

APPLICATION AND AGREEMENT TO PERFORM WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY

FOR DEPARTMENT USE ONLY

Permit Number	Highway Number	County
DOT Project Number		Expiration/Completion Date

APPLICANT (INDIVIDUAL OR COMPANY)	(ASSISTANCE FROM DEPARTMENT AVAILABLE UPON REQUEST)
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First Name Jill	Middle	Last Name Apfel	Phone Number 641-484-3822	Ext.
Company Name City of Tama			Phone Number	Ext.
Street Address 305 Siegel St		City/Town Tama	State IA	ZIP Code 52339
e-Mail Address tamacityclerk@tamacityia.gov				

WORK TO BE ACCOMPLISHED

Approval is hereby requested to enter within the state right-of-way and to complete the proposed work as detailed on the attachments and further described as follows:

The stormwater culvert underneath State St (HWY 63) has deteriorated significantly and is structurally unsound and causing the road to fail as the top of culvert. The existing top of culvert is the top of road. The City of Tama is planning to replace 135'-5 1/2" of the culvert (starting at 3rd Street moving south) with a new, precast culvert. Additionally, the City of Tama is planning to repair approximately 525' of the existing box culvert north of 3rd Street.

The project will include the installation of temporary shoring around the 135'-5 1/5" length of culvert to be removed. Two way traffic shall remain open along Highway 63 throughout construction.

and shall be located as shown on the detailed plan attached hereto. (See current Iowa Department of Transportation Utility Accommodation Policy for submittal of detailed plan requirements.) <https://iowadot.gov/rightofway/pdfs/UtilityPolicy.pdf>

WORK SITE LOCATION

The proposed work as described above is located in Section 34, Twp. 83 North, Range 15 West on Highway No. 63 generally located 0.83 (miles) North (direction) from the Tama county line (city, county line, or other land line). Work proposed is more specifically located as being from 117.24 (Milepost #) and 400+95 (Highway Station) to 117.36 (Milepost #) and 407+63 (Highway Station) on the East side of highway.

All proposed work covered by this permit shall be at the applicant's expense. The applicant shall reimburse the Iowa Department of Transportation for any materials removed from the highway right-of-way described as follows:

The following special requirements shall apply to this permit:

The utility company, corporation, applicant, permit holder or licensee, (hereinafter referred to as the Permit applicant) agrees with the Iowa Department of Transportation (hereafter referred to as the Department) that the following stipulations and those special requirements as listed on this document shall govern under this permit after it is approved by the Department.

A. General

1. The installation shall meet the requirements of local municipal, county, state, and federal franchise rules and regulations, regulations and directives of the Iowa State Commerce Commission; the Iowa Department of Natural Resources, all rules and regulations of the Department and any other laws or regulations applicable.
2. The Permit Holder shall be fully responsible for any future adjustments of the facilities within the established highway right-of-way caused by highway construction or maintenance operations.
3. As per Section 115.8(8) of the Utility Accommodation Policy, As-Built plans are due within 90 days after completion of construction, the utility owner shall submit to the district representative an as-built plan.
4. The work described in this permit shall be completed as proposed in compliance with the stipulations and special requirements within one year from the date Department approval is received for said request. Failure on the part of the Permit Holder to abide by the stipulations or in constructing the work described as stipulated and within the time frame stated shall render this agreement and request null and void. The Permit Holder also agrees to save the State of Iowa and the Department harmless of any damages or losses that may be sustained by any person, or persons, on account of the conditions and requirements of this agreement.
5. Non-compliance with any of the terms of the Department's policy, permit, or agreement, may be considered cause for shut-down of construction operations, revocation of the permit, or withholding of relocation reimbursement and/or withholding of future application approvals until compliance is confirmed. The cost of any work deemed necessary to be performed by the State in removal of non-complying construction will be assessed against the Permit Holder.

B. Construction and Maintenance

1. The location, construction and maintenance of the utility installation covered by this application shall be in accordance with the current Department's Utility Accommodation Policy. <https://iowadot.gov/rightofway/pdfs/UtilityPolicy.pdf>
2. Before beginning any work in the highway right-of-way, it is the responsibility of the Permit Holder to obtain an easement from the drainage district if necessary. The Department assumes no responsibility for advising the Permit Holder of each location of a drainage district crossing. It is the Permit Holder's responsibility to locate these crossings and obtain any necessary easements or permission from the drainage district. See Code of Iowa, Chapter 468 for additional information.
3. A copy of the approved permit shall be available on the job site at all times for examination by Department personnel.
4. Operations in the construction and maintenance of this utility installation shall be carried on in such a manner as to cause minimum interference to or distraction of traffic on said highway.
5. Traffic protection shall minimally be in accordance with Part VI of the current Manual on Uniform Traffic Control Devices for Streets and Highways. The applicant shall be responsible for correctly using traffic control devices including signs, warning lights, and channelizing devices as needed while work is in progress or the clear zone is impacted. Flagging operations are the responsibility of the applicant. The Department's TC XXX Series Standards are the preferred traffic control specification plans. http://www.iowadot.gov/design/std/pln_tc
6. The applicant shall seed and mulch all disturbed areas within the highway right-of-way and shall be responsible for the vegetative cover until it becomes well established. Any surfaced areas such as driveways or shoulders and sodded waterways and plantings which are disturbed shall be restored to their original condition. Any damage to any other underground facilities during installation shall be repaired at the permit holder's expense.
7. All personnel in the highway right-of-way shall wear ANSI 107 Class 2 apparel at all times when exposed to traffic or construction equipment.
8. As per Policy Section 115.4(9) parking or storage in the clear zone is prohibited. When not in actual use, vehicles, equipment and materials shall not be parked or stored within the clear zone or median.
9. Unless specifically noted in Special Requirements section, all work performed within the right-of-way shall be restricted to 30 minutes after sunrise to 30 minutes before sunset.
10. Pedestals shall be placed within 12 inches of the right-of-way line.
11. All above and below ground appurtenances (pedestals, hydrants, drains, accesses, etc.) shall be marked with high visibility posts and signs. The minimum height requirement for the signs shall be 5 foot. Urban Roadway Sections may be exempted with department approval.

C. Liability

1. To the extent allowable by law, the Permit Holder agrees to indemnify, defend, and hold the Department harmless from any action or liability arising out of the design, construction, maintenance, placement of traffic control devices, inspection, or use of the Permit Holder's facilities. This agreement to indemnify, defend, and hold harmless applies to all aspects of the Department's application review and approval process, plan and construction reviews, and funding participation.
2. The Permit Holder shall indemnify and save harmless the State of Iowa, its agencies and employees, from any and all causes of action, suits at law or in equity, for losses, damages, claims or demands, and from any and all liability and expense of whatsoever nature, arising out of or in connection with the Permit Holder's use or occupancy of the public highway.
3. The State of Iowa and the Department assume no responsibility for damages to the Permit Holder's property occasioned by any construction or maintenance operations on said highway if the facilities are not located in accordance with this permit.
4. The State of Iowa, its agencies or employees, will be liable for expense incurred by the Permit Holder in its use and occupancy of the highway right-of-way only when negligence of the State, its agencies or employees, is the sole proximate cause of such expense. Whether in contract, tort or otherwise, the liability of the State, its agencies and employees, is limited to the reasonable, direct expense to repair damaged utilities, and in no event will such liability extend to loss of profits or business, indirect, special, consequential or incidental damages.

D. Notification

1. The Permit Holder is responsible for contacting Iowa One-Call (1-800-292-8989) and request the location of all underground utilities forty-eight (48) hours before excavation. Before beginning work in the highway right-of-way, the Permit Holder shall also contact any other known utility located in the area of the proposed work.
2. The Permit Holder agrees to give the Department forty-eight (48) hour notice of its intention to start construction or to perform routine maintenance on the highway right-of-way. Said notice shall be made to the local DOT contact person whose name is shown on Page 3.
3. 511 Notification - The Permit Holder or their contractor may not obstruct or close primary highways or primary highway extensions (state highways within city limits) without prior consent of the department, except in emergency situations. Before setting up a lane closure or vertical/horizontal restriction of any kind on a primary highway, call the local DOT Maintenance Garage AND the Traffic Management Center per attached documents. Except in emergency situations, a 10-day advance notice is required. <http://www.iowadot.gov/traffic/utility/pdfs/511UtilityNotification.pdf>

E. Buy America

Buy America applies to relocations of utility facilities that must move due to highway projects under certain specific conditions that include reimbursable locations and relocations due to interstate projects.

Please contact the Department's District Engineering Operation Technician (EOT) for more information on Buy America requirements or visit the following link:

<https://iowadot.gov/rightofway/Utility-Accommodation-and-Coordination#533652456-buy-america>

Permit Number: _____

Applicant Signature and Agreement

The undersigned have read the stipulations of this permit agreement as stated as well as attachments which may be included and by signing this application agree to abide by all stipulations and to complete the work as proposed in compliance with the stipulations and attachments within one year from the date Department approval is received for said request. Failure on the part of the applicant to abide by the stipulations or to construct the work desired as stipulated and within the time frame stated shall render this agreement and request null and void. The undersigned also agrees to save harmless the State of Iowa and the Iowa Department of Transportation from any damage or losses that may be sustained by any person or persons on account of the conditions and requirements of this agreement.

Applicant Name (First, M.I., Last - Print or Type) <i>Sill Apfel</i>	Agent/Owner (Signature) <i>Sill Apfel</i>	Date <i>1-30-24</i>
e-Mail Address <i>tamacityclerk@tamacityia.gov</i>		

CITY ACTION (IF PROPOSED WORK IS WITHIN AN INCORPORATED CITY, CITY ACTION IS REQUIRED)

"The undersigned city joins in the grants embodied in the above permit executed by the Iowa Department of Transportation on condition that all of the covenants and undertakings therein running to the Iowa Department of Transportation shall inure to the benefit of the undersigned city and recommends action on said permit application as noted below by the delegated city official".

Recommend Approval
 Do Not Recommend Approval
 None Required

Signature <i>Brian Hanes</i>	Title <i>Mayor</i>	Date <i>1-30-24</i>
Type or Print Name <i>Brian Hanes</i>	Authorized Official for the City of <i>City of Tama</i>	
e-Mail Address <i>tamacityclerk@tamacityia.gov</i>		

COUNTY ACTION (IF PROPOSED WORK CROSSES COUNTY RIGHT-OF-WAY, COUNTY ACTION IS REQUIRED)

"The undersigned county joins in the grants embodied in the above permit executed by the Iowa Department of Transportation on condition that all of the covenants and undertakings therein running to the Iowa Department of Transportation shall inure to the benefit of the undersigned county and recommends action on said permit application as noted below by the delegated county official".

Recommend Approval
 Do Not Recommend Approval
 None Required

Signature	Title	Date
Type or Print Name	Authorized Official for the County of	
e-Mail Address		

**FEDERAL HIGHWAY ADMINISTRATION ACTION
(DEPARTMENT REPRESENTATIVE WILL REVIEW THE REQUEST AND OBTAIN FHWA ACTION, WHEN NECESSARY)**

Recommend Approval
 Do Not Recommend Approval
 None Required

Authorized FHWA Representative Signature	Date
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DEPARTMENT OF TRANSPORTATION FINAL ACTION

Application Approved
 Application Denied
 Permit Number:

Authorized Highway District Representative	Signature	Date
e-Mail Address		

Notice of intention to commence activities on the highway rights-of-way shall be submitted by the applicant a minimum of 48 hours prior to actually commencing the activities as herein granted by this approved application. Notice is to be given to the following Iowa Department of Transportation representative:

Local DOT Contact Person (Type or Print Name)	Phone Number
Street Address	City/Town
e-Mail Address	State IA ZIP Code

CITY OF TAMA

305 SIEGEL STREET

Tama, Iowa 52339

641-484-3822 Fax: 641-484-2715

Website: www.tamacity.govoffice2.com

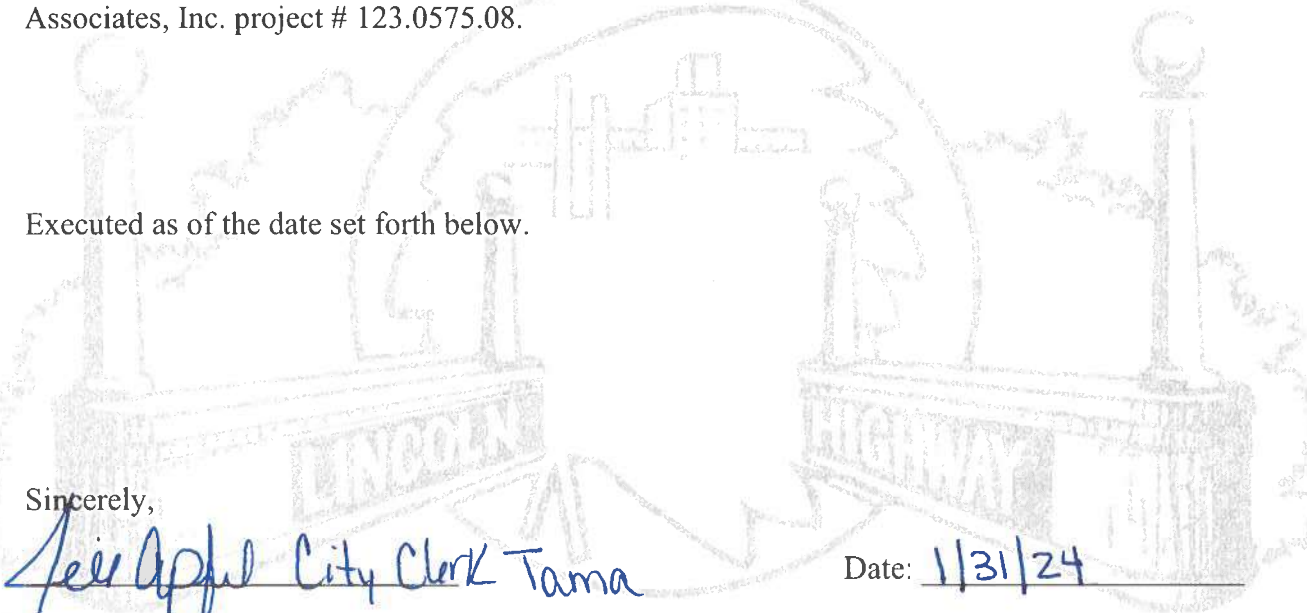
Email: tamacityclerk@tamacityia.gov

To whom it may concern,

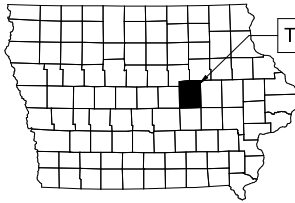
The City of Tama (the "City") owns and operates the stormwater culvert beneath US Highway 63 in Tama, IA and authorizes Snyder & Associates, Inc. to serve as the City's Authorized Agent, therefore, allowing Snyder & Associates, Inc. to file the necessary permits on the City's behalf. The City wishes to allow this status for the extent of time required to replace the culvert under Highway 63 and to complete the accompanying repairs within the culvert under Snyder & Associates, Inc. project # 123.0575.08.

Executed as of the date set forth below.

Sincerely,


Lee Apple City Clerk Tama

Date: 1/31/24



TAMA COUNTY

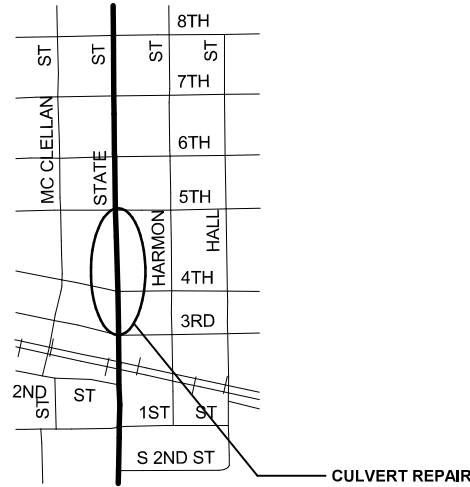
TAMA COUNTY, IOWA

US HWY 63 BOX CULVERT REPAIR

US HIGHWAY 63 3RD STREET TO 5TH STREET

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS THAT REQUIRE APPROVAL SHALL BE SUBMITTED TO: SHUCK-BRITSON INC.
400 EAST COURT AVE. - SUITE 150
DES MOINES, IOWA 50309



LOCATION MAP
(NOT TO SCALE)

INDEX OF SHEETS	
NO.	DESCRIPTION
A.1	TITLE SHEET
C.1	ESTIMATE OF QUANTITIES AND TABULATIONS
C.2	ESTIMATE OF QUANTITIES AND TABULATIONS
C.3	GENERAL NOTES
C.4	GENERAL NOTES
C.5	NOTES AND DETAILS
C.6	REPAIR DETAILS
D.1	OVERALL PLAN VIEW
D.2	ENLARGED PLANS
D.3	ENLARGED PLANS
J.1	TRAFFIC CONTROL
J.2	TRAFFIC CONTROL
J.3	TRAFFIC CONTROL


MARK	REVISION	DATE	BY

Engineer: AJIS	Checked By: JAG	Scale: (AS NOTED)	Pg.
Technician: DBT	Date: 2/29/2024	Field Bk.	
Project No:	123.0575.08		Sheet A.1

TAMA, IA.
 USHWY 63 BOX CULVERT REPAIR
 TITLE SHEET
 SNYDER & ASSOCIATES, INC.

2727 S.W. SNYDER BLVD.
 ANKENY, IOWA 50023
 515-964-2020 | www.snyder-associates.com






I HEREBY CERTIFY THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: Kelli J. Scott

NAME: KELLI J. SCOTT, P.E.

IOWA REG. NO: P19975 EXPIRATION DATE: 12/31/2025

PAGES OR SHEETS COVERED BY THIS SEAL:
SHEETS C.1 THRU C.3, AND J.1 THRU J.3




I HEREBY CERTIFY THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: Anna Siegrist

NAME: ANNA J. SIEGRIST, P.E.

IOWA REG. NO: P27391 EXPIRATION DATE: 12/31/2025

PAGES OR SHEETS COVERED BY THIS SEAL:
SHEETS A.1, C.4 THRU C.6, AND D.1 THRU D.3



SNYDER & ASSOCIATES

Project No: 123.0575.08

Sheet A.1

TITLE SHEET

3/1/2024 10:22:24

C:\Users\jag\Documents\123.0575.08_01\123.0575.08_01.dwg

U:\projects\1230575\1230575.dwg (2024-05-16 10:54:10 AM) - Plot Date: 2024-05-16 10:54:10 AM - Plot Scale: 1.00000000 - Plot Size: 18.00 x 24.00 (INCHES)

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	DESCRIPTION	UNIT	ESTIMATED QUANTITY	AS BUILT QUANTITY
1	2426-6772016	CONCRETE REPAIR (UNDERSIDE OF LID)	SF	95	
2	2426-6772016	CONCRETE REPAIR (INTERIOR OF WALL)	SF	30	
3	2530-5070240	JOINT REPLACEMENT	LF	63	
4	2533-4980005	MOBILIZATION	LS	1	
5	2599-9999009	EPOXY CRACK INJECTION	LF	505	
6	2599-9999014	FLOOR INFILL	SF	267	
7	2599-9999014	WALL RESURFACING	SF	280	
8	7040-A	FULL DEPTH PATCH, 8 INCH	SY	275	
9	8030-A	TEMPORARY TRAFFIC CONTROL	LS	1	
10	0000-999-B	MOBILIZATION/DEMOBILIZATION DUE TO FLOODING	EA	2	



Project No: 123.0575.08

Sheet C.1

USHWY 63 BOX CULVERT REPAIR

ESTIMATE OF QUANTITIES AND TABULATIONS

SNYDER & ASSOCIATES, INC.

TAMA, IA

5005 BOWLING STREET S.W.
CEDAR RAPIDS, IOWA 52404
319-362-8334 | www.snyder-associates.com

Project No: 123.0575.08

Sheet C.1

MARK	REVISION	DATE	BY
#	#	#	#
#	#	#	#
#	#	#	#
#	#	#	#
#	#	#	#

Engineer: KJS Checked By: NAE Scale: 1" = #'
Technician: LJO Date: #####

TAMA, IA

LEGEND

FEATURES

- Section Corner
1/2" Rebar, Cap # 11579
ROW Marker
ROW Rail
Control Point
Bench Mark
Platted Distance
Measured Bearing & Distance
Recorded As
Deed Distance
Calculated Distance
Minimum Protection Elevation
Centerline
Section Line
1/4 Section Line
1/4 1/4 Section Line
Easement Line

FOUND

- OC
OC/P
P
M
R
D
C
MPE

FEATURES EXISTING

- Spot Elevation
Contour Elevation
Fence (Barbed, Field, Hog)
Fence (Chain Link)
Fence (Wood)
Fence (Silt)
Tree Line
Tree Stump
Deciduous Tree \ Shrub
Coniferous Tree \ Shrub
Communication
Overhead Communication
Fiber Optic
Underground Electric
Overhead Electric
Gas Main with Size
High Pressure Gas Main with Size
Water Main with Size
Sanitary Sewer with Size
Duct Bank
Test Hole Location for SUE w/ID

(*) Denotes the survey quality service level for utilities

- Sanitary Manhole
Storm Sewer with Size
Storm Manhole
Single Storm Sewer Intake
Double Storm Sewer Intake
Fire Hydrant
Fire Hydrant on Building
Water Main Valve
Water Service Valve
Well
Utility Pole
Guy Anchor
Utility Pole with Light
Utility Pole with Transformer
Street Light
Yard Light
Electric Box
Electric Transformer
Traffic Sign
Communication Pedestal
Communication Manhole
Communication Handhole
Fiber Optic Manhole
Fiber Optic Handhole
Gas Valve
Gas Manhole
Gas Apparatus
Fence Post or Guard Post
Underground Storage Tank
Above Ground Storage Tank
Sign
Satellite Dish
Mailbox
Sprinkler Head
Irrigation Control Valve

UTILITY QUALITY SERVICE LEVELS

QUALITY LEVELS OF UTILITIES ARE SHOWN IN THE PARENTHESES WITH THE UTILITY TYPE AND WHEN APPLICABLE, SIZE. THE QUALITY LEVELS ARE BASED ON THE CI / ASCE 38-02 STANDARD. QUALITY LEVEL (D) INFORMATION IS DERIVED FROM EXISTING UTILITY RECORDS OR ORAL RECOLLECTIONS. QUALITY LEVEL (C) INFORMATION IS OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION WITH QUALITY D INFORMATION. QUALITY LEVEL (B) INFORMATION IS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL (A) IS HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES OBTAINED BY ACTUAL EXPOSURE OR VERIFICATION OF PREVIOUSLY EXPOSED SUBSURFACE UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.

GENERAL NOTES

- 1. NOTIFY OWNER AND ENGINEER AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
2. COMPLETE ALL CONSTRUCTION IN ACCORDANCE WITH CURRENT EDITION OF IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS 2024 EDITION AND PLANS AND SPECIFICATIONS FOR THIS PROJECT.
3. LOCATION OF EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES SHOWN ARE FROM AVAILABLE SURVEYS AND RECORDS. THESE LOCATIONS SHOULD BE CONSIDERED AS APPROXIMATE ONLY, WITH POSSIBILITY THAT OTHER UTILITIES OR UNDERGROUND FEATURES MAY EXIST. DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS.
4. NOTIFY UTILITY COMPANIES PRIOR TO COMMENCING WORK. AVOID DAMAGE TO UTILITIES AND UNDERGROUND FEATURES DURING CONSTRUCTION. REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OPERATIONS AT CONTRACTOR'S EXPENSE.
5. COORDINATE CONSTRUCTION OPERATIONS AND COOPERATE WITH UTILITY COMPANIES WITH RESPECT TO RELOCATING ANY CONFLICTING FACILITIES. COSTS FOR LOCATING EXISTING UTILITIES, COORDINATING RELOCATION WORK, PROVIDING TEMPORARY SUPPORTS, AND STAGING CONSTRUCTION TO ACCOMMODATE THE RELOCATION OF UTILITIES IS INCIDENTAL TO CONSTRUCTION.
6. PROVIDE EROSION CONTROL MEASURES NECESSARY TO PROTECT AGAINST SILTATION, EROSION AND DUST POLLUTION WITHIN CONSTRUCTION LIMITS AND ANY OFF-SITE AREAS USED FOR THIS PROJECT. COMPLY WITH SOIL EROSION CONTROL REQUIREMENTS OF IOWA CODE AND LOCAL ORDINANCES.
7. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETED.
8. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING ALL ACCESSES TO THE CONSTRUCTION LIMITS. THE ACCESSES MUST BE ADEQUATELY SIZED AND PROPERLY SURFACED FOR UTILIZATION BY CONSTRUCTION VEHICLES AND INCLUDE PROVISIONS TO MAINTAIN POSITIVE DRAINAGE. WORK WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
9. LIMIT GRADING AND CONSTRUCTION OPERATIONS TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR REQUIRED TO PAY DAMAGES TO RESPECTIVE PARTIES FOR DAMAGE TO CROPLAND CAUSED BY CONSTRUCTION ACTIVITIES OUTSIDE OF THE CONSTRUCTION LIMITS IN ADDITION TO THE RESTORATION, AT NO COST TO OWNER.
10. COORDINATE THE CONSTRUCTION TO MINIMIZE THE DISRUPTIONS TO THE ADJACENT PROPERTIES. ANY AREAS DISTURBED BY CONSTRUCTION OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE REPAIRED AND RESTORED AT THE CONTRACTOR'S EXPENSE.
11. DO NOT RESTRICT DRAINAGE CHANNELS AND PROTECT ALL EXISTING DRAINAGE STRUCTURES. CONTRACTOR FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN THE HANDLING OF STORM WATER FLOWS DURING CONSTRUCTION, ANY EXTRA GRADING WORK NEEDED TO MAINTAIN POSITIVE DRAINAGE WITHIN THE CONSTRUCTION LIMITS IS INCIDENTAL TO CONSTRUCTION.
12. REPAIR ALL FIELD/DRAIN TILES THAT ARE ENCOUNTERED DURING CONSTRUCTION AS SPECIFIED. RECORD THE EXISTING TYPE, SIZE, LOCATION AND DEPTH OF ALL FIELD/DRAIN TILES ENCOUNTERED AND REPAIRED DURING CONSTRUCTION, PROVIDE DATA TO THE ENGINEER FOR INCORPORATION INTO THE RECORD DRAWINGS.
13. PROTECT AND KEEP DEBRIS DEPOSITED BY THE CONSTRUCTION OFF OF ADJACENT PROPERTIES OUTSIDE THE EASEMENT AREA AND STREETS. REMOVE AND REPAIR ANY DAMAGE WITHOUT ADDITIONAL COMPENSATION.
14. PROTECT EXISTING TREES, SHRUBS, FENCES, AND LANDSCAPING UNLESS SPECIFICALLY NOTED OR DESIGNATED OTHERWISE ON THE PLANS. REPLACE ANY ITEMS DAMAGED DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE.
15. CONTRACTORS SHALL SATISFY THEMSELVES PRIOR TO SUBMISSION OF BIDS AS TO THE SOIL CONDITIONS.
16. AS NECESSARY FOR CONSTRUCTION, THE CONTRACTOR SHALL REMOVE EXISTING IMPROVEMENTS WITHIN THE WORK AREA SHOWN ON THE PLAN AS 'REMOVE & REPLACE' AND SHALL REPLACE THEM TO THE CONDITION EXISTING PRIOR TO CONSTRUCTION, OR BETTER, AS DETERMINED BY THE ENGINEER. THE REMOVAL AND REPLACEMENT WORK IS INCIDENTAL AND ALL ASSOCIATED COSTS SHALL BE INCLUDED IN THE BID.
17. ADJUST ALL MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
18. PROTECT AND SAVE ALL PROPERTY CORNER MONUMENTS. REPLACE IF REMOVED OR DAMAGED.
19. CONSTRUCTION STAKING PROVIDED BY OWNER, REFER TO PROJECT SPECIFICATIONS FOR COORDINATION REQUIREMENTS.
20. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH CURRENT STATE OF IOWA APPROVED MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
21. CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING PERMANENT TRAFFIC SIGNS THAT ARE IN CONFLICT WITH THE CONSTRUCTION. NOTIFY THE OWNER 48 HOURS BEFORE CONSTRUCTION BEGINS.
22. DO NOT STORE EQUIPMENT AND/OR MATERIALS WITHIN PUBLIC RIGHT OF WAY ON STREETS OPEN TO TRAFFIC. PROVIDE AREAS AS NEEDED FOR STORAGE OF EQUIPMENT AND/OR MATERIALS.
23. BLADING, SHAPING OR MAINTENANCE OF TEMPORARY CONNECTIONS, CROSSINGS DETOURS OR TEMPORARY ACCESSSES SHALL BE INCIDENTAL TO THE PROJECT.
24. REMOVE THE EXISTING PAVEMENT AREAS TO THE NEAREST EXISTING JOINT OR AS DIRECTED BY THE ENGINEER.

