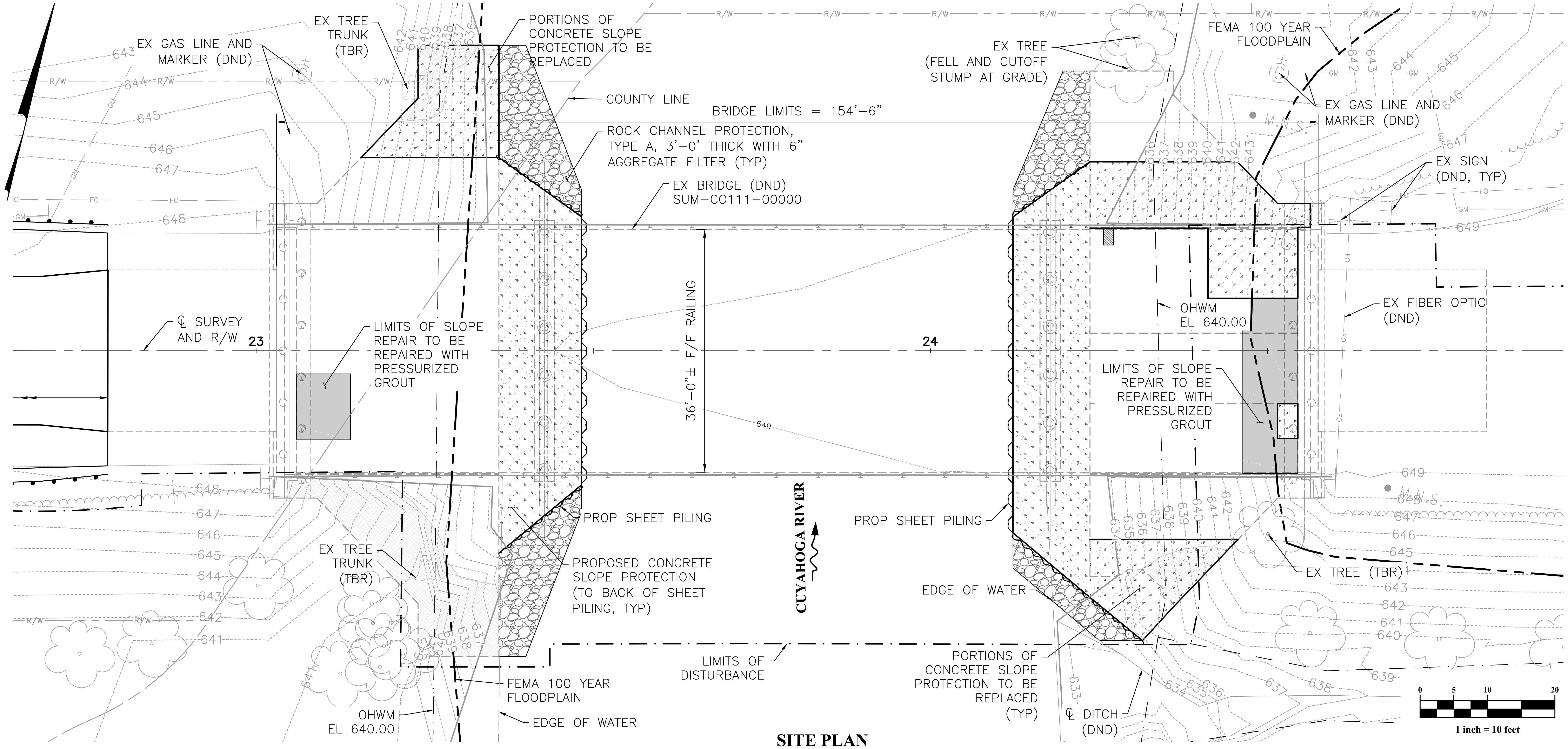
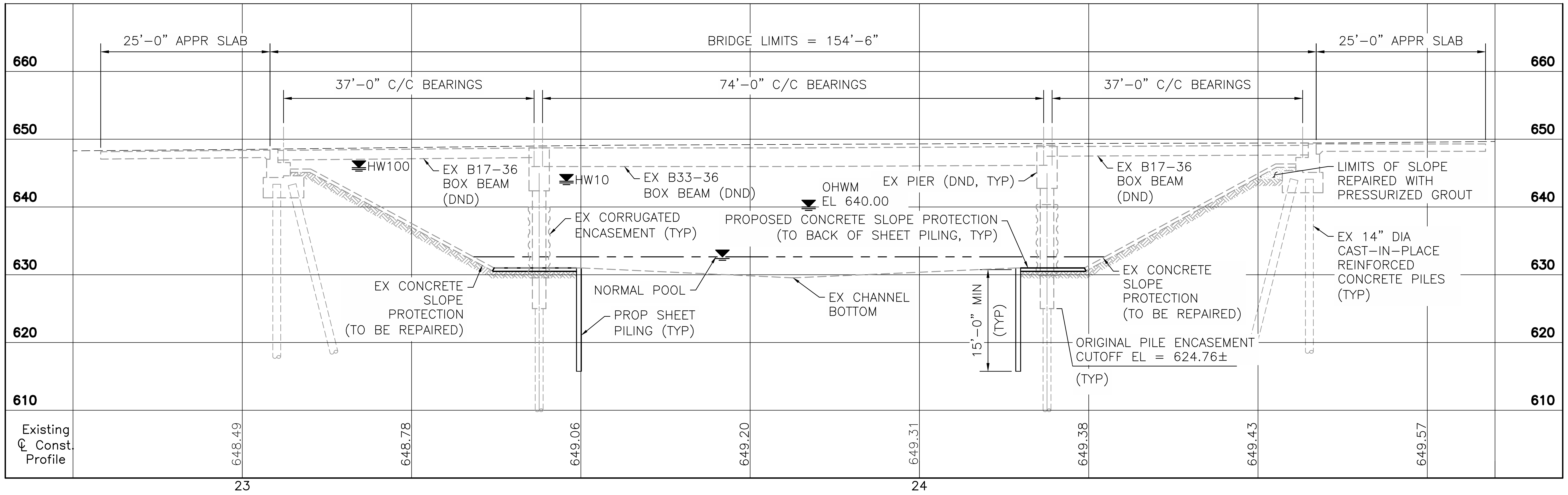
PROJECT SET: 40 OF 49
C SHEET: 30 OF 30
SHEET NO.:


EX GAS LINE AND MARKER (DND)
EX TREE TRUNK (TBR)
PORTIONS OF CONCRETE SLOPE PROTECTION TO BE REPLACED
COUNTY LINE
BRIDGE LIMITS = 154'-6"
ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER (TYP)
EX BRIDGE (DND) SUM-CO111-00000
EX TREE (FELL AND CUTOFF STUMP AT GRADE)
FEMA 100 YEAR FLOODPLAIN
EX GAS LINE AND MARKER (DND)
EX SIGN (DND, TYP)
℄ SURVEY AND R/W
23
LIMITS OF SLOPE REPAIR TO BE REPAIRED WITH PRESSURIZED GROUT
36'-0" ± F/F RAILING
24
OHWM EL 640.00
EX FIBER OPTIC (DND)
LIMITS OF SLOPE REPAIR TO BE REPAIRED WITH PRESSURIZED GROUT
PROP SHEET PILING
CUYAHOGA RIVER
PROP SHEET PILING
EX TREE TRUNK (TBR)
PROPOSED CONCRETE SLOPE PROTECTION (TO BACK OF SHEET PILING, TYP)
EDGE OF WATER
EX TREE (TBR)
LIMITS OF DISTURBANCE
PORTIONS OF CONCRETE SLOPE PROTECTION TO BE REPLACED (TYP)
FEMA 100 YEAR FLOODPLAIN
OHWM EL 640.00
EDGE OF WATER
℄ DITCH (DND)
0 5 10 20
1 inch = 10 feet

SITE PLAN


660
650
640
630
620
610
25'-0" APPR SLAB
BRIDGE LIMITS = 154'-6"
25'-0" APPR SLAB
37'-0" C/C BEARINGS
74'-0" C/C BEARINGS
37'-0" C/C BEARINGS
HW100
EX B17-36 BOX BEAM (DND)
HW10
EX B33-36 BOX BEAM (DND)
OHWM EL 640.00
EX PIER (DND, TYP)
EX B17-36 BOX BEAM (DND)
LIMITS OF SLOPE REPAIRED WITH PRESSURIZED GROUT
EX CORRUGATED ENCASEMENT (TYP)
PROPOSED CONCRETE SLOPE PROTECTION (TO BACK OF SHEET PILING, TYP)
EX 14" DIA CAST-IN-PLACE REINFORCED CONCRETE PILES (TYP)
EX CONCRETE SLOPE PROTECTION (TO BE REPAIRED)
NORMAL POOL
EX CHANNEL BOTTOM
15'-0" MIN (TYP)
EX CONCRETE SLOPE PROTECTION (TO BE REPAIRED)
PROP SHEET PILING (TYP)
ORIGINAL PILE ENCASEMENT CUTOFF EL = 624.76± (TYP)
Existing ℄ Const. Profile
648.49
648.78
649.06
649.20
649.31
649.38
649.43
649.57
23
24

PROFILE

BENCH MARK	ELEV (NAVD 88)	DESCRIPTION
BM #102	644.77	1" DIAMETER IRON IN MONUMENT BOX IN CENTER OF VAUGHN ROAD APPROXIMATELY 40 FEET FROM SPEED LIMIT SIGN ON SOUTH SIDE OF ROAD BEFORE GOING EAST OVER CUYAHOGA RIVER BRIDGE
BM #103	649.87	½" DIAMETER IRON PIN WITH RED CAP ON NORTH SIDE OF VAUGHN ROAD APPROXIMATELY 185 FEET FROM WEIGHT LIMIT SIGN ON NORTH SIDE OF ROAD BEFORE GOING WEST OVER CUYAHOGA RIVER BRIDGE

FOR ADDITIONAL BENCHMARK INFORMATION, SEE PLAN SHEET G-1-06.

