

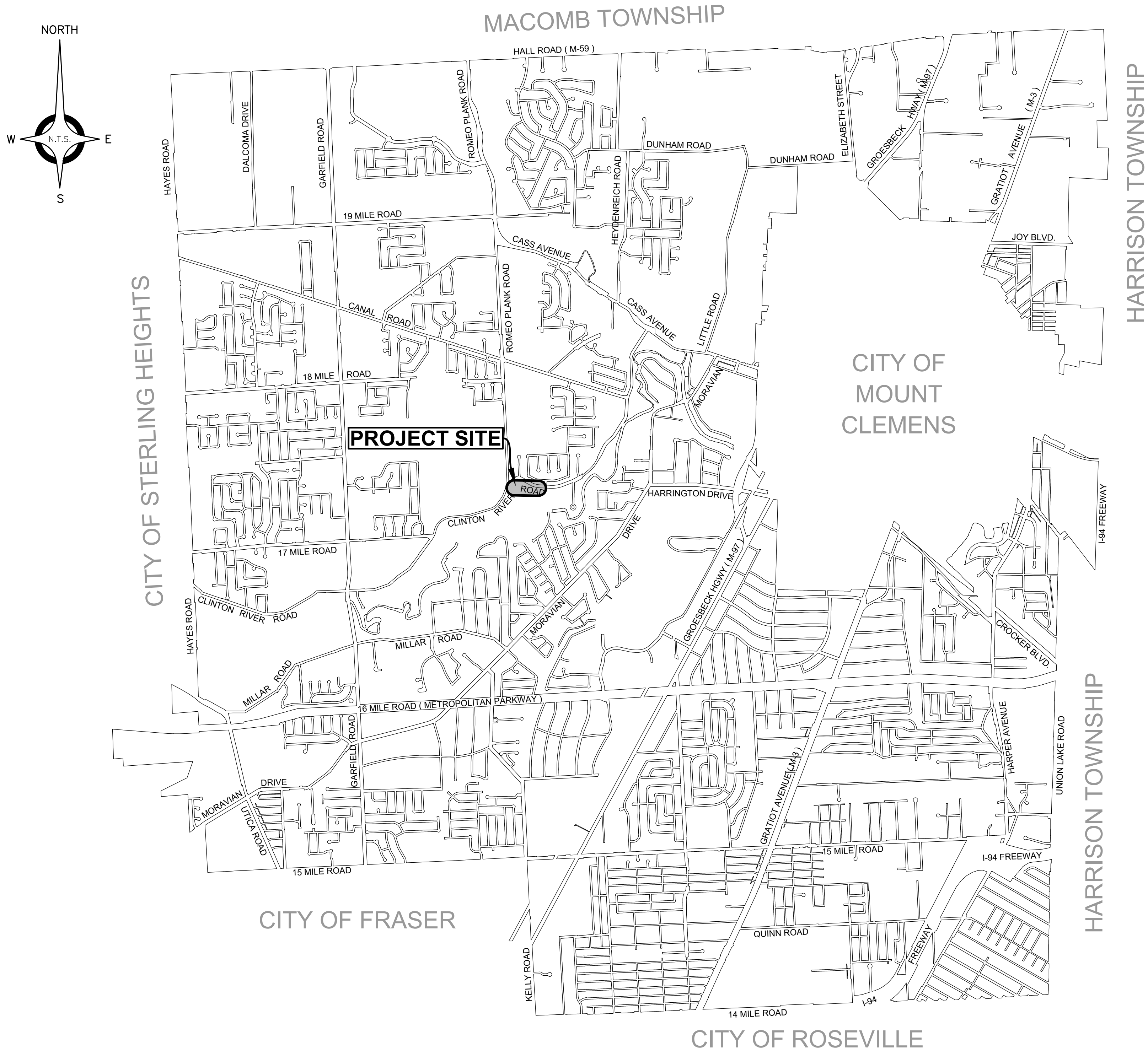


Charter Township of Clinton

Macomb County, Michigan



Budd Park Universally Accessible Kayak Launch and Site Improvements



INDEX TO SHEETS

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MACOMB COUNTY DEPARTMENT OF ROADS DETAIL SHEETS (2 PAGES)	

DESIGN & CONSTRUCTION STANDARD

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE CITY OF EASTPOINTE STANDARD WATER MAIN SPECIFICATIONS UNLESS MODIFIED BY A SPECIAL PROVISION.

ALL TRAFFIC CONTROL DEVICES SUCH AS LIGHTED ARROW BOARDS, PLASTIC DRUMS, BARRICADES, TEMPORARY SIGNAGE, AND LANE CLOSURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND THE SUPPLEMENTARY MAINTAINING TRAFFIC SPECIAL PROVISION.

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE INSTALLATION OF AN ACCESSIBLE KAYAK LAUNCH AND SITE IMPROVEMENTS SUCH AS CONCRETE SIDEWALK INSTALLATION, RECONDITIONING OF THE EXISTING GRAVEL SURFACE, ADDITIONAL PARKING AREA, AND MISCELLANEOUS ITEMS OF WORK.

"I HEREBY CERTIFY THESE PLANS HAVE BEEN PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH ACT 240, PUBLIC ACTS OF 1937 AS AMENDED- STATE OF MICHIGAN."

SCOTT J. CHABOT, P.E. No. 6201053119 DATE



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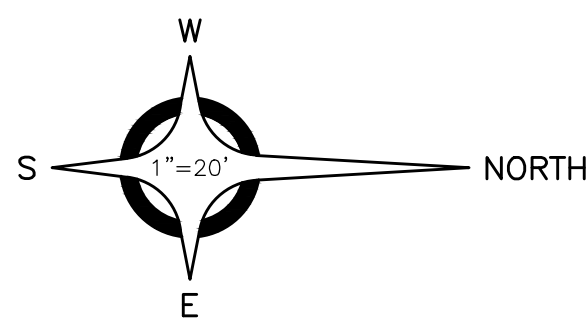
BENCH MARK NO. 3119
MAG NAIL IN NORTH FACE OF
WOOD POLE EAST QUAD.
BUDD PARK ENTRANCE.
ELEVATION: 598.06

BENCH MARK NO.3120
T/ NAIL WEST FACE OF WOOD
POWER POLE EAST SIDE
BUDD PARK DRIVE.
ELEVATION: 586.26

BENCH MARK NO.3121
T/NAIL NORTHEAST FACE OF
WOOD LIGHT POLE NORTH
SIDE ISLAND OF BUDD PARK
DRIVE CIRCLE.
ELEVATION: 585.95

BUDD PARK

19000 CLINTON RIVER RD. CLINTON TWP., MI 48038



LOCATION MAP
NOT TO SCALE

LEGEND

- | | |
|---------|--|
| ===== | CENTERLINE SWALE |
| + 000.0 | SPOT ELEVATION ("+" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED) |
| + | SIGN |
| ++ | SIGN DOUBLE |
| < | GUY WIRE |
| ● | POWER POLE |
| ✱ | LIGHT POLE |
| ⊖ | SANITARY MANHOLE |
| ----- | STORM SEWER |
| + | WATER FAUCET |
| ----- | OVHD. UTIL. |
| P | UTILITY MARKER |

811 Know what's below. Call 811 72 hours before you dig.

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PROJECT NO. _____

0242-0326

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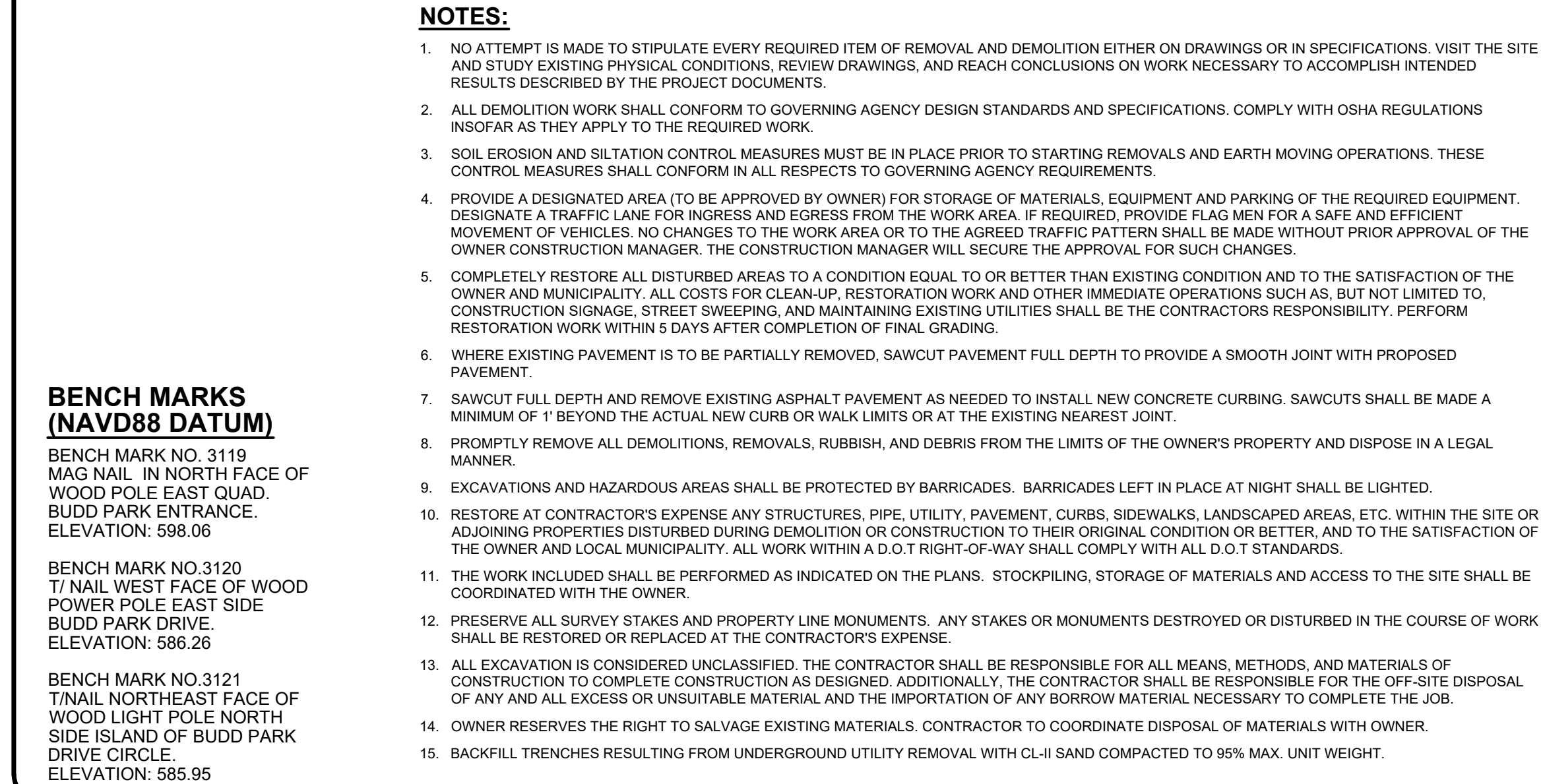
SHEET NO.

2



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CLEAR AND GRUB. EXCAVATE
EARTH AS NECESSARY FOR
PROPOSED 10 INCH
AGGREGATE SECTION TO BE
PAID AS PART OF "SITE
EARTHWORK" PAY ITEM (TYP.

— MISCELLANEOUS EARTHWORK,
CLEARING AND GRUBBING
TO BE PAID AS PART OF
"EARTHWORK, SITE" PAY ITEM (TYP.

REMOVE EX. WOODEN
POSTS (TYP)

REMOVE EX.
GUARDRAIL (TYP)

RECONDITION EXISTING
GRAVEL (TYP.)

- RECONDITION EXISTING
GRAVEL (TYP.)

REMOVE EX. TREES (TYP)

Sewer, Rem, 24 inch to 48 inch - 15 Ft

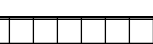
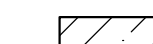
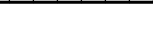
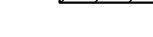





**MISCELLANEOUS EARTHWORK, DREDGING,
CLEARING AND GRUBBING
TO BE PAID AS PART OF "EARTHWORK, SITE
PAY ITEM (TYP.)**

CLINTON RIVER


ESTIMATED QUANTITIES (THIS SHEET)

1. Guardrail, Rem	170	Ft
2. Tree, Rem, 6 inch to 18 inch	3	Ea
3. Tree, Rem, 19 inch to 36 inch	1	Ea
4. Sewer, Rem, 24 inch to 48 inch	15	Ft
5. Aggregate Base, Conditioning	1,200	Syd
6. Existing Wood Post, Rem	74	Ea
7. Pavt, Rem, Modified	50	Syd

REMOVAL LEGEND

	MISCELLANEOUS EARTHWORK, CLEARING AND GRUBBING	
	CONDITION EXIST. GRAVEL	
	REMOVE EXIST. GUARD RAIL	
	REMOVE EX. STM. SEWER	
	REMOVE EXIST. WOOD POSTS	
	REMOVE EXIST. TREE	
	EARTH EXCAVATION, TREE AND SHRUB CLEARING	

LEGEND

— — — — —	CENTERLINE SWALE
	SPOT ELEVATION ("+" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED)
+	SIGN
±	SIGN DOUBLE
<	GUY WIRE
●	POWER POLE
★	LIGHT POLE
⊖	SANITARY MANHOLE
=====	STORM SEWER
⦿	WATER FAUCET
— — — — —	OVHD. UTIL.
⤵	UTILITY MARKER

10/30/2024	Additional Topographical Survey
DATE	SUBMITTALS/REVISIONS

PROJECT NAME:

CLINTON RIVER WATER TRAIL IMPROVEMENTS BUDD PARK

SHEET TITLE

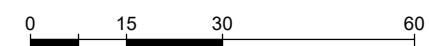
REMOVAL PLAN

CLIENT

CHARTER TOWNSHIP OF CLINTON

<input checked="" type="checkbox"/> PRELIMINARY	<input checked="" type="checkbox"/> CONSTRUCTION	<input type="checkbox"/> RECORD
DRAWN BY: SAK	CHECKED BY: SJC	DATE: JANUARY 2025

SCAL

 $1^\circ = 30'$ 

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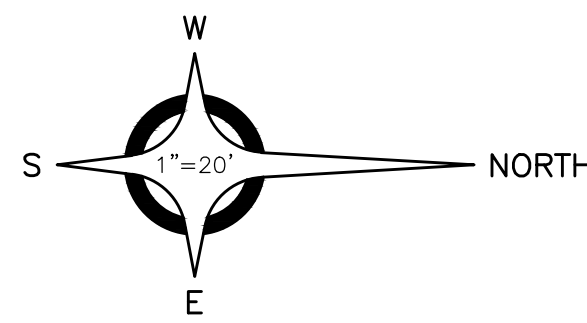
PROJECT NO.

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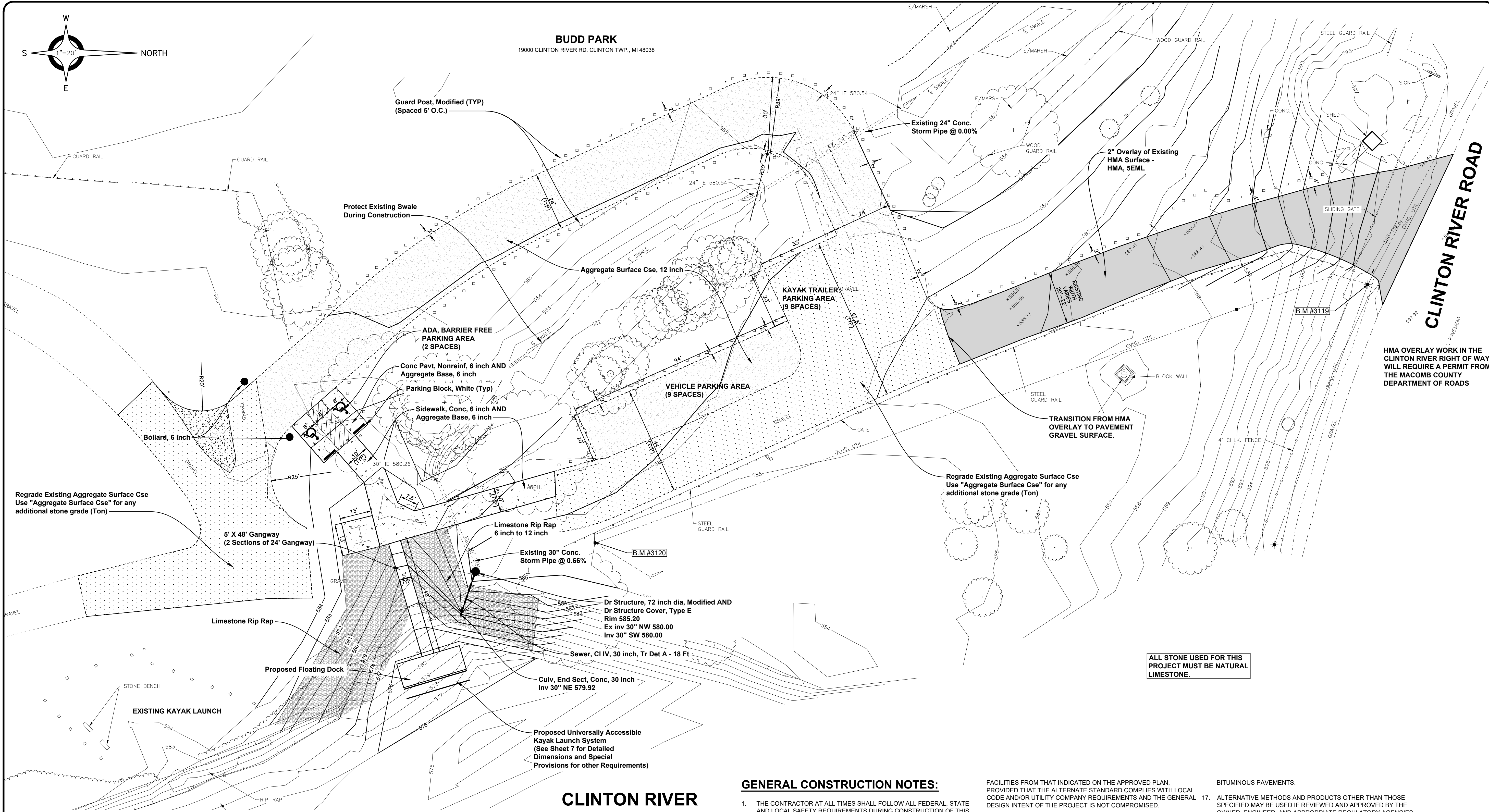
SHEET NO.

3



BUDD PARK

19000 CLINTON RIVER RD. CLINTON TWP., MI 48038



PAVING LEGEND

	2-INCH HMA OVERLAY
	CONCRETE SIDEWALK & MISC. CONCRETE PAVEMENT
	RECONDITIONED GRAVEL BASE WITH AGGREGATE SURFACE COURSE
	AGGREGATE SURFACE COURSE, 10 INCH
	LIMESTONE RIPRAP (6" TO 12")

ESTIMATED QUANTITIES (THIS SHEET)

1. Aggregate Base, 6 inch	75 Syd
2. Aggregate Surface Cse, 10 inch	1,150 Syd
3. Aggregate Surface Cse	200 Ton
4. HMA, 5EML	75 Ton
5. Dr Structure, 72 inch dia, Modified	1 Ea
6. Dr Structure, Type E	1 Ea
7. Sewer, CI IV, 30 inch, Tr Det A	18 Ft
8. Culv, End Sect, Conc, 30 inch	1 Ea
9. Sidewalk, Conc, 6 inch	1,150 Sft
10. Conc Pavt, Nonreinf, 4 inch	20 Syd
11. Conc Pavt, Nonreinf, 6 inch	55 Syd
12. RipRap, 6 inch to 12 inch Limestone	352 Syd
13. Wood Guard Post, 4 inch by 4 inch	198 Ea
14. Bollard, 6 inch	2 Ea
15. Parking Block, White	2 Ea
16. Hand Patching	5 Ton

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 3119
MAG NAIL IN NORTH FACE OF
WOOD POLE EAST QUAD.
BUDD PARK ENTRANCE.
ELEVATION: 598.06

BENCH MARK NO. 3120
1/4" NAIL WEST FACE OF WOOD
POWER POLE EAST SIDE
BUDD PARK DRIVE.
ELEVATION: 586.26

BENCH MARK NO. 3121
1/4" NAIL NORTHEAST FACE OF
WOOD LIGHT POLE NORTH
SIDE ISLAND OF BUDD PARK
DRIVE CIRCLE.
ELEVATION: 585.95

GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR AT ALL TIMES SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS DURING CONSTRUCTION OF THIS PROJECT. SPECIAL CARE SHALL BE TAKEN DURING ALL TRENCHING OPERATIONS. SHEETING AND BRACING, CRIBBING, ETC., MUST BE INSTALLED AS REQUIRED TO PROVIDE MAXIMUM SAFETY TO THE CONTRACTOR'S WORKERS IN FULL COMPLIANCE WITH OSHA REGULATIONS.
- ALL CONSTRUCTION SHALL BE CONDUCTED SUCH THAT THERE WILL BE MINIMAL INTERFERENCE WITH STREETS, DRIVES OR WALKS. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF TRAFFIC. DO NOT CLOSE OR OBSTRUCT STREETS, DRIVES OR WALKS OR USER FACILITIES WITHOUT PERMISSION FROM THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL KEEP EXISTING STREETS, ROADS AND DRIVES CLEAR OF DIRT, DEBRIS AND EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND FOR DEWATERING TO ACCOMPLISH ALL WORK INDICATED ON PLANS AND TO PERFORM REQUIRED COMPACTION OPERATIONS.
- REVIEW CONSTRUCTION AND PROVIDE TRAFFIC SEQUENCE AND SCHEDULE AT THE PRECONSTRUCTION MEETING WITH OWNER.
- THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO CONSTRUCTION. ANY CONFLICT BETWEEN DRAWINGS AND THE SPECIFICATIONS SHALL BE CONFIRMED WITH THE ENGINEER PRIOR TO BIDDING.
- THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS.
- THE OWNER AT ITS DISCRETION RESERVES THE RIGHT TO MODIFY THE DETAILS AND STANDARDS OF CONSTRUCTION FOR ALL PRIVATE

FACILITIES FROM THAT INDICATED ON THE APPROVED PLAN, PROVIDED THAT THE ALTERNATE STANDARD COMPLIES WITH LOCAL CODE AND/OR UTILITY COMPANY REQUIREMENTS AND THE GENERAL DESIGN INTENT OF THE PROJECT IS NOT COMPROMISED.

CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE STATE DOT, LOCAL MUNICIPALITY, COUNTY, OR OTHER GOVERNING AUTHORITY IS RECEIVED.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER SHOULD ANY DISCREPANCY REGARDING THE PROPOSED WORK OR UNFORESEEN CONDITIONS ARISE PRIOR TO PROCEEDING FURTHER WITH THE AFFECTED WORK.

ALL PAVING AND AGGREGATE MATERIALS AND WORK COMPLETED SHALL BE IN STRICT ACCORDANCE WITH THE STATE DOT SPECIFICATIONS AND STANDARD DETAILS UNLESS OTHERWISE SPECIFIED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS FOR BUILDING, WALLS, CONCRETE SLABS, AND UTILITY SERVICE POINT CONNECTIONS AND NOTIFYING THE OWNER AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS TO THE OWNER AND LOCAL UTILITY COMPANIES AS REQUIRED FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 7 DAYS FOR REVIEW.

TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB.

THE CONTRACTOR SHALL REMOVE CONFLICTING PAVEMENT MARKINGS IN A METHOD APPROVED BY THE STATE DOT.

AGGREGATES AND BITUMINOUS PAVEMENT MATERIAL AND INSTALLATION SPECIFICATIONS SHALL BE IN ACCORDANCE WITH STATE DOT SPECS. THE CONTRACTOR SHALL SUBMIT AGGREGATE SIEVE ANALYSIS AND A JOB-MIX FORMULA FOR THE BITUMINOUS PAVEMENT TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL AT LEAST 14 DAYS PRIOR TO THE PLACEMENT OF

BITUMINOUS PAVEMENTS.

ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.

CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ENGINEER FOR ALL CONSTRUCTION LAYOUTS AND SURVEYS REQUIRED TO PERFORM CONSTRUCTION. CADD FILE INFORMATION IS PROVIDED FOR REFERENCE ONLY.

PROVIDE ADEQUATE BARRICADES AT DRIVES, ENTRANCES, EXCAVATIONS AND OTHER OPENINGS TO KEEP OUT UNAUTHORIZED PERSONS AND FOR PUBLIC SAFETY AND TRAFFIC CONTROL. SAFETY PROVISIONS OF APPLICABLE LAWS SHALL BE OBSERVED AT ALL TIMES. BARRICADES LEFT IN PLACE AT NIGHT SHALL BE LIGHTED.

NO EQUIPMENT OR MATERIAL STORAGE IS PERMITTED WITHIN THE ROAD RIGHT-OF-WAY.

CONTRACTOR'S MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREA SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATION AND WRITTEN APPROVAL OF APPROPRIATE GOVERNING AGENCIES.

CONSTRUCTION SHALL BE IN ACCORDANCE WITH A.D.A. REGULATIONS AS APPLICABLE.

HMA OVERLAY WORK IN THE CLINTON RIVER RIGHT OF WAY WILL REQUIRE A PERMIT FROM THE MACOMB COUNTY DEPARTMENT OF ROADS



ANDERSON, ECKSTEIN & WESTRICK, INC.
CIVIL ENGINEERS - SURVEYORS - ARCHITECTS

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Engineering Strong Communities

DATE SUBMITTALS/REVISIONS

PROJECT NAME:

CLINTON RIVER WATER TRAIL IMPROVEMENTS BUDD PARK

SHEET TITLE:

CONSTRUCTION PLAN

CLIENT:

CHARTER TOWNSHIP OF CLINTON

<input checked="" type="checkbox"/> PRELIMINARY	<input checked="" type="checkbox"/> CONSTRUCTION	<input type="checkbox"/> RECORD
DRAWN BY: SAK	CHECKED BY: SJC	DATE: JANUARY 2025
SCALE: 1" = 20'		
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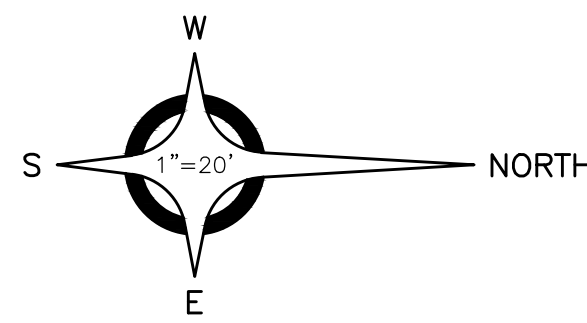
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PROJECT NO.