- 25. REMOVE AND REPLACE, OR REPAIR ALL ROAD SURFACES AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO THEIR ORIGINAL CONDITION AND/OR TO THE SATISFACTION OF THE OWNER AND ENGINEER.
26. EXERCISE EXTREME CARE WHEN PERFORMING ANY NECESSARY SAW CUTTING OPERATIONS FOR THE REMOVAL OF EXISTING PAVEMENT. PROTECT ADJACENT STREET SURFACING, REMOVE AND REPLACE DAMAGED SURFACING WITHOUT ADDITIONAL COMPENSATION.
27. COMPACT ALL TRENCH BACKFILL UNDER PAVED SURFACES, AND WITHIN RIGHT-OF-WAY TO 95% STANDARD PROCTOR DENSITY.
28. SURFACE RESTORATION INCLUDES THE REMOVAL OF ALL GRANULAR MATERIAL FROM THE TOP 6 INCHES OF TOPSOIL. THIS WORK IS INCIDENTAL TO CONSTRUCTION.
29. OWNER HAS FIRST RIGHT OF REFUSAL TO RETAIN ANY MATERIAL REMOVED FROM THE PROJECT AREA. IF DIRECTED, DELIVER ITEMS OR MATERIALS TO OWNER AT LOCATION DESIGNATED BY THE PUBLIC WORKS DEPARTMENT. DISPOSE OF NON-SALVAGEABLE MATERIALS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
30. PROVIDE WASTE AREAS OR DISPOSAL SITES FOR WASTE MATERIAL (ASPHALTIC CONCRETE, STEEL OR BROKEN CONCRETE). NO EXTRA PAYMENTS WILL BE MADE FOR MATERIAL HAULED TO THESE SITES. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS. DO NOT PLACE WASTE MATERIAL WITHIN THE RIGHT-OF-WAY. KEEP CONSTRUCTION DEBRIS AND DIRT OFF OF THE ADJACENT PROPERTIES AND STREETS.
31. RECONSTRUCT ANY ROAD DITCHES DISTURBED, INCLUDING DITCH GRADES AND CROSS SECTIONS, REPLACE CULVERTS TO ORIGINAL GRADES UNLESS OTHERWISE NOTED. GRADE ALL DITCHES FOR PROPER DRAINAGE. PONDING OF WATER IS NOT ACCEPTABLE. RE-GRADE ANY DITCH WHICH DOES NOT PROPERLY DRAIN. ALL DITCH GRADING IS INCIDENTAL TO CONSTRUCTION.
32. STRIP, SALVAGE AND RESPREAD TOP 6 INCHES OF TOPSOIL IN ALL AREAS WITHIN THE CONSTRUCTION LIMITS AS PER SPECIFICATIONS. EXCEPT AREAS NOT DISTURBED BY CONSTRUCTION AND USED TO STOCKPILE THE TOPSOIL. MECHANICALLY LOOSEN THE 18 INCHES OF SOIL ON ALL HAIL ROADS AND OVERLY COMPACTED AREAS PRIOR TO RESPREADING OF THE TOPSOIL.
33. ASSIST ENGINEER'S FIELD REPRESENTATIVE WITH DAILY RECORD KEEPING INCLUDING ALL NECESSARY FIELD LOCATIONS AND MEASUREMENTS. CONTRACTOR REQUIRED TO ATTEND FINAL AND INTERMEDIATE INSPECTIONS OF PROJECT, OPEN ALL MANHOLES FOR INSPECTION.
34. DIMENSIONS, STREET LOCATIONS, UTILITIES, AND GRADING ARE BASED ON AVAILABLE INFORMATION AT THE TIME OF DESIGN. DEVIATIONS MAY BE NECESSARY IN THE FIELD. REPORT ANY SUCH CHANGES OR CONFLICTS BETWEEN THE PLAN AND FIELD CONDITIONS TO PROJECT ENGINEER IMMEDIATELY.
35. IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITY ESTIMATES AND THE DETAILED PLANS, THE DETAILED PLANS SHALL GOVERN.
36. MAINTAIN EMERGENCY ACCESS ON ALL STREETS AND ALL AFFECTED PROPERTIES AT ALL TIMES.
37. MAINTAIN GARBAGE SERVICE TO ALL RESIDENCES ALONG THE PROJECT. COORDINATE THE GARBAGE REMOVAL WITH THE LOCAL REFUSE HAULERS AND TRANSPORT GARBAGE AND/OR RECYCLING CONTAINERS ACROSS THE CONSTRUCTION AREAS AS NEEDED.
38. MAINTAIN MAIL SERVICE TO ALL RESIDENCES ALONG THE PROJECT. THIS INCLUDES INSTALLING A TEMPORARY MAILBOX. IF NECESSARY, COORDINATE TEMPORARY MAIL SERVICE WITH POST OFFICE.

PROCESS PIPING AND SITE PIPING NOTES

- 1. COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
2. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED.
3. FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE CONNECTIONS TO EXISTING PIPING. VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIALS OF CONSTRUCTION. EXCAVATE TEST PITS AS REQUIRED TO LOCATE EXISTING PIPING.
4. PROTECT AND SUPPORT ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION BY THE CONTRACTOR UNTIL THE IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE WORK SHALL BE COORDINATED THROUGH THE OWNER.
5. REFER TO SPECIFICATIONS FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
6. MANHOLES ARE 4 FEET IN DIAMETER UNLESS OTHERWISE NOTED, SET TOP OF MANHOLE FRAME FLUSH WITH FINISH GRADE. UNLESS OTHERWISE NOTED ON DRAWINGS, SUPPORT PIPES WITHIN VALVE VAULTS 12 INCHES ABOVE BOTTOM OF VALVE VAULT ON ADJUSTABLE PIPE SADDLE SUPPORTS.
7. LENGTHS OF GRAVITY SEWER ARE DIMENSIONED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
8. MINIMUM COVER OF 5 FEET IS REQUIRED ON ALL LIQUID CARRYING PIPES, UNLESS OTHERWISE NOTED BY PIPE ELEVATIONS. PIPELINE INSULATION SHALL BE USED WHERE DEPTH OF COVER IS LESS THAN 5 FEET.
9. SLOPE ALL PIPELINES UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED. RESTRAIN ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED LINES WITH THRUST BLOCKS AND RETAINER GLANDS. PROVIDE ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE ELEVATIONS AND ALIGNMENT INDICATED ON THE DRAWINGS.
10. ALL EQUIPMENT AND PIPING LAYOUT DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH EQUIPMENT PROVIDED, AND/OR EXISTING CONDITIONS.
11. WRITTEN DIMENSIONS SHALL PREVAIL. REPORT ANY DISCREPANCIES IMMEDIATELY TO ENGINEER.
12. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS. CORRECT SETTLEMENT OCCURRING DURING THE CONTRACT WARRANTY PERIOD AT NO ADDITIONAL COST.
13. CLEAN ALL PIPING AS DIRECTED BY ENGINEER, BEFORE TESTING.
14. PRESSURE TEST ALL GRAVITY PIPELINES AFTER INSTALLATION, AS SPECIFIED.

Table with columns for MARK, REVISION, DATE, SCALE, and PROJECT INFO. Includes Project No. 123.0575.08 and Sheet C-3.

GENERAL NOTES
USHWY 63 BOX CULVERT REPAIR
SNYDER & ASSOCIATES, INC.
5005 BOULING STREET S.W.
CEDAR RAPIDS, IOWA 52404
319-462-6334 | www.snyder-associates.com

SNYDER & ASSOCIATES logo and Project No. 123.0575.08, Sheet C.3

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GENERAL NOTES:

1. IT IS THE INTENT OF THIS DESIGN TO PERFORM REPAIRS TO THE EXISTING CULVERT FROM STATION 1+78.5 TO STATION 6+38.
2. FANT LINES ON PLANS INDICATE EXISTING STRUCTURE.
3. UTILITY COMPANIES AND MUNICIPALITIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.
4. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, EQUIPMENT AND OTHER FACILITIES AND PERSONS.
5. ALL AREAS DESTROYED OR DAMAGED BY CONTRACTOR'S WORK INCLUDING SIDEWALKS, SOD, AND GRASS WAYS ARE TO BE RESTORED TO ORIGINAL CONDITION (AS DOCUMENTED PRIOR TO THE START OF CONSTRUCTION) BY CONTRACTOR AT THEIR EXPENSE.
6. ALL REPAIR REMOVALS OF EXISTING CONCRETE SHALL BE INITIATED WITH A NEAT 3/4" MINIMUM DEEP STRAIGHT SAW CUT. PROTECT EXISTING REINFORCING STEEL IN PLACE, EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING REINFORCEMENT. EXACT LOCATION OF EXISTING REINFORCING IS TO BE DETERMINED BY THE CONTRACTOR USING REBAR LOCATOR OR SIMILAR METHOD. CONTRACTOR RESPONSIBLE TO REPAIR DAMAGED EXISTING REINFORCEMENT TO THE SATISFACTION OF THE ENGINEER/OWNER. CONTRACTOR RESPONSIBLE FOR ALL COSTS AND DELAYS ASSOCIATED WITH THE REPAIR.
7. CONTRACTOR SHALL SUBMIT A LIST OF ALL MATERIALS FOR REVIEW AND APPROVAL OF THE ENGINEER.
8. ALL MATERIALS SHALL BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S PRODUCT DATA FOR ALL REPAIR MATERIALS FOR ENGINEER TO REVIEW AND APPROVE PRIOR TO CONSTRUCTION.
9. ACCEPTABLE MATERIALS TO BE USED AS A BONDING AGENT/CORROSION INHIBITOR WHEN PLACING PLASTIC CONCRETE AGAINST EXISTING CONCRETE ARE SIKA ARMATEC 110, EUCLID CORR-BOND, MATEREMACO P124, OR AN EQUIVALENT ALTERNATE APPROVED BY THE ENGINEER.
10. ALL CONCRETE REMOVED FROM THE EXISTING STRUCTURE AND REPLACED AS PART OF THE WORK INCLUDED IN THESE PLANS SHALL MATCH THE FORM, BEVELS, TEXTURE, AS THE CONCRETE REMOVED.
11. NEW CONCRETE CORNERS OF 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A DRESSED AND BEVELED 3/4" STRIP.
12. NEW CONCRETE SURFACES SHALL BE FLUSH WITH, OR MATCH PROFILE AND GRADE OF EXISTING CONCRETE SURFACES AS SHOWN.
13. THE CONTRACTOR SHALL CONTACT THE CITY AND ENGINEER A MINIMUM OF 24 HOURS BEFORE BEGINNING CONSTRUCTION, AND ROAD CLOSURES.
14. THE CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCE AND CONSTRUCTION SCHEDULE, NO WORK SHALL BE PERMITTED ON THE PROJECT UNTIL THE CONSTRUCTION SEQUENCE AND SCHEDULE IS APPROVED BY THE ENGINEER AND THE CITY. THE ENGINEER SHALL HAVE 7 DAYS TO REVIEW THE CONSTRUCTION SEQUENCE AND SCHEDULE.
15. AFTER HOURS AND WEEKEND WORK MUST BE APPROVED BY THE CITY PRIOR TO THE DATE OF THE REQUEST.
16. ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION IN RELATION TO EXISTING PORTIONS OF THE STRUCTURE SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO STARTING CONSTRUCTION.
17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUAINT THEMSELVES AND ALL SUPERVISORY PERSONNEL WITH THE ABOVE-NAMED DRAWINGS AND DOCUMENTS.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE SITE OF THE PROPOSED WORK TO SATISFY THEMSELVES AS TO THE EXISTING CONDITIONS RELATIVE TO THE CONTRACT.
19. UTILITY LOCATIONS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UTILITIES BE FOUND DIFFERENT THAN LOCATED OR SHOWN ON THE DRAWINGS, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.
20. DIMENSIONS MARKED ++ REQUIRE VERIFICATION BY THE CONTRACTOR.
21. IN ANY CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
22. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THAT PARTS OF THE STRUCTURE TO BE PRESERVED ARE NOT DAMAGED BY THE APPLICATION OF EXCESSIVE LOADS OR BY ANY OTHER MEANS, AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE CAUSED.
23. ALL REMOVALS SHALL BE CAREFULLY ACCOMPLISHED AND ANY CONCRETE DAMAGED BY THE CONTRACTOR THAT IS NOT TO BE REMOVED SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE CITY. REMOVALS SHALL BE IN ACCORDANCE WITH 2401 OF THE STANDARD SPECIFICATIONS.
24. V.I.F. DENOTED VERIFY IN FIELD.

SPECIAL INSPECTION

1. SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1704 OF THE 2018 INTERNATIONAL BUILDING CODE, AND ICBO MODEL PROGRAM FOR SPECIAL INSPECTION.
2. THE OWNER WILL EMPLOY AN APPROVED AGENCY TO PERFORM THE SPECIAL INSPECTION SERVICES.
3. SPECIAL INSPECTION WILL BE PERFORMED IN ACCORDANCE WITH AND IN ADDITION TO THE INSPECTION AND TESTING REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.
4. THE FOLLOWING ITEMS ARE INCLUDED IN THE SPECIAL INSPECTION:
 - CONCRETE: AIR-ENTRAINMENT
 - SLUMP
 - COMPRESSIVE STRENGTH TESTING
 - REINFORCING PLACEMENT

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED., SERIES OF 2017, REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60 CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, FC FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR TRANSITION SECTIONS DEGN FC = 5.0 KSI.

SPECIFICATIONS:

1. DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED., SERIES OF 2017
2. CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

GENERAL NOTES

2/29/2024
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Engineer: AJIS	Checked By: JAG	Scale: (AS NOTED)	
Technician: DBT	Date: 2/29/2024	Field Bk:	Pg.
Project No: 123.0575.08			Sheet C.4


USHWY 63 BOX CULVERT REPAIR

TAMA, IA

GENERAL NOTES

SNYDER & ASSOCIATES, INC.

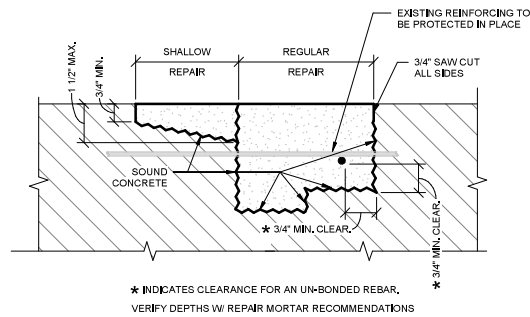
2727 S.W. SNYDER BLVD.
ANKENY, IOWA 50023
515-964-2020 | www.snyder-associates.com



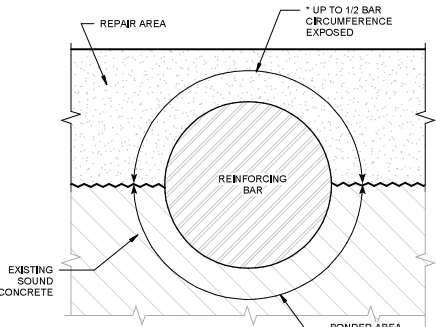
SNYDER & ASSOCIATES

Project No: 123.0575.08

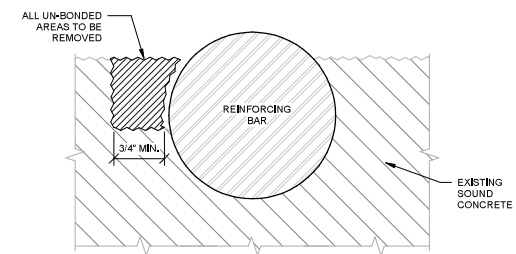
Sheet C.4



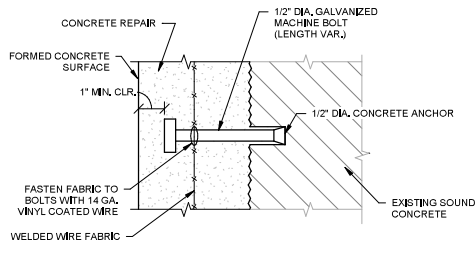
① CONCRETE SPALL REPAIR DETAIL
1" = 1'-0"



* IF MORE THAN 1/2 THE REBAR IS EXPOSED IT SHALL BE TREATED AS AN UN-BONDED REBAR.

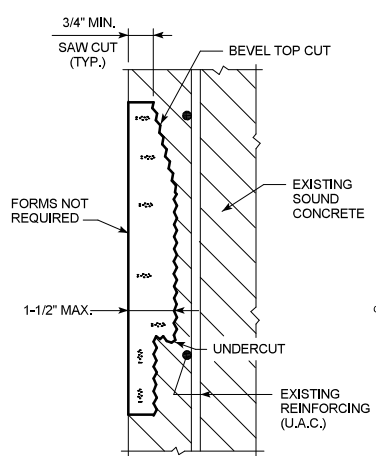


② CONCRETE REMOVAL ADJACENT TO REINF.
1" = 1'-0"

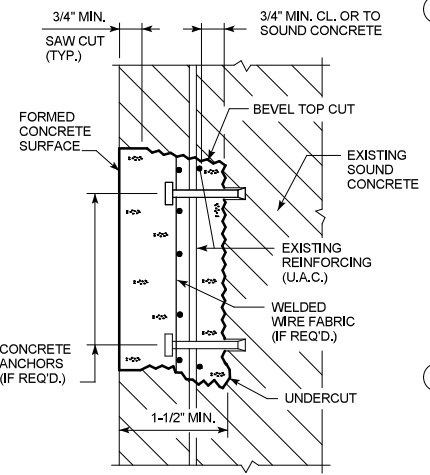


NOTE: FOR SPACING AND USE OF CONCRETE ANCHORS AND WWF SEE REPAIR NOTES, SIMILAR FOR OVERHEAD REPAIRS.

⑦ ANCHOR DETAIL
3/4" = 1'-0"

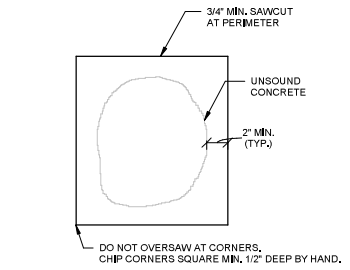


③ SHALLOW REPAIR VERTICAL FACE

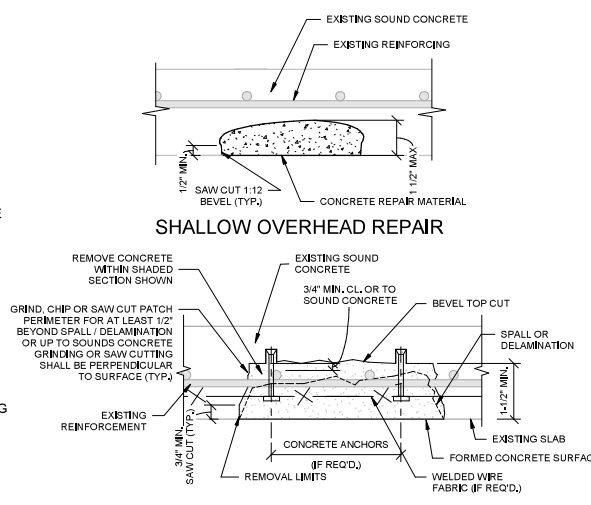


③ REGULAR REPAIR VERTICAL FACE

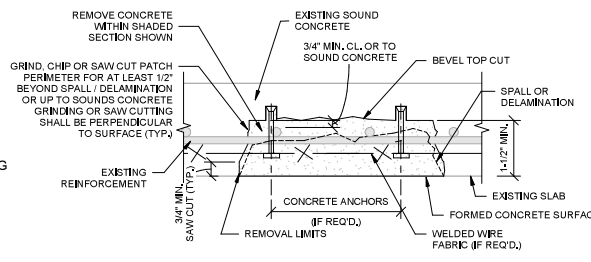
③ VERT CONC REPAIR
1" = 1'-0"



⑧ TYPICAL PLAN AT REMOVALS
3" = 1'-0"

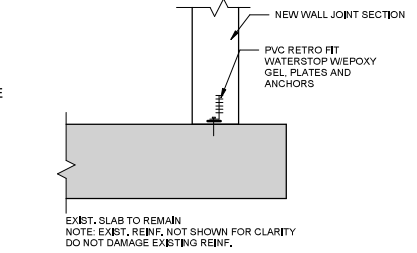


SHALLOW OVERHEAD REPAIR

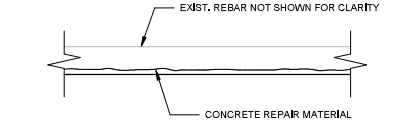


REGULAR OVERHEAD REPAIR

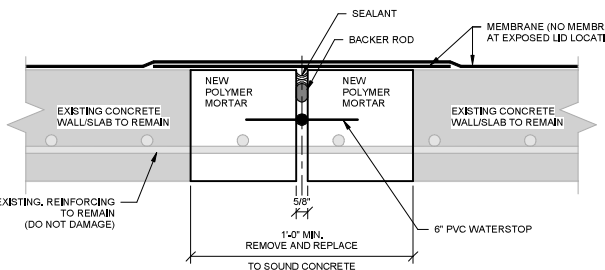
④ UNDERSIDE OF LID REPAIR
3" = 1'-0"



⑥ SECTION
1 1/2" = 1'-0"



⑤ RESURFACING DETAIL
3/4" = 1'-0"



⑨ SECTION
3" = 1'-0"

CONCRETE REPAIR NOTES:

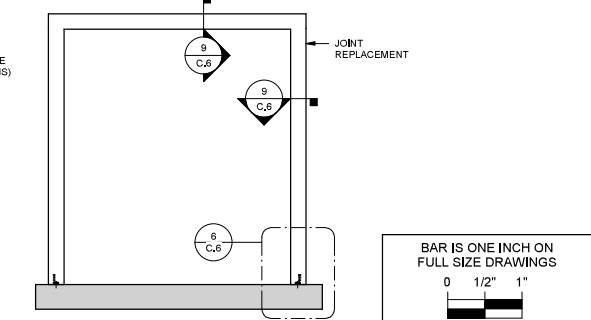
- THE SPALLED AND HOLLOW AREAS OF THIS CULVERT AS NOTED AND SHOWN IN THESE PLANS SHALL BE REPAIRED AS FOLLOWS:
 - ALL THE COSTS OF EQUIPMENT AND MATERIALS REQUIRED TO REPAIR THE SPALLED AND HOLLOW AREAS OF THIS CULVERT SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE REPAIR (UNDERSIDE OF LID)" AND "CONCRETE REPAIR (UNDERSIDE OF LID)".
 - THE PRICE BID FOR "CONCRETE REPAIR (UNDERSIDE OF LID)" AND "CONCRETE REPAIR (UNDERSIDE OF LID)" SHALL INCLUDE THE COST OF ALL CONCRETE ANCHORS AND WELDED WIRE FABRIC REQUIRED BY THE PLANS.
 - THE CONTRACTOR SHALL DETERMINE AND OUTLINE BY VISUAL AND AUDIBLE INSPECTION THE ACTUAL AREAS OF THE CONCRETE REPAIRS. THE AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING REPAIRS. THE CONTRACTOR SHALL BE PAID FOR THE ACTUAL AMOUNT OF REPAIRS MADE ON A SQUARE FOOT BASIS BASED ON THE PRICE BID PER SQUARE FOOT.
 - REMOVE DETEIORATED AREAS TO SOUND CONCRETE. IF REINFORCING IS ENCOUNTERED EITHER OF TWO CONDITIONS SHOULD BE MET. IF LESS THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, REMOVE CONCRETE WITHOUT DAMAGING BARS. IF MORE THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, CAREFULLY REMOVE CONCRETE AROUND BAR TO A DEPTH OF 3/4" UNDER THE BAR. ALL EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO THE NEW WORK. EXCEPT, BADLY DETEIORATED EXISTING REINFORCING WITH 20% OR MORE OF SECTION LOSS SHALL BE REPLACED. THE CONTRACTOR SHALL REPORT REINFORCING STEEL SECTION LOSS EXISTING DURING REMOVAL WORK. TO THE ENGINEER PRIOR TO PERFORMING ANY REPAIR WORK, THE ENGINEER SHALL BE GIVEN TWO WORKING DAYS TO DETERMINE WHETHER ADDITIONAL REINFORCING IS REQUIRED. THE CONTRACTOR SHALL INCORPORATE THESE DAYS INTO THE CONSTRUCTION SCHEDULE WITH WORK IN OTHER AREA OF THE PROJECT, IN ORDER TO NOT DELAY THE PROJECT.
 - ALL SURFACES OF OLD CONCRETE AGAINST WHICH NEW MATCHING MORTAR OR CONCRETE IS TO BE PLACED SHALL BE THOROUGHLY SANDBLASTED CLEAN AND ALL LOOSE MATERIAL SHALL BE REMOVED BY DRY SWEEPING AND BLOWING OUT WITH CLEAN, DRY COMPRESSED AIR. AN EPOXY BINDER SHALL BE APPLIED TO THE SURFACE OF ALL REINFORCING STEEL (2 COATS) AND CONCRETE SURFACE (1 COAT) WITHIN THE CONCRETE PLACEMENT AREA PRIOR TO PLACEMENT OF NEW CONCRETE.
 - THE CONCRETE ANCHORS REQUIRED SHALL HAVE A MINIMUM PULL OUT OF 5000 LBS. BASED ON 4000 PSI CONCRETE, AN ANCHOR MEETING THE REQUIREMENTS OF IOWA D.O.T., MATERIALS IM, 453.09 AND THE PULL OUT LOAD ABOVE IS REQUIRED. THE ANCHORS SHALL BE GALVANIZED AND SHALL BE INSTALLED ACCORDING TO RECOMMENDATIONS OF THE MANUFACTURER. THE COST OF FURNISHING AND INSTALLING THE CONCRETE ANCHORS SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE REPAIR".
 - THE WELDED WIRE FABRIC SHALL BE ASTM A185 AND GALVANIZED AS PER ASTM A641. THE WWF WIRES SHALL BE SPACED 3' X 3 OR 4' X 4 AND THE WIRES SHALL HAVE A NOMINAL AREA OF 0.014 TO 0.029 SQUARE INCHES INCLUSIVE, EXAMPLE "WWF 3' X 3 - W1.4 X W2.9".
 - WHERE REINFORCEMENT HAS BEEN EXPOSED AND CLEARANCE AROUND THE PERIPHERY OF THE EXISTING BAR IS PROVIDED NO SUPPLEMENTAL REINFORCING IS REQUIRED, EXCEPT WHERE EXISTING REINFORCEMENT DENSITY AND PATTERN ARE SUCH THAT INDIVIDUAL OPEN SPACES BETWEEN BARS ARE OF 15 SQUARE FOOT OR LARGER, FOR THIS CONDITION 1/2" DIA. CONCRETE ANCHORS AND WELDED WIRE FABRIC SHALL BE INSTALLED AT THE RATE OF ONE CONCRETE ANCHOR WITH WWF PER EACH 15 SQUARE FEET OF AREA WITHIN EACH OPEN SPACE.
 - REPAIRING THE STRUCTURAL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 2426 OF THE STANDARD SPECIFICATIONS.
 - THE CONCRETE REPAIR WORK IS ESTIMATED TO BE COMPRISED OF 50% SHALLOW REPAIR AND 50% REGULAR REPAIR.
 - PROTECT EXISTING UTILITIES IN PLACE, DO NOT DAMAGE.
 - PROVIDE SHORING AS REQUIRED TO COMMENCEMENT OF ANY CONCRETE REMOVAL WORK.