TRAFFIC DATA

ADT (2021) = 2425　ADTT (2021) = 20
DIRECTIONAL DISTRIBUTION = 52%

HYDRAULIC DATA

DRAINAGE AREA = 555 SQ. MILES
Q(10) = 14,100 CFS　V(10) = 11.9 FPS　HW(10) = 643.8
Q(100) = 22,200 CFS　V(100) = 13.3 FPS　HW(100) = 645.8

TYPE: THREE SPAN PRESTRESSED CONCRETE BOX BEAM WITH ASPHALT WEARING SURFACE SUPPORTED ON REINFORCED CONCRETE CAPPED PILE ABUTMENTS AND CAP AND COLUMN PIERS

SPANS: 37'-0"-74'-0"-37'-0" C/C BRGS

ROADWAY: 36'-0" F/F OF RAILING

LOADING: S15-60

SKEW: NONE

APPROACH SLAB: 25'-0"

ALIGNMENT: TANGENT

CROWN: NORMAL

COORDINATES: LATITUDE: N 41°17'18"　LONGITUDE: W 81°33'54"

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PROJECT 1641

BRIDGE SITE PLAN AND PROFILE

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT SET: 41 OF 49
S SHEET: 1 OF 6
SHEET NO.:

GENERAL NOTES

DESIGN SPECIFICATIONS:

DESIGN SPECIFICATIONS: THE STRUCTURE CONFORMS TO THE 9TH EDITION OF "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATIONS OF THE STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020

DESIGN DATA

CONCRETE CLASS C – MINIMUM COMPRESSIVE STRENGTH 4000 PSI

CONCRETE CLASS S – MINIMUM COMPRESSIVE STRENGTH 4500 PSI

REINFORCING STEEL – MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL, SHEET PILING – ASTM A572, MINIMUM YIELD STRENGTH 50 KSI

LOW STRENGTH MORTAR BACKFILL – REFER TO PROJECT SPECIFICATIONS FOR DESIGN DATA

PRESSURIZED GROUT – REFER TO PROJECT SPECIFICATIONS FOR DESIGN DATA

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE.

PORTIONS OF STRUCTURE REMOVED

ITEMS TO BE REMOVED INCLUDE ALL EXISTING SLOPE PROTECTION BEING REPLACED WITH NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS, AND/OR HOE–RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90–POUND CLASS.

SOUND THE CONCRETE TO DETERMINE THE LIMITS OF THE CONCRETE TO BE REMOVED AND COMPARE THESE LIMITS TO THE AREAS SHOWN IN THE PLANS. IF NEW AREAS ARE DISCOVERED OR IF THE DIMENSIONS OF THE PLAN AREAS INCREASE BY MORE THAN 25% IN ANY DIRECTION, DOCUMENT THE AREAS AND NOTIFY THE CONSTRUCTION SUPERVISOR FOR EVALUATION TWO WEEKS PRIOR TO REMOVAL.

COFFERDAMS AND EXCAVATION BRACING

THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESS FILL AND OR COFFERDAM SYSTEMS TO FACILITATE CONSTRUCTION.

THE SELECTED METHOD WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SUFFICIENT SITE ACCESS IS MAINTAINED THROUGHOUT CONSTRUCTION WHILE MAINTAINING ALL NECESSARY WATERWAY REQUIREMENTS.

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE OWNER FOR REVIEW AND APPROVAL. SHOP DRAWINGS SHALL DEPICT THE INTENDED PLAN FOR SITE ACCESS AND CONSTRUCTION STAGING.

AS THE WATER ELEVATION MAY VARY SIGNIFICANTLY THROUGHOUT THE YEAR THE CONTRACTOR IS ADVISED TO PERFORM WORK DURING LOW FLOW CONDITIONS TO MINIMIZE ACCESS FILL AND ENSURE PROPER IN–STREAM WORK CLEARANCE.

SHEET PILING LEFT IN PLACE

FURNISH AZ, NZ, PZ, OR PZC STEEL SHEET PILING WHICH MEETS THE FOLLOWING MINIMUM REQUIREMENTS:

GRADE OF STEEL – 50 KSI

ELASTIC SECTION MODULUS – 18.1 IN.^{3}/FT

PLASTIC SECTION MODULUS – 21.79 IN.^{3}/FT

MOMENT OF INERTIA – 84.38 IN.^{4}/FT

SHEET PILING SHALL BE DRIVEN IN SUCH A MANNER AS TO ENSURE INTERLOCKING THROUGHOUT THE ENTIRE LENGTH OF EACH SHEET PILE. THE SHEET PILES SHALL BE HELD IN PROPER ALIGNMENT DURING DRIVING BY MEANS OF ASSEMBLING FRAMES OR OTHER SUITABLE TEMPORARY GUIDE STRUCTURES. TEMPORARY GUIDE STRUCTURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR PURPOSE.

DRIVE SHEET PILES WITH A VARIATION OF ¼ INCH OR LESS PER FOOT FROM VERTICAL. DO NOT DAMAGE SHEET PILING WHILE ATTEMPTING TO CORRECT FOR MISALIGNMENT.

CUT OFF THE TOP OF SHEET PILING IN A CLEAN, STRAIGHT LINE BETWEEN THE ELEVATIONS SPECIFIED IN THE PLANS, AND AS APPROVED BY THE ENGINEER. THE LENGTH OF THE PILE CUT OFF SHALL BE SUFFICIENT TO PERMIT THE REMOVAL OF ALL DAMAGED MATERIAL. ANY IRREGULARITIES SHALL BE STRAIGHTENED OR CUT OFF BY GRINDING. DISPOSE OF CUT–OFFS NOT INCORPORATED INTO THE WORK PROPERLY.

REMOVE AND REPLACE, OR OTHERWISE CORRECT, SHEET PILES THAT THE ENGINEER DEEMS UNACCEPTABLE. SUBMIT DETAILS OF PLANNED CORRECTIONS TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE INITIATING ANY CORRECTIVE ACTION. ANY SHEET PILING RUPTURED IN THE INTERLOCK OR OTHERWISE DAMAGED DURING DRIVING SHALL BE PULLED AND REPLACED.

DURING SHEET PILE INSTALLATION THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE EXISTING BRIDGE TO REMAIN. SHEET PILING SHALL BE DRIVEN CLEAR OF THE EXISTING BRIDGE PILES TO ENSURE NO IMPACT IS ACHIEVED.

SHEET PILING INSTALLATION DOES NOT REQUIRE DEWATERING. CONTRACTOR SHALL INSTALL USING THEIR PREFERRED MEANS AND METHODS.

THE CONTRACTOR SHALL HAVE EXPERIENCE WITH ZERO CLEARANCE SHEET PILING INSTALLATION METHODS. PILE SPLICES SHALL BE INSTALLED PER THE CONTRACTORS DISCRETION AND SHALL MEET ALL THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

PATCHING OF CONCRETE SURFACES

THIS WORK CONSISTS OF PATCHING CONCRETE SURFACES. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PATCHING LIMITS SHOWN IN THE PLANS SHALL BE CONSIDERED APPROXIMATE. ACTUAL LIMITS SHALL BE VERIFIED IN THE FIELD JOINTLY BY THE CONTRACTOR AND OWNER VIA FIELD OBSERVATIONS AND SOUNDING.

PRIOR TO CONSTRUCTING THE REPAIRS, ALL REPAIR LOCATIONS SHALL BE IDENTIFIED AND DIMENSIONED (LENGTH X WIDTH) ON A PLAN SHEET AND SUBMITTED TO THE OWNER FOR APPROVAL. FINAL REPAIR LIMITS SHALL BE MARKED IN THE FIELD USING SPRAY PAINT.

PRESSURIZED GROUTING

THIS WORK CONSISTS OF FILLING VOIDED AREAS BELOW THE EXISTING SLAB WITH PRESSURIZED GROUT. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING MATERIAL, INSTALLATION, AND ASSOCIATED WORK.

CRACK SEALING

THIS WORK CONSISTS OF SEALING CRACKS WITH AN EPOXY INJECTED GROUT WHERE INDICATED IN THE PLANS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ABBREVIATION LEGEND

℄	– CENTERLINE
APPR	– APPROACH
C/C	– CENTER TO CENTER
DIA	– DIAMETER
DND	– DO NOT DISTURB
EX	– EXISTING
F/F	– FACE TO FACE
FWD	– FORWARD
MIN	– MINIMUM
OHWM	– ORDINARY HIGH WATER MARK
R/W	– RIGHT OF WAY
SF	– SQUARE FEET
TBR	– TO BE REMOVED
TYP	– TYPICAL

