ADDENDUM SUMMARY

Addendum #4

Date: 02/12/2024

Project: 2024 – Fishers Elementary School Addition & Renovations

This Addendum is issued in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein.

This Addendum includes the following attachments:

1) Addendum #4 dated 02/12/24 issued by CSO Architecture / Interior Design with attachments (revised Civil drawings)
2) Addendum #4 Revisions to Wurster Constr. Co. Procurement & Contract Requirements
   a) Revised 00 4100 Bid Form (updated to include additional alternates)

End Addendum

8463 Castlewood Drive ■ Indianapolis, IN 46250
p. 317-841-1000 f. 317-576-5172

ADDENDUM

CSO
ARCHITECTURE · INTERIOR DESIGN

ADDENDUM NO: 04

BID PACKAGE NO: N/A

PROJECT: 2024 – Fishers Elementary School Addition and Renovations

PROJECT NO: 2021119 DATE: 02/12/2024 BY: Josh Cannaday

This Addendum is issued in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein. This Addendum includes:

ATTACHMENTS

Specifications:

-

Drawings:

- CS, C101, C102. C201, C301, C302, C401, C401A, C402, C402A, C403, C403A, C501, C502, C601C701-C707, C801, C901, C902-C930

PART 1 - GENERAL INFORMATION

1.1 NOT USED

PART 2 - BIDDING REQUIREMENTS

2.1 NOT USED

PART 3 - SPECIFICATIONS

3.1 NOT USED

PART 4 - DRAWINGS

4.1 CS

A. Note removed about common area and perimeter paths per City request.

4.2 C101

A. Updates to keynote legend.
B. Made adjustments at main entry drive based on alignment and crosswalk comments received from City.

8831 Keystone Crossing, Indianapolis, IN 46240 | 317.848.7800 | csoinc.net

C. Updated pavement demolition limits to align with pavement replacement on east side of Lantern Road.
D. Relocation of Gas Line Marker noted
E. Partial removal of ADA curb ramp and curb on southwest corner of Lantern & Morgan as required by the City.
F. Relocation of a Metronet Fiber Optic Handhole for sidewalk construction at proposed crosswalk.
G. Removal of curb along existing walk and curb at Lantern Road on northwest corner for crosswalk and sidewalk connection.
H. Note to raise valve box on gas line.

4.3 C102

A. Updates to keynote legend.
B. Storm pipe to be abandoned in place labeled to coordinate with Underground Detention System.

4.4 C201

A. Updates to keynote legend.
B. Added street lights per City of Fishers and bore of conduit to electrical cabinet at Morgan along east side of Lantern – see Electrical Plans
C. Added crosswalk and ADA Ramps to Lantern Road north of Morgan Street. Removed south crosswalk and ADA Ramps
D. Rework of curb ramp on southwest corner of Lantern & Morgan.
E. Thermoplastic Crosswalk pavement markings required in R/W at all three driveways and crossing Lantern.
F. Adjusted Main entry drive alignment per City request.
G. Added information for Rectangular Rapid Flashing Beacon assembly at Lantern Road Cross Walk per City requirements.
H. Added dimensions and transportation easement along Lantern Road R/W.

4.5 C301

A. Update to entrance and islands and grading.
B. Added additional spot grades for more detail and clarification generally and in the truck dock area and new building south entrance.
C. Re-graded north entry drive.
D. Re-graded south entry drive.
E. Added grades for slopes at entry drives along walking route.
F. Revised grading at main entrance.
G. Updated Floodplain map and notes.

4.6 C302

A. Added additional spot grades along south curb line of south drive.

B. Added grading information to "dig pit" at east end of playground
C. Added spot grades along walk east of building.

4.7 C401

A. Revised/Updated Phased Erosion Control Plan per City requirements.

4.8 C401A

A. Revised/Updated Phased Erosion Control Plan per City requirements.

4.9 C402

A. Revised/Updated Phased Erosion Control Plan per City requirements.

4.10 C402A

A. Revised/Updated Phased Erosion Control Plan per City requirements.

4.11 C403

A. Revised/Updated Phased Erosion Control Plan per City requirements.

4.12 C403A

A. Revised/Updated Phased Erosion Control Plan per City requirements.

4.13 C501

A. Added information to canopy roof drains at main and south entries.
B. Added information to subsurface drains in mechanical yard.
C. Updated Keynote legend for FDC requirement per City requirements
D. Updated Keynote legend for FDC requirement per CEG requirements
E. Added note about R/W permit requirements for work in R/W per City request.
F. Site lighting added to the plan – See Electrical Plans
G. Added Blue reflector in pavement per City requirements at north hydrant.

4.14 C502

A. Added subsurface drains playground areas to connect to storm system and underground detention system.
B. Site lighting added to the plan – See Electrical Plans
C. Added Blue reflector in pavement per City requirements at southeast hydrant.
D. Adjusted Underground Detention System to allow for south fence and light installation at back of south walk.

4.15 C601

A. Crosswalk and ADA ramp changes.

4.16 C701-C705

A. Note changes to refer to Fishers Details for Casting information.

4.17 C706

A. Updated Stormbrixx Detail.

4.18 C707

A. Updated detail information for diversion structures.
B. Removed SSD in lawn detail.
C. Removed conflicting diversion structure details.

4.19 C801

A. Sheet layout revision.

4.20 C901

A. General sheet update

4.21 C902-C930

A. Fishers Standard Details added to project titleblock

PART 5 - QUESTIONS AND ANSWERS

5.1 NOT USED

END ADDENDUM

CONSTRUCTION PLANS FOR FISHERS ELEMENTARY SCHOOL FISHERS, IN

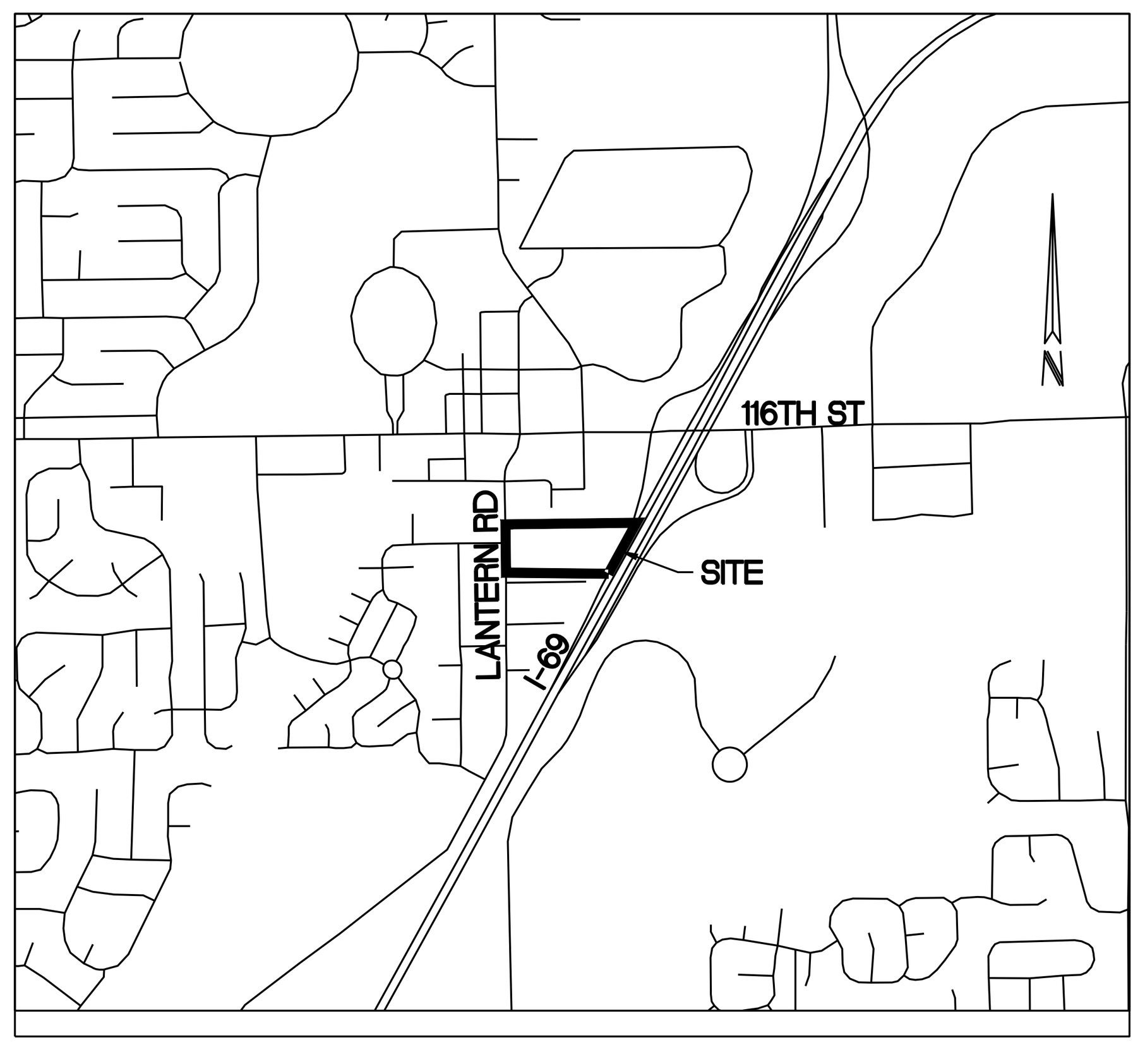
OWNER:

HAMILTON SOUTHEASTERN SCHOOLS
13485 CUMBERLAND ROAD
FISHERS, IN 46038
DISTRICT OFFICE: (317) 594-4100
(317) 594-4109 FAX

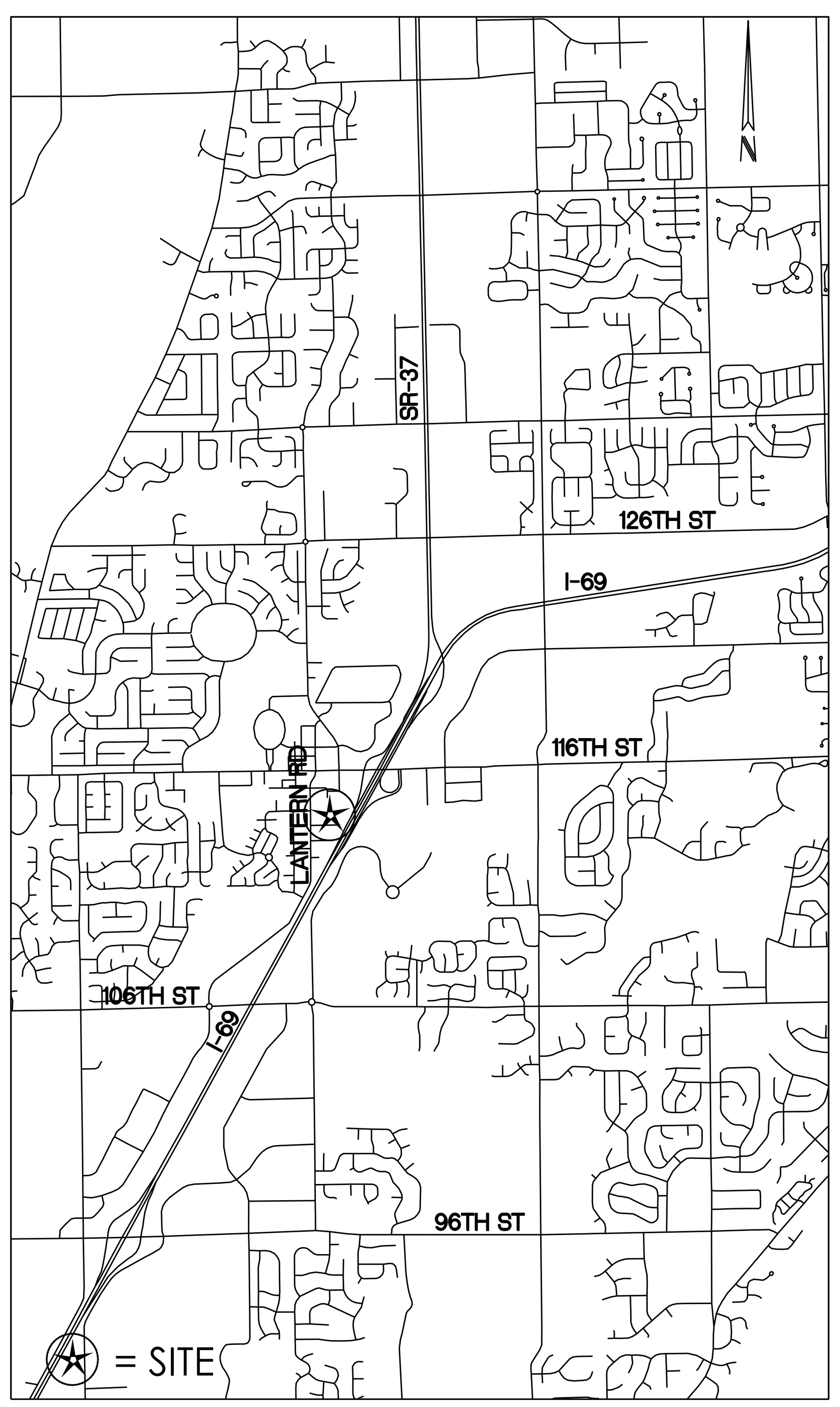
ENGINEER:

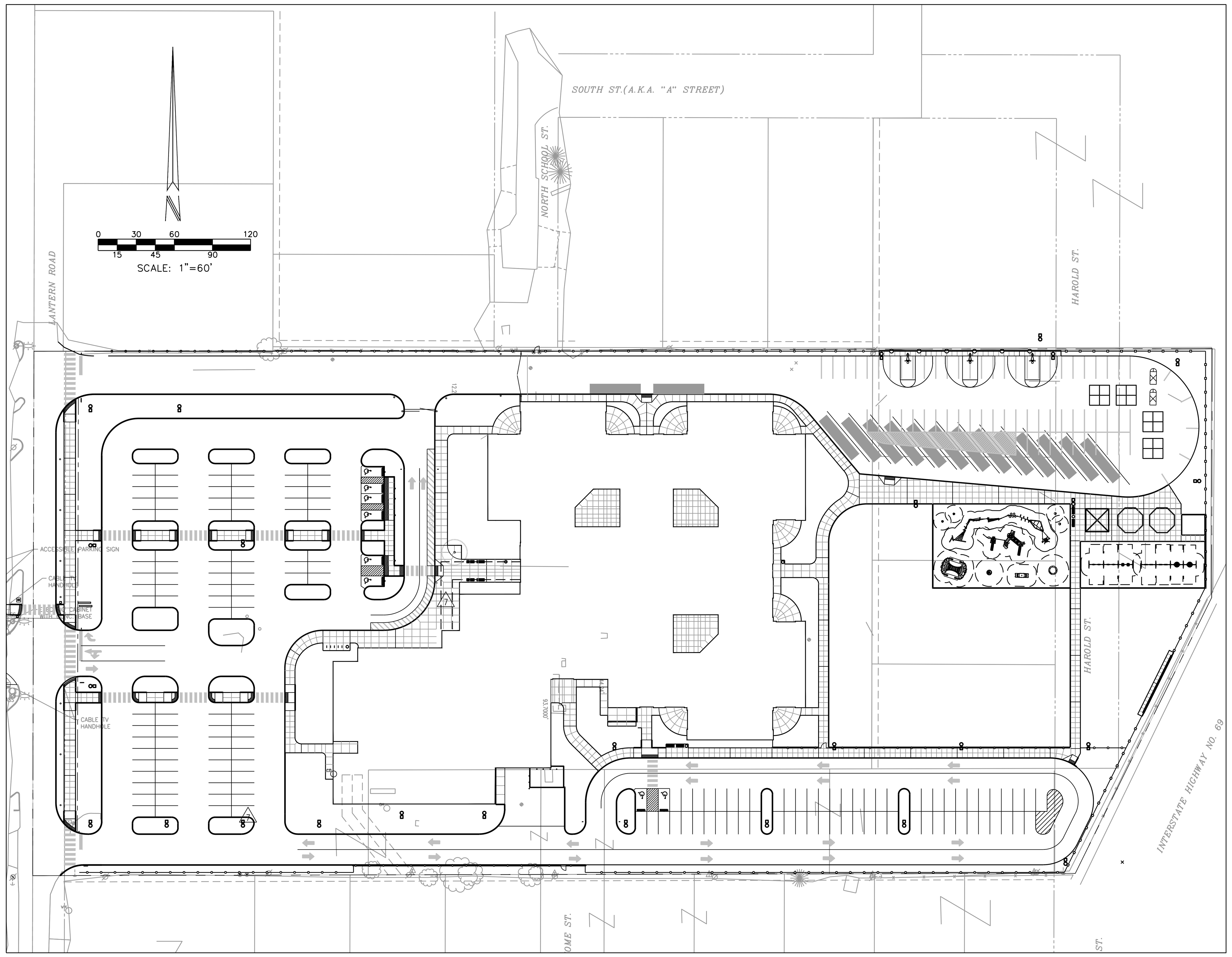
Cripe
Solutions by Design Since 1937
9339 PRIORITY WAY WEST DRIVE, SUITE 100
INDIANAPOLIS, INDIANA 46240
CONTACT: DAVID LACH
P: (317) 706-6361 E-MAIL: DLACH@CRIPE.BIZ

LOCATION MAP:



VICINITY MAP:





THE DESIGN AND CONSTRUCTION SHALL COMPLY WITH THE CURRENT FISHERS CONSTRUCTION SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT.

THE DESIGN AND CONSTRUCTION SHALL COMPLY WITH ALL ADA STANDARDS.

THE CONTRACTOR SHALL SCHEDULE A SITE PRE-CONSTRUCTION MEETING WITH THE FISHERS DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY CONSTRUCTION ON THE SITE BEING STARTED.

THE FINAL SITE INSPECTION WILL NOT BE PERFORMED BY THE FISHERS DEPARTMENT OF ENGINEERING INSPECTOR UNTIL ALL SITE AND RIGHT-OF-WAY WORK IS COMPLETED.

SITE RECORD DRAWINGS ARE REQUIRED TO BE SUBMITTED IN THE FISHERS STANDARD FORMAT PRIOR TO ENGINEERING DEPARTMENT RELEASE OF THE COMPLETED SITE.

A CITY OF FISHERS RIGHT-OF-WAY ACTIVITY PERMIT IS REQUIRED FOR UTILITY WORK CROSSING EXISTING PUBLIC RIGHT-OF-WAY.

UTILITY WORK WITHIN EXISTING PUBLIC RIGHT-OF-WAY OR WITHIN 5' OF EXISTING PUBLIC RIGHT-OF-WAY PAVEMENT REQUIRES REMOVABLE FLOWABLE FILL.

ALL ROADS MUST BE BROUGHT BACK TO ORIGINAL OR BETTER CONDITION, INCLUDING BUT NOT LIMITED TO PAVEMENT MARKINGS, CURB / STONE SHOULDERS, SIGNAGE, ETC. REPAIRS SHALL COINCIDE WITH THE ADJOINING ROAD.

~~ALL PERIMETER PATHS AND COMMON AREA SIDEWALKS OR PATHS ARE TO BE CONSTRUCTED AS PART OF THE SITE INFRASTRUCTURE. INDIVIDUAL LOT SIDEWALKS ARE TO BE CONSTRUCTED AT THE TIME OF HOME CONSTRUCTION.~~

LEGAL DESCRIPTION:

Corporate Warranty Deed (Inst. No.: 88-11592)

Property at Fishers Elementary School:

Part of the Northwest Quarter of Section 6, Township 17 North, Range 5 East, in Delaware Township, Hamilton County, Indiana described as follows:

Commencing at the Northwest corner of the Northwest Quarter of Section 6, Township 17 North, Range 5 East; thence South 00 degrees 00 minutes 00 seconds East (assumed bearing) on the West line of said Northwest Quarter 693.00 feet to the POINT OF BEGINNING of the real estate herein described; thence continuing South 00 degrees 00 minutes 00 seconds East on said West line 412.50 feet; thence North 89 degrees 44 minutes 02 seconds East parallel with the North line of said Northwest Quarter 804.22 feet to the Southeast corner of Lot 36, in Richard E. Harold 1st subdivision recorded in Deed Record 132, Pages 359-360 in the Office of the Recorder of Hamilton County, Indiana; thence South 89 degrees 47 minutes 00 seconds East 16.16 feet to the Northeasterly right-of-way line of interstate #69 as established per the plans for Project # I-69-1(33)0; thence North 26 degrees 11 minutes 56 seconds East on said right-of-way line 241.98 feet; thence North 00 degrees 00 minutes 00 seconds West parallel with the West line of said Northwest Quarter 196.01 feet to a point which extends North 89 degrees 44 minutes 02 seconds East 927.22 feet from the Point of Beginning; thence South 89 degrees 44 minutes 02 seconds West parallel with the North line of said Northwest Quarter 927.22 feet to the Point of Beginning; containing 8.515 acres, more or less.

Subject to any and all liens, easements, agreements and restrictions of record.

PROJECT DATA:

PROJECT ADDRESS	11442 LATERN RD FISHERS, IN 46038
PROJECT AREA	xx AC
BUILDING AREA	xx SF
STANDARD SPACES PROPOSED	172 SPACES
ACCESSIBLE SPACES PROPOSED	8 SPACES
BUS SPACES PROPOSED	13 SPACES
TOTAL PARKING SPACES	185 SPACES

SHEET INDEX:

SHEET	DESCRIPTION
CS	COVER SHEET
C001-C002	ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY
C101-C102	DEMOLITION PLAN
C201	SITE PLAN
C301-C302	GRADING PLAN
C401-C403A	EROSION CONTROL PLAN
C404	STORMWATER POLLUTION PREVENTION PLAN
C501-C502	UTILITY PLAN
C601	MAINTENANCE OF TRAFFIC PLAN
C701-C705	STORM SEWER PLAN AND PROFILES
C706-C707	STORM SEWER DETAILS
C801	SANITARY PLAN AND PROFILE
~~C901~~	~~WATER DETAILS~~
C902-930	CITY OF FISHERS STANDARD DETAILS
~~L100-L103~~	~~LANDSCAPE PLAN~~

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS:

1 / 29	TITLE SHEET
2 -3/ 29	TYPICAL SECTIONS AND PAVEMENT
4 / 29	CURB DETAILS
5 / 29	DRIVEWAY AND MICELLANEOUS ROADWAY DETAILS
6 / 29	SIDEWALK AND CURB RAMP DETAILS
7/ 29	ROUNDABOUT DESIGN DETAILS
8 / 29	HANDRAIL AND FENCE DETAILS
9-12 / 29	TIMBER GUARDRAIL DETAILS
13-15 / 29	STORM SEWER DETAILS
16-17 / 29	DETENTION BASIN DETAILS
18-23 / 29	SANITARY SEWER DETAILS
24-27 / 29	EROSION CONTROL DETAILS
28 / 29	SIGN AND PAVEMENT MARKING DETAILS
29 / 29	LIGHTING DETAILS

BENCHMARKS:

HSE 15 – SET DISK BY HSE UTILITIES – 4INCH DIAMETER ALUMINUM DISK STAMPED "HAMILTON SOUTHEASTERN UTILITIES" hse 15. SET IN CONCRETE ± 45 FEET SOUTH AND ±11 FEET EAST OF THE SOUTHEAST CORNER OF CUMBERLAND ROAD BRIDGEABUTMENT OVER I-69. YEAR ESTABLISHED 1997.

ELEV.=846.46 [NAVD 1988(GEOID12A)]

TBM #1 MAGSPIKE SET IN A POWERPOLE LOCATED AT THE NORTHWEST CORNER OF LOT 26, R.E. HAROLDS 1ST SUBDIVISION.

ELEV. = 820.33

AGENCY & UTILITY INFO:

AGENCY/UTILITY	PHONE NUMBER
FISHERS PLANNING & ZONING	317-595-3155
FISHERS DEPARTMENT OF ENGINEERING	317-595-3160
FISHERS FIRE DEPARTMENT	317-595-3200
HAMILTON COUNTY SURVEYOR	317-776-8495
DUKE ENERGY	317-776-5348
CENTERPOINT ENERGY	317-776-5532
AT&T	317-610-5472
COMCAST	317-774-3384
CITIZENS ENERGY GROUP	317-927-4377

CAUTION

LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

CRIPE TEAM:

PROJECT MANAGER	DAVID LACH, PE	317-706-6361

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8831 Keystone Crossing, Indianapolis, IN 46240
317.848.7800 | csoinc.net

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FISHERS ELEMENTARY SCHOOL
ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems.
The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract.
On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:

4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

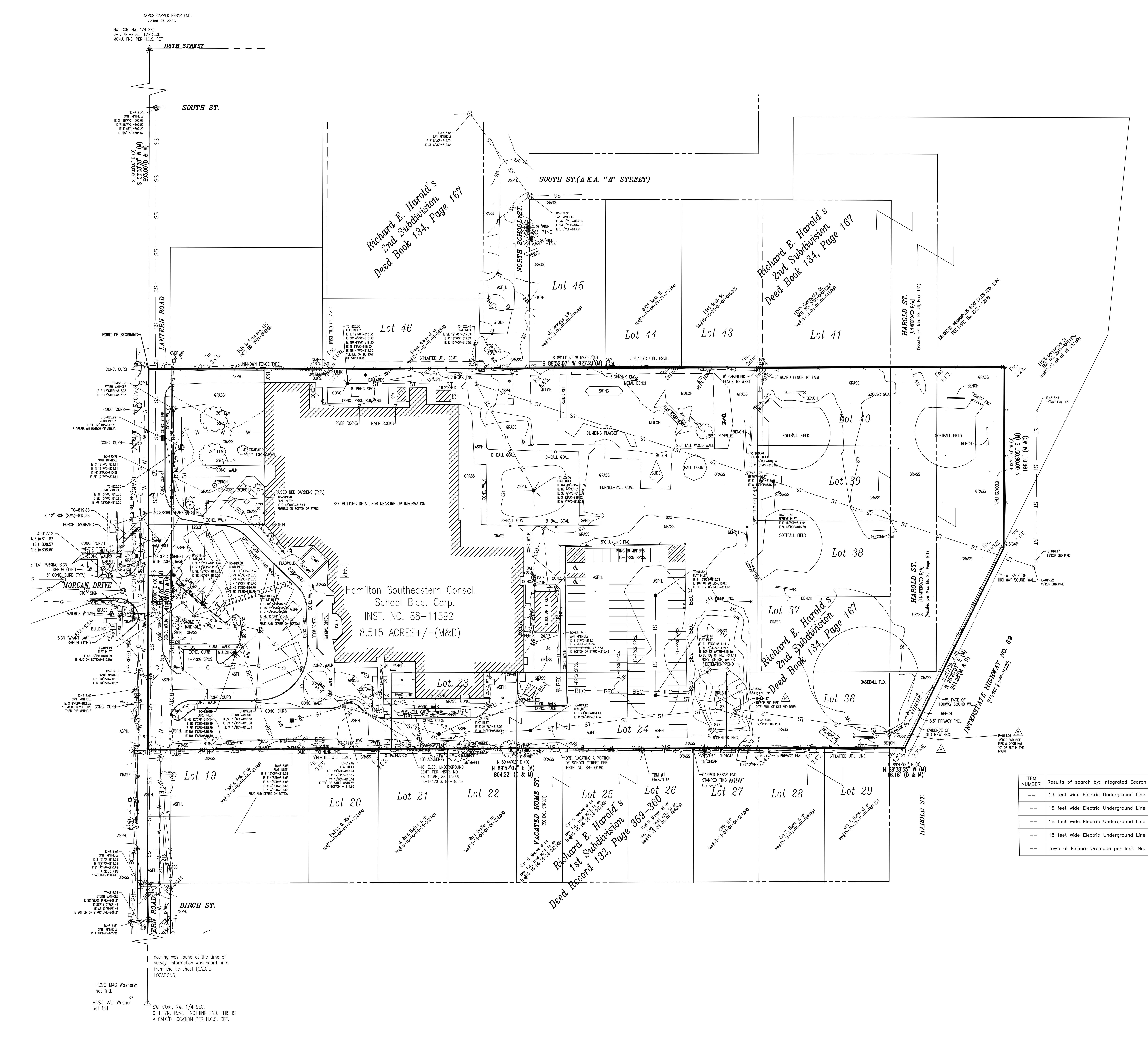
DRAWING TITLE: COVER SHEET

CERTIFIED BY:

DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER CS

PROJECT NUMBER 2021119



SCALE: 1"=50'

EXISTING FEATURES LEGEND

SS	SANITARY SEWER & MANHOLE		POWER POLE
ST	STORM SEWER; END SECTION, INLET & M.H.		GUY WIRE
G	GAS LINE		UTILITY RISER; TELE., ELEC. & CTV
W	WATER LINE	E.T.	ELECTRIC TRANSFORMER
E	ELECTRIC LINE (AERIAL)		AIR CONDITIONER UNIT
T	TELEPHONE LINE (AERIAL)		STREET LIGHT
CTV	CABLE TELEVISION (AERIAL)		LIGHT POLE
BTC	BURIED TELE. CABLE		FLOOD LIGHT
BEC	BURIED ELEC. CABLE	TR	TRAFFIC MANHOLE AND SIGNAL POLE
	FENCE LINE (FNC)		FIRE HYDRANT
BCTV	BURIED CABLE TV		VALVE; GAS & WATER
	GUARDRAIL		STREET SIGN
	RIGHT OF WAY LINE (R/W)	W T E	WATER, TELE, AND ELEC. MANHOLE
	EASEMENT LINE	CO	SEWER CLEANOUT
	CENTER LINE	EM GM WM	ELECTRIC, GAS AND WATER METER
	SWALE LINE		PIPELINE MARKER POST
D.	DEED DIMENSION		MAILBOX
M.	MEASURED DIMENSION		GUARD POST
P.	PLAT DIMENSION		SPRINKLER HEAD
R.	RADIUS	IRR	IRRIGATION CONTROL BOX
L.	ARC LENGTH		
H.H.	HANDHOLE	+800.25	SPOT GRADE
FND.	FOUND	800.25 799.75	TOP CURB OVER GUTTER GRADE
CONC.	CONCRETE	MW	MONITORING WELL
ASPH.	ASPHALT	SP	FIRE SERVICE STAND PIPE
TC	TOP OF CASTING ELEVATION	VP	GAS VENT PIPE
IE	INVERT ELEVATION	STL	SEPTIC TANK LID
FFE	FINISH FLOOR ELEVATION	WC	WELL CAP
TBM	TEMPORARY BENCHMARK	1234	SITE ADDRESS
		ARV	AIR RELIEF VALVE
		FP	UNDERGROUND TANK FILLER PIPE

● DENOTES A 5/8" DIA. REBAR WITH YELLOW PLASTIC CAP SET. CAP STAMPED "CRIPE FIRM NO. 0055" UNLESS OTHERWISE NOTED.

○ DENOTES A MAG NAIL WITH WASHER SET. WASHER STAMPED "CRIPE FIRM NO. 0055" UNLESS OTHERWISE NOTED.

NOTES:

(1) THIS SURVEY REFLECTS ABOVE GROUND INDICATIONS OF UTILITIES (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS), AS WELL AS INFORMATION AVAILABLE FROM UTILITY COMPANIES. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, THE SURVEYOR DOES NOT WARRANT THE UNDERGROUND UTILITIES SHOWN ARE OF THE SIZE, CAPACITY, OR IN THE EXACT LOCATION INDICATED, ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE EXACT LOCATION, SIZES, AND CAPACITIES OF EXISTING UNDERGROUND UTILITIES SHOULD BE FIELD VERIFIED PRIOR TO ANY CONSTRUCTION ACTIVITIES.

(2) EXCEPT AS EXPLICITLY SHOWN, DETAILED, OR LISTED ON THE FACE OF THIS DOCUMENT, PAUL I. CRIPE, INC. HAS NOT INVESTIGATED THIS SITE FOR FLOOD PLAINS, WETLANDS, ZONING, ENVIRONMENTAL CONTAMINATION, OR ANY OTHER ISSUES NOT SPECIFICALLY SET FORTH HEREIN. ANY ADDITIONAL ISSUES NOT EXPLICITLY DESCRIBED IN THE CONTRACTED SCOPE OF SERVICES FOR THE PREPARATION OF THE CURRENT VERSION OF THIS DOCUMENT WERE NOT INVESTIGATED.

I, THE UNDERSIGNED, HEREBY CERTIFY THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF THE WITHIN PLAT REPRESENTS A TOPOGRAPHIC SURVEY COMPLETED UNDER MY SUPERVISION ON DECEMBER 29, 2022 . I FURTHER CERTIFY THAT THE ELEVATIONS SHOWN ARE ACCURATE WITHIN THE FOLLOWING LIMITS UNLESS OTHERWISE NOTED:

ELEVATIONS ON PAVEMENT, CURBS, OR OTHER HARD SURFACES, BUILDING FLOOR ELEVATIONS, MANHOLES AND OTHER STRUCTURES; ±0.05 FEET

ELEVATIONS ON SOIL, GRASS OR OTHER NATURAL SURFACES; ±0.10 FEET

CONTOUR LINES SHOWN ARE PLOTTED WITHIN ± ONE-HALF INTERVAL.

ITEM NUMBER	Results of search by: Integrated Search Technologies, LLC, per Invoice #2022-025676, dated Dec. 21, 2022	AFFECTS PARCEL
--	16 feet wide Electric Underground Line Esmt. by Public Service Indiana, Inc. under Inst. No. 88-19420	YES
--	16 feet wide Electric Underground Line Esmt. by Public Service Indiana, Inc. under Inst. No. 88-19366	YES
--	16 feet wide Electric Underground Line Esmt. by Public Service Indiana, Inc. under Inst. No. 88-19365	YES
--	16 feet wide Electric Underground Line Esmt. by Public Service Indiana, Inc. under Inst. No. 88-19364	YES
--	Town of Fishers Ordinace per Inst. No. 88-09180, 82.5 feet of school street was vacated.	YES

DRAWN BY: CMQ
TECH. CK. BY & DATE:
CONCEPT CK. BY & DATE:
FIELD CK. BY & DATE:
CERTIFIED BY:
NAME: CLAUDE M. QUILLEN, P.S.#20200002
DATE: 2-22-23

Revisions

Mark	Date	Description
A	3-2-23	ADDED STORM MH DATA ON W. SIDE OF LANTERN
B	7-6-23	REVISED 15" DRAINAGE PIPE CMQ

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- Energy + Facilities
- Equipment Planning
- Real Estate Services

ALTA/NSPS Land Title and Topographic Survey

Fishers Elementary School

Hamilton Southeastern Schools
13845 Cumberland Road
Fishers, IN 46038

Legal Township: DELAWARE TWP., HAMILTON CO.
Section: 6 Township: 17-N Range: 5-E
Record Owner: HAMILTON SOUTHEASTERN CONSOL. SCHOOL BLDG. CORP.

Scale: 1" =50'
Sheet No. 1 of 2
Project Number 220201-30000

I, the undersigned Registered Land Surveyor, hereby certify to the best of my information, knowledge and belief, that the included plat correctly represents a survey performed under my direction during December 2022 of the following described real estate:

(ALTA Table 'A' Item 4, Gross Area)
Owner Name on Deed: HAMILTON SOUTHEASTERN CONSOLIDATED SCHOOL BUILDING CORPORATION.
Corporate Warranty Deed (Inst. No.: 88-11592)

Property at Fishers Elementary School:

Part of the Northwest Quarter of Section 6, Township 17 North, Range 5 East, in Delaware Township, Hamilton County, Indiana described as follows:

Commencing at the Northwest corner of the Northwest Quarter of Section 6, Township 17 North, Range 5 East; thence South 00 degrees 00 minutes 00 seconds East (assumed bearing) on the West line of said Northwest Quarter 693.00 feet to the POINT OF BEGINNING of the real estate herein described; thence continuing South 00 degrees 00 minutes 00 seconds East on said West line 412.50 feet; thence North 89 degrees 44 minutes 02 seconds East parallel with the North line of said Northwest Quarter 804.22 feet to the Southeast corner of Lot 36, in Richard E. Harold 1st subdivision recorded in Deed Record 132, Pages 359-360 in the Office of the Recorder of Hamilton County, Indiana; thence South 89 degrees 47 minutes 00 seconds East 16.16 feet to the Northeasterly right-of-way line of interstate #69 as established per the plans for Project #I-69-1(33)0; thence North 26 degrees 11 minutes 56 seconds East on said right-of-way line 241.98 feet; thence North 00 degrees 00 minutes 00 seconds West parallel with the West line of said Northwest Quarter 196.01 feet to a point which extends North 89 degrees 44 minutes 02 seconds East 927.22 feet from the Point of Beginning; thence South 89 degrees 44 minutes 02 seconds West parallel with the North line of said Northwest Quarter 927.22 feet to the Point of Beginning; containing 8.515 acres, more or less.

Subject to any and all liens, easements, agreements and restrictions of record.

FLOOD STATEMENT
This is to certify that no portion of the property is located within a Special Flood Hazard Area (Zone AE) as said property plots by scale (subject to map scale uncertainty and to any other uncertainty in location or elevation) on Community Panel No. 18057C 0234G of the Flood Insurance Rate Maps (published by Federal Emergency Management Agency – FEMA) dated November 19, 2014. The subject property is located in Zone X – unshaded (Areas determined to be outside 0.2% annual chance floodplain)

PROPERTY ADDRESS:
11442 Lantern Road, Fishers, IN 46038
(per County GIS)
Property Owner's Address
Hamilton Southeastern Consol. School Bldg. Corp.
13485 Cumberland Road, Fishers, IN 46038

PARKING COUNT STATEMENT:
Existing Available Parking Spaces:
Regular Parking Spaces = 95
Temp. Bus parking Spaces= 12
Handicapped Parking Space = 5
Total Parking Spaces = 112

UNDERGROUND UTILITIES NOTE:
The within survey reflects the location of above ground visible evidence of utility lines such as poles, riser pedestals, transformers, manholes, vault covers, valve boxes and fire hydrants, et cetera. Requests for underground utility location markings were made through Indiana 811 on December 2, 2022, Ticket Numbers: 2212021316, 2212021333, and 2212021345. This survey reflects above ground indications of utilities and information available from utility companies. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated, although he does certify that they are located as accurately as possible from the information available. The surveyor has not physically located the underground utilities. The user of this survey is cautioned that there may be buried utility lines, either in service or abandoned, or other underground facilities existing on the premises which are not shown on the within survey, or which are shown hereon but the location of which is uncertain. Unless otherwise noted, the surveyor has not physically located any buried utility lines and the surveyor assumes no liability for any errors or omissions relative to underground utility lines or other buried facilities.

Request for additional underground utility location markings were made through GPRS for the following utilities: Electric, Communications, Natural Gas Water, Strom sewer and Sanitary sewers, under Workorder Number 511101-16287 on December 15, 2022. (Contact person is Darren Guetig). This survey reflects above ground indications of utilities and information available from utility companies, IN811 and GPRS. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned.

THEORY OF LOCATION

Reference: An 80-year search was ordered by this firm from Integrated Search Tech. (IST) for easements and rights-of-way affecting the subject real estate with an Effective Date of: December 21, 2022. See title commitment table on the face of the survey. Including a Schneider survey for the Northeast adjoiner under Schn. Job No. 4152.001, dated March 29, 2002, for the Northeast adjoiner property.

REFERENCE DOCUMENTS

Reference: An ALTA/NSPS (previously known as ALTA/ACSM) Land Title Survey of the Northeast Adjoiner deed for Indianapolis Boat Sales prepared by The Schneider Corp. certified by Bryan F. Catlin P.L.S. No. 910012, Job No. 4152.001 and dated March 29, 2002, recorded as Instrument Number 2003-112039, in the Office of the Recorder of Hamilton County, Indiana.

Reference: The Secondary Plat of R.E. Harold, 1st Subdivision recorded as Deed Record 132 and Pages 359-360, in the Office of the Recorder of Hamilton County, Indiana.

Reference: The Secondary Plat of R.E. Harold, 2nd Subdivision, recorded as Deed Book 134, Page 167, in the Office of the Recorder of Hamilton County, Indiana.

This is a retracement survey of a tract of school land and retracement of the deed lines and platted lands of the within described real estate are to be performed according to the minimum standard detail requirements for a 2021 ALTA/NSPS Land Title Surveys. The surveyed land is a part of the land owned or formerly owned by "Hamilton Southeastern Consol. School Bldg. Corp." as originally described in Instrument No. 88-11592 in the Office of the Recorder of Hamilton County, Indiana. The tracts are subject to the right of way of Lantern Road on the West side and the Limited Access Right of way line for Interstate No. 69 on the East line which both adjoins said school tract as shown on the survey. The location of the corners and the lines of the subject real estate are dependent upon the location of the perimeter of the Northwest Quarter of Section 6, Township 17 North, Range 5 East, of the Second Principal Meridian.

Right-of-Way Statement
The existing Right-of-Way along Interstate Highway No. 69 (limited access R/W varies on each side of the road) was determined per Hamilton County GIS and the Sound Barrier Wall and evidence of the previous R/W fence and noted accordingly on this survey. The existing Right-of-Way along Lantern Road (Public R/W 25 feet Half Right-of-way per plat for R.E. Harold Second Subdivision) was assumed due to the platted public records for the street and noted accordingly on this survey. The existing Right-of-Way along North School St. was (Public R/W 25 feet wide on each side of the platted center line) was determined per subject plat for R.E. Harold Second Sub .and noted accordingly on this survey. The existing Right-of-Way along South Home Street (Public R/W was 25 on each side of the road centerline per plat – special note: this street appears to have been previously vacated) was determined per the tax records and noted accordingly on this survey. The existing Right-of-Way along Harold Street (unimproved Public R/W 50 feet wide) was determined per plats as 25 feet wide on each side of the platted center line) as shown on the plat for R.E. Harold's First and Second Subdivisions, was vacated per Misc. record 26, page 161.

If the existing Right-of-Way was not listed in the Title 80-Year Search or on a Plat, Deed, Right-of-Way Grant or other Legal Recorded Document (record Survey) then the existing Right-of-Way was established by physical evidence in the field and labeled as "Apparent R/W" or "App R/W" on this survey. This may or may not be the actual Right-of-Way for the Roadway. If a recorded Right-of-Way document cannot be found for this Roadway, the edge of the travel lane may become the actual Right-of-Way.

ORIGIN BENCHMARK

HSE 15 – SET DISK BY HSE UTILITIES – 4INCH DIAMETER ALUMINUM DISK STAMPED "HAMILTON SOUTHEASTERN UTILITIES" hse 15. SET IN CONCRETE ± 45 FEET SOUTH AND ±11 FEET EAST OF THE SOUTHEAST CORNER OF CUMBERLAND ROAD BRIDGEABUTMENT OVER I-69. YEAR ESTABLISHED 1997.

ELEV.=846.46 [NAVD 1988(GEOID12A)]

▽ TBM #1 MAGSPIKE SET IN A POWERPOLE LOCATED AT THE NORTHWEST CORNER OF LOT 26, R.E. HAROLDS 1ST SUBDIVISION.

ELEV. = 820.33

SURVEYOR'S REPORT

In accordance with Title 865, Article 1, Chapter 12, of the Indiana Administrative Code ("Rule 12"), the following observations and opinions are submitted regarding the various uncertainties in the locations of the lines and corners established on this survey as a result of uncertainties in reference monumentation; in record descriptions and plats; in lines of occupation; and as introduced by random errors in measurement ("Relative Positional Accuracy"). There may be unwritten rights associated with these uncertainties. The client should assume there is an amount of uncertainty along any line equal in magnitude to the discrepancy in the location of the lines of possession from the surveyed lines.

There may be differences of deed dimensions versus measured dimensions along the boundary lines shown hereon and, likewise, there may be found survey markers near, but not precisely at, some boundary corners. In cases where the magnitude of these differences is less than the Relative Positional Accuracy stated below and less than the uncertainty identified for the reference monumentation (discussed below), the differences may be considered insignificant and are shown only for purposes of mathematical closure. Such differences that are greater than the Relative Positional Accuracy and the uncertainty in reference monumentation should be considered worthy of notice and are therefore further discussed below.

This survey and report are based in part upon opinions formed in accordance with an Indiana Land Surveyor's responsibility to conduct a survey in accordance with "law or a precedent" (865 IAC 1-12-11(5), Rules of the Indiana State Board of Registration for Land Surveyors). Since Indiana has no statutes addressing how to resolve boundary lines, a solution based on principles derived from common law precedent must be relied upon as the basis for a boundary resolution.

A. Availability and Conditions of Reference Monuments

The following monuments are taken from evidence found in the field provided by the Hamilton County Surveyors Office and GIS or calculations made in the office to the locations of the section corners to determine the Northwest Quarter of Section 6, Township 17 North, Range 4 East.

Point 1 (17040103)
Northwest corner of the Northwest Quarter of said Section 6 – A Harrison Monument was found and accepted per the Hamilton County Surveyor's Office Corner Record, County ties (corner no. 17040103). Said monument was in good condition, flush with 116th Street surface, and has been in place since August 2019 per reference tie date. The uncertainty in the location of this corner is negligible.

Point 2 (17040116)
Southwest corner of the Northwest Quarter of the Northwest Quarter of said Section 6 – This is a calculated corner, and no monument was found or set per this survey. The uncertainty in the location of this corner is based upon other corners that were found, set or calculated and is plus or minus 0.2 feet in any direction based upon that calculation. (Corner no. 17040116)

Point 3 (17040106)
Southwest corner of the Northwest Quarter of said Section 6 – This is a calculated corner, and no monument was found or set per this survey. The uncertainty in the location of this corner is based upon other corners that were found, set or calculated and is negligible based upon that calculation. (Corner no. 17040106)

All monuments shown and noted on this survey were found or set flush with the surface, unless otherwise noted.

B. Occupation and/or Possession Lines:

The possession and occupation along the North line of the subject real estate is to a fence line along said line as shown on the survey. The possession and occupation along the East line of the subject real estate is to a 8ft tall privacy fence line NOTE: also includes the sound barrier wall 8feet +/- southwest along said line for the Interstate Highway No. 69 as shown on the survey. The possession and occupation along the South line of the subject real estate is to a fence line along said line as shown on the survey. The possession and occupation along the West line of the subject real estate is to the street improvements of Lantern Road.

Existing monumentation, fence lines and other forms of possession lines for adjoining tracts were found as shown on this survey.

C. Clarity or Ambiguity of the Record Descriptions (used and/or adjoiner's descriptions):
The deed description for the school property does close. The description entry call does place the property well from 2.6 feet North to 0.9 feet South. The qualifying calls within the description are consistent with the plats and streets and highways in the area. There are no scriveners' errors noted in the subject tract description. There is in my opinion 0.5 feet error in uncertainty in the location of the control. Special Note: two of the four section corner monuments were not found. The lines and corners of the subject tract were located hereon based on controlling calls contained in the record description for the subject tract.

NOTE: Donaldson Street was vacated from both the R.E. Harold's 1st and 2nd Subdivisions, however, the Lots in both Subdivisions were not Vacated. So, the easements on said Lots were not affected by the Vacation document and the 5' Utility Corridor is still in affect along the back of said Lots.

The course bearings in the vesting deed are on a different bearing system then this survey. The bearings have been adjusted to match this system accordingly also there is a difference in distance of 0.01 feet in a couple of the courses this could be from a rounding error either up or down and the qualifying calls were held over the distances.

There is a gap / overlap due to along North line of the subject tract due to qualifying calls from different deed documents The distance varies from a 0.9 feet overlap South of said North line to 2.9 feet gap North of said line for the subdivision.

The subject property abuts, without gaps gores or strips, and has vehicular and pedestrian ingress to and egress from Lantern Road but not the Limited Access to Interstate No. 69 if allowed by the local, city or state agencies, which are completed, dedicated and accepted public rights of way.

Except as shown on the survey, the subject property does not serve any adjoining property for utilities, drainage, structural support or ingress or egress.

Unless discussed above, there are no discrepancies between the record land descriptions of the subject real estate and the adjoiners. A title company and/or legal counsel should be consulted regarding any deed overlap and deed gap areas if shown on this survey. Similarly, the lines of the subject real estate are contiguous with the adjoiners' lines if no gap or overlaps are noted.

D. The Relative Positional Precision of the Measurements:

The relative positional accuracy (due to random errors in measurement) of the corners of the subject tract established on this survey is within the specifications for an Urban Survey (0.13 feet plus 50 ppm) as defined in 865 IAC 1-12-7 and the 2021 ALTA Standards.

E. Positional Uncertainty:

As a result of the above observations, it is my opinion that the uncertainties in the location of the lines and corners established on this survey are as follows:

Due to Variances in reference monuments: As much as 0.2 feet North-South, 0.2 feet East-West

Due to Discrepancies in record descriptions: As much as 2.9 feet North-South, 0.5 feet East-West

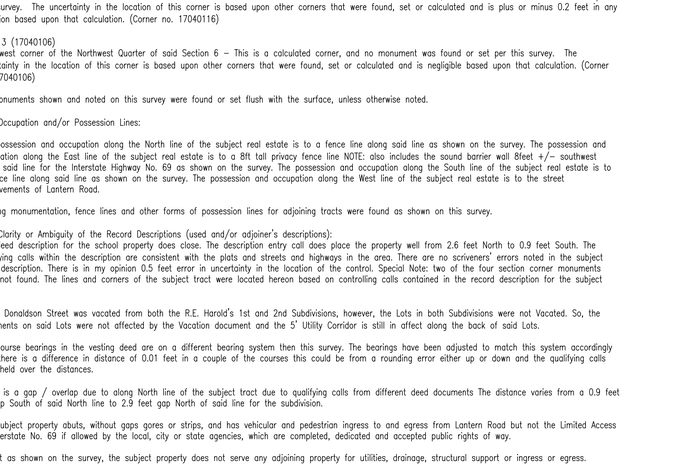
Due to Inconsistencies in lines of occupation: EQUAL to the differences shown between the property line evidence found and the property lines established by this survey.

Certification of Survey
ALTA/NSPS Land Title Survey

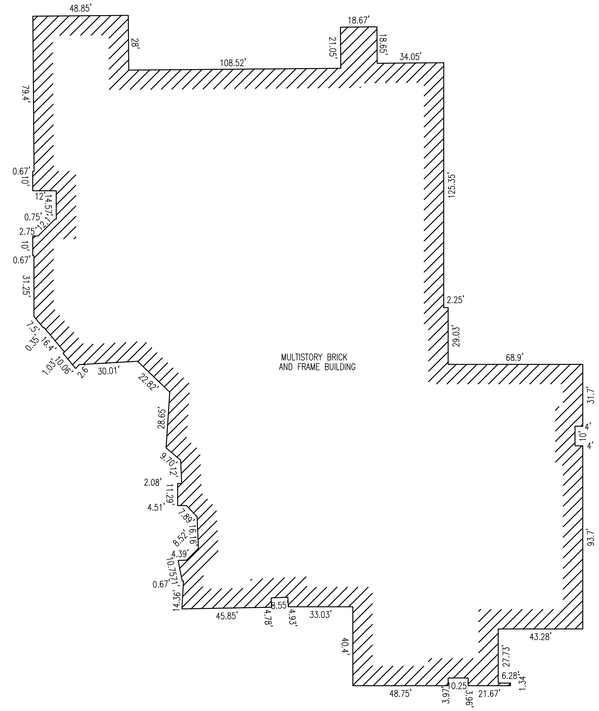
To: HAMILTON SOUTHEASTERN CONSOLIDATED SCHOOL BUILDING CORPORATION.

This is to certify that this map or plat and the survey on which it is based were made in accordance with 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 7(a), 8, 9, 11(a), and 13 of Table A, thereof. The field work was completed on December 28, 2022.

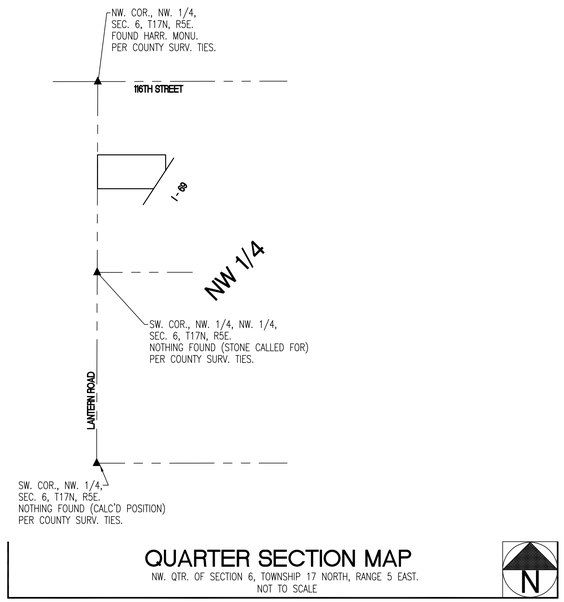
Certified: January 10, 2023



AREA MAP
NOT TO SCALE



BUILDING MEASURE-UP
NOT TO SCALE



QUARTER SECTION MAP
NW. QTR. OF SECTION 6, TOWNSHIP 17 NORTH, RANGE 5 EAST.
NOT TO SCALE

This instrument was prepared by: Claude M. Quillen, P.S.

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law.

Claude M. Quillen, P.S.

DRAWN BY: CMQ	TECH. CK. BY & DATE:
CONCEPT CK. BY & DATE:	FIELD CK. BY & DATE:
CERTIFIED BY:	
NAME: CLAUDE M. QUILLEN P.S.#20200002	DATE: 2-22-23

Revisions		
Mark	Date	Description
A	3-2-23	ADDED STORM MH DATA ON W. SIDE OF LANTERN

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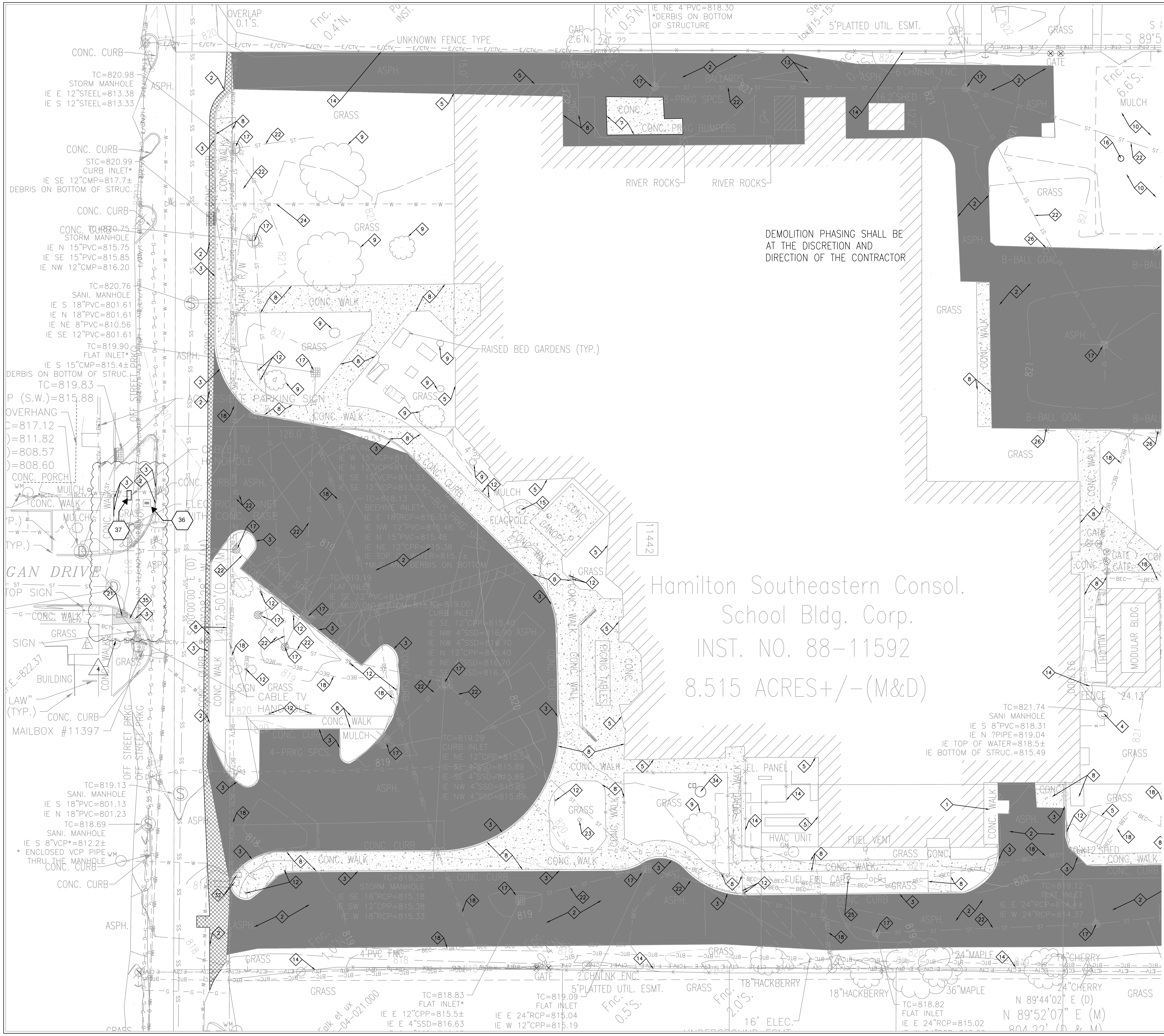
E-Mail cripe@cripe.biz

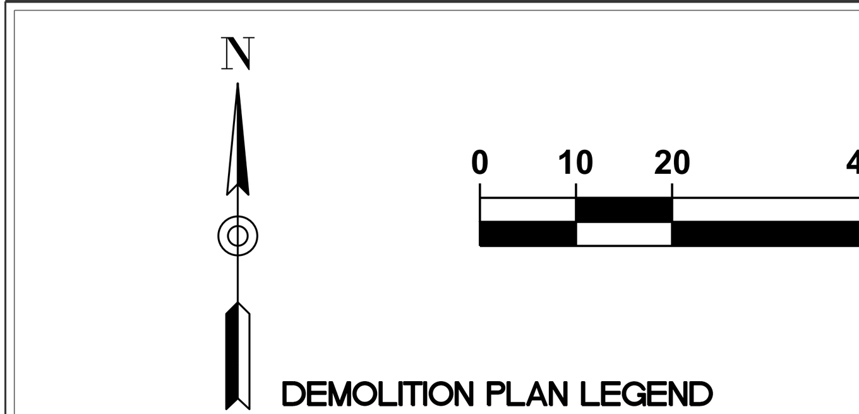
ALTA/NSPS Land Title and Topographic Survey
FISHERS ELEMENTARY SCHOOL
HAMILTON SOUTHEASTERN SCHOOLS
13485 CUMBERLAND ROAD
FISHERS, IN 46038

Legal Township: DELAWARE TWP., HAMILTON CO.
Section: 6 Township: 17-N Range: 5-E
Record Owner: HAMILTON SOUTHEASTERN CONSOL SCHOOL BLDG. CORP.
Scale:
Sheet No. 2 of 2
Project Number 220201-30000

O:\2022\220201\30000\cad\Additional Topo\220201-30000 fshs elem ALTA-Topo.dwg, January 11, 2024, PAUL KLODZEN @ Paul L Cripe, Inc.



MATCHLINE SHEET C102



DEMOLITION PLAN LEGEND

SAWCUT AND REMOVE ASPHALT FROM SITE

SAWCUT AND REMOVE CONCRETE FROM SITE

CONSTRUCTION LIMITS

TREE PRESERVATION FENCING

CONSTRUCTION FENCING

DEMOLITION PLAN NOTES

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3. ALL DEMOLISHED MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED, AND SHALL BE LEGALLY DISPOSED OF OFF-SITE.
4. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PER SHEET C401-C403 PRIOR TO COMMENCING DEMOLITION.
5. MAINTAIN PROPER DRAINAGE IN DEMOLITION AREAS.
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8. THE CONCRETE TO BE SAWCUT SHALL BE SAWCUT TO THE NEAREST CONCRETE JOINT BEYOND THE LIMITS ILLUSTRATED. NOTIFY ENGINEER IF JOINT IS OVER ONE (1) FOOT FROM LINE SHOWN.
9. REMOVAL OR RELOCATION OF ALL LANDSCAPING MUST BE COORDINATED WITH OWNER.
10. OVERHEAD AND/OR UNDERGROUND ELECTRIC AND TELEPHONE CABLES THAT ARE SHOWN TO BE ABANDONED IN PLACE MAY BE CUT AS NECESSARY TO FACILITATE NEW CONSTRUCTION. CONTRACTOR SHALL ENSURE THAT LINES ARE NOT ACTIVE PRIOR TO CUTTING AND OBTAIN UTILITY COMPANY APPROVAL PRIOR TO PERFORMING ANY DEMOLITION.
11. WATER LINES SHALL NOT BE ABANDONED OR DEMOLISHED UNTIL PROPOSED WATER MAINS HAVE BEEN INSTALLED TO A POINT SUCH THAT ONLY MINIMAL DISRUPTION IN WATER SERVICE TO THE EXISTING OCCUPIED BUILDINGS WILL OCCUR. CONTRACTOR TO COORDINATE ANY SERVICE SHUT DOWN WITH THE BUILDING OWNER AT LEAST 72 HOURS PRIOR TO SCHEDULING SHUT DOWN.
12. CONTRACTOR TO ESTABLISH NEW LOCAL SURVEY CONTROL SYSTEM (VERTICAL AND HORIZONTAL) PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITY. MANY TEMPORARY BENCHMARKS UTILIZED IN THE PREPARATION OF THE TOPOGRAPHIC SURVEY FOR THE DESIGN WILL BE RELOCATED AS PART OF CONSTRUCTION.
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35. REMOVE EXISTING CURB RAMP
36. RELOCATE GAS MARKER. COORDINATE WITH UTILITY COMPANY.
37. RELOCATE FIBER JUNCTION BOX.

4

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REAL ESTATE SERVICES

FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS

DESIGN DEVELOPMENT

11442 LANTERN RD, FISHERS, IN 46038

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These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems.
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REVISIONS:

4 02/12/24 ADDENDUM #4

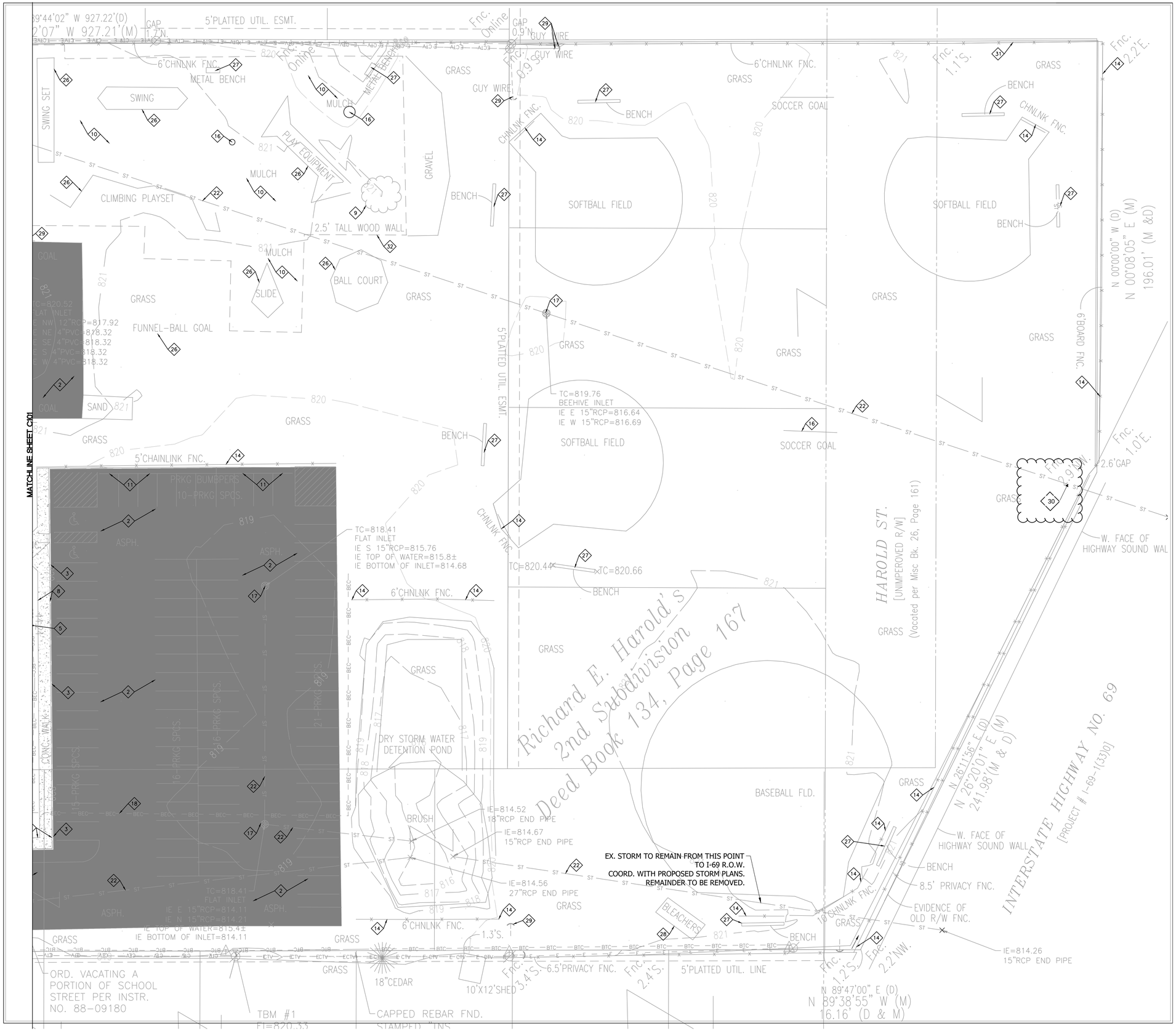
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
DEMOLITION PLAN

CERTIFIED BY:
DAVID A. LACH
REGISTERED
PE 10000126
STATE OF INDIANA
PROFESSIONAL ENGINEER

DRAWING NUMBER
C101

PROJECT NUMBER
2021119



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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS DESIGN DEVELOPMENT

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DRAWING TITLE:

DEMOLITION PLAN

CERTIFIED BY:

DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER

C102

PROJECT NUMBER

2021119

R920-E

Solar-Powered Rectangular Rapid Flashing Beacon Data Sheet

carmanah®

Rectangular rapid flashing beacons (RRFBs) improve pedestrian safety by increasing yield rates to 72-96% at crosswalks*:

- The benchmark for RRFBs, the R920-E meets MUTCD requirements, including IA-21, and is Buy America compliant
- Compact and lightweight solar engine
- Audible pushbutton activation with all ADA compliance features
- Solar Power Report™ (SPR) prepared for every location to ensure battery longevity

Superior Design and Technology

The R920-E utilizes a self-contained solar engine integrating the Energy Management System (EMS) with an on-board user interface, housed in a compact enclosure together with the batteries and solar panel. MUTCD interim approval IA-21 flash pattern and multiple configurations enable the R920-E to handle all crosswalk applications.

Easy Installation

With its highly efficient and compact design, installation is quick and uncomplicated, dramatically reducing installation costs. Retrofitting can be done where existing sign bases are used to enhance existing marked crosswalks in minutes, and new installations can be completed without the cost of larger poles, new bases, and trenching.

Advanced User Interface

The R920-E comes with an on-board user interface for quick configuration and status monitoring. It allows for simple in-the-field adjustment of flash pattern, duration, intensity, ambient auto adjust, night dimming, and many more. Settings are automatically sent wirelessly to all units in the system.

Reliable

Every solar-powered model is solar-sized by location to ensure year-after-year operation. Carmanah includes a Solar Power Report to prove sustainability over a 12-month period.

* U.S. Department of Transportation Federal Highways Administration, Publication No. FHWA-HRT-10-043 - "Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalks"

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R920-E

Solar-Powered Rectangular Rapid Flashing Beacon Data Sheet

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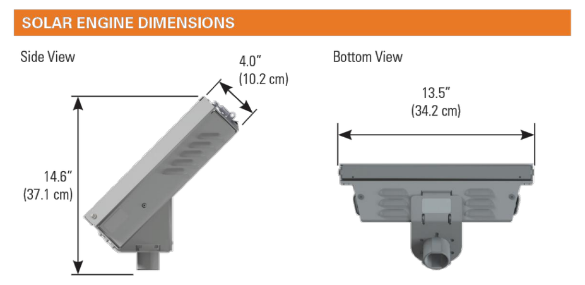
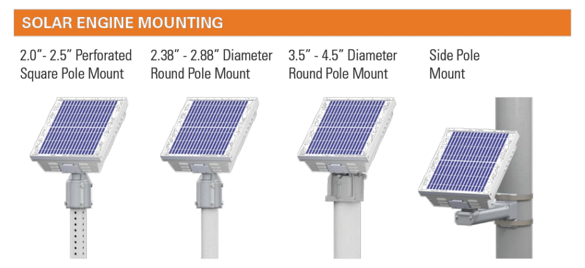
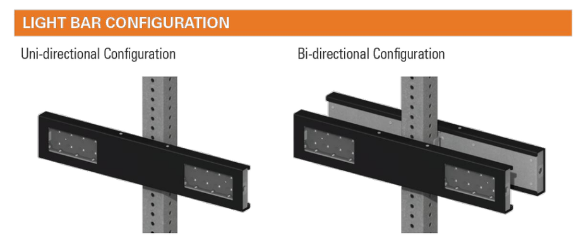
SOLAR ENGINE DIMENSIONS



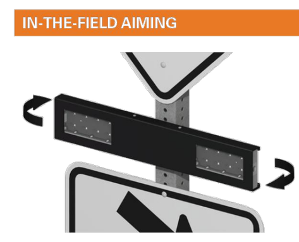
SOLAR ENGINE MOUNTING



LIGHT BAR CONFIGURATION



IN-THE-FIELD AIMING



Rotate the light bar towards the incoming vehicle lane, independent of the wire hole location.

BEACON SPECIFICATIONS

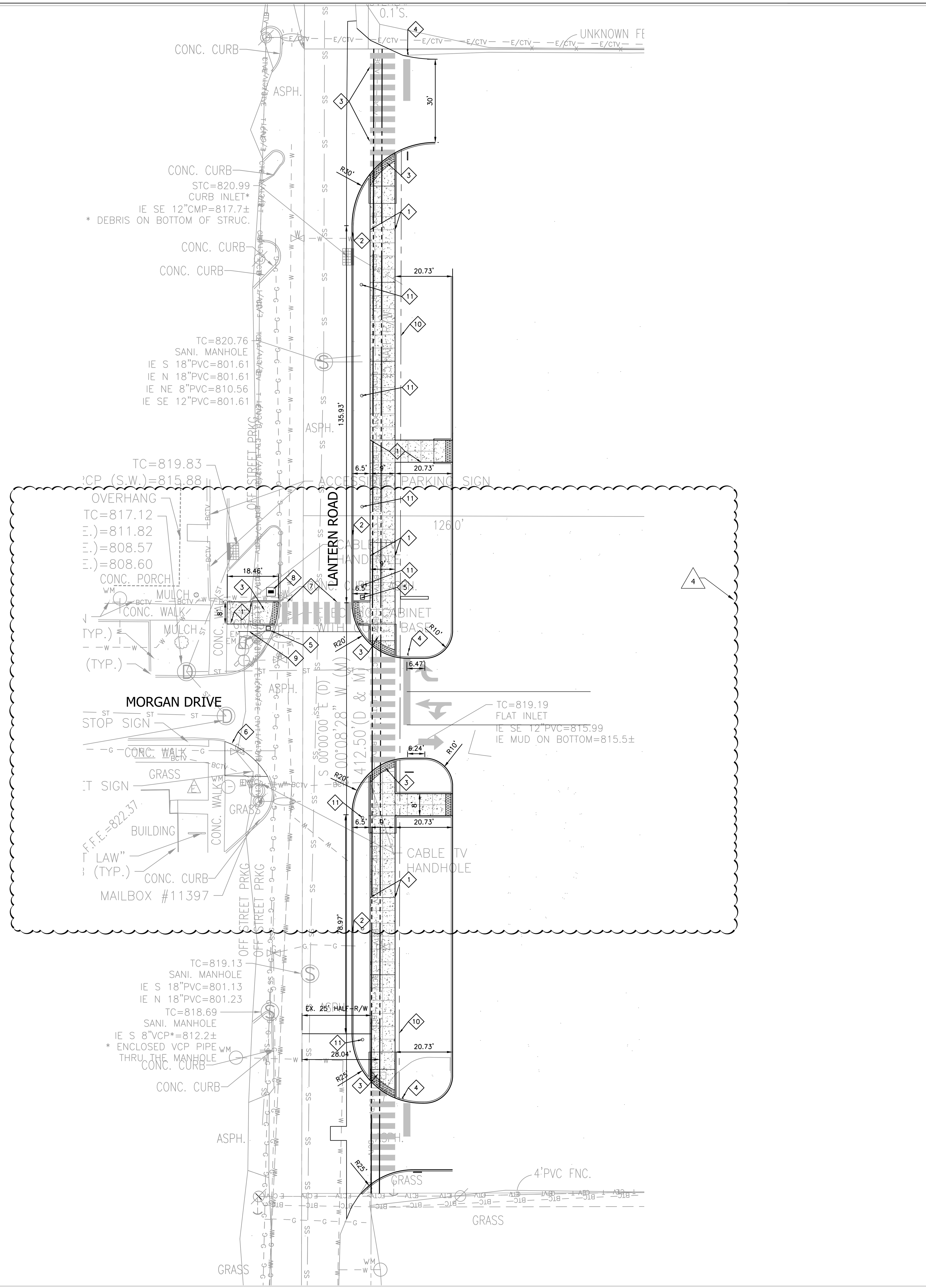
Optical	MUTCD interim approval IA-21 and MUTCDC compliant
	Purpose-built light bar optics = maximum efficiency and no stray light Exceeds SAE J595 class 1 intensity by 2.5 to 3x when used as recommended Meets SAE J578 chromaticity
	3 in (76 mm) x 7 in (178 mm) clear, UV-rated polycarbonate lens with yellow LEDs
	High-power LEDs: +90% lumen maintenance (L90) based on IES LM-80
	Side-emitting pedestrian confirmation LEDs
	Independent, stainless steel mounting brackets make back-to-back installation simple and enable in-field aiming for maximum effectiveness
	Yellow, black, or green powder coated light bar covers

SYSTEM SPECIFICATIONS

On-Board User Interface (OBUI)	Adjustable system settings with auto-scrolling LED display on our latest EMS
	System test, status, and fault detection: battery, solar, button, beacon, radio, day/night
	Flash patterns: RFB (WW+S), RFB1 (WW+S legacy), RFB2 (WSDOT), 0.5 sec. alternating (MUTCD), 0.5 sec. unison (MUTCD), 0.5 sec. x3 alternating (MUTCD), 0.1 sec. unison, 0.25 sec. unison, 0.1 sec. x3 quick flashes unison, 0.1 sec. x3 quick flashes alternating, steady on
	Input: momentary for pushbutton activation, normally open switch, normally closed switch, dusk-to-dawn operation
	Flash duration: 5 sec. to 1 hr.
	Intensity setting: 20 to 1400 mA for multiple RRFBs, circular beacons, or LED enhanced signs
	Nighttime dimming: 10 to 100% of daytime intensity
	Ambient Auto Adjust: increases intensity during bright daytime
	Automatic Light Control: reduces intensity if the battery is extremely low
	Temperature correction: yellow beacons
	Calendar: internal time clock function
	Radio settings: enable/disable, selectable channel from 1 to 14
	Output: enabled when beacons flashing daytime and nighttime, or nighttime only
	Activation counts and data reporting via OBUI or optional USB connection
Beacon Communication	Encrypted, wireless radio with 2.4 GHz mesh technology
	Wireless update of settings from any unit to all systems on the same radio channel
	User-selectable multiple channels to group different beacons and ensure a robust wireless signal
	Communicates with all other Gen III radio-enabled systems including our R820-E, -F, and -G circular beacons
	Instantaneous wireless activation: <150 ms
	Wireless range: 1000 ft (305 m)
	Integrated, vandal-resistant antenna
Energy Collection	15 W high-efficiency photovoltaic solar panel
	45 deg tilt for optimal energy collection
	Maximum Power Point Tracking with Temperature Compensation (MPPT-TC) battery charger for optimal energy collection in all solar and battery conditions
Energy Storage	12 V 14 Ahr. battery system
	Replaceable, recyclable, sealed, maintenance-free, best-in-class AGM batteries offer the widest temperature range and longest life
	Battery design life: +5 yrs.
	Tool-less battery change with quick connect terminals and strapping for easy installation
Solar Engine Construction	Weatherproof, gasketed enclosure with vents for ambient air transfer (NEMA 3R)
	Lockable, hinged lid for access to on-board user interface and batteries
	Corrosion-resistant aluminum with stainless steel hardware
	Raw aluminum finish or yellow, black, or green powder coated
	Prewired to minimize installation time
	High-efficiency optics and EMS = the most compact, lightweight system
	19 lb (8.6 kg) including batteries, excluding beacons and pushbutton
Environmental	-35 to 165° F (-37 to 74° C) system operating temperature
	-40 to 140° F (-40 to 60° C) battery operating temperature
	150 mph (241 kph) wind speed as per AASHTO LTS-6
Activation	Pushbutton: ADA-compliant, piezo-driven with visual LED and two-tone audible confirmation
	Audible pushbutton station: ADA-compliant, piezo-driven with visual LED and customizable voice message confirmation
Warranty	**5-year limited warranty, 1-year limited on batteries**
Customize	Build an RRFB online

Specifications subject to local environmental conditions, and may be subject to change.
All Carmanah products are manufactured in facilities that are certified to ISO quality standards.

Document: Carmanah_DATA_R920-E_RevU



N

SITE PLAN LEGEND

PROPERTY LINE
EASEMENT LINE
RIGHT-OF-WAY
CONSTRUCTION LIMITS
FENCE
GUARD RAIL
BUILDING LIMITS
BICYCLE ROUTE
22 PARKING COUNT

SITE WORK GENERAL NOTES AND SPECIFICATIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, OR VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, STATE AND ANY OTHER REGULATORY AGENCIES PRIOR TO STARTING CONSTRUCTION.
2. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE AND FIELD VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY AND OBTAIN APPROVAL FROM EACH RESPECTIVE UTILITY COMPANY PRIOR TO PERFORMING ANY WORK ON OR IN THE VICINITY OF EXISTING UTILITIES LINES AND APPURTENANCES.
4. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THE PROJECT; FAILURE TO DO SO MAY RESULT IN REMOVAL AND REPLACEMENT OF THE DEFECTIVE WORK. IT IS RECOMMENDED THAT THE DEVELOPER HAVE A QUALIFIED INSPECTOR ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
5. ALL QUANTITIES GIVEN ON THE PRINTS, VERBALLY OR IN THE SCOPE OF WORK SECTION ARE ESTIMATES AND SHALL BE CONFIRMED BY THE BIDDING CONTRACTOR.
6. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
7. EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
8. IT IS ESSENTIAL THAT THE WORK TO BE COMPLETED IN CONJUNCTION WITH THIS PROJECT SHALL BE INSTALLED ACCORDING TO THESE PLANS AND SPECIFICATIONS. THE ENGINEER WILL BE REQUIRED TO CERTIFY TO CERTAIN PORTIONS OF THIS PROJECT UPON COMPLETION. THEREFORE, IT IS NECESSARY TO OBTAIN APPROVAL AND ACCEPTANCE BY THE CITY THAT CONSTRUCTION WAS COMPLETED IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS.
9. LOCATIONS & ELEVATIONS OF "FLOODWAY LIMITS" AND "100 YEAR FLOOD LIMITS" ARE SHOWN FOR REFERENCE ONLY. DEVELOPER/BUILDER/INDIVIDUAL LOT OWNER TO REFER TO NATIONAL FLOOD HAZARD INSURANCE MAP (F.E.M.A.) TO DETERMINE FLOOD HAZARD POTENTIAL PRIOR TO PROJECT CONSTRUCTION.

SITE PLAN NOTES

1. ALL RADII AND STREET DIMENSIONS SHALL BE MEASURED TO BACK OF CURB OR FACE OF INTEGRAL CURB AND WALK. ALL DIMENSIONS TO THE BUILDING ARE TO THE OUTSIDE OF BUILDING FOUNDATION WALL.
2. ALL PAVEMENT AND/OR CURB RADII TO BE FIVE (5) FOOT UNLESS OTHERWISE NOTED.
3. BEARINGS, DIMENSIONS AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY. REFER TO RECORDED BOUNDARY SURVEYS, ALTAS AND SECONDARY PLATS FOR EXACT INFORMATION.
4. ALL PARKING STALLS SHALL BE 9' X 20' OR 10' X 18' WHERE ADJACENT TO SIDEWALK OR GRASS AREA. WHERE INTEGRAL CURB AND WALK IS ADJACENT TO A PARKING STALL, TWO (2) FEET OF SIDEWALK SHALL BE UTILIZED AS PARKING AREA OVERHANG. PARKING STALLS ARE DIMENSIONED TO THE FACE OF CURBS.
5. REFER TO ARCHITECTURAL PLANS FOR DETAILS OF BUILDINGS AND BUILDING DIMENSIONS.
6. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION SHALL CONFORM TO APPLICABLE LOCAL STANDARDS.
7. REFER TO UTILITY PLAN FOR SANITARY AND STORM STRUCTURE LOCATIONS.
8. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

KEYNOTE LEGEND

1. CONCRETE SIDEWALK (LIMITS ILLUSTRATED MAY BE DIFFERENT AT SAWCUT LOCATIONS DUE TO EXISTING JOINT LOCATIONS AND DEMOLITION LIMITS).
2. COMBINED WALK AND CURB (LIMITS ILLUSTRATED MAY BE DIFFERENT AT SAWCUT LOCATIONS DUE TO EXISTING JOINT LOCATIONS AND DEMOLITION LIMITS).
3. PERPENDICULAR CURB RAMPS WITH RETURNED CURBS PER FISHERS STANDARDS.
4. STOP SIGN, WITH "CROSS TRAFFIC DOES NOT STOP"
5. R920-E SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON BI-DIRECTIONAL CONFIGURATION MOUNTED ON 4-INCH FISHERS GREEN (RAL 6004) PEDESTAL POLES
6. 6" CONCRETE CURB
7. PAVEMENT MARKINGS
8. RELOCATED GAS MARKER
9. DIRECT BORE 2-INCH CONDUIT - SEE ELECTRICAL PLANS
10. TRANSPORTATION EASEMENT
11. LANTERN ROAD STREET LIGHTS - SEE ELECTRICAL PLANS

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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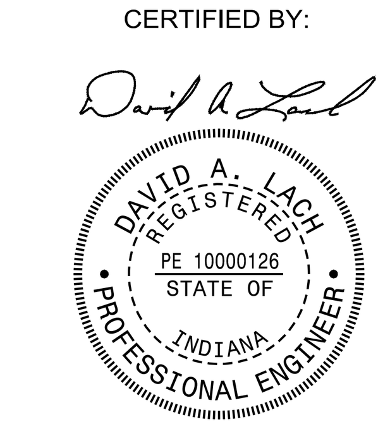
REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

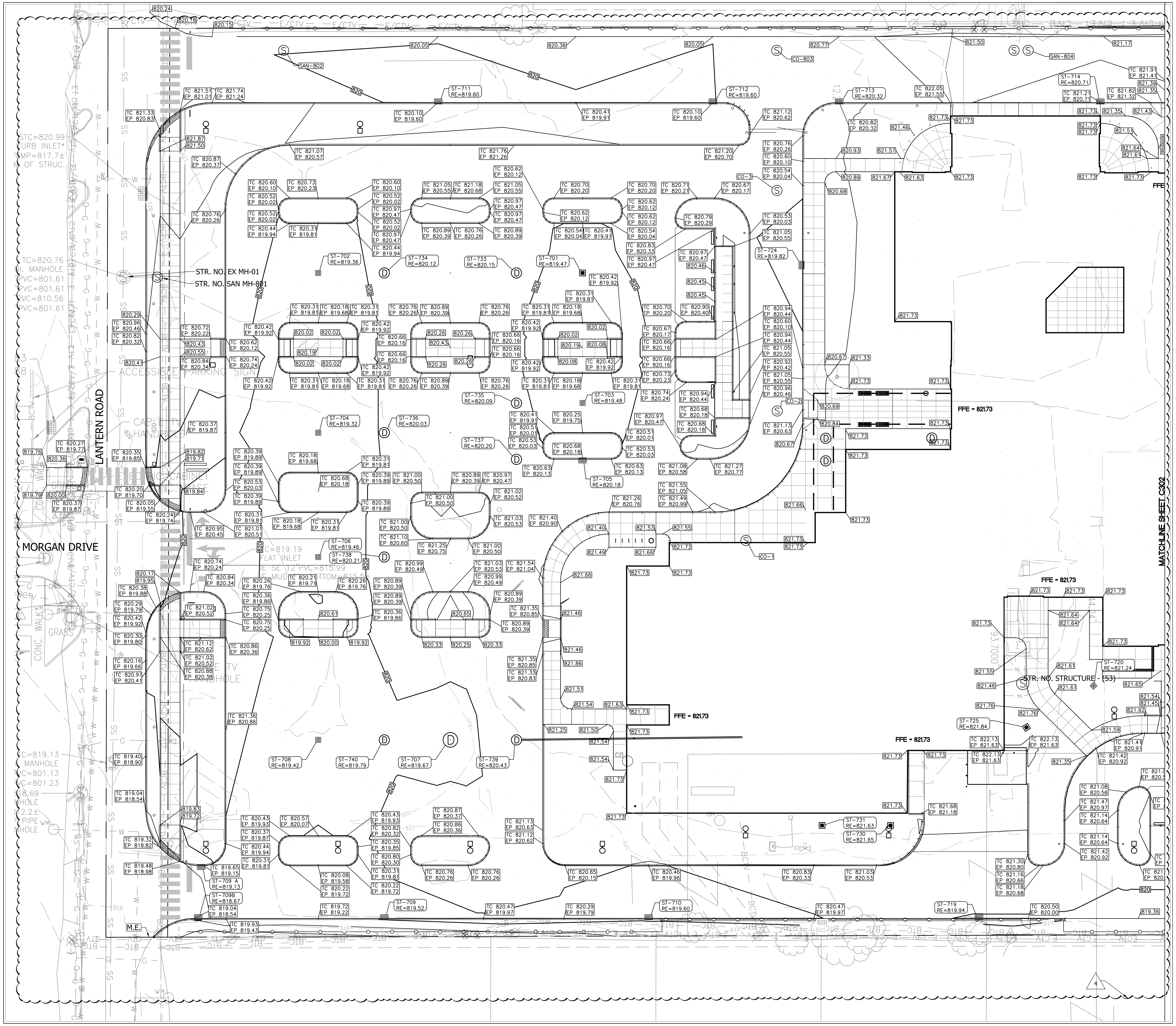
DRAWING TITLE:
LANTERN ROAD IMPROVEMENT PLAN

CERTIFIED BY:



DRAWING NUMBER
C201

PROJECT NUMBER
2021119



GRADING PLAN LEGEND

Symbol	Description
801	PROPOSED 1' CONTOUR
800	PROPOSED 5' CONTOUR
SWALE @ 1.0%	PROPOSED SWALE
SWALE @ 1.0%	PROPOSED SWALE WITH SUB-SURFACE DRAIN
	GRADE BREAK LINE
800.00	PROPOSED GRADE
MEG	MATCH EXISTING GRADE
TC 800.50 EP 800.00	PROPOSED TOP OF CURB PROPOSED EDGE OF PAVEMENT
TW 800.50 BW 800.00	PROPOSED TOP OF WALL PROPOSED BOTTOM OF WALL
FFE=800.00	FINISHED FLOOR ELEVATION
STR 700 RE=800.00	RIM ELEVATION
	FLOOD ROUTE PATH
	DRAINAGE FLOW ARROW

GRADING PLAN NOTES

1. UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTOR IS TO DETERMINE AND FIELD VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL GRADES AT BOUNDARY SHALL MEET EXISTING GRADES.
3. RIM ELEVATION (RE) SHALL INDICATE THE ELEVATION THAT WATER WOULD ENTER THE GRATE FOR ALL CASTINGS. IF CASTING HAS SOLID LID, THE RE IS THE LID ELEVATION.
4. BUILDING PAD AREAS AND PAVED AREAS DESIGNATED FOR FILL SHALL BE CONSTRUCTED OF SUITABLE FILL MATERIAL AND COMPACTED PER SPECIFICATIONS. ALL FILL AREAS SHALL BE STRIPPED OF TOPSOIL PRIOR TO PLACEMENT OF FILL.
5. ANY EXCESS SOIL MATERIAL SHALL BE EXPORTED FROM THE SITE AFTER CONSTRUCTION IS COMPLETED.
6. TOPSOIL SHALL BE PLACED IN LAWN, LANDSCAPE, MOUNDING AND NONSTRUCTURAL FILL AREAS. UPON COMPLETION OF MASS EARTHWORK, TOPSOIL SHALL BE SPREAD TO A DEPTH OF FOUR TO SIX (4 TO 6) INCHES IN AREAS LISTED ABOVE. TOPSOIL SHALL NOT BE UTILIZED AS STRUCTURAL FILL IN PAVED AREAS.
7. CONTRACTOR SHALL PRESERVE EXISTING TREES WHEREVER POSSIBLE. CLEARING LIMITS SHALL CONSIST OF ALL TREES WITHIN PAVED AREAS, UTILITY INSTALLATION LIMITS, AND CUT/FILL AREAS.
8. A GEOTECHNICAL REPORT HAS BEEN PROVIDED FOR THIS PROJECT FOR REFERENCE. CONTRACTOR TO REVIEW PRIOR TO START OF CONSTRUCTION.

FLOODPLAIN NOTES

1. THE SITE IS LOCATED WITHIN THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 18057C0234G, REVISED NOVEMBER 19, 2014.

