O'GRADY DRAIN, BEIER DRAIN, AND McCLELLAN RUN DRAIN

SAGINAW COUNTY, MICHIGAN

SAGINAW COUNTY PUBLIC WORKS COMMISSIONER – BRIAN J. WENDLING

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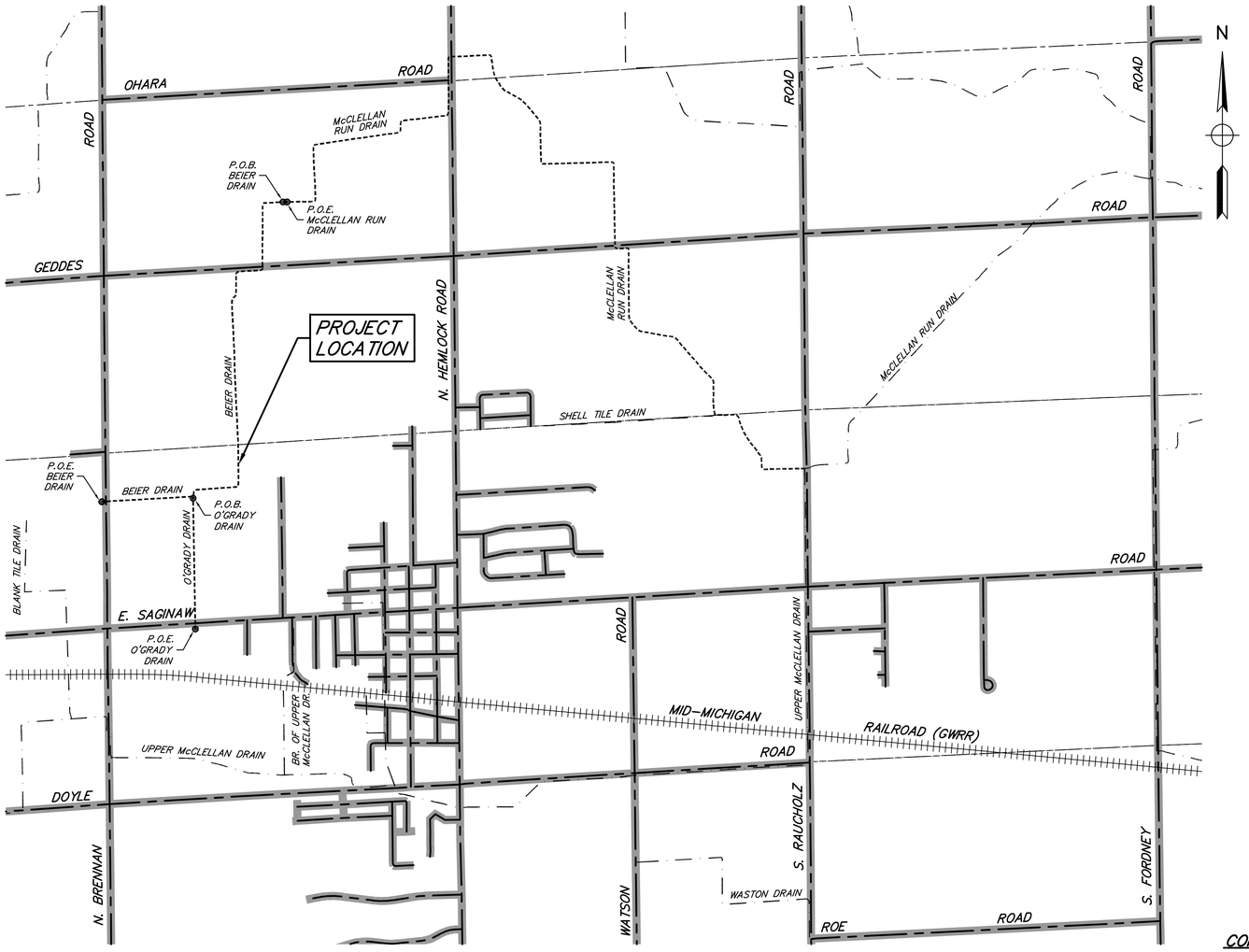
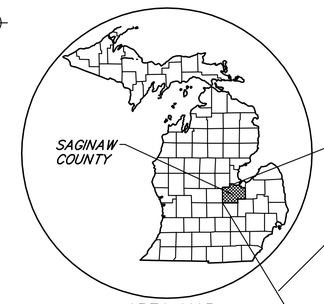


LOCATION MAP

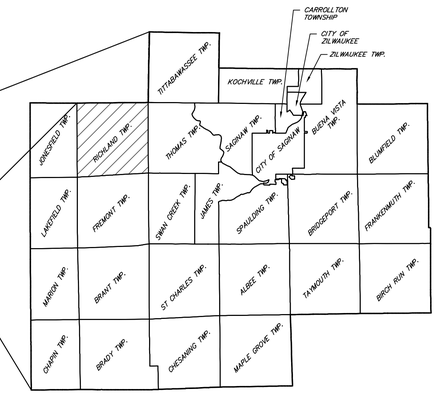
NOT TO SCALE

SECTIONS 15–16, 21–22, & 27–28 T.12N.–R.2E.,
RICHLAND TOWNSHIP,
SAGINAW COUNTY, MICHIGAN



AREA MAP

NOT TO SCALE



CONTACTS

BRIAN J. WENDLING SAGINAW COUNTY PUBLIC WORKS COMMISSIONER 111 SOUTH MICHIGAN SAGINAW, MI 48602 (989) 790–5258	OWNER	ANNAMARIE RENO RICHLAND TOWNSHIP 1180 N. HEMLOCK RD. HEMLOCK, MI 48626 (989) 642–2097 EXT. 305	MANAGER	GREG SQUANDA CONSUMERS ENERGY 2400 WEISS STREET SAGINAW, MI 48602 (989) 791–5353	ELECTRIC
NICHOLAS CZERWINSKI, P.E. SPICER GROUP, INC. 230 S. WASHINGTON AVENUE SAGINAW, MI 48605 (989) 754–4717	ENGINEER	BRIAN BECKROW RICHLAND TOWNSHIP 1180 N. HEMLOCK RD. SAGINAW, MI 48626 (989) 245–9327	DEPT. OF PUBLIC WORKS	MARCIA JANSON–WILSON CONSUMERS ENERGY 2400 WEISS STREET SAGINAW, MI 48602 (989) 791–5869	GAS – DISTRIBUTION
DON HUNDLEY MICHIGAN DEPT. OF TRANSPORTATION 2590 E. WILDER ROAD BAY CITY, MI 48706 (989) 233–7253	MDOT	LEROY KOGLIN AIR ADVANTAGE 465 FRANKLIN ST. FRANKENMUTH, MI 48734 (989) 652–9500	INTERNET	KEVIN COUTURIER CONSUMERS ENERGY 2400 WEISS STREET SAGINAW, MI 48602 (989) 791–5885	GAS – TRANSMISSION
DAN BIELACYZC CHARTER COMMUNICATIONS 1392 TRADE CENTRE DRIVE TRAVERSE CITY, MI 49696 (231) 941–3819	CABLE	KATHRYN ANDERSON VERIZON/FRONTIER 311 S. CEDAR IMLAY CITY, MI 48444 (810) 724–3127	TELEPHONE	JOEL SCHROEDER WINDSTREAM COMMUNICATIONS 929 MARTHA'S WAY HIAWATHA, IA 52233 (319) 790–1514	TELECOMMUNICATIONS