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

SLOPE REPAIR GENERAL NOTES

WARNING
0 1/2 1
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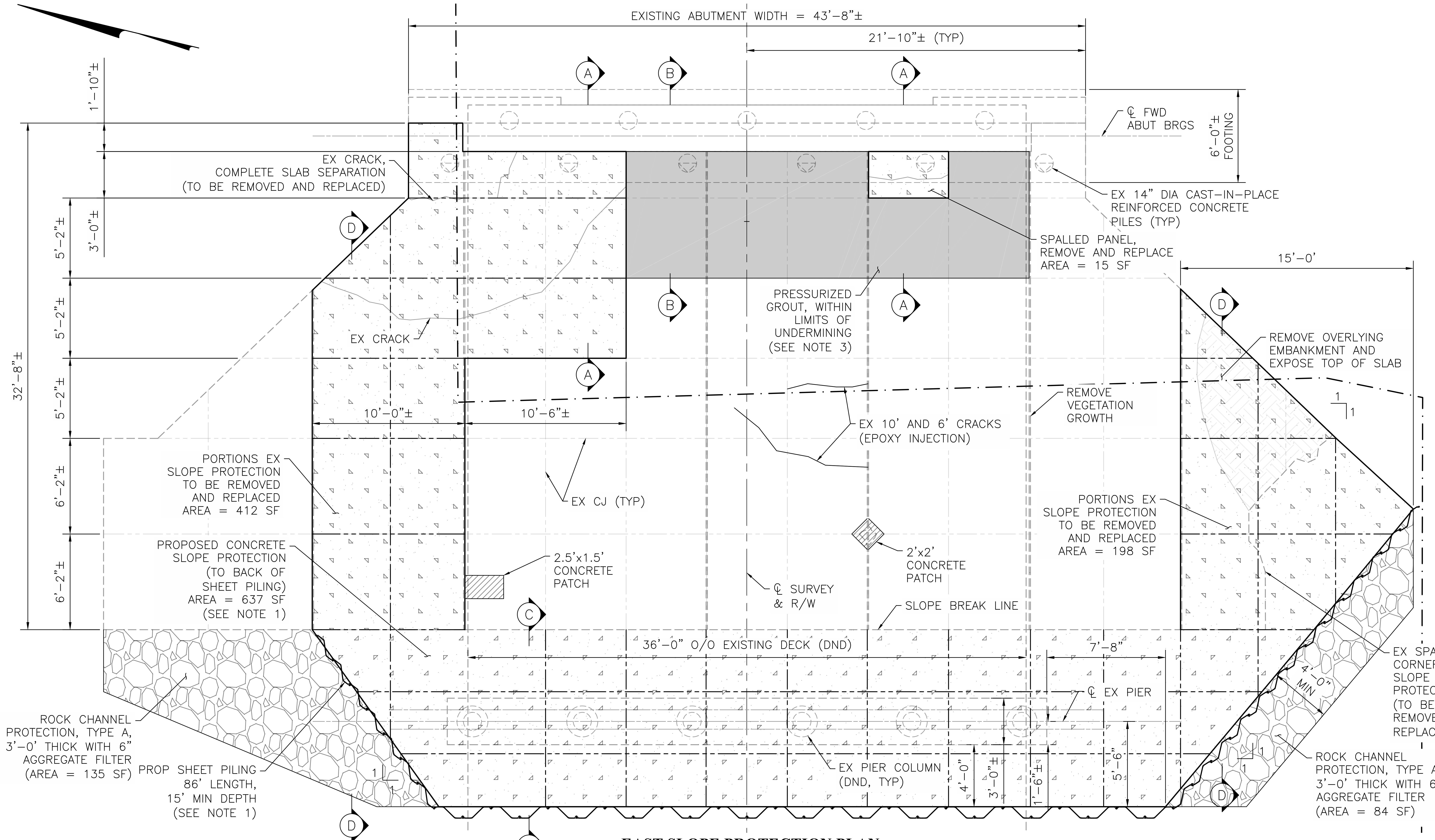
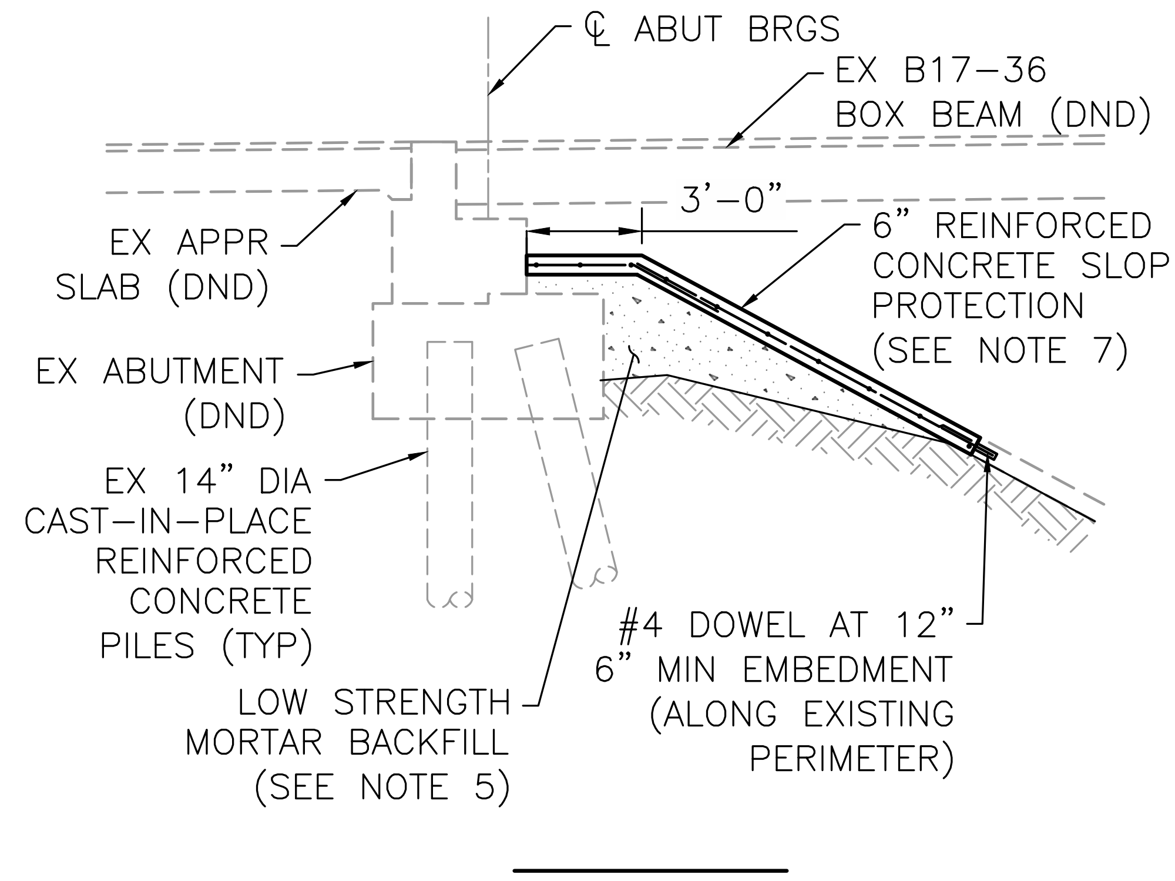
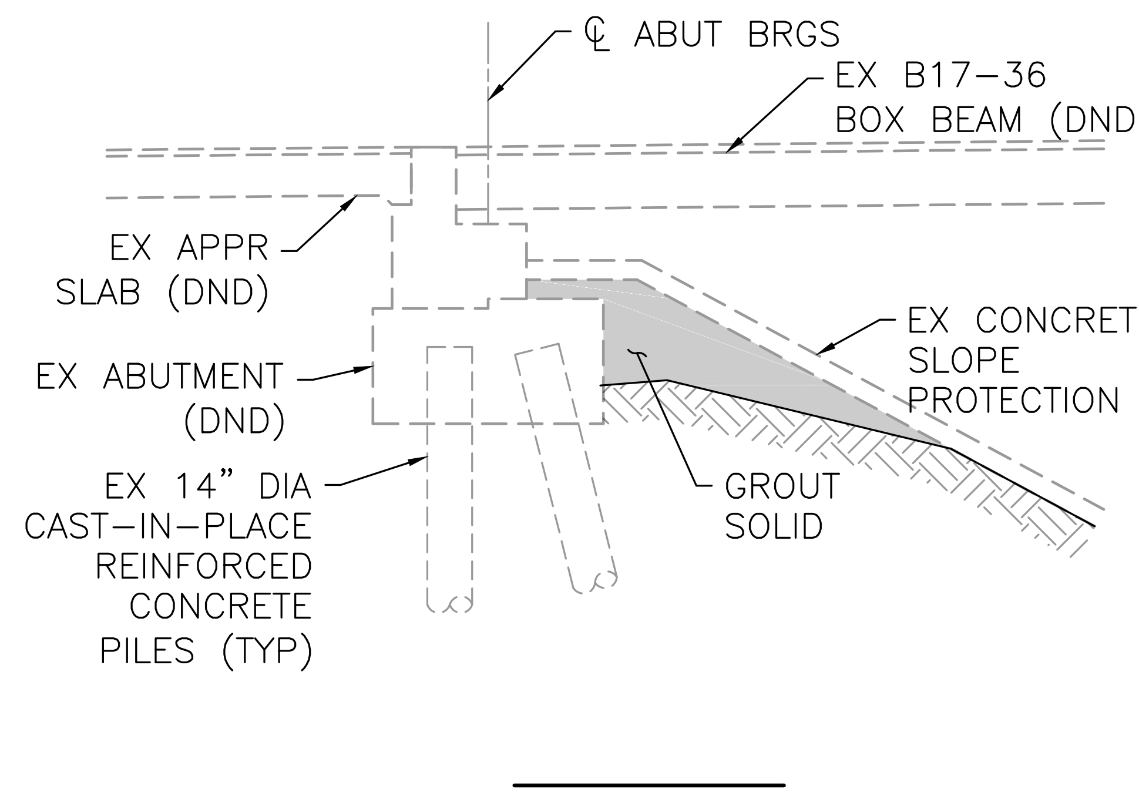
PROJECT SET: 42 OF 49
S SHEET: 2 OF 6
SHEET NO.:

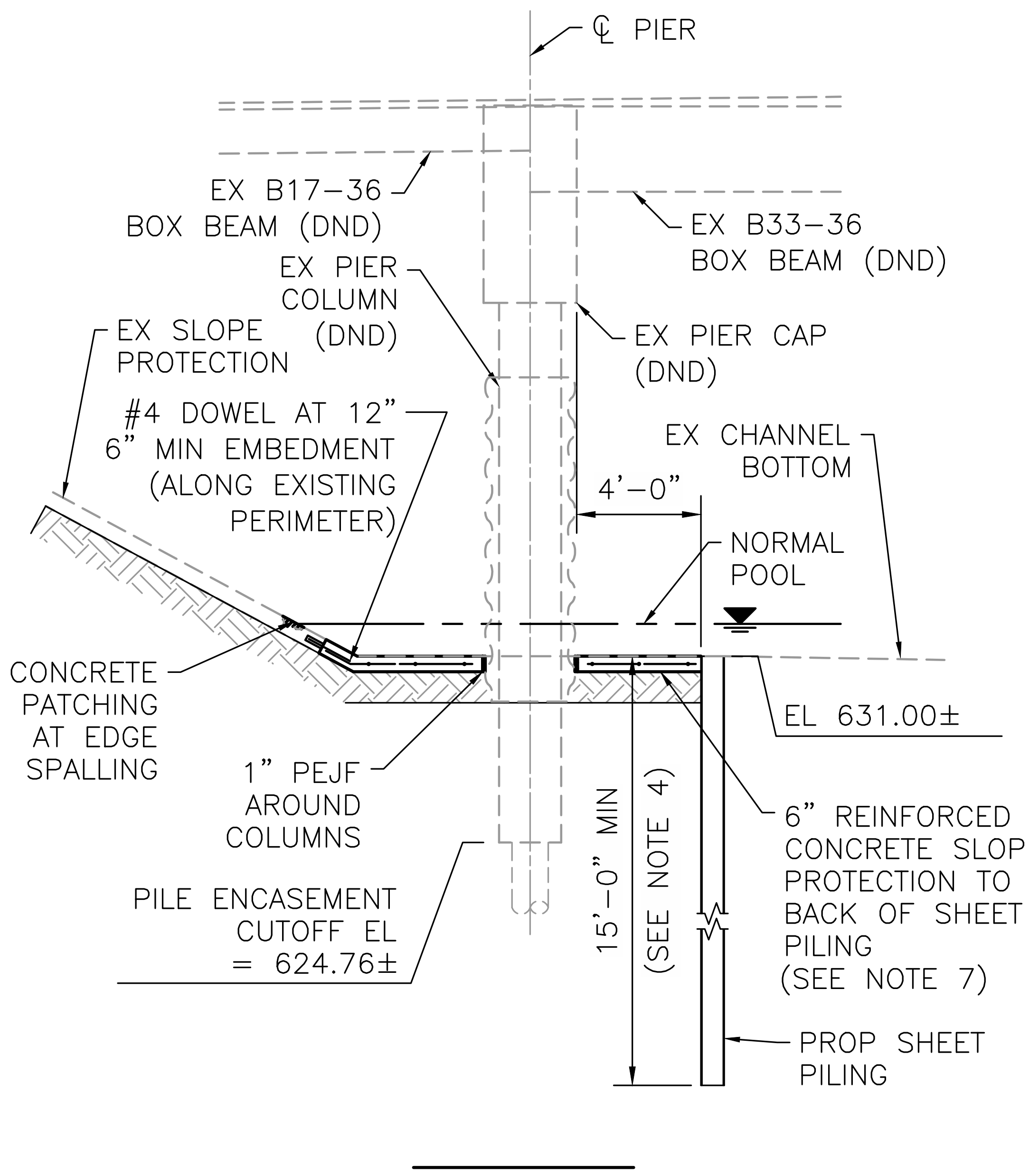

EXISTING ABUTMENT WIDTH = 43'-8"±
21'-10"± (TYP)
1'-10"±
3'-0"±
5'-2"±
5'-2"±
5'-2"±
6'-2"±
6'-2"±
32'-8"±
A
B
A
℄ FWD ABUT BRGS
6'-0"± FOOTING
EX CRACK, COMPLETE SLAB SEPARATION (TO BE REMOVED AND REPLACED)
EX 14" DIA CAST-IN-PLACE REINFORCED CONCRETE PILES (TYP)
SPALLED PANEL, REMOVE AND REPLACE AREA = 15 SF
D
15'-0"
B
A
PRESSURIZED GROUT, WITHIN LIMITS OF UNDERMINING (SEE NOTE 3)
D
EX CRACK
A
REMOVE OVERLYING EMBANKMENT AND EXPOSE TOP OF SLAB
REMOVE VEGETATION GROWTH
10'-0"±
10'-6"±
EX 10' AND 6' CRACKS (EPOXY INJECTION)
1
1
PORTIONS EX SLOPE PROTECTION TO BE REMOVED AND REPLACED AREA = 412 SF
EX CJ (TYP)
PORTIONS EX SLOPE PROTECTION TO BE REMOVED AND REPLACED AREA = 198 SF
PROPOSED CONCRETE SLOPE PROTECTION (TO BACK OF SHEET PILING) AREA = 637 SF (SEE NOTE 1)
2.5'x1.5' CONCRETE PATCH
2'x2' CONCRETE PATCH
℄ SURVEY & R/W
SLOPE BREAK LINE
C
36'-0" O/O EXISTING DECK (DND)
7'-8"
4'-0" MIN
EX SPALLED CORNER OF SLOPE PROTECTION (TO BE REMOVED AND REPLACED)
℄ EX PIER
ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER (AREA = 135 SF)
PROP SHEET PILING 86' LENGTH, 15' MIN DEPTH (SEE NOTE 1)
1
1
EX PIER COLUMN (DND, TYP)
4'-0"
3'-0"±
1'-6"±
5'-6"
1
1
ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER (AREA = 84 SF)
D
D
C

EAST SLOPE PROTECTION PLAN

(DIMENSIONS SHOWN ARE MEASURED ALONG THE SLOPED SURFACE)
NOT TO SCALE


℄ ABUT BRGS
EX B17-36 BOX BEAM (DND)
3'-0"
EX APPR SLAB (DND)
6" REINFORCED CONCRETE SLOPE PROTECTION (SEE NOTE 7)
EX ABUTMENT (DND)
EX 14" DIA CAST-IN-PLACE REINFORCED CONCRETE PILES (TYP)
#4 DOWEL AT 12" 6" MIN EMBEDMENT (ALONG EXISTING PERIMETER)
LOW STRENGTH MORTAR BACKFILL (SEE NOTE 5)


℄ ABUT BRGS
EX B17-36 BOX BEAM (DND)
EX APPR SLAB (DND)
EX CONCRETE SLOPE PROTECTION
EX ABUTMENT (DND)
EX 14" DIA CAST-IN-PLACE REINFORCED CONCRETE PILES (TYP)
GROUT SOLID



NOTES

1. SHEET PILING SHALL BE INSTALLED BY ZERO CLEARANCE METHODS BELOW THE EXISTING BRIDGE DECK TO REMAIN. PRIOR TO DRIVING SHEET PILING, CONFIRM LIMITS OF THE EXISTING CONCRETE SLOPE PROTECTION ALONG THE CHANNEL AND BELOW THE NORMAL POOL. ANY PARTIAL REMOVALS OF EXISTING SLOPE PROTECTION TO FACILITATE INSTALLATION SHALL BE INCIDENTAL TO THE SHEETING COST.
2. CLEAR ALL VEGETATION FROM SLAB JOINTS, AND PROVIDE EPOXY INJECTION ALONG ALL JOINTS THAT EXCEED A WIDTH OF 1/8".
3. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING PRESSURE GROUTING AND GROUT HOLE LOCATIONS.
4. DRIVE SHEET PILING A MINIMUM OF 15' UNLESS OTHERWISE APPROVED BY THE ENGINEER. MINIMUM SHEET PILE SECTION MODULUS SHALL BE 21.8 IN3/FT.
5. PLACE LOW STRENGTH MORTAR BACKFILL BELOW LIMITS OF THE CONCRETE SLOPE PROTECTION TO BE REMOVED AND REPLACED AND AS REQUIRED TO ACHIEVE A UNIFORM CHANNEL CROSS SECTION.
6. FOR SECTION D-D SEE SHEET S-1-04.
7. REINFORCED CONCRETE SLOPE PROTECTION SHALL PROVIDE A MINIMUM AREA OF STEEL, Ast = 0.20 IN2 PER FOOT IN EACH DIRECTION AND PLACE 3" CLEAR FROM THE BOTTOM OF SLAB. TOP OF SLAB AND SHEET PILING SHALL MATCH EXISTING CHANNEL BOTTOM.

LEGEND

▭ – LIMITS OF CONCRETE SLOPE PROTECTION REMOVAL AND REPLACEMENT

▒ – LIMITS OF PRESSURIZED GROUT

▨ – LIMITS OF PATCHING OF CONCRETE SURFACES

▦ – LIMITS OF ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER

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VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

EAST SLOPE PROTECTION REPAIR

WARNING
0 1/2 1
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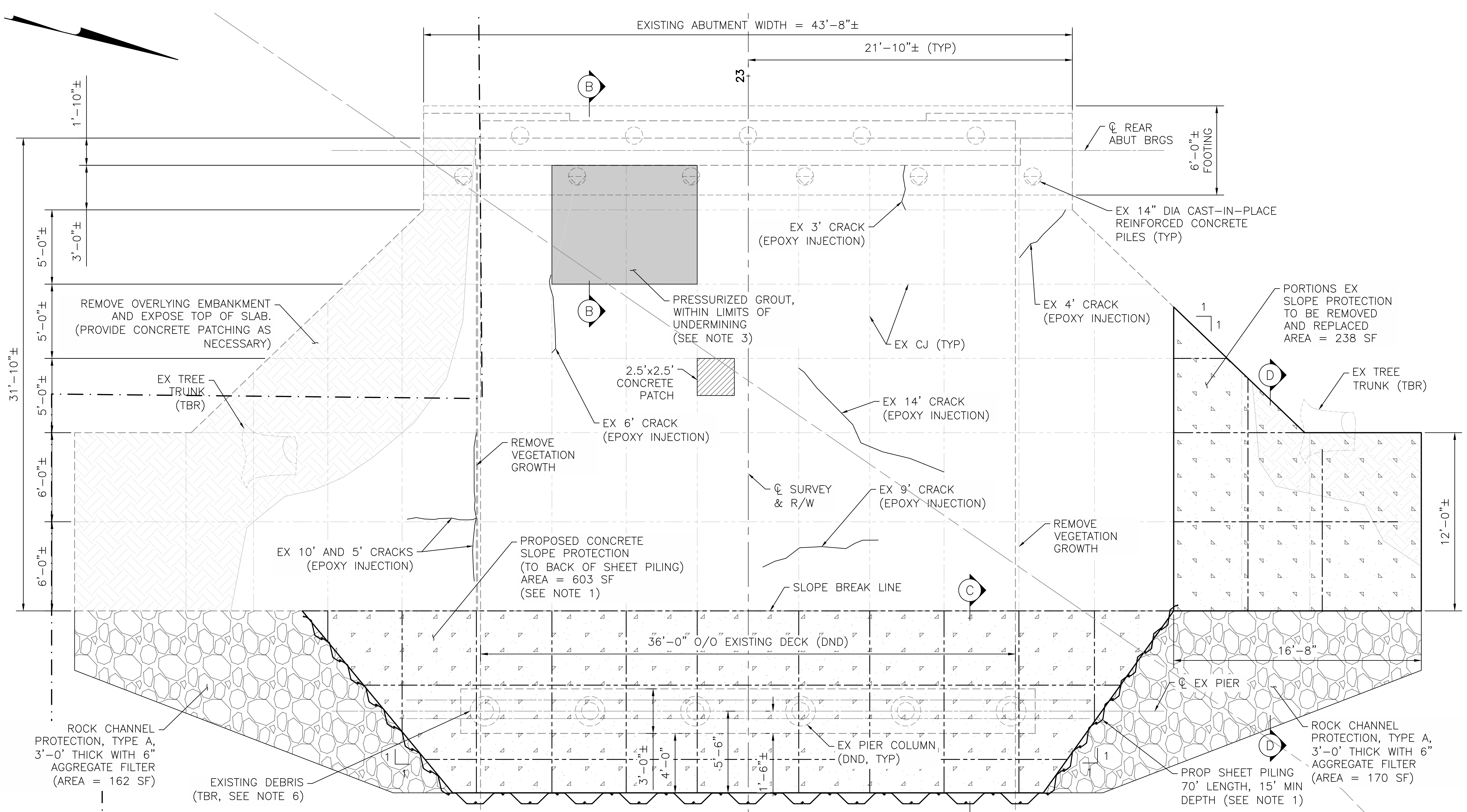
PROJECT SET: 43 OF 49