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4 — 02/12/24 ADDENDUM #4

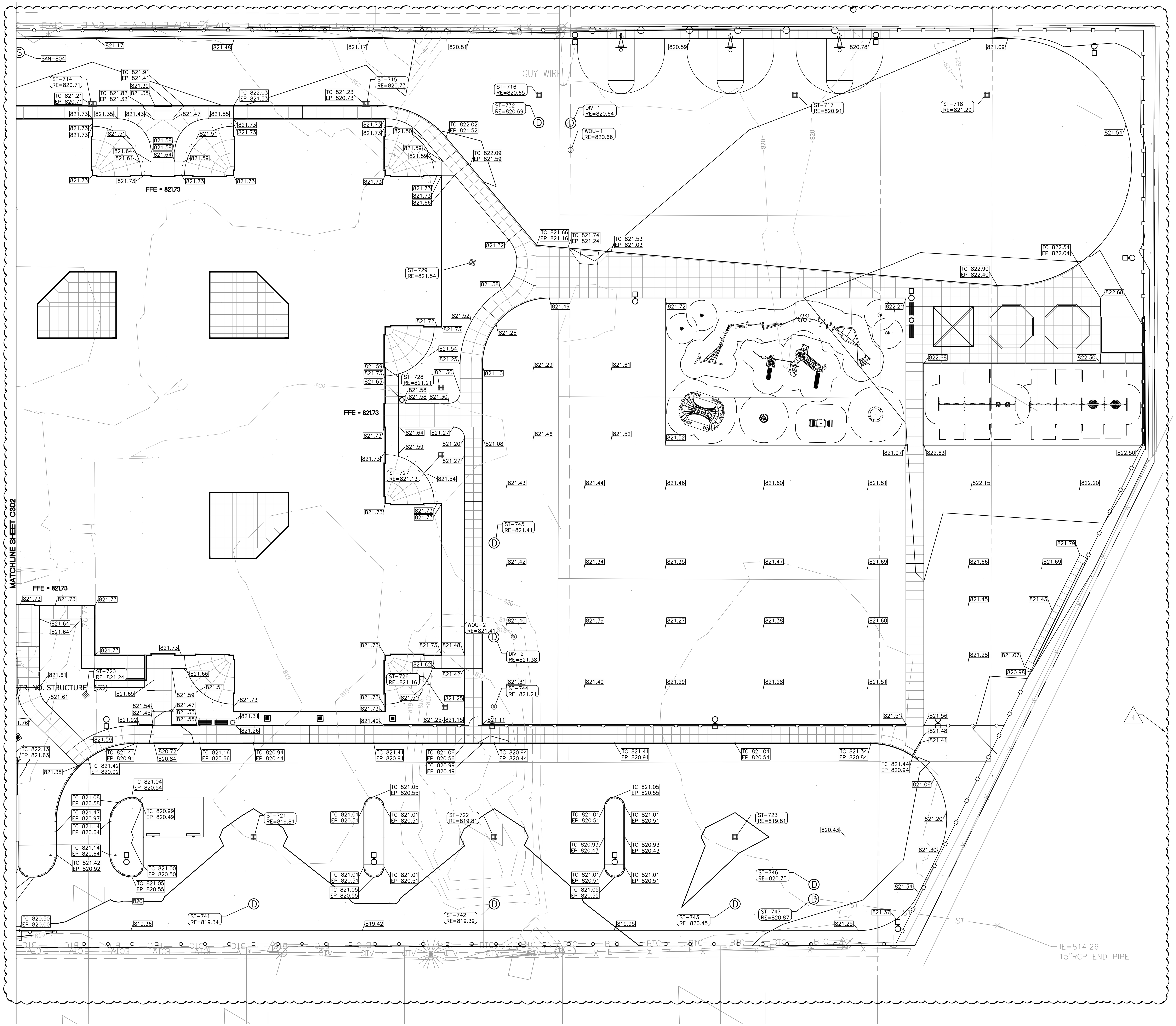
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
GRADING PLAN

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C301

PROJECT NUMBER
2021119



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GRADING PLAN LEGEND

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801	PROPOSED 1' CONTOUR
800	PROPOSED 5' CONTOUR
SWALE @ 1.0%	PROPOSED SWALE
SWALE @ 1.0%	PROPOSED SWALE WITH SUB-SURFACE DRAIN
	GRADE BREAK LINE
800.00	PROPOSED GRADE
MEG	MATCH EXISTING GRADE
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01/15/2023	KDK	JAD

DRAWING TITLE:

GRADING PLAN

CERTIFIED BY:

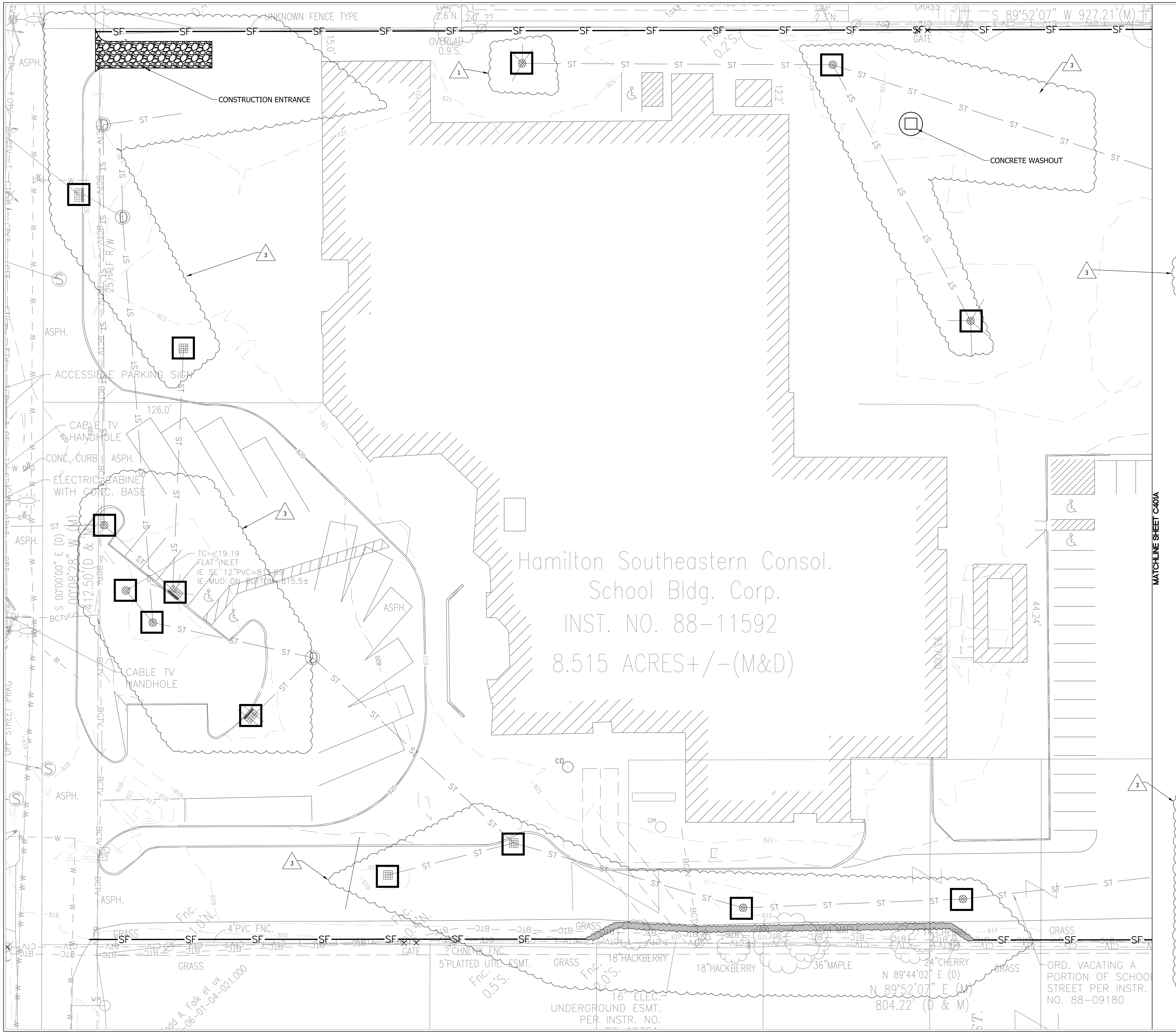
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER

C302

PROJECT NUMBER

2021119



STORMWATER POLLUTION PREVENTION PLAN LEGEND

0 10 20 40

- CONSTRUCTION LIMITS
- TP — TREE PRESERVATION FENCING
- SF — SILT FENCE BARRIER INSTALLATION
- PERMANENT SEEDING WITH EROSION CONTROL BLANKET (NAG SC150 OR EQUAL)
- PERMANENT SEEDING
- TEMPORARY SEEDING
- TEMPORARY CONSTRUCTION DRIVE. UTILIZE EXISTING PAVED DRIVE AS CONSTRUCTION ENTRNACE.
- CONTRACTOR STAGING AREA SHALL UTILIZE THE EXISTING ASPHALT AREA. CONTRACTOR SHALL REPAIR ALL DAMAGED ASPHALT WITHIN THE AREA UPON COMPLETION OF THE PROJECT AND SHALL MEET THE STANDARDS AS DICTATED ON DETAILS.
- CONCRETE WASHOUT
- ROCK CHECK DAM
- NPDES PUBLIC POSTING SIGN
- CONSTRUCTION TRAILER
- CONSTRUCTION DUMPSTER
- GEOTEXTILE FABRIC YARD DROP INLET PROTECTION
- INSERT (BAG) INLET PROTECTION
- INSERT (BAG) CURB INLET PROTECTION WITH CURB FILTER
- CONCRETE END SECTION RIPRAP (UPPER AND LOWER INV)
- COIR LOG EROSION CONTROL

STORMWATER POLLUTION PREVENTION PLAN NOTES

1. REFER TO SHEET C404 FOR SOILS MAP AND SOIL CHARACTERISTICS.
2. REFER TO SHEET C405 FOR STORMWATER POLLUTION PREVENTION DETAILS.
3. REFER TO LANDSCAPE PLANS FOR PLANTING DETAILS. ANY MOUNDING NOTED ON LANDSCAPE PLANS SHALL NOT CHANGE THE DRAINAGE PATTERN NOTED IN THE GRADING PLAN SERIES C300'S.
4. SILT FENCE BARRIER TO BE INSTALLED PRIOR TO CONSTRUCTION.
5. EROSION CONTROL MEASURES TO BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.
6. REFER TO THE STORMWATER POLLUTION PREVENTIONS NOTES SHEET C404 FOR ALL EROSION CONTROL MEASURES, SCHEDULES, AND SEQUENCES.
7. CONTRACTOR TO MAINTAIN A STABLE TEMPORARY CONSTRUCTION DRIVE FROM THE SITE TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADS.
8. EROSION CONTROL MAINTENANCE – SITE TO BE INSPECTED AT LEAST ONCE A WEEK AND MAKE REPAIRS IMMEDIATELY AFTER PERIODS OF 1/2" RAINFALL OR GREATER.
9. STORMWATER DISCHARGE WILL NOT ENTER THE GROUNDWATER FOR THIS PROJECT.
10. THIS SITE IS NOT IMPACTED BY THE 100 YEAR FLOODPLAIN.
11. PRESENCE OF HYDRIC SOILS: NONE.
12. CONTRACTOR SHALL PROVIDE THE CITY OF FISHERS WITH A NARRATIVE DESCRIBING THE CONSTRUCTION SEQUENCE, INCLUDING START DATES FOR EACH LAND DISTURBING ACTIVITY.
13. THE ACTUAL PERSON RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL SHALL BE DETERMINED DURING THE BIDDING PROCESS. THE AWARD WINNING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES. ONCE DETERMINED, CONTRACTOR SHALL COORDINATE WITH THE CITY.
14. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

PRE-CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN SEQUENCE AND IMPLEMENTATION

1. INSTALL CONSTRUCTION FENCING AND GATES IF REQUIRED.
2. INSTALL SILT FENCING, COIR LOGS, & INLET PROTECTION. DUST SHALL BE KEPT TO A MINIMUM BY UTILIZING SPRINKLING WATER OR OTHER APPROVED METHODS.
3. IDENTIFY CONSTRUCTION STAGING AREA, CONCRETE WASHOUT AREAS, MATERIAL STORAGE AND TOPSOIL STOCKPILE AREAS. EACH AREA SHALL BE PROPERLY PROTECTED AND DELINEATED PRIOR TO CONSTRUCTION.
4. STAGING AREA LOCATION SHALL BE DETERMINED BY THE CONTRACTOR.
5. THE IDEM NOI, IF REQUIRED, AND CONTACT INFORMATION FOR THE PERSON WITH ONSITE RESPONSIBILITIES MUST BE POSTED ONSITE.
6. IDEM AND THE LOCAL CITY AGENCY MUST BE NOTIFIED WITHIN 48 HOURS OF COMMENCING CONSTRUCTION.
7. CONTACT INDIANA UNDERGROUND PLANNED PROTECTION SYSTEMS, INC. ("INDIANA 811") FOR UNDERGROUND UTILITY LOCATIONS. (1-800-382-5544).
8. BEFORE OPENING UP THE SITE, FIRST EVALUATE, MARK AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOT ZONES, UNIQUE AREAS TO BE PRESERVED (I.E. WETLANDS), STREAMS, LAKES OR EXISTING VEGETATION SUITABLE FOR USE AS FILTER STRIPS (ESPECIALLY IN PERIMETER AREAS). SEE LANDSCAPE PLANS FOR PROPOSED PLANTING SCHEDULE.

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DESIGN DEVELOPMENT

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4 — 02/12/24 ADDENDUM #4

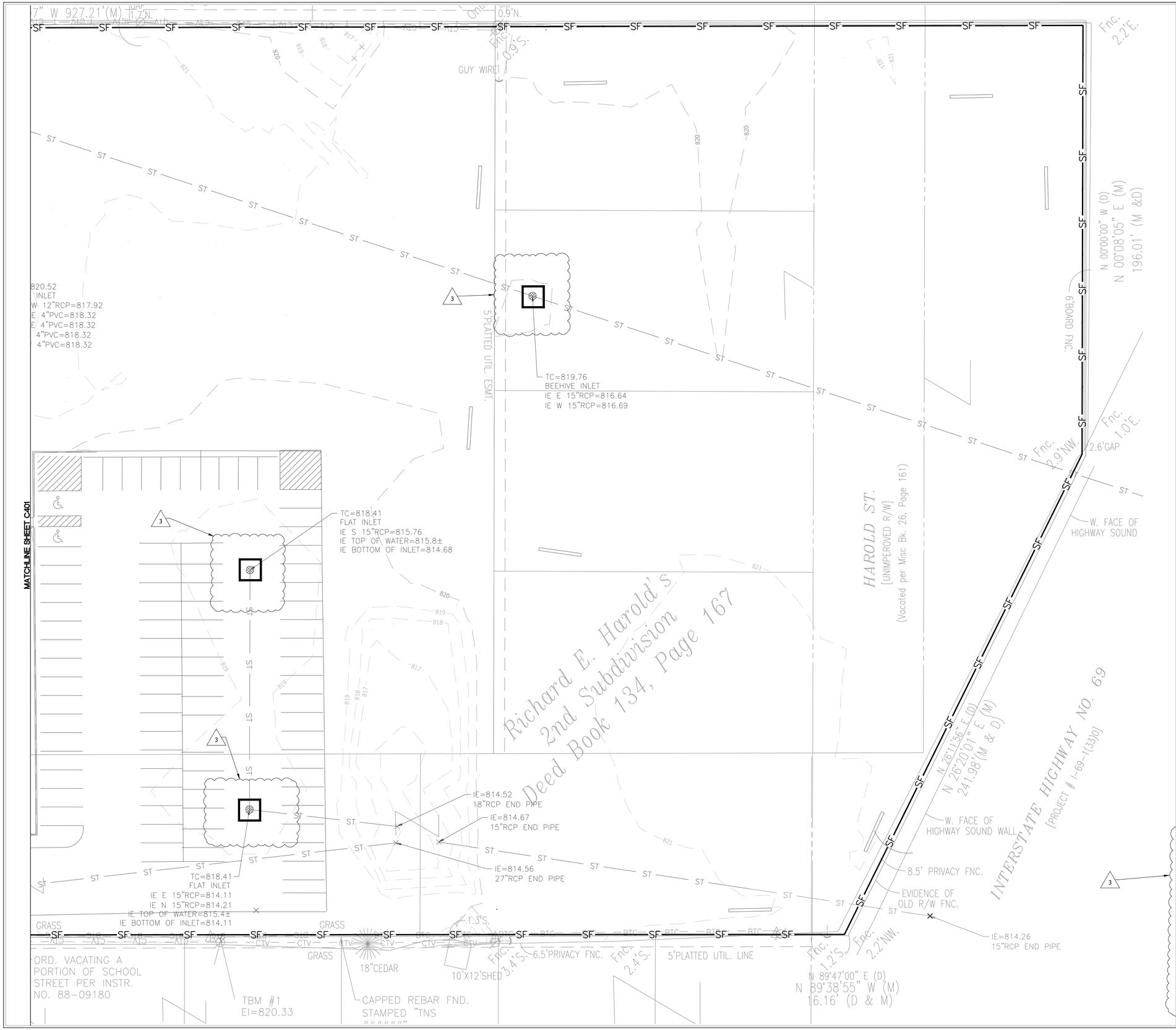
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

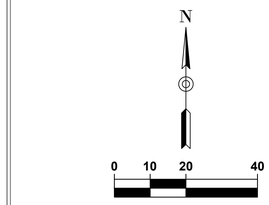
DRAWING TITLE:
PRE-CONSTRUCTION EROSION CONTROL PLAN

CERTIFIED BY:
DAVID A. LACH
REGISTERED PE 10000126
STATE OF INDIANA
PROFESSIONAL ENGINEER

DRAWING NUMBER
C401

PROJECT NUMBER
2021119





STORMWATER POLLUTION PREVENTION PLAN LEGEND

- CONSTRUCTION LIMITS
- TP — TREE PRESERVATION FENCING
- SF — SILT FENCE BARRIER INSTALLATION
- PERMANENT SEEDING WITH EROSION CONTROL BLANKET (NAG SC150 OR EQUAL)
- PERMANENT SEEDING
- TEMPORARY SEEDING
- TEMPORARY CONSTRUCTION DRIVE. ONCE CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL REMOVE STONE, GEOTEXTILE, RESPREAD TOPSOIL, AND PERMANENT SEED ENTIRE AREA.
- CONTRACTOR STAGING AREA SHALL UTILIZE THE EXISTING ASPHALT AREA. CONTRACTOR SHALL REPAIR ALL DAMAGED ASPHALT WITHIN THE AREA UPON COMPLETION OF THE PROJECT AND SHALL MEET THE STANDARDS AS DICTATED ON DETAILS.
- CONCRETE WASHOUT
- ROCK CHECK DAM
- NPDES PUBLIC POSTING SIGN
- CONSTRUCTION TRAILER
- CONSTRUCTION DUMPSTER
- GEOTEXTILE FABRIC YARD DROP INLET PROTECTION
- INSERT (BAG) INLET PROTECTION
- INSERT (BAG) CURB INLET PROTECTION WITH CURB FILTER
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- COIR LOG EROSION CONTROL

STORMWATER POLLUTION PREVENTION PLAN NOTES

1. REFER TO SHEET C404 FOR SOILS MAP AND SOIL CHARACTERISTICS.
2. REFER TO SHEET C405 FOR STORMWATER POLLUTION PREVENTION DETAILS.
3. REFER TO LANDSCAPE PLANS FOR PLANTING DETAILS. ANY MOUNDING NOTED ON LANDSCAPE PLANS SHALL NOT CHANGE THE DRAINAGE PATTERN NOTED IN THE GRADING PLAN SERIES C.300'S.
4. SILT FENCE BARRIER TO BE INSTALLED PRIOR TO CONSTRUCTION.
5. EROSION CONTROL MEASURES TO BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.
6. REFER TO THE STORMWATER POLLUTION PREVENTIONS NOTES SHEET C404 FOR ALL EROSION CONTROL MEASURES, SCHEDULES, AND SEQUENCES.
7. CONTRACTOR TO MAINTAIN A STABLE TEMPORARY CONSTRUCTION DRIVE FROM THE SITE TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADS.
8. EROSION CONTROL MAINTENANCE – SITE TO BE INSPECTED AT LEAST ONCE A WEEK AND MAKE REPAIRS IMMEDIATELY AFTER PERIODS OF 1/2" RAINFALL OR GREATER.
9. STORMWATER DISCHARGE WILL NOT ENTER THE GROUNDWATER FOR THIS PROJECT.
10. THIS SITE IS NOT IMPACTED BY THE 100 YEAR FLOODPLAIN.
11. PRESENCE OF HYDRIC SOILS: NONE.
12. CONTRACTOR SHALL PROVIDE THE CITY OF FISHERS WITH A NARRATIVE DESCRIBING THE CONSTRUCTION SEQUENCE, INCLUDING START DATES FOR EACH LAND DISTURBING ACTIVITY.
13. THE ACTUAL PERSON RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL SHALL BE DETERMINED DURING THE BIDDING PROCESS. THE AWARD WINNING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES. ONCE DETERMINED, CONTRACTOR SHALL COORDINATE WITH THE CITY.
14. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

PRE-CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN SEQUENCE AND IMPLEMENTATION

1. INSTALL CONSTRUCTION FENCING AND GATES IF REQUIRED.
2. INSTALL SILT FENCING. DUST SHALL BE KEPT TO A MINIMUM BY UTILIZING SPRINKLING WATER OR OTHER APPROVED METHODS.
3. IDENTIFY CONSTRUCTION STAGING AREA, CONCRETE WASHOUT AREAS, MATERIAL STORAGE AND TOPSOIL STOCKPILE AREAS. EACH AREA SHALL BE PROPERLY PROTECTED AND DELINEATED PRIOR TO CONSTRUCTION.
4. STAGING AREA LOCATION SHALL BE DETERMINED BY THE CONTRACTOR.
5. THE IDEM NOI, IF REQUIRED, AND CONTACT INFORMATION FOR THE PERSON WITH ONSITE RESPONSIBILITIES MUST BE POSTED ONSITE.
6. IDEM AND THE LOCAL CITY AGENCY MUST BE NOTIFIED WITHIN 48 HOURS OF COMMENCING CONSTRUCTION.
7. CONTACT INDIANA UNDERGROUND PLANNED PROTECTION SYSTEMS, INC. ("INDIANA 811") FOR UNDERGROUND UTILITY LOCATIONS. (1-800-382-5544).
8. BEFORE OPENING UP THE SITE, FIRST EVALUATE, MARK AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOT ZONES, UNIQUE AREAS TO BE PRESERVED (I.E. WETLANDS), STREAMS, LAKES OR EXISTING VEGETATION SUITABLE FOR USE AS FILTER STRIPS (ESPECIALLY IN PERIMETER AREAS). SEE LANDSCAPE PLANS FOR PROPOSED PLANTING SCHEDULE

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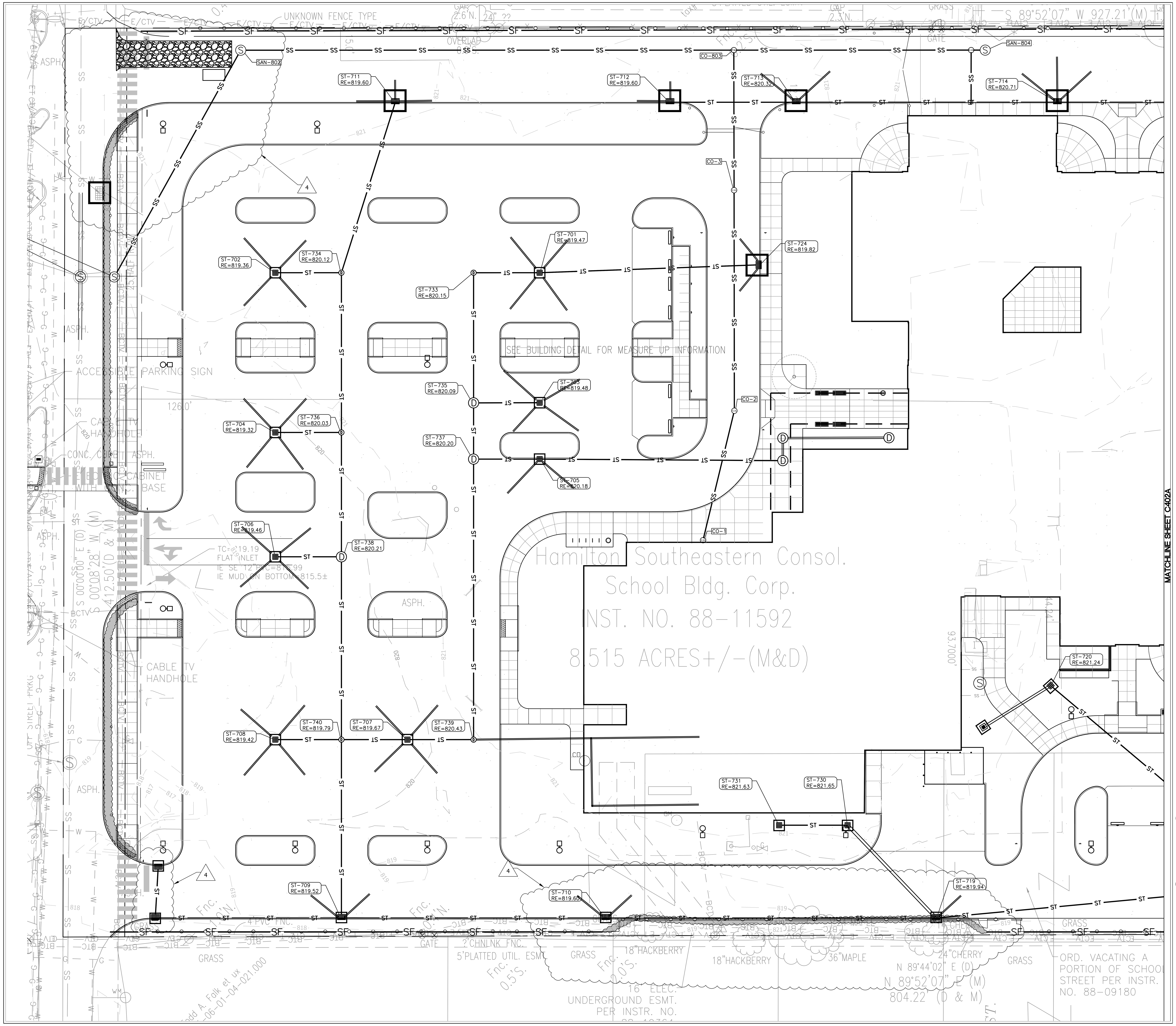

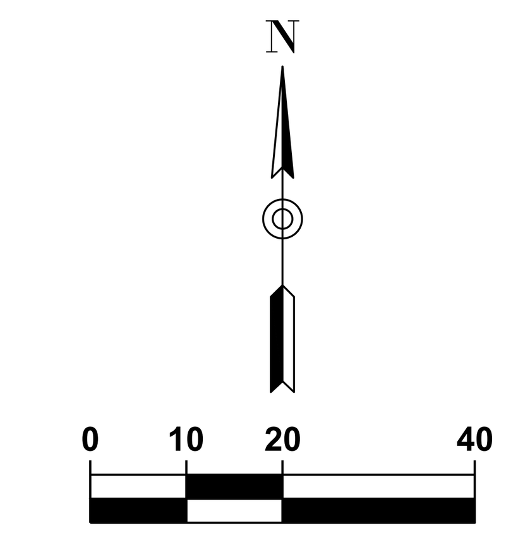

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4. MAINTAIN CONSTRUCTION ENTRANCE, INLET PROTECTION, AND CONCRETE WASHOUT.
5. TEMPORARY SEEDING SHALL BE PLACED ON ANY DISTURBED AREA THAT WILL REMAIN OPEN FOR MORE THAN SEVEN DAYS. SEE SHEET C404.
6. ALL AREAS THAT ARE TO BE PAVED IN THE FINAL PHASE OF CONSTRUCTION SHALL HAVE THE BASE MATERIAL PLACED AS SOON AS PRACTICABLE.

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PE 10000126
STATE OF INDIANA
PROFESSIONAL ENGINEER

DRAWING NUMBER
C402

PROJECT NUMBER
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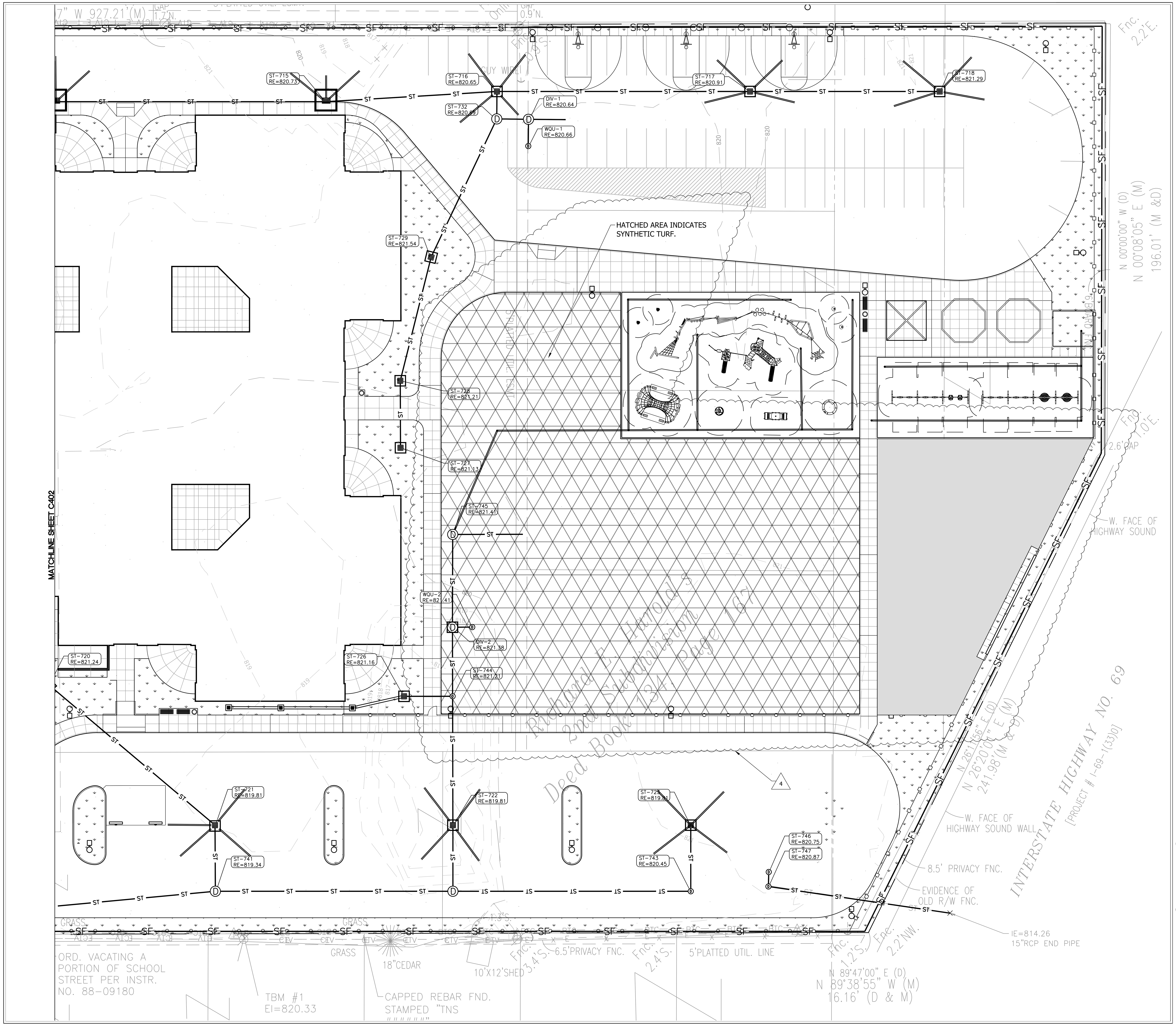

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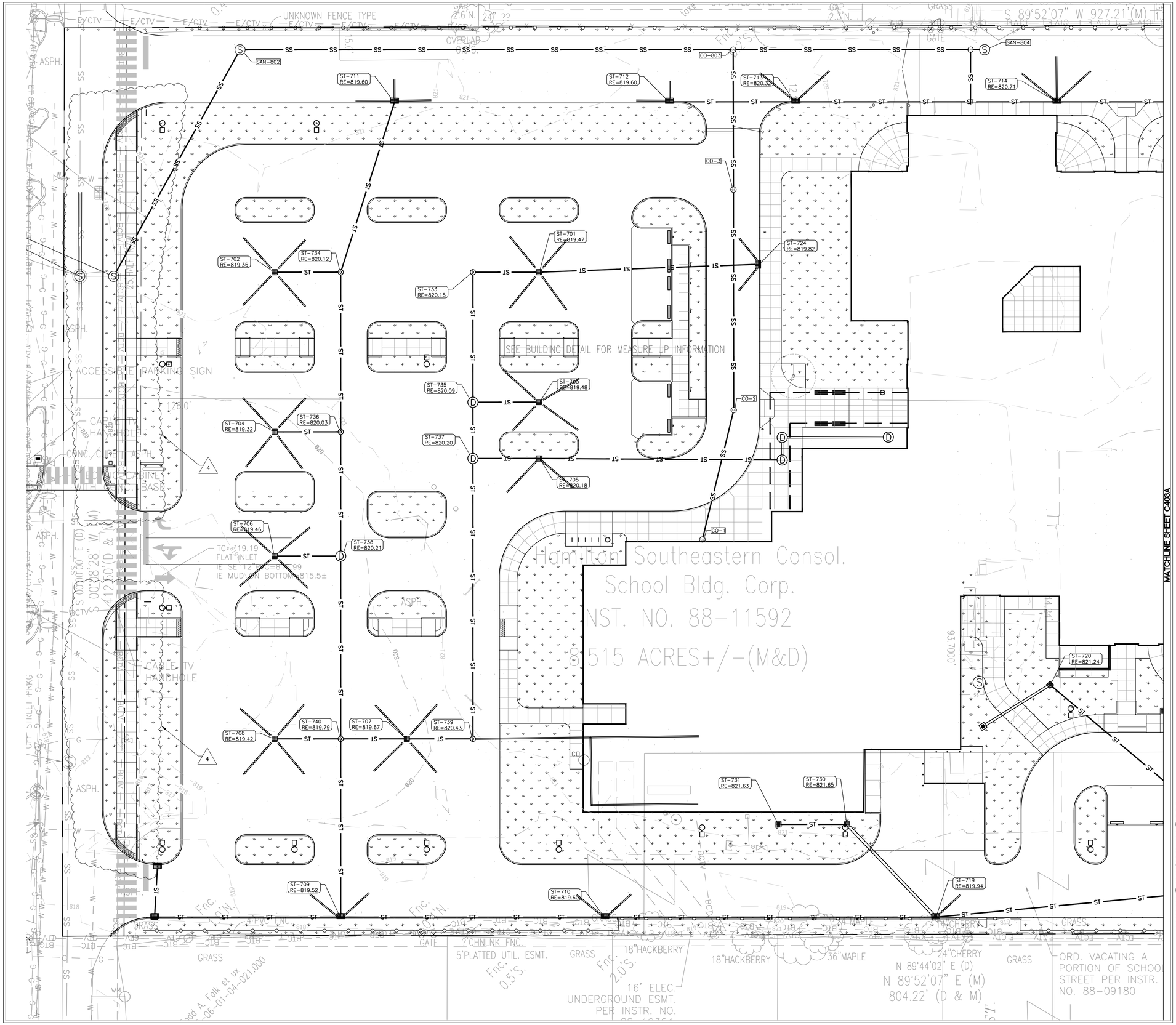

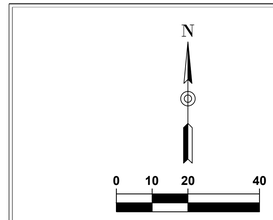

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POST-CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN SEQUENCE AND IMPLEMENTATION

1. REMOVE CONSTRUCTION FENCING.
2. REMOVE SILT FENCING.
3. REMOVE INLET PROTECTION.
4. ALL AREAS OF PERMANENT SEEDING SHALL BE ESTABLISHED AND MAINTAINED.

4

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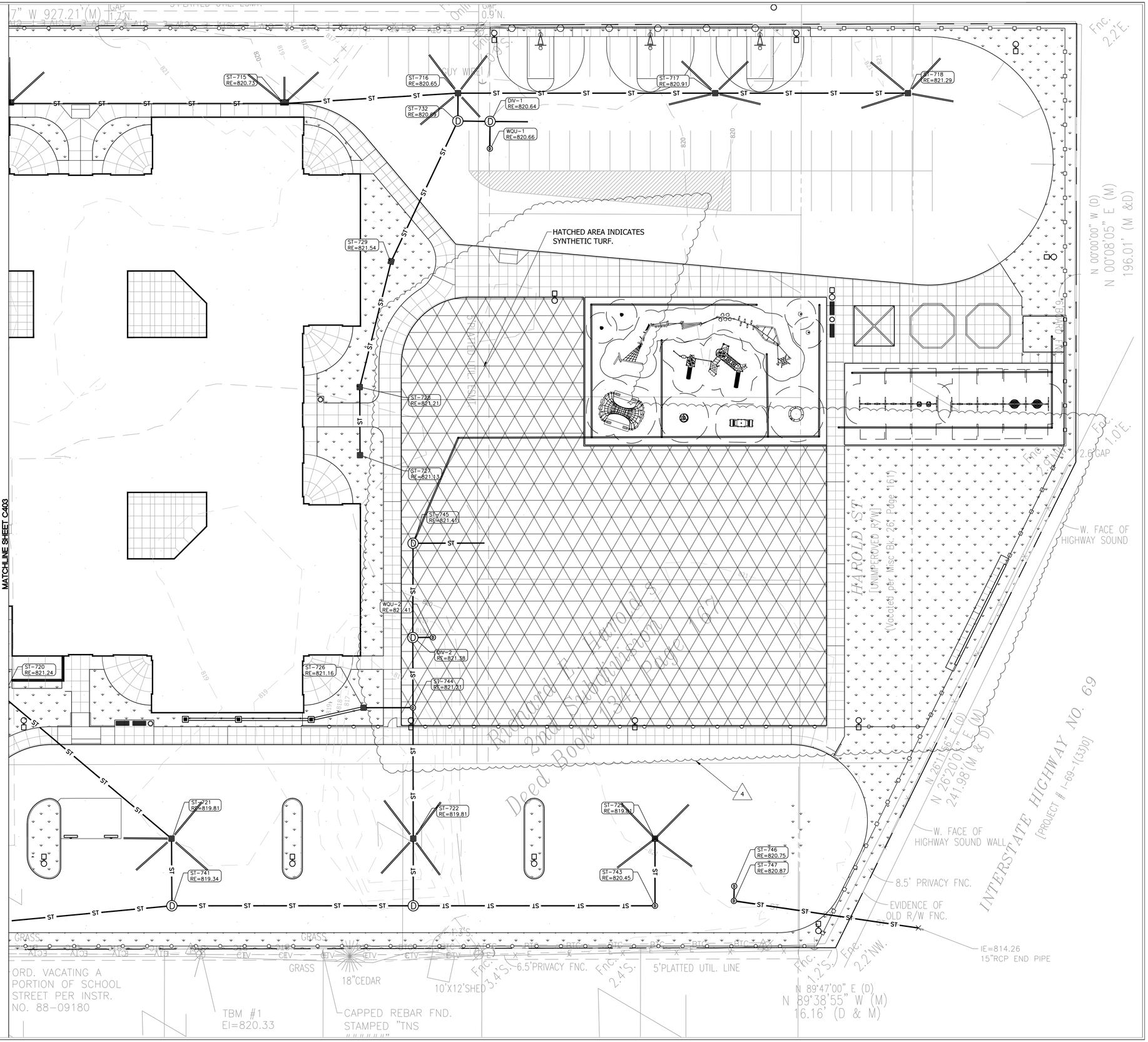

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4. SILT FENCE BARRIER TO BE INSTALLED PRIOR TO CONSTRUCTION.
5. EROSION CONTROL MEASURES TO BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.
6. REFER TO THE STORMWATER POLLUTION PREVENTIONS NOTES SHEET C404 FOR ALL EROSION CONTROL MEASURES, SCHEDULES, AND SEQUENCES.
7. CONTRACTOR TO MAINTAIN A STABLE TEMPORARY CONSTRUCTION DRIVE FROM THE SITE TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADS.
8. EROSION CONTROL MAINTENANCE – SITE TO BE INSPECTED AT LEAST ONCE A WEEK AND MAKE REPAIRS IMMEDIATELY AFTER PERIODS OF 1/2" RAINFALL OR GREATER.
9. STORMWATER DISCHARGE WILL NOT ENTER THE GROUNDWATER FOR THIS PROJECT.
10. THIS SITE IS NOT IMPACTED BY THE 100 YEAR FLOODPLAIN.
11. PRESENCE OF HYDRIC SOILS: NONE.
12. CONTRACTOR SHALL PROVIDE THE CITY OF FISHERS WITH A NARRATIVE DESCRIBING THE CONSTRUCTION SEQUENCE, INCLUDING START DATES FOR EACH LAND DISTURBING ACTIVITY.
13. THE ACTUAL PERSON RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL SHALL BE DETERMINED DURING THE BIDDING PROCESS. THE AWARD WINNING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES. ONCE DETERMINED, CONTRACTOR SHALL COORDINATE WITH THE CITY.
14. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

POST-CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN SEQUENCE AND IMPLEMENTATION

1. REMOVE CONSTRUCTION FENCING.
2. REMOVE SILT FENCING.
3. REMOVE INLET PROTECTION.
4. ALL AREAS OF PERMANENT SEEDING SHALL BE ESTABLISHED AND MAINTAINED.

CSO
8831 Keystone Crossing, Indianapolis, IN 46240
317.848.7800 | csoinc.net

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DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems.
The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract.
On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
4 — 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
POST CONSTRUCTION EROSION CONTROL PLAN

CERTIFIED BY:
DAVID A. LACH — REGISTERED — PE 10000126 STATE OF INDIANA — PROFESSIONAL ENGINEER

DRAWING NUMBER
C403A

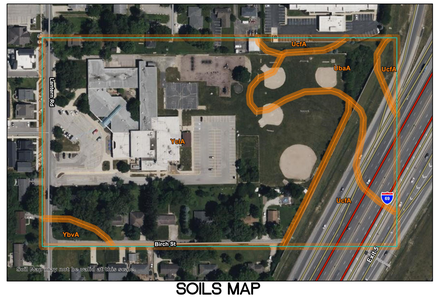
PROJECT NUMBER
2021119

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UbaA	Urban land-Brookston complex, 0 to 2 percent slopes	2.2	13.2%
UcfA	Urban land-Crosby silt loam complex, fine-loamy subsoil, 0 to 2 percent slopes	2.2	13.2%
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	0.3	2.0%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	11.7	71.6%
Totals for Area of Interest		**16.3**	**100.0%**

EROSION AND SEDIMENT CONTROL SEQUENCE AND IMPLEMENTATION

1. Post the NOI and contact information for the person with onsite responsibilities.
2. Existing drive entrance off Lantern Road shall be used as construction entrance. See sheets C401-C403.
3. Install silt fencing along property lines and along construction limits as shown on sheets C401 (See detail on sheet C403). Dust shall be kept to a minimum by utilizing sprinkling, calcium chloride, vegetative cover, spray on adhesive or other approved methods.Identify construction staging, concrete washout areas, material storage and areas. Each area shall be properly protected and delineated prior to construction.
4. IDEM and the City of Fishers must be notified within 48 hours of commencing construction.
5. Contact Indiana Underground Planned Protection Systems, Inc. for underground Utility locations. (1-800-382-5544).
6. Before opening up the site, first evaluate, mark and protect important trees and associated root zones, unique areas to be preserved (i.e. wetlands), or existing vegetation suitable for use as filter strips (especially in perimeter areas).
7. Begin mass earthwork for preliminary grading. See "General Seeding and Surface Stabilization Procedures" for temporary seeding guidelines on this sheet.
8. Repair any silt fencing if damaged. If silt fence is 1/3 height of fabric, remove silt and replace to original condition. See detail on Sheet C403.
9. Immediately after grading, apply surface stabilization practices on all graded areas, using permanent measures in accordance with the erosion control plan. However, if weather delays permanent stabilization, temporary seeding and/or mulching may be necessary as a provisional measure. Also stabilize (using temporary seeding/mulching or other suitable means) any disturbed area where active construction will not take place for 15 working days.
10. Install Post Construction BMP measures. Includes final grading and stabilization. If any of these areas were used as temporary sediment control devices during construction, remove and restabilize for post construction use.
11. After construction and final grading, landscape and permanently stabilize all disturbed areas, including borrow and disposal areas. Also remove temporary runoff control structures and any unstable sediment around them, and stabilize those areas with permanent seeding and erosion control blanket if necessary.
12. Maintain all erosion and sediment control practices until all disturbed areas are permanently stabilized.



SOILS MAP

Person Responsible for Installation and Maintenance of Erosion and Sediment Control Practices:

CONTACT TBD
WURSTER CONSTRUCTION
8463 CASTLEWOOD DR, #100
INDIANAPOLIS, IN 46250
DISTRICT OFFICE: (317) 594-4100

CONSTRUCTION/STORMWATER POLLUTION PREVENTION PLAN

ASSESSMENT OF CONSTRUCTION PLAN ELEMENTS (SECTION A)

A1 Plan Index Showing Locations Of Required Items:
See Cover Sheet C001.

A2 A Vicinity Map Depicting Project Site Location in Relationship to Roads and Local Landmarks
See Cover Sheet C001.

A3 Narrative of the Project Nature And Purpose:
The proposed project consists of elementary school building addition, paved parking lots, connecting sidewalks, greenspace, and associated utilities. Stormwater quantity and quality will be achieved through storm sewer network, and an underground detention chambers.

A4 latitude and Longitude to the Nearest Fifteen (15) Seconds:
LATITUDE: 39° 95' 23" N
LONGITUDE: 86° 01' 11" W

A5 Legal Description of the Project Site:
See legal description on Cover Sheet C001.

A6 Location Of All Lots and Proposed Site Improvements:
All Proposed drives, parking lots walks, buildings and walls are shown on plan Sheet C200.

A7 100-Year Floodplain, Floodway Fringe, and Floodways:
See Sheet C203 FOR FLOOD ZONE AE AT THE SOUTHWEST CORNER OF THE SITE.

A8 Land Use of all Adjacent Properties:
NORTH – VARIETY OF USES – ZONED MIXED-USE
SOUTH – VARIETY OF USES – ZONED MIXED-USE
EAST – INDOT INTERSTATE 69 R/W
WEST – VARIETY OF USES – ZONED MIXED-USE

A9 Identification of U.S. EPA Approved of Established TMDL:
The stormwater runoff is captured and conveyed to water quality BMPs and an underground detention basin which discharges to the existing Indiana Department of Transportation right-of-way. The outfall connection is located on the east side of the site. See sheet C503, STR 700 for location and connection information.

The project is within IDEM Fall Creek TMDL Study of 2003 which identified E. Coli as the primary pollutant of concern wherein CSO discharges are the greatest contributor.

A10 Name or Receiving Water:
The closest water course to the site is Geist Reservoir.

A11 Identification of Discharges to Water on Current 303(d) List:
Stormwater does not discharge to a 303(d) impaired water.

A12 Soils Map of the Predominate Soil Types:
Soils map provided on this sheet. The predominant soils present within the construction limits are YclA–Crosby silt loam, UbaA–Urban Brookston complex, and UcfA–Unbran Crosby silt loam complex.

A13 Wetlands, Lakes, and Water Courses on or Adjacent:
The closest waterway to the site is Geist Reservoir. There are no wetlands, lakes, or water courses adjacent to the project site.

A14 State OR Federal Water Quality Permits:
An IDEM permit is required for this project.

A15 Identification and Delineation of Existing Cover and Natural Buffers:
See Sheets C100 & C101. This site is an elementary school that will be partially demolished.

A16 Existing Topography to Indicate Drainage Patterns:
See sheet C101.

A17 Location(s) Where Run-off Enters the Project Site:
Run-off enters site primarily in the South West corner.

A18 Locations(s) Where Run-off Discharges From The Site Prior to Land Disturbance Activities:
Existing Stormwater run-off sheet drains into a storm sewer system and outlets into a pipe in the East side of the site.

A19 Location of all Existing Structures on the Project Site:
See sheet C100.

A20 Existing Permanent Retention or Detention Facilities, Manmade Wetlands for Stormwater Purposes:
There are no existing detention facilities present at this site. The post-developed site will have an underground detention system with water quality structures (hydrodynamic BMPs) that capture and treat runoff prior to discharge into the existing storm sewer system. See sheets C501 and C503 for details.

A21 Locations of Abandoned Wells, Sinkholes and Karst Features Where Stormwater may be Directly Discharged intoGround Water
N/A

A22 Size of Project Area in acres:
8.51 Acres

A23 Total Land Disturbance in Acres:
8.51 Acres

A24 Proposed Final Topography:
See sheets C301 and C302. The site is fairly flat with topography sloping towards drainage structures.

A25 Locations and Boundaries of all Disturbed Areas:
See sheets C101 and C301.

A26 Location, Size, and Dimensions of all Stormwater Drainage system such as Culverts, Stormwater sewer, and Conveyance Channels:
See sheets C701–C711.

A27 Specific Points where Storm and Non-storm Water Discharges Leave the Site:
See sheets C701–C702, C301–C304, & C405–C408. Stormwater sheet flows into a storm system through a underground detention and outlets in a 15 inch RCP outfall pipe.

SECTION A CONTD.

A28 Location of Site Improvements: Road, Utilities, Lot Delineation and Identification, Proposed Structures and Common Areas:
See sheets C200 and C501.

A29 Location of all On-Site and Off-Site Soil Stockpiles and Borrow Areas:
See sheet C401. No off-site stockpiles are anticipated for this project.

A30 Construction Support Activities as part of the Project:
See sheet C401. No stream activity is occurring with this project.

A31 Location of in Stream Activities Including Stream Crossings and Pump Arounds:
N/A

ASSESSMENT OF STORMWATER POLLUTION PREVENTION PLAN–CONSTRUCTION COMPONENT (SECTION B)

B1 Description Of The Potential Pollutant Generating Sources And Pollutants, Including All Potential Non-Stormwater Discharges:
The primary pollutant associated with construction activities is sediment. Additional pollutants may be generated by construction vehicle operation and maintenance (e.g. fueling, changing hydraulic fluids and oils); concrete washout; improper storage of construction materials; improper disposal of construction trash and debris; improper application or over application of fertilizers and pesticides; and improper storage, application, and disposal of soluble materials or other materials that may be mobilized by storm water runoff. Equipment and fuel will be stored in a central location and the contractor shall institute methods and procedures to prevent discharge of pollutants.

B2 Stable Construction Entrance Locations And Specifications:
See sheet C401,

B3 Specifications for temporary and permanent stabilization:
See erosion and sediment control sequences and implementation on sheets C401.

B4 Sediment Control Measures For Concentrated Flow Areas:
Adequate erosion control measures must be installed within these areas prior to opening for runoff acceptance. If it is a steep slope, an erosion control blanket should be installed prior to opening. Stabilize disturbed areas directly after earth disturbing activities. Temporary seed areas scheduled to be idle for up to 15 days. Permanently seed all areas that are at final grade, phase projects where each subsequent phase will not begin for 8 months or more, and areas to be idle for more than one year. See sheets C401 and C402 for erosion control measures to be installed in concentrated flow areas. See sheet C403 for details as well as installation and maintenance procedure.

B5 Sediment Control Measures For Sheet Flow Areas:
Preliminary grading and stabilization must be completed to ensure adequate drainage to the temporary or permanent runoff conveyance facilities. Silt fencing must also be implemented prior to any construction activity to ensure silt collection. Stabilize disturbed areas directly after earth disturbing activities, temporary seed areas scheduled to be idle for up to one year. Permanently seed all areas that are at final grade, phase projects where each subsequent phase will not begin for 8 months or more, and areas to be idle for more than one year. See sheets C401 and C402 for erosion control measures to be installed in concentrated flow areas. See sheet C403 for details as well as installation and maintenance procedure.

B6 Runoff Control Measures:
Gravel bag weirs, silt fence, and outlet structures shall be used for runoff control. See sheet C401 for locations and C403 for details.

B7 Stormwater Outlet Protection Specifications:
Outlet protection is not required for this project.

B8 Grade Stabilization Structure Locations And Specifications:
N/A

B9 Dewatering Applications And Management Methods:
Any dewatering activities shall be brought to the attention of the engineer for approval. Submit shop drawings prior to the start of excavation, that are complete plans and describing the overall dewater system. See Specification 31 23 19 Dewatering. Discharged water bust be treated with an appropriate sediment control measure or measures, prior to discharge. Other measures such as sediment basins and sediment traps or the use of flocculants should be considered components of items (B4) and (B5) above.

B10 Measures Utilized For Work Within Waterbodies:
N/A

B11 Maintenance Guidelines For Each Proposed Stormwater Quality Measure:
Please refer to the Operations and Maintenance Manual for information on the proposed stormwater quality measures.

B12 Planned Construction Sequence That Describes The Implementation Of Stormwater Quality Measures in Relation To Land Disturbance:
Refer to "Erosion and Sediment Control Sequence and Implementation" above.

B13 Provisions For Erosion And Sediment Control On Individual Residential Building Lots Regulated Under The Proposed Project:
N/A

B14 Material Handling And Spill Prevention And Spill Response Plan Meeting The Requirements in 327 IAC 2-6.1:
Expected construction materials on site may include vehicle lubricants, oils, vehicular fuels, concrete wash-out, acids, curing compounds, paints, mulch, pesticides, herbicides, fertilizer, and trash. Any toxic waste materials are to be disposed of according to local and state laws.

Small spills and leaks of these materials onto non-paved areas will be shoveled into containers or dumpsters for proper disposal.

Fueling trucks will be equipped with spill prevention kits for smaller fuel spills. All vehicular maintenance shall be performed in the same designated area throughout the construction time frame. If possible, vehicular maintenance shall be done off-site at facilities that are designed to handle any material spillage. This shall include fueling of vehicles whenever possible. The City of Fishers Fire Department (317) 595-3200 or 911, Indiana Department of Environmental Management, Office of Emergency Response (800) 233-7745, shall be notified immediately for larger spills or leaks. The National Response Center (800) 424-8802 shall be notified and provided with the following information: Time of Spill, Location of Spill, Material, Source of Spill, Approximate Volume and Length of Spillage, Weather Conditions at Time of Spill, Personal Present at Time of Spill, and All Action Taken for Post Spill Cleanup.

Contractor shall contact a waste recovery agency immediately for removal of contaminates and coordination of monitoring the site during cleanup until all of the hazardous material has been removed. Contractor shall cooperate with IDEM during and after the spill to insure all required cleanup and filing reports are properly submitted.

SECTION B CONTD.

The Developer shall be continually informed of any contamination concerns occurring on the site. The construction manager shall keep on site a list of qualified contractors for spill remediation. All site personnel, including maintenance employees, shall be made aware of proper spill prevention and remediation techniques. All materials used to absorb spills shall be properly disposed of in an approved manner with local and state laws. Do not flush spill materials with water unless directed to do so by a governing agency. It is important that all manufacturer's instructions be followed when using or applying all fertilizers, herbicides, and pesticides.

B15 Material Handling And Storage Procedures Associated With Construction Activity:
Appropriate measures must be implemented to manage wastes or unused building materials including, but not limited to garbage, debris, cleaning wastes, wastewater, concrete or cementitious washout water, mortar/masonry products, soil stabilizers, lime stabilization materials, and other substances. Wastes and unused building materials must be managed and disposed of in accordance with all applicable statues and regulations. Proper storage and handling of materials, such as fuels or hazardous wastes, and spill prevention and clean-up measures must be implemented to minimize the potential for pollutants to contaminate surface or ground water or degrade soil quality. Concrete or cementitiouss washout areas, where washout is permisible, must be identified for the site and locations clearly posted. Wash water must be directed into leak-proof containers or leak-proof containment areas which are located and designed to divert stormwater run-off away from the measure and sized to prevent discharge and/or overflow of the wash water.

TOXIC WASTE MATERIALS

Insure that toxic liquid wastes such as used oils, solvents, paints, chemicals such as acids, pesticides, additives, and curing compounds are not disposed of in dumpsters designated for construction debris, but are rather properly disposed of according to local and state laws.

ASSESSMENT OF STORMWATER POLLUTION PREVENTION POST-CONSTRUCTION COMPONENT (SECTION C)

C1 Description Of Pollutants And Their Sources Associated With The Proposed Land Use:
Potential post-construction pollutant sources include assorted fuels, oils and liquids associated with vehicular traffic used in field maintenance. There are no new downstream water quality effects due to channeling discharges to a single point which can result in bank erosion, down cutting of the channel bottom.

C2 Description of Proposed Post-Construction Stormwater Measures:
Post construction stormwater quality measures to aid in reducing the amount of pollutants include the construction of a hydrodynamic separator upstream from the dry detention basin. The above BMP will provide 80% TSS removal from the proposed site.

C3 Plan Details For Each Stormwater Measures:
See sheets C401–C403.

C4 Sequence Describing Stormwater Measure Implementation:
The post-construction stormwater quality measure implementation shall begin after substantial completion of the construction activities for the proposed project. This is the appropriate time to install the proposed stormwater BMP. Any newly installed or existing BMPs on site shall be clear of any and all debris. The location of the post construction BMP can be found on sheets C401–C403. Details can be found on sheets C707–C711. Following construction, all erosion control measures shall be inspected and maintained until all permanent measures and vegetation has been established and construction is complete. After installation of the post-construction BMP structure is in place, individual erosion control measures may be removed, including following permanent inlet protection seeding and after sufficient vegetation has been established in an area to prevent silt and soil erosion into the storm sewer system. Inspection and maintenance of all BMP structures are the responsibility of the owner.

C5 Maintenance Guidelines For Proposed Post Construction Stormwater Quality Measures:
Please refer to The Operation & Maintenance Manual for information regarding the post-construction water quality measures. Grass areas will be maintained on a regular mowing cycle. Trash and debris will be removed from seeded and gravel areas. The Hydrodynamic Separator Water Quality BMP structures will be inspected and maintained as follows:

BMP - Stormwater Quality Treatment Units (AQUA-SWIRL, XCELERATOR XC-5 and XC-7)
Basic Operation
The Stormwater Quality Treatment Units (SQTU) are hydrodynamic separators designed to enhance gravitational separation of floating and settling materials from storm water flows. Storm water flows enter the unit tangentially to the grit chamber, which promotes a gentle swirling motion. As polluted water circles within the grit chamber, pollutants migrate toward the center of the unit where velocities are the lowest. The majority of settleable solids are left behind as storm water exits the grit chamber through two apertures on the perimeter of the chamber. Next, buoyant debris and oil and grease are separated from water flowing under the baffle wall due to their relatively low specific gravity. As storm water exits the System through the flow control wall and ultimately through the outlet pipe, it is relatively free of floating and settling pollutants.
Over time a conical pile tends to accumulate in the center of the unit containing sediment and associated metals, nutrients, hydrocarbons and other pollutants. Floating debris and oil and grease form a floating layer trapped in front of the baffle wall. Accumulation of these pollutants can easily be assessed through access manholes over each chamber. Maintenance is typically performed through the manhole over the grit chamber.
Inspection of SQTU
SQTU should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the System collects pollutants will depend more heavily on site activities than the size of the unit, e.g., unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping will slow accumulation. Inspection is the key to effective maintenance and is easily performed. Quarterly inspections of the accumulated sediment. Pollutant deposition and transport may vary from year to year and quarterly inspections will help insure that Systems are cleaned out at the appropriate time. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment wash down areas. It is very useful to keep a record of each inspection.
The SQTU system should be cleaned when inspection reveals that the sediment depth has accumulated to the determined elevation or depth. This determination can be made by taking 2 measurements with a stadia rod or similar measuring device.
Cleaning of SQTU Structure
Maintaining the SQTU is easiest when there is no flow entering the Systems. For this reason, it is a good idea to schedule the clean out during dry weather. Clean out of the SQTU with a vacuum truck is generally the most effective and convenient method of excavating pollutants from the System. If such a truck is not available, a "clamshell" grab may be used, but it is difficult to remove all accumulated pollutants with such devices.
Oil or gasoline spills should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use adsorbent pads since they are usually cheaper to dispose of than the oil water emulsion that may be created by vacuuming the oily layer. Trash can be netted out if you wish to separate it from the other pollutants. Accumulated sediment is typically evacuated through the manhole over the grit chamber. Simply remove the cover and insert the vacuum hose into the grit chamber. As water is evacuated, the water level outside of the grit chamber will drop to the same level as the crest of the lower aperture of the grit chamber. It will not drop below this level due to the fact that the bottom and sides of the grit chamber are sealed to the tank floor and walls. This "Water Lock" feature prevents water from migrating into the grit chamber, exposing the bottom of the baffle wall. Floating pollutants will decant into the grit chamber as the water level there is drawn down. This allows most floating material to be withdrawn from the same access point above the grit chamber.
If maintenance is not performed as recommended, sediment may accumulate outside the grit chamber. If this is the case, it may be necessary to pump out all chambers. It is a good idea to check for accumulation in all chambers during each maintenance event to prevent sediment build up there.
Manhole covers should be securely seated following cleaning activities, to ensure that surface runoff does not leak into the unit from above.
After a storm event, treated runoff is decanted out of the SQTU at a controlled rate, restoring the water level to a low dry-weather volume. This reveals a conical pile of accumulated sediment in the center of the grit chamber. Besides facilitating inspection and cleaning through the unobstructed access, the low water level significantly reduces maintenance costs by decreasing pump-out volume.
Note As the generator, the landowner is ultimately responsible for the proper disposal of material removed from water quality treatment structures.
Quarterly inspections of the SQTU shall include observation of the accumulated sediment. Pollutant deposition and transport may vary from year to year and quarterly inspections will help insure that the systems are cleaned out at the appropriate time. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment wash down areas.

C6 Entity That Will Be Responsible For Operation And Maintenance Of The Post-Construction Stormwater Measures:
Matt Rapp, Director of Facilities, Hamilton Southeastern School Corp., 13485 Cumberland Rd., Fishers, IN 46038

GENERAL SEEDING and SURFACE STABILIZATION PROCEDURES

(1) TEMPORARY SEEDING

Table 1. Temporary Seeding Specifications

Seed Species 1	Rate per Acre	Planting Depth	Optimum Dates 2
Wheat or Rye	150 lbs.	1 to 1-1/2 inches	Sept. 15 – Oct. 30
Spring Oats	100 lbs.	1 inch	March 1 – April 15
Annual Ryegrass	40 lbs.	1-1/4 inch	March 1 – May 1 Aug. 1 – Sept. 1

1. Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than one year (See Permanent Seeding).
2. Seeding done outside the optimum seeding dates increases the chances of seeding failure. Dates may be extended or shortened based on the location of the project site within the state.

Notes: Mulch alone is an acceptable temporary cover and may be used in lieu of temporary seeding, provided that it is appropriately anchored. A high potential for fertilizer, seed, and mulch to wash exists on steep banks, cuts, and in channels and areas of concentrated flow.

Application
Seedbed Preparation
1. Test soil to determine pH and nutrient levels.
2. Apply soil amendments as recommended by the soil test. If testing is not done, apply 400 to 600 pounds per acre of 12-12-12 analysis fertilizer, or equivalent.
3. Work the soil amendments into the upper two to four inches of the soil with a disk or rake operated across the slope.

Seeding
1. Select a seed species or an appropriate seed mixture and application rate from Table 1.
2. Apply seed uniformly with a drill or cultipacker seeder or by broadcasting. Plant or cover seed to the depth shown in Table 1.

Notes:
1. If drilling or broadcasting the seed, ensure good seed-to-soil contact by firming the seedbed with a roller or cultipacker after completing seeding operations. Daily seeding when the soil is moist is usually most effective.
2. If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.
3. Apply mulch (See Mulching and Compost Mulching Requirements Below) and anchor it in place.

Maintenance
Inspect within 24 hours of each rain event and at least once every seven calendar days. Check for erosion or movement of mulch and repair immediately. Monitor for erosion damage and adequate cover (80 percent density); reseed, fertilize, and apply mulch where necessary. If nitrogen deficiency is apparent, top-dress tall seeded wheat or rye seeding with 50 pounds per acre of nitrogen in February or March.

(2) PERMANENT SEEDING

Application
Site Preparation
1.Grade the site to achieve positive drainage.
2. Add topsoil or compost mulch to achieve needed depth for establishment of vegetation. (Compost material may be added to improve soil moisture holding capacity, soil friability, and nutrient availability.)

Seedbed Preparation
1.Test soil to determine pH and nutrient levels.
2. Apply soil amendments as recommended by the soil test and work into the upper two to four inches of soil. If testing is not done, apply 400 to 600 pounds per acre of 12-12-12 analysis fertilizer, or equivalent.
3. Till the soil to obtain a uniform seedbed. Use a disk or rake, operated across the slope, to work the soil amendments into the upper two to four inches of the soil.

Seeding
Optimum seeding dates are March 1 to May 10 and August 10 to September 30. Permanent seeding done between May 10 and August 10 may need to be irrigated. Seeding outside or beyond optimum seeding dates is still possible with the understanding that reseeding or overseeding may be required if adequate surface cover of 85% is not achieved. Reseeding or overseeding can be easily accomplished if the soil surface remains well protected with mulch.
1. Use a seeding mixture and rate from Table 1 Permanent Seeding Recommendations. Select seed mixture based on site conditions, soil pH, intended land use, and expected level of maintenance.
2. Apply seed uniformly with a drill or cultipacker seeder or by broadcasting. Plant or cover the seed to a depth of one-fourth to one-half inch. If drilling or broadcasting the seed, ensure good seed-to-soil contact by firming the seedbed with a roller or cultipacker after completing seeding operations. (If seeding is done with a hydroseeder fertilizer and mulch can be applied with the seed in a slurry mixture.)
3. Mulch all seeded areas and use appropriate methods to anchor the mulch in place. Consider using erosion control blankets on sloping areas and conveyance channels.

Maintenance
1. Inspect within 24 hours of each rain event and at least once every seven calendar days until the vegetation is successfully established.
2. Characteristics of a successful stand include vigorous dark green or bluishgreen seedlings with a uniform vegetative cover density of 90 percent or more.
3. Check for erosion or movement of mulch.
4. Repair damaged, bare, gullied, or sparsely vegetated areas and then fertilize, reseed, and apply and anchor mulch.
5. If plant cover is sparse or patchy, evaluate the plant materials chosen, soil fertility, moisture condition, and mulch application; repair affected areas either by overseeding or preparing a new seedbed and reseeding. Apply and anchor mulch on the newly seeded areas.
6. If vegetation fails to grow, consider soil testing to determine soil pH or nutrient deficiency problems. (Contact your soil and water conservation district or cooperative extension office for assistance.)
7. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
8. Add fertilizer the following growing season. Fertilize according to soil test recommendations.
9. Fertilize turf areas annually. Apply fertilizer in a split application. For cool-season grasses, apply one-half of the fertilizer in late spring and one-half in early fall. For warm-season grasses, apply one-third in early spring, one-third in late spring, and the remaining one-third in middle summer.

Table 1 Permanent Seeding Recommendations

Typical Lawn Seed: Provide fresh, clean, new crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of 95% purity, 95% germination, and maximum percentage of 0.5% weed seed per the chart below.

Seed Mixtures	Rate per Acre Pure Live Seed	Optimum Soil pH
1. Perennial ryegrass – white clover	150 lbs. 2 lbs.	5.5 to 7.0
2. Kentucky bluegrass – smooth bromegrass – switchgrass – timothy – perennial ryegrass – white clover	20 lbs. 10 lbs. 3 lbs. 4 lbs. 10 lbs. 2 lbs.	5.5 to 7.5
3. Tall fescue 1 – white clover	150 lbs. 2 lbs.	5.5 to 7.5
4. Tall fescue 2 – perennial ryegrass – Kentucky bluegrass1	150 lbs. 20 lbs. 20 lbs.	5.5 to 7.5

(3) MULCHING

Specifications
Materials

Table 1. Mulch Specifications

Material 1	Rate per Acre	Comments
Straw or Hay	2 tons	Shall be dry, free of undesirable seeds. Spread by hand or machine. Must be crimped or anchored (See Table 2).
Wood fiber or cellulose1	1 ton	Apply with a hydraulic mulch machine and use with tacking agent.

1 Mulching is not recommended in concentrated flows. Consider erosion control blankets or other stabilization methods.

Coverage
The mulch should have a uniform density of at least 80 percent over the soil surface.

Anchoring
Table 2. Mulch Anchoring Methods

Anchoring Method	How to Apply
Mulch anchoring tool or farm disk (dull, serrated, and blades set straight)	Crimp or punch the straw or hay two to four inches into the soil. Operate machinery on the contour of the slope.
Cleating with dozer tracks	Operate dozer up and down slope to prevent formation of rills by dozer cleats
Wood hydromulch fibers	Apply according to manufacturer's recommendations.
Synthetic tackifiers, binders, or soil stabilizers Netting (synthetic or biodegradable material)	Apply according to manufacturer's recommendations. Install netting immediately after applying mulch. Anchor netting with staples. Edges of netting strips should overlap with each up-slope strip overlapping four to six inches over the adjacent down-slope strip. Best suited to slope applications. In most instances, installation details are site specific, so manufacturer's recommendations should be followed.

1 All forms of mulch must be anchored to prevent displacement by wind and/or water.

Application
1. Apply mulch at the recommended rate shown in Table 1.
2. Spread the mulch material uniformly by hand, hayfork, mulch blower, or hydraulic mulch machine. After spreading, no more than 25 percent of the ground should be visible.
3. Anchor straw or hay mulch immediately after application. The mulch can be anchored using one of the methods listed below:
   a. Crimp with a mulch anchoring tool, a weighted farm disk with dull serrated blades set straight, or track cleats of a bulldozer,
   b. Apply hydraulic mulch with short cellulose fibers,
   c. Apply a liquid tackifier, or
   d. Cover with netting secured by staples.

Maintenance
1. Inspect within 24 hours of each rain event and at least once every seven calendar days.
2. Check for erosion or movement of mulch; repair damaged areas, reseed, apply new mulch and anchor the mulch in place.
3. Continue inspections until vegetation is firmly established.
4. If erosion is severe or recurring, use erosion control blankets or other more substantial stabilization methods to protect the area.

(6) Compost Mulching
Compost Specifications
1. Feedstocks may include but are not limited to well-composted vegetable matter, leaves, yard trimmings, food scraps, composted manures, paper fiber, wood bark, Class A biosolids (as defined in Title 40 of the Code of Federal Regulations at 40 CFR Part 503), or any combination thereof.
2. Compost shall be produced using an aerobic composting process meeting 40 CFR Part 503 regulations, including time and temperature data indicating effective weed seed, pathogen, and insect larvae kill.
3. Compost shall be well decomposed, stable, and weed free.
4. Refuse free (less than one percent by weight).
5. Free of any contaminants and materials toxic to plant growth.
6. Inert materials not to exceed one percent by dry weight pH of 5.5 to 8.0.
7. Carbon–nitrogen ratio not to exceed 100.
8. Moisture content not to exceed 45 percent by dry weight.
9. Variable particle size with maximum dimensions of three inches in length, one-half inch in width and one-half inch in depth.

Table 1 Compost Particle Size

Percent Passing Sieve Size			
2-Inch Sieve	1-Inch Sieve	3/4-Inch Sieve	>1/4-Inch Sieve
100%	99%	90%	25%

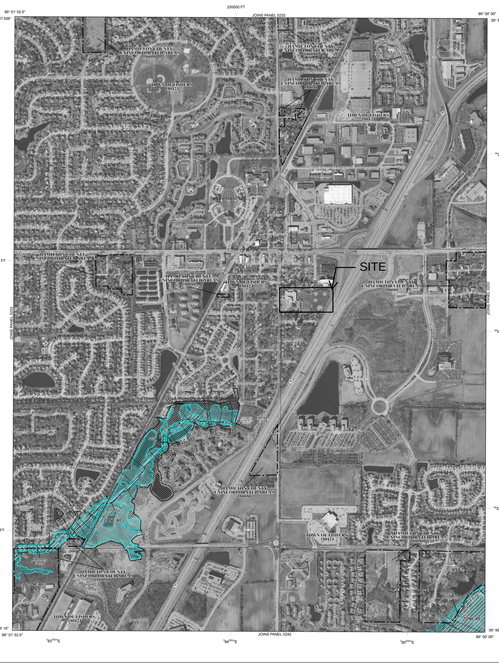
Bonding Agents (optional)
Tackifiers, flocculants, or microbial additives may be used to remove sediment and/or additional pollutants from storm water runoff. (All additives combined with compost materials should be tested for physical results at a certified erosion and sediment control laboratory and biologically tested for elevated beneficial microorganisms at a United States Compost Council, Seal of Testing Assurance, approved testing laboratory.)
Soil Material (optional)
Five percent to ten percent sandy loam (as classified by the U.S. Department of Agriculture soil classification system).
Cover Density
Ninety percent or greater over the soil surface.
Anchoring Method
- Moisten compost/mulch blanket for a minimum of 60 days.
- Erosion control netting (optional).

Cover Thickness
Table 2 Compost Blanket Thickness

Slope		Thickness of Compost Blanket	Thickness of Compost Blanket with Erosion Control Netting
< 25%	< 4:1	1 to 2 inches	Not Applicable
25% to 50%	4:1 to 2:1	1 to 2 inches	2 inches
> 50%	> 2:1	2 to 3 inches	3 inches

Application
1. Remove existing vegetation, large soil clods, rocks, stumps, large roots, and debris in areas where compost mulch is to be applied and dispose of in designated areas.
2. Scarify sloping areas.
3. Aerate areas to be covered with compost/mulch blanket. (Proper aeration will require a minimum of two passes oriented in opposite directions.)
4. Broadcast a minimum of one pound of nitrogen (N), one–half pound of phosphorous (P205), and one–half pound of potash (K20) per 1,000 square feet or 300 to 400 pounds per acre of 12–12–12 analysis fertilizer, or equivalent, per acre.
5. Apply compost mulch blanket with a pneumatic blower or per manufacturer's directions.
   a. Apply within three days of completing aeration operations.
   b. Overlap top of slope shoulder by five to ten feet.
   c. Seed may be applied at time of installation. (Seed must be evenly blended into the compost if applied with a pneumatic blower or applied with a calibrated seeder attachment prior to installation of the compost blanket.)
6. Water compost mulch blanket for a period of 60 days following application. (On steeper slopes, it may be necessary to install erosion control netting over the compost blanket.)
   a. Mat blanket for first seven days and then every three days throughout the remainder of the 60–day period.
   b. Maintain a constant moisture content of 40 percent to 60 percent.

Maintenance
1. Inspect within 24 hours of a rain event and at least once every seven calendar days.
2. Repair eroded areas.
3. Reseed, if applicable.
4. Monitor vegetation and apply appropriate soil amendments (if needed) per a soil test.



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SCOPE DRAWINGS:
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REVISIONS:
4 — 02/12/24 ADDENDUM #4

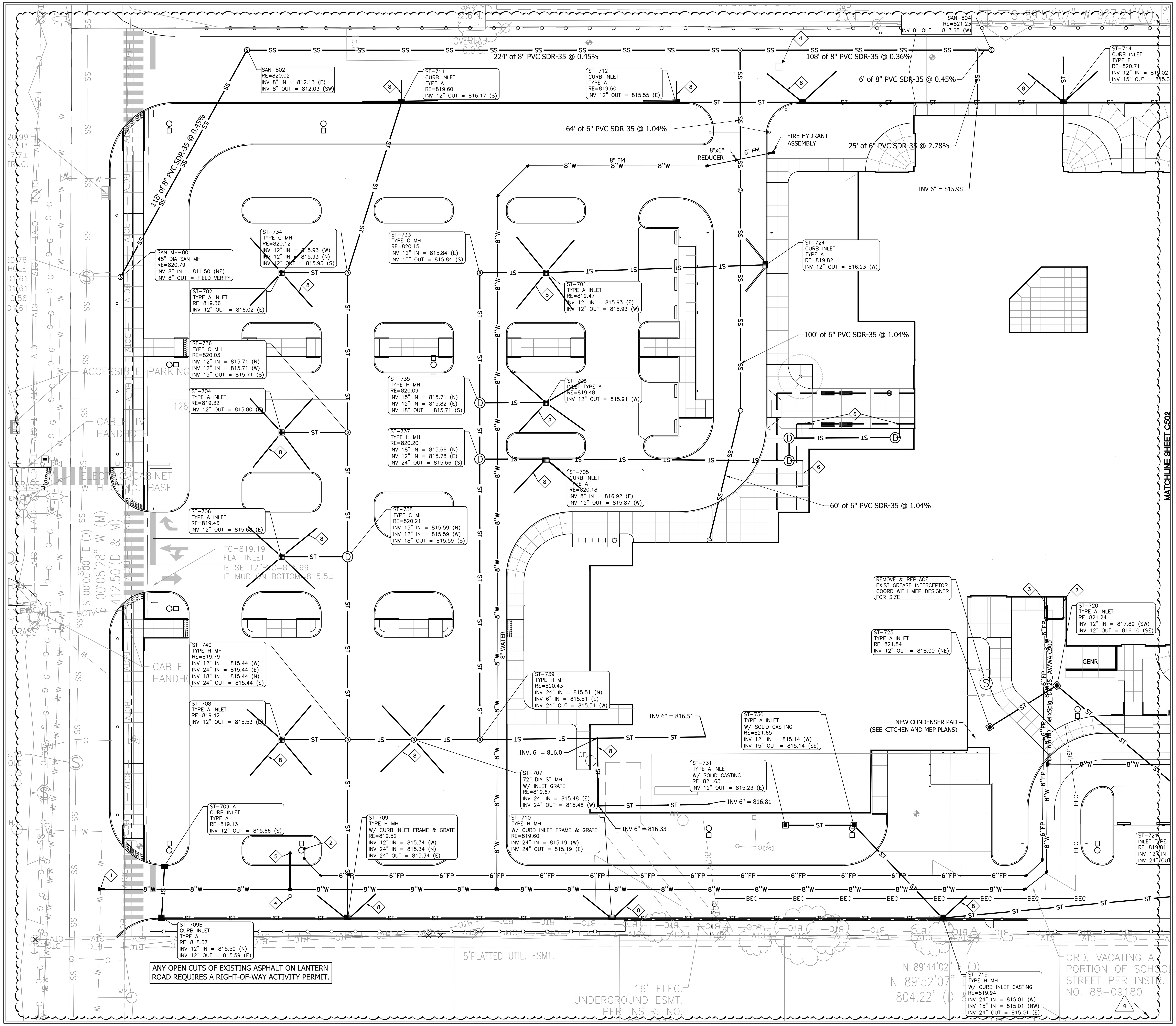
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
STORMWATER POLLUTION PREVENTION PLAN

CERTIFIED BY:
DAVID A. LACH — REGISTERED — PE 10000126 — STATE OF INDIANA — PROFESSIONAL ENGINEER

DRAWING NUMBER
C404

PROJECT NUMBER
2021119



N

0 10 20 40

UTILITY PLAN LEGEND

Symbol	Description
ST	STORM SEWER, MANHOLE
	SUBSURFACE DRAIN (SSD)
RD	ROOF DRAIN, CLEANOUT
	WATER LINE, METER, VALVE
SS	SANITARY SEWER, MANHOLE
SS	SANITARY LATERAL, CLEAN OUT
	EASEMENT LINE
E	OVERHEAD ELECTRIC, POLE
BEC	BURIED ELECTRIC, MANHOLE
CTV	OVERHEAD CABLE TELEVISION
BCTV	BURIED CABLE TELEVISION
G	GAS LINE, METER, VALVE
T	OVERHEAD TELEPHONE LINE
BTC	BURIED TELEPHONE LINE
	END SECTION
	CURB INLET
	STORM SEWER INLETS
	"TEE" FITTING
	TAPPING SLEEVE & VALVE
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	POST INDICATOR VALVE
	STREET LIGHT
ET	TRANSFORMER
	ELECTRIC METER
C	CABLE RISER PEDESTAL

UTILITY PLAN NOTES:

1. SEE ARCHITECTURAL PLUMBING PLANS FOR PLUMBING DETAILS TO AREAS FIVE (5) FEET OUTSIDE AND INSIDE OF THE PROPOSED STRUCTURE.
2. SITE CONTRACTOR TO VERIFY ALL BUILDING LATERALS WITH PLUMBING DRAWINGS PRIOR TO CONSTRUCTION.
3. SITE UTILITY CONTRACTOR TO VERIFY BUILDING CONNECTION LOCATIONS AND ELEVATIONS WITH MEP AND ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
4. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE AND FIELD VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. RIM ELEVATION (RE) SHALL INDICATE THE ELEVATION THAT WATER WOULD ENTER THE GRATE FOR ALL CASTINGS. IF CASTING HAS SOLID LID, THE RE IS THE LID ELEVATION.
6. WATER AND SEWER CROSSINGS AND SEPARATIONS SHALL BE IN ACCORDANCE WITH "TEN STATE STANDARDS" AND LOCAL CODES.
7. WATER LINES THROUGHOUT THE PROJECT SHALL BE INSTALLED WITH AT LEAST 54 INCHES OF COVER TO PROVIDE PROTECTION FROM FREEZING.
8. PLASTIC WATER LINES SHALL BEAR THE NSF SEAL OF APPROVAL AND MEET COMMERCIAL STANDARD NO. 256-3, PRODUCT STANDARD 22-70, OR ASTM D 2441.
9. ALL SUB-SURFACE DRAIN (SSD) SHALL BE 6" PERFORATED DUAL WALL HDPE UNLESS NOTED OTHERWISE.
10. INVERT ELEVATION OF SUB-SURFACE DRAIN (SSD) AT STRUCTURE TO BE THREE (3) FEET BELOW RIM ELEVATION. ALL STORM STRUCTURES MUST HAVE AT LEAST 3 SUB SURFACE DRAIN CONNECTIONS.
11. REFER TO TOWN OF FISHERS DETAIL SHEETS C914 & C919 FOR BACKFILL REQUIREMENTS FOR STORM & SANITARY SEWERS.
12. REFER TO TOWN OF SHEETS C919-C924 FOR TOWN OF FISHERS SANITARY SEWER DETAILS.
13. REFER TO DETAIL SHEETS C914-C918 FOR TOWN OF FISHERS STORM SEWER DETAILS.
14. REFER TO SHEETS IN THE C900 SERIES FOR ALL OTHER TOWN OF FISHERS DETAILS.
15. SEE STRUCTURE DATA TABLE DETAILS ON SHEETS C705 (STORM) & C801 (SANITARY).
16. CONNECTIONS TO EXISTING STRUCTURES REQUIRE THAT THE STRUCTURE BE REHABILITATED TO CURRENT DPW DESIGN STANDARDS.
17. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
18. ALL EXISTING STRUCTURES, MANHOLES, AND CATCH BASIN GRATES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
19. ALL UTILITY STRUCTURES IN PAVED AREAS SHALL BE TRAFFIC BEARING AND SHALL BE FLUSH WITH ADJACENT PAVEMENT.

KEYNOTE LEGEND

1. CONNECT WATER TO EXISTING WITH STAINLESS STEEL TAPPING SLEEVE AND VALVE.
2. FIRE DEPARTMENT CONNECTION TO BE 5-INCH STORZ AND PAINTED RED.
3. POST INDICATOR VALVE - SEE FIRE PROTECTION PLANS AND ELECTRICAL PLANS FOR LOW VOLTAGE WIRING.
4. BLUE FIRE HYDRANT SNOWPLOWABLE MARKER
5. FIRE HYDRANT ASSEMBLY
6. DOWN SPOUT AT COLUMN WITH BOOT FOR UNDERGROUND DRAINAGE
7. 2-2-INCH WATER METERS ON A TREE INSIDE BUILDING-SEE PLUMBING PLANS.
8. SUBSURFACE DRAIN, TYP.

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REVISIONS:
4 02/12/24 ADDENDUM #4

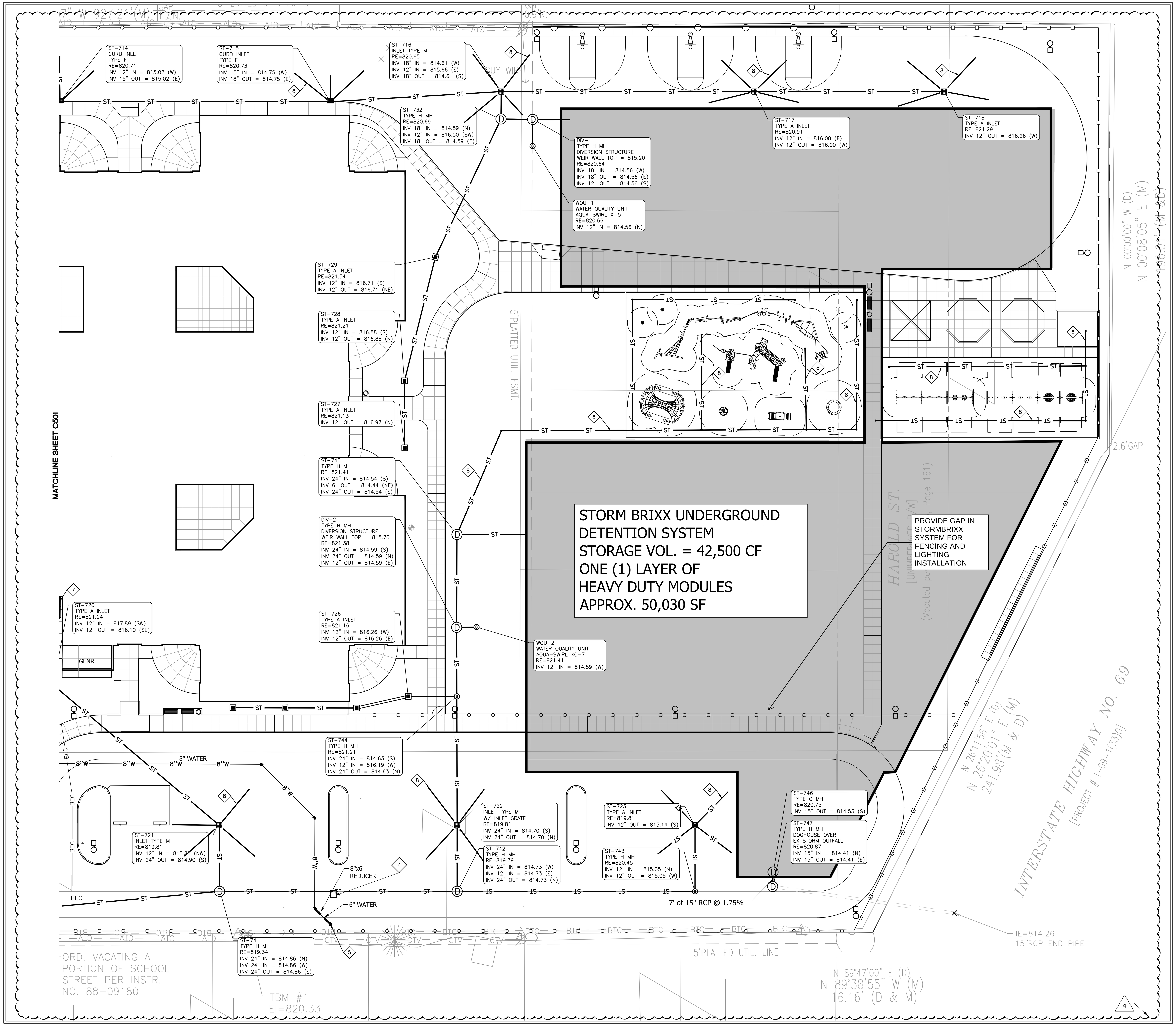
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
UTILITY PLAN

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C501

PROJECT NUMBER
2021119



N

0 10 20 40

UTILITY PLAN LEGEND

- ST — STORM SEWER, MANHOLE
- SUBSURFACE DRAIN (SSD)
- RD — ROOF DRAIN, CLEANOUT
- WATER LINE, METER, VALVE
- SS — SANITARY SEWER, MANHOLE
- SS — SANITARY LATERAL, CLEAN OUT
- EASEMENT LINE
- E — OVERHEAD ELECTRIC, POLE
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- END SECTION
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- "TEE" FITTING
- TAPPING SLEEVE & VALVE
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- POST INDICATOR VALVE
- STREET LIGHT
- TRANSFORMER
- ELECTRIC METER
- CABLE RISER PEDESTAL

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11. REFER TO TOWN OF FISHERS DETAIL SHEET XX FOR BACKFILL REQUIREMENTS FOR ALL UTILITIES.
12. REFER TO TOWN OF FISHERS DETAIL SHEET 18-23 FOR SANITARY SEWER DETAILS.
13. REFER TO TOWN OF FISHERS DETAIL SHEETS 13-15 FOR STORM SEWER DETAILS.
14. REFER TO TOWN OF FISHERS DETAIL SHEET XX FOR ALL OTHER UTILITY DETAILS.
15. SEE STRUCTURE DATA TABLE DETAIL ON SHEET C60X FOR STRUCTURE AND CASTING TYPE AND SIZE.
16. CONNECTIONS TO EXISTING STRUCTURES REQUIRE THAT THE STRUCTURE BE REHABILITATED TO CURRENT DPW DESIGN STANDARDS.
17. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
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3. POST INDICATOR VALVE - SEE FIRE PROTECTION PLANS AND ELECTRICAL PLANS FOR LOW VOLTAGE WIRING.
4. BLUE FIRE HYDRANT SNOWPLOWABLE MARKER
5. FIRE HYDRANT ASSEMBLY
6. DOWN SPOUT AT COLUMN WITH BOOT FOR UNDERGROUND DRAINAGE
7. 4" DOMESTIC WATER
8. SUBSURFACE DRAIN, TYP.