CONCRETE REPAIR MATERIALS

- BONDING AGENT IS TO BE SIKA ARMATEC 110 EPOCEM BONDING AGENT, BASF MASTER BUILDERS MASTEREMACO P124, OR EQUAL.
- CONCRETE REPAIR MATERIAL TO BE SIKATOP 123 (OVERHEAD) POLYMER-MODIFIED NON-SAG MORTAR PATCH REPAIR MATERIAL, BASF MASTER BUILDERS MASTEREMACO N400, OR EQUAL.
- EPOXY ADHESIVE FOR EMBEDDED REINFORCEMENT IS TO BE HILTI HIT-RE 500V3 EPOXY, OR EQUAL.
- USE ALL PRODUCTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

WALL RESURFACING NOTES

- METHOD OF MEASUREMENT AND BASIS OF PAYMENT. SQUARE FOOT OF RESURFACING REQUIRED FOR "WALL RESURFACING" ARE ESTIMATED BASED ON VISUAL OBSERVATION, ACTUAL AREA, MEASURED IN SQUARE FEET. FOR WALL RESURFACING SHALL BE DETERMINED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION, FOR APPROVAL BY THE ENGINEER. THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR THE ACTUAL QUANTITY OF "WALL RESURFACING" COMPLETED PER PROJECT REQUIREMENTS, AS COMPUTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THIS PAYMENT SHALL BE CONSIDERED FULL COMPENSATION FOR ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED TO COMPLETE THIS WORK.
- CONSTRUCTION DETAILS:
 - CONTRACTOR TO REMOVE SCALED CONCRETE AREA TO SOUND CONCRETE OR MASONRY. IF REINFORCING IS ENCOUNTERED EITHER OF TWO CONDITIONS SHOULD BE MET. IF LESS THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, REMOVE CONCRETE WITHOUT DAMAGING BARS. IF MORE THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, CAREFULLY REMOVE CONCRETE AROUND THE BAR TO A DEPTH OF 3/4" UNDER THE BAR.
 - IF THE BAR EXHIBITS SECTION LOSS GREATER THEN 20%, REPLACE THE BAR, DRILL AND EPOXY IF REQUIRED.
 - CLEAN SURFACE BY MECHANICAL MEANS (NOT SAND BLASTING) (REINFORCING BARE MATERIAL).
 - PREPARE SOUND CONCRETE AND REINFORCING SURFACES IN STRICT ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
 - APPLY BONDING AGENT.
 - PLACE REPAIR MATERIAL, FULLY CONSOLIDATE.
 - CURE PER THE MANUFACTURER'S RECOMMENDATIONS.
- REPAIR MATERIALS:
 - BONDING AGENT IS TO BE SIKA ARMATEC 110 EPOCEM BONDING AGENT, BASF MASTER BUILDERS MASTEREMACO P124, OR EQUAL.
 - CONCRETE REPAIR MATERIAL TO BE SIKATOP 123 (OVERHEAD) POLYMER-MODIFIED NON-SAG MORTAR PATCH REPAIR MATERIAL, BASF MASTER BUILDERS MASTEREMACO N400, OR EQUAL.
 - EPOXY ADHESIVE FOR EMBEDDED REINFORCEMENT IS TO BE HILTI HIT-RE 500V3 EPOXY, OR EQUAL.
 - USE ALL PRODUCTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



⑪ JOINT REPLACEMENT
1/2" = 1'-0"

BAR IS ONE INCH ON FULL SIZE DRAWINGS
0 1/2" 1"
IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

MARK	REVISION	DATE	BY
Engineer: AJIS	Checked By: JAG	Scale: (AS NOTED)	
Technician: DBT	Date: 2/29/2024	File/Bk: Pg.	
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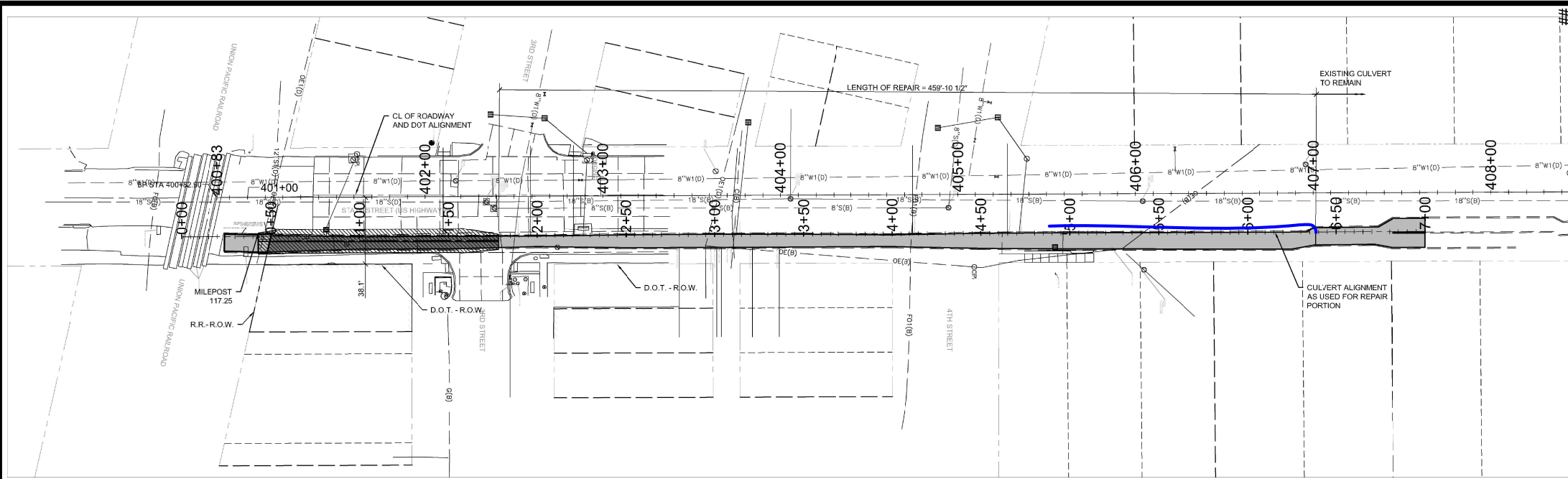
TAMA, IA
2727 S.W. SNYDER BLVD.
ANKENY, IOWA 50023
515-964-2120 | www.snyder-associates.com

USHWY 63 BOX CULVERT REPAIR
REPAIR DETAILS
SNYDER & ASSOCIATES, INC.



Project No: 123.0575.08
Sheet C.6

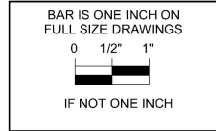
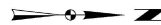
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1

OVERALL PLAN VIEW

Scale: 1" = 30'



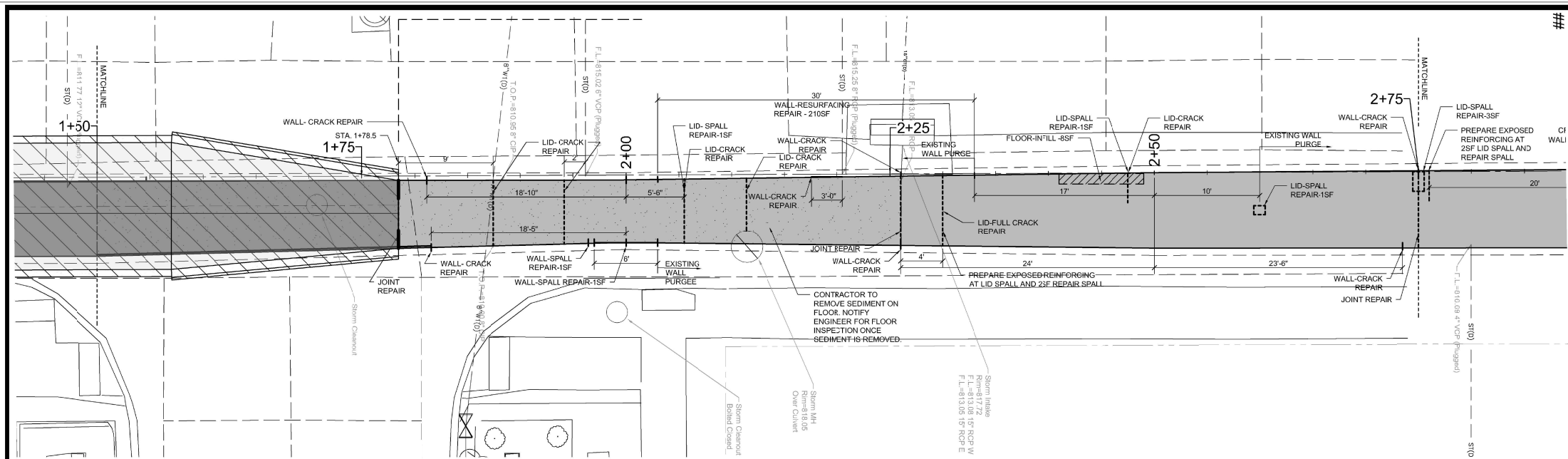
MARK	REVISION	DATE	BY

Engineer: A.J.S.
 Checked By: J.A.G.
 Date: 2/29/2024
 Technician: DBT
 Scale: 1" = 30'
 T.R.S. #####
 Project No: 123.0575.08
Sheet D.1

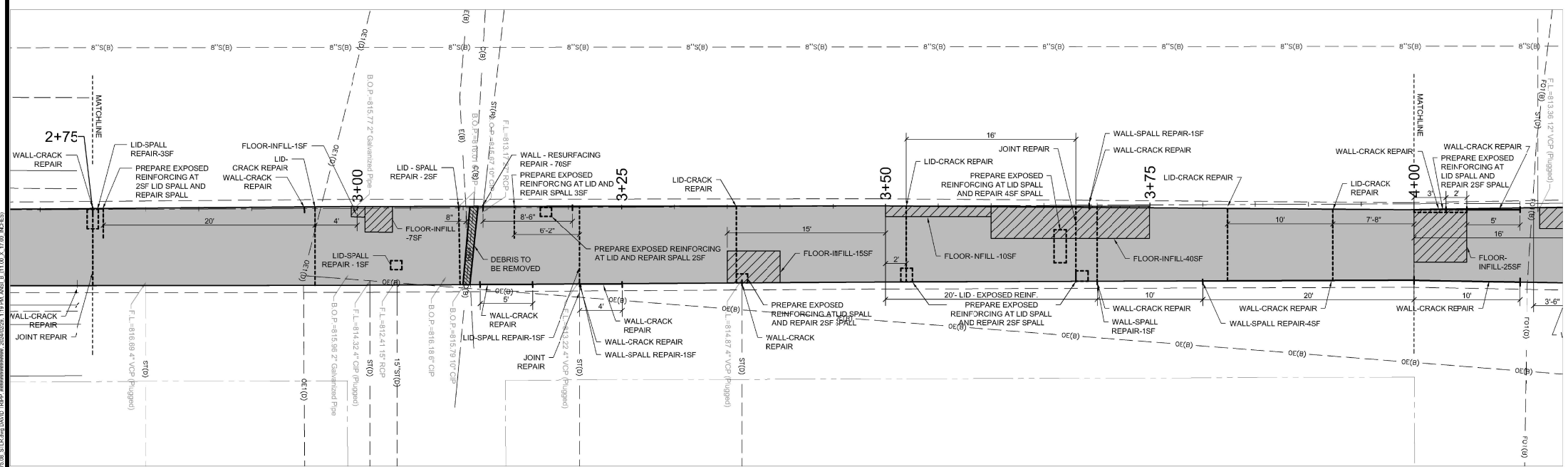
USHWY63 BOX CULVERT REPAIR
OVERALL PLAN VIEW
TAMA, IA.
SNYDER & ASSOCIATES, INC.

SNYDER & ASSOCIATES
 Project No: 123.0575.08
Sheet D.1

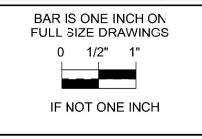
2727 S.W. SNYDER BLVD
 ANKENY, IOWA 50023
 515-964-2020 | www.snyder-associates.com



1 ENLARGED PLAN VIEW - AT STA 1+50 TO 2+75
Scale: 1" = 5'



2 ENLARGED PLAN VIEW - AT STA 2+75 TO 4+00
Scale: 1" = 5'

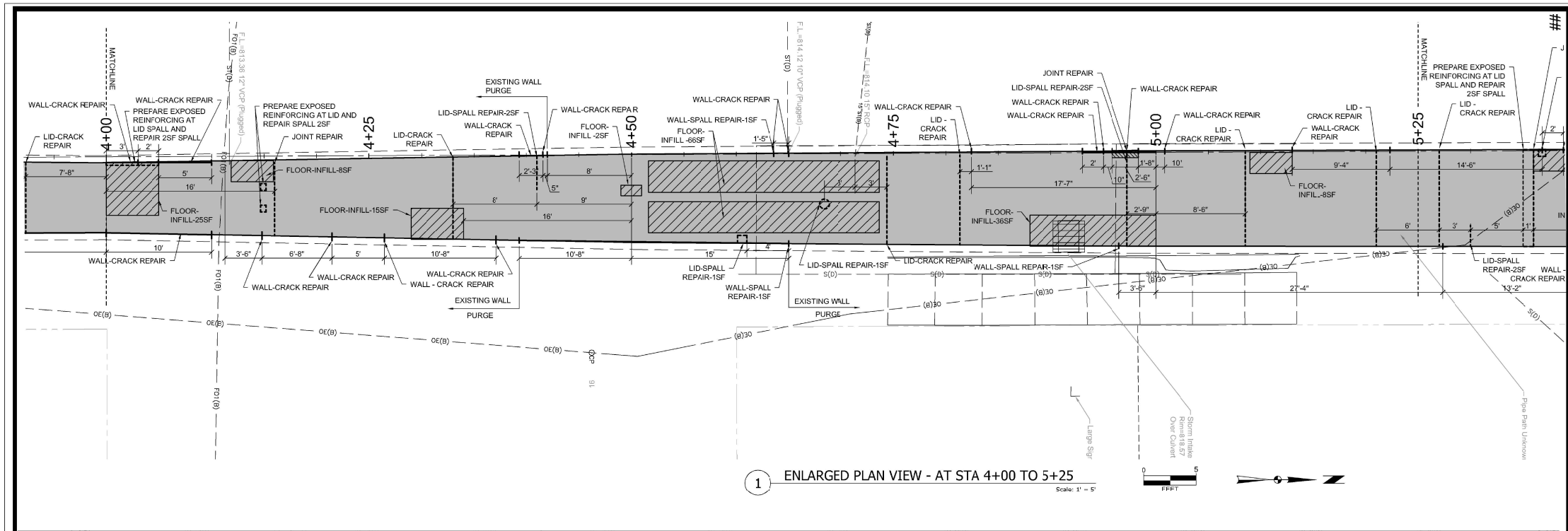


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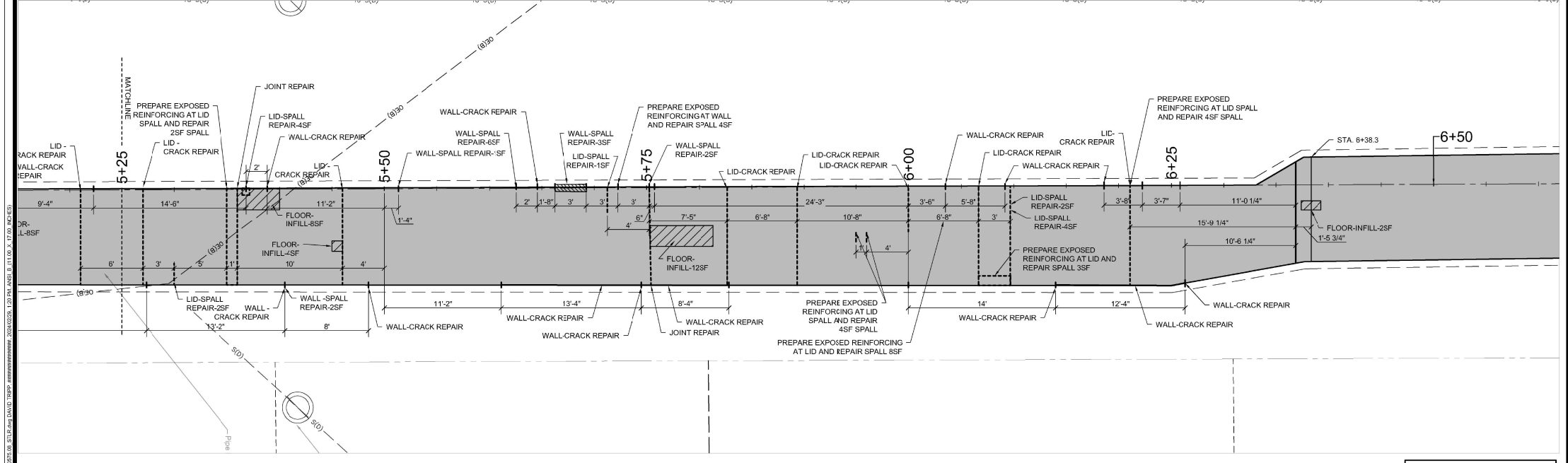
TAMA, IA.
2727 S.W. SNYDER BLVD
ANKENY, IOWA 50023
515-984-2020 | www.snyder-associates.com

USHWY 63 BOX CULVERT REPAIR
ENLARGED PLANS
SNYDER & ASSOCIATES, INC.

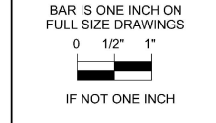




1 ENLARGED PLAN VIEW - AT STA 4+00 TO 5+25
Scale: 1" = 5'



2 ENLARGED PLAN VIEW - AT STA 5+25 TO 6+50
Scale: 1" = 5'



ENLARGED PLANS	TAMA, IA.	SNYDER & ASSOCIATES, INC.
	2727 S.W. SNYDER BLVD ANKENY, IOWA 50023 515-984-2020 www.snyder-associates.com	
	SNYDER & ASSOCIATES	
	Project No: 123.0575.08 Sheet D.3	

REVISION	DATE	BY

MARK	REVISION	DATE	BY

Engineer: AJS	Checked By: JAG	Scale: 1" = 1' = 5'
Technician: DBT	Date: 2/29/2024	T.R.S. #####

TRAFFIC CONTROL NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION PER 761 IOWA ADMINISTRATIVE CODE, CHAPTER 130.
2. FURNISH AND INSTALL ALL TRAFFIC CONTROL DEVICES AND MAINTAIN IN THE CORRECT POSITION, PROMPTLY CLEAN AND REPLACE DAMAGED TRAFFIC CONTROL DEVICES. PATROL THE WORK AREAS AS FREQUENTLY AS NEEDED TO ENSURE ALL TRAFFIC CONTROL DEVICES ARE PROPERLY SET.
3. REMOVE THE EXISTING PERMANENT TRAFFIC CONTROL SIGNS LOCATED WITHIN THE LIMITS OF THE PROJECT IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL AND PLACE THEM ON THE SITE OUT OF THE WAY, NOTIFY THE CITY TO COLLECT THE PERMANENT TRAFFIC CONTROL SIGNS AND ALSO WHEN THE SITE IS READY FOR THE SIGNS TO BE REINSTALLED, THE CITY WILL REINSTALL THE PERMANENT TRAFFIC CONTROL SIGNS.
4. ALL TRAFFIC CONTROL SIGNS SHALL BE PLACED A MINIMUM OF FOUR (4) FEET CLEAR FROM THE FACE OF THE CURB OR A MINIMUM OF SIX (6) FEET CLEAR FROM THE TRAVELED WAY WHEN NO CURB IS PRESENT.
5. ALL SIGN FACES SHALL BE RETRO REFLECTIVE MEETING THE REQUIREMENTS OF ASTM-D4956 TYPE III (HIGH INTENSITY) OR GREATER REFLECTIVE SHEETING UNLESS OTHERWISE NOTED.
6. THE PROPOSED SIGNING MAY BE MODIFIED TO MEET FIELD CONDITIONS, PREVENT OBSTRUCTIONS AND ACCOMMODATE CONSTRUCTION SCHEDULING UPON APPROVAL OF THE ENGINEER.
7. ALL TYPE III BARRICADES SHALL HAVE TYPE "A" FLASHING LIGHTS, THE BACK SIDE OF THE BARRICADES SHALL BE REFLECTORIZED BY A MINIMUM OF SIX (6) YELLOW REFLECTORS, ONE AT EACH END OF EACH RAIL.
8. NOTIFY ALL PROPERTY OWNERS IN WRITING WHOSE ACCESS MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES AT LEAST 48 HOURS PRIOR TO COMMENCING WORK, THE NOTICE SHALL INCLUDE A TELEPHONE NUMBER WHERE THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY IN THE EVENT OF AN EMERGENCY, THE CONTRACTOR SHALL ALSO ATTEMPT TO VERBALLY CONTACT ALL PROPERTY OWNERS.
9. WHEN SIDEWALK SECTIONS ARE CLOSED DURING CONSTRUCTION ACTIVITIES, PROVIDE ADEQUATE PROTECTION FOR PEDESTRIANS, USE APPROPRIATE BARRICADING AND SIGNING, THESE DEVICES SHALL REMAIN IN PLACE DURING CONSTRUCTION ACTIVITIES, REOPEN TO THE PEDESTRIAN TRAFFIC AFTER CONSTRUCTION ACTIVITIES ARE FINISHED AT THE END OF THE DAY, COST FOR THE INSTALLATION AND MAINTENANCE OF THE DEVICES FOR SIDEWALK TRAFFIC CONTROL ARE CONSIDERED INCIDENTAL TO THE LUMP SUM BID FOR TRAFFIC CONTROL.
10. A PHASING PLAN AND PROJECT SCHEDULE SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO COMMENCING WORK THAT OUTLINES THE TIMELINE AND PROCESS TO COMPLETE THE STAGED CONSTRUCTION.
11. ALL SPECIAL TYPE SIGNS SHALL HAVE HIGHWAY C SERIES FONT, STREET NAME ONLY SIGNS SHALL HAVE 6" LETTERING, ALL OTHER SPECIAL SIGNS SHALL HAVE 5" LETTERING.

USHWY 63 BOX CULVERT REPAIR

TRAFFIC CONTROL

TAMA, IA

SNYDER & ASSOCIATES, INC. |

5005 BOULING STREET S.W.
CEDAR RAPIDS, IOWA 52404
319-382-8334 | www.snyder-associates.com



Project No: 123.0575.08

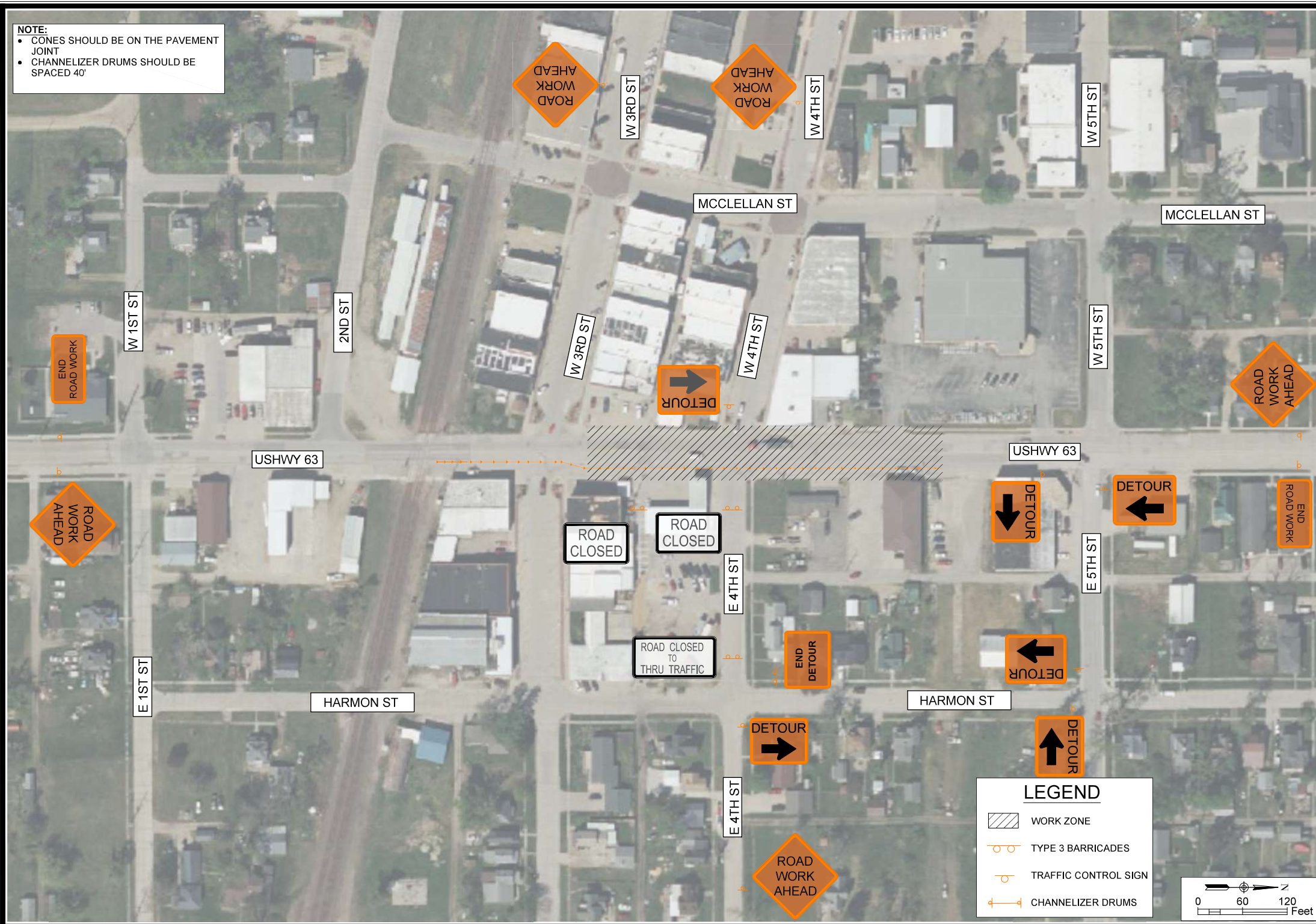
Sheet J.1

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Engineer: KJS	Checked By: NAE				1" = #'
Technician: LJO	Date: ####/###/##				TAMA, IA
					Project No: 123.0575.08
					Sheet J.1

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NOTE:

- CONES SHOULD BE ON THE PAVEMENT JOINT
- CHANNELIZER DRUMS SHOULD BE SPACED 40'



LEGEND

- WORK ZONE
- TYPE 3 BARRICADES
- TRAFFIC CONTROL SIGN
- CHANNELIZER DRUMS



MARK	REVISION	DATE	BY

Engineer: KJS
 Checked by: NAE
 Date: #####
 Technician: LJO
 Scale: 1" = 80'
 TACS: #####

USHWY 63 BOX CULVERT REPAIR
TRAFFIC CONTROL
SNYDER & ASSOCIATES, INC.




Project No: 123.0575.08
 Sheet J.2

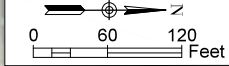
TAMA, IA
 5005 BOULING STREET S.W.
 CEDAR RAPIDS, IOWA 52404
 319-262-2834 | www.snyder-associates.com
 Project No: 123.0575.08
 Sheet J.2

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LEGEND

-  WORK ZONE
-  PEDESTRIAN PATH CLOSURE
-  SIDEWALK CONTROL SIGN



MARK	REVISION	DATE	BY

Engineer: KJS	Checked By: NAE	Scale: 1" = 60'
Technician: LJO	Date: #####/##/##	T&S: #####/##/##
Project No: 123.0575.08		Sheet J.3


USHWY 63 BOX CULVERT REPAIR

TRAFFIC CONTROL

TAMA, IA

SNYDER & ASSOCIATES, INC.

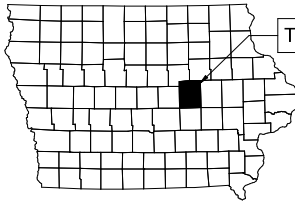
5005 BOULING STREET S.W.
CEDAR RAPIDS, IOWA 52404
319-262-8334 | www.snyder-associates.com



SNYDER & ASSOCIATES

Project No: 123.0575.08

Sheet J.3



TAMA COUNTY

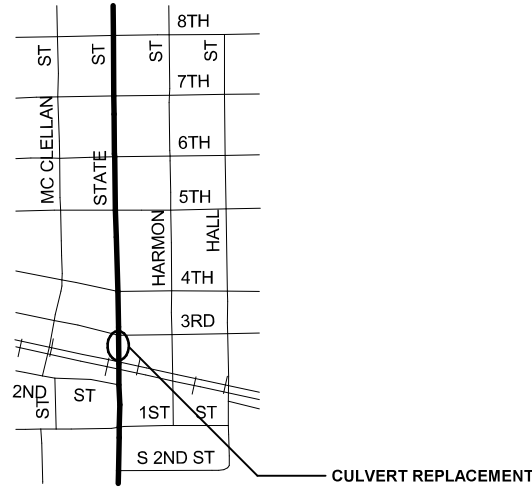
TAMA COUNTY, IOWA

US HWY 63 BOX CULVERT REPLACEMENT

US HIGHWAY 63 UNION PACIFIC RAILROAD TO 3RD STREET

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS THAT REQUIRE APPROVAL SHALL BE SUBMITTED TO: SHUCK-BRITSON INC., 400 EAST COURT AVE., - SUITE 140 DES MOINES, IOWA 50309



LOCATION MAP
(NOT TO SCALE)

INDEX OF SHEETS	
NO.	DESCRIPTION
A.1	TITLE SHEET
C.1	ESTIMATE OF QUANTITIES AND TABULATIONS
C.2	ESTIMATE OF QUANTITIES AND TABULATIONS
C.3	GENERAL NOTES
C.4	GENERAL NOTES
C.5	NOTES AND DETAILS
D.1	OVERALL PLAN VIEW
E.1	REPLACEMENT SITUATION PLAN
E.2	TRANSITION DETAILS
E.3	TEMPORARY SHORING
E.4	PRECAST CULVERT
J.1	TRAFFIC CONTROL
J.2	TRAFFIC CONTROL
J.3	TRAFFIC CONTROL
L.1	GEOMETRIC, STAKING, AND JOINTING
L.2	GEOMETRIC, STAKING, AND JOINTING
L.3	GEOMETRIC, STAKING, AND JOINTING
M.1	BURIED PIPE SHEETS - STORM
Q.1	PROJECT REMOVALS

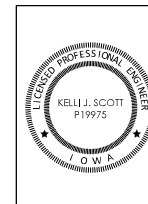
IOWA DEPARTMENT OF TRANSPORTATION STANDARDS REQUIRED	
STANDARD	LATEST REVISION
PRCB G1-20	-
PRCB G2-20	01 - 2023
PRCB 10-20	-

THESE SHEETS MAY BE OBTAINED AT THE ELECTRONIC REFERENCE LIBRARY WEBSITE. <https://iowadot.gov/er/index.html>

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
CULVERT STANDARDS	JAMES S. NELSON	STRUCTURAL DESIGN



1-800-292-8989
www.iowaonecall.com

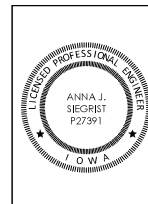


I HEREBY CERTIFY THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *Kelli J. Scott*
NAME: KELLI J. SCOTT, P.E.