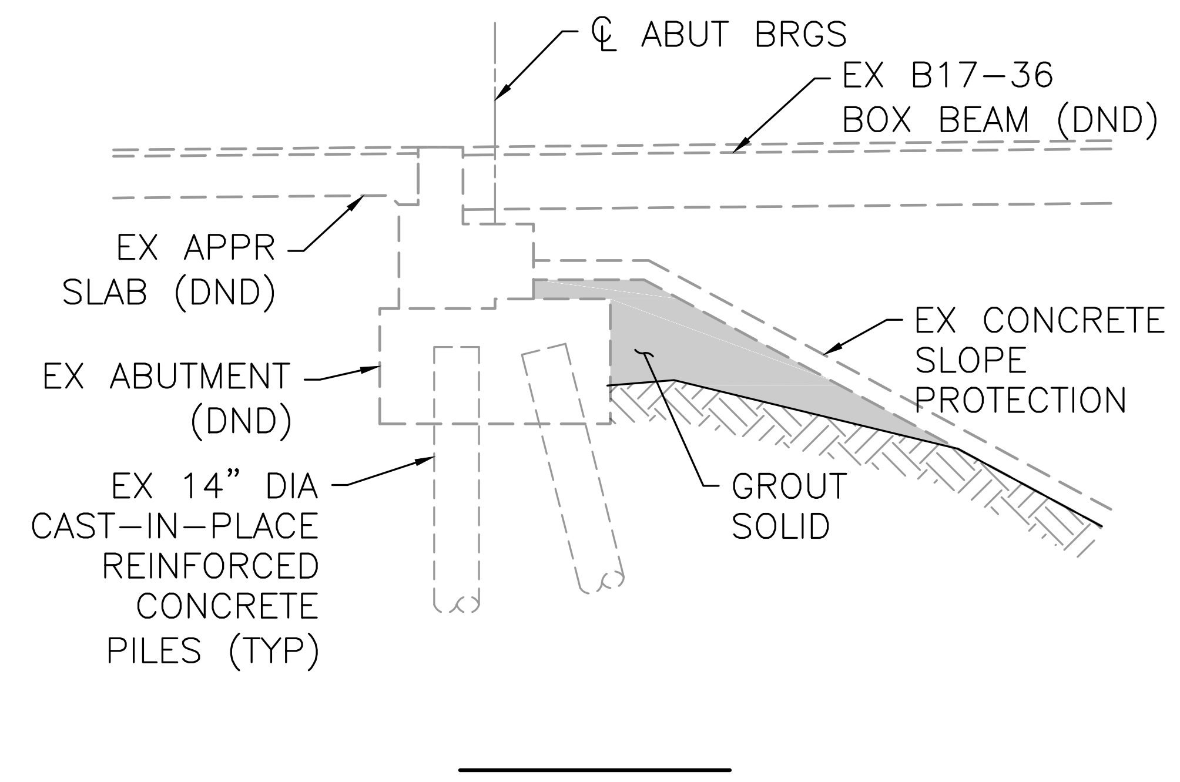
S SHEET: 3 OF 6

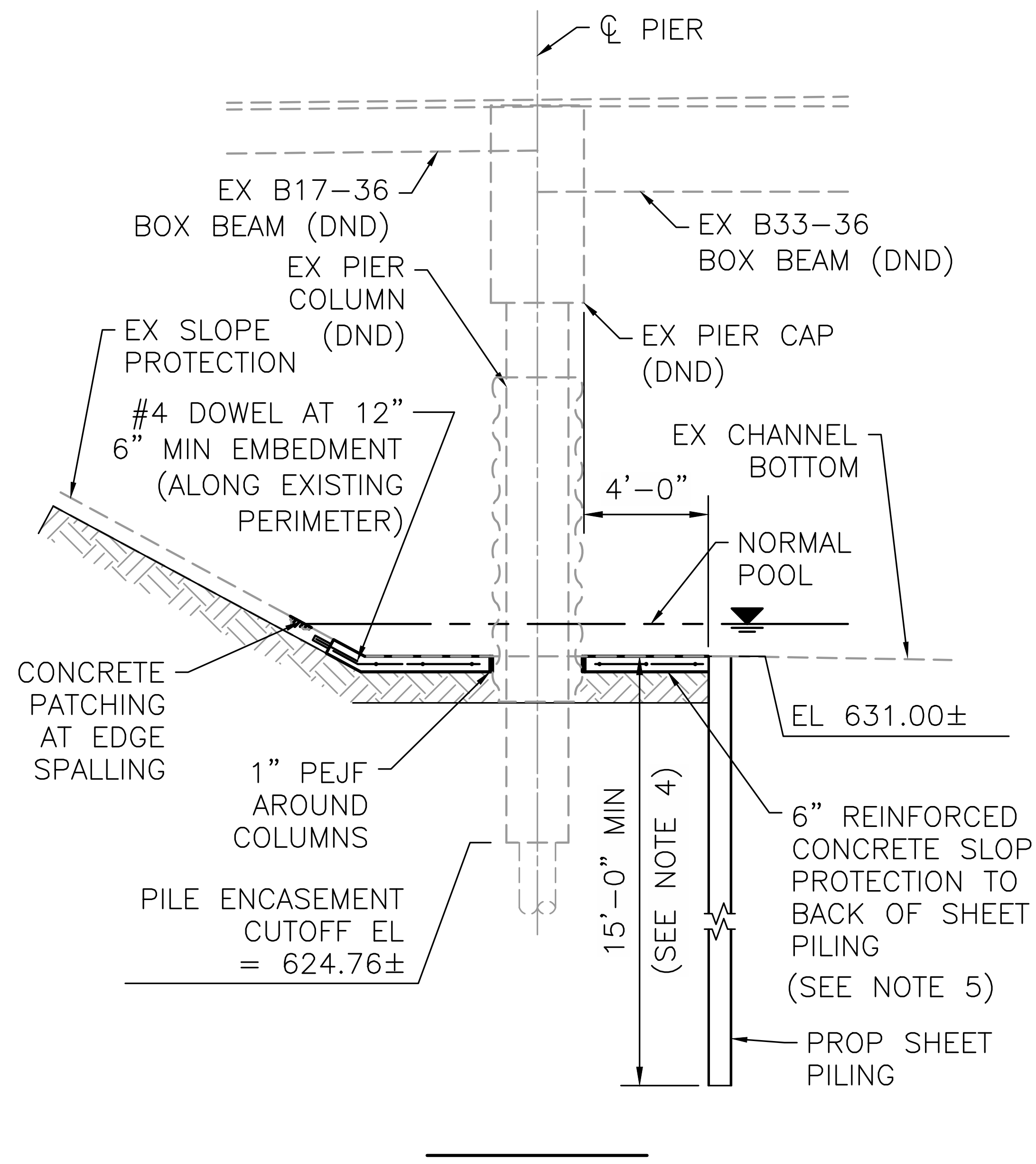
SHEET NO.:

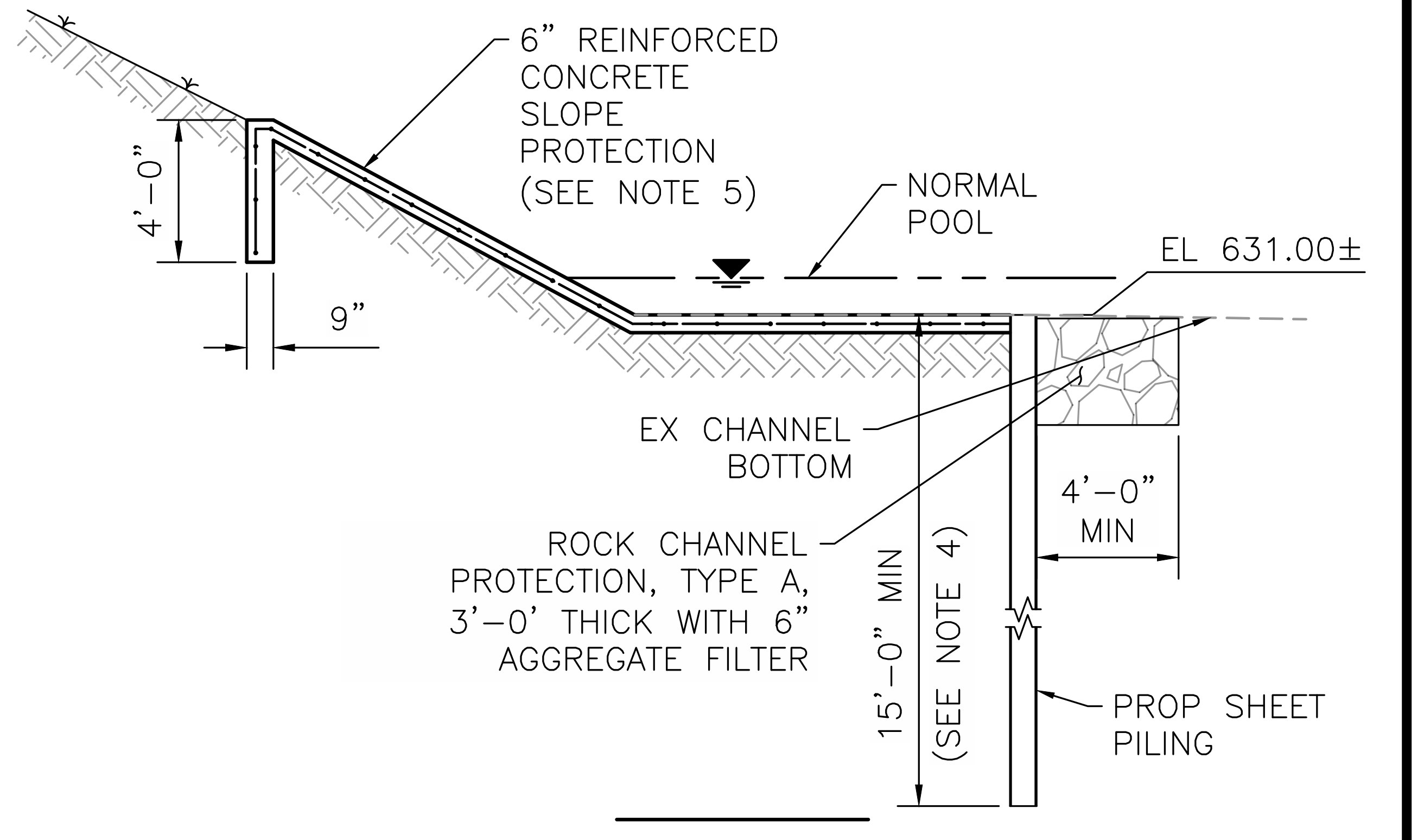

EXISTING ABUTMENT WIDTH = 43'-8"±
21'-10"± (TYP)
23
B
℄ REAR ABUT BRGS
6'-0"± FOOTING
1'-10"±
3'-0"±
5'-0"±
5'-0"±
5'-0"±
6'-0"±
6'-0"±
31'-10"±
EX 3' CRACK (EPOXY INJECTION)
EX 14" DIA CAST-IN-PLACE REINFORCED CONCRETE PILES (TYP)
REMOVE OVERLYING EMBANKMENT AND EXPOSE TOP OF SLAB. (PROVIDE CONCRETE PATCHING AS NECESSARY)
PRESSURIZED GROUT, WITHIN LIMITS OF UNDERMINING (SEE NOTE 3)
EX 4' CRACK (EPOXY INJECTION)
PORTIONS EX SLOPE PROTECTION TO BE REMOVED AND REPLACED AREA = 238 SF
1
1
EX CJ (TYP)
2.5'x2.5' CONCRETE PATCH
EX TREE TRUNK (TBR)
D
EX TREE TRUNK (TBR)
EX 14' CRACK (EPOXY INJECTION)
EX 6' CRACK (EPOXY INJECTION)
REMOVE VEGETATION GROWTH
℄ SURVEY & R/W
EX 9' CRACK (EPOXY INJECTION)
12'-0"±
REMOVE VEGETATION GROWTH
EX 10' AND 5' CRACKS (EPOXY INJECTION)
PROPOSED CONCRETE SLOPE PROTECTION (TO BACK OF SHEET PILING) AREA = 603 SF (SEE NOTE 1)
SLOPE BREAK LINE
C
36'-0" O/O EXISTING DECK (DND)
16'-8"
℄ EX PIER
EX PIER COLUMN (DND, TYP)
ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER (AREA = 162 SF)
EXISTING DEBRIS (TBR, SEE NOTE 6)
3'-0"±
4'-0"
5'-6"
1'-6"±
1
1
ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER (AREA = 170 SF)
D
PROP SHEET PILING 70' LENGTH, 15' MIN DEPTH (SEE NOTE 1)
C

WEST SLOPE PROTECTION PLAN

(DIMENSIONS SHOWN ARE MEASURED ALONG THE SLOPED SURFACE)
NOT TO SCALE


℄ ABUT BRGS
EX B17-36 BOX BEAM (DND)
EX APPR SLAB (DND)
EX CONCRETE SLOPE PROTECTION
EX ABUTMENT (DND)
GROUT SOLID
EX 14" DIA CAST-IN-PLACE REINFORCED CONCRETE PILES (TYP)




6" REINFORCED CONCRETE SLOPE PROTECTION (SEE NOTE 5)
4'-0"
NORMAL POOL
EL 631.00±
9"
EX CHANNEL BOTTOM
4'-0" MIN
ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER
15'-0" MIN (SEE NOTE 4)
PROP SHEET PILING

NOTES

1. SHEET PILING SHALL BE INSTALLED BY ZERO CLEARANCE METHODS BELOW THE EXISTING BRIDGE DECK TO REMAIN. PRIOR TO DRIVING SHEET PILING, CONFIRM LIMITS OF THE EXISTING CONCRETE SLOPE PROTECTION ALONG THE CHANNEL AND BELOW THE NORMAL POOL. ANY PARTIAL REMOVALS OF EXISTING SLOPE PROTECTION TO FACILITATE INSTALLATION SHALL BE INCIDENTAL TO THE SHEETING COST.