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REVISIONS:

4	02/12/24 ADDENDUM #4

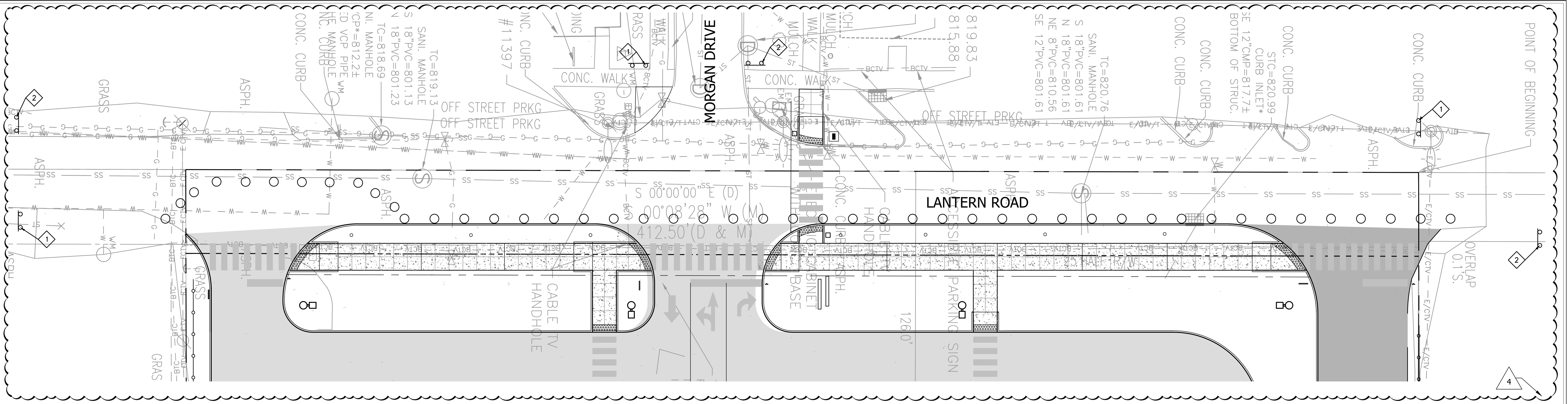
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
UTILITY PLAN

CERTIFIED BY:
DAVID A. LACH
REGISTERED
PE 10000126
STATE OF INDIANA
PROFESSIONAL ENGINEER

DRAWING NUMBER
C502

PROJECT NUMBER
2021119



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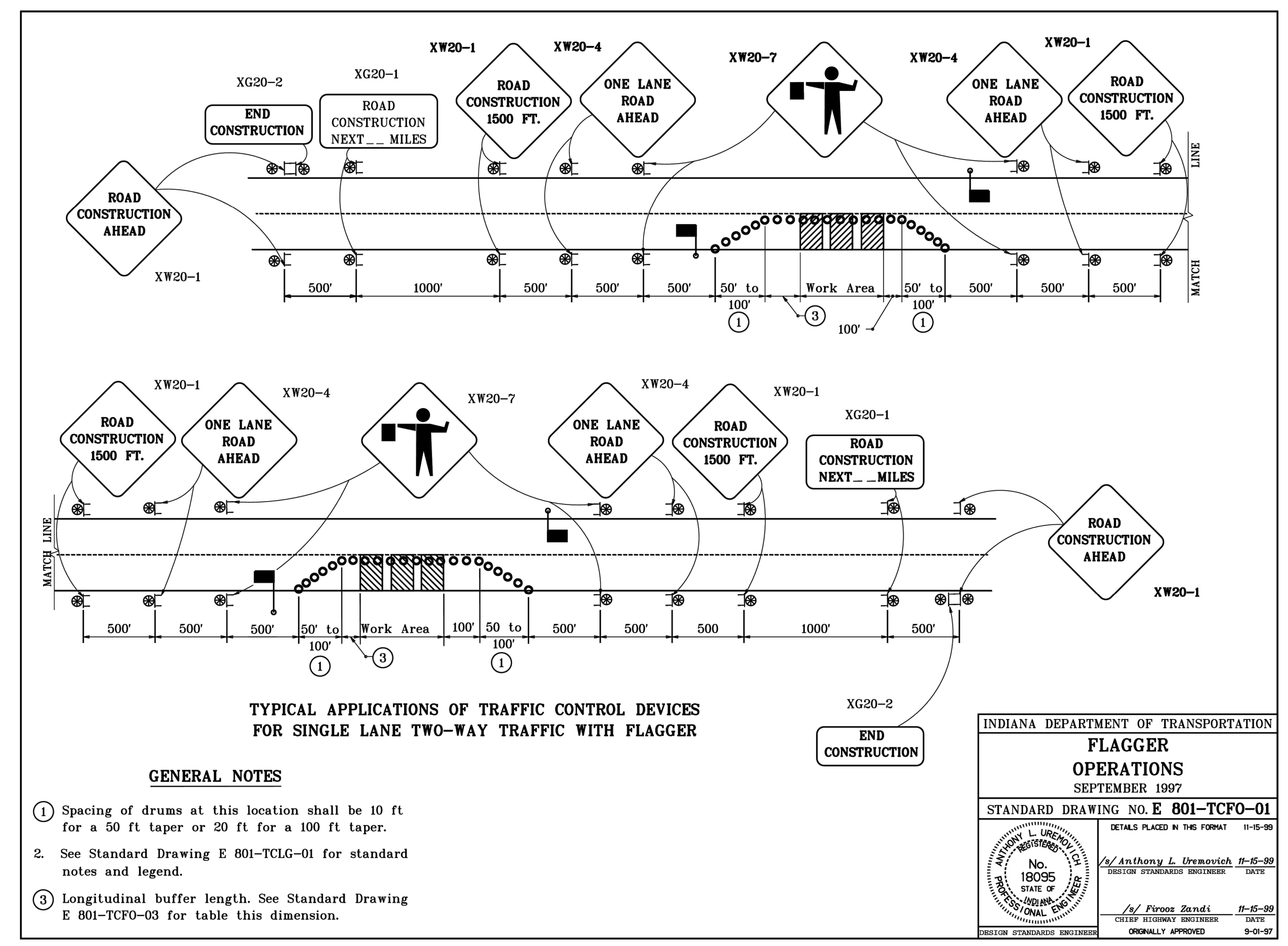
GRAPHIC SCALE (FEET)

0 10 20 40

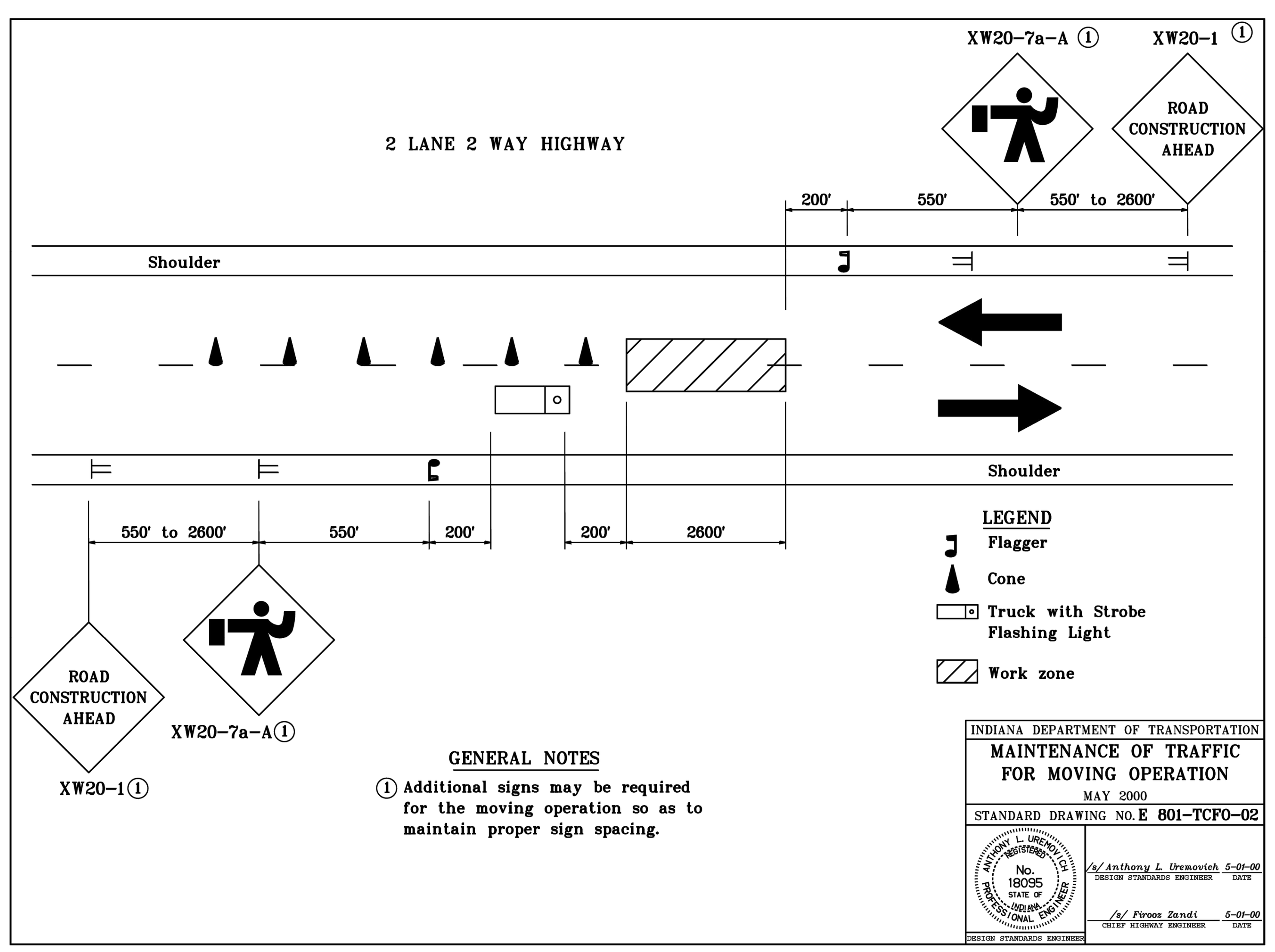
KEYNOTE LEGEND

1	ROAD CONSTRUCTION AHEAD SIGN
2	END CONSTRUCTION SIGN
○	TRAFFIC BARRELS

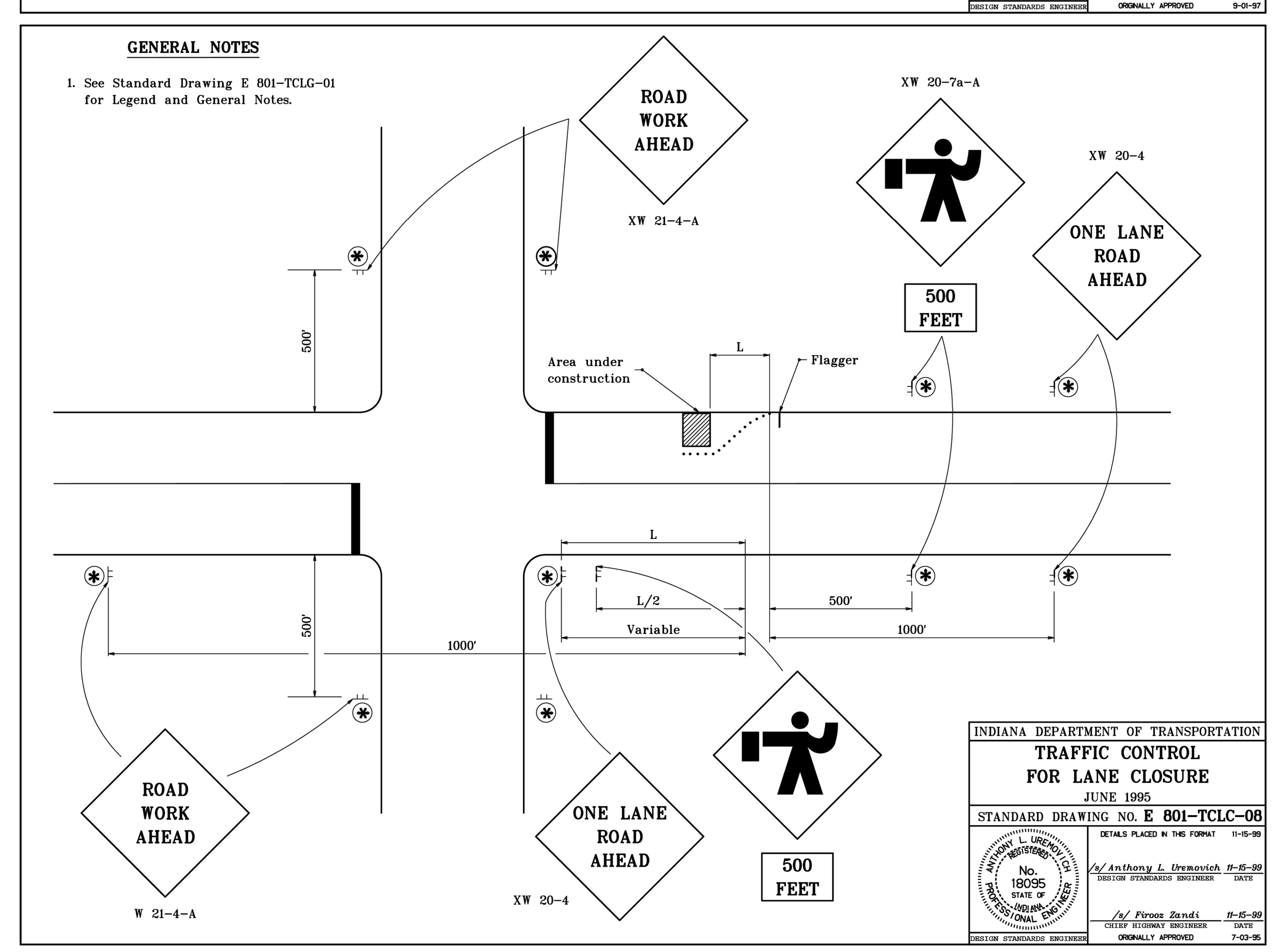
COORDINATE ALL LANE RESTRICTIONS WITH FISHERS ENGINEERING INSPECTOR AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO BEGINNING WORK.



ROAD CONSTRUCTION AHEAD
END CONSTRUCTION
ROAD CONSTRUCTION NEXT __ MILES
ROAD CONSTRUCTION 1500 FT.
ONE LANE ROAD AHEAD
Work Area
TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR SINGLE LANE TWO-WAY TRAFFIC WITH FLAGGER
GENERAL NOTES
1 Spacing of drums at this location shall be 10 ft for a 50 ft taper or 20 ft for a 100 ft taper.
2. See Standard Drawing E 801-TCLG-01 for standard notes and legend.
3 Longitudinal buffer length. See Standard Drawing E 801-TCFO-03 for table this dimension.
INDIANA DEPARTMENT OF TRANSPORTATION
FLAGGER OPERATIONS
SEPTEMBER 1997
STANDARD DRAWING NO. E 801-TCFO-01



2 LANE 2 WAY HIGHWAY
XW20-7a-A 1
XW20-1
ROAD CONSTRUCTION AHEAD
Shoulder
200' 550' 550' to 2600'
550' to 2600' 550' 200' 200' 2600'
LEGEND
Flagger
Cone
Truck with Strobe Flashing Light
Work zone
GENERAL NOTES
1 Additional signs may be required for the moving operation so as to maintain proper sign spacing.
INDIANA DEPARTMENT OF TRANSPORTATION
MAINTENANCE OF TRAFFIC FOR MOVING OPERATION
MAY 2000
STANDARD DRAWING NO. E 801-TCFO-02



GENERAL NOTES
1. See Standard Drawing E 801-TCLG-01 for Legend and General Notes.
ROAD WORK AHEAD
XW 21-4-A
XW 20-7a-A
XW 20-4
ONE LANE ROAD AHEAD
500 FEET
Area under construction
Flagger
L/2
Variable
1000'
W 21-4-A
XW 20-4
INDIANA DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL FOR LANE CLOSURE
JUNE 1995
STANDARD DRAWING NO. E 801-TCLC-08

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REVISIONS:

4	02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:

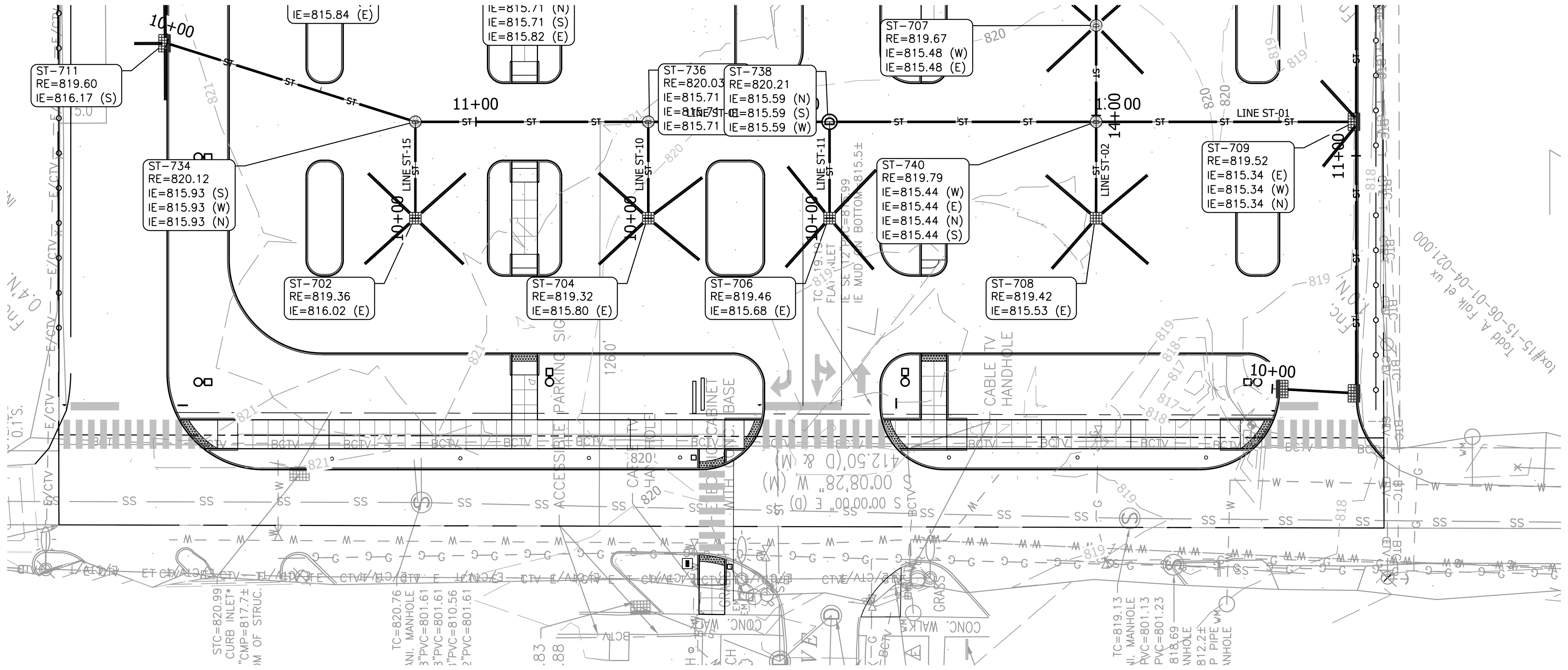
MAINTENANCE OF TRAFFIC PLAN

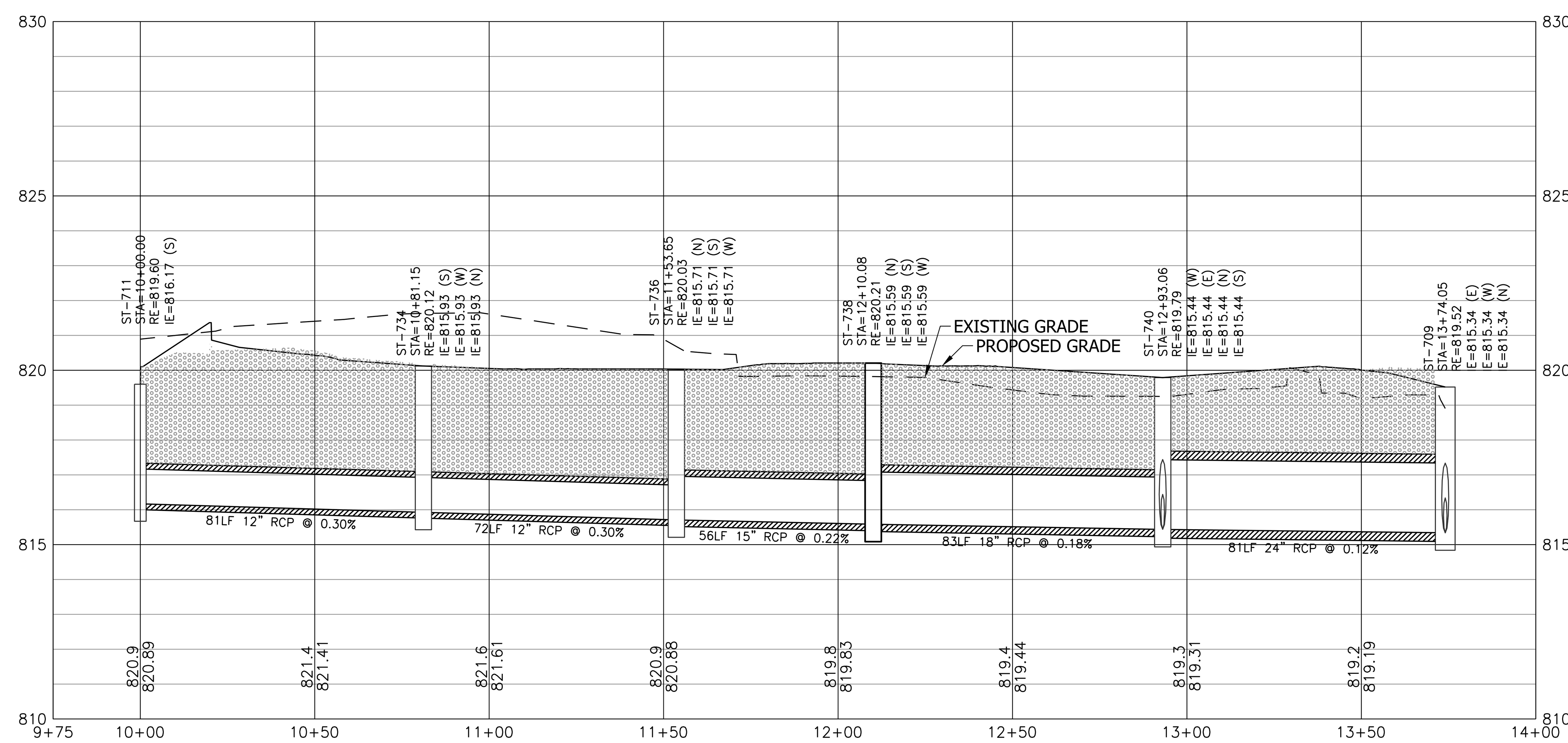
CERTIFIED BY:

DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

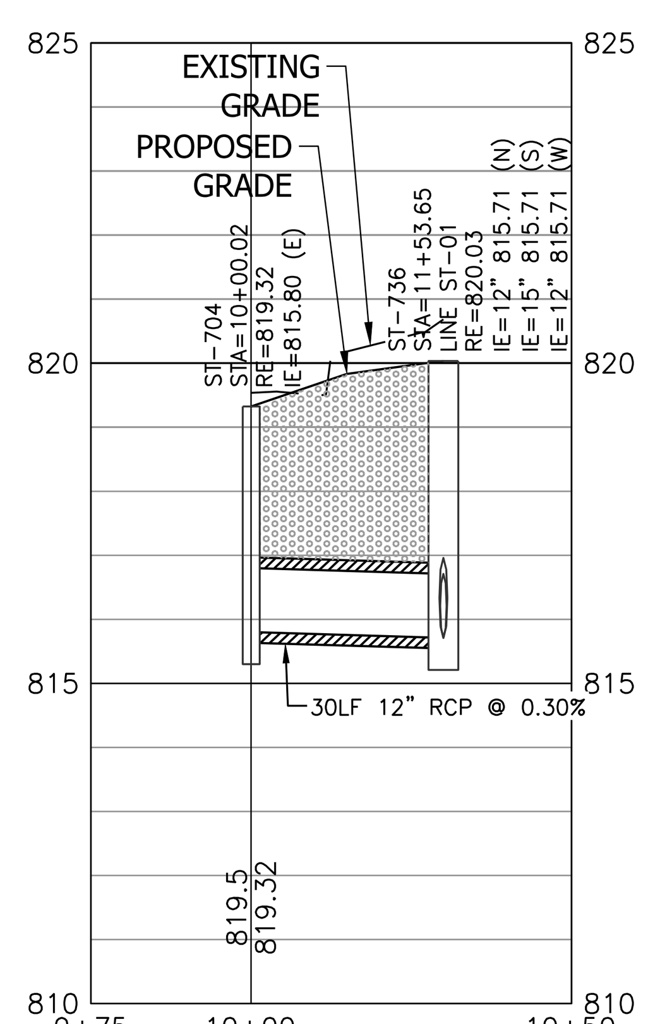
DRAWING NUMBER
C601

PROJECT NUMBER
2021119





PROFILE - LINE ST-01
HOR SCALE = 1"=30'
VERT. SCALE = 1"=3'



PROFILE - LINE ST-10
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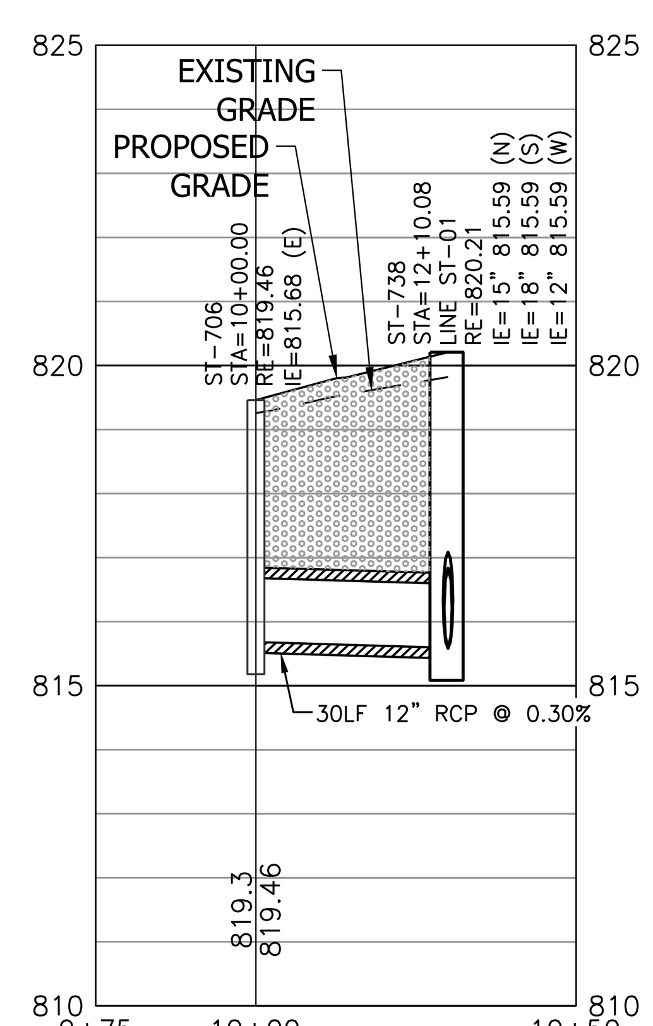
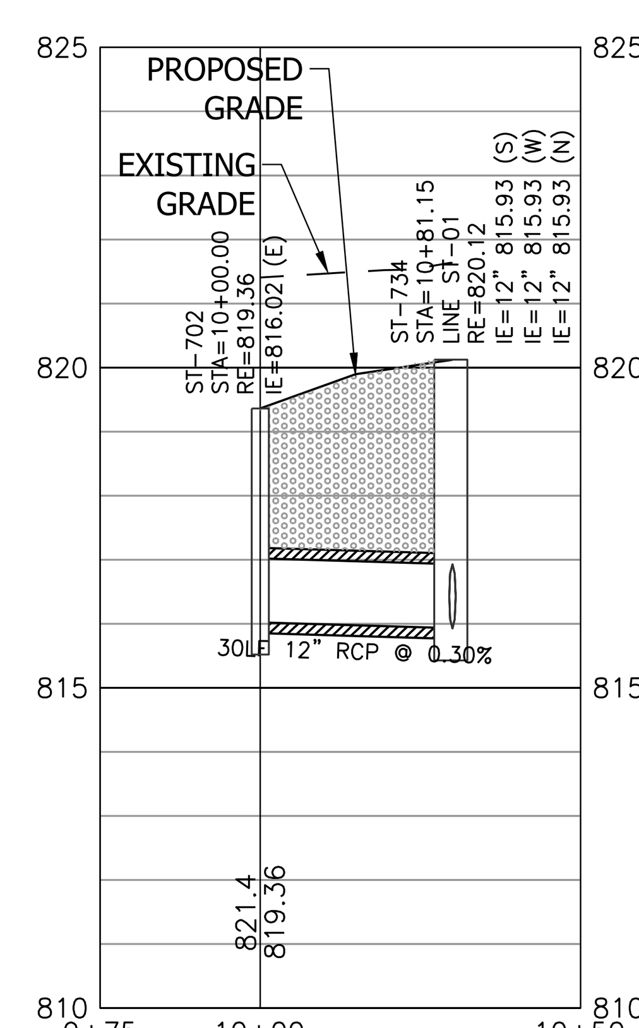
VERT. SCALE = 1"=3'



PROFILE - LINE ST-11
HOR SCALE = 1"=30'
VERT. SCALE = 1"=3'



PROFILE - LINE ST-15
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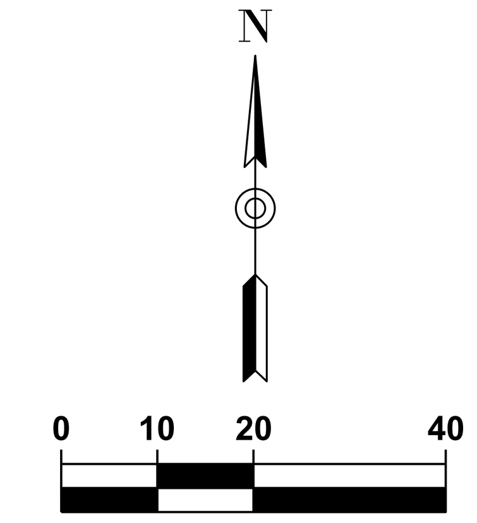
VERT. SCALE = 1"=3'



STORM SEWER PLAN AND PROFILE GENERAL NOTES

1. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
2. IN ADDITION, EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
3. ALL STRUCTURES SHALL HAVE CASTINGS, JOINTS, LIFT RINGS, STEPS AND PIPE CONNECTIONS WELL GROUTED, TROWELED SMOOTH AND BRUSH FINISHED.
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FISHERS ELEMENTARY SCHOOL
ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

REVISIONS:

4	02/12/24 ADDENDUM #4

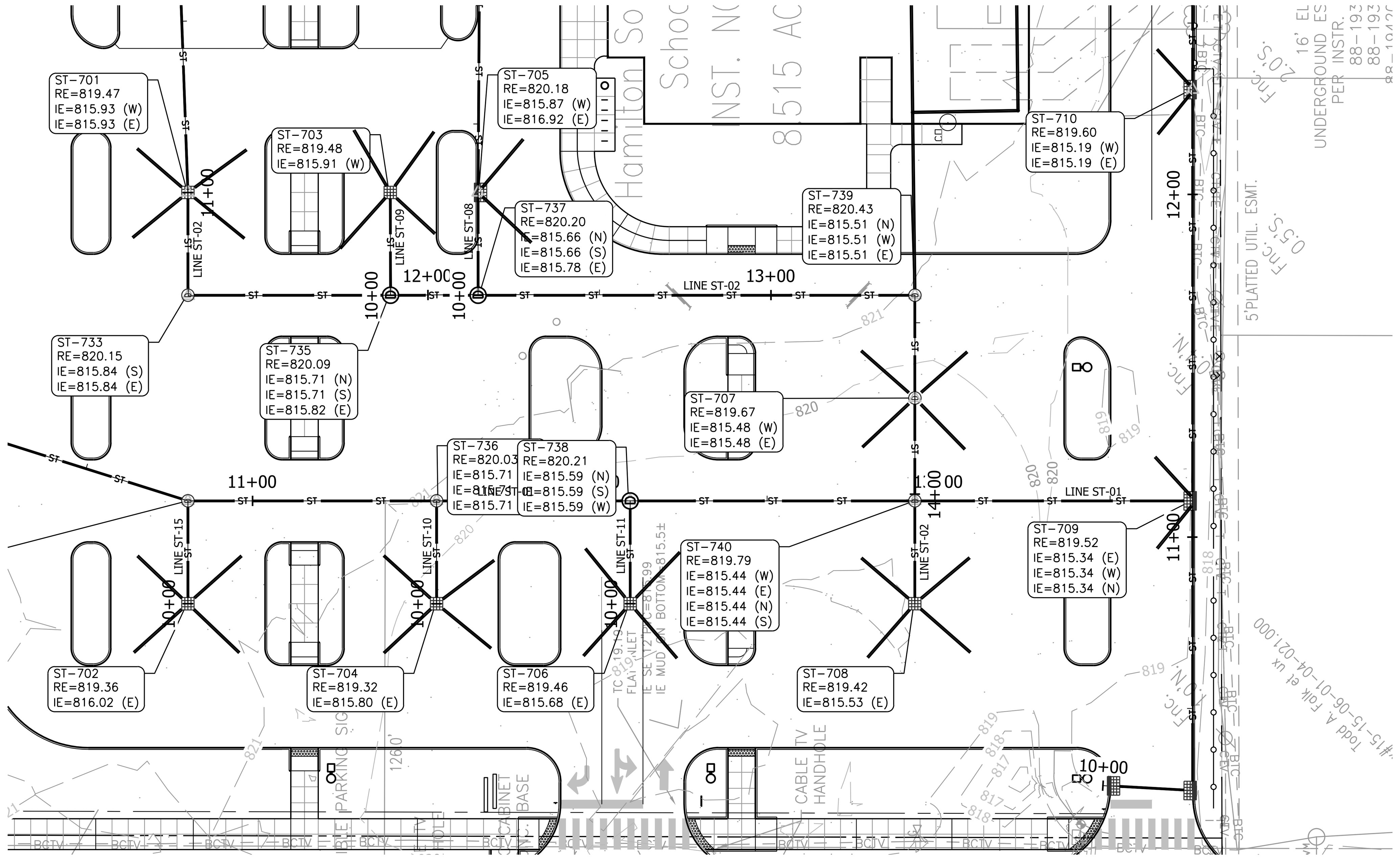
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

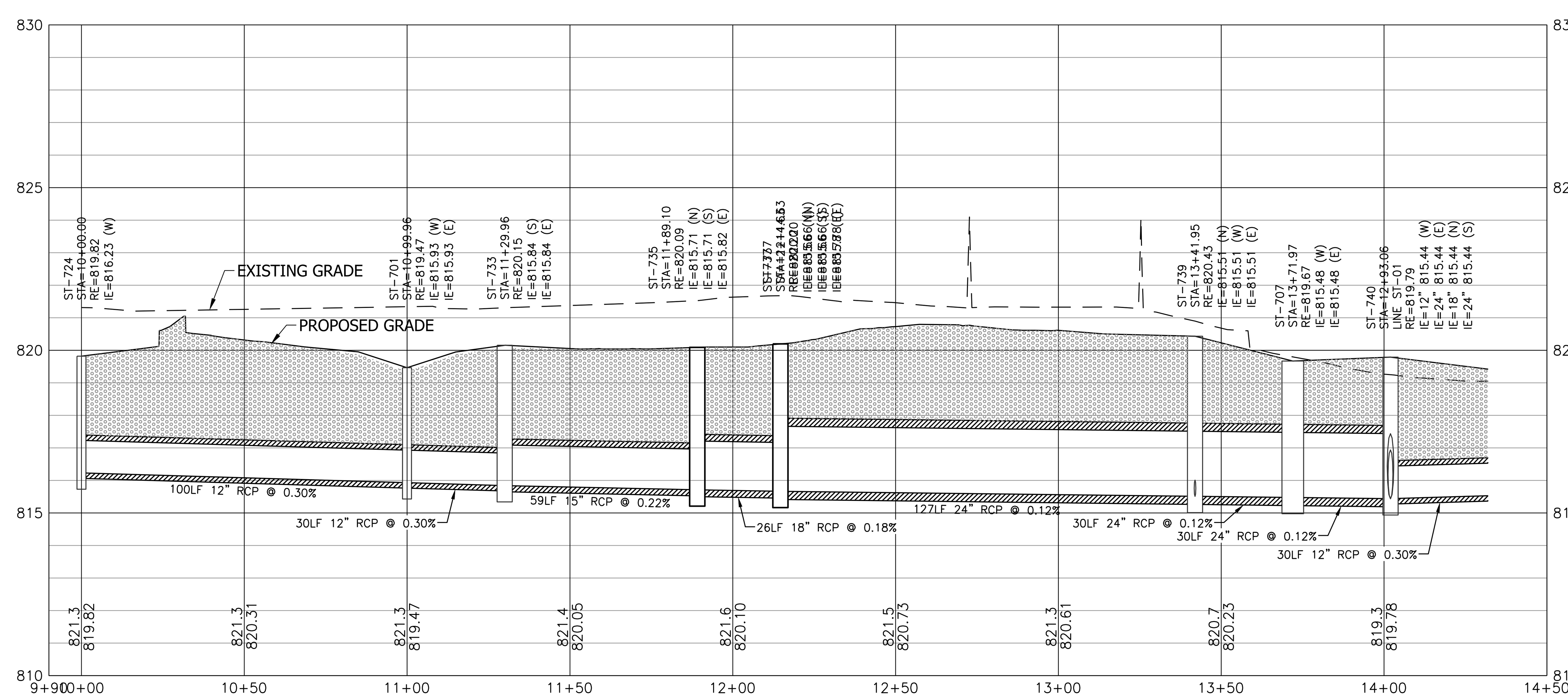
DRAWING TITLE:
STORM SEWER PLAN AND PROFILES

CERTIFIED BY:
DAVID A. LACH
REGISTERED
PE 10000126
STATE OF INDIANA
PROFESSIONAL ENGINEER

DRAWING NUMBER
C701

PROJECT NUMBER
2021119





PROFILE - LINE ST-02
HOR SCALE = 1"=30'
VERT. SCALE = 1"=3'

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DESIGN DEVELOPMENT
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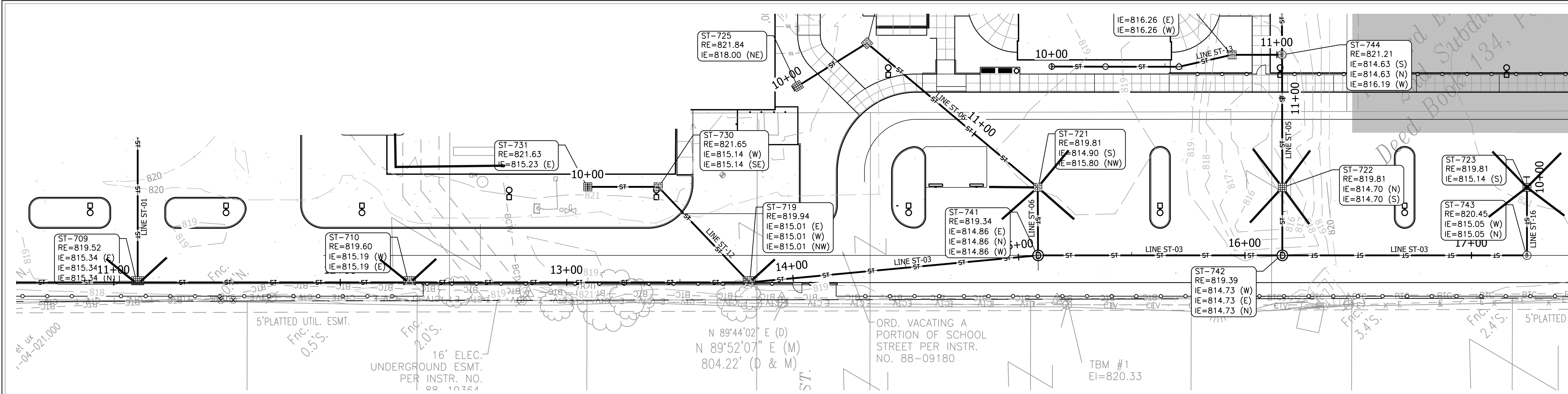
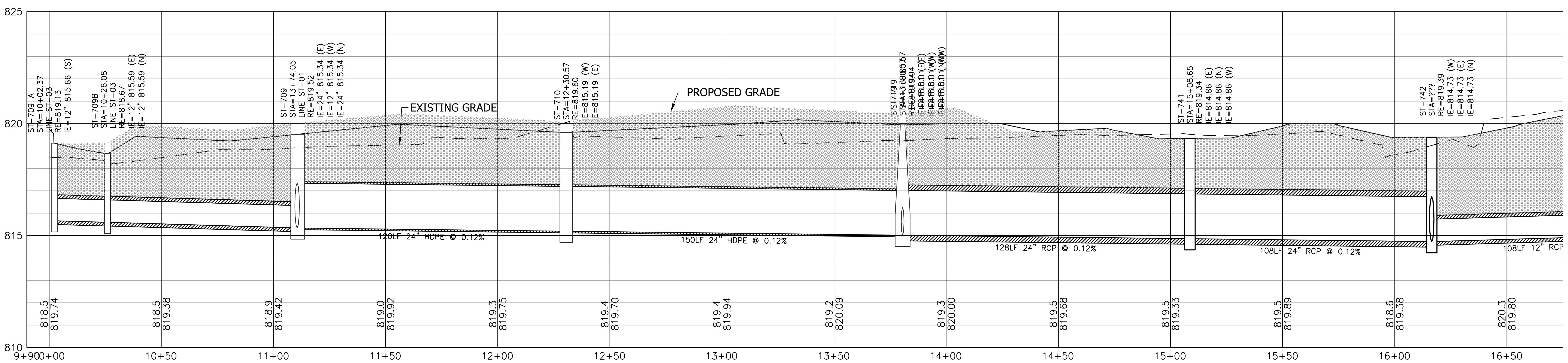
STORM SEWER PLAN AND PROFILES

CERTIFIED BY:
DAVID A. LACH, REGISTERED PE 10000126, STATE OF INDIANA, PROFESSIONAL ENGINEER

DRAWING NUMBER
C702

PROJECT NUMBER
2021119





PROFILE - LINE ST-03
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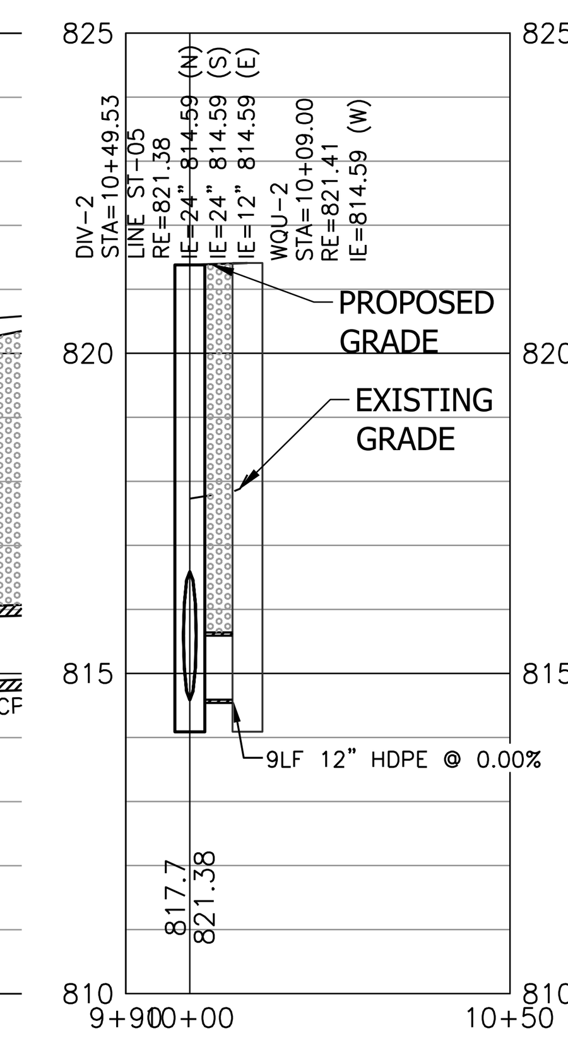
VERT. SCALE = 1"=3'



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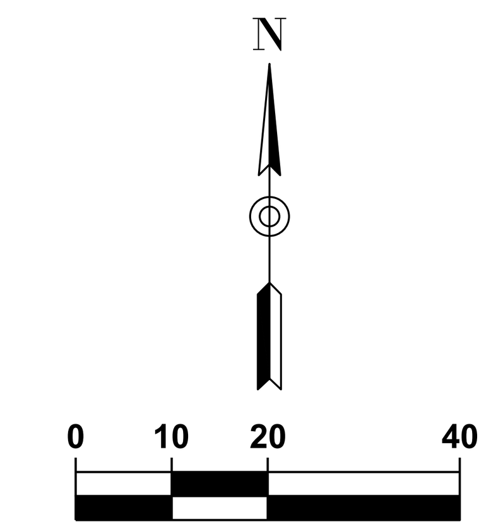
VERT. SCALE = 1"=3'



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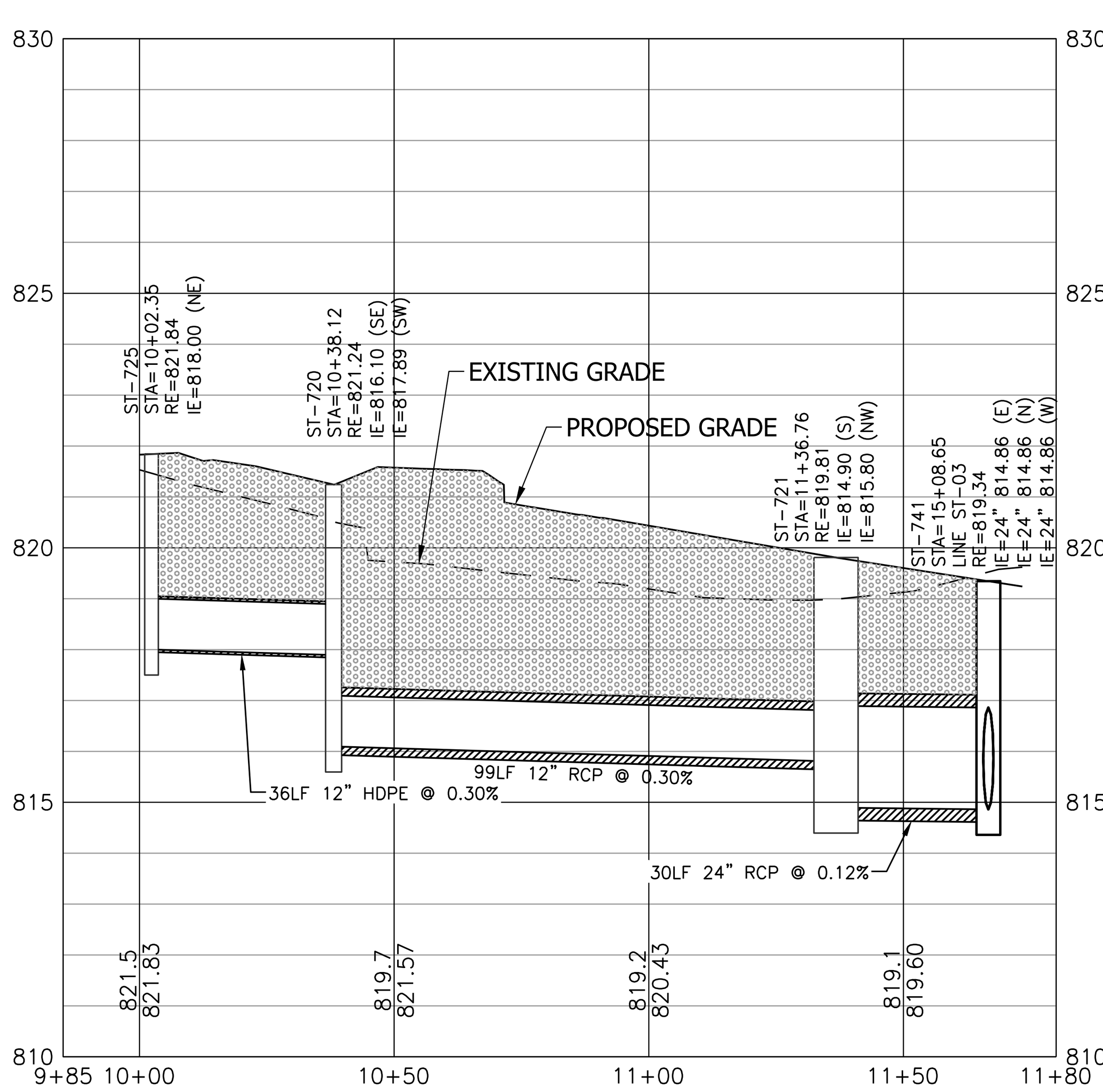
STORM-BRIXX UNDERGROUND DETENTION



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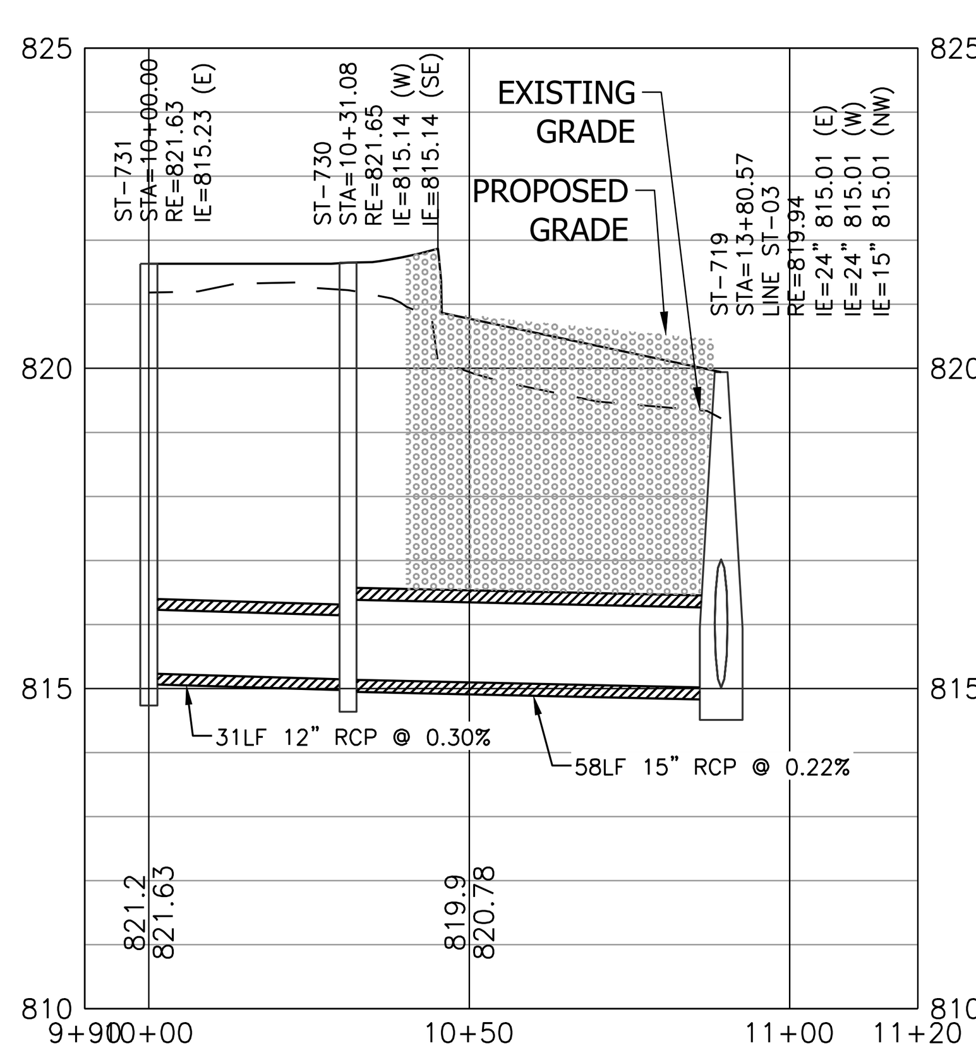
VERT. SCALE = 1"=3'



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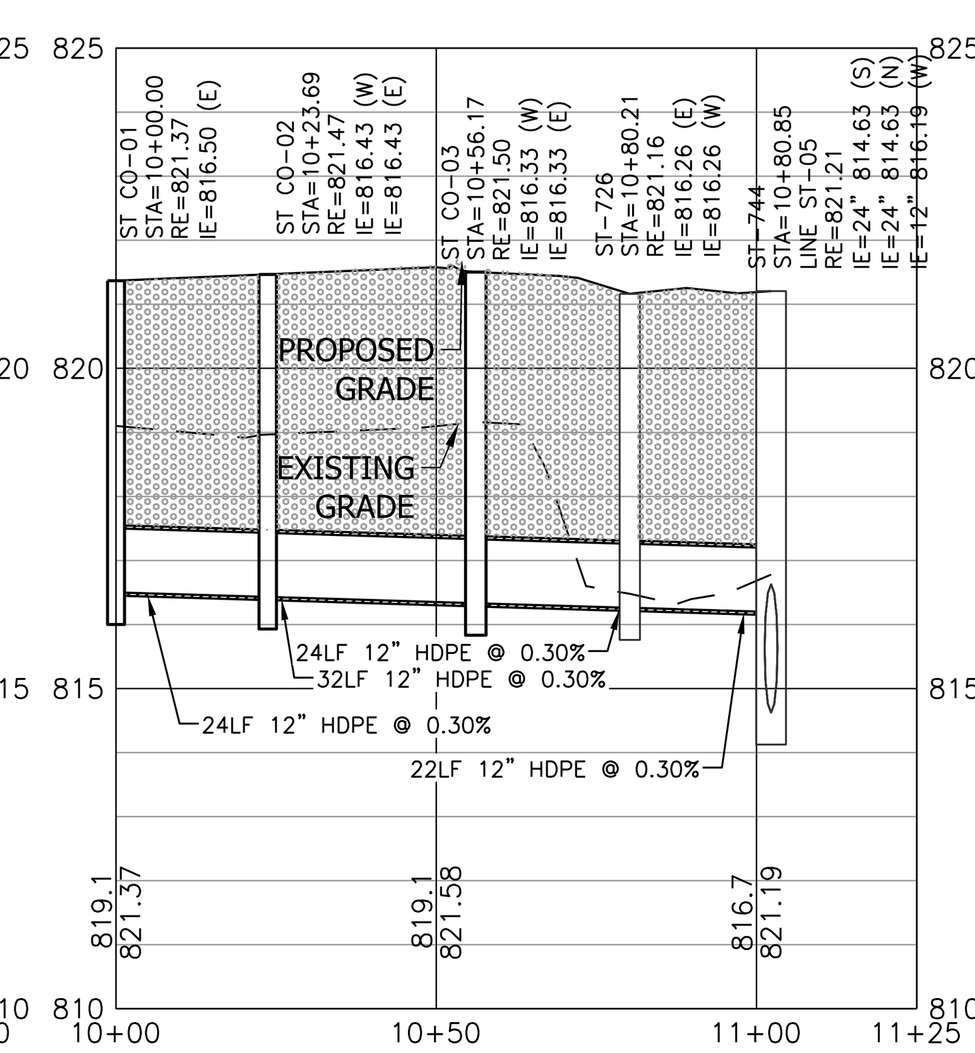
VERT. SCALE = 1"=3'



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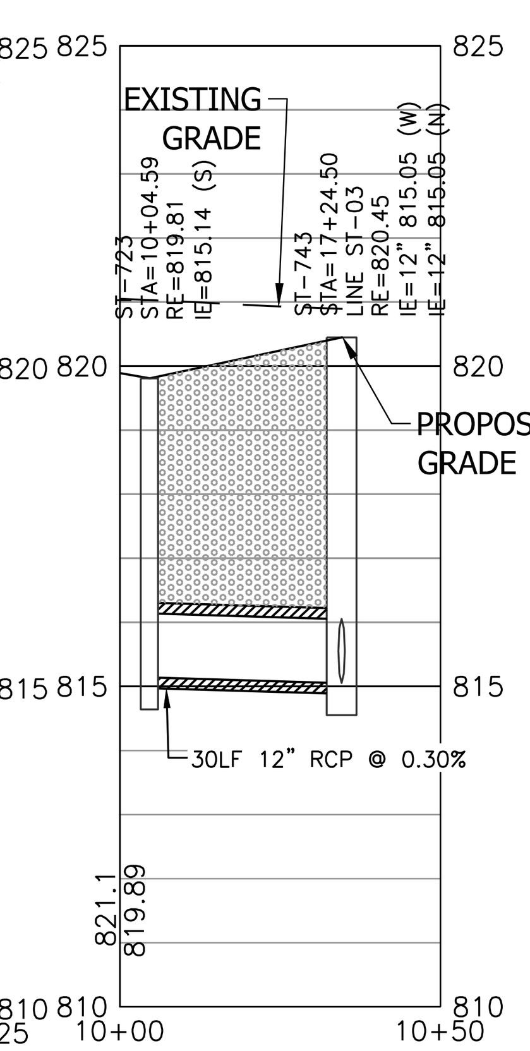
VERT. SCALE = 1"=3'



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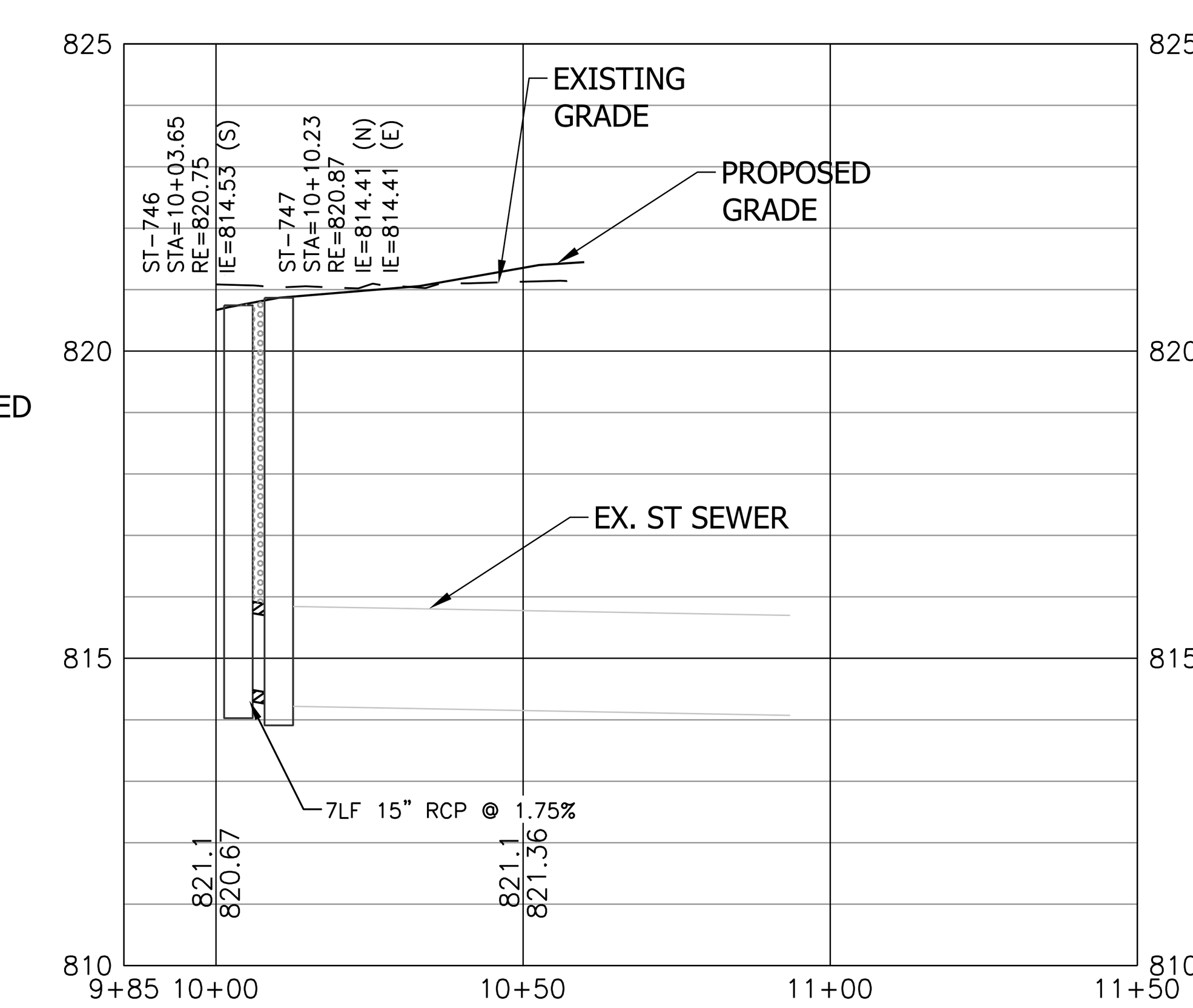

PROFILE - LINE ST-17
HOR SCALE = 1"=30'
VERT. SCALE = 1"=3'

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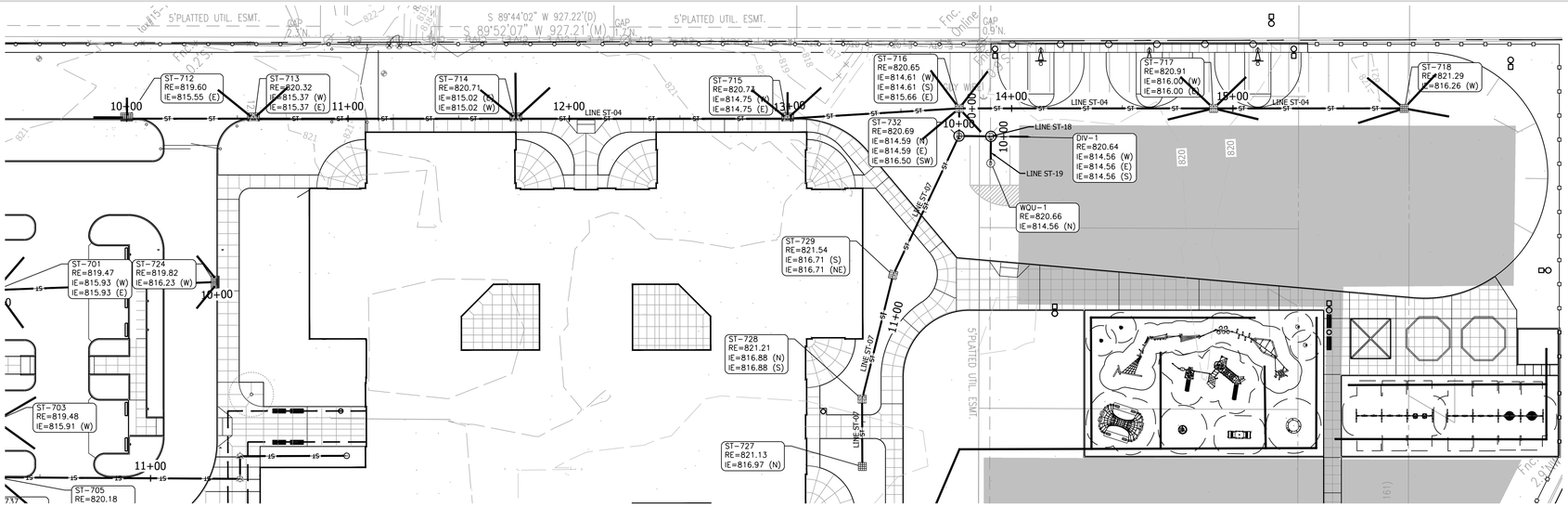
01/15/2023	KDK	JAD

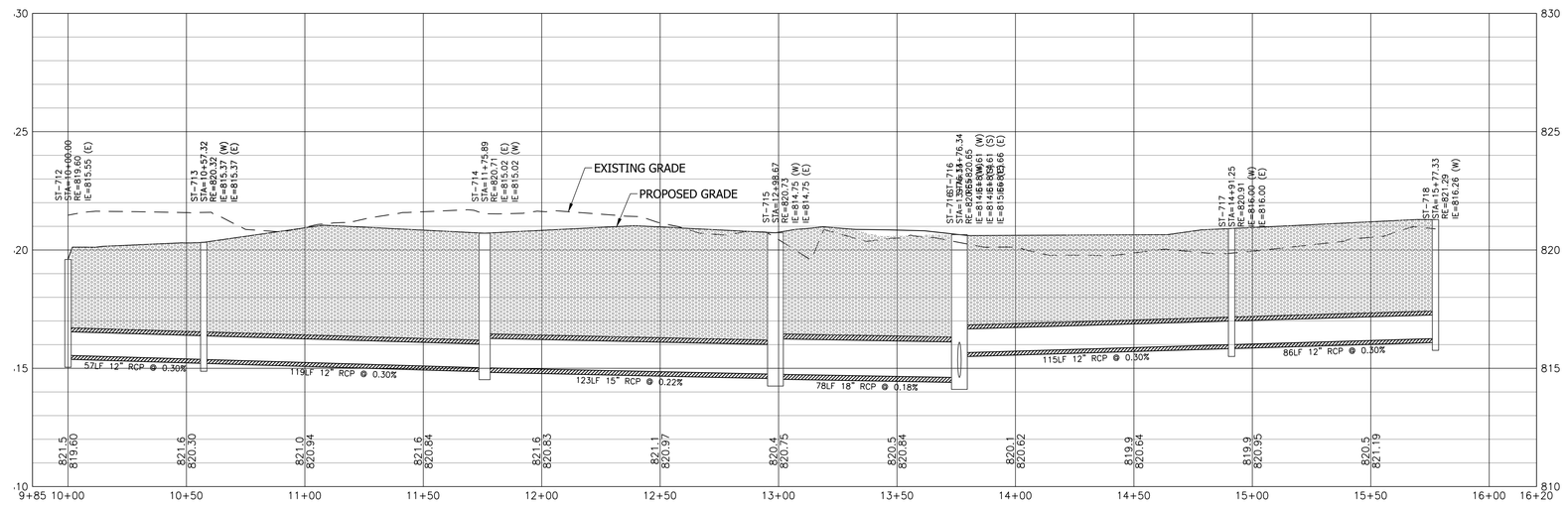
DRAWING TITLE:
STORM SEWER PLAN AND PROFILES

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C703

PROJECT NUMBER
2021119





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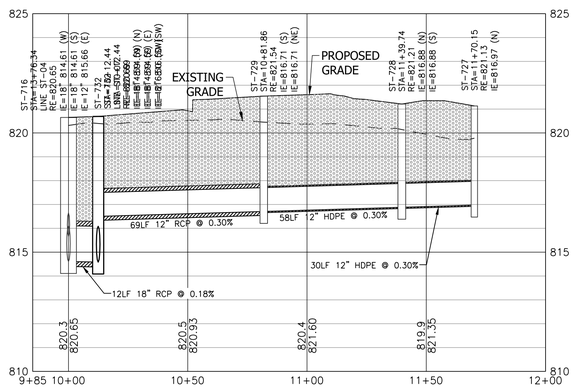

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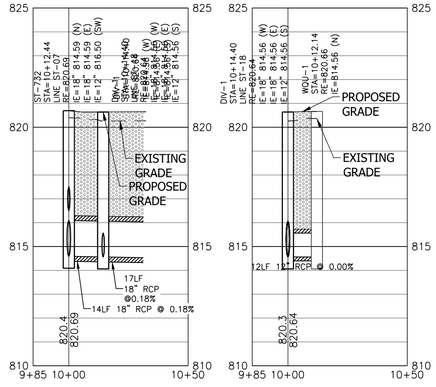

PROFILE - LINE ST-18
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PROFILE - LINE ST-19
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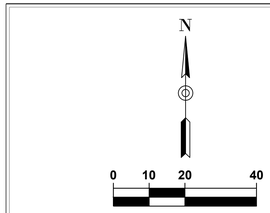

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CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C704

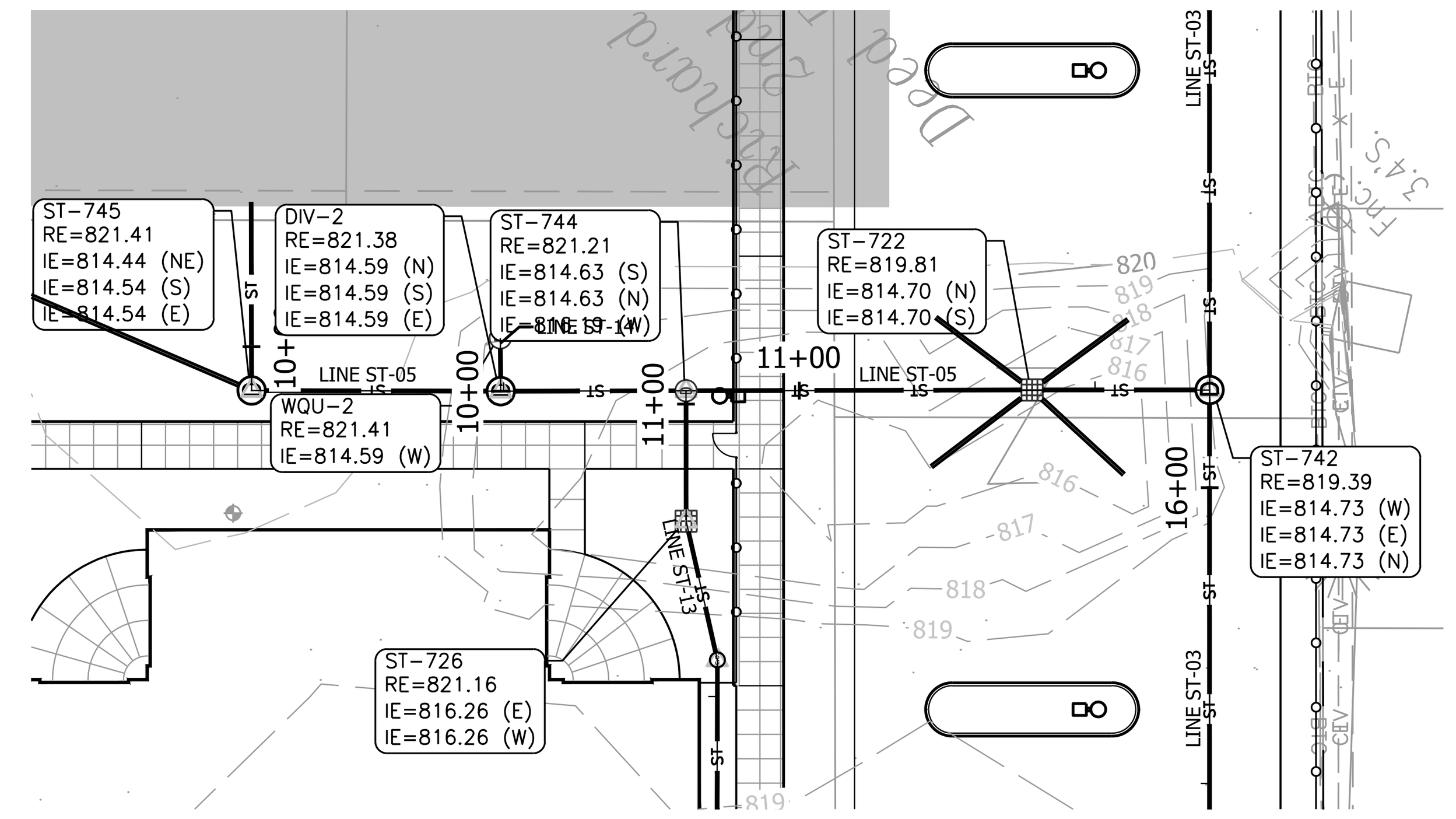
PROJECT NUMBER
2021119

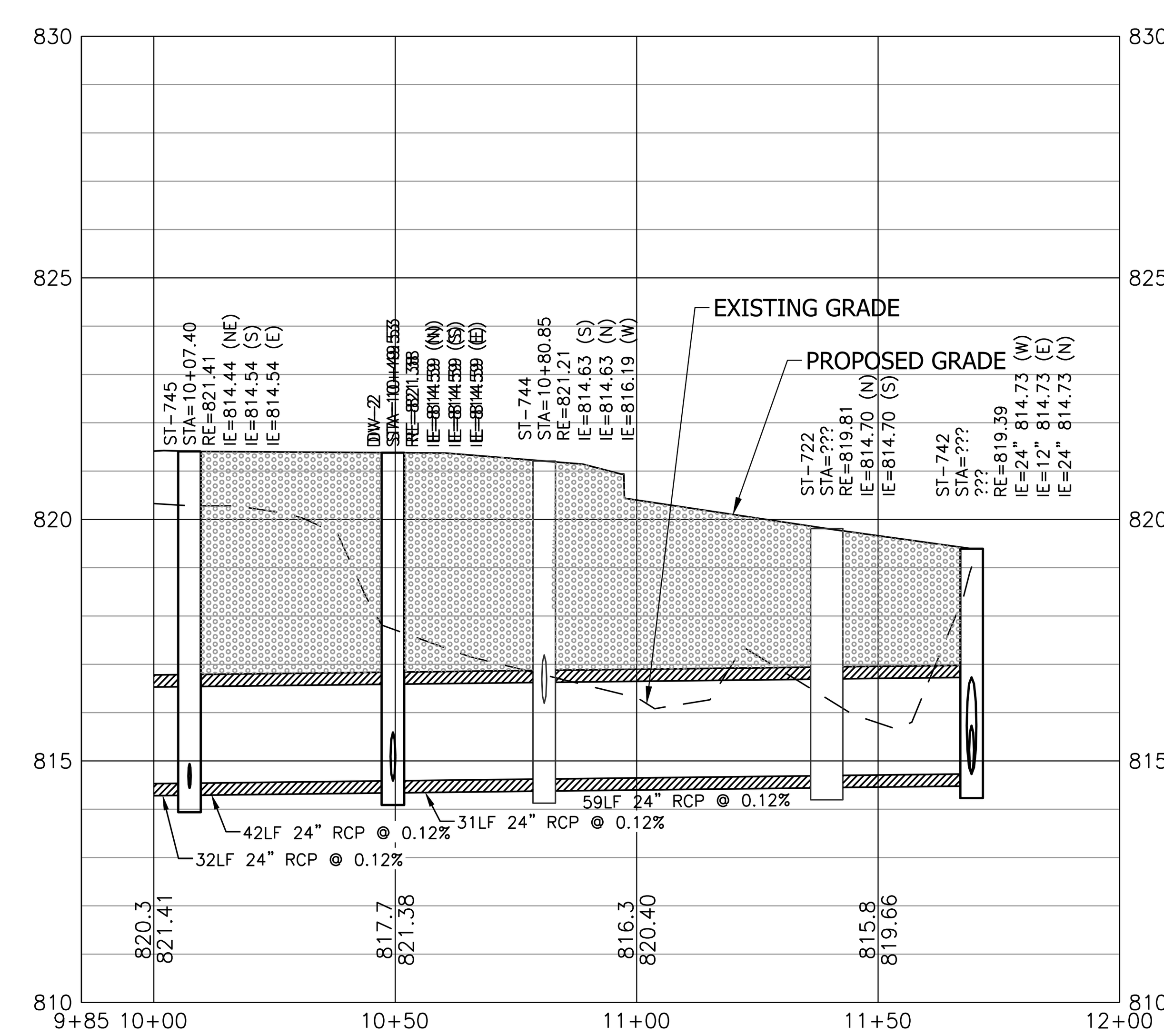
STORM STRUCTURE DATA TABLE

STRUCTURE NUMBER	STRUCTURE TYPE	TOP OF CASTING	INVERT (DIRECTION)	PIPE SLOPE
DIV-1	TYPE H MH DIVERSION STRUCTURE WEIR WALL TOP = 815.20	RIM = 820.64	INV. 18" IN = 814.56 (W) INV. 18" OUT = 814.56 (E) INV. 12" OUT = 814.56 (S)	0.18% 0.18% 0.00%
DIV-2	TYPE H MH DIVERSION STRUCTURE WEIR WALL TOP = 815.70	RIM = 821.38	INV. 24" IN = 814.59 (S) INV. 24" OUT = 814.59 (N) INV. 12" OUT = 814.59 (E)	0.12% 0.12% 0.00%
ST-701	TYPE A INLET	RIM = 819.35	INV. 12" IN = 815.93 (E) INV. 12" OUT = 815.93 (W)	0.30% 0.30%
ST-702	TYPE A INLET	RIM = 819.35	INV. 12" OUT = 816.02 (E)	0.30%
ST-703	INLET TYPE A	RIM = 819.48	INV. 12" OUT = 815.91 (W)	0.30%
ST-704	TYPE A INLET	RIM = 819.28	INV. 12" OUT = 815.80 (E)	0.30%
ST-705	CURB INLET TYPE A	RIM = 820.29	INV. 8" IN = 816.92 (E) INV. 12" OUT = 815.87 (W)	0.40% 0.30%
ST-706	TYPE A INLET	RIM = 819.46	INV. 12" OUT = 815.68 (E)	0.30%
ST-707	72" DIA ST MH W/ INLET GRATE	RIM = 819.67	INV. 24" IN = 815.48 (E) INV. 24" OUT = 815.48 (W)	0.12% 0.12%
ST-708	TYPE A INLET	RIM = 819.42	INV. 12" OUT = 815.53 (E)	0.30%
ST-709	TYPE H MH W/ CURB INLET FRAME & GRATE	RIM = 820.02	INV. 12" IN = 815.34 (W) INV. 24" IN = 815.34 (N) INV. 24" OUT = 815.34 (E)	0.30% 0.12% 0.12%
ST-709 A	CURB INLET TYPE A	RIM = 819.13	INV. 12" OUT = 815.66 (S)	0.30%
ST-709B	CURB INLET TYPE A	RIM = 819.14	INV. 12" IN = 815.59 (N) INV. 12" OUT = 815.59 (E)	0.30% 0.30%
ST-710	TYPE H MH W/ CURB INLET FRAME & GRATE	RIM = 820.10	INV. 24" IN = 815.19 (W) INV. 24" OUT = 815.19 (E)	0.12% 0.12%
ST-711	CURB INLET TYPE A	RIM = 819.60	INV. 12" OUT = 816.17 (S)	0.30%
ST-712	CURB INLET TYPE A	RIM = 819.60	INV. 12" OUT = 815.55 (E)	0.30%
ST-713	CURB INLET TYPE A	RIM = 820.32	INV. 12" IN = 815.37 (W) INV. 12" OUT = 815.37 (E)	0.30% 0.30%
ST-714	CURB INLET TYPE F	RIM = 820.71	INV. 12" IN = 815.02 (W) INV. 15" OUT = 815.02 (E)	0.30% 0.22%
ST-715	CURB INLET TYPE F	RIM = 820.73	INV. 15" IN = 814.75 (W) INV. 18" OUT = 814.75 (E)	0.22% 0.18%
ST-716	INLET TYPE M	RIM = 820.65	INV. 18" IN = 814.61 (W) INV. 12" IN = 815.66 (E) INV. 18" OUT = 814.61 (S)	0.18% 0.30% 0.18%
ST-717	TYPE A INLET	RIM = 820.91	INV. 12" IN = 816.00 (E) INV. 12" OUT = 816.00 (W)	0.30% 0.30%
ST-718	TYPE A INLET	RIM = 821.29	INV. 12" OUT = 816.26 (W)	0.30%
ST-719	TYPE H MH W/ CURB INLET CASTING	RIM = 820.44	INV. 24" IN = 815.01 (W) INV. 15" IN = 815.01 (NW) INV. 24" OUT = 815.01 (E)	0.12% 0.22% 0.12%
ST-720	TYPE A INLET	RIM = 821.24	INV. 12" IN = 817.89 (SW) INV. 12" OUT = 816.10 (SE)	0.30% 0.30%
ST-721	INLET TYPE M	RIM = 819.81	INV. 12" IN = 815.80 (NW) INV. 24" OUT = 814.90 (S)	0.30% 0.12%
ST-722	INLET TYPE M W/ INLET GRATE	RIM = 819.81	INV. 24" IN = 814.70 (S) INV. 24" OUT = 814.70 (N)	0.12% 0.12%
ST-723	TYPE A INLET	RIM = 819.81	INV. 12" OUT = 815.14 (S)	0.30%
ST-724	CURB INLET TYPE A	RIM = 819.82	INV. 12" OUT = 816.23 (W)	0.30%
ST-725	TYPE A INLET	RIM = 821.84	INV. 12" OUT = 818.00 (NE)	0.30%
ST-726	TYPE A INLET	RIM = 821.16	INV. 12" IN = 816.26 (W) INV. 12" OUT = 816.26 (E)	0.30% 0.30%
ST-727	TYPE A INLET	RIM = 821.13	INV. 12" OUT = 816.97 (N)	0.30%
ST-728	TYPE A INLET	RIM = 821.21	INV. 12" IN = 816.88 (S) INV. 12" OUT = 816.88 (N)	0.30% 0.30%
ST-729	TYPE A INLET	RIM = 821.54	INV. 12" IN = 816.71 (S) INV. 12" OUT = 816.71 (NE)	0.30% 0.30%
ST-730	TYPE A INLET W/ SOLID CASTING	RIM = 821.65	INV. 12" IN = 815.14 (W) INV. 15" OUT = 815.14 (SE)	0.30% 0.22%
ST-731	TYPE A INLET W/ SOLID CASTING	RIM = 821.63	INV. 12" OUT = 815.23 (E)	0.30%
ST-732	TYPE H MH	RIM = 820.69	INV. 18" IN = 814.59 (N) INV. 12" IN = 816.50 (SW) INV. 18" OUT = 814.59 (E)	0.18% 0.30% 0.18%
ST-733	TYPE C MH	RIM = 820.07	INV. 12" IN = 815.84 (E) INV. 15" OUT = 815.84 (S)	0.30% 0.22%

STORM STRUCTURE DATA TABLE

STRUCTURE NUMBER	STRUCTURE TYPE	TOP OF CASTING	INVERT (DIRECTION)	PIPE SLOPE
ST-734	TYPE C MH	RIM = 820.19	INV. 12" IN = 815.93 (W) INV. 12" IN = 815.93 (N) INV. 12" OUT = 815.93 (S)	0.30% 0.30% 0.30%
ST-735	TYPE H MH	RIM = 820.09	INV. 15" IN = 815.71 (N) INV. 12" IN = 815.82 (E) INV. 18" OUT = 815.71 (S)	0.22% 0.30% 0.18%
ST-736	TYPE C MH	RIM = 820.03	INV. 12" IN = 815.71 (N) INV. 12" IN = 815.71 (W) INV. 15" OUT = 815.71 (S)	0.30% 0.30% 0.22%
ST-737	TYPE H MH	RIM = 820.20	INV. 18" IN = 815.66 (N) INV. 12" IN = 815.78 (E) INV. 24" OUT = 815.66 (S)	0.18% 0.30% 0.12%
ST-738	TYPE C MH	RIM = 820.21	INV. 15" IN = 815.59 (N) INV. 12" IN = 815.59 (W) INV. 18" OUT = 815.59 (S)	0.22% 0.30% 0.18%
ST-739	TYPE H MH	RIM = 820.43	INV. 24" IN = 815.51 (N) INV. 6" IN = 815.51 (E) INV. 24" OUT = 815.51 (W)	0.12% 1.00% 0.12%
ST-740	TYPE H MH	RIM = 819.79	INV. 12" IN = 815.44 (W) INV. 24" IN = 815.44 (E) INV. 18" IN = 815.44 (N) INV. 24" OUT = 815.44 (S)	0.30% 0.12% 0.18% 0.12%
ST-741	TYPE H MH	RIM = 819.34	INV. 24" IN = 814.86 (N) INV. 24" IN = 814.86 (W) INV. 24" OUT = 814.86 (E)	0.12% 0.12% 0.12%
ST-742	TYPE H MH	RIM = 819.39	INV. 24" IN = 814.73 (W) INV. 12" IN = 814.73 (E) INV. 24" OUT = 814.73 (N)	0.12% 0.30% 0.12%
ST-743	TYPE H MH	RIM = 820.45	INV. 12" IN = 815.05 (N) INV. 12" OUT = 815.05 (W)	0.30% 0.30%
ST-744	TYPE H MH	RIM = 821.21	INV. 24" IN = 814.63 (S) INV. 12" IN = 816.19 (W) INV. 24" OUT = 814.63 (N)	0.12% 0.30% 0.12%
ST-745	TYPE H MH	RIM = 821.41	INV. 24" IN = 814.54 (S) INV. 6" OUT = 814.44 (NE) INV. 24" OUT = 814.54 (E)	0.12% 1.00% 0.12%
ST-746	TYPE C MH	RIM = 820.75	INV. 15" OUT = 814.53 (S)	1.75%
ST-747	TYPE H MH DOGHOUSE OVER EX STORM OUTFALL	RIM = 820.87	INV. 15" IN = 814.41 (N) INV. 15" OUT = 814.41 (E)	1.75% 0.18%
ST CO-01	BLDG. C.O. BY OTHERS	RIM = 821.37	INV. 12" OUT = 816.50 (E)	0.30%
ST CO-02	STORM C.O.	RIM = 821.47	INV. 12" IN = 816.43 (W) INV. 12" OUT = 816.43 (E)	0.30% 0.30%
ST CO-03	STORM C.O.	RIM = 821.50	INV. 12" IN = 816.33 (W) INV. 12" OUT = 816.33 (E)	0.30% 0.30%
ST CO-04	ST CO	RIM = 821.58	INV. 8" IN = 817.37 (N) INV. 8" OUT = 817.37 (W)	0.40% 0.40%
ST CO-05	ST CO	RIM = 821.46	INV. 8" IN = 817.41 (E) INV. 8" OUT = 817.41 (S)	0.40% 0.40%
ST CO-06	ST CO	RIM = 821.65	INV. 8" OUT = 817.60 (W)	0.40%
WQU-1	WATER QUALITY UNIT AQUA-SWIRL X-5	RIM = 820.66	INV. 12" IN = 814.56 (N)	0.00%
WQU-2	WATER QUALITY UNIT AQUA-SWIRL XC-7	RIM = 821.41	INV. 12" IN = 814.59 (W)	0.00%





PROFILE - LINE ST-05
HOR SCALE = 1"=30'
VERT. SCALE = 1"=3'

0 10 20 40

STORM SEWER PLAN AND PROFILE GENERAL NOTES

1. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
2. IN ADDITION, EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
3. ALL STRUCTURES SHALL HAVE CASTINGS, JOINTS, LIFT RINGS, STEPS AND PIPE CONNECTIONS WELL GROUTED, TROWELED SMOOTH AND BRUSH FINISHED.
4. ALL STRUCTURES (IE: MANHOLES, INLETS) SHALL HAVE POURED FLOW LINES AND BENCH WALLS. THE FLOW LINES AND BENCH WALLS SHALL BE TROWELED SMOOTH AND BRUSH FINISHED.
5. FIELD ADJUSTMENTS OF TOP OF CURB (TC) OF STRUCTURES MAY BE REQUIRED TO MEET FIELD CONDITIONS. ADJUSTMENTS EXCEEDING FIVE TENTHS (0.5) OF A FOOT MUST BE APPROVED BY THE ENGINEER TO DETERMINE THE INTEGRITY OF THE STRUCTURE, AT NO COST TO THE OWNER.
6. STORM STRUCTURES WITH INLET CASTINGS SHALL BE SET TO MAINTAIN A POSITIVE DRAINAGE FLOW INTO THE STRUCTURE.
7. STORM PIPE INVERTS AT OUTLET STRUCTURES (IE: END SECTIONS), AND PIPE LENGTHS MAY REQUIRE FIELD ADJUSTMENTS TO MEET ACTUAL FIELD CONDITIONS.
8. FULL DEPTH GRANULAR BACKFILL SHALL BE REQUIRED UNDER AND WITHIN (5) FEET OF ALL PAVED AREAS, INCLUDING CURBS, EDGE OF PAVEMENT, AND SIDEWALKS.
9. PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE END SECTIONS.
10. RIM ELEVATIONS (RE) SHALL INDICATE THE ELEVATION THAT WATER WOULD ENTER A STRUCTURE.
11. INVERT ELEVATION OF SUB-SURFACE DRAIN (SSD) AT STRUCTURE TO BE THREE (3) FEET BELOW RIM ELEVATION.
12. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
13. NO BLASTING SHALL BE PERFORMED ON THIS SITE.
14. NO SEISMIC VIBRATING OPERATIONS WILL OCCUR ON THIS SITE.
15. STRUCTURES DEEPER THAN 4' MUST BE ACCESSIBLE WITH STEPS.
16. DEBRIS GUARD TO BE INSTALLED ON ALL OPEN ENDED INLETS.
17. ALL STORM SEWER, INCLUDING SSD, SHALL BE CLEANED AND TELEVISED AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED.
18. REFER TO FISHERS STORM DETAILS FOR CASTING INFORMATION. (4)
19. WHERE CONNECTIONS ARE MADE TO EXISTING MANHOLES OR INLET STRUCTURES, THOSE STRUCTURES SHALL BE REHABILITATED OR REPLACED TO THOSE MINIMUM STANDARDS OUTLINED THE TOWN OF FISHERS STORMWATER SPECIFICATIONS MANUAL, LATEST EDITION. THE REHABILITATION SHALL INCLUDE THE INSTALLATION OF BENCH WALLS, AS WELL AS PRESCRIBED MEASURES TO ELIMINATE THE POTENTIAL FOR MIGRATION OF BACKFILL MATERIALS INTO THE STORMWATER SYSTEMS.
20. STRUCTURES RECEIVING SUB-SURFACE DRAIN (SSD) SHALL HAVE BOTH PORTS CORE DRILLED. T OR Y BLIND CONNECTIONS ARE NOT ALLOWED.