IOWA REG. NO: P19975 EXPIRATION DATE: 12/31/2025

PAGES OR SHEETS COVERED BY THIS SEAL: SHEETS C.1 THRU C.3, J.1 THRU J.3, L.1 THRU L.3, M.1 AND Q.1



I HEREBY CERTIFY THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: *Anna Siegrist*
NAME: ANNA J. SIEGRIST, P.E.

IOWA REG. NO: P27391 EXPIRATION DATE: 12/31/2025

PAGES OR SHEETS COVERED BY THIS SEAL: SHEETS A.1, C.4 THRU C.5, D.1, AND E.1 THRU E.4

MARK	REVISION	DATE	BY

TAMA, IA

USHWY 63 BOX CULVERT REPLACEMENT

TITLE SHEET

SNYDER & ASSOCIATES, INC.

2727 S.W. SNYDER BLVD.
ANKENY, IOWA 50023
515-964-2020 | www.snyder-associates.com

Project No: 123.0575.08

Sheet A.1

TITLE SHEET

3/1/2024
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ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	DESCRIPTION	UNIT	ESTIMATED QUANTITY	AS BUILT QUANTITY
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1	
2	2402-2720000	EXCAVATION, CLASS 20	CY	430	
3	2402-3825025	GRANULAR MATERIAL FOR BLANKET	CY	44	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	39,7	
5	2404-7775000	REINFORCING STEEL	LB	10931	
6	2415-2111205	PRECAST CONCRETE BOX CULVERT, 12 FT. X 5 FT.	LF	99,5	
7	2501-8400172	TEMPORARY SHORING	LS	1	
8	2533-4980005	MOBILIZATION	LS	1	
9	4020-A-1	STORM SEWER, TRENCHED, RCP, 15 INCH	LF	5	
10	4020-A-1	STORM SEWER, TRENCHED, PVC, 12 INCH	LF	5	
11	4020-D	REMOVAL OF STORM SEWER, RCP, 15 INCH	LF	9	
12	4020-D	REMOVAL OF STORM SEWER, VCP, 12 INCH	LF	15	
13	4020-F	STORM SEWER ABANDONMENT, PLUG, VCP, 12 INCH	EA	1	
14	7030-A	REMOVAL OF SIDEWALK	SY	75	
15	7030-E	SIDEWALK, PCC, 6 INCH	SY	75	
16	7030-999-A	REPAIR BRICK SIDEWALK	EA	1	
17	7030-G	DETECTABLE WARNING	SF	10	
18	7040-A	FULL DEPTH PATCH 8 INCH	SY	275	
19	8030-A	TEMPORARY TRAFFIC CONTROL	LS	1	
20	8030-999-A	RAILROAD FLAGGING	LS	1	
21	0000-999-A	RAILROAD INSURANCE, COORDINATION, AND TRAINING	LS	1	
22	0000-999-B	MOBILIZATION/DEMobilIZATION DUE TO FLOODING	EA	2	

USHWY 63 BOX CULVERT REPLACEMENT

ESTIMATE OF QUANTITIES AND TABULATIONS

SNYDER & ASSOCIATES, INC. |

TAMA, IA

5005 BOULING STREET S.W.
CEDAR RAPIDS, IOWA 52404
319-362-8334 | www.snyder-associates.com



Project No: 123.0575.08

Sheet C.1

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 DATE: # # # # #
 Engineer: KJS
 Technician: LJO
 Checked By: NAE
 Scale: 1" = #'
 T-#S: TAMA, IA
 Project No: 123.0575.08

Sheet C.1

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ESTIMATE REFERENCE INFORMATION

Note: DOT Standard Specifications shall apply to bid items 1 through 8. All included work listed within the Standard SUDAS Specifications for bid items 9 through 21 shall apply. For all additional work items in the Estimate Reference Information, these work items shall be added to the work already included in the DOT Standard Specifications & Standard SUDAS Specifications listed for that Bid Item and are not necessarily added by Special Provision.

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6750001	REMOVALS, AS PER PLAN INCLUDES ALL WORK FOR REMOVAL AND OFF-SITE DISPOSAL OF 135'-6" WITH VARYING WIDTH AND HEIGHT CULVERT. REMOVAL SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS, ANY DAMAGE TO MATERIAL NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE CITY.
2	2402-2720003	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND THE PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE GRANULAR MATERIAL FOR BLANKET, QUANTITIES ASSUME THAT SHORING IS SUPPORTING THE PERIMETER OF THE EXCAVATION BOUNDARIES.
3	2402-3825025	GRANULAR MATERIAL FOR BLANKET INCLUDES ALL COSTS TO INSTALL A 6 INCH-THICK BLANKET CONSISTING OF CLEAN COARSE CRUSHED ROCK IN ACCORDANCE WITH SECTION 4118, (SIMILAR TO OR COARSER THAN IOWA DOT 4115).
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT) INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES ALL COSTS ASSOCIATED WITH INSTALLING THE DOWEL BARS BETWEEN EXISTING AND CIP TRANSITION SECTION AS WELL AS BETWEEN CIP TRANSITION SECTION AND PRECAST BOX CULVERT SECTION AS DETAILED IN THESE PLANS. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING ENGINEERING FABRIC, FURNISHING AND INSTALLING OF THE SW-604, TYPE 6 INTAKE GRATE AND SW-602, TYPE E MANHOLE CASTING, ADJUSTMENT RINGS AND PCO BOXOUT ARE INCIDENTAL TO THIS BID ITEM.
5	2404-7775003	REINFORCING STEEL INCLUDES MATERIAL FOR DOWEL BARS BETWEEN EXISTING AND CIP TRANSITION SECTION AS WELL AS BETWEEN CIP TRANSITION SECTION AND PRECAST BOX CULVERT SECTION AS DETAILED IN THESE PLANS.
6	2415-2111205	PRECAST CONCRETE BOX CULVERT, 12 FT. X 5 FT. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE CULVERT TIES, LIFTING HOLE PLUGS, ENGINEERING FABRIC, JOINT MATERIAL, 6 INCH-THICK GRANULAR LEVELING MATERIAL, AND GROUT AS REQUIRED.
7	2501-8400172	TEMPORARY SHORING --
8	2533-4980005	MOBILIZATION BYPASS BUMPING OF LOW FLOW CONDITIONS IS INCIDENTAL TO THIS BID ITEM.
9	4020-A-1	STORM SEWER, TRENCHED, RCP, 15 INCH
10	4020-A-1	STORM SEWER, TRENCHED, PVC, 12 INCH REFER TO M SHEETS FOR LOCATION, CONNECTIONS TO THE EXISTING PIPE AND THE RCB CULVERT ARE INCIDENTAL TO THIS BID ITEM.
11	4020-D	REMOVAL OF STORM SEWER, RCP, 15 INCH
12	4020-D	REMOVAL OF STORM SEWER, VCP, 12 INCH REFER TO Q SHEETS FOR LOCATION

13	4020-F	STORM SEWER ABANDONMENT, PLUG, VCP, 12 INCH REFER TO Q SHEETS FOR LOCATION
14	7030-A	REMOVAL OF SIDEWALK REFER TO Q SHEETS FOR LOCATION
15	7030-E	SIDEWALK, PCC, 6 INCH REFER TO L SHEETS FOR LOCATION
16	7030-999-A	REPAIR BRICK SIDEWALK ANY PORTION OF THE BRICK SIDEWALK DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO MATCH THE EXISTING BRICK SIDEWALK. DAMAGE TO BRICK SHALL BE ASSESSED BY ENGINEER, CITY, AND CONTRACTOR BEFORE CONSTRUCTION BEGINS AND BEFORE CONSTRUCTION IS COMPLETED. THE DETERMINATION OF WHETHER DAMAGE HAS BEEN CAUSED TO THE BRICK DURING CONSTRUCTION AND TO WHAT DEGREE DAMAGE HAS OCCURRED SHALL BE AGREED UPON BY THE ENGINEER, CITY, AND CONTRACTOR. ENGINEER APPROVAL IS REQUIRED FOR ANY REPAIRS TO BRICK SIDEWALK. PRIOR AUTHORIZATION FROM THE CITY OR ENGINEER IS REQUIRED FOR USE OF THIS BID ITEM, NO PAYMENT WILL BE MADE WITHOUT PRIOR AUTHORIZATION.
17	7030-G	DETECTABLE WARNING REFER TO L SHEETS FOR LOCATION
18	7040-A	FULL DEPTH PATCH, 8 INCH REFER TO L SHEETS FOR LOCATION. REMOVAL AND DISPOSAL OF EXISTING PAVEMENT IS INCIDENTAL TO THIS BID ITEM. THIS BID ITEM IS A CONTINGENCY ITEM TO BE USED AS NECESSARY FOR ROADWAY REPAIRS, PRIOR AUTHORIZATION FROM THE CITY OR ENGINEER IS REQUIRED FOR USE OF THIS BID ITEM, NO PAYMENT WILL BE MADE WITHOUT PRIOR AUTHORIZATION.
19	8030-A	TEMPORARY TRAFFIC CONTROL ITEM INCLUDES THE SUPPLY, ERECTION, MAINTENANCE, AND REMOVAL OF ALL SIGNS, CONSTRUCTION FENCE, USE OF FLAGGERS, AND/OR BARRICADES NECESSARY TO REDIRECT TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA. STATE STREET WILL BE REDUCED TO TWO LANES IN THE CONSTRUCTION AREA DURING CONSTRUCTION ALONG THE LENGTH OF CULVERT THAT IS TO BE REPAIRED AS WELL AS THE LENGTH TO BE REPLACED. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC), CHAPTER 130, REFER TO J SHEETS FOR THE TRAFFIC CONTROL PLAN.
20	8030-999-A	RAILROAD FLAGGING RAILROAD FLAGGING SHALL BE PROVIDED BY THE CONTRACTOR ON EITHER SIDE OF THE UNION PACIFIC RAILROAD TRACKS CROSSING HIGHWAY 63 (NORTH AND SOUTH SIDE OF THE TRACKS) IN ACCORDANCE WITH THE REQUIREMENTS OF THE UPRR.
21	0000-999-A	RAILROAD INSURANCE, COORDINATION, AND TRAINING THE CONTRACTOR SHALL OBTAIN RAILROAD PROTECTIVE LIABILITY INSURANCE AS WELL AS COMMERCIAL GENERAL LIABILITY INSURANCE, BUSINESS AUTOMOBILE LIABILITY INSURANCE, AND WORKER'S COMPENSATION INSURANCE IF REQUIRED BY THE APPROVED AGREEMENT WITH UNION PACIFIC. INSURANCE SHALL BE OBTAINED TO MEET THE SPECIFIC INSURANCE REQUIREMENTS PROVIDED IN THE APPROVED AGREEMENT WITH UNION PACIFIC.
22	0000-999-B	MOBILIZATION/DEMobilIZATION DUE TO FLOODING ITEM INCLUDES TEMPORARY FLOW DIVERSION MEASURES, RELOCATION MATERIAL, EQUIPMENT, PERSONNEL AND PROTECTION OF THE SITE FROM FLOODING WHICH MAY OCCUR DURING THE PROJECT. ITEM WILL BE PAID FOR EACH FLOODING OCCURENCE REQUIRING RELOCATION AND/OR PROTECTION MEASURES.

USHWY 63 BOX CULVERT REPLACEMENT

ESTIMATE OF QUANTITIES AND TABULATIONS

SNYDER & ASSOCIATES, INC. I



Project No: 123.0575.08

Sheet C.2

TAMA, IA	5005 BOULING STREET S.W. CEDAR RAPIDS, IOWA 52404 319-262-8884 www.snyder-associates.com
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MARK: _____
 Engineer: KJS
 Technician: LAO
 Checked by: NAE
 Date: ####/####/####
 Scale: 1" = #'
 TARS: TAMA, IA
 Project No: 123.0575.08
 Sheet C.2

LEGEND

FEATURES

- Section Corner
- 1/2" Rebar, Cap # 11579
(Unless Otherwise Noted)
- ROW Marker
- ROW Rail
- Control Point
- Bench Mark
- Flatted Distance
- Measured Bearing & Distance
- Recorded As
- Deed Distance
- Calculated Distance
- Minimum Protection Elevation
- Centerline
- Section Line
- 1/4 Section Line
- 1/4 1/4 Section Line
- Easement Line

FOUND

- OC
- OC/P
- P
- M
- R
- D
- C
- MPE

FEATURES EXISTING

- Spot Elevation
- Contour Elevation
- Fence (Barbed, Field, Hog)
- Fence (Chain Link)
- Fence (Wood)
- Fence (Slt)
- Tree Line
- Tree Stump
- Deciduous Tree \(\) Shrub
- Coniferous Tree \(\) Shrub
- Communication
- Overhead Communication
- Fiber Optic
- Underground Electric
- Overhead Electric
- Gas Main with Size
- High Pressure Gas Main with Size
- Water Main with Size
- Sanitary Sewer with Size
- Duct Bank
- Test Hole Location for SUE w/ID

(*) Denotes the survey quality service level for utilities

- Sanitary Manhole
- Storm Sewer with Size
- Storm Manhole
- Single Storm Sewer Intake
- Double Storm Sewer Intake
- Fire Hydrant
- Fire Hydrant on Building
- Water Main Valve
- Water Service Valve
- Well
- Utility Pole
- Guy Anchor
- Utility Pole with Light
- Utility Pole with Transformer
- Street Light
- Yard Light
- Electric Box
- Electric Transformer
- Traffic Sign
- Communication Pedestal
- Communication Manhole
- Communication Handhole
- Fiber Optic Manhole
- Fiber Optic Handhole
- Gas Valve
- Gas Manhole
- Gas Apparatus
- Fence Post or Guard Post
- Underground Storage Tank
- Above Ground Storage Tank
- Sign
- Satellite Dish
- Mailbox
- Sprinkler Head
- Irrigation Control Valve

UTILITY QUALITY SERVICE LEVELS

QUALITY LEVELS OF UTILITIES ARE SHOWN IN THE PARENTHESES WITH THE UTILITY TYPE AND WHEN APPLICABLE, SIZE. THE QUALITY LEVELS ARE BASED ON THE CI / ASCE 38-02 STANDARD.
 QUALITY LEVEL (D) INFORMATION IS DERIVED FROM EXISTING UTILITY RECORDS OR ORAL RECOLLECTIONS.
 QUALITY LEVEL (B) INFORMATION IS OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION WITH QUALITY D INFORMATION.
 QUALITY LEVEL (A) INFORMATION IS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.
 QUALITY LEVEL (C) IS HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES OBTAINED BY ACTUAL EXPOSURE OR VERIFICATION OF PREVIOUSLY EXPOSED SUBSURFACE UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA. EITHER IN SERVICE OR ABANDONED, THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.

GENERAL NOTES

1. NOTIFY OWNER AND ENGINEER AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
2. COMPLETE ALL CONSTRUCTION IN ACCORDANCE WITH CURRENT EDITION OF IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS 2024 EDITION AND PLANS AND SPECIFICATIONS FOR THIS PROJECT.
3. LOCATION OF EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES SHOWN ARE FROM AVAILABLE SURVEYS AND RECORDS. THESE LOCATIONS SHOULD BE CONSIDERED AS APPROXIMATE ONLY. WITH POSSIBILITY THAT OTHER UTILITIES OR UNDERGROUND FEATURES MAY EXIST. DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS.
4. NOTIFY UTILITY COMPANIES PRIOR TO COMMENCING WORK. AVOID DAMAGE TO UTILITIES AND UNDERGROUND FEATURES DURING CONSTRUCTION. REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OPERATIONS AT CONTRACTOR'S EXPENSE.
5. COORDINATE CONSTRUCTION OPERATIONS AND COOPERATE WITH UTILITY COMPANIES WITH RESPECT TO RELOCATING ANY CONFLICTING FACILITIES. COSTS FOR LOCATING EXISTING UTILITIES, COORDINATING RELOCATION WORK, PROVIDING TEMPORARY SUPPORTS, AND STAGING CONSTRUCTION TO ACCOMMODATE THE RELOCATION OF UTILITIES IS INCIDENTAL TO CONSTRUCTION.
6. PROVIDE EROSION CONTROL MEASURES NECESSARY TO PROTECT AGAINST SILTATION, EROSION AND DUST POLLUTION WITHIN CONSTRUCTION LIMITS AND ANY OFF-SITE AREAS USED FOR THIS PROJECT. COMPLY WITH SOIL EROSION CONTROL REQUIREMENTS OF IOWA CODE AND LOCAL ORDINANCES.
7. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETED.
8. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING ALL ACCESSES TO THE CONSTRUCTION LIMITS. THE ACCESSES MUST BE ADEQUATELY SIZED AND PROPERLY SURFACED FOR UTILIZATION BY CONSTRUCTION VEHICLES AND INCLUDE PROVISIONS TO MAINTAIN POSITIVE DRAINAGE. WORK WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
9. LIMIT GRADING AND CONSTRUCTION OPERATIONS TO THE MINIMUM REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR REQUIRED TO PAY DAMAGES TO RESPECTIVE PARTIES FOR DAMAGE TO CROPLAND CAUSED BY CONSTRUCTION ACTIVITIES OUTSIDE OF THE CONSTRUCTION LIMITS IN ADDITION TO THE RESTORATION, AT NO COST TO OWNER.
10. COORDINATE THE CONSTRUCTION TO MINIMIZE THE DISRUPTIONS TO THE ADJACENT PROPERTIES. ANY AREAS DISTURBED BY CONSTRUCTION OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE REPAIRED AND RESTORED AT THE CONTRACTOR'S EXPENSE.
11. DO NOT RESTRICT DRAINAGE CHANNELS AND PROTECT ALL EXISTING DRAINAGE STRUCTURES. CONTRACTOR FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN THE HANDLING OF STORM WATER FLOWS DURING CONSTRUCTION. ANY EXTRA GRADING WORK NEEDED TO MAINTAIN POSITIVE DRAINAGE WITHIN THE CONSTRUCTION LIMITS IS INCIDENTAL TO CONSTRUCTION.
12. REPAIR ALL FIELD/DRAIN TILES THAT ARE ENCOUNTERED DURING CONSTRUCTION AS SPECIFIED. RECORD THE EXISTING TYPE, SIZE, LOCATION AND DEPTH OF ALL FIELD/DRAIN TILES ENCOUNTERED AND REPAIRED DURING CONSTRUCTION. PROVIDE DATA TO THE ENGINEER FOR INCORPORATION INTO THE RECORD DRAWINGS.
13. PROTECT AND KEEP DEBRIS DEPOSITED BY THE CONSTRUCTION OFF OF ADJACENT PROPERTIES OUTSIDE THE EASEMENT AREA AND STREETS. REMOVE AND REPAIR ANY DAMAGE WITHOUT ADDITIONAL COMPENSATION.
14. PROTECT EXISTING TREES, SHRUBS, FENCES, AND LANDSCAPING UNLESS SPECIFICALLY NOTED OR DESIGNATED OTHERWISE ON THE PLANS. REPLACE ANY ITEMS DAMAGED DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE.
15. CONTRACTORS SHALL SATISFY THEMSELVES PRIOR TO SUBMISSION OF BIDS AS TO THE SOIL CONDITIONS.
16. AS NECESSARY FOR CONSTRUCTION, THE CONTRACTOR SHALL REMOVE EXISTING IMPROVEMENTS WITHIN THE WORK AREA SHOWN ON THE PLAN AS "REMOVE & REPLACE" AND SHALL REPLACE THEM TO THE CONDITION EXISTING PRIOR TO CONSTRUCTION, OR BETTER, AS DETERMINED BY THE ENGINEER. THE REMOVAL AND REPLACEMENT WORK IS INCIDENTAL AND ALL ASSOCIATED COSTS SHALL BE INCLUDED IN THE BID.
17. ADJUST ALL MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
18. PROTECT AND SAVE ALL PROPERTY CORNER MONUMENTS. REPLACE IF REMOVED OR DAMAGED.
19. CONSTRUCTION STAKING PROVIDED BY OWNER, REFER TO PROJECT SPECIFICATIONS FOR COORDINATION REQUIREMENTS.
20. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH CURRENT STATE OF IOWA APPROVED MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
21. CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING PERMANENT TRAFFIC SIGNS THAT ARE IN CONFLICT WITH THE CONSTRUCTION. NOTIFY THE OWNER 48 HOURS BEFORE CONSTRUCTION BEGINS.
22. DO NOT STORE EQUIPMENT AND/OR MATERIALS WITHIN PUBLIC RIGHT OF WAY ON STREETS OPEN TO TRAFFIC. PROVIDE AREAS AS NEEDED FOR STORAGE OF EQUIPMENT AND/OR MATERIALS.

23. BLADING, SHAPING OR MAINTENANCE OF TEMPORARY CONNECTIONS, CROSSINGS DETOURS OR TEMPORARY ACCESSES SHALL BE INCIDENTAL TO THE PROJECT.
24. REMOVE THE EXISTING PAVEMENT AREAS TO THE NEAREST EXISTING JOINT OR AS DIRECTED BY THE ENGINEER.
25. REMOVE AND REPLACE, OR REPAIR ALL ROAD SURFACES AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO THEIR ORIGINAL CONDITION AND/OR TO THE SATISFACTION OF THE OWNER AND ENGINEER.
26. EXERCISE EXTREME CARE WHEN PERFORMING ANY NECESSARY SAW CUTTING OPERATIONS FOR THE REMOVAL OF EXISTING PAVEMENT. PROTECT ADJACENT STREET SURFACING. REMOVE AND REPLACE DAMAGED SURFACING WITHOUT ADDITIONAL COMPENSATION.
27. COMPACT ALL TRENCH BACKFILL, UNDER PAVED SURFACES, AND WITHIN RIGHT-OF-WAY TO 95% STANDARD PROCTOR DENSITY.
28. SURFACE RESTORATION INCLUDES THE REMOVAL OF ALL GRANULAR MATERIAL FROM THE TOP 6 INCHES OF TOPSOIL. THIS WORK IS INCIDENTAL TO CONSTRUCTION.
29. OWNER HAS FIRST RIGHT OF REFUSAL TO RETAIN ANY MATERIAL REMOVED FROM THE PROJECT AREA. IF DIRECTED, DELIVER ITEMS OR MATERIALS TO OWNER AT LOCATION DESIGNATED BY THE PUBLIC WORKS DEPARTMENT. DISPOSE OF NON-SALVAGEABLE MATERIALS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
30. PROVIDE WASTE AREAS OR DISPOSAL SITES FOR WASTE MATERIAL (ASPHALTIC CONCRETE, STEEL OR BROKEN CONCRETE). NO EXTRA PAYMENTS WILL BE MADE FOR MATERIAL HAULED TO THESE SITES. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS. DO NOT PLACE WASTE MATERIAL WITHIN THE RIGHT-OF-WAY. KEEP CONSTRUCTION DEBRIS AND DIRT OFF OF THE ADJACENT PROPERTIES AND STREETS.
31. RECONSTRUCT ANY ROAD DITCHES DISTURBED, INCLUDING DITCH GRADES AND CROSS SECTIONS. REPLACE CULVERTS TO ORIGINAL GRADES UNLESS OTHERWISE NOTED. GRADE ALL DITCHES FOR PROPER DRAINAGE. PONDING OF WATER IS NOT ACCEPTABLE. RE-GRADE ANY DITCH WHICH DOES NOT PROPERLY DRAIN. ALL DITCH GRADING IS INCIDENTAL TO CONSTRUCTION.
32. STRIP, SALVAGE AND RESPREAD TOP 6 INCHES OF TOPSOIL IN ALL AREAS WITHIN THE CONSTRUCTION LIMITS AS PER SPECIFICATIONS. EXCEPT AREAS NOT DISTURBED BY CONSTRUCTION AND USED TO STOCKPILE THE TOPSOIL. MECHANICALLY LOOSEN THE 18 INCHES OF SOIL ON ALL HAUL ROADS AND OVERLY COMPACTED AREAS PRIOR TO RESPREADING OF THE TOPSOIL.
33. ASSIST ENGINEER'S FIELD REPRESENTATIVE WITH DAILY RECORD KEEPING INCLUDING ALL NECESSARY FIELD LOCATIONS AND MEASUREMENTS. CONTRACTOR REQUIRED TO ATTEND FINAL AND INTERMEDIATE INSPECTIONS OF PROJECT. OPEN ALL MANHOLES FOR INSPECTION.
34. DIMENSIONS, STREET LOCATIONS, UTILITIES, AND GRADING ARE BASED ON AVAILABLE INFORMATION AT THE TIME OF DESIGN. DEVIATIONS MAY BE NECESSARY IN THE FIELD. REPORT ANY SUCH CHANGES OR CONFLICTS BETWEEN THE PLAN AND FIELD CONDITIONS TO PROJECT ENGINEER IMMEDIATELY.
35. IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITY ESTIMATES AND THE DETAILED PLANS, THE DETAILED PLANS SHALL GOVERN.
36. MAINTAIN EMERGENCY ACCESS ON ALL STREETS AND ALL AFFECTED PROPERTIES AT ALL TIMES.
37. MAINTAIN GARBAGE SERVICE TO ALL RESIDENCES ALONG THE PROJECT. COORDINATE THE GARBAGE REMOVAL WITH THE LOCAL REFUSE HAULERS AND TRANSPORT GARBAGE AND/OR RECYCLING CONTAINERS ACROSS THE CONSTRUCTION AREAS AS NEEDED.
38. MAINTAIN MAIL SERVICE TO ALL RESIDENCES ALONG THE PROJECT. THIS INCLUDES INSTALLING A TEMPORARY MAILBOX. IF NECESSARY, COORDINATE TEMPORARY MAIL SERVICE WITH POST OFFICE.

PROCESS PIPING AND SITE PIPING NOTES

1. COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
2. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED.
3. FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE CONNECTIONS TO EXISTING PIPING. VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIALS OF CONSTRUCTION. EXCAVATE TEST PITS AS REQUIRED TO LOCATE EXISTING PIPING.
4. PROTECT AND SUPPORT ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION BY THE CONTRACTOR UNTIL THE IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE WORK SHALL BE COORDINATED THROUGH THE OWNER.
5. REFER TO SPECIFICATIONS FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
6. MANHOLES ARE 4 FEET IN DIAMETER UNLESS OTHERWISE NOTED, SET TOP OF MANHOLE FRAME FLUSH WITH FINISH GRADE. UNLESS OTHERWISE NOTED ON DRAWINGS, SUPPORT PIPES WITHIN VALVE VAULTS 12 INCHES ABOVE BOTTOM OF VALVE VAULT ON ADJUSTABLE PIPE SADDLE SUPPORTS.
7. LENGTHS OF GRAVITY SEWER ARE DIMENSIONED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
8. MINIMUM COVER OF 5 FEET IS REQUIRED ON ALL LIQUID CARRYING PIPES. UNLESS OTHERWISE NOTED BY PIPE ELEVATIONS, PIPELINE INSULATION SHALL BE USED WHERE DEPTH OF COVER IS LESS THAN 5 FEET.
9. SLOPE ALL PIPELINES UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED. RESTRAIN ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED LINES WITH THRUST BLOCKS AND RETAINER GLANDS. PROVIDE ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE ELEVATIONS AND ALIGNMENT INDICATED ON THE DRAWINGS.
10. ALL EQUIPMENT AND PIPING LAYOUT DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH EQUIPMENT PROVIDED, AND/OR EXISTING CONDITIONS.
11. WRITTEN DIMENSIONS SHALL PREVAIL. REPORT ANY DISCREPANCIES IMMEDIATELY TO ENGINEER.
12. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS. CORRECT SETTLEMENT OCCURRING DURING THE CONTRACT WARRANTY PERIOD AT NO ADDITIONAL COST.
13. CLEAN ALL PIPING AS DIRECTED BY ENGINEER, BEFORE TESTING.
14. PRESSURE TEST ALL GRAVITY PIPELINES AFTER INSTALLATION, AS SPECIFIED.

USHWY 63 BOX CULVERT REPLACEMENT

GENERAL NOTES

SNYDER & ASSOCIATES, INC.