2. CLEAR ALL VEGETATION FROM SLAB JOINTS, AND PROVIDE AND PROVIDE EPOXY INJECTION ALONG ALL JOINTS THAT EXCEED A WIDTH OF 1/8".

3. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING PRESSURE GROUTING AND GROUT HOLE LOCATIONS.

4. DRIVE SHEET PILING A MINIMUM OF 15' UNLESS OTHERWISE APPROVED BY THE ENGINEER. MINIMUM SHEET PILE SECTION MODULUS SHALL BE 21.8 IN3/FT.

5. REINFORCED CONCRETE SLOPE PROTECTION SHALL PROVIDE A MINIMUM AREA OF STEEL, Ast = 0.20 IN2 PER FOOT IN EACH DIRECTION AND PLACE 3" CLEAR FROM THE BOTTOM OF SLAB. TOP OF SLAB AND SHEET PILING SHALL MATCH EXISTING CHANNEL BOTTOM.

6. REMOVE EXISTING CHANNEL DEBRIS AROUND PIER COLUMNS. CONCRETE RUNOUT WAS OBSERVED AT THE BASE OF THE UPSTREAM COLUMN ENCASEMENT. REMOVE PORTIONS OF THE CONCRETE RUNOUT THAT IS OUTSIDE OF THE PLAN LIMITS OF THE PLASTIC CORRUGATED ENCASEMENT AND THAT ARE ALSO WITHIN CONFLICT WITH THE PROPOSED LIMITS OF THE CONCRETE SLOPE PROTECTION. AT NO POINT SHALL REMOVAL EXTEND INTO THE EXISTING PILE ENCASEMENT.

LEGEND

◿	– LIMITS OF CONCRETE SLOPE PROTECTION REMOVAL AND REPLACEMENT
▒	– LIMITS OF PRESSURIZED GROUT
▨	– LIMITS OF PATCHING OF CONCRETE SURFACES
⬡	– LIMITS OF ROCK CHANNEL PROTECTION, TYPE A, 3'-0' THICK WITH 6" AGGREGATE FILTER

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

WEST SLOPE PROTECTION REPAIR

WARNING
0 1/2 1
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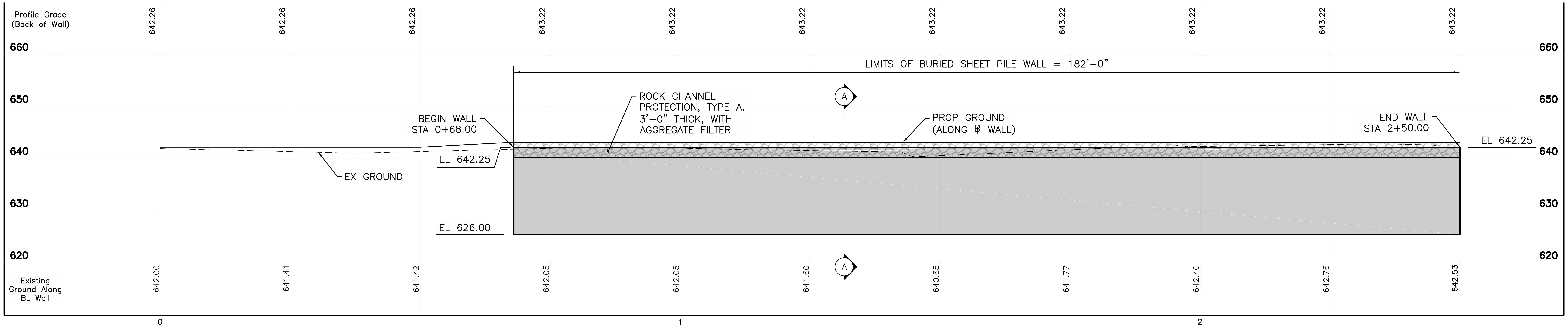
PROJECT SET: 44 OF 49
S SHEET: 4 OF 6
SHEET NO.:

SITE PLAN



PROFILE

- ∿ – PROP SHEET PILE WALL
- ▨ – ROCK CHANNEL PROTECTION, TYPE A, 3'-0" THICK, WITH 6" AGGREGATE FILTER

1. FOR SECTION A–A SEE SHEET S–0–06.

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PROJECT 1641

RETAINING WALL PLAN AND PROFILE

WARNING
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PROJECT SET: 45 OF 49
S SHEET: 5 OF 6
SHEET NO.:

WALL NOTES:

DESIGN SPECIFICATIONS:

DESIGN SPECIFICATIONS: THE STRUCTURE CONFORMS TO THE 9TH EDITION OF "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATIONS OF THE STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020

DESIGN DATA:

STRUCTURAL – ASTM A572 GRADE 50
YIELD STRENGTH – 50 KSI

BACKFILL – INTERNAL FRICTION ANGLE = 34°
UNIT WEIGHT = 135 PCF

GRANULAR EMBANKMENT

BACKFILL BEHIND THE EXTENTS OF THE RETAINING WALL SHALL BE #57 STONE OR ALTERNATE GRANULAR MATERIALS WHICH HAVE A MINIMUM INTERNAL FRICTION ANGLE OF 34 DEGREES. GRANULAR MATERIAL SHALL BE COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES.

PLACE THE GRANULAR BACKFILL AT A 1.5:1 SLOPE FROM HORIZONTAL AT THE BASE OF THE WALL (EXISTING GROUND) AND EXTEND UPWARD TO AN ELEVATION 1 FOOT BELOW THE TOP OF PROPOSED GRADE.

SHEET PILING LEFT IN PLACE

FURNISH AZ, NZ, PZ, OR PZC STEEL SHEET PILING WHICH MEETS THE FOLLOWING MINIMUM REQUIREMENTS:

GRADE OF STEEL – 50 KSI

ELASTIC SECTION MODULUS – 18.1 IN.^{3}/FT

PLASTIC SECTION MODULUS – 21.79 IN.^{3}/FT

MOMENT OF INERTIA – 84.38 IN.^{4}/FT

SHEET PILING SHALL BE DRIVEN IN SUCH A MANNER AS TO ENSURE INTERLOCKING THROUGHOUT THE ENTIRE LENGTH OF EACH SHEET PILE. THE SHEET PILES BE HELD IN PROPER ALIGNMENT DURING DRIVING BY MEANS OF ASSEMBLING FRAMES OR OTHER SUITABLE TEMPORARY GUIDE STRUCTURES. TEMPORARY GUIDE STRUCTURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR PURPOSE.

DRIVE SHEET PILES WITH A VARIATION OF $\frac{1}{4}$ INCH OR LESS PER FOOT FROM VERTICAL. DO NOT DAMAGE SHEET PILING WHILE ATTEMPTING TO CORRECT FOR MISALIGNMENT.

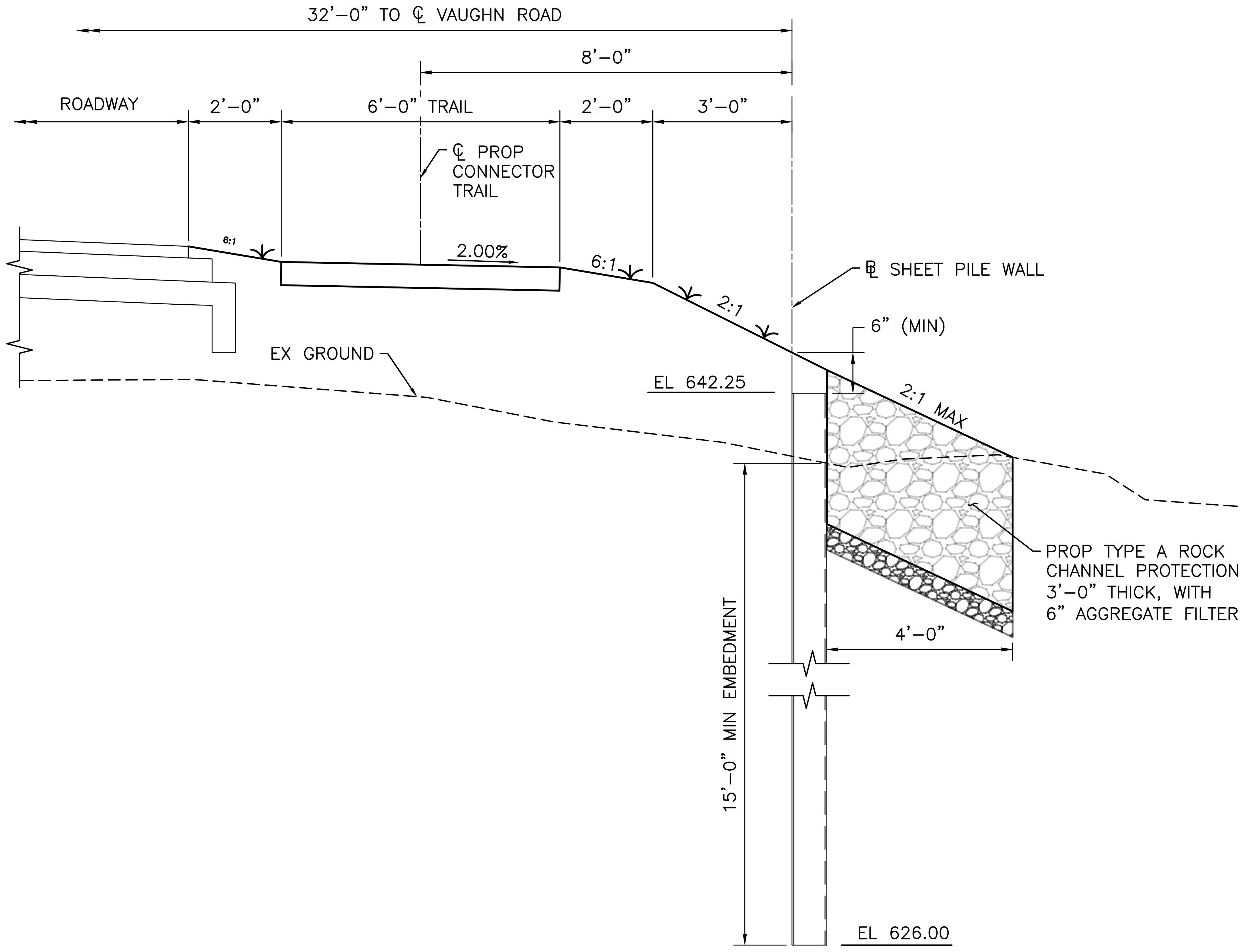
CUT OFF THE TOP OF SHEET PILING IN A CLEAN, STRAIGHT LINE BETWEEN THE ELEVATIONS SPECIFIED IN THE PLANS, AND AS APPROVED BY THE ENGINEER. THE LENGTH OF THE PILE CUT OFF SHALL BE SUFFICIENT TO PERMIT THE REMOVAL OF ALL DAMAGED MATERIAL. ANY IRREGULARITIES SHALL BE STRAIGHTENED OR CUT OFF BY GRINDING. DISPOSE OF CUT–OFFS NOT INCORPORATED INTO THE WORK PROPERLY.