STORM-BRIXX UNDERGROUND DETENTION

CSO

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems.
The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract.
On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
4 — 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
STORM SEWER PLAN AND PROFILES

CERTIFIED BY:
DAVID A. LACH, REGISTERED PE 10000126, STATE OF INDIANA, PROFESSIONAL ENGINEER

DRAWING NUMBER
C705

PROJECT NUMBER
2021119

GENERAL NOTES

1. IT IS CUSTOMERS RESPONSIBILITY TO ENSURE THAT EACH PRODUCT IS FIT FOR ITS INTENDED PURPOSE AND THAT THE ACTUAL CONDITIONS ARE SUITABLE.
2. IT IS THE CUSTOMERS RESPONSIBILITY TO FOLLOW ACO, INC. INSTALLATION INSTRUCTIONS FOR EACH PRODUCT. SEEK ENGINEERING ADVICE FOR INSTALLATIONS NOT ILLUSTRATED IN THE INSTALLATION GUIDELINES.
3. FOR FURTHER PRODUCT INFORMATION, CUT SHEETS, SPECIFICATIONS AND INSTALLATION INSTRUCTIONS, PLEASE VISIT US AT OUR WEBSITE: **ACOSTORMBRIXX.US**

STORMBRIXX NOTES

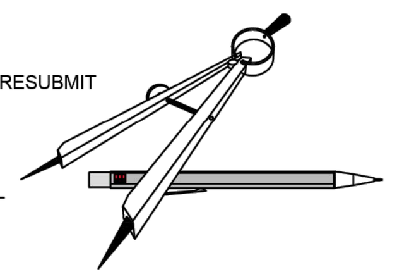
1. ALL FABRICATIONS TO BE COMPLETED BY INSTALLING CONTRACTOR. HE/SHE TO VERIFY THE ENTIRE SCOPE OF STORMBRIXX HD HAS BEEN PROVIDED FOR THIS PROJECT.
2. DIMENSIONS ARE FROM OUTSIDE TO OUTSIDE.
3. LAYOUT IS BASED ON CAD PLANS PROVIDED TO THE ACO, INC. TECHNICAL SERVICES DEPARTMENT.
4. THIS PLAN VIEW REPRESENT ONE OF TWO STORMBRIXX HD HALF LAYER ORIENTATIONS REQUIRED FOR THIS TANK. FOR COMPLETE, BRICK - BONDABLE INSTALLATION DRAWINGS, PLEASE REQUEST THIS SERVICE FROM THE ACO, INC. SALES DEPARTMENT.
5. THE NUMBER OF ACCESS/INSPECTION LOCATIONS DISPLAYED ARE RECOMMENDATIONS, AND MORE/LESS CAN BE ADDED WITH EASE VIA REVISION.
6. ACCESS UNITS OCCUPY A PROFILE EQUIVALENT TO HALF OF ON HALF MODULE AND ALLOW FOR DIRECT ACCESS TO UP 18" PIPE CONNECTIONS.
7. ACCESS PLATES OCCUPY THE EQUIVALENT PROFILE OF HALF OF ONE HALF MODULE AND MUST BE SURROUNDED BY BRICK BONDED MODULES. ACCESS PLATES CAN BE PLACED ANYWHERE BESIDES THE EDGE OF THE SYSTEM.
8. HOLDING CAPACITY OF ONE FULLY ASSEMBLED STORMBRIXX HD MODULE = 14.73 CF

INSTALLATION NOTES

1. ALL FABRICATIONS TO BE COMPLETED BY INSTALLING CONTRACTOR.
2. EXCAVATE AWAY FROM TANK'S PROFILE PER OSHA STANDARDS.
3. UP TO 15" PIPE CONNECTIONS CAN BE CORED DIRECTLY INTO STORMBRIXX HD SIDE PANELS.
4. USE LAYER CONNECTORS TO RESTRICT SHEARING MOVEMENT BETWEEN BRICK-BONDED LAYERS/HALF LAYERS.
5. USE LAYER CONNECTORS TO ADHERE ACCESS UNITS TO BRICK-BONDED HALF MODULES.
6. A VOID AREA EQUIVALENT TO HALF OF ONE HALF MODULE IS PRESENT UNDER EACH ACCESS PLATE.

ALL DRAWINGS ARE AS ACCURATE AS THE INFORMATION SUPPLIED. ALL REASONABLE CARE HAS BEEN TAKEN IN COMPILING THE INFORMATION WITHIN. PLEASE REVIEW THIS INFORMATION FOR ACCURACY.

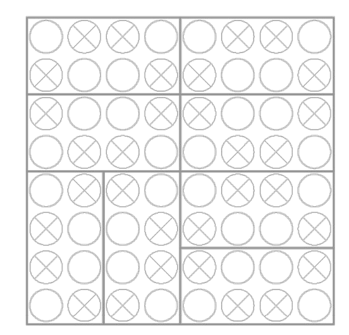
☐ APPROVED ☐ REVISE AND RESUBMIT
☐ APPROVED AS NOTED ☐ REJECTED



SIGNED: ______________________

DATE: __________

COMMENTS:



ALWAYS ARRANGE THE SAME 4 PILLARS IN A SQUARE

SHEET INDEX

SHEET NO.	DESCRIPTION
1	NOTES
2	TRENCH DRAIN LAYOUT I
3	TRENCH DRAIN LAYOUT II
4	TRENCH DRAIN LAYOUT III

FISHERS ELEMENTARY FISHERS, IN		NOTES			
DRAWN BY: JJ	EMAIL: Jason.Jonke@aco.com	SYSTEM HD LAYER(S) 1			
DATE 9/27/23	CHECKED BY: -	REVISIONS			
SHEET NO. SHEET 1 OF 4	DESIGN SERV. NO. 1231128C REV. 1	NO.	DESCRIPTION	DATE	BY
		1	CORRECTED SD REFERENCE	09-28-23	JJ
		2			
		3			

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SOUTHEAST SALES OFFICE: 4211 PLEASANT RD. FORT MILL, SC 29708 Tel. (800)-543-4764 Fax (803)-802-1063
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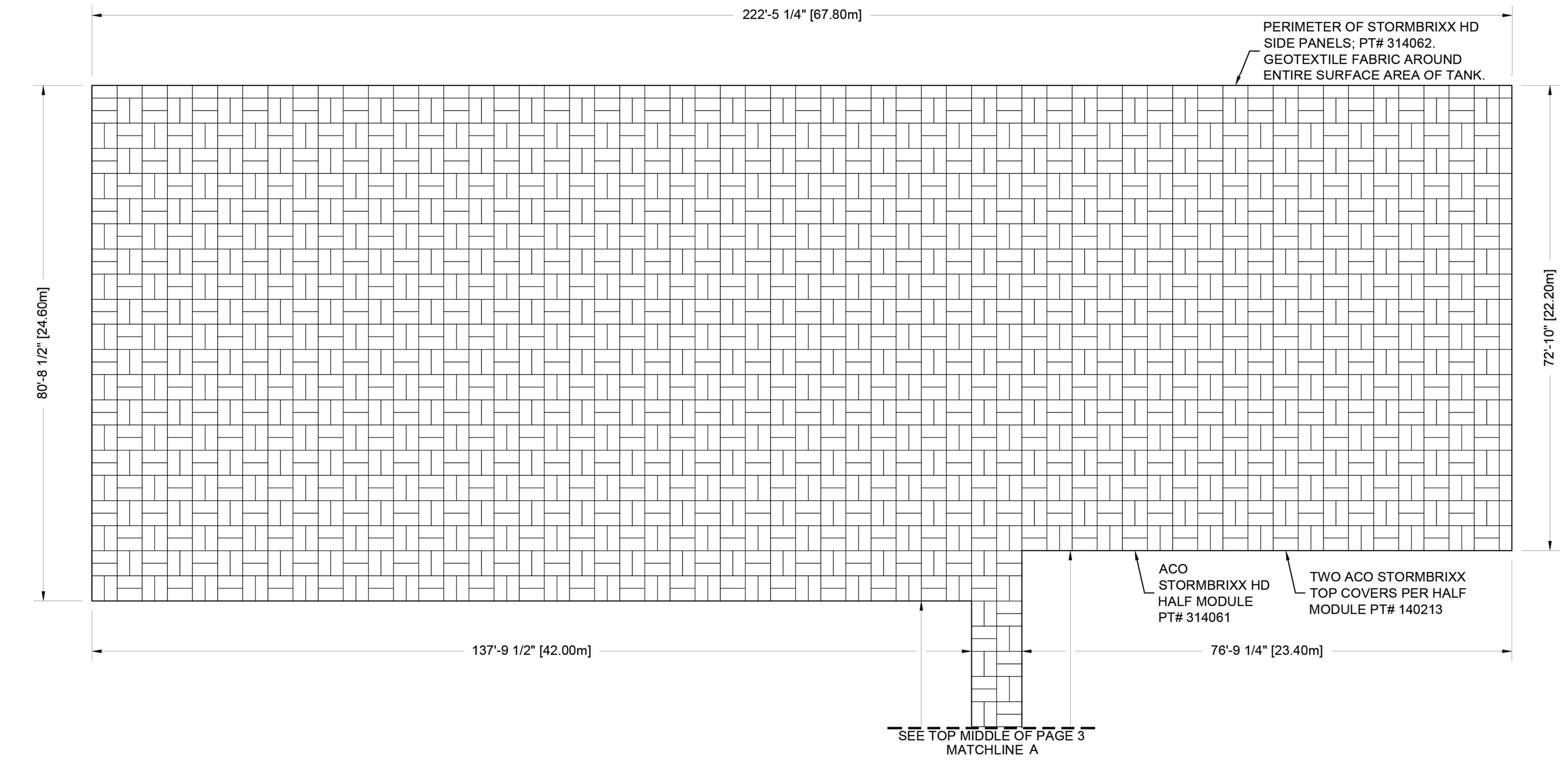
ACO STORMBRIXX HD TANK
TANK STRUCTURAL VOLUME 100,033 FT³
TOTAL HOLDING VOLUME 95,031 FT³
NUMBER OF LAYERS = 1 (2FT)



FISHERS ELEMENTARY FISHERS, IN		STORMBRIXX PLAN VIEW I			
DRAWN BY: JJ	EMAIL: Jason.Jonke@aco.com	SYSTEM HD LAYER(S) 1			
DATE 9/27/23	CHECKED BY: -	REVISIONS			
SHEET NO. SHEET 2 OF 4	DESIGN SERV. NO. 1231128C REV. 1	NO.	DESCRIPTION	DATE	BY
		1	CORRECTED SD REFERENCE	09-28-23	JJ
		2			
		3			

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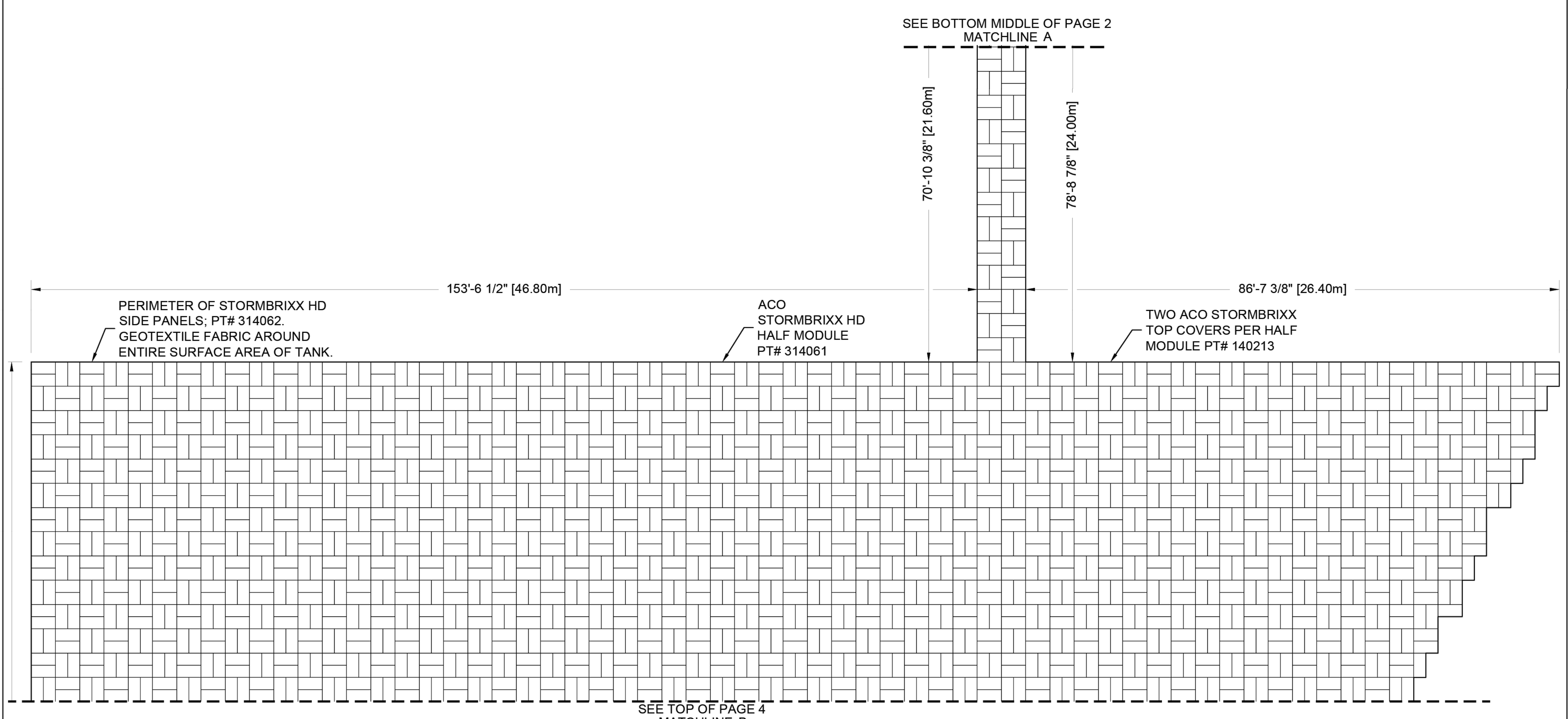

FISHERS ELEMENTARY FISHERS, IN		STORMBRIXX PLAN VIEW II			
DRAWN BY: JJ	EMAIL: Jason.Jonke@aco.com	SYSTEM HD LAYER(S) 1			
DATE 9/27/23	CHECKED BY: -	REVISIONS			
SHEET NO. SHEET 3 OF 4	DESIGN SERV. NO. 1231128C REV. 1	NO.	DESCRIPTION	DATE	BY
		1	CORRECTED SD REFERENCE	09-28-23	JJ
		2			
		3			

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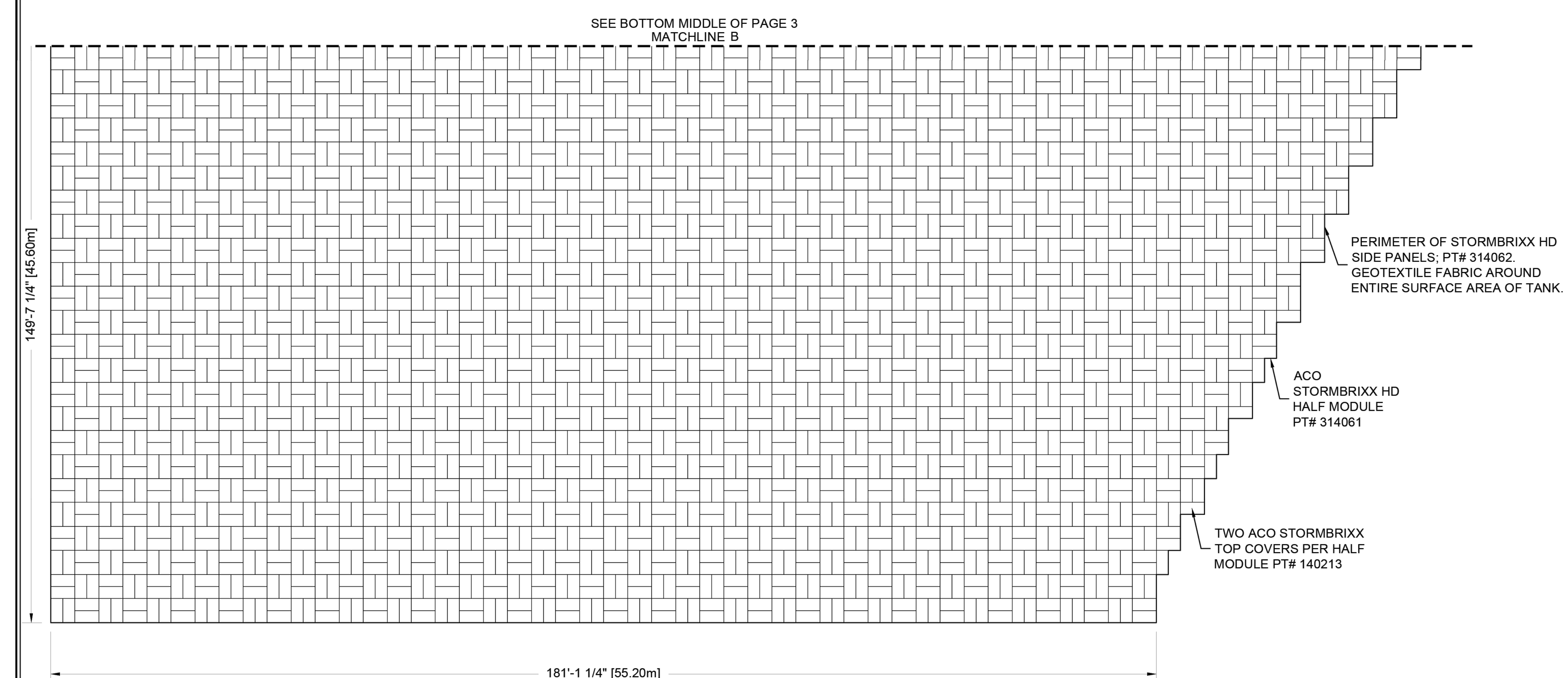

FISHERS ELEMENTARY FISHERS, IN		STORMBRIXX PLAN VIEW III			
DRAWN BY: JJ	EMAIL: Jason.Jonke@aco.com	SYSTEM HD LAYER(S) 1			
DATE 9/27/23	CHECKED BY: -	REVISIONS			
SHEET NO. SHEET 4 OF 4	DESIGN SERV. NO. 1231128C REV. 1	NO.	DESCRIPTION	DATE	BY
		1	CORRECTED SD REFERENCE	09-28-23	JJ
		2			
		3			

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11442 LANTERN RD, FISHERS, IN 46038

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REVISIONS:

4 — 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

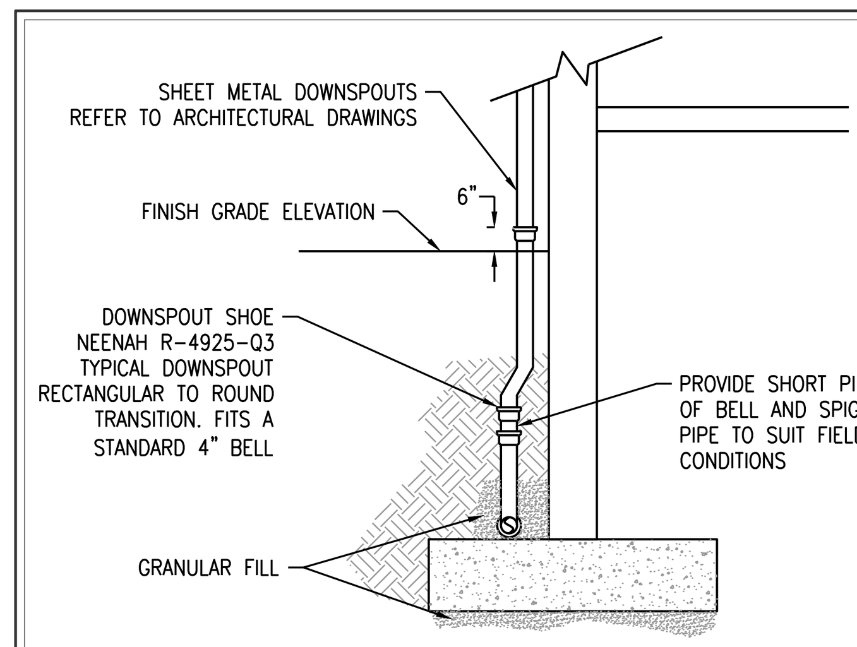
DRAWING TITLE:
STORM SEWER DETAILS

CERTIFIED BY:

DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

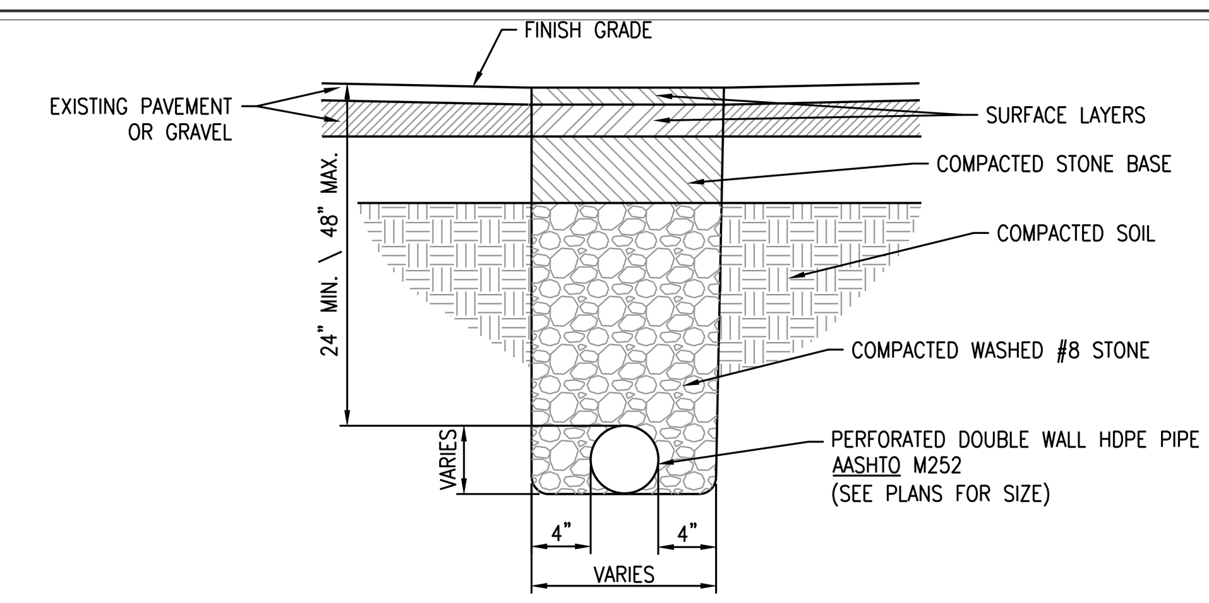
DRAWING NUMBER
C706

PROJECT NUMBER
2021119


SHEET METAL DOWNSPOUTS - REFER TO ARCHITECTURAL DRAWINGS
FINISH GRADE ELEVATION
6"
DOWNSPOUT SHOE NEENAH R-4925-03 TYPICAL DOWNSPOUT RECTANGULAR TO ROUND TRANSITION. FITS A STANDARD 4" BELL
PROVIDE SHORT PIECE OF BELL AND SPIGOT PIPE TO SUIT FIELD CONDITIONS
GRANULAR FILL

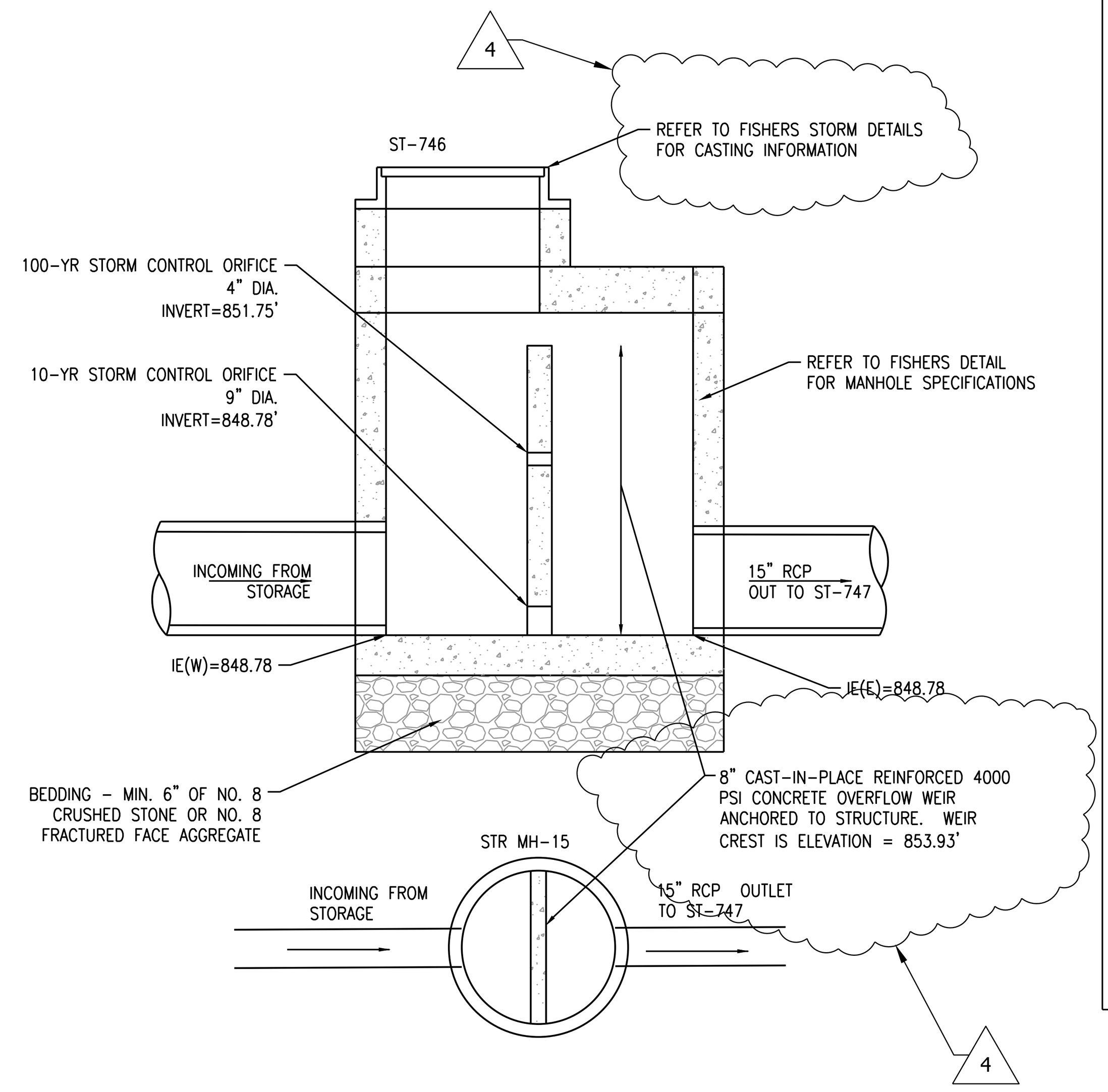
DOWNSPOUT BOOT DETAIL

NOT TO SCALE



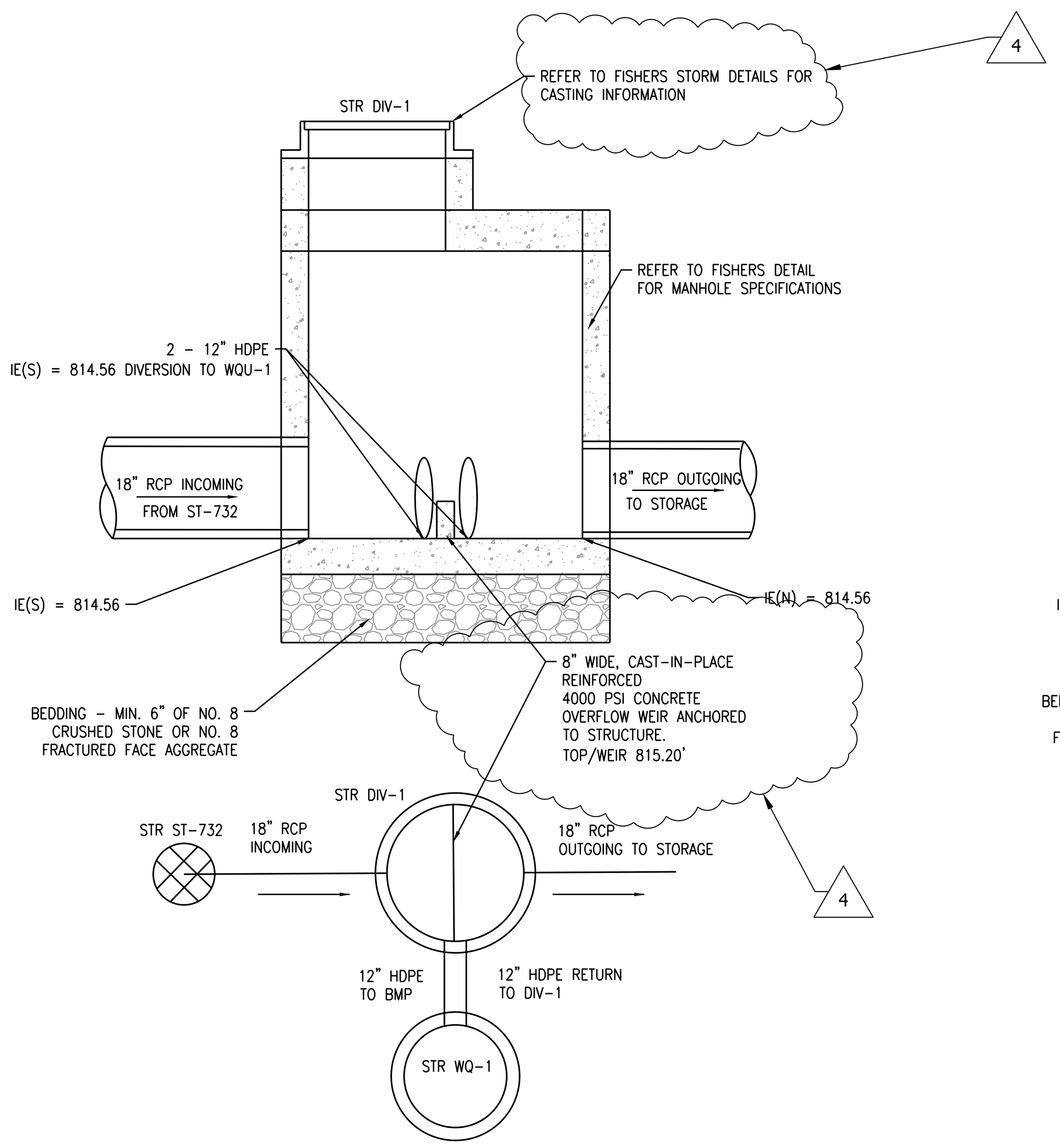
PERFORATED UNDERDRAIN (SSD) UNDER PAVEMENT OR GRAVEL AREA

NOT TO SCALE


4
REFER TO FISHERS STORM DETAILS FOR CASTING INFORMATION
ST-746
100-YR STORM CONTROL ORIFICE 4" DIA. INVERT=851.75'
10-YR STORM CONTROL ORIFICE 9" DIA. INVERT=848.78'
REFER TO FISHERS DETAIL FOR MANHOLE SPECIFICATIONS
INCOMING FROM STORAGE
15" RCP OUT TO ST-747
IE(W)=848.78
IE(E)=848.78
BEDDING - MIN. 6" OF NO. 8 CRUSHED STONE OR NO. 8 FRACTURED FACE AGGREGATE
8" CAST-IN-PLACE REINFORCED 4000 PSI CONCRETE OVERFLOW WEIR ANCHORED TO STRUCTURE. WEIR CREST IS ELEVATION = 853.93'
STR MH-15
INCOMING FROM STORAGE
15" RCP OUTLET TO ST-747
4

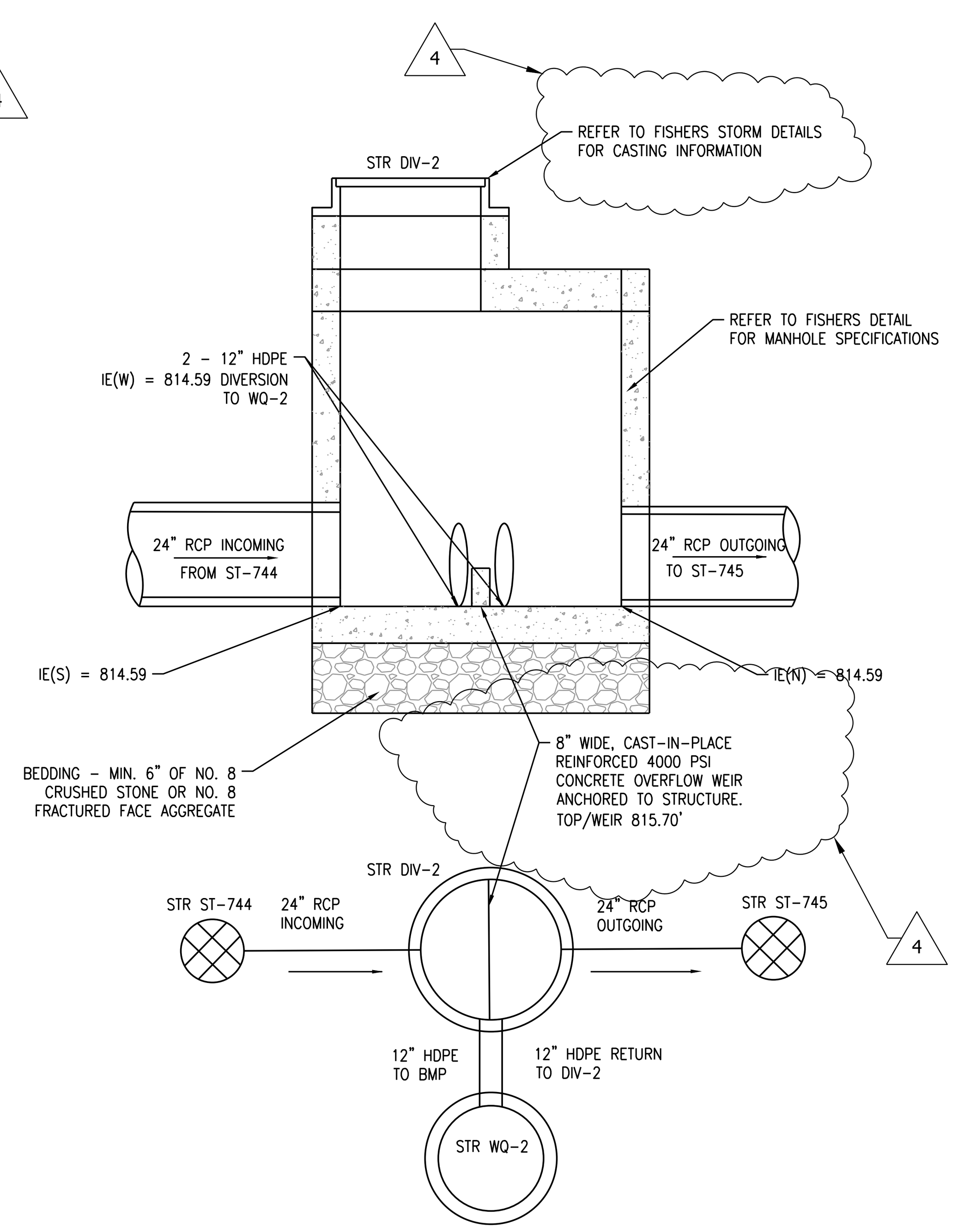
UNDERGROUND DETENTION OUTLET CONTROL STRUCTURE

NOT TO SCALE


REFER TO FISHERS STORM DETAILS FOR CASTING INFORMATION
4
STR DIV-1
REFER TO FISHERS DETAIL FOR MANHOLE SPECIFICATIONS
2 - 12" HDPE IE(S) = 814.56 DIVERSION TO WQU-1
18" RCP INCOMING FROM ST-732
18" RCP OUTGOING TO STORAGE
IE(S) = 814.56
IE(N) = 814.56
BEDDING - MIN. 6" OF NO. 8 CRUSHED STONE OR NO. 8 FRACTURED FACE AGGREGATE
8" WIDE, CAST-IN-PLACE REINFORCED 4000 PSI CONCRETE OVERFLOW WEIR ANCHORED TO STRUCTURE. TOP/WEIR 815.20'
STR DIV-1
STR ST-732
18" RCP INCOMING
18" RCP OUTGOING TO STORAGE
4
12" HDPE TO BMP
12" HDPE RETURN TO DIV-1
STR WQ-1

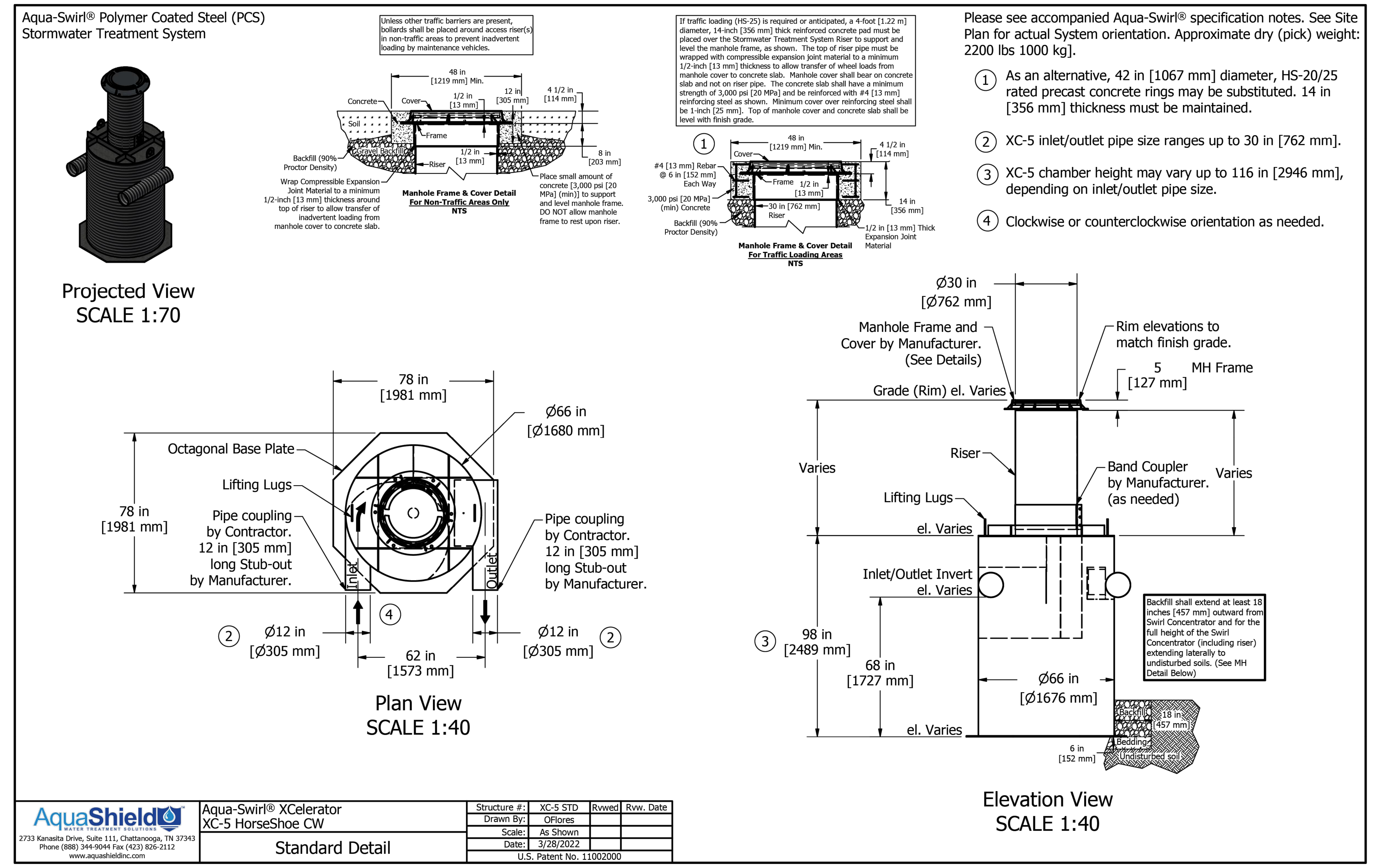
STORM SEWER MANHOLE WITH DIVERSION WEIR (STR DIV-1)

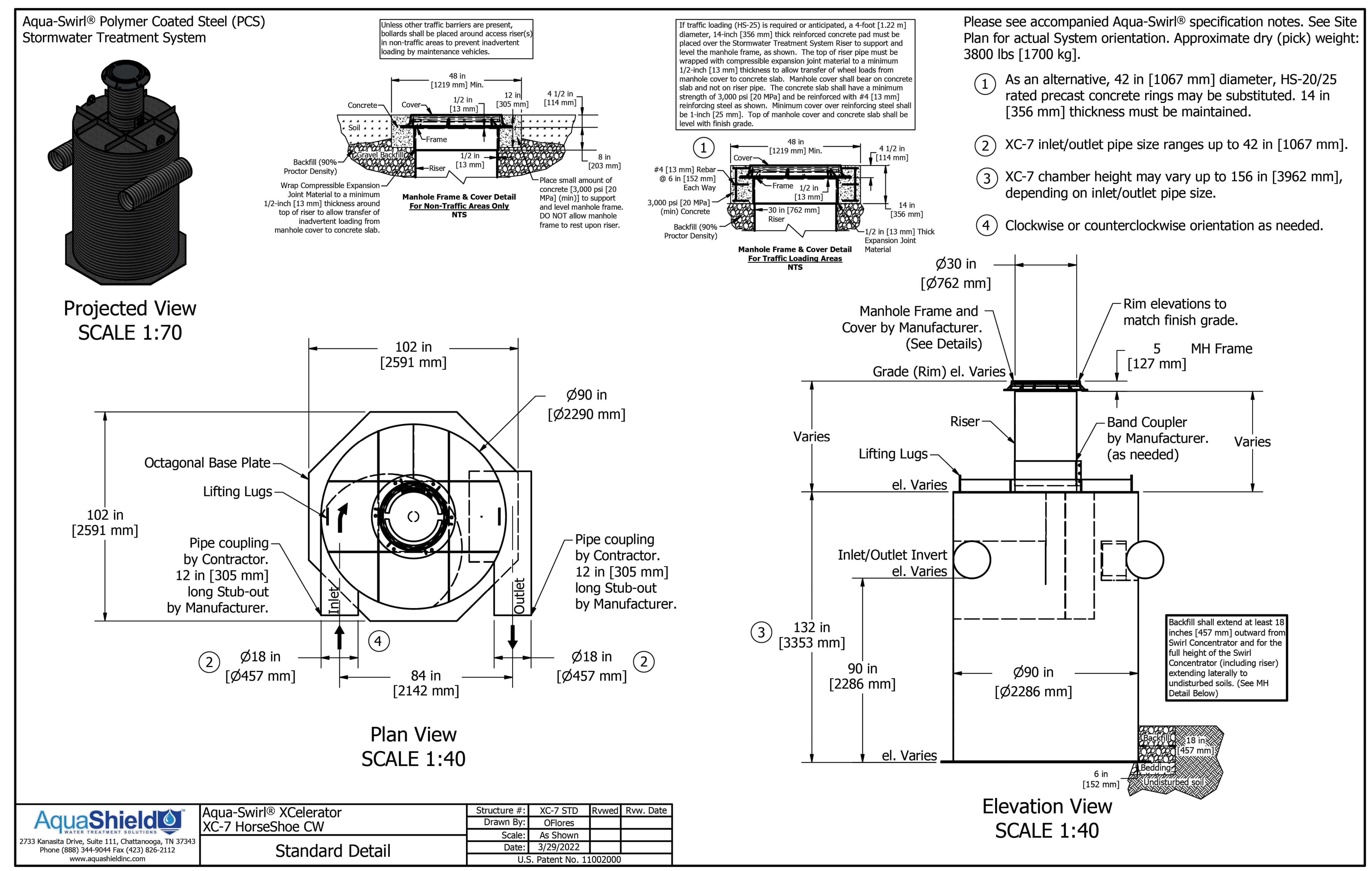
NOT TO SCALE


4
REFER TO FISHERS STORM DETAILS FOR CASTING INFORMATION
STR DIV-2
REFER TO FISHERS DETAIL FOR MANHOLE SPECIFICATIONS
2 - 12" HDPE IE(W) = 814.59 DIVERSION TO WQ-2
24" RCP INCOMING FROM ST-744
24" RCP OUTGOING TO ST-745
IE(S) = 814.59
IE(N) = 814.59
BEDDING - MIN. 6" OF NO. 8 CRUSHED STONE OR NO. 8 FRACTURED FACE AGGREGATE
8" WIDE, CAST-IN-PLACE REINFORCED 4000 PSI CONCRETE OVERFLOW WEIR ANCHORED TO STRUCTURE. TOP/WEIR 815.70'
STR DIV-2
STR ST-744
24" RCP INCOMING
24" RCP OUTGOING
STR ST-745
4
12" HDPE TO BMP
12" HDPE RETURN TO DIV-2
STR WQ-2

STORM SEWER MANHOLE WITH DIVERSION WEIR (STR DIV-2)

NOT TO SCALE


Aqua-Swirl® Polymer Coated Steel (PCS) Stormwater Treatment System
Unless other traffic barriers are present, bollards shall be placed around access riser(s) in non-traffic areas to prevent inadvertent loading by maintenance vehicles.
Manhole Frame & Cover Detail For Non-Traffic Areas Only NTS
Manhole Frame & Cover Detail For Traffic Loading Areas NTS
Please see accompanied Aqua-Swirl® specification notes. See Site Plan for actual System orientation. Approximate dry (pick) weight: 2200 lbs 1000 kg].
1 As an alternative, 42 in [1067 mm] diameter, HS-20/25 rated precast concrete rings may be substituted. 14 in [356 mm] thickness must be maintained.
2 XC-5 inlet/outlet pipe size ranges up to 30 in [762 mm].
3 XC-5 chamber height may vary up to 116 in [2946 mm], depending on inlet/outlet pipe size.
4 Clockwise or counterclockwise orientation as needed.
Projected View SCALE 1:70
78 in [1981 mm]
Ø66 in [Ø1680 mm]
Octagonal Base Plate
Lifting Lugs
Pipe coupling by Contractor. 12 in [305 mm] long Stub-out by Manufacturer.
Ø12 in [Ø305 mm]
62 in [1573 mm]
Plan View SCALE 1:40
Ø30 in [Ø762 mm]
Manhole Frame and Cover by Manufacturer. (See Details)
Rim elevations to match finish grade.
5 [127 mm] MH Frame
Grade (Rim) el. Varies
Riser
Band Coupler by Manufacturer. (as needed)
Lifting Lugs
Inlet/Outlet Invert el. Varies
98 in [2489 mm]
68 in [1727 mm]
Ø66 in [Ø1676 mm]
Backfill shall extend at least 18 inches [457 mm] outward from Swirl Concentrator and for the full height of the Swirl Concentrator (including riser) extending laterally to undisturbed soils. (See MH Detail Below)
Elevation View SCALE 1:40
AquaShield
2733 Kanasita Drive, Suite 111, Chattanooga, TN 37343 Phone (888) 344-9044 Fax (423) 826-2112 www.aquashieldinc.com
Aqua-Swirl® XCelerator XC-5 HorseShoe CW
Standard Detail
Structure #: XC-5 STD
Drawn By: OFlores
Scale: As Shown
Date: 3/28/2022
U.S. Patent No. 11002000


Aqua-Swirl® Polymer Coated Steel (PCS) Stormwater Treatment System
Please see accompanied Aqua-Swirl® specification notes. See Site Plan for actual System orientation. Approximate dry (pick) weight: 3800 lbs [1700 kg].
1 As an alternative, 42 in [1067 mm] diameter, HS-20/25 rated precast concrete rings may be substituted. 14 in [356 mm] thickness must be maintained.
2 XC-7 inlet/outlet pipe size ranges up to 42 in [1067 mm].
3 XC-7 chamber height may vary up to 156 in [3962 mm], depending on inlet/outlet pipe size.
4 Clockwise or counterclockwise orientation as needed.
Projected View SCALE 1:70
102 in [2591 mm]
Ø90 in [Ø2290 mm]
Octagonal Base Plate
Lifting Lugs
Pipe coupling by Contractor. 12 in [305 mm] long Stub-out by Manufacturer.
Ø18 in [Ø457 mm]
84 in [2142 mm]
Plan View SCALE 1:40
Ø30 in [Ø762 mm]
Manhole Frame and Cover by Manufacturer. (See Details)
Rim elevations to match finish grade.
5 [127 mm] MH Frame
Grade (Rim) el. Varies
Riser
Band Coupler by Manufacturer. (as needed)
Inlet/Outlet Invert el. Varies
132 in [3353 mm]
90 in [2286 mm]
Ø90 in [Ø2286 mm]
Elevation View SCALE 1:40
AquaShield
Aqua-Swirl® XCelerator XC-7 HorseShoe CW
Standard Detail
Structure #: XC-7 STD
Drawn By: OFlores
Scale: As Shown
Date: 3/29/2022
U.S. Patent No. 11002000

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS

DESIGN DEVELOPMENT

11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:

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REVISIONS:

4 — 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:

STORM SEWER DETAILS

CERTIFIED BY:

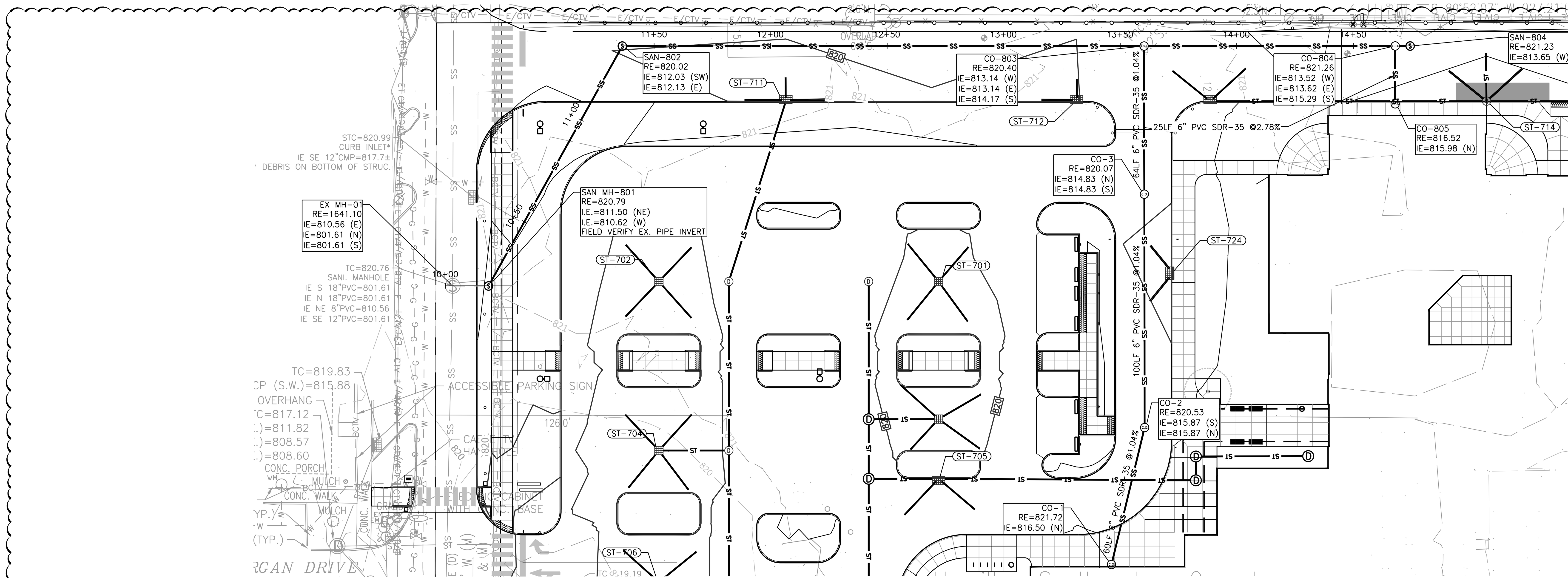
DAVID A. LACH, REGISTERED PE 10000126, STATE OF INDIANA, PROFESSIONAL ENGINEER

DRAWING NUMBER

C707

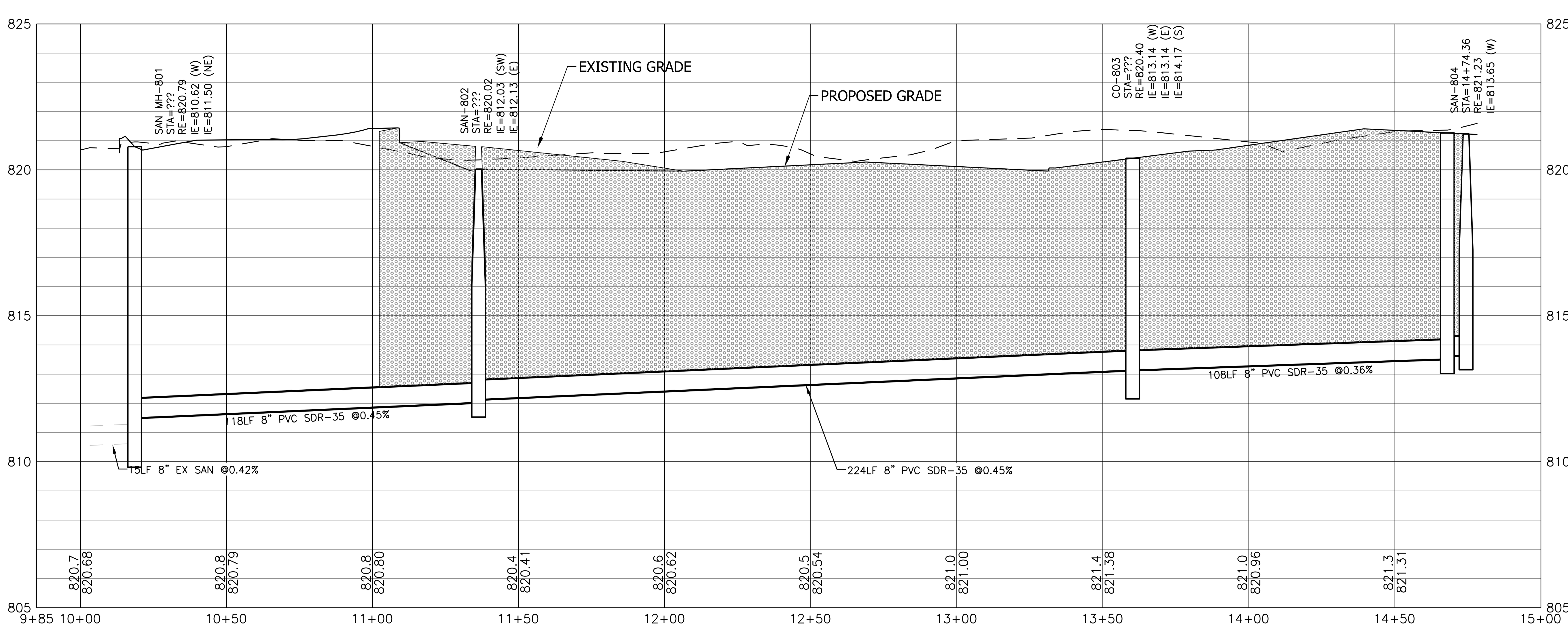
PROJECT NUMBER

2021119

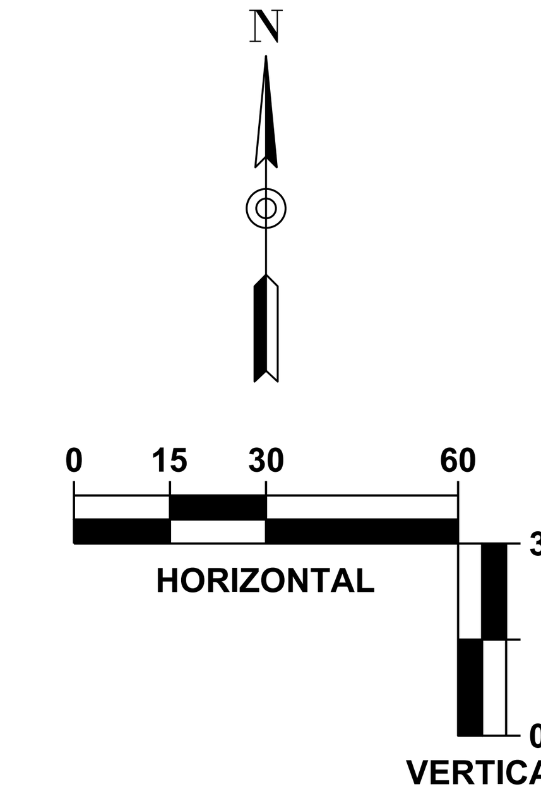


SANITARY STRUCTURE DATA TABLE								
STRUCTURE NUMBER	STRUCTURE TYPE	PIPE TYPE	PIPE LENGTH	PIPE SIZE	TOP OF CASTING	INVERT (DIRECTION)	PIPE SLOPE	CONNECT TO STRUCTURE
CO-1	SAN C.O.	PVC	60.47'	6"	RIM = 821.72	816.50 (N)	1.04%	CO-2
CO-2	SAN C.O.	PVC PVC	60.47'	6"	RIM = 820.53	815.87 (S) 815.87 (N)	1.04%	CO-1
CO-3	SAN C.O.	PVC PVC	63.58'	6"	RIM = 820.07	814.83 (S) 814.83 (N)	1.04%	CO-803
CO-803	SAN C.O.	PVC PVC PVC	223.87'	8"	RIM = 820.40	813.14 (E) 814.17 (S) 813.14 (W)	0.45%	SAN-802
CO-804	SAN C.O.	PVC PVC PVC	107.75'	8"	RIM = 821.26	813.62 (E) 815.29 (S) 813.52 (W)	0.36%	CO-803
CO-805	SAN C.O.	PVC	24.82'	6"	RIM = 816.52	815.98 (N)	2.78%	CO-804
EX MH-01	EX SAN MH	PVC PVC PVC	15.39'	8"	RIM = 1641.10	810.56 (E) 801.61 (N) 801.61 (S)	-0.18% -0.18%	SAN MH-801

SANITARY STRUCTURE DATA TABLE								
STRUCTURE NUMBER	STRUCTURE TYPE	PIPE TYPE	PIPE LENGTH	PIPE SIZE	TOP OF CASTING	INVERT (DIRECTION)	PIPE SLOPE	CONNECT TO STRUCTURE
SAN-802	48" DIA SAN MH	PVC PVC	117.83'	8"	RIM = 820.02	812.13 (E) 812.03 (SW)	0.45%	SAN MH-801
SAN-804	48" DIA SAN MH	PVC	6.40'	8"	RIM = 821.23	813.65 (W)	0.45%	CO-804
SAN MH-801	48" DIA SAN MH	PVC PVC	15.39'	8"	RIM = 820.79	811.50 (NE) 810.62 (W)	0.42%	EX MH-01
Structure - (53)	REMOVE & REPLACE EXIST GREASE INTERCEPTOR COORD WITH MEP DESIGNER FOR SIZE		???'	???"	RIM = 821.50			???



PROFILE - LINE SAN-01
HOR SCALE = 1"=30'
VERT. SCALE = 1"=3'



SANITARY SEWER PLAN AND PROFILE GENERAL NOTES

1. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
2. IN ADDITION, EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
3. ALL STRUCTURES SHALL HAVE CASTINGS, JOINTS, LIFT RINGS, STEPS AND PIPE CONNECTIONS WELL GROUTED, TROWELED SMOOTH AND BRUSH FINISHED.
4. ALL STRUCTURES (IE: MANHOLES, INLETS) SHALL HAVE POURED FLOW LINES AND BENCH WALLS. THE FLOW LINES AND BENCH WALLS SHALL BE TROWELED SMOOTH AND BRUSH FINISHED.
5. FIELD ADJUSTMENTS RIM ELEVATIONS (RE) OF STRUCTURES MAY BE REQUIRED TO MEET FIELD CONDITIONS. ADJUSTMENTS EXCEEDING FIVE TENTHS (0.5) OF A FOOT MUST BE APPROVED BY THE ENGINEER TO DETERMINE THE INTEGRITY OF THE STRUCTURE. AT NO COST TO THE OWNER.
6. PIPE LENGTHS MAY REQUIRE FIELD ADJUSTMENTS TO MEET ACTUAL FIELD CONDITIONS.
7. FULL DEPTH GRANULAR BACKFILL SHALL BE REQUIRED UNDER AND WITHIN (5) FEET OF ALL PAVED AREAS, INCLUDING CURBS, EDGE OF PAVEMENT, AND SIDEWALKS. THIS IS INDICATED BY THE HATCHING ON THE PROFILE.
8. PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
9. ANY DISCREPANCIES OR CONFLICTS WHICH BECOME APPARENT BEFORE OR DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
10. CITY OF FISHERS IS THE LOCAL SANITARY UTILITY COMPANY. ADDRESS: 3 MUNICIPAL DRIVE, FISHERS, IN 46038. PHONE: 317-593-3140
11. MANHOLE OR CLEAN-OUT CASTINGS MAY NEED TO BE ELEVATED AFTER FINAL GRADING TO INSURE DRAINAGE AWAY FROM STRUCTURES.
12. PAVEMENT OR CONCRETE, INCLUDING DRIVEWAYS AND SIDEWALKS, MUST NOT BE CONSTRUCTED ON OR WITHIN ONE (1) FOOT HORIZONTAL DISTANCE OF SANITARY SEWER CASTINGS.
13. ALL ROUGH GRADING (ON-SITE AND OFF-SITE) MUST BE FINISHED TO WITHIN ONE (1) FOOT OF FINAL GRADE PRIOR TO THE START OF CONSTRUCTION OF THE SANITARY SEWER INFRASTRUCTURE.
14. ALL LATERALS SHALL TERMINATE WITHIN A SANITARY EASEMENT.
15. AT THE INSPECTOR'S DISCRETION, A CONCRETE CRADLE MAY BE REQUIRED FOR ALL LATERAL/UTILITY CROSSINGS.
16. CONTRACTOR MUST FIELD VERIFY INVERT ELEVATIONS OF EXISTING MANHOLES PRIOR TO CONSTRUCTION.
17. SANITARY SEWER FACILITIES, INCLUDING MAINS AND LATERALS, MUST MAINTAIN FIVE (5) FEET OF COVER FROM THE TOP OF PIPE TO GRADE. IF ADEQUATE COVER CAN NOT BE MAINTAINED, THEN CONCRETE CAPPING MUST BE INSTALLED WHEN COVER IS FOUR (4) TO FIVE (5) FEET AND CONCRETE ENCASEMENT MUST BE INSTALLED WHEN COVER IS THREE (3) TO FOUR (4) FEET. UNDER NO CIRCUMSTANCES WILL COVER BE PERMITTED TO BE LESS THAN THREE (3) FEET.
18. ALL BENCH WALLS SHALL EXTEND TO THE CROWN OF THE HIGHEST INFLUENT PIPE.
19. THE TEE WYES LOCATED ON THE SANITARY SEWER MAINLINE MUST BE DESIGNATED AND INSTALLED TO OBTAIN A 1:1 RATIO AWAY FROM STRUCTURES (DEPTH OF MANHOLE : DISTANCE OF TEE WYE FROM MANHOLE), DUE TO PROBLEMS ENCOUNTERED IN THE FIELD WITH THE TEE WYES FAILING WHEN LOCATED IN THE OVER DIG OF MANHOLES.

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FISHERS ELEMENTARY SCHOOL
ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:

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REVISIONS:

4 — 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
SANITARY SEWER PLAN AND PROFILES

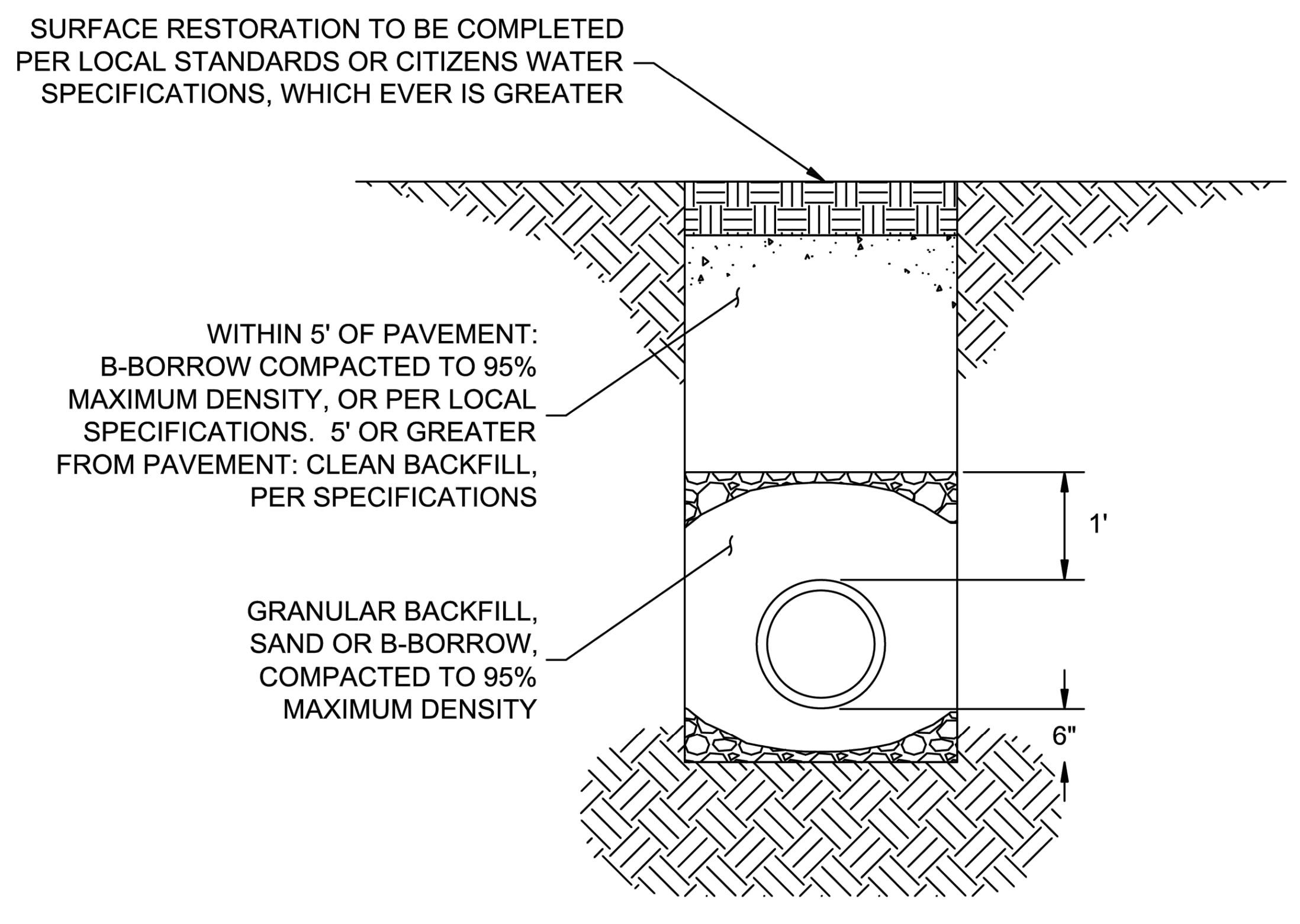
CERTIFIED BY:
DAVID A. LACH, REGISTERED PE 10000126, STATE OF INDIANA, PROFESSIONAL ENGINEER

DRAWING NUMBER
C801

PROJECT NUMBER
2021119

CITIZENS WATER
STANDARD PRACTICE
A.1
REVISION DATE: 9/20/2018 ISSUE DATE: 7/17/2013

WATER MAIN AND SERVICE BACKFILL REQUIREMENTS

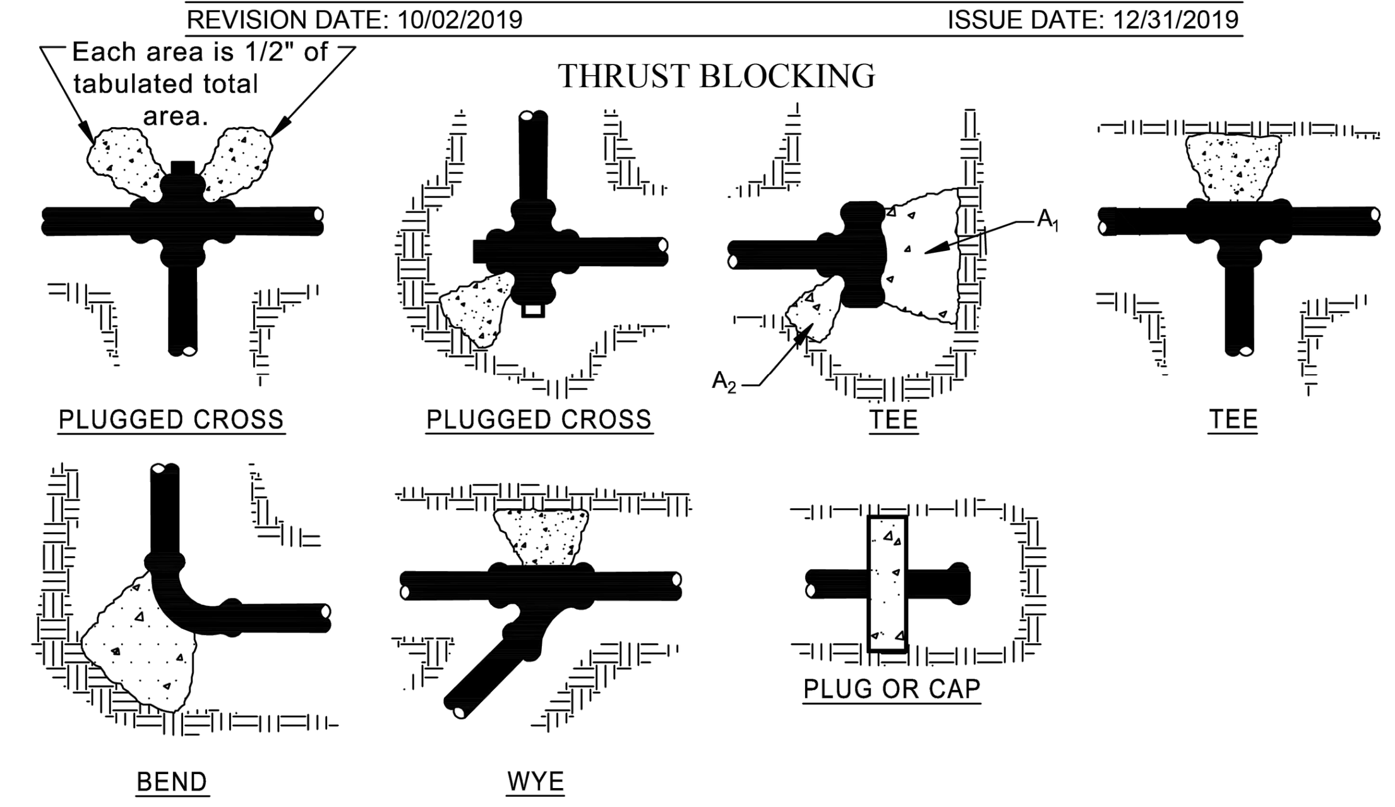


SCALE: NTS

NOTE:
COMPACTED BACKFILL IN LIFTS OF 12" MAXIMUM. TRENCH EXCAVATION SHALL CONFORM TO LOCAL STANDARDS.

CITIZENS WATER
STANDARD PRACTICE
A.2
REVISION DATE: 10/02/2019 ISSUE DATE: 12/31/2019

THRUST BLOCKING



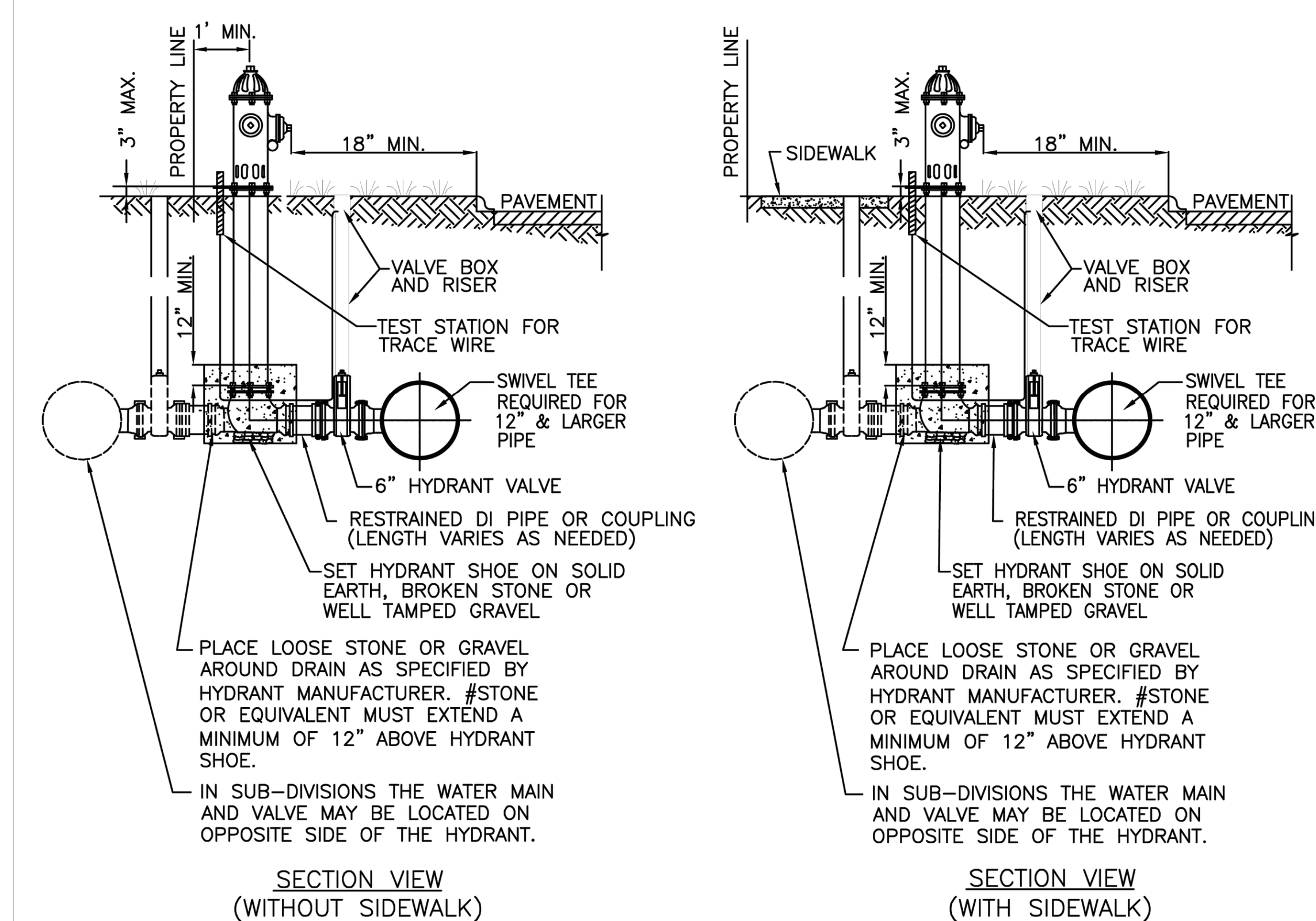
Notes:
1) CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2) KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3) POLYETHYLENE ENCASEMENT SHALL BE PLACED BETWEEN CONCRETE AND FITTINGS.
4) ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3,000 P.S.I., 2" TO 4" SLUMP AND INCLUDE WIRE MESH FOR REINFORCEMENT.
5) MINIMUM SOIL BEARING SURFACE AREA REQUIREMENTS ARE PROVIDED BELOW BASED ON 150 P.S.I. WATER PRESSURE PLUS 100 P.S.I. WATER HAMMER AND SOIL BEARING CAPACITY OF 3,000 POUNDS PER SQUARE FOOT.

Minimum Soil Bearing Surface Area (ft2) (Assuming 3,000 psf Soil Bearing Capacity)				
Pipe Size	Horizontal Bends			Tee or Dead End (Plug/Cap)
	22-1/2°	45°	90°	
6"		6	8	6
8"		6	8	6
12"	4	6	11	8
16"	6	11	22	15
20"	9	18	36	24
24"	13	27	50	36
30"	20	45	76	57
36"	31	59	115	80

CITIZENS WATER
STANDARD PRACTICE
B
REVISION DATE: 10/02/2019 ISSUE DATE: 12/31/2019

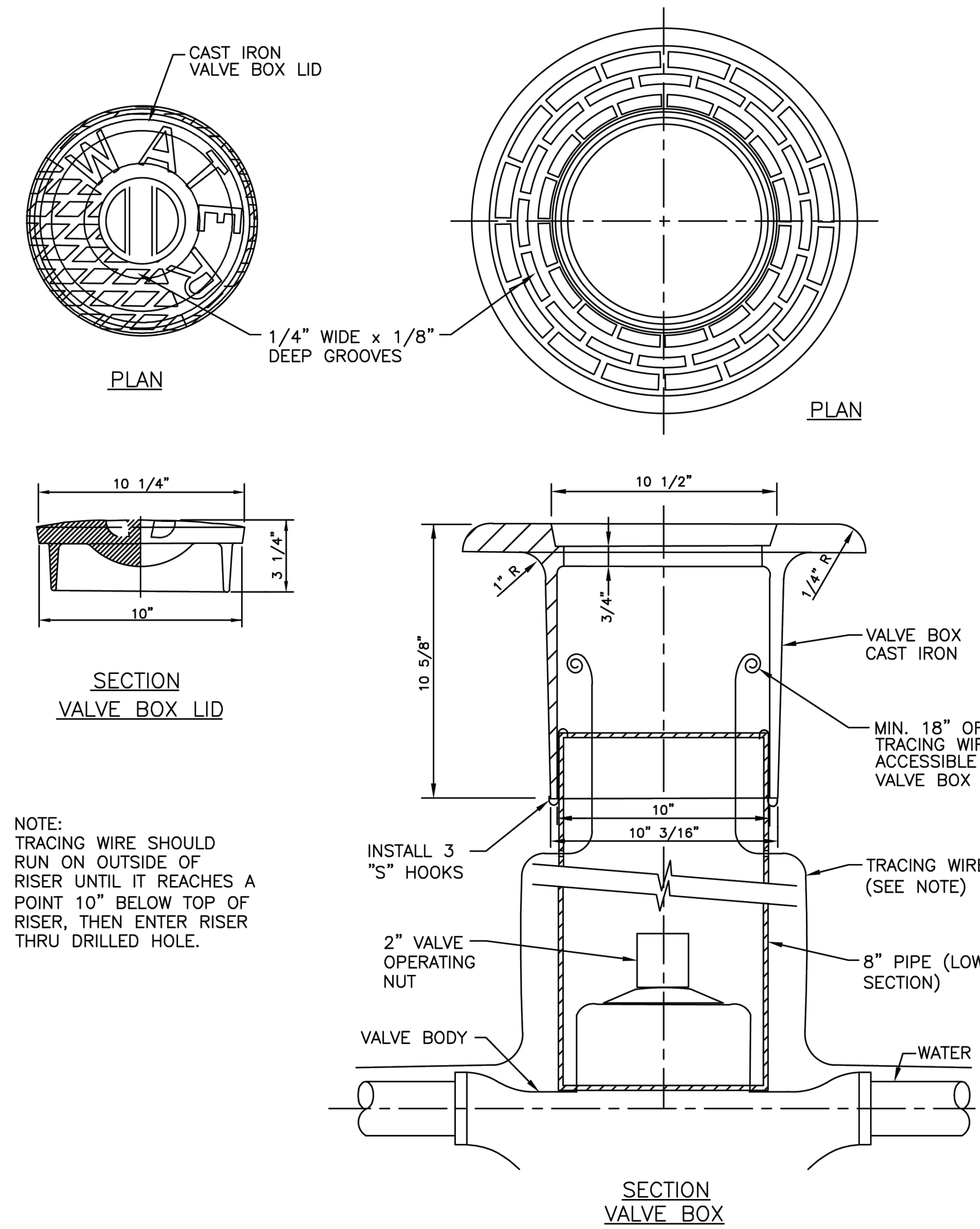
STANDARD HYDRANT SETTING

NOTES:
1. ALL HYDRANTS SHALL BE RESTRAINED TO THE HYDRANT TEE WITH DUCTILE IRON BRANCH PIPING ENCASED IN POLYETHYLENE WRAP.
2. SWIVEL 90° BEND MAY BE USED TO INSTALL HYDRANT AND VALVE IN GRASS STRIP BETWEEN CURB & SIDEWALK.
3. A MANUFACTURED "OUT OF SERVICE" SIGN WILL BE REQUIRED ON HYDRANTS UNTIL MAIN HAS BEEN PLACED "IN SERVICE" BY THE INSPECTOR.
4. FOR BRANCH PIPE LONGER THAN 10', INSTALL TRACING WIRE ALONG HYDRANT VALVE RISER.

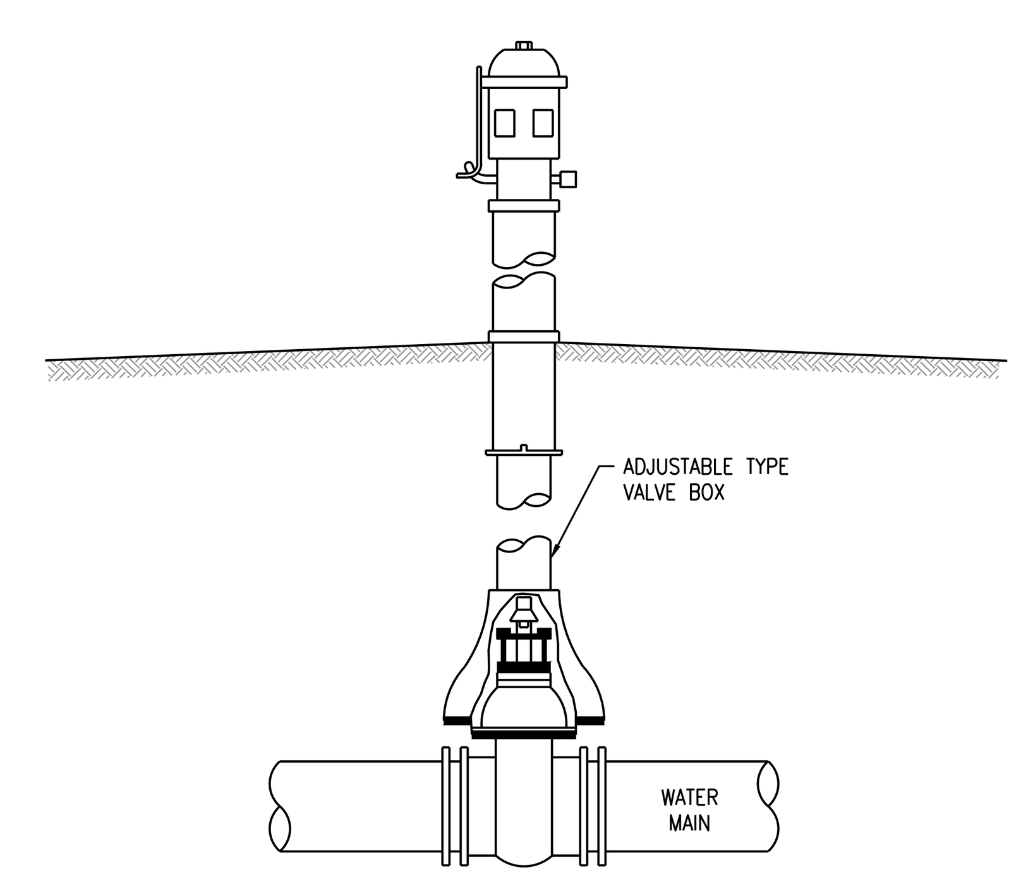


CITIZENS WATER
STANDARD PRACTICE
G
REVISION DATE: 10/11/2021 ISSUE DATE: 6/8/2009

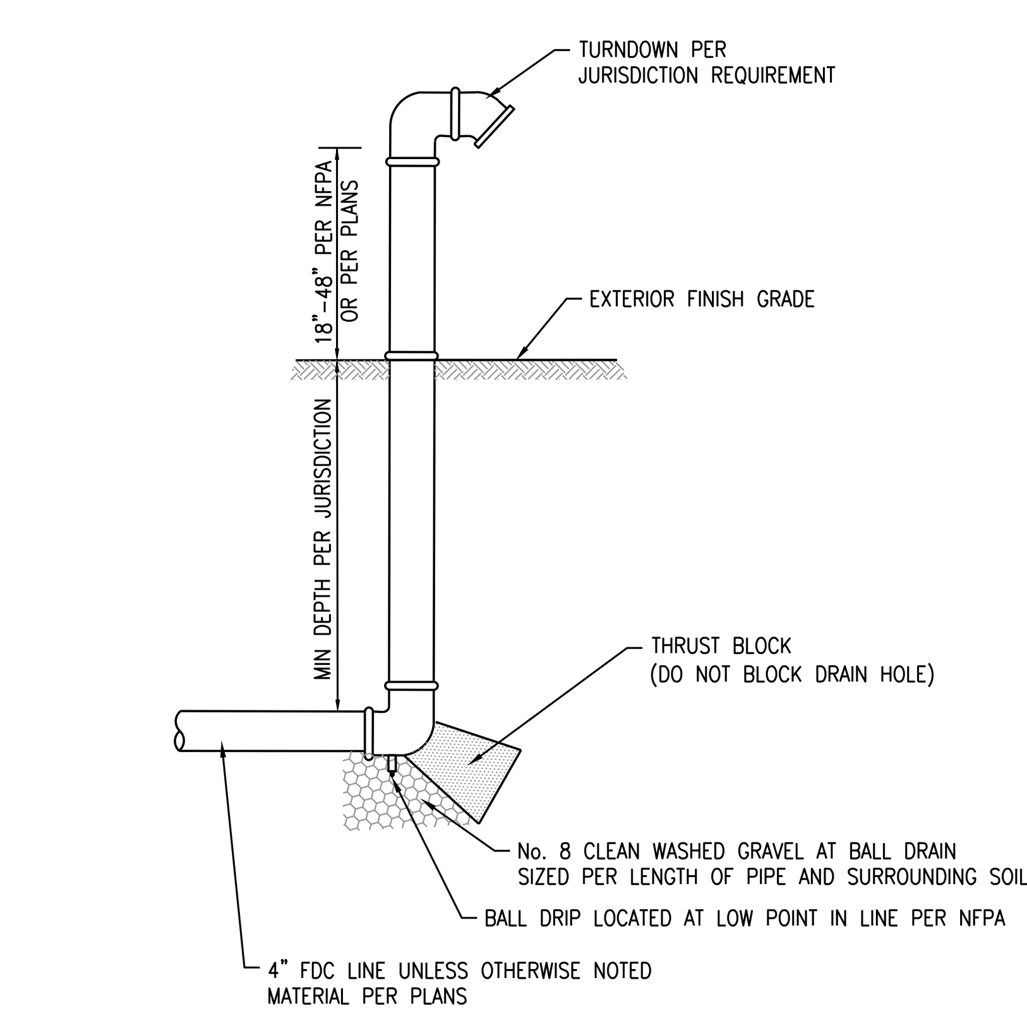
STANDARD 8" VALVE BOX AND COVER



NOTE:
TRACING WIRE SHOULD RUN ON OUTSIDE OF RISER UNTIL IT REACHES A POINT 10" BELOW TOP OF RISER, THEN ENTER RISER THRU DRILLED HOLE.



POST INDICATOR VALVE W/BOX
NOT TO SCALE



NOTES:
1. LOCATE FDC PER AUTHORITY HAVING JURISDICTION
2. SIGN SHALL BE AFFIXED TO THE FDC PER AUTHORITY HAVING JURISDICTION. COORDINATE WITH LOCAL FIRE DEPARTMENT
3. FDC'S SHALL BE 5" STORZ CONNECTION EXCEPT FOR NFPA 13R AND NFPA 13D SYSTEMS, WHICH WILL HAVE A SINGLE 2-1/2
4. FDC SHALL BE PROVIDED WITH LOCKING KNOX CAPS

FIRE DEPARTMENT CONNECTION (FDC)
NOT TO SCALE

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ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
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REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C901

PROJECT NUMBER
2021119

CITY STANDARDS APPLY TO PUBLIC PROPERTY & PRIVATE PROPERTY

FISHERS
EST. 1872

STANDARD CONSTRUCTION DETAILS

AMENDED JANUARY 2022

DIRECTIONS FOR USE

1) Applicable sheets from the City Standards shall be attached to the construction drawings and shall be considered part thereto. Individual City Standards that do not apply may be crossed out by design engineer by placing a single large X over the detail. Minor reference notations may be placed adjacent to individual standard titles for coordination. However, the standards themselves shall not be modified in any way.

2) Details prepared by outside sources shall not be included in the construction drawings when said details are covered by City Standards.

3) Details prepared by outside sources covering work which is not covered by City Standards are the sole responsibility of the design engineer and shall be placed on sheets other than the City Standard sheets.

4) Failure to properly execute the above directions for use will not affect the applicability nor the enforcement of the City Standards.

5) City of Fishers shall be contacted when required by calling the Director of Engineering.

6) City Standards shall be used in conjunction with the Transportation Plan and Construction Specifications.

7) The use of INDOT refers to Indiana Department of Transportation Standard Drawings and Specifications (Current Version).

NOTES

1) A City of Fishers Right-of-Way Activity Permit is required for utilities crossing existing public right-of-way or encroaching into right-of-way pavement.

2) Utility work within existing public right-of-way or within 5 feet of existing right-of-way pavement requires removable flowable fill as backfill.

4

INDEX

1/18/2022

JASON M. TAYLOR REGISTERED NO. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	R011822A RESOLUTION NO.	SHEET
TITLE SHEET	1/18/2022 DATE OF ADOPTION	1 of 29

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317.844.4777
www.cripe.com

FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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REVISIONS:

4	02/12/24 ADDENDUM #4

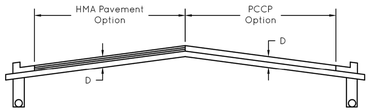
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
FISHERS STANDARD DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C902

PROJECT NUMBER
2021119



Notes:
1) Asphalt pavement shall be in accordance with the most current INDOT Standard Specifications Section 401. For all local (non-Federal Aid) projects, all HMA acceptance and testing requirements shall be in accordance with Section 402. Patching and Widening shall be in accordance with Section 304.
2) PCCP pavement shall be in accordance with the most current INDOT Standard Specifications Section 502.
3) Any other pavement design will need Director of Engineering approval.
4) Where existing roads have SMA surface pavement, material is to be matched.