Project No: 123.0575.08

Sheet C.3

TAMA, IA

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Project No: 123.0575.08

Sheet C-3

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GENERAL NOTES:

1. IT IS THE INTENT OF THIS DESIGN TO REMOVE A 135.5 1/2" CONCRETE CULVERT AND CONSTRUCT A 12-0 X 5-0 PRECAST REINFORCED CONCRETE BOX CULVERT WITH TWO CAST IN PLACE CONCRETE TRANSITION SECTIONS.
2. FAINT LINES ON PLANS INDICATE EXISTING STRUCTURE.
3. UTILITY COMPANIES AND MUNICIPALITIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.
4. THE PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 24 FEET. THIS DESIGN IS BASED ON LOAD AND RESISTANCE FACTOR DESIGN, ACCORDING TO THE 2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CLASS I EXPOSURE CONDITION FOR CRACK CONTROL.
5. THE PRECAST R.C.B. BARREL SECTIONS SHALL CONFORM TO IOWA D.O.T., SINGLE PRECAST R.C.B. CULVERT STANDARDS, AT THE CONTRACTOR'S OPTION. PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.
6. EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.
7. CLASS 20 EXCAVATION MATERIAL UNSUITABLE FOR BACKFILLING SHALL BE DISPOSED OF IN A MANNER THAT WILL LEAVE THE SITE IN A NEAT CONDITION.
8. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING ALONG PERIMETER OF THE EXCAVATION BOUNDARIES AS REQUIRED BY ALL FEDERAL UNION PACIFIC RAILROAD, STATE AND LOCAL AGENCIES HAVING JURISDICTION, ALL COSTS ASSOCIATED WITH SHORING WILL BE INCLUDED IN BID ITEM "TEMP SHORING". THE CONTRACTOR TO SUBMIT SHORING PLANS FOR REVIEW AND APPROVAL FROM UNION PACIFIC RAILROAD AS WELL AS THE ENGINEER. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS STILL APPLIES. CONTRACTOR TO ENSURE NOT TO UNDERMINE THE EXISTING ADJACENT BUILDING FOUNDATION.
9. OPEN EXCAVATION WITHOUT THE USE OF A TEMPORARY SHORING SYSTEM IS NOT PERMITTED. SHORING PLANS AND CALCULATIONS ARE REQUIRED TO BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION AND ADHERE TO UPRR GUIDELINES FOR TEMPORARY SHORING.
10. TRACK AND GROUND MONITORING IS REQUIRED. CONSTRUCTION WITHIN ZONE A IS REQUIRED TO BE 247' CONTINUOUS.
11. CONSTRUCTION OBSERVATION IS REQUIRED BY RAILPROS.
12. THE BID ITEM "REMOVALS, AS PER PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE EXISTING CULVERT AS PER PLAN AND SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.
13. THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CLASS 20 EXCAVATION", AND "MOBILIZATION".
14. THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE TRANSITION SECTIONS WITH TWO TIES PER SIDE.
15. CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL. SEE STANDARD SHEET G2-20 FOR DETAILS.
16. CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.
17. THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR LEVELING MATERIAL DETAIL".
18. THE GRANULAR LEVELING MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 4117 OF THE STANDARD SPECIFICATIONS.
19. A MINIMUM OF 6 INCHES OF GRANULAR LEVELING MATERIAL SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAFED TO A FLAT BASE USING A TEMPLATE. A MINIMUM 6 INCH GRANULAR BLANKET CONSISTING OF GRANULAR MATERIAL SHALL BE USED FOR THE PRECAST BOX CULVERT. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE GRANULAR LEVELING MATERIAL SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT, 12 FT. X 5 FT.", ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE GRANULAR BLANKET. SHALL BE INCLUDED IN THE BID ITEMS "GRANULAR MATERIAL FOR BLANKET".
20. THE PRECAST BOX CULVERT SHALL BE BUILT TO THE DIMENSIONS AND SPECIFICATIONS SHOWN IN THESE PLANS.
21. THE CONTRACTOR SHALL SUBMIT DETAILS (I.E. SHOP DRAWINGS) OF THE PROPOSED PRECAST CONCRETE BOX SECTIONS FOR THIS PROJECT. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON "PRECAST CULVERT" SHEET:
 - A. A SITUATION PLAN DRAWING SHOWING THE LINE OF THE CULVERT SECTIONS.
 - B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
 - C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
 - D. A DETAIL OF THE PRECAST CONCRETE CULVERT TRANSITION SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IOWA D.O.T. STANDARDS.
 - E. DETAILS OF REINFORCING AROUND PIPE PENETRATIONS IN PRECAST CULVERT BARREL WALLS, SEE SHEET E.1, FOR LOCATION AND SIZE OF PIPE PENETRATIONS.
22. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON SHEET E.4. THE CONTRACTOR SHALL ALLOW 30 WORKING DAYS FOR THE ENGINEER'S SHOP DRAWING.
23. ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE INCLUDED IN BID ITEM "REINFORCING STEEL".
24. CONTRACTOR TO WORK IN SUCH A MANNER THE EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE SHALL BE COORDINATED WITH THE RAILROAD.
25. ENSURE SAFE PASSAGE OF PERSONS AROUND AREA OF DEMOLITION AND CONSTRUCTION. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURE, EQUIPMENT AND OTHER FACILITIES AND PERSONS.
26. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, EQUIPMENT AND OTHER FACILITIES AND PERSONS.
27. ALL AREAS DESTROYED OR DAMAGED BY CONTRACTOR'S WORK INCLUDING SIDEWALKS, SOD, AND GRASSWAYS ARE TO BE RESTORED TO ORIGINAL CONDITION (AS DOCUMENTED PRIOR TO THE START OF CONSTRUCTION) BY CONTRACTOR AT THEIR EXPENSE.
28. ALL REPAIR REMOVALS OF EXISTING CONCRETE SHALL BE INITIATED WITH A NEAT 3/4" MINIMUM DEEP STRAIGHT SAW CUT. PROTECT EXISTING REINFORCING STEEL IN PLACE. EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING REINFORCEMENT. EXACT LOCATION OF EXISTING REINFORCING IS TO BE DETERMINED BY THE CONTRACTOR USING REBAR LOCATOR OR SIMILAR METHOD. CONTRACTOR RESPONSIBLE TO REPAIR DAMAGED EXISTING REINFORCEMENT TO THE SATISFACTION OF THE ENGINEER/OWNER. CONTRACTOR RESPONSIBLE FOR ALL COSTS AND DELAYS ASSOCIATED WITH THE REPAIR.
29. CONTRACTOR SHALL SUBMIT A LIST OF ALL MATERIALS FOR REVIEW AND APPROVAL OF THE ENGINEER.
30. ALL MATERIALS SHALL BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S PRODUCT DATA FOR ALL REPAIR MATERIALS FOR ENGINEER TO REVIEW AND APPROVE PRIOR TO CONSTRUCTION.
31. ACCEPTABLE MATERIALS TO BE USED AS A BONDING AGENT/CORROSION INHIBITOR WHEN PLACING PLASTIC CONCRETE AGAINST EXISTING CONCRETE ARE Sika ARMATEC 110, EUCLID CORR-BOND, MATERMACO P124, OR AN EQUIVALENT ALTERNATE APPROVED BY THE ENGINEER.
32. ALL CONCRETE REMOVED FROM THE EXISTING STRUCTURE AND REPLACED AS PART OF THE WORK INCLUDED IN THESE PLANS SHALL MATCH THE FORM, BEVELS, TEXTURE, AS THE CONCRETE REMOVED.
33. NEW CONCRETE CORNERS OF 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A DRESSED AND BEVELED 3/4" STRIP.
34. NEW CONCRETE SURFACES SHALL BE FLUSH WITH, OR MATCH PROFILE AND GRADE OF EXISTING CONCRETE SURFACES AS SHOWN.
35. THE CONTRACTOR SHALL CONTACT THE CITY AND ENGINEER A MINIMUM OF 24 HOURS BEFORE BEGINNING CONSTRUCTION, AND ROAD CLOSURES.
36. THE CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCE AND CONSTRUCTION SCHEDULE. NO WORK SHALL BE PERMITTED ON THE PROJECT UNTIL THE CONSTRUCTION SEQUENCE AND SCHEDULE IS APPROVED BY THE ENGINEER AND THE CITY. THE ENGINEER SHALL HAVE 7 DAYS TO REVIEW THE CONSTRUCTION SEQUENCE AND SCHEDULE.

GENERAL NOTES (CONT.)

37. AFTER HOURS AND WEEKEND WORK MUST BE APPROVED BY THE CITY PRIOR TO THE DATE OF THE REQUEST.
38. ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION IN RELATION TO EXISTING PORTIONS OF THE STRUCTURE SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO STARTING CONSTRUCTION.
39. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUAINT THEMSELVES AND ALL SUPERVISORY PERSONNEL WITH THE ABOVE-NAMED DRAWINGS AND DOCUMENTS.
40. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE SITE OF THE PROPOSED WORK TO SATISFY THEMSELVES AS TO THE EXISTING CONDITIONS RELATIVE TO THE CONTRACT.
41. UTILITY LOCATIONS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UTILITIES BE FOUND DIFFERENT THAN LOCATED OR SHOWN ON THE DRAWINGS, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.
42. DIMENSIONS MARKED +/- REQUIRE VERIFICATION BY THE CONTRACTOR.
43. IN ANY CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
44. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THAT PARTS OF THE STRUCTURE TO BE PRESERVED ARE NOT DAMAGED BY THE APPLICATION OF EXCESSIVE LOADS OR BY ANY OTHER MEANS, AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE CAUSED.
45. THE CLASS 20 EXCAVATION QUANTITY INCLUDED IN THESE PLANS IS BASED ON THE ASSUMPTION THAT AT THE START OF THE CULVERT REPLACEMENT THE EXISTING GROUND LINE SHOWN ON THE "REPLACEMENT SITUATION PLAN" SHEET HAS REMAINED UNDISTURBED. THE CLASS 20 EXCAVATION QUANTITY IS MEASURED FROM THE EXISTING GROUND LINE SHOWN ON "REPLACEMENT SITUATION PLAN" SHEET DOWN TO THE LIMITS SHOWN IN THE GRANULAR BEDDING DETAIL. CLASS 20 EXCAVATION QUANTITIES ASSUME THAT SHORING IS SUPPORTING THE PERIMETER OF THE EXCAVATION BOUNDARIES.
46. REMOVAL OF THE EXISTING CULVERT SHALL BE ON A VERTICAL PLANE PARALLEL WITH AND AT THE LOCATION INDICATED ON THE REMOVAL PLAN SHEET. THE WALLS SHALL BE CUT NORMAL TO THE BARREL WALLS AND AS SHOWN ON THE "REMOVAL PLAN" SHEET. THE REMOVAL LINE SHALL BE INITIATED WITH A 3/2" +/- DEEP SAW CUT ON THE TOP AND BOTH SIDES OF EACH WALL, AND ACROSS THE TOP OF THE FLOOR. THIS SAW CUT SHOULD CUT THRU ANY EXISTING LONGITUDINAL REINFORCING THEREBY FACILITATING A NEAT NON-SPALLED BREAK LINE.
47. ALL REMOVALS SHALL BE CAREFULLY ACCOMPLISHED AND ANY CONCRETE DAMAGED BY THE CONTRACTOR THAT IS NOT TO BE REMOVED SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE CITY. REMOVALS SHALL BE IN ACCORDANCE WITH 2401 OF THE STANDARD SPECIFICATIONS.
48. THE PROPOSED CULVERT TRANSITION SHALL ABUT AGAINST THE EXISTING CULVERT 521 X 2'-6" DOWEL REINFORCEMENT BARS WITH A 10" MINIMUM EMBEDMENT INTO EXISTING CONCRETE. THE BARS SHALL BE SET AROUND THE ENTIRE PERIMETER OF THE EXISTING CULVERT. 521 DOWEL REINFORCING BARS SHALL BE CENTERED IN THE EXISTING SLAB, WALLS AND FLOOR. 521 DOWEL REINFORCEMENT BARS SHALL BE AT 1'-0" MAXIMUM SPACING C-C, OF DOWELS, 521 DOWEL REINFORCING BARS SHALL BE SET WITH POLYMER GROUT IN ACCORDANCE WITH ARTICLE 2301.03.E. OF THE STANDARD SPECIFICATIONS, AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.
49. ANY DIMENSIONAL TRANSITION REQUIRED BETWEEN EXISTING STRUCTURE AND THE NEW CULVERT SHALL BE MADE AS DETAILED ON THESE PLANS.
50. CONTRACTOR IS TO CONTROL WATER SEEPAGE BY PERMITTING IT TO DRAIN INTO TEMPORARY CONSTRUCTION SUMPS AND PUMPED OUTSIDE THE PERIMETER OF THE EXCAVATIONS.
51. V.I.F. DENOTED VERIFY IN FIELD.

PRECAST INSTALLATION NOTES:

1. PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER. NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM 3/16" INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER-TIGHT 1 INCH BUTYL ROPE GASKET.
2. BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.
3. THE CONTRACTOR SHALL PLACE A 2-FOOT-WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER.
4. THE GRANULAR LEVELING MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 2402.03, H. 4. OF THE STANDARD SPECIFICATIONS. IF LARGER GRANULAR MATERIAL IS TO BE INSTALLED BELOW THE GRANULAR LEVELING MATERIAL, THE CONTRACTOR SHALL PLACE ENGINEERING FABRIC BELOW THE GRANULAR LEVELING MATERIAL TO SEPARATE THE LAYERS. THE FABRIC SHALL BE OVERSIZED BY A MINIMUM OF 1 FOOT ON ALL EDGES TO CONTAIN THE GRANULAR LEVELING MATERIAL.
5. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE ENGINEERING FABRIC AS DESCRIBED ABOVE FOR THE JOINTS AND UNDERLAYMENT OF THE GRANULAR LEVELING MATERIAL SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "STRUCTURAL CONCRETE (RCB CULVERT)". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B. 3 OF THE STANDARD SPECIFICATIONS.
6. DURING BACKFILLING, THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADI OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.
7. THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED, AND COVERED WITH A 2'-0" X 2'-0" PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SPECIAL INSPECTION

1. SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1704 OF THE 2018 INTERNATIONAL BUILDING CODE, AND ICBO MODEL PROGRAM FOR SPECIAL INSPECTION.
2. THE OWNER WILL EMPLOY AN APPROVED AGENCY TO PERFORM THE SPECIAL INSPECTION SERVICES.
3. SPECIAL INSPECTION WILL BE PERFORMED IN ACCORDANCE WITH AND IN ADDITION TO THE INSPECTION AND TESTING REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.
4. THE FOLLOWING ITEMS ARE INCLUDED IN THE SPECIAL INSPECTION:

SOILS: FILL COMPACTING

CONCRETE: AIR-ENTRAIMENT
SLUMP
COMPRESSIVE STRENGTH TESTING
REINFORCING PLACEMENT

DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED., SERIES OF 2017, REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60, CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, FC FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR TRANSITION SECTIONS DESIGN FC = 52 KSI.

SPECIFICATIONS:

1. DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED., SERIES OF 2017
2. CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

MARK	REVISED	DATE	BY
Engineer: AJS	Checked By: JAG	Scale:	(AS NOTED)
Technician: DBT	Date:	2/29/2024	Field BK
Project No: 123.0575.08			Sheet C.4

GENERAL NOTES
 TAMA, IA
 USHWY 63 BOX CULVERT REPLACEMENT
 SNYDER & ASSOCIATES, INC.
 2727 S.W. SNYDER BLVD.
 ANKENY, IOWA 50023
 515-964-2020 | www.snyder-associates.com



Project No: 123.0575.08

Sheet C.4

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DRILLED-IN-DOWELS AND ANCHORS NOTES:

1. HOLES FOR DOWELS SHALL BE DRILLED INTO THE EXISTING CONCRETE AT THE LOCATIONS AND OF THE SIZE SHOWN ON THE PLANS. EMBED DRILLED-IN-DOWELS 16 BAR OR ANCHOR BOLT DIAMETERS MINIMUM, UNLESS NOTED OTHERWISE. AFTER HOLES ARE DRILLED, THEY SHALL BE BLOWN CLEAN WITH OIL-FREE COMPRESSED AIR BEFORE THE EPOXY RESIN IS PLACED IN THE HOLE. THE HOLE SHALL BE FILLED WITH EPOXY RESIN TO A LEVEL SUCH THAT AFTER THE BAR IS INSERTED, THE EPOXY WILL RISE TO THE SURFACE OF THE HOLE. IN OVERHEAD APPLICATIONS, WORK AND SECURE ENOUGH EPOXY RESIN INTO THE HOLE SUCH THAT WHEN THE DOVEL IS INSERTED, THE EPOXY RESIN COMPLETELY FILLS THE VOID AROUND THE DOVEL. SECURE THE EPOXY RESIN IN PLACE FOR CURING BY PLUGGING THE HOLE AROUND THE SHANK OF THE DOVEL. REINFORCING STEEL DOWELS OR ANCHOR BOLTS OF THE SIZE SHOWN ON THE PLANS SHALL BE INSERTED INTO THE HOLE IMMEDIATELY AFTER THE EPOXY RESIN IS PLACED. THE EPOXY RESIN SHALL BE PERMITTED TO SET BEFORE NEW CONCRETE IS PLACED AROUND THE ANCHOR.

CONCRETE NOTES:

- ALL CONCRETE SHALL BE 4000 PSI AT 28 DAYS.
- ALL CONCRETE TO HAVE PERMEABILITY ADMXTURE INCLUDED.
- CONCRETE EXPOSED TO FREEZE/THAW CONDITIONS SHALL BE AIR ENTRAINED.
- COARSE AGGREGATE FOR SLABS AND EXPOSED WALLS TO BE CRUSHED LIMESTONE.
- MAXIMUM AGGREGATE SIZE TO BE 1" U.N.D., MAXIMUM AGGREGATE SIZE TO BE 3/8" FOR TOPPING MIXES.
- ALL AGGREGATE IN ACCORDANCE WITH ASTM C33, LIMIT SHALE, CHERT, COAL AND IRON OXIDE.
- 4000 PSI CONCRETE TO HAVE A MIN. 6 SACKS CEMENT/MAX. 5 GAL. OF WATER/SACK.
- WATER REDUCER REQUIRED FOR ALL WALLS AND SLABS.
- CONCRETE WATER-CEMENT RATIO INDICATED FOR DESIGN MIXES TO HAVE CEMENT CONTENT ADJUSTED TO PROVIDE A WORKABLE MIX.
- USE OF CALCIUM CHLORIDES PROHIBITED.
- ALL REINFORCING STEEL TO BE ASTM A615 - GRADE 60.
- ALL WELDED WIRE FABRIC IN ACCORDANCE WITH ASTM A1064.
- CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR TO BE: EDGE CLEARANCES: 2" EXCEPT TOP OF FLOOR = 2 1/4" TO NEAR TRANSV. REINF. BAR BOTTOM OF FLOOR = 3 1/2" TO NEAR TRANSV. REINF. BAR END CLEARANCES: VERTICAL TOP = 2" VERTICAL BOTTOM = 3" OR 3 1/2" IF OVERALL HEIGHT OF THE CULVERT IS NOT TO A FULL INCH TRANSVERSE = 2"
- ALL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED.
- MAXIMUM SPACING OF BAR SUPPORTS TO BE 3'-0" O.C. EACH WAY.
- PROVIDE 2#5 BARS AROUND ALL SIDES OF HOLES THROUGH CONCRETE WALLS AND SLABS. AT WALLS AND SLABS WITH MULTIPLE MATS OF REINFORCING, PROVIDE SUPPLEMENTAL REINFORCING BARS IN EACH FACE OF MEMBER, BARS TO EXTEND 2'-0" BEYOND EDGES OF OPENINGS, SEE TYP. CONCRETE OPENING DETAIL.
- PROVIDE CLASS B TENSION LAP SPLICES FOR CONTINUOUS BARS UNLESS OTHERWISE SHOWN.
- LAP WELDED WIRE FABRIC MESH A MINIMUM OF 6 INCHES OR ONE SPACE.
- ALL CONCRETE SLABS SHALL BE POURED TO UNIFORM THICKNESS AS INDICATED ON PLANS.
- ALL REINFORCING BARS SHALL BE LAPPED AS DETAILED ON THE STRUCTURAL DRAWINGS, WHERE NOT SPECIFICALLY INDICATED ON THE DRAWINGS, ALL REINFORCING BARS SHALL BE LAPPED AS FOLLOWS: LAP WALL/BEAM TOP HORIZONTAL REINFORCEMENT AT CENTER OF SPAN, LAP WALL/BEAM BOTTOM HORIZONTAL REINFORCEMENT AT SUPPORT, TERMINATE CONTINUOUS BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS.
- FLOOR OF BARREL IS TO BE FINISHED SMOOTH, SIDES OF CAST-IN-PLACE TRANSITION FOOTING ARE TO BE FORMED TO INSURE CORRECT LINE AND GRADE.
- THE PERMISSIBLE CONSTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED AT THE CONTRACTOR'S OPTION WITH ENGINEER'S APPROVAL.
- THE VERTICAL BARS IN THE WALLS MAY BE SPLICED ABOVE THE FOOTING AT THE CONTRACTOR'S OPTION, AND IF USED SHALL BE AT THE CONTRACTOR'S EXPENSE, AS FOLLOWS:

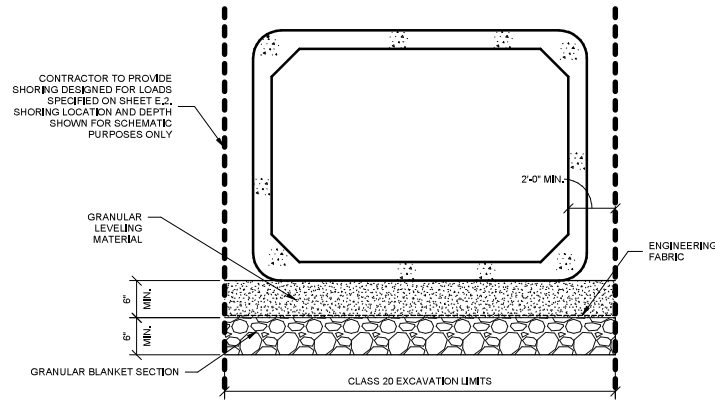
BAR SIZE NUMBER	4	5	6	7	8
MINIMUM SPLICE LENGTH	21"	26"	31"	41"	54"

- METAL BAR CHAIRS SPACED AT NOT OVER 3'-0" C.C. IN EITHER DIRECTION ARE TO BE USED TO SUPPORT ALL SLAB AND FLOOR STEEL AS OUTLINED IN THE STANDARD SPECIFICATIONS.
- EXCEPT FOR DOWEL BARS #1 IN SLAB, LONGITUDINAL REINFORCING IS NOT TO EXTEND THRU CONSTRUCTION JOINTS.
- ALL CONSTRUCTION JOINTS SHALL BE FORMED WITH A BEVELED KEYWAY THAT ARE CENTERED. THESE KEYWAYS SHALL BE 2X4 UNLESS NOTED OTHERWISE. KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.
- THESE CULVERT PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (#1 IS 5/8" DIAMETER BAR), ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION", THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

TEMPORARY SHORING NOTES:

- TEMPORARY SHORING (SHEET PILE OR OTHER) SHALL BE REQUIRED AS NECESSARY TO PREVENT THE EARTH UNDER THE TRAFFIC LANE, UNDER THE SIDEWALK/ADJACENT BUILDING, AND AS REQUIRED PER THE UP RR REQUIREMENTS FROM SLOUGHING IN DURING CONSTRUCTION
- THE CONTRACTOR SHALL SUBMIT A TEMPORARY SHORING PLAN FOR REVIEW, THE TEMPORARY PLAN SHALL BE DESIGNED AND CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IOWA, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IOWA, THE CONTRACTOR SHALL NOT PROCEED WITH INSTALLATION OF THE TEMPORARY SHORING WITHOUT NOTICE TO PROCEED FROM THE ENGINEER.
- THE TEMPORARY SHORING SUBMITTAL SHALL INCLUDE:
 - DESIGN CALCULATIONS (INCLUDING A GLOBAL STABILITY ANALYSIS)
 - SOIL PROPERTIES
 - SHORING MATERIAL PROPERTIES
 - SHORING PLAN LAYOUT (SHOWING LOCATION OF TRAFFIC, BUILDING, AND RR TRACK/ROW
 - SHORING DETAILS
- TEMPORARY SHORING SHALL BE PAID FOR AS A LUMP SUM INCLUDING ALL COST FOR DESIGNING, FURNISHING, INSTALLING AND REMOVAL. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATION, STILL APPLIES.



Granular Leveling Material Detail

② GRANULAR LEVELING MATERIAL DETAIL

MARK	REVISION	DATE	BY
Engineer: AJIS	Checked By: JAG	Scale: (AS NOTED)	
Technician: DBT	Date: 2/29/2024	Field BK	Pg.
Project No:	123.0575.08		Sheet C.5

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USHWY 63 BOX CULVERT REPLACEMENT

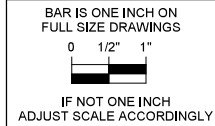
NOTES AND DETAILS

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Project No: 123.0575.08

Sheet C.5

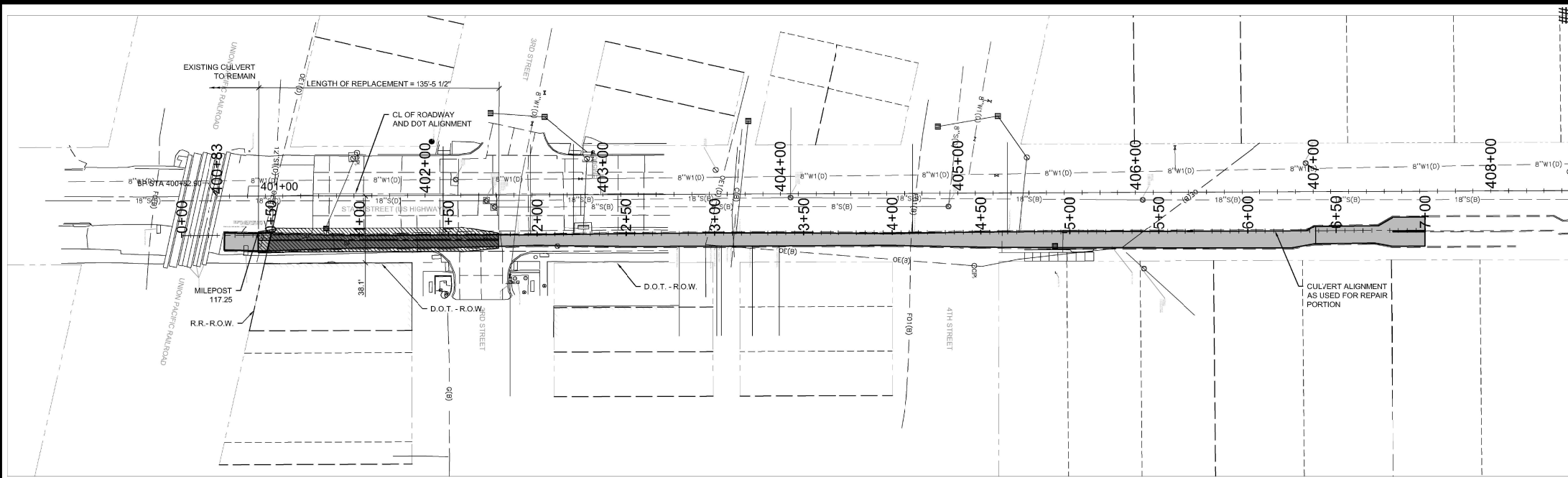


NOTES AND DETAILS

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1

OVERALL PLAN VIEW

Scale: 1" = 30'



BAR IS ONE INCH ON FULL SIZE DRAWINGS



IF NOT ONE INCH

USHWY63 BOX CULVERT REPLACEMENT

OVERALL PLAN VIEW

TAMA, IA.

SNYDER & ASSOCIATES, INC.