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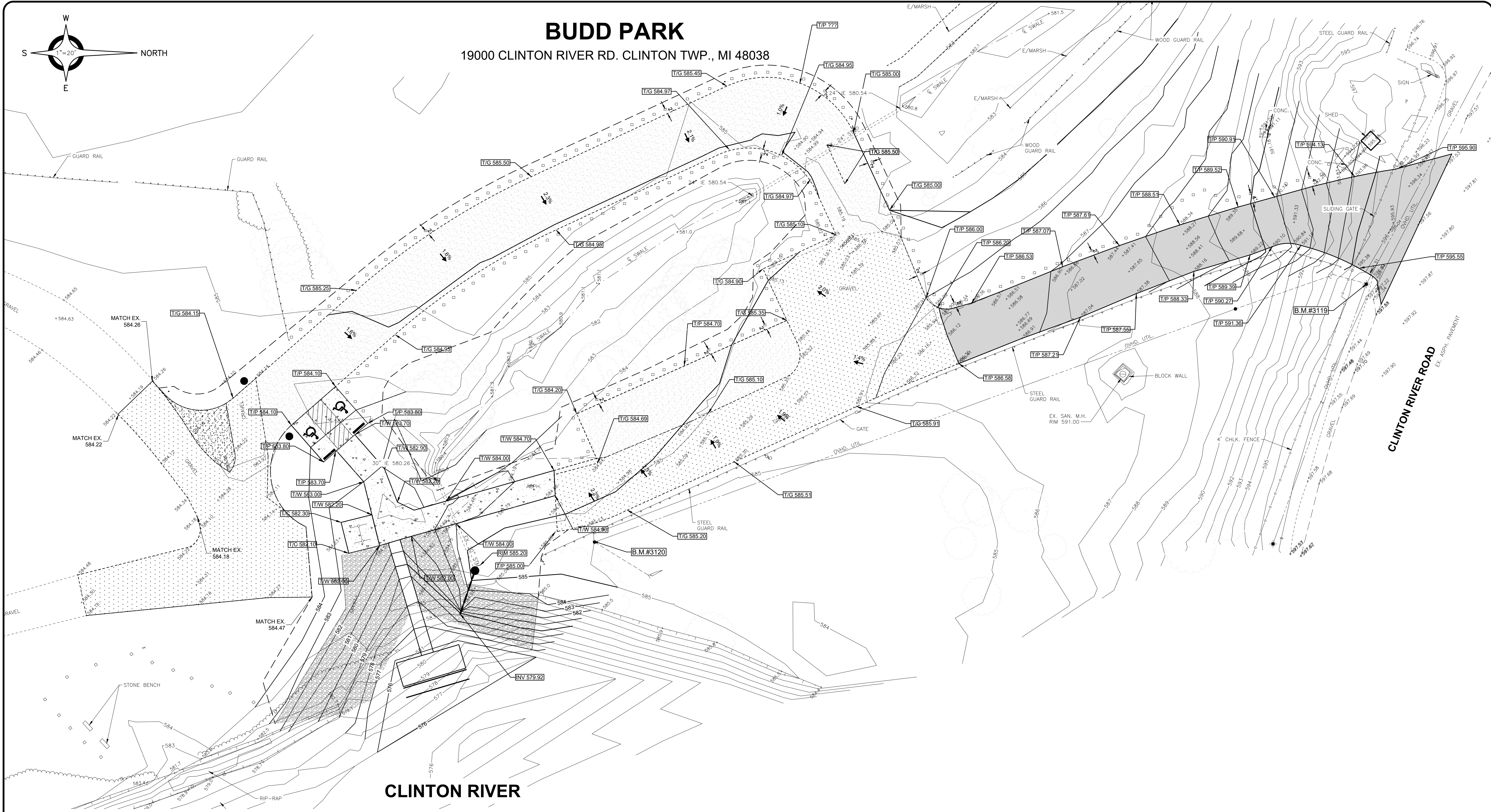
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SHEET NO.



BUDD PARK

19000 CLINTON RIVER RD. CLINTON TWP., MI 48038



BENCH MARKS (NAVD88 DATUM)

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SIDE ISLAND OF BUDD PARK
DRIVE CIRCLE.
ELEVATION: 585.95

GRADING LEGEND

- T/P 500.00 PROPOSED HMA OR CONCRETE PAVEMENT GRADE
- T/G 500.00 PROPOSED GRAVEL PAVEMENT GRADE
- T/W 500.00 PROPOSED TOP OF CONCRETE WALK GRADE
- FLOW ARROW
- EXIST. GRADE
- MATCH EXIST. GRADE
- LIMITS OF GRADING (MATCH TO EXISTING)

APPROXIMATE EARTHWORK QUANTITIES

TOTAL CUT = 1,640 CYD

TOTAL FILL = 315 CYD

NET EARTH CHANGE = -1,325 CYD

ALL EXCESS SPOILS MUST BE HAULED
OFF-SITE IN ACCORDANCE WITH THE
EARTHWORK, SITE SPECIAL PROVISION



ANDERSON, ECKSTEIN & WESTRICK, INC.
CIVIL ENGINEERS - SURVEYORS - ARCHITECTS

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Engineering Strong Communities

DATE	SUBMITTALS/REVISIONS



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72 hours before you dig.

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PROJECT NO.

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SHEET NO.

5



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Engineering Strong Communities



**MADE IN
USA**

Budd Park		EZ Dock of Mid America	
Prepared For: Water's Edge Dock & Hoist		3253 W. 1000 N. Fortville, IN 46040	
Drawing Number: EZ042725BUDDPARK			
Drawn By: RKU	Date: 4/27/2025	PHONE NO: (317) 747-4934 EMAIL: sales@deatonsdocks.com WEBSITE: deatonsdocks.com	

Wood Guard Post, 4 inch by 4 inch

LOW WATER DEPTH = 577.00- DECK HEIGHT = 578.00
2024 WATER DEPTH = 579.00 - DECK HEIGHT = 580.00
HIGH WATER DEPTH = 582.00 - DECK HEIGHT = 583.00

2'x10' CONCR
ELEV. 582.00
CONC. PATH

WATER ELEV. 579.00

2'L X 10'W X 4'D FROST FOOTING

GANGWAY DETAIL
NOT TO SCALE

NOT TO SCALE

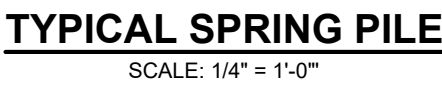
- 5'x48' LONG DR1 ALUMINUM GANGWAY
W/SLIP RESISTANT FLOW THRU
DECKING AND ADA COMPLIANT RAIL
SYSTEM BY GATOR DOCK OR
APPROVED EQUAL.

TRANSITION PLATE

FLOATING DOCK SYSTEM
W / ADA COMPLIANT RAIL
SYSTEM BY EZ DOCK
OR APPROVED EQUAL

ROLLER CONNECTION

Kayak Launch Rendering



SCALE: 1/4" = 1'-0"

CLIENT: CHARTER TOWNSHIP OF CLINTON

<input checked="" type="checkbox"/> PRELIMINARY	<input checked="" type="checkbox"/> CONSTRUCTION	<input type="checkbox"/> RECORD
DRAWN BY:	CHECKED BY:	DATE:
SAK	SJC	JANUARY 2025
SCALE:		
<p>1" = 30'</p>		



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PROJECT NO.

0242-0326

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07 DETAILS--5/9/2025 3:00:29 PM

SHEET NO.

6

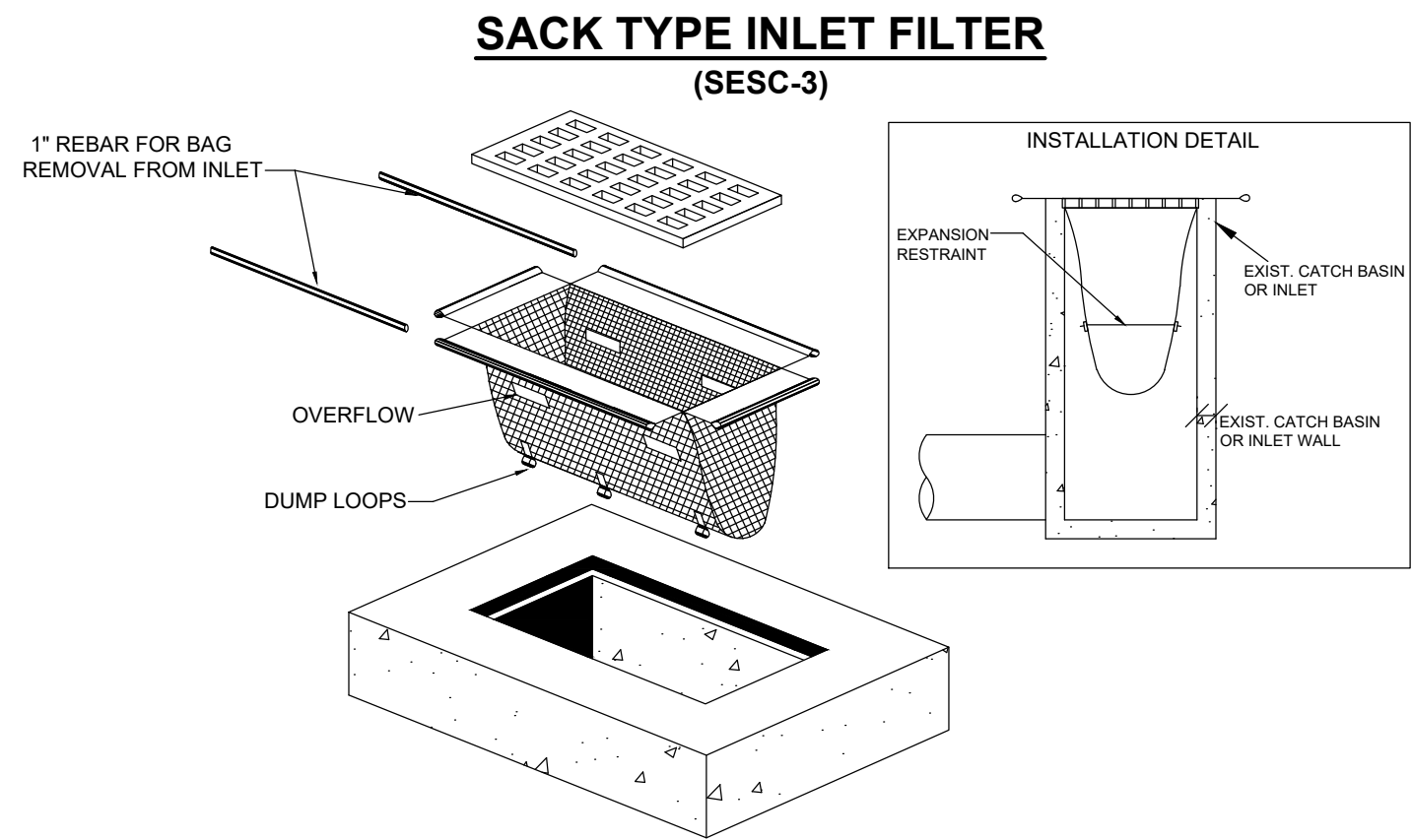
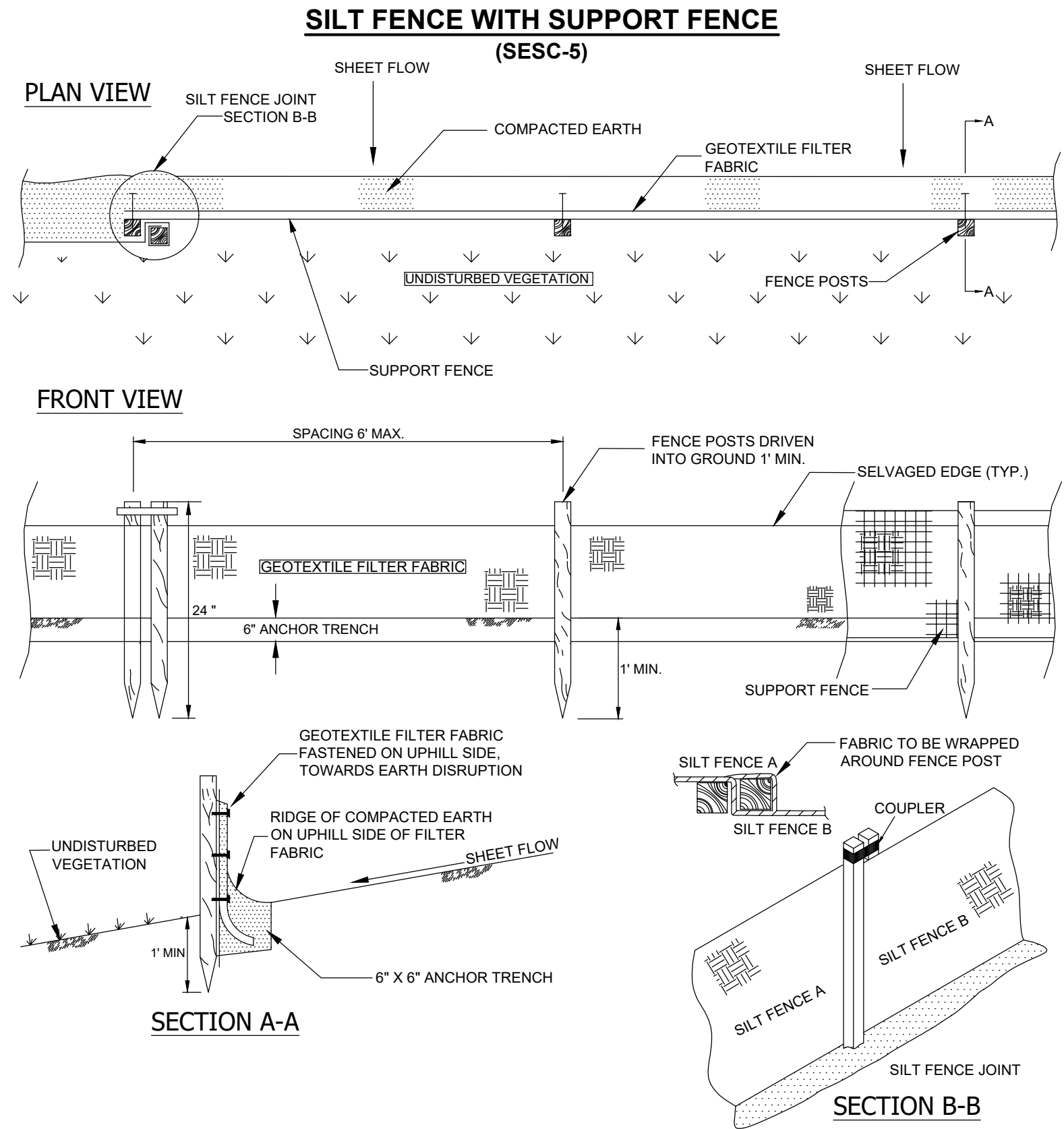
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ANDERSON, ECKSTEIN & WESTRICK, INC.
CIVIL ENGINEERS - SURVEYORS - ARCHITECTS

51301 Schoenherr Road
Shelby Township, MI 48315
586.726.1234 | aewinc.com

Engineering Strong Communities



MAINTENANCE NOTES

- THE CONTRACTOR SHALL INSTRUCT ALL TRUCK DRIVERS TO CLEAN SOIL MATERIALS FROM TIRES PRIOR TO ENTERING UPON EXIST. ROADS.
- THE CONTRACTOR SHALL SCRAPE AS NEEDED AND SWEEP ALL TRUCK ROUTES ON A WEEKLY BASIS.
- TEMPORARY ACCESS ROADS SHALL BE MAINTAINED WEEKLY.
- THE DESIGNATED RESPONSIBLE PARTY FOR INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL DEVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- SILT FENCE SHALL BE CLEANED WHEN 2/3 FULL OR REPAIRED AS REQUIRED.
- SILT SCREENS SHALL BE CLEANED OR REPAIRED AS REQUIRED.
- THE CONTRACTOR SHALL SWEEP THE ROADS WITHIN THE DEVELOPMENT AS REQUIRED.
- DUST CONTROL TO BE MAINTAINED WITH A WATER TRUCK OR AN APPROVED METHOD ON AS NEEDED BASIS.
- CONTRACTOR TO KEEP EXPOSED GROUND TO A MINIMUM

SEQUENCE OF EVENTS			
	SEPT	OCT	NOV
NOTICE TO PROCEED	X		
START DEMO, EARTHWORK & GRADING	X		
SIDEWALK CONSTRUCTION & PAVEMENT WORK	X	X	
INSTALL KAYAK LAUNCH, SITE WORK COMPLETE		X	
SUBSTANTIAL COMPLETION			X

- THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENTATION CONTROL ACT AND THE MACOMB COUNTY SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE.
- ALL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE MACOMB COUNTY PUBLIC WORKS OFFICE.
- EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
- STAGING THE WORK WILL BE DONE BY THE LANDOWNER OR LANDOWNER'S REPRESENTATIVE AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH CHANGE.
- THE LANDOWNER OR LANDOWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.
- THE LANDOWNER OR LANDOWNER'S REPRESENTATIVE SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS BEFORE AND AT ALL TIMES DURING CONSTRUCTION ON THIS PROJECT. ANY MODIFICATIONS OR ADDITIONS TO SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE COMPLIED WITH AS REQUIRED OR DIRECTED BY THE MACOMB COUNTY PUBLIC WORKS OFFICE.
- IF ANY OF THE SESC MEASURES ON THE SITE ARE DEEMED INADEQUATE OR INEFFECTIVE, THE MACOMB COUNTY PUBLIC WORKS OFFICE SESC DIVISION HAS THE RIGHT TO REQUIRE ADDITIONAL SESC MEASURES AT THE EXPENSE OF THE LANDOWNER.
- INSTALL CRUSHED CONCRETE ACCESS DRIVE PLACED ON GEOTEXTILE FABRIC AS INDICATED ON THE PLAN. THE ACCESS DRIVE MUST BE A MINIMUM OF 30' X 50' X 6".
 - NEW LAYERS OF CRUSHED CONCRETE WILL BE ADDED AS OLD LAYERS BECOME COMPACTED.
- INSTALL SILT FENCE AS INDICATED ON THE PLAN AND AT ADDITIONAL AREAS AS NECESSARY.
 - SILT FENCE SHALL BE INSTALLED PER DETAIL.
 - BUILD UP OF SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE.
 - IF SILT FENCE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE SILT FENCE SHALL BE REPLACED PROMPTLY.
- SILT FENCE SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT. REQUIRED MAINTENANCE SHALL BE PROVIDED PROMPTLY.
- INSTALL INLET FILTER ON ALL PAVEMENT CATCH BASINS PER DETAIL.
 - INLET FILTERS SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF A RAINFALL, AND DAILY DURING A PROLONGED RAIN EVENT.
 - BUILDUP OF SEDIMENT AND DEBRIS SHALL BE REMOVED PROMPTLY.
 - IF FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.
- INSTALL DRAIN GUARD ON ALL YARD CATCH BASINS PER DETAIL. SEED OR SOD THE AREA BETWEEN THE SILT FENCE AND THE INLET.
 - DRAIN GUARDS SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT.
 - BUILD UP OF SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE.
 - IF FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE SILT FENCE SHALL BE REPLACED PROMPTLY.
- INLET SEDIMENT TRAPS AND ALL DITCH SEDIMENT TRAPS SHALL BE INSPECTED DAILY. THE SEDIMENT PITS SHALL BE CLEANED OUT WHEN HALF FULL, OR AS DIRECTED BY THE MACOMB COUNTY PUBLIC WORKS OFFICE.
- ALL STOCKPILED SOILS SHALL BE MAINTAINED IN SUCH A WAY AS TO PREVENT EROSION FROM LEAVING THE SITE. IF THE STOCKPILE WILL BE ON SITE FOR MORE THAN 30 DAYS, THE STOCKPILE MUST BE SEEDED. SILT FENCE MUST BE INSTALLED AROUND THE PERIMETER OF THE STOCKPILE.
- IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW, SPREAD UNIFORMLY AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE OR 100 POUNDS (2-3 BALES) PER 1000 SQUARE FEET. THIS MULCH SHOULD BE ANCHORED WITH DISC TYPE MULCH ANCHORING TOOL OR OTHER MEANS AS APPROVED BY THE MACOMB COUNTY PUBLIC WORKS OFFICE. MULCH MATTING MAY BE USED IN LIEU OF LOOSE MULCH.
- IF ANY DEWATERING IS NEEDED, IT SHALL BE DISCHARGED THROUGH A FILTER BAG OVER A WELL VEGETATED AREA. THE PUMP MUST DISCHARGE AT A NON-EROSIVE VELOCITY. IF NECESSARY, AN APPROVED ENERGY DISSIPATER MAY BE USED.
- ALL DIRT TRACKED ONTO ANY ROADWAY SHALL BE REMOVED IMMEDIATELY.
- STREETS AND OR PARKING AREAS WILL BE SCRAPED ON A DAILY BASIS AND SWEEPED AT A MINIMUM OF ONCE PER WEEK BY THE LANDOWNER OR LANDOWNER'S REPRESENTATIVE.
- DURING DRY PERIODS, ALL DISTURBED AREAS SHALL BE WATERED FOR DUST CONTROL.
- PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGES ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. ALL TEMPORARY SOIL EROSION CONTROL SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
- FINAL GRADE, ESTABLISH VEGETATION, AND OR LANDSCAPE ALL DISTURBED AREAS NOT BUILT OR PAVED UPON.
- REMOVE ALL TEMPORARY SOIL EROSION DEVICES AFTER PERMANENT STABILIZATION IS ESTABLISHED.

NAME OF & DISTANCE TO NEAREST WATERCOURSE:

CLINTON RIVER ON SITE

NAME(S) & PHONE NUMBER(S) FOR PERSON(S) RESPONSIBLE FOR THE MAINTENANCE OF ALL TEMPORARY & PERMANENT SOIL EROSION CONTROL MEASURES:

CONTACT NAME & NUMBER

APPROXIMATE START DATE _____

APPROXIMATE COMPLETION DATE _____

TOTAL ACRES DISTURBED = 3.02 ACRES

I UNDERSTAND MY RESPONSIBILITY OUTLINED UNDER THESE GUIDELINES.

LANDOWNER'S SIGNATURE _____ DATE _____

FAILURE TO COMPLY WITH THE SESC PLAN AND THESE GUIDELINES MAY RESULT IN ENFORCEMENT ACTION AGAINST THE LANDOWNER.

CLINTON RIVER WATER TRAIL IMPROVEMENTS BUDD PARK

SHEET TITLE:

SOIL EROSION CONTROL DETAILS AND NOTES

CLIENT:

CHARTER TOWNSHIP OF CLINTON

PRELIMINARY	CONSTRUCTION	RECORD
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DRAWN BY:	CHECKED BY:	DATE:
SAK	SJC	JANUARY 2025
SCALE:		
1" = 30'		
0 15 30 60		



Know what's below. Call
72 hours before you dig.

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES, (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

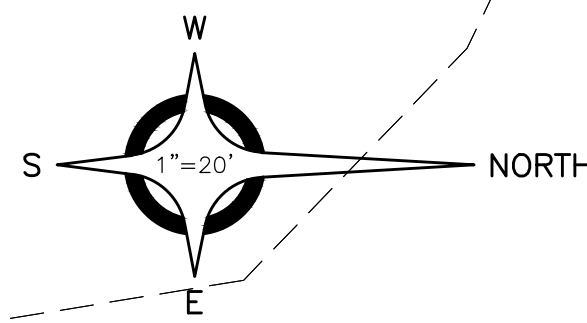
PROJECT NO.

0242-0326

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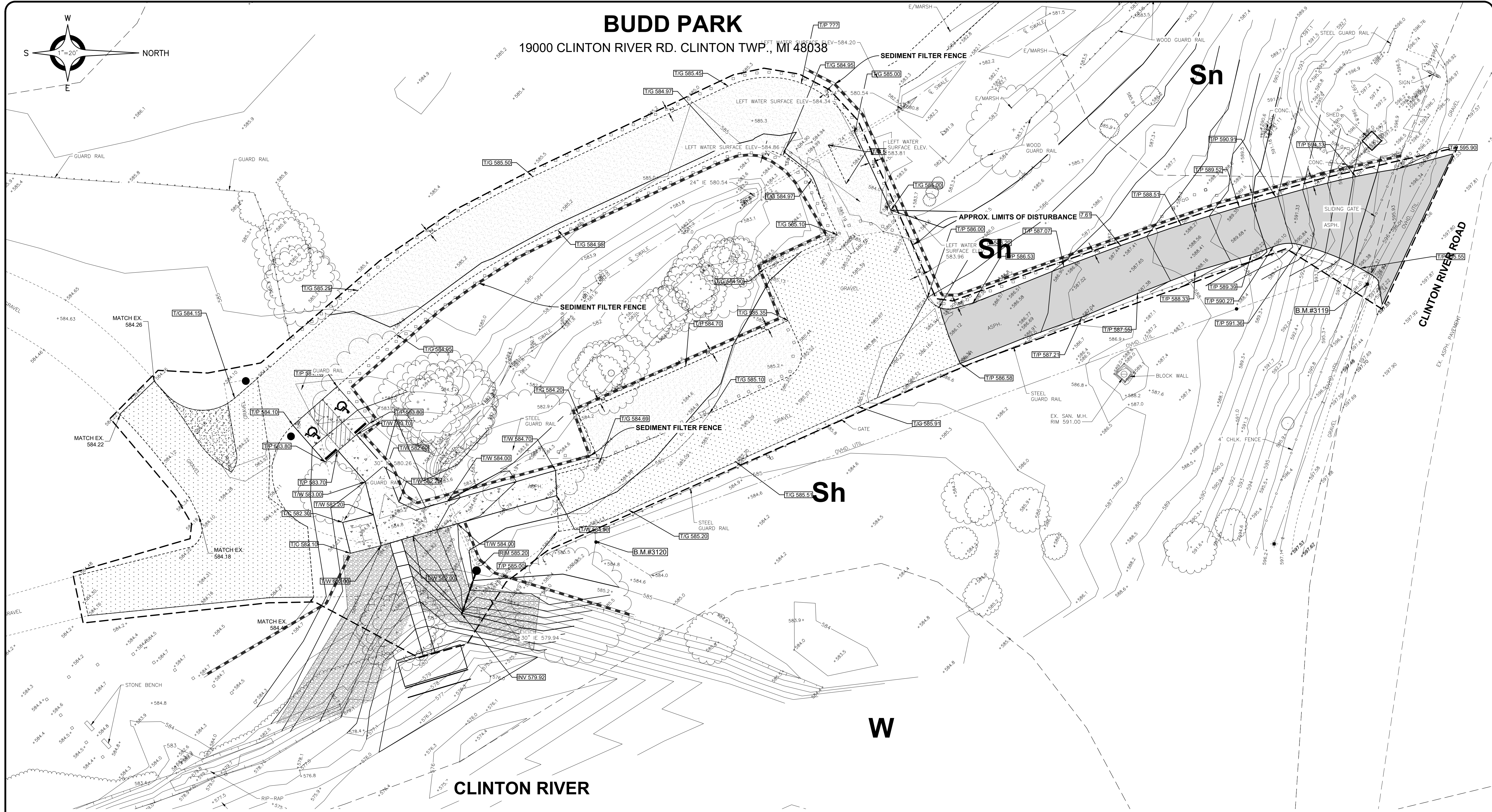
SHEET NO.

