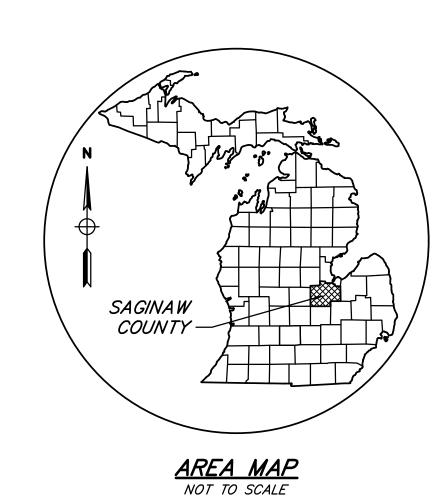
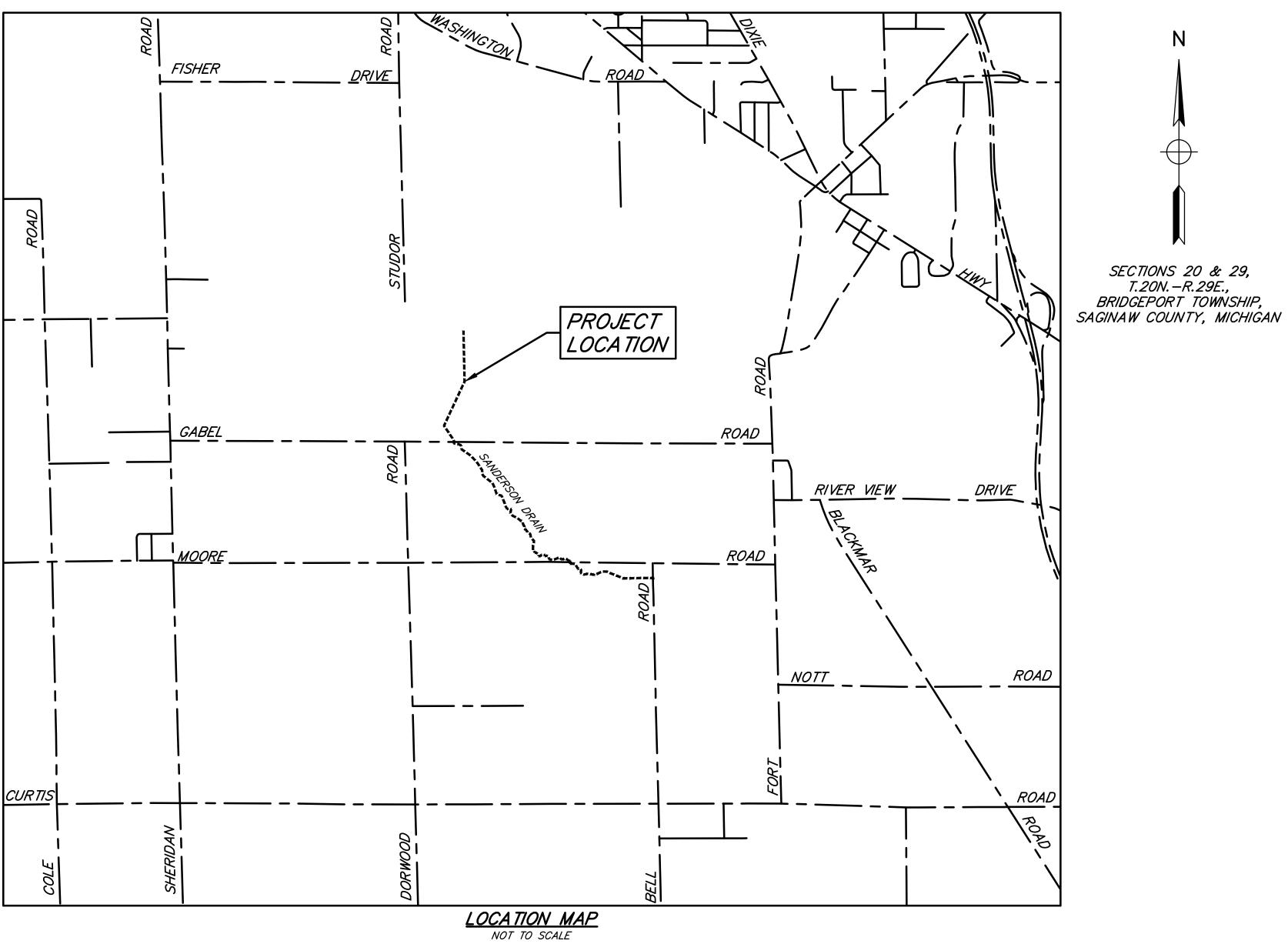
SANDERSON DRAIN

SAGINAW COUNTY PUBLIC WORKS COMMISSIONERE - BRIAN WENDLING





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BY MARK

REVISIONS

DATE

THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

SANDERSON DRAIN SAGINAW COUNTY, MICHIGAN

COVER SHEET



SAGINAW OFFICE
230 S. Washington Ave.
Saginaw, MI 48607
Tel. 989-754-4717
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www.SpicerGroup.com

DE. BY: JMY/POC CH. BY: NDC 127922SG2019

STDS. SHEET 01 OF 09

DATE MARCH, 2021 FILE NO. DR-3968-01

DATE NOT TO SCALE DR-3968-01

CONTRACTOR SHALL NOTIFY ENGINEER 72 HOURS PRIOR TO START OF CONSTRUCTION, CONSTRUCTION STAKING AND INSPECTION.

CONTRACTOR SHALL MAINTAIN ACCESS FOR MAIL DELIVERY AND GARBAGE PICKUP AT ALL PARCELS. IF THESE SERVICES CANNOT BE PERFORMED CONTRACTOR IS RESPONSIBLE FOR TAKING THE NECESSARY MEASURES TO

CONTRACTOR TO PROVIDE DUST CONTROL AND SWEEP ROADS DAILY.

ALL EXCAVATED MATERIAL NOT TO BE REUSED OR DISPOSED OF ON SITE SHALL BE REMOVED FROM SITE. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSING MATERIALS ACCORDING TO LOCAL AND STATE REQUIREMENTS.

ALL WORK SHALL BE WITHIN DRAIN RIGHT-OF-WAY, WORK OUTSIDE RIGHT-OF-WAY MUST BE AGREED UPON BY LANDOWNER AND ENGINEER WITH A SIGNED LANDOWNER AGREEMENT PRIOR TO WORK ON THAT PROPERTY.

RESTORE ALL LAWN AREAS WITH 4" OF TOPSOIL, SEED, AND MULCH.

CONTRACTOR TO RESTORE INCIDENTAL DAMAGES ON THE PROJECT AS DIRECTED BY OWNER AND ENGINEER AT CONTRACTORS EXPENSE.

ALL DRAIN SIDE SLOPES SHALL BE 2H:1V OR FLATTER, UNLESS SPECIFIED OTHERWISE.

THE WORDS "RIGHT SIDE" OR "LEFT SIDE" IMPLY A REFERENCE TO THE DRAIN FACING UPSTREAM.

CLEAR AND GRUB TREES AS INDICATED FOR CONSTRUCTION WITHIN DRAIN RIGHT-OF-WAY. REMOVE ALL TREES.

REMOVE EXISTING FENCES. LANDSCAPING. AND OTHER STRUCTURES IN DRAIN RIGHT-OF-WAY AS NEEDED FOR CONSTRUCTION. REINSTALLATION OF FENCES MUST BE COORDINATED WITH THE LAND OWNER AT THE LAND

OWNER'S EXPENSE. UNLESS STATED OTHERWISE IN THE PLANS. COST TO BE INCLUDED IN SITE CLEARING. CONTRACTOR SHALL COORDINATE REMOVAL OF TREES WITHIN THE LIMITS OF CONSTRUCTION WITH THE PROPERTY OWNER AND ENGINEER.

TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE AS TOPSOIL SURFACE AS DIRECTED BY THE ENGINEER.

ALL SPRINKLER SYSTEMS DAMAGED SHALL BE REPAIRED BY CONTRACTOR. COST TO BE INCLUDED IN OTHER WORK ITEMS OF THE PROJECT.

CONTRACTOR TO CLEAR TREES WITHIN THE DRAIN R.O.W. AS NECESSARY TO CONSTRUCT DRAIN AND LEVEL SPOILS AS SHOWN IN DETAILS. COORDINATE REMOVALS WITH LANDOWNER, ENGINEER, AND OVERHEAD UTILITIES.

UNDERGROUND UTILITIES/MISS DIG

STUMPS AND DEBRIS FROM SITE.

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE EXISTING UTILITIES ON THESE DRAWINGS HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICT EXISTS.

ALL CONSTRUCTION UNDER EXISTING UTILITIES, INCLUDING HOUSE SERVICES, SHALL BE COMPLETELY BACKFILLED WITH SAND, IN 12" LAYERS, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT.

ANY UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE SUPPORTED, PER THE SPECIFICATIONS OF THE INDIVIDUAL UTILITY COMPANY CLAIMING OWNERSHIP OF THE UTILITY.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODABLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED/MULCH OR MULCH BLANKET AS DIRECTED BY THE ENGINEER.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND MAINTAINED UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MEASURES SHALL ONLY BE PAID FOR ONCE.

ALL CATCHBASINS AND SEDIMENTATION TRAP/BASIN SHALL BE CLEANED OUT UPON COMPLETION OF THE

CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF

SOIL EROSION SEDIMENT CONTROL

GROUNDWATER SEEPAGE AND STORMWATER RUNOFF IS ANTICIPATED TO BE A FACTOR DURING CONSTRUCTION. WATER CONTROL AND DEWATERING METHODS MAY BE NECESSARY. ALL WATER CONTROL AND DEWATERING REQUIRED IS THE CONTRACTOR'S RESPONSIBILITY AND COST SHALL BE INCLUDED IN THE PAY ITEM BEING INSTALLED. THE METHODS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

ALL DEWATERING REQUIRED FOR CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR UTILITY BEING INSTALLED.

ALL RIPRAP MATERIAL SHALL BE APPROVED BY THE ENGINEER UNLESS OTHERWISE DIRECTED. SUBMIT SAMPLES TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. OWNER AND ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL RIPRAP.

CONTRACTORS SHALL FINISH GRADE, SEED, FERTILIZE, AND MULCH DAILY ON ALL DISTURBED AREAS AS DESCRIBED IN THE SPECIFICATIONS.

HAND SEED, FERTILIZE, AND MULCH DITCH BANKS AND SPOILS DAILY.

ALL DISTURBED WETLAND AREA SHALL BE SEEDED WITH NATIVE WETLAND SEED AS SPECIFIED BY ENGINEER.

PROPERTY OWNERS

PROPERTY OWNERS' NAMES AND PARCEL LINES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THEIR ACCURACY IS NOT GUARANTEED.

PROPERTY CORNER MONUMENT VISIBILITY OBSERVED ON SITE SHALL BE PROTECTED. DAMAGED PROPERTY CORNER WILL BE RESET AT CONTRACTORS EXPENSE.

ADJUSTING MONUMENT BOXES

ALL GOVERNMENT CORNERS ON THIS PROJECT SHALL BE PRESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES, AS REQUIRED.

THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES. SIGNAGE MUST BE IN ACCORDANCE WITH THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SHALL BE COORDINATED WITH THE ENGINEER AND GOVERNING ROAD AGENCY. PERMITS MAY BE REQUIRED.

PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED BY THE APPROPRIATE AGENCIES.

CONSTRUCTION PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE AGENCIES.

MAILBOXES

CONTRACTOR SHALL REMOVE AND TEMPORARILY RELOCATE ALL EXISTING MAIL BOXES AS NEEDED FOR CONSTRUCTION. COSTS TO BE INCLUDED IN THE UNIT PRICE BID FOR SITE CLEARING.

CONTRACTOR COORDINATE MAIL BOX RELOCATION WITH LANDOWNERS A MINIMUM OF ONE DAY IN ADVANCE.

ALL TEMPORARILY RELOCATED MAIL BOXES, STREET AND TRAFFIC SIGNS TO BE REINSTALLED TO ORIGINAL LOCATIONS AS CONSTRUCTION ALLOWS. COSTS TO BE INCLUDED IN THE UNIT PRICE BID FOR CLEANUP AND RESTORATION.

GENERAL NOTES

ROADS, DRIVEWAYS AND SIDEWALKS

COORDINATE DRIVEWAY CLOSURES WITH LANDOWNERS A MINIMUM OF ONE DAY IN ADVANCE.

ALL JOINTS AT INTERSECTION APPROACHES AND DRIVEWAYS SHALL BE SAW—CUT WITH BUTT—JOINTS. COST TO BE INCLUDED IN UNIT PRICE BID THAT INCLUDES ROAD AND DRIVEWAY REPAIRS.

FOR OPEN CUT PAVEMENT REMOVAL CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT FULL DEPTH PRIOR TO REMOVAL.

ALL DRIVING SURFACES ARE TO BE RESTORED TO IN KIND DEPTH AND MATERIAL UNLESS OTHERWISE SPECIFIED

ON THE PLANS. COST TO BE INCLUDED IN THE BID PRICE FOR WORK PERTAINING TO EACH CROSSING. PROTECT ALL BITUMINOUS ROADS NOT SPECIFIED TO BE REMOVED DURING CONSTRUCTION. REPAIR ANY

BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE AND SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE. COST SHALL BE INCLUDED IN THE OTHER PAY ITEMS OF THE PROJECT.

MATCH EXISTING TYPE FOR CONCRETE CURB AND GUTTER RESTORATION.

UNAUTHORIZED DAMAGE AT CONTRACTORS EXPENSE.

CONTRACTOR SHALL REMOVE ALL STREET AND TRAFFIC SIGNAGE AS NECESSARY FOR CONSTRUCTION. ALL COSTS TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR SITE CLEARING. REPLACE SIGNAGE AS CONSTRUCTION ALLOWS. COST TO BE INCLUDED IN THE UNIT PRICE FOR CLEANUP AND RESTORATION.

CONTRACTOR SHALL COORDINATE LOCATION OF ANY ACCESS ROADS WITH THE LANDOWNER AND THE ENGINEER. ANY ACCESS ROAD SHALL BE REPAIRED TO THE LANDOWNERS AND OWNERS APPROVAL.

ALL WORK WITHIN THE ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS OF THE COUNTY ROAD COMMISSION, CITY, VILLAGE, AND MDOT.

WITH FINISHED GRADE.

© - ELECTRIC MANHOLE

■ - ELECTRICAL PEDESTAL

BARRIER FREE PARKING

(C)M.W. – MONITORING WELL

• – HAND HOLE

□ – TRANSFORMER

ELECTRIC, GAS AND TELEPHONE UTILITIES LOCATED IN THE ROAD AND DRAIN RIGHT-OF-WAYS REQUIRING RELOCATION WILL BE RELOCATED BY OTHERS.

WHEN RELOCATING UTILITIES AS REQUIRED FOR CONSTRUCTION OF DRAIN IMPROVEMENTS A MINIMUM CLEARANCE OF 36" BELOW THE BOTTOM OF PROPOSED DRAIN CROSSING MUST BE ACHIEVED UNLESS OTHERWISE SPECIFIED.

ALL WATER VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADE. COST SHALL BE INCLUDED IN THE PAY ITEM BEING INSTALLED.

ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL MANHOLE RIMS IN ROADWAYS AND DRIVES SHALL BE ADJUSTED PRIOR TO FINAL PAVING TO BE FLUSH

GRADING AROUND MANHOLES/CATCHBASINS, FLARED END SECTIONS, AND OTHER INLETS DETERMINED BY THE ENGINEER SHALL BE SMOOTH AND SHAPED TO PROVIDE POSITIVE DRAINAGE INTO THE INLETS.

ALL CORRUGATED METAL PIPE SHALL BE TYPE II ALUMINIZED UNLESS OTHERWISE NOTED.

DEMOLISH EXISTING STRUCTURE(S) AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. COST TO BE INCLUDED WITH THE ITEM BEING INSTALLED AS DIRECTED BY OWNER/ENGINEER.

CONTRACTOR SHALL CONNECT ANY AND ALL FIELD TILE OUTLETS AND OTHER STORM LEADS TO PROPOSED STORM SEWER WITH PREMANUFACTURED TEES, WYES, GASKETS, SEALS, COUPLERS, BOOTS, ETC. COST TO BE INCLUDED IN UNIT BID PRICE FOR LATERAL TILE CONNECTIONS

<u>PROJECT CONSTRUCTION NOTES</u>

1. ROUND CULVERTS SHALL BE EITHER RCP (C-76, CL-III) OR ADS HP-STORM.

SYMBOL LEGEND EXISTING SYMBOLS

0	_	MANHOLE	۵ –	SPRINKLER
Ø	_	CATCH BASIN	a_p _	RAILROAD SIGNAL
	_	CURB CATCH BASIN	⊠ -	ANTENNA
A	_	FIRE HYDRANT	⊗ -	SATELLITE DISH
\oplus	_	GAS VALVE	AC _	AIR CONDITIONING UNIT
\otimes	_	WATER VALVE	◆ SB# -	SOIL BORING
	_	TELEPHONE PEDESTAL	♦ -	BENCH MARK
•	_	POWER POLE		FOUND SURVEY CORNER
Ø	_	TELEPHONE POLE	o –	SET 1/2" IRON ROD
Ø	-	POWER AND TELEPHONE POLE	• -	1/4 SECTION CORNER
\	-	LIGHT POLE	\	BREAK IN LINE
$ \circ$	_	GUY ANCHOR AND POLE		EXISTING SIGN-1 POST
0	-	MAIL BOX		
6	-	WATER METER	<u>ээ</u> –	EXISTING SIGN-2 POST
\bigcirc	_	TELEPHONE MANHOLE) (—	STUMP

PROPOSED SYMBOLS

O – MANHOLE ✓ – CATCHBASIN 😈 – FIRE HYDRANT WATER VALVE - BARRIER FREE PARKING ■ O■ - LIGHT POLES

⇒ - DRAINAGE FLOW - SPOT ELEVATION LABELS G = GUTTERTW = WA/KTC = TOP OF CURB FS = FINISH SURFACE

LINE TYPE LEGEND

BM = BENCH MARK

CB = CATCH BASIN

CL = CENTERLINE

CONC = CONCRETE

EF = EACH FACE

ELEC = ELECTRIC

ESMT = EASEMENT

FF = FINISH FLOOR

FG = FINISH GROUNDFL = FLOW LINE

FS = FINISH SURFACE

HDG = HOT DIP GALVANIZED

HMA = HOT MIX ASPHALTHOR = HORIZONTAL

NFL = NOT FIELD LOCATED

PVC = POLYVINYL CHLORIDE

RCP = REINFORCED CONCRETE PIPE

NTS = NOT TO SCALE

ROW = RIGHT OF WAY

SS = STAINLESS STEEL

T/B = TOP AND BOTTOM

TRW = TOP OF RETAINING WALL

UNO = UNLESS NOTED OTHERWISE

WS = WATER SURFACE ELEVATION

TC = TOP OF CURB

TOB = TOP OF BANK

TOS = TOE OF SLOPE TELE = TELEPHONE

TW = TOP OF WALK

WM = WATER MAIN

PROP = PROPOSED

SAN = SAN/TARY

SB = SOIL BORING

STA = STATIONSTM = STORM

SWR = SEWER

HDPE = HIGH DENSITY POLYETHYLENE

GALV = GALVANIZED

EW = EACH WAY

FT = FEET

G = GUTTER

GA = GAUGE

HP = HIGH POINT

HYD = HYDRANT

OC = ON CENTEROH = OVERHEADMH = MANHOLE

M/N = M/N/MUMMON = MONUMENT

INV = INVERTLP = LOW POINT

CORR = CORRUGATED

DI = DUCTILE IRON PIPE

EL OR ELEV = ELEVATION

EQ/SP = EQUALLY SPACED

EX OR EXIST = EXISTING

EOM = EDGE OF METALEOP = EDGE OF PAVEMENT

C/C = CENTER TO CENTER

CJ = CONSTRUCTION JOINT

CMP = CORRUGATED METAL PIPE

CSP = CORRUGATED STEEL PIPE

	 EXISTING ROAD CENTERLINE 				
w	– EXISTING WATER MAIN	KEY	SESC MEASURE	SYMBOL	WHERE USED
	- EXISTING SANITARY SEWER OR FORCEMAIN - EXISTING STORM SEWER	1	SEEDING	Marine Ma	When bare soil is exposed, temporarily or permanently, to erosive force from wind and or water on flat areas, mid slopes, grassed waterways and spillways diversion ditches and dikes, barrow and stockpile areas, and spoil piles.
	 EXISTING TELEPHONE EXISTING GAS MAIN EXISTING ELECTRIC 	2	MULCH		On flat areas, slopes, grassed waterways and spillways, diversion ditches and dikes, barrow and stockpile areas, and spoil piles when areas are subject to raindrop impact, and erosive force from wind or water.
	EXISTING FIBER OPTICEXISTING CABLE/TV	15	RIPRAP	T. Carlotte and the car	Riprap and toe of slope protection is used in areas where velocities are causin drain bank erosion and are too high to stabilize using other methods
	 PROPOSED UTILITY EXISTING CURB & GUTTER PROPOSED CURB & GUTTER 	16	RIPRAP TOE OF SLOPE	-14000000-	Along drain banks, shorelines, or where concentrated flows occur. Slows velocity, reduces erosion and sediment load.
xx	- FENCE LINE - OVERHEAD UTILITY	18	REINFORCED VEGETATED SPILLWAY		When slope failure at eroded outfalls are observed or are likely to occur from concentrated runoff on very shallow slopes (where flow velocities will be low enough not to undermine the reinforced grass root structure).
1+00 	RAILROAD TRACKSSTATION LINE	19	ARMORED SPILLWAY		When concentrated flow must be conveyed down a drain bank or slope or discharge into another drain. Where slope failure or channel scour is observed or is likely to occur, or when runoff must be redirected around work in the drain
	 LIMITS OF RIGHT OF WAY EASEMENT SILT FENCE 	20	Toe Drain		Where piping or groundwater seepage is causing erosion and unstable drain banks.
	- REVERSE PAN CURB & GUTTER - TREE LINE	23	OUTFALL STABILIZATION		In the stream or drain bank usually above the ordinary high water marker where an enclosed drain or tile discharges to an open drain.
	- EXISTING CONTOURS	26	DUST CONTROL		As a temporary measure on exposed and unstabilized areas that must be protected from wind or water erosion.
600	PROPOSED CONTOURS	Α	DEBRIS REMOVAL	•	
<u>ABBREVI</u>	<u>'A TIONS</u>	В	SEDIMENT REMOVAL		
BC = BACK OF C	CURB	D	DRAIN CROSSING MAINTENAN	ICE	

DETAILED DRAWINGS AND SPECIFICATIONS ARE LOCATED IN THE MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SOIL EROSION AND SEDIMENTATION CONTROL AUTHORIZED PUBLIC AGENCY PROCEDURES MANUAL

SYMBOLOGY FOR INSERTION INTO CONSTRUCTION DRAWINGS:

PERMANENT MEASURE

 $\left(\begin{array}{c} \frac{\#}{T} \end{array}\right)$ = TEMPORARY MEASURE

CONTACTS

MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SOIL

EROSION AND SEDIMENTATION CONTROL KEYING SYSTEM

	CONT	AC 13	
BRIAN J. WENDLING SAGINAW COUNTY PUBLIC WORKS COMMISSIONER 111 SOUTH MICHIGAN AVENUE SAGINAW, MI 48602	OWNER	MARK KELLY CHARTER COMMUNICATIONS 2525 STATE STREET SAGINAW, MI 48602 (989) 233-9404	FIBER
(989) 790-5258 NICK CZERWINSKI, P.E. SPICER GROUP, INC. 230 S. WASHINGTON AVENUE SAGINAW, MI 48605	ENGINEER	KATHY HENDERSON AT&T 309 S WASHINGTON AVE SAGINAW, MI 48607 (989) 771–5412	FIBER
(989) 529-0256 DAN ARMENTROUT, P.E. SAGINAW COUNTY ROAD COMMISSION 3020 SHERIDAN AVENUE SAGINAW, MI 48601	ROAD COMMISSION	NATHAN GOFFNET CONSUMERS ENERGY 2400 WEISS STREET SAGINAW, MI 48602 (989) 791–5869	ELECTRI
(989) 752-6140 RUTHANN EVANS BRIDGEPORT WATER SUPPLY SYSTEM 6206 DIXIE HWY BRIDGEPORT, MI 48722 (989) 777-0940 EXT 229	WA TER	JOE RODEA CONSUMERS ENERGY 2400 WEISS STREET SAGINAW, MI 48602 (989) 791–5869	<i>GAS</i>

HORIZONTAL: STATE PLANE SOUTH MI '83 2113 VERTICAL: NORTH AMERICAN VERTICAL DATUM '88 BY | MARK ! **REVISIONS** THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION DESIGN OR PURPOSE.

PROJECT DATUM

SANDERSON DRAIN SAGINAW COUNTY. MICHIGAN

CONTACTS, GENERAL NOTES, LINE TYPE LEGEND, AND SESC MEASURE LEGEND



230 S. Washington Ave. Saginaw, MI 48607 Tel. 989-754-4717 Fax. 989-754-4440 www.SpicerGroup.com PROJECT NO

SAGINAW OFFICE

127922SG201 APP. BY: *RBH* DR. BY: *CBS* SHEET *02* OF *09* DATE *MARCH, 2021* SCALE *NOT TO SCALE* DR-3968-02

WATERSHED

- ₩ - PINE

∅ – BUSH

· – TREE

- EXISTING PROJECT DRAIN

- EXISTING DRAINAGE DISTRICT LINE

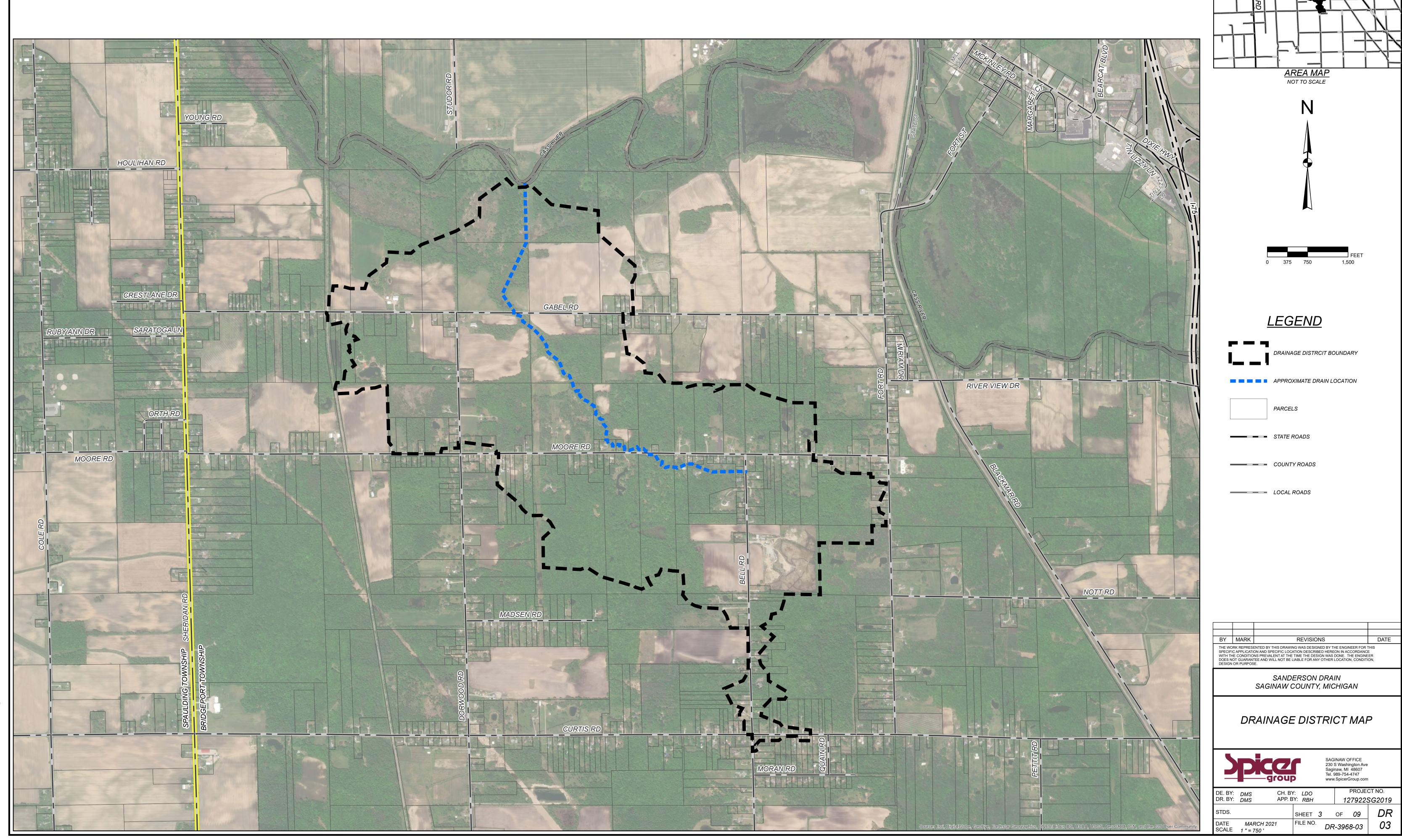
- EXISTING DRAINS (OTHER)

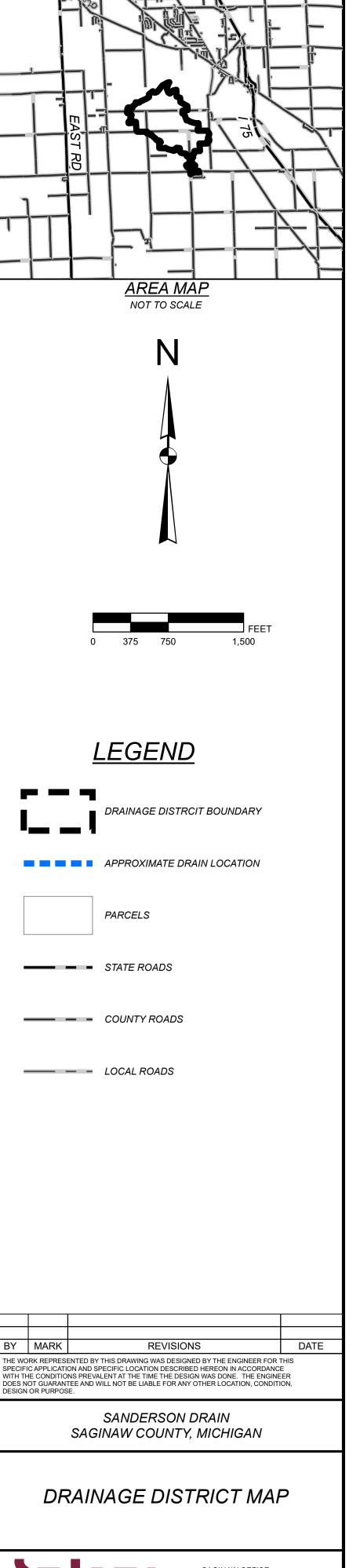
- PROPOSED DRAINAGE DISTRICT LINE

- PROPOSED SUB-DRAINAGE DISTRICT LINE

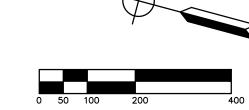


SANDERSON DRAIN SAGINAW COUNTY, MICHGAN BRIAN J. WENDLING - SAGINAW COUNTY PUBLIC WORKS COMMISSIONER



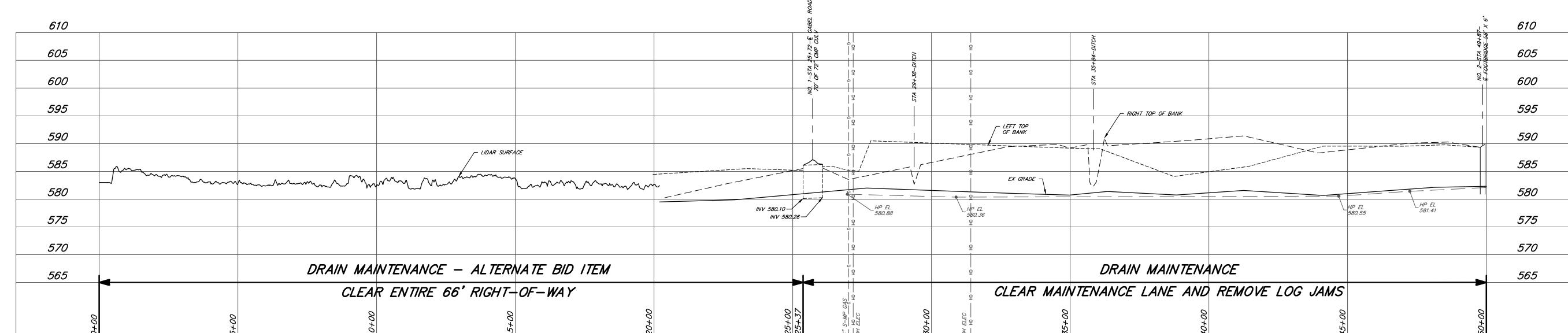






SCALE: 1" = 200'

SECTION 20, T.11N. — R.05E. BRIDGEPORT CHARTER TOWNSHIP, SAGINAW COUNTY, MICHIGAN



NO. 1 - STA 25+72 - GABEL ROAD.

NO WORK

NO. 2 — STA 49+87 — WEILER, L. NO WORK

	EROSION CONTROL TABLE						
KEY*	FROM STATION	TO STATION	SIDE	DESCRIPTION	QTY		
	0+00	50+00	ВОТН	SEEDING OF ALL DISTURBED	LUMP SUM		
	0+00	50+00	ВОТН	MULCHING OF ALL DISTURBED AREAS	LUMP SUM		
∞ P		KED BY WEER	ВОТН	RIPRAP TOE OF SLOPE PROTECTION	400 LIN FT		
(5 P)		KED BY WEER	ВОТН	RIPRAP SPILLWAY	100 LIN FT		
8 P	CROSSII	NGS 1-2	ВОТН	INSTALL RIPRAP PROTECTION AT INLET & OUTLET OF CROSSING	80 SQ YDS TOTAL		
NOTE:	COORDIN	IATE INSTA	LLA TION	OF EROSION CONT	ROL		

NOTE: COORDINATE INSTALLATION OF EROSION CONTROL STRUCTURES WITH ENGINEER PRIOR TO CONSTRUCTION. LOCATIONS, QUANTITIES, OR TYPES MAY VARY BASED ON FIELD DECISIONS

MAINTENANCE ACCESS CULVERTS							
STA TION	SIDE	SIZE/TYPE	LENGTH				
8+00	LEFT	24" HP STORM	30 LIN FT				
13+00	LEFT	24" HP STORM	30 LIN FT				
18+50	LEFT	15" HP STORM	30 LIN FT				
25+60	<i>LEFT</i>	15" HP STORM	30 LIN FT				
25+84	LEFT	24" HP STORM	30 LIN FT				
39+25	LEFT	18" HP STORM	30 LIN FT				
49+50	LEFT	24" HP STORM	30 LIN FT				
COORDINATE INSTALLATION OF ACCESS CULVERTS WITH ENGINEER PRIOR TO CONSTRUCTION.							

SPOIL LEVELING TABLE						
STATION FROM	STATION TO	DETAIL	SIDE TO EXCAVATE FROM			
0+00	25+37	CLEARING ONLY	LEFT			
<i>25+37</i>	50+00	"A"/"B"	LEFT			

USE SPOIL LEVELING DETAIL "A" THROUGH FIELD AREA. USE SPOIL LEVELING DETAIL "B" THROUGH WOODED AREA.

CONSTRUCTION NOTES

- 1. OWNER WILL SELECT WHETHER OR NOT TO INCLUDE ALTERNATIVE BID ITEM BASED ON CONTRACTOR BID AND CURRENT WATER LEVELS IN CASE RIVER.
- 2. DRAIN MAINTENANCE INCLUDES CLEARING 25' WIDE MAINTENANCE LANE, CLEARING ALL TREES IN THE DRAIN CHANNEL, REMOVING DEAD FALL, DEBRIS AND OTHER OBSTRUCTIONS, INCLUDING SEDIMENT BARS. ALSO INCLUDES LEVELING SPOILS AND GRADING ERODED AREA OF BANK AS DIRECTED BY ENGINEER.

<u>BENCHMARKS</u>

BM 202 — 485'± EAST FROM CENTER OF CULVERT 1 ALONG THE & OF GABEL ROAD AND 52'± SOUTH TO POWER POLE.

EL = 594.41

RIGHT OF WAY

SANDERSON DRAIN - DRAIN RIGHT-OF-WAY AS SHOWN ON PLANS.

BY	MARK	REVISIONS	DATE
PECIFIC ITH TH OES NO	: APPLICATI E CONDITIO	ENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER ON AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORNS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE TEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, SE.	DANCE ENGINEER

SANDERSON DRAIN SAGINAW COUNTY, MICHIGAN

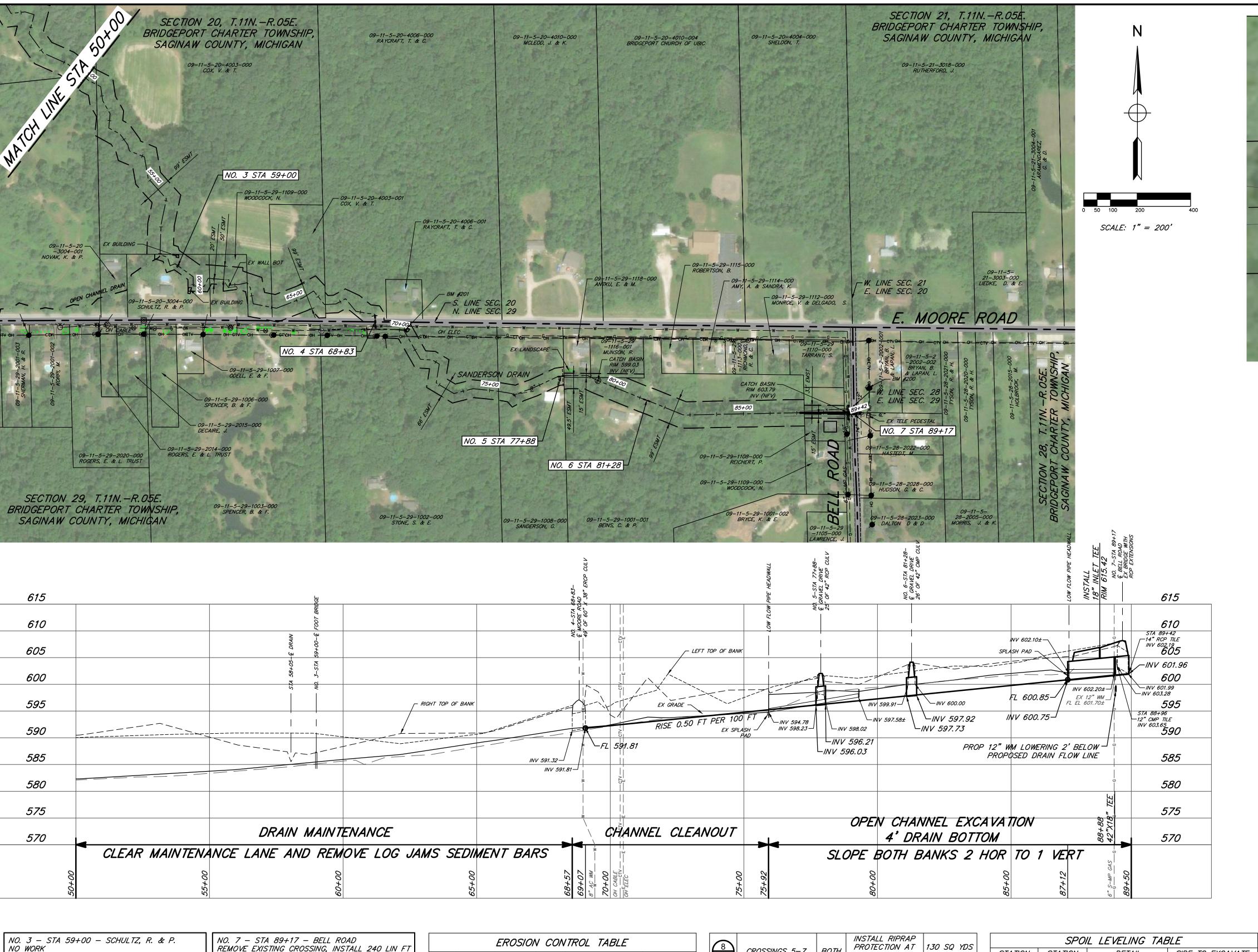
PLAN AND PROFILE STA 0+00 TO STA 50+00

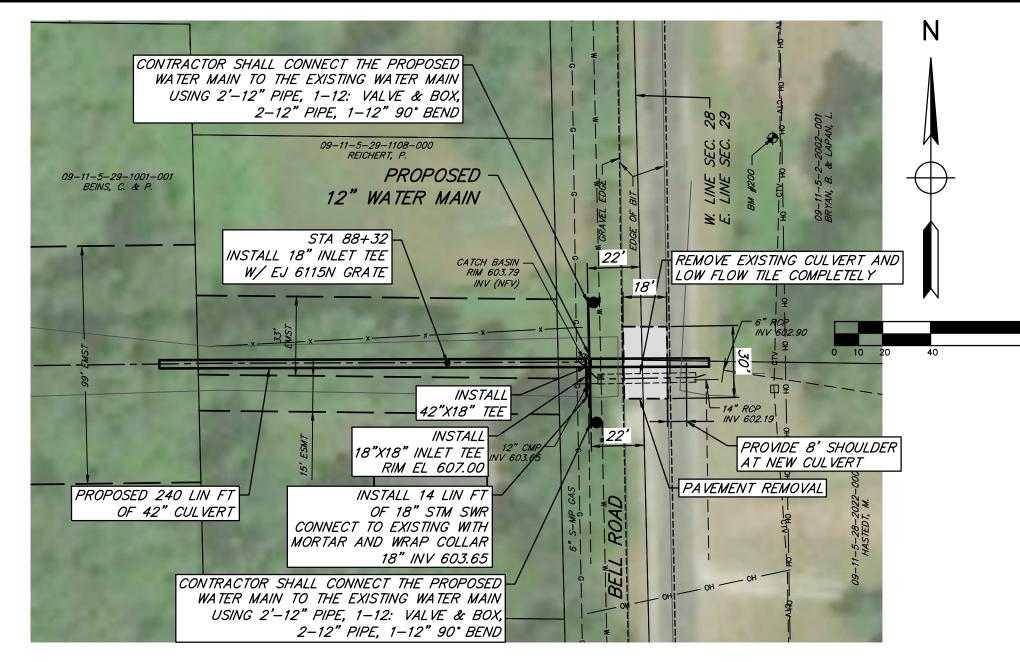


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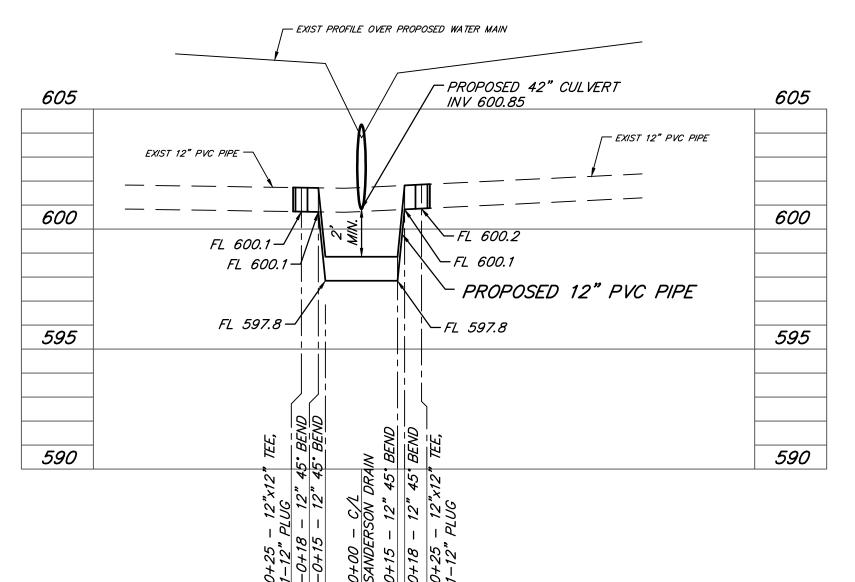
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CROSSING NO 7 STA 89+17 BELL ROAD DETAIL



BELL ROAD WATER MAIN LOWERING AT SANDERSON DRAIN

NO. 3 - STA 59+00 - SCHULTZ, R. & P. NO WORK	NO. / - STA 89+17 - BELL ROAD REMOVE EXISTING CROSSING, INSTALL 240 LIN OF 42" DIA CULVERT PIPE. (SEE DETAIL ON THIS SHEET)
NO. 4 — STA 68+83 — E. MOORE ROAD NO WORK	

NO. 5 — STA 77+88 — SANDERSON, G. REMOVE EXISTING CROSSING, INSTALL 56 LIN FT OF 42" DIA CULVERT PIPE.	
NO. 6 — STA 81+28 — BEINS, C. & P. REMOVE EXISTING CROSSING, INSTALL 56 LIN FT OF 42" DIA CULVERT PIPE.	

EROSION CONTROL TABLE							
KEY*	FROM STATION	TO STATION	SIDE	DESCRIPTION	QTY		
1 P	50+00	89+42	ВОТН	SEEDING OF ALL DISTURBED	LUMP SUM		
$\frac{2}{T}$	50+00	59+42	ВОТН	MULCHING OF ALL DISTURBED AREAS	LUMP SUM		
8 P	AS STAKED BY ENGINEER		ВОТН	RIPRAP TOE OF SLOPE PROTECTION	500 LIN FT		
9 P	ALL EX FIELD TILE OUTLETS AND S.O.T.		ВОТН	SPLASH PAD	8 EA		
14 P	AS STAKED BY ENGINEER		ВОТН	SURFACE OUTLET TUBE (35 LIN FT)	4 EA		
15 P	AS STAKED BY ENGINEER		ВОТН	RIPRAP SPILLWAY	100 LIN FT		
18 P	AS STAKED BY ENGINEER		ВОТН	GRASS SPILLWAY	25 LIN FT		
(20) P	AS STAKED BY ENGINEER		ВОТН	TOE DRAIN	1000 LIN FT		

8 P	CROSSINGS 5-7	ВОТН	INSTALL RIPRAP PROTECTION AT INLET & OUTLET OF CROSSING	130 SQ YDS TOTAL
STRUC	COORDINATE INSTA TURES WITH ENGINEE TONS, QUANTITIES, O ONS.	R PRIOI	R TO CONSTRUCTION	<i>l</i> .

MAINTENANCE ACCESS CULVERTS			
STATION	SIDE	SIZE/TYPE	LENGTH
67+75	LEFT	18" HP STORM	30 LIN FT
<i>68+70</i>	LEFT	15" HP STORM	30 LIN FT
68+96	LEFT	15" HP STORM	30 LIN FT
74+25	LEFT	15" HP STORM	30 LIN FT
COORDINATE INSTALLATION OF ACCESS CULVERTS WITH ENGINEER PRIOR TO CONSTRUCTION.			

	SPO	L LEVELING TAE	BLE
STATION FROM	STATION TO	DETAIL	SIDE TO EXCAVATE FROM
50+00	77+88	<i>"B"</i>	LEFT
77+88	81+28	<i>"B"</i>	RIGHT
81+28	87+25	"B"	LEFT
87+25	89+50	HAUL	<i>LEFT</i>

USE SPOIL LEVELING DETAIL "A" THROUGH FIELD AREA. USE SPOIL LEVELING DETAIL "B" THROUGH WOODED AREA.

CONSTRUCTION NOTES

- 1. CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING LOW FLOW TILE AND STRUCTURES. COST TO BE INCLUDED IN PRICE FOR OPEN CHANNEL EXCAVATION AND CULVERT INSTALLATION.
- 2. INSTALL TOE DRAIN AS STAKED BY ENGINEER IN AREAS OF HIGH GROUND WATER.
- 3. WATERMAIN LOWERING WORK IS BEING BID AS AN ALTERNATE BID ITEM. THE BASE BID INCLUDES BRIDGEPORT CHARTER TOWNSHIP LOWERING THE WATERMAIN.

BENCHMARKS

BM 200 - CENTER OF CULVERT 7 100'± NORTH ALONG & BELL ROAD, AND 56'± EAST POWER POLE.

EL 608.33

BM 201 - CENTER OF CULVERT 4 118'± EAST ALONG € MOORE ROAD, AND 28'± SOUTH HYDRANT. EL 598.28

RIGHT OF WAY

SANDERSON DRAIN - DRAIN RIGHT-OF-WAY AS SHOWN ON PLANS.

BY	MARK	REVISIONS	DATE
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SANDERSON DRAIN SAGINAW COUNTY, MICHIGAN

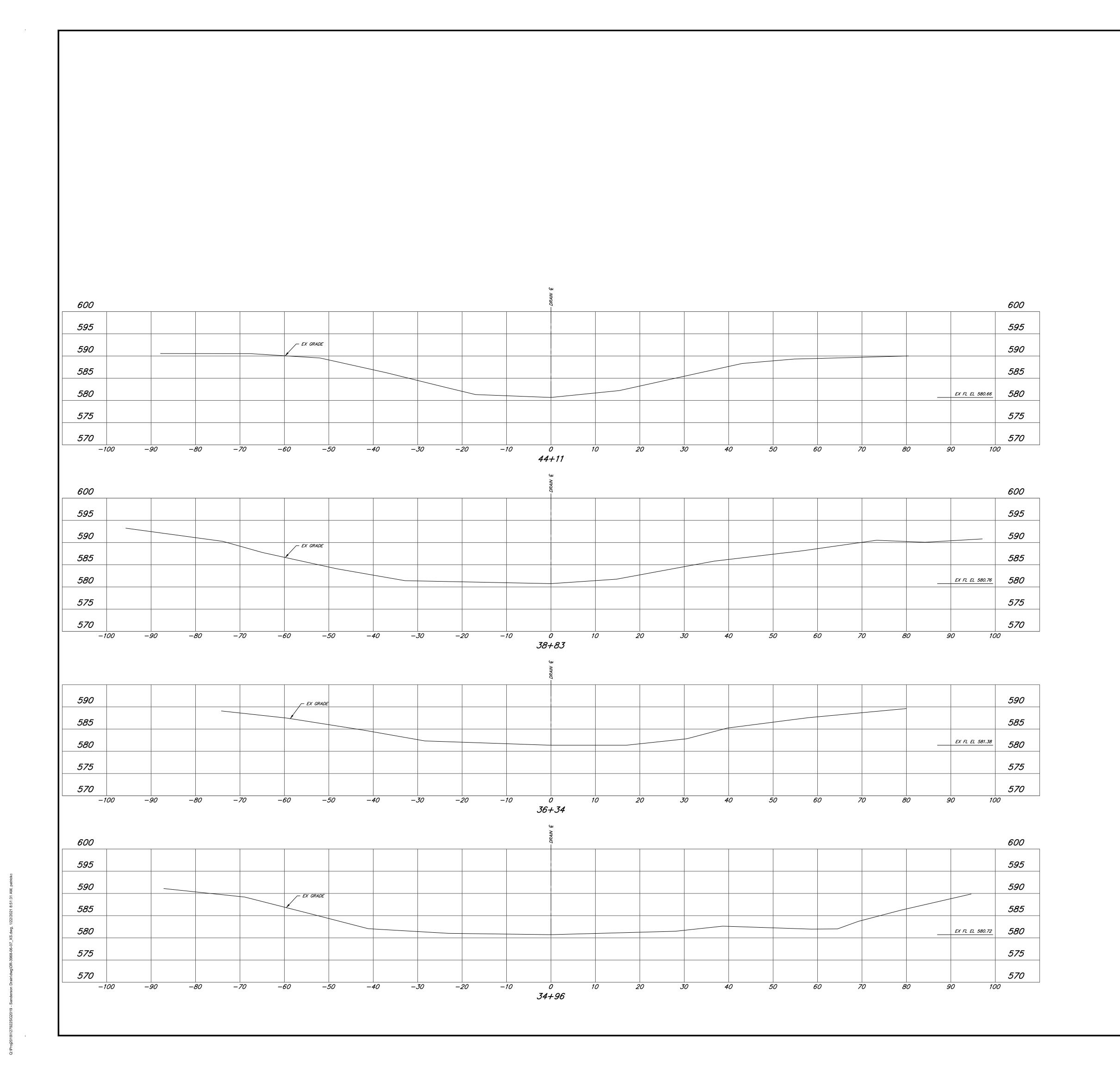
PLAN AND PROFILE STA 50+00 TO STA 89+50

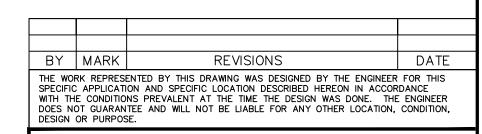
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PROJECT NO.

DE. BY: *JMY/POC* CH. BY: *NDC* DR. BY: *CBS* APP. BY: *RBH* 127922SG2019 SHEET 05 OF 09 DR DATE MARCH, 2021 | FILE NO. SCALE H: 1"=200'V: 1"=10' | DR-3968-05 | 05





SANDERSON DRAIN SAGINAW COUNTY, MICHIGAN

CROSS SECTIONS STA 34+96 TO STA 44+11

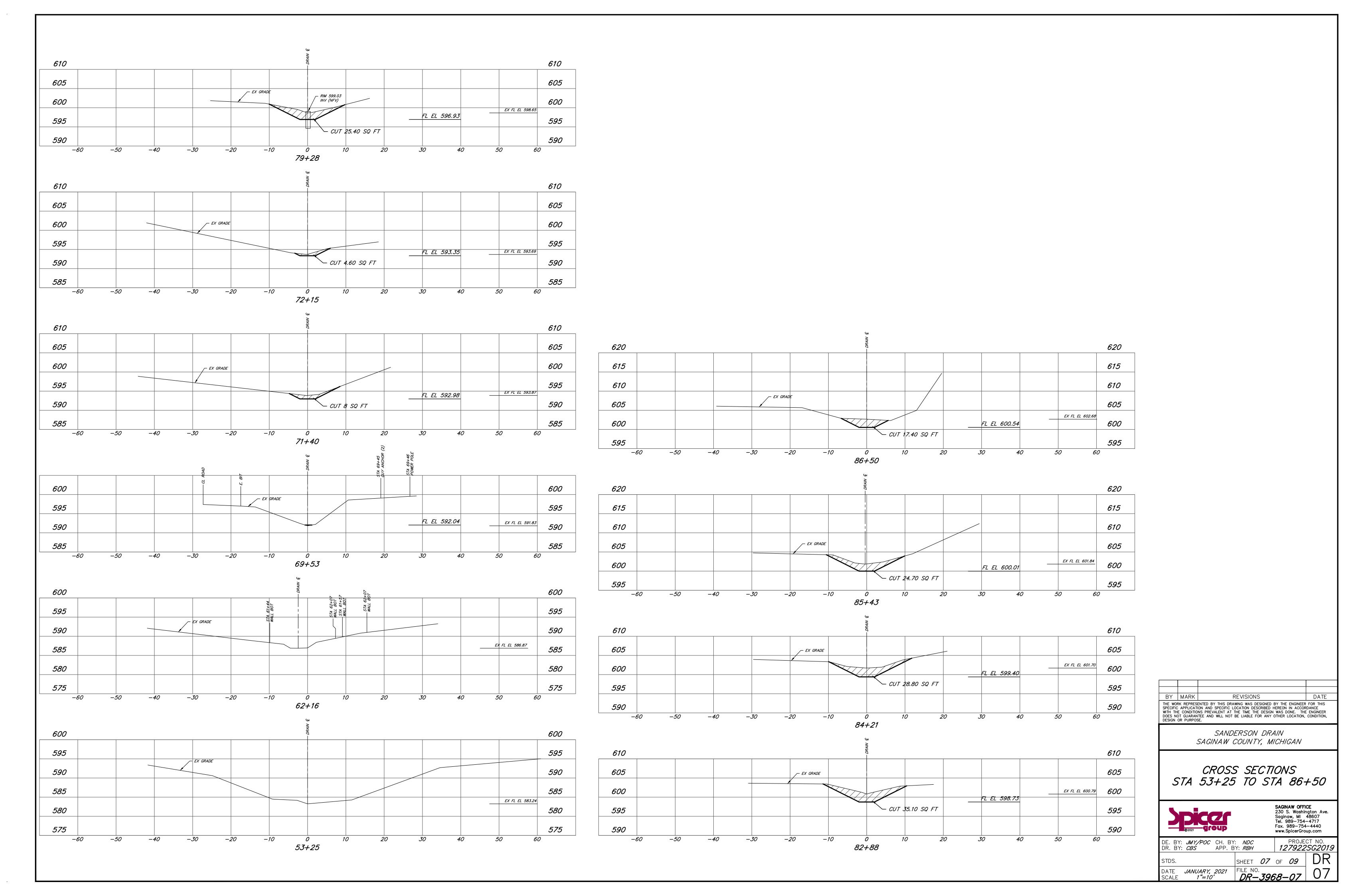


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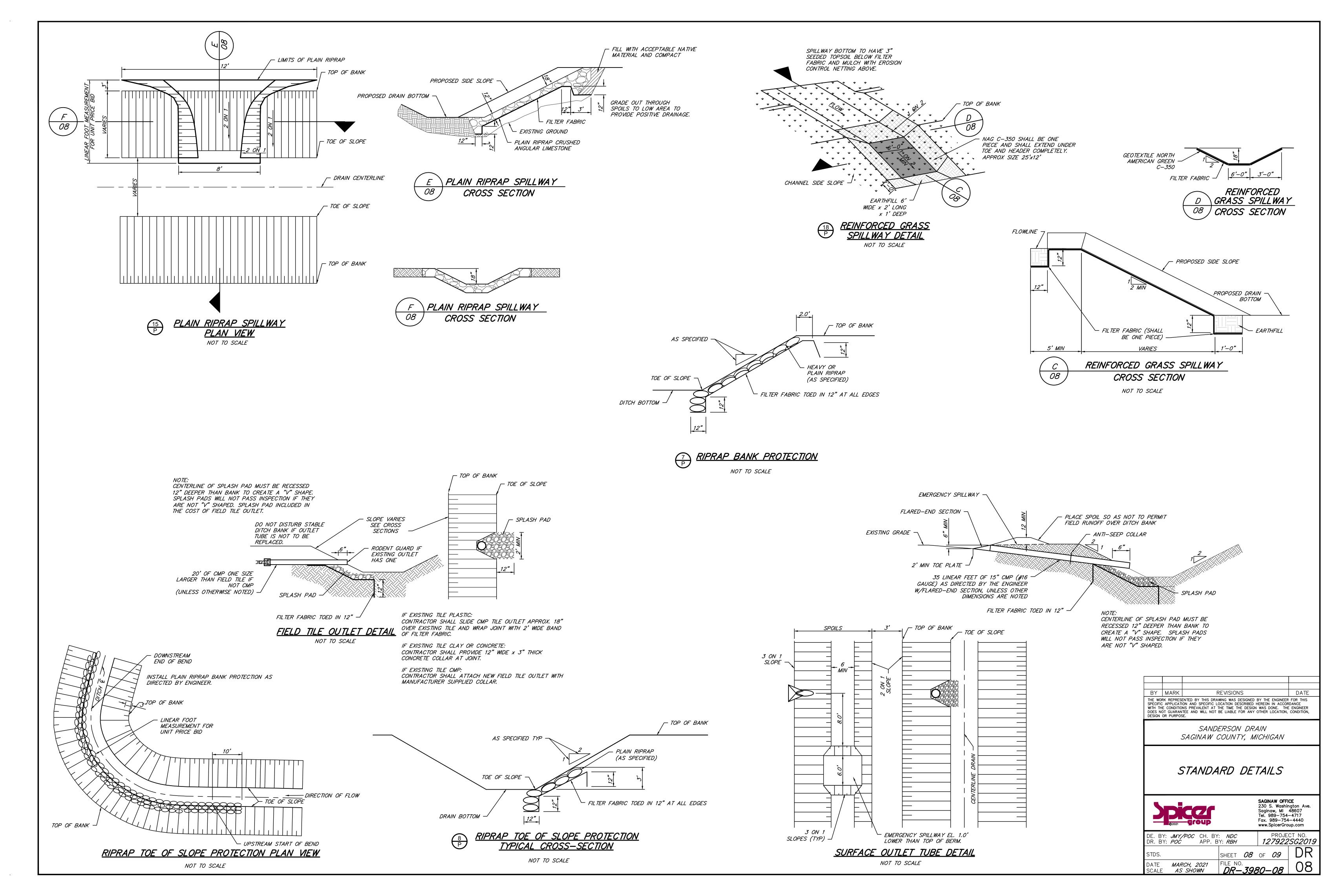
DE. BY: JMY/POC CH. BY: NDC 127922SG2019

STDS. SHEET 06 OF 09 DR

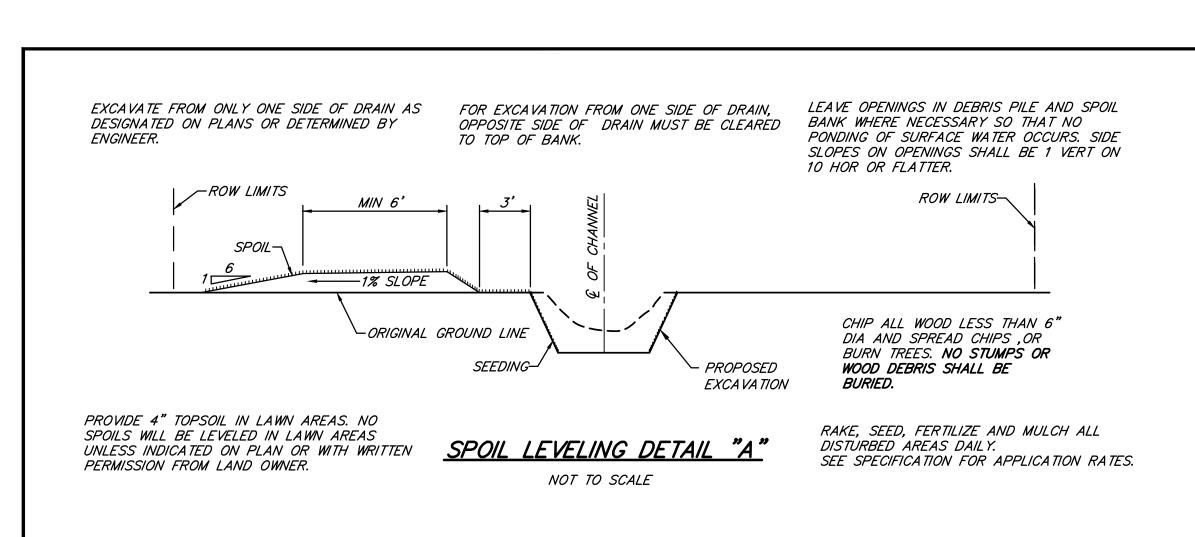
DATE JANUARY, 2021 FILE NO. DR-3968-06

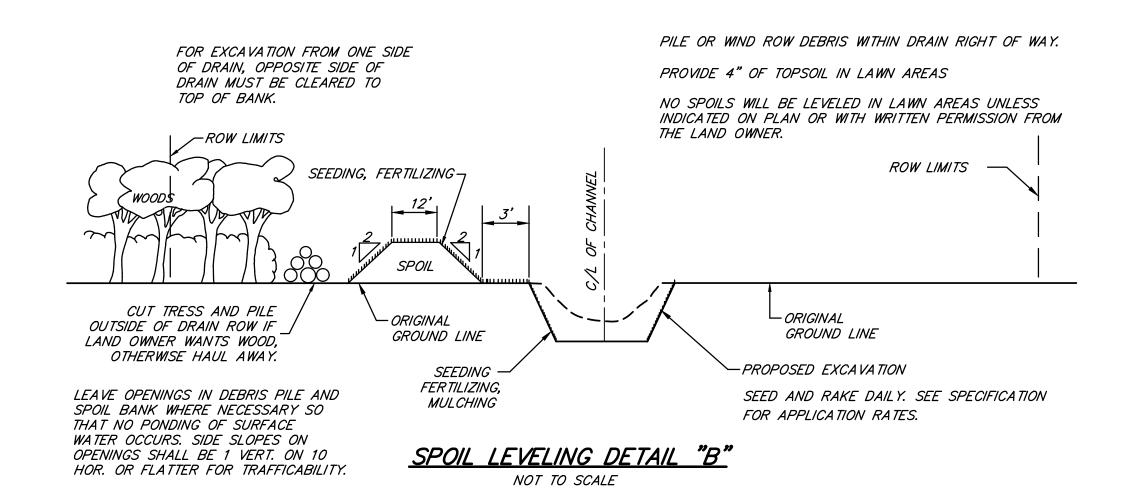


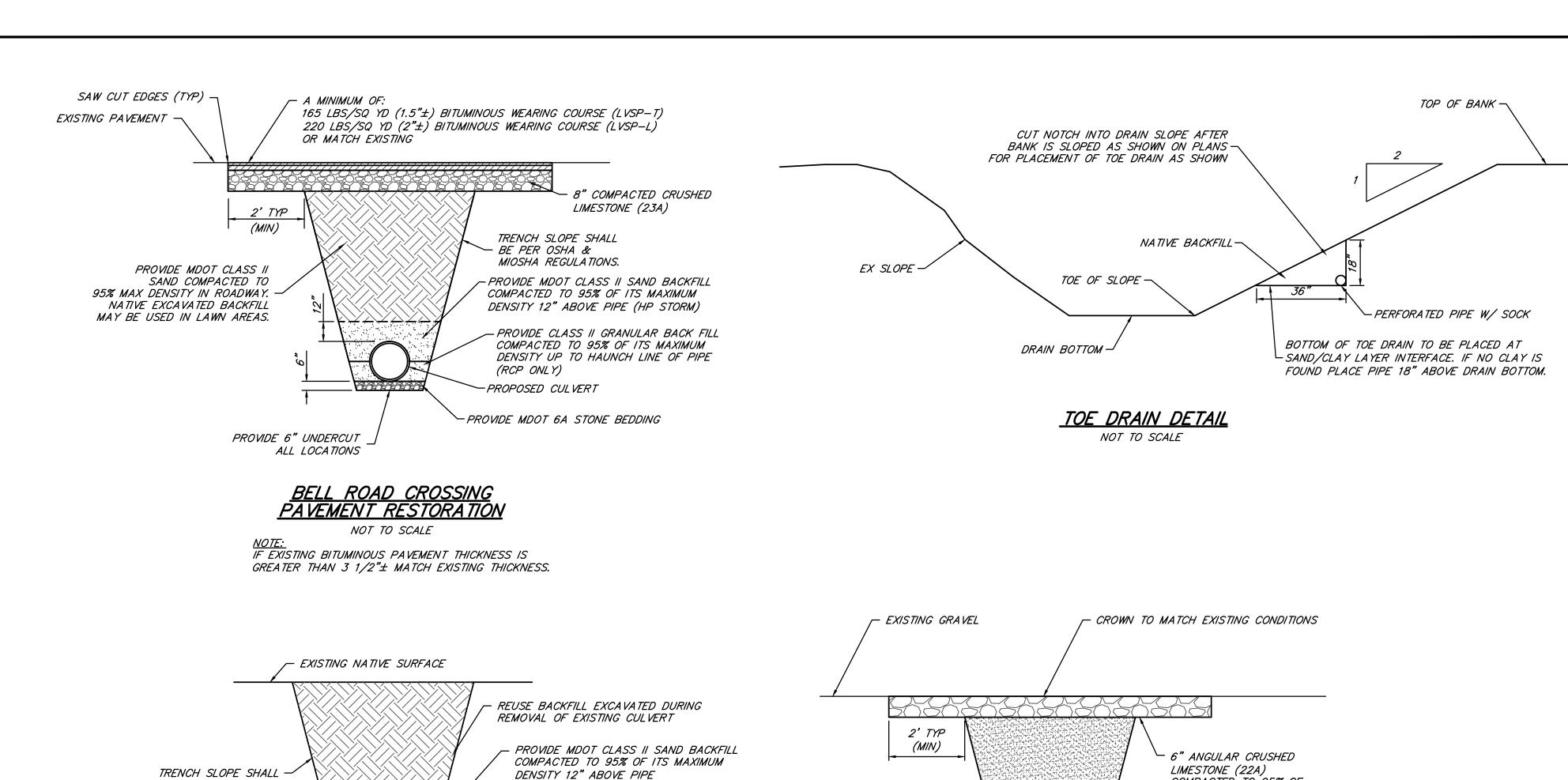
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TRENCH SLOPE SHALL BE

PER O.S.H.A. & MI.O.S.H.A.

REGULATIONS. —

(HP STORM & CMP)

PROVIDE MOOT 6A STONE BEDDING

(RCP ONLY)

PROVIDE CLASS II GRANULAR BACK FILL

COMPACTED TO 95% OF ITS MAXIMUM

DENSITY UP TO HAUNCH LINE OF PIPE

BE PER O.S.H.A. &

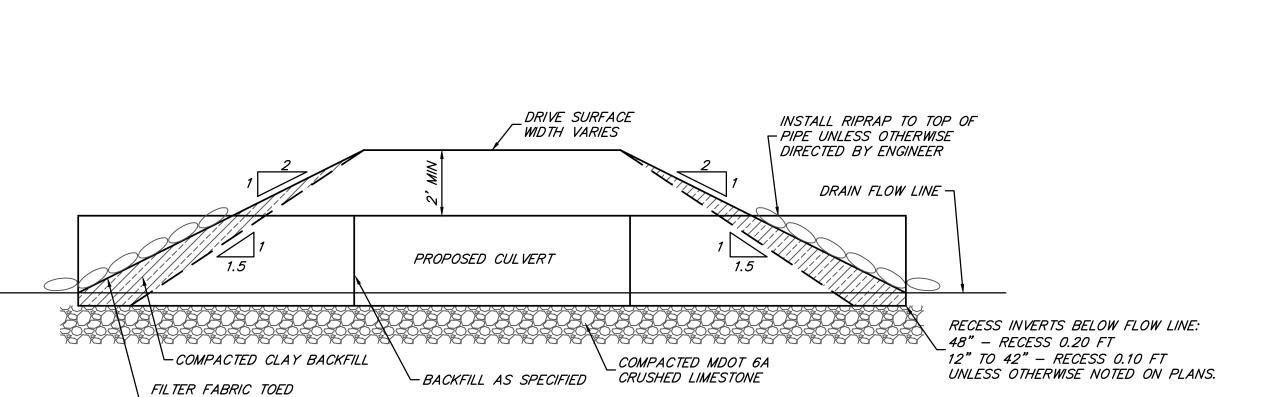
MI.O.S.H.A.

REGULATIONS.

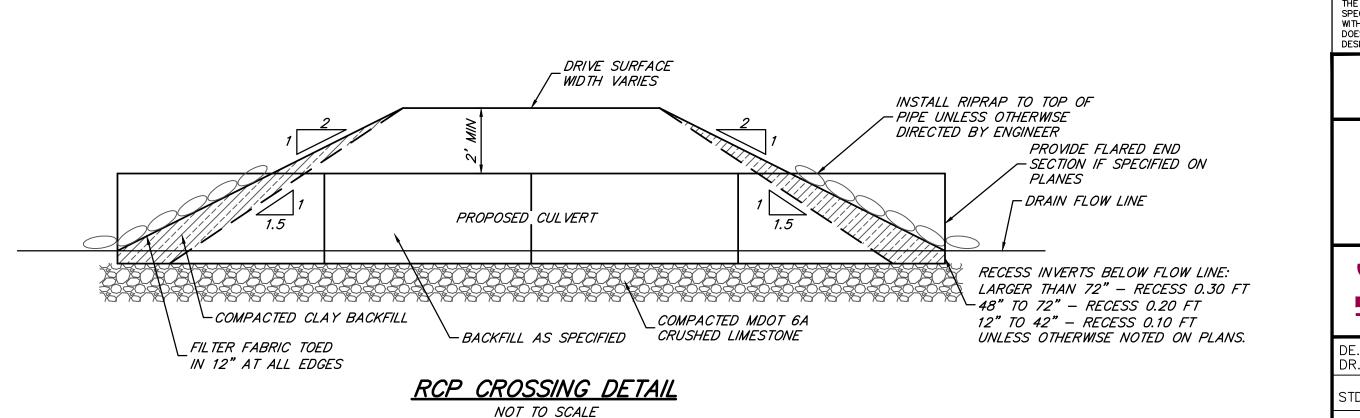
PROPOSED CULVERT

TYPICAL NATIVE DRIVE

CROSSING DETAIL



HP STORM CROSSING DETAIL NOT TO SCALE



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COMPACTED TO 95% OF

ITS MAXIMUM DENSITY.

← CLASS // GRANULAR BACK

FILL COMPACTED TO 95%

OF ITS MAXIMUM DENSITY.

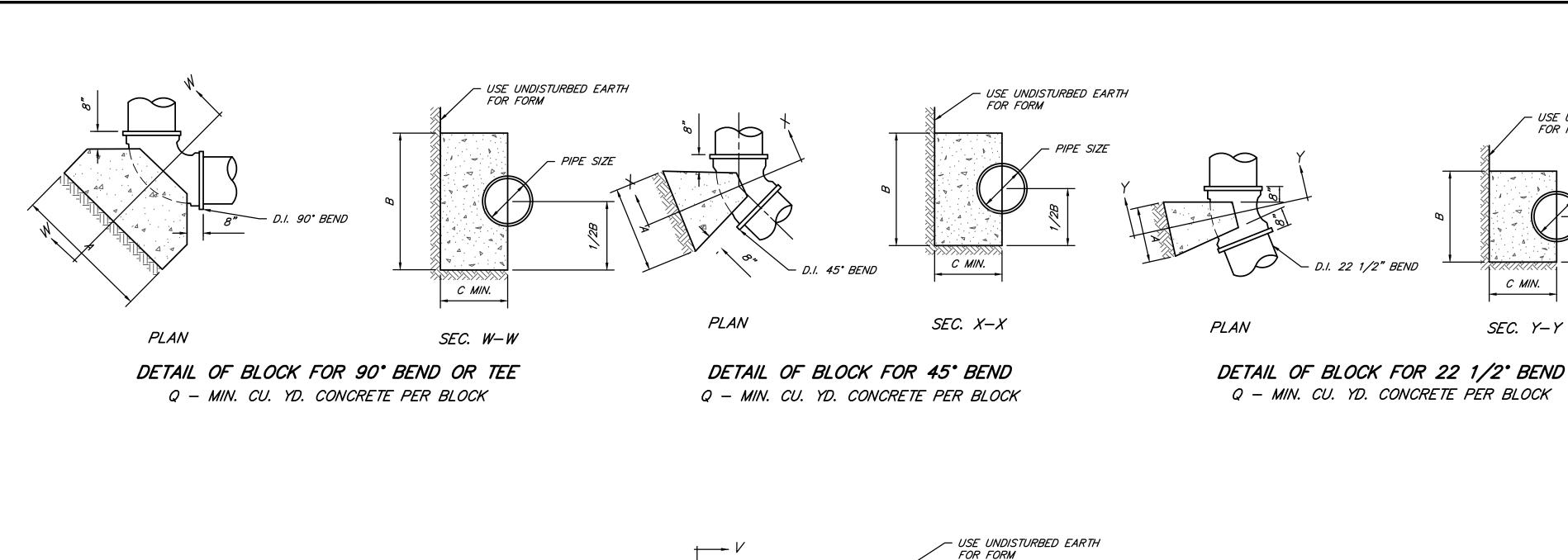
BEDDING UP TO HAUNCH LINE.

- PROVIDE MDOT 6A STONE

TYPICAL GRAVEL DRIVE

CROSSING DETAIL NOT TO SCALE

IN 12" AT ALL EDGES



C MIN.

SEC. V-V

VAL VE BOX

PLACE 4"x8"x16"

CONCRETE BLOCK

DETAIL OF

SETTING OF VALVE BOXES

SUPPORT VALVE BOX ON

WRAP VALVE WITH 8 MIL

LIMESTONE TO UNDISTURBED

VALVE OR VALVE BOX BASE,

WHICHEVER IS GREATER

EARTH NOT LESS THAN LENGTH OF

POLYETHYLENE SHEET

PER AWWA C105

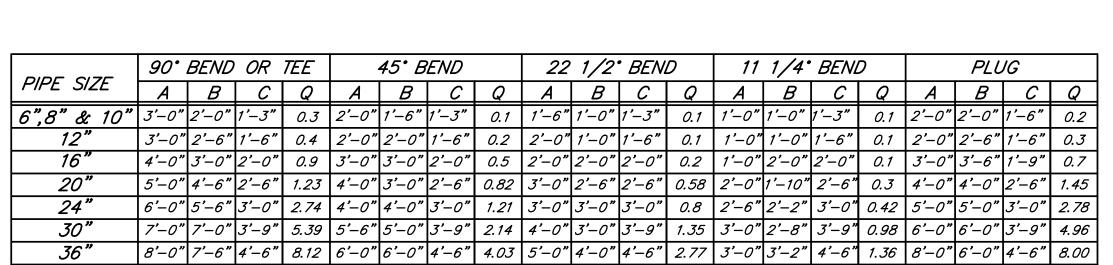
EXTEND MDOT 6A

COMPACTED CRUSHED

MDOT 6A LIMESTONE

DETAIL OF BLOCK FOR PLUG

Q - MIN. CU. YD. CONCRETE PER BLOCK



9'-0"|8'-0"|5'-3"| 11.58| 7'-7"|7'-0"|5'-3"| 6.43 | 5'-0"|5'-0"|5'-3"| 3.85 | 4'-0"|3'-9"| 5'-3"| 2.17 | 8'-0"|8'-0"|5'-3"| 12.44

USE UNDISTURBED EARTH

FOR FORM

C MIN.

TRENCH WIDTH CHART <u>PIPE SIZE</u> TRENCH WIDTH <u>MINIMUM</u> <u>MAXIMUM</u> 8" & 10" 12" & 15" TOP OF PIPE AND COMPACT TO 95% 49" *53"* I.D.+20" I.D.+24" LARGER THAN 36"

TRENCH SLOPE SHALL BE

TRENCH SHALL BE BACKFILLED

PROVIDE MDOT CLASS II SAND BACKFILL TO A MIN. OF 12" OVER

COMPLETELY WITH APPROVED

MDOT CLASS II GRANULAR MATERIAL OR ACCEPTABLE

EXCAVATED MATERIAL AND COMPACTED AS SPECIFIED.

MAXIMUM DENSITY.

SEE TRENCH

WIDTH CHART

TRENCH DETAIL

PER OSHA & MIOSHA

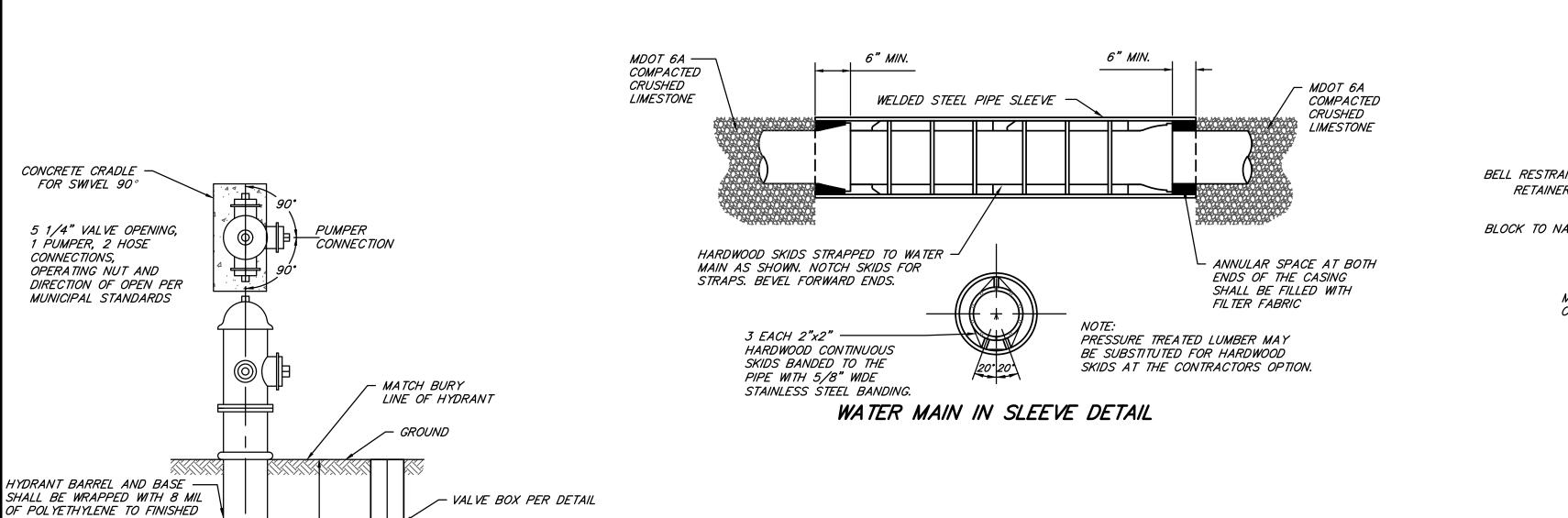
REGULATIONS.

THE CONTRACTOR SHALL SECURE ALL MECHANICAL JOINT FITTINGS WITH RETAINER GLANDS IN ADDITION TO THRUST BLOCKING RETAINER GLANDS SHALL BE MEGA-LUG AS MANUFACTURED BY EBAA IRON OR APPROVED EQUAL

ALTERNATE FOR HYDRANTS: TWO 3/4" THREADED RESTRAINING RODS MAY BE USED AT HYDRANTS IN ADDITION TO ALL BLOCKING. RODS SHALL RECEIVE A MINIMUM DRY FILM OF 15 MILS (DTM) OF COAL TAR EPOXY. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH HYDRANT INSTALLED.

WRAP ALL FITTINGS, VALVES, HYDRANTS, AND ALL D.I. PIPE IN 8 MIL POLYETHYLENE SHEET PER AWWA C105

THE CONCRETE USED FOR BLOCKING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI IN 28 DAYS.



MDOT 6A -

COMPACTED

CRUSHED

LIMESTONE

PLAN

USE UNDISTURBED EARTH

FOR FORM

C MIN.

SEC. Z-Z

- 6" AUXILIARY VALVE

VARIES

RETAINER GLANDES

HYDRANT TEE

BLOCK PER

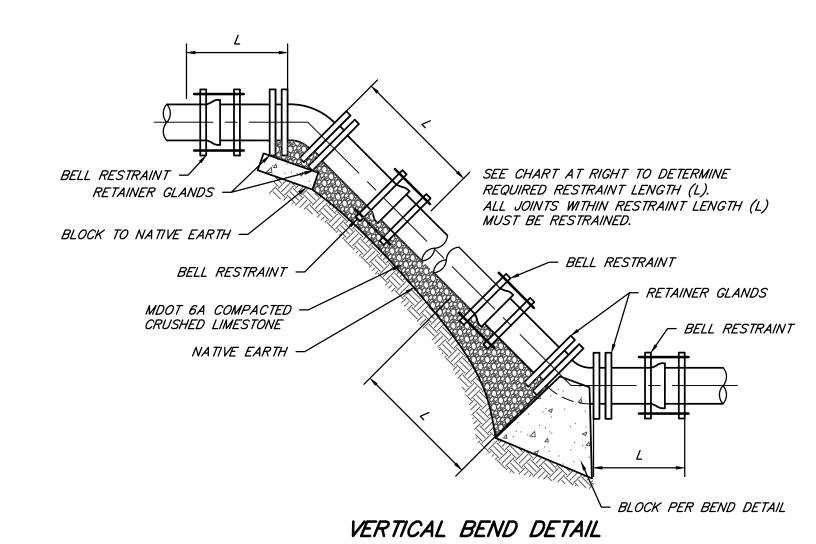
TEE DETAIL

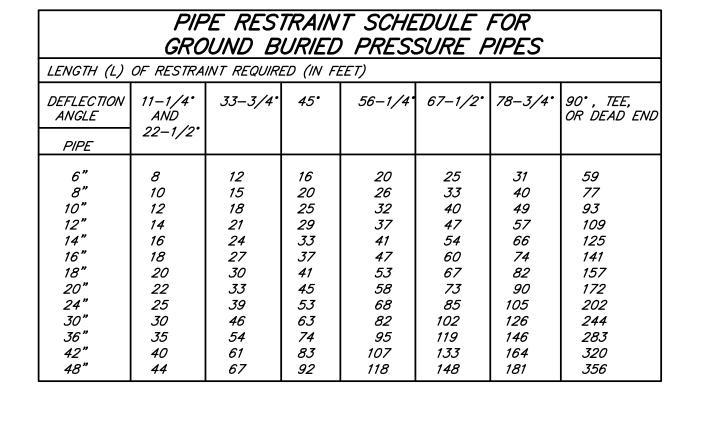
NATIVE EARTH

PLAN

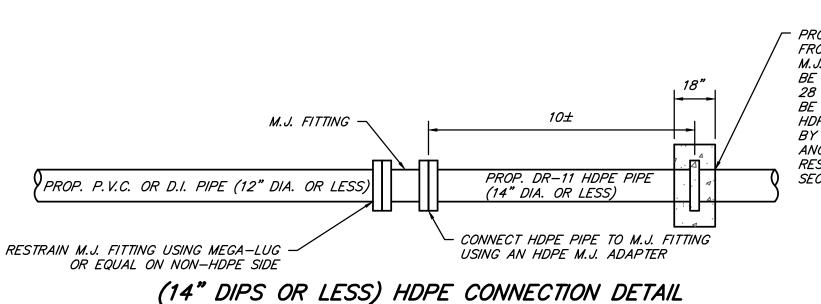
DETAIL OF BLOCK FOR 11 1/4° BEND

Q - MIN. CU. YD. CONCRETE PER BLOCK





BY MARK



PROVIDE 36"x36"x18" ANCHOR BLOCK APPROX 10' FROM CONNECTION TO OTHER PIPE MATERIAL, M.J. FITTING, OR MANHOLE. ANCHOR BLOCK SHALL BE FORMED WITH PLYWOOD AND USE 3000 PSI @ 28 DAYS CONCRETE. HDPE ANCHOR RING SHALL BE FULLY FUSED OR INTEGRALLY FORMED TO THE HDPE PIPE. FLEX RESTRAINT AS MANUFACTURED BY CENTRAL PLASTICS IS AN ACCEPTABLE ANCHORING DEVICE. THE TYPE AND NUMBER OF RESTRAINT DEVICES SHALL BE SUBMITTED PER SECTION 01 33 00 OF THE SPECIFICATIONS

WATER MAIN STANDARD DETAILS

REVISIONS

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STANDARD

WATER MAIN DETAILS

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8-21-17

DATE

PROJECT NO. CH. BY: SG/ DR. BY:*SG*/ APP. BY: SG/ SHEET 1 OF 1 DATE *FEBRUARY, 2006* FILE NO. SCALE *NOT TO SCALE*

GRADE, PER AWWA C105

PLUG DRAIN BACK

UNDISTURBED EARTH

BLOCK HYDRANT WITH

POURED WET CONCRETE

PLACE 4"x8"x16"

CONCRETE BLOCK

PER DETAIL FOR 90°

BEND OR TEE

RETAINER GLANDS -

PLACE 4"x8"x16"

3'-0" MIN.

CONCRETE BLOCK

DETAIL OF SETTING HYDRANT