MARK	REVISION	DATE	BY

Engineer: A.J.S.
 Checked By: JAG
 Date: 2/29/2024
 Scale: 1" = 30'
 T.R.S. #####

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Sheet D.1



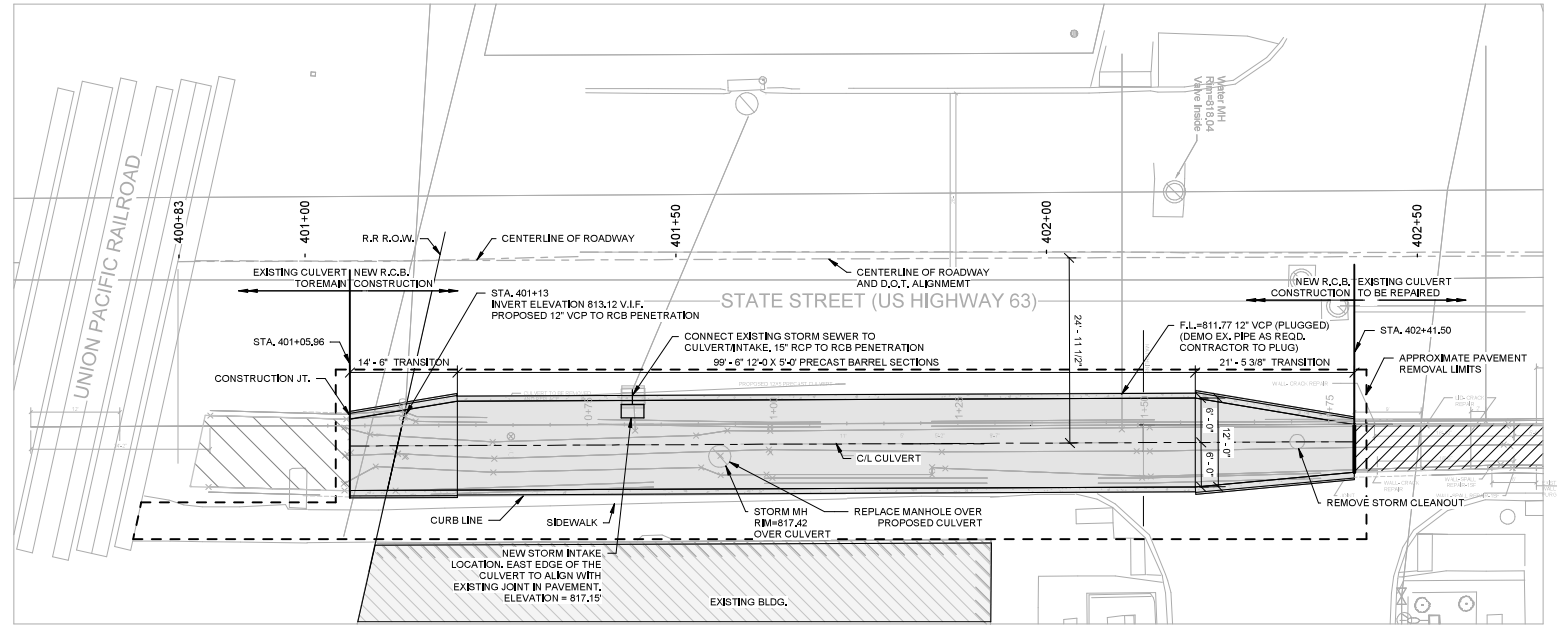
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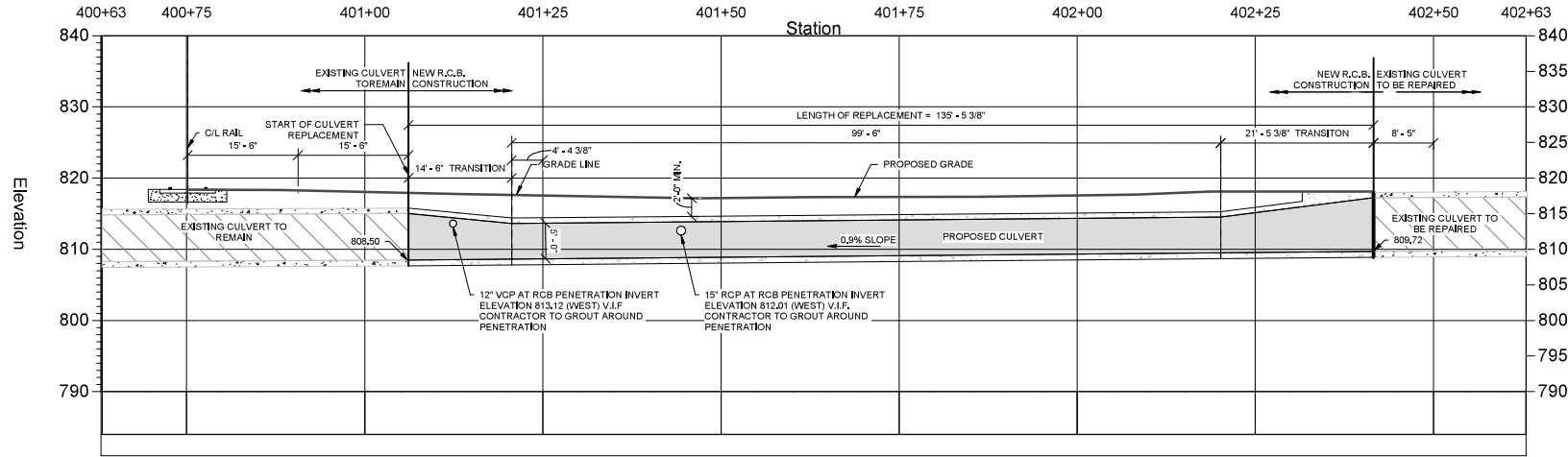
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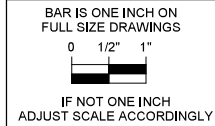
① SITUATION PLAN

1" = 10'-0"



② LONGITUDINAL SECTION ALONG C/L CULVERT

1" = 10'-0"



MARK	REVISION	DATE	BY


TAMA, IA

REPLACEMENT SITUATION PLAN

USHWY 63 BOX CULVERT REPLACEMENT

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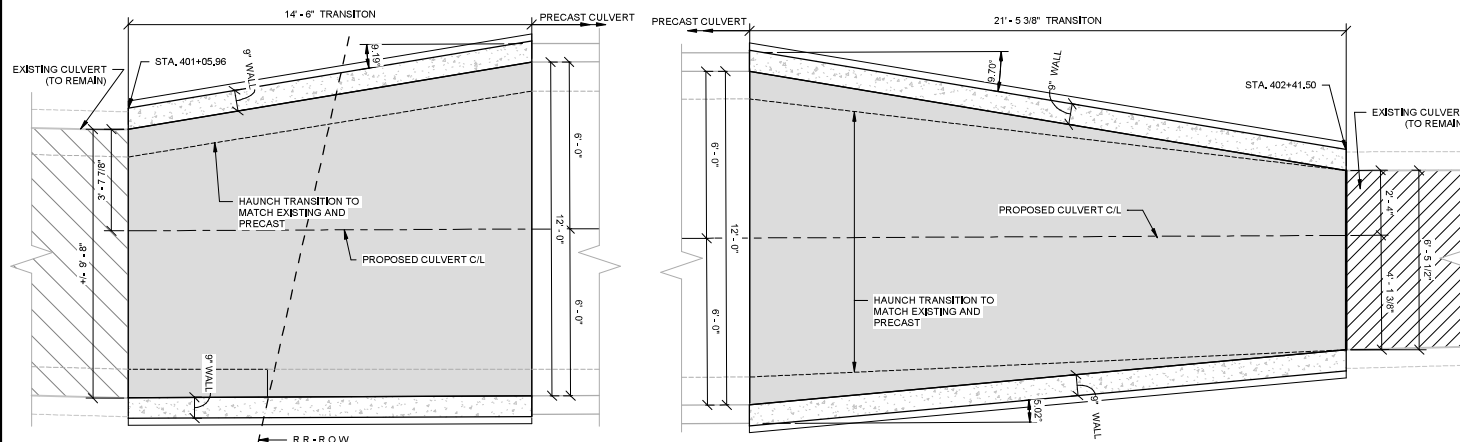
Project No: 123.0575.08

Sheet E.1

TRANSITION DETAILS

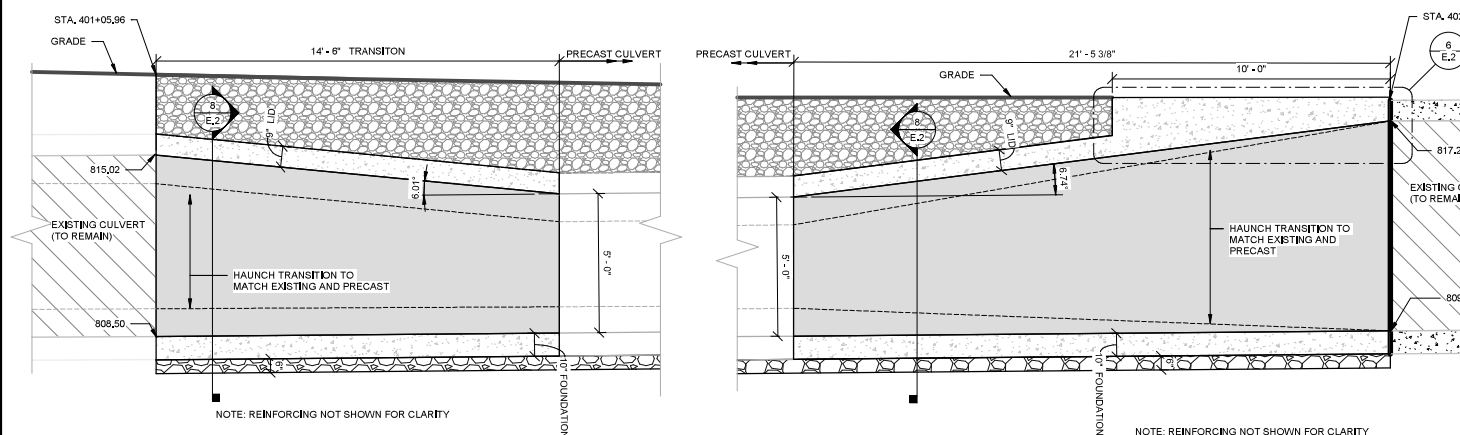
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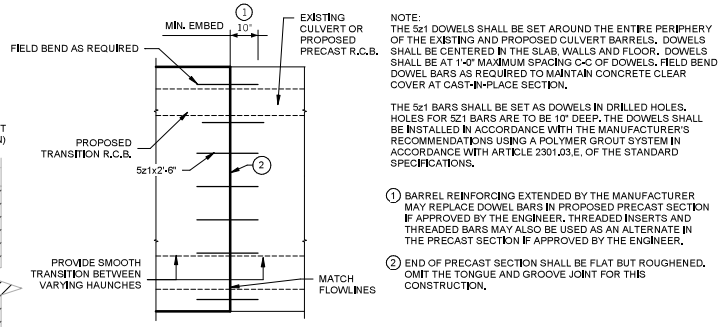
1 ENLARGED CULVERT PLAN - SOUTH
3/8" = 1'-0"

2 PROPOSED CULVERT PLAN - NORTH
3/8" = 1'-0"



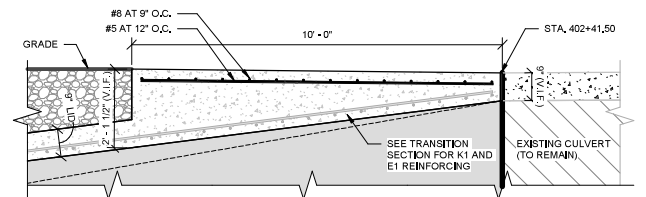
3 PROPOSED CULVERT - SECTION (SOUTH)
3/8" = 1'-0"

4 PROPOSED CULVERT - SECTION (NORTH)
3/8" = 1'-0"

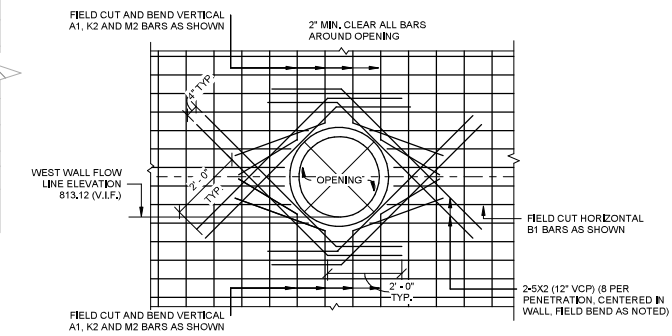


PART ELEVATION AT CIP TO PRECAST OR EXISTING
(SHOWING 5x1 INSTALLATION)

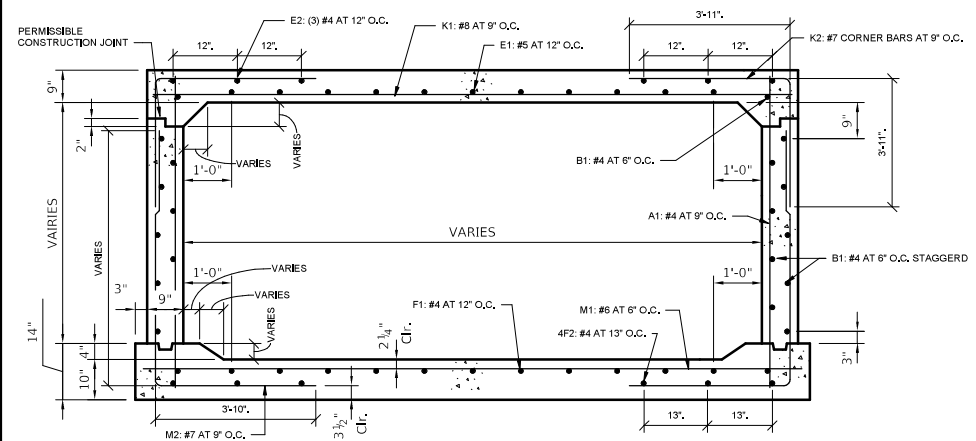
5 TRANSITION CONNECTION
3/4" = 1'-0"



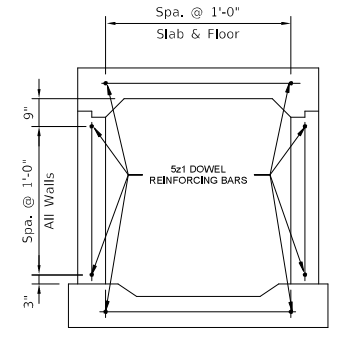
6 NORTH LID TRANSITION SECTION
1/2" = 1'-0"



7 CONC. OPENING
1/2" = 1'-0"



8 TRANSITION SECTION
1" = 1'-0"

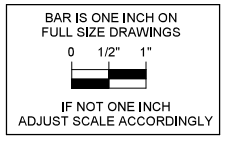


SECTION NEAR EXTENSION
(SHOWING SPACING OF 5x1 DOWEL BARS)

9 SECTION NEAR EXTENSION
1" = 1'-0"

CONCRETE PLACEMENT QUANTITIES					
LOCATION	FOOTING	EAST WALL	WEST WALL	SLAB	TOTAL
NORTH TRANSITION SECTION	1 AT 8.7	1 AT 3.2	1 AT 3.2	1 AT 9.4	1 AT 22.2
SOUTH TRANSITION SECTION	1 AT 6.2	1 AT 2.0	1 AT 2.0	1 AT 5.0	1 AT 15.1
TOTAL (CY)	14.9	5.2	5.2	14.4	39.7

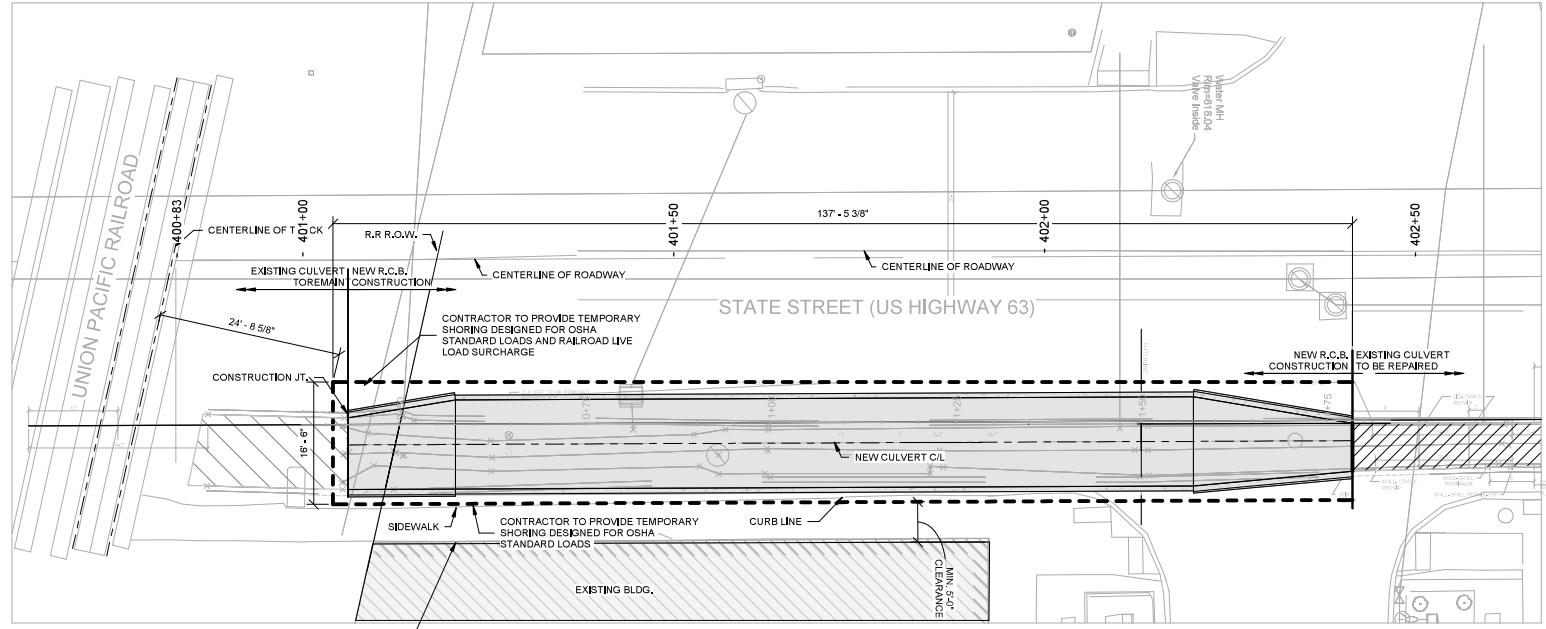
SUMMARY OF REINFORCING STEEL		
LOCATION	QUANTITY	TOTAL
NORTH TRANSITION SECTION	1 AT 6177	6177
SOUTH TRANSITION SECTION	1 AT 4754	4754
TOTAL (LBS.)		10,931



MARK	REVISION	DATE	BY
Engineer: AJIS	Checked By: JAG	Scale: (AS NOTED)	File/BK: Pg.
Technician: DBT	Date: 2/29/2024		
Project No: 123.0575.08			Sheet E.2

USHWY 63 BOX CULVERT REPLACEMENT
 TRANSITION DETAILS
SNYDER & ASSOCIATES, INC.
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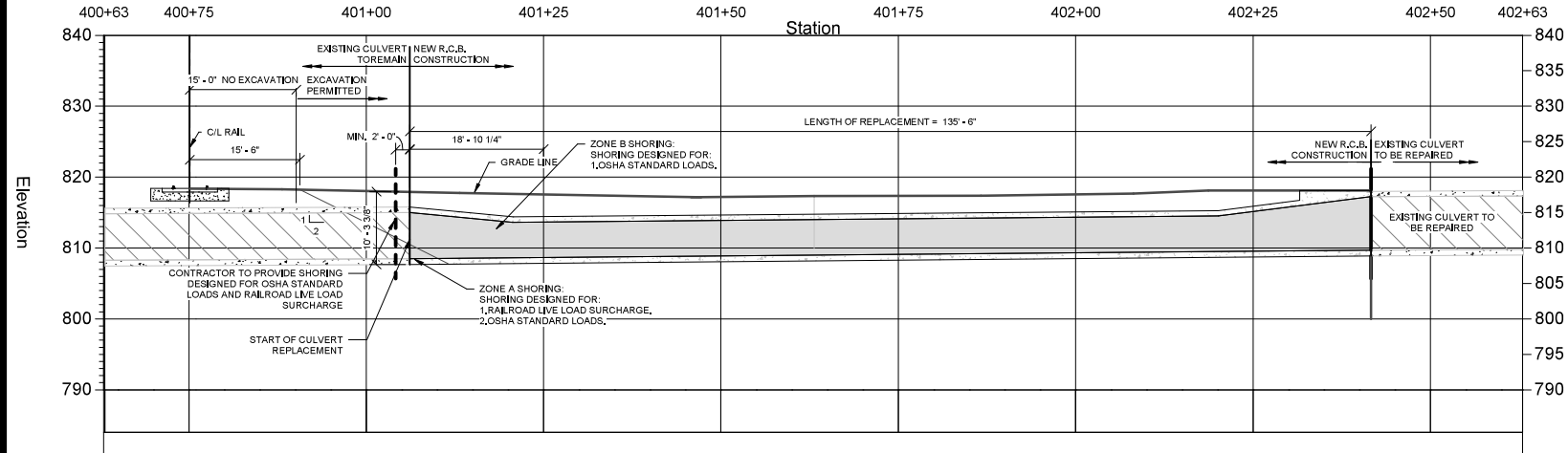
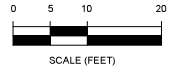
Project No: 123.0575.08
 Sheet E.2



BUILDING FOUNDATION IS UNKNOWN AND CONTRACTOR IS TO MAINTAIN MINIMUM CLEARANCE, DO NOT UNDERMINE EXISTING FOUNDATION.

NOTE: SHORING LOCATION AND DEPTH IS SHOWN FOR BIDDING PURPOSES ONLY AND IS SCHEMATIC. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, AND DETAILS OF THE TEMPORARY SHORING

① TEMP. SHORING PLAN
1" = 10'-0"



NOTE: SHORING LOCATION AND DEPTH IS SHOWN FOR BIDDING PURPOSES ONLY AND IS SCHEMATIC. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, AND DETAILS OF THE TEMPORARY SHORING

② TEMP. SHORING DETAIL
1" = 10'-0"

RAILROAD GENERAL NOTES:

RAILROAD REVIEW AND APPROVAL OF SHORING, ERECTION, DEMOLITION, AND FALSEWORK IS REQUIRED. ALLOW A MINIMUM OF FOUR WEEKS FOR THE REVIEW AND APPROVAL OF EACH SUBMITTAL.

THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.

THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.

THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD. ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.

ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.

ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION. ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.

ALL CONSTRUCTION PHASING THAT MAY IMPACT THE RAILROAD OPERATIONS SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION. ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.

FALSEWORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.

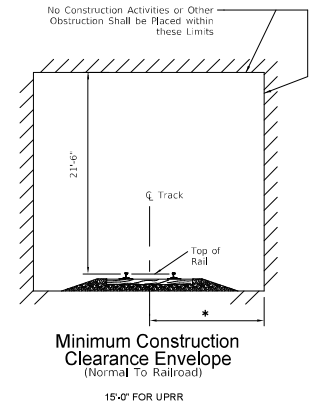
ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING. FOR RAILROAD COORDINATION PLEASE REFER TO THE RAILROAD COORDINATION REQUIREMENTS AS PART OF SPECIAL PROVISIONS.

GENERAL SHORING NOTES:

ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO TRACK.

PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE RAILROAD DETAILED PLANS INDICATING THE NATURE AND EXTENT OF THE TRACK PROTECTION SHORING PROPOSED. THE CONTRACTOR SHALL INSTALL THE TEMPORARY SHORING SYSTEM PER THE APPROVED PLANS. DESIGN OF THE TEMPORARY SHORING SYSTEM TO COMPLY WITH UPRR & BNSF GUIDELINES FOR TEMPORARY SHORING.

FOR EXCAVATIONS WHICH ENCRoACH INTO ZONE A OR B, SHORING PLANS SHALL BE ACCOMPANIED BY DESIGN CALCULATIONS. PLANS AND CALCULATIONS MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IOWA.



MARK	REVISION	DATE	BY

TAMA, IA
 2727 S.W. SNYDER BLVD.
 ANKENY, IOWA 50023
 515-964-2020 | www.snyder-associates.com

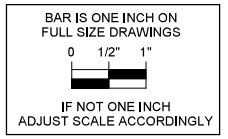
USHWY 63 BOX CULVERT REPLACEMENT
 TEMPORARY SHORING

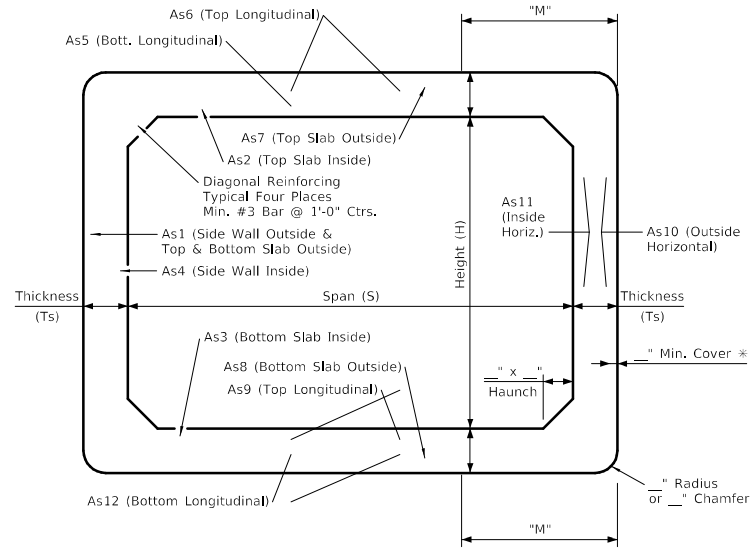
SNYDER & ASSOCIATES, INC.



Project No: 123.0575.08

Sheet E.3



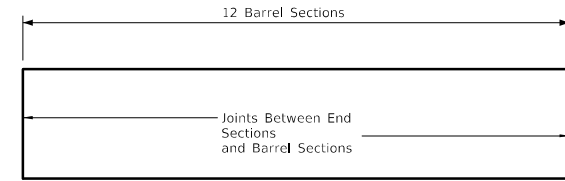


Barrel Section

Note:
Dimension "M" begins at the outside edge of the wall for Iowa D.O.T. Single Precast R.C.B. Culvert Standards. The "M" dimension for the ASTM Standards begins at the reinforcing clear distance from the outside edge of the wall.

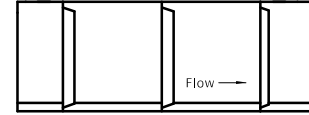
Minimum laying length shall be 4'-0".

* Use 1 inch cover for ASTM design, 1 1/2 inch cover for Iowa D.O.T. standard and non-standard design.



Elevation View

(Show the Number of Barrel and End Sections)



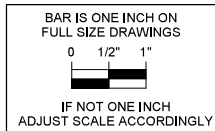
Plan View for Barrel Section

(Show Overall Length and Back to Back of Parapets)

___ ft. x ___ ft. x ___ ft. Culvert

Barrel Section																													
Design Earth Cover, ft	f'c ksi	A in.	B in.	C in.	M in.	Circumferential Reinforcement																							
						As1		As2		As3		As4		As5		As6		As7		As8		As9		As10		As11		As12	
						Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2
						Bar Size																							
						Spacing (in.)																							
						Area (in. ² /ft)																							
End Section																													
f'c ksi	Ts in.	Tb in.	A in.	Circumferential Reinforcement																				Length of Splice @ ϕ					
				As1		As2		As3		As4		As5		As6		As7		As9		As10		As11			As12				
				Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2	Layer 1	Layer 2						
				Bar Size																									
				Spacing (in.)																									
				Area (in. ² /ft)																									

Precast Box Option - Check If Applicable: Astm C1577 Standard End Section Type - Check One: Type 1 Type 3
 Reinforcement Type - Check One: Plain WWR (65 ksi) Deformed WWR (70 ksi)
 ASTM Standard Reinforcing Bars (60 ksi)



MARK	REVISION	DATE	BY

Engineer: AJS Checked By: JAG Scale: (AS NOTED) Field Bk. Pg. 2/29/2024
 Technician: DBT Date: 123.0575.08
 Project No: 123.0575.08 Sheet E.4

TAMA, IA
 2727 S.W. SNYDER BLVD.
 ANKENY, IOWA 50023
 515-964-2020 | www.snyder-associates.com
USHWY 63 BOX CULVERT REPLACEMENT
PRECAST CULVERT
SNYDER & ASSOCIATES, INC.