PRIMARY ARTERIAL AND COLLECTOR

HMA Pavement Option

D = 1.5" - 165lb/syd QC/QA-HMA, 2, 64, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 64, Intermediate, 19.0 mm, on
3.75" - 413lb/syd QC/QA-HMA, 2, 64, Base, 25.0mm, on
3" - 300lb/syd QC/QA-HMA, 3, 76, Intermediate, Base, 19.0mm, on
6" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

PCCP Option (Requires Engineering Approval)

D = 13" - PCCP, on
3" - Compacted Aggregate, No. 8, on
3" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

Roundabout

D = 2" - 220lb/syd QC/QA-HMA, 2, 64, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 64, Intermediate, 19.0 mm, on
3.5" - 385lb/syd QC/QA-HMA, 2, 64, Base, 25.0mm, on
3" - 300lb/syd QC/QA-HMA, 3, 76, Intermediate, Base, 19.0mm, on
6" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

SECONDARY ARTERIAL

HMA Pavement Option

D = 1.5" - 165lb/syd QC/QA-HMA, 2, 64, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 64, Intermediate, 19.0 mm, on
3.75" - 413lb/syd QC/QA-HMA, 2, 64, Base, 25.0mm, on
9" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

PCCP Option (Requires Engineering Approval)

D = 13" - PCCP, on
3" - Compacted Aggregate, No. 8, on
3" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

Roundabout

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2.5" - 275lb/syd QC/QA-HMA, 2, 64, Intermediate, 19.0 mm, on
3.5" - 385lb/syd QC/QA-HMA, 2, 64, Base, 25.0mm, on
9" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

COLLECTOR

HMA Pavement Option

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3.75" - 413lb/syd QC/QA-HMA, 2, 64, Base, 25.0mm, on
8" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

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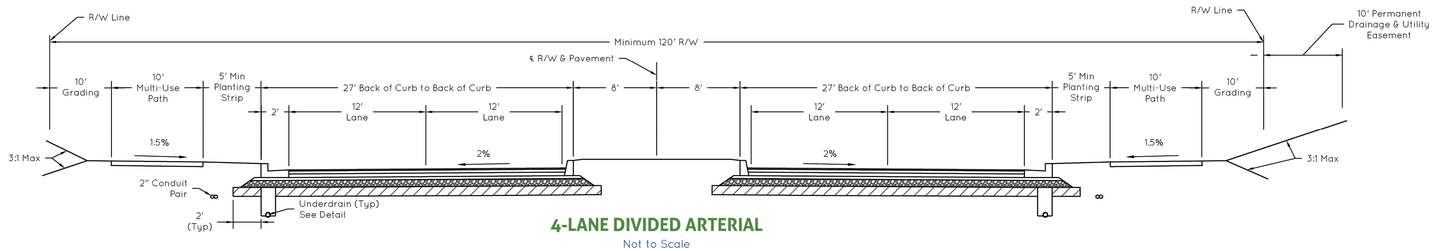
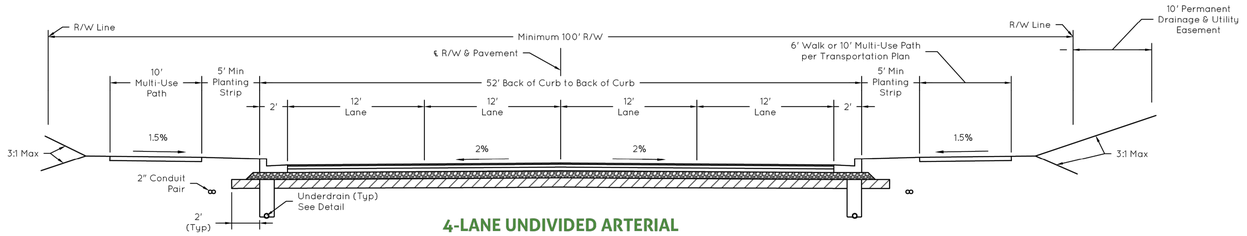
3.5" - 385lb/syd QC/QA-HMA, 2, 64, Base, 25.0mm, on
8" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC



4-LANE DIVIDED ARTERIAL

Not to Scale

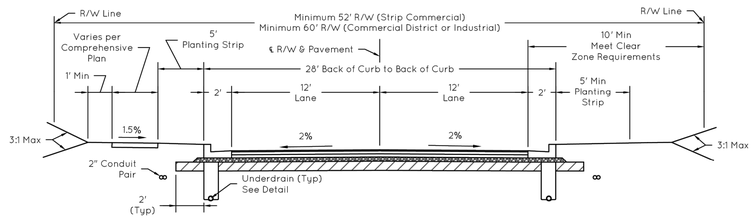


4-LANE UNDIVIDED ARTERIAL

Not to Scale

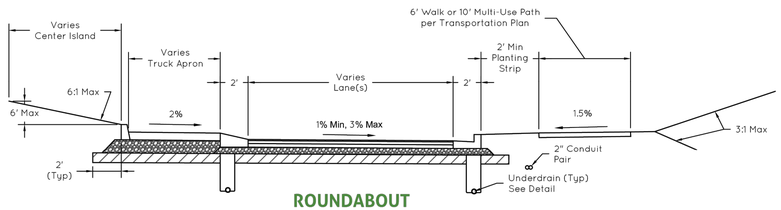
2-LANE COLLECTOR

Not to Scale



COMMERCIAL OR INDUSTRIAL COLLECTOR

Not to Scale



ROUNDABOUT

Not to Scale

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
ARTERIAL AND COLLECTOR TYPICAL PAVEMENT AND ROADWAY SECTIONS	2 of 29

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DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

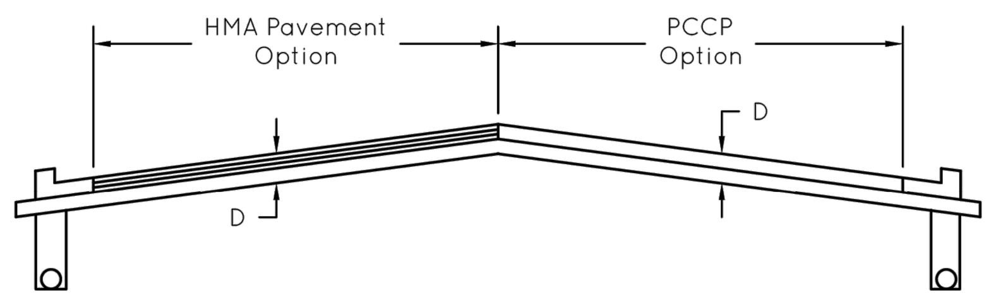
DRAWING TITLE:
FISHERS STANDARD DETAILS

4

CERTIFIED BY:
DAVID A. LACH REGISTERED No. PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C903

PROJECT NUMBER
2021119



Notes:

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3) Any other pavement design will need Director of Engineering approval

LOCAL STREET

HMA Pavement Option

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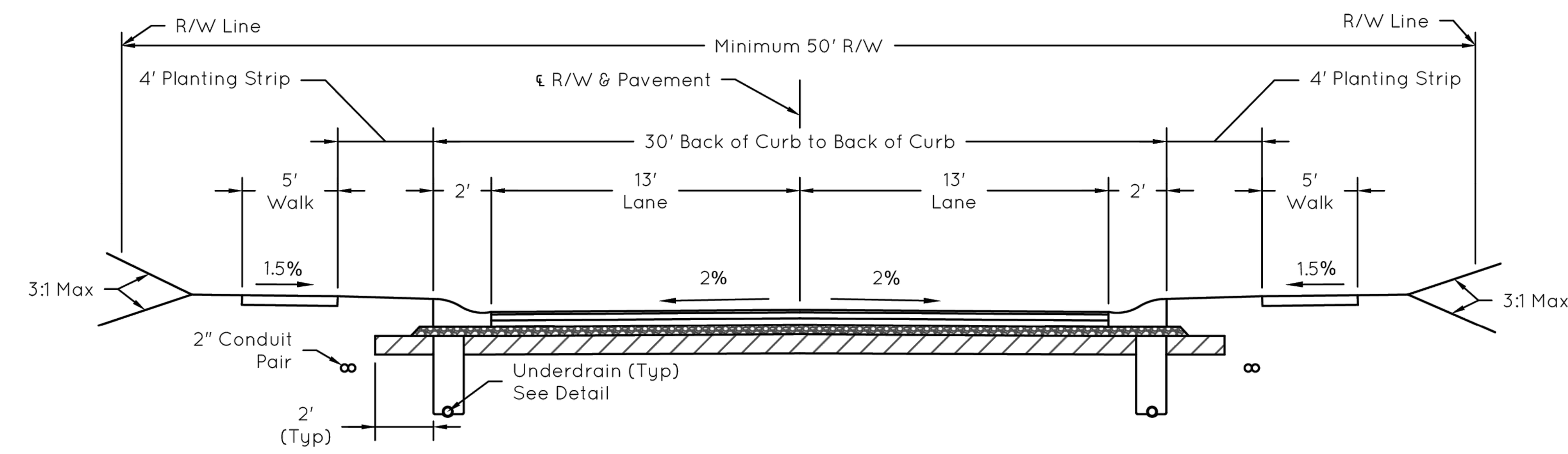
3.75" - 413lb/syd QC/QA-HMA, 2, 64, Base, 19.0mm, on
6" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

Minor Subdivision

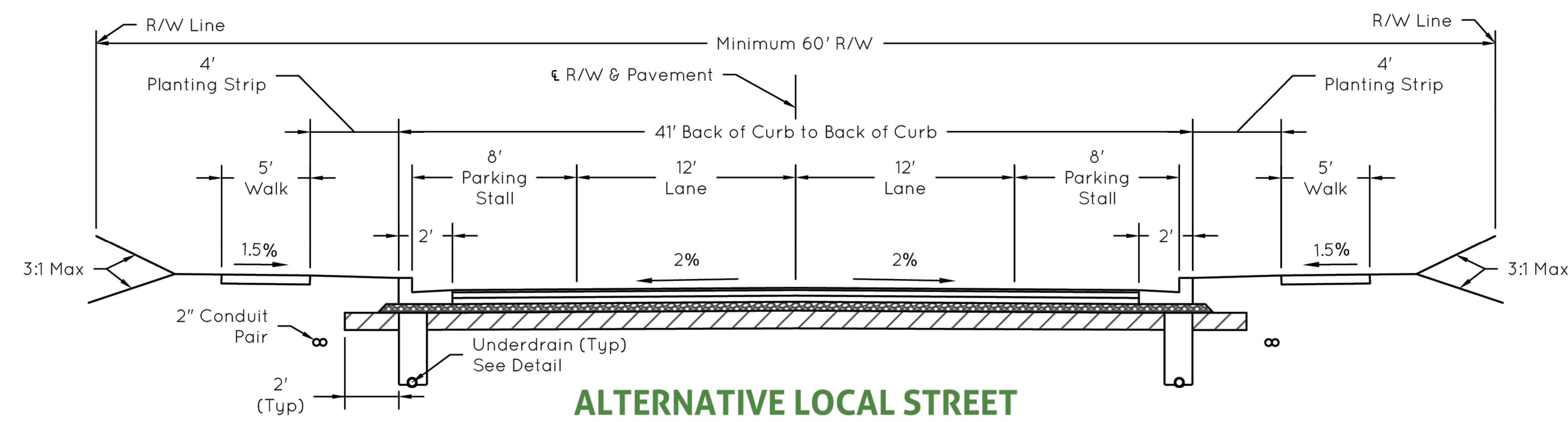
D = 1.5" - 165lb/syd QC/QA-HMA, 2, 64, Surface, 9.5mm, on
3.5" - 385lb/syd QC/QA-HMA, 2, 64, Intermediate, 19.0 mm, on
12" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

PCCP Option (Requires Engineering Approval)

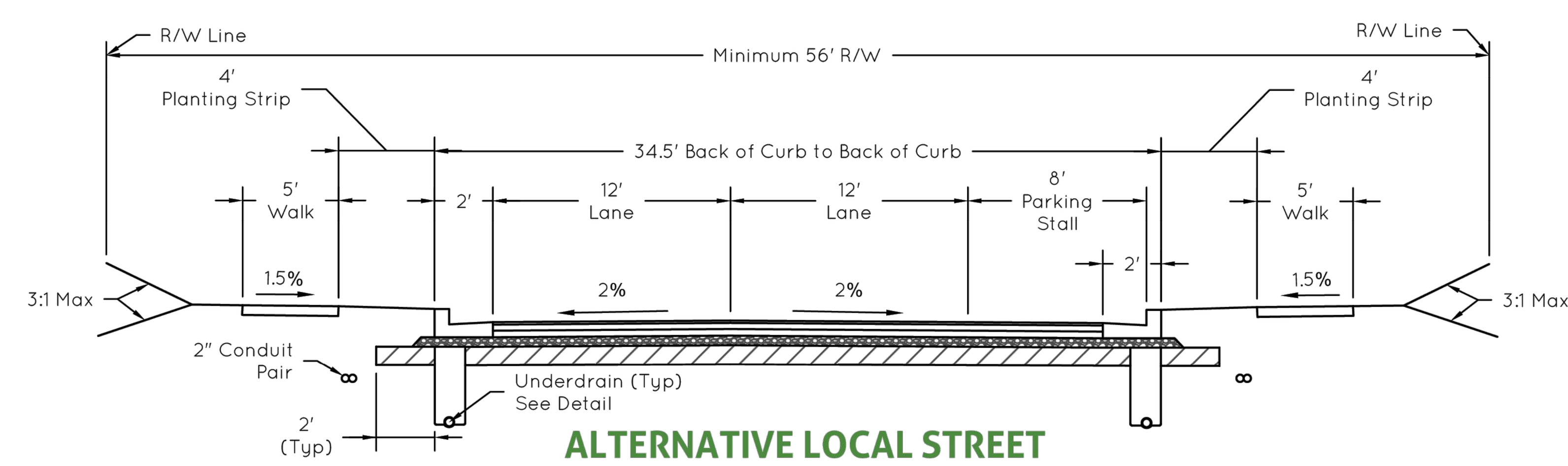
D = 13" - PCCP, on
3" - Compacted Aggregate, No. 8, on
3" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC



LOCAL STREET
Not to Scale

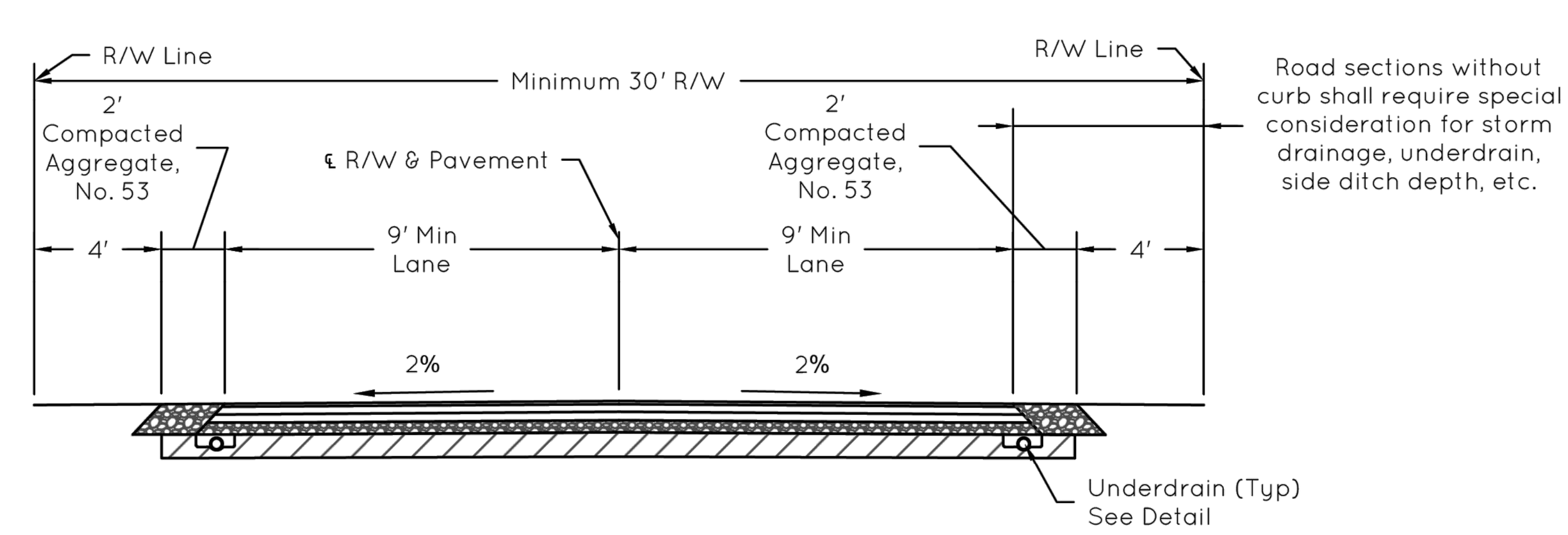


ALTERNATIVE LOCAL STREET
TRADITIONAL SECTION WITH 2 PARKING LANES
Not to Scale



ALTERNATIVE LOCAL STREET
TRADITIONAL SECTION WITH 1 PARKING LANE
Not to Scale

MODIFICATIONS TO THESE SECTIONS MUST BE APPROVED BY THE DIRECTOR OF ENGINEERING



ALTERNATIVE LOCAL STREET
MINOR SUBDIVISION
Not to Scale

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER
1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

LOCAL STREET
TYPICAL PAVEMENT AND ROADWAY SECTIONS

SHEET 3 of 29

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DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
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REVISIONS:
4 02/12/24 ADDENDUM #4

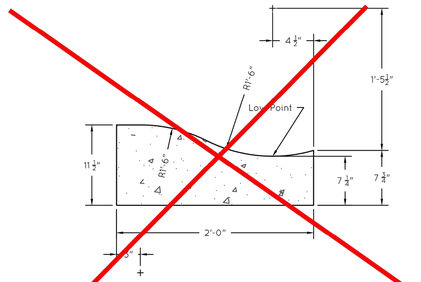
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
FISHERS STANDARD DETAILS

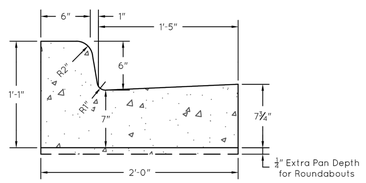
CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C904

PROJECT NUMBER
2021119

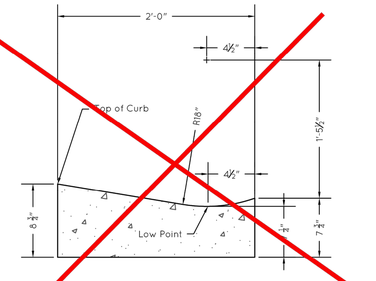


CONCRETE ROLL CURB
Not to Scale

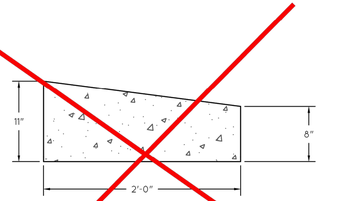


Note:
1) Provide reverse pitch curb & gutter on center islands when curb inlets are not provided for drainage and when natural flow is away from curb.

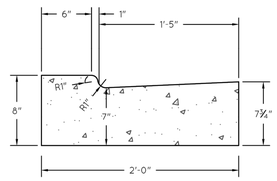
CONCRETE COMBINED CURB & GUTTER
Not to Scale



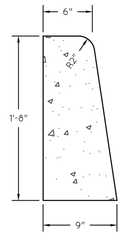
CONCRETE VALLEY GUTTER
Not to Scale



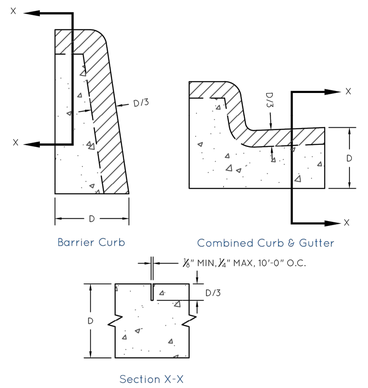
CONCRETE SLOPED CURB - FOR ROUNDABOUTS
Not to Scale



CONCRETE COMBINED CURB & GUTTER - DEPRESSED
Not to Scale

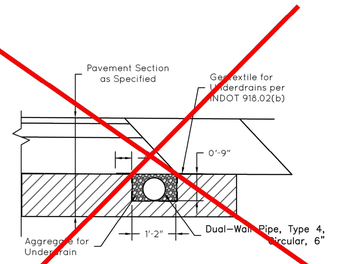


CONCRETE BARRIER CURB
Not to Scale

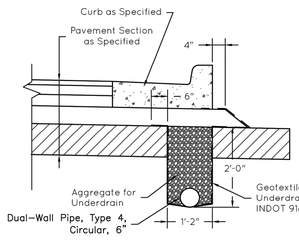


Note:
1) Contraction joints for concrete curbs shall be sawed at 10-ft spacing. Spacing shall be 5-ft on curves.

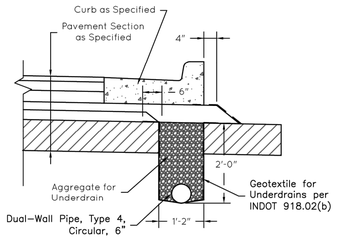
CONTRACTION JOINTS - CONCRETE CURB
Not to Scale



LOCAL STREET UNDERDRAIN
Not to Scale



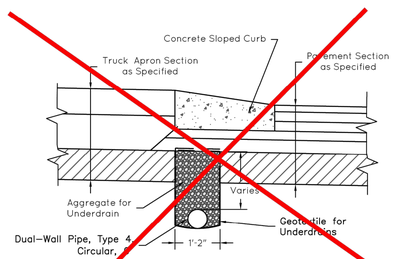
Underdrain without HMA Drainage Layer



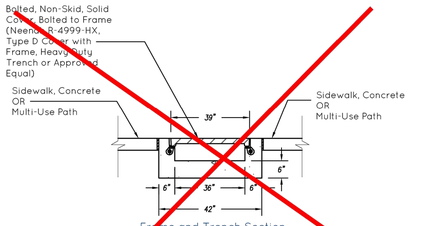
Underdrain with HMA Drainage Layer

Note:
1) No connections shall be made to curb underdrain (downspouts, sump pumps, yard drains, etc).

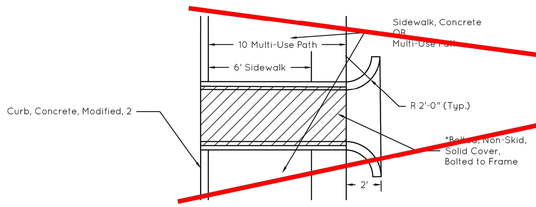
CURB UNDERDRAIN
Not to Scale



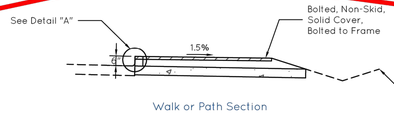
UNDERDRAIN AT ROUNDABOUTS (AS NEEDED)
Not to Scale



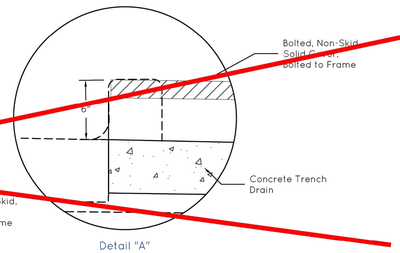
Frame and Trench Section



Plan View



Walk or Path Section



Detail "A"

TRENCH DRAIN DETAIL W/ SIDEWALK OR MULTI-USE PATH
Not to Scale

1/18/2022

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
CURB AND UNDERDRAIN DETAILS	4 of 29

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REVISIONS:

4	02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

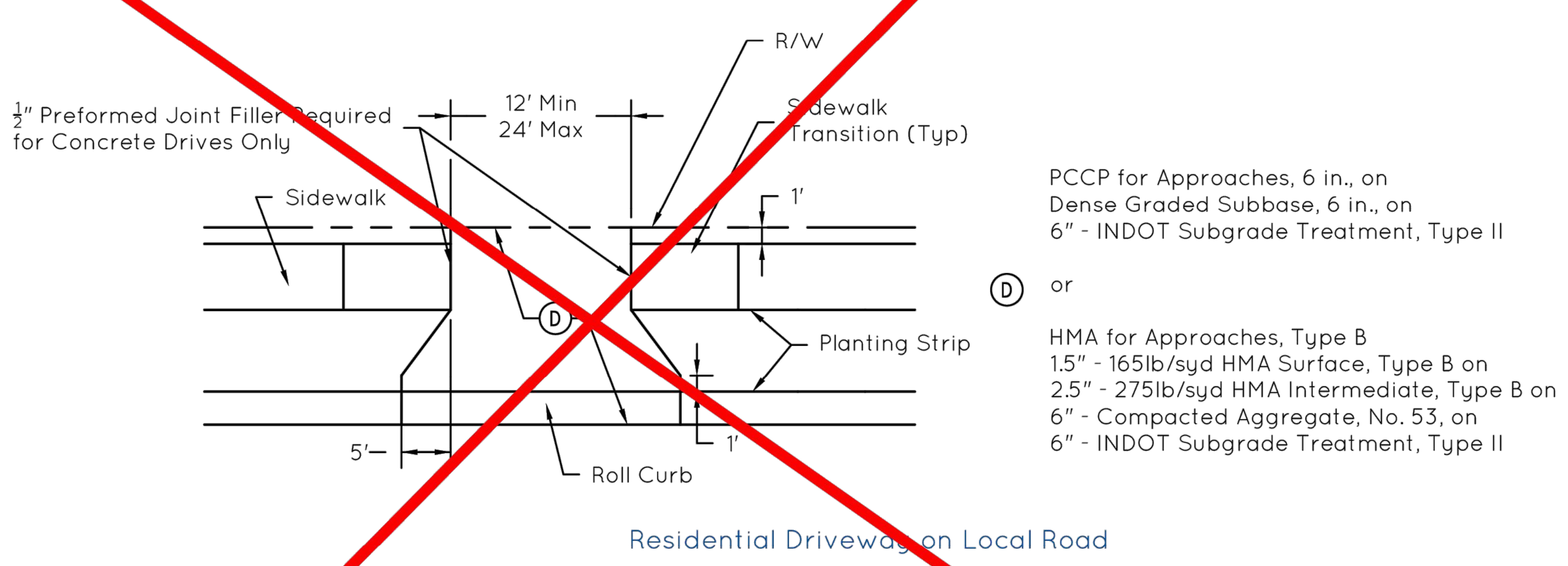
DRAWING TITLE:
FISHERS STANDARD DETAILS

4

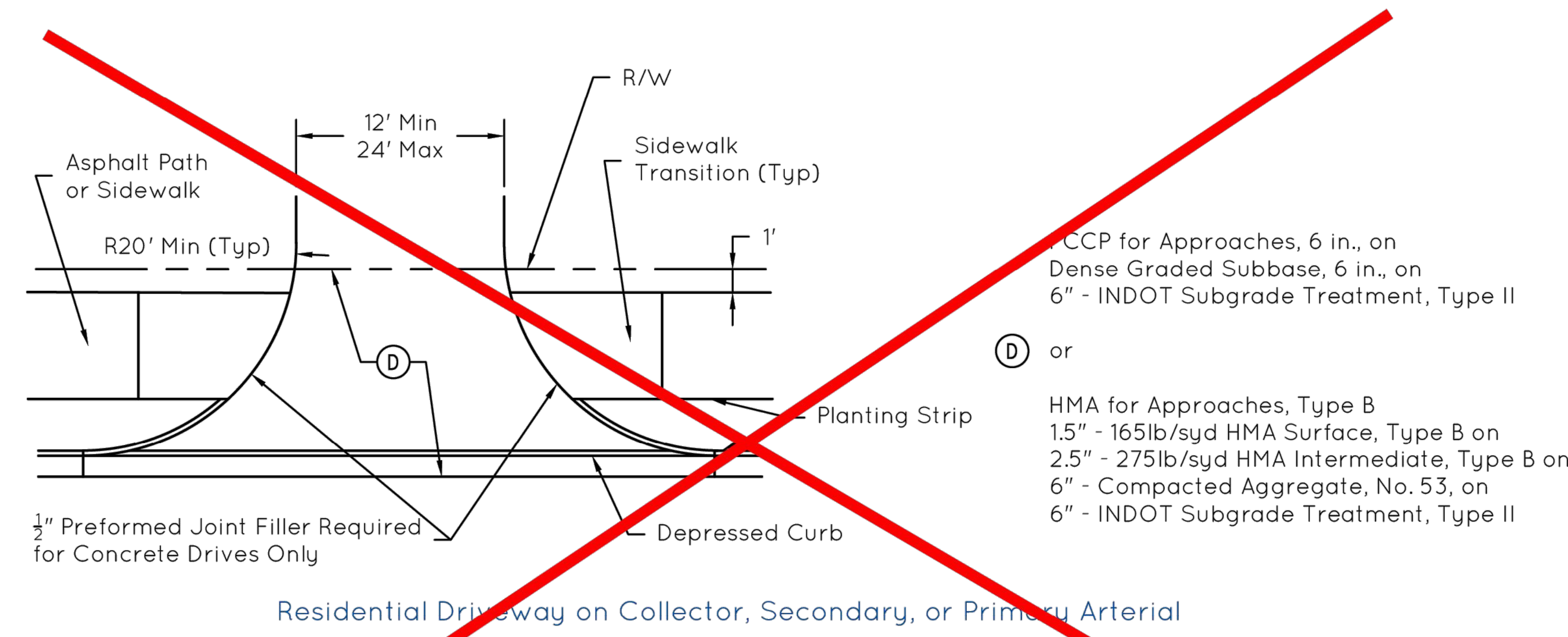
CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C905

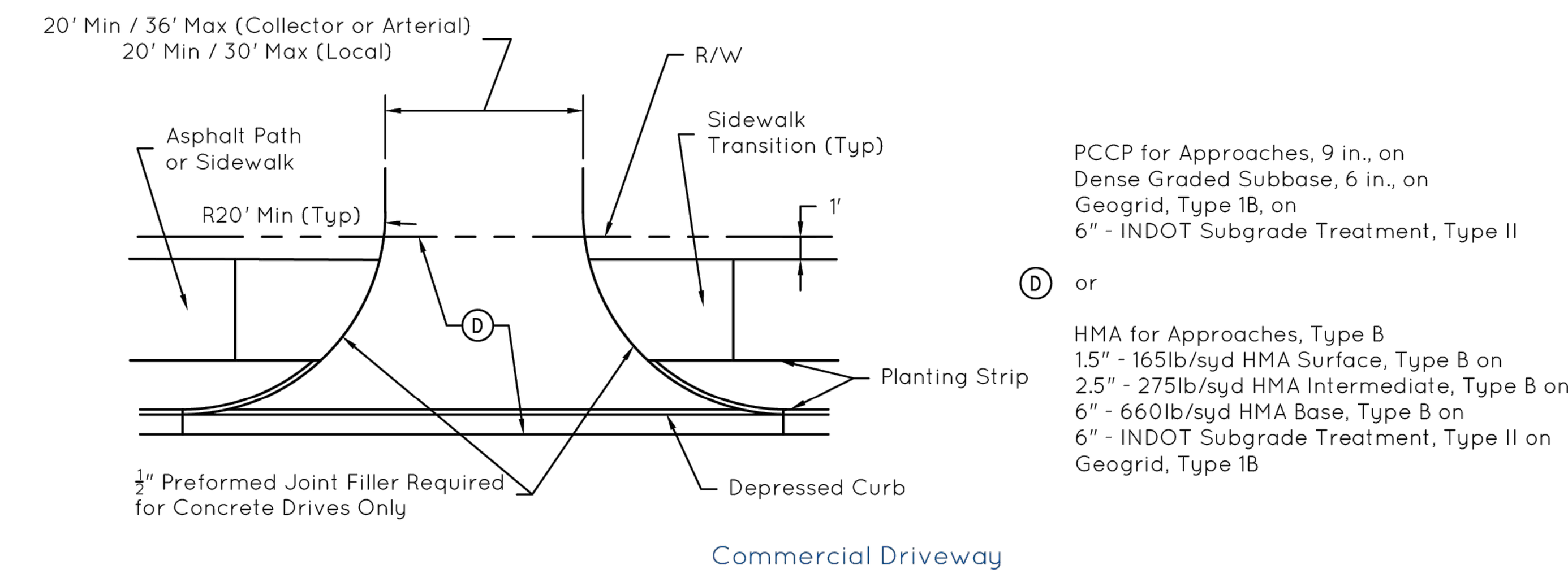
PROJECT NUMBER
2021119



Residential Driveway on Local Road



Residential Driveway on Collector, Secondary, or Primary Arterial

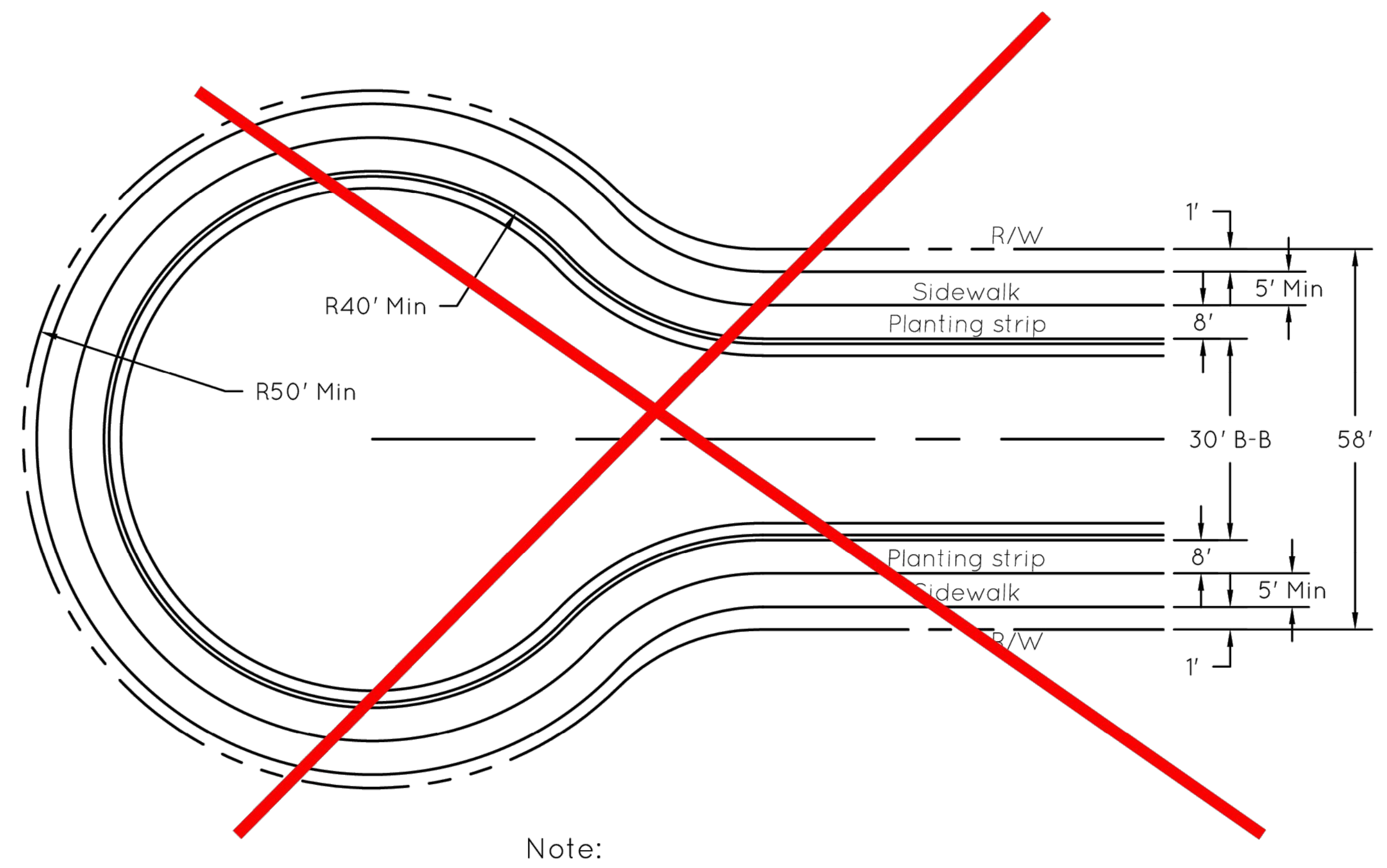


Commercial Driveway

Notes:
1) Details do not reflect additional road improvements (i.e., turn lanes and tapers).
2) Decorative driveway aprons are not allowed except as approved by the Director of Engineering.
3) Maximum driveway slope outside of right-of-way shall be 12% for minimum 10 feet beyond R/W line.
4) Adjoining asphalt shall have perpendicular edges.
5) Asphalt shall not be used for residential driveways on Collector, Secondary, or Primary Arterials.
6) Asphalt must match adjacent mainline cross section for commercial approaches.

DRIVEWAY DETAILS

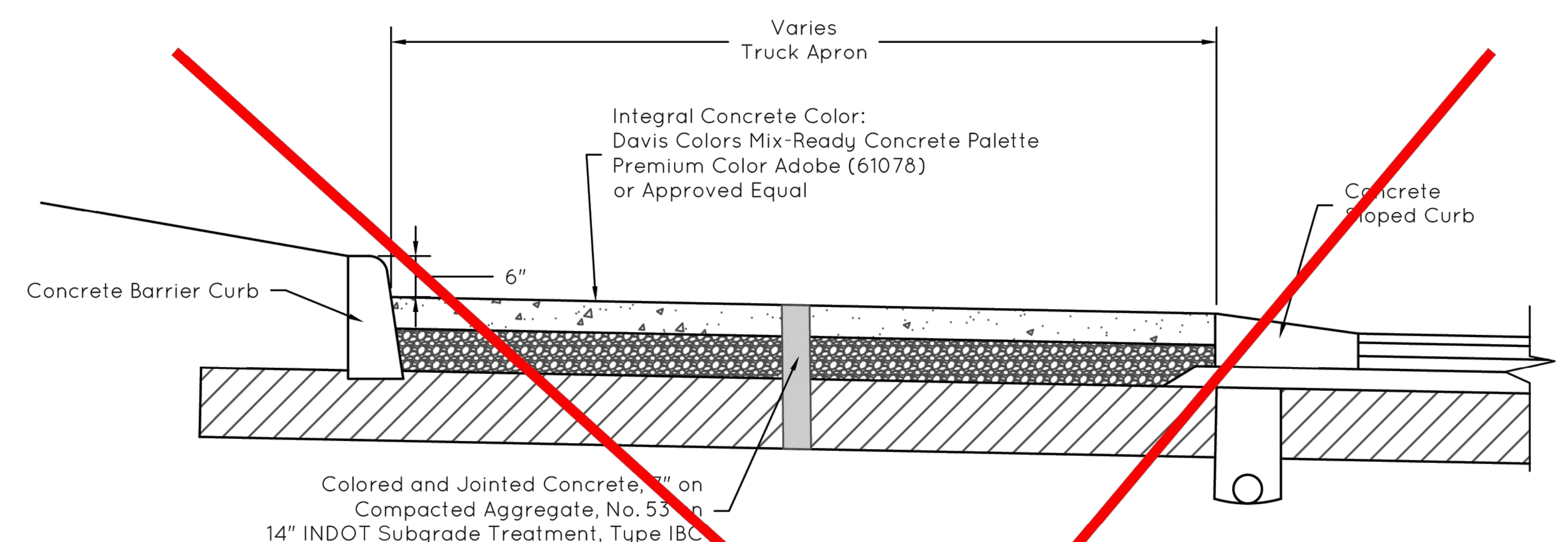
Not to Scale



Note:
1) 'Eyebrows' are not allowed

CUL-DE-SAC

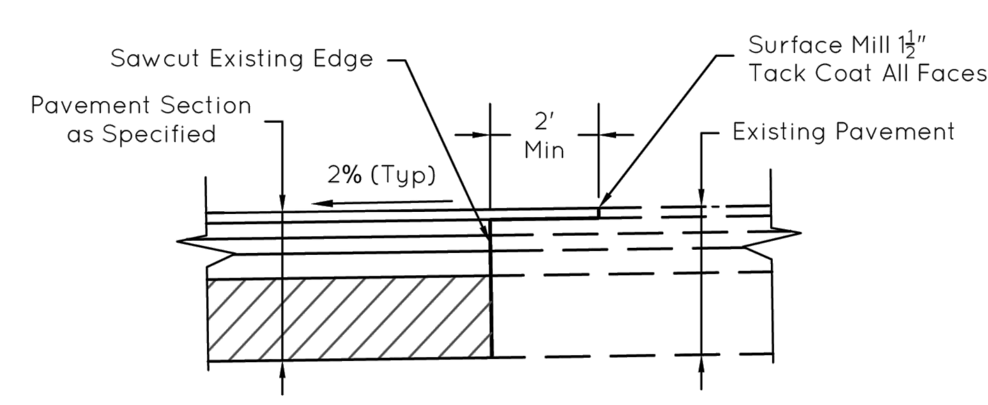
Not to Scale



Note:
1) Type D-1 Contraction Joints not required unless otherwise directed by Dept. of Engineering.

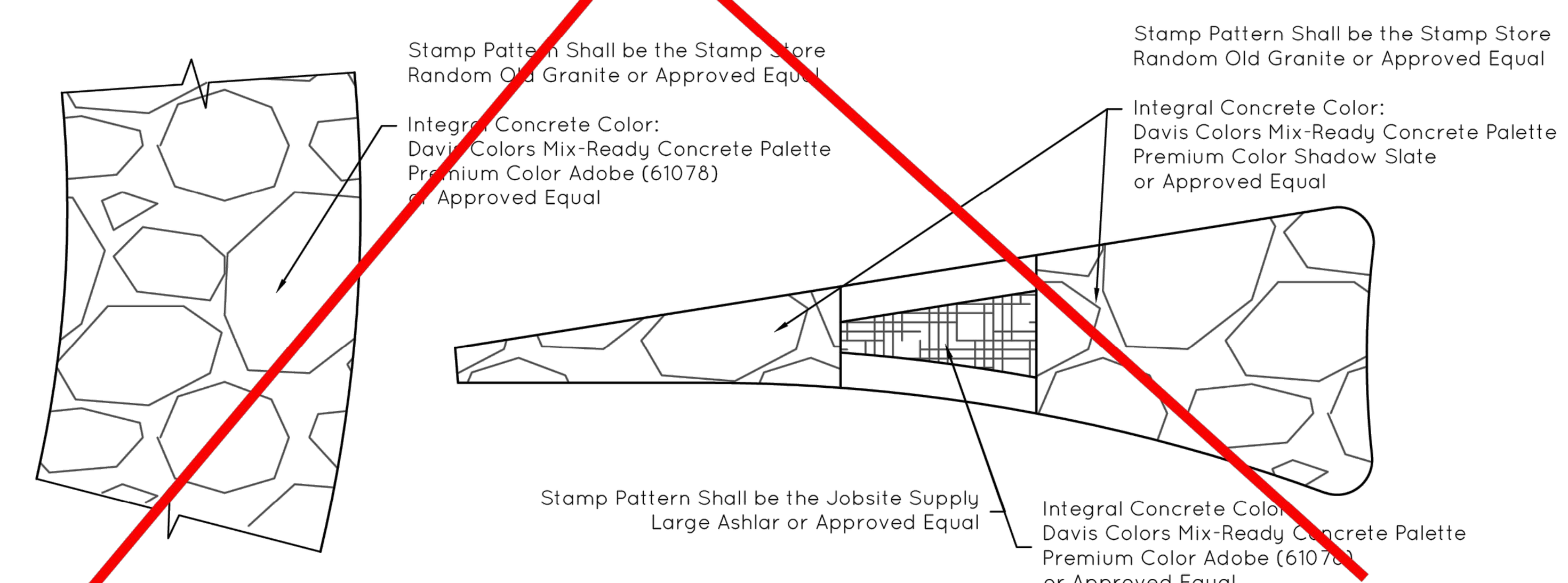
CONCRETE TRUCK APRON DETAIL

Not to Scale



LONGITUDINAL PAVEMENT TIE-IN SECTION

Not to Scale



Notes:
1) Pattern shall be submitted to ENGINEER prior to construction.
2) A 4' x 4' mock-up is required for ENGINEER approval.
3) Concrete shall cure for a minimum of four days prior to applying sealant.

ROUNDABOUT TRUCK APRON AND SPLITTER ISLAND STAMP DETAIL

Not to Scale

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

1/18/2022

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
DRIVEWAY, CUL-DE-SAC, AND MISC. TRANSPORTATION DETAILS	5 of 29

4

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01/15/2023	KDK	JAD

DRAWING TITLE:

FISHERS STANDARD DETAILS

CERTIFIED BY:

DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER

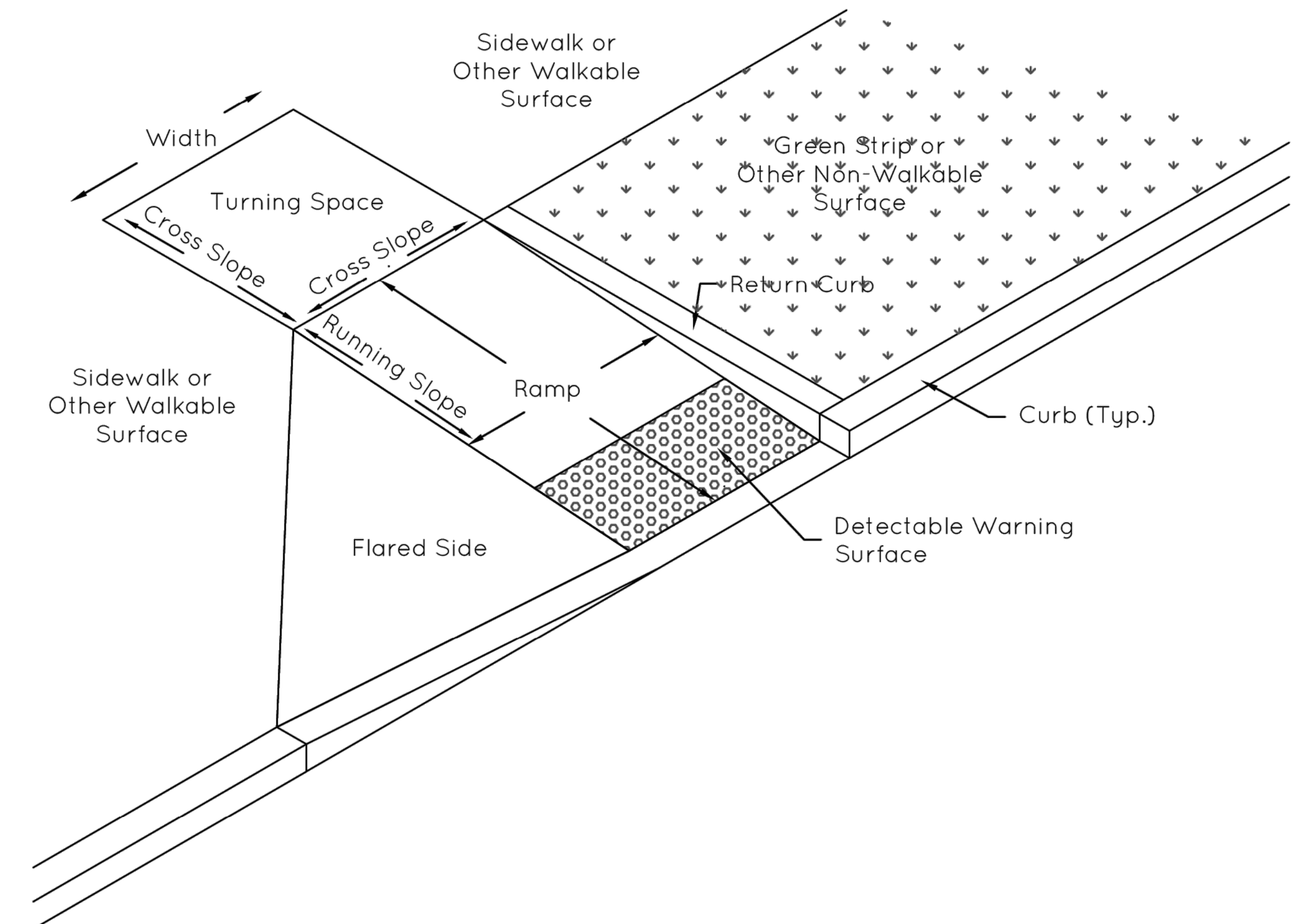
C906

PROJECT NUMBER

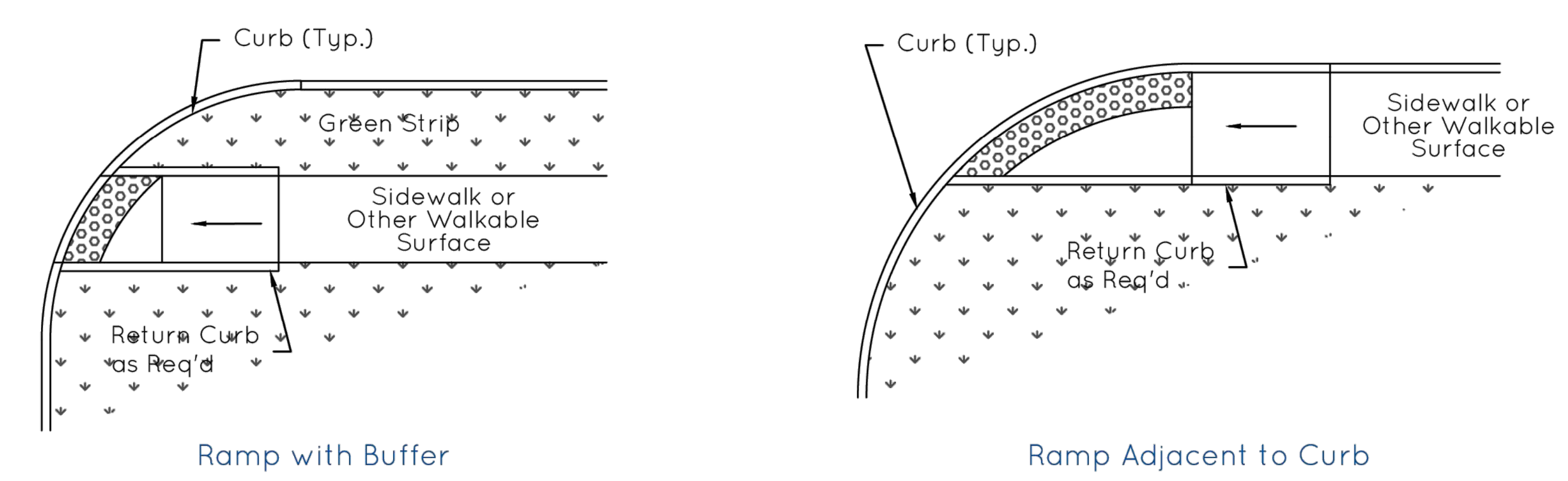
2021119

NOTES

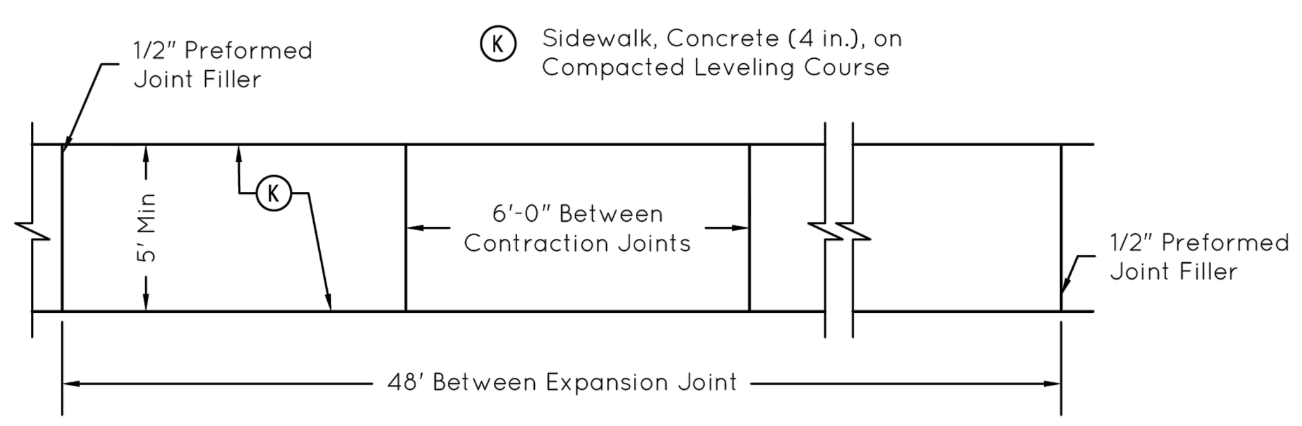
1) Curb ramps and sidewalks shall be constructed in accordance with INDOT Standard Specifications, Section 604.
2) All sidewalks and curb ramps within Fishers Right-of-Way shall be ADA compliant.
3) Detectable Warning Surfaces shall be cast iron type and shall be powder coated black.
4) Detectable Warning Surfaces shall not be installed at commercial or private driveways unless traffic warrants or approved by City Engineer.
5) Transverse joints shall be cut with a jointer having a radius of 1/2-inch of spacing.
6) Decorative sidewalks are not permitted unless prior approval has been given by the Director of Engineering.
7) When sidewalk is built in conjunction with concrete pavement, expansion and contraction joints should be placed at the same location as the pavement slab. The curb and gutter shall be tied to the pavement by 1/2-in round preformed epoxy coated bars at approximate 3-foot intervals. If concrete pavement is not being built at the same time the curb is constructed, expansion joints should be placed at the ends of all returns and at intervals not to exceed 100 feet. Contraction joints should be installed at 20-foot intervals.
8) Curb inlets shall not be allowed within 2 feet of curb ramps or at the apex of corner radii.



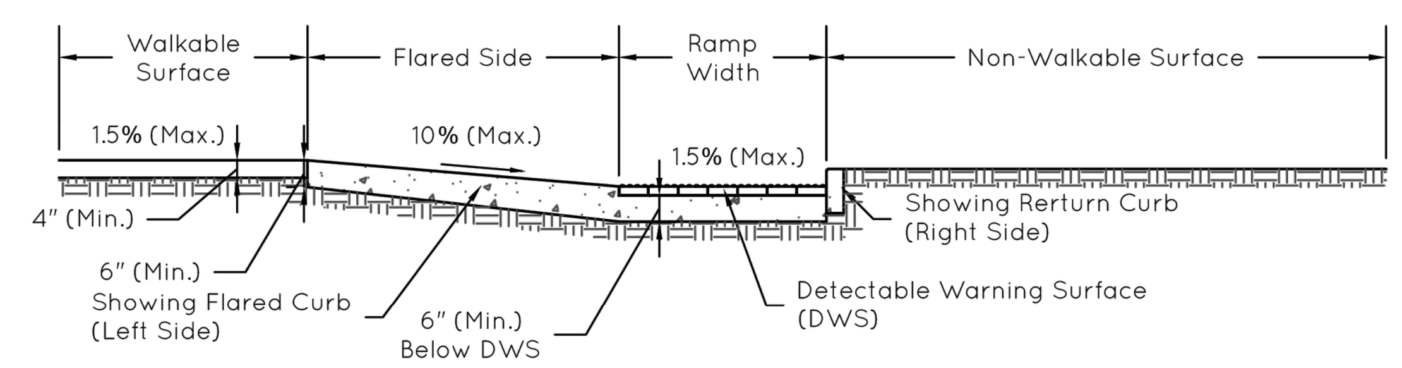
TYPICAL CURB RAMP COMPONENTS
Not to Scale



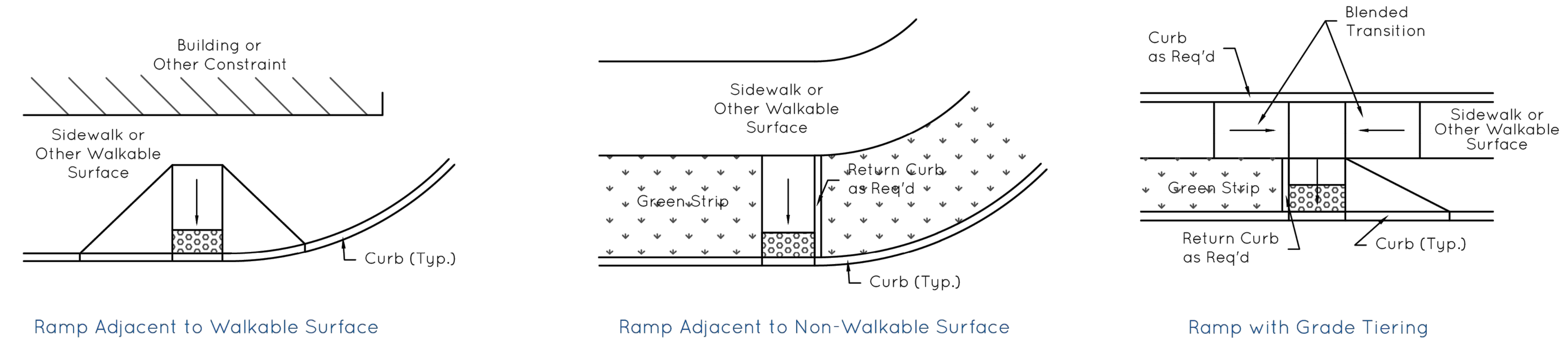
ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP EXAMPLES
Not to Scale



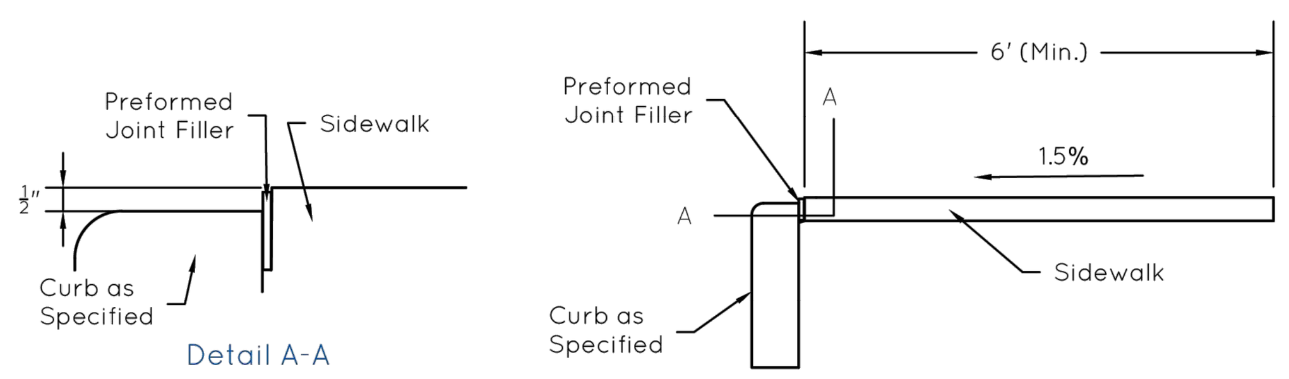
SIDEWALK DETAIL
Not to Scale



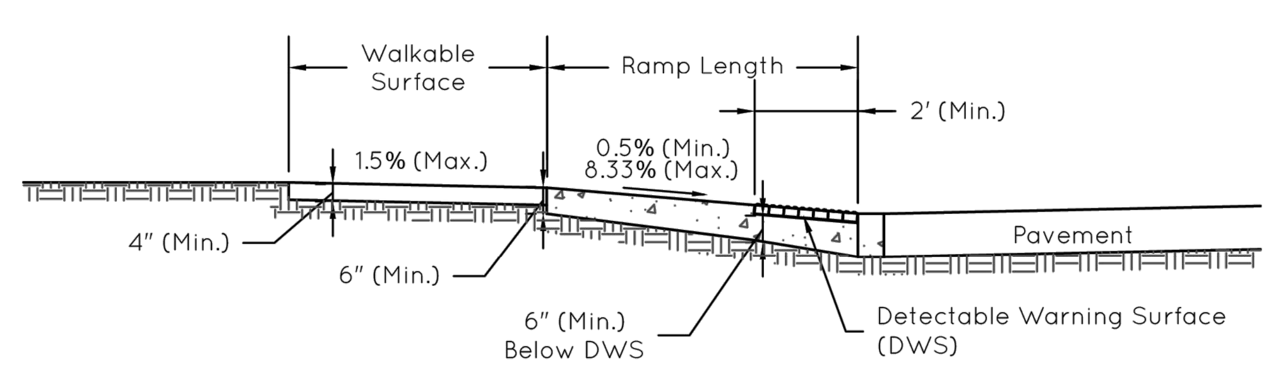
TYPICAL CURB RAMP CROSS SLOPE SECTION
Not to Scale



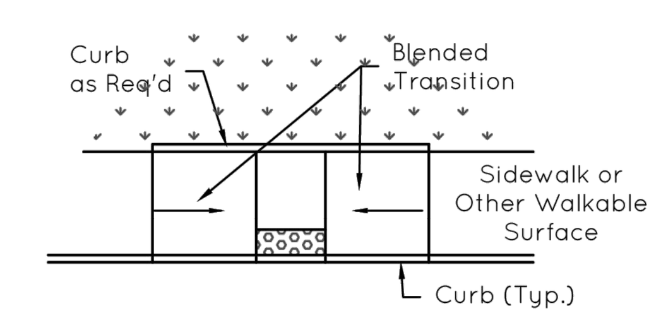
PERPENDICULAR CURB RAMP EXAMPLES
Not to Scale



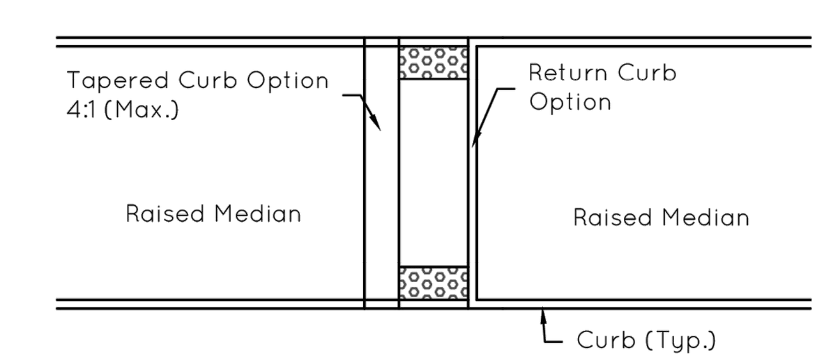
SIDEWALK ADJACENT TO CURB
Not to Scale



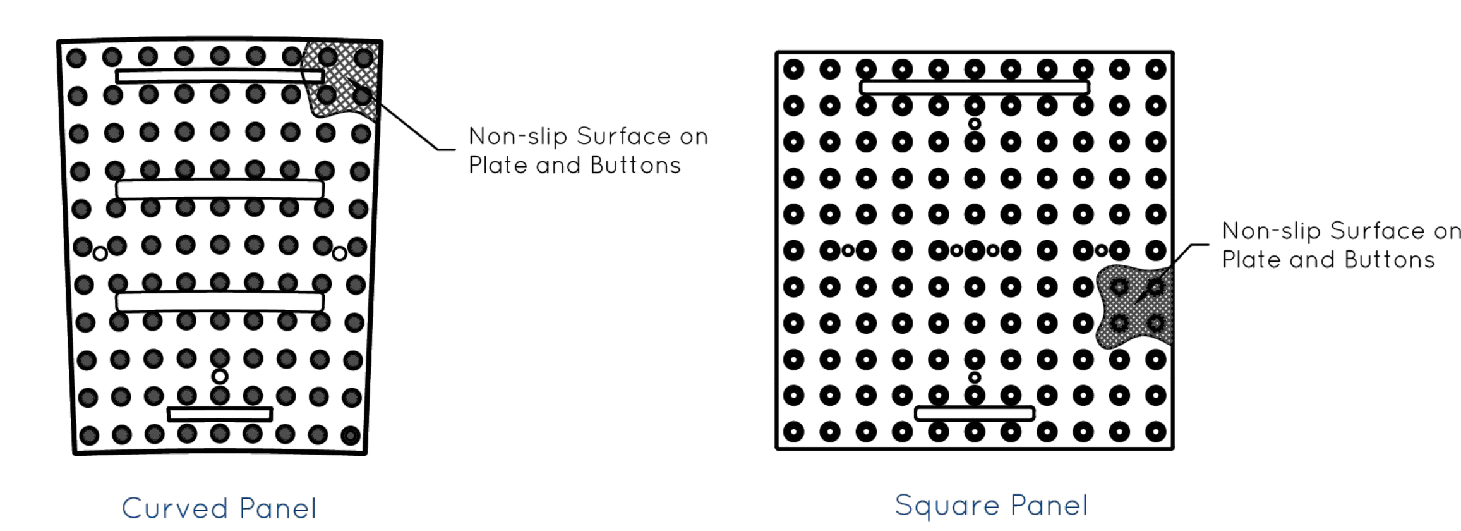
TYPICAL CURB RAMP RUNNING SLOPE SECTION
Not to Scale



PARALLEL CURB RAMP EXAMPLE
Not to Scale



MEDIAN CURB RAMP EXAMPLE
Not to Scale



Note:
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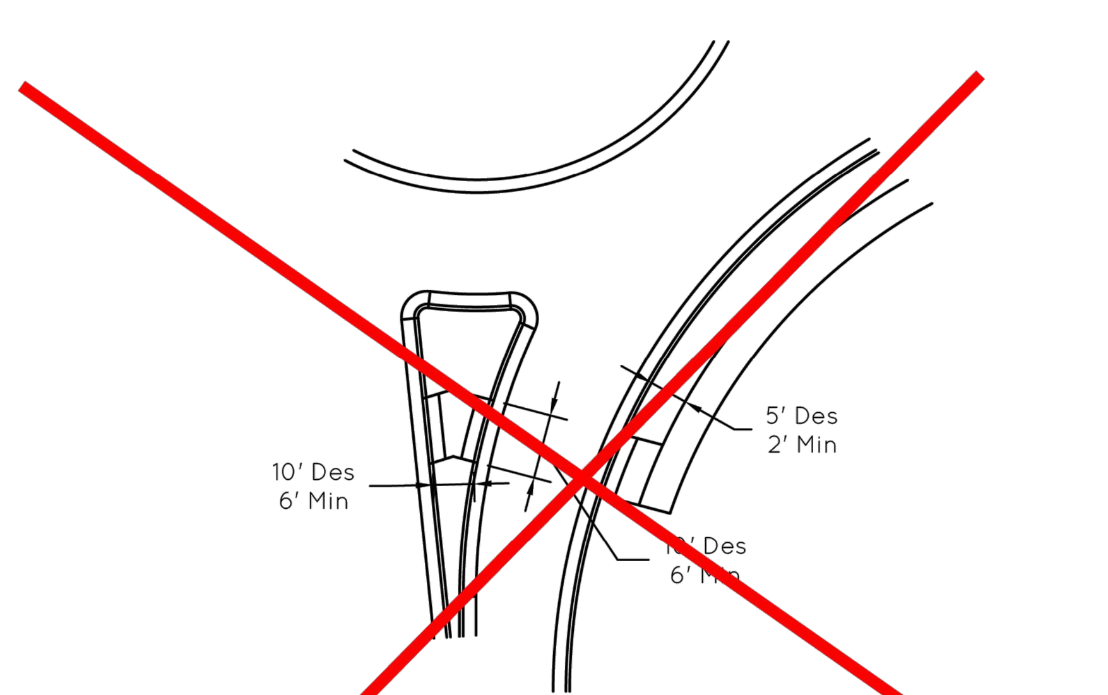
2) Detectable warning surfaces shall be ADA compliant.

DETECTABLE WARNING SURFACE
Not to Scale



Note:
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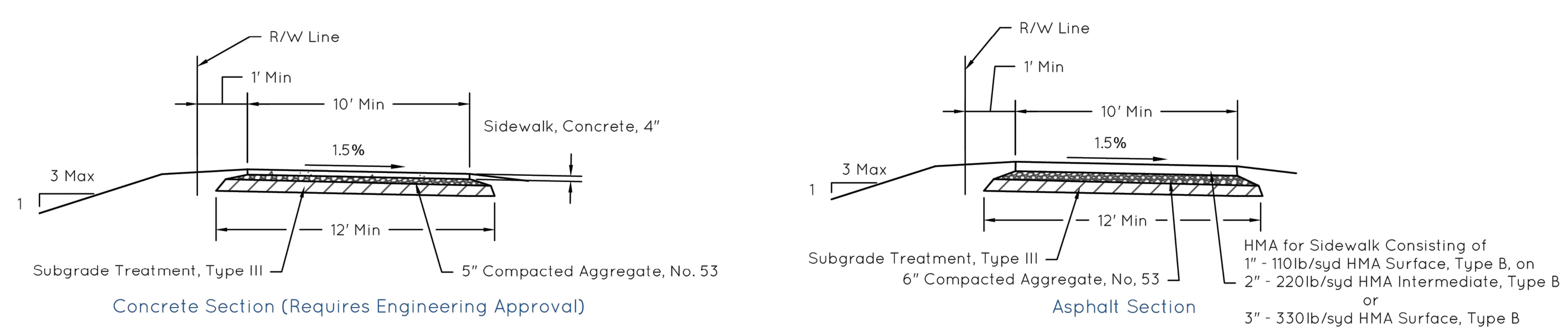
ROUNDABOUT SIDEWALK AND CURB RAMP PLACEMENT
Not to Scale



PERIMETER PATH
Not to Scale

1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SIDEWALK, CURB RAMP, AND PERIMETER PATH DETAILS

SHEET 6 of 29

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
FISHERS STANDARD DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C907

PROJECT NUMBER
2021119

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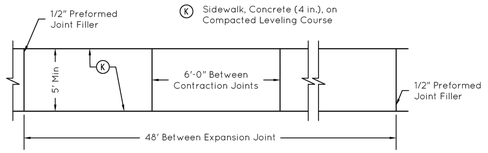
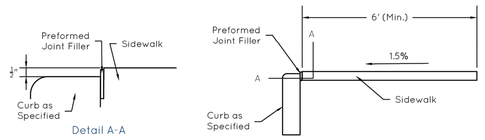
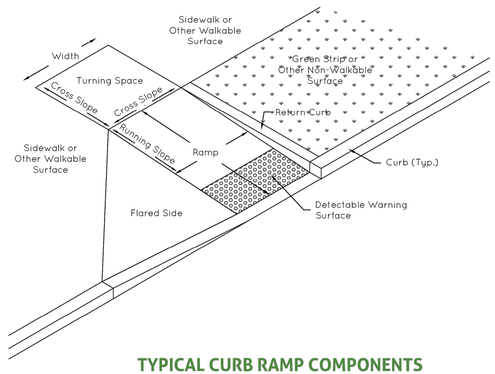


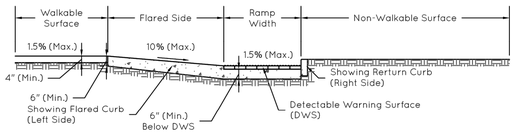
SIDEWALK DETAIL
Not to Scale



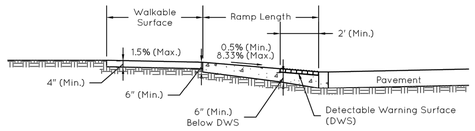
SIDEWALK ADJACENT TO CURB
Not to Scale



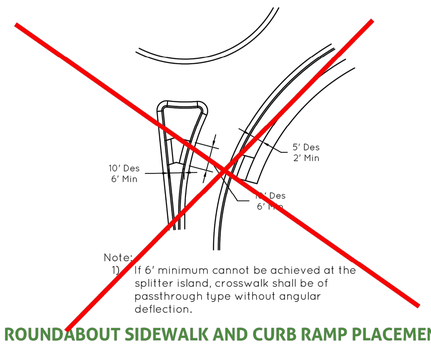
TYPICAL CURB RAMP COMPONENTS
Not to Scale



TYPICAL CURB RAMP CROSS SLOPE SECTION
Not to Scale



TYPICAL CURB RAMP RUNNING SLOPE SECTION
Not to Scale



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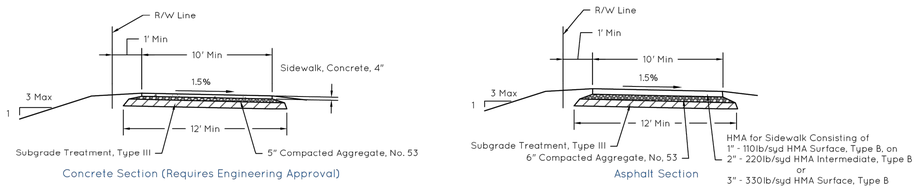
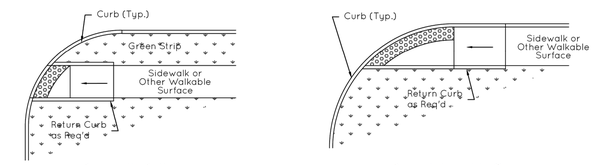
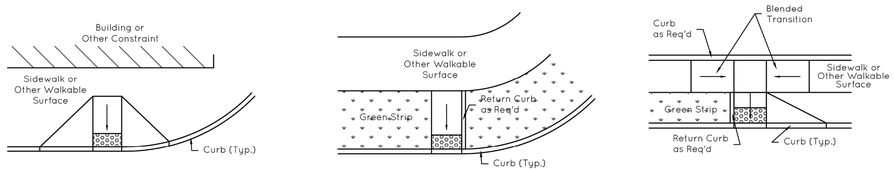
ROUNDABOUT SIDEWALK AND CURB RAMP PLACEMENT
Not to Scale



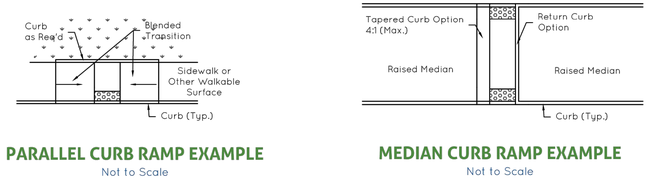
PERIMETER PATH
Not to Scale



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP EXAMPLES
Not to Scale

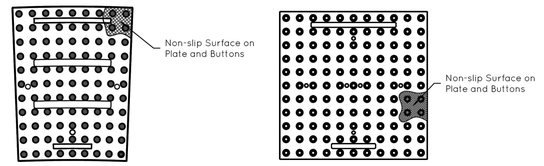


PERPENDICULAR CURB RAMP EXAMPLES
Not to Scale



PARALLEL CURB RAMP EXAMPLE
Not to Scale

MEDIAN CURB RAMP EXAMPLE
Not to Scale



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DETECTABLE WARNING SURFACE
Not to Scale

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11202277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SIDEWALK, CURB RAMP, AND PERIMETER PATH DETAILS

SHEET
6 of 29

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01/15/2023	KDK	JAD

DRAWING TITLE:
FISHERS STANDARD DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C908

PROJECT NUMBER
2021119

PRINCIPLES AND OBJECTIVES

Several overarching principles should guide the development of all roundabout designs. Achieving these principles should be the goal of any roundabout design:

- Provide slow entry speeds and consistent speeds through the roundabout by using deflection.
- Provide the appropriate number of lanes and lane assignment to achieve adequate capacity, lane volume balance, and lane continuity.
- Provide smooth channelization that is intuitive to drivers and results in vehicles naturally using the intended lanes.
- Provide adequate accommodation for the design vehicles.
- Design to meet the needs of pedestrians and cyclists.
- Provide appropriate sight distance and visibility for driver recognition of the intersection and conflicting users.

Note that some features of multi-lane roundabout design are significantly different from single-lane roundabout design, and some techniques used in single-lane roundabout design may not directly transfer to multi-lane design. Each of the principles described above affects the safety and operations of the roundabout. When developing a design, the trade-offs of safety, capacity, cost, and so on must be recognized and assessed throughout the design process.

DESIGN GUIDELINES

Submittals

All roundabout designs shall be submitted for review at the following stages of development:

1) Conceptual
   1)1) Preliminary layout
   1)2) Planned roundabout capacity analysis for construction year, 10-year, and 20-year traffic review

2) Stage 1 or 25% plans
   2)1) Refined geometrics
   2)2) Turning movement and design vehicle selection review
   2)3) Striping review

3) Stage 2 or 50% plans
   3)1) Drainage and grade review
   3)2) Roundabout sight distance review

4) Stage 3 or 75% plans
   4)1) Landscaping review
   4)2) Lighting review
   4)3) Signage review

Speed Management

The maximum allowable fastest path entry speeds shall be as indicated below unless prior approval has been given by the Department.

1) Single-lane roundabouts - 25 mph

2) Multi-lane roundabouts - 30 mph

Design Vehicle Selection

1) The WB-62 shall be the minimum design vehicle for sizing the roundabout unless prior approval has been given by the Department.
   1)1) At multi-lane approaches it shall be assumed that the WB-62 will straddle the lane line to make a through and right-turn movement.

2) At a minimum, the WB-62 shall be able to travel through a roundabout without over-tracking any curb with the exception of the truck apron roll curb unless prior approval has been given by the Department.

3) The circulatory roadway and all lanes within a multi-lane roundabout shall accommodate a city-bus, fire truck, and school bus unless prior approval has been given by the Department.

Inscribed Circle Diameter (ICD)

Unless prior approval is given by the Department, the smallest ICD used for design shall be 110 ft.

Entry Geometry and Path Alignment

1) If horizontal deflection is utilized on an approach to a roundabout it should be a 6 ft offset minimum and, ideally, 10 to 12 ft to ensure drive path is influenced.

2) Entries shall be designed such that path overlap is eliminated.

Profiles and Grades

Vertical profiles and roundabout grading should take into consideration low clearance vehicles especially on heavy truck routes.

Splitter Islands

1) Splitter islands for single-lane roundabouts should be 50 feet or greater in length and 100 feet or greater in length for multi-lane roundabouts measured from the circulatory roadway.

2) On high speed approaches (design speed of approaching roadways above 45 mph) consideration should be given for the splitter island length to be the SSD of that design speed.

Drainage

No drainage structures shall be located within the circulatory roadway unless prior approval has been given by the Department.

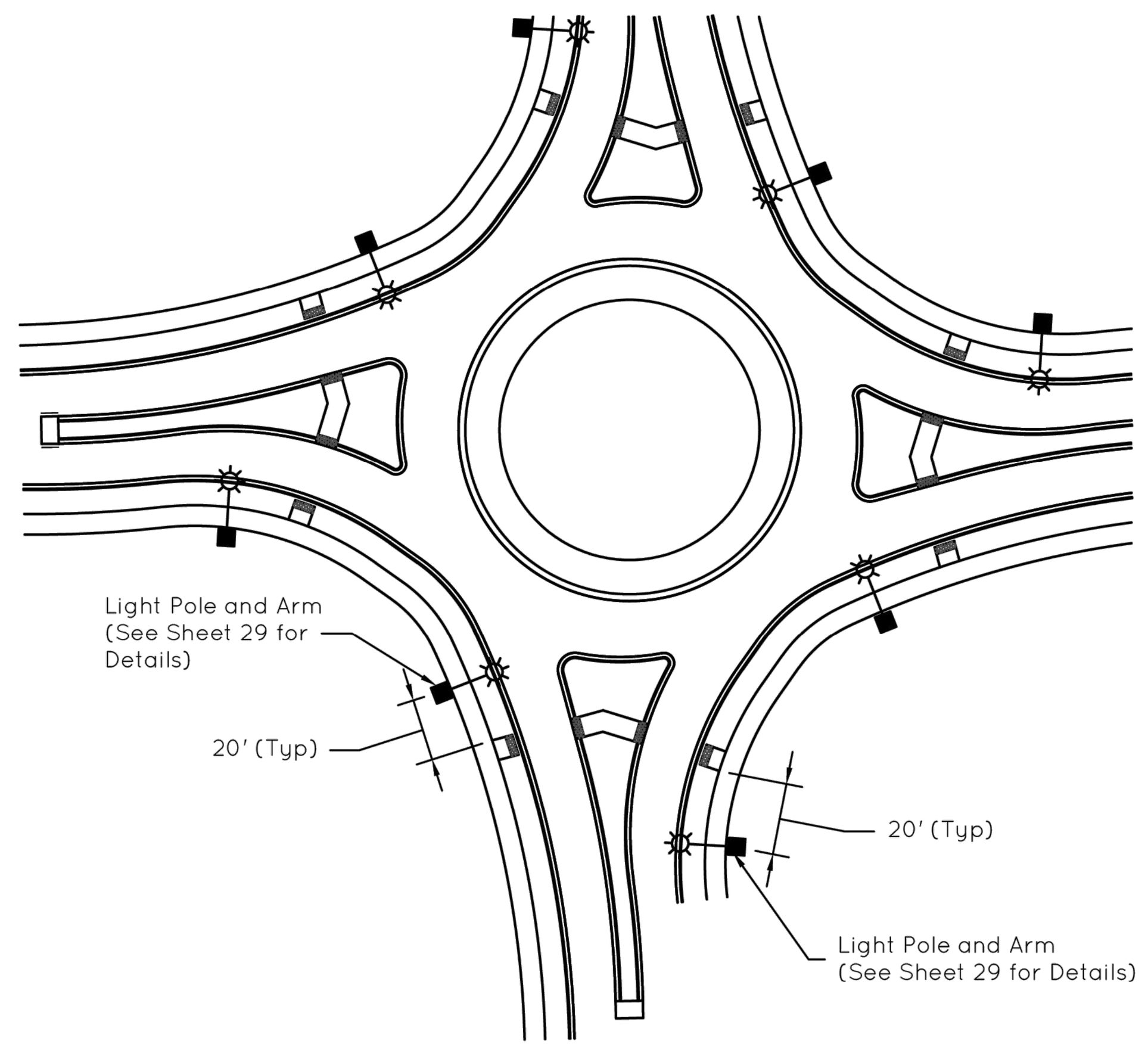
Landscape

Any landscaping or object located within the center island shall be approved by the City of Fishers.

1) If no landscaping is proposed in the center island, fill should be placed at a 6:1 slope in order to provide a sight obstruction mound.

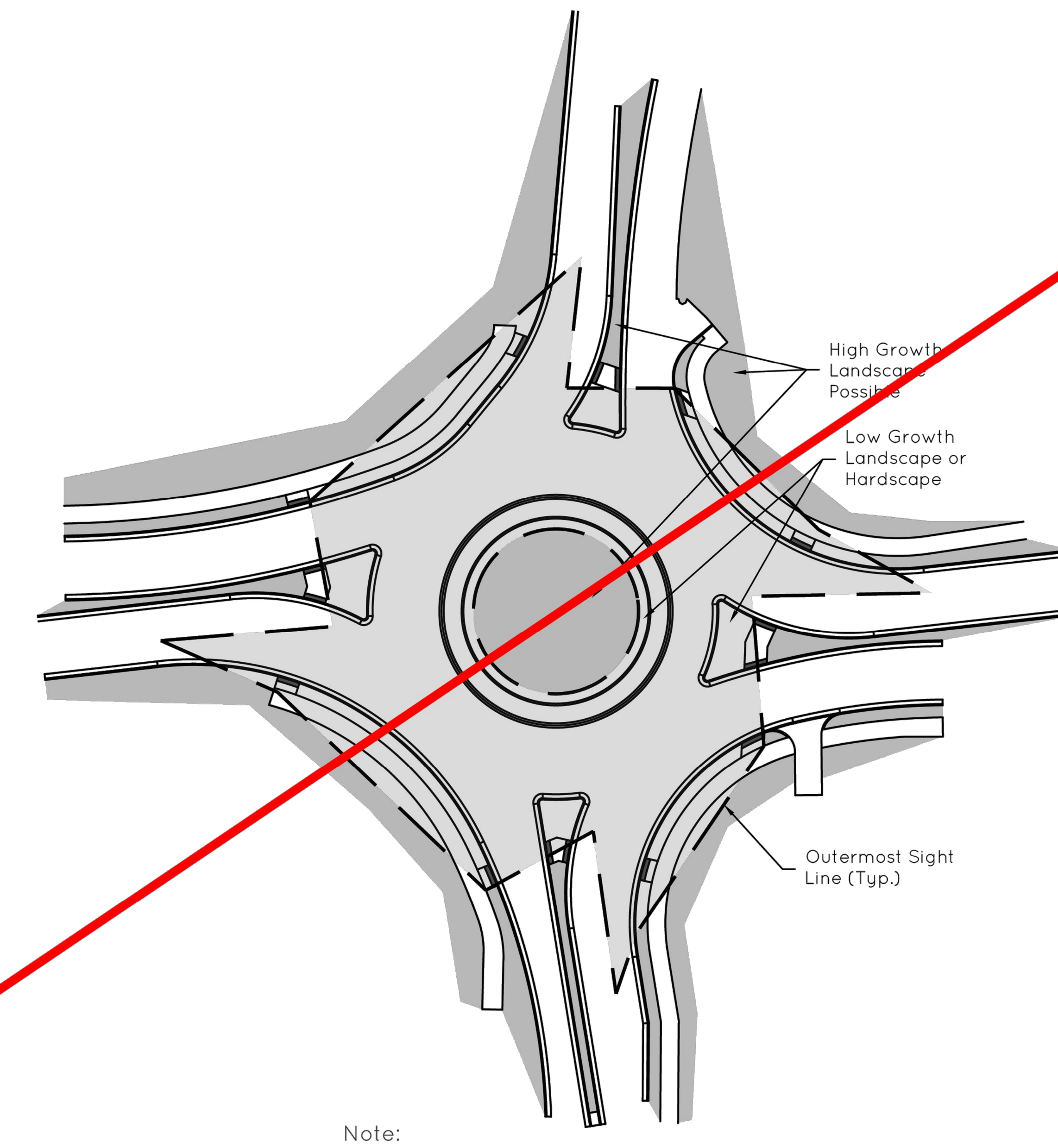
2) All splitter islands less than 8 ft in width and between the pedestrian crosswalk and circulatory roadway shall not be landscaped and shall be in stamped concrete unless prior approval has been given by the Department.

3) The minimum median width shall be 52 inches. If 52 inches cannot be achieved, then median must be stamped concrete or landscaped with typical Fishers narrow median landscape plan as provided by City during plan review.



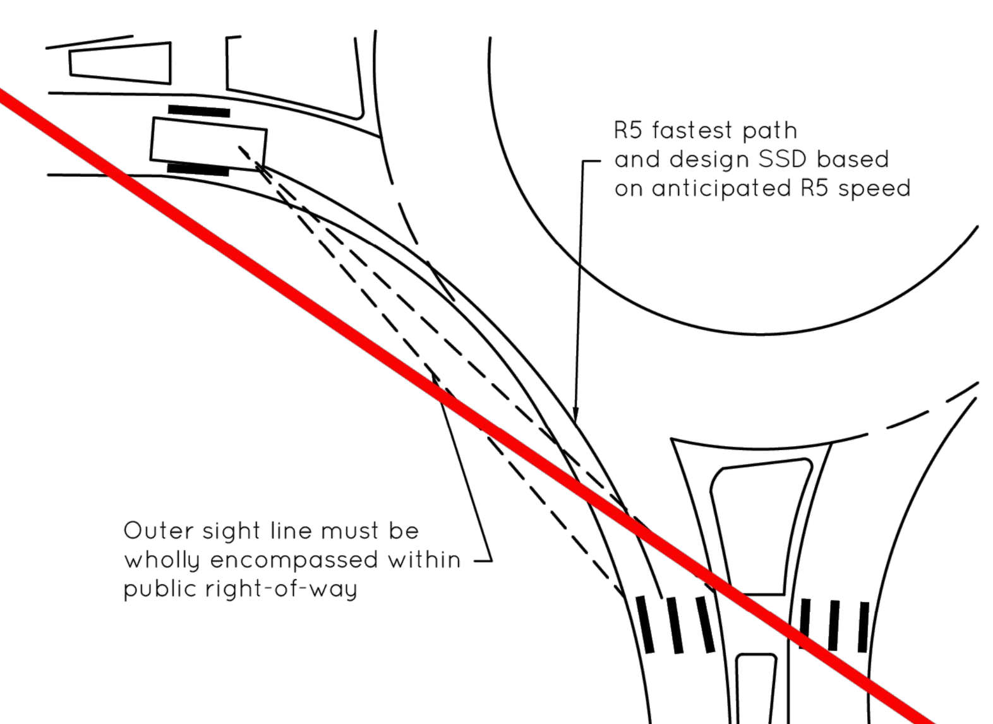
Notes:
1) Lighting design shall be in conformance with the IES Design Guide (IES DG-19-08) and City of Fishers standards.
2) Luminaire, pole, and placement shall be coordinated for installation by Duke Energy.
3) Do not backlight pedestrians.
4) The full length of splitter islands shall be illuminated unless prior approval has been given by the Department.
5) Additional poles should be provided as required to meet appropriate photometeric results for complex geometry.

TYPICAL LIGHTING PLACEMENT
Not to Scale



Note:
1) A scalable plan sheet and CAD file shall be provided to the Dept. of Engineering upon completion of final plans.

EXAMPLE LANDSCAPE AREAS DIAGRAM
Not to Scale



Notes:
1) This detail is to provide additional guidance to designers. Designer shall not arbitrarily place vehicle at yield line or circulatory roadway edge line to check visibility.
2) All roundabout sight lines shall be checked in accordance with NCHRP 672.