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN, BEIER DRAIN,
AND McCLELLAN RUN DRAIN
SAGINAW COUNTY, MICHIGAN

COVER SHEET

SAGINAW OFFICE
230 S. Washington Ave.
Saginaw, MI 48607
Tel. 989–754–4717
Fax. 989–754–4440
www.SpicerGroup.com

DE. BY: POC CH. BY: NDC
DR. BY: POC APP. BY: RBH
PROJECT NO. 123475SG2016
STDS.
SHEET 1 OF 7
DATE SEPTEMBER, 2016
SCALE NOT TO SCALE
FILE NO. DR–3170–01
DIV 1/2

PLOTTING SCALE: PG. RET. F.B. ACAD FILE: Q:\Proj2016\123475SG2016 – O'Grady Drain\dwg_C3D2015\DR-3170-01-02_Cover_C3D2015.dwg

GENERAL NOTES

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

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

CONTRACTOR SHALL NOTIFY ENGINEER 72 HOURS PRIOR TO START OF CONSTRUCTION.

CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION.

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

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

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

NO WORK SHALL BE PERFORMED BEFORE 7:00 AM OR AFTER 7:00 PM MONDAY THROUGH SATURDAY. NO WORK SHALL HAPPEN ON SUNDAYS OR HOLIDAYS.

CLEAR AND GRUB TREES AS INDICATED FOR CONSTRUCTION WITHIN DRAIN RIGHT-OF-WAY. REMOVE ALL TREES, STUMPS AND DEBRIS FROM SITE.

CONTACT THE ENGINEER 48 HOURS PRIOR FOR CONSTRUCTION STAKING AND INSPECTION.

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 LOCATION OF ANY ACCESS ROADS WITH THE LANDOWNER AND THE ENGINEER. ANY ACCESS ROAD SHALL BE REPAIRED TO THE LANDOWNERS AND THE PUBLIC WORKS COMMISSIONER'S APPROVAL.

CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171) A MINIMUM OF 3 WORKING DAYS PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES. SIGNAGE MUST BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF TRAFFIC CONTROL AND SHALL BE COORDINATED WITH THE ENGINEER AND SAGINAW COUNTY ROAD COMMISSION. PERMITS FROM THE ROAD COMMISSION AND/OR MDOT MAY BE REQUIRED.

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.

BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE AND SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE. COST TO BE INCLUDED IN SITE CLEARING.

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.

COORDINATE DRIVE CLOSURES AND MAIL BOX RELOCATION WITH LANDOWNERS A MINIMUM OF ONE DAY IN ADVANCE.

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.

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.

ALL CONSTRUCTION UNDER EXISTING UTILITIES SHALL BE COMPLETELY BACKFILLED WITH SAND WITH COST TO BE INCLUDED IN THE UNIT PRICE FOR UTILITY BEING INSTALLED.

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

CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF 1994.

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

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

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

ABBREVIATIONS

BIT = BITUMINOUS
BM = BENCH MARK
CB = CATCH BASIN
CF = CUBIC FEET
CL = CENTERLINE
CMP = CORRUGATED METAL PIPE
CSP = CORRUGATED STEEL PIPE
CONC = CONCRETE
DIP = DUCTILE IRON PIPE
ELEC = ELECTRIC
ELEV = ELEVATION
ESM'T = EASEMENT
EX OR EXIST = EXISTING
FF = FINISH FLOOR
FS = FINISH SURFACE
FG = FINISH GRADE
G = GUTTER
HYD = HYDRANT
INV = INVERT
MH = MANHOLE
MIN = MINIMUM
NFL = NOT FIELD LOCATED
NTS = NOT TO SCALE
PROP = PROPOSED
PVC = POLYVINYL CHLORIDE
RCP = REINFORCED CONCRETE PIPE
ROW = RIGHT OF WAY
SAN = SANITARY
SB = SOIL BORING
STA = STATION
STM = STORM
SWR = SEWER
TC = TOP OF CURB
TELE = TELEPHONE
TRW = TOP OF RETAINING WALL
TW = TOP OF WALK
WM = WATER MAIN

SYMBOL LEGEND

- MANHOLE
- PROPOSED MANHOLE
- CATCHBASIN
- CURB CATCHBASIN
- PROPOSED CATCHBASIN
- FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- GAS VALVE
- WATER VALVE
- PROPOSED WATER VALVE
- TELEPHONE PEDESTAL
- POWER POLE
- TELEPHONE POLE
- POWER AND TELEPHONE POLE
- LIGHT POLE
- GUY ANCHOR AND POLE
- MAIL BOX
- SIGN
- CABLE TV PEDESTAL
- TRANSFORMER
- ELECTRICAL PEDESTAL
- BARRIER FREE PARKING
- FENCE
- SPRINKLER
- RAILROAD SIGNAL
- ANTENNA
- SATELLITE DISH
- AIR CONDITIONING UNIT
- SOIL BORING
- FOUND SURVEY CORNER
- SET 3/4" IRON PIPE
- BREAK IN LINE
- STUMP
- WETLANDS
- PINE
- BUSH
- TREE
- ACREAGE OF PARCEL WITHIN DISTRICT

LINE TYPE LEGEND

- EXISTING PROJECT DRAIN
- EXISTING DRAINS (OTHER)
- EXISTING ROAD
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING TELEPHONE CABLE
- EXISTING GAS MAIN
- EXISTING ELECTRIC
- PROPOSED UTILITY
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER

MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SOIL EROSION AND SEDIMENTATION CONTROL KEYING SYSTEM

KEY	SESC MEASURE	SYMBOL	WHERE USED
1	SEEDING		When bare soil is exposed, temporarily or permanently, to erosive forces from wind and or water on flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles.
2	MULCH		On flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles when areas are subject to raindrop impact, and erosive forces from wind or water.
7	RIPRAP		Along drain banks, shorelines, or where concentrated flows occur. Slows velocity, reduces erosion and sediment load.
8	RIPRAP TOE OF SLOPE		Riprap and toe of slope protection is used in areas where velocities are causing drain bank erosion and are too high to stabilize using other methods
9	OUTFALL STABILIZATION		In the stream or drain bank usually above the ordinary high water mark where an enclosed drain or tile discharges to an open drain.
15	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.
16	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).
19	ENERGY DISSIPATORS		Where the discharge velocity of concentrated flow exceeds the erosive velocity of the receiving area or channel.
26	DUST CONTROL		As a temporary measure on exposed and unstabilized areas that must be protected from wind or water erosion.
40	CHECK DAM		In constructed and existing flow corridors to reduce flow velocities.
63	SEDIMENT SUMP (TRAP)		When working in the drain, or drain easement and the soil disturbance and anticipated sediment is limited.
80	DEBRIS REMOVAL		
81	SEDIMENT REMOVAL		
87	Enclosed Drain Maintenance		
103	DRAIN CROSSING		

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:

P/P = PERMANENT MEASURE

P/T = TEMPORARY MEASURE

PROJECT DATUM

HORIZONTAL: STATE PLANE SOUTH MI '83 2113
VERTICAL: NORTH AMERICAN VERTICAL DATUM '88

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN, BEIER DRAIN,
AND McCLELLAN RUN DRAIN
SAGINAW COUNTY, MICHIGAN

GENERAL NOTES

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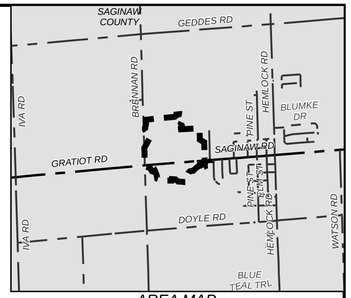
DE. BY: POC CH. BY: NDC
DR. BY: POC APP. BY: RBH
PROJECT NO. 123475SG2016
STDS.
SHEET 2 OF 7
DIV 2
DATE SEPTEMBER, 2016
SCALE NOT TO SCALE
FILE NO. DR-3170-02

O'GRADY DRAIN
SAGINAW COUNTY, MICHIGAN

BRIAN J. WENDLING. - SAGINAW COUNTY PUBLIC WORKS COMMISSIONER



AREA MAP
NOT TO SCALE

N

0 75 150 300 FEET

LEGEND

- DRAINAGE DISTRICT BOUNDARY
- APPROXIMATE DRAIN LOCATION
- APPROXIMATE LOCATION OF OUTLET DRAIN
- OTHER WATERCOURSES
- STATE ROADS
- COUNTY ROADS
- LOCAL ROADS

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN, BEIER DRAIN,
AND McCLELLAN RUN DRAIN
SAGINAW COUNTY, MICHIGAN

DRAINAGE DISTRICT MAP

Spicer group
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125 Helle Blvd, Suite 2
Dundee, MI 48131
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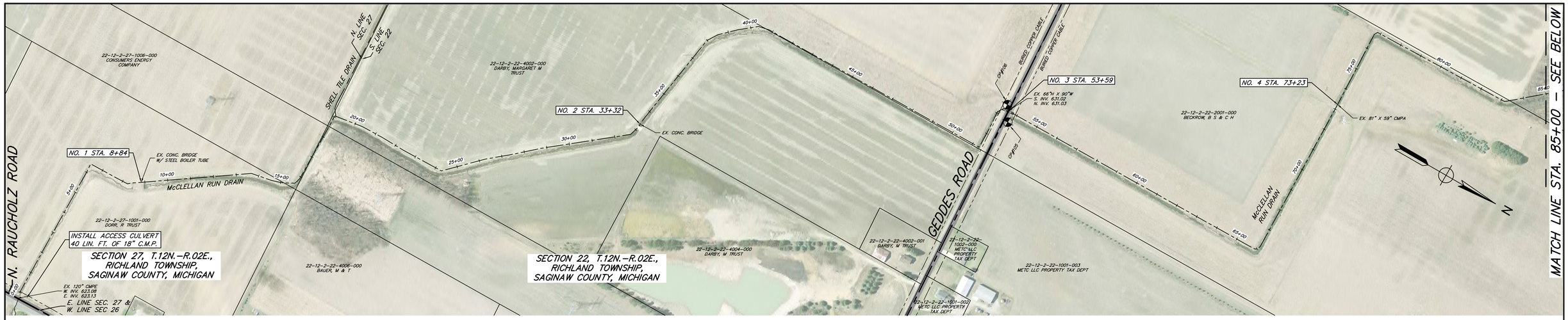
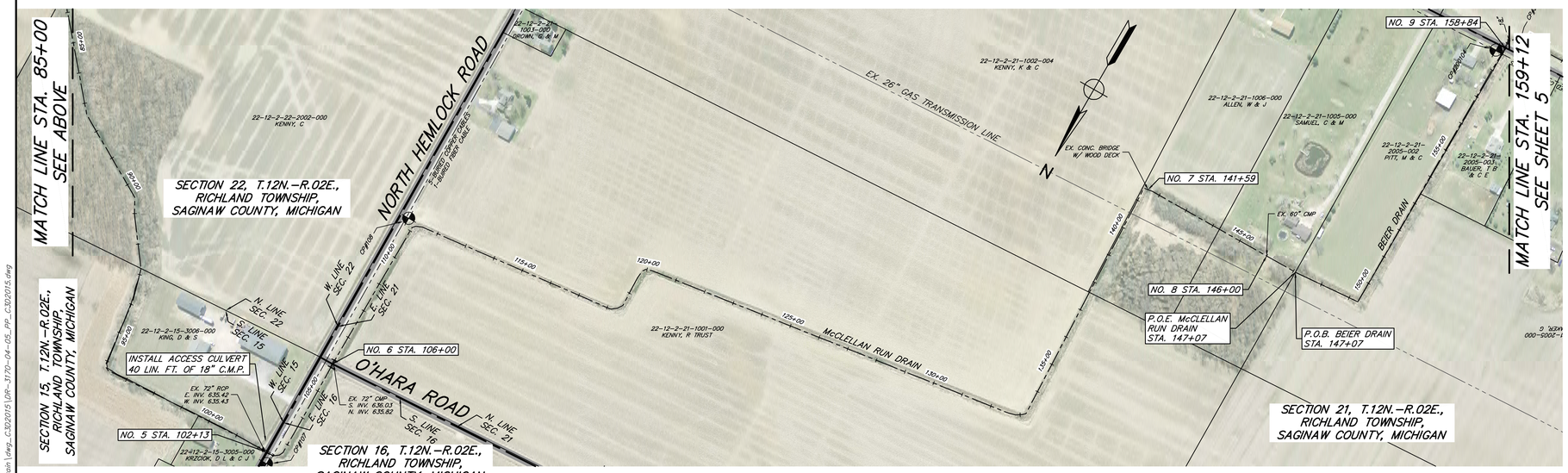
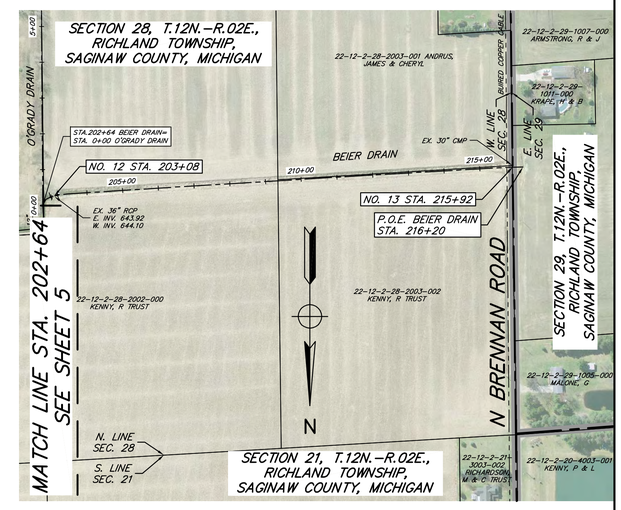
DE. BY: LDO	CH. BY: NDC	PROJECT NO.	
DR. BY: LDO	APP. BY: RBH	123475SG2016	
STDS.	SHEET 3 OF 7		DIV 1
DATE SEPTEMBER 2016	FILE NO.		
SCALE 1 " = 150 '	DR - 3170-03		

PATH: Q:\PROJ\2016\123475SG2016 - O'GRADY DRAIN\GEODATA\DR-3170-03_DISTRICT MAP.MXD, PRINTED ON: 9/27/2016, BY: DBRENELD







0 50 100 200 400

SCALE: 1" = 200'

NO. 1 – STA. 8+84 – DORR, R TRUST
REMOVE EXISTING CROSSING (BASE BID) AND INSTALL 64 LIN FT. OF 128" X 83" C.M.P.A. (3" X 1" CORR., 10 GA.) BEVEL ENDS 2 HOR. TO 1 VERT. RESTORE NATIVE DRIVE. (ALTERNATE BID)

NO. 2 – STA. 33+32 – DARBY, MARGARET M TRUST
CLEANOUT EXISTING CROSSING.