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TRAFFIC CONTROL NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION PER 761 IOWA ADMINISTRATIVE CODE, CHAPTER 130.
2. FURNISH AND INSTALL ALL TRAFFIC CONTROL DEVICES AND MAINTAIN IN THE CORRECT POSITION, PROMPTLY CLEAN AND REPLACE DAMAGED TRAFFIC CONTROL DEVICES. PATROL THE WORK AREAS AS FREQUENTLY AS NEEDED TO ENSURE ALL TRAFFIC CONTROL DEVICES ARE PROPERLY SET.
3. REMOVE THE EXISTING PERMANENT TRAFFIC CONTROL SIGNS LOCATED WITHIN THE LIMITS OF THE PROJECT IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL AND PLACE THEM ON THE SITE OUT OF THE WAY, NOTIFY THE CITY TO COLLECT THE PERMANENT TRAFFIC CONTROL SIGNS AND ALSO WHEN THE SITE IS READY FOR THE SIGNS TO BE REINSTALLED, THE CITY WILL REINSTALL THE PERMANENT TRAFFIC CONTROL SIGNS.
4. ALL TRAFFIC CONTROL SIGNS SHALL BE PLACED A MINIMUM OF FOUR (4) FEET CLEAR FROM THE FACE OF THE CURB OR A MINIMUM OF SIX (6) FEET CLEAR FROM THE TRAVELED WAY WHEN NO CURB IS PRESENT.
5. ALL SIGN FACES SHALL BE RETRO REFLECTIVE MEETING THE REQUIREMENTS OF ASTM-D4956 TYPE III (HIGH INTENSITY) OR GREATER REFLECTIVE SHEETING UNLESS OTHERWISE NOTED.
6. THE PROPOSED SIGNING MAY BE MODIFIED TO MEET FIELD CONDITIONS, PREVENT OBSTRUCTIONS AND ACCOMMODATE CONSTRUCTION SCHEDULING UPON APPROVAL OF THE ENGINEER.
7. ALL TYPE III BARRICADES SHALL HAVE TYPE "A" FLASHING LIGHTS. THE BACK SIDE OF THE BARRICADES SHALL BE REFLECTORIZED BY A MINIMUM OF SIX (6) YELLOW REFLECTORS, ONE AT EACH END OF EACH RAIL.
8. NOTIFY ALL PROPERTY OWNERS IN WRITING WHOSE ACCESS MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES AT LEAST 48 HOURS PRIOR TO COMMENCING WORK. THE NOTICE SHALL INCLUDE A TELEPHONE NUMBER WHERE THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY IN THE EVENT OF AN EMERGENCY. THE CONTRACTOR SHALL ALSO ATTEMPT TO VERBALLY CONTACT ALL PROPERTY OWNERS.
9. WHEN SIDEWALK SECTIONS ARE CLOSED DURING CONSTRUCTION ACTIVITIES, PROVIDE ADEQUATE PROTECTION FOR PEDESTRIANS. USE APPROPRIATE BARRICADING AND SIGNING. THESE DEVICES SHALL REMAIN IN PLACE DURING CONSTRUCTION ACTIVITIES. REOPEN TO THE PEDESTRIAN TRAFFIC AFTER CONSTRUCTION ACTIVITIES ARE FINISHED AT THE END OF THE DAY. COST FOR THE INSTALLATION AND MAINTENANCE OF THE DEVICES FOR SIDEWALK TRAFFIC CONTROL ARE CONSIDERED INCIDENTAL TO THE LUMP SUM BID FOR TRAFFIC CONTROL.
10. A PHASING PLAN AND PROJECT SCHEDULE SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO COMMENCING WORK THAT OUTLINES THE TIMELINE AND PROCESS TO COMPLETE THE STAGED CONSTRUCTION.
11. ALL SPECIAL TYPE SIGNS SHALL HAVE HIGHWAY C SERIES FONT, STREET NAME ONLY SIGNS SHALL HAVE 6" LETTERING, ALL OTHER SPECIAL SIGNS SHALL HAVE 5" LETTERING.

USHWY 63 BOX CULVERT REPLACEMENT
TRAFFIC CONTROL

TAMA, IA

SNYDER & ASSOCIATES, INC. |

5005 BOULING STREET S.W.
 CEDAR RAPIDS, IOWA 52404
 319-362-8334 | www.snyder-associates.com



Project No: 123.0575.08

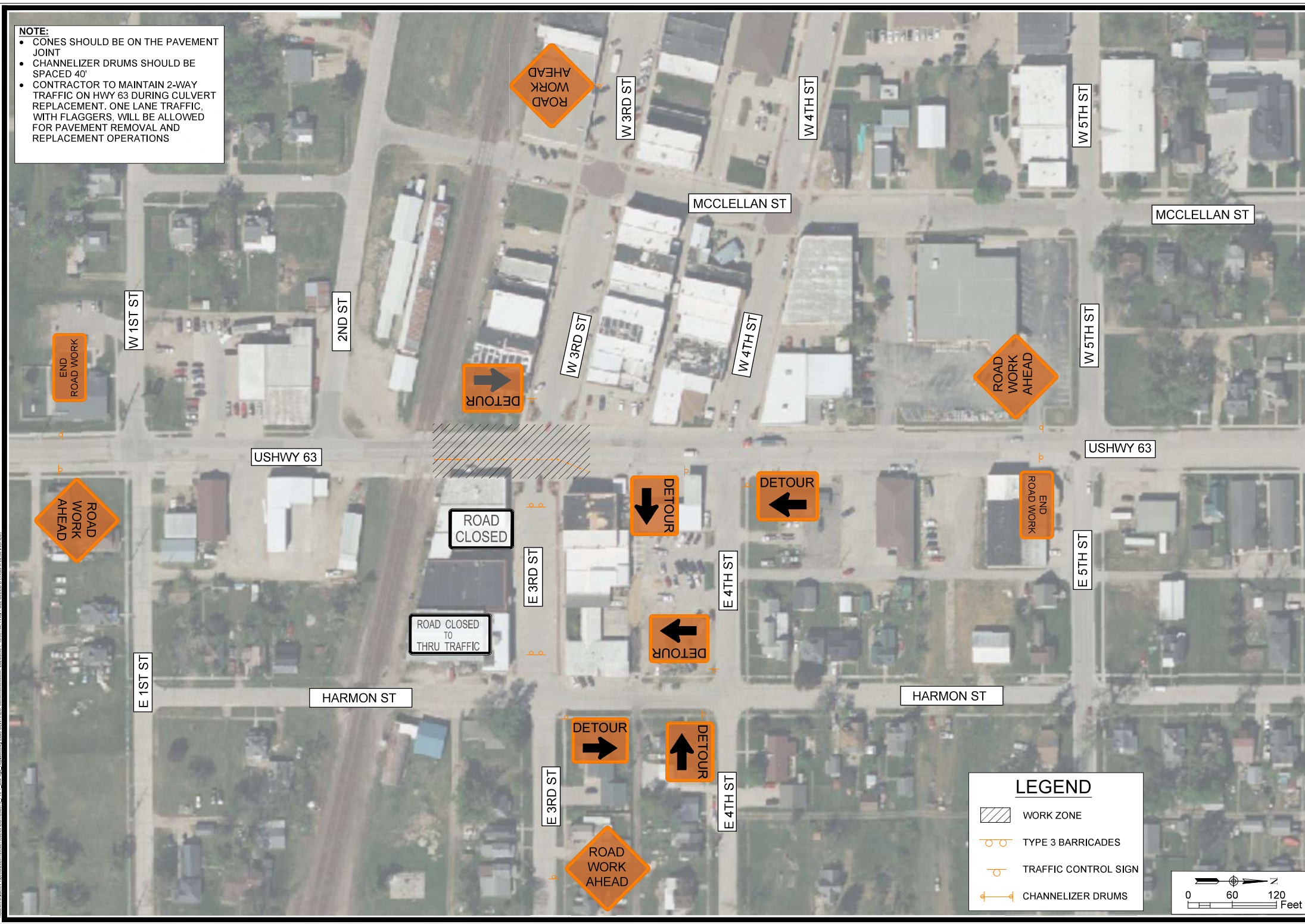
Sheet **J.1**

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MARK: _____ Engineer: K.J.S. Checked by: NAE Technician: L.A.O. Date: #####/###/###	REVISION: _____ DATE: _____ BY: _____ Scale: 1" = #' TARS: TAMA, IA
Project No: 123.0575.08 Sheet J.1	

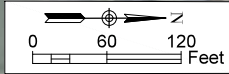
NOTE:

- CONES SHOULD BE ON THE PAVEMENT JOINT
- CHANNELIZER DRUMS SHOULD BE SPACED 40'
- CONTRACTOR TO MAINTAIN 2-WAY TRAFFIC ON HWY 63 DURING CULVERT REPLACEMENT. ONE LANE TRAFFIC, WITH FLAGGERS, WILL BE ALLOWED FOR PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS



LEGEND

- WORK ZONE
- TYPE 3 BARRICADES
- TRAFFIC CONTROL SIGN
- CHANNELIZER DRUMS



MARK	REVISION	DATE	BY

Engineer: KJS
 Checked by: NAE
 Date: #####
 Technician: LAO
 Scale: 1" = 60'
 TACS: #####

USHWY 63 BOX CULVERT REPLACEMENT
TRAFFIC CONTROL
SNYDER & ASSOCIATES, INC.




Project No: 123.0575.08
 Sheet J.2

TAMA, IA
 5005 BOULING STREET S.W.
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 319-262-2334 | www.snyder-associates.com

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LEGEND	
	WORK ZONE
	PEDESTRIAN PATH CLOSURE
	SIDEWALK CONTROL SIGN

MARK	REVISION	DATE	BY

TAMA, IA
 505 BOWLING STREET S.W.
 CEDAR RAPIDS, IOWA 52404
 319-362-8334 | www.snyder-associates.com

USHWY 63 BOX CULVERT REPLACEMENT

TRAFFIC CONTROL

SNYDER & ASSOCIATES, INC.



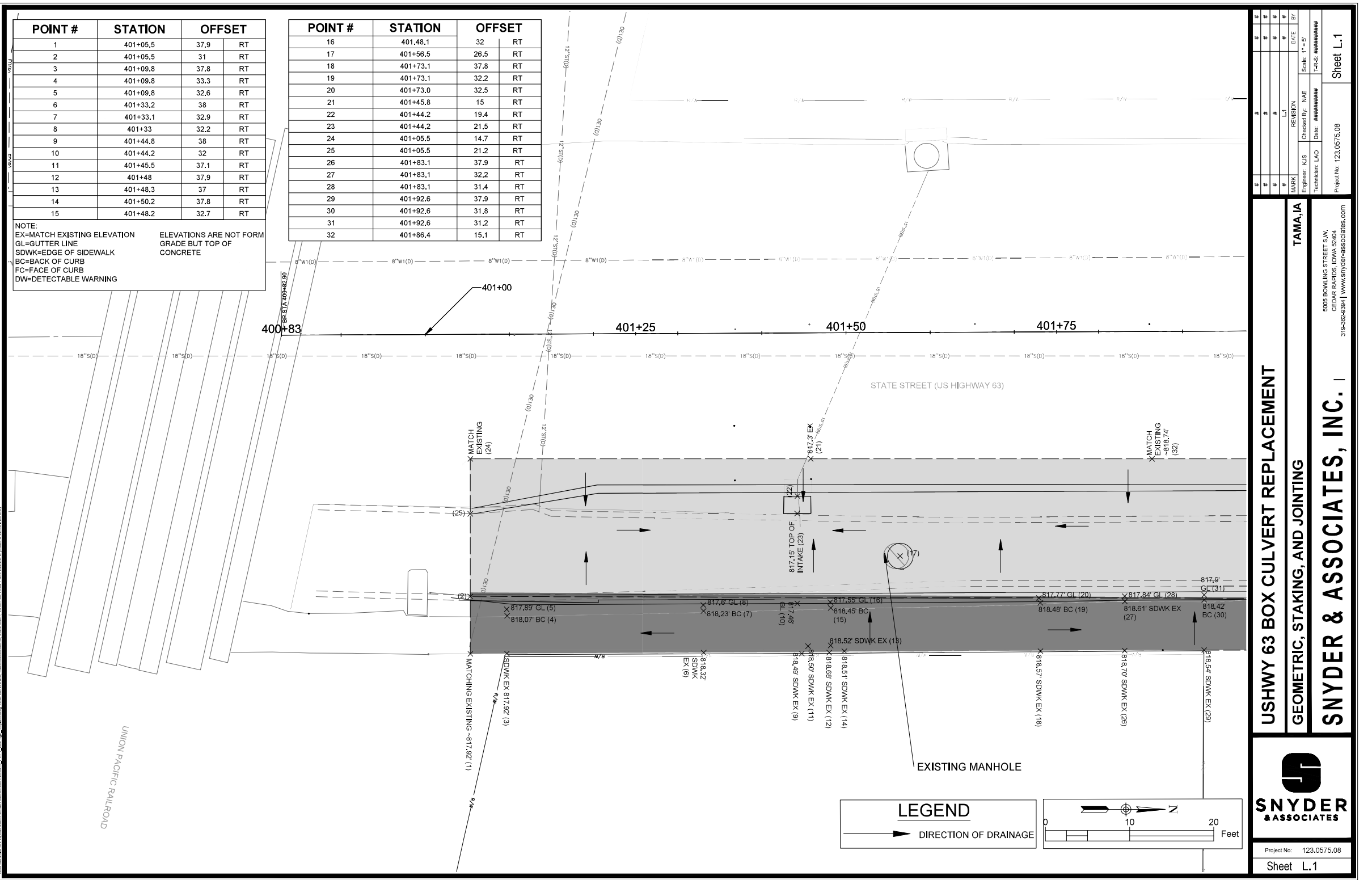
Project No: 123.0575.08
 Sheet J.3

POINT #	STATION	OFFSET	
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2	401+05.5	31	RT
3	401+09.8	37.8	RT
4	401+09.8	33.3	RT
5	401+09.8	32.6	RT
6	401+33.2	38	RT
7	401+33.1	32.9	RT
8	401+33	32.2	RT
9	401+44.8	38	RT
10	401+44.2	32	RT
11	401+45.5	37.1	RT
12	401+48	37.9	RT
13	401+48.3	37	RT
14	401+50.2	37.8	RT
15	401+48.2	32.7	RT

POINT #	STATION	OFFSET	
16	401+48.1	32	RT
17	401+56.5	26.5	RT
18	401+73.1	37.8	RT
19	401+73.1	32.2	RT
20	401+73.0	32.5	RT
21	401+45.8	15	RT
22	401+44.2	19.4	RT
23	401+44.2	21.5	RT
24	401+05.5	14.7	RT
25	401+05.5	21.2	RT
26	401+83.1	37.9	RT
27	401+83.1	32.2	RT
28	401+83.1	31.4	RT
29	401+92.6	37.9	RT
30	401+92.6	31.8	RT
31	401+92.6	31.2	RT
32	401+86.4	15.1	RT

NOTE:
EX=MATCH EXISTING ELEVATION
GL=GUTTER LINE
SDWK=EDGE OF SIDEWALK
BC=BACK OF CURB
FC=FACE OF CURB
DW=DETECTABLE WARNING

ELEVATIONS ARE NOT FORM GRADE BUT TOP OF CONCRETE



LEGEND
 DIRECTION OF DRAINAGE

Feet

MARK	REVISION	DATE	BY

Engineer: KJS Checked By: NAE Scale: 1" = 5'
Technician: LAO Draw: #####
Project No: 123.0575.08

TAMA, IA

USHWY 63 BOX CULVERT REPLACEMENT

GEOMETRIC, STAKING, AND JOINTING

SNYDER & ASSOCIATES, INC. I

505 BOULING STREET S.W.
CEDAR RAPIDS IOWA 52004
319-462-0334 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 123.0575.08

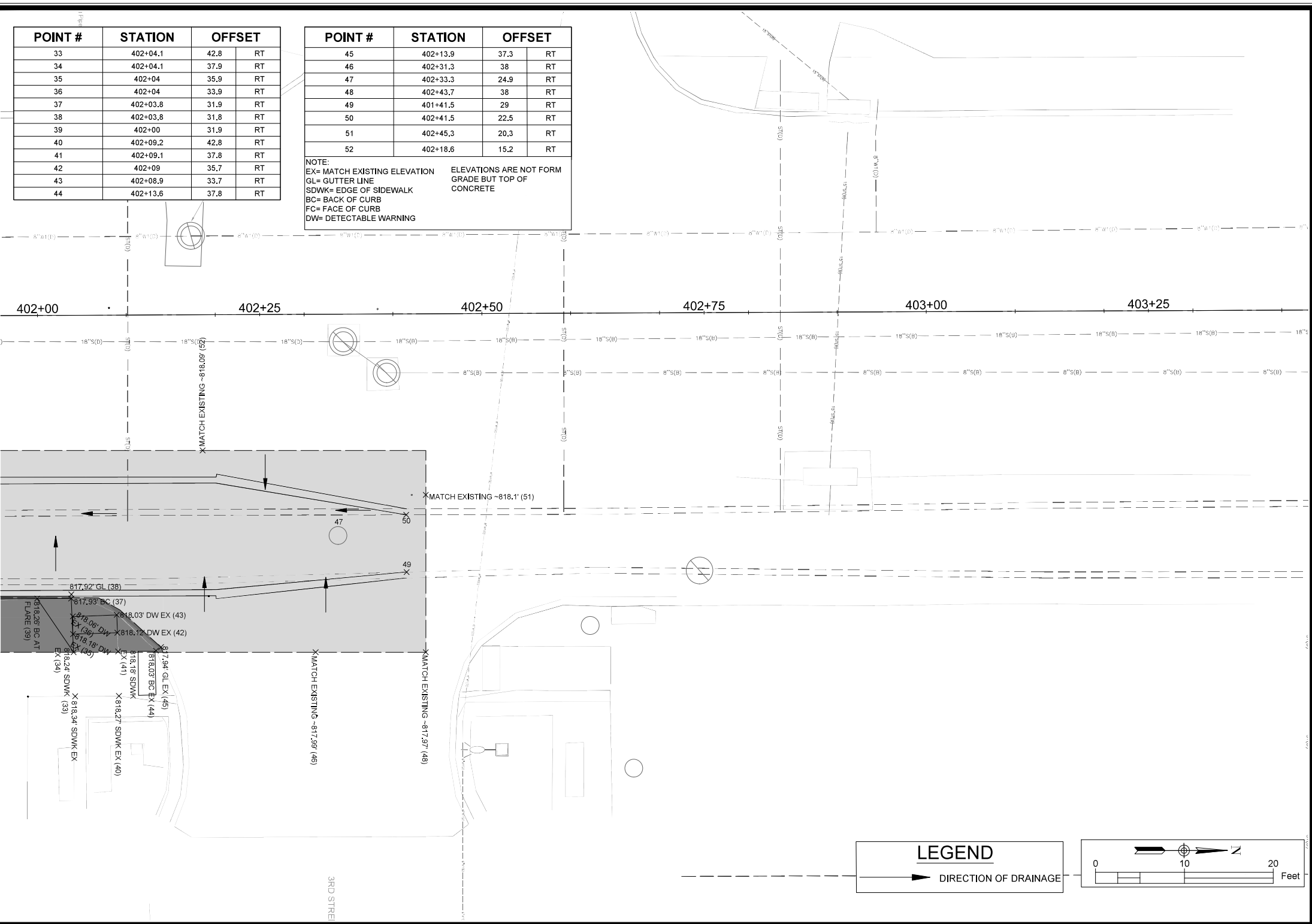
Sheet L.1

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POINT #	STATION	OFFSET	
33	402+04.1	42.8	RT
34	402+04.1	37.9	RT
35	402+04	35.9	RT
36	402+04	33.9	RT
37	402+03.8	31.9	RT
38	402+03.8	31.8	RT
39	402+00	31.9	RT
40	402+09.2	42.8	RT
41	402+09.1	37.8	RT
42	402+09	35.7	RT
43	402+08.9	33.7	RT
44	402+13.6	37.8	RT

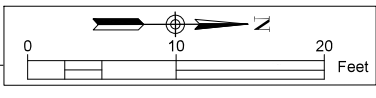
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46	402+31.3	38	RT
47	402+33.3	24.9	RT
48	402+43.7	38	RT
49	401+41.5	29	RT
50	402+41.5	22.5	RT
51	402+45.3	20.3	RT
52	402+18.6	15.2	RT

NOTE:
 EX= MATCH EXISTING ELEVATION ELEVATIONS ARE NOT FORM GRADE BUT TOP OF CONCRETE
 GL= GUTTER LINE
 SDWK= EDGE OF SIDEWALK
 BC= BACK OF CURB
 FC= FACE OF CURB
 DW= DETECTABLE WARNING

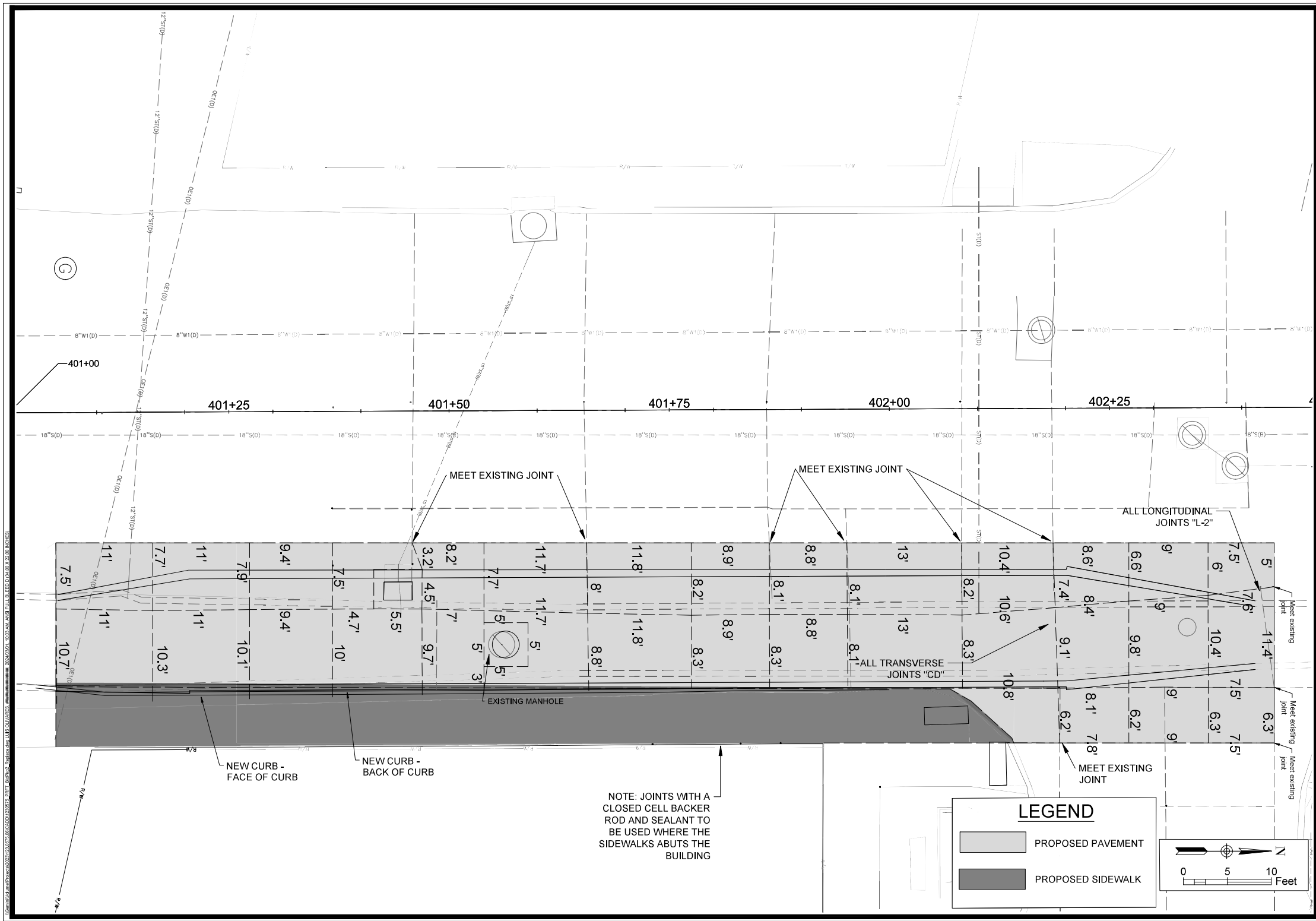


LEGEND

DIRECTION OF DRAINAGE



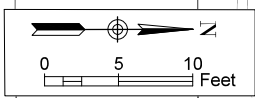
TAMA, IA	USHWY 63 BOX CULVERT REPLACEMENT	GEOMETRIC, STAKING, AND JOINTING	SNYDER & ASSOCIATES, INC. I	Project No: 123.0575.08 Sheet L.2	
5005 BOWLING STREET S.W. CEDAR RAPIDS, IOWA 52404 319-262-2334 www.snyder-associates.com	REVISION L.2 Engineer: KJS Checked by: NAE Technician: LJO Date: #####/###/### Scale: 1" = 5' TAC: #####			MARK REVISION DATE BY	



NOTE: JOINTS WITH A CLOSED CELL BACKER ROD AND SEALANT TO BE USED WHERE THE SIDEWALKS ABUTS THE BUILDING

LEGEND

- PROPOSED PAVEMENT
- PROPOSED SIDEWALK



MARK	REVISION	DATE	BY

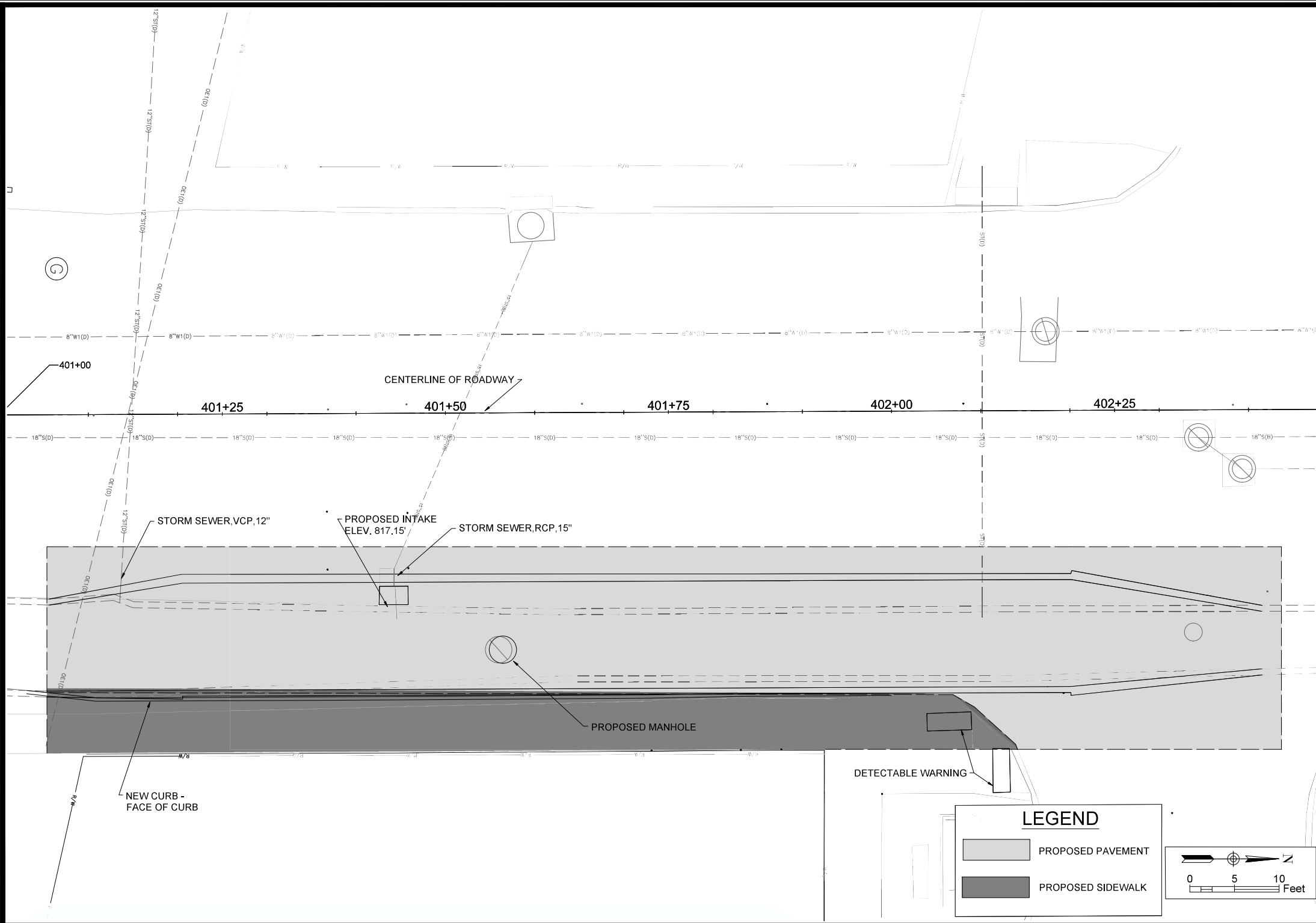
Engineer: KJS Checked by: NAE Scale: 1" = 5'
 Technician: LAO Date: ##### T+CS: #####

USHWY 63 BOX CULVERT REPLACEMENT
GEOMETRIC, STAKING, AND JOINTING
SNYDER & ASSOCIATES, INC.