REMOVE AND REPLACE, OR OTHERWISE CORRECT, SHEET PILES THAT THE ENGINEER DEEMS UNACCEPTABLE. SUBMIT DETAILS OF PLANNED CORRECTIONS TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE INITIATING ANY CORRECTIVE ACTION. ANY SHEET PILING RUPTURED IN THE INTERLOCK OR OTHERWISE DAMAGED DURING DRIVING SHALL BE PULLED AND REPLACED.

FINAL GRADING:

THE CONTRACTOR SHALL GRADE AS NECESSARY IN FRONT OF THE SHEET PILING WALL TO ENSURE POSITIVE DRAINAGE AWAY FROM THE FACE OF THE WALL. NO DEPRESSIONS WHICH MAY HOLD WATER SHALL BE PERMITTED TO REMAIN.

ALL FINAL GRADING, EMBANKMENT, AND SEEDING AND MULCHING, UNLESS OTHERWISE NOTED IN THE PLANS, SHALL BE INCLUDED IN THE BID PRICE FOR SHEET PILING LEFT IN PLACE.



SECTION A-A
(NOT TO SCALE)

ABBREVIATION LEGEND

℄ – CENTERLINE
C/C – CENTER TO CENTER
EL – ELEVATION
E/P – EDGE OF PAVEMENT
EX – EXISITNG
MIN – MINIMUM
NPCPP – NON–PERFORATED CORRUGATED PLASTIC PIPE
OHWM – ORDINARY HIGH WATER MARK
PCPP – PERFORATED CORRUGATED PLASTIC PIPE
PROP – PROPOSED
RT – RIGHT
STA – STATION

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RETAINING WALL GENERAL NOTES

WARNING
0 1/2 1
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PROJECT SET: 46 OF 49
S SHEET: 6 OF 6
SHEET NO.:

MAINTENANCE OF TRAFFIC NOTES

GENERAL

THE MAINTENANCE OF TRAFFIC PLANS HEREIN SHALL CONFORM TO THE REQUIREMENTS OF THE REFERENCES LISTED IN CONSTRUCTION SPECIFICATION 01 56 23 TEMPORARY BARRICADES.

THE PROPOSED IMPROVEMENTS ALONG VAUGHN ROAD SHALL BE CONSTRUCTED UNDER FULL ROADWAY CLOSURE, WITH TRAFFIC DETOURED AS DETAILED WITHIN. DETOUR SIGNAGE SHALL BE INCLUDED IN THE COST FOR MAINTAINING TRAFFIC, AS PER PLAN.

ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (CURRENT EDITION), COPIES OF WHICH ARE AVAILABLE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, OFFICE OF TRAFFIC ENGINEERING, 1980 WEST BROAD STREET, COLUMBUS, OHIO 43223.

THE ROADWAY SHALL NOT BE OPENED TO TRAFFIC UNTIL PERMANENT TRAFFIC CONTROLS ARE IN PLACE, OR UNTIL TEMPORARY TRAFFIC CONTROLS, APPROVED BY THE ENGINEER, ARE INSTALLED. THE CONTRACTOR ASSUMES ALL LIABILITY FOR THE PREMATURE REMOVAL OF TEMPORARY TRAFFIC CONTROLS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REINSTALLATION AND/OR REPLACEMENT OF ALL PERMANENT TRAFFIC CONTROL DEVICES DAMAGED OR REMOVED DURING THE CONSTRUCTION. PERMANENT TRAFFIC CONTROL THAT IS NO LONGER IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE REPLACED IMMEDIATELY. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR MISSING, DAMAGED AND IMPROPERLY PLACED TRAFFIC CONTROL DEVICES.

THE CONTRACTOR SHALL PROVIDE A 24 HOUR CONTACT WHO WILL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC FOR THE DURATION OF THE PROJECT.

CONSTRUCTION OPERATIONS SHALL NOT BEGIN UNTIL ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE IN PLACE AND APPROVED BY THE OWNER AND THE CITY.

ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES. ACCESS FOR MAIL DELIVERY, EMERGENCY AND SERVICE VEHICLES SHALL NOT BE DISRUPTED. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE OWNER, CITY, AND THE OWNERS OF THE ABUTTING PROPERTIES IN ADVANCE (10 DAYS) OF ANY OPERATIONS WHICH AFFECT ACCESS.

MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES INCLUDING DRUMS, SIGNS, BARRICADES, SIGN BOARDS, DETOUR SIGNAGE, ETC., SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

DRUMS SHALL BE PLACED AS FOLLOWS: 35' C/C ON TANGENTS, 20' C/C ON TAPERS, AND 8' C/C IN RADII.

A FLASHING ARROW PANEL (48"X96" – TYPE "C") SHALL BE USED IN LANE CLOSURES IN ACCORDANCE WITH THE OHIO MANUAL.

ALL TRENCHES SHALL BE BACKFILLED OR SECURELY PLATED DURING ALL NIGHTTIME AND NON–WORKING HOURS.

FLASHING YELLOW TYPE "B" LIGHTS SHALL BE REQUIRED ON ALL BARRICADES IN USE AT NIGHT. ALL ADVANCE SIGNING SHALL BE EQUIPPED WITH TYPE "A" FLASHING LIGHTS. CONES ARE NOT APPROVED FOR USE AT NIGHT. LIGHTS ARE NOT REQUIRED ON SIGNS IN PLACE DURING DAYLIGHT HOURS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND SAFE MOVEMENT OF PEDESTRIANS THROUGH, AROUND, OR DETOURED AWAY FROM THE CONSTRUCTION SITE. TRAFFIC CONTROL FOR PEDESTRIAN MOVEMENTS SHALL BE AS PER FIGURES TA–28 AND TA–29 OF PART VI OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE SAFETY OF PEDESTRIAN TRAFFIC SHALL BE CONSIDERED AT ALL TIMES IN THE PROVISION OF TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS AND NOTES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE LIGHTS, SIGNS, BARRICADES, AND OTHER WARNINGS TO PHYSICALLY SEPARATE THE PEDESTRIAN FROM HAZARDS INCIDENTAL TO THE CONSTRUCTION OPERATIONS SUCH AS ANCHOR BOLTS, OPEN EXCAVATIONS, ETC.

FOR AREAS ADJACENT TO VEHICULAR TRAFFIC, OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH THE PROPER TRAFFIC CONTROL DEVICES AT ALL TIMES. PLACEMENT OF SUBBASE AND BASE MATERIAL SHALL FOLLOW CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A LENGTH THAT CAN BE BACKFILLED FOR NIGHTTIME AND NON–WORKING HOURS. DROP OFFS WITHIN THE WORK ZONE SHALL CONFORM TO THE REQUIREMENTS SET FORTH ON ODOT STANDARD CONSTRUCTION DRAWING MT–101.90.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE OWNER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW. THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE BUT IS NOT LIMITED TO ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHOULD LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, DETOUR ROUTES IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER. ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE OWNER USING THE NOTIFICATION TIME FRAME TABLE.

NOTIFICATION TIME FRAME TABLE

ITEM	DURATION OF CLOSURE	NOTIFICATION DUE TO PROJECT ENGINEER
ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES/ RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE

LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

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

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

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

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

- FOR LANE CLOSURES: DURING INITIAL SET–UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG–TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).
- FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURRING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA:
  - ON A MULTI–LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY; AND
  - AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION; AND,
  - AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

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

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

- THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER; OR
- THE ACTIVE WORK AREA LATERALLY CLOSEST TO THE OPEN TRAVELED LANE; OR
- OTHER LOCATION AS APPROVED BY THE ENGINEER.

THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

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

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

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

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

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

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1 Xref: 20210275_TO06_BORD

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REV NO	DATE	ISSUED BY	REMARKS