7



BUDD PARK

19000 CLINTON RIVER RD. CLINTON TWP., MI 48038



SOILS INFORMATION

AREA OF CONSTRUCTION:
Sh = Shoals loam
Sn = Sloan loam
W = Water

ESTIMATED QUANTITIES (THIS SHEET)

SILT FENCE	1,020 LF
TURF RESTORATION	3,500 Syd

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 3119
MAG NAIL IN NORTH FACE OF
WOOD POLE EAST QUAD.
BUDD PARK ENTRANCE.
ELEVATION: 598.06

BENCH MARK NO. 3120
T/NAIL WEST FACE OF WOOD
POWER POLE EAST SIDE
BUDD PARK DRIVE.
ELEVATION: 586.26

BENCH MARK NO. 3121
T/NAIL NORTHEAST FACE OF
WOOD LIGHT POLE NORTH
SIDE ISLAND OF BUDD PARK
DRIVE CIRCLE.
ELEVATION: 585.95



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Engineering Strong Communities

DATE	SUBMITTALS/REVISIONS
PROJECT NAME:	
CLINTON RIVER WATER TRAIL IMPROVEMENTS BUDD PARK	
SHEET TITLE:	
SOIL EROSION CONTROL PLAN	
CLIENT:	
CHARTER TOWNSHIP OF CLINTON	
PRELIMINARY CONSTRUCTION RECORD	
DRAWN BY:	CHECKED BY:
SAK	SJC
DATE:	JANUARY 2025
SCALE:	
0 15 30 60	

CLINTON RIVER
WATER TRAIL
IMPROVEMENTS
BUDD PARK

SHEET TITLE:

SOIL EROSION
CONTROL PLAN

CLIENT:
CHARTER TOWNSHIP OF CLINTON

PRELIMINARY	CONSTRUCTION	RECORD
DRAWN BY:	CHECKED BY:	DATE:
SAK	SJC	JANUARY 2025
SCALE:		
0 15 30 60		



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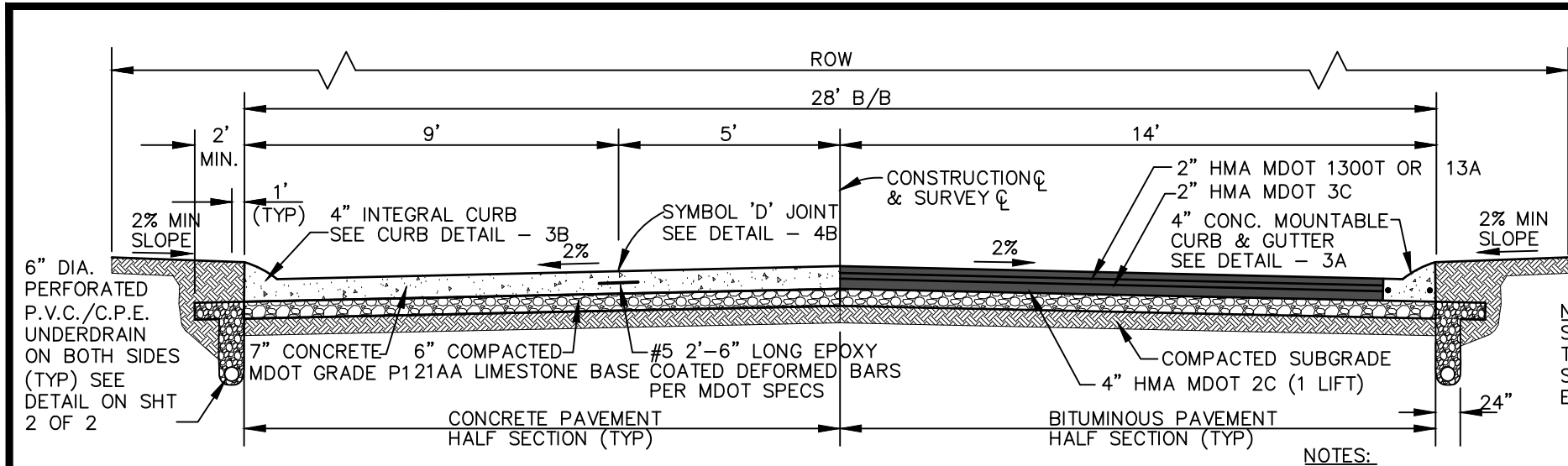
PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF
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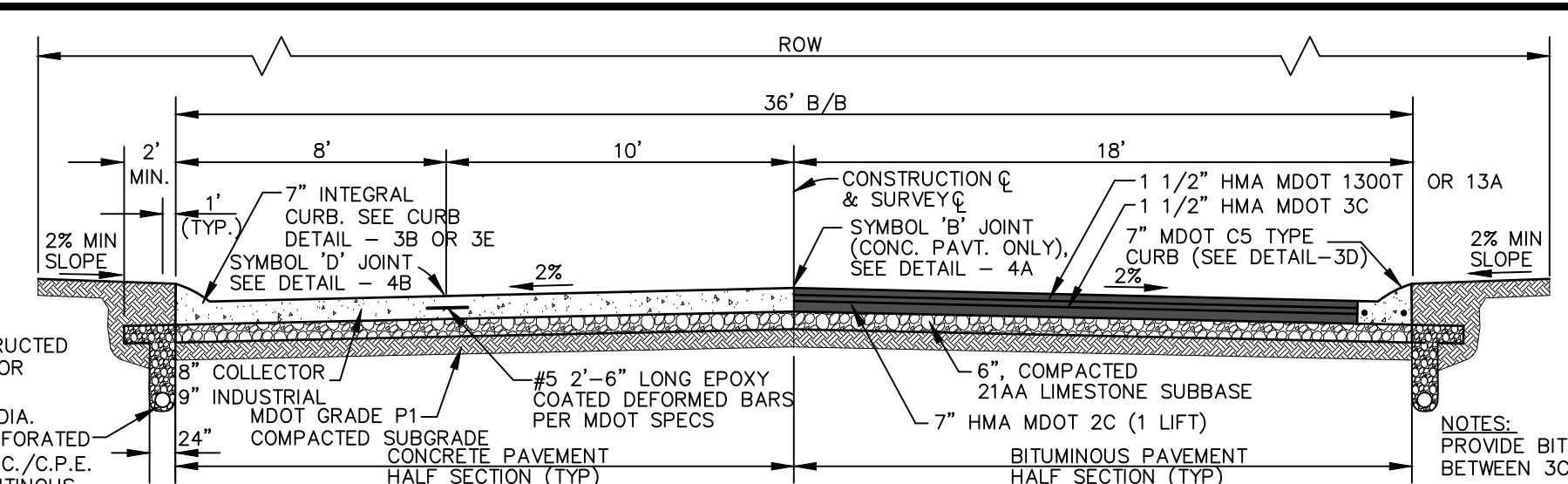
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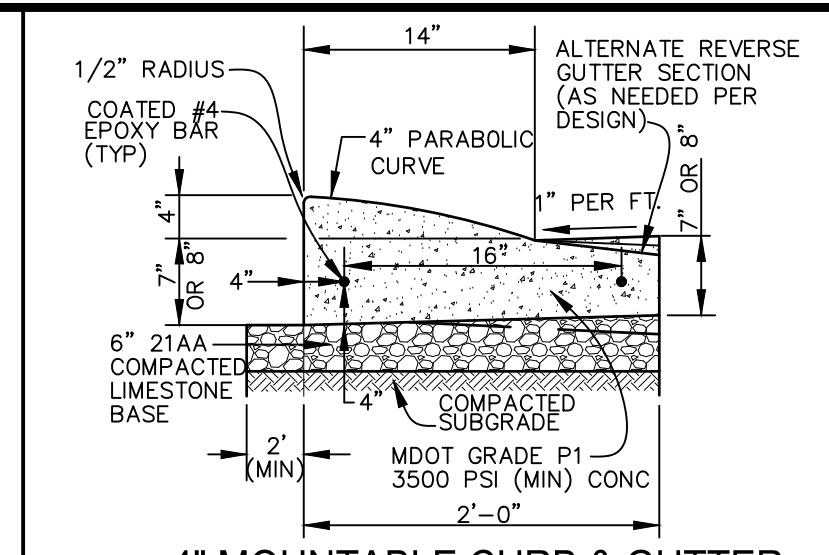
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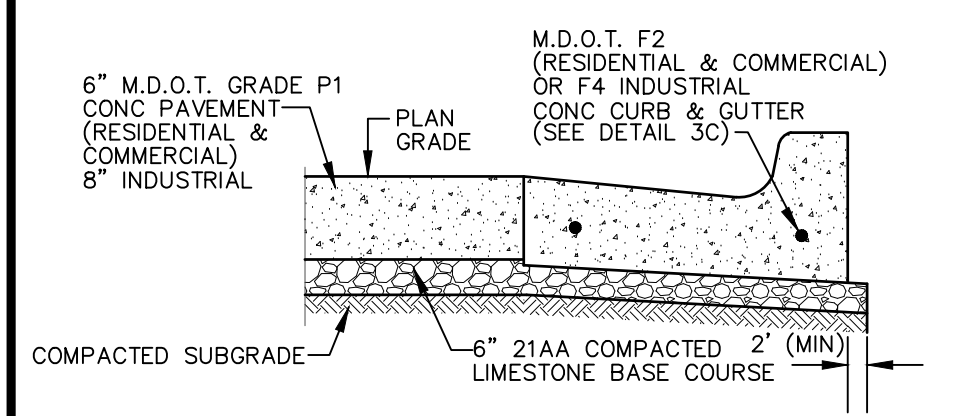
TYPICAL CROSS SECTION DETAIL - 1
PRIVATE RESIDENTIAL
ROAD PAVEMENT (28' B/B)
NOT TO SCALE



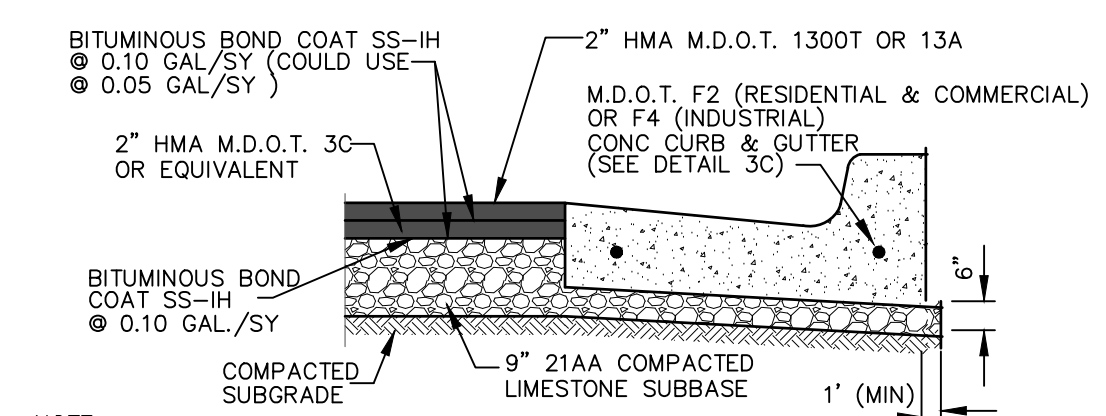
TYPICAL CROSS SECTION DETAIL - 2
COLLECTOR AND INDUSTRIAL ROAD PAVEMENT
(36' B/B)
NOT TO SCALE



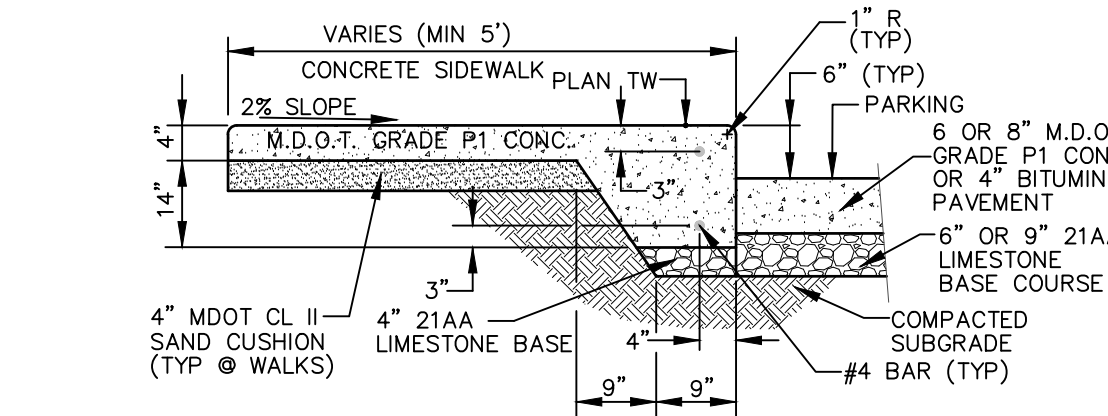
4" MOUNTABLE CURB & GUTTER
DETAIL - 3A
NOT TO SCALE



TYPICAL CONCRETE PARKING SECTION
DETAIL - 5A
NOT TO SCALE

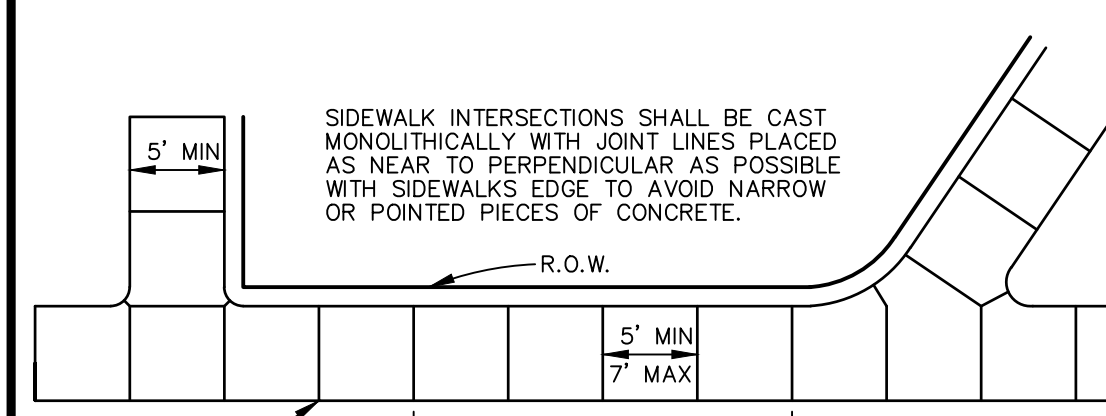


TYPICAL BITUMINOUS PARKING SECTION
DETAIL - 5B
NOT TO SCALE

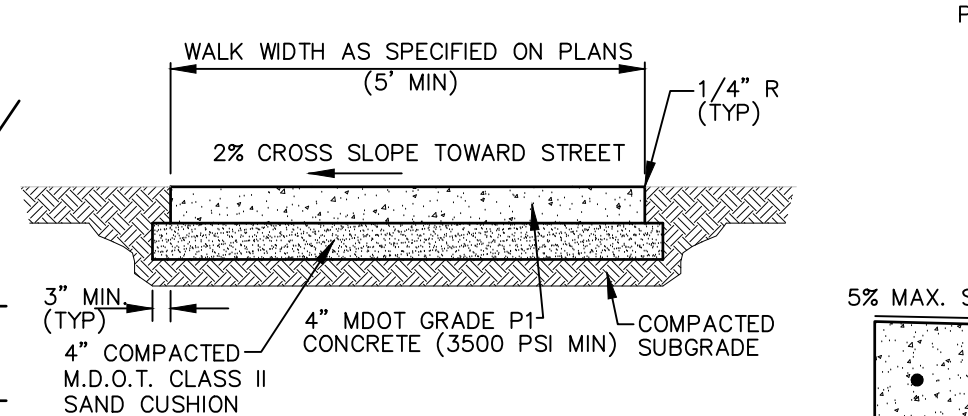


TYPICAL PAVEMENT INTEGRAL WALK/CURB
DETAIL - 5C
NOT TO SCALE

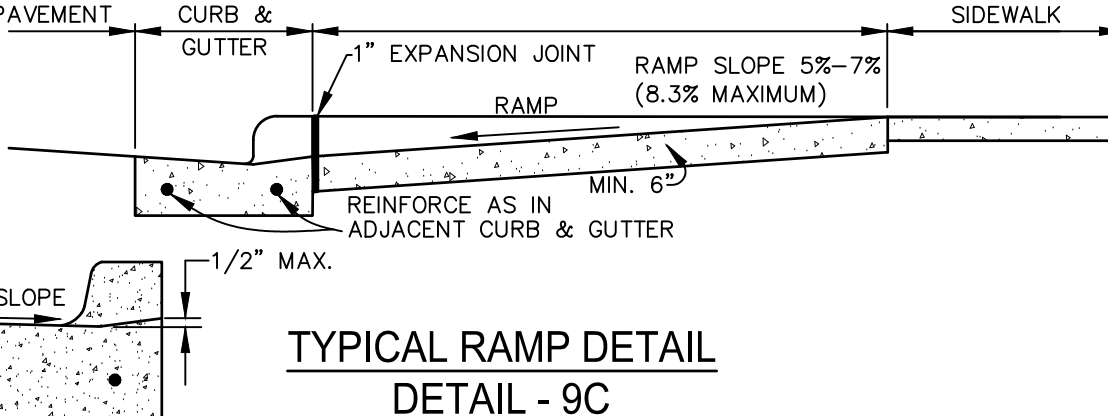
TYPICAL PARKING AREA PAVEMENT & CURB DETAILS - 5



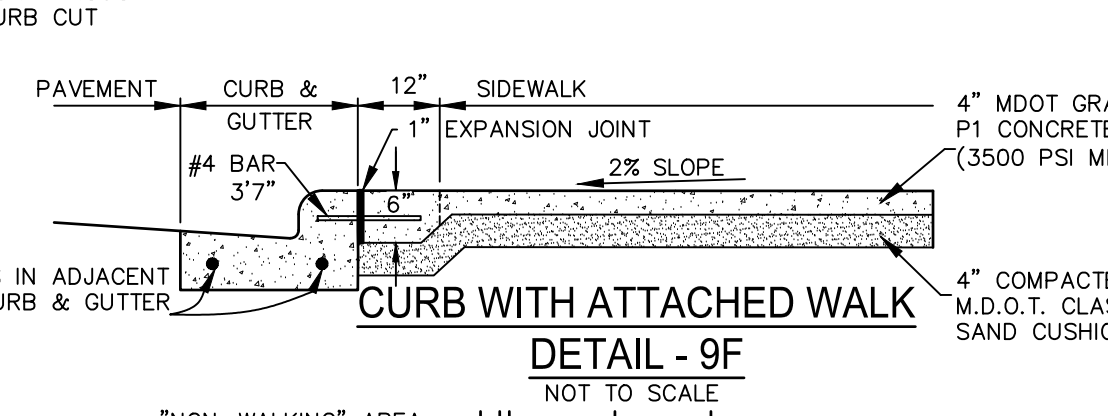
TYPICAL SIDEWALK JOINT LAYOUTS
DETAIL - 9A
NOT TO SCALE



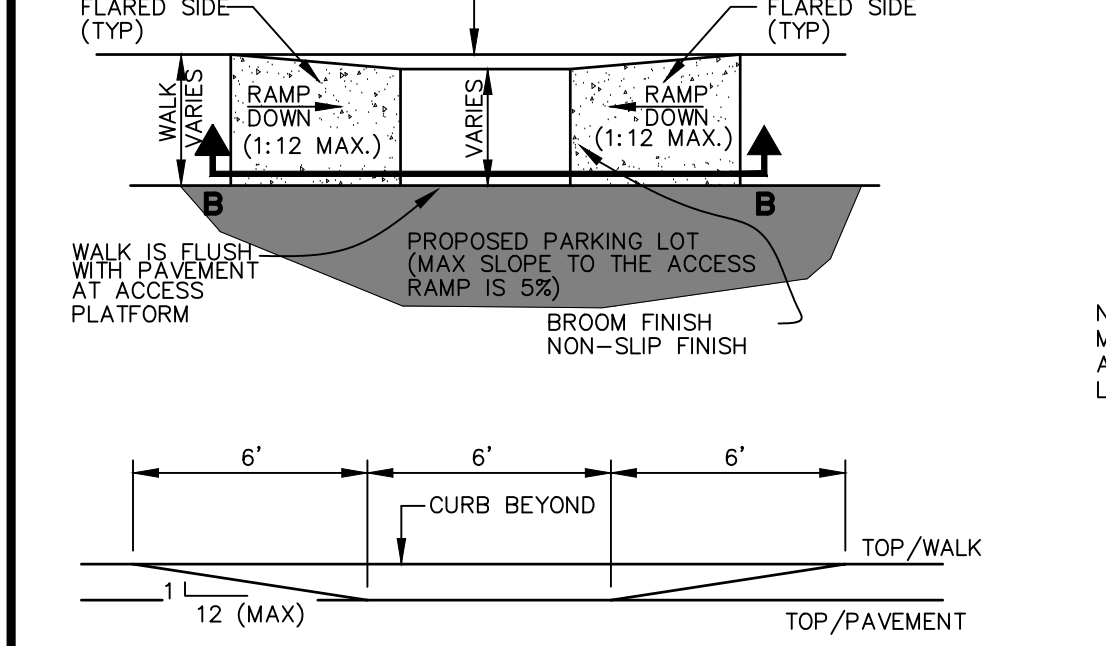
TYPICAL CROSS SECTION 4" CONCRETE SIDEWALK
DETAIL - 9B
NOT TO SCALE



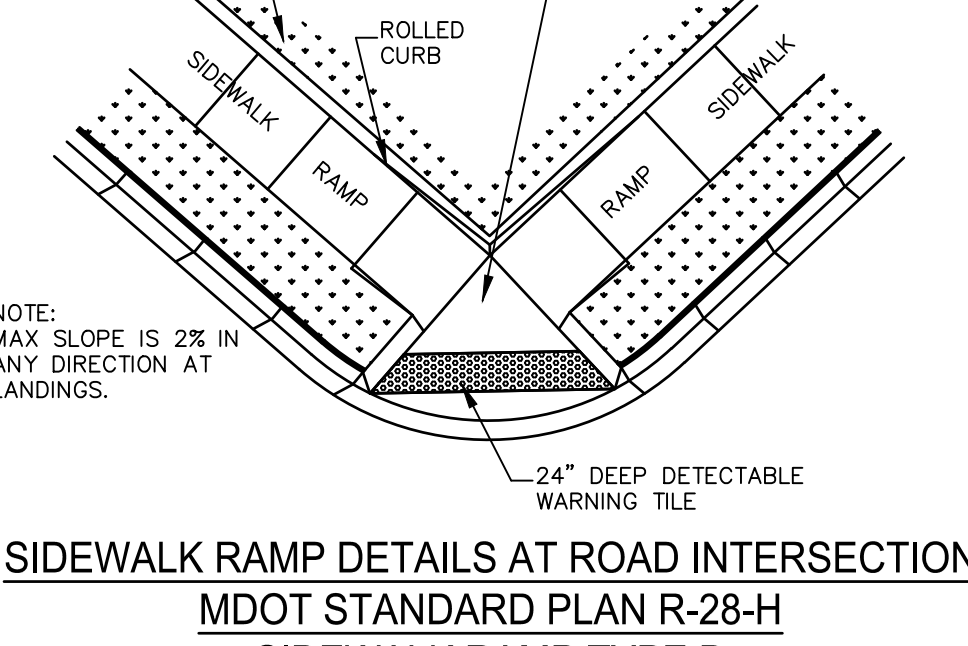
TYPICAL RAMP DETAIL
DETAIL - 9C
NOT TO SCALE



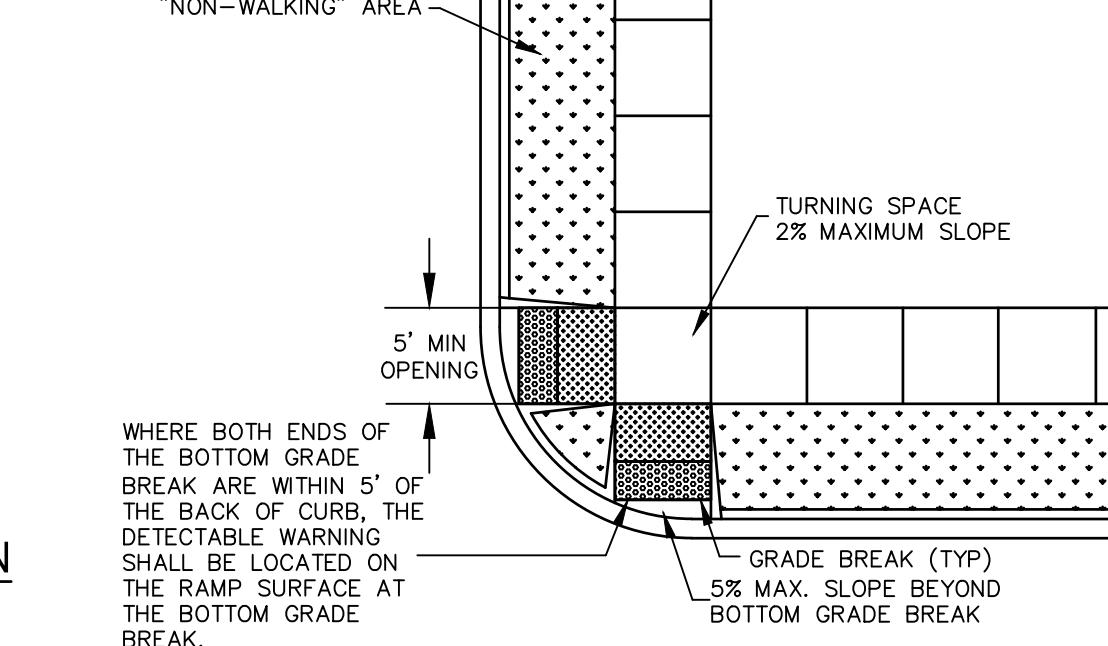
CURB WITH ATTACHED WALK
DETAIL - 9F
NOT TO SCALE



TYPICAL SIDEWALK RAMP
DETAIL AT PARKING LOT
DETAIL - 9D
NOT TO SCALE

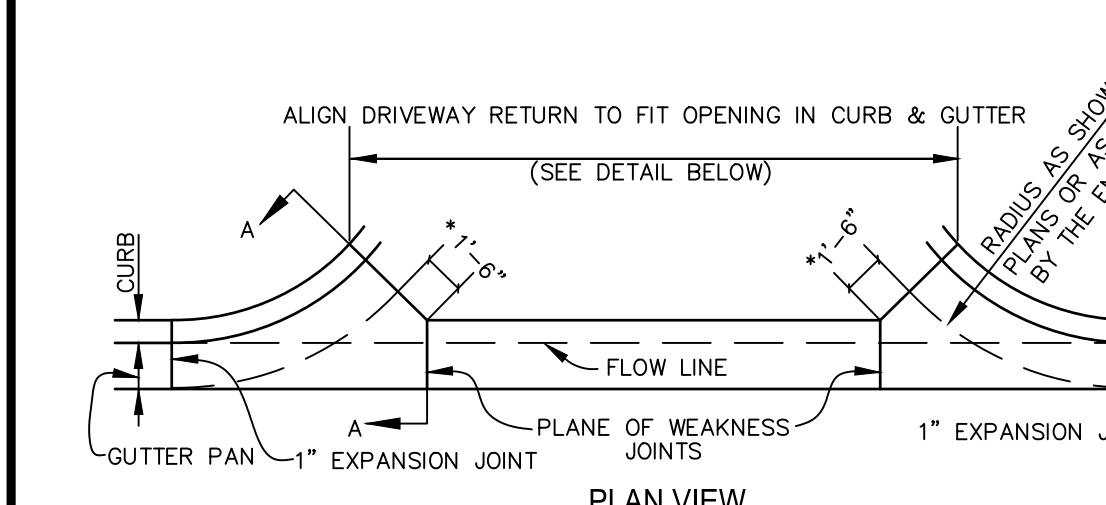


SIDEWALK RAMP DETAILS AT ROAD INTERSECTION
MDOT STANDARD PLAN R-28-H
SIDEWALK RAMP TYPE D
(DEPRESSED CORNER)
DETAIL - 9E
NOT TO SCALE

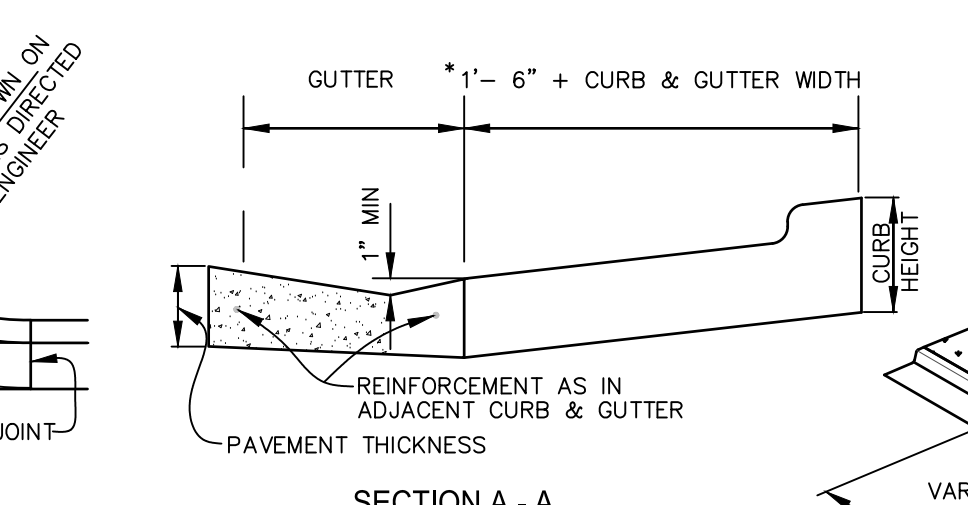


TYPICAL SIDEWALK RAMP DETAILS
AT ROAD INTERSECTION
STANDARD PLAN R-28-H
SIDEWALK RAMP TYPE F
DETAIL - 9G
NOT TO SCALE

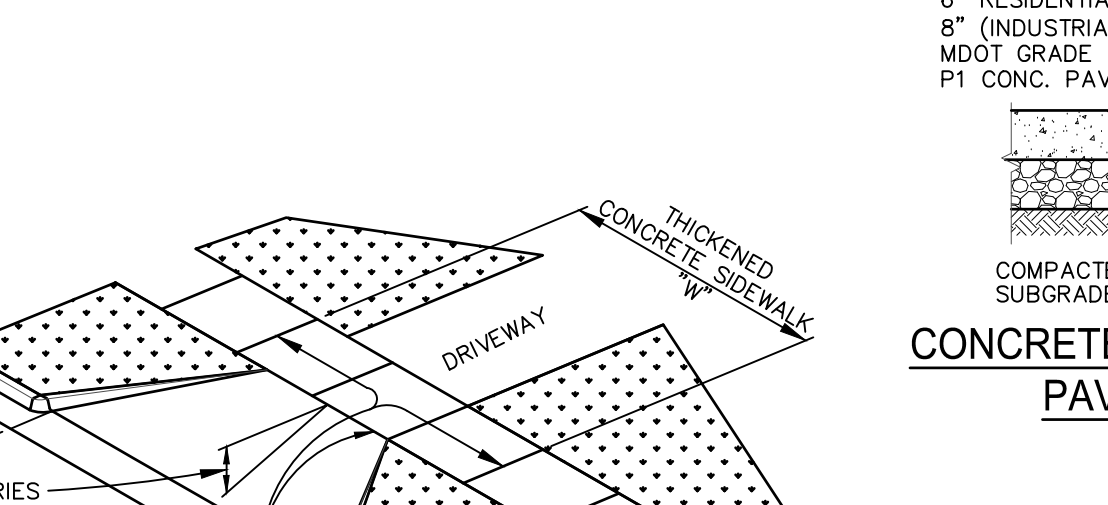
TYPICAL CONCRETE SIDEWALK DETAILS - 9



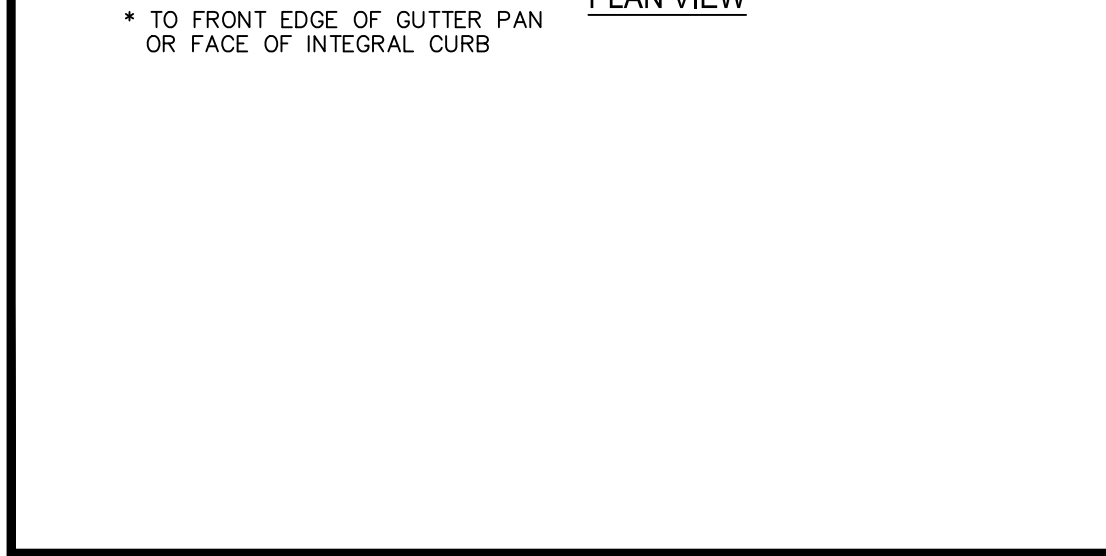
TYPICAL CONCRETE DRIVEWAY OPENING
MDOT DETAIL "M"
STANDARD PLAN R-29-H
DETAIL - 8A
NOT TO SCALE



