



EXISTING SITE & DEMOLITION LEGEND

- EXISTING UTILITY TO BE REMOVED
- EXISTING ITEM TO BE REMOVED
- SPOT ELEVATION
- SOIL BORING
- TREE
- TAG NUMBER
- TREE TO BE REMOVED (397 TOTAL)
- LANDMARK TREE
- DRAINAGE FLOW
- EXISTING OVERLAND FLOW
- DRAINAGE TRIBUTARY LIMITS
- WETLAND LIMITS
- SOIL TYPE LIMITS/UNIT NAME
- EXISTING IMPERVIOUS SURFACE/BUILDING TO BE REMOVED
- EXISTING WOODLAND TO BE REMOVED
- EXISTING SLOPES STEEPER THAN 12%
- LIMITS OF DISTURBANCE

- ### DEMOLITION NOTES
- ALL ON-SITE WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SPECIFICATIONS AND STANDARD DETAILS UNLESS OTHERWISE SPECIFIED.
 - THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AS-BUILT DRAWINGS AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
 - ALL NECESSARY PERMITS AND LICENSES SHALL BE OBTAINED AND THE CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THE SITE, INCLUDING ALL TESTING AND CLOSE OUT REQUIREMENTS, PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS AND NOTIFY ALL AFFECTED UTILITY COMPANIES PRIOR TO THE DEMOLITION OF ANY EXISTING STRUCTURES. ALL EXISTING UTILITIES TO BE DEMOLISHED/ABANDONED SHALL BE CAPPED OFF OR REMOVED SO AS NOT TO INTERFERE WITH THE CONSTRUCTION PROJECT.
 - THE CONTRACTOR SHALL CONTACT THE ENGINEER AND OWNER IN WRITING PRIOR TO THE REMOVAL OF ANY SUBSURFACE STRUCTURES NOT DESIGNATED OR SHOWN ON THE CONSTRUCTION PLANS.
 - THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ON-SITE EXISTING STRUCTURES, VEGETATION, FENCES, CONCRETE, PAVEMENT, ETC., WITHIN THE LIMITS OF DISRUPTION UNLESS NOTED "TO REMAIN" ON THE CONSTRUCTION PLANS, AT A LOCATION APPROVED BY THE OWNER.
 - THE FLOW IN ALL DRAIN TILE, SANITARY & STORM SEWERS, DRAINS, WATERMANS AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE. WHENEVER SUCH UTILITIES, WATERCOURSES AND DRAINS ARE DISTURBED OR DESTROYED DURING THE PROSECUTION OF THE WORK, THEY SHALL BE RESTORED BY THE CONTRACTOR AT HIS OWN COST AND EXPENSE. UNLESS SPECIFIC PROVISION IS MADE WITHIN THE PLANS, DAMAGED ITEMS SHALL BE REPLACED WITH THE SAME QUALITY MATERIALS OR BETTER, MAINTAINING THE SAME GRADIENT AS EXISTING. REPLACED DRAIN TILE SHALL BE LAID ON COMPACTED BEDDING EQUAL IN DENSITY TO SURROUNDING STRATUM. REPLACEMENT SHALL BE DONE AT THE TIME OF THE BACKFILL OPERATION.
 - CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE DAMAGE DONE TO ANY EXISTING ITEM DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO, OR BETTER THAN, EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND REPAIRS.
 - SAW CUT THE EDGE OF EXISTING PAVEMENT AND CURB TO FULL DEPTH AT LOCATIONS WHERE EXISTING IS TO MEET PROPOSED TO PROVIDE A SMOOTH EDGE. REMOVE PAVEMENT TO THE EXTENT NECESSARY TO ALLOW FOR PROPER JOINTING METHOD TO PROPOSED PAVEMENT (PER DETAILS).
 - SEE ELECTRICAL DRAWINGS FOR DETAILS ABOUT ELECTRICAL AND COMMUNICATION POLES AND LINES REMOVAL AND RELOCATION.
 - ALL EXISTING UTILITIES OUTSIDE OF DISTURBANCE LIMITS TO REMAIN.

BENCHMARKS

BENCHMARK #330 ARROW ON HYDRANT 5' E. OF WALK ELEVATION = 807.61 (NAVD88)
BENCHMARK #331 CHISELED "X" ON THE S. SIDE OF CONCRETE LIGHT POLE BASE AT S. SIDE OF EXIST. DRIVE ELEVATION = 812.02 (NAVD88)
BENCHMARK #332 CHISELED "X" ON THE E. SIDE OF CONCRETE LIGHT POLE BASE ALONG THE S. SIDE OF SCREENED FENCE ELEVATION = 809.15 (NAVD88)

TRUE NORTH PLANT NORTH

HORIZONTAL SCALE

1 inch = 100 feet (24"x36")

MISS DIG
3 WORKING DAYS BEFORE STARTING YOUR PROJECT
1-800-482-7171 (TOL FREE)

CLIENT

HATCI MICHIGAN R&D CENTER
SUPERIOR TOWNSHIP, MICHIGAN

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IBI Group Professional Services (USA) Inc.
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ISSUES

No.	DESCRIPTION	DATE
A	AREA PLAN	2021-10-27
B	AREA PLAN AMENDMENT	2021-11-29
C	PRELIMINARY SITE DESIGN	2022-01-26
D	30% OWNER REVIEW	2022-02-18
E	80% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

NOT FOR CONSTRUCTION

PLEASE CONFIRM KEYPLAN BOX

CONSULTANTS

SEAL

PRIME CONSULTANT

IBI GROUP
25000 Telegraph Road - Suite 300
Southfield MI 48033 USA
tel 248 536 8000 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

SHEET TITLE

OVERALL EXISTING CONDITIONS

SHEET NUMBER

CD-100

ISSUE



EXISTING SITE & DEMOLITION LEGEND

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ARROW ON HYDRANT 5'
E. OF WALK
ELEVATION= 807.61
(NAVD88)

BENCHMARK #331
CHISELED "X" ON THE S.
SIDE OF CONCRETE LIGHT
POLE BASE AT S. SIDE
OF EXIST. DRIVE
ELEVATION= 812.02
(NAVD88)

BENCHMARK #332
CHISELED "X" ON THE E.
SIDE OF CONCRETE LIGHT
POLE BASE ALONG THE
SIDE OF SCREENED
FENCE
ELEVATION= 809.15
(NAVD88)

TRUE NORTH PLANT NORTH

HORIZONTAL SCALE

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WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG 3 WORKING DAYS BEFORE STARTING YOUR PROJECT 1-800-482-7171 (TOL. FREE)

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CONSULTANTS

SEAL

PRIME CONSULTANT

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Southfield MI 48033 USA
tel 248 938 8000 fax 248 938 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO: 134894	CHECKED BY:
DRAWN BY: G TANNER	APPROVED BY:
PROJECT MGR: D KASSAB	

SHEET TITLE

EXISTING CONDITIONS

SHEET NUMBER	ISSUE
CD-101	



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TRUE NORTH **PLANT NORTH**

HORIZONTAL SCALE

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WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG

CLIENT

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SUPERIOR TOWNSHIP, MICHIGAN

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PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
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PROJECT NO:
134894

DRAWN BY:
G TANNER

CHECKED BY:

PROJECT MGR:
D KASSAB

APPROVED BY:

SHEET TITLE

EXISTING CONDITIONS

SHEET NUMBER

CD-102

ISSUE

SEE SHEET CD-101 FOR CONTINUATION

REAR SETBACK

Table with 14 columns: TO BE TAG NO., REMOVED, SCIENTIFIC NAME, COMMON NAME, DBH (INCHES), HEIGHT (FEET), CONDITION, LANDMARK, SOVEREIGN, REPLACEMENT REQUIRED, NOTES. Rows 1326-1431.

Table with 14 columns: TO BE TAG NO., REMOVED, SCIENTIFIC NAME, COMMON NAME, DBH (INCHES), HEIGHT (FEET), CONDITION, LANDMARK, SOVEREIGN, REPLACEMENT REQUIRED, NOTES. Rows 1432-1534.

Table with 14 columns: TO BE TAG NO., REMOVED, SCIENTIFIC NAME, COMMON NAME, DBH (INCHES), HEIGHT (FEET), CONDITION, LANDMARK, SOVEREIGN, REPLACEMENT REQUIRED, NOTES. Rows 1535-1636.

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SEAL



TREE SURVEY SCHEDULE										
TO BE REMOVED				REPLACEMENT						
TAG NO.	REMOVED	SCIENTIFIC NAME	COMMON NAME	DBH (INCHES)	HEIGHT (FEET)	CONDITION	LANDMARK	SOVEREIGN	REQUIRED	NOTES
1943	Y	Morus alba	white mulberry	8.0 in		good			1	
1944		Juglans nigra	black walnut	12.7 in		fair			-	
1945		Juglans nigra	black walnut	8.1 in		fair			-	
1946		Acer negundo	box elder	9.3 in		dead or dying			-	
1947		Acer negundo	box elder	9.0 in		fair			-	
1948		Juglans nigra	black walnut	10.9 in		good			-	
1949		Acer negundo	box elder	13.6 in		fair			-	
1950		Salix nigra	black willow	8.6 in		good			-	
1951		Acer negundo	box elder	9.3 in		poor			-	
1952		Juglans nigra	black walnut	20.9 in		fair	Y		-	
1953		Acer negundo	box elder	10.0 in		poor			-	
1954		Juglans nigra	black walnut	9.1 in		excellent			-	
1955		Acer negundo	box elder	8.2 in		poor			-	
1956		Juglans nigra	black walnut	10.2 in		excellent			-	
1957		Salix nigra	black willow	17.1 in		fair			-	
1958		Salix nigra	black willow	15.6 in		good			-	
1959		Juglans nigra	black walnut	23.1 in		fair	Y		-	
1960		Populus deltoides	cottonwood	17.7 in		good			-	
1961		Juglans nigra	black walnut	8.1 in		good			-	
1962		Populus deltoides	cottonwood	42.1 in		good			-	
1963		Juglans nigra	black walnut	8.0 in		good			-	
1964		Juglans nigra	black walnut	9.0 in		excellent			-	
1965		Juglans nigra	black walnut	11.5 in		excellent			-	
1966		Juglans nigra	black walnut	9.1 in		good			-	
1967		Juglans nigra	black walnut	8.3 in		excellent			-	
1968		Acer negundo	box elder	8.3 in		poor			-	
1969		Juglans nigra	black walnut	11.7 in		good			-	
1970		Juglans nigra	black walnut	8.8 in		excellent			-	
1971		Juglans nigra	black walnut	13.9 in		good			-	
1972		Juglans nigra	black walnut	16.6 in		excellent			-	
1973		Juglans nigra	black walnut	11.7 in		excellent			-	
1974		Morus alba	white mulberry	8.0 in		fair			-	
1975		Juglans nigra	black walnut	10.3 in		excellent			1	
1976		Prunus serotina	wild black cherry	19.7 in		fair	Y		-	
1977		Prunus serotina	wild black cherry	8.4 in		excellent			-	
1978		Juglans nigra	black walnut	12.0 in		good			-	
1979		Juglans nigra	black walnut	9.5 in		good			-	
1980		Ulmus americana	American elm	10.7 in		excellent			-	
1981		Juglans nigra	black walnut	8.0 in		excellent			-	
1982		Juglans nigra	black walnut	8.5 in		good			-	
1983		Populus deltoides	cottonwood	32.8 in		excellent			-	
1984		Juglans nigra	black walnut	15.2 in		good			-	
1985		Salix amygdaloides	peach-leaved willow	8.5 in		good			-	
1986		Juglans nigra	black walnut	10.1 in		excellent			-	
1987		Juglans nigra	black walnut	15.2 in		excellent			-	
1988		Ulmus americana	American elm	11.2 in		excellent			-	
1989		Ulmus americana	American elm	9.4 in		good			-	
1990		Ulmus americana	American elm	8.4 in		good			-	
1991		Ulmus americana	American elm	9.0 in		excellent			-	
1992		Juglans nigra	black walnut	15.9 in		excellent			-	
1993		Juglans nigra	black walnut	17.8 in		excellent			-	
1994		Acer negundo	box elder	8.2 in		poor			-	
1995		Juglans nigra	black walnut	11.0 in		excellent			-	
1996		Juglans nigra	black walnut	8.7 in		excellent			-	
1997		Juglans nigra	black walnut	16.7 in		excellent			-	
1998		Juglans nigra	black walnut	15.6 in		good			-	
1999		Acer negundo	box elder	8.7 in		poor			-	
2000		Juglans nigra	black walnut	8.1 in		good			-	
TOTAL REPLACEMENT TREES:									2,109	

CLIENT



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ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

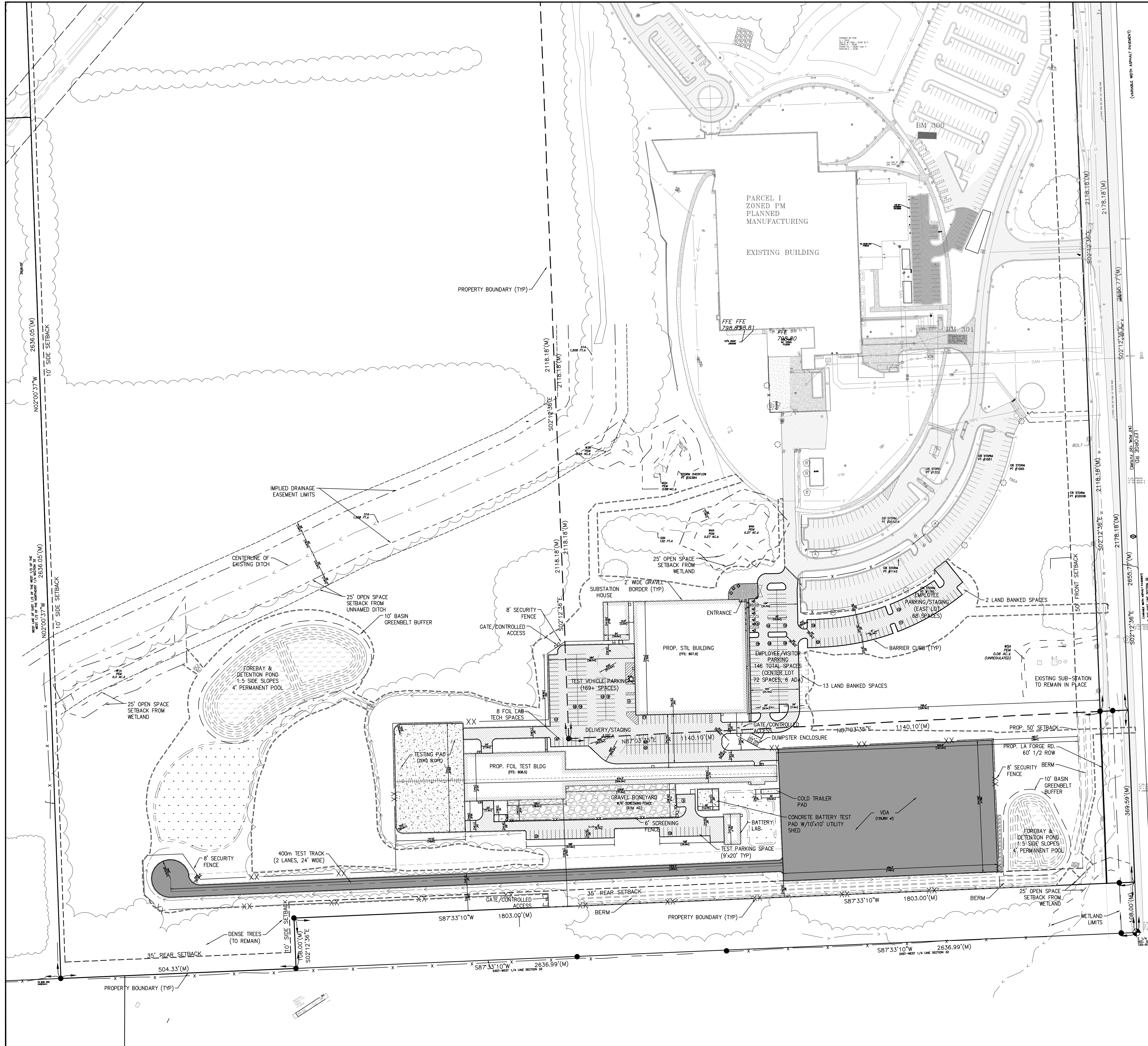
PROJECT NO:
134894

DRAWN BY: G TANNAR	CHECKED BY:
PROJECT MGR: D KASSAB	APPROVED BY:

SHEET TITLE

TREE SURVEY SCHEDULE

SHEET NUMBER	ISSUE
CD-107	



CIVIL LEGEND - SITE

- SWSL/4" 4" WIDE SINGLE WHITE SOLID LINE (TYP FOR PARKING)
- SBSL/4" 4" WIDE SINGLE BLUE SOLID LINE (TYP FOR ADA)
- SYSL/4" 4" WIDE SINGLE YELLOW SOLID LINE
- [Symbol] ACCESSIBLE PARKING SPACE AND ACCESS AISLE
- [Symbol] DETECTABLE WARNING STRIP PER ADA STANDARDS
- [Symbol] NEW BUILDING OUTLINE
- [Symbol] PARKING LOT/STANDARD DUTY ASPHALT PAVEMENT
- [Symbol] TESTING FACILITY ASPHALT PAVEMENT
- [Symbol] HEAVY DUTY CONCRETE PAVEMENT - IAW DETAIL SHEET CT-606
- [Symbol] CONCRETE SIDEWALK - IAW DETAIL SHEET CT-606
- [Symbol] AGGREGATE SURFACE - IAW DETAIL SHEET CT-606
- [Symbol] PATIO SEATING
- [Symbol] LANDSCAPE VEGETATION
- [Symbol] LIGHT POLE - SEE ELECTRICAL PLANS
- XX 8" HIGH WILDLIFE/SECURITY FENCE - IAW DETAIL SHEET CT-606
- [Symbol] CENTER OF SWALE
- [Symbol] LIMITS OF DISTURBANCE

TRUE NORTH

PLANT NORTH

3 WORKING DAYS BEFORE STARTING YOUR PROJECT

1-800-482-7171 (TOL. FREE)

HORIZONTAL SCALE

1 inch = 100 feet (24"x36")

CLIENT

HATCI MICHIGAN R&D CENTER
SUPERIOR TOWNSHIP, MICHIGAN

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ISSUES

No.	DESCRIPTION	DATE
A	AREA PLAN	2021-10-27
B	AREA PLAN AMENDMENT	2021-11-29
C	PRELIMINARY SITE DESIGN	2022-01-26
D	30% OWNER REVIEW	2022-02-18
E	60% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

NOT FOR CONSTRUCTION

PLEASE CONFIRM KEYPLAN BOX

CONSULTANTS

SEAL

PRIME CONSULTANT

IBI GROUP
25200 Telegraph Road - Suite 300
Southfield MI 48033 USA
tel 248 936 8200 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO: 134894

DRAWN BY: G TANNER

PROJECT MGR: D KASSAB

CHECKED BY:

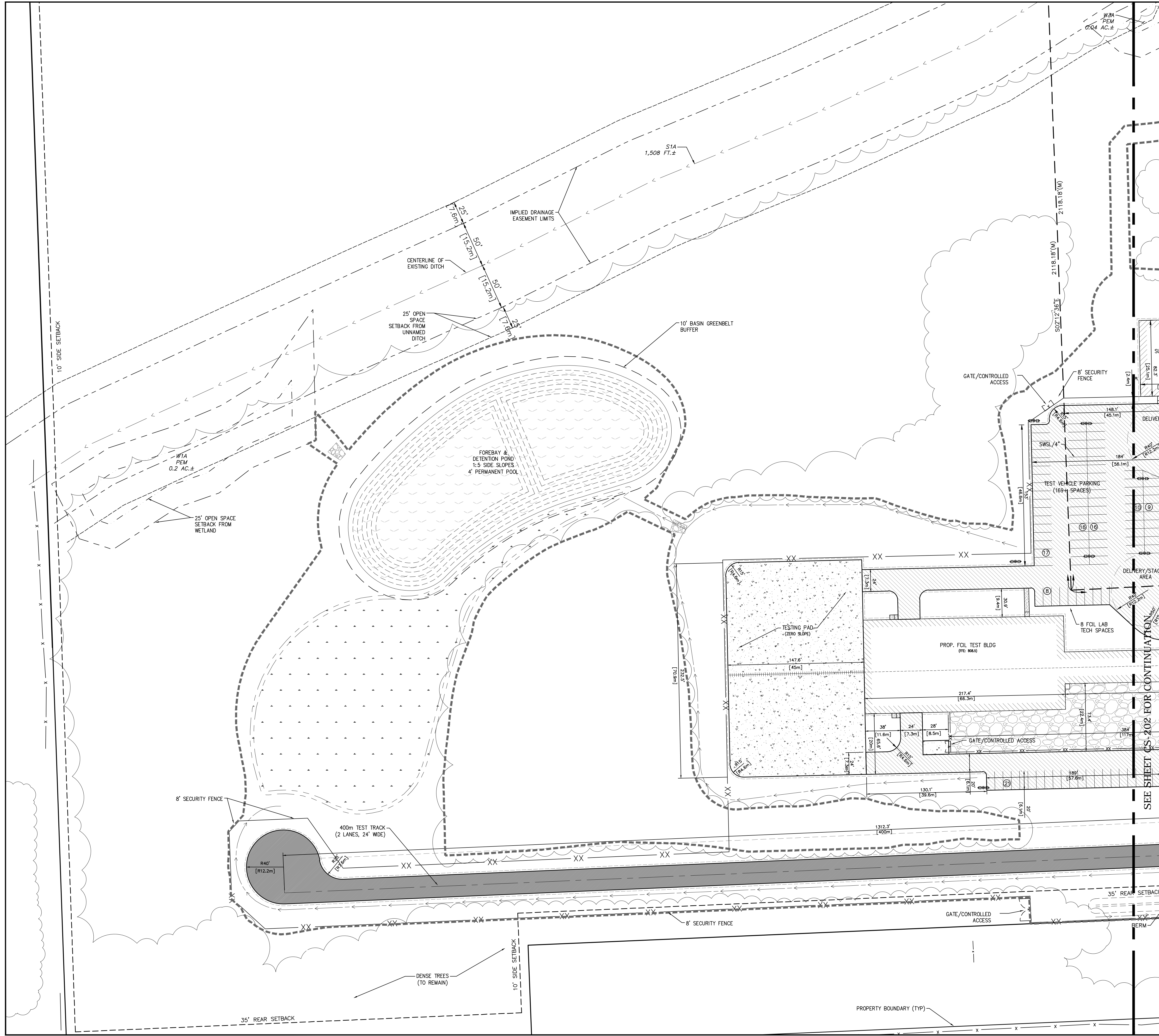
APPROVED BY:

SHEET TITLE

OVERALL SITE PLAN

SHEET NUMBER CS-200

ISSUE



CIVIL LEGEND -- SITE

- SWSL/4" 4" WIDE SINGLE WHITE SOLID LINE (TYP FOR PARKING)
- SBSL/4" 4" WIDE SINGLE BLUE SOLID LINE (TYP FOR ADA)
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- [Symbol] PATIO SEATING
- [Symbol] LANDSCAPE VEGETATION
- [Symbol] LIGHT POLE - SEE ELECTRICAL PLANS
- XX 8" HIGH WILDLIFE/SECURITY FENCE - IAW DETAIL SHEET CT-606
- CENTER OF SWALE
- LIMITS OF DISTURBANCE



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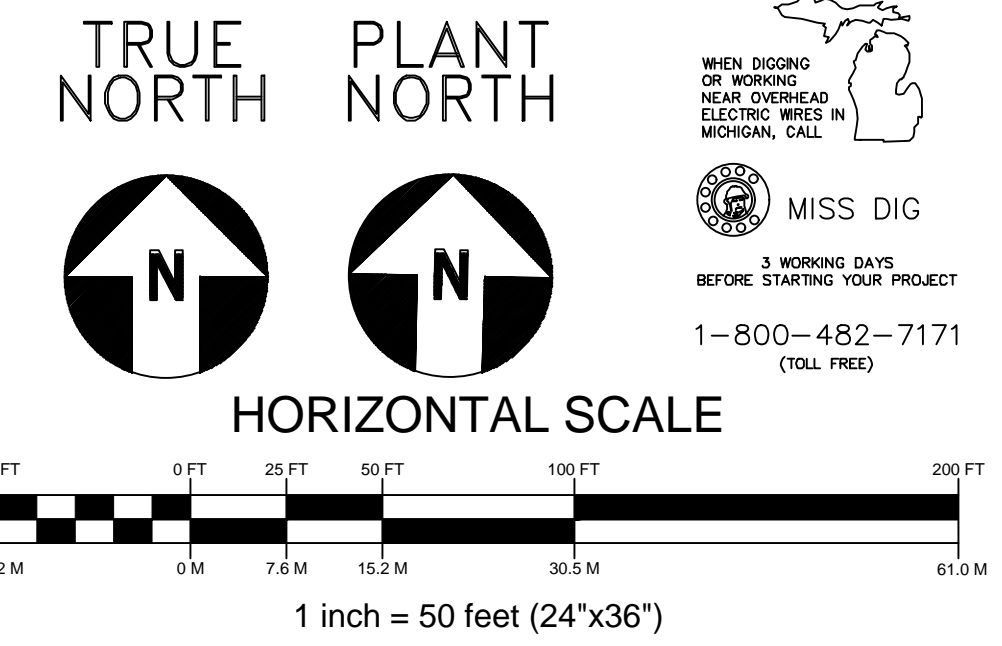
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 6800 Geddes Rd Superior Charter Twp,
 MI 48198

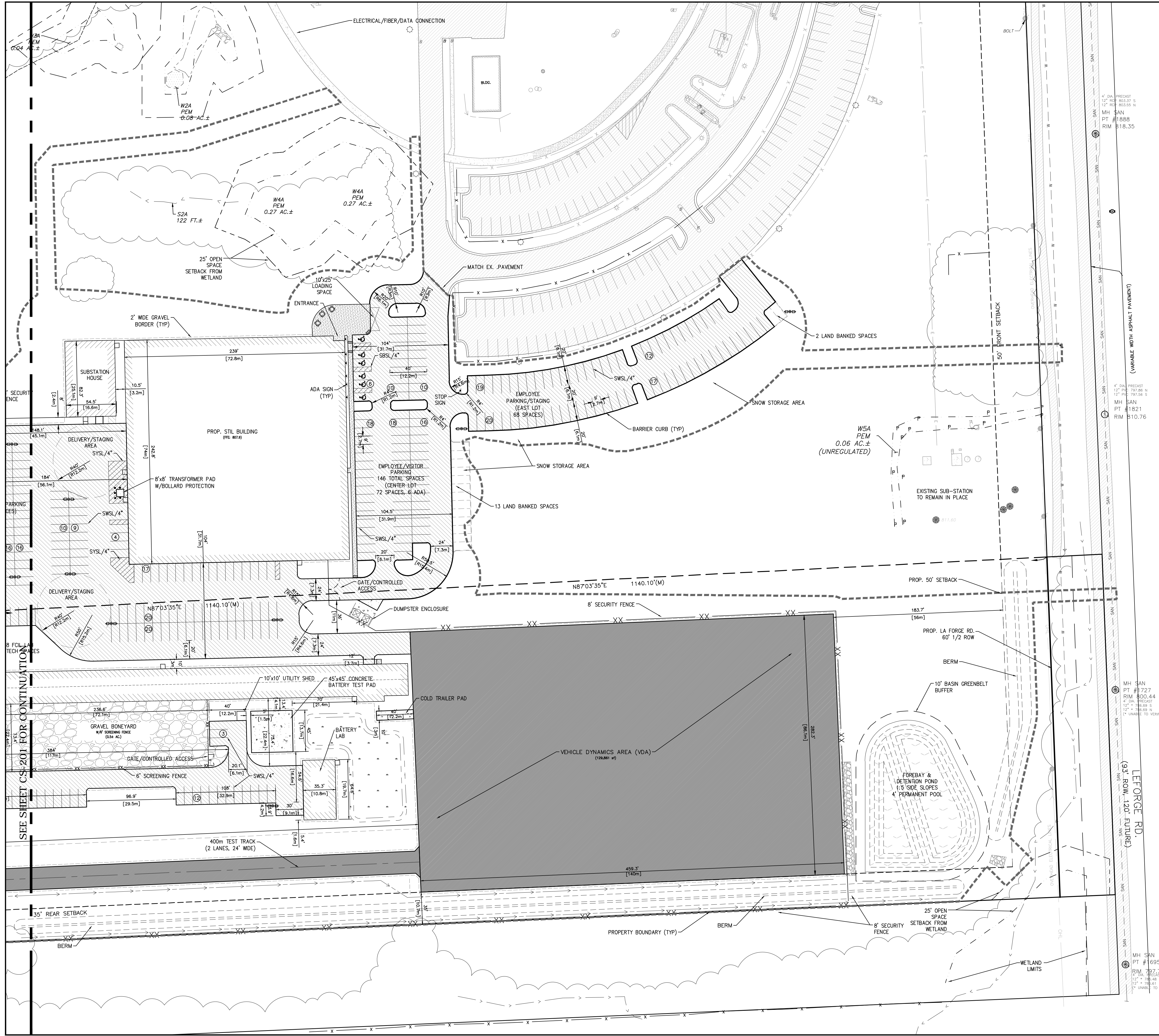
PROJECT NO: 134894
DRAWN BY: G TANNER
PROJECT MGR: D KASSAB

CHECKED BY:
APPROVED BY:

SHEET TITLE
SITE PLAN

SHEET NUMBER CS-201 **ISSUE**





CIVIL LEGEND -- SITE

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- PATIO SEATING
- LANDSCAPE VEGETATION
- LIGHT POLE - SEE ELECTRICAL PLANS
- 8" HIGH WILDLIFE/SECURITY FENCE - IAW DETAIL SHEET CT-606 CENTER OF SWALE
- LIMITS OF DISTURBANCE



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MI 48198

PROJECT NO:
134894
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G TANNER
PROJECT MGR:
D KASSAB

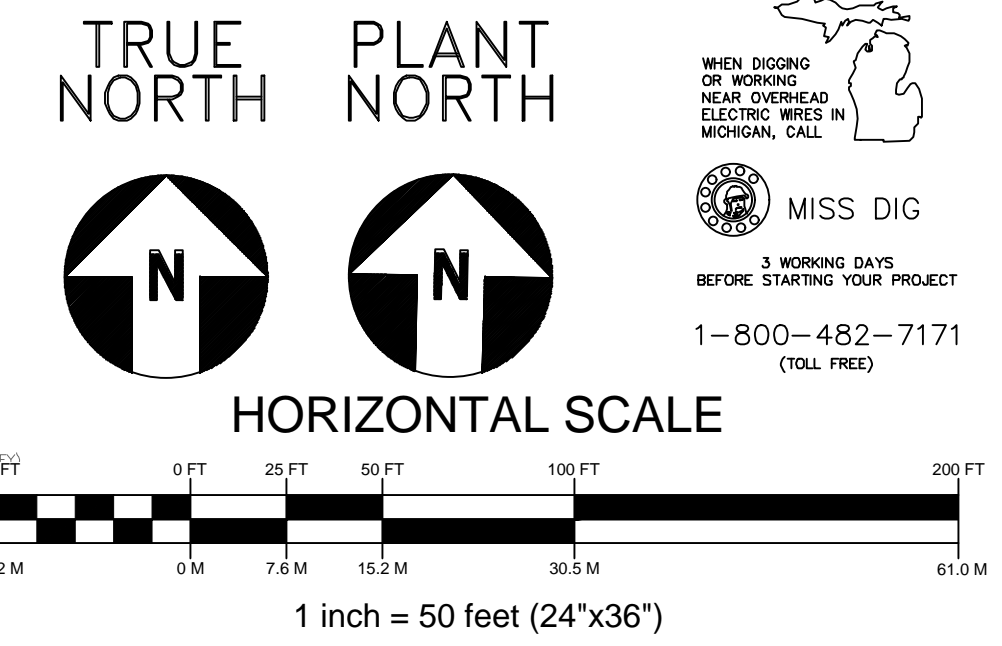
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APPROVED BY:

SHEET TITLE

SITE PLAN

SHEET NUMBER
CS-202

ISSUE



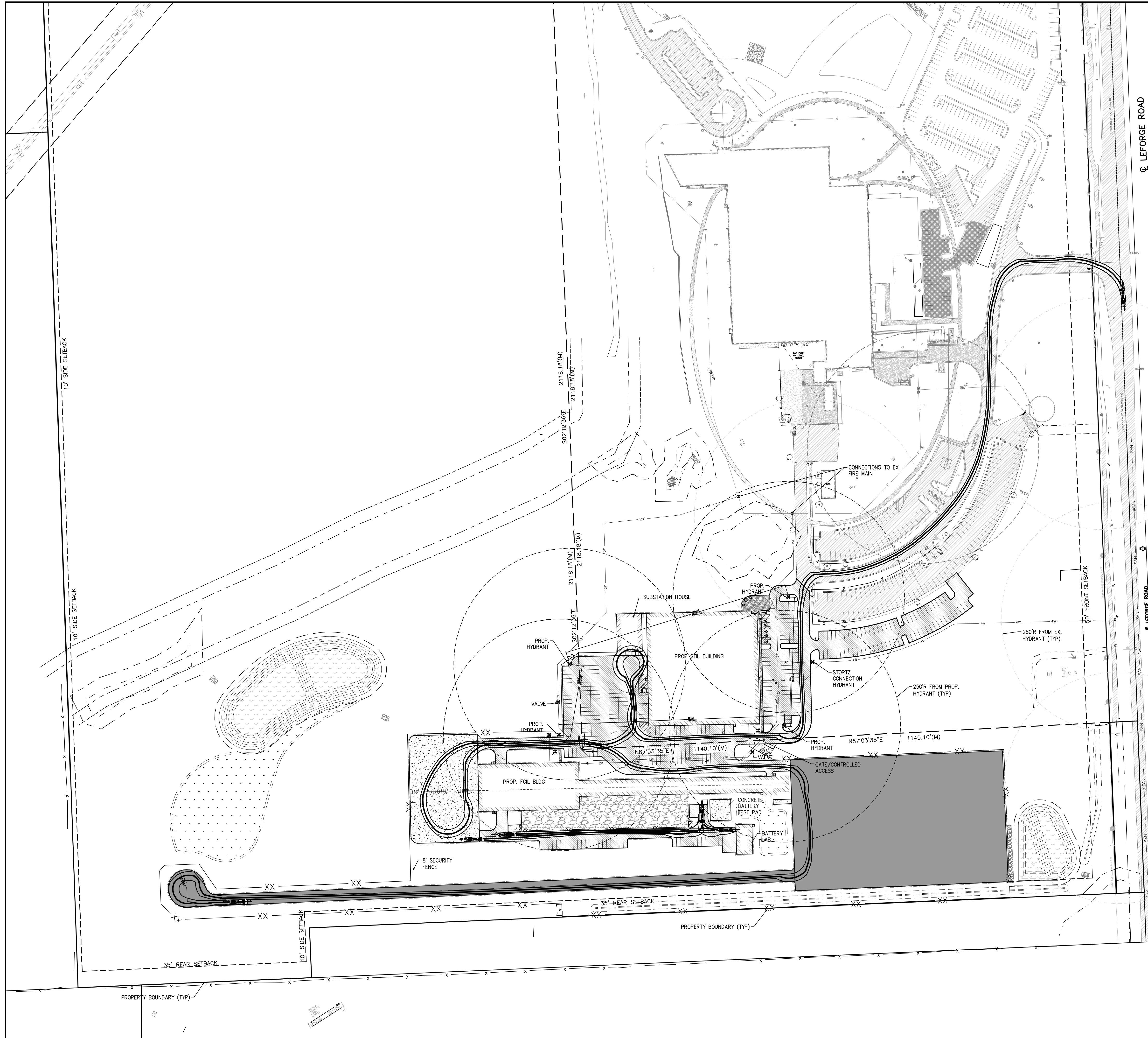
MISS DIG
3 WORKING DAYS
BEFORE STARTING YOUR PROJECT
1-800-482-7171
(TOLL FREE)

SHEET TITLE

SITE PLAN

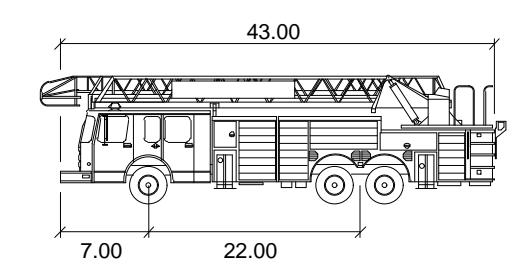
SHEET NUMBER
CS-202

ISSUE



- FIRE MAIN NOTES:**
1. PLANS, MATERIALS & INSTALLATION PER NFPA #24, #13, & SUPERIOR TOWNSHIP SPECIFICATIONS.
 2. NEW 12" UNDERGROUND PIPE TO BE PVC C900 DR14.
 3. NEW FITTINGS TO BE DUCTILE IRON MECHANICAL JOINT PER ANSI A-21.10
 4. NEW UNDERGROUND PIPE TO BE FLUSHED PER NFPA #24 REQUIREMENTS. 200 PSI OR 50 PSI ABOVE MAXIMUM SYSTEM WORKING PRESSURE.
 5. NEW UNDERGROUND TO BE HYDROSTATICALLY TESTED PER NFPA #24 & CHARTER TOWNSHIP OF SUPERIOR SPECIFICATIONS.
 6. ALL MATERIAL & INSTALLATION PER NFPA #24 & CHARTER TOWNSHIP OF SUPERIOR SPECIFICATIONS.
 7. MINIMUM BURY DEPTH FROM TOP OF PIPE TO BE 5'-6" PER NFPA #24.
 8. NEW THRUST BLOCKS TO BE IN ACCORDANCE WITH THE LATEST NFPA #13 REQUIREMENTS.

- NFPA PIPING UNDERGROUND NOTES:**
- TRENCHING**
ALL TRENCHING FOR INSTALLATION OF UNDERGROUND PIPING IS TO BE PERFORMED ACCORDANCE WITH OSHA GUIDELINES.
- ANCHORING**
ALL UNDERGROUND PIPING IS TO BE ANCHORED PER NFPA 24. TIE-RODS AND CLAMPS MAY BE USED WITH DUCTILE IRON OR PVC PIPE (SEE TABLE FOR NUMBER & SIZE OF ROADS REQUIRED FOR EACH SIZE OF PIPE). THRUST BLOCKS MAY BE USED ALONE (SEE THRUST BLOCK DETAILS FOR REQUIRED BEARING AREA).
- THRUST BLOCKS**
CALCULATED PER THE RECOMMENDED GUIDELINES OF NFPA 24, SECTION A-10.6.2 AND INCLUDES A SAFETY FACTOR OF 1.5. EXTERNAL PIPE DIAMETER USED IN PLACE OF INTERNAL FOR ADDITIONAL SAFETY FACTOR BEYOND NFPA 13 RECOMMENDATIONS. SOIL BEARING STRENGTH HAS BEEN DETERMINED BY GEOTECHNICAL REPORT PROVIDED. THE SOIL BEARING STRENGTH IS 2.68 tsf OR 5,360 psf. REFER TO TABLE NO. 3 FOR SITE SPECIFIC THRUST BLOCK BEARING AREAS REQUIRED.
- BACKFILLING**
ALL UNDERGROUND PIPE (DUCTILE IRON AND PVC) IS TO BE BACKFILLED USING T DATA DODD TAIL NO. 1 BELOW. BACKFILL SHALL BE 3" CLEAN GRAVEL A MIN. 4' DEPTH UNDER AND AROUND PIPES (AND PUDDLED WHERE POSSIBLE) TO PREVENT SETTLEMENT OR LATERAL MOVEMENT, AND SHALL CONTAIN NO ASHES, CINDERS, REFUSE, ORGANIC OR OTHER CORROSIVE MATERIAL. THE TOP OF PIPE SHALL BE BURIED NOT LESS THAN 1' BELOW THE (30") FROST LINE FOR THE LOCALITY.
- FLUSHING**
FLUSH UNDERGROUND MAINS AND LEAD-IN CONNECTIONS TO THE SYSTEM RISERS THROUGH HYDRANTS AND DEAD ENDS OF THE SYSTEM OR THROUGH ACCESSIBLE ABOVEGROUND FLUSHING OUTLETS ALLOWING THE WATER TO RUN UNTIL CLEAR. THE FLOWS SPECIFIED IN TABLE 4 WILL PROVIDE A VELOCITY OF AT LEAST 10 FT/SEC (3 M/SEC) WHICH IS NECESSARY FOR CLEANING THE PIPE AND LIFTING FOREIGN MATERIAL TO AN ABOVE GRADE FLUSHING OUTLET.



Fire (Ladder) Truck

	Feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

TRUE NORTH PLANT NORTH

HORIZONTAL SCALE

1 inch = 100 feet (30"x42")

CLIENT

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PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

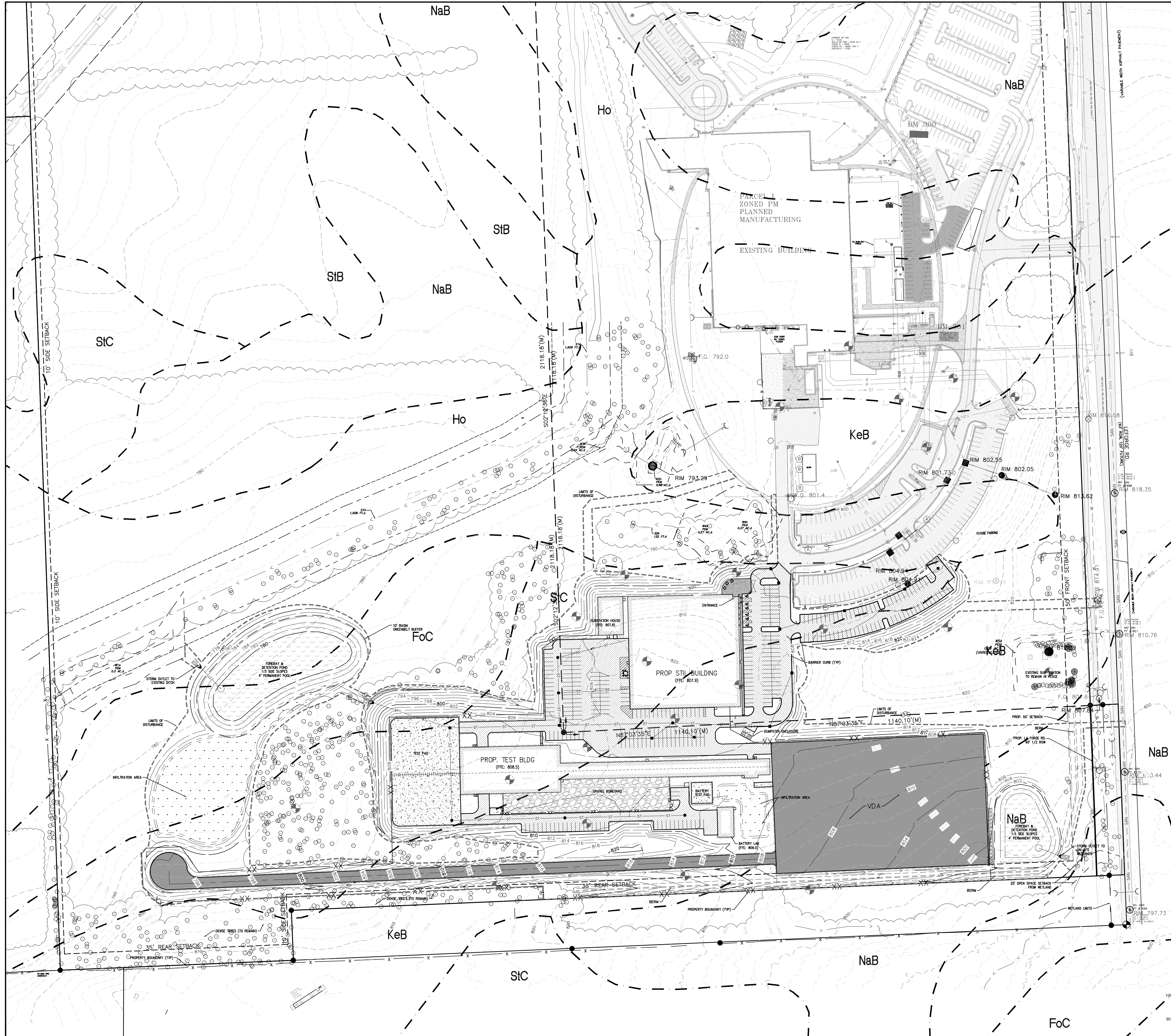
SHEET TITLE

FIRE PROTECTION PLAN

SHEET NUMBER

CS-203

ISSUE



- KEYNOTES:**
- FILL AREA BELOW BUILDING ADDITION WITH SUITABLE FILL
 - EXISTING STORM SEWER TO REMAIN. VERIFY LOCATION & OPERATION PRIOR TO CONSTRUCTION. REMOVAL ANY BLOCKAGES OR REPLACE STORM SEWER IN KIND (MATCH EX. INVERTS & PIPE SIZES) IF SYSTEM CANNOT BE CLEANED.
 - SLOPE TO STORM INLET
 - REPLACE CURB & PAVEMENT AS NEEDED TO INSTALL FIRE MAIN RE-ROUTE. PLACE 1" EXPANSION JOINT WHERE PROP. CURB MEETS EXISTING, BUTT JOINT WHERE PROP. ASPHALT MEETS EXISTING.
 - TRANSITION CURB FROM TYP. TYPE "B" CURB TO ZERO BACK/VALLEY CURB IN 1'
 - REPLACE CURB/HOOD INLET WITH FLAT GRATE IN VALLEY CURB
 - REMOVE CONCRETE COLLAR ADJUST RIM ELEVATION TO -0.2' BELOW LOWEST ADJACENT ASPHALT ELEVATION AT COLLAR SAWCUT, RE-POUR CONCRETE COLLAR UPON COMPLETION
 - ADJUST STRUCTURE PER MECHANICAL PLAN

CIVIL LEGEND - GRADING & DRAINAGE

- MH ## MAN HOLE
- CB ## CATCH BASIN
- ST STORM DRAINAGE PIPE
- PROP. UNDERDRAIN
- F FIRE MAIN
- 65 PROP. CONTOUR
- 80.00 EXISTING SPOT GRADE
- EXISTING CONTOUR
- RIDGE LINE
- ▲ 123.15 PROP. GRADE SPOT ELEVATION
- RM: STRUCTURE RIM/FLOW LINE
- HP: HIGH POINT
- HYD: HYDRANT, VLV: VALVE
- 80 SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
- DRAINAGE FLOW ARROW
- ← CENTER OF SWALE
- 1.1% SLOPE AND SLOPE DIRECTION
- LIMITS OF DISTURBANCE

- GRADING & DRAINAGE NOTES:**
- UNLESS NOTED OTHERWISE, ALL SPOTS/DIMENSIONS PROVIDED ARE TO:
 - TOP OF PAVEMENT/WALK/TOPSOIL
 - FACE/FLOW LINE OF CURB/DITCH
 - FLOW LINE OF STORM INLET/END SECTION
 - CENTER OF MANHOLE RIM
 - BASE FLANGE GRADE OF HYDRANT/PIV
 - SLOPE SMOOTHLY BETWEEN ELEVATIONS INDICATED.
 - GENERAL CONTRACTOR SHALL COORDINATE ALL SITE UTILITIES AND STORM DRAINAGE INSTALLATION SCHEDULES TO AVOID POTENTIAL UTILITY CONFLICTS.
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- HORIZONTAL AND VERTICAL CONTROL IS PROVIDED ON THE TOPOGRAPHICAL SURVEY BY LIVINGSTON ENGINEERING, REFER TO THE ATTACHED SURVEY SHEETS FOR BENCHMARK LOCATIONS AND INFORMATION.

BENCHMARKS

BENCHMARK #330
ARROW ON HYDRANT 5' E. OF WALK
ELEVATION = 807.61 (NAVD88)

BENCHMARK #331
CHISELED "X" ON THE S. SIDE OF CONCRETE LIGHT POLE BASE AT S. SIDE OF EXIST. DRIVE
ELEVATION = 812.02 (NAVD88)

BENCHMARK #332
CHISELED "X" ON THE E. SIDE OF CONCRETE LIGHT POLE BASE ALONG THE S. SIDE OF SCREENED FENCE
ELEVATION = 809.15 (NAVD88)

TRUE NORTH PLANT NORTH

MISS DIG
3 WORKING DAYS BEFORE STARTING YOUR PROJECT
1-800-482-7171 (TOLL FREE)

HORIZONTAL SCALE

1 inch = 100 feet (24"x36")

CLIENT

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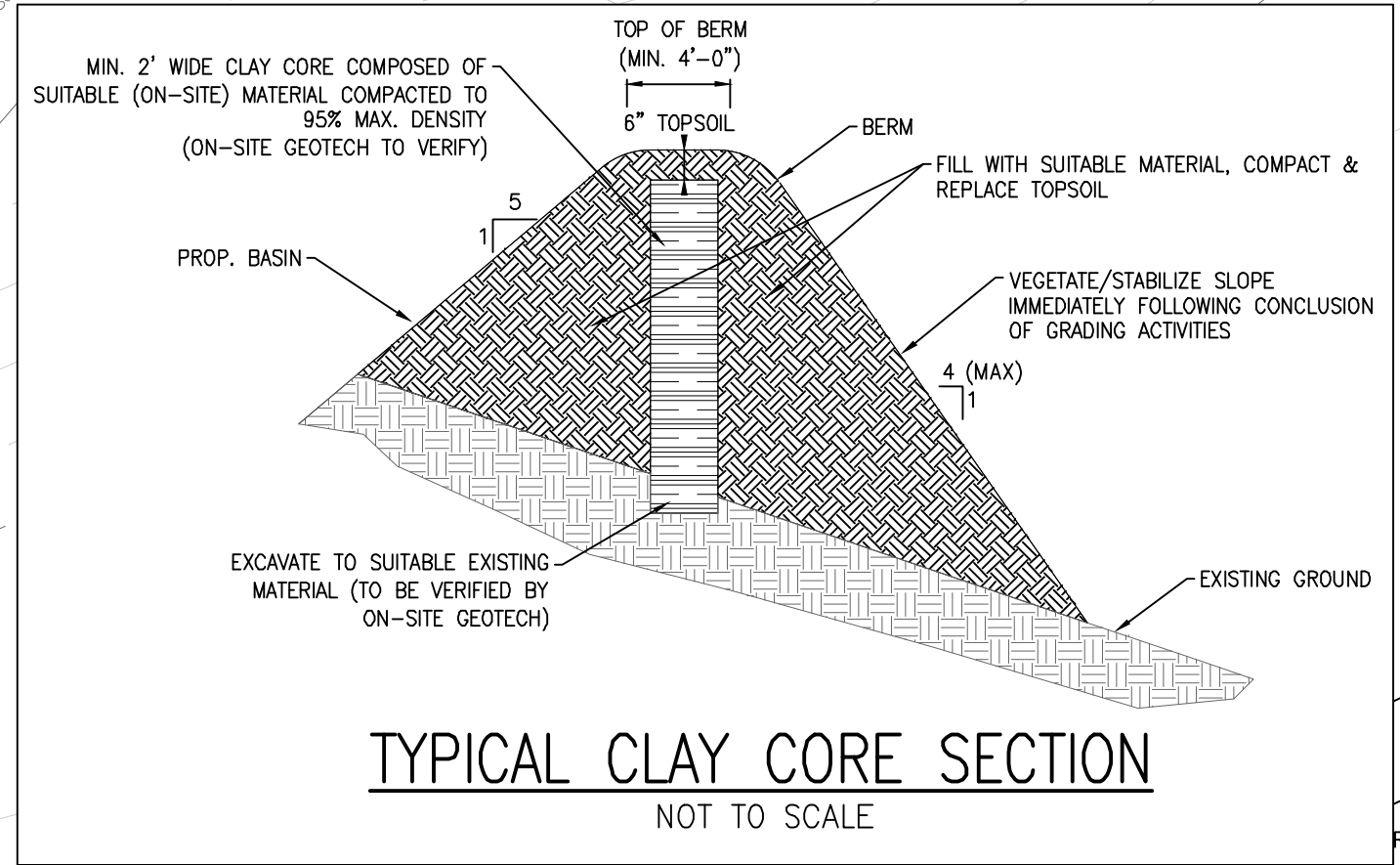
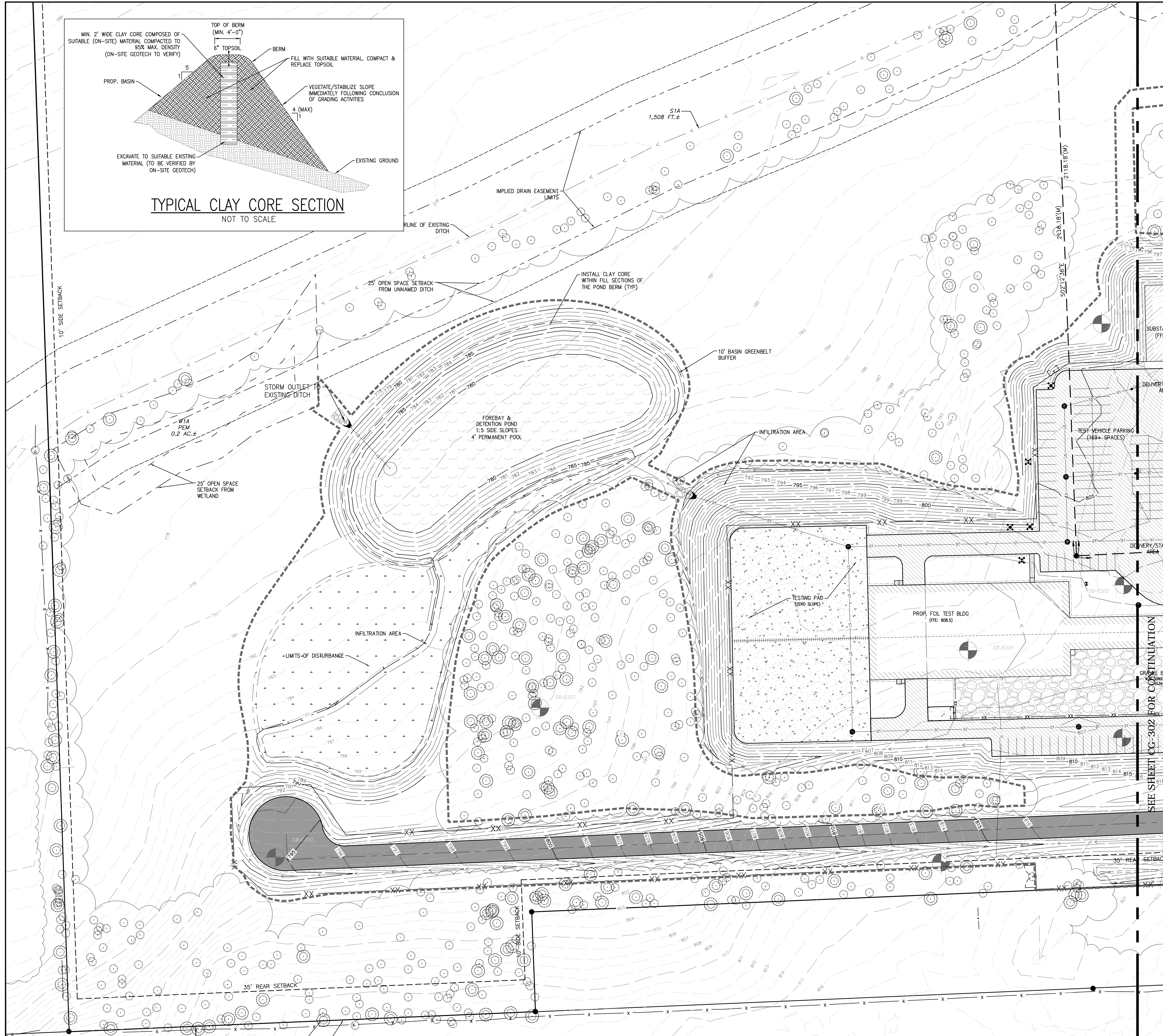
SHEET TITLE

OVERALL GRADING
PLAN

SHEET NUMBER

CG-300

ISSUE



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- FILL AREA BELOW BUILDING ADDITION WITH SUITABLE FILL
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CIVIL LEGEND - GRADING & DRAINAGE

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- PROP. CONTOUR
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TRUE NORTH PLANT NORTH

HORIZONTAL SCALE

1 inch = 50 feet (24"x36")

50 FT 0 FT 25 FT 50 FT 100 FT 200 FT

15.2 M 0 M 7.6 M 15.2 M 30.5 M 61.0 M

WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG 3 WORKING DAYS BEFORE STARTING YOUR PROJECT 1-800-482-7171 (TOLL FREE)

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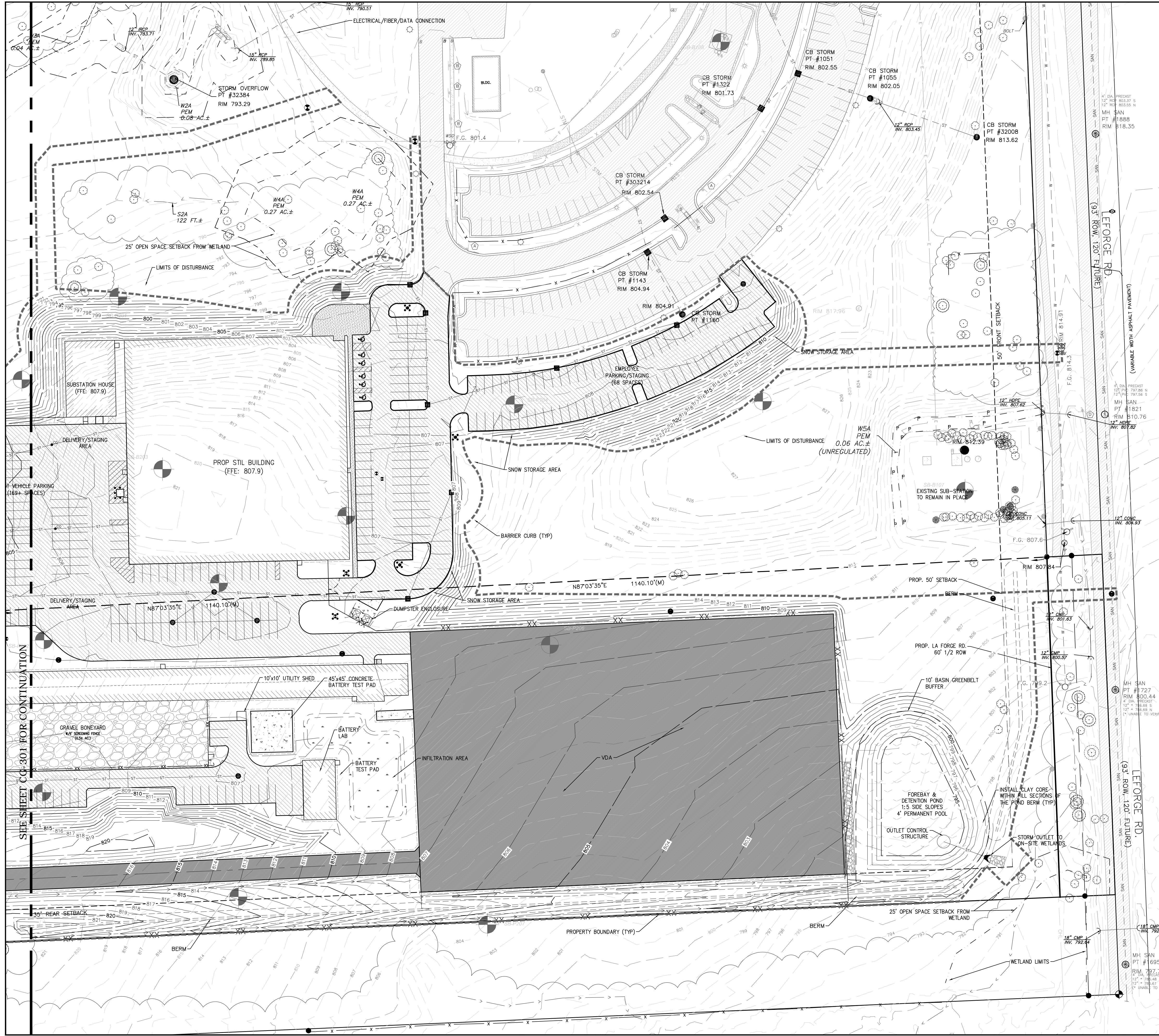
SHEET TITLE

GRADING PLAN

SHEET NUMBER

CG-301

ISSUE



KEYNOTES:

- FILL AREA BELOW BUILDING ADDITION WITH SUITABLE FILL
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- ADJUST STRUCTURE PER MECHANICAL PLAN

CIVIL LEGEND - GRADING & DRAINAGE

- MH ## MAN HOLE
- CB ## CATCH BASIN
- ST STORM DRAINAGE PIPE
- PROP. UNDERDRAIN
- F FIRE MAIN
- 65 PROP. CONTOUR
- EXISTING SPOT GRADE
- EXISTING CONTOUR
- RIDGE LINE
- 123.15 PROP. GRADE SPOT ELEVATION
- HP: HIGH POINT
- HYD: HYDRANT, VLV: VALVE
- SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
- DRAINAGE FLOW ARROW
- CENTER OF SWALE
- 1.1% SLOPE AND SLOPE DIRECTION
- LIMITS OF DISTURBANCE

- GRADING & DRAINAGE NOTES:**
- UNLESS NOTED OTHERWISE, ALL SPOTS/DIMENSIONS PROVIDED ARE TO:
 - TOP OF PAVEMENT/WALK/TOPSOIL
 - FACE/FLOW LINE OF CURB/DITCH
 - FLOW LINE OF STORM INLET/END SECTION
 - CENTER OF MANHOLE RIM
 - SLOPE SMOOTHLY BETWEEN ELEVATIONS INDICATED.
 - GENERAL CONTRACTOR SHALL COORDINATE ALL SITE UTILITIES AND STORM DRAINAGE INSTALLATION SCHEDULES TO AVOID POTENTIAL UTILITY CONFLICTS. PRIOR TO CONSTRUCTION, FIELD VERIFY EXISTING UTILITY LOCATIONS AND ELEVATIONS AS WELL AS PROPOSED BUILDING CONNECTIONS WITH MECH. PLANS. CONTACT ENGINEER AND OWNER WITH ANY CONFLICTS THAT MAY IMPACT THE PROPOSED DESIGN OPERATION OF THE UTILITY.
 - HORIZONTAL AND VERTICAL CONTROL IS PROVIDED ON THE ATTACHED SURVEY SHEETS FOR BENCHMARK LOCATIONS AND INFORMATION.

TRUE NORTH PLANT NORTH

HORIZONTAL SCALE

1 inch = 50 feet (24"x36")

0 FT 25 FT 50 FT 100 FT 200 FT

15.2 M 0 M 7.6 M 15.2 M 30.5 M 61.0 M

WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG

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ISSUES		
No.	DESCRIPTION	DATE
A	AREA PLAN	2021-10-27
B	AREA PLAN AMENDMENT	2021-11-29
C	PRELIMINARY SITE DESIGN	2022-01-26
D	30% OWNER REVIEW	2022-02-18
E	80% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

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PLEASE CONFIRM KEYPLAN BOX

CONSULTANTS

SEAL

PRIME CONSULTANT

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Southfield MI 48033 USA
tel 248 936 8000 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

CHECKED BY:

PROJECT MGR:
D KASSAB

APPROVED BY:

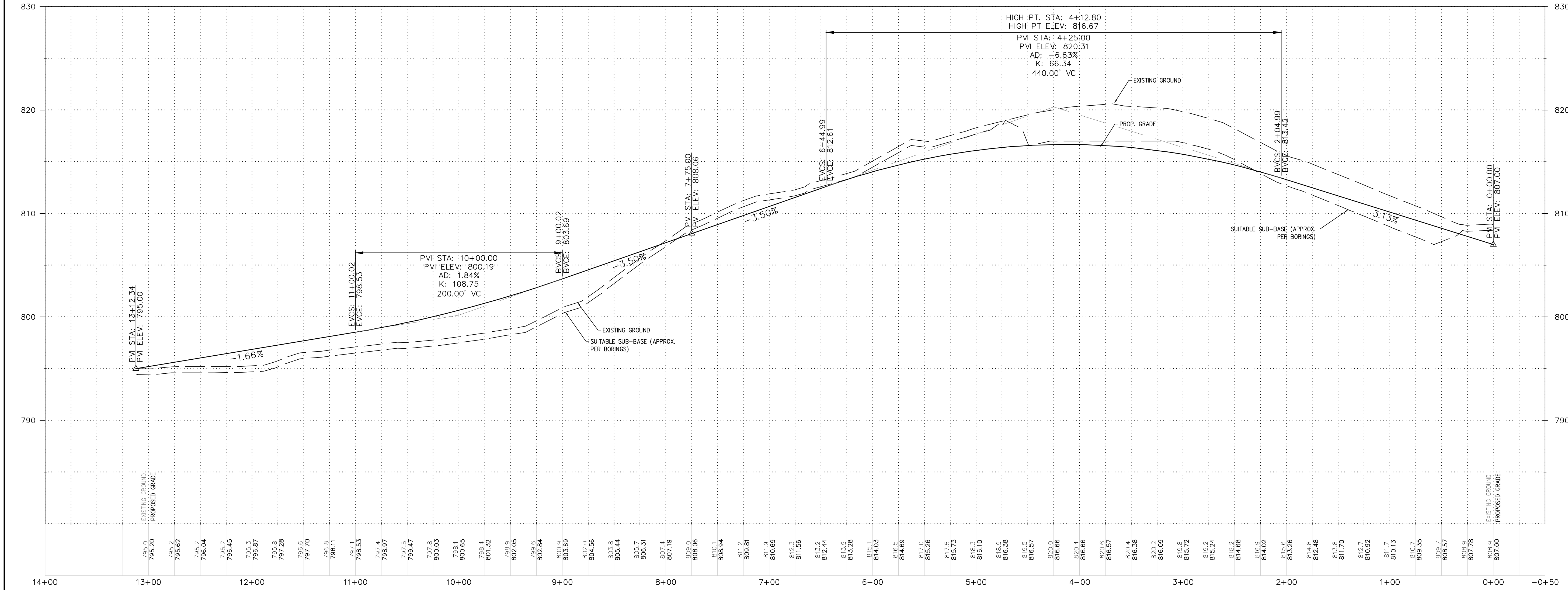
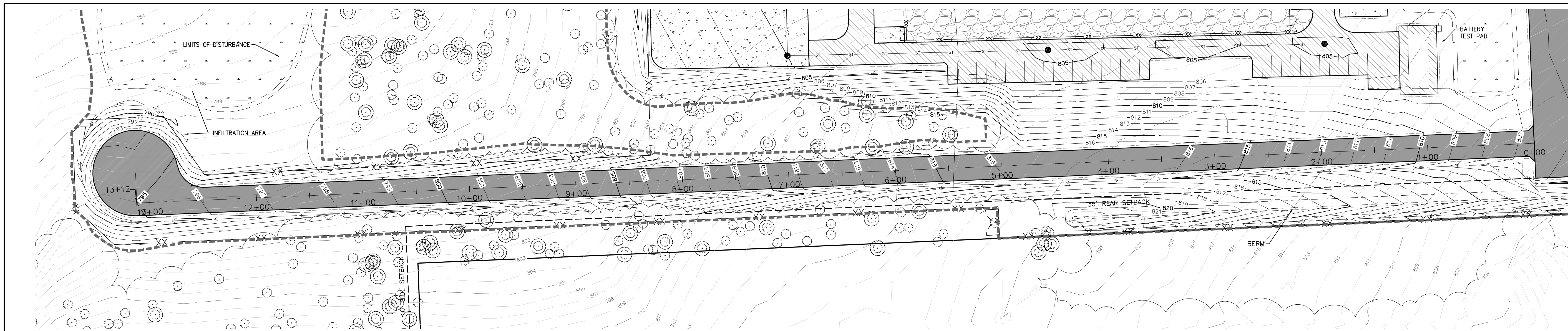
SHEET TITLE

GRADING PLAN

SHEET NUMBER

CG-302

ISSUE



CENTERLINE: 400m TEST TRACK
 HORZ. SCALE: 1" = 50'
 VERT. SCALE: 1" = 5'

- GRADING & DRAINAGE NOTES:**
- UNLESS NOTED OTHERWISE, ALL SPOTS/DIMENSIONS PROVIDED ARE TO:
 - TOP OF PAVEMENT/WALK/TOPSOIL
 - FACE/FLOW LINE OF CURB/DITCH
 - FLOW LINE OF STORM INLET/END SECTION
 - CENTER OF MANHOLE RM
 - BASE FLANGE GRADE OF HYDRANT/PIV
 - SLOPE SMOOTHLY BETWEEN ELEVATIONS INDICATED.
 - GENERAL CONTRACTOR SHALL COORDINATE ALL SITE UTILITIES AND STORM DRAINAGE INSTALLATION SCHEDULES TO AVOID POTENTIAL UTILITY CONFLICTS.
 - PRIOR TO CONSTRUCTION, FIELD VERIFY EXISTING UTILITY LOCATIONS AND ELEVATIONS AS WELL AS PROPOSED BUILDING CONNECTIONS WITH MECH. PLANS. CONTACT ENGINEER AND OWNER WITH ANY CONFLICTS THAT MAY IMPACT THE PROPOSED DESIGN OPERATION OF THE UTILITY.
 - HORIZONTAL AND VERTICAL CONTROL IS PROVIDED ON THE TOPOGRAPHICAL SURVEY BY LIVINGSTON ENGINEERING, REFER TO THE ATTACHED SURVEY SHEETS FOR BENCHMARK LOCATIONS AND INFORMATION.

TRUE NORTH PLANT NORTH

HORIZONTAL SCALE
 1 inch = 50 feet (24"x36")

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D	30% OWNER REVIEW	2022-02-18
E	60% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

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CONSULTANTS

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PRIME CONSULTANT

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 25200 Telegraph Road - Suite 300
 Southfield MI 48033 USA
 tel 248 536 8000 fax 248 936 8111
 ibigroup.com

PROJECT
Hyundai STIL
 6800 Geddes Rd Superior Charter Twp,
 MI 48198

PROJECT NO:
 134894

DRAWN BY:
G TANNAR

CHECKED BY:

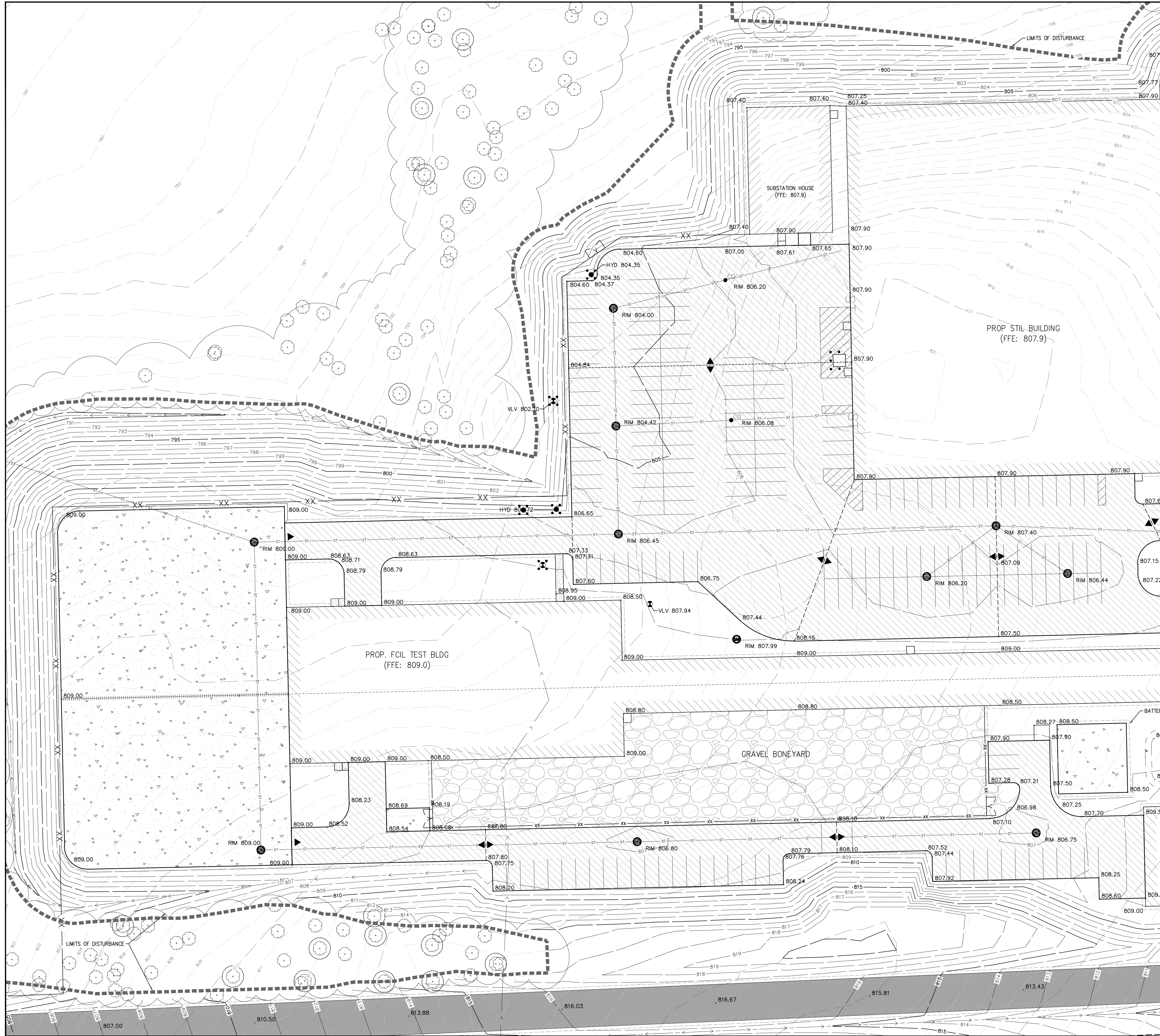
PROJECT MGR:
D KASSAB

APPROVED BY:

SHEET TITLE
TEST TRACK PROFILE

SHEET NUMBER
CG-303

ISSUE



KEYNOTES:

1. FILL AREA BELOW BUILDING ADDITION WITH SUITABLE FILL
2. EXISTING STORM SEWER TO REMAIN. VERIFY LOCATION & OPERATION PRIOR TO CONSTRUCTION. REMOVAL ANY BLOCKAGES OR REPLACE STORM SEWER IN KIND (MATCH EX. INVERTS & PIPE SIZES) IF SYSTEM CANNOT BE CLEANED.
3. SLOPE TO STORM INLET
4. REPLACE CURB & PAVEMENT AS NEEDED TO INSTALL FIRE MAIN RE-ROUTE. PLACE 1" EXPANSION JOINT WHERE PROP. CURB MEETS EXISTING, BUTT JOINT WHERE PROP. ASPHALT MEETS EXISTING.
5. TRANSITION CURB FROM TYP. TYPE "B" CURB TO ZERO BACK/VALLEY CURB IN 1'
6. REPLACE CURB/HOOD INLET WITH FLAT GRATE IN VALLEY CURB
7. REMOVE CONCRETE COLLAR ADJUST RIM ELEVATION TO -0.2' BELOW LOWEST ADJACENT ASPHALT ELEVATION AT COLLAR SAWCUT, RE-POUR CONCRETE COLLAR UPON COMPLETION
8. ADJUST STRUCTURE PER MECHANICAL PLAN

CIVIL LEGEND - GRADING & DRAINAGE

- MH ## MAN HOLE
- CB ## CATCH BASIN
- ST — STORM DRAINAGE PIPE
- PROP. UNDERDRAIN
- F FIRE MAIN
- 65 — PROP. CONTOUR
- 65 — EXISTING SPOT GRADE
- 65 — EXISTING CONTOUR
- ▲— RIDGE LINE
- ▲ 123.15 PROP. GRADE SPOT ELEVATION
- ▲ RIM: STRUCTURE RIM/FLOW LINE
- ▲ HP: HIGH POINT
- ▲ HYD: HYDRANT, VLV: VALVE
- CO SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
- DRAINAGE FLOW ARROW
- ← CENTER OF SWALE
- 1.1% SLOPE AND SLOPE DIRECTION
- LIMITS OF DISTURBANCE

GRADING & DRAINAGE NOTES:

1. UNLESS NOTED OTHERWISE, ALL SPOTS/DIMENSIONS PROVIDED ARE TO:
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 - FLOW LINE OF STORM INLET/END SECTION
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2. SLOPE SMOOTHLY BETWEEN ELEVATIONS INDICATED.
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4. PRIOR TO CONSTRUCTION, FIELD VERIFY EXISTING UTILITY LOCATIONS AND ELEVATIONS AS WELL AS PROPOSED BUILDING CONNECTIONS WITH MECH. PLANS. CONTACT ENGINEER AND OWNER WITH ANY CONFLICTS THAT MAY IMPACT THE PROPOSED DESIGN OPERATION OF THE UTILITY.
5. HORIZONTAL AND VERTICAL CONTROL IS PROVIDED ON THE TOPOGRAPHICAL SURVEY BY LIVINGSTON ENGINEERING, REFER TO THE ATTACHED SURVEY SHEETS FOR BENCHMARK LOCATIONS AND INFORMATION.

TRUE NORTH PLANT NORTH

MISS DIG
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1-800-482-7171 (TOLL FREE)

HORIZONTAL SCALE
1 inch = 30 feet (24"x36")

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E	60% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

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CONSULTANTS

SEAL

PRIME CONSULTANT

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tel 248 936 8000 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNAR

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

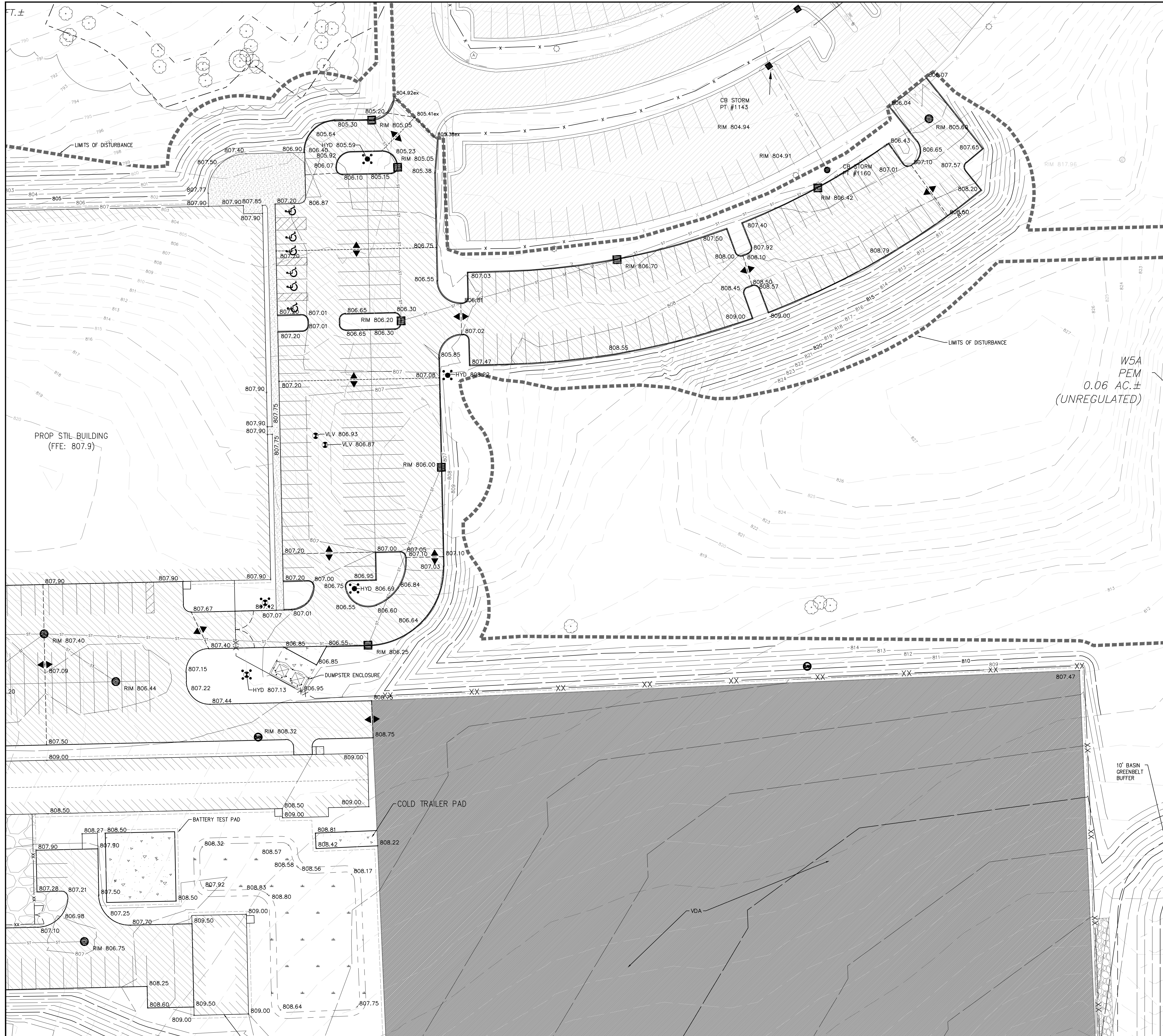
SHEET TITLE

DETAILED GRADING PLAN

SHEET NUMBER

CG-310

ISSUE



KEYNOTES:

1. FILL AREA BELOW BUILDING ADDITION WITH SUITABLE FILL
2. EXISTING STORM SEWER TO REMAIN. VERIFY LOCATION & OPERATION PRIOR TO CONSTRUCTION. REMOVE ANY BLOCKAGES OR REPLACE STORM SEWER IN KIND (MATCH EX. INVERTS & PIPE SIZES) IF SYSTEM CANNOT BE CLEANED.
3. SLOPE TO STORM INLET
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5. TRANSITION CURB FROM TYP. TYPE "B" CURB TO ZERO BACK/VALLEY CURB IN 1'
6. REPLACE CURB/HOOD INLET WITH FLAT GRATE IN VALLEY CURB
7. REMOVE CONCRETE COLLAR ADJUST RIM ELEVATION TO -0.2' BELOW LOWEST ADJACENT ASPHALT ELEVATION AT COLLAR SAWCUT, RE-POUR CONCRETE COLLAR UPON COMPLETION
8. ADJUST STRUCTURE PER MECHANICAL PLAN

CIVIL LEGEND - GRADING & DRAINAGE

- MH ## MAN HOLE
- CB ## CATCH BASIN
- ST STORM DRAINAGE PIPE
- PROP. UNDERDRAIN
- F FIRE MAIN
- 65 PROP. CONTOUR
- EXISTING SPOT GRADE
- EXISTING CONTOUR
- RIDGE LINE
- 123.15 PROP. GRADE SPOT ELEVATION
- RIM: STRUCTURE RIM/FLOW LINE
- HP: HIGH POINT
- HYD: HYDRANT, VLV: VALVE
- CO SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
- DRAINAGE FLOW ARROW
- ← CENTER OF SWALE
- 1.1% SLOPE AND SLOPE DIRECTION
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GRADING & DRAINAGE NOTES:

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0	ISSUED FOR BIDS	2022-04-01

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CONSULTANTS

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PRIME CONSULTANT



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Tel 248 936 8000 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

SHEET TITLE

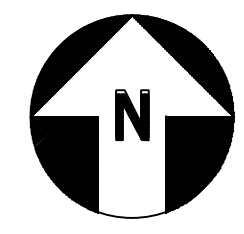
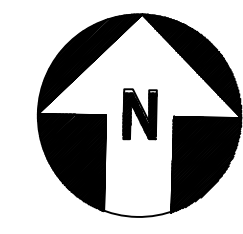
DETAILED GRADING PLAN

SHEET NUMBER

CG-311

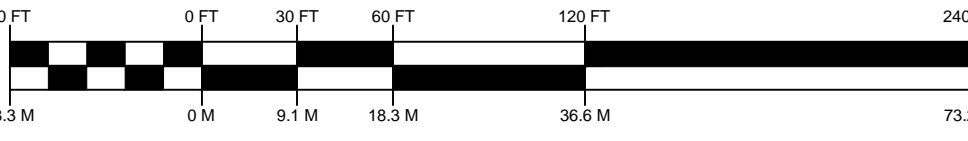
ISSUE

TRUE NORTH PLANT NORTH

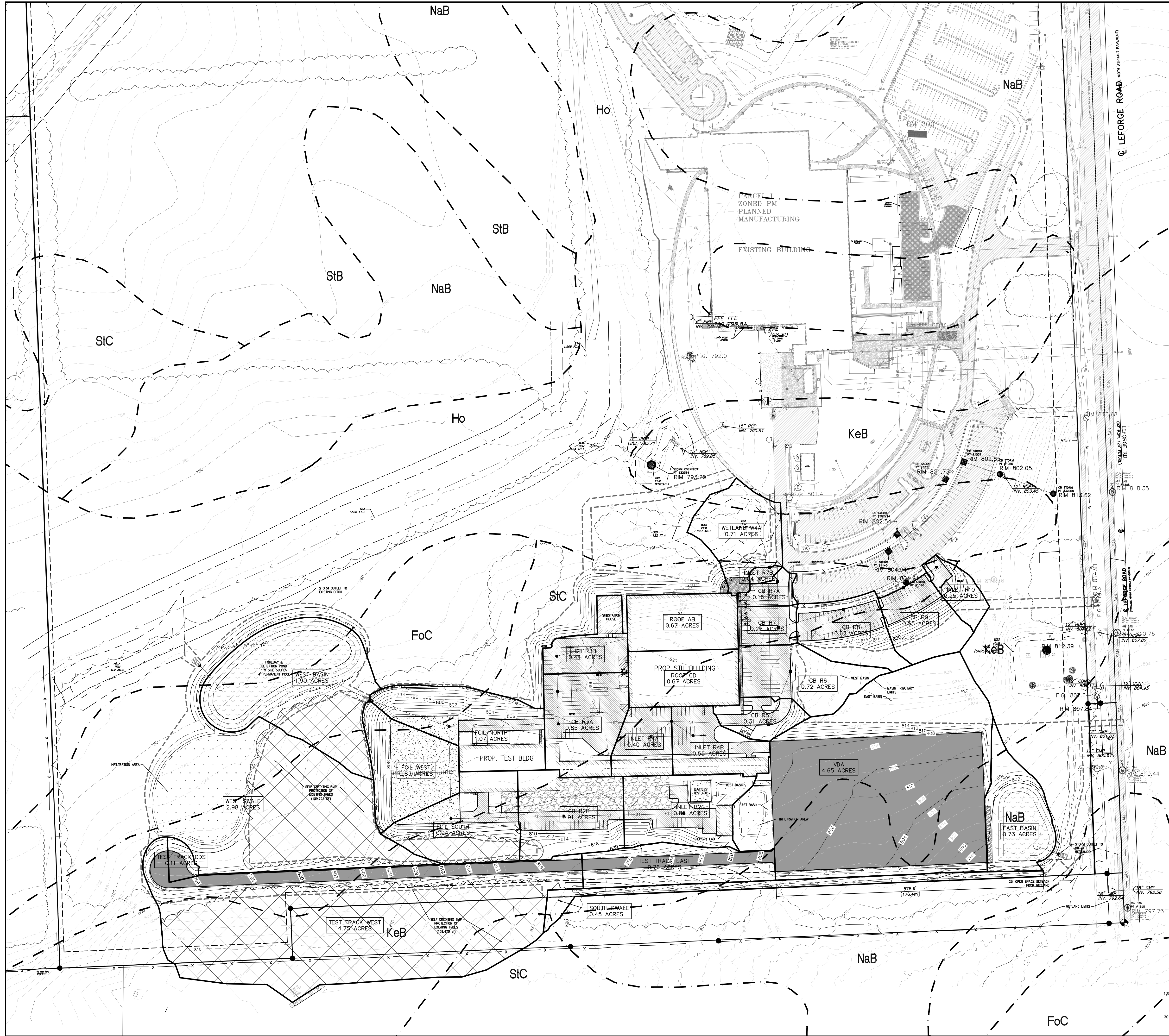



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HORIZONTAL SCALE



1 inch = 30 feet (24"x36")



Name	Area	C Factor	CN
CB R2B	0.91 ac	0.77	90
CB R3A	0.85 ac	0.91	95
CB R3B	0.44 ac	0.95	98
CB R5	0.31 ac	0.67	86
CB R6	0.72 ac	0.66	86
CB R7	0.25 ac	0.89	95
CB R7A	0.16 ac	0.89	95
CB R8	0.62 ac	0.70	87
CB R9	0.55 ac	0.68	86
EAST BASIN	0.73 ac	0.55	80
FCIL NORTH	1.07 ac	0.68	83
FCIL SOUTH	0.94 ac	0.67	86
FCIL WEST	0.83 ac	0.81	91
INLET R2C	0.88 ac	0.71	88
INLET R4A	0.40 ac	0.92	97
INLET R4B	0.55 ac	0.88	95
INLET R7B	0.04 ac	0.89	95
INLET R10	0.25 ac	0.56	81
ROOF AB	0.67 ac	0.95	98
ROOF CD	0.67 ac	0.95	98
SOUTH SWALE	0.45 ac	0.49	78
TEST TRACK CDS	0.11 ac	0.77	90
TEST TRACK EAST	0.76 ac	0.61	83
TEST TRACK WEST	4.75 ac	0.48	76
VDA	4.65 ac	0.77	90
WEST BASIN	1.90 ac	0.43	69
WEST SWALE	2.98 ac	0.48	73
WETLAND W4A	0.71 ac	0.57	81
Total	28.14 ac	0.65	84

Name	Area	C Factor	CN
East Basin	6.13 ac	0.72	88
West Basin	20.84 ac	0.64	83



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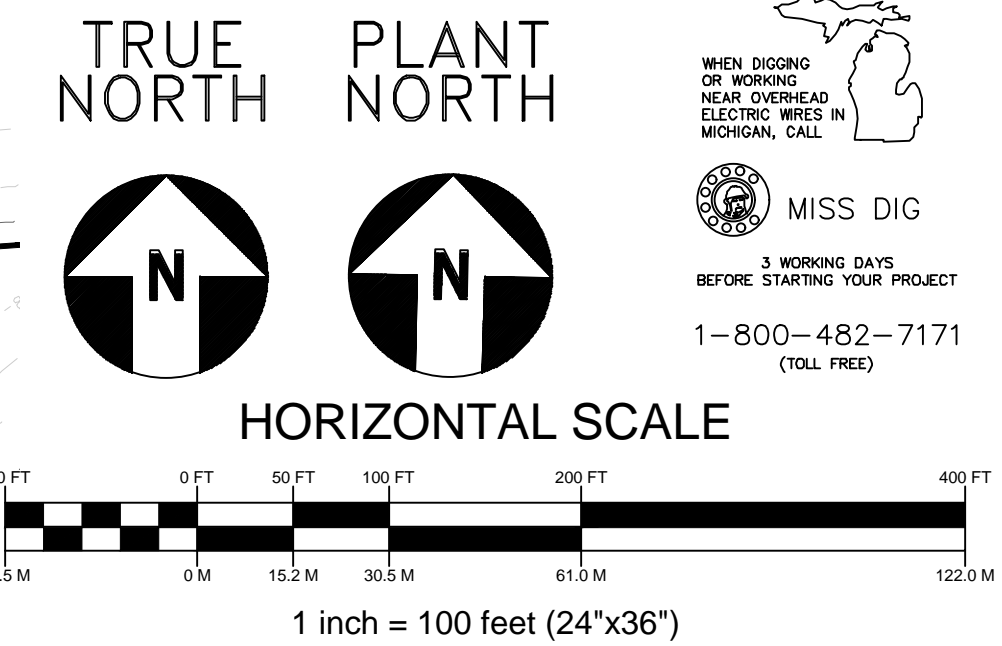
PROJECT
 Hyundai STIL
 6800 Geddes Rd Superior Charter Twp,
 MI 48198

PROJECT NO: 134894
DRAWN BY: G TANNER
PROJECT MGR: D KASSAB

CHECKED BY:
APPROVED BY:

SHEET TITLE
OVERALL DRAINAGE PLAN

SHEET NUMBER CG-330 **ISSUE**



WEST STORM BASIN

Table with 4 columns: Section, Description, Value, Unit. Includes sections like 'Total Basin Detention Area', 'Pre-Development Areas', 'Infiltration Areas', etc.

STORM SEWER CALCULATIONS

Large table with 23 columns: FROM STR INPUT, TO STR, Tributary Area A (Acres), Runoff Coef C, Equivalent Impervious Areas C x A, Sum of Equivalent Imp. Areas Sum C x A, Intensity i (in/hr), Time of Conc. Tc (min), Flow Rate Q (cfs), Length of Pipe (ft), Dia. of Pipe (in), Min HG Per Q (%), Design Slope of Pipe (%), Velocity In Pipe (Flowing Full) (fps), Time of Flow (min), Pipe Capacity (cfs), HYDRAULIC GRADE (UP STREAM, DOWN STREAM), Rim Elevation (Upper End, Lower End), Invert Elevation (Upper End, Lower End).

INFILTRATION AREAS

Table with 2 columns: Infiltration Area, Values. Includes Central Infiltration Area, Wet Infiltration Area, etc.

WEST BASIN PRE-DEVELOPMENT AREAS

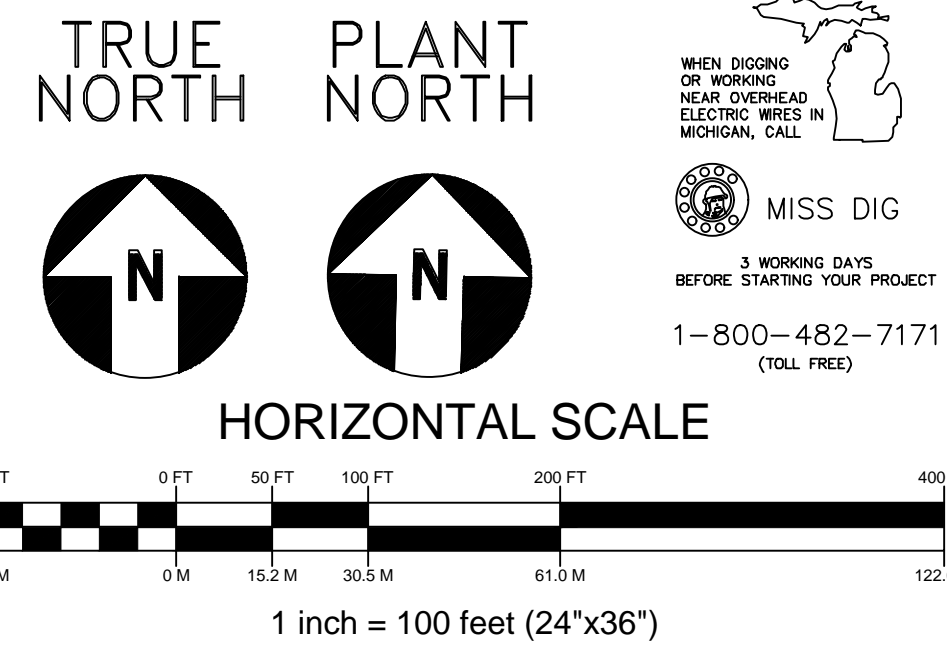
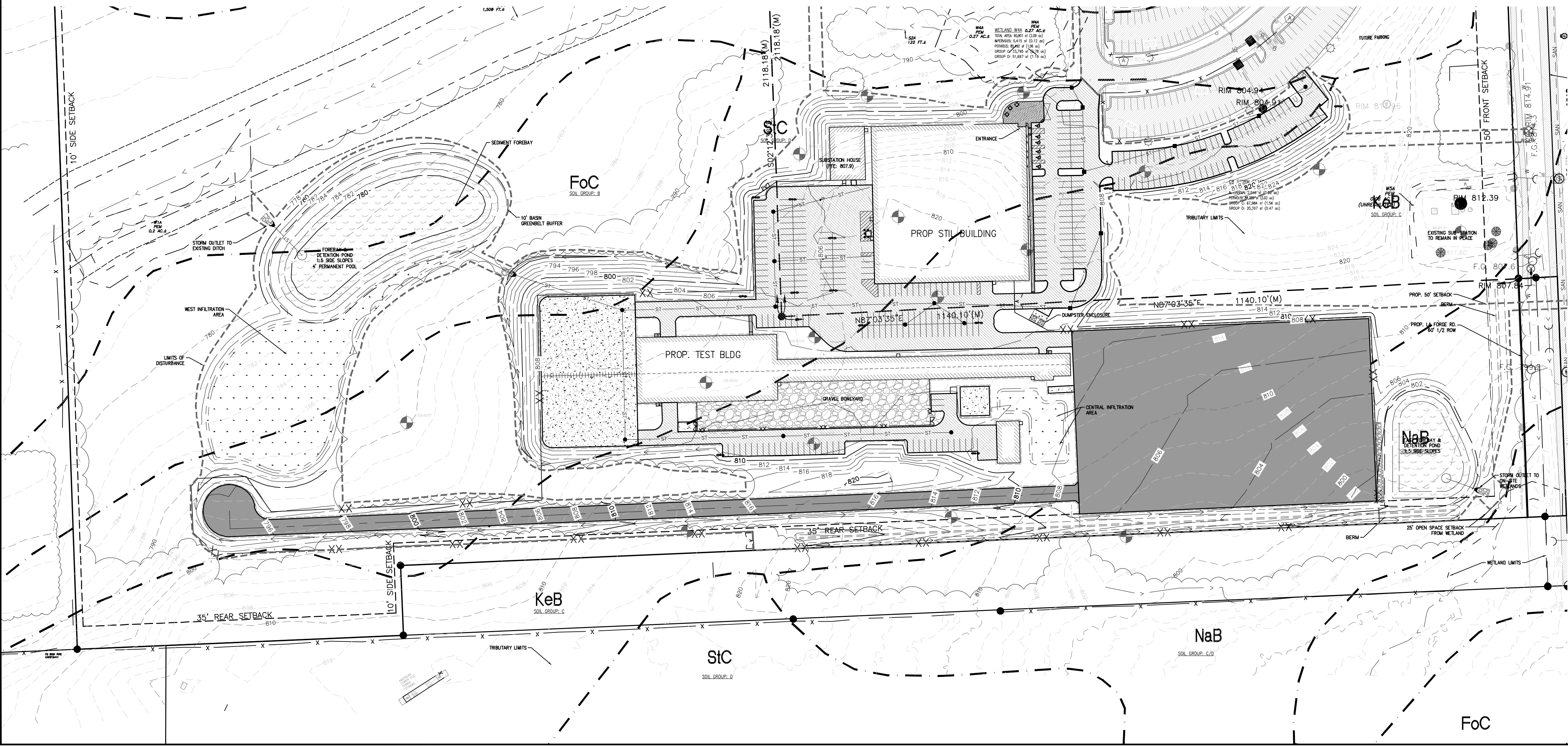
Table with 4 columns: Pre-Development Areas, CN, Area (sf), Area (ac). Includes Impervious, Brush, Woods categories.

EAST BASIN PRE-DEVELOPMENT AREAS

Table with 4 columns: Pre-Development Areas, CN, Area (sf), Area (ac). Includes Impervious, Brush, Woods categories.

EAST STORM BASIN

Table with 4 columns: Section, Description, Value, Unit. Includes sections like 'Total Basin Detention Area', 'Pre-Development Areas', 'Infiltration Areas', etc.



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Table with 3 columns: No., DESCRIPTION, DATE. Lists project milestones like AREA PLAN, PRELIMINARY SITE DESIGN, etc.

NOT FOR CONSTRUCTION

PLEASE CONFIRM KEYPLAN BOX

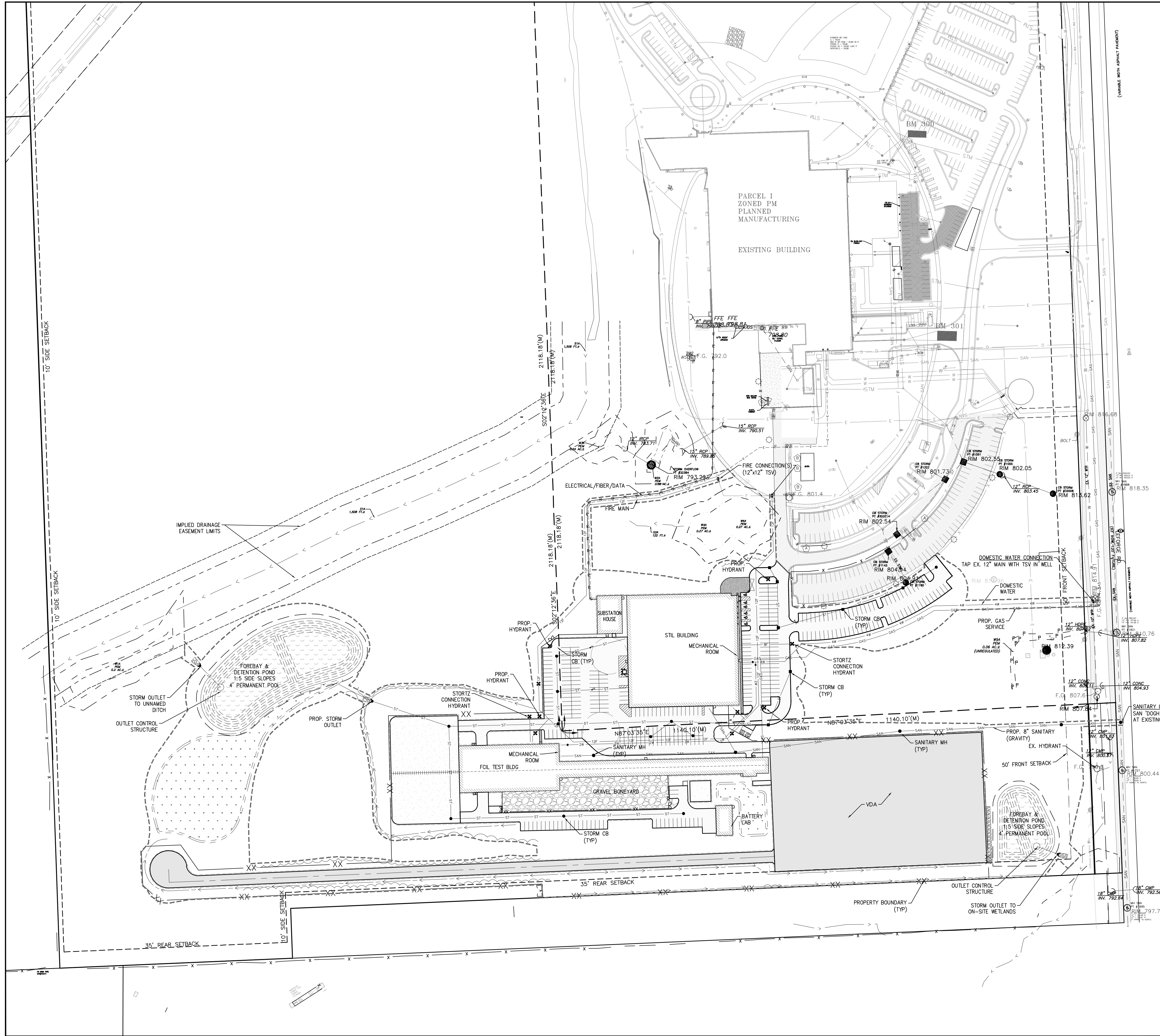
CONSULTANTS

SEAL

PRIME CONSULTANT IBI GROUP

PROJECT Hyundai STIL 6800 Geddes Rd Superior Charter Twp, MI 48198

PROJECT NO: 134894, DRAWN BY: G TANNER, PROJECT MGR: D KASSAB, SHEET TITLE: STORMWATER MANAGEMENT PLAN, SHEET NUMBER: CG-331



CIVIL LEGEND - UTILITIES

- STORM INLET
- MANHOLE
- END-SECTION
- SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
- FIRE HYDRANT ASSEMBLY W/BOLLARD PROTECTION
- GATE VALVE
- POST INDICATOR VALVE W/BOLLARD PROTECTION
- FIRE SYSTEM CONTROL VALVE W/ BOLLARD PROTECTION
- LIGHT POLE - SEE ELECTRICAL PLANS
- SAN - SANITARY SEWER PIPE
- ST - STORM DRAINAGE PIPE
- STORM UNDERDRAIN
- W - DOMESTIC WATER LINE (SIZE AS SHOWN)
- 12F - FIRE WATER LINE - SIZE AS SHOWN.
- FO - FIBER OPTIC
- GAS - GAS MAIN
- OHP - OVERHEAD POWER LINE
- E - ELECTRICAL LINE (UNDERGROUND)
- LIMITS OF DISTURBANCE

UTILITY NOTES:

1. SEE ATTACHED CHARTER TOWNSHIP OF SUPERIOR DETAIL SHEETS FOR THE FOLLOWING:
 - SANITARY SEWER CONSTRUCTION NOTES
 - SANITARY SEWER ACCEPTANCE TESTS
 - GENERAL NOTES FOR STORM SEWER CONSTRUCTION
 - WATER MAIN NOTES
2. GENERAL CONTRACTOR SHALL COORDINATE ALL SITE UTILITIES AND STORM DRAINAGE INSTALLATION SCHEDULES TO AVOID POTENTIAL UTILITY CONFLICTS.
3. VERIFY BUILDING CONNECTIONS WITH MECH. PLANS PRIOR TO CONSTRUCTION.
4. EXTERIOR LIGHTING WILL BE PROVIDED SO TO ADEQUATELY ILLUMINATE VEHICLE AND PEDESTRIAN USE AREAS AND ARRANGED SO TO NOT INTERFERE WITH TRAFFIC, IS SHIELDED OR DIRECTED AWAY FROM ADJOINING RESIDENCES, AND PRODUCES NO GLARE ACROSS RESIDENTIAL PROPERTY BOUNDARIES.
5. ALL SANITARY & STORM (NON-SUMP) STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED CONCRETE CHANNEL FROM INVERT(S) IN TO INVERT OUT.
6. CATHODE PROTECTION SHALL BE PROVIDED FOR DUCTILE IRON/METAL SURFACES EXPOSED TO THE GROUND.
7. ALL EXISTING/PROPOSED STRUCTURES AND UTILITY PIPES WITHIN THE INFLUENCE OF PROPOSED PAVED SURFACES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND SHALL BE INSTALLED/RECONSTRUCTED ACCORDINGLY.
8. PIPE MEASUREMENTS ARE TO CENTER OF SOLID STRUCTURE. FLOW LINE POINT OF INLET STRUCTURE AND INCLUDE LENGTH OF END SECTION WHERE APPLICABLE.
9. STRUCTURE TOPS SHALL BE BUILT OR SUBSEQUENTLY ADJUSTED TO MEET FINAL SURFACE GRADES. ADJUST THE FRAME AND COVER OF CATCH BASINS AND MANHOLES AS WELL AS ALL VALVE AND CURB BOXES THAT ARE NOT INDICATED TO BE ABANDONED OR REMOVED, TO FINISH GRADE ELEVATION. FRAME AND COVER ADJUSTMENTS SHALL BE MADE USING PRECAST GRADE RINGS WITH A MAXIMUM 0.3" RELIEF ACROSS MANHOLES.
10. ALL CONTRACTORS/SUBCONTRACTORS/PERSON THAT WILL BE ENGAGED IN LAND DISTURBING ACTIVITIES SHALL COMPLY WITH ALL EROSION CONTROL AND STORMWATER POLLUTION PREVENTION REQUIREMENTS CONTAINED THROUGHOUT THE DRAWINGS, SPECIFICATIONS AND PERMITS.
11. MINIMUM COVER OF UNDERGROUND UTILITIES:

WATER/FIRE	5.5 (MIN)/10.0 (MAX) FT
AIR	2.5 FT
NATURAL GAS	2.5 FT
SANITARY SEWERS	4.0 FT
STORM SEWER	3.0 FT (2.5 FT AT MOST UPSTREAM CATCH BASIN)
CHILLED WATER	5.5 FT
ALL OTHERS	2.5 FT

FIRE MAIN NOTES:

1. PLANS, MATERIALS & INSTALLATION PER NFPA #24, #13, & SUPERIOR TOWNSHIP SPECIFICATIONS.
2. NEW 12" UNDERGROUND PIPE TO BE PVC C900 DR14.
3. NEW FITTINGS TO BE DUCTILE IRON MECHANICAL JOINT PER ANSI A-2110
4. NEW UNDERGROUND PIPE TO BE FLSHED PER NFPA #24 REQUIREMENTS. 200 PSI OR 50 PSI ABOVE MAXIMUM SYSTEM WORKING PRESSURE.
5. NEW UNDERGROUND TO BE HYDROSTATICALLY TESTED PER NFPA #24 & CHARTER TOWNSHIP OF SUPERIOR SPECIFICATIONS.
6. ALL MATERIAL & INSTALLATION PER NFPA #24 & CHARTER TOWNSHIP OF SUPERIOR SPECIFICATIONS.
7. MINIMUM BURY DEPTH FROM TOP OF PIPE TO BE 5'-6" PER NFPA #24.
8. NEW THRUST BLOCKS TO BE IN ACCORDANCE WITH THE LATEST NFPA #13 REQUIREMENTS.

TRUE NORTH PLANT NORTH

WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG 3 WORKING DAYS BEFORE STARTING YOUR PROJECT 1-800-482-7171 (TOLL FREE)

HORIZONTAL SCALE

1 inch = 100 feet (24"x36")

CLIENT

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SUPERIOR TOWNSHIP, MICHIGAN**

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CONSULTANTS

SEAL

PRIME CONSULTANT

IBI GROUP
25200 Telegraph Road - Suite 300
Southfield MI 48033 USA
tel 248 936 8000 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

CHECKED BY:

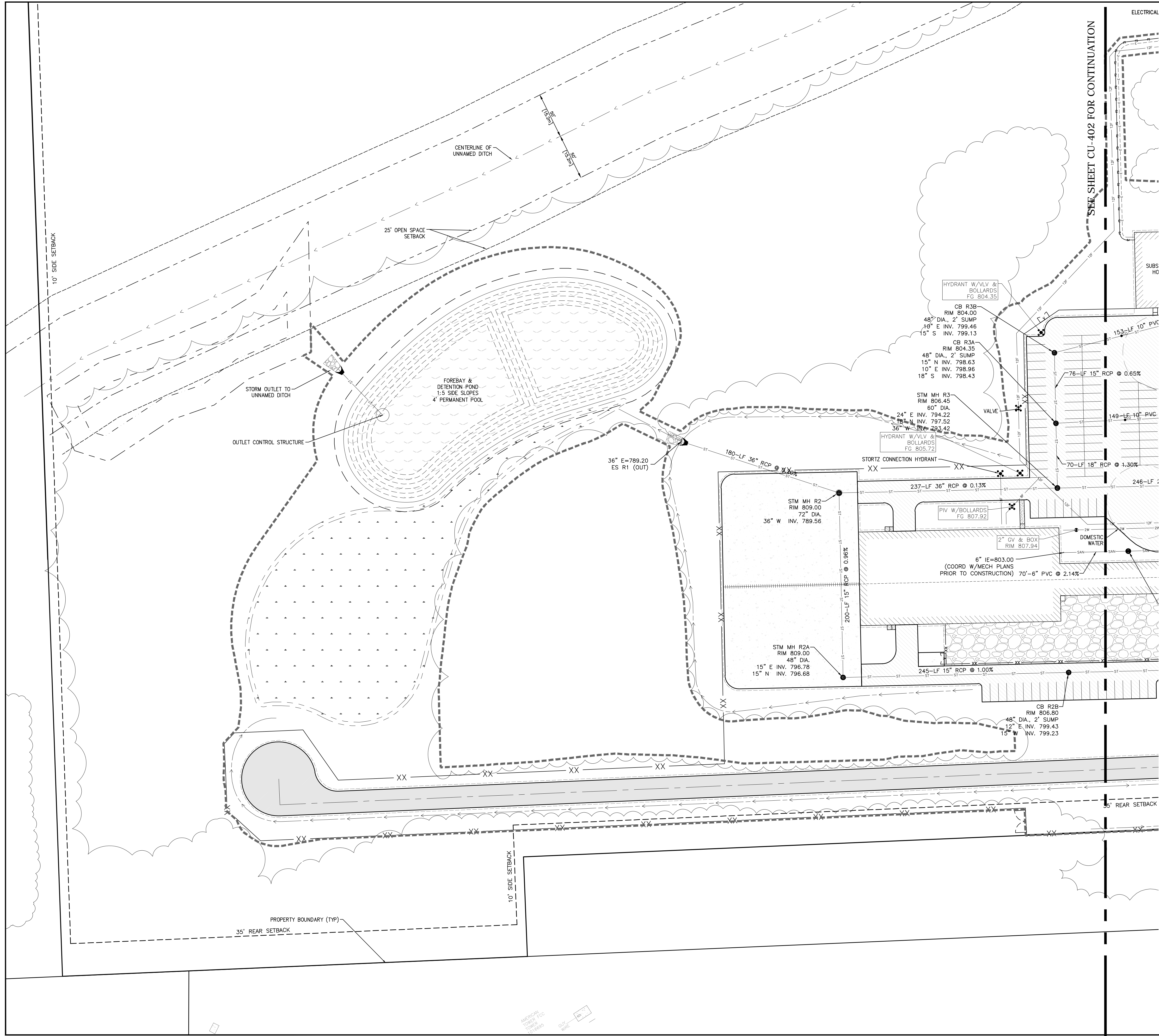
APPROVED BY:

SHEET TITLE

OVERALL UTILITY PLAN

SHEET NUMBER
CU-400

ISSUE



CIVIL LEGEND - UTILITIES

	STORM INLET
	MANHOLE
	END-SECTION
	SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
	FIRE HYDRANT ASSEMBLY W/BOLLARD PROTECTION
	GATE VALVE
	POST INDICATOR VALVE W/BOLLARD PROTECTION
	FIRE SYSTEM CONTROL VALVE W/ BOLLARD PROTECTION
	LIGHT POLE - SEE ELECTRICAL PLANS
	SAN - SANITARY SEWER PIPE
	ST - STORM DRAINAGE PIPE
	STORM UNDERDRAIN
	W - DOMESTIC WATER LINE (SIZE AS SHOWN)
	12F - FIRE WATER LINE - SIZE AS SHOWN.
	FO - FIBER OPTIC
	GAS - GAS MAIN
	OHP - OVERHEAD POWER LINE
	E - ELECTRICAL LINE (UNDERGROUND)
	LIMITS OF DISTURBANCE

- ### UTILITY NOTES:
- SEE ATTACHED CHARTER TOWNSHIP OF SUPERIOR DETAIL SHEETS FOR THE FOLLOWING:
 - SANITARY SEWER CONSTRUCTION NOTES
 - SANITARY SEWER ACCEPTANCE TESTS
 - GENERAL NOTES FOR STORM SEWER CONSTRUCTION
 - WATER MAIN NOTES
 - GENERAL CONTRACTOR SHALL COORDINATE ALL SITE UTILITIES AND STORM DRAINAGE INSTALLATION SCHEDULES TO AVOID POTENTIAL UTILITY CONFLICTS.
 - VERIFY BUILDING CONNECTIONS WITH MECH. PLANS PRIOR TO CONSTRUCTION.
 - EXTERIOR LIGHTING WILL BE PROVIDED SO TO ADEQUATELY ILLUMINATE VEHICLE AND PEDESTRIAN USE AREAS AND ARRANGED SO TO NOT INTERFERE WITH TRAFFIC, IS SHIELDED OR DIRECTED AWAY FROM ADJOINING RESIDENCES, AND PRODUCES NO GLARE ACROSS RESIDENTIAL PROPERTY BOUNDARIES.
 - ALL SANITARY & STORM (NON-SUMP) STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED CONCRETE CHANNEL FROM INVERT(S) IN TO INVERT OUT.
 - CATHODE PROTECTION SHALL BE PROVIDED FOR DUCTILE IRON/METAL SURFACES EXPOSED TO THE GROUND.
 - ALL EXISTING/PROPOSED STRUCTURES AND UTILITY PIPES WITHIN THE INFLUENCE OF PROPOSED PAVED SURFACES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND SHALL BE INSTALLED/RECONSTRUCTED ACCORDINGLY.
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TRUE NORTH PLANT NORTH

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3 WORKING DAYS BEFORE STARTING YOUR PROJECT

1-800-482-7171 (TOLL FREE)

HORIZONTAL SCALE

1 inch = 50 feet (24"x36")

CLIENT

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Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNAR

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

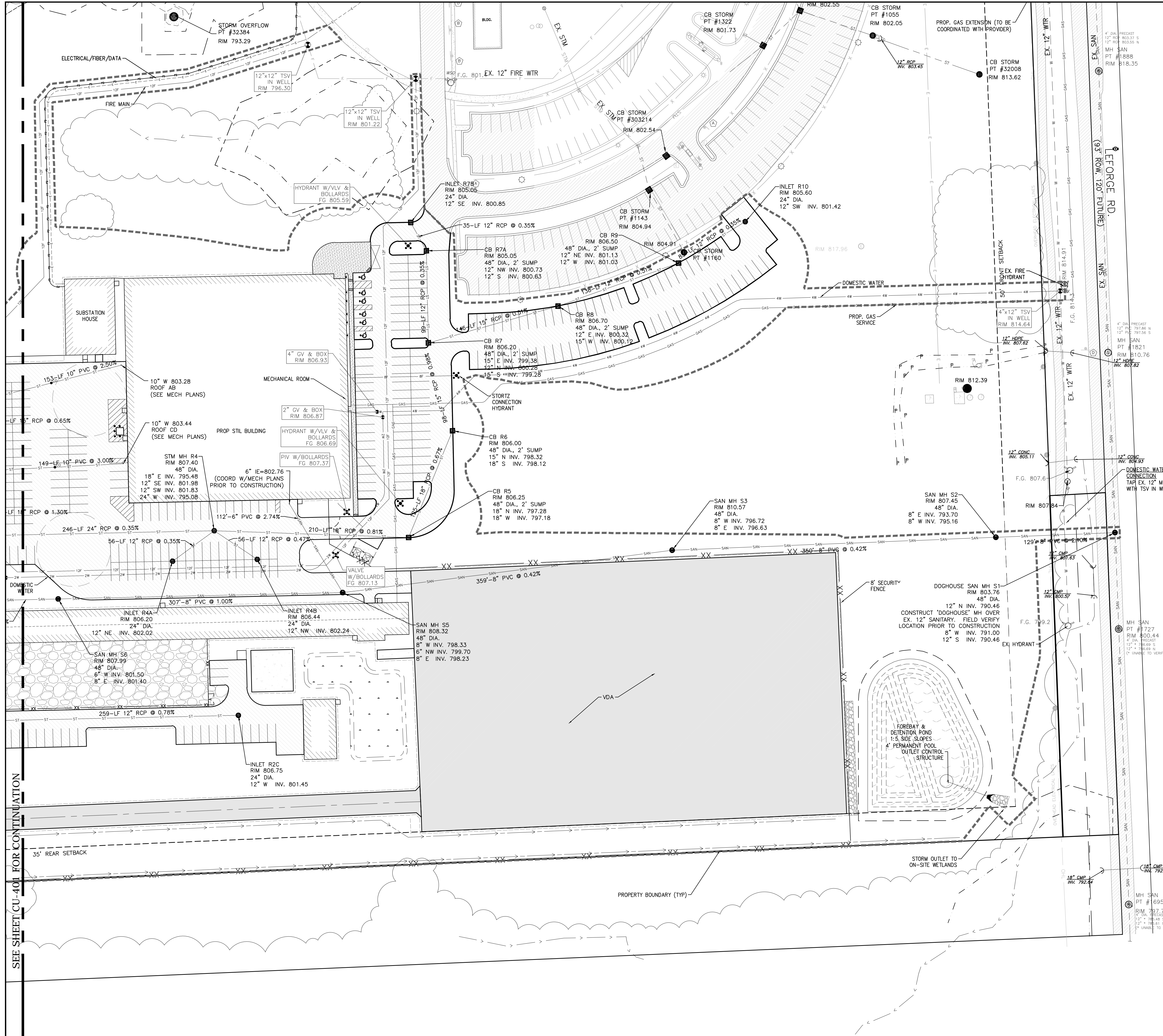
SHEET TITLE

UTILITY PLAN

SHEET NUMBER

CU-401

ISSUE



CIVIL LEGEND - UTILITIES

- STORM INLET
- MANHOLE
- END-SECTION
- SEWER CLEANOUT - INSTALL USING 75FT MIN. SPACING
- FIRE HYDRANT ASSEMBLY W/BOLLARD PROTECTION
- GATE VALVE
- POST INDICATOR VALVE W/BOLLARD PROTECTION
- FIRE SYSTEM CONTROL VALVE W/ BOLLARD PROTECTION
- LIGHT POLE - SEE ELECTRICAL PLANS
- SANITARY SEWER PIPE
- STORM DRAINAGE PIPE
- STORM UNDERDRAIN
- DOMESTIC WATER LINE (SIZE AS SHOWN)
- FIRE WATER LINE - SIZE AS SHOWN.
- FIBER OPTIC
- GAS MAIN
- OVERHEAD POWER LINE
- ELECTRICAL LINE (UNDERGROUND)
- LIMITS OF DISTURBANCE

UTILITY NOTES:

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TRUE NORTH PLANT NORTH

HORIZONTAL SCALE

1 inch = 50 feet (24"x36")

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Hyundai STIL
6800 Geddes Rd Superior Charter Twp,
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PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

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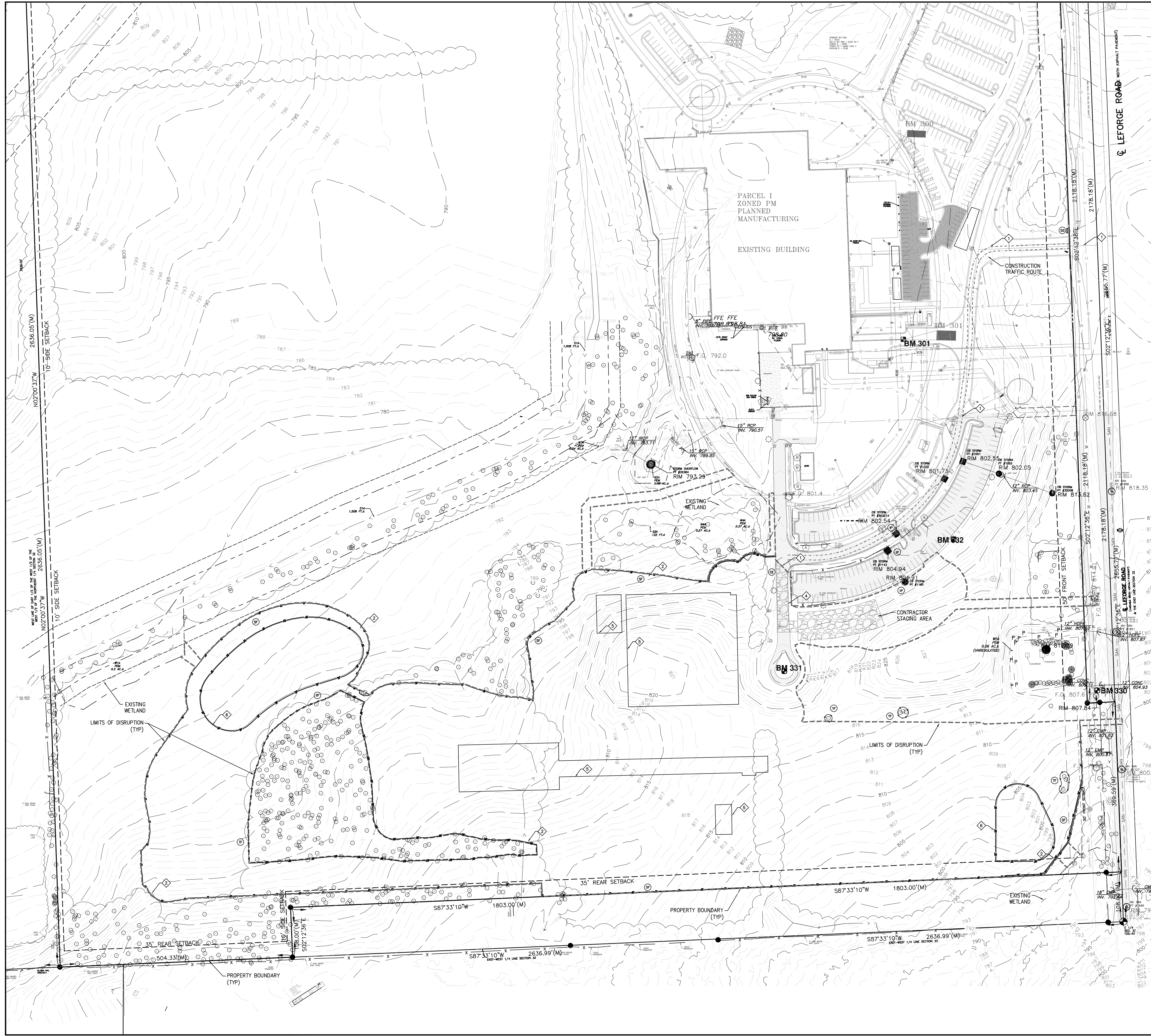
APPROVED BY:

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
CU-402

ISSUE

SEE SHEET CU-401 FOR CONTINUATION



KEYNOTES:

- SWEEP/SCRAPE PAVED SURFACES ADJACENT TO WORK AREAS WHEN SEDIMENT IS VISIBLE AND AT THE END OF EACH WORK DAY.
- PROVIDE 5' EXISTING VEGETATION BUFFER BETWEEN SILT FENCE & GRADING ACTIVITIES WHERE AVAILABLE.
- PROVIDE DOUBLE LAYER OF SILT FENCE WHERE GRADING ACTIVITIES ARE UPSTREAM/ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS.
- UTILIZE EXISTING PAVEMENT (TO BE REMOVED) OR INSTALL STABILIZED CONSTRUCTION ENTRANCE FOR CONSTRUCTION TRAFFIC
- PROPOSED BUILDING FOOTPRINT, NO SPOILS TO BE PLACED WITHIN 10' OF BUILDING LIMITS
- INSTALL SILT FENCE ALONG RIDGE OF EXCAVATED BASINS

CIVIL LEGEND – EROSION CONTROL

- SF — SILT FENCE
- TF — TREE PROTECTION/CONSTRUCTION FENCE
- SS — SWPPP SIGN
- INLET PROTECTION
 - CURB/PAVED INLETS
 - YARD INLETS/VEGETATED AREAS
- RR — PERMANENT RIP RAP APRON – IAW TOWNSHIP DETAIL (SHEET CT-602)
- CW — CONCRETE WASHOUT – CONTRACTOR TO DESIGNATE LOCATION IF FIELD
- CE — STABILIZED CONSTRUCTION ENTRANCE
- CONSTRUCTION TRAFFIC ROUTE
- LIMITS OF DISTURBANCE
- ST — SLOPE TRACKING
- CB — EROSION CONTROL BLANKET
- TS — TEMPORARY SEEDING
- PS — PERMANENT SEEDING – INSTALL IAW DETAIL C/xxx.
- LS — LANDSCAPING – INSTALL IAW LANDSCAPING DRAWINGS.

TOTAL DISTURBED AREA: 21.9 ac

- WASHTENAW COUNTY SOIL EROSION CONTROL REQUIREMENTS NOTES:**
- NO EARTH MOVING ACTIVITY CAN BEGIN WITHOUT A SOIL EROSION PERMIT OR SOIL EROSION WAIVER. THE SOIL EROSION PERMIT OR SOIL EROSION WAIVER MUST BE POSTED AND BE CLEARLY VISIBLE FROM THE ROAD.
 - SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS DESIGNATED ON PLANS AND/OR AS REQUIRED MUST BE INSTALLED PRIOR TO ANY EARTH MOVING ACTIVITIES.
 - EARTH CHANGES TO A PROPERTY MUST NOT ADVERSELY AFFECT DRAINAGE TO SURROUNDING AREAS.
 - DETENTION/RETENTION/SEDIMENTATION PONDS MUST BE CONSTRUCTED AND STABILIZED PRIOR TO OTHER EARTH MOVING ACTIVITIES.
 - OUTLETS OF DETENTION/RETENTION/SEDIMENTATION PONDS SHALL BE DESIGNED AND CONSTRUCTED TO REDUCE THE WATER FLOW TO A NON-EROSIVE VELOCITY. RIP-RAP MUST BE INSTALLED ON ALL STORMWATER OUTLETS.
 - RISER PIPES IN DETENTION PONDS MUST BE WRAPPED IN GEOTEXTILE FABRIC AND CHECKED WITH PEA GRAVEL.
 - ALL EARTH MOVING SHALL BE DESIGNED, CONSTRUCTED AND COMPLETED IN SUCH A MANNER THAT LIMITS THE EXPOSED AREAS OF ANY DISTURBED LAND FOR THE SHORTEST POSSIBLE PERIOD OF TIME. THE SITE MUST BE STABILIZED WITHIN FIVE (5) CALENDAR DAYS AFTER FINAL GRADING OR EARTH MOVING ACTIVITY AS BEEN COMPLETED.
 - STONE ACCESS DRIVES, IF REQUIRED, MUST BE INSTALLED PRIOR TO CONSTRUCTION FOR PURPOSES OF MUD TRACKING.
 - SOIL, SEDIMENT, AND MISCELLANEOUS DEBRIS MUST BE KEPT OFF STREETS AND OUT OF DRAINAGE DITCHES AND CATCH BASINS THROUGHOUT THE DURATION OF THE PROJECT.
 - ROCK CHECK DAMS ARE TO BE USED INSTEAD OF STRAW BALES OR SILT FENCING IN CONCENTRATED FLOW LOCATIONS SUCH AS DITCHES OR PIPE OUTLETS. STRAW BALES SHOULD NEVER BE USED FOR SOIL EROSION CONTROL.
 - SILT FENCING, IF REQUIRED, MUST BE TRENCHED IN AND BACKFILLED. FENCING MAY BE TOED-IN WITH PEA GRAVEL IF INSTALLED IN WINTER.
 - CATCH BASINS, IF INSTALLED, MUST BE PROTECTED WITH A SEDIMENT FILTER WITH OVERFLOW.
 - DEWATERING OPERATIONS MUST HAVE SOME TYPE OF CONTROL, E.G. FILTER BAG AND VEGETATIVE FILTER AREA. THERE SHALL BE NO DEWATERING OF UNFILTERED WATER.
 - STOCKPILING OF ANY EXCAVATED MATERIAL MUST BE KEPT CLEAR OF SENSITIVE AREAS. ADEQUATE CONTROLS MUST BE IN PLACE TO ENSURE THIS REQUIREMENT.
 - EROSION CONTROL BLANKETS ARE REQUIRED ON SLOPES OF 4:1 OR STEEPER.
 - ALL AREAS OF A PROJECT THAT ARE DISTURBED MUST BE STABILIZED BY DECEMBER 1.
 - ALL PERMANENT EROSION CONTROL MEASURES SHALL BE PERMANENTLY MAINTAINED BY THE OWNER OR HOMEOWNER ASSOCIATION.

TRUE NORTH **PLANT NORTH**

HORIZONTAL SCALE

1 inch = 100 feet (24"x36")

WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG 3 WORKING DAYS BEFORE STARTING YOUR PROJECT 1-800-482-7171 (TOLL FREE)

CLIENT

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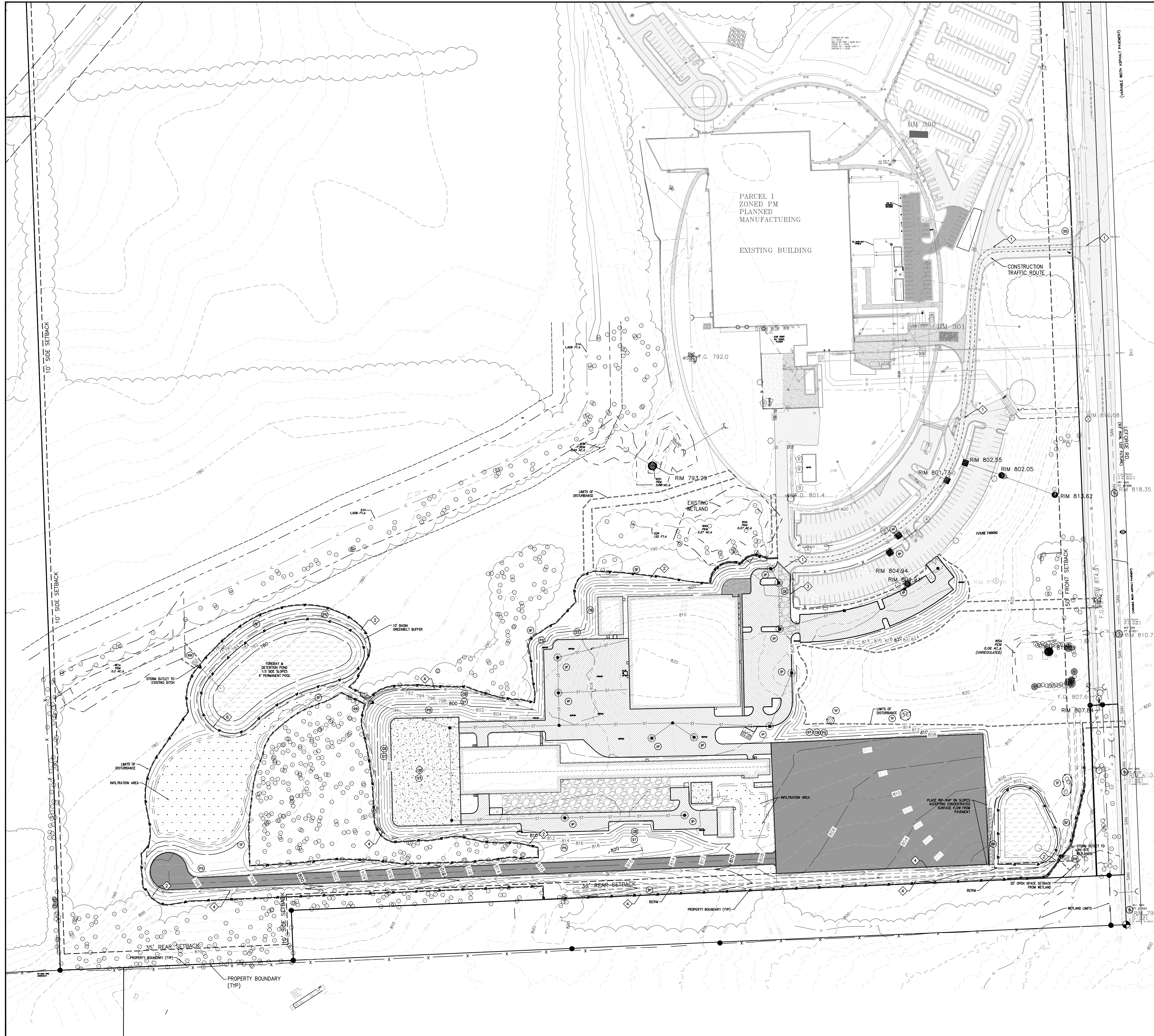
SHEET TITLE

**OVERALL SESC PLAN -
PHASE I**

SHEET NUMBER

SESC-500

ISSUE



KEYNOTES:

- SWEEP/SCRAPE PAVED SURFACES ADJACENT TO WORK AREAS WHEN SEDIMENT IS VISIBLE AND AT THE END OF EACH WORK DAY.
- MAINTAIN SILT FENCE & TREE PROTECTION FENCE; REMOVE & REPAIR GROUND AS A FINAL SESC MEASURE.
- MAINTAIN CONSTRUCTION ENTRANCE & CONTRACTOR STAGING AREA; THESE AREAS ARE TO BE PAVED LAST.
- REPLACE TOPSOIL & STABILIZE DRAINAGE SWALES IMMEDIATELY UPON COMPLETION OF FINAL GRADING.

CIVIL LEGEND - EROSION CONTROL

- CENTER OF SWALE
- SF - SILT FENCE
- TF - TREE PROTECTION/CONSTRUCTION FENCE
- SS - SWPPP SIGN
- INLET PROTECTION
 - CURB/PAVED INLETS
 - YARD INLETS/VEGETATED AREAS
- RR - PERMANENT RIP RAP APRON
- CW - CONCRETE WASHOUT - CONTRACTOR TO DESIGNATE LOCATION IF FIELD
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- CONSTRUCTION TRAFFIC ROUTE
- LIMITS OF DISTURBANCE
- ST - SLOPE TRACKING
- CB - EROSION CONTROL BLANKET
- TS - TEMPORARY SEEDING
- PS - PERMANENT SEEDING
- LS - LANDSCAPING - INSTALL IAW LANDSCAPING DRAWINGS.

TOTAL DISTURBED AREA: 21.9 ac

WASHTENAW COUNTY SOIL EROSION CONTROL REQUIREMENTS NOTES:

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- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS DESIGNATED ON PLANS AND/OR AS REQUIRED MUST BE INSTALLED PRIOR TO ANY EARTH MOVING ACTIVITIES.
- EARTH CHANGES TO A PROPERTY MUST NOT ADVERSELY AFFECT DRAINAGE TO SURROUNDING AREAS.
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- RISER PIPES IN DETENTION PONDS MUST BE WRAPPED IN GEOTEXTILE FABRIC AND CHOKED WITH PEA GRAVEL.
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D	30% OWNER REVIEW	2022-02-18
E	60% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

NOT FOR CONSTRUCTION

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CONSULTANTS

SEAL

PRIME CONSULTANT

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25000 Telegraph Road - Suite 300
Southfield MI 48033 USA
tel 248 936 8000 fax 248 936 8111
ibigroup.com

PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

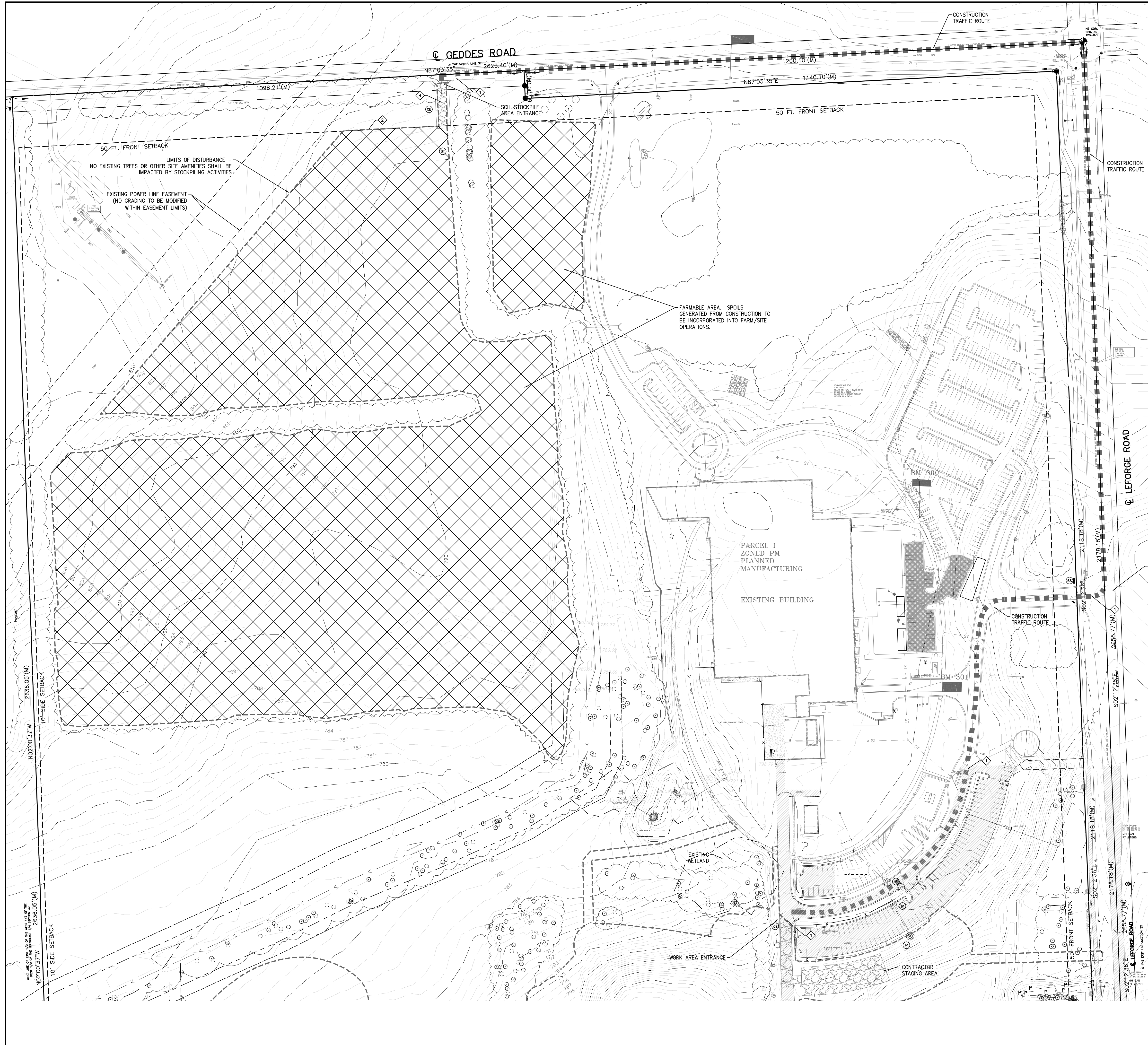
SHEET TITLE

OVERALL SESC PLAN -
PHASE II

SHEET NUMBER

SESC-501

ISSUE



KEYNOTES:

1. SWEEP/SCRAPE PAVED SURFACES ADJACENT TO WORK AREAS WHEN SEDIMENT IS VISIBLE AND AT THE END OF EACH WORK DAY.
2. MAINTAIN SILT FENCE & TREE PROTECTION FENCE; REMOVE & REPAIR GROUND AS A FINAL SECC MEASURE
3. GRADE STOCKPILE TO MAX. 4:1 SIDE SLOPES & STABILIZE UPON COMPLETION OF GRADING ACTIVITIES
4. REPLACE TOPSOIL & STABILIZE CONSTRUCTION ENTRANCE ONCE STOCKPILE HAS BEEN PERMANENTLY STABILIZED.
5. MAINTAIN SILT FENCE & TREE PROTECTION FENCE; REMOVE & REPAIR GROUND AS A FINAL SECC MEASURE/ONCE STOCKPILE IS STABILIZED.

CIVIL LEGEND – EROSION CONTROL

- CENTER OF SWALE
- SF — SILT FENCE
- TF — TREE PROTECTION/CONSTRUCTION FENCE
- SS — SWPPP SIGN
- INLET PROTECTION
- CURB/PAVED INLETS
- IP — YARD INLETS/VEGETATED AREAS
- CE — STABILIZED CONSTRUCTION ENTRANCE
- CONSTRUCTION TRAFFIC ROUTE
- LIMITS OF DISTURBANCE
- ST — SLOPE TRACKING
- TS — TEMPORARY SEEDING
- PS — PERMANENT SEEDING
- ⊠ — LAND AVAILABLE FOR TOPSOIL APPLICATION / FARMING OPERATION

STOCKPILE/FARMLAND DISTURBED AREA: 24.5 ac

WASHTENAW COUNTY SOIL EROSION CONTROL REQUIREMENTS NOTES:

- NO EARTH MOVING ACTIVITY CAN BEGIN WITHOUT A SOIL EROSION PERMIT OR SOIL EROSION WAIVER. THE SOIL EROSION PERMIT OR SOIL EROSION WAIVER MUST BE POSTED AND BE CLEARLY VISIBLE FROM THE ROAD.
- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS DESIGNATED ON PLANS AND/OR AS REQUIRED MUST BE INSTALLED PRIOR TO ANY EARTH MOVING ACTIVITIES.
- EARTH CHANGES TO A PROPERTY MUST NOT ADVERSELY AFFECT DRAINAGE TO SURROUNDING AREAS.
- DETENTION/RETENTION/SEDIMENTATION PONDS MUST BE CONSTRUCTED AND STABILIZED PRIOR TO OTHER EARTH MOVING ACTIVITIES.
- OUTLETS OF DETENTION/RETENTION/SEDIMENTATION PONDS SHALL BE DESIGNED AND CONSTRUCTED TO REDUCE THE WATER FLOW TO A NON-EROSIVE VELOCITY. RIP-RAP MUST BE INSTALLED ON ALL STORMWATER OUTLETS.
- RISER PIPES IN DETENTION PONDS MUST BE WRAPPED IN GEOTEXTILE FABRIC AND CHOKED WITH PEA GRAVEL.
- ALL EARTH MOVING SHALL BE DESIGNED, CONSTRUCTED AND COMPLETED IN SUCH A MANNER THAT LIMITS THE EXPOSED AREAS OF ANY DISTURBED LAND FOR THE SHORTEST POSSIBLE PERIOD OF TIME. THE SITE MUST BE STABILIZED WITHIN FIVE (5) CALENDAR DAYS AFTER FINAL GRADING OR EARTH MOVING ACTIVITY AS BEEN COMPLETED.
- STONE ACCESS DRIVES, IF REQUIRED, MUST BE INSTALLED PRIOR TO CONSTRUCTION FOR PURPOSES OF MUD TRACKING.
- SOIL, SEDIMENT, AND MISCELLANEOUS DEBRIS MUST BE KEPT OFF STREETS AND OUT OF DRAINAGE DITCHES AND CATCH BASINS THROUGHOUT THE DURATION OF THE PROJECT.
- ROCK CHECK DAMS ARE TO BE USED INSTEAD OF STRAW BALES OR SILT FENCING IN CONCENTRATED FLOW LOCATIONS SUCH AS DITCHES OR PIPE OUTLETS. STRAW BALES SHOULD NEVER BE USED FOR SOIL EROSION CONTROL.
- SILT FENCING, IF REQUIRED, MUST BE TRENCHED IN AND BACKFILLED. FENCING MAY BE TOD-IN WITH PEA GRAVEL IF INSTALLED IN WINTER.
- CATCH BASINS, IF INSTALLED, MUST BE PROTECTED WITH A SEDIMENT FILTER WITH OVERFLOW.
- DEWATERING OPERATIONS MUST HAVE SOME TYPE OF CONTROL, E.G. FILTER BAG AND VEGETATIVE FILTER AREA. THERE SHALL BE NO DEWATERING OF UNFILTERED WATER.
- STOCKPILING OF ANY EXCAVATED MATERIAL MUST BE KEPT CLEAR OF SENSITIVE AREAS.
- ADEQUATE CONTROLS MUST BE IN PLACE TO ENSURE THIS REQUIREMENT.
- EROSION CONTROL BLANKETS ARE REQUIRED ON SLOPES OF 4:1 OR STEEPER.
- ALL AREAS OF A PROJECT THAT ARE DISTURBED MUST BE STABILIZED BY DECEMBER 1.
- ALL PERMANENT EROSION CONTROL MEASURES SHALL BE PERMANENTLY MAINTAINED BY THE OWNER OR HOMEOWNER ASSOCIATION.

TRUE NORTH PLANT NORTH

WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG 3 WORKING DAYS BEFORE STARTING YOUR PROJECT 1-800-482-7171 (TOLL FREE)

HORIZONTAL SCALE

1 inch = 100 feet (24"x36")

CLIENT

HATCI MICHIGAN R&D CENTER
SUPERIOR TOWNSHIP, MICHIGAN

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PROJECT

Hyundai STIL

6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNAR

CHECKED BY:

PROJECT MGR:
D KASSAB

APPROVED BY:

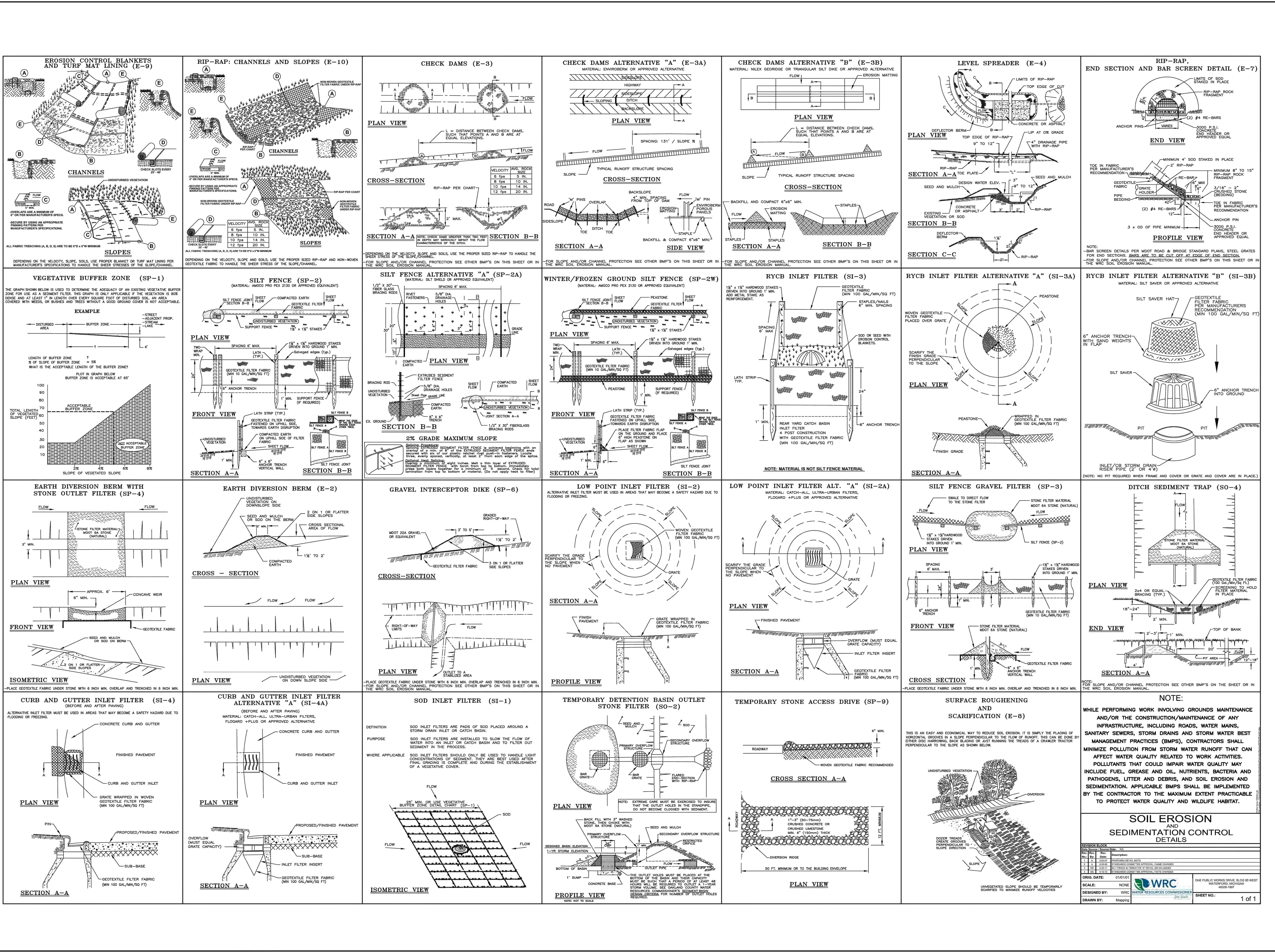
SHEET TITLE

SOIL STOCKPILE

SHEET NUMBER

SESC-502

ISSUE



CLIENT: HATCH MICHIGAN R&D CENTER SUPERIOR TOWNSHIP, MICHIGAN

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PROJECT: Hyundai STIL, 6800 Geddes Rd Superior Charter Twp, MI 48198

PROJECT NO: 134894

DRAWN BY: G TANNAR, CHECKED BY:

PROJECT MGR: D KASSAB, APPROVED BY:

SHEET TITLE: SESC DETAILS

SHEET NUMBER: SESC-503, ISSUE

REVISION BLOCK: (Empty table)

ORIG. DATE: 01/10/11, SCALE: NONE, DESIGNED BY: WRC, DRAWN BY: Mapping, SHEET NO: 1 of 1

WATER RESOURCES CONSULTANTS (WRC) logo and contact information.



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PROJECT

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MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

CHECKED BY:

PROJECT MGR:
D KASSAB

APPROVED BY:

SHEET TITLE

DETAILS

SHEET NUMBER

CT-600

ISSUE



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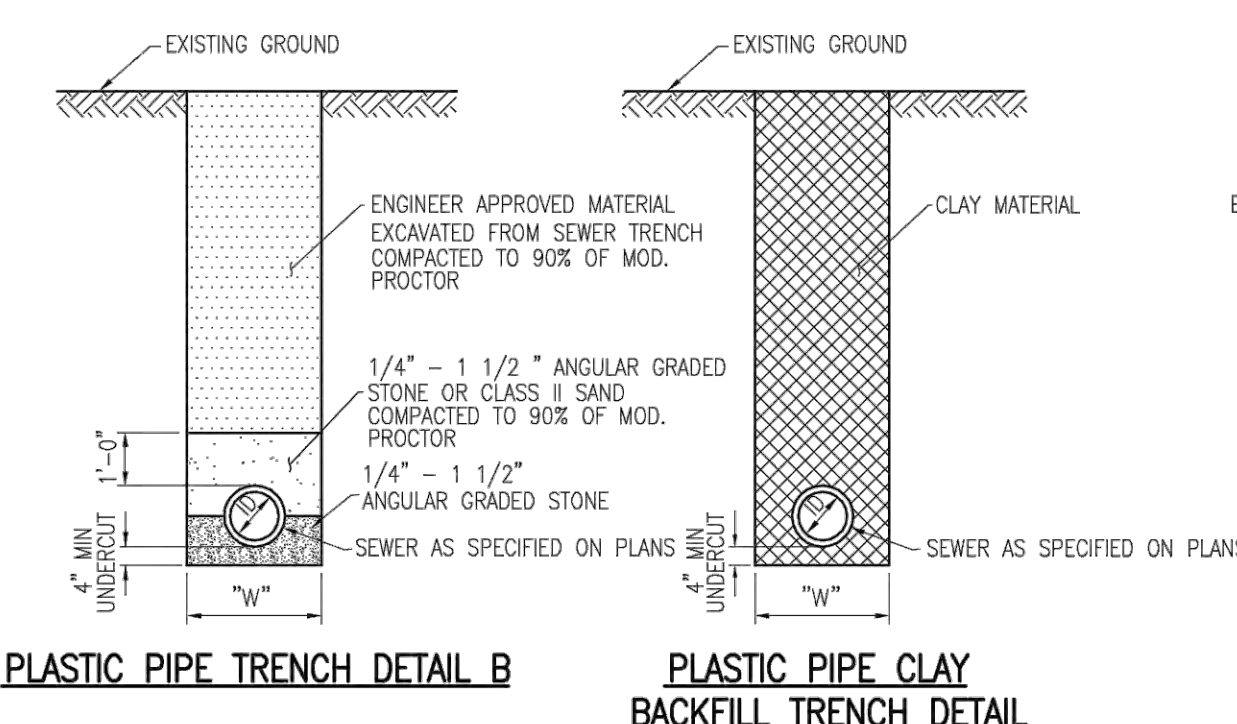
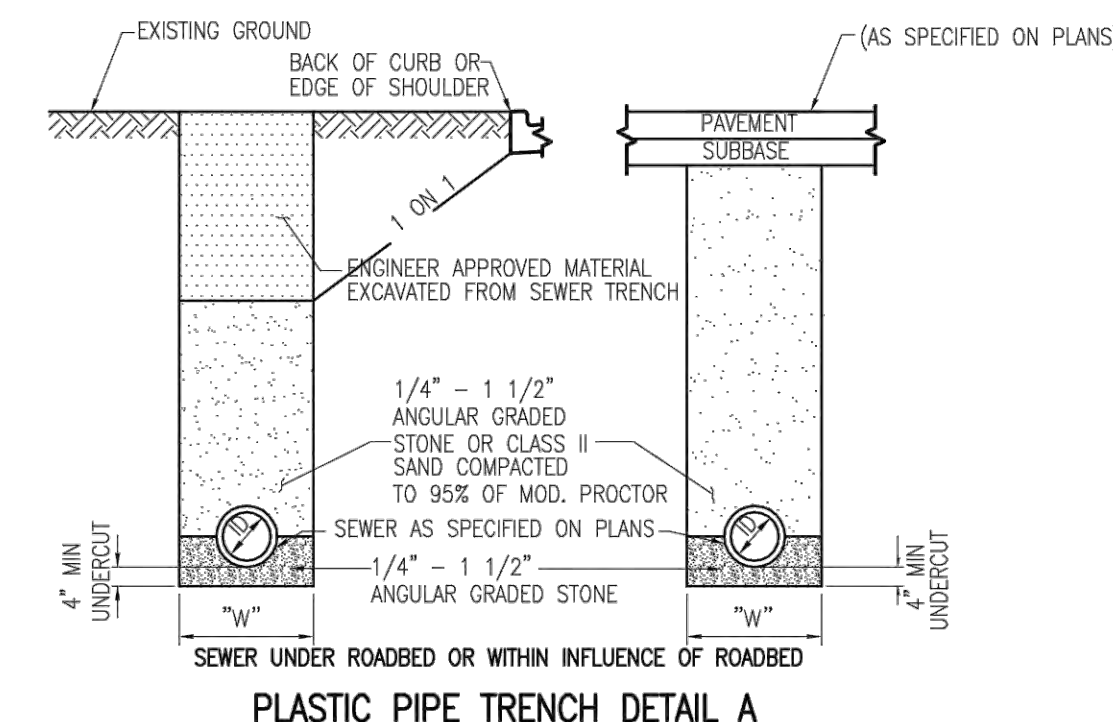
34000 Plymouth Road Livonia, MI 48150 | P (734) 522-8711 | F (734) 522-8427

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VERTICUM	HORIZONTAL	SCALE	DATE	REVISIONS
N/A	N/A	1" = 10'	000-00-0000	
CITY/TOWNSHIP	COUNTY	RANGE	TOWNSHIP	SECTION
CHARTER TOWNSHIP OF SUPERIOR	WASHTENAW		CHARTER TOWNSHIP OF SUPERIOR	
PROJECT	CLIENT	DATE	DATE	DATE
	HYUNDAI	OCT 2023		

CHARTER TOWNSHIP OF SUPERIOR
STANDARD SANITARY DETAILS

SHEET
1
OF 2

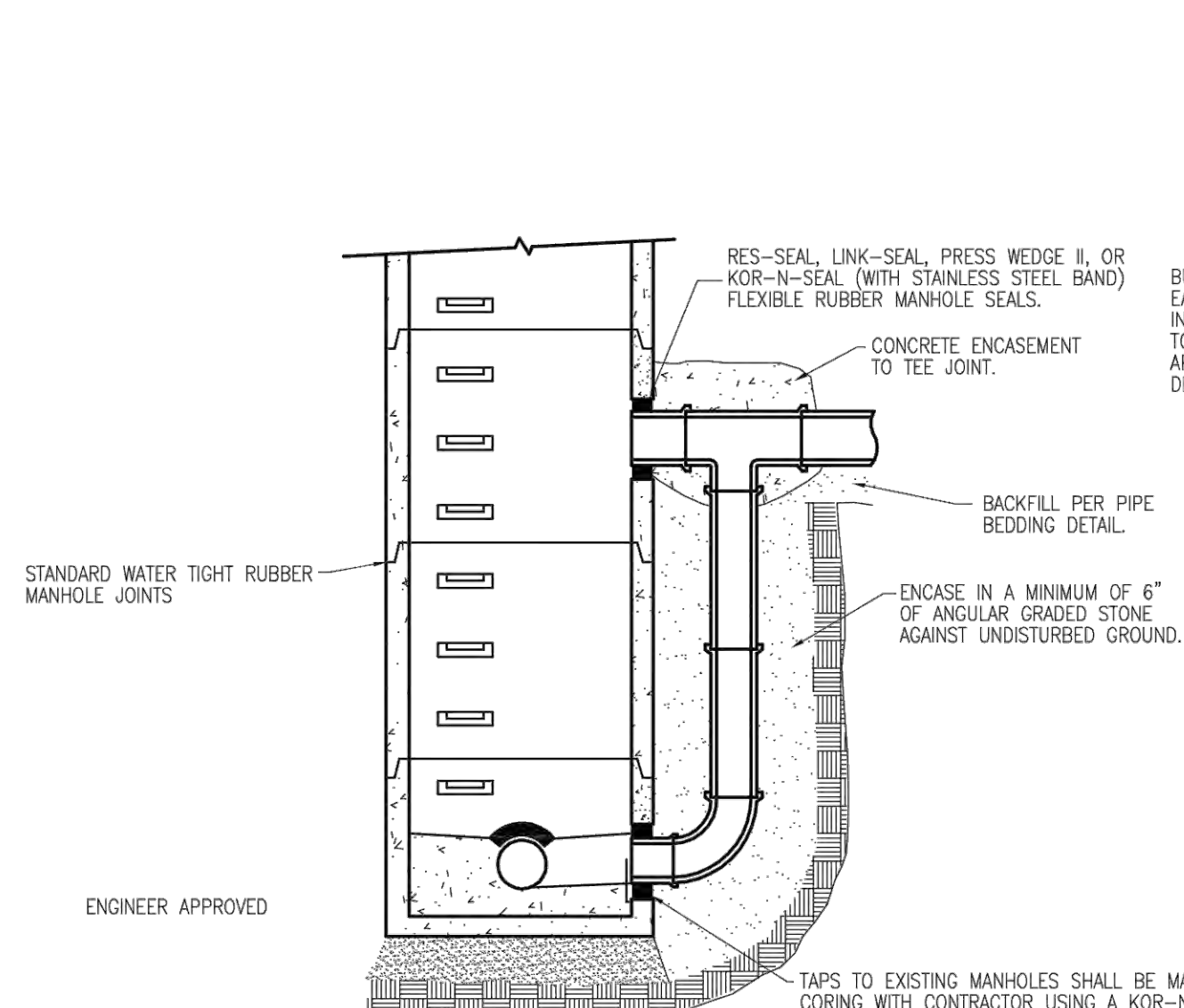


PLASTIC PIPE CLAY
BACKFILL TRENCH DETAIL

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

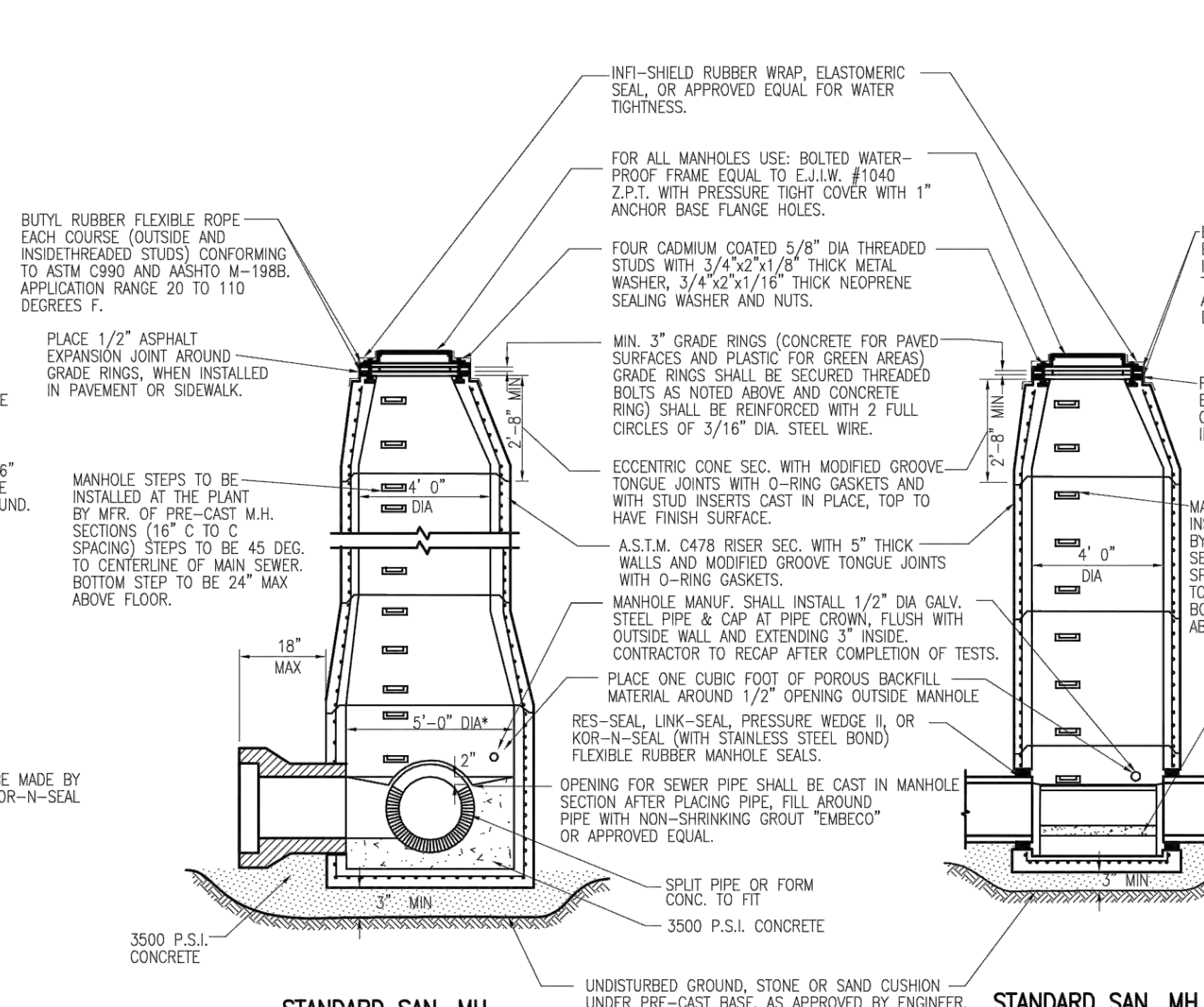
I.D. PIPE SIZE (INCHES)	LESS THAN 18"	21"	24"	30"	36"		
"W" TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0		
I.D. PIPE SIZE (INCHES)	42"	48"	54"	60"	66"	72"	78"
"W" TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	11.0	11.5	
I.D. PIPE SIZE (INCHES)	84"	90"	96"	102"	108"		
"W" TRENCH WIDTH (FEET)	12.0	12.5	13.0	13.5	14.0		

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "W" PLUS 1' EACH SIDE OF THE TRENCH (6" MINIMUM).



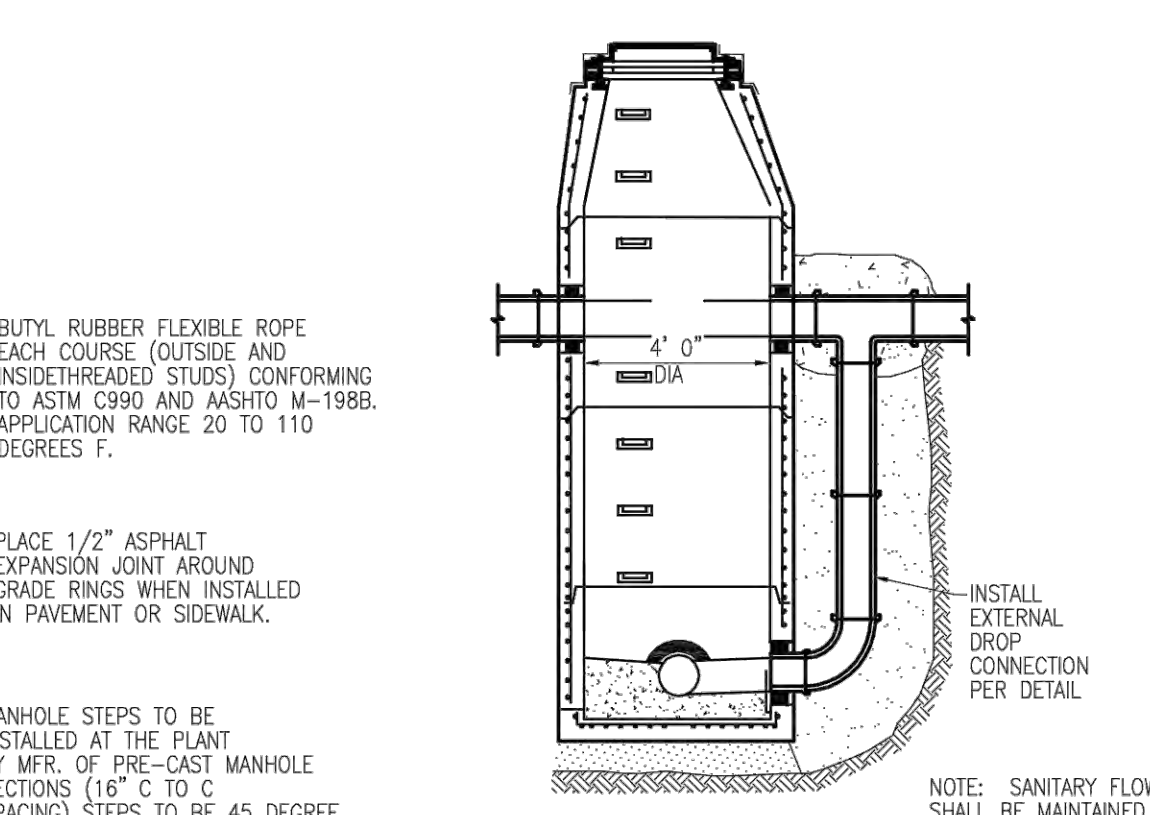
EXTERNAL DROP CONNECTION
(HYDROGEN SULFIDE PROTECTION)

DIA OF SEWER	DIA OF CONNECTION
12" - 15" & 18"	8"
21" - 24" & 30"	18"
36" & 42"	24"



STANDARD SAN. MH.
FOR SEWERS 24" THRU 42"

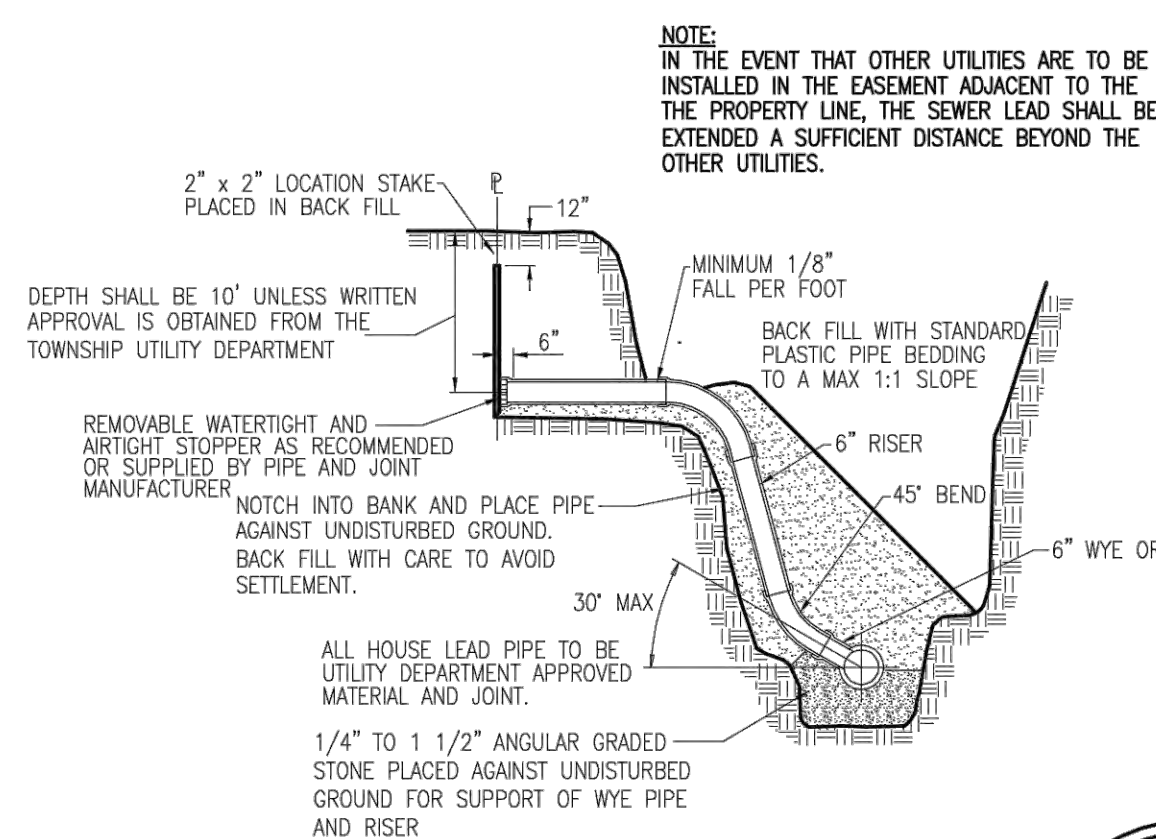
* MANHOLE DIAMETER TO MEET MANUFACTURERS REQUIREMENTS FOR BOTH STRAIGHT THRU & RIGHT ANGLE INSTALLATION