TAMA, IA
 5005 BOWLING STREET S.W.
 CEDAR RAPIDS, IOWA 52404
 319-262-8334 | www.snyder-associates.com

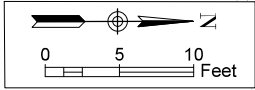
Project No: 123.0575.08
 Sheet L.3

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LEGEND

- PROPOSED PAVEMENT
- PROPOSED SIDEWALK



MARK	REVISION	DATE	BY
	M-1		

Engineer: K.J.S. Checked by: NAE
 Technician: L.A.O. Date: #####/###/###
 Scale: 1" = 5'
 T&S: #####

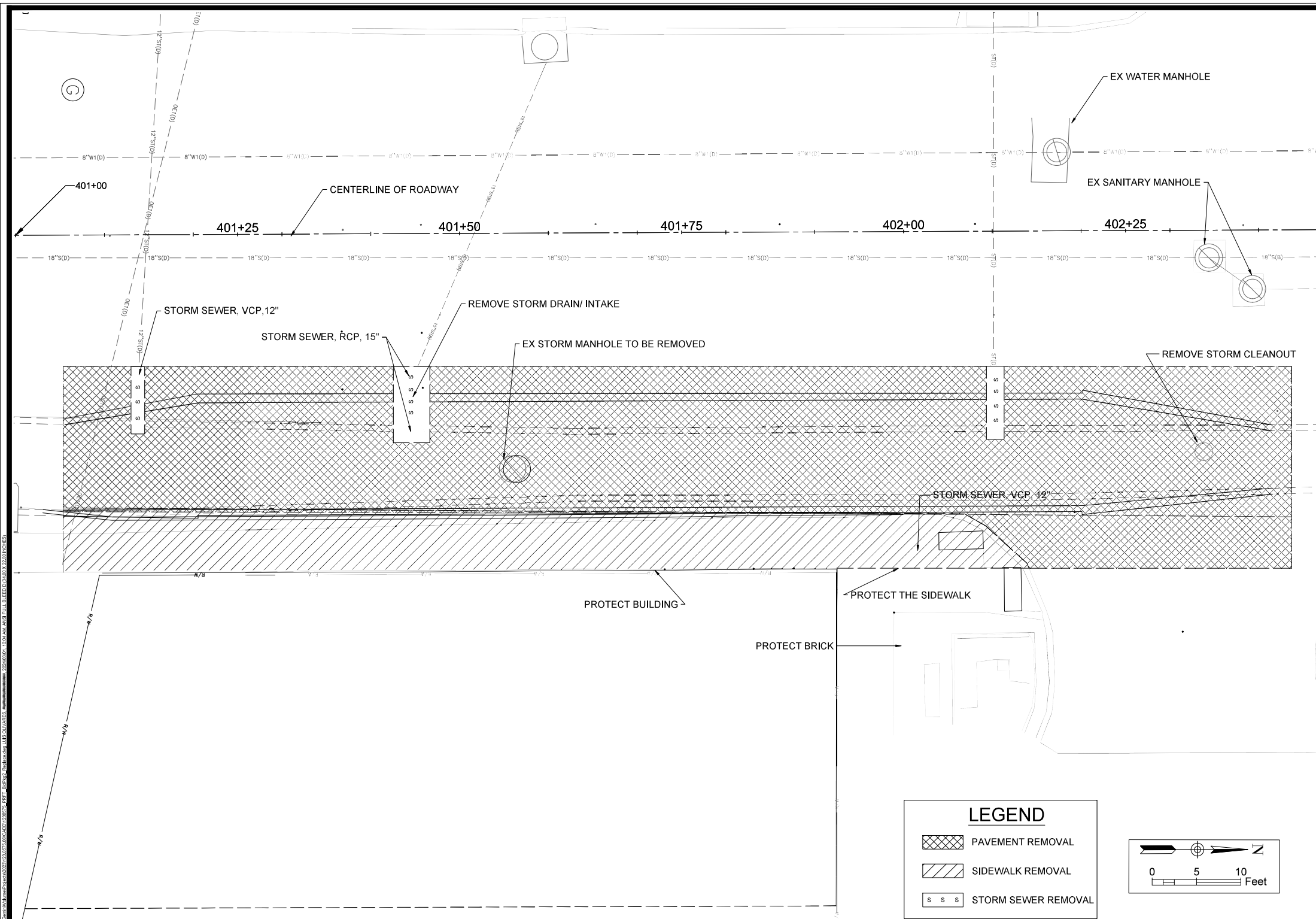
USHWY 63 BOX CULVERT REPLACEMENT
BURIED PIPE SHEETS - STORM

TAMA, IA

SNYDER & ASSOCIATES, INC.

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 CEDAR RAPIDS, IOWA 52404
 319-262-8334 | www.snyder-associates.com

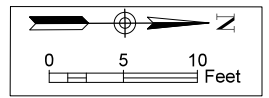
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 Sheet M.1



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LEGEND

- PAVEMENT REMOVAL
- SIDEWALK REMOVAL
- STORM SEWER REMOVAL



<p>USHWY 63 BOX CULVERT REPLACEMENT</p> <p>PROJECT REMOVALS</p> <p>SNYDER & ASSOCIATES, INC.</p>	<p>TAMA, IA</p> <p>5005 BOWLING STREET S.W. CEDAR RAPIDS, IOWA 52404 319-262-2334 www.snyder-associates.com</p>																																								
<p>Project No. 123.0575.08</p> <p>Sheet Q.1</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>MARK</th> <th>REVISION</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Engineer: KJS Checked by: NAE Scale: 1" = 5' Technician: LAO Date: #####/###/#### T&S: #####</p>	MARK	REVISION	DATE	BY																																				
MARK	REVISION	DATE	BY																																						

Special Requirements to Permit

1. All material or equipment shall be kept off the Right of Way during non-working hours.
2. Right of Way shall be restored at the end of each working day.
3. No open holes or dirt piles shall be left on Right of Way during non –working hours.
4. No parking on shoulders.
5. Final seeding and restoration of Right of Way shall be done.
6. No digging into the side slopes of any road or highway shall be allowed.
7. Proper traffic control must be used at all times.

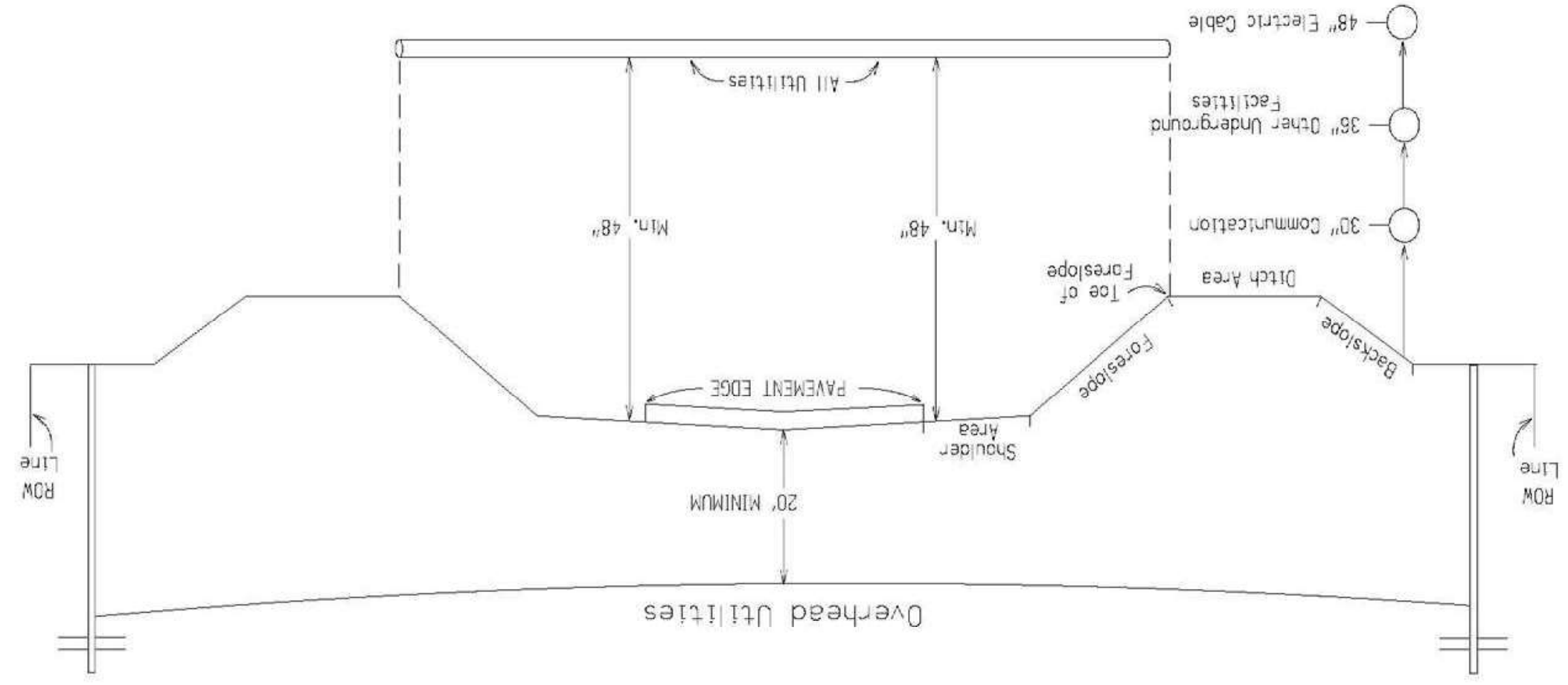
Acceptable Clear-zone Distances (feet).

design speed	design ADT	FORESLOPES			BACKSLOPES		
		6:1 or flatter	Steeper than 6:1, up to and including 4:1	Steeper than 4:1	Steeper than 4:1*	4:1 or flatter, up to 6:1	6:1 or flatter
40 mph or less	ADT < 750	7	7	**	7	7	7
	750 ≤ ADT < 1500	10	12	**	10	10	10
	1500 ≤ ADT < 6000	12	14	**	12	12	12
	ADT ≥ 6000	14	16	**	14	14	14
45 – 50 mph	ADT < 750	10	12	**	8	8	10
	750 ≤ ADT < 1500	14	16	**	10	12	14
	1500 ≤ ADT < 6000	16	20	**	12	14	16
	ADT ≥ 6000	20	24	**	14	18	20
55 mph	ADT < 750	12	14	**	8	10	10
	750 ≤ ADT < 1500	16	20	**	10	14	16
	1500 ≤ ADT < 6000	20	24	**	14	16	20
	ADT ≥ 6000	22	26	**	16	20	22
60 mph	ADT < 750	16	20	**	10	12	14
	750 ≤ ADT < 1500	20	26	**	12	16	20
	1500 ≤ ADT < 6000	26	30	**	14	18	24
	ADT ≥ 6000	30	30	**	20	24	26
65 – 70 mph	ADT < 750	18	20	**	10	14	14
	750 ≤ ADT < 1500	24	28	**	12	18	20
	1500 ≤ ADT < 6000	28	30	**	16	22	26
	ADT ≥ 6000	30	30	**	22	26	28

* Backslopes as steep as 2.5:1 can be considered as part of the clear zone, as long as they are relatively smooth and do not contain any fixed objects. Refer to Section 8A-4 of the Design Manual for information regarding backslopes steeper than 2.5:1.

** Since a vehicle traveling on a slope steeper than 4:1 is likely to be diverted to the bottom of the slope, the width of any slope steeper than 4:1 cannot be counted in the clear zone determination. Refer to Section 8A-2 of the Design Manual for information on providing clear recovery areas at the base of steep slopes.

Minimum Policy Requirements
 Rural Section
 Non-Freeway Highway



Notes:
 Utilities shall be located between the toe of foreslope and the highway row line. Utilities should be located as near to the highway row line as practical. See Utility Policy, Section 115.13 for further details.

IOWA DOT

STANDARD ROAD PLAN

TC-419

SHEET 1 of 1

REVISION 4-18-23 9

APPROVED BY DESIGN METHODS ENGINEER

REVISIONS: Added speed limit note.

LANE CLOSURE ON UNDIVIDED HIGHWAY

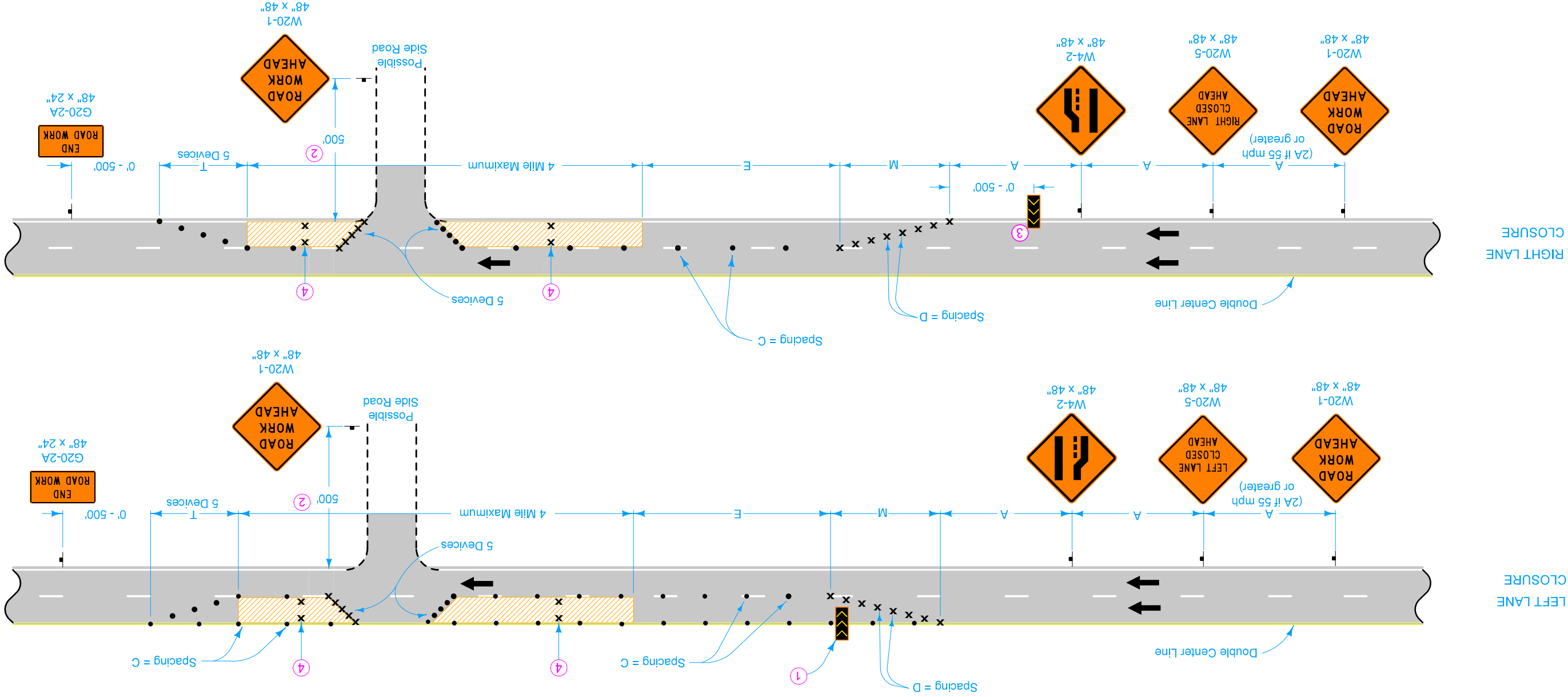
- ① Place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.
 - ② Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.
 - ③ When there is no shoulder, place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.
 - ④ For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations, in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
- Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.
- Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMF (W8-1) sign is placed.
- Possible Contract Item: Traffic Control

* Speed Limit refers to regulatory speed limit before road work.

SPEED LIMIT (mph)*	A	C	D	E	M	T
35 or less	250'	40'	35'	0-200'	245'	50'
40	500'	80'	40'	0-300'	320'	50'
45	700'	80'	45'	0-400'	630'	100'
50	700'	80'	45'	400'	630'	100'
55 - 60	1000'	100'	55'	600'	770'	100'

LEGEND

- Traffic Sign
- Drum
- 42" Channelizer
- Arrow Board
- Work Area
- Direction of Traffic



WORK WITHIN 15 FT OF TRAVELED WAY

APPROVED BY DESIGN METHODS ENGINEER

Brian Smith

REVISIONS: Modified general notes, changed title and replaced the DOT logo in the title block with the new version.

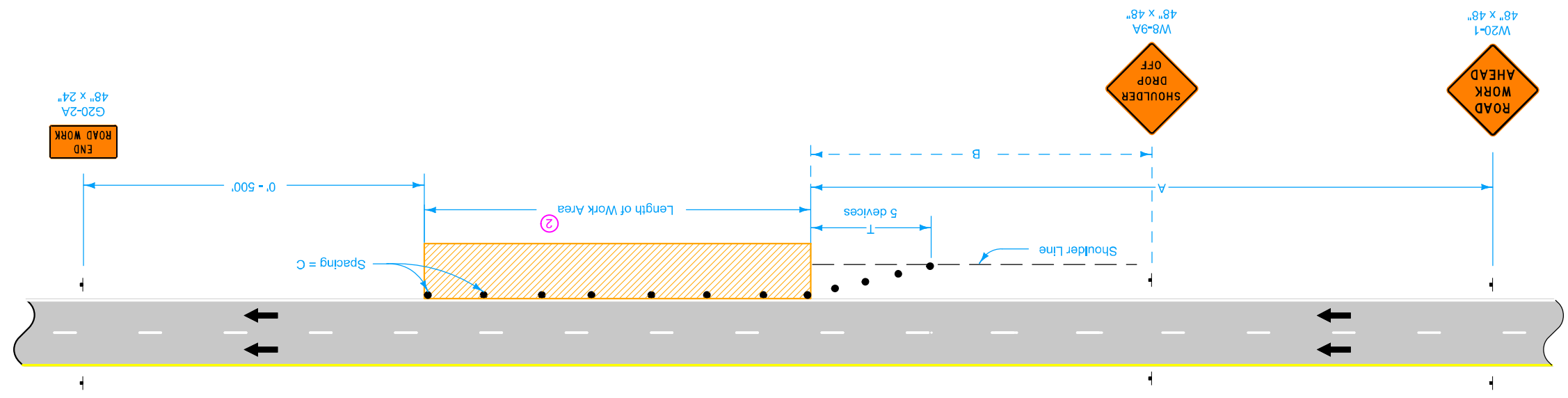
STANDARD ROAD PLAN

TC-402 SHEET 1 of 1

IOWADOT

REVISION 8 04-21-15

Possible Contract Item:
Traffic Control



When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.L2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

① When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.

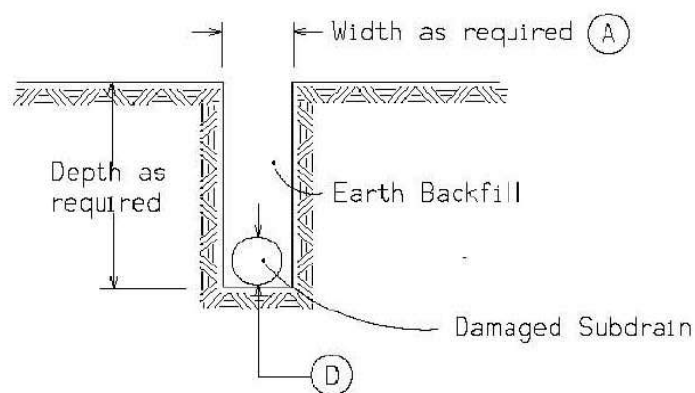
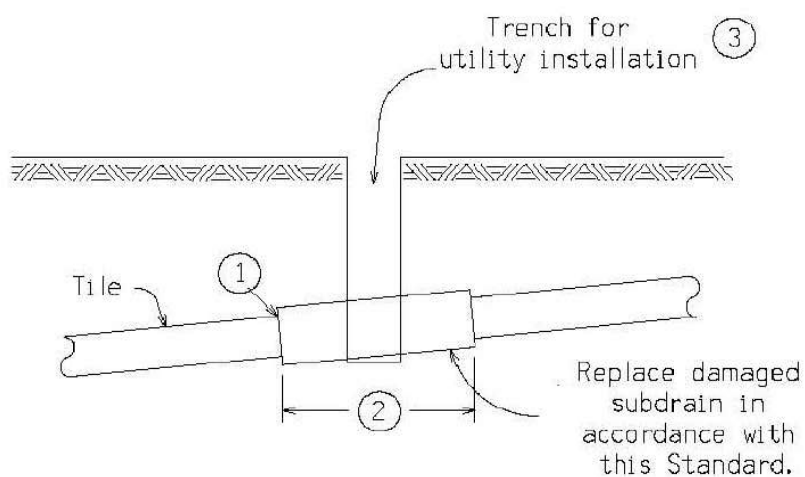
② For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.

SPEED LIMIT (mph)	A	B	C	①	②
40 or less	50'	250'	40'	100'	100'
45 - 50	70'	350'	80'	100'	200'
55 - 60	1500'	500'	500'	100'	200'
65 - 70	1500'	500'	500'	100'	230'

LEGEND

- Traffic Sign
- 42" Channelizer
- Work Area
- Direction of Traffic

Tile Line Repair Guideline



Note:
Replacement of drainage tile shall be accomplished so as to cause the minimum of disturbance to existing field tile. The repaired drainage tile shall be left in a functional condition with special emphasis placed on maintaining existing flow line elevations.

(A) = A minimum of 24" shall be excavated outside the normal utility trench wall or such greater width as may be required to expose a minimum of 12" of undamaged drain tile.

REPLACEMENT SCHEDULE - CASE 'A'										
Existing Tile (D)	4	6	8	10	12	15	18	21	24	>24
Proposed Subdrain Size										
Concrete Pipe	-	-	12	15	15	18	21	24	30	D+6"
Coated C.M.P.	10	12	15	18	21	24	30	36	36	*

* Replacement sizes provide equivalent capacity based on 6" settlement assuming a 0.20% slope with $n = 0.013$ for concrete pipe and $n = 0.025$ for corrugated pipe (Manning Formula)

NOTES:

Tile lines disturbed within the right-of-way (outside the Roadway Embankment Area *) limits shall be repaired as follows:

May be repaired with schedule 40 PVC pipe of compatible size or in accordance with the replacement schedule-case 'A' as listed above. Replacement with schedule 40 PVC pipe shall require using a connecting device of a Femco plain and plain flexible pipe coupling or equal.

Tile lines disturbed within the "Roadway Embankment Area" shall be replaced in accordance with the replacement schedule - case 'A' stated above and as follows:

- ① Concrete collar to be placed around joint where existing tile line and corrugated aluminized metal pipe connect.

- ② Minimum length of corrugated metal pipe shall be 4 feet. Minimum length of 2 feet on each side of the tile line break location.

- ③ Trench shall be backfilled with 8 inches loose material, compacted to 6 inches with a minimum of 95% compaction of natural density.

A. Backfill and compact area around drain tile to be completed by hand until new tile is completely covered. Remainder of the trench shall be backfilled by acceptable methods.

B. Area shall require inspection by the Iowa Department of Transportation inspectors or their designated personnel prior to backfilling of trench.

* "Roadway Embankment Area" is defined as the area lying between the foreslopes of a two-lane roadway and from near foreslope to far foreslope of a four lane roadway.



511 Request Form

Email NEW 511 entries to IowaDOT.Traffic@iowadot.us. Updates and/or changes to the current 511 entries may be emailed or by calling 515-237-3300.

If you need a press release for this project please contact Keven Arrowsmith in the Office of Strategic Communications, by email (Keven.Arrowsmith@iowadot.us).

General Information

Requester: _____ E-mail address: _____

Does this project include [Intelligent Work Zones](#)? Yes No

Responsible RCE Office:

- | | | |
|---------------------------------------|---|---------------------------------------|
| <input type="checkbox"/> Grimes | <input type="checkbox"/> Sioux City | <input type="checkbox"/> Chariton |
| <input type="checkbox"/> Jefferson | <input type="checkbox"/> Cherokee | <input type="checkbox"/> Cedar Rapids |
| <input type="checkbox"/> Marshalltown | <input type="checkbox"/> Council Bluffs | <input type="checkbox"/> Davenport |
| <input type="checkbox"/> Mason City | <input type="checkbox"/> Creston | <input type="checkbox"/> Manchester |
| <input type="checkbox"/> New Hampton | <input type="checkbox"/> Mount Pleasant | <input type="checkbox"/> Other |

Route and direction (N, S, E, W or Both) _____

DOT Project Number (if applicable) _____

DOT Permit Number (for contractors) _____

Project description (PCC/HMA resurfacing or overlay, bridge replacement, new bridge, etc.)

Project begin location (detailed description) (Do NOT use landmarks)

Project end location (detailed description) (Do NOT use landmarks)

County/Countries _____

24 hour project contact (for **after-hours** traffic control issues)

Name _____ Phone _____ (If none, please enter **none**)

Describe the impact on traffic

- | | | |
|--|--|---|
| <input type="checkbox"/> Closed | <input type="checkbox"/> Left 3 lanes closed | <input type="checkbox"/> Ramp partially closed |
| <input type="checkbox"/> Closed intermittently | <input type="checkbox"/> Center lane closed | <input type="checkbox"/> Exit ramp partially closed |
| <input type="checkbox"/> Intermittent lane closure | <input type="checkbox"/> Center 2 lanes closed | <input type="checkbox"/> Entrance ramp partially closed |
| <input type="checkbox"/> Opposing traffic | <input type="checkbox"/> Center 3 lanes closed | <input type="checkbox"/> Ramp closed (systems interchange) |
| <input type="checkbox"/> Right lane closed | <input type="checkbox"/> Right shoulder closed | <input type="checkbox"/> Local road closures in area |
| <input type="checkbox"/> Right 2 lanes closed | <input type="checkbox"/> Left shoulder closed | <input type="checkbox"/> Single lane traffic alternating directions |
| <input type="checkbox"/> Right 3 lanes closed | <input type="checkbox"/> Both shoulders closed | <input type="checkbox"/> Slow moving maintenance vehicle |
| <input type="checkbox"/> Left lane closed | <input type="checkbox"/> Exit ramp closed | |
| <input type="checkbox"/> Left 2 lanes closed | <input type="checkbox"/> Entrance ramp closed | |

Additional project information (pilot car, flagger, etc.)

Will there be temporary overhead signals? (15' standard height restriction) Yes No

If yes, please provide the location of the temporary overhead signals.

Project begin date and time: _____ Project end date and time: _____

Times of Closure Continuous Weekdays (Monday – Friday) Nights

Times of closure (Actual times required) _____

Restrictions (Need help deciding appropriate restrictions? Call Motor Carrier Services at 515-237-3264)

Are there restrictions? Yes No (If no, please skip ahead to the "Detour information" section.

Are there width restrictions? Yes No

Is the width restriction the entire length of the project? Yes No

If yes, what is the width restriction? _____

If no, do you have the Restriction Tabulation sheet? Yes No

If yes, please attach the Restriction Tabulation Sheet.

If no, how many width restricted areas and bridges are within the project? _____

If you do NOT have the Restriction Tabulation Sheet, please complete the relevant information for each restricted area or bridge.

- 1. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 2. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 3. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 4. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 5. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 6. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 7. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 8. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 9. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____
- 10. Area or bridge # _____ Travel direction N S E W Measured width minus (at least) 1 ft. _____

Are there height restrictions? Yes No (if no, please continue to next section)

If yes, do you have the Restriction Tabulation sheet? Yes No

If yes, please attach the Restriction Tabulation Sheet.

If no, how many overhead bridges are within the project? _____

If you do NOT have the Restriction Tabulation Sheet, please complete the relevant information for each overhead bridge

- 1. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 2. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 3. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 4. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 5. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 6. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 7. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 8. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 9. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____
- 10. Bridge # or location _____ Travel direction N S E W Estimated Vertical Clearance _____

Are there **weight** restrictions? Yes No Unknown

If yes, what is the weight restriction? _____

Are there **length** restrictions? Yes No Unknown

If yes, what is the length restriction? _____

Are these restrictions 24 hours per day? Yes No (If no, please enter the daily start / end times below.)

Enter the daily restriction START time _____ And daily restriction END time _____

Additional information pertaining to restrictions (shoulder type and width, TBR, channelizing devices, etc.)

Detour Information

Is there a marked detour? Yes No

If yes, are oversized loads allowed on the detour? Yes No

If yes, are there restrictions on the detour? (height, width, length, weight)

If no, what restriction prevents oversize / overweight loads? (height, width, weight, length)

Do you have a map of the detour? Yes No

If yes, please attach the map of the detour

If no, please describe the detour in detail in the space provided below.

District Traffic Tech (contact for all detour restriction info)

Name _____ Phone _____

Maintenance Garage responsible for detour: _____

Dynamic Message Signs (DMS)

Request use of permanent DMS is area: Yes No

Will there be portable DMS tied to this project? Yes No

Table 2601.03-1: Rural Stabilizing Crop Seeding Rates and Schedule

March 1 through October 31	
Oat	50 lbs. per acre
Grain rye	50 lbs. per acre
Canada wildrye (<i>Elymus canadensis</i>)	5 lbs PLS. per acre
November 1 through February 28 (or 29)	
Oat	62 lbs. per acre
Grain rye	62 lbs. per acre
Canada wildrye (<i>Elymus canadensis</i>)	7 lbs. PLS. per acre
For stabilizing crop only, Canada wildrye (<i>Elymus canadensis</i>) seed will not be required to be certified as Source Identified Class (Yellow Tag) Source G0-Iowa.	
Canada wildrye (<i>Elymus canadensis</i>) seed shall be debarbed or equal to facilitate application of seed.	
Table 2601.03-3: Permanent Seed Rates, Rural Areas	
Fescue, Tall ¹	100 lbs. per acre
Ryegrass, Perennial ²	75 lbs. per acre
Bluegrass, Kentucky	20 lbs. per acre
1. All tall fescue shall be endophyte free.	
2. Perennial ryegrass shall be cultivars Linn, Amazon, Norlea, or Nui, or a combination thereof	