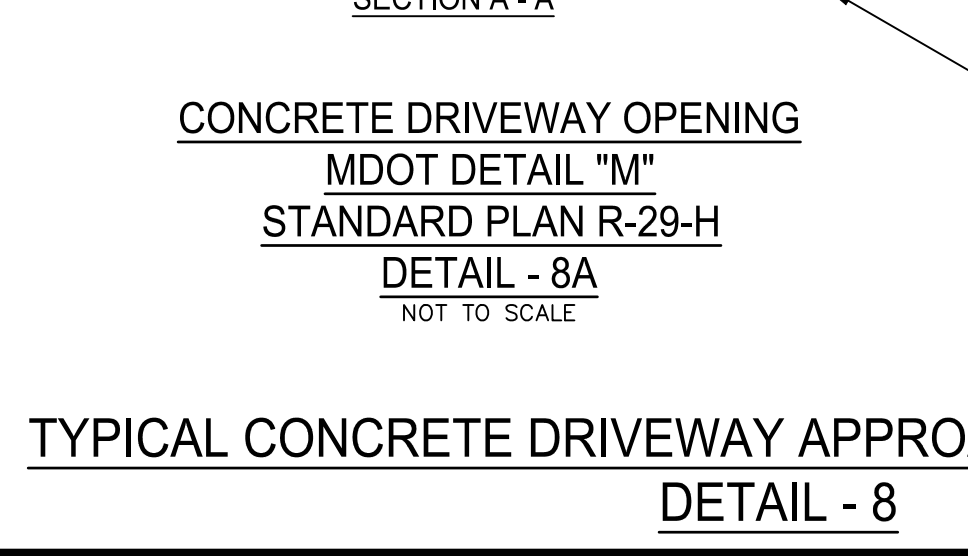
CONCRETE DRIVEWAY OPENING
MDOT DETAIL "M"
STANDARD PLAN R-29-H
DETAIL - 8A
NOT TO SCALE



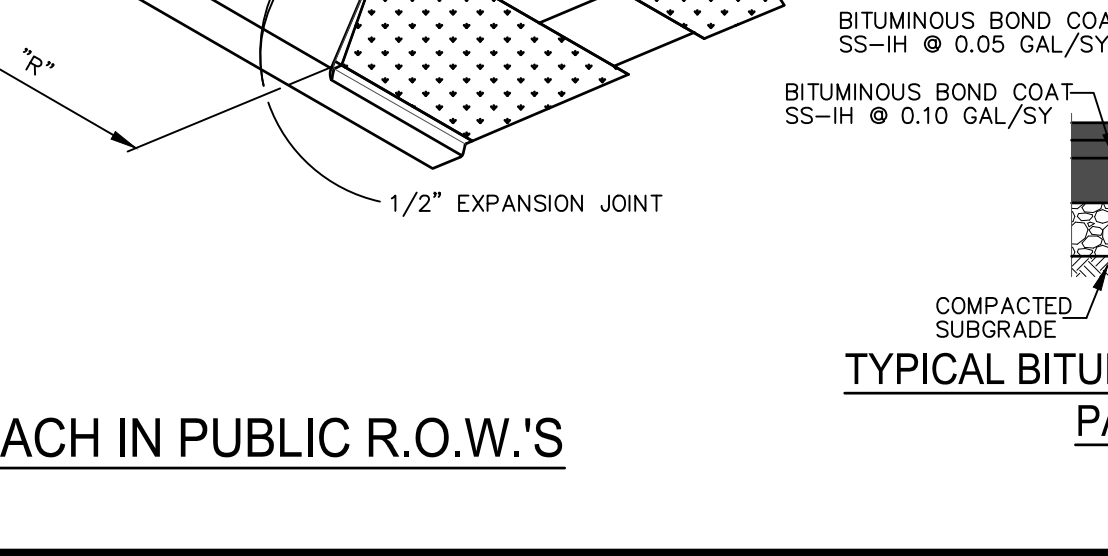
TYPICAL BITUMINOUS DRIVEWAY APPROACH
PAVEMENT SECTION
DETAIL - 8C
NOT TO SCALE



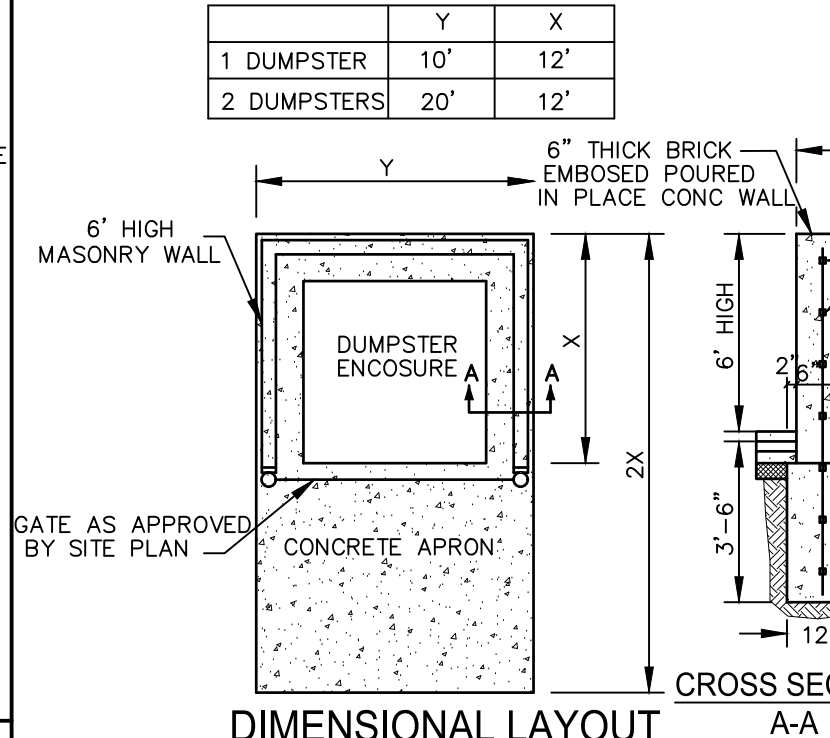
TYPICAL CONCRETE DRIVEWAY APPROACH IN PUBLIC R.O.W.'S
DETAIL - 8



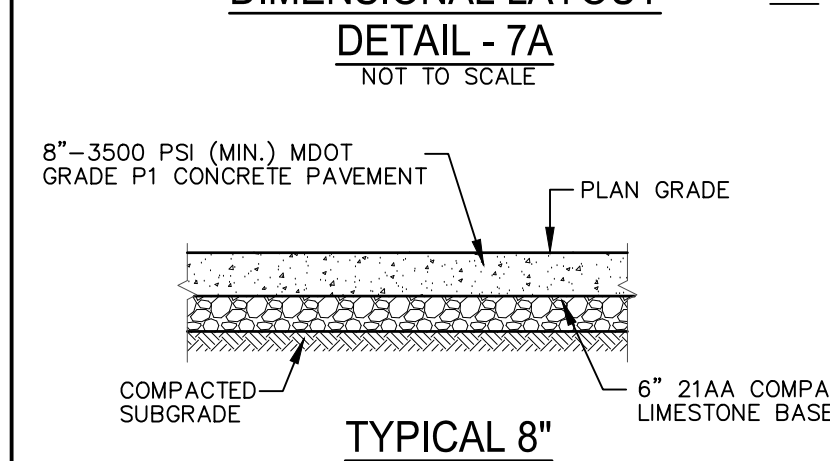
CONCRETE DRIVEWAY OPENING
MDOT DETAIL "M"
STANDARD PLAN R-29-H
DETAIL - 8A
NOT TO SCALE



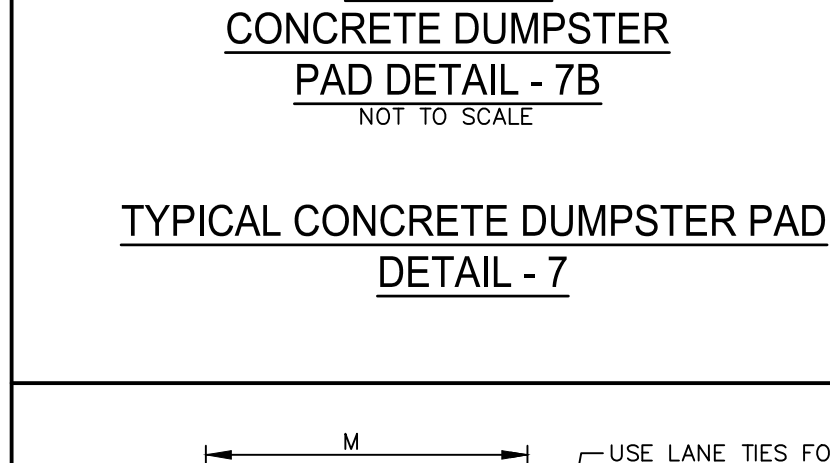
TYPICAL BITUMINOUS DRIVEWAY APPROACH
PAVEMENT SECTION
DETAIL - 8C
NOT TO SCALE



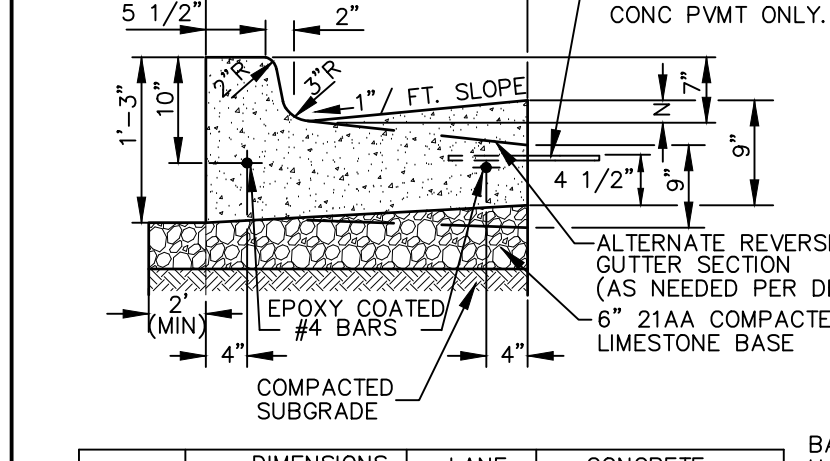
DIMENSIONAL LAYOUT
DETAIL - 7A
NOT TO SCALE



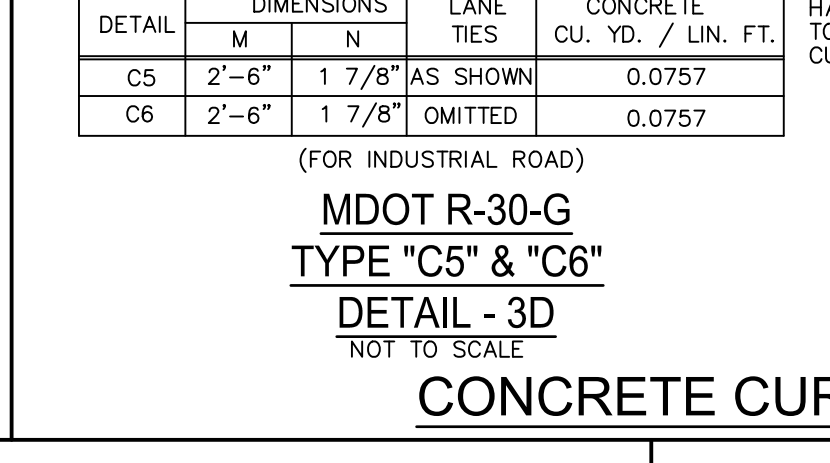
TYPICAL 8" CONCRETE DUMPSTER PAD
DETAIL - 7B
NOT TO SCALE



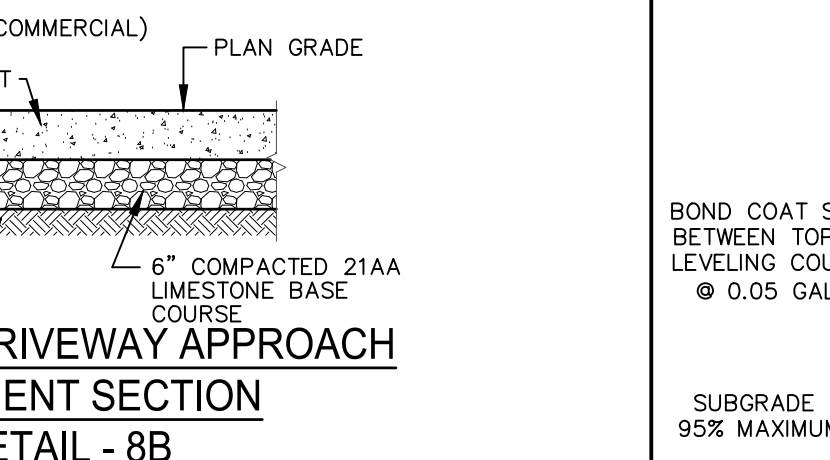
TYPICAL CONCRETE DUMPSTER PAD
DETAIL - 7



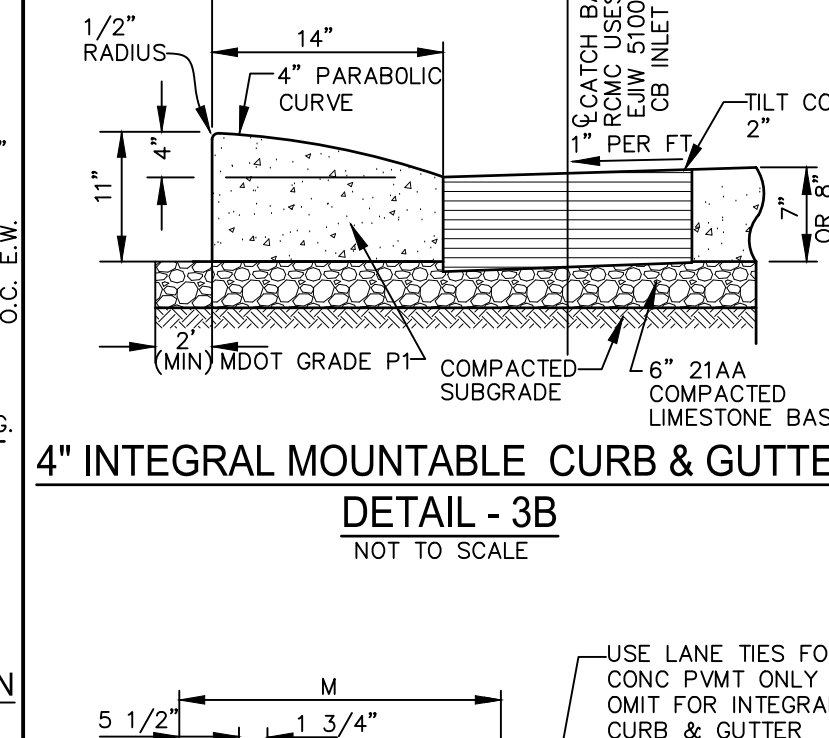
MDOT R-30-G
TYPE "F2" & "F4"
DETAIL - 3C
NOT TO SCALE



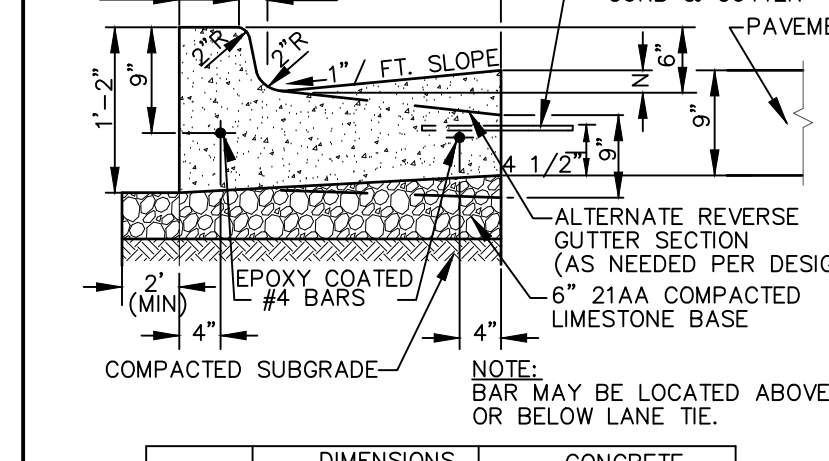
MDOT R-30-G
TYPE "C5" & "C6"
DETAIL - 3D
NOT TO SCALE



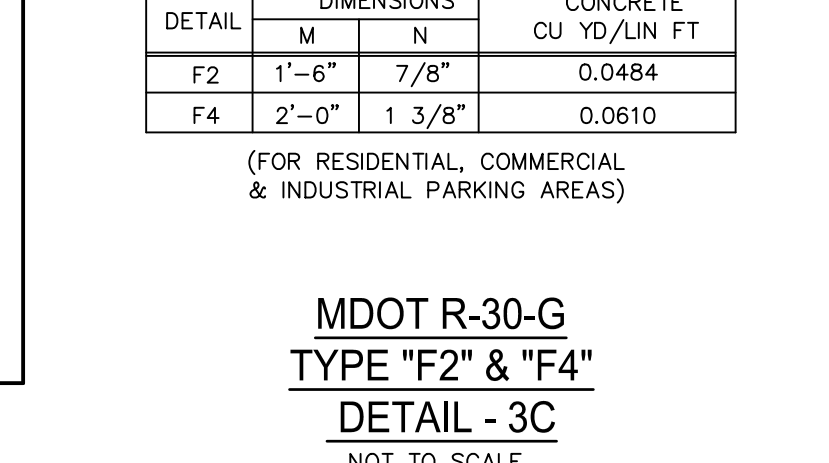
CONCRETE CURB & GUTTER DETAILS - 3



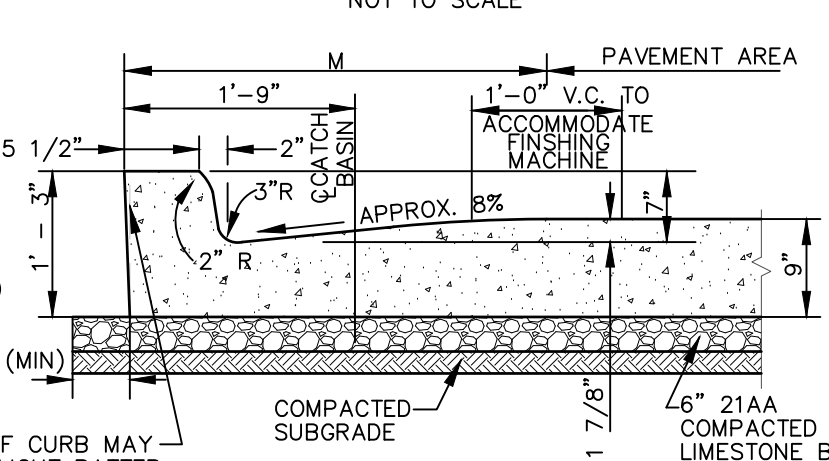
4" INTEGRAL MOUNTABLE CURB & GUTTER
DETAIL - 3B
NOT TO SCALE



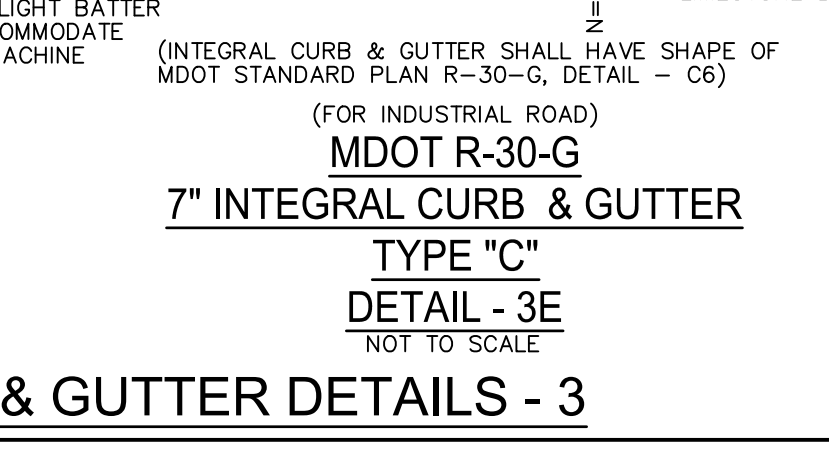
TYPICAL 8" CONCRETE DUMPSTER PAD
DETAIL - 7B
NOT TO SCALE



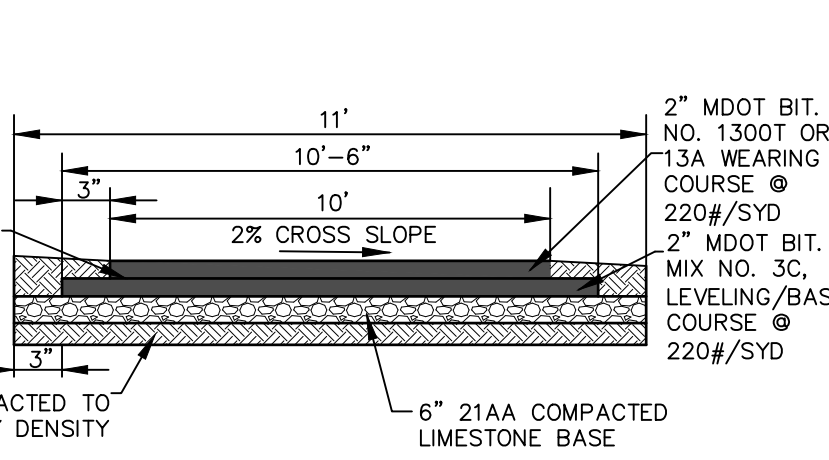
MDOT R-30-G
TYPE "C5" & "C6"
DETAIL - 3D
NOT TO SCALE



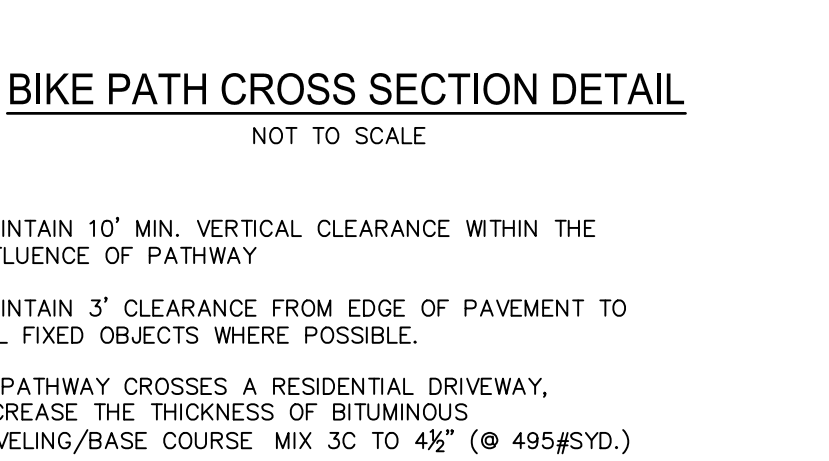
CONCRETE CURB & GUTTER DETAILS - 3



MDOT R-30-G
TYPE "C5" & "C6"
DETAIL - 3D
NOT TO SCALE



CONCRETE CURB & GUTTER DETAILS - 3



BIKE PATH CROSS SECTION DETAIL
NOT TO SCALE

GENERAL PAVING NOTES

- EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS. TREE ROOTS SHALL BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- THE PAVEMENT SUBGRADE SHALL BE THOROUGHLY PROOF-ROLLED IN THE PRESENCE OF A PUBLIC WORKS INSPECTOR AND GEOTECHNICAL ENGINEER TO DETERMINE STABILITY. LOOSE OR YIELDING AREAS WHICH CANNOT BE MECHANICALLY STABILIZED SHALL BE REMOVED AND REPLACED WITH CLASS II SAND OR AS DIRECTED BY A GEOTECHNICAL ENGINEER. ALL FILL MATERIAL AND BASE MATERIAL SHALL BE TESTED AND ITS COMPACTION AND SUITABILITY FOR ACCEPTANCE OF THE BASE MATERIAL AND PAVEMENT SHALL BE CERTIFIED BY SAID TESTING FIRM. THE OWNER SHALL SUPPLY THREE COPIES OF GEOTECHNICAL AND TECHNICAL REPORTS TO CLINTON TOWNSHIP.
- IF IN THE OPINION OF THE INSPECTOR/GEOTECHNICAL ENGINEER, FIELD CONDITIONS WARRANT ADDITIONAL TESTING, THE DEVELOPER SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED ADDITIONAL TESTING.
- LIMESTONE AGGREGATE BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY DETERMINED BY THE MODIFIED PROCTOR (ASTM D1557) METHOD OF TESTING. THE AGGREGATE BASE SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE BACK OF CURB OR THE PAVED EDGE. AGGREGATE OF 21AA CAN BE 21AA CRUSHED CONCRETE IF FROM A DOT APPROVED SOURCE WITH ADDITIONAL THICKNESS DETERMINED BY GEOTECHNICAL ENGINEER.
- CONCRETE PAVEMENT TESTING SHALL BE REQUIRED FOR ALL PROJECTS WITH THE EXCEPTION OF PRIVATE DEVELOPMENTS. (I.E. COMMERCIAL AND INDUSTRIAL)
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CHARTER TOWNSHIP OF CLINTON, THE MACOMB COUNTY DEPARTMENT OF ROADS, AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.
- CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.
- FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL INSPECTION.
- 1.0 INCH AND 2.0 INCH EXPANSION JOINTS SHOULD BE INSTALLED PER MDOT STANDARDS.
- FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 95% OF THE MAXIMUM DENSITY DETERMINED BY THE MODIFIED PROCTOR (ASTM D1557) METHOD OF TESTING PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.
- EDGE DRAINS WRAPPED IN GEOTEXTILE FABRIC FILTER SHALL BE INSTALLED ON BOTH SIDES OF ALL ROADWAYS. ALSO PLACE UNDERDRAINS AT ALL DRAINAGE STRUCTURES WITHIN PARKING AREAS, (SEE DETAILS 6A, 6B, 6C, 6D & 6E).
- CONSTRUCTION TRAFFIC SHALL BE MINIMIZED ON THE NEW BITUMINOUS PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, SUBJECT TO MDOT APPROVAL, THE PLACEMENT OF THE FINAL LIFT SHALL BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM. THIS RECOMMENDATION MAY REDUCE FUTURE MAINTENANCE COSTS DUE TO LOCALIZED PREMATURE PAVEMENT FAILURES.

CONCRETE PAVEMENT

- CONCRETE SHALL CONSIST OF PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES. PAVEMENT SHALL CONFORM TO MDOT GRADE P1.
- ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.
- THE CONCRETE BATCH PLANT SHALL BE MDOT CERTIFIED WITH LOCATION APPROVED BY THE TOWNSHIP BOARD. NO CONCRETE PAVING SHALL BE ALLOWED PRIOR TO MAY 1, OR AFTER NOVEMBER 1 (UNLESS APPROVED BY MDOT, MACOR OR CLINTON TOWNSHIP).
- AIR TEMPERATURE AT POINT OF PLACEMENT, ADOOR FROM ARTIFICIAL HEAT SHALL BE MINIMUM 40° F AND RISING.
- TEMPERATURE OF CONCRETE AT TIME OF PLACEMENT SHALL BE BETWEEN 45° F AND 90° F.

BITUMINOUS PAVEMENT

- BITUMINOUS MIXTURE SHALL CONSIST OF:
 - BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 3C;
 - LEVELING COURSE - MDOT BITUMINOUS MIXTURE NO. 3C;
 - WEARING COURSE - MDOT BITUMINOUS MIXTURE NO. 1300T OR 13A;
 - ASPHALT CEMENT PENETRATION GRADE 85-100 (PG 64-22)
- FOR RESIDENTIAL DEVELOPMENTS, COMMERCIAL PARKING LOTS, AND BIKE PATHS MDOT BITUMINOUS MIXTURE 1100T, 1100L, AND/OR 1300L&T, 20AAA MAY BE USED, WITH APPROVAL FROM THE ENGINEER.
- ALL BITUMINOUS MATERIAL SHALL BE COMPACTED TO A DENSITY OF 97% OF THE FIELD CONTROL DENSITY AS DETERMINED BY THE MARSHALL METHOD.
- A BOND COAT OF SS-1H EMULSION IS REQUIRED BETWEEN THE BASE COURSE AND LEVELING COURSE AND BETWEEN THE LEVELING COURSE AND WEARING COURSE. THE BOND COAT SHALL BE APPLIED IN A UNIFORM MANNER OVER THE SURFACE AT A RATE OF 0.10 GALLON/SY. (BETWEEN LEVELING COURSE AND BASE COURSE & 0.05 GALLON/SY BETWEEN WEARING COURSE AND LEVELING COURSE).

SIDEWALK STANDARD NOTES

- SIDEWALK RAMPS, CONFORMING TO MOST CURRENT ADA STANDARDS, SHALL BE INSTALLED AS SHOWN ON THE PLAN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS. ALL SIDEWALKS AND SIDEWALK RAMPS NEED TO COMPLY WITH CURRENT MICHIGAN BARRIER FREE REQUIREMENTS FOR ACCESSIBILITY.
- SIDEWALK AND PATHWAY RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. DETAILS 9D & 9E SHOW SIDEWALK RAMP DETAILS AT PARKING LOT AND ROADWAY INTERSECTION. HANDICAP RAMPS SHALL MEET A.D.A. BARRIER FREE REQUIREMENTS.
- RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT LARGE LOCATIONS IN MID-BLOCK IN THE VICINITIES OF HOSPITALS, MEDICAL CENTERS, AND LARGE ATHLETIC FACILITIES.
- SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE SLOPE OF RAMP.
- SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.
- CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND SHORT GRADE CHANGES. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.
- RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE TOWNSHIP.
- IF POSSIBLE, DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS, EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURE.
- THE NORMAL GUTTER LINE PROFILE SHALL TRANSITION TO 2% MAXIMUM SLOPE MAINTAINED THROUGH THE AREA OF THE RAMP.
- THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.
- CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
- DETAILS 8A, 8A AND 8B SHOW THICKENED CROSS SECTION AT DRIVEWAYS, TYPICAL SIDEWALK JOINT LAYOUTS AND CROSS SECTION.
- DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. THEY SHALL BE LOCATED SO THAT THE EDGE OF THE DETECTABLE WARNING IS AT THE BACK OF CURB LINE.
- THICKNESS OF SIDEWALK SHALL BE INCREASED TO 6" AT DRIVEWAYS FOR RESIDENTIAL AREAS. SIDEWALK THICKNESS SHALL BE INCREASED TO 8" AT COMMERCIAL AND INDUSTRIAL DRIVEWAYS.

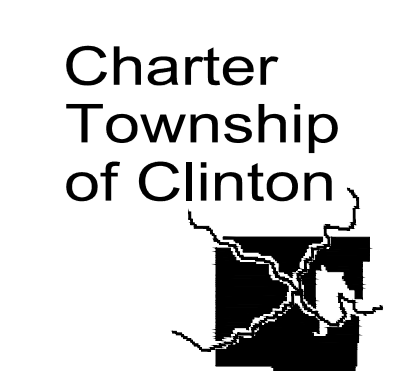
SIDEWALK JOINTS NOTES

- CONSTRUCT TRANSVERSE AND LONGITUDINAL EXPANSION AND PLANE OF WEAKNESS JOINTS AT INTERVALS AND LOCATIONS SHOWN ON THE PLANS. ALIGN TRANSVERSE JOINTS WITH LIKE JOINTS IN ANY ADJACENT SLAB.
- CONSTRUCT JOINTS WITH FACES PERPENDICULAR TO THE SIDEWALK SURFACE.
- PLACE CONTRACTION JOINTS AT 5' MINIMUM AND 2' MAXIMUM INTERVALS. SAW CUT JOINTS AFTER BROOM FINISHING. JOINTS ARE TO BE FULL WIDTH OF THE WALK AND MINIMUM 1/4 SLAB THICKNESS DEEP AND 1/8 INCH TO 1/4 INCH WIDE. DO NOT SEAL THE JOINTS.
- PLACE 1/2" FIBER EXPANSION JOINT FILLERS AT MAX. 50' INTERVALS. EXTEND EXPANSION JOINT FILLER THE FULL DEPTH OF THE JOINT WITH THE TOP SLIGHTLY BELOW THE FINISHED SURFACE OF THE SIDEWALK.
- PLACE 1/2" FIBER EXPANSION JOINT FILLERS AT EACH SIDE OF DRIVE.
- PROVIDE 1" FIBER EXPANSION JOINT FILLERS AT BACK OF CURB AND BUILDING OR R.O.W. LINE. SEAL EXPANSION JOINTS WITH HOT-POURED RUBBER-ASPHALT SEALANT.

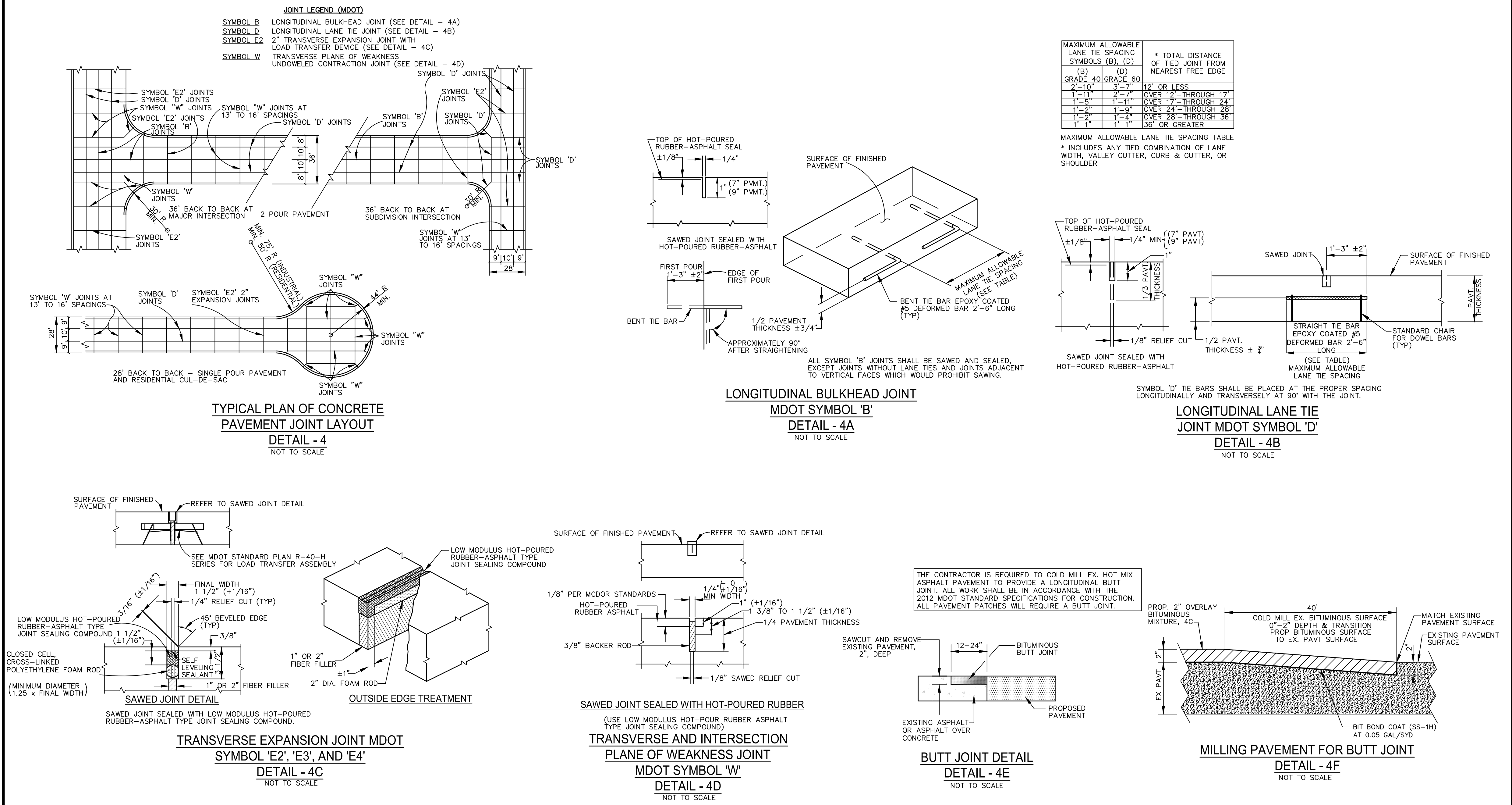
PAVING (1 OF 2) STANDARD DETAILS

CHARTER TOWNSHIP OF CLINTON
MACOMB COUNTY
MICHIGAN

Date:	07.24.2015
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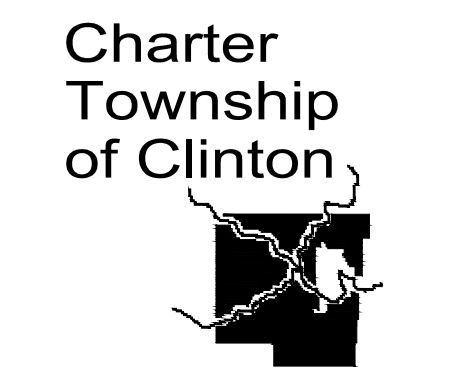


Developed For:
CHARTER TOWNSHIP
OF CLINTON
40700 ROMEO PLANK ROAD
CLINTON TOWNSHIP, MI 48038
(586) 286-8000



STREET AND PARKING LOT PAVING NOTES

1. THE MAXIMUM ALLOWABLE PAVEMENT GRADE SHALL BE 7 PERCENT.
2. THE MINIMUM ALLOWABLE PAVEMENT GRADE SHALL BE AS FOLLOWS:
 - A. CONCRETE PAVEMENT GUTTER GRADES: 0.50 PERCENT.
 - B. ASPHALT PAVEMENT GUTTER GRADES: 1.0 PERCENT.
 - C. CONCRETE PAVEMENT SURFACE GRADE TO GUTTER LINE: 0.50 PERCENT.
 - D. ASPHALT PAVEMENT SURFACE GRADE TO GUTTER LINE: 1.0 PERCENT.
3. WHENEVER A CHANGE IN THE GRADE OF TWO PERCENT OR MORE OCCURS, A VERTICAL CURVE SHALL BE PROVIDED WITH A LENGTH DETERMINED (TO THE NEAREST FIFTY FEET) BY THE FOLLOWING FORMULA: $L = 1/2 (G1 - G2)$, WHERE L IS THE LENGTH IN STATIONS OF 100 FEET PER EACH STATION, AND G1-G2 IS THE ALGEBRAIC CHANGE OF GRADE IN PERCENT.
4. AT ALL INTERSECTIONS A MINIMUM OF 0.3 FEET IN DROP IN ELEVATION AROUND THE CURB RETURN SHALL BE ALLOWED FOR.
5. CENTERLINE CURVE DATA (RADIUS, DEFLECTION ANGLE, AND TOTAL ARC LENGTH) FOR ALL STREET PAVEMENT CURVES SHALL BE INDICATED ON THE PLANS.
6. THE TOP OF THE CURB OR THE GUTTER GRADE ELEVATIONS EVERY FIFTY FEET SHALL BE INDICATED ON THE PROFILE VIEW FOR EACH STREET.
7. WHEN STREET CENTERLINES HAVE A DEFLECTION OF MORE THAN TEN DEGREES, THE CENTERLINE SHALL HAVE A CURVE WITH A MINIMUM RADIUS OF 150 FEET FOR LOCAL STREETS AND 300 FEET FOR COLLECTOR STREETS. BETWEEN REVERSE CURVES, THERE SHALL BE A TANGENT SECTION OF 200 FEET FOR COLLECTOR STREETS AND FIFTY FEET FOR LOCAL STREETS HAVING A RADIUS OF LESS THAN 300 FEET.
8. ALL STREET PAVEMENT IN RESIDENTIAL AREAS SHALL HAVE MOUNTABLE CURBS. WHERE THE PAVEMENT IS A BOULEVARD SECTION, ISLAND CURBS SHALL BE SIX-INCH HIGH ROLL CURBS.
9. AT THE END OF A STREET THAT WILL BE EXTENDED IN THE FUTURE, A ONE-FOOT WIDE CONCRETE PAVEMENT HEADER, A STANDARD ROAD-END BARRICADE AND A SIGN SHALL BE INSTALLED.
10. WHERE THE ZONING CODE REQUIRES OFF-STREET PARKING, THE DESIGN OF THE PARKING AREA SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - A. ALL PARKING AREAS (OTHER THAN DRIVING LANES IN RESIDENTIAL PARKING LOT AREAS) SHALL BE PAVED WITH EITHER SIX INCHES MINIMUM THICKNESS OF CONCRETE OR SIX INCHES MINIMUM THICKNESS OF LIMESTONE AGGREGATE, TOPPED WITH 260 POUNDS PER SQUARE YARD OF BITUMINOUS AGGREGATE SURFACE COURSE. A SIX-INCH HIGH CONCRETE CURB SHALL BE PLACED AROUND THE ENTIRE PERIMETER (EXCEPT ALONG DRIVE ENTRANCES) OF THE PAVED PARKING AREA WHERE ADJACENT TO GRASSED OR SIDEWALK AREAS. ALL DRIVEWAY LANES IN PARKING LOTS AND MULTIPLE-FAMILY HOUSING SITES SHALL BE TWENTY-FOUR FEET WIDE AND CONSTRUCTED OF EITHER:
 - B. EACH PARKING STALL SHALL BE A MINIMUM OF TEN FEET IN WIDTH AND TWENTY FEET IN LENGTH AND TWELVE FEET IN WIDTH AND TWENTY FEET IN LENGTH FOR HANDICAPPED SPACES. EACH CAR SPACE SHALL BE MARKED WITH YELLOW PAINT STRIPES.
 - C. WHEN SIDEWALKS ARE PROVIDED ADJACENT TO THE PARKING AREA CURBS WHERE CAR OVERHANGS OCCUR. SUCH WALKS SHALL BE A MINIMUM WIDTH OF SIX FEET AS MEASURED FROM THE FACE OF THE CURB.
11. PAVING FOR ALL STREETS AND PARKING LOTS, PUBLIC OR PRIVATE, SHALL CONFORM TO THE SPECIFICATIONS OF THE MACOMB COUNTY DEPARTMENT OF ROADS, IF APPLICABLE THE MICHIGAN DEPARTMENT OF TRANSPORTATION, AND THE TOWNSHIP PAVING DETAIL SHEET, WHICHEVER IS STRICTER AS DETERMINED BY THE TOWNSHIP ENGINEER.
12. ALL RESURFACING OF EXISTING PRIVATE ROADS AND PARKING LOTS SHALL COMPLY WITH MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARDS WITH REGARD TO THE TYPE OF MIXTURE AND OTHER STANDARDS AS RELATE TO PAVING. A REVIEW OF THE PROPOSED RESURFACING OF THE CURRENT SITE CONDITIONS IS REQUIRED BY THE TOWNSHIP ENGINEER AND IS SUBJECT TO ENGINEERING APPROVAL WITH RESPECT TO CONSTRUCTION TECHNIQUE, FINAL PAVEMENT ELEVATION AND OTHER ISSUES, INCLUDING DETERMINING WHETHER SUBSTANTIAL MODIFICATIONS ARE BEING PROPOSED IN RELATION TO PREVIOUSLY APPROVED ENGINEERING PLANS.
13. 6" EDGE DRAINS WRAPPED IN GEOTEXTILE FABRIC FILTER SHALL BE INSTALLED ON BOTH SIDES OF ALL ROADWAYS. ALSO PLACE UNDERDRAINS AT ALL DRAINAGE STRUCTURES WITHIN PARKING AREAS, (SEE DETAILS 6A, 6B, 6C, 6D).
14. UNDERDRAIN INSPECTION TO BE PERFORMED BY CLINTON TOWNSHIP DPW.



T-20 R-13-E



DATE:	ISSUE:
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Developed For:
CHARTER TOWNSHIP OF CLINTON
40700 ROMEO PLANK ROAD
CLINTON TOWNSHIP, MI 48038

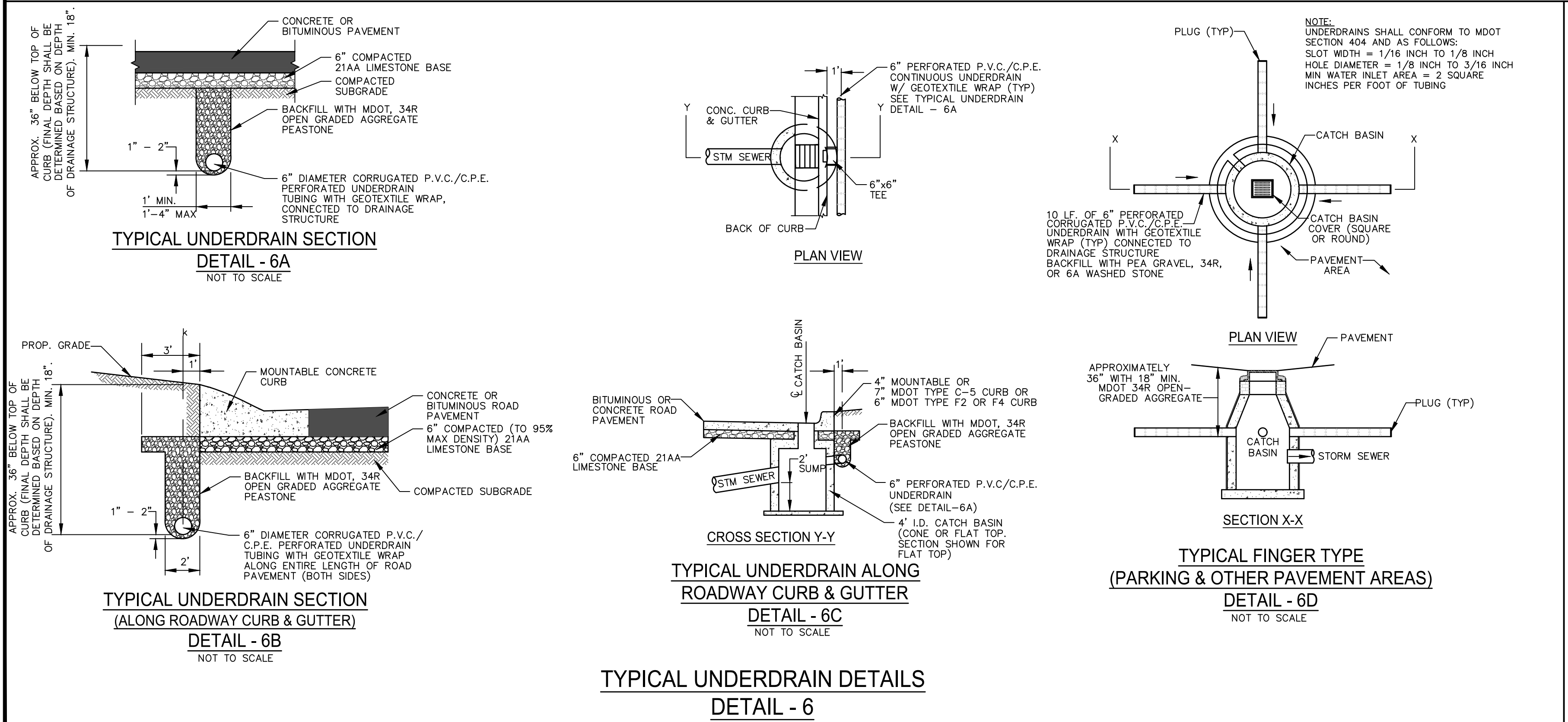
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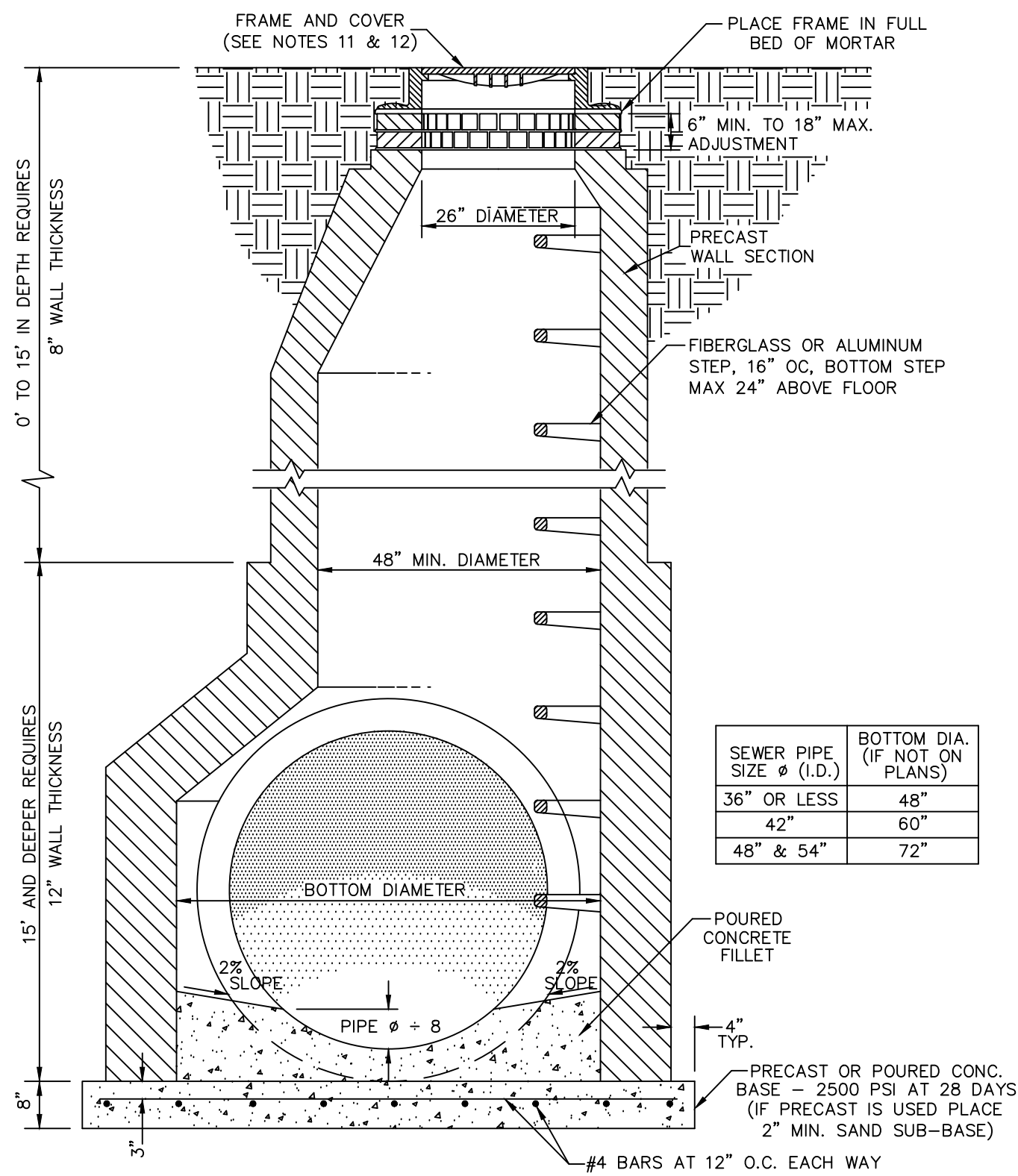
CHARTER TOWNSHIP OF CLINTON

PAVING (2 OF 2)
STANDARD DETAILS

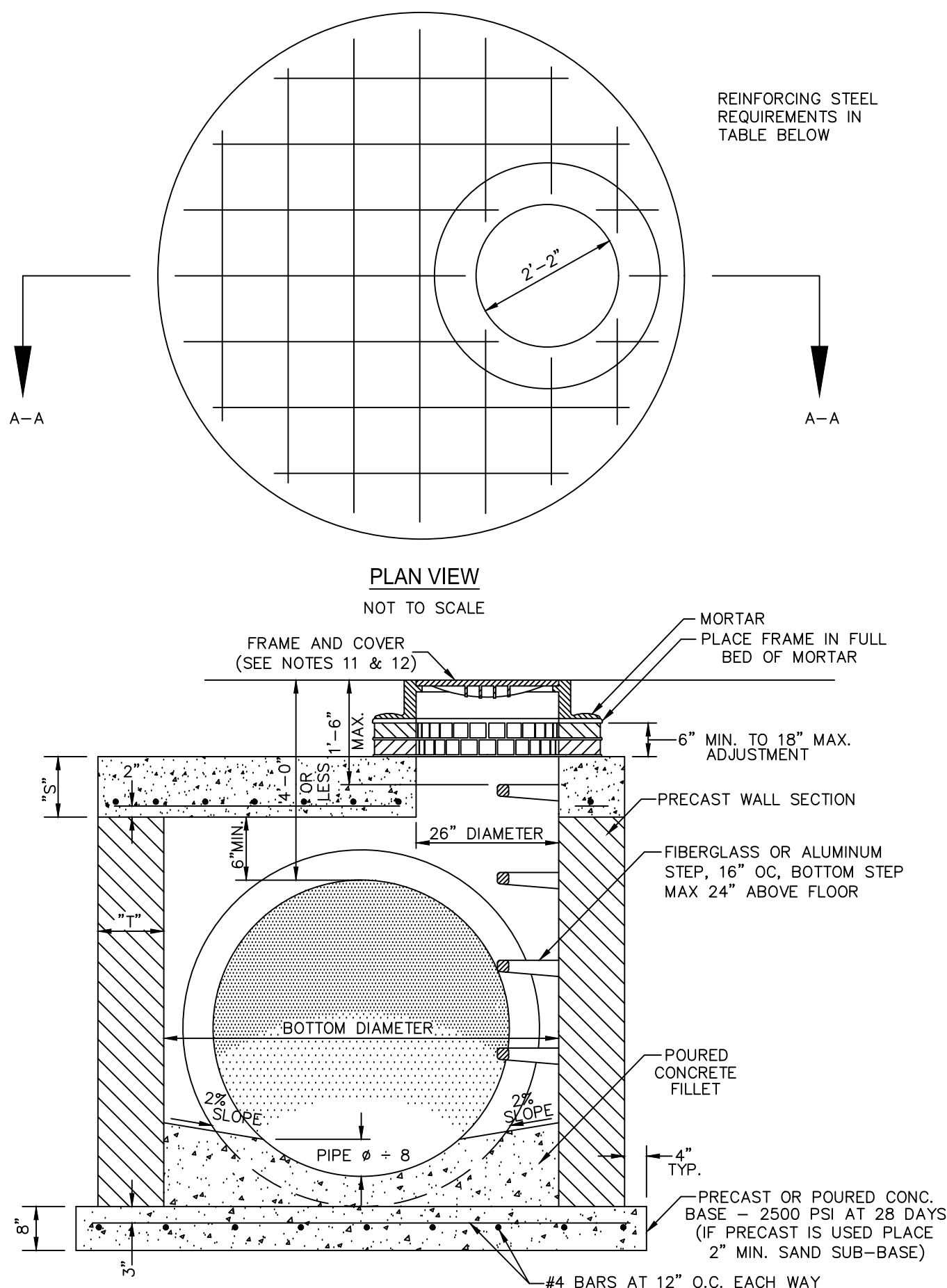
CHARTER TOWNSHIP OF CLINTON
MACOMB COUNTY
MICHIGAN

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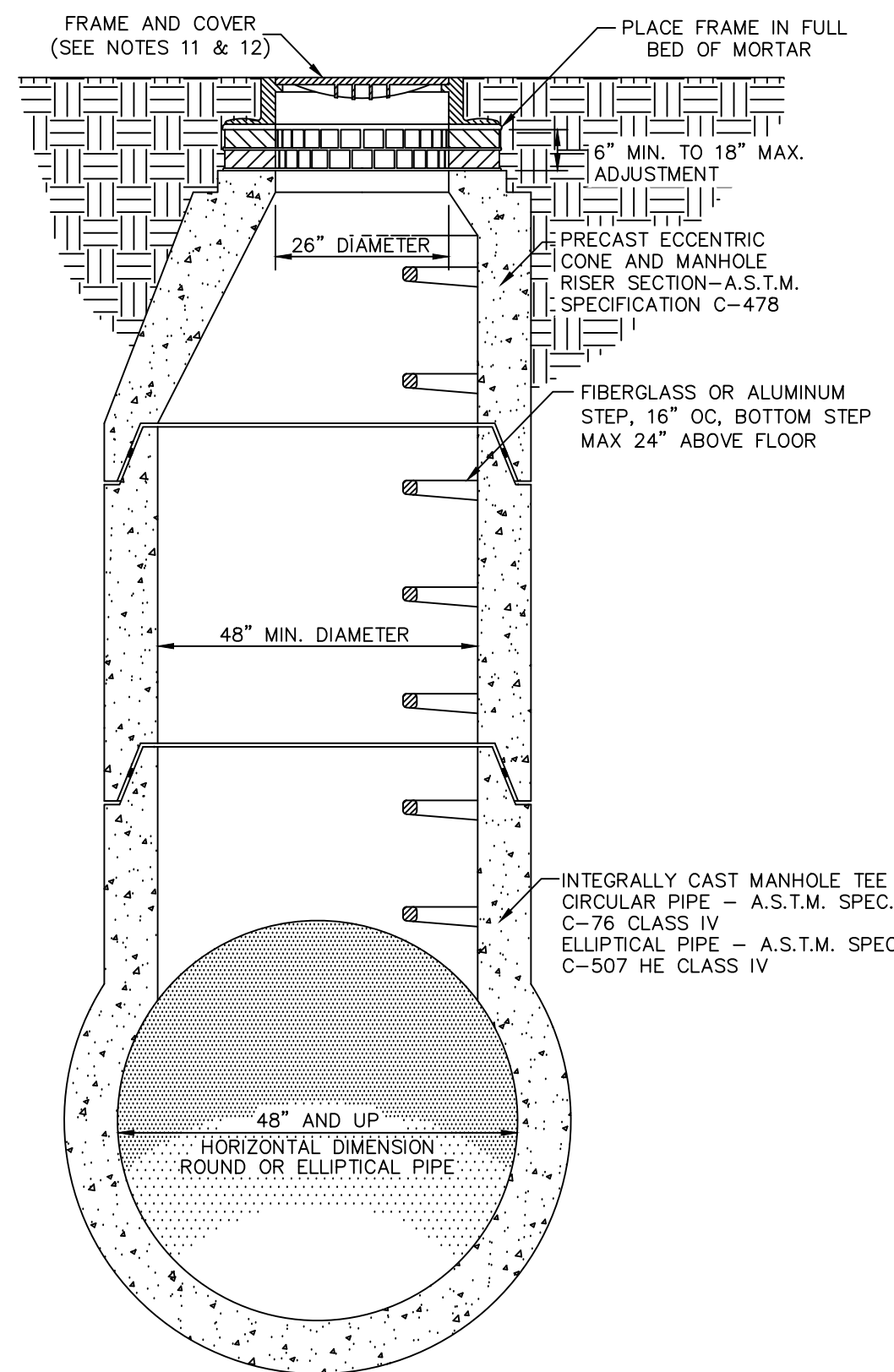
STORM SEWER MANHOLE "A"
NOT TO SCALE



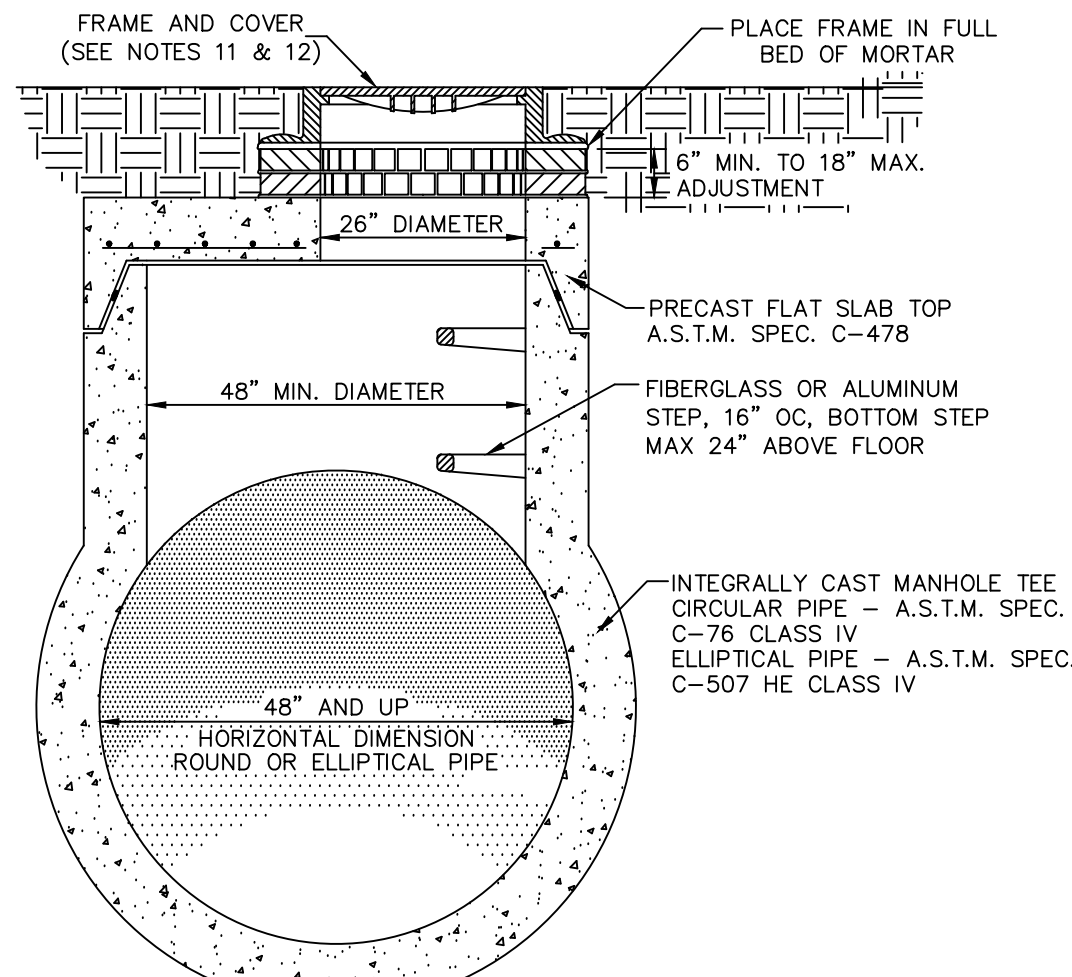
SEWER PIPE SIZE Ø (I.D.)	BOTTOM DIA. (IF NOT ON PLANS)*	TOP SLAB "S"	WALL "T"	REINFORCING STEEL
36" OR LESS	48"	9"	12"	3/4" Ø 9" EA. WAY
42"	60"	10"	12"	3/4" Ø 9" EA. WAY
48" & 54"	72"	11"	12"	7/8" Ø 9" EA. WAY

* DIAMETER OF MANHOLE SHALL BE INCREASED AS SHOWN ON THE PLANS DEPENDING ON THE ANGLE OF THE SEWERS.

STORM SEWER MANHOLE "B"
NOT TO SCALE



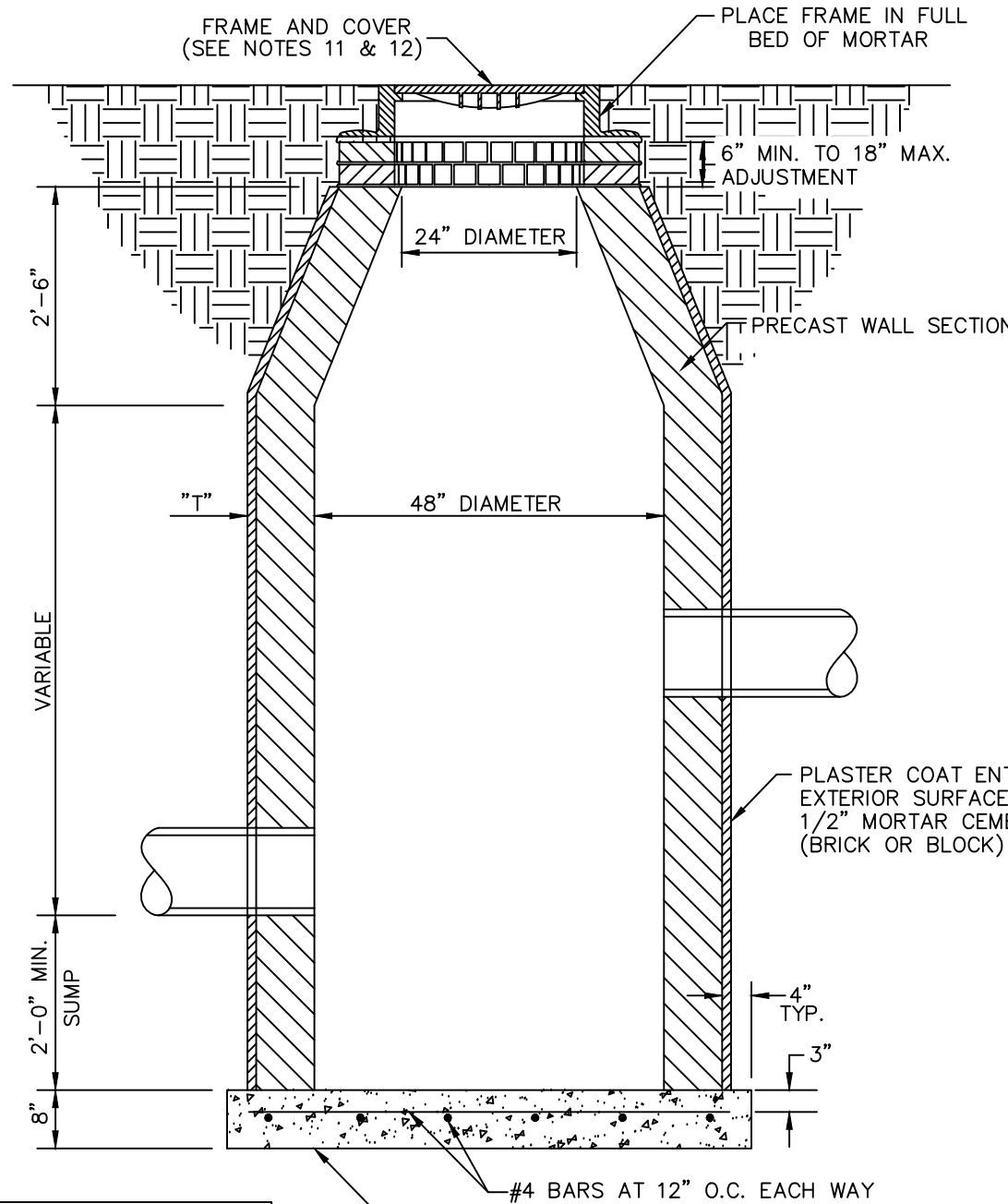
STORM SEWER TEE MANHOLE "A"
NOT TO SCALE



STORM SEWER TEE MANHOLE "B"
NOT TO SCALE

SPECIAL CATCH BASIN NOTES:

- DIAMETER OF "YARD" CATCH BASIN MAY BE REDUCED TO 36" PROVIDED THERE IS ONLY ONE (1) PIPE IN THE STRUCTURE AND THE DISTANCE TO THE OUTLET MANHOLE IS LESS THAN 150 FEET.
- CATCH BASIN MUST DISCHARGE INTO MANHOLES AND NOT INTO OTHER CATCH BASINS, EXCEPT:
 - WHERE CATCH BASIN IS A "YARD" TYPE WITH NOT MORE THAN THREE (3) CATCH BASINS DISCHARGING INTO IT.
 - WHERE CATCH BASIN IS A "PAVEMENT TYPE" DISCHARGING INTO ANOTHER CATCH BASIN LOCATED WITHIN 75 FEET.
- STEPS SHALL BE PLACED IN ALL 48" DIAMETER STRUCTURES MORE THAN 4' DEEP.
- ALL BACKFILL AROUND THE STRUCTURE SHALL BE 1/4" TO 3/4" ANGULAR STONE UP TO THE SPRINGLINE OF THE HIGHEST PIPE. THE REMAINING BACKFILL (TO GRADE) SHALL BE SAND COMPACTED IN 12" LIFTS.

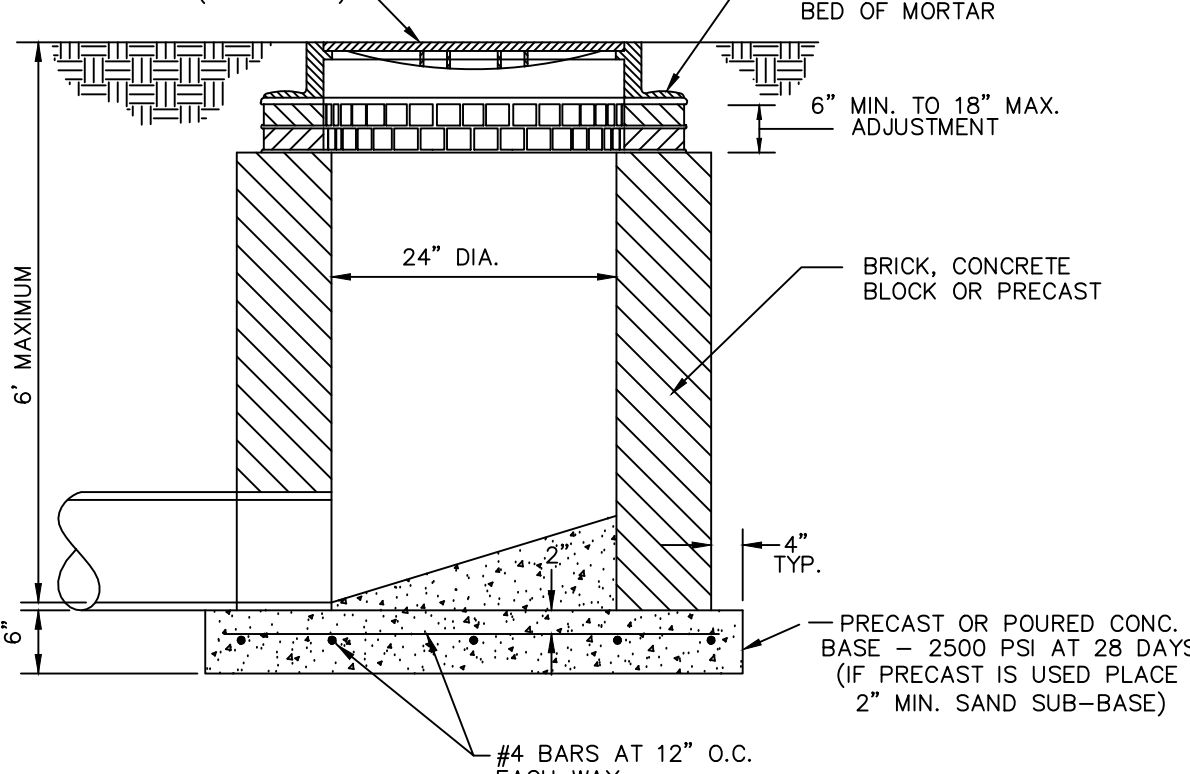


WALL THICKNESS "T"	DEPTH	BRICK	PRECAST OR BLOCK
0'-10'	8"	6"	6"
10'-16'	12"	8"	8"

STORM SEWER CATCH BASIN
NOT TO SCALE

SPECIAL INLET NOTES:

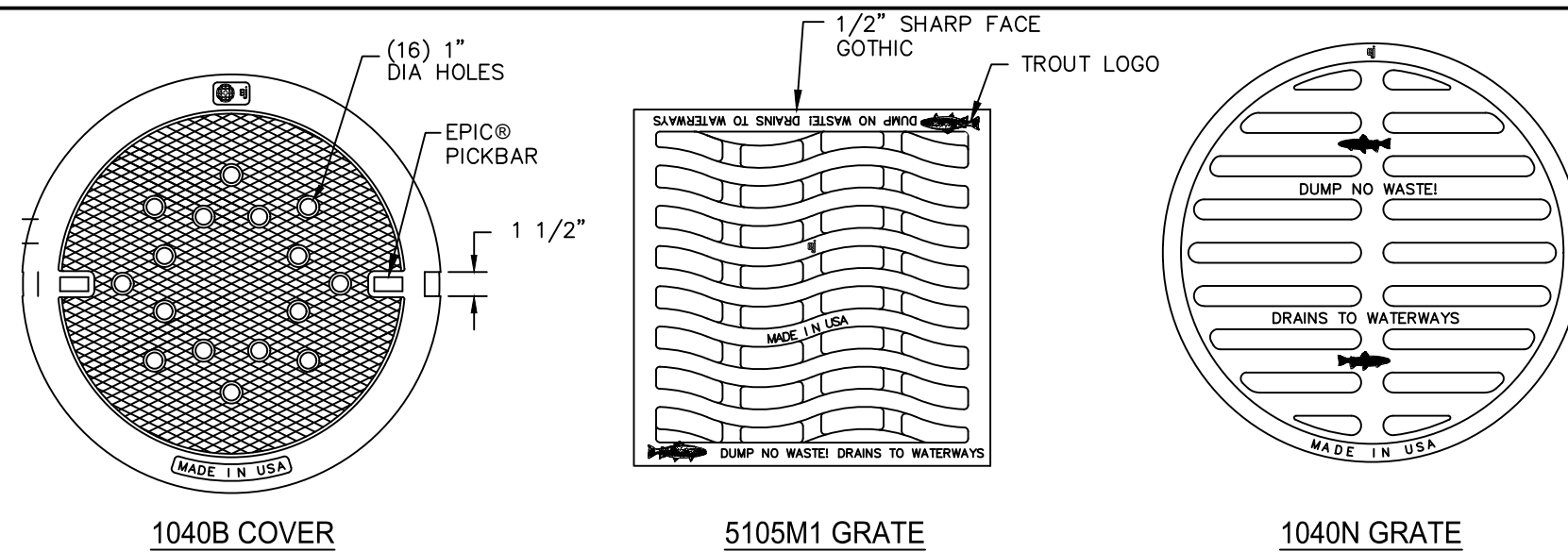
- INLET SHALL NOT BE USED FOR YARD DRAINAGE.
- INLET SHALL NOT BE USED IN COUNTY ROAD RIGHT-OF-WAY.
- OTHER THAN ABOVE, INLET MAY BE USED, PROVIDED:
 - THE INLET DISCHARGES INTO CATCH BASIN LOCATED WITHIN 75 FEET.
 - NOT MORE THAN ONE INLET DISCHARGES INTO A CATCH BASIN.



STORM SEWER INLET
NOT TO SCALE

GENERAL STORM SEWER NOTES

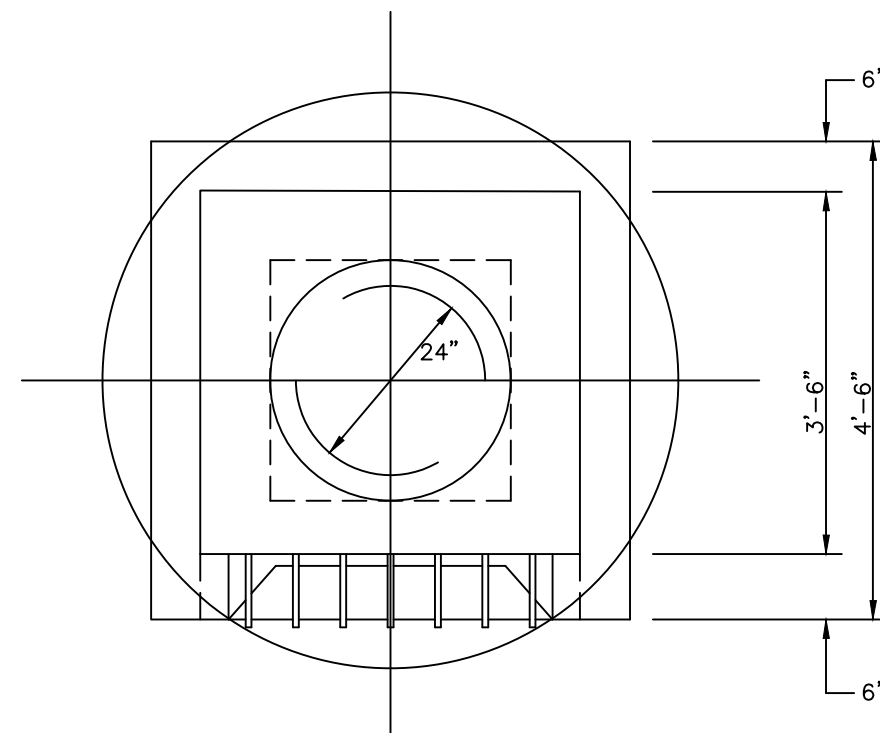
- AT LEAST THREE WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL GIVE NOTIFICATION OF HIS INTENTION TO BEGIN CONSTRUCTION TO THE TOWNSHIP, THE OFFICE OF THE PUBLIC WORKS COMMISSIONER AND THE COUNTY ROAD COMMISSION, WHEN NEEDED.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY THE OWNER OR THE MUNICIPAL ENGINEER, AT WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST HAVE IN HIS POSSESSION A COPY OF A VALID PERMIT TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF, THE STORM WATER DRAINAGE SYSTEM.
- THE CONTRACTOR SHALL SECURE PERMITS FROM THE OFFICE OF THE PUBLIC WORKS COMMISSIONER FOR TAPS AND CROSSINGS OF COUNTY DRAINS AND SHALL PAY THE COSTS OF SAID PERMITS AND THE COST OF ANY INSPECTION CHARGES BY THAT AGENCY FOR WORK DONE UNDER THE PERMITS.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL TELEPHONE MISS DIG(800-482-7171) OR DIAL 811 FOR THE LOCATION OF UNDERGROUND FACILITIES, AND SHALL ALSO NOTIFY REPRESENTATIVES OF ANY OTHER FACILITIES, LOCATED IN THE VICINITY OF THE WORK, WHICH MAY NOT BE HANDLED BY MISS DIG.
- ALL STORM WATER DRAINAGE SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE TOWNSHIP, COUNTY ROAD COMMISSION AND/OR THE OFFICE OF THE PUBLIC WORKS COMMISSIONER, MDEQ OR AGENCY WITH JURISDICTION AS REQUIRED.
- ALL REINFORCED CONCRETE SEWER PIPE SHALL CONFORM TO ASTM SPECIFICATION C-76 WITH QJUS DESIGNATION ON PLANS. CLASS II OR LOWER SHOULD NOT BE ALLOWED.
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL STORM SEWER BEDDING SHALL BE STANDARD BEDDING.
- UNDERGROUND DETENTION STORM PIPE SHALL BE SOLID WALLED PIPE WITH A MINIMUM OF H-20 LOADING CAPACITY.
- ALL WYES AND BUILDING SERVICE CONNECTIONS SHALL BE 3" POLYVINYL CHLORIDE (PVC) SEWER PIPE D3033 OR D3034-3.
- ALL WYES MUST GO TO STORM STRUCTURE.
- UNLESS OTHERWISE NOTED ON THE PLANS, STRUCTURE FRAME AND COVERS SHALL BE AS FOLLOWS:
 - MANHOLE (IN ROAD R.O.W.) EJ 1040B WITH PERFORATED COVER.
 - MANHOLE (OTHER THAN IN ROAD R.O.W.) EJ 1040B WITH PERFORATED COVER.
 - CATCH BASIN OR INLET (PAVEMENT TYPE) EJ 5105M1 WITH SINUSOIDAL GRATE.
 - CATCH BASIN (YARD TYPE) OR SIDE INLET EJ 1040N WITH OVAL GRATE HAVING A RISE ABOVE THE FRAME OF 2 1/2".
- ALL CATCH BASIN AND INLET COVERS SHALL HAVE "DUMP NO WASTE!" LETTERING AND TROUT IMAGE.
- ALL STORM SEWER JOINTS SHALL BE MODIFIED GROOVED TONGUE WITH RUBBER GASKET.
- AS PART OF THE FINAL INSPECTION, THE CONTRACTOR SHALL PROVIDE FOR TELEVISION INSPECTION OF THE STORM SEWER LINES IN ACCORDANCE WITH THE CURRENT DETAILED SPECIFICATIONS OF THE TOWNSHIP.
- ALL MANHOLES NEED TO BE CHanneled.
- THE MUNICIPAL SEWER DEPARTMENT WILL PROVIDE INSPECTION DURING "NORMAL INSPECTION HOURS" (MONDAY THROUGH FRIDAY BETWEEN 7:00 AM AND 3:30 PM) AT THE OWNER'S EXPENSE. THE CONTRACTOR SHALL PAY FOR ALL OVERTIME INSPECTION COSTS OUTSIDE OF NORMAL INSPECTION HOURS OR SATURDAY INSPECTION COST (COMPUTED AT 2.25 TIMES THE INSPECTOR'S PAYROLL), OR HOLIDAY & SUNDAY INSPECTION COST (COMPUTED AT 3 TIMES THE INSPECTOR'S PAYROLL) INCURRED BY REASON OF OVERTIME WORK OUTSIDE OF "NORMAL INSPECTION HOURS" SHALL BE PAID BY THE CONTRACTOR.
- STORM SEWER PIPES, LEADS AND STRUCTURES MUST BE "MADE IN USA".



1040B COVER

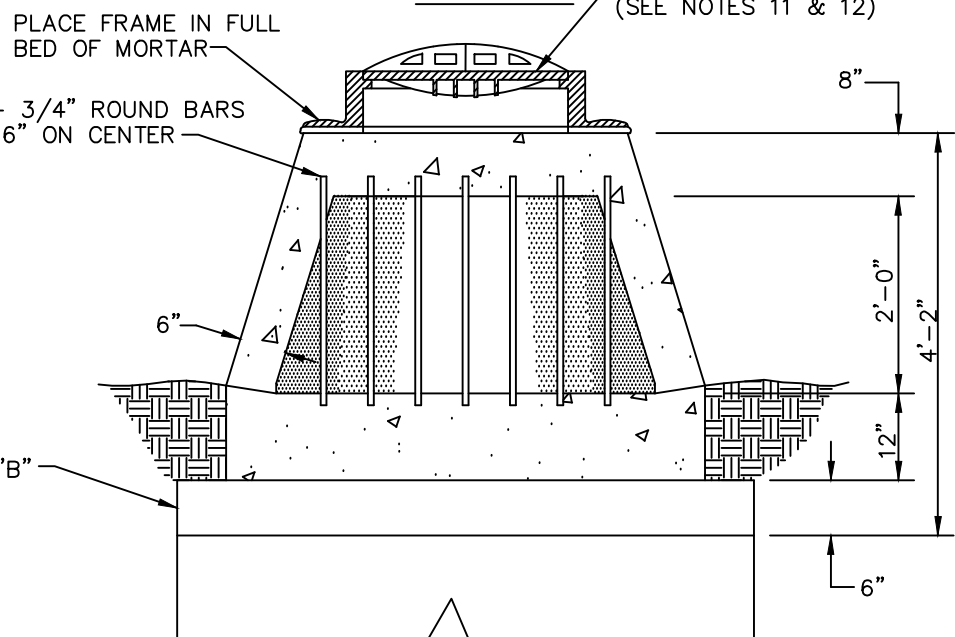
5105M1 GRATE

1040N GRATE



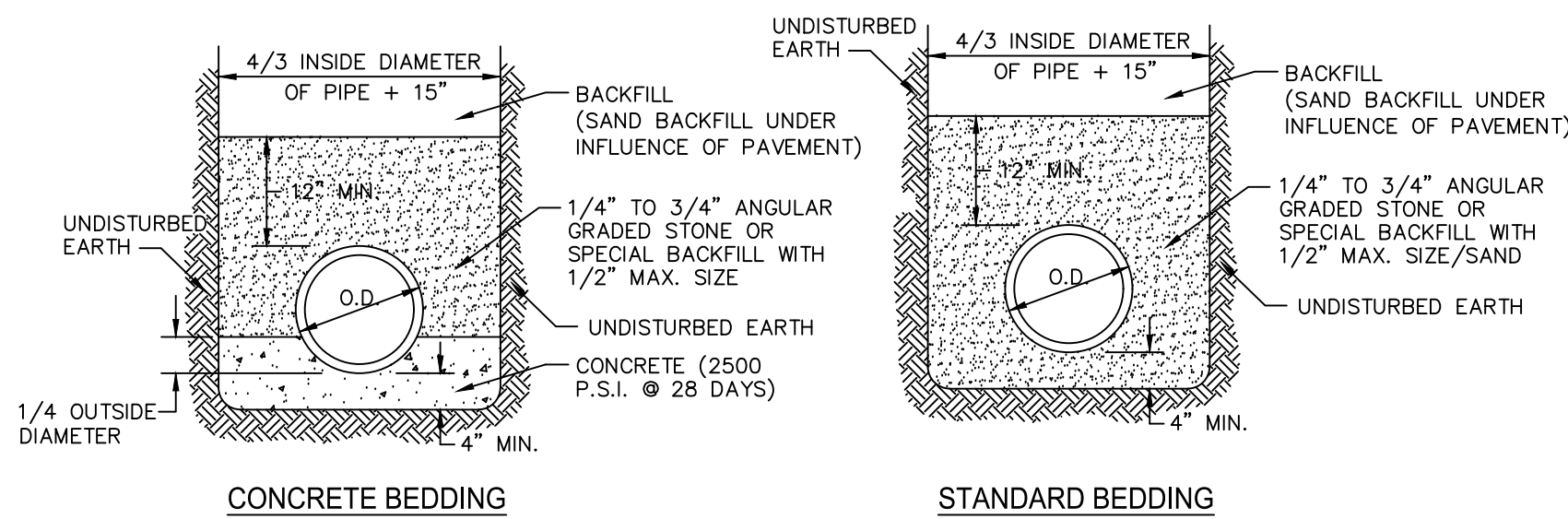
PLAN VIEW

FRAME AND COVER (SEE NOTES 11 & 12)



PROFILE VIEW

STORM SEWER SIDE INLET
NOT TO SCALE



CONCRETE BEDDING

STANDARD BEDDING

BEDDING DETAILS
NOT TO SCALE

Charter Township of Clinton



T-2N R-13-E



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Developed For:

CHARTER TOWNSHIP OF CLINTON
40700 ROMEO PLANK ROAD
CLINTON TOWNSHIP, MI 48038

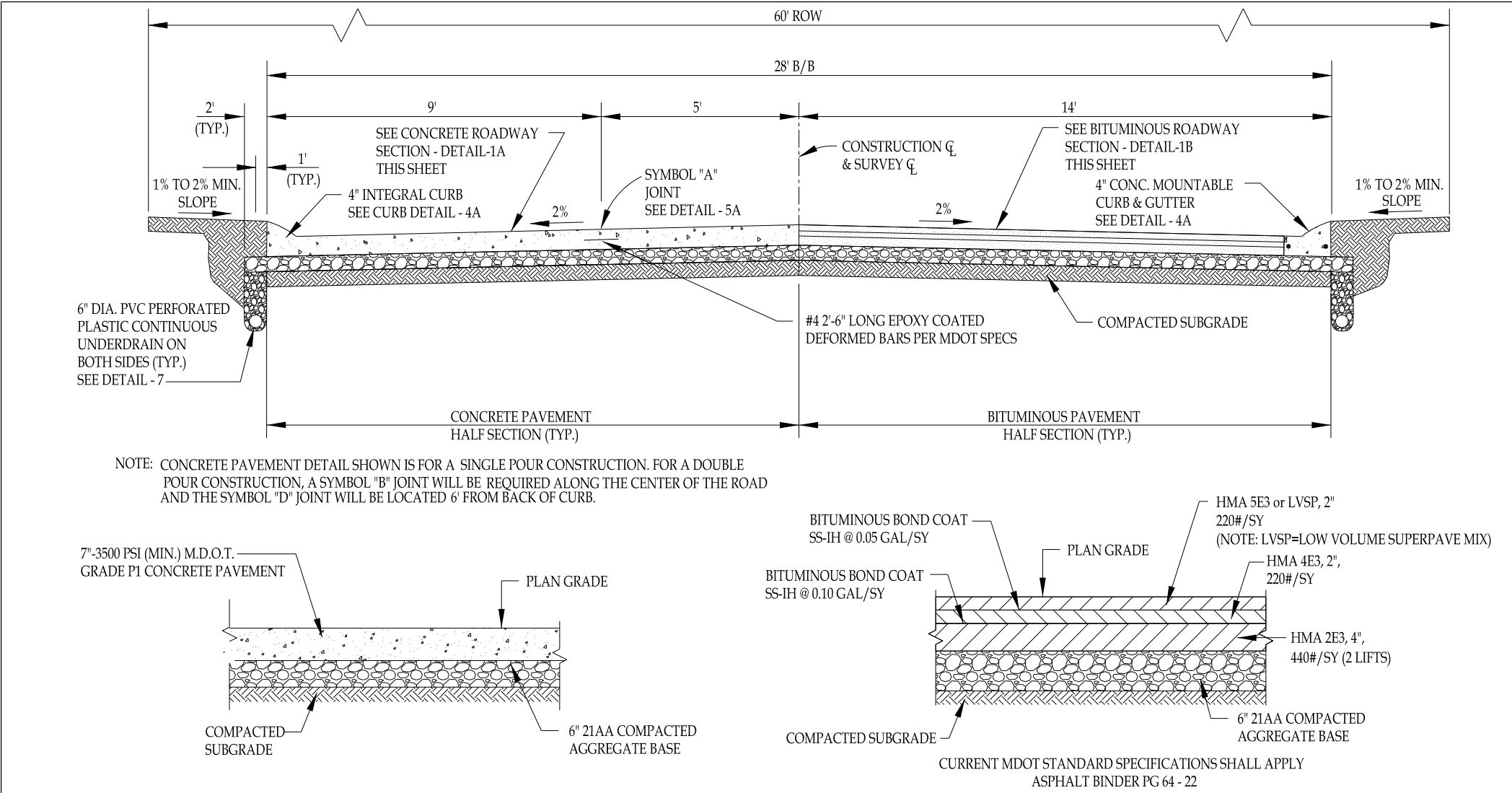
(586) 286-8000

CHARTER TOWNSHIP OF CLINTON

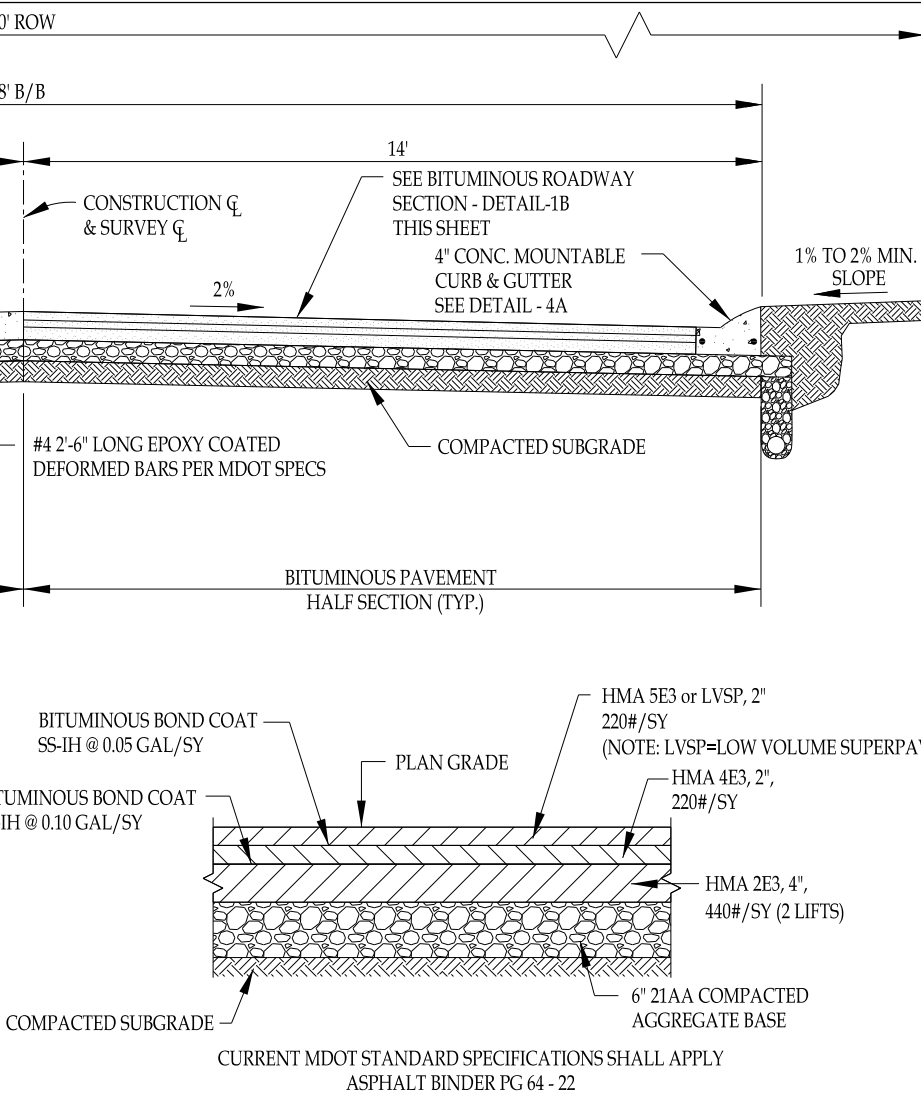
STORM SEWER STANDARD DETAILS

CHARTER TOWNSHIP OF CLINTON
MACOMB COUNTY
MICHIGAN

Date:	07.24.2015
Scale:	N.T.S.
Sheet:	ST-1
Project:	

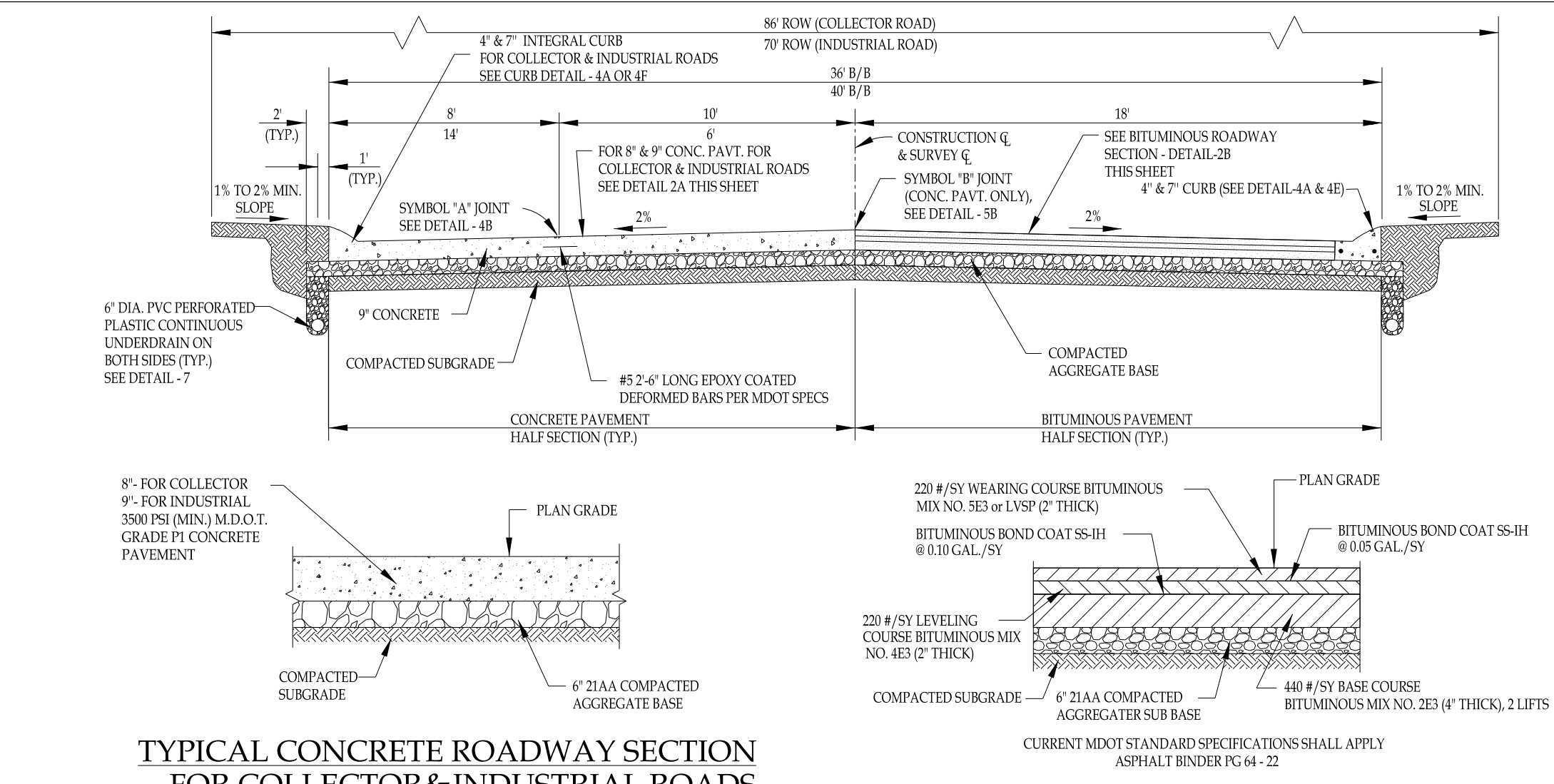


TYPICAL CONCRETE ROADWAY SECTION
FOR RESIDENTIAL ROAD
DETAIL - 1A
NOT TO SCALE

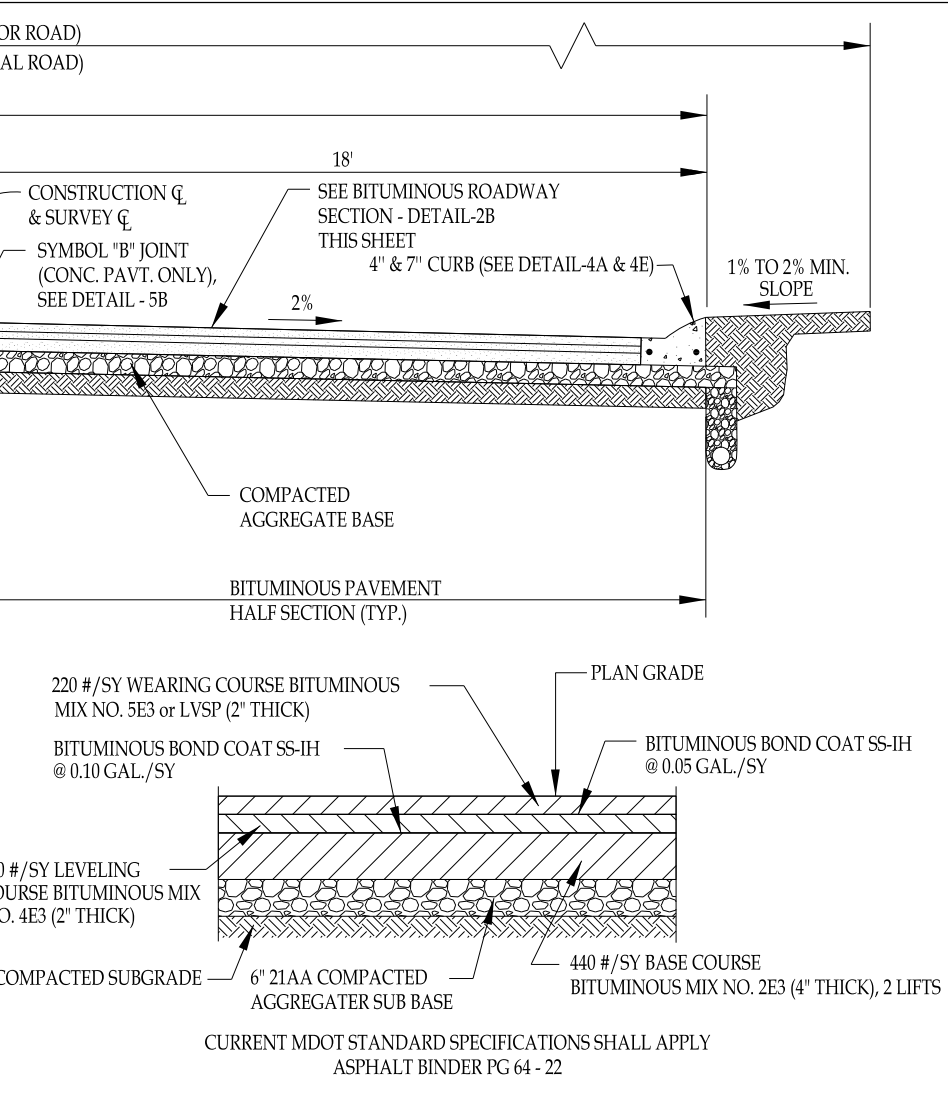


TYPICAL BITUMINOUS ROADWAY SECTION
FOR RESIDENTIAL ROAD
DETAIL - 1B
NOT TO SCALE

TYPICAL CROSS SECTION DETAIL - 1
RESIDENTIAL ROAD PAVEMENT (28' B/B)
NOT TO SCALE



TYPICAL CONCRETE ROADWAY SECTION
FOR COLLECTOR & INDUSTRIAL ROADS
DETAIL - 2A
NOT TO SCALE



TYPICAL BITUMINOUS ROADWAY SECTION
FOR COLLECTOR & INDUSTRIAL ROADS
DETAIL - 2B
NOT TO SCALE

TYPICAL CROSS SECTION DETAIL - 2
COLLECTOR AND INDUSTRIAL ROAD PAVEMENT (36' & 40' B/B)
NOT TO SCALE

GENERAL NOTES

- EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS. TREE ROOTS SHALL BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- THE PAVEMENT SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. THE FINAL SURGRADE SHALL BE THOROUGHLY PROOF-ROLLED IN THE PRESENCE OF A GEOTECHNICAL/PAVEMENT ENGINEER TO DETERMINE STABILITY. LOOSE OR YIELDING AREAS WHICH CANNOT BE MECHANICALLY STABILIZED SHALL BE REMOVED AND REPLACED WITH CLASS II SAND OR AS DIRECTED BY THE ENGINEER. ALL FILL MATERIAL AND BASE MATERIAL SHALL BE TESTED AND ITS COMPACTATION AND SUITABILITY FOR ACCEPTANCE OF THE BASE MATERIAL AND PAVEMENT SHALL BE CERTIFIED BY SAID TESTING FIRM.
- IF IN THE OPINION OF THE INSPECTOR/ENGINEER, FIELD CONDITIONS WARRANT ADDITIONAL TESTING, THE DEVELOPER SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED ADDITIONAL TESTING.
- 21A AGGREGATE BASE SHALL BE COMPACTED TO ACHIEVE A 95% COMPACTION LEVEL (MODIFIED PROCTOR - ASTM D 1557-91). THE BASE SHALL EXTEND A MINIMUM OF 2 FEET BEYOND THE BACK OF CURB OR THE PAVEMENT EDGE.
- CONCRETE PAVEMENT TESTING SHALL BE REQUIRED FOR ALL PROJECTS.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MACOMB COUNTY DEPARTMENT OF ROADS (MCDOR) AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.
- FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL ARRANGE FOR ALL INSPECTION.
- 10 INCH AND 20 INCH EXPANSION JOINTS SHALL BE INSTALLED PER MCDOR STANDARDS.
- FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 95% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.
- UNDERDRAIN WRAPPED IN GEOTEXTILE FABRIC FILTER SHALL BE INSTALLED ON BOTH SIDES OF ALL ROADWAYS. (SEE DETAIL 7)
- CONSTRUCTION TRAFFIC SHALL BE MINIMIZED ON THE NEW BITUMINOUS PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, SUBJECT TO MCDOR APPROVAL, THE PLACEMENT OF THE FINAL LIFT SHALL BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED BY THE DEVELOPER. PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS.

PAVING NOTES

CONCRETE PAVEMENT

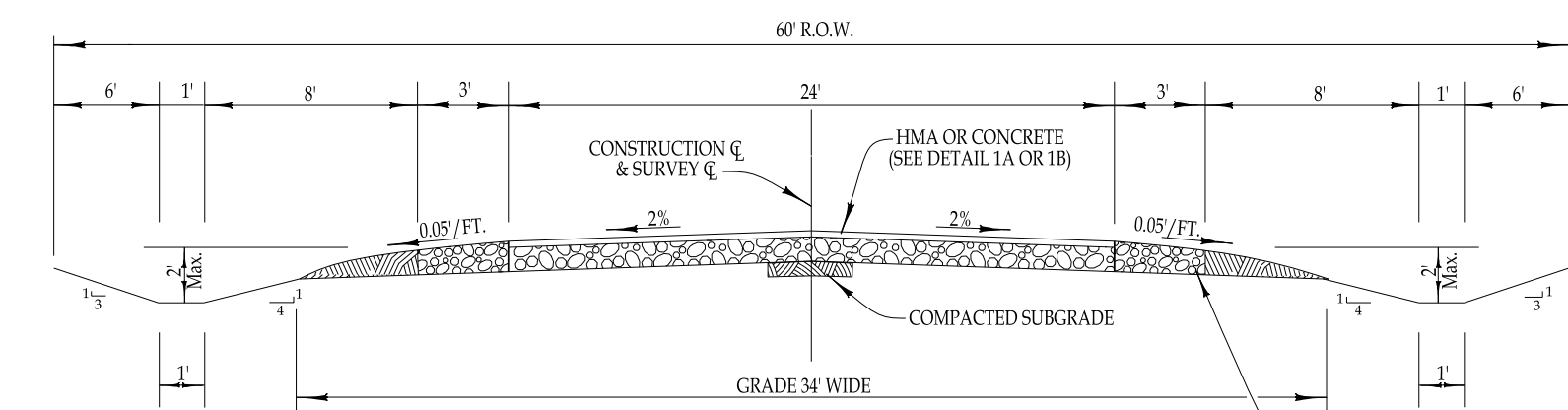
- CONCRETE SHALL CONSIST OF PORTLAND CEMENT TYPE I/A (AIR-ENTAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES. PAVEMENT SHALL CONFORM TO M.D.O.T. GRADE P1.
- ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.
- THE CONCRETE BATCH PLANT SHALL BE M.D.O.T. CERTIFIED WITH LOCATION APPROVED BY THE MACOMB COUNTY DEPARTMENT OF ROADS.
- NO CONCRETE PAVING SHALL BE ALLOWED PRIOR TO MAY 1, OR AFTER NOVEMBER 1 (UNLESS APPROVED BY THE MACOMB COUNTY DEPARTMENT OF ROADS).
- AIR TEMPERATURE AT POINT OF PLACEMENT, AWAY FROM ARTIFICIAL HEAT SHALL BE MINIMUM 25°F AND RISING.
- TEMPERATURE OF CONCRETE AT TIME OF PLACEMENT SHALL BE BETWEEN 40°F AND 90°F.
- CONCRETE PAVING MIXTURES SHALL MEET ALL PROVISIONS OF SECTION 902 OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND FOR THE COARSE AGGREGATE 6A-A-SECTION 902. OBTAIN THE COARSE AGGREGATE FOR CONCRETE MIXTURES FROM NATURAL AGGREGATE SOURCES. THE ABSORPTION DETERMINED IN ACCORDANCE WITH ASTM C 127 SHALL NOT EXCEED 2.5%.

BITUMINOUS PAVEMENT

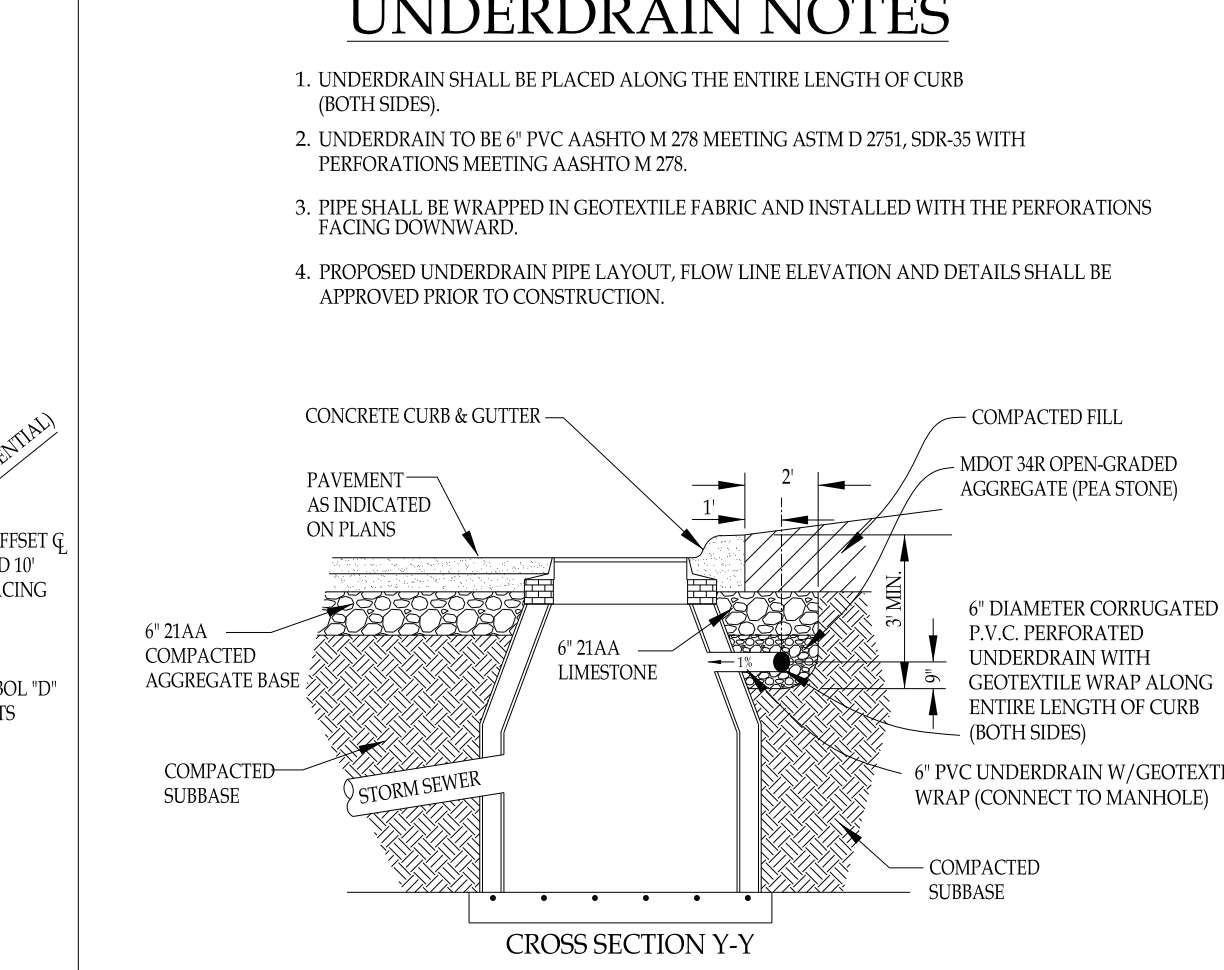
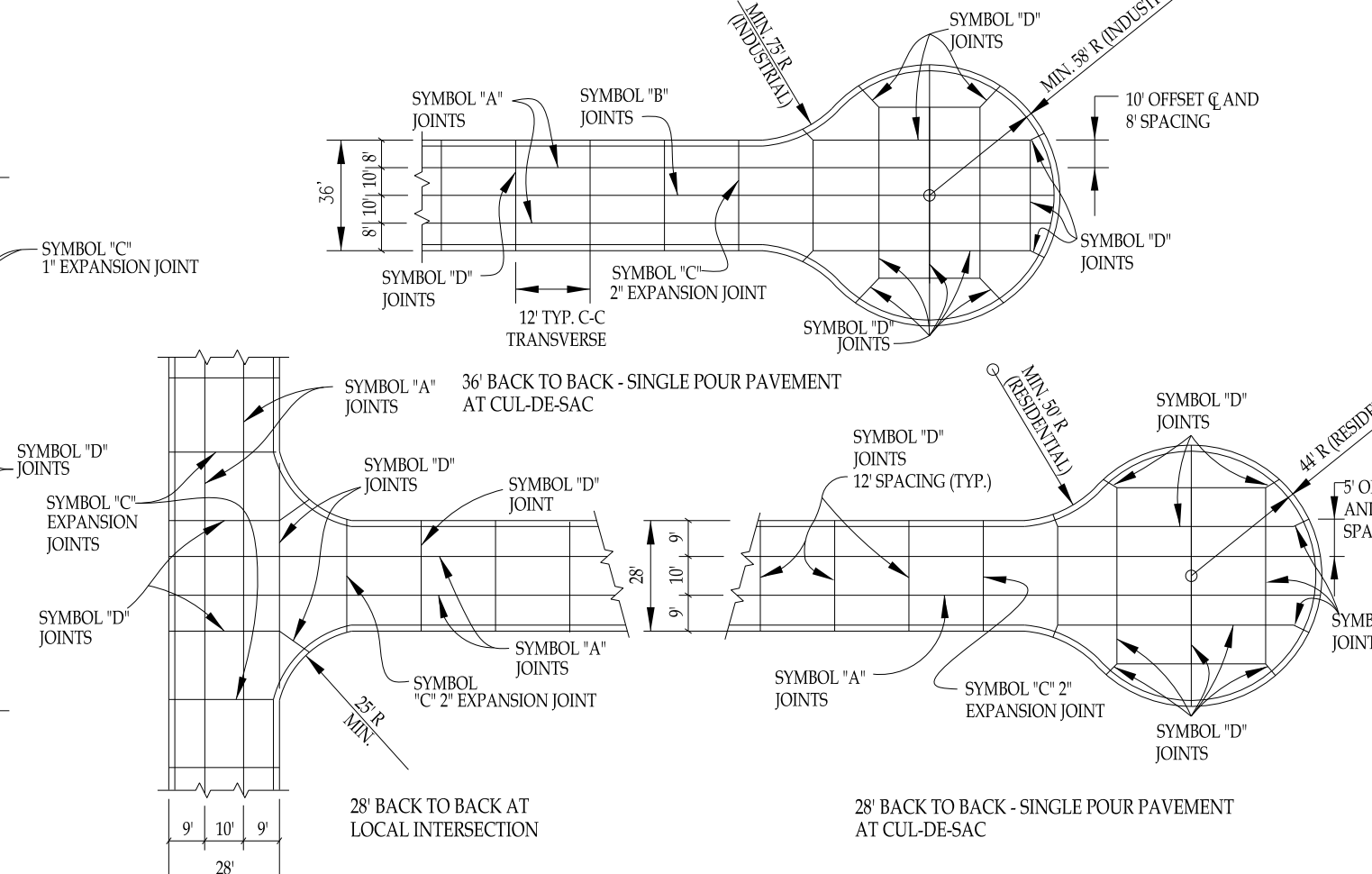
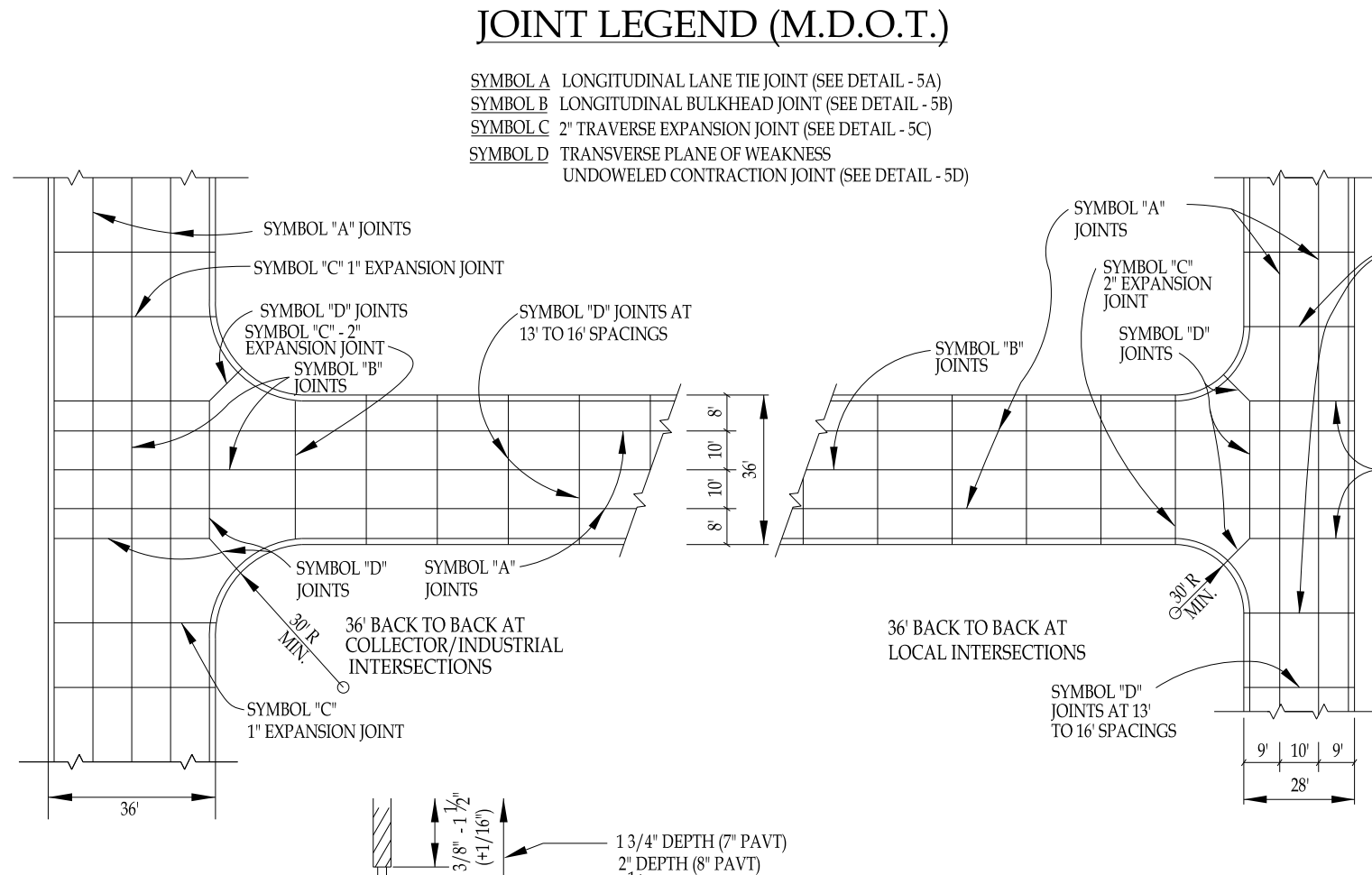
- BITUMINOUS MIXTURE SHALL CONSIST OF: BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 2B3 LEVING COURSE - MDOT BITUMINOUS MIXTURE NO. 4E3 WEARING COURSE - MDOT BITUMINOUS MIXTURE NO. 5E3 or LVSF ASPHALT CEMENT PERFORMANCE GRADE 50 (PG 64-22)
- ALL BITUMINOUS MATERIAL SHALL BE COMPACTED TO A DENSITY OF 97% OF THE FIELD CONTROL DENSITY AS DETERMINED BY THE MARSHBEE METHOD.
- A BOND COAT OF 50-50 EMULSION IS REQUIRED BETWEEN THE BASE COURSE AND LEVING COURSE AND BETWEEN THE LEVING COURSE AND WEARING COURSE WHEN EITHER 48 HOURS HAVE ELAPSED BETWEEN PLACEMENT OF THE BITUMINOUS COURSES OR THE SURFACE OF THE PAVEMENT HAS BEEN CONTAMINATED WITH DIRT, DUST, OR FOREIGN MATERIAL. THE BOND COAT SHALL BE APPLIED IN A UNIFORM MANNER OVER THE SURFACE AT A RATE OF 0.10 GALLON/SY. (BETWEEN LEVING COURSE AND BASE COURSE) & 0.05 GALLON/SY (BETWEEN WEARING COURSE AND LEVING COURSE) THE COURSE MAY DIFFER. IN THE EVENT A BOND COAT IS NOT REQUIRED, THE LEVING COURSE MAY REQUIRE LOCALIZED BROOM CLEANING.
- UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ROADS, TEMPERATURE AND SEASONAL REQUIREMENTS FOR PLACING HMA WILL BE ACCORDING TO CURRENT MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. TARGET PLACEMENT TEMPERATURES FOR CONSTRUCTION. THE MCDOR WILL NOT ALLOW PAVING BELOW THESE MINIMUM TEMPERATURES, NOR WHEN FROST IS ON OR IN THE GRADE OR ON THE EXISTING SURFACE.
- PLACEMENT OF HMA OR APPLICATION OF BOND COAT IS PROHIBITED WHEN PRECIPITATION IS IMMINENT OR WHEN MOISTURE ON THE EXISTING SURFACE WILL PREVENT SATISFACTORY CURING.
- RECYCLED HOT MIX ASPHALT MIXTURE - LIMITS RECYCLED ASPHALT MATERIAL (RAP) TO A MAXIMUM OF 15% BINDER BY WEIGHT OF THE TOTAL BINDER IN THE MIXTURE. ASPHALT SHINGLES AND TIES ARE NOT ALLOWED.

UNDERDRAIN NOTES

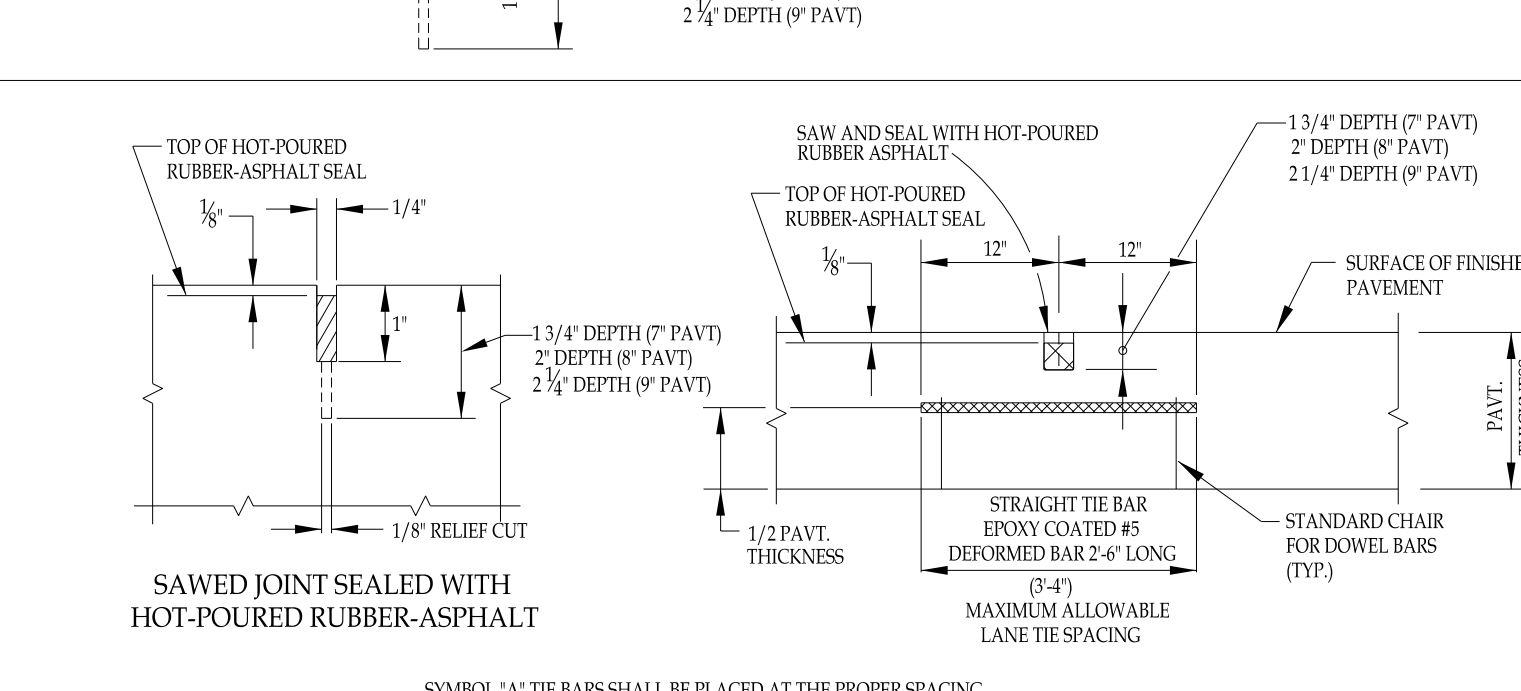
- UNDERDRAIN SHALL BE PLACED ALONG THE ENTIRE LENGTH OF CURB (BOTH SIDES).
- UNDERDRAIN TO BE 6" PVC AASHTO M 278 MEETING ASTM D 2751, SDR-35 WITH PERFORATIONS MEETING AASHTO M 278.
- PIPE SHALL BE WRAPPED IN GEOTEXTILE FABRIC AND INSTALLED WITH THE PERFORATIONS FACING DOWNWARD.
- PROPOSED UNDERDRAIN PIPE LAYOUT, FLOW LINE ELEVATION AND DETAILS SHALL BE APPROVED PRIOR TO CONSTRUCTION.



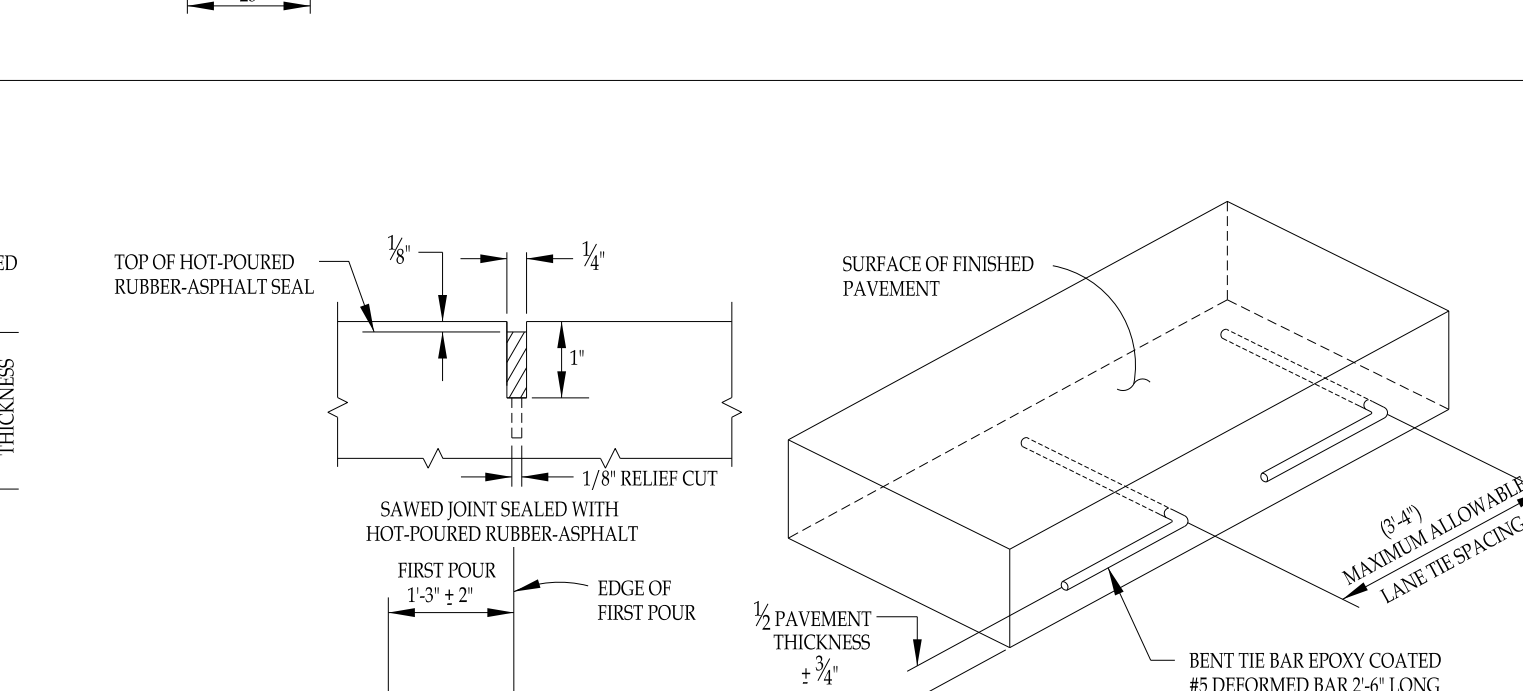
TYPICAL RESIDENTIAL ROAD CROSS SECTION DETAIL - 3
FOR OPEN DITCH CONSTRUCTION
NOT TO SCALE



UNDERDRAIN WITH CATCH BASIN
ALONG ROADWAY CURB & GUTTER (TYP.)
DETAIL - 7A
NOT TO SCALE

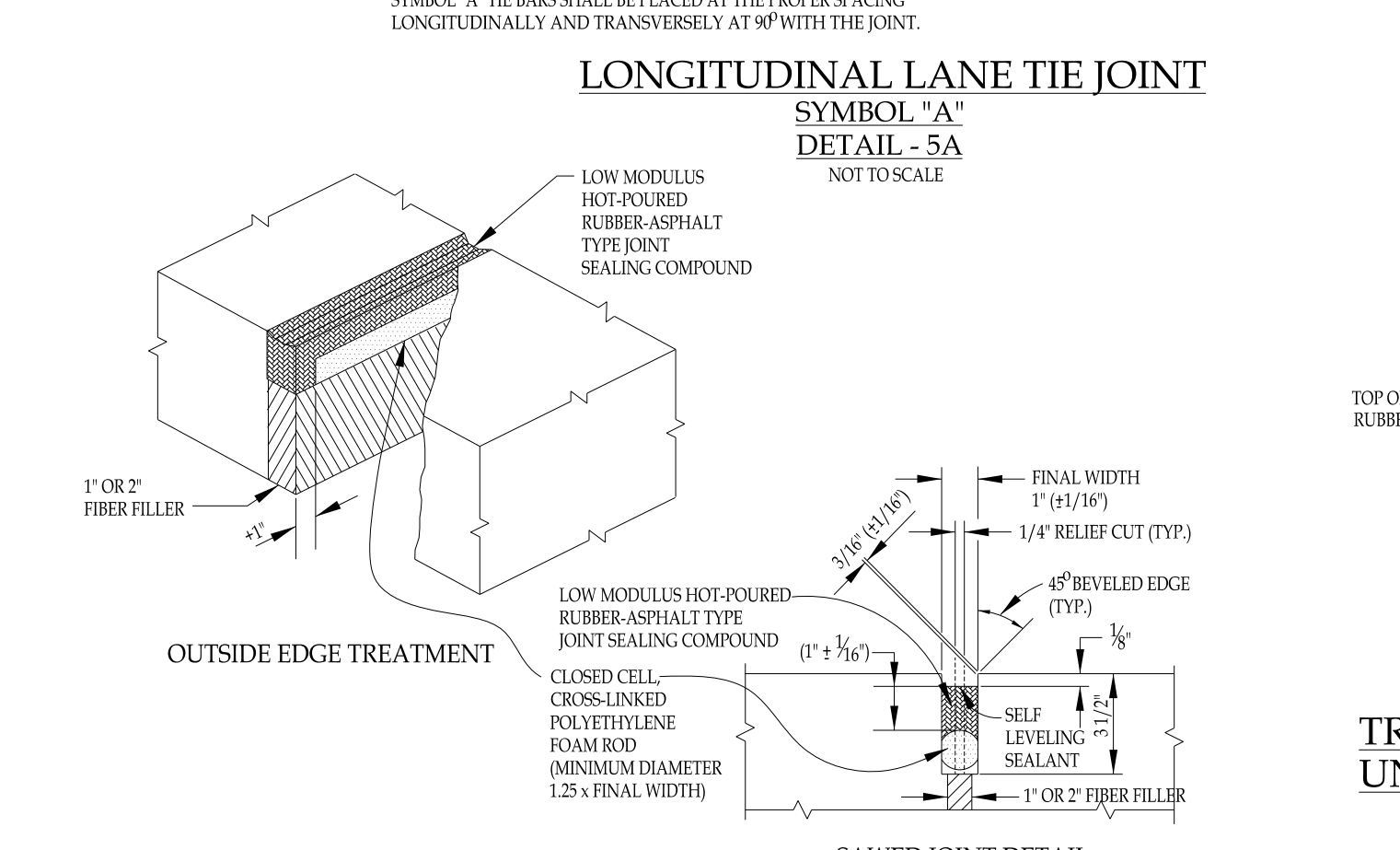


LONGITUDINAL LANE TIE JOINT
SYMBOL 'A'
DETAIL - 5A
NOT TO SCALE



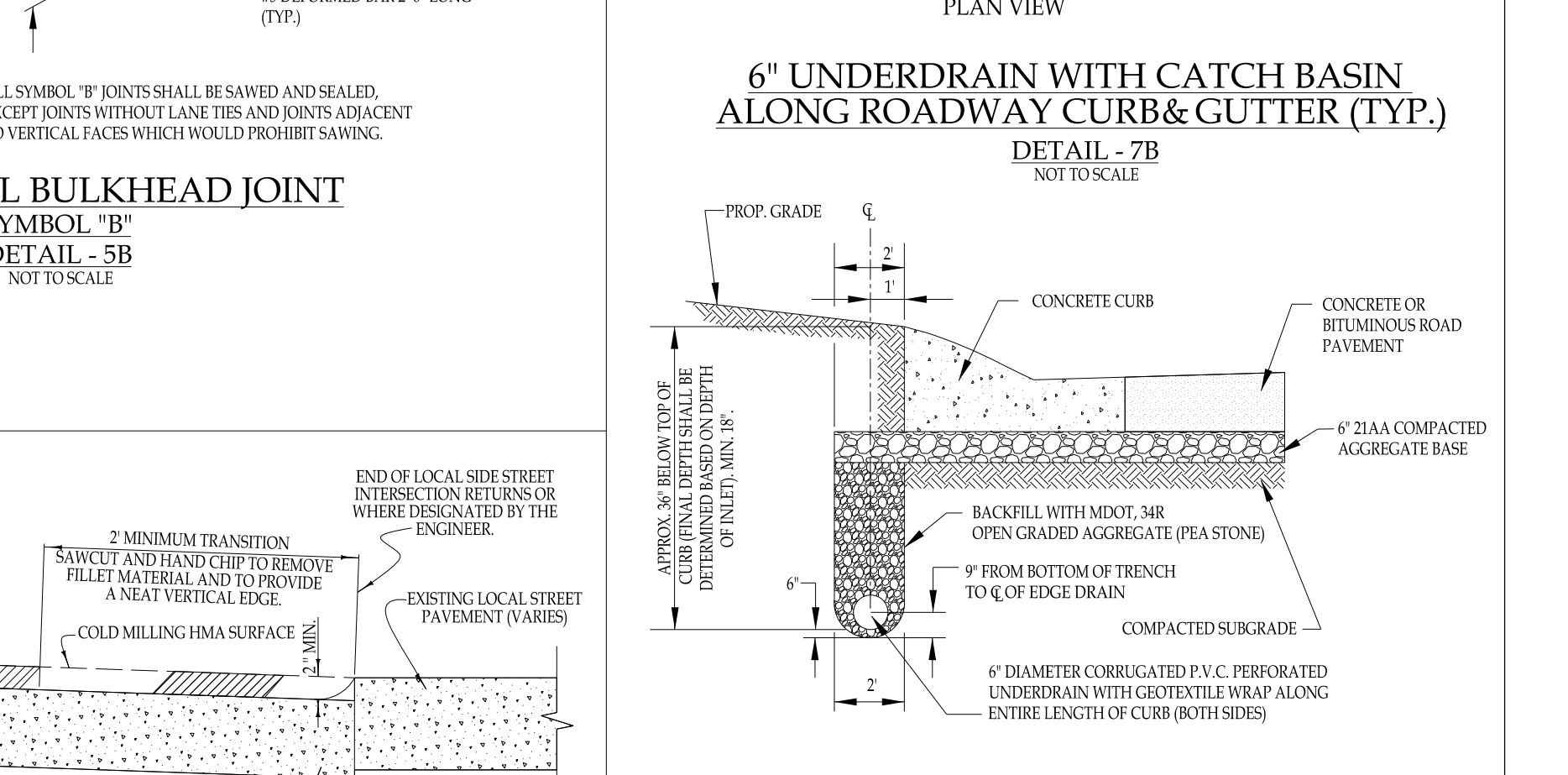
LONGITUDINAL BULKHEAD JOINT

SYMBOL 'B'
DETAIL - 5B
NOT TO SCALE

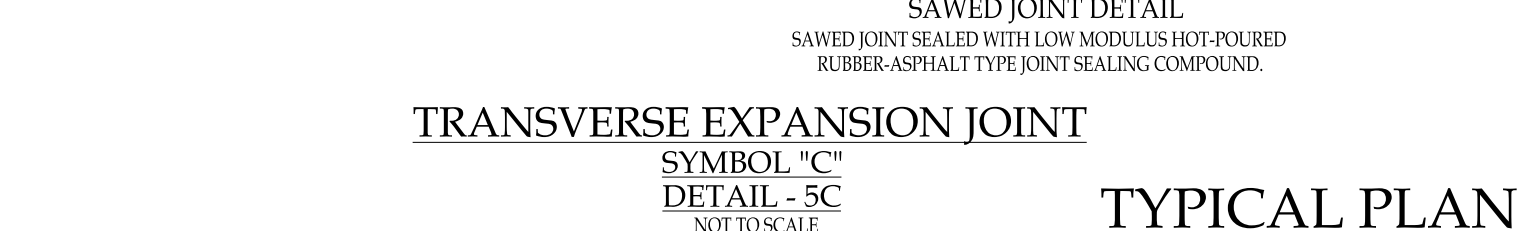


TRANSVERSE PLANE OF WEAKNESS

UNDOWELED CONTRACTION JOINT
SYMBOL 'D'
DETAIL - 5D
NOT TO SCALE



TYPICAL UNDERDRAIN ALONG ROADWAY
CURB & GUTTER SECTION
DETAIL - 7C
NOT TO SCALE



TRANSVERSE EXPANSION JOINT

SYMBOL 'C'
DETAIL - 5C
NOT TO SCALE

TYPICAL PLAN OF CONCRETE PAVEMENT
JOINT LAYOUT DETAILS - 5
NOT TO SCALE

TERMINAL BUTT JOINT

DETAIL - 6
NOT TO SCALE

TYPICAL UNDERDRAIN DETAILS - 7
NOT TO SCALE

PAVING STANDARD DETAILS

SCALE
NTS

DATE
REVISED
MARCH 2018



MACOMB COUNTY
DEPARTMENT OF ROADS

SHEET NO.

1 OF 2