STOPPING SIGHT DISTANCE (SSD) TO CROSSWALK
Not to Scale

1/18/2022

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
ROUNDABOUT DESIGN STANDARDS	7 of 29

4

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DESIGN DEVELOPMENT
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CERTIFIED BY:
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DRAWING NUMBER
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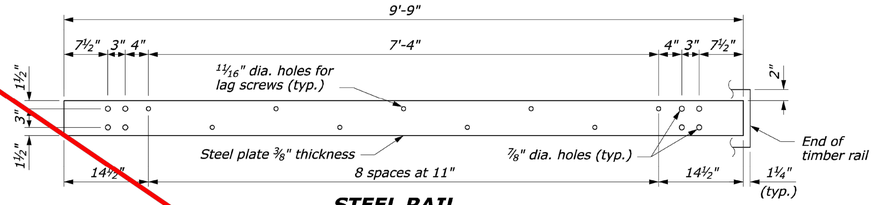
STATE	PROJECT	SHEET NUMBER

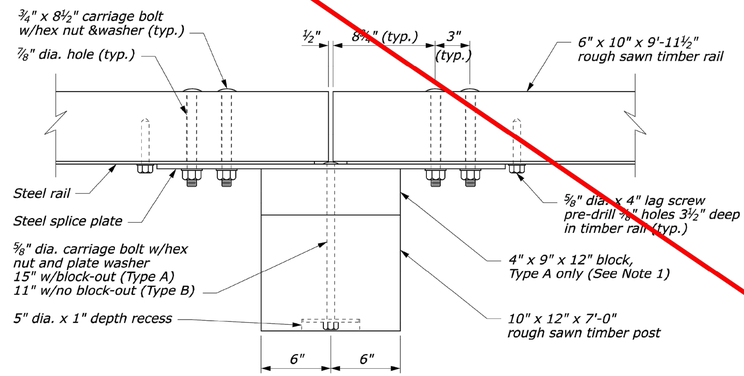


STEEL RAIL

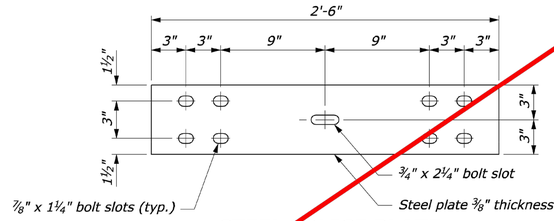
PLATE WASHER

NOTE:

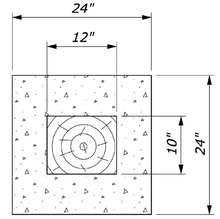
1. *Use the Type A, blocked-out, system or the Type B, non-blocked-out, system as specified in the plans.*
2. *Use weathering steel for all structural steel and fastener hardware as specified.*
3. *Place a terminal section (See Standards 617-61 and 617-62) on both approach and trailing ends of barrier installations.*

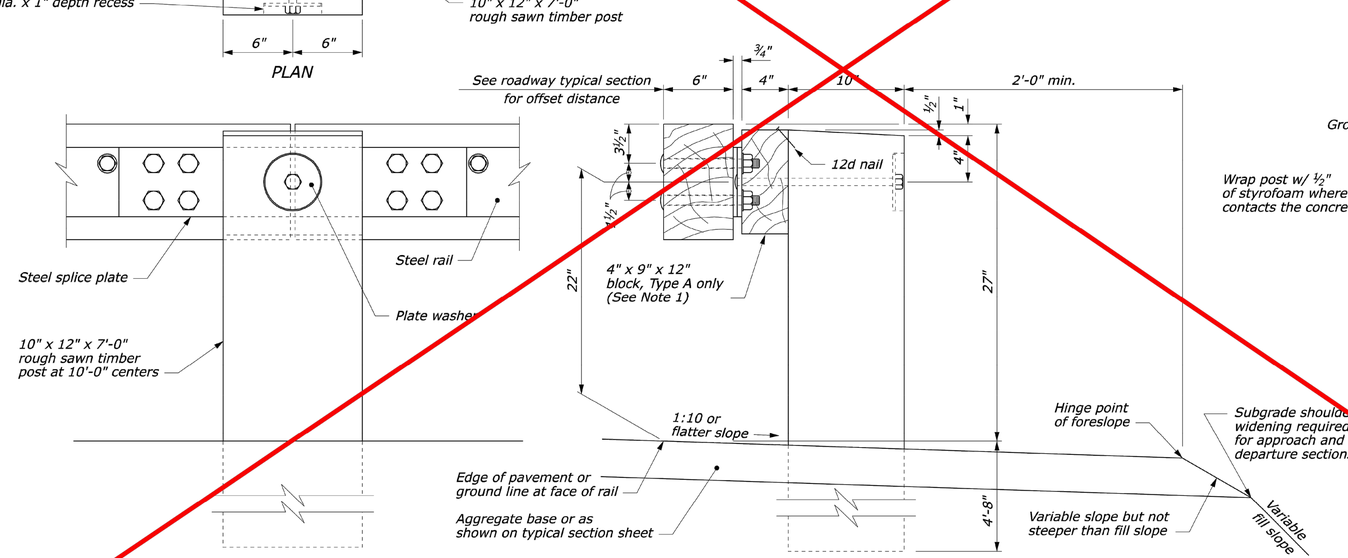


PLAN



STEEL SPLICE PLATE



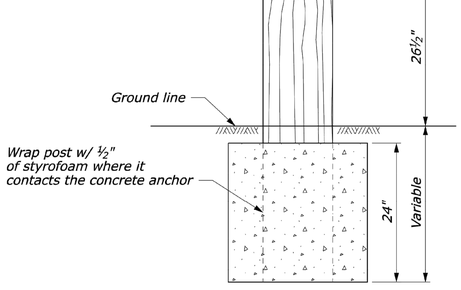


ELEVATION

POST CONNECTION

TYPICAL GUARDRAIL CROSS SECTION

NO SCALE



24" dia. round anchor is an acceptable alternative. Reduced size acceptable in solid rock.

CONCRETE ANCHOR FOR SHORT GUARDRAIL POST

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

STEEL-BACKED TIMBER GUARDRAIL TYPE A & TYPE B

STANDARD APPROVED FOR USE 3/1994
REVISED: 4/1994 6/2005

STANDARD 617-60

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

FHWA TIMBER GUARDRAIL DETAILS

SHEET 9 of 29

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REVISIONS:

4	02/12/24 ADDENDUM #4

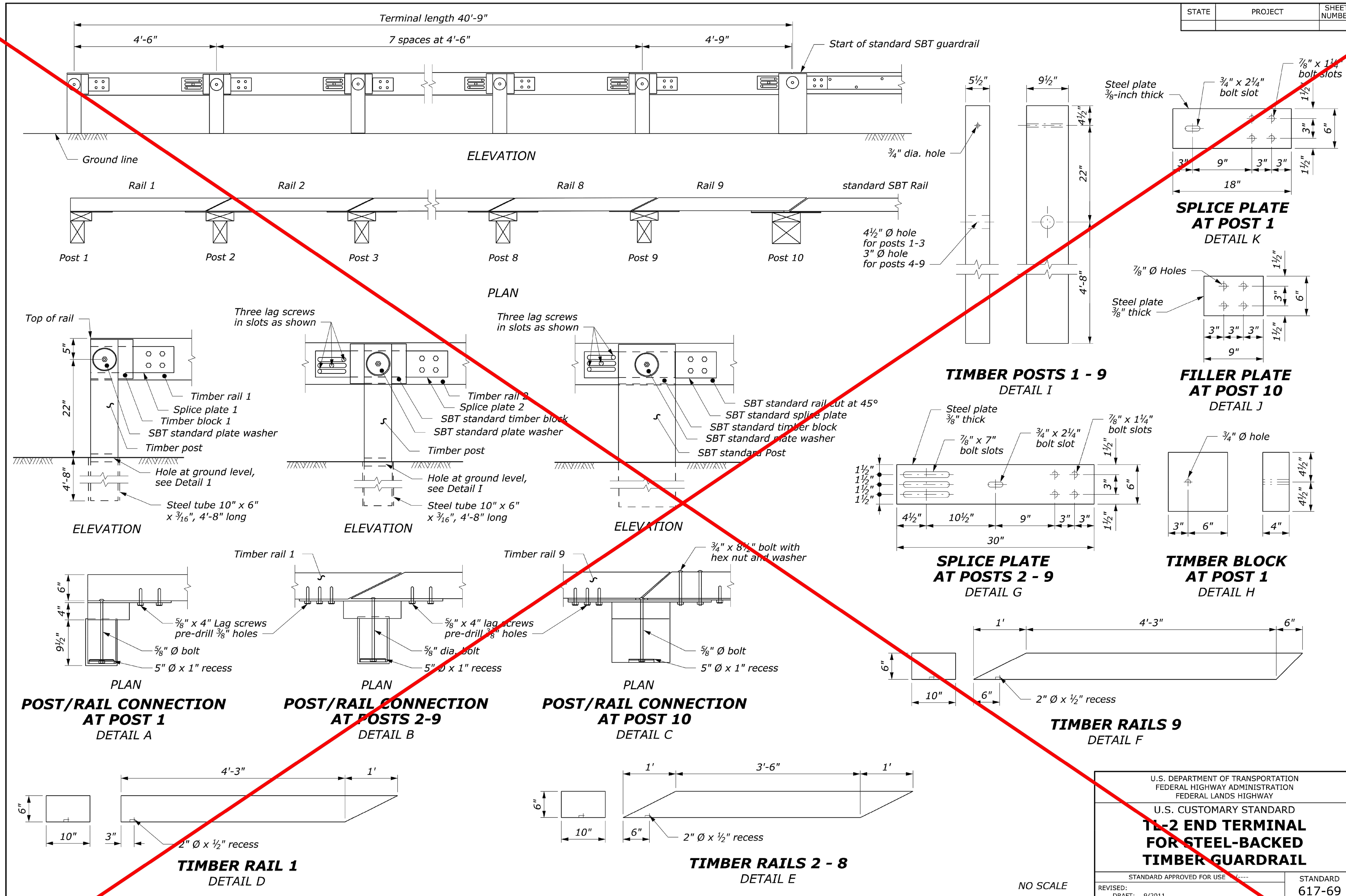
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
FISHERS STANDARD DETAILS

CERTIFIED BY:
DAVID A. JACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C910

PROJECT NUMBER
2021119



JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

FHWA TIMBER GUARDRAIL DETAILS

SHEET 10 of 29

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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CERTIFIED BY:
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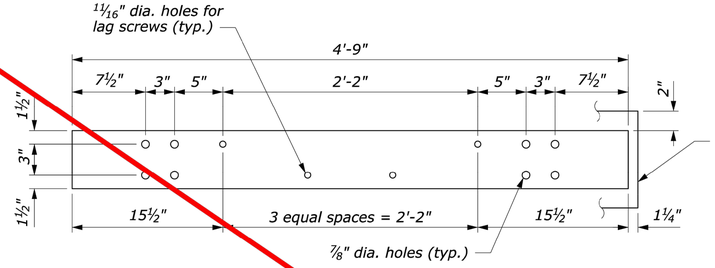
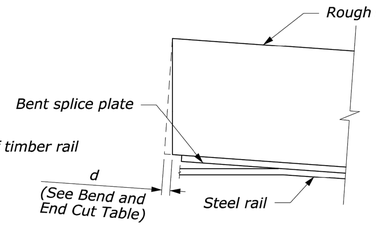
DRAWING NUMBER
C911

PROJECT NUMBER
2021119

STATE	PROJECT	SHEET NUMBER



STEEL RAIL
6" x ⅜" x 4'-9"



DETAIL A

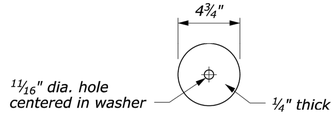
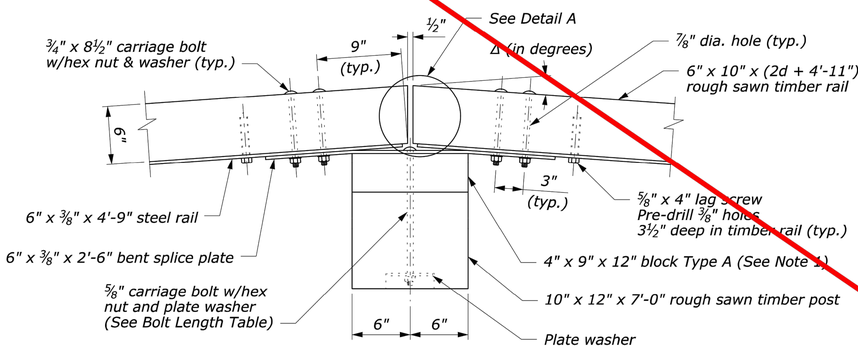


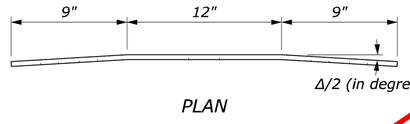
PLATE WASHER DETAIL

NOTE:

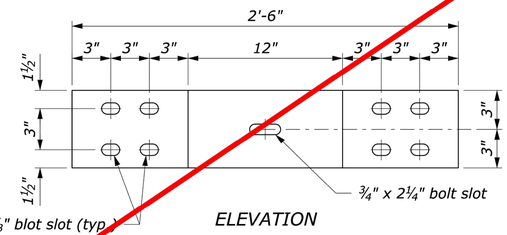
1. Use the Type A, blocked-out, system or the Type B, non-blocked-out, system as specified.
2. Use the weathering steel for all structural steel and fastener hardware.
3. Furnish shop bent splice plates. Use the minimum bend angle shown in the table below.
4. See Sheet 2 of 2 for Plan View Layout.



PLAN



PLAN

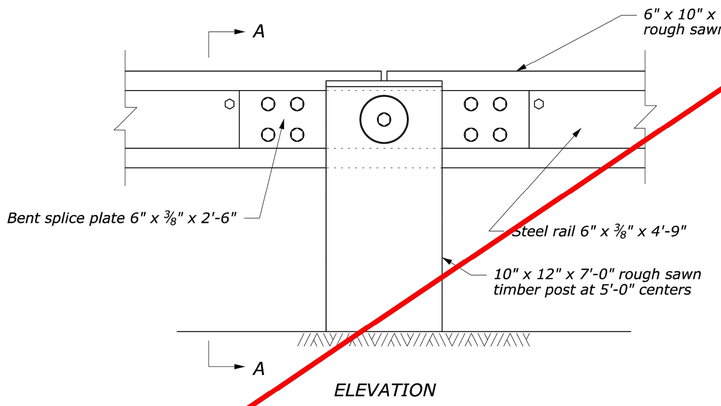


ELEVATION

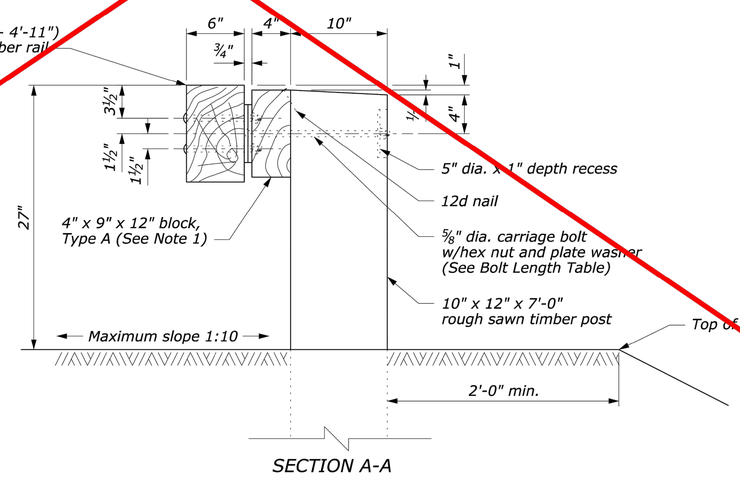
BENT SPLICE PLATE
6" x ⅜" x 2'-6"

BEND AND END CUT TABLE		
Radius R ft	Δ/2 degrees	d in
20	7.18	¾
25	5.74	⅝
30	4.78	½
35	4.10	7/16
40	3.58	⅜
45	3.18	⅓
50	2.87	5/16
55	2.61	¼
60	2.39	¼
65	2.20	¼
70	2.05	¼
over 70	flat	0

BOLT LENGTH TABLE	
Type A (Block-out)	Type B (No Block-out)
15"	11"



ELEVATION



SECTION A-A

POST CONNECTION

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

STEEL-BACKED TIMBER GUARDRAIL AROUND CIRCULAR CURVES 70 FOOT RADIUS AND BELOW

Sheet 1 of 2

STANDARD APPROVED FOR USE 6/1/2005

REVISED:

STANDARD 617-63

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

FHWA TIMBER GUARDRAIL DETAILS

SHEET 11 of 29

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FISHERS ELEMENTARY SCHOOL
ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

4

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

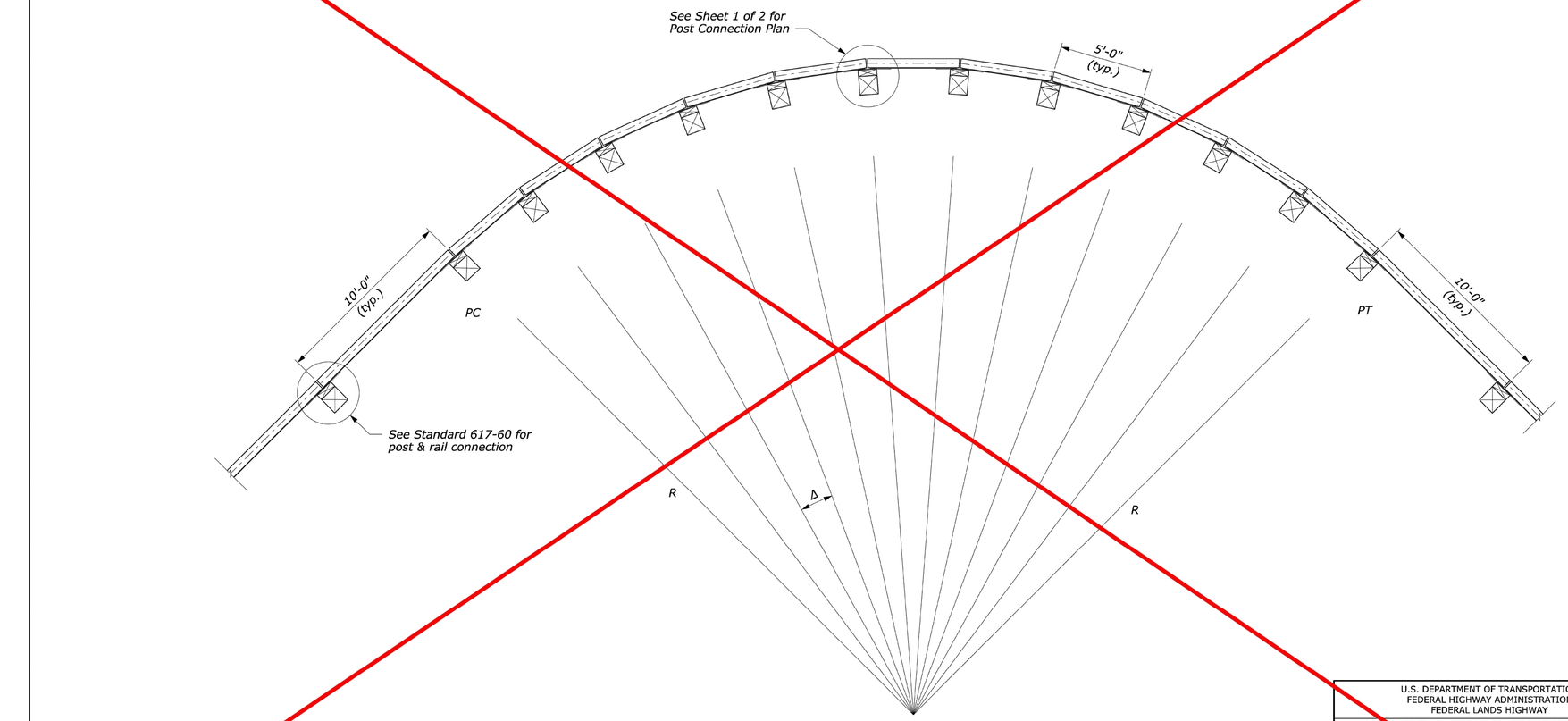
DRAWING NUMBER
C912

PROJECT NUMBER
2021119

STATE	PROJECT	SHEET NUMBER

NOTE:

1. *Δ is the central angle which subtends a 5'-0" chord.*
2. *R is measured from the center of the circle to the back surface of the rough sawn timber rail.*



PLAN VIEW LAYOUT

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

STEEL-BACKED TIMBER GUARDRAIL AROUND CIRCULAR CURVES 70 FOOT RADIUS AND BELOW

Sheet 2 of 2

STANDARD APPROVED FOR USE 6/2015	STANDARD
REVISED:	617-63

1/18/2022

JASON M. TAYLOR REGISTERED NO. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
FHWA TIMBER GUARDRAIL DETAILS	12 of 29

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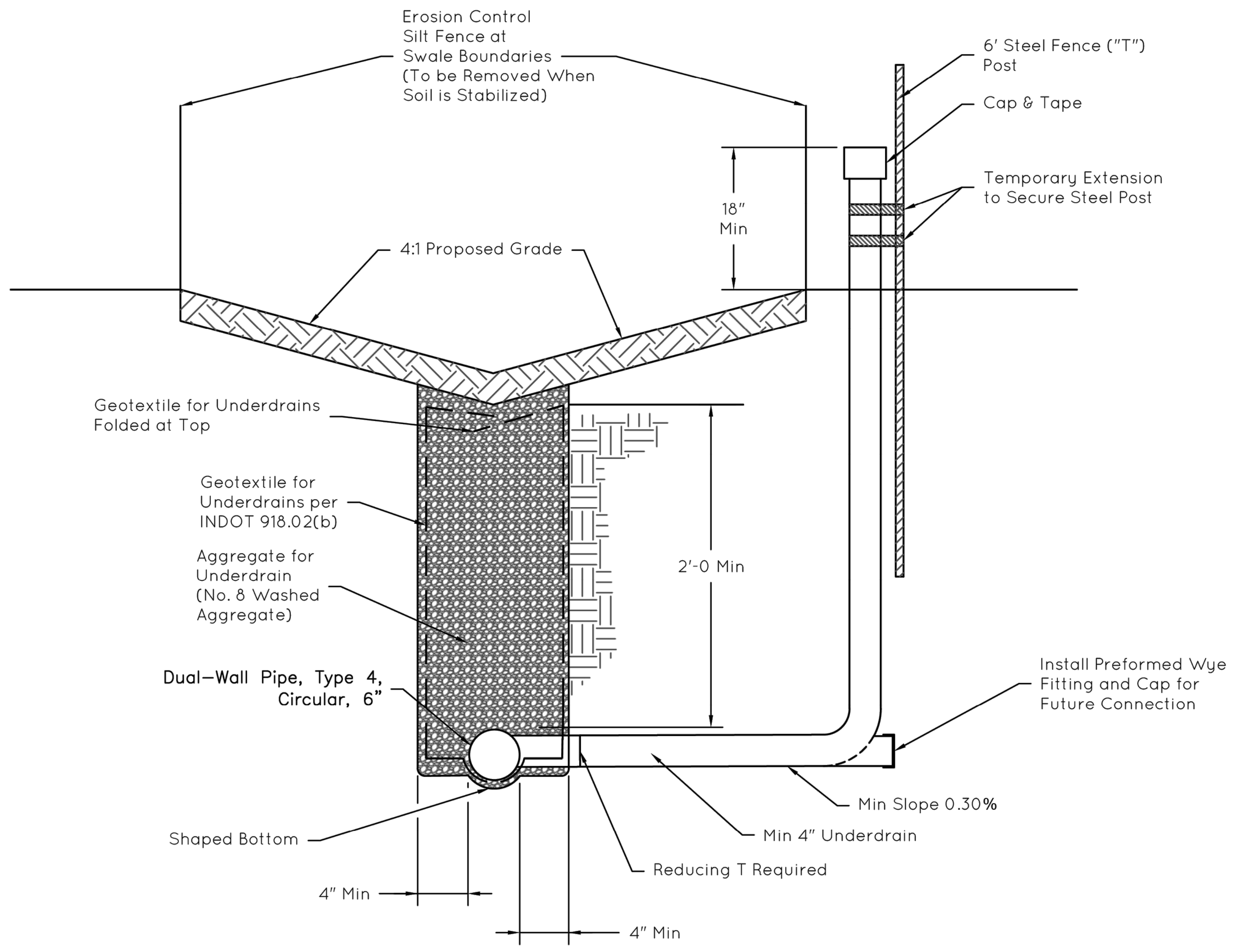
WATER DETAILS

CERTIFIED BY:

DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C913

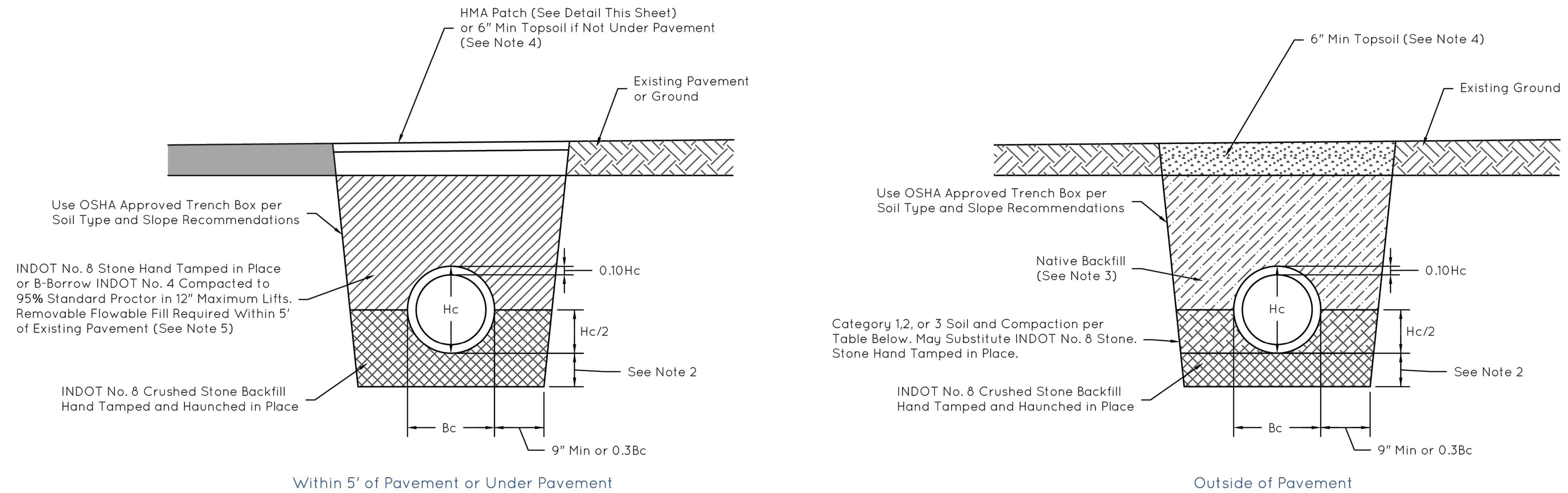
PROJECT NUMBER
2021119



Notes:
1) Temporary extension above ground to be removed upon connection to house. If extension is not utilized, it shall be capped below ground level.
2) Location of structures shall be shown on as-built plans.
3) Must connect sump pumps to underdrain.
4) Required for all rear yard drainage swales unless waived in writing by the Director of Engineering.

REAR YARD UNDERDRAIN

Not to Scale



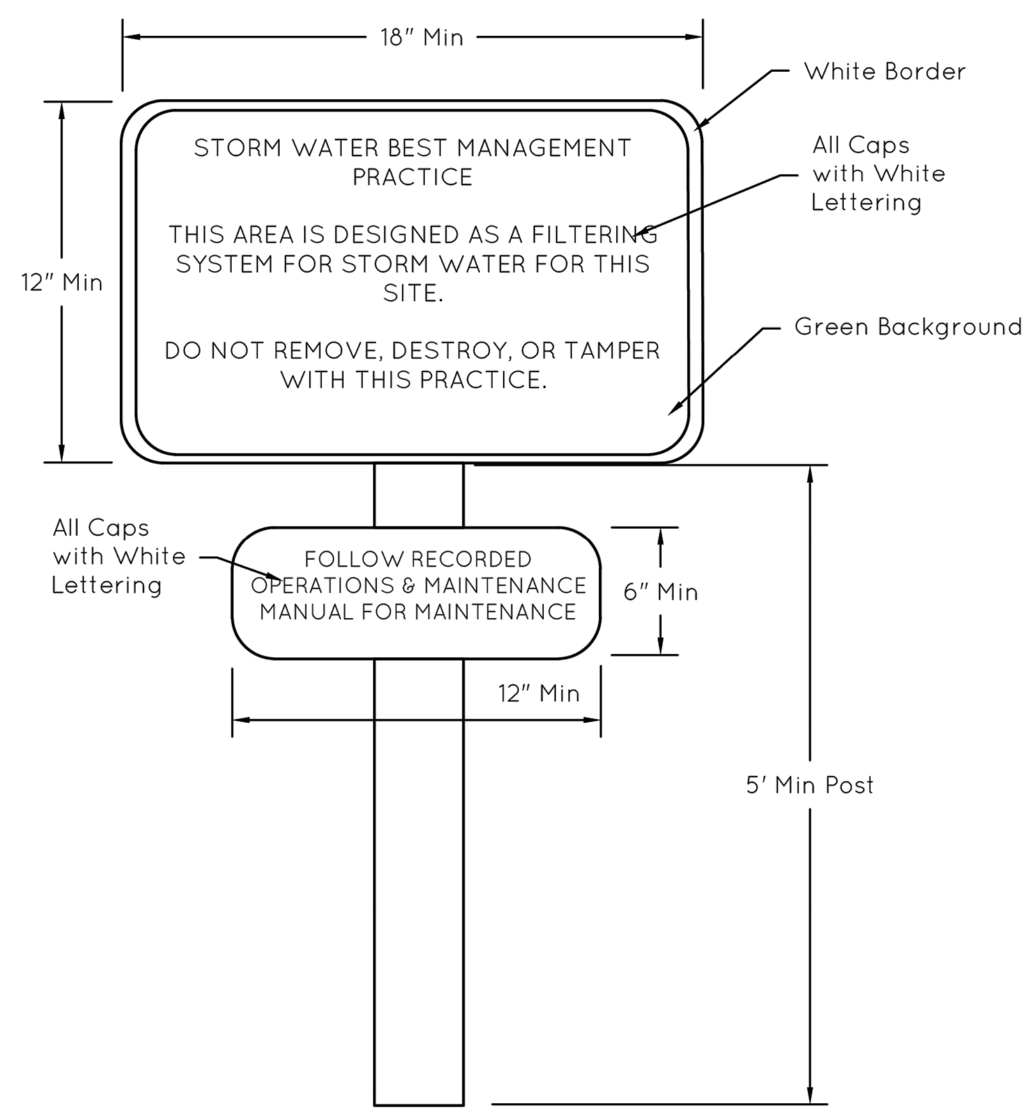
SOIL CATEGORY	SOIL NAME	USCS SOIL TYPE	AASHTO SOIL TYPE	STANDARD PROCTOR	MODIFIED PROCTOR
CATEGORY 1	CLEAN GRAVEL OR SAND	SW, SP, GW, GP	A1, A3	85	80
CATEGORY 2	SILTY GRAVEL OR SAND	GM, SM, ML & GC/SC W/LESS THAN 20% PASSING #200 SIEVE	A2, A4	90	85
CATEGORY 3	SILTY CLAY	CL, MH, GC, SC	A5, A6	95	85

Reference: American Concrete Pipe Association Standard Installation Manual

Notes:
1) For backfill purposes, paved shoulders and curbs are considered pavement. If paving is to occur within 30 days of placement of INDOT No.#4 B-Borrow, contractor shall provide City of Fishers with Professional Engineer certified compaction results.
2) Depth of bedding material below pipe shall be minimum of 3" or hc/24, whichever is greater.
3) Native backfill material must be free of aggregate greater than 6" diameter.
4) Topsoil material shall be mounded to accommodate settlement.
5) Removable flowable backfill shall be required for all open cuts across existing pavement and will also be allowed as a substitute for other backfill requirements.
6) Pipe and fittings used in storm sewer construction shall be RCP (AASHTO M170) and meet the fill height and load requirements according to the latest fill height tables of INDOT. Refer to Chapter 4.J of the City of Fishers Stormwater Technical Standards Manual for other approved pipe materials that may be used in commercial parking lots or private, non-paved areas. Any alternative pipe materials shall be in accordance with the requirements of Chapter 4.J, and shall be installed in accordance with manufacturer's specifications.
7) A minimum of Class III RCP (D-load 1350 lb/ft/ft) is required for all pipe within the City of Fishers Right-of-Way, or areas subject to loading. An alternate pipe class (Class IV or V) may be required by the design engineer or Director of Engineering for special pipement loading circumstances.
8) For pavement bores, alternative materials will be considered.
9) For elliptical or arch pipe installations, see installation specifications from the American Concrete Pipe Association.
10) For all excavation work, OSHA approved safety standards shall be followed.

TRENCH BACKFILL DETAILS

Not to Scale



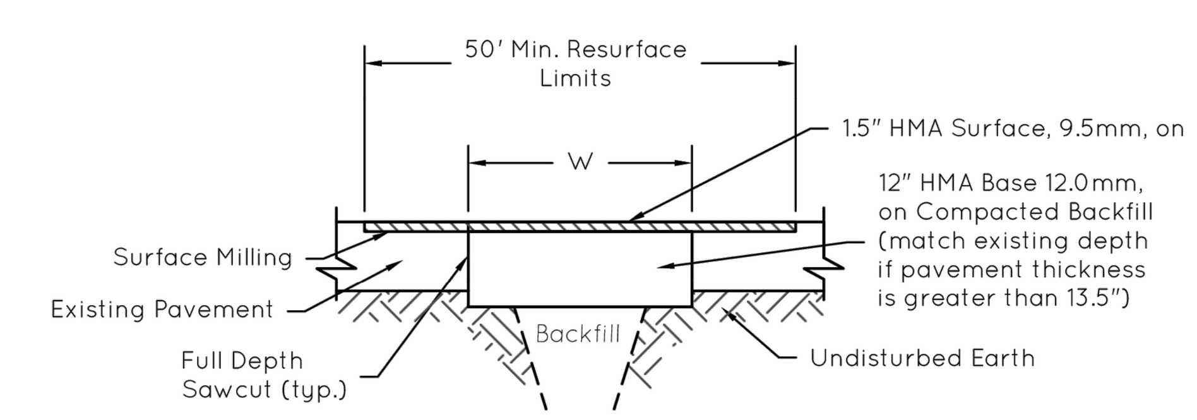
Notes:
1) BMP signs should be placed immediately adjacent or within the practice.
2) Signs should be aluminum and meet minimum IMUTCD standards.
3) Total number of signs required for each BMP is subject to plan review.

BMP SIGN

Not to Scale

PAVEMENT RESTORATION TABLE	
UTILITY DEPTH RANGE (FEET)	MAXIMUM TRENCH WIDTH AT FINISHED GRADE, W (FEET)
0 to 5	I.D. +5
5 to 8	I.D. +8
8 to 10	I.D. +10
10 to 12	I.D. +12
12 to 14	I.D. +14
14 to 16	I.D. +16
16 to 18	I.D. +18
18 to 20	I.D. +20

I.D. = Pipe or Conduit Inside Diameter



Notes:
1) Sawcuts shall provide a vertical, neat, and uniform edge.
2) All materials shall comply with specifications as required by the City of Fishers.
3) Contractor shall surface mill (1.5") existing pavement 25 ft. in each direction from trench centerline from face-of-curb to face-of-curb or edge-of-roadway, replace with 1.5" HMA Surface, 9.5mm, and appropriate pavement markings.
4) The existing milled surface and HMA Base layer is to be tack coated prior to the placement of new asphalt. The new surface pavement grade shall match the existing surface pavement grade.
5) A two (2) inch wide band of crack sealant is to be applied along the joint between the existing and new asphalt surface. Sealant is to be applied in accordance with INDOT Standard Specifications, Section 305.
6) Refer to Pavement Restoration Table for W.

HMA PATCH DETAIL

Not to Scale

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

1/18/2022

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
STORM SEWER BACKFILL, SWALE UNDERDRAIN, EXCAVATION DETAILS AND NOTES	13 of 29

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WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C914

PROJECT NUMBER
2021119

NOTES

1) Inlet boxes shall not extend into the pavement section beyond the width of the wall thickness which shall be a maximum of 6 inches. Square or rectangular structures shall be utilized for all pipe connections along the curb line. The maximum inlet box size shall be limited to 24"x36". Mainline pipe shall be defined as all pipe greater than 15" in diameter. No mainline pipe shall be allowed in direct connection to the inlet box. Details and manufacturer shop drawings shall be provided for all pipe connections less than 90 degrees to the box edge. Field changes to structures shall be cut or cored. Round structures shall only be allowed for areas outside of the curb line and outside of road section pavement.

2) 24"x24" inlet boxes shall be limited to depths of 5 feet. Inlet boxes greater than 5 feet in depth shall be 24"x36" (inside dimensions), or greater, and include steps.

3) The downstream most structure that collects runoff from within the Right-of-Way shall be sumped (2 feet) prior to the detention basin and is required to be placed within 15 feet of the curb, where practical, and equipped with a snout to catch floatables.

4) The contractor shall use precast inlets or catch basins, unless otherwise approved by the Director of Engineering, that are in accordance with INDOT Standard Specifications.

5) A 6" cushion of INDOT No. 8 crushed stone shall be required when the precast bottom section is used.

6) If a precast inlet, catch basin, or manhole is used and the adjoining pipes are field connected directly to the precast unit, the connection shall be made using a Class "A" concrete collar of 6" minimum longitudinal and radial thickness. Brick should be used as a filler for concrete patching for inlets that are not precast.

7) Waterproofing material shall conform to AASHTO M115 and INDOT Standard Specifications.

8) All curb inlets and catch basins shall be equipped for underdrains.

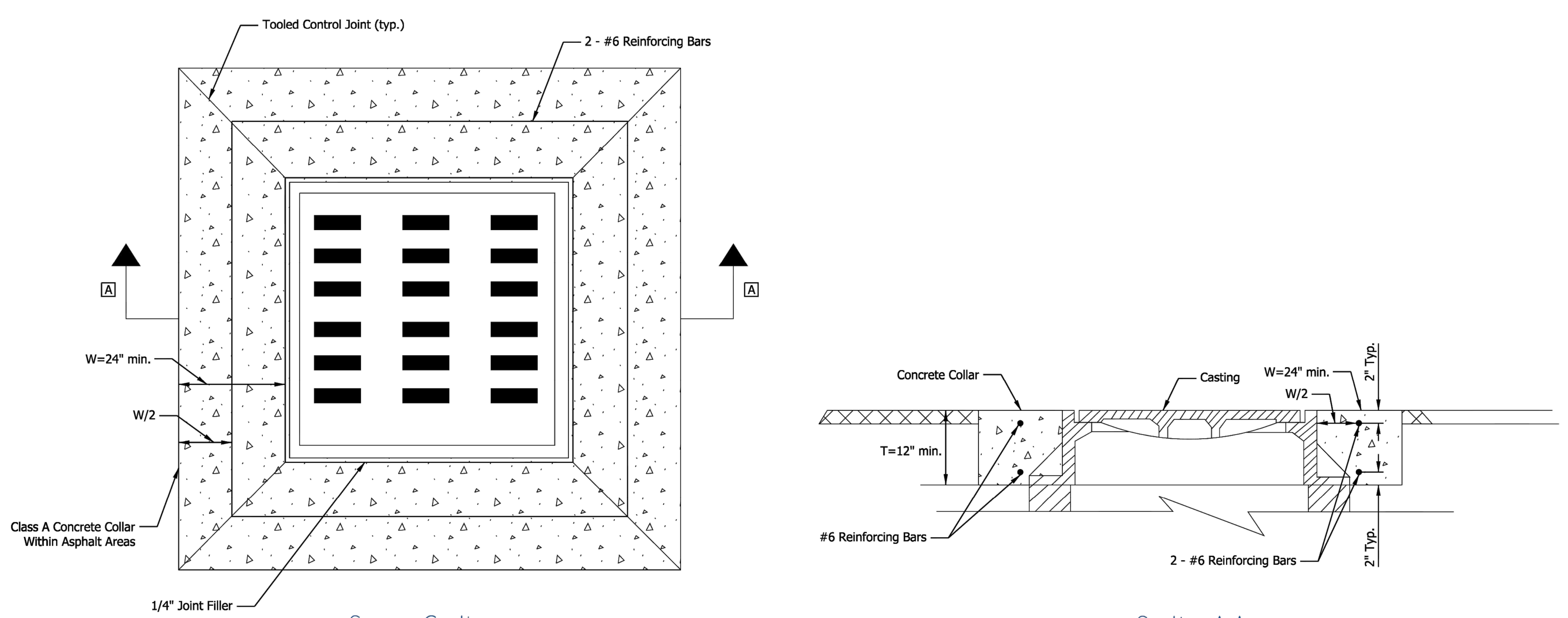
9) All structures receiving sub-surface drain (SSD) shall have both ports core drilled. T or Y blind connections are not allowed.

10) Expansion joints are required around castings for all structures located within PCCP, PCC sidewalk, PCC multi-use paths, or concrete curb and/or gutter.

11) All castings shall be checked to meet inlet design and ensure compatibility with curb specified, swales, ponds, etc. All castings shall be in accordance with the Compatibility of Inlet Structures and Castings Table, this sheet, unless otherwise approved by the Director of Engineering.

12) All inlet castings shall contain a "NO DUMPING, DRAINS TO WATERWAY" or equivalent clean water message to educate and warn against illegal dumping. Casting openings should be grated or otherwise designed to limit floatables and debris from entering the inlet box.

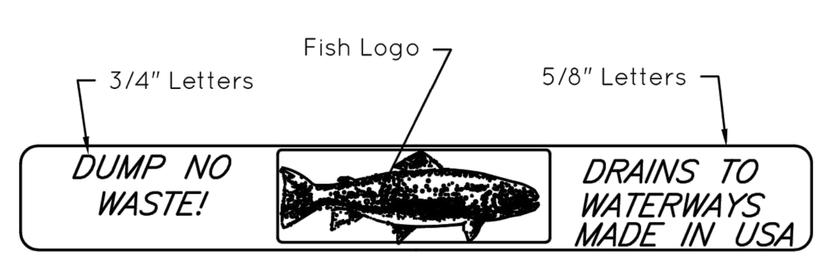
13) No inlet castings shall be installed within wheel paths, unless otherwise approved by the Director of Engineering.



Square Casting

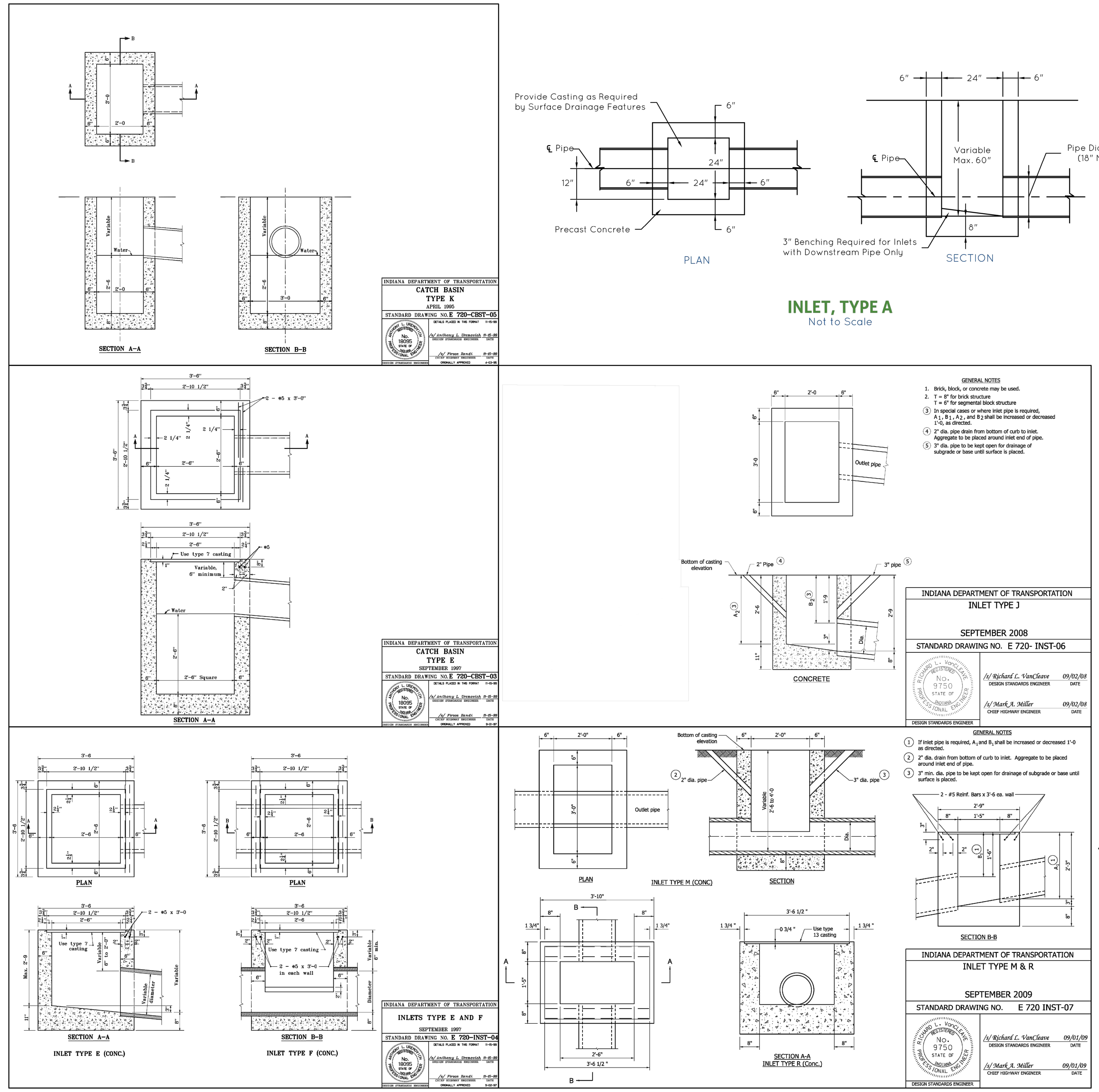
Section A-A

CONCRETE COLLAR FOR SQUARE CASTINGS DETAIL
Not to Scale



INLET LID CASTING DETAIL
Not to Scale

COMPATIBILITY OF INLET STRUCTURES AND CASTINGS																	
INLET TYPE	INDOT CASTING TYPES					NEENAH CASTING TYPES					EAST JORDAN IRON WORKS CASTING TYPES						
	2	3	7	8	10	R-3287-10V	R-3405-A	R-3501-TR	R-3501-TL	R-4215-C	5250	6610	7030 w/ M2 Grate & T1 Back	7495M1	7495M2	7495M4
A	X	X		X			X				X					
E			X							X		X				
F			X							X		X				
J					X	X		X	X				X	X	X	X
M					X	X		X	X				X	X	X	X



INLET, TYPE A
Not to Scale

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WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER
1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS
STORM SEWER INLET STRUCTURE DETAILS AND NOTES

SHEET 14 of 29

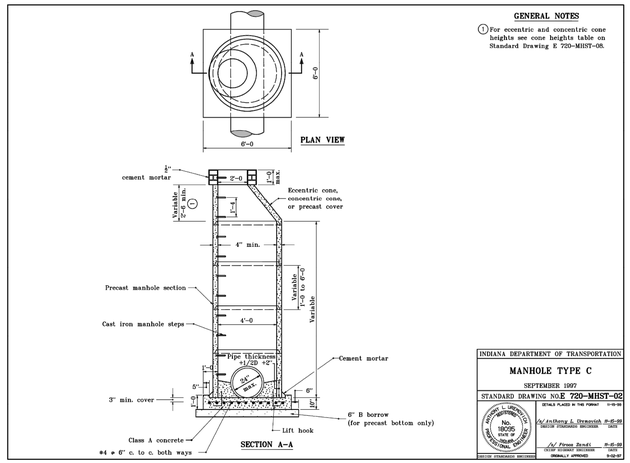
DRAWING NUMBER C915

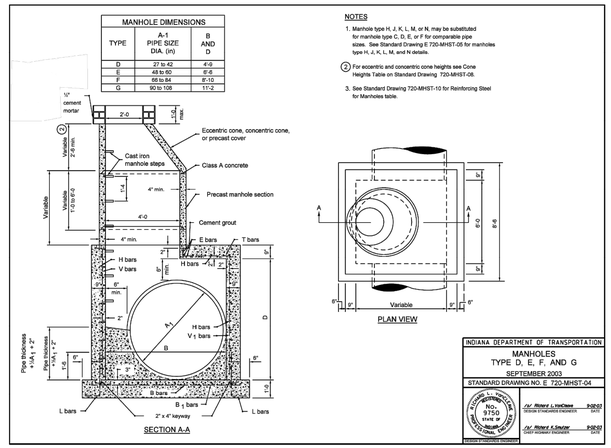
PROJECT NUMBER 2021119

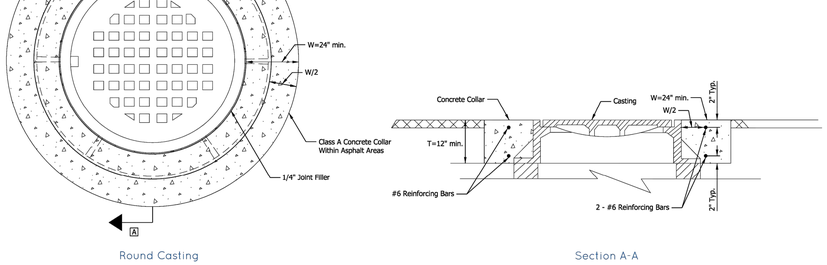
NOTES

1) All precast manhole materials shall conform to ASTM C-478 and INDOT Standard Specifications (min. sq. in. of reinforcing steel per lineal foot of barrel shall be 0.12).
2) A 6" cushion of INDOT No. 8 crushed stone shall be required when the precast bottom section is used.
3) Joints between sections of precast manholes shall be in accordance with ASTM C-443.
4) If the contractor uses a precast manhole and the adjoining pipes are field connected directly to the precast unit, the connection shall be made using a Class "A" concrete collar of 6" minimum longitudinal and radial thickness. Brick should be used as a filler for concrete patching for manholes that are not precast.
5) Drop pipe may be used with Manhole, Type D, E, F, or G and referred to as Drop Manhole, Type D, E, F, or G as approved by the Director of Engineering.
6) Bottom shall be constructed of precast bottom section or Class "A" concrete formed in place.
7) Benchwalls shall be Class "A" concrete.
8) Waterproofing material shall conform to AASHTO M115 and INDOT Standard Specifications.
9) Flat precast covers shall be used where headroom is limited.
10) The downstream most structure that collects runoff from within the Right-of-Way shall be sumped (2 feet) prior to the detention basin and is required to be placed within 15 feet of the curb, where practical, and equipped with a snout to catch floatables.
11) All structures receiving sub-surface drain (SSD) shall have both ports core drilled. T or Y blind connections are not allowed.
12) Expansion joints around castings are required at all structures located within PCCP, PCC sidewalk, PCC multi-use paths, or concrete curb and/or gutter.
13) All manhole castings shall be checked to meet inlet grate design and ensure compatibility with curb specified, swales, ponds, etc. In accordance with the Compatibility of Manhole Structures and Castings Table, this sheet, unless otherwise approved by the Director of Engineering.
14) All manhole castings shall contain a "NO DUMPING, DRAINS TO WATERWAY" or equivalent clean water message to educate and warn against illegal dumping. Casting openings should be grated or otherwise designed to limit floatables and debris from entering the manhole.
15) All manhole steps shall conform to INDOT Standard Drawing 720-MHST-09.
16) No manhole castings shall be installed within wheel paths, unless otherwise approved by the Director of Engineering.

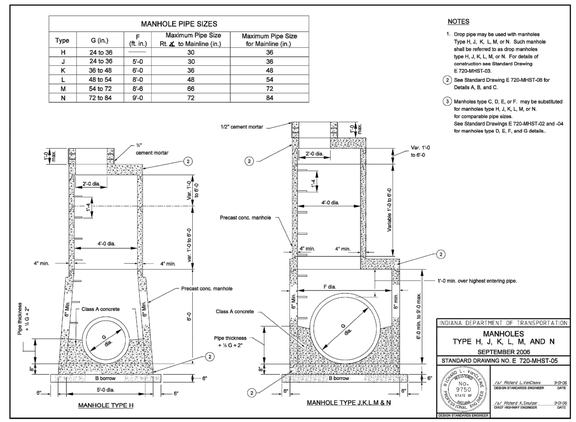
COMPATIBILITY OF MANHOLE STRUCTURES AND CASTINGS									
MANHOLE TYPE	INDOT CASTING TYPES			NEENAH CASTING TYPES			EAST JORDAN IRON WORKS CASTING TYPES		
	2	4	8	R-2502-D	R-4342	R-1772	1022 w/ Type A Lid	1022 w/ M1 or M3 Grate	6489
C	X	X	X	X	X	X	X	X	X
H	X	X	X	X	X	X	X	X	X
J	X	X	X	X	X	X	X	X	X
K	X	X	X	X	X	X	X	X	X
L	X	X	X	X	X	X	X	X	X
M	X	X	X	X	X	X	X	X	X
N	X	X	X	X	X	X	X	X	X

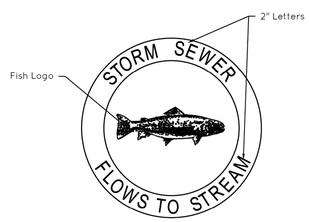






CONCRETE COLLAR FOR ROUND CASTINGS DETAIL
Not to Scale





MANHOLE LID CASTING DETAIL
Not to Scale

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

STORM SEWER MANHOLE STRUCTURE DETAILS AND NOTES

SHEET 15 of 29

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DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
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On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
4 — 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED No. PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C916

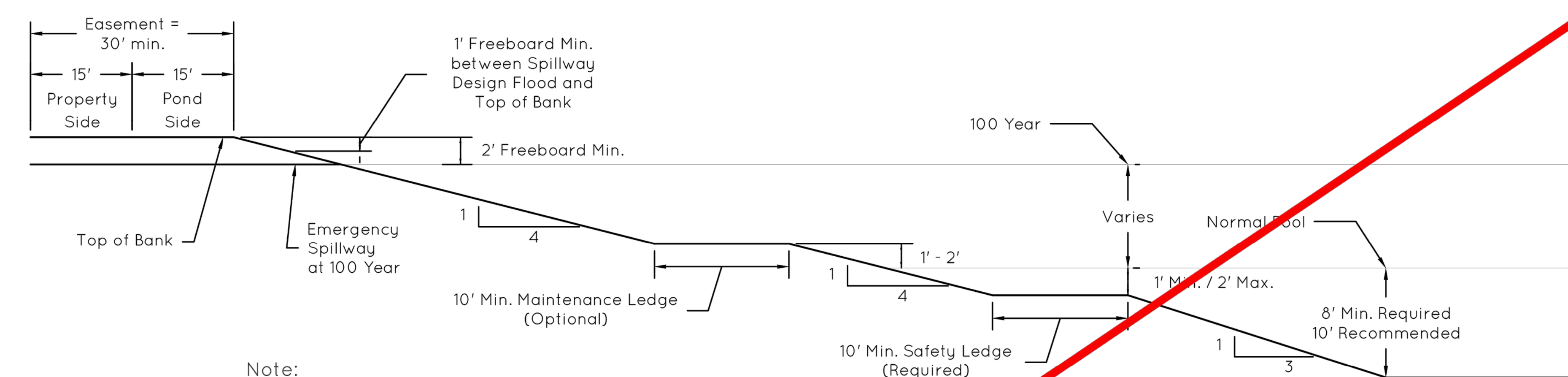
PROJECT NUMBER
2021119

GENERAL WET-BOTTOM DETENTION BASIN NOTES

1) All detention basins shall be designed in accordance with Chapters 3, 6 and 8 of the City of Fishers Stormwater Technical Standards Manual (STSM).
2) Per Section 6.C.4 of the STSM, all detention facilities shall be separated from edge of pavement of parking lots by a minimum of 50 feet and a minimum of 150 feet from a roadway, unless structural measures, such as guardrails, berms, or other physical barriers are provided that prevent passage of a vehicle. See Guardrail Details, Sheets 9 - 12.
3) Regardless of physical barriers, minimum separation of all stormwater detention facilities shall be according to the Minimum Detention Pond Setbacks in Table 1.
4) The design of all wet-bottom detention facilities should include methods to prevent pond stagnation, including but not limited to, surface or sub-surface aeration (diffusers) or destratification facilities.

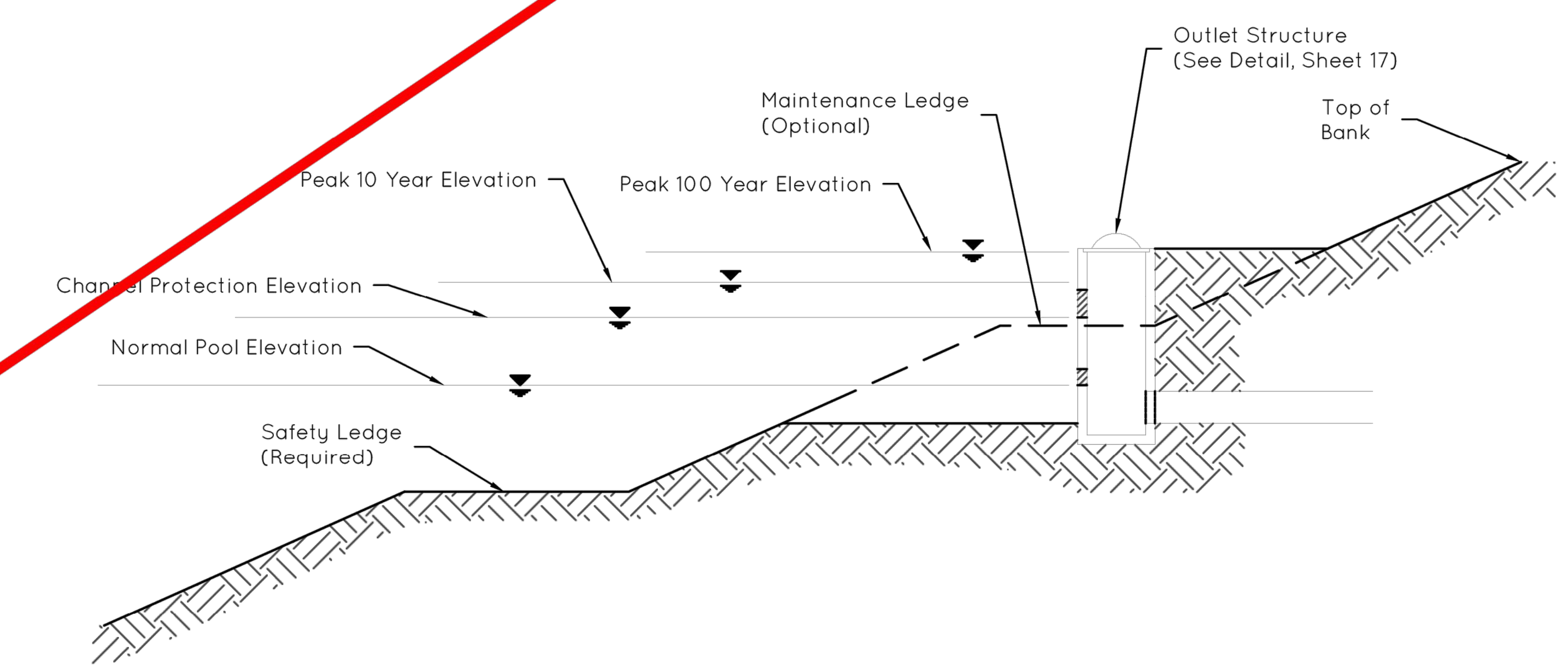
Table 1. Detention Facility Minimum Separations

FUNCTIONAL CLASSIFICATION OF ROADWAY	MINIMUM DETENTION POND SETBACK
Principal Arterial Minor Arterial Rural Major Collector Rural Minor Collector Urban Collector Local	50 Ft. From Right-of-Way to the Top of Bank -Or- 50 Ft. From Right-Of-Way to Maximum 100-Year Elevation, Whichever is Greater.
Private Roadways	80 Ft. From Centerline of Roadway to the Top of Bank -Or- 80 Ft. From Centerline of Roadway to Maximum 100-Year Elevation, Whichever is Greater.



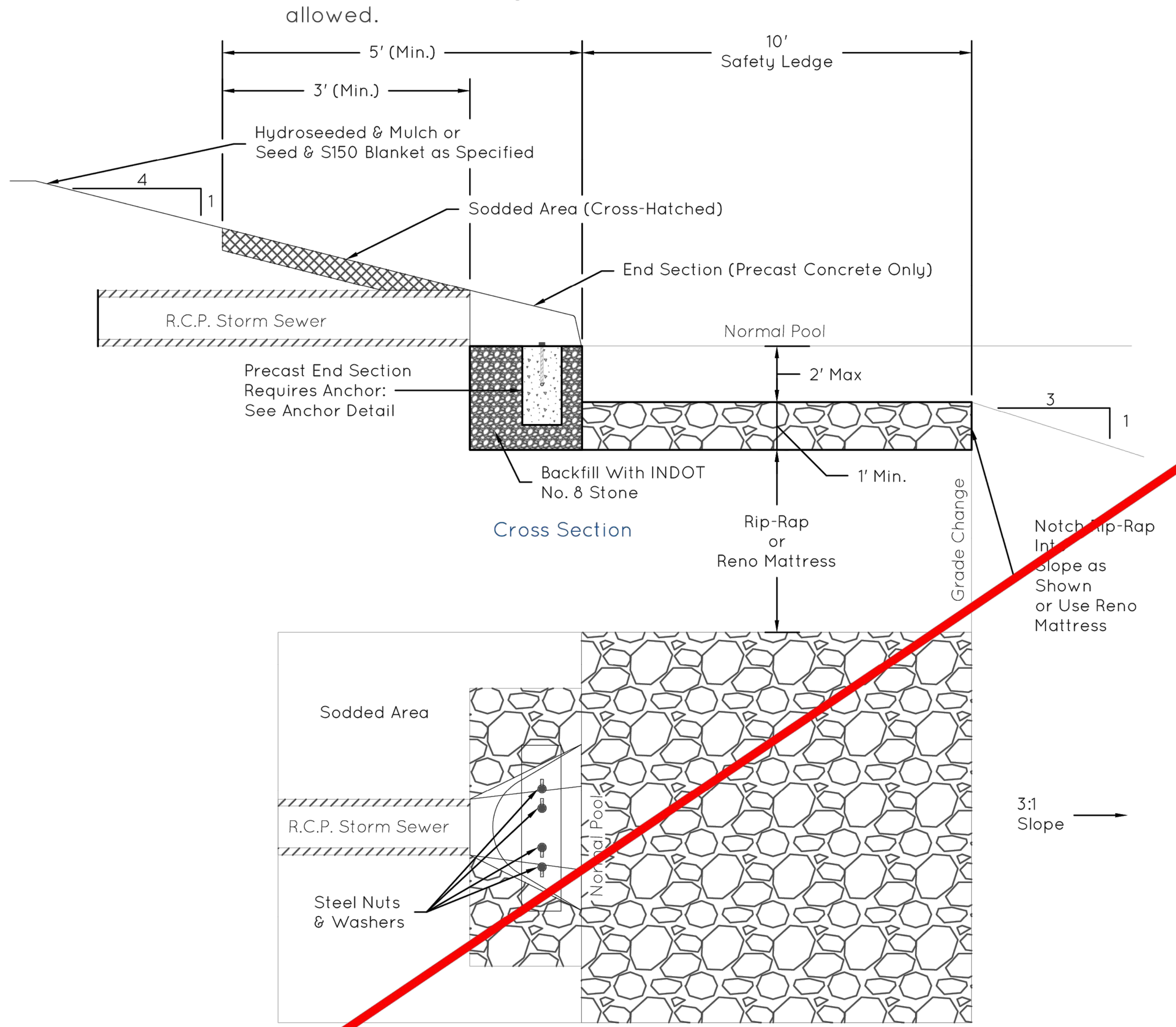
Note:
1) If a Safety Fence is Provided, Pond Slopes Above the Safety Ledge May be Changed to 3:1 Versus 4:1.

DETENTION BASIN CROSS-SECTION
Not to Scale

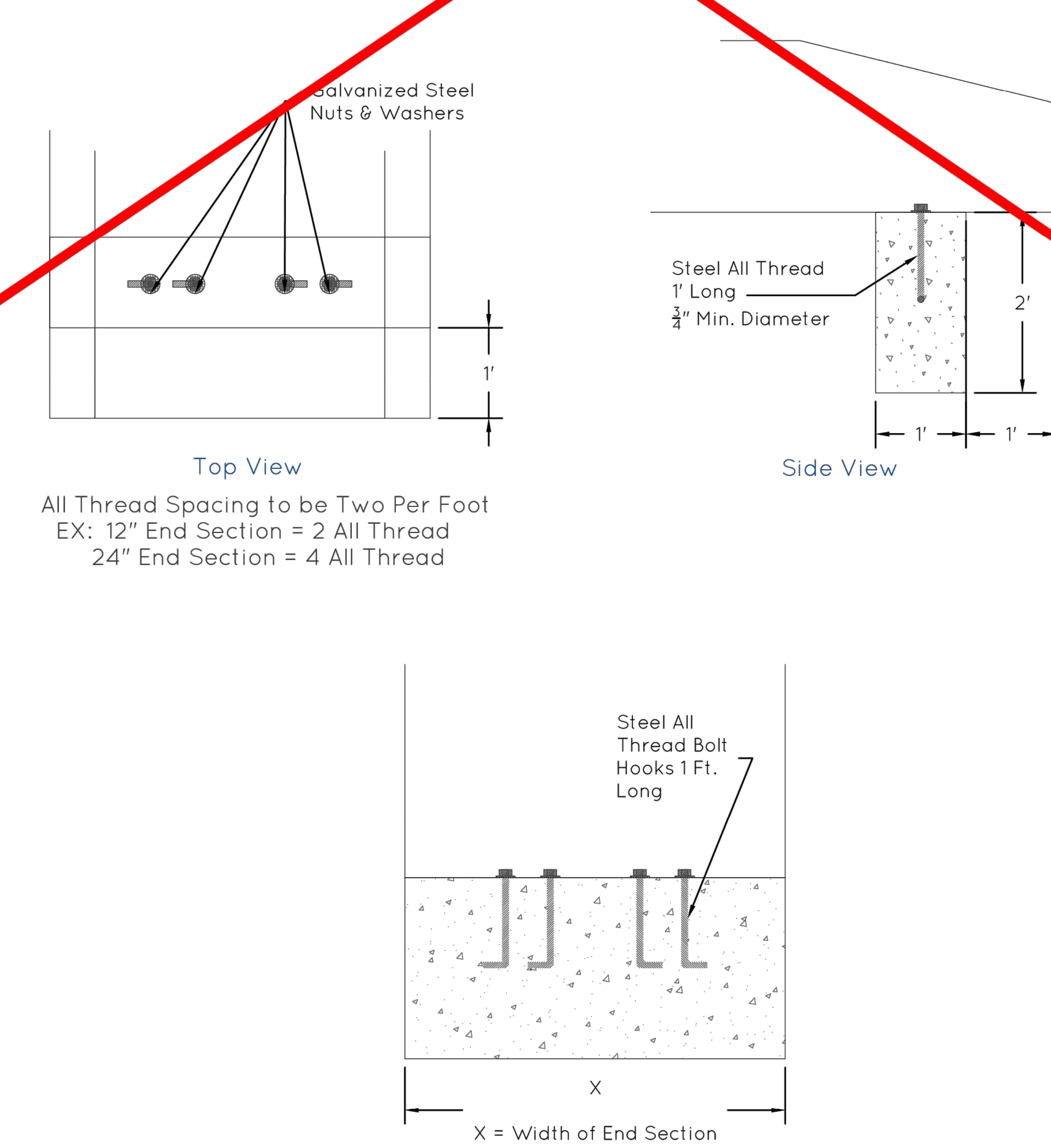


TYPICAL OUTLET STRUCTURE PLACEMENT
Not to Scale

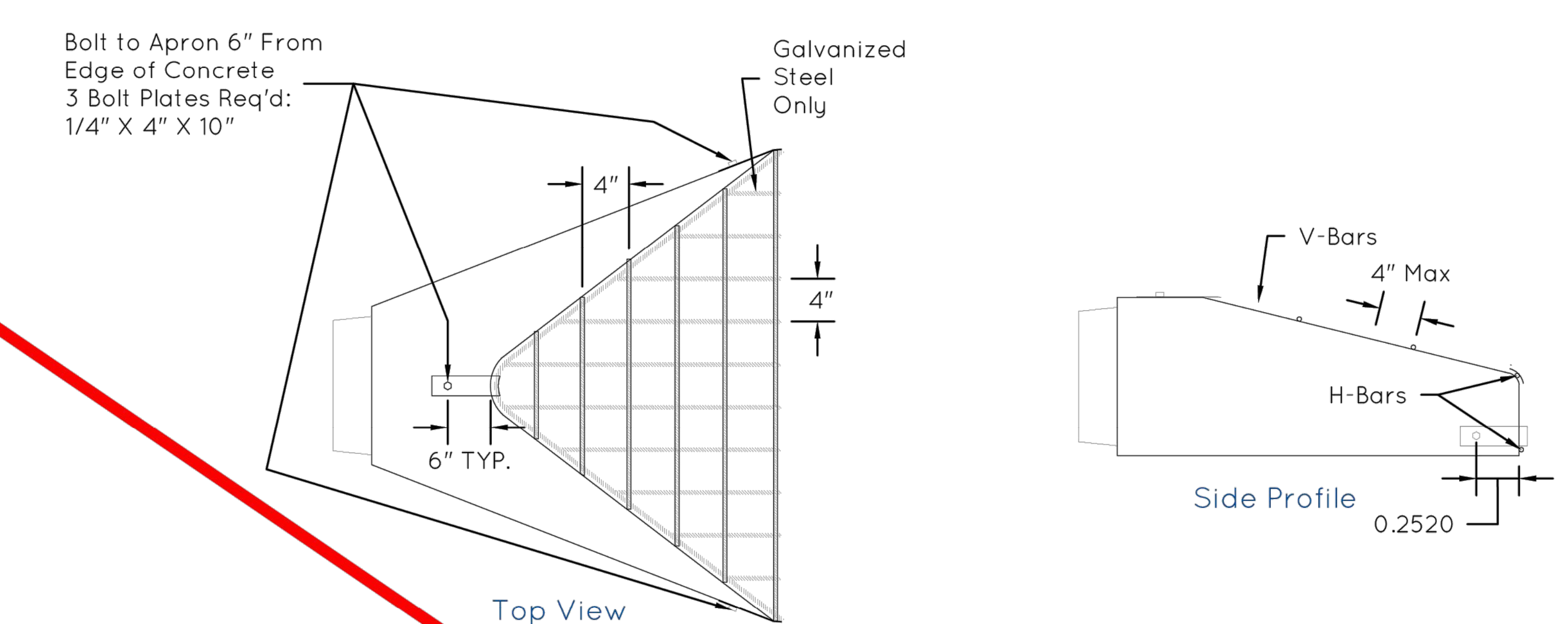
Note:
1) Underwater discharge not allowed.



OUTLET TO DETENTION BASIN
Not to Scale



END SECTION ANCHOR
Not to Scale



Notes:
1) Trash guards should be galvanized steel only.
2) To be placed on upstream end of detention basin outlet pipe only.

TRASH/DEBRIS GUARD
Not to Scale

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS
DETENTION BASIN & END SECTION DETAILS

SHEET 16 of 29

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER
1/18/2022

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REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C917

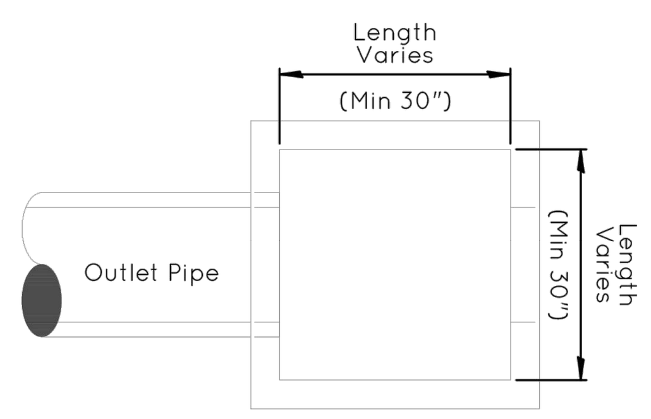
PROJECT NUMBER
2021119

GENERAL OUTLET STRUCTURE NOTES

1) Use of a circular or rectangular orifice is at the discretion of the designer. The minimum opening height or diameter shall be 6", unless written approval of a smaller opening is provided during the stormwater review process. Openings shall be consolidated as much as is practicable while meeting the remaining requirements to reduce the potential for clogging. The minimum 6" dimension requirement does not apply to CPv or WQ orifice sizing. Coordinate with City of Fishers for minimum CPv / WQ orifice sizing.

2) If an overland emergency flow route cannot be created, the structure shall be sized to allow the open casting and outlet pipe to serve as a drop-inlet capable of carrying 125% of the peak inflow to the detention pond.

3) The maximum opening size for trash racks shall be 3" for outlets less than 24" in diameter or smaller than a 24" x 24" rectangle. Larger outlets shall have a 6" opening size.



Outlet Structure Top View

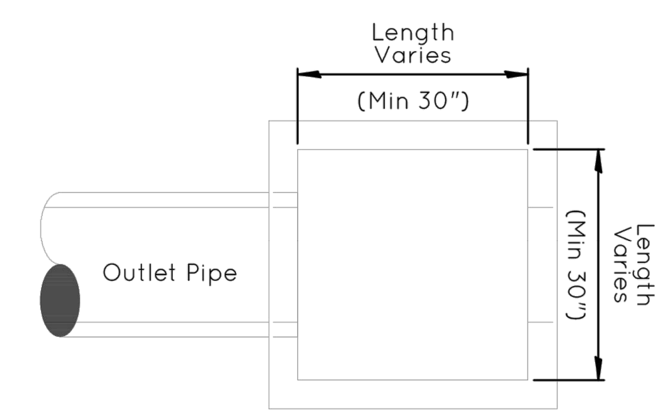
DESCRIPTION OF OUTLETS

Outlet 1: Extended Detention / Channel Protection Outlet
The purpose of this outlet is to detain the flow and provide for settlement of suspended solids and to attenuate the outflow from the detention basin to meet the water quality or channel protection requirements of Ch. 8 of the STSM.

Outlet 2: Peak Flow Control Orifice (10-year)
The purpose of this outlet is to restrict the flow leaving the detention pond when the volume of runoff exceeds the water quality or channel protection volume. This outlet is typically used to control the release of runoff for events between the 2-year and 10-year events to meet peak flow control requirements. This outlet has an invert elevation at the elevation of when the water quality or channel protection is fully stored assuming no outflow from Outlet 1.

Outlet 3: Peak Flow Control Orifice (100-year)
The purpose of this outlet is to supplement Outlet 2 when the 100-year peak flow control requirements cannot be met using a single peak flow control orifice. This outlet typically has an invert elevation above the 10-year maximum water surface elevation.

Outlet 4: Emergency Overflow
The purpose of this outlet is to allow the outlet to convey flow downstream even if the peak flow control orifice(s) are completely blocked. It may also serve as a part of the emergency flood route in special circumstances.



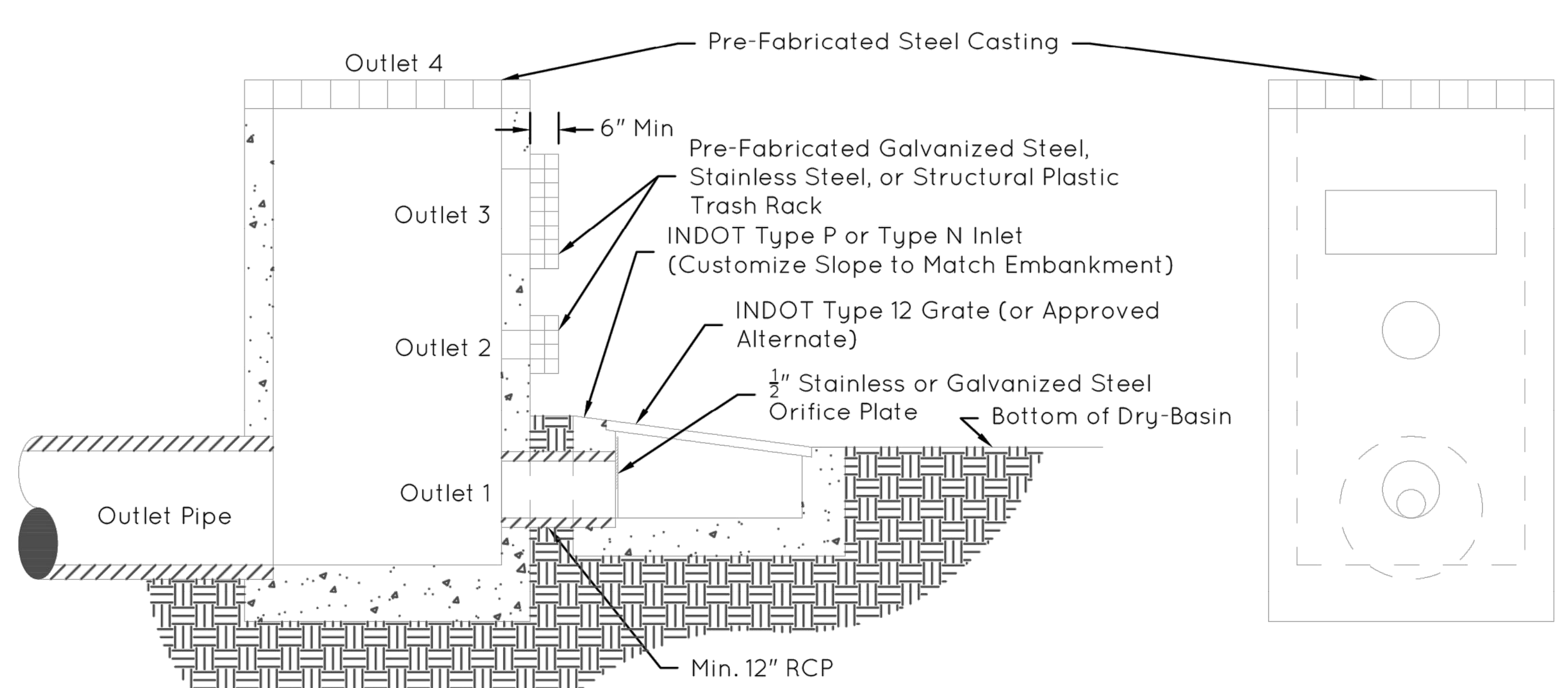
Outlet Structure Top View

DESCRIPTION OF OUTLETS

Outlet 1: Peak Flow Control Orifice (10-year)
The purpose of this outlet is to control the release of runoff for events between the 2-year and 10-year storm events to meet peak flow control requirements per Ch. 3 and 6 of the STSM. This outlet has an invert elevation at the normal pool of a wet pond or below the bottom of a dry-bottom facility.

Outlet 2: Peak Flow Control Orifice (100-year)
The purpose of this outlet is to supplement Outlet 1 when the 100-year peak flow control requirements cannot be met using a single peak flow control orifice. This outlet typically has an invert elevation above the 10-year maximum water surface elevation.

Outlet 3: Emergency Overflow
The purpose of this outlet is to allow the outlet to convey flow downstream even if the peak flow control orifice(s) are completely blocked. It may also serve as a part of the emergency flood route in special circumstances.



— Crest Elevation (Outlet 4) = _____.__ — The rim crest elevation is established by the maximum water surface elevation of the 100-year storm event when the peak flow control requirements are met.

— 100-year Invert Elevation (Outlet 3) = _____.__ — The elevation of the 100-year orifice is established by the maximum water surface elevation of the peak 10-year storm event. The orifice size is established in conjunction with Outlet 2 to meet peak flow control rates and available storage requirements.

— 10-year Invert Elevation (Outlet 2) = _____.__ — The elevation of the 10-year orifice is established when the calculated Channel Protection or Water Quality Volume is fully stored in the detention basin, assuming no outflow from the Extended Detention Outlet (Outlet 1).

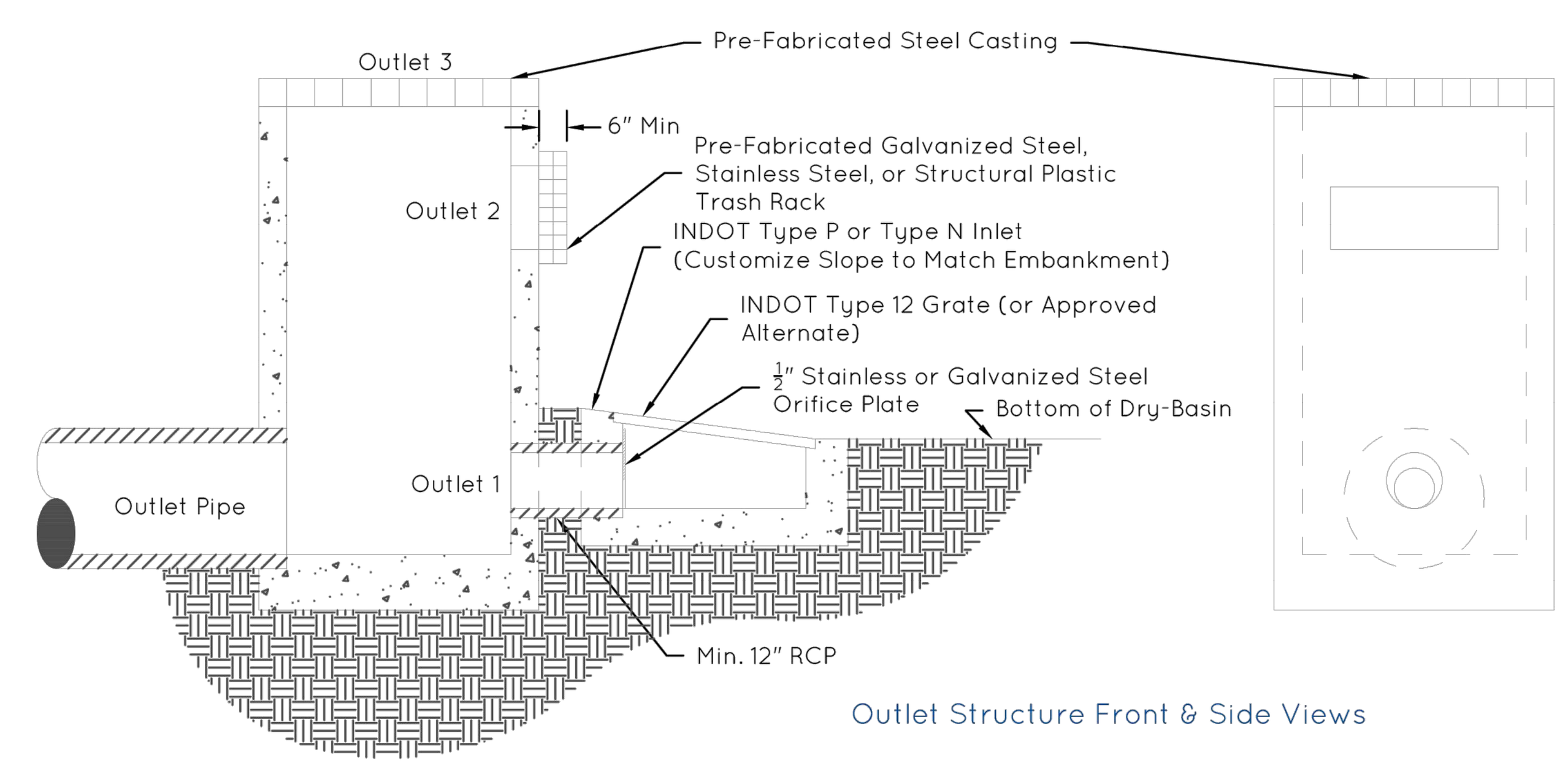
— CPv / WQ Invert Elevation (Outlet 1) = _____.__ — This elevation is established below the bottom of the dry-bottom pond. Orifice size determined to drain CPv / WQ (if providing CPv or WQ) by storing between the inverts of Outlet 1 and Outlet 2 within 48 HRS after T_{PEAK}.

Note: Design data shall be filled-in for the indicated blanks (_____.__) on the construction plans.

Outlet Structure Front & Side Views

DRY-BOTTOM DETENTION BASIN OUTLET DETAILS - COMBINED PEAK FLOW AND CHANNEL PROTECTION / WATER QUALITY BASIN

Not to Scale



— Crest Elevation (Outlet 3) = _____.__ — The rim crest elevation is established by the maximum water surface elevation of the 100-year storm event when the peak flow control requirements are met.

— 100-year Invert Elevation (Outlet 2) = _____.__ — The elevation of the 100-year orifice is established by the maximum water surface elevation of the peak 10-year storm event. The orifice size is established in conjunction with Outlet 1 to meet peak flow control rates and available storage requirements.

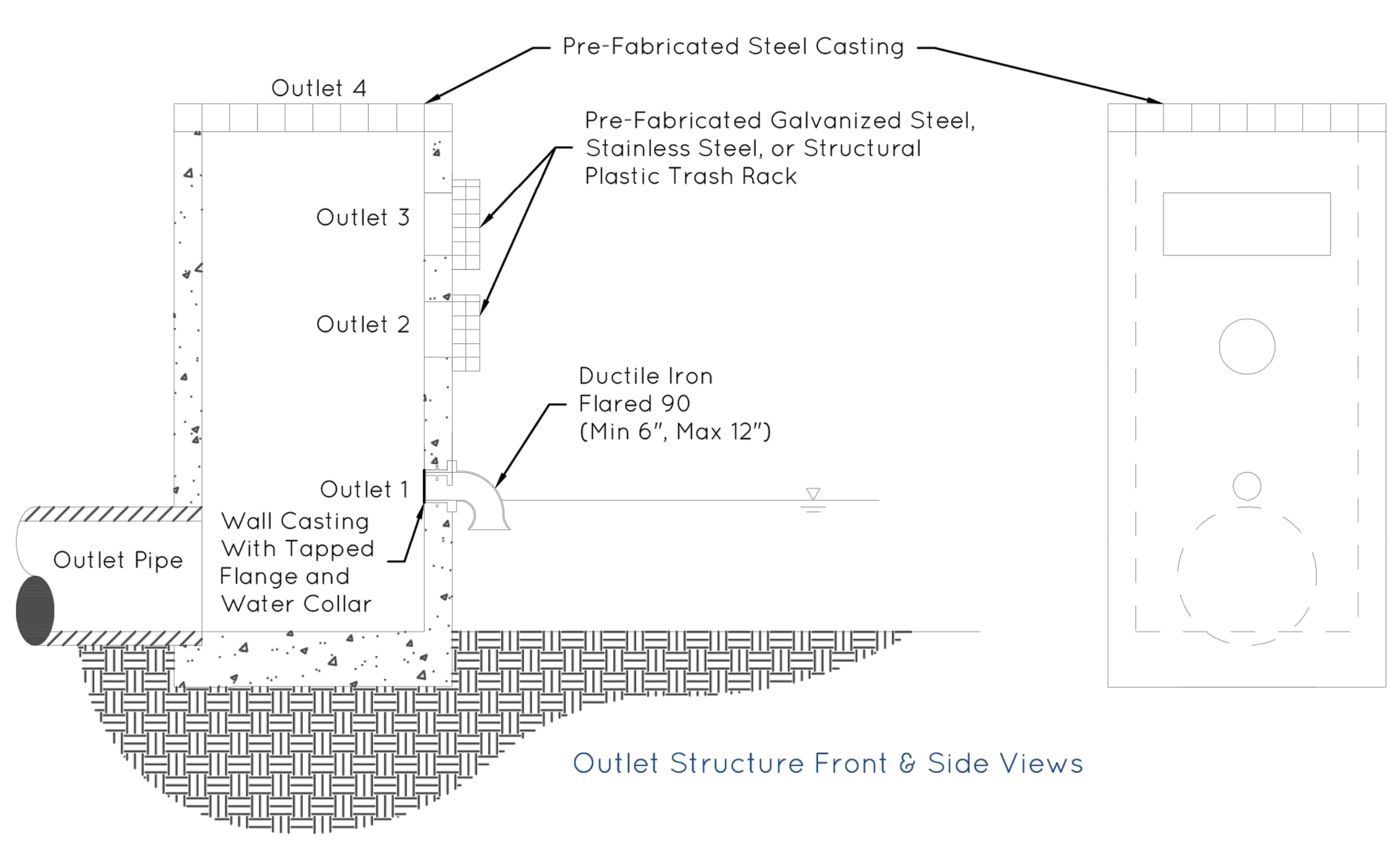
— 10-year Invert Elevation (Outlet 1) = _____.__ — This elevation is established below the bottom of the dry-bottom pond. Orifice size is established to meet the peak flow control requirements of the 10-year storm event.

Note: Design data shall be filled-in for the indicated blanks (_____.__) on the construction plans.

Outlet Structure Front & Side Views

DRY-BOTTOM DETENTION BASIN OUTLET DETAILS - PEAK FLOW CONTROL FACILITY (SINGLE USE)

Not to Scale



— Crest Elevation (Outlet 4) = _____.__ — The rim crest elevation is established by the maximum water surface elevation of the 100-year storm event when the peak flow control requirements are met.

— 100-year Invert Elevation (Outlet 3) = _____.__ — The elevation of the 100-year orifice is established by the maximum water surface elevation of the peak 10-year storm event. The orifice size is established in conjunction with Outlet 2 to meet peak flow control rates and available storage requirements.

— 10-year Invert Elevation (Outlet 2) = _____.__ — The elevation of the 10-year orifice is established when the calculated Channel Protection or Water Quality Volume is fully stored in the detention basin, assuming no outflow from the Extended Detention Outlet (Outlet 1).

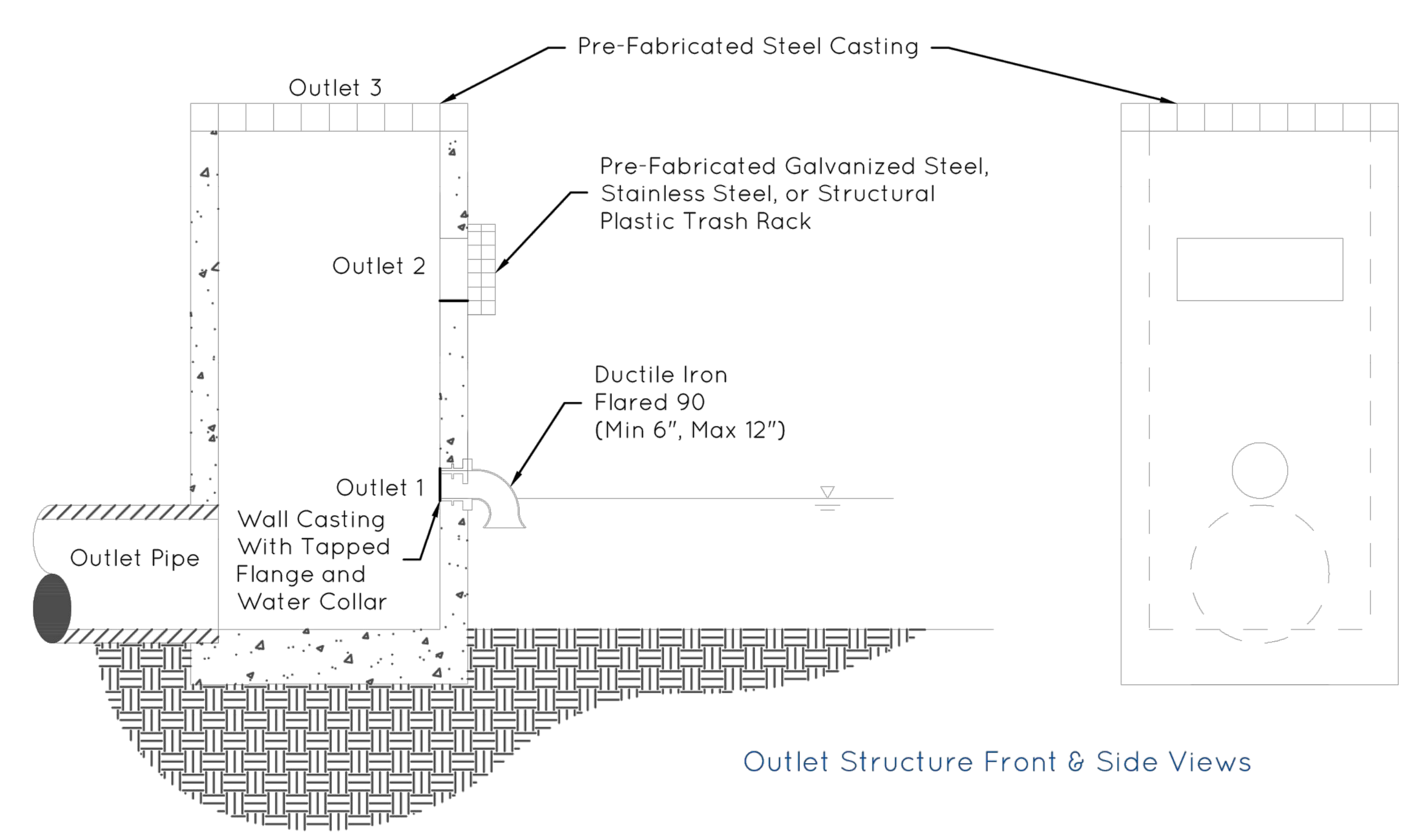
— CPv / WQ Invert Elevation (Outlet 1) = _____.__ — Normal pool elevation of wet pond. Orifice size determined to Drain CPv / WQ (if providing CPv or WQ) by storing between the inverts of Outlet 1 and Outlet 2 within 48 HRS after T_{PEAK}.