NO. 3 – STA. 53+59 – GEDDES ROAD
CLEANOUT EXISTING CROSSING.

NO. 4 – STA. 73+23 – BECKROW, B S & C H
CLEANOUT EXISTING CROSSING.

NO. 5 – STA. 102+13 – NORTH HEMLOCK ROAD
CLEANOUT EXISTING CROSSING.

NO. 6 – 106+00 – O'HARA ROAD
CLEANOUT EXISTING CROSSING.

NO. 7 – STA. 141+59 – ALLEN, W & J
CLEANOUT EXISTING CROSSING.

NO. 8 – STA. 146+00 – SAMUEL, C & M
CLEANOUT EXISTING CROSSING.

NO. 9 – STA. 158+84 – GEDDES ROAD
CLEAN OUT EXISTING CROSSING.

NO. 12 – STA. 203+08 – KENNY, R TRUST
CLEANOUT EXISTING CROSSING.

NO. 13 – STA. 215+92– N. BRENNAN ROAD
CLEANOUT EXISTING CROSSING.

EROSION CONTROL TABLE

KEY*	FROM STATION	TO STATION	SIDE	DESCRIPTION	QUANTITY
1/P	0+00	159+12	BOTH	SEEDING OF ALL DEISTURBED AREAS	–
1/P	202+64	215+72	BOTH	SEEDING OF ALL DEISTURBED AREAS	–
2/T	0+00	159+12	BOTH	MULCHING OF ALL DISTURBED AREAS	–
2/T	202+64	215+72	BOTH	MULCHING OF ALL DISTURBED AREAS	–
9/P	ALL EXISTING FIELD TILE OUTLETS		BOTH	SPLASH PAD	AS STAKED IN FIELD BY ENGINEER
8/P	CROSSINGS 1–9, 12–13		BOTH	INSTALL RIPRAP PROTECTION AT INLET AND OUTLET OF CROSSING	AS STAKED IN FIELD BY ENGINEER

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

CONSTRUCTION NOTES

1. STA. 0+00 TO 159+12 AND STA. 202+64 TO 215+72 CONTRACTOR TO CLEAR DRAIN FROM TOP OF BANK TO TOP OF BANK AND CLEAR MAINTENANCE LANE ON ONE SIDE OF DRAIN. FLUSH CUT TREES AND SPRAY STUMPS.
2. STA. 0+00 TO STA. 159+12 AND STA. 202+64 TO 215+72 CONTRACTOR TO CLEAN EX DRAIN BOTTOM AND CLEAN ALL EXISTING CROSSINGS UNLESS OTHERWISE NOTED ON PLANS. PRICE TO CLEAN EXISTING DRAIN BOTTOM AND EXISTING CROSSINGS INCLUDED IN UNIT BID PRICE FOR OPEN CHANNEL CLEANOUT.
3. CONTRACTOR TO PLACE RIPRAP AS STAKED IN FIELD BY ENGINEER FOLLOWING DRAIN CHANNEL CLEARING.
4. CONTRACTOR TO CONTACT JEREMY RAU AT CONSUMERS ENERGY AT (989) 751–9489 FOR STAKING OF EXISTING 26" GAS TRANSMISSION LINE PRIOR TO CONSTRUCTION.

SPOIL LEVELING TABLE

STATION FROM	STATION TO	DETAIL	SIDE TO EXCAVATE FROM
0+00	19+00	"C"	RIGHT
19+00	25+50	"B"	RIGHT
25+50	50+25	"C"	RIGHT
50+25	53+59	"C"	LEFT
53+59	73+23	"C"	RIGHT
73+23	84+00	"C"	LEFT
84+00	92+75	"B"	LEFT
92+75	102+13	"C"	LEFT
102+13	111+00	"C"	RIGHT
111+00	159+12	"C"	LEFT
202+64	216+20	"C"	RIGHT

RIGHTS OF WAY

McCLELLAN RUN DRAIN – DRAIN RIGHT–OF–WAY 47 FT. EACH SIDE OF DRAIN

BEIER DRAIN – DRAIN RIGHT–OF–WAY 66' EACH SIDE OF DRAIN

BENCH MARKS

NO. 105 – 1/2" X 18" REROD AND CAP, NORTH SIDE OF GEDDES ROAD, 0.5 MILES EAST OF CROSSING, 20'± NORTH OF ℄ ROAD
ELEV. 638.47

NO. 106 – 1/2" X 18" REROD AND CAP, SOUTH SIDE OF GEDDES ROAD, 0.5 MILES EAST OF HEMLOCK ROAD, 25'± WEST OF CROSSING, 15'± SOUTH OF ℄ ROAD
ELEV. 638.42

NO. 107 – 1/2" X 18" REROD AND CAP, WEST SIDE OF NORTH HEMLOCK ROAD, 18'± WEST OF ℄ ROAD, 390'± NORTH OF O'HARE ROAD
ELEV. 644.29

NO. 108 – 1/2" X 18" REROD AND CAP, WEST SIDE OF NORTH HEMLOCK ROAD, 30'± WEST OF ℄ ROAD, 530'± SOUTH OF O'HARE ROAD
ELEV. 649.73