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

PLAN SET DATE
OCTOBER 2022

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DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
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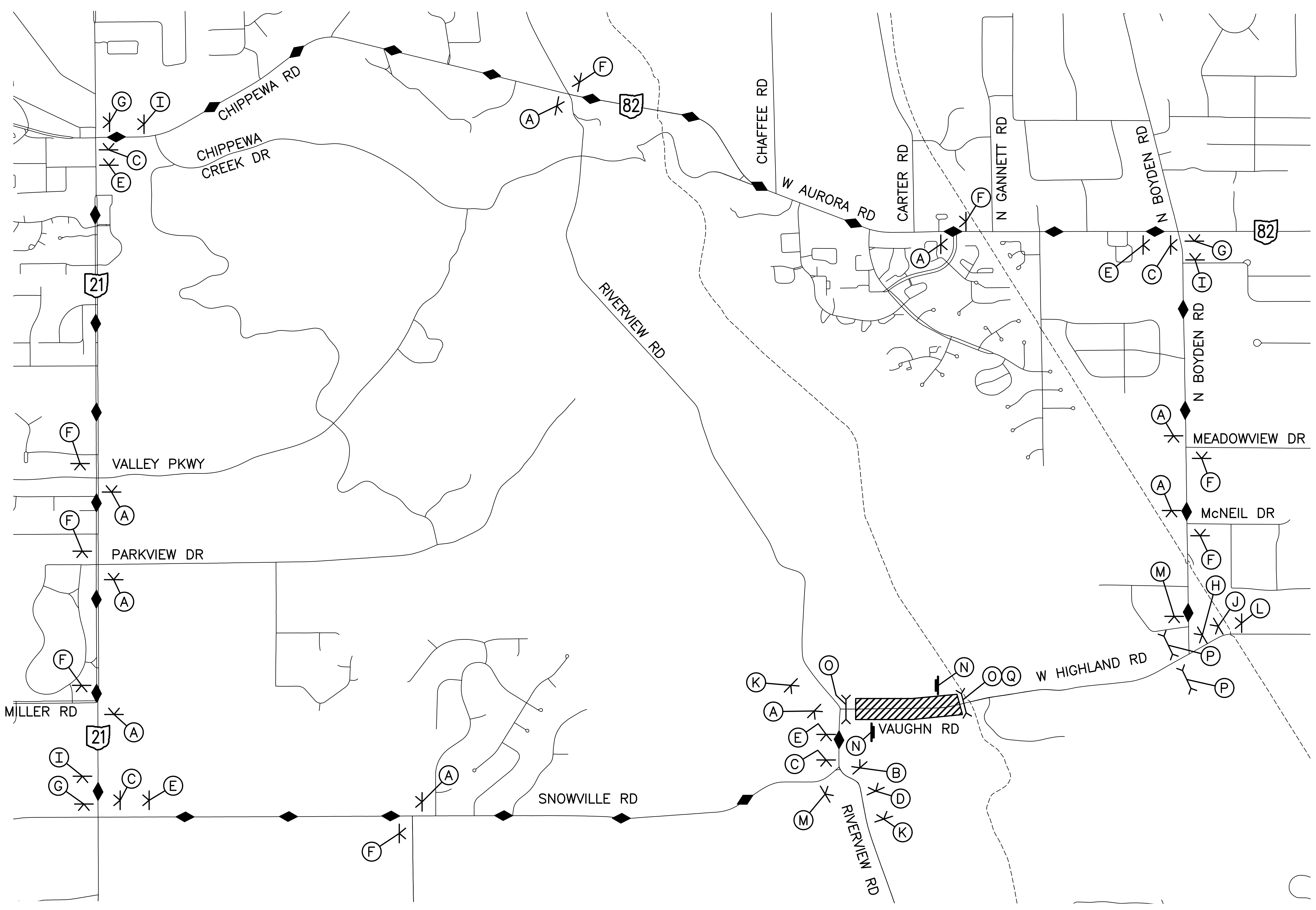
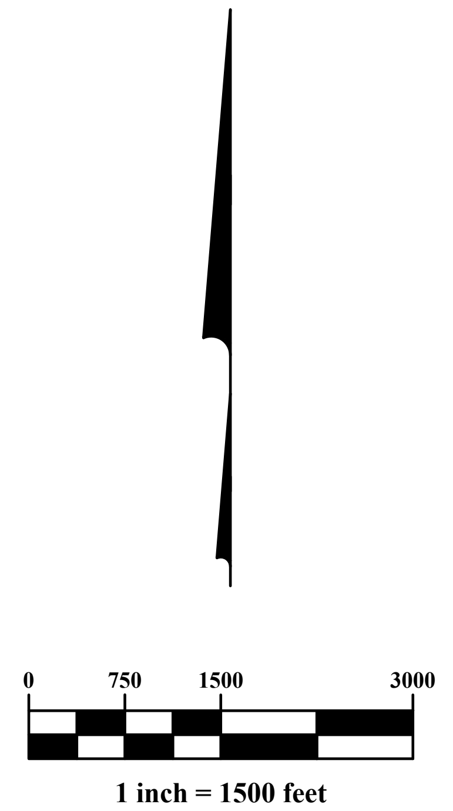
CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

MAINTENANCE OF TRAFFIC DETOUR PLAN

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT SET: 47 OF 49
T SHEET: 01 OF 02
SHEET NO.:



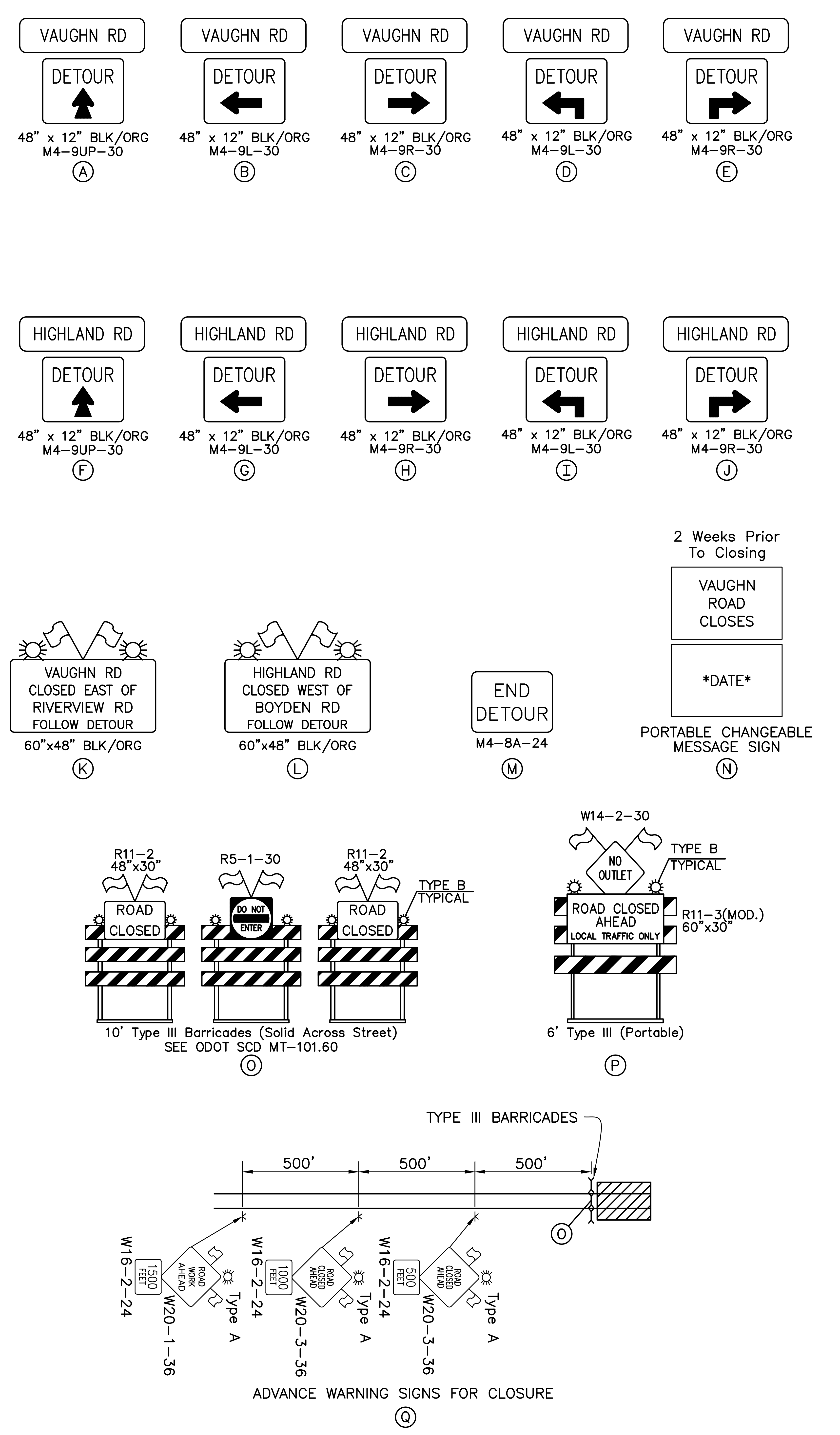


LEGEND

- ▨ = Work Area
- ◆ = Detour Route
- = Type III Barricade
- = Temporary Sign Support
- = Portable Changeable Message Sign

DETOUR PLAN

SIGN LEGEND



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PROJECT 1641

MAINTENANCE OF TRAFFIC DETOUR PLAN

WARNING
0 1/2 1
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PROJECT SET: 48 OF 49
T SHEET: 02 OF 02
SHEET NO.:

SEEDING TABLE

LOCATION	TYPE	APPLICATION RATE	APPLICATION DATES	COVER
▧	ROAD EMBANKMENT SEEDING MIX: OVERSEED: WINTER RYE (GRAIN) (SECALE CEREALE) PERMANENT SEED: ERNST SEEDS ERNMX-140, PARTIALLY SHADED AREA ROADSIDE MIX, OR APPROVED EQUAL	30 LBS/ACRE 40 LBS/ACRE	MAR 15 - MAY 31 OR SEP 1 - OCT 15	PERMANENT COMPOSITE EROSION MAT
▨	ROAD EMBANKMENT SEEDING MIX: OVERSEED: WINTER RYE (GRAIN) (SECALE CEREALE) PERMANENT SEED: ERNST SEEDS ERNMX-140, PARTIALLY SHADED AREA ROADSIDE MIX, OR APPROVED EQUAL	30 LBS/ACRE 40 LBS/ACRE	MAR 15 - MAY 31 OR SEP 1 - OCT 15	TEMP EROSION MAT
▩	STAGING AREA MIX: OVERSEED: WINTER RYE (GRAIN) (SECALE CEREALE) PERMANENT SEED: ERNST SEEDS ERNMX-178, RIPARIAN BUFFER MIX, OR APPROVED EQUAL	30 LBS/ACRE 30 LBS/ACRE	MAR 15 - MAY 31 OR SEP 15 - NOV 15	TEMP EROSION MAT

SEEDING TABLE NOTES:

1. IF SEEDING AND MULCHING OF PERMANENT GRASS IS DURING THE WINTER DORMANT SEEDING WINDOW (AFTER OCTOBER 16 AND BEFORE MARCH 14), THE CONTRACTOR IS EXPECTED TO INSPECT SEED GERMINATION AFTER APRIL 1 AND RESEED BARE AREAS WITH ADDITIONAL ROUND OF SEED. SEEDING SHALL NOT OCCUR JUNE 1 TO AUGUST 31.
2. THE SPECIFIED OVERSEED MIX IS FOR A FALL APPLICATION. SUBSTITUTE GRAIN OATS FOR SPRING SEEDING AT THE 2X APPLICATION RATE.

NOTE:
SEEDING AND MATTING IS SHOWN TO THE FULL EXTENT OF THE WORK LIMITS. NEORSD CONSTRUCTION SUPERVISOR, WITH CONSULTATION OF DESIGN ENGINEER, MAY REDUCE SEEDING AND MATTING LIMITS IF LESS AREA IS DISTURBED BY CONTRACTOR. CONSULTATION WITH DESIGN ENGINEER IS REQUIRED TO ENSURE ADEQUATE PERMANENT TURF REINFORCEMENT MATTING IS INSTALLED TO SATISFY THE DESIGN INTENT.

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CITY OF BRECKSVILLE, OHIO
VAUGHN ROAD FLOOD MITIGATION
PROJECT 1641

LANDSCAPE PLAN

WARNING
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SHEET NO.:

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