Note: Design data shall be filled-in for the indicated blanks (_____.__) on the construction plans.

Outlet Structure Front & Side Views

WET-BOTTOM DETENTION BASIN OUTLET DETAILS - COMBINED PEAK FLOW AND CHANNEL PROTECTION / WATER QUALITY BASIN

Not to Scale



— Crest Elevation (Outlet 3) = _____.__ — The rim crest elevation is established by the maximum water surface elevation of the 100-year storm event when the peak flow control requirements are met.

— 100-year Invert Elevation (Outlet 2) = _____.__ — The elevation of the 100-year orifice is established by the maximum water surface elevation of the peak 10-year storm event. The orifice size is established in conjunction with Outlet 1 to meet peak flow control rates and available storage requirements.

4

— 10-year Invert Elevation (Outlet 1) = _____.__ — Normal pool elevation of the wet pond. Orifice size is established to meet the peak flow control requirements of the 10-year storm event.

Note: Design data shall be filled-in for the indicated blanks (_____.__) on the construction plans.

Outlet Structure Front & Side Views

WET-BOTTOM DETENTION BASIN OUTLET DETAILS - PEAK FLOW CONTROL FACILITY (SINGLE USE)

Not to Scale

1/18/2022

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
DETENTION BASIN - OUTLET CONTROL STRUCTURE DETAILS	17 of 29

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4 — 02/12/24 ADDENDUM #4

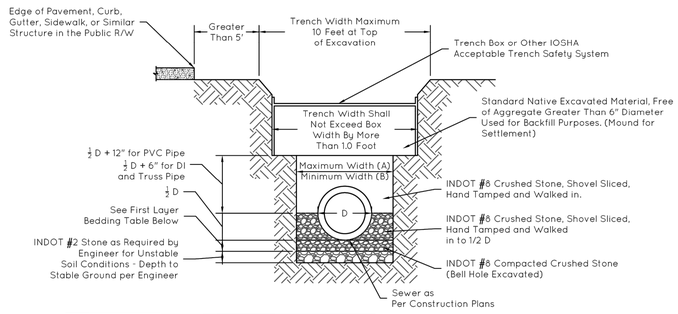
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH — REGISTERED — PE 10000126 — STATE OF INDIANA — PROFESSIONAL ENGINEER

DRAWING NUMBER
C918

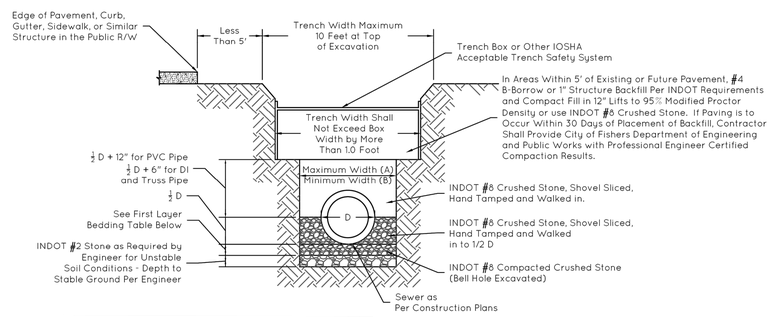
PROJECT NUMBER
2021119



FIRST LAYER BEDDING TABLE		
Pipe Size	6" TO 15"	18" & Over
Bedding Below the Pipe Barrel and Bell	Minimum = 6"	Minimum = 10"

PIPE SIZE	A	B
Up to 18"	3' - 0"	2' - 6"
18" and Greater	D + 24"	D + 18"

Greater Than 5' From Edge of Pavement



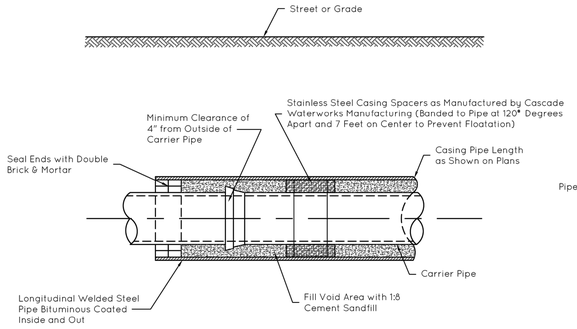
FIRST LAYER BEDDING TABLE		
Pipe Size	6" to 15"	18" & Over
Bedding Below the Pipe Barrel and Bell	Minimum = 6"	Minimum = 10"

PIPE SIZE	A	B
Up to 18"	3' - 0"	2' - 6"
18" and Greater	D + 24"	D + 18"

Within 5' of Existing or Future Pavement

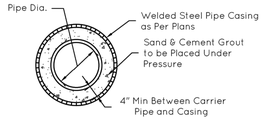
SANITARY SEWER TRENCHING, BEDDING AND BACKFILL

Not to Scale



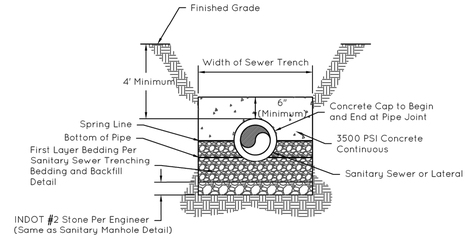
TYPICAL STREET BORING SIDE VIEW

Not to Scale



TYPICAL BORING END VIEW

Not to Scale

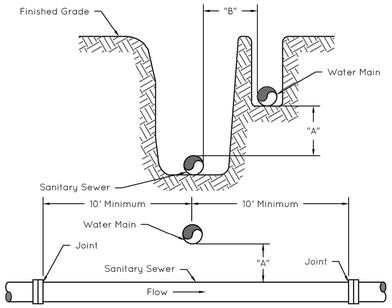


Notes:

1) Concrete shall be high-early yield and shall not be backfilled until Engineer deems the concrete adequately cured.
2) To be used when cover over top of pipe is 3-4 feet, per Engineer's direction, or where noted on the construction plans.

CONCRETE CAP

Not to Scale



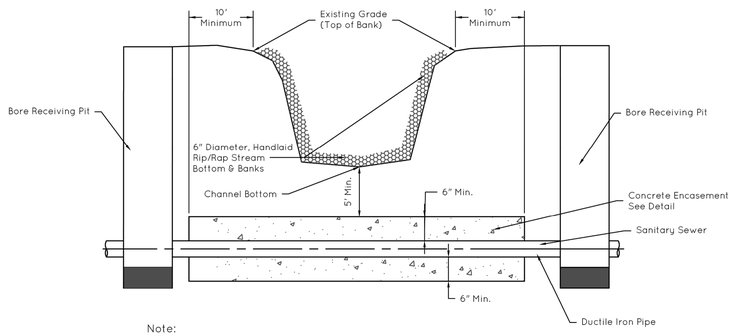
IF "A" IS	IF "B" IS	THEN SANITARY SEWER PIPE SEGMENT SHALL BE
18" or More	10' or More	No Special Pipe Material or Grade Requirments
Less Than 18"	Less Than 10'	PVC (Either ASTM D 2241 (SDR 21 Minimum) or ANSI/AWWA C900 (DR 18 Minimum) or ANSI/AWWA C905 (DR 21 Minimum)) or Ductile Iron (Class 51 Minimum)

Notes:

1) Water mains shall not be located in the same trench as sanitary sewers.
2) Separation distances from water supplies and pipe classifications shall conform to Indiana State Board of Health's "On-Site Water Supply and Wastewater Disposal for Public and Commercial Establishments - Bulletin S.E. 13".

WATER SUPPLY & SEWER CROSSING

Not to Scale

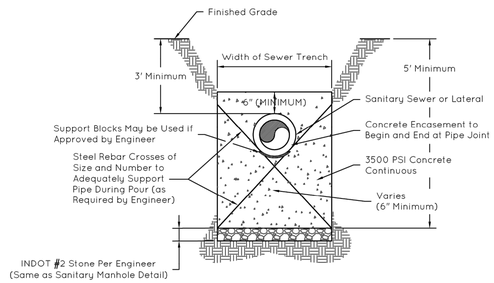


Note:

1) Stream crossing may need permit from Hamilton County Surveyor's Office. Should a county permit be necessary, refer to Hamilton County Surveyor's Office detail.

STREAM CROSSING -GRAVITY SEWER

Not to Scale



Notes:

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2) To be used when cover over top of pipe is 3-4 feet, per Engineer's direction, or where noted on the construction plans.

CONCRETE ENCASEMENT

Not to Scale

THESE SANITARY SEWER DETAILS AND FISHERS SANITARY SEWER SPECIFICATIONS ARE COMPLEMENTARY IN NATURE AND SHOULD NOT BE INTERPRETED INDIVIDUALLY WITHOUT REFERENCE TO THE OTHER.

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SANITARY SEWER PIPE BEDDING & CROSSING DETAILS

SHEET 18 of 29

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4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:

WATER DETAILS

CERTIFIED BY:

DAVID A. LATCH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

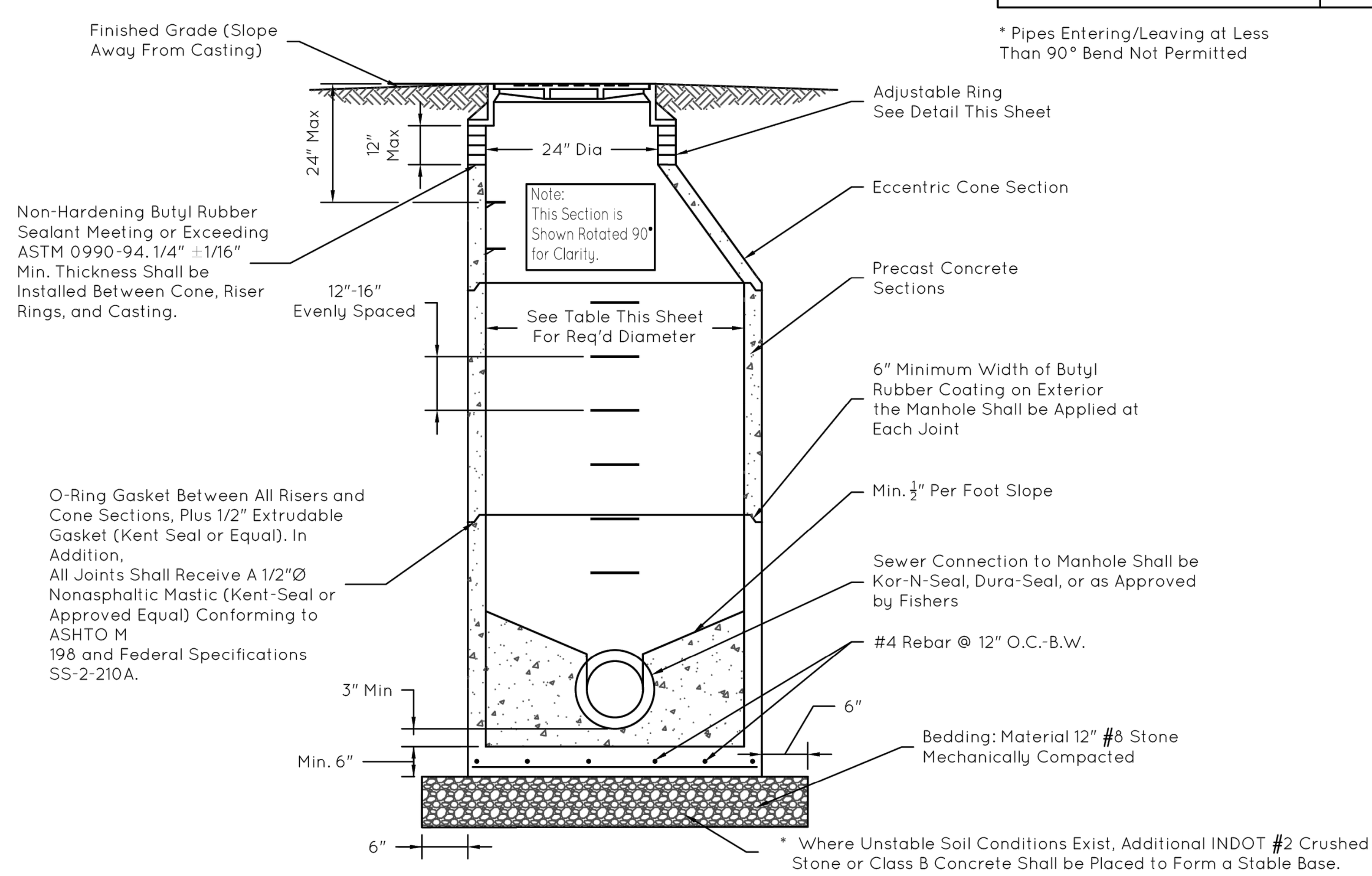
DRAWING NUMBER
C919

PROJECT NUMBER
2021119

MANHOLE DIAMETERS

Pipe Size	Pipes Entering/Leaving at *45°-90°
8"-24"	48"
27"-30"	60"

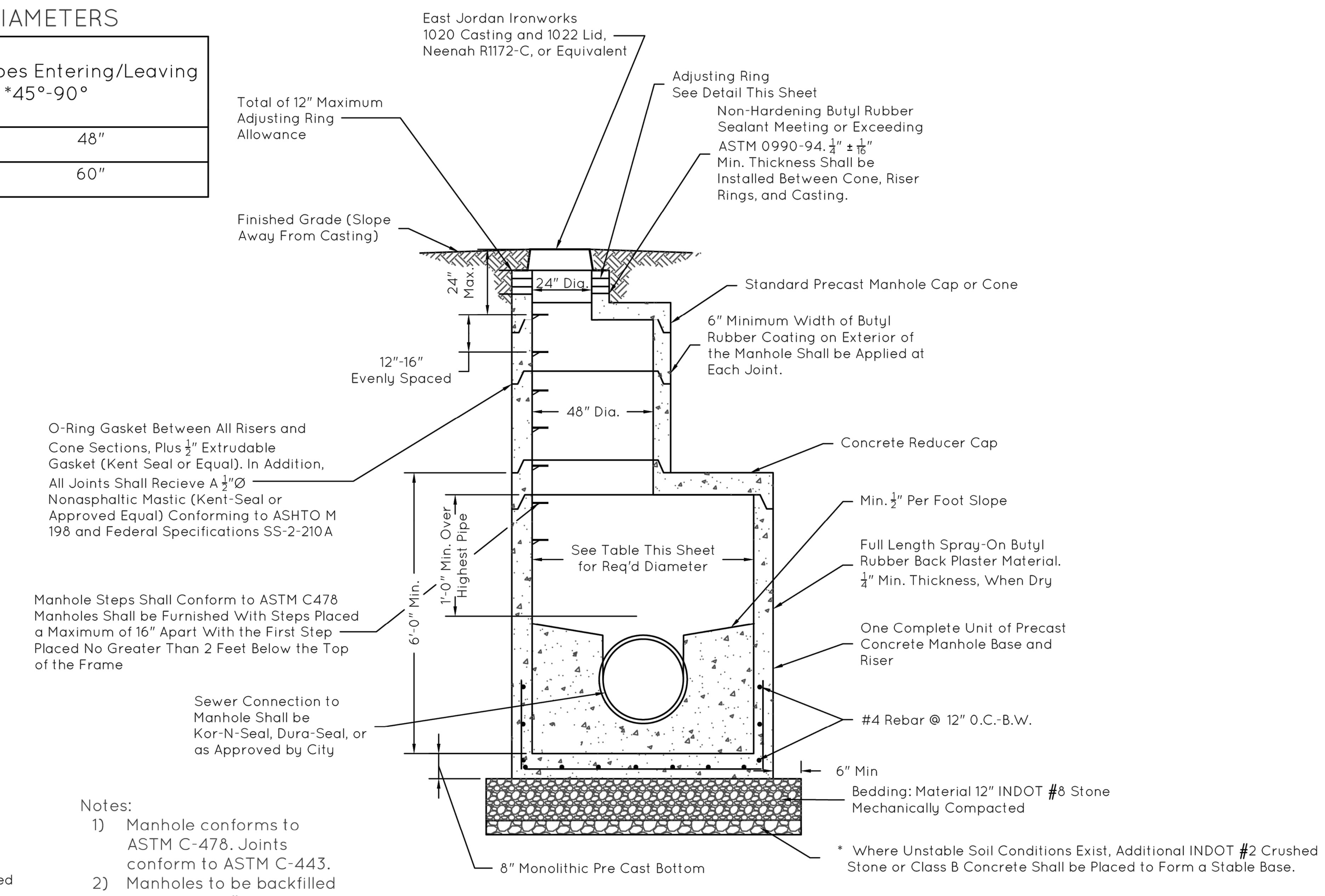
* Pipes Entering/Leaving at Less Than 90° Bend Not Permitted



Flow channels within manholes shall be an integral part of the precast base. The channels shall be shaped and formed for a clean transition with proper hydraulics to allow the smooth conveyance of the flow through the manhole. The bench wall shall be formed to the crown of the inlet and outlet pipes to form a "U" shaped channel. The bench wall shall slope back from the crown at 1/2" per foot to the manhole wall.

STANDARD MANHOLE FOR PIPE SIZES 8" THRU 24"

Not to Scale

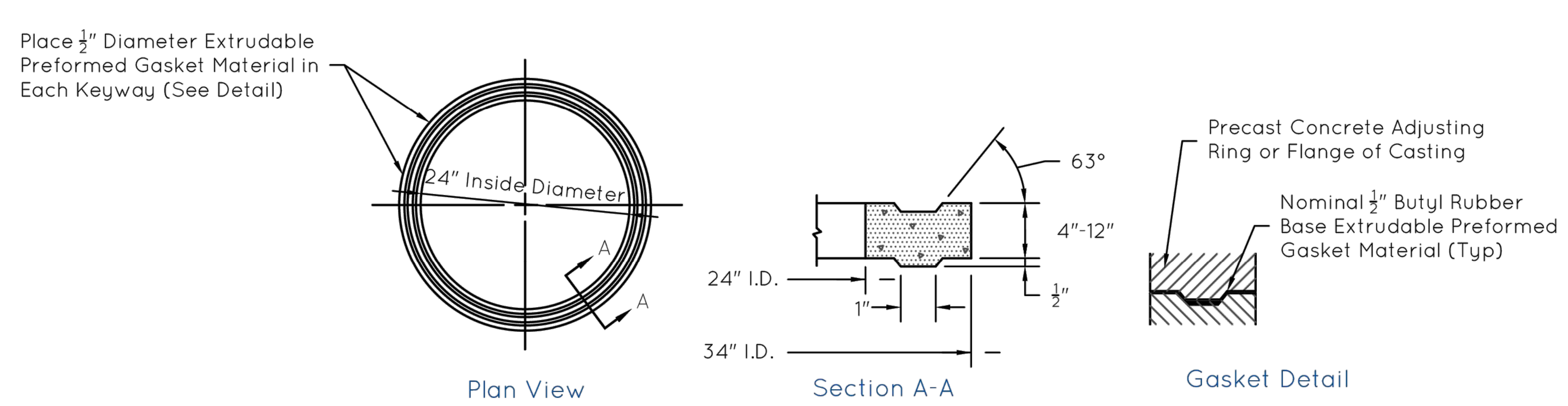


Notes:
1) Manhole conforms to ASTM C-478, Joints conform to ASTM C-443.
2) Manholes to be backfilled with INDOT #53 or INDOT #8 Crushed Stone.

Flow channels within manholes shall be an integral part of the precast base. The channels shall be shaped and formed for a clean transition with proper hydraulics to allow the smooth conveyance of the flow through the manhole. The bench wall shall be formed to the crown of the inlet and outlet pipes to form a "U" shaped channel. The bench wall shall slope back from the crown at 1/2" per foot to the manhole wall.

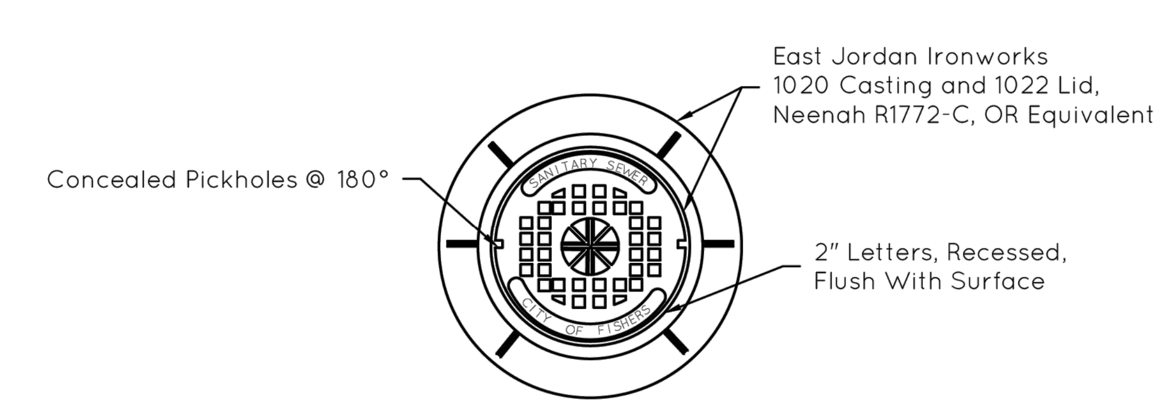
STANDARD MANHOLE FOR PIPE SIZES 27" THRU "30"

Not to Scale



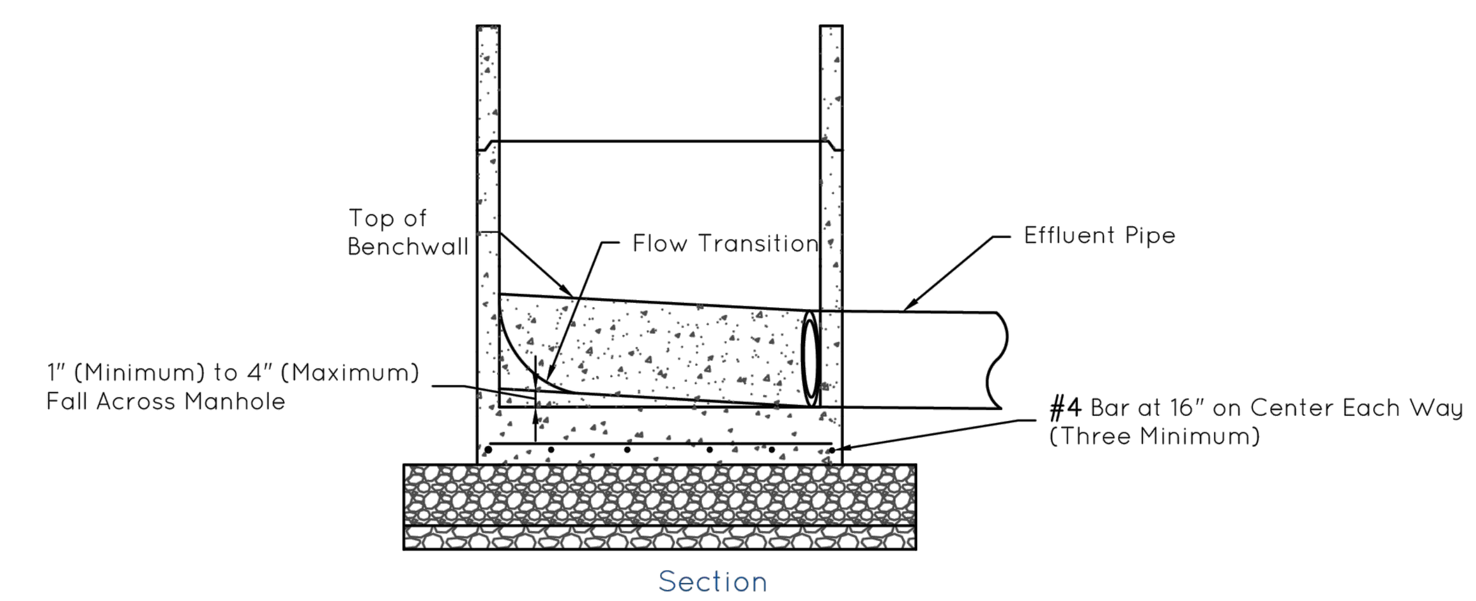
ADJUSTING RING

Not to Scale



FRAME AND COVER

Not to Scale



TERMINATION MANHOLE

Not to Scale

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1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SANITARY SEWER STRUCTURE DETAILS

SHEET 19 of 29

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
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REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C920

PROJECT NUMBER
2021119

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DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C921

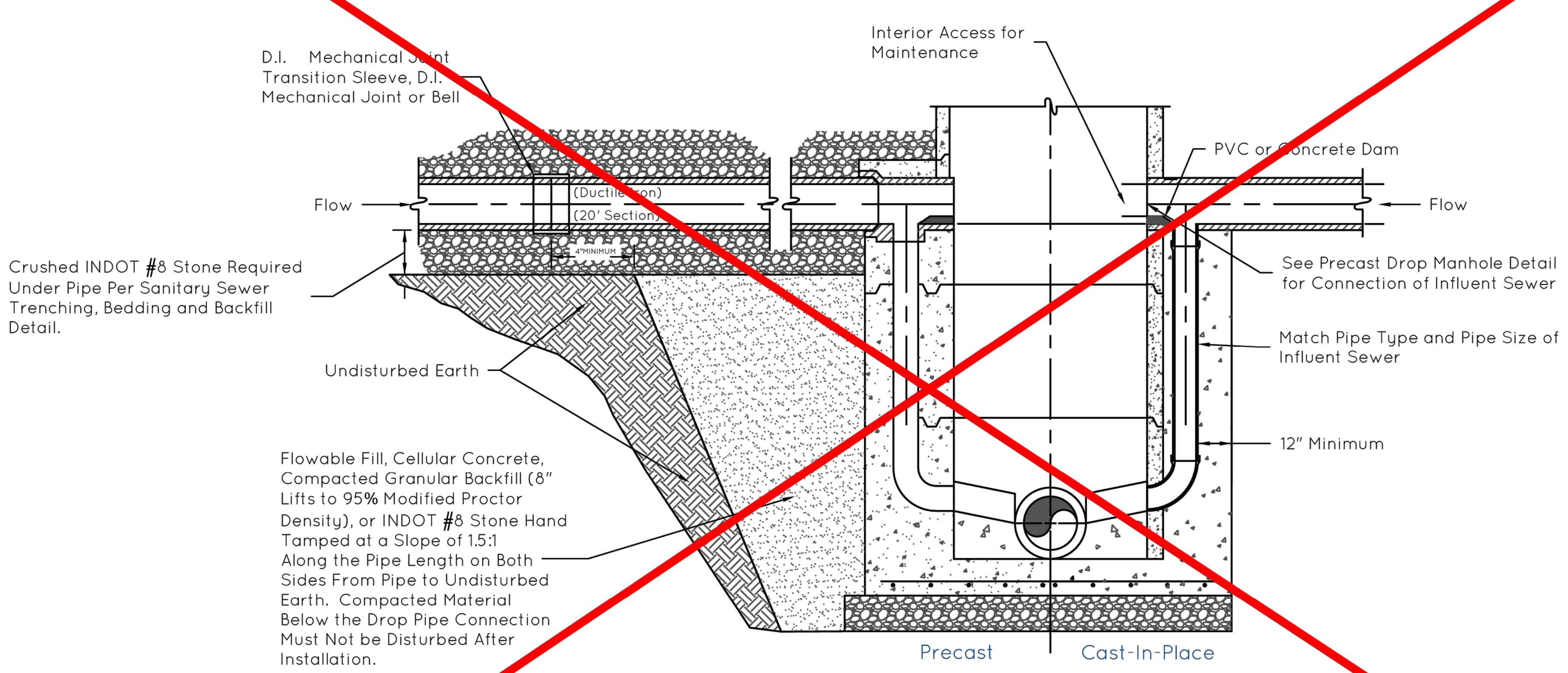
PROJECT NUMBER
2021119

MANHOLE CASTING TABLE		
LOCATION	MODEL	COVER
18" Inches or More Above 100 Year Flood Elevation of All Waterway	East Jordan 1060-Z1 or Neenah R-1712-B OR Equivalent	Heavy Duty Solid
Less Than 18" Above 100 Year Flood Elevation of All Waterways	East Jordan 1050-Z1WT OR Neenah R-1916-E OR Equivalent	Heavy Duty Solid
LID		
OWNERSHIP	LETTERING	
Private or Fishers	"Sanitary Sewer"	

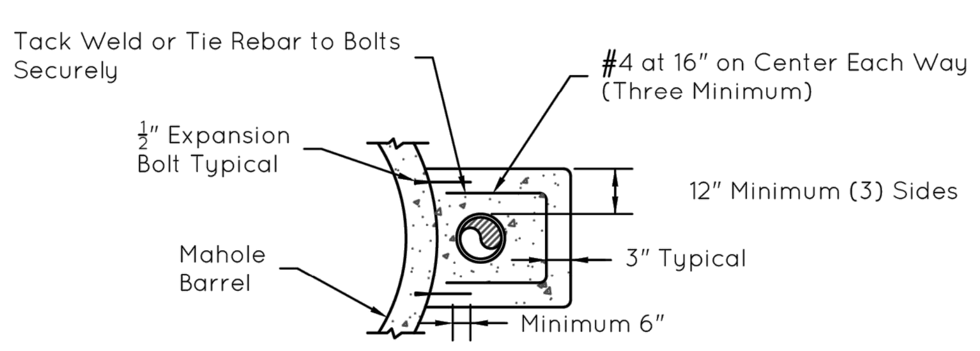
All Castings to be Supplied With Four (4) Anchor Bolt Holes

Notes:
1) Grease Trap Shall Conform to ASTM C 478 Utilizing 4,000 PSI Concrete. Contractor May Supply Grease Trap as Manufactured by ZURN Series Z-1170 or Jay R. Smith Manufacturing Company Series 8000.
2) Exterior Installation Must be Concrete or Cast Iron. Steel Grease Traps Shall Only be Installed Inside a Building.

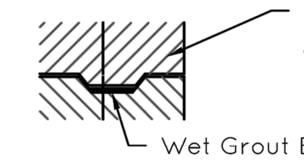
Note:
Top of Casting Shall Extend 0.20 Feet Minimum Above Finished Grade. Unless Approved by Fishers, Castings Must Not be Within One (1) Foot Horizontal Distance of Any Paved or Concrete Surfaces.



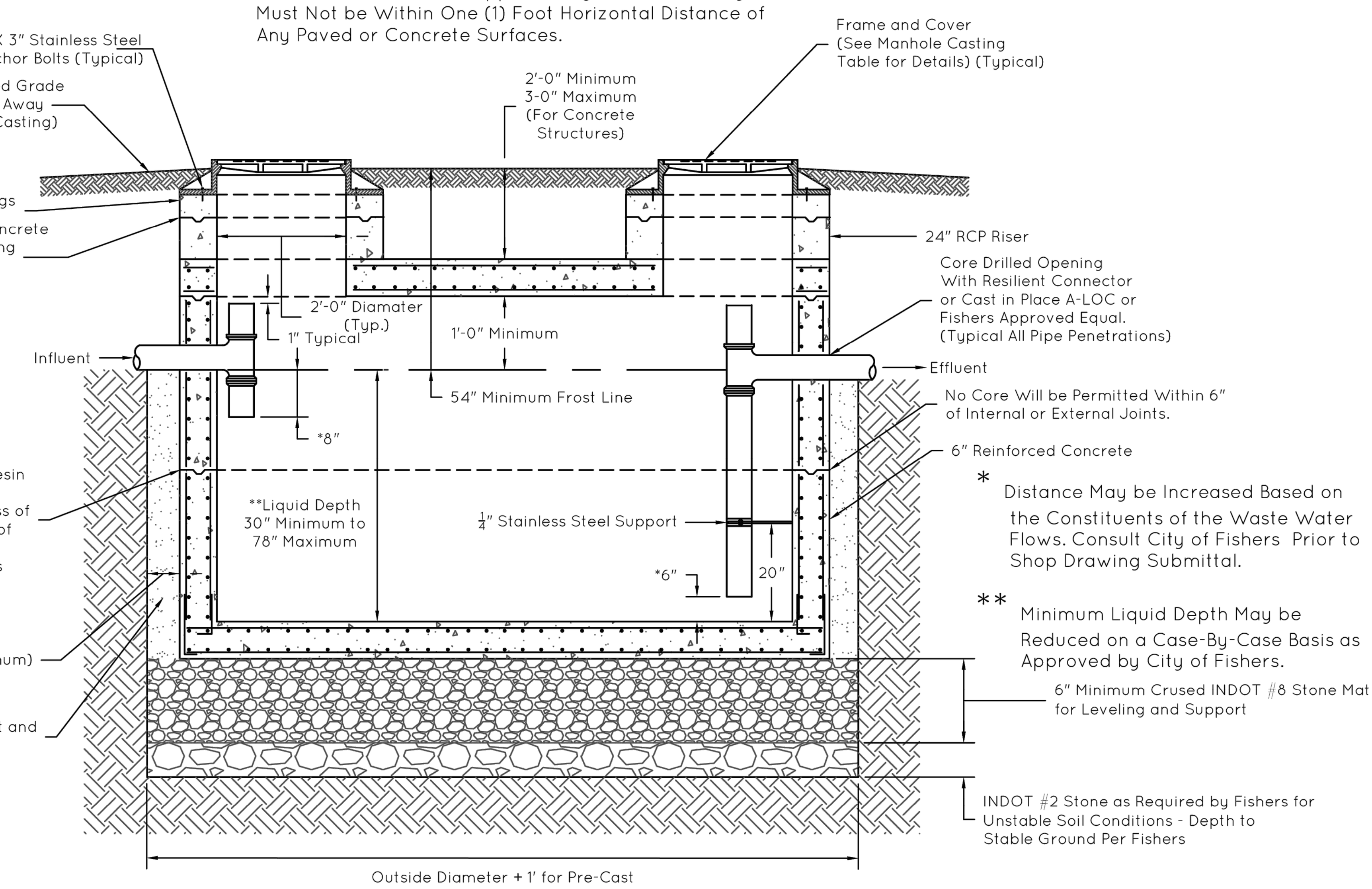
TYPICAL EXTERIOR DROP MANHOLE
Not to Scale



DROP SECTION
Not to Scale



JOINT DETAIL



Notes:
1) Exterior grease traps must be sized according to the Indiana State Department of Health, Environmental Public Health Division Rule 410 IAC 6-10.1, "Commercial On-Site Sewage Systems" and per local requirements and codes. The sizing method for all structures must be approved by City of Fishers.
2) Top of casting shall extend 0.20 feet minimum above finished grade. Unless approved by City of Fishers, castings must not be within one (1) foot horizontal distance of any paved or concrete surfaces.
3) Shop drawings must be submitted to City of Fishers for review and approval.
4) Alternate equivalent must be approved by Director of Public Works.

EXTERIOR GREASE INTERCEPTOR
Not to Scale

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JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER
1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS
SANITARY SEWER STRUCTURE DETAILS

SHEET
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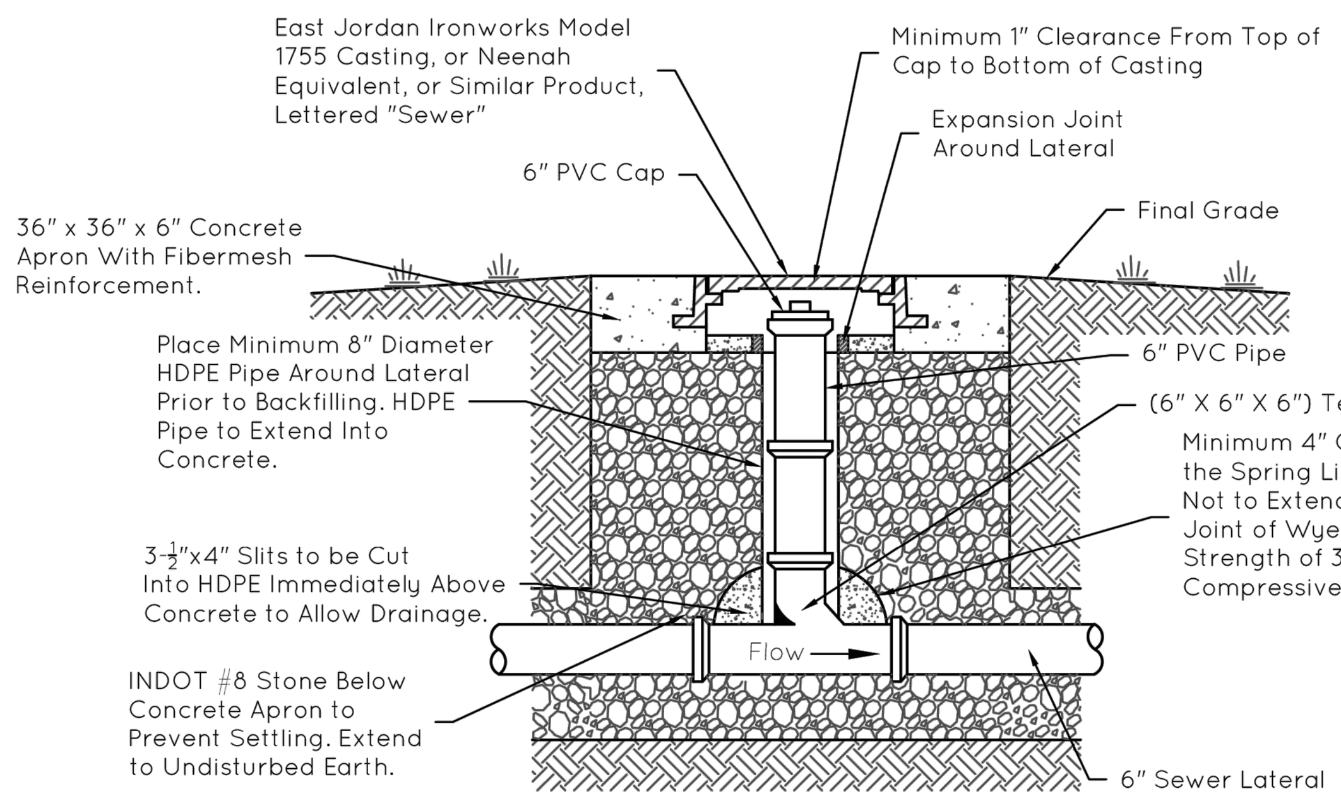
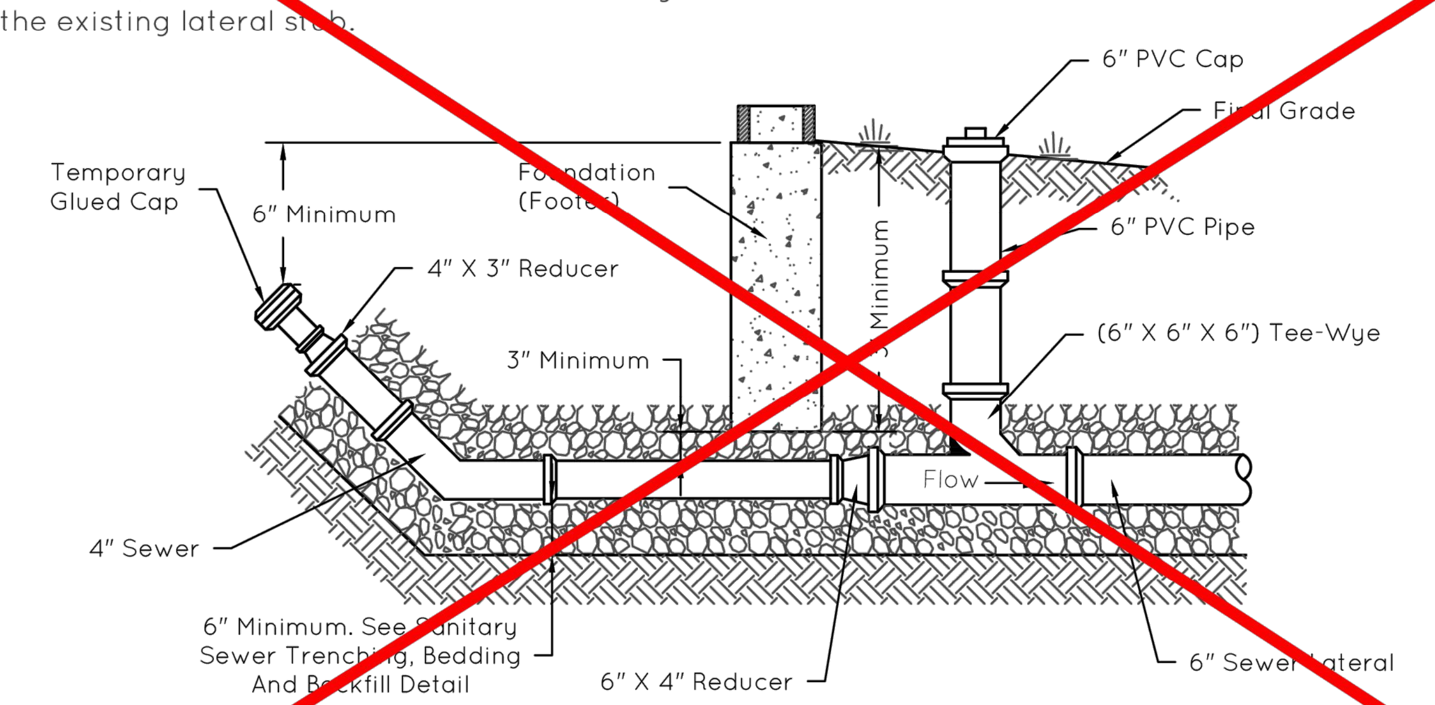
Note:
Concrete apron and casting shall be installed so that they do not contact the lateral or lateral cap.



CLEANOUT TYPE 2
(Hardscape Surfaces and All Other Installations Beyond Three Feet of Building)

Note:
All slab and crawl space connections must be a minimum of 3" below the footer and exit the building at the front of the structure to provide the shortest, most direct route from the building to the existing lateral stub.

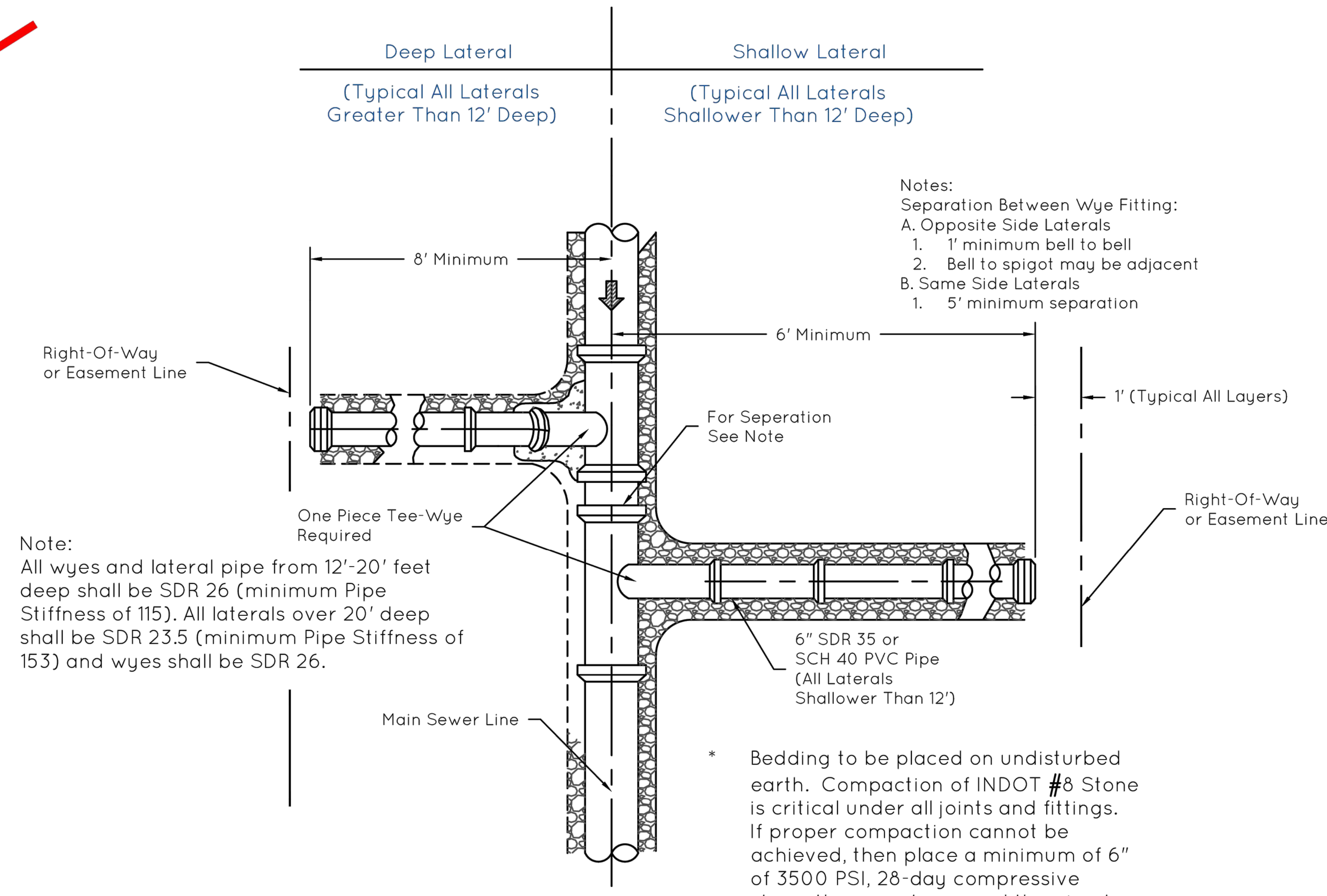
Note:
Lateral contractor to install in top of cleanout cap a 1-1/2" x 1/4" Mag Nail as manufactured by CHRISNIK, Inc. of Cincinnati, Ohio and sealed with exterior clear silicone sealant.



CLEANOUT TYPE 1
(Only Landscaped Surfaces Within Three Feet of Building)

Notes:
1) Top of casting or cleanout cap shall extend 0.20 feet minimum above finished grade unless constructed within pedestrian or vehicular traffic way. Unless approved by Engineer, sanitary sewer castings or cleanouts must not be within one (1) foot horizontal distance of any paved or concrete surfaces.
2) All cleanout pipes and fittings to be PVC Schedule 40 or SDR 35 when shallower than twelve (12) feet. At depths greater than twelve (12) feet, material of construction will be determined by Engineer.

TYPICAL CLEANOUTS
Not to Scale

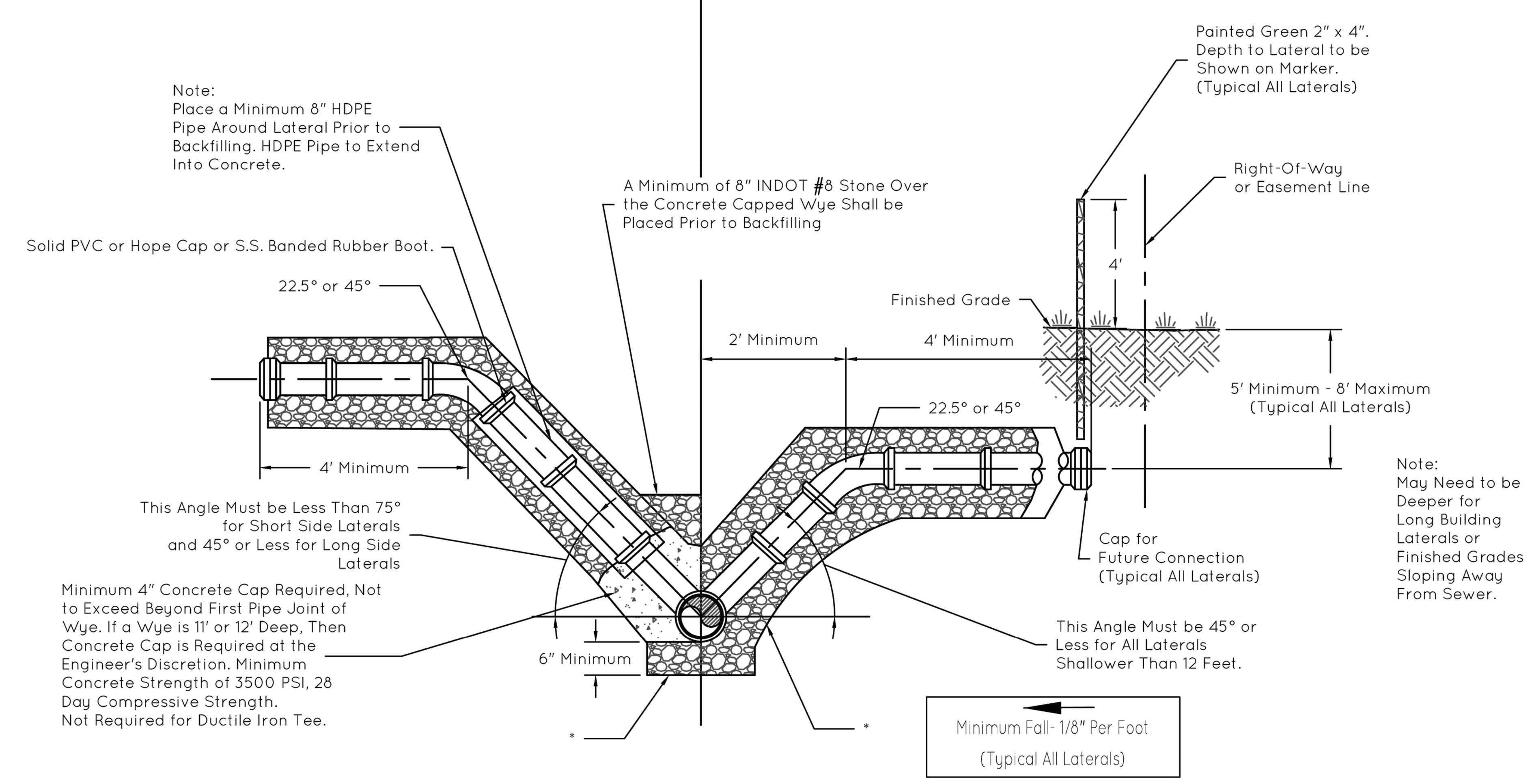


Notes:
Separation Between Wye Fitting:
A. Opposite Side Laterals
1. 1' minimum bell to bell
2. Bell to spigot may be adjacent
B. Same Side Laterals
1. 5' minimum separation

Note:
All wyes and lateral pipe from 12'-20' feet deep shall be SDR 26 (minimum Pipe Stiffness of 115). All laterals over 20' deep shall be SDR 23.5 (minimum Pipe Stiffness of 153) and wyes shall be SDR 26.

PLAN VIEW

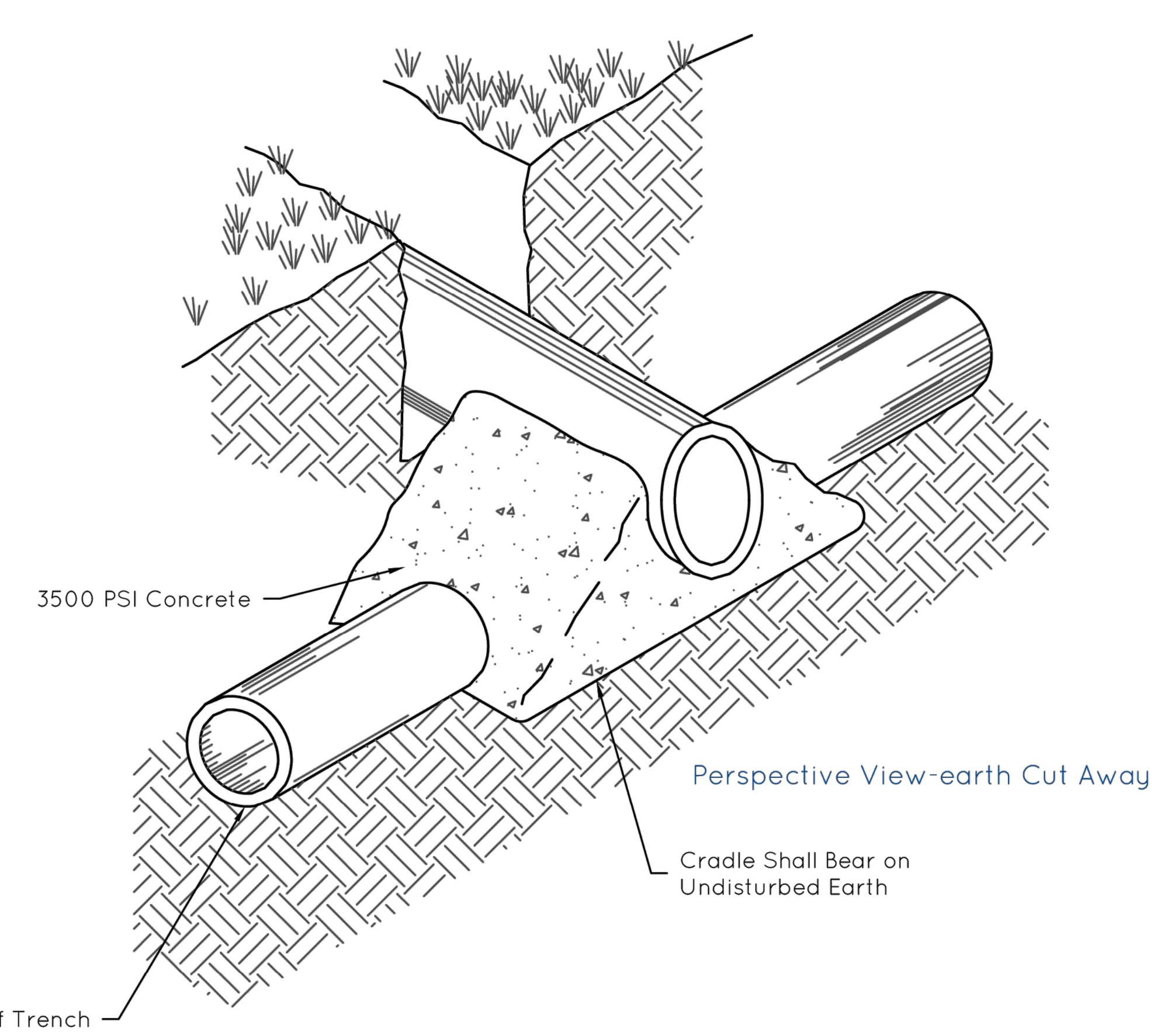
* Bedding to be placed on undisturbed earth. Compaction of INDOT #8 Stone is critical under all joints and fittings. If proper compaction cannot be achieved, then place a minimum of 6" of 3500 PSI, 28-day compressive strength concrete around the pipe to bear on stable ground (per Engineer).



Section

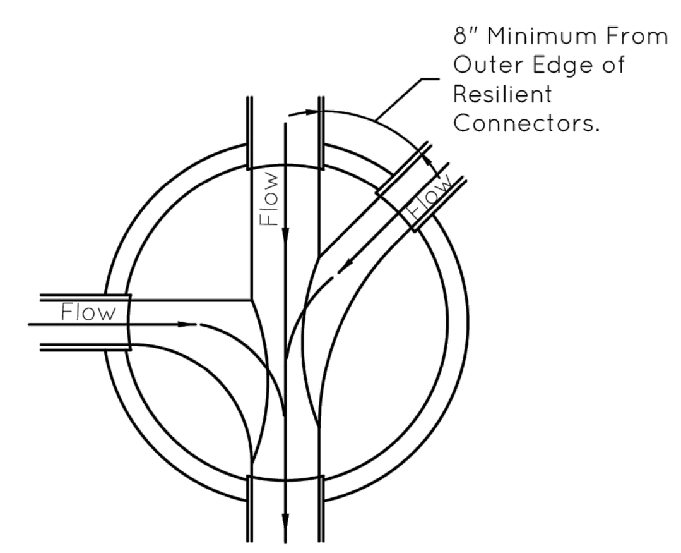
Notes:
1) Depth of service lateral shall be measured from finished grade to the top of main sewer line.
2) All piping from wye to 45°/22.5° fitting at 5'-8' below grade shall be SDR 26 to 20' deep or SDR 23.5 greater than 20' deep.
3) All lateral bedding shall be against undisturbed trench.

SERVICE LATERAL
Not to Scale



Note:
1) To be used when clear distance (from exterior pipe diameter to exterior pipe diameter) between sanitary sewer piping (mains, laterals, force mains, etc.) and all other pipes is 18" or less, per Engineer's direction, or where noted on the construction plans. A minimum clear distance of 3" must be provided to maintain structural integrity of the concrete. Concrete must not come into contact with force main. At least 3" of sand must be placed as a cushion around the force main. If the conflict is between a water main and any sanitary sewer piping, 18" clearance must be maintained, or note above applies and only granular fill may be used.

CONCRETE CRADLE
Not to Scale



Note:
1) If manhole has only one (1) influent pipe which is approximately 90 degrees to effluent pipe, then contractor shall maintain a radiused channel of same width as influent pipe.
2) If separation is between 8" and 18", then additional reinforcement (rebar or mesh area) shall be increased as deemed necessary by Engineer,

FLOW CHANNEL
Not to Scale

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1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SANITARY LATERAL CONNECTION, CLEAN OUT, & MISC. DETAILS

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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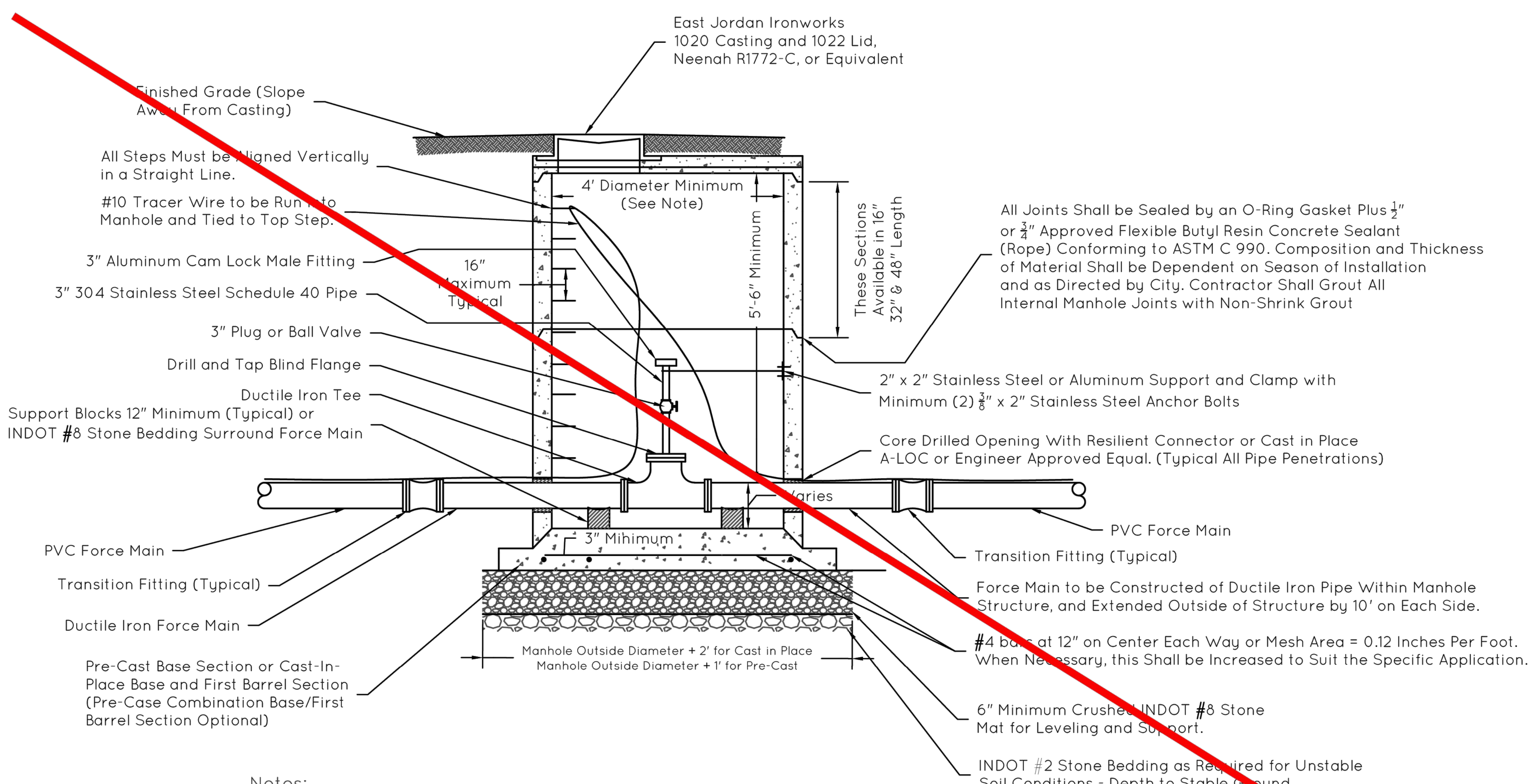
CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C922

PROJECT NUMBER
2021119

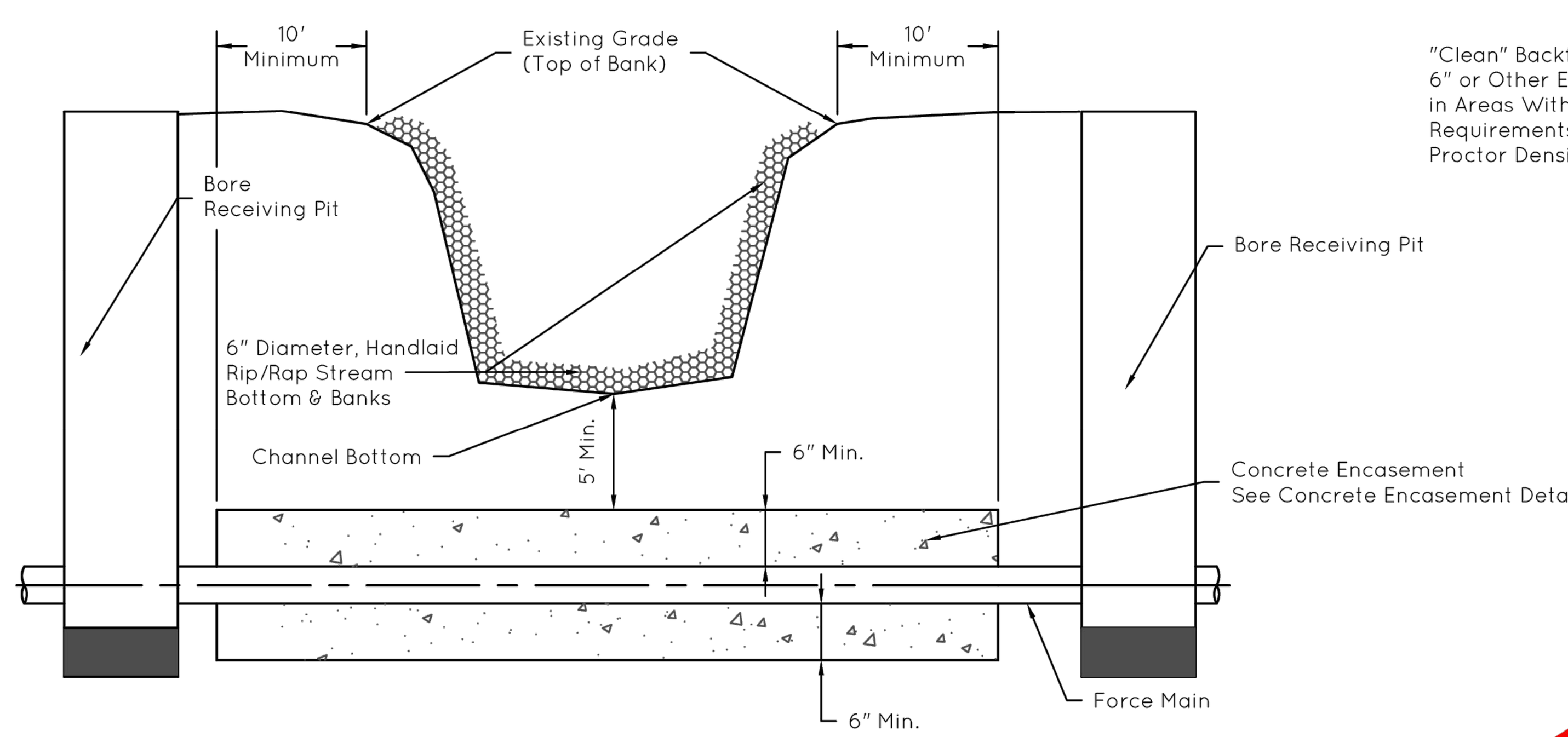


Notes:

1) Manhole sections shall conform to ASTM C 478 utilizing 4,000 psi concrete. Joints shall conform to ASTM C 443. Four (4) feet diameter manhole for 6" force main or smaller, or five (5) feet diameter manhole for 8" force main or larger.
2) Top of casting shall extend 0.20 feet minimum above finished grade.

FORCE MAIN CLEAN-OUT MANHOLE

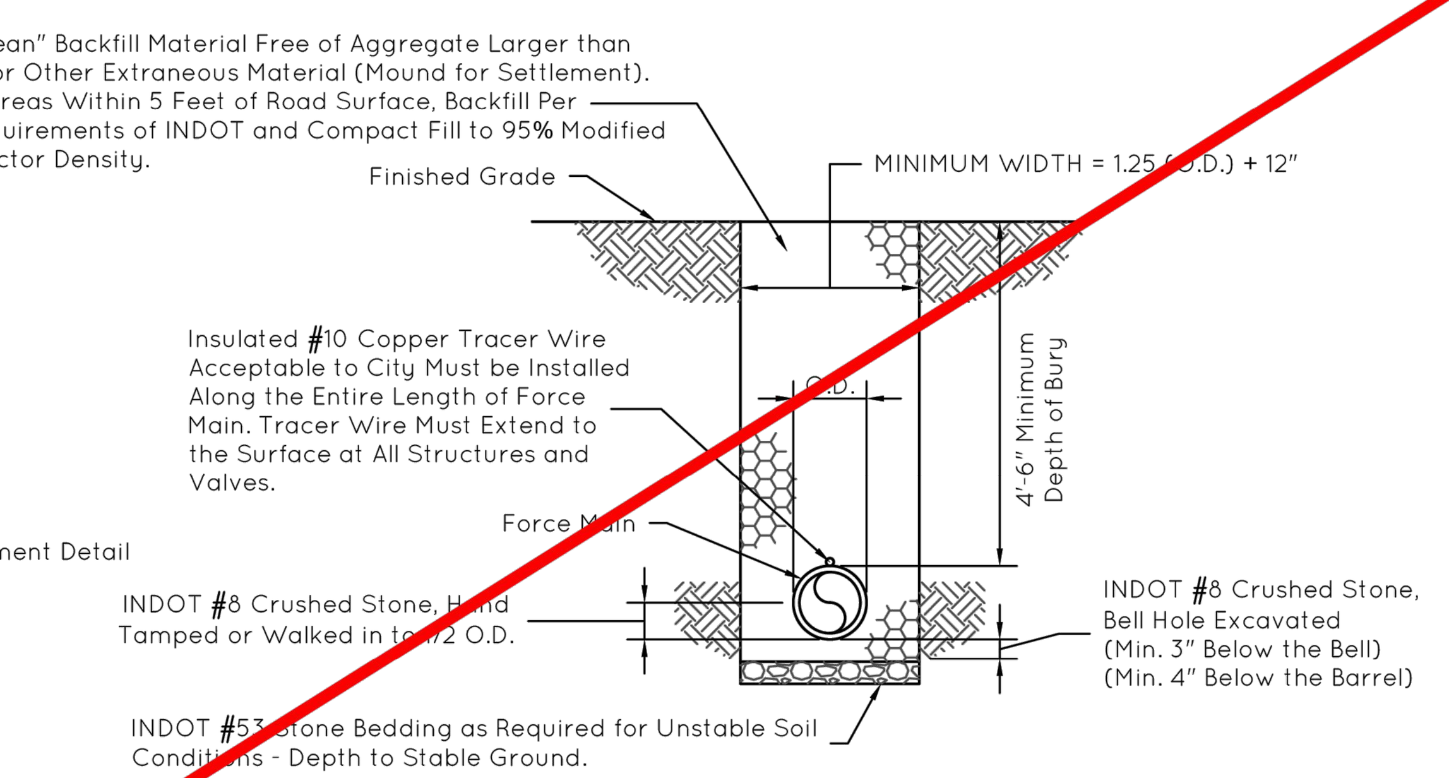
Not to Scale



STREAM CROSSING -FORCE MAIN

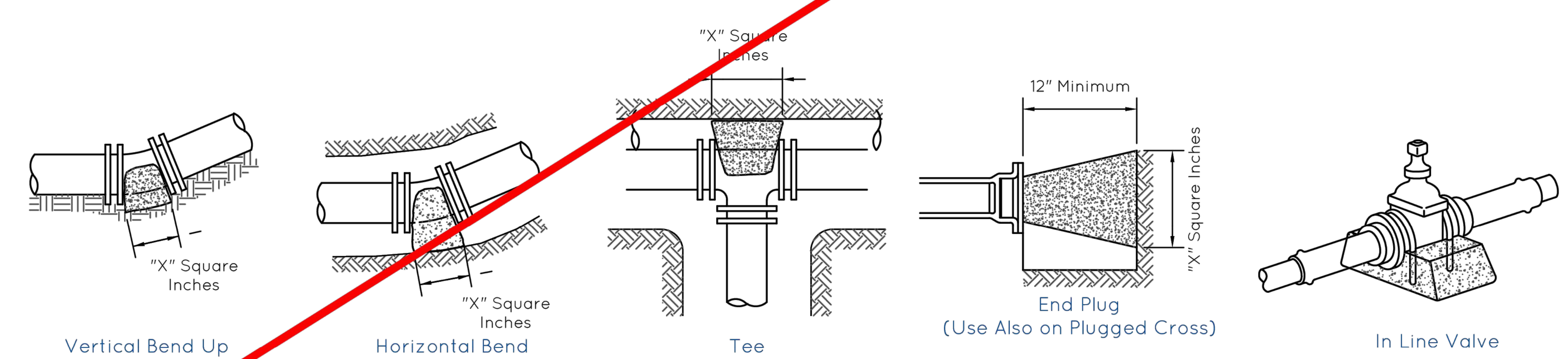
(Refer to Hamilton County Surveyors Detail)

Not to Scale



FORCE MAIN TRENCH

Not to Scale



Notes:

1) Blocks designed for 100 psi pressure, for higher pressures contact City of Fishers.
2) Vertical bends downwards (3" and greater) shall be individually designed using flanged or restrained joints.
3) Concrete for thrust blocks to be 3750 psi laid to undisturbed bearing wall of the trench in the form of a wedge with the wide end against the trench wall.
4) Thrust blocking is required for all force main locations where the main changes direction by 11.25° or more.

FORCE MAIN THRUST BLOCKING

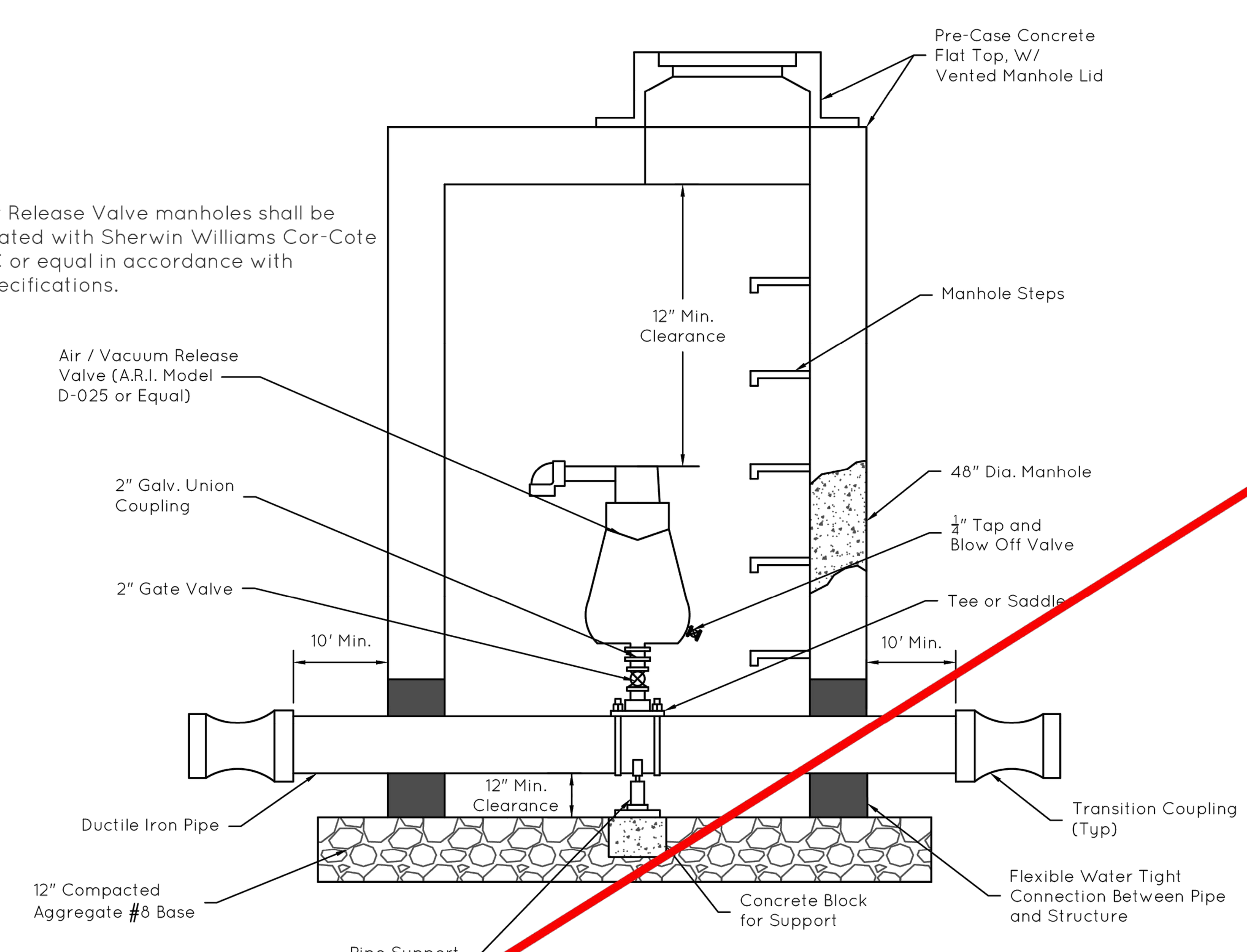
Not to Scale

SIZE OF THRUST BLOCK IN SQUARE INCHES

Type of Soil	$\frac{1}{32}$ (11-$\frac{1}{4}$") & $\frac{1}{16}$ (22 $\frac{1}{2}$") Bend					$\frac{1}{8}$ (45°) Bend					$\frac{1}{4}$ (90°) Bend					Tee & End Plug					In Line Valve
	1.5"	2"	2.5"	3"	4"	1.5"	2"	2.5"	3"	4"	1.5"	2"	2.5"	3"	4"	1.5"	2"	2.5"	3"	4"	Coordinate With Engineer
Loose Sand & Gravel, Soft Clay	20	30	40	60	100	40	60	80	110	190	70	100	140	210	340	50	70	100	150	240	
Compacted Sand & Gravel, Dense Silt, Firm Till & Stiff Clay	10	20	20	30	50	20	30	40	60	100	40	50	70	110	170	30	40	50	80	120	
Very Stiff Clay, Dense Till, Shale or Rock	10	10	20	20	40	20	20	30	40	70	30	40	50	70	120	20	30	40	50	80	

Note:

1) Air Release Valve manholes shall be coated with Sherwin Williams Cor-Cote SC or equal in accordance with specifications.



TYPICAL AIR RELEASE VALVE WITH CONNECTION

Not to Scale

DUCTILE IRON PIPE SIZE	DEPTH OF COVER(INVERT TO FINAL GRADE)	THICKNESS CLASS
6" - 8"	Up to 20 Feet Over 20 Feet Contact Engineer	Class 50
10" - 12"	Up to 20 Feet Over 20 Feet Contact Engineer	Class 51
14" - 16"	Up to 20 Feet Over 20 Feet Contact Engineer	Class 52
18" - 20"	Up to 20 Feet Over 20 Feet Contact Engineer	Class 54
24"	Up to 20 Feet Over 20 Feet Contact Engineer	Class 55
Greater Than 24" Diameter	Greater Than 20 Feet Deep	Contact Engineer (Either Case)
NOTE: No Pressure Rated Pipe Will be Permitted		

Note:

1) Manhole sections shall conform to ASTM C 478 utilizing 4,000 psi concrete. Joints shall conform to ASTM C 443. Four (4) feet diameter manhole for 6" force main or smaller, or five (5) feet diameter manhole for 8" force main or larger.

4

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1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SANITARY SEWER FORCE MAIN DETAILS

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
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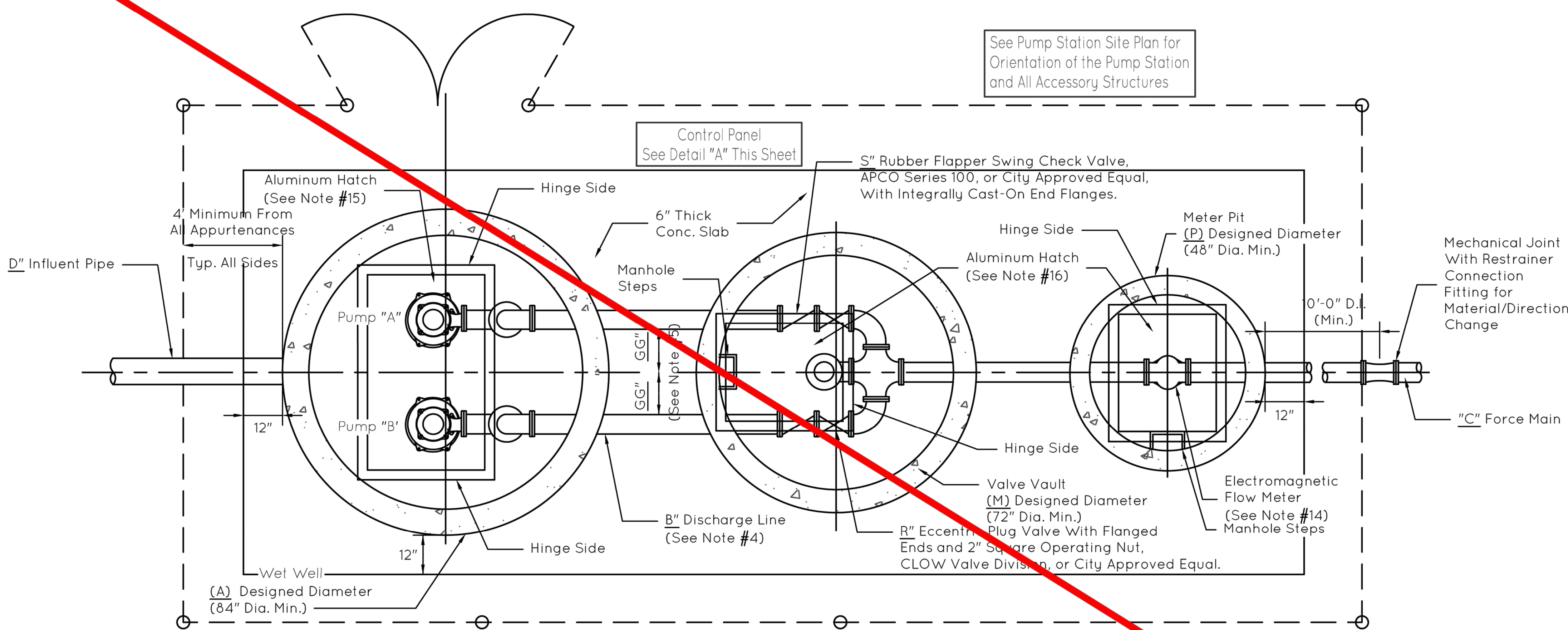
CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

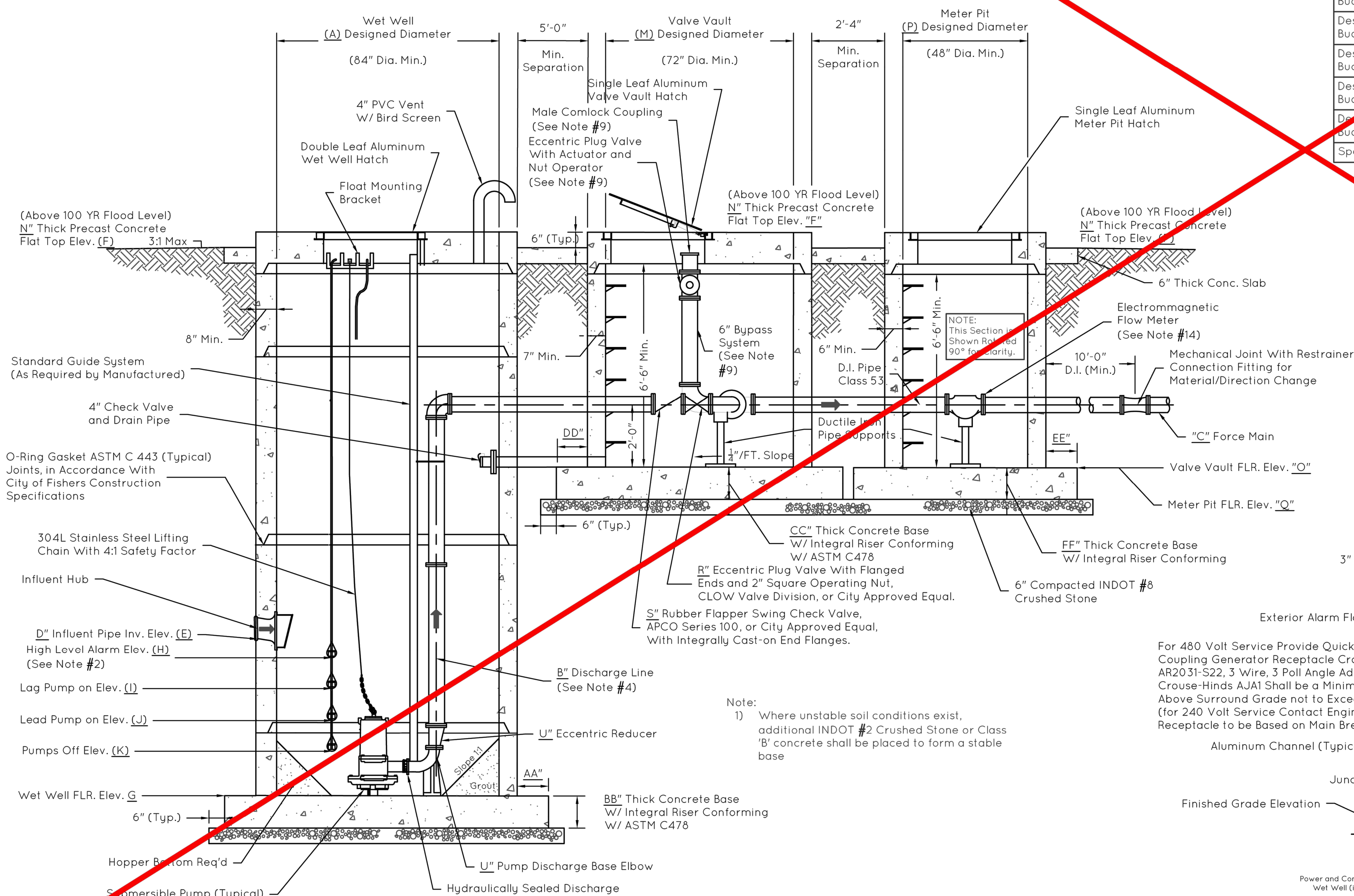
DRAWING NUMBER
C923

PROJECT NUMBER
2021119

NOTE: *ONLY FOR LIFT STATIONS COVEYED TO FISHERS*



PLAN VIEW
Not to Scale



SECTION VIEW
Not to Scale

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SUBMERSIBLE PUMP STATION SCHEDULE			
DESCRIPTION	SYMBOL	DATA (1)	ADDITIONAL INFORMATION
Pump Model Number			
Pump Capacity - GPM Each			
Total Dynamic Head - FT.			
Pump Discharge Size Ø			
Motor H.P.			
Motor RPM			
Wet Well Diameter	A		
Discharge Pipe Diameter	B		
Force Main Diameter	C		
Gravity Influent Pipe Diameter	D		
Gravity Influent Inv. EL. - FT.	E		
Wet Well, Valve Vault, & Meter Pit Top of Str. EL.	F		
Wet Well Floor EL.	G		
High Water Alarm EL. Level	H		
Lag Pump Start EL. Level	I		
Lead Pump Start EL. Level	J		
Pumps Off EL. Level	K		
(Not Used)	L		
Valve Vault Diameter	M		
Precast Concrete Flat Top (Min. 12")	N		
Valve Vault Floor EL.	O		
Meter Pit Diameter	P		
Meter Pit Floor EL.	Q		
Plug Valve	R		
Check Valve	S		
(Not Used)	T		
Eccentric Reducer	U		
Discharge Elbow Size	V		
Design Engineer to Set Dimension, Supported by Buoyancy Calculations	AA		
Design Engineer to Set Dimension, Supported by Buoyancy Calculations	BB		
Design Engineer to Set Dimension, Supported by Buoyancy Calculations	CC		
Design Engineer to Set Dimension, Supported by Buoyancy Calculations	DD		
Design Engineer to Set Dimension, Supported by Buoyancy Calculations	EE		
Design Engineer to Set Dimension, Supported by Buoyancy Calculations	FF		
Spacing Between Discharge Piping	GG		

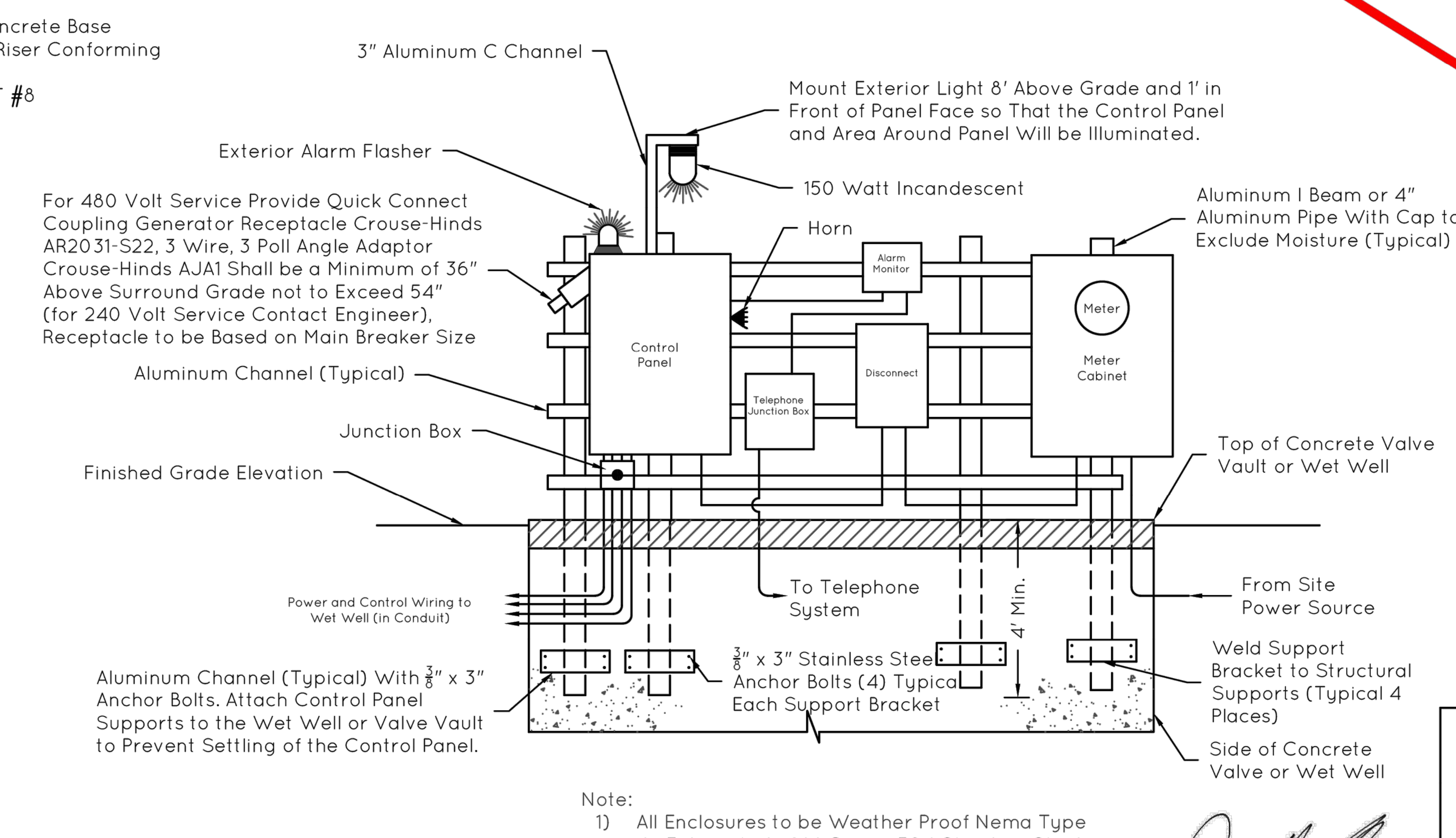
Design Engineers Certification of Actual Pump Station Dimensions, Control Settings, & Pump Selection as Indicated on Pump Station Schedule.

DATE ____________

Notice:
This certification is limited to those standards and guidelines per this sheet, and does not include information written into Pump Station Schedule. Construction is subject to construction drawings, shop drawings, and Design Engineer's design data written into Pump Station Schedule, and its certification thereof.

Reminder - For Pump Station Site Plan Data Project Engineer Shall Provide:

1) Wet Well and Valve Vault Orientation
2) Control Panel Location
3) Fencing and Gate Locations
4) Asphalt Access Drive from Public Right-of-Way
5) Parking Stops
6) Grading and Drainage Arrows
7) Boundary of Pump Station Parcel to be Granted to Fishers'
8) Area for Emergency Generator
9) All Other Information That Will Allow for a Detailed Review of the Site Plan



CONTROL PANEL DETAIL "A"
Not to Scale

STANDARD PUMP STATION NOTES

1) Actual pump station dimensions, control settings, and pump selection to be as indicated by the design engineer's certification of the data written into the Submersible Pump Station Schedule, this sheet.
2) High level alarm elevation shall be set at least 6" below the lowest incoming gravity pipe.
3) Glycerin-filled pressure gauges shall be provided as manufactured by Ashcroft, or equal. The gauges shall have an operating range appropriate for the system pressure and shall display in both feet and psi. Each gauge shall be provided with an in-line snubber and a shut-off valve. The pipe shall be drilled and tapped wherever possible.
4) Piping in and within the zone of influence of the excavation of the wet well, valve vault, and meter pit structure, shall be Class 53 flanged D.I. pipe or Class 50 D.I. pipe for direct bury. The minimum dimension for D.I. pipe outside of a structure is ten (10) feet. All fasteners within pump station structures, shall be 316 S.S.
5) Design engineer shall space discharge piping in accordance with pump and piping dimensions and pump manufacturer's recommendations.
6) Piping and fittings in wet well, valve vault, and meter pit shall be in accordance with City of Fishers construction specifications.
7) Butyl rubber shall be applied to all exterior structure joints that are below grade. The Butyl rubber shall extend six (6) inches above and below the joint.
8) Pump Station wet well, valve vault, and meter pit manholes shall be pre-cast concrete in accordance with ASTM C-478, with rubber gaskets, in accordance with the City of Fishers Construction Specifications.
9) Comlock coupling and eccentric plug valve on by-pass line shall be 6 inch diameter with transition to force main size occurring with concentric reducer placed on the top of base elbow. The plug valve's operating nut shall be directly accessible with a standard tee wrench. Show location on the structure layout sketch required in Note 15.
10) Sewer connections and force main penetrations of wet well, valve vault, and meter pit structure shall be KOR-N-SEAL, A-LOK, or Dura-Seal, in accordance with the City of Fishers Construction Specifications. Portland cement grout may be used to seal penetrations on non-sewer connections.
11) Generator receptacle, with factory sealed switch, shall match to receive of the City of Fishers' portable generator set.
12) Provide an Allen Bradley or "Engineer Approved" SCADA System that incorporates: 1 spare input/output, 1 input for flowmeter 4-20mA signal, 5 outputs to control being lead remote on, lead remote off, lag remote on, lag remote off and remote alarm acknowledge, and 10 inputs from control being hatch(es) open alarm, panel(s) open alarm, Pump "A" on, Pump "B" on, Pump "A" fail, Pump "B" fail, phase fail alarm, power fail alarm, high water alarm and pump(s) seal failure, remote lead pump override and remote lag pump override.
13) Electromagnetic Flowmeter shall be a Siemens series 5100W or "Engineer Approved", flanged, with remote transmitter and accidental submergence kit. Interconnecting cable for power to transmitter shall be provided of appropriate length for application. Flowmeter transmitter shall be integral mounted and shall produce a 4-20mA signal for use by the SCADA System. Flowmeter size shall be based upon the projected flow through the force main, the force main size, and per the manufacturer's recommendation for highest accuracy over the operational range of the lift station.
14) Provide an aluminum double-door access hatch and frame assembly with safety man catches for pump station wet well to be installed in concrete top. Pump manufacturer shall size door opening in order to facilitate ease in removing pumps from wet well. Contractor and pump manufacturer shall coordinate to match size and location of opening in concrete top to dimensions of hatch provided by pump manufacturer.
15) Provide an aluminum single-door access hatch and frame assembly with safety man catches for valve vault and meter pit, respectively, to be installed in concrete top. The contractor and pump manufacturer shall provide a dimensionally accurate sketch of the valve vault and meter pit showing all valves, piping, and equipment to confirm the proper location and size of the access hatch for the structure.

Notes:
1) See Fishers' Pump Station and Force Main Specifications Sheet for details of equipment.
2) This plan is for design purposes only.
3) Access drive from nearest public Right-of-Way to pump station must be provided.
4) The access drive must have a minimum of 14 feet of clearance from all utility or power poles.
5) All station piping must be Ductile Iron.
6) A "live" yard hydrant shall be installed inside fence area (if possible) and close to fence, to provide water service for pump station maintenance purposes. Backflow preventer as required by water company

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1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SANITARY SEWER DUPLEX PUMP STATION DETAILS AND NOTES

SHEET 23 of 29

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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REVISIONS:

4	02/12/24	ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
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DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C924

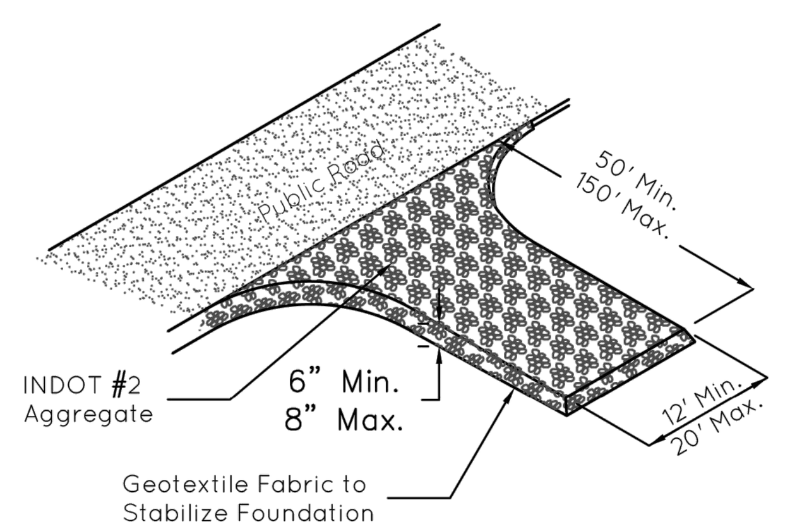
PROJECT NUMBER
2021119

GENERAL SWWP NOTES FOR INDIVIDUAL LOTS

1) All storm water quality measures, including erosion and sediment control, necessary to comply with the requirements for 327 IAC 15-5, Rule 5, City of Fishers, and/or general construction practices must be implemented in accordance with the plan and sufficient to satisfy Chapter 7 of the City of Fishers STSM.
2) Provisions for erosion and sediment control on individual building lots regulated under the original permit of a project site owner must include the following requirements:
   - 2)1) The individual lot operator, whether owning the property or acting as the agent of the property owner, shall be responsible for erosion and sediment control requirements associated with activities on individual lots.
   - 2)2) Installation and maintenance of a stable construction site access.
   - 2)3) Installation and maintenance of appropriate perimeter erosion and sediment control measures prior to land disturbance.
   - 2)4) Sediment discharge and tracking from each lot must be minimized throughout the land disturbing activities on the lot until permanent stabilization has been achieved.
   - 2)5) Clean-up of sediment must be redistributed or disposed of in a manner that is in compliance with all applicable statutes and rules.
   - 2)6) Adjacent lots disturbed by an individual lot operator must be repaired and stabilized with temporary or permanent surface stabilization.
3) In accordance with Chapter 7 of the City of Fishers STSM, final stabilization of an individual lot project site is achieved when:
   - 3)1) All land disturbing activities have been completed
   - 3)2) The establishment, at a uniform density of seventy percent (70%) across one-hundred percent (100%) of the disturbed area, of vegetative cover or permanent non-erosive material that will ensure the resistance of the soil to erosion, sliding, or other movement.

CONSTRUCTION SEQUENCE FOR INDIVIDUAL LOTS

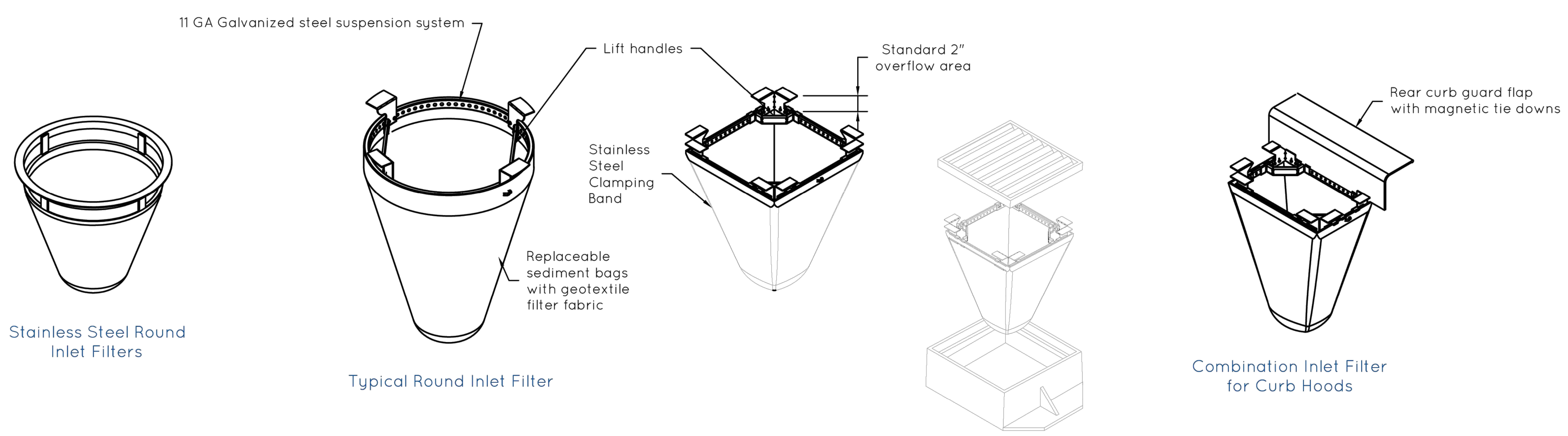
1) Clearly delineate areas of trees, shrubs, and vegetation that are to be undisturbed. To prevent root damage, the areas delineated for tree protection should be at least the same diameter as the crown.
2) Install perimeter silt fence at construction limits. Position the fence to intercept runoff prior to entering drainage swales.
3) Avoid disturbing drainage swales if vegetation is established. If drainage swales are bare, install erosion control blankets or sod to immediately stabilize.
4) Install appropriate inlet protection for all inlets on the property.
5) Install curb inlet protection, on both sides of the road, for all inlets along the property frontage and along the frontage of adjacent lots, or install temporary catch basin inserts in each inlet and frequently clean.
6) Install gravel construction entrance flush with the back of existing curb, extending from the street to the building pad.
7) Perform primary grading operations.
8) Contain erosion from any soil stockpiles created on-site with silt fence around the base.
9) Establish temporary seeding and straw mulch on disturbed areas.
10) Construct the home and install utilities.
11) Install downspout extenders once the roof and gutters have been constructed. Extenders should outlet to a stabilized area.
12) Re-seed any areas disturbed by construction and utilities installation with temporary seed mix that will be left inactive for seven (7) days.
13) Grade the site to final elevations. Add topsoil as needed to minimize erosion of underlying soil and to quickly establish grass.
14) Install permanent seeding or sod.



Notes:
1. Must keep top of stone at road elevation.
2. Width to be adjusted to match wider entrance, if required.

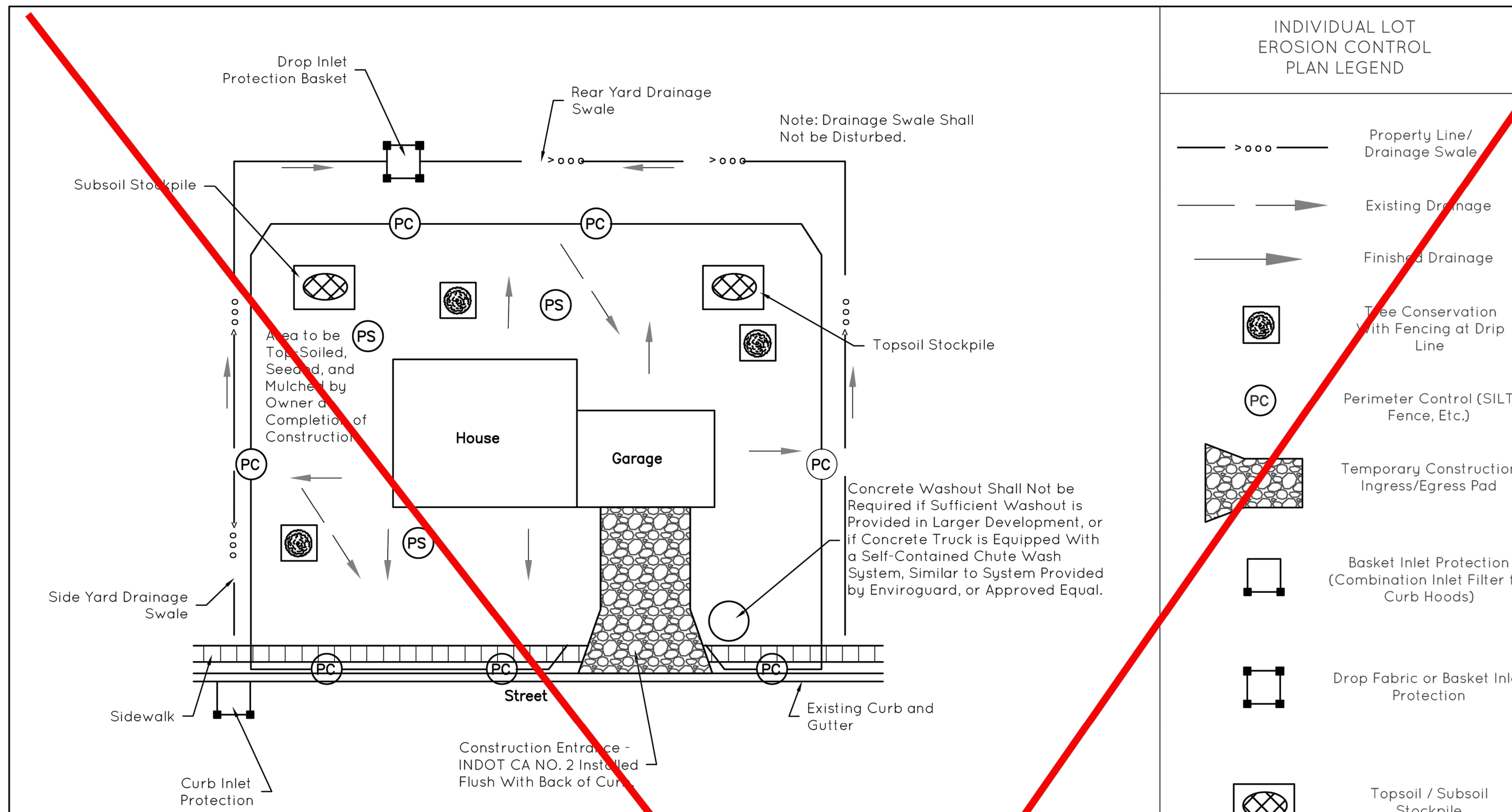
Site Size	Entrance Width	Entrance Length	Stone Depth
Less than 2 acres	12' min	50' min	6" min
2 acres or more	20' min	150' min	8" min

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
Not to Scale



Note:
1) Measures to be used in accordance with manufacturer's stated installation and maintenance specifications, and limitations

BASKET INLET PROTECTION
Not to Scale



SAMPLE EROSION / SEDIMENT CONTROL PLAN ONE OR TWO-FAMILY DWELLING UNDER CONSTRUCTION
Not to Scale

Notes:
1) Erosion/ sediment control measures must be functional and be maintained throughout construction.
2) Maintain positive drainage away from the structure.
3) Perimeter protection should be installed before excavation of basement/foundation has begun. Perimeter protection on lots shall remain in place until the lot is stabilized, meeting the cover requirements of IDEM and City of Fishers.
4) All trash and construction debris shall be disposed properly into an enclosed waste receptacle.
5) Street to be cleaned at the end of every work day, at a minimum, or more frequent if needed.
6) Erosion control blanket must be used on rear yards where slopes exceed 3:1 in lieu of silt fence.

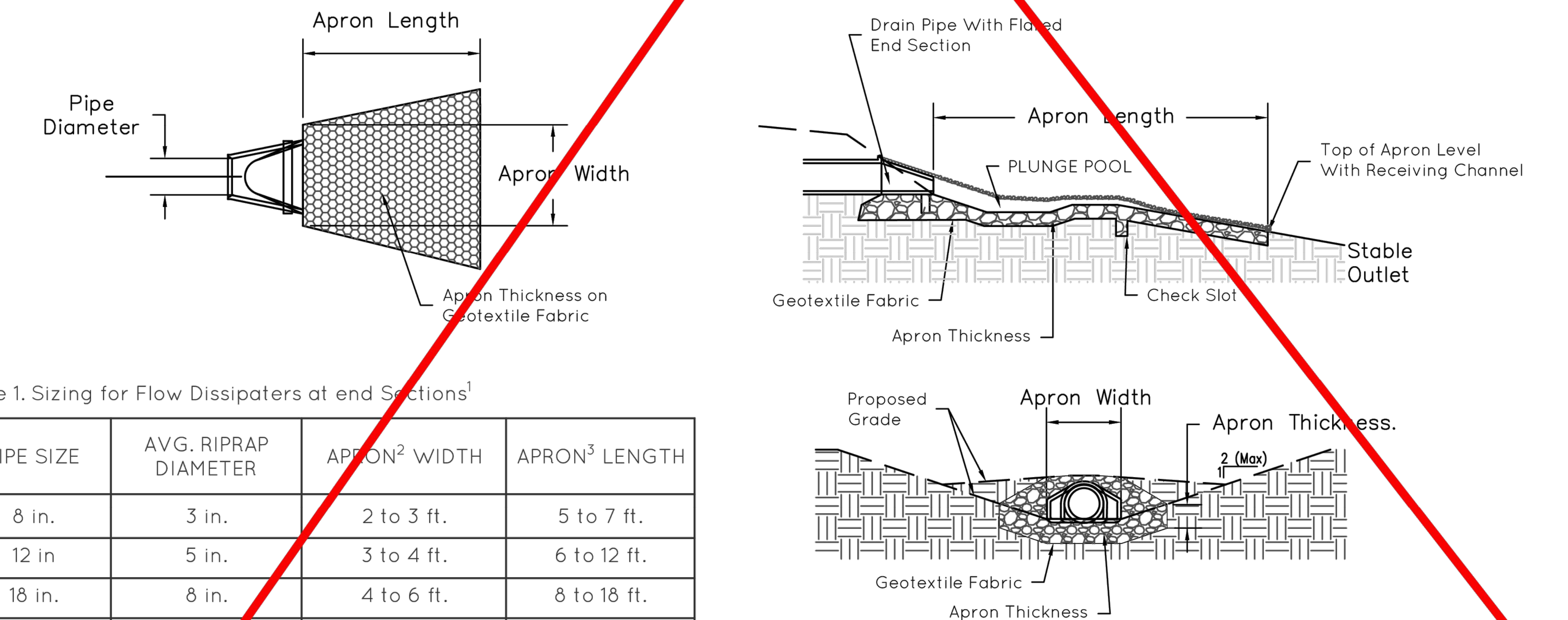


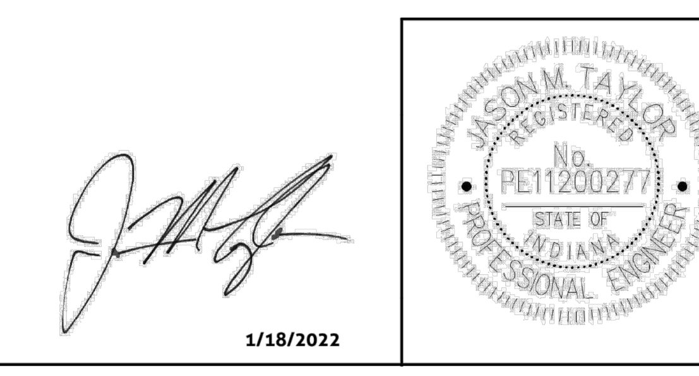
Table 1. Sizing for Flow Dissipaters at end Sections[1]

PIPE SIZE	AVG. RIPRAP DIAMETER	APRON[2] WIDTH	APRON[3] LENGTH
8 in.	3 in.	2 to 3 ft.	5 to 7 ft.
12 in	5 in.	3 to 4 ft.	6 to 12 ft.
18 in.	8 in.	4 to 6 ft.	8 to 18 ft.
24 in.	10 in.	6 to 8 ft.	12 to 22 ft.
30 in.	12 in.	8 to 10 ft.	14 to 28 ft.
36 in.	14 in.	10 to 12 ft.	16 to 32 ft.

1-For Larger or Higher Flows Consult a Registered Engineer
2-Apron Width at the Narrow End of Apron (Pipe or Channel Outlet)
3-Select Length Taking Into Consideration the Low Flow (Nor Pressure Head) or High Flow (Pressure Head) Conditions of the Culvert Pipe.

Apron Thickness = 1.2 Times the Max Stone Diameter for a D50 Stone Size of 15 Inches or Larger
Apron Thickness = 1.5 Times the Max Stone Diameter for a D50 Stone Size of 15 Inches or Less

ENERGY DISSIPATER (OUTLET PROTECTION)
Not to Scale



CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

EROSION CONTROL DETAILS

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

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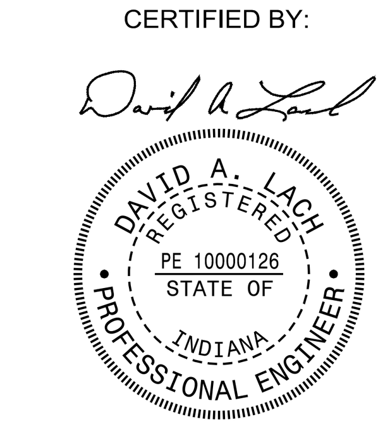

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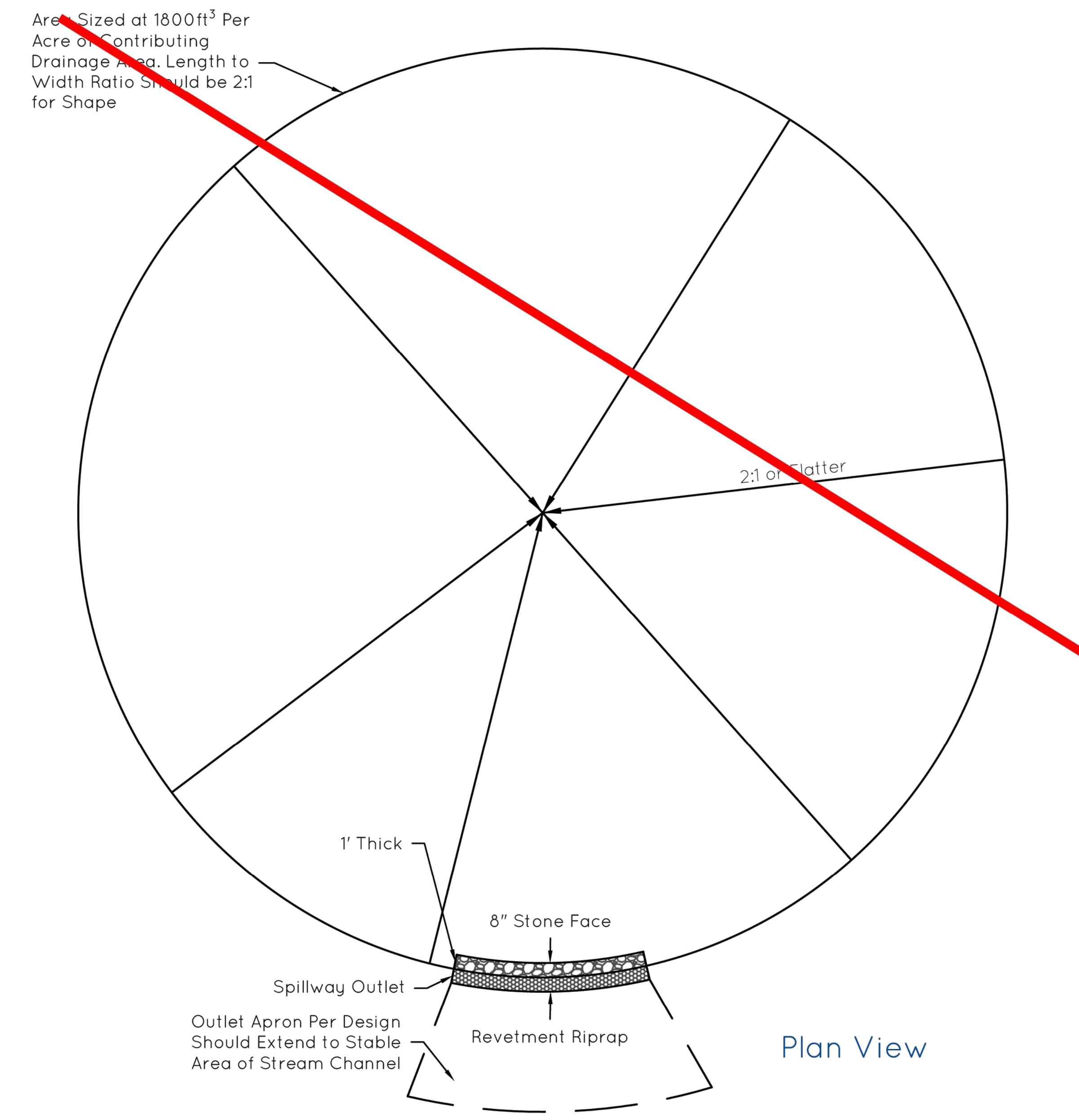
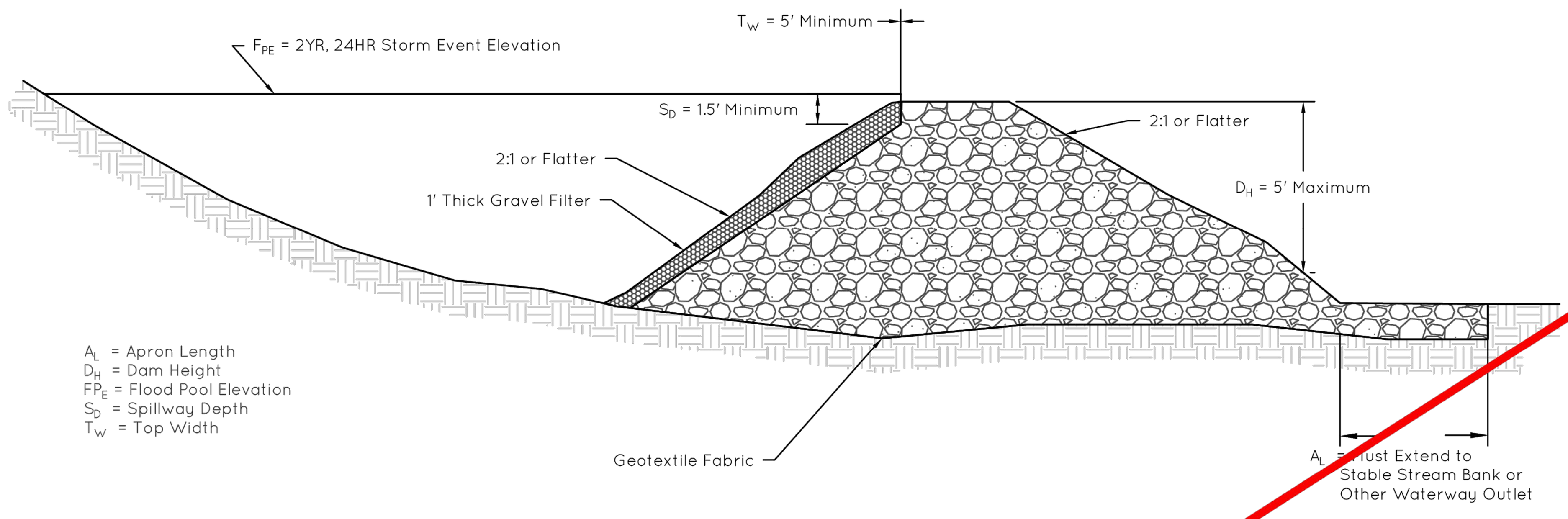
2021119

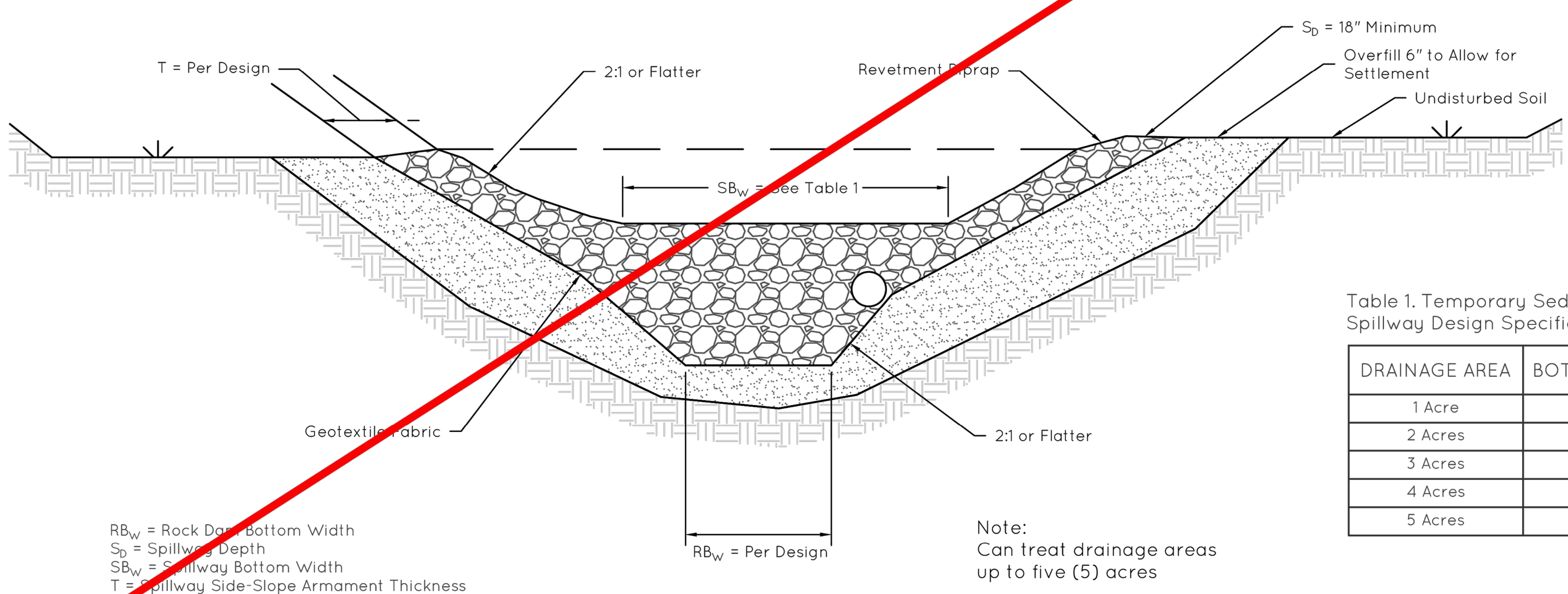
TEMPORARY SEDIMENT TRAP
Not to Scale



Plan View



Profile View



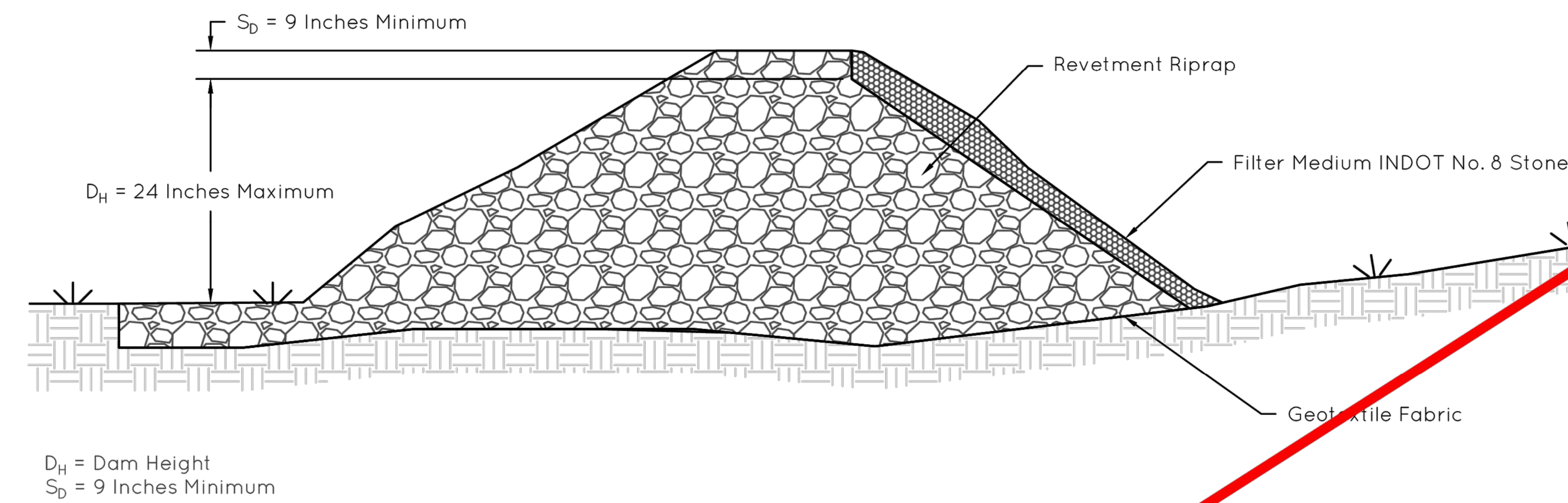
Cross-Section View

Table 1. Temporary Sediment Trap Spillway Design Specifications

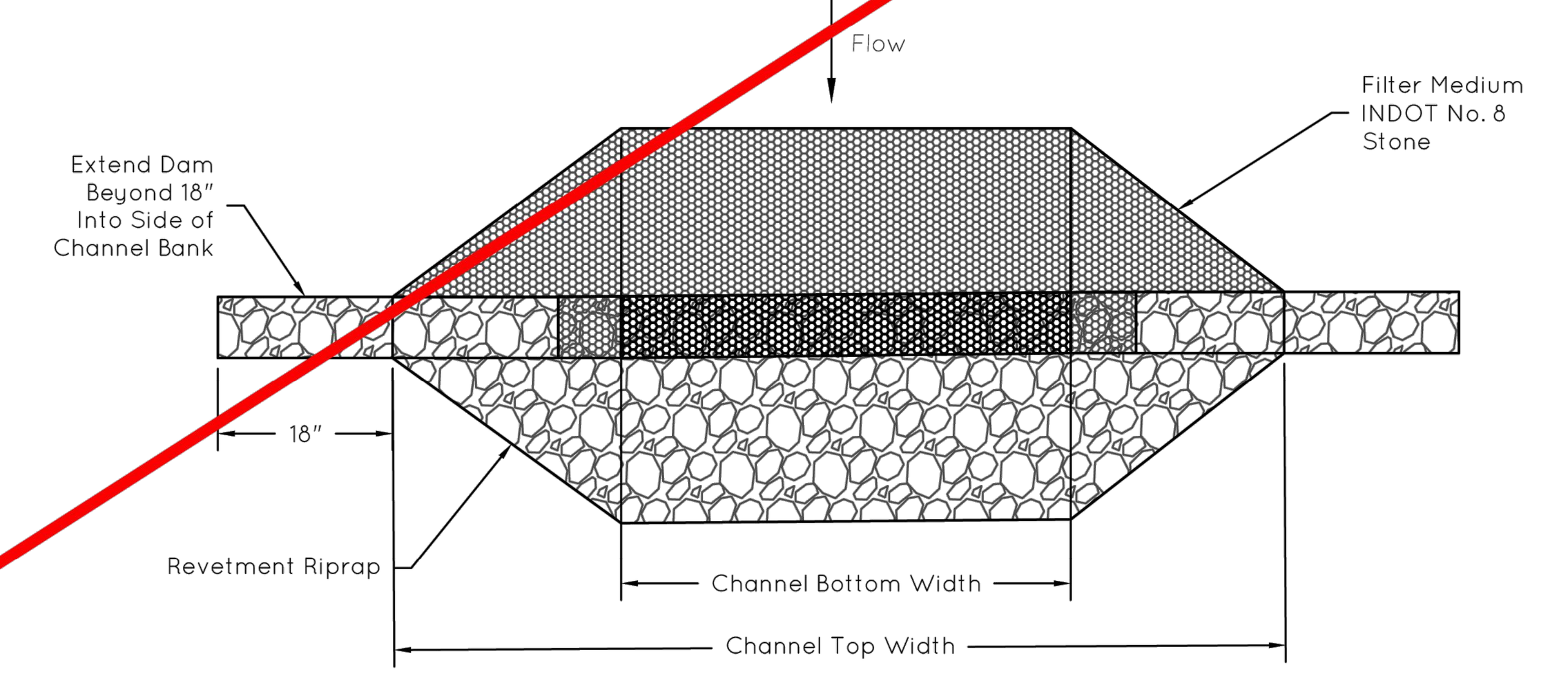
DRAINAGE AREA	BOTTOM WIDTH
1 Acre	4 Feet
2 Acres	6 Feet
3 Acres	8 Feet
4 Acres	10 Feet
5 Acres	12 Feet

Note:
Can treat drainage areas up to five (5) acres

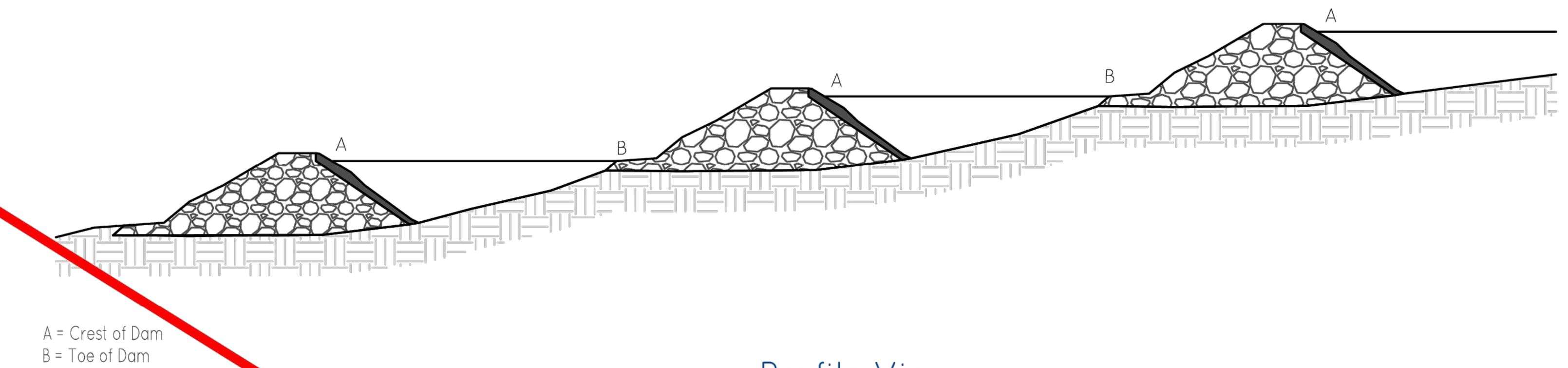
TEMPORARY ROCK CHECK DAM
Not to Scale



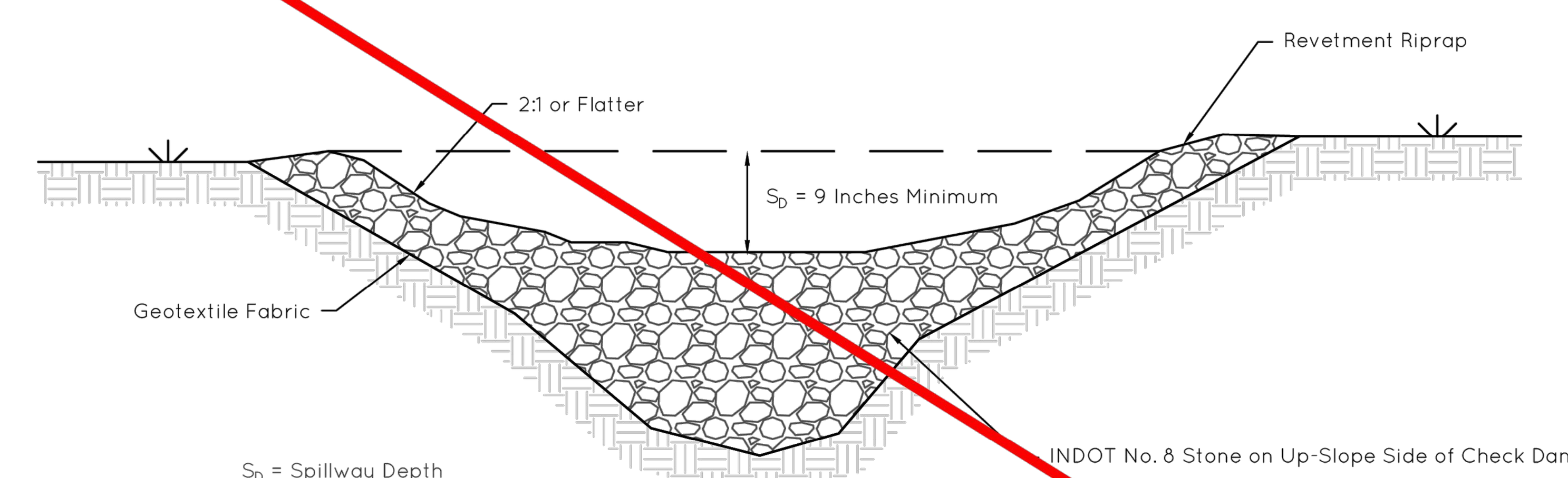
Profile View



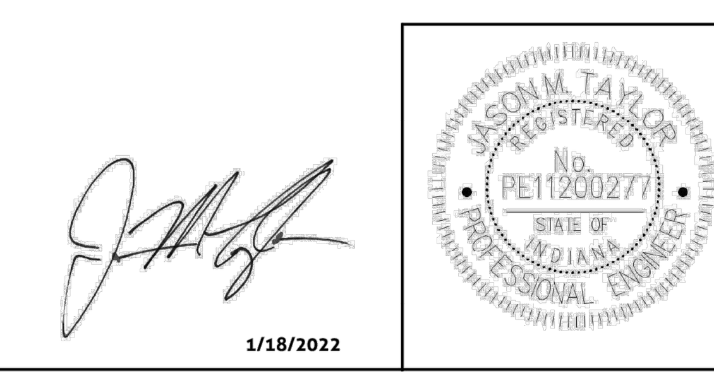
Plan View



Profile View



Cross Section View



CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

EROSION CONTROL DETAILS

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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS
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11442 LANTERN RD, FISHERS, IN 46038

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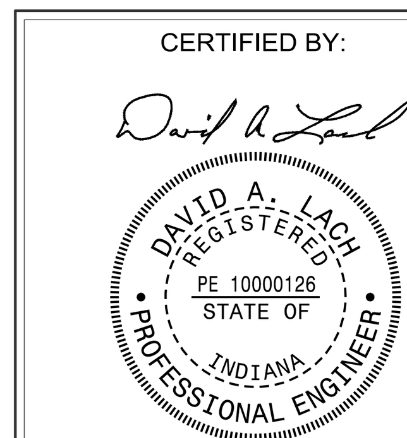

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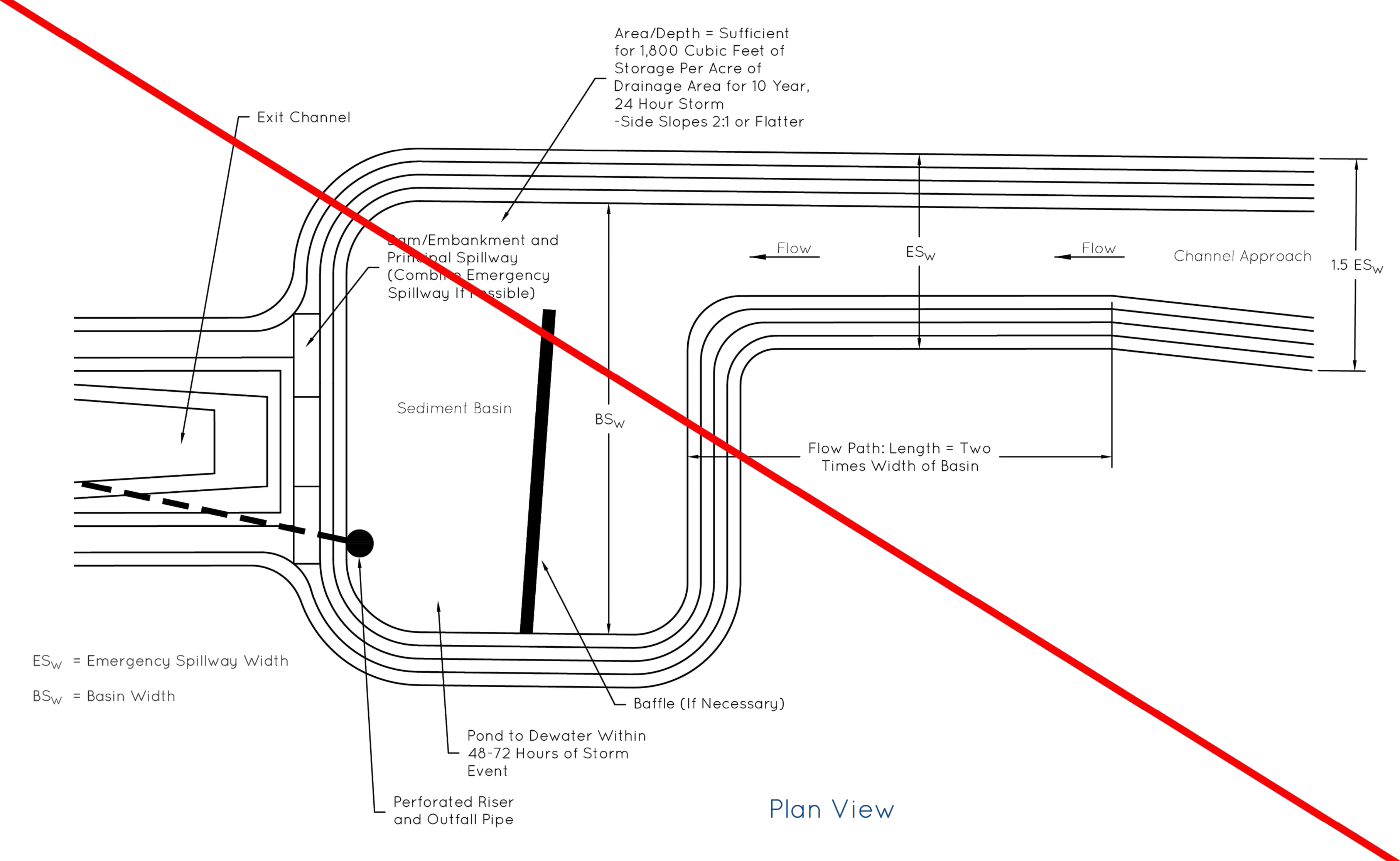
C926

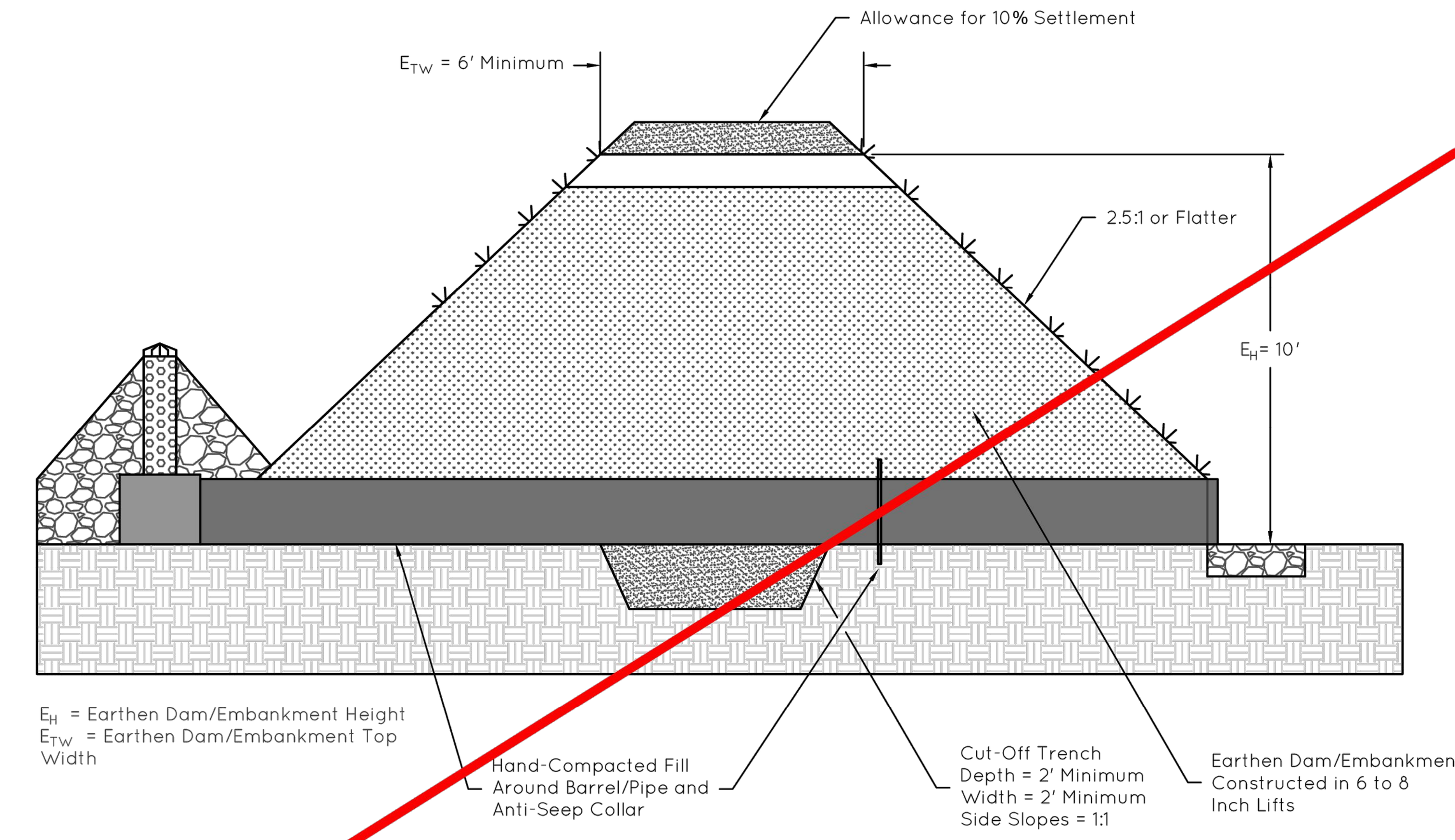
PROJECT NUMBER
2021119



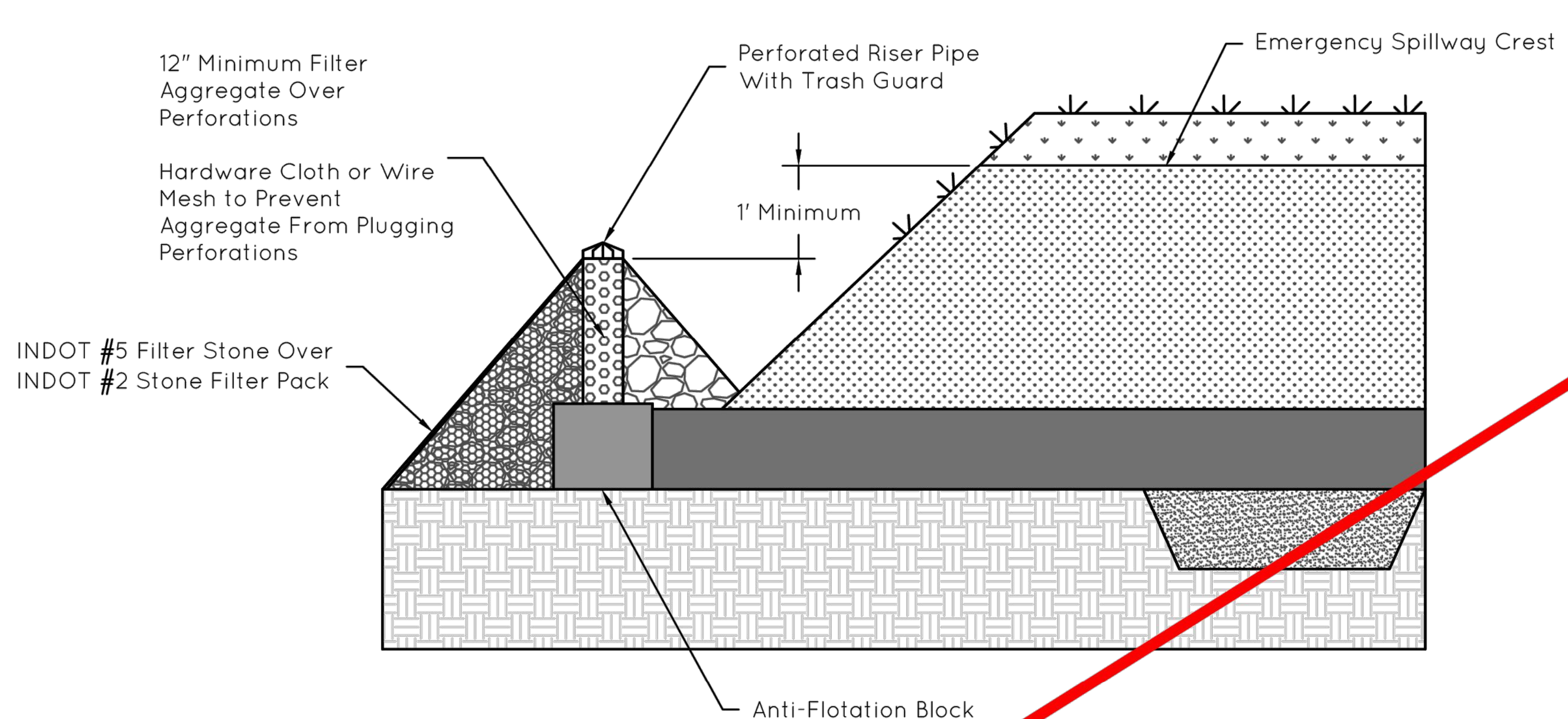
Plan View

TEMPORARY SEDIMENT BASIN

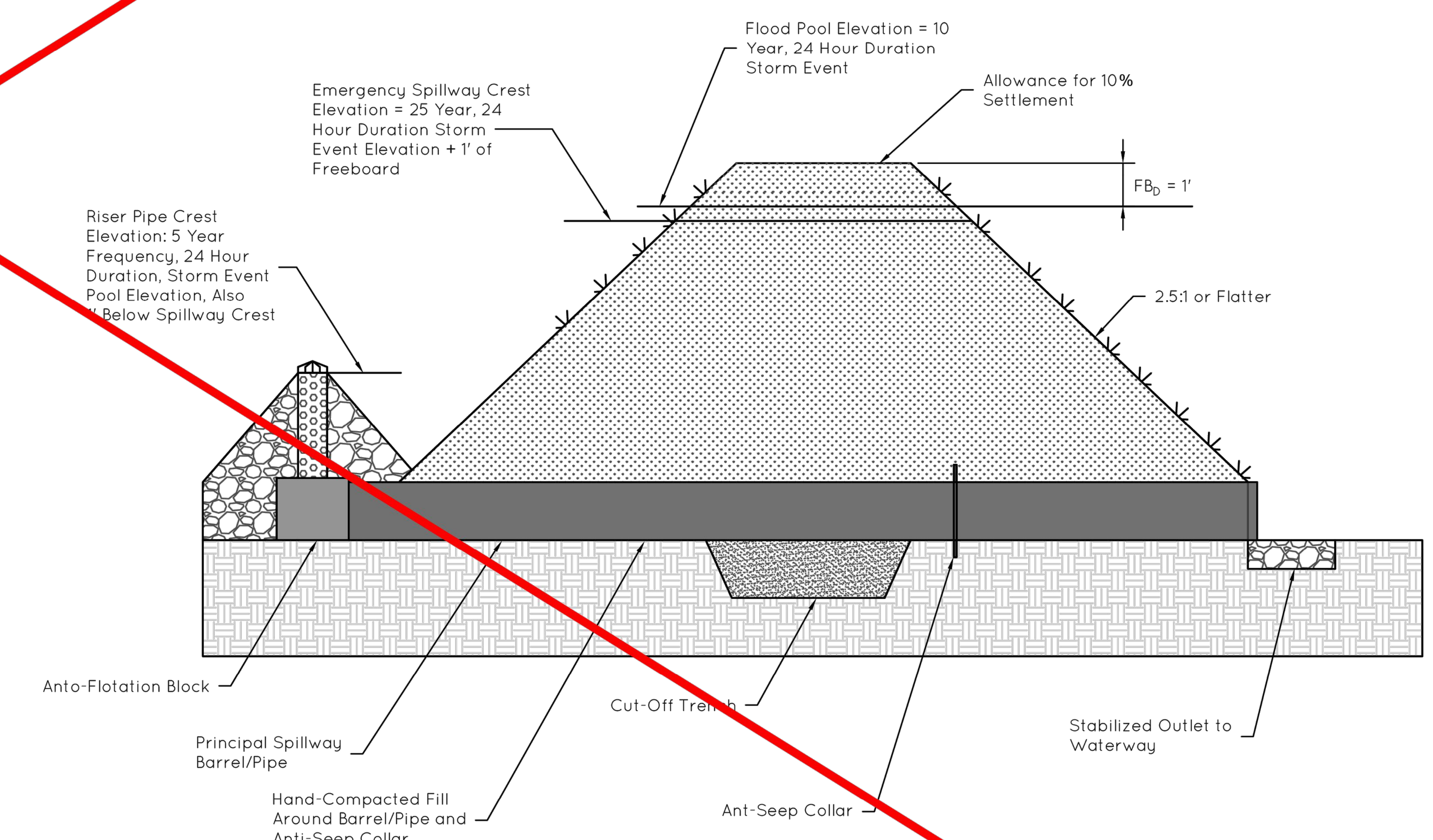
Not to Scale



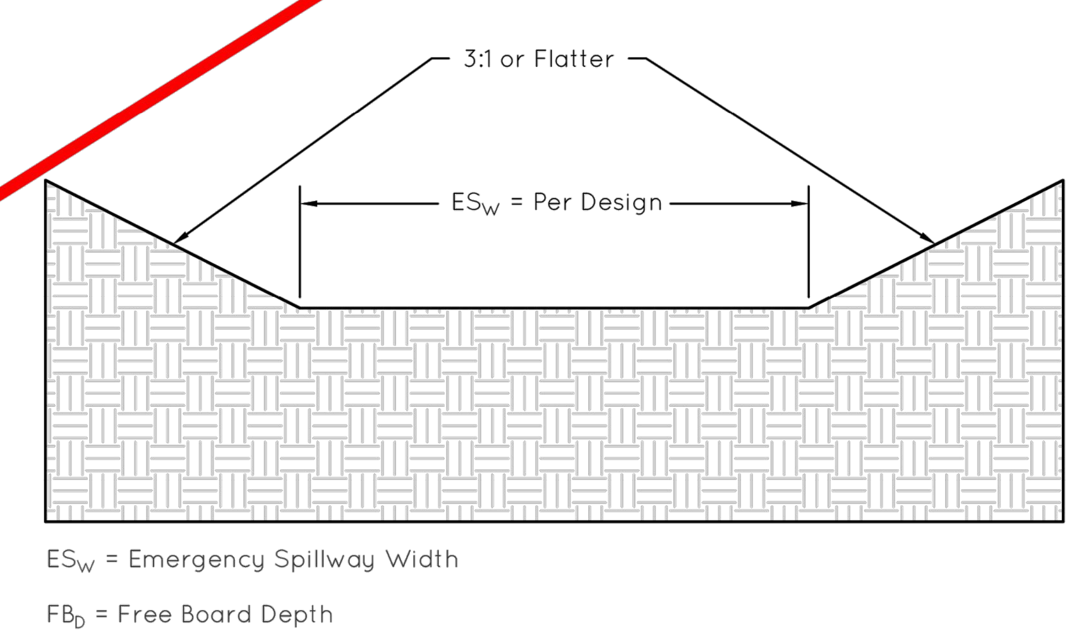
Earthen Dam/Embankment Profile View



Riser Pipe Profile View



Spillway Profile View



Spillway Cross Section View

1/18/2022

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

EROSION CONTROL DETAILS

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CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

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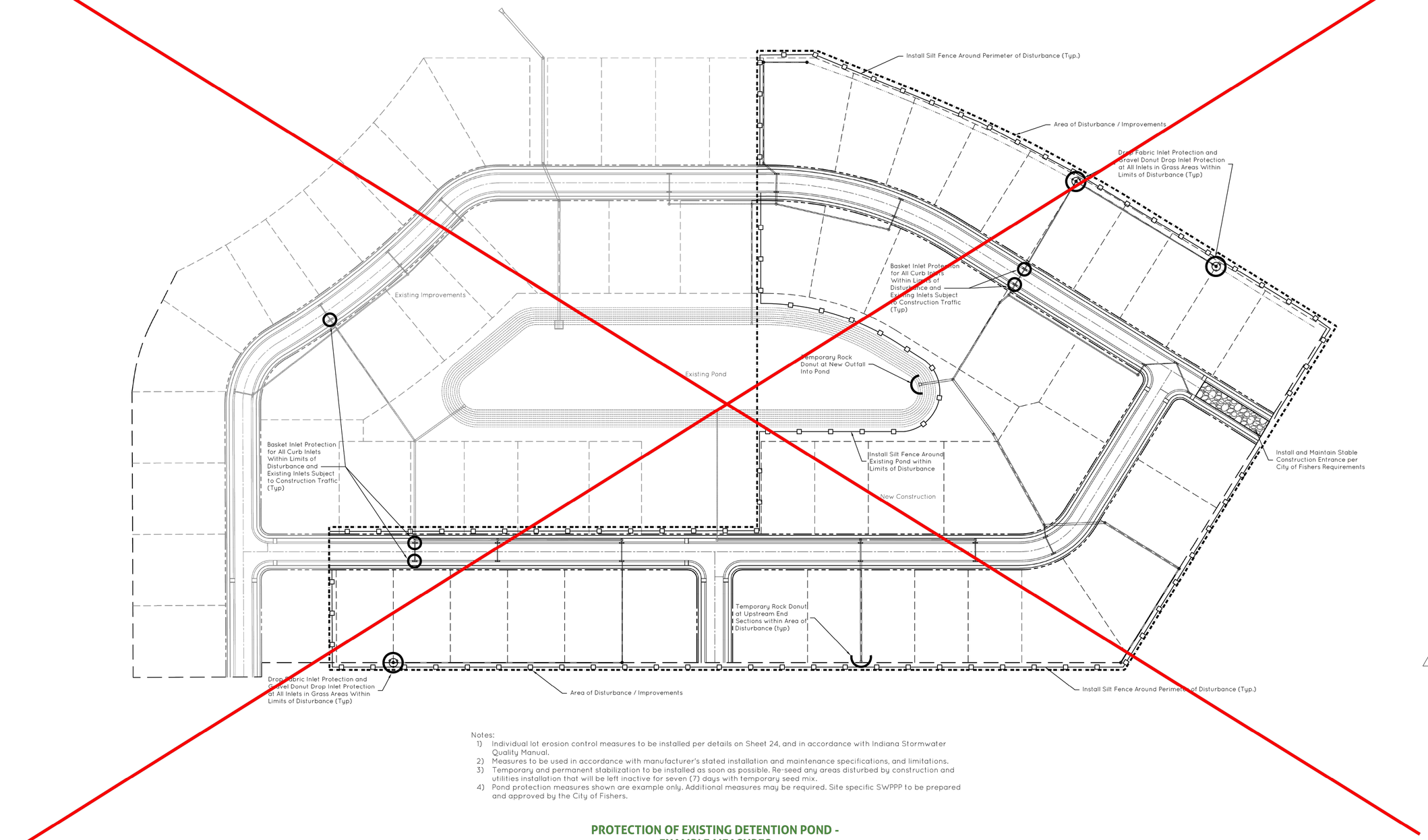
C927

PROJECT NUMBER
2021119



Notes:

1) Individual lot erosion control measures to be installed per details on Sheet 24, and in accordance with Indiana Stormwater Quality Manual.
2) Measures to be used in accordance with manufacturer's stated installation and maintenance specifications, and limitations.
3) Temporary and permanent stabilization to be installed as soon as possible. Re-seed any areas disturbed by construction and utilities installation that will be left inactive for seven (7) days with temporary seed mix.
4) Pond protection measures shown are example only. Additional measures may be required. Site specific SWPPP to be prepared and approved by the City of Fishers.

PROTECTION OF EXISTING DETENTION POND - EXAMPLE MEASURES

Not to Scale

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS STANDARD CONSTRUCTION DETAILS	SHEET
EROSION CONTROL DETAILS	27 of 29

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WATER DETAILS

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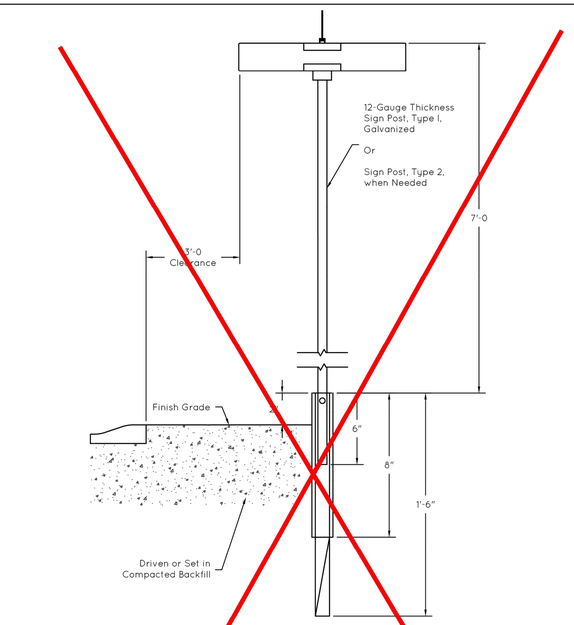
DRAWING NUMBER
C928

PROJECT NUMBER
2021119



Notes:
1) Streets shall be signed per latest approved edition of IMUTCD.
2) Street name signs shall be 8" tall 0.1 gauge extruded aluminum sign blanks. The sign face material shall be Diamond grade retroreflective green background with white letters and shall be mix-cased in accordance with the IMUTCD.
3) All public regulatory street signs shall be diamond grade retroreflective background, including letters and border where appropriate.
4) Font and letter height shall be in accordance with IMUTCD and FHWA Standard Highway Signs.
5) Street signs shall have rounded corners and be tall enough to accommodate the above noted minimum letter heights.
6) Supr-lok cap shall be model #91UX-NU180 or equal. Supr-lok cross shall be model #990X or equal.
7) Street name signs shall be mounted on Type 1 or 2 12-gauge steel galvanized post. Whichever is required according to INDOT Standard Drawings.
8) Street name signs on roundabouts shall be on decorative 2 3/8" round post with finial, with Fishers Green finish, and with Z238 aluminum interlocking bracket set by Hall Signs or approved equal.
9) Private streets must include a vertical "PVT" symbol in 3" white lettering to the left of the street name.
10) Public street signs must include City of Fishers logo (does not have to be multi-colored) to the left of the street name.
11) Optional white privately owned/maintainted signs on public roads:
11)1) White retroreflective background with black font may be used for street name signs, however, a maintenance agreement must be signed and submitted as these are considered privately owned and maintained signs. These signs will not be maintained by the City.
11)2) The City of Fishers logo is still required to the left of the street name.
11)3) No other logo or picture is permitted
12) Optional black/green or decorative post/poles on public roads:
12)1) Any painted or coated street name or regulatory sign post/pole is permitted; however, a maintenance agreement must be signed and submitted as these are considered privately owned and maintained posts/poles. These posts/poles will not be maintained by the City.

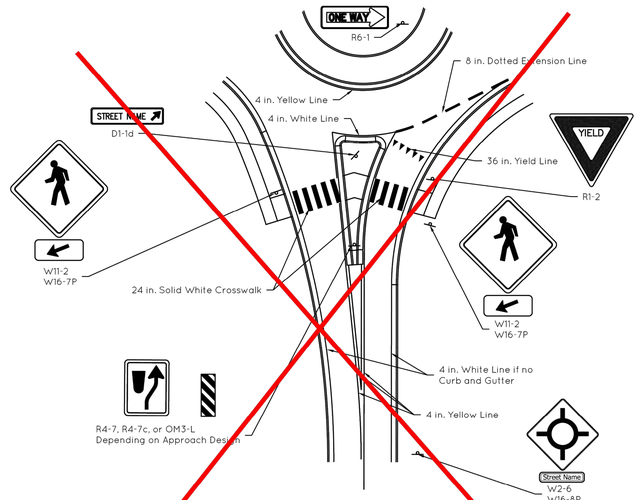
STREET NAME AND PUBLIC STREET SIGNS
Not to Scale

FISHERS
EST. 1823

Public street signs must include City of Fishers logo (white lettering and green background) to the left of the street name. The logo size should be based on the following table:

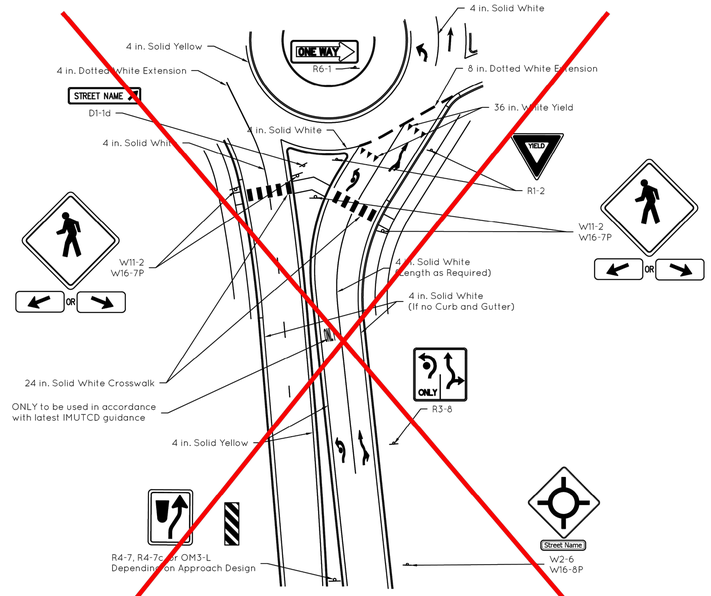
Sign Lettering Height	Max Logo Dimension
12"	10"X10"
9"	7"X7"
8"	6"X6"
6"	4"X4"
4"	3"X3"

CITY LOGO FOR STREET SIGNS
Not to Scale



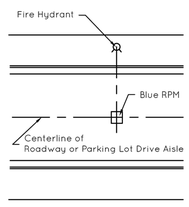
Notes:
1) Signs and striping shown for only one leg of single-lane roundabout.
2) Striping and signs indicated may be optional per the latest IMUTCD, but shall be required for all roundabouts designed in the City of Fishers unless prior approval has been given by the Dept. of Engineering.
3) All striping shall be thermoplastic on asphalt pavement and multi-component on concrete pavement.
4) All white striping on concrete pavement shall have black contrast border.
5) Sign post heights and lateral offsets shall be in accordance with latest IMUTCD guidance. R6-4a signs shall not exceed 4 feet from bottom of sign to edge of circulatory roadway traveled way.
6) Lighting adjacent to roundabouts shall be per the "LAMP POSTS AND LUMINAIRES ADJACENT TO ROUNDABOUTS" detail on next sheet.

SINGLE-LANE ROUNDABOUT STRIPING EXAMPLE
Not to Scale

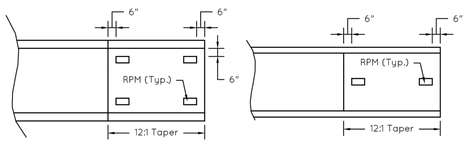


Notes:
1) Signs and striping shown for only one leg of multi-lane roundabouts.
2) Striping and signs indicated may be optional per the latest IMUTCD, but shall be required for all roundabouts designed in the City of Fishers unless prior approval has been given by the Dept. of Engineering.
3) Lane indication Arrows and circulatory roadway striping are for example. Actual lane configurations may vary.
4) All striping shall be thermoplastic on asphalt pavement and multi-component on concrete pavement.
5) All white striping on concrete pavement shall have black contrast border.
6) Sign post heights and lateral offsets shall be in accordance with latest IMUTCD guidance. R6-4a signs shall not exceed 4 feet from bottom of sign to edge of circulatory roadway traveled way.
7) Lighting adjacent to roundabouts shall be per the "LAMP POSTS AND LUMINAIRES ADJACENT TO ROUNDABOUTS" detail on next sheet.

TWO-LANE ROUNDABOUT STRIPING EXAMPLE
Not to Scale

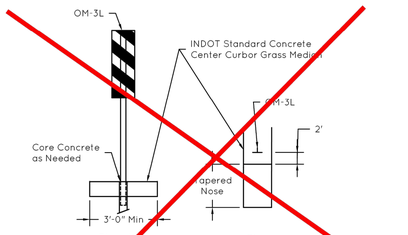


RAISED PAVEMENT MARKERS FOR HYDRANTS
Not to Scale



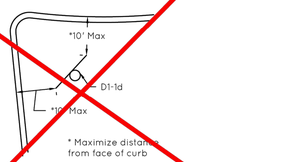
Notes:
1) Width greater than 3 feet requires 4 RPMs per Detail 1. Width less than 3 feet requires 2 RPMs per Detail 2 centered on width of median.
2) RPMs shall be yellow and Ennis Flint model 101LP or approved equal.
3) RPMs on top of concrete shall be epoxied and RPMs in pavement shall be grooved and epoxied according to manufacturer specifications.

RAISED PAVEMENT MARKERS
Not to Scale



Notes:
1) All medians shall have an end treatment.
2) Medians greater than four feet in width may contain approved landscaping or grass.

MEDIAN END TREATMENT
Not to Scale



ROUNDABOUT D1-1d SPLITTER ISLAND PLACEMENT
Not to Scale

4

1/18/2022

JASON M. TAYLOR REGISTERED No. PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

SIGN, PAVEMENT MARKING AND RPM DETAILS

SHEET
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FISHERS ELEMENTARY SCHOOL ADDITIONS & RENOVATIONS DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of construction proposed for the electrical systems.
The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract.
On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
4 — 02/12/24 ADDENDUM #4

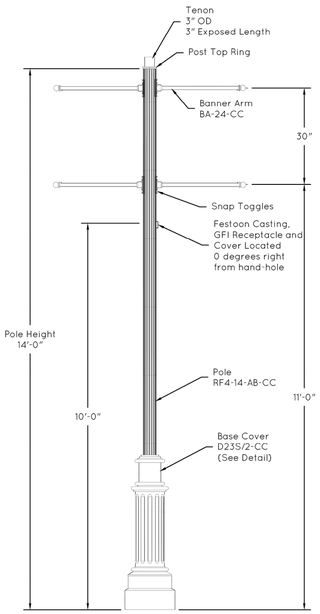
ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C929

PROJECT NUMBER
2021119



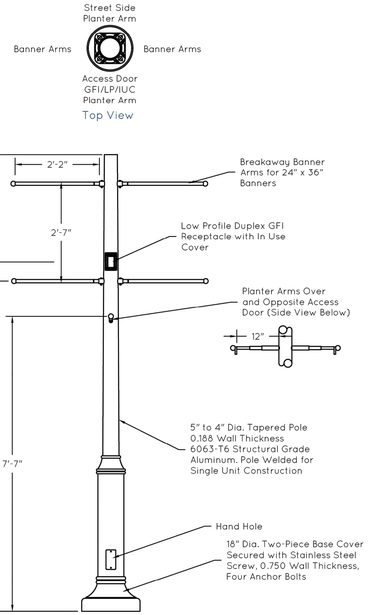
POLE

Model: FR4
Top Dia: 4"
Taper: None
Construction: Pultruded fiberglass reinforced isopthalic polyester resin utilizing longitudinal glass roving, continuous strand mat and off-axis fibers.
Anchor Base: Custom Top Hat Plate-ASTM A36

Tenon: 3" OD 3" Exposed 6061-T6 Alum
Post Top Ring: Cast Alum
Bolt Circle: 11 1/2"
Hand Hole: 5"x6" in anchor base. Cover to match
Paint: UV&Cleaning chemical resistant
Color: CC-Fishers Green
MAX Attachment Weight: 100 lbs
MAX Attachment EPA: 15.2
Pole Weight: 72 lbs approx

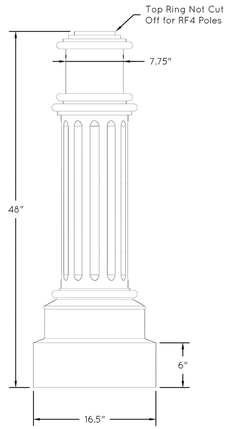
BASE COVER

Model: D23S/2
Style: 2-Piece Clamshell
Material: Elastomeric Urethane
Color: CC-Fishers Green
Height: 48"
Width: 16.38"
Weight: 52 lbs approx

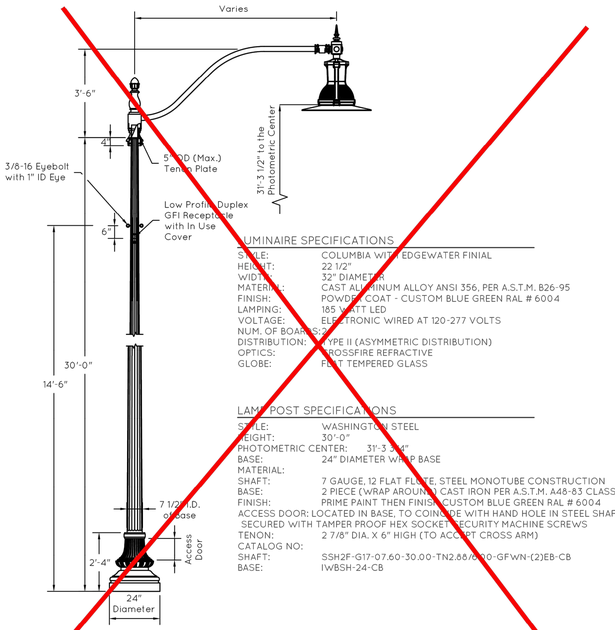


Notes:
1) All poles to be Fishers Green RAL 6004
2) Outlet wiring on lamp posts shall be such that the top outlet to be on only when lights are on. Bottom outlet shall remain on continuously

LAMP POSTS
Not to Scale



BASE COVER
Not to Scale



LUMINAIRE SPECIFICATIONS

STYLE: COLUMBIA WITH EDGEWATER FINIAL
HEIGHT: 22 1/2"
WIDTH: 32" DIAMETER
MATERIAL: CAST ALUMINUM ALLOY ANSI 356, PER A.S.T.M. B26-95
FINISH: POWDER COAT - CUSTOM BLUE GREEN RAL # 6004
LAMPING: 185 WATT LED
VOLTAGE: ELECTRONIC WIRED AT 120-277 VOLTS
NUM. OF BOARDS: 5
DISTRIBUTION: TYPE II (ASYMMETRIC DISTRIBUTION)
OPTICS: CROSSFIRE REFRACTIVE
GLOBE: FLAT TEMPERED GLASS

LAMP POST SPECIFICATIONS

STYLE: WASHINGTON STEEL
HEIGHT: 30'-0"
PHOTOMETRIC CENTER: 31'-3 1/2"
BASE: 24" DIAMETER WITH P BASE
MATERIAL:
SHAFT: 7 GAUGE, 12 FLAT FLUTE, STEEL MONOTUBE CONSTRUCTION
BASE: 2 PIECE (WRAP AROUND) CAST IRON PER A.S.T.M. A48-83 CLASS 30
FINISH: PRIME PAINT THEN FINISH CUSTOM BLUE GREEN RAL # 6004
ACCESS DOOR: LOCATED IN BASE, TO COINCIDE WITH HAND HOLE IN STEEL SHAFT, SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
TENON: 2 7/8" DIA. X 6" HIGH (TO ACCEPT CROSS ARM)
CATALOG NO:
SHAFT: SSH2F-G17-07.60-30.00-TN2.88/6.70-GFWN-(2)EB-CB
BASE: IWBSH-24-CB

Note:
1) Outlet wiring on lamp posts shall be such that the top outlet to be on only when lights are on, while the bottom outlet shall remain on continuously.

LAMP POSTS AND LUMINAIRES ADJACENT TO ROUNDABOUTS
Not to Scale

POLE

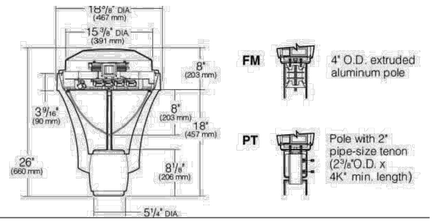
MODEL:	RF4
TOP	DIA: 4"
TAPER:	NONE
CONSTRUCTION:	Pultruded fiberglass reinforced isopthalic polyester resin utilizing longitudinal glass roving, continuous strand mat and off-axis fibers.
ANCHOR BASE:	Custom Top Hat Plate-ASTM A36
TENON:	3" OD 3" Exposed 6061-T6 Alum
POST TOP RING:	Cast Alum
BOLT CIRCLE:	11 1/2"
HAND HOLE:	5"x6" in Anchor Base; Cover to Match
PAINT:	UV & Cleaning chemical resistant
COLOR:	CC-Fishers Green
MAX ATTACHMENT WEIGHT:	100 LBS
MAX ATTACHMENT EPA:	15.2
POLE WEIGHT:	72 LBS approx

BASE COVER

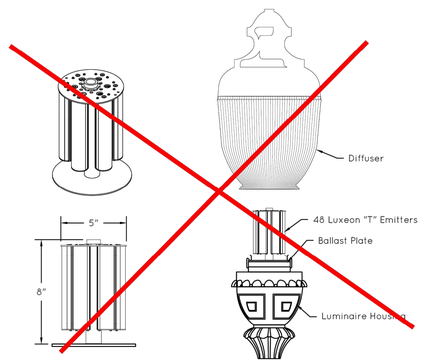
MODEL:	D23S/2
STYLE:	2-Piece Clamshell
MATERIAL:	Elastomeric Urethane
COLOR:	CC-Fishers Green
HEIGHT:	48"
WIDTH:	16.38"
WEIGHT:	52 LBS approx

SPECIFICATIONS

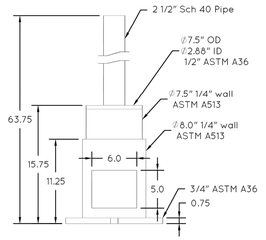
Approx. Weight = 45 lbs EPA 2.5 for 1SA
See Configuration for Additional EPAs

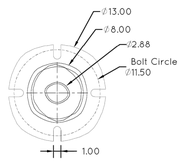


KIM LIGHTING-SOLITAIRE
Not to Scale

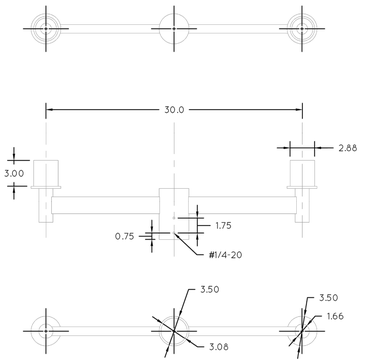


LED FIXTURES
Not to Scale





CUSTOM HAT BASE ASSEMBLY
Not to Scale



CROSS ARM
Not to Scale

1/18/2022

JASON M. TAYLOR REGISTERED No PE11200277 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF FISHERS
STANDARD CONSTRUCTION DETAILS

LAMP POST & LED FIXTURE DETAILS

SHEET 29 of 29

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FISHERS ELEMENTARY SCHOOL
ADDITIONS & RENOVATIONS
DESIGN DEVELOPMENT
11442 LANTERN RD, FISHERS, IN 46038

SCOPE DRAWINGS:
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On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
4 02/12/24 ADDENDUM #4

ISSUE DATE	DRAWN BY	CHECKED BY
01/15/2023	KDK	JAD

DRAWING TITLE:
WATER DETAILS

CERTIFIED BY:
DAVID A. LACH REGISTERED PE 10000126 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING NUMBER
C930

PROJECT NUMBER
2021119

00 4100 - BID FORMS ~~**ADDENDUM NO. 2**~~ **Addendum No. 4**

PROJECT:
Hamilton Southeastern Schools Fishers Elementary
11442 Lantern Rd.
Fishers, Indiana 46038

TO:
Wurster Construction
8463 Castlewood Drive
Indianapolis, Indiana 46250

SUBCONTRACTOR: _____

I have received and thoroughly reviewed the Bidding Documents for the above project and have examined the site. I have also received and reviewed all Addenda and have included their provision in my Bid. I submit the following Bid in respect to said Bidding Documents.
In submitting this Bid, I agree:

- To hold my bid open until 60 days after the date set for receipt of Bids.
- To enter into and execute a contract if awarded on the basis of this Bid, and to furnish a Performance & Payment Bond if requested. (Not Included in Base Bid)
- To accomplish the Work in accord with the Contract Documents.
- To complete the Work in accord with the Instructions to Bidders.
- On your company letterhead include a detailed scope of work and your bid amount per specification section.

The undersigned bidder, with a complete understanding of the bidding documents and the existing project site, shall complete the work for

SCOPE OF WORK:

Bid Package: _____

in full and complete accordance with the requirements of the bidding documents, for the lump sum **BASE BID PRICE including allowances based on bid packages**:

($_____)
Numerals

_____ Dollars
Written Amount

COMBINATION BID PACKAGES

If the subcontractor wishes to submit a price for multiple bid packages please continue to insert bid package numbers and costs below

Bid Packages: _____

in full and complete accordance with the requirements of the bidding documents, for the lump sum **BASE BID PRICE including allowances based on bid packages**:

($_____)
Numerals

_____ Dollars
Written Amount

ADDENDA
The following Addenda have been received by the undersigned bidder, and all costs resulting from these Addenda have been included in the preparation of this Bid Form.

Addenda No. _____Dated _____
Addenda No. _____Dated _____
Addenda No. _____Dated _____

HOURLY RATES
Subcontractors are required to submit comprehensive hourly labor rates for all positions anticipated for the entirety of the project. At no point throughout the duration of the project will an increase in labor rates be accepted.

Position	Rate	Position	Rate

ALTERNATE PROPOSALS

I will include the following alternates as specified substitutes for the additional or deductible costs listed required for a completed project.

Alternate No. 01: Performance & Payment Bond

Add/~~Deduct~~ Cost _____

~~Add/Deduct Time~~ _____

Alternate No. 02: PVC Roofing _____

Alternate No. 03: Boilers

a. Alternate 03a: Fulton Endura 2000 _____
b. Alternate 03b: Lochinvar Crest FCB 2000 _____
c. Alternate 03c: Cleaver Brooks CE 2000 _____

Alternate No. 04: Air-Cooled Chiller

a. Alternate 04a: York/JCI _____
b. Alternate 04b: Trane _____
c. Alternate 04c: Carrier _____

Alternate No. 05: Air Handling Units

a. Alternate 05a: Carrier _____
b. Alternate 05b: York/JCI _____
c. Alternate 05c: Trane _____

Alternate No. 06: Temperature Controls

a. Alternate 06a: Siemens Controls _____
b. Alternate 06b: Grantham Controls _____
c. Alternate 06c: Trane Controls _____

Alternate No. 07: Deduct Synthetic Turf (without cushion) per detail 5 /L602 outside of playing area
Add / Deduct Cost _____

Alternate No. 08: Replace Roof at Cafeteria & Gym Add Cost _____

UNIT PRICES

Unit Price No. 1:

Replacement of poor soils with new compacted granular fill based on the geotechnical report. The unit cost should include removal and off-site disposal of the existing poor soils and installation of the new compacted fill.

Compacted Fill - Cost Per Cubic Yard: $_____

Unit Price No. 2:

Replacement of poor soils with new lean (1,500 psi minimum) concrete based on the geotechnical report. The unit cost should include removal and disposal of the existing poor soils and installation of the lean concrete.

Lean Concrete - Cost Per Cubic Yard: $_____

Unit Price No. 3: Import of #53 stone onsite. The unit cost should include trucking and installation of the new compacted fill.

Compacted Fill - Cost Per Cubic Yard: $_____

Unit Price No. 4: Import of clean dirt for onsite use. The unit cost should include trucking and installation of the new compacted fill.

Compacted Fill - Cost Per Cubic Yard: $_____

COMPLETION TIME FOR THIS WORK

I will substantially complete the base bid project, ready for beneficial use by the Owner, within

_____ ( ) calendar days.

Written Amount Numerals

IN TESTIMONY WHEREOF, THE BIDDER (AN INDIVIDUAL) HAS HEREUNTO SET HIS HAND

This _____ day of _____, 2024.

Bidder: _____ _____
Signed Printed

IN TESTIMONY WHEREOF, THE BIDDER (A CORPORATION) HAS CAUSED THIS PROPOSAL TO BE SIGNED BY ITS PRESIDENT AND SECRETARY AND AFFIXED ITS CORPORATE SEAL

This _____ day of _____, 2024.

BY: _____
Name of Corporation

_____, President _____, Secretary
Printed Printed

_____, President _____, Secretary
Signed Signed

IN TESTIMONY WHEREOF, THE BIDDER (A PARTNERSHIP) HAS CAUSED THIS PROPOSAL TO BE SIGNED BY EACH GENERAL PARTNER

This _____ day of _____, 2024.

BY: _____
Name of Partnership

_____, Partner _____, Partner
Printed Printed

_____, Partner
Signed

_____, Partner
Signed

END OF SECTION 00 4100