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN, BEIER DRAIN, AND McCLELLAN RUN DRAIN
SAGINAW COUNTY, MICHIGAN

MAINTENANCE PLAN – BEIER & McCLELLAN RUN DRAINS STA. 0+00 TO STA. 155+00 STA. 202+59 TO STA. 215+72

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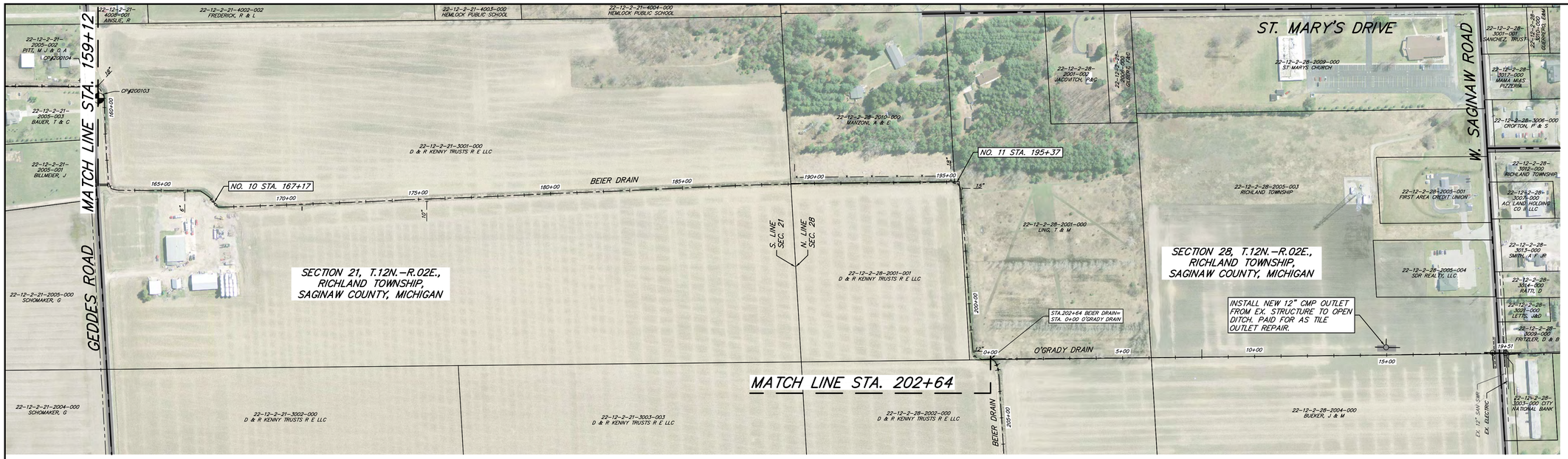
DE. BY: LDO CH. BY: NDC
DR. BY: CBP APP. BY: RBH
PROJECT NO. 123475SG2016
STDS.
SHEET 4 OF 7
DATE SEPTEMBER, 2016
SCALEH: 1"=200' V: 1"=10'
FILE NO. DR–3170–04
DIV 2

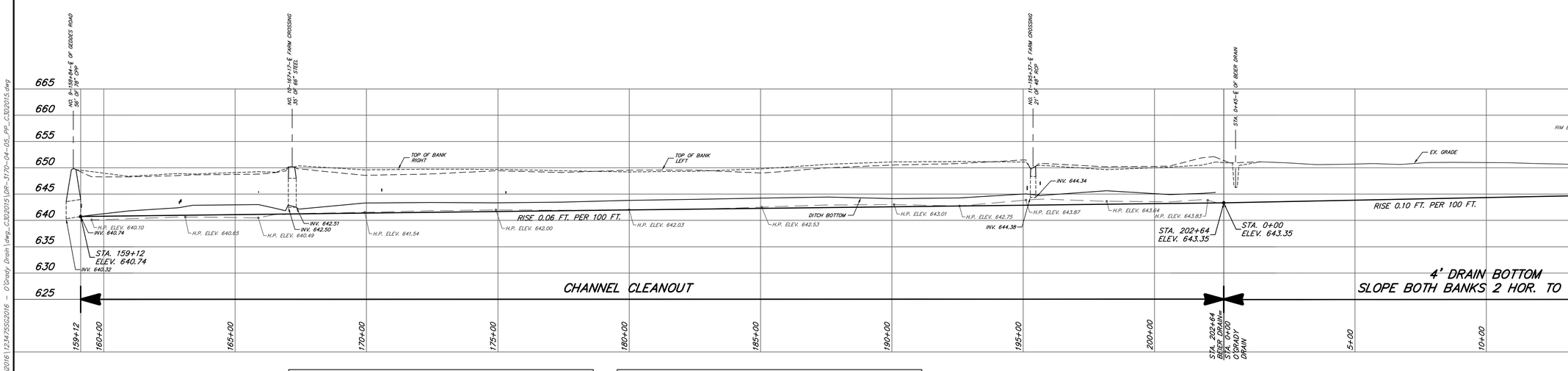
ACAD FILE: Q:\Proj2016\123475SG2016 – O'Grady Drain\dwg_C\D2015\DR-3170-04-05_PP_C.D2015.dwg
PLOTTING SCALE: RET. F.B. PG.



N

0 50 100 200 400

SCALE: 1" = 200'



NO. 10 – STA. 167+17 – D & R KENNY TRUSTS R E LLC
REMOVE EXISTING CROSSING (BASE BID) AND INSTALL 60 LIN. FT. OF 60" C.M.P. (2–2/3" X 1/2" CORR., 10 GA.) BEVEL ENDS 2 HOR. TO 1 VERT. RESTORE NATIVE DRIVE. (ALTERNATE BID)

NO. 11 – STA. 195+37 – D & R KENNY TRUSTS R E LLC AND LING, T & M
REMOVE EXISTING CROSSING (BASE BID) AND INSTALL 56 LIN. FT. OF 54" C.M.P. (2–2/3" X 1/2" CORR., 10 GA.) BEVEL ENDS 2 HOR. TO 1 VERT. RESTORE NATIVE DRIVE. (ALTERNATE BID)

EROSION CONTROL TABLE – BEIER DRAIN

KEY*	FROM STATION	TO STATION	SIDE	DESCRIPTION	QUANTITY
1/P	159+12	202+64	BOTH	SEEDING OF ALL DEISTURBED AREAS	–
2/T	159+12	202+64	BOTH	MULCHING OF ALL DISTURBED AREAS	–
16/P	160+00	–	LEFT	GRASS SPILLWAY	19 LIN. FT.
16/P	164+75	–	RIGHT	GRASS SPILLWAY	19 LIN. FT.
16/P	166+50	–	RIGHT	GRASS SPILLWAY	19 LIN. FT.
16/P	171+00	–	RIGHT	GRASS SPILLWAY	19 LIN. FT.
16/P	200+00	–	RIGHT	GRASS SPILLWAY	19 LIN. FT.
9/P	ALL EXISTING FIELD TILE OUTLETS		BOTH	SPLASH PAD	AS STAKED IN FIELD BY ENGINEER
8/P	CROSSINGS 10–11		BOTH	INSTALL RIPRAP PROTECTION AT INLET AND OUTLET OF CROSSING	AS STAKED IN FIELD BY ENGINEER

EROSION CONTROL TABLE – O'GRADY DRAIN

KEY*	FROM STATION	TO STATION	SIDE	DESCRIPTION	QUANTITY
1/P	0+00	19+02	BOTH	SEEDING OF ALL DEISTURBED AREAS	–
2/T	0+00	19+02	BOTH	MULCHING OF ALL DISTURBED AREAS	–
16/P	3+00	–	RIGHT	GRASS SPILLWAY	19 LIN. FT.
16/P	4+50	–	LEFT	GRASS SPILLWAY	19 LIN. FT.
16/P	13+00	–	RIGHT	GRASS SPILLWAY	19 LIN. FT.
16/P	18+80	–	BOTH	GRASS SPILLWAY	19 LIN. FT. EA. SIDE
9/P	ALL EXISTING FIELD TILE OUTLETS		BOTH	SPLASH PAD	AS STAKED IN FIELD BY ENGINEER

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

CONSTRUCTION NOTES

1. STA. 0+00 TO STA. 19+02 – O'GRADY DRAIN
   CONTRACTOR TO INSTALL TILE OUTLETS AND SPLASH PADS TO ANY EXISTING TILE LATERALS EXPOSED DURING REMOVAL OF EXISTING O'GRADY TILE AND EXCAVATION OF OPEN DRAIN.
2. STA. 159+12 TO STA. 202+64 – BEIER DRAIN
   CONTRACTOR TO CLEAR DRAIN FROM TOP OF BANK TO TOP OF BANK. FLUSH CUT TREES AND SPRAY STUMPS.
3. STA. 159+12 TO 202+64 – BEIER DRAIN
   CONTRACTOR TO CLEAN EXISTING DRAIN BOTTOM. PRICE INCLUDED IN UNIT BID PRICE FOR OPEN CHANNEL CLEANOUT.

SPOIL LEVELING TABLE

STATION FROM	STATION TO	DETAIL	SIDE TO EXCAVATE FROM
159+12	168+00	"C"	LEFT
168+00	202+64	"C"	RIGHT
00+00	19+02	"D"	BOTH

RIGHTS OF WAY

BEIER DRAIN – DRAIN RIGHT–OF–WAY 66' EACH SIDE OF DRAIN

O'GRADY DRAIN – SUFFICIENT WIDTH RIGHT–OF–WAY. CONFINE WORKING LIMITS TO 49.5' EACH SIDE OF DRAIN.

BENCH MARKS

NO. 200103 – 1/2" X 18" REBAR AND CAP. 0.5 MILES EAST OF BRENNAN ROAD, 25'± SOUTH OF ℄ OF GEDDES ROAD, SOUTHWEST OF DRAIN CROSSING

ELEV. 649.29

NO. 200104 – 1/2" X 18" REBAR AND CAP , 0.5 MILES EAST OF BRENNAN ROAD, 25± NORTH OF ℄ OF GEDDES ROAD AT DRAIN CROSSING

ELEV. 649.73

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN, BEIER DRAIN, AND McCLELLAN RUN DRAIN
SAGINAW COUNTY, MICHIGAN

PLAN AND PROFILE
BEIER DRAIN & O'GRADY DRAIN
STA. 155+00 TO STA. 202+64
STA. 0+00 TO STA. 19+75

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DE. BY: LDO CH. BY: NDC
DR. BY: CBP APP. BY: RBH
PROJECT NO. 123475SG2016
STDS.
SHEET 5 OF 7
DIV 1
DATE SEPTEMBER, 2016
SCALE H: 1"=200' V: 1"=10'
FILE NO. DR–3170–05

ACAD FILE: Q:\Proj2016\123475SG2016 – O'Grady Drain\dwg_C\D2015\DR-3170-04-05_PP_C3D2015.dwg
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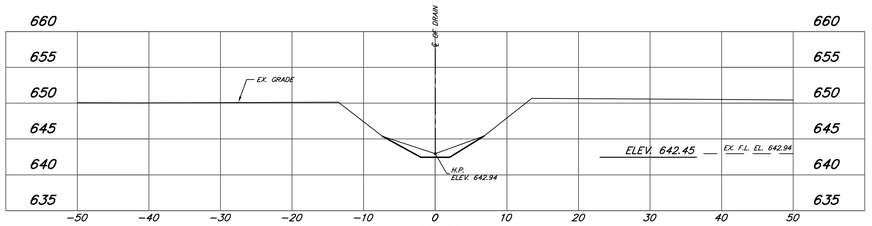
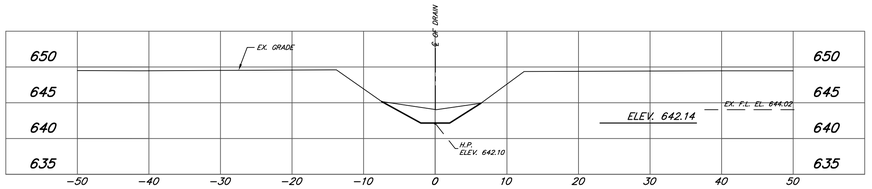
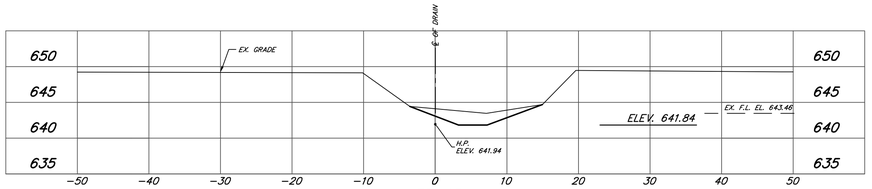


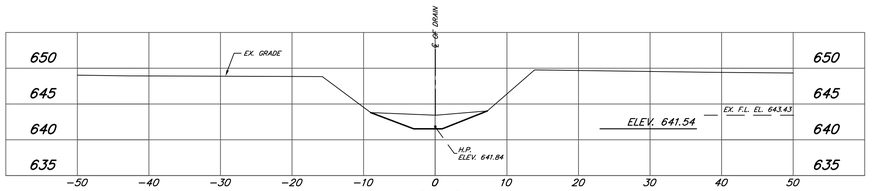
187+56



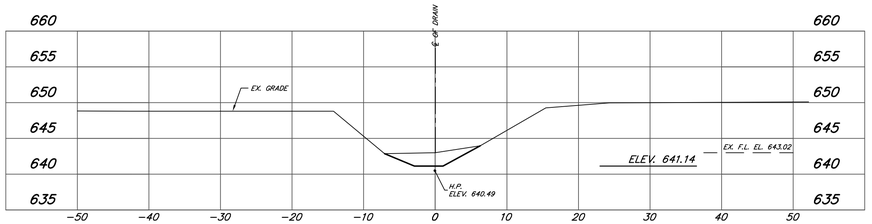
182+55



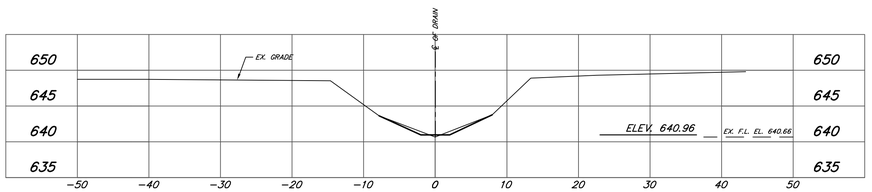
177+43



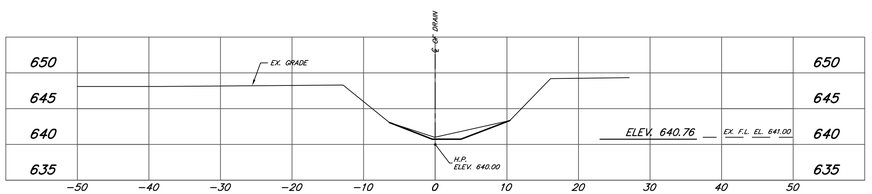
172+45



165+87

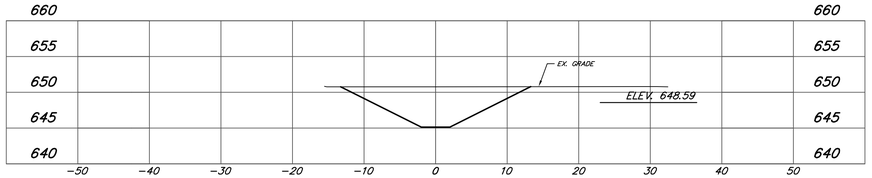


162+82

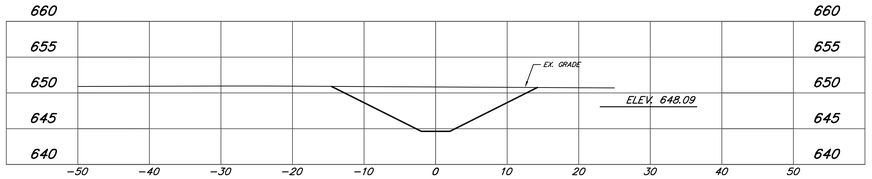


159+54

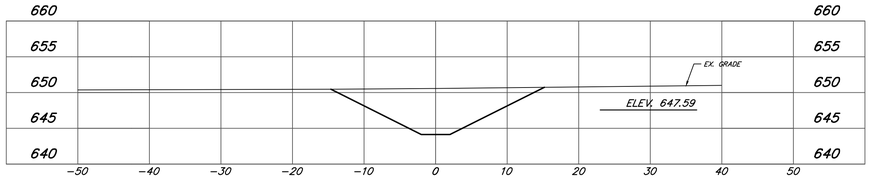
BEIER DRAIN



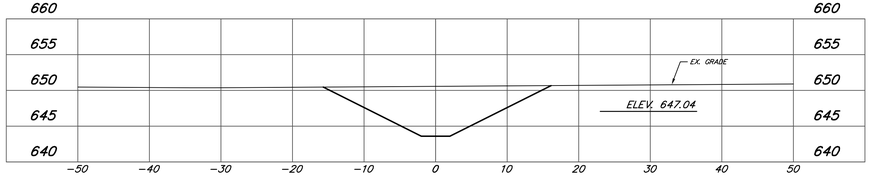
18+00



13+00

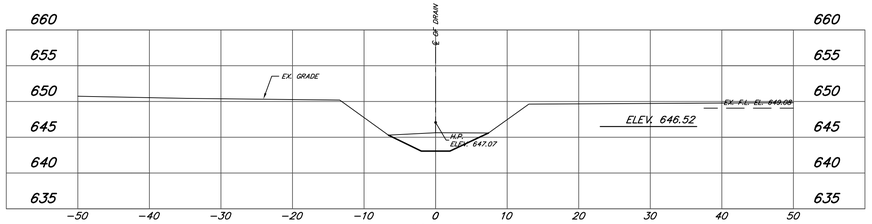


8+00

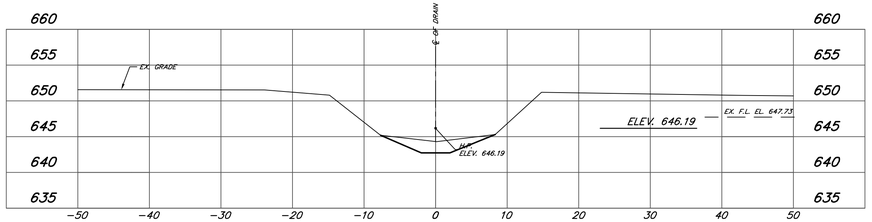


2+47

O'GRADY DRAIN



198+14



192+58

BEIER DRAIN

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN, BEIER DRAIN,
AND McCLELLAN RUN DRAIN
SAGINAW COUNTY, MICHIGAN

CROSS SECTIONS
BEIER DRAIN & O'GRADY DRAIN
STA. 159+54 TO STA. 205+94
STA. 0+00 TO STA 19+75

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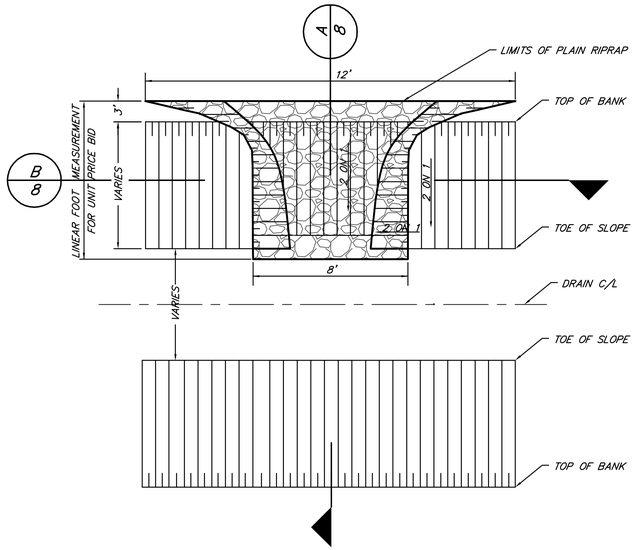
DE. BY: LDO CH. BY: NDC
DR. BY: CBP APP. BY: RBH
PROJECT NO. 123475SG2016

STDS.
SHEET 6 OF 7
DIV 1

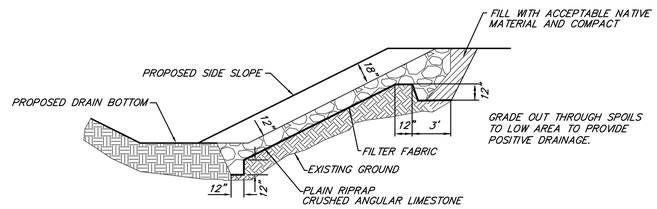
DATE SEPTEMBER, 2016
SCALE 1"=10'
FILE NO. DR-3170-06

PLOTTING SCALE: RET: F.B. PG. ACAD FILE: Q:\Proj2016\123475SG2016 - O'Grady Drain\dwg_C3D2015\DR-3170-06_XS_C3D2015.dwg

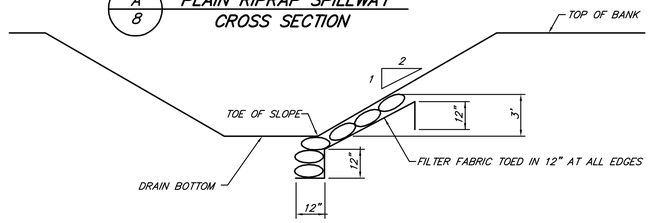


PLAIN RIPRAP SPILLWAY PLAN VIEW

NOT TO SCALE

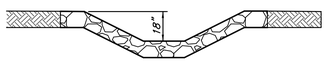


A/8 PLAIN RIPRAP SPILLWAY CROSS SECTION

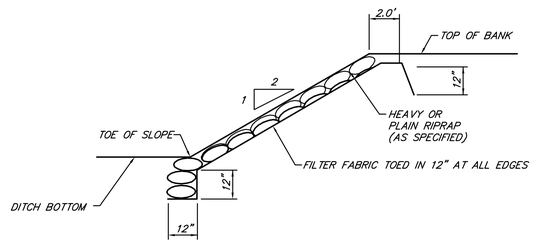


RIPRAP TOE OF SLOPE PROTECTION

NOT TO SCALE

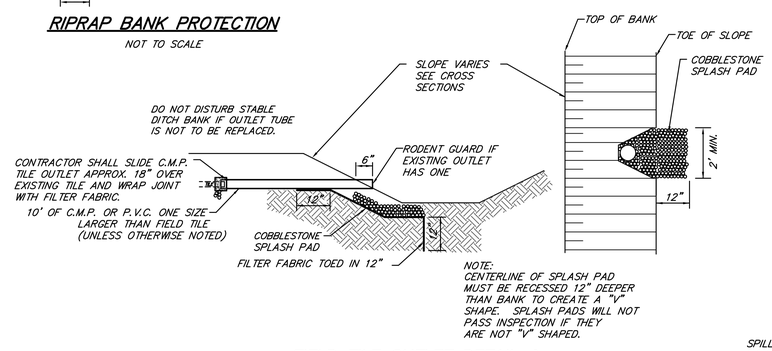


B/8 PLAIN RIPRAP SPILLWAY CROSS SECTION EROSION CONTROL STRUCTURE TYPE I



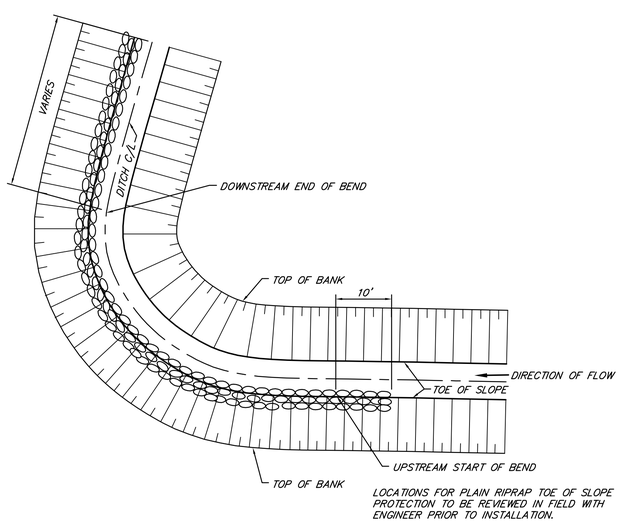
RIPRAP BANK PROTECTION

NOT TO SCALE



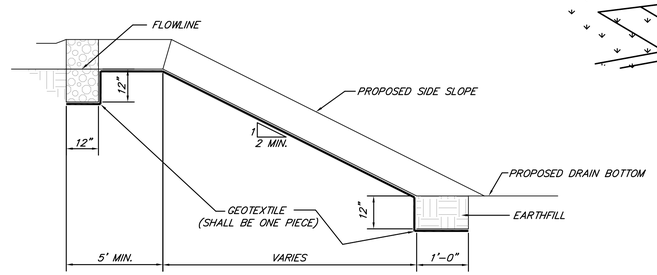
FIELD TILE OUTLET DETAIL & COBBLESTONE SPLASH PAD DETAIL

NOT TO SCALE

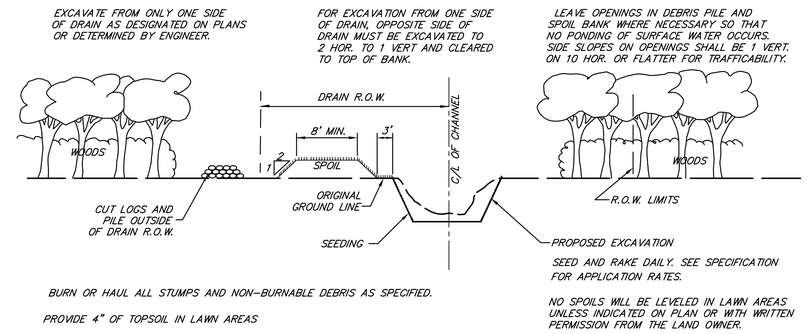


RIPRAP TOE OF SLOPE PROTECTION PLAN VIEW

NOT TO SCALE

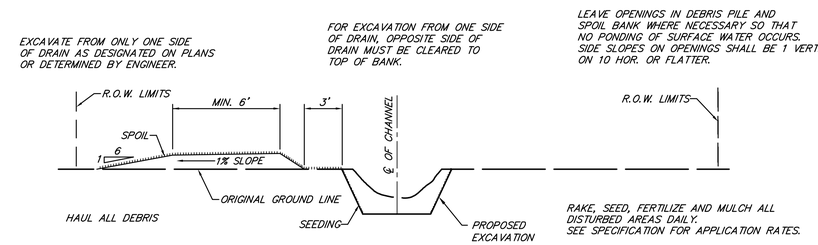


C/8 GRASS SPILLWAY CROSS SECTION



SPOIL LEVELING DETAIL "B"

NOT TO SCALE



SPOIL LEVELING DETAIL "C"

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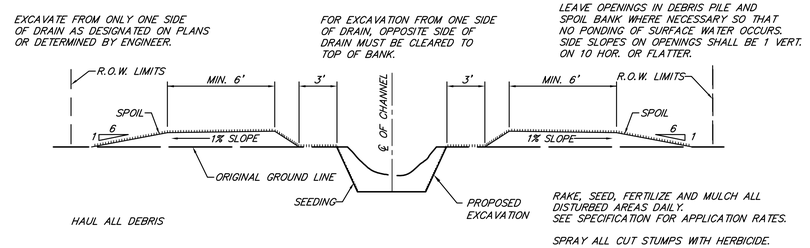

SPOIL LEVELING DETAIL "D"

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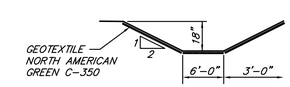
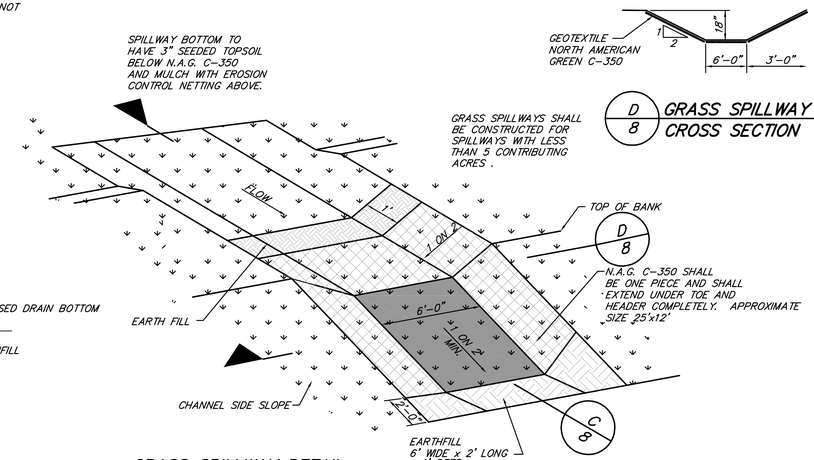


D/8 GRASS SPILLWAY CROSS SECTION



GRASS SPILLWAY DETAIL

NOT TO SCALE

BY	MARK	REVISIONS	DATE

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O'GRADY DRAIN
SAGINAW COUNTY, MICHIGAN

MISCELLANEOUS DETAILS

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DE. BY: POC CH. BY: NDC
DR. BY: POC APP. BY: RBH
PROJECT NO. 123475SG2016
STDS.
SHEET 7 OF 7
DATE SEPTEMBER, 2016
SCALE NOT TO SCALE
FILE NO. DR-3170-07
DIV 1/2

ACAD FILE: G:\Proj2016\123475SG2016 - O'Grady Drain\dwg_C3D2015\DR-3170-07_Details_C3D2015.dwg
PLOTTING SCALE:
RET: F.B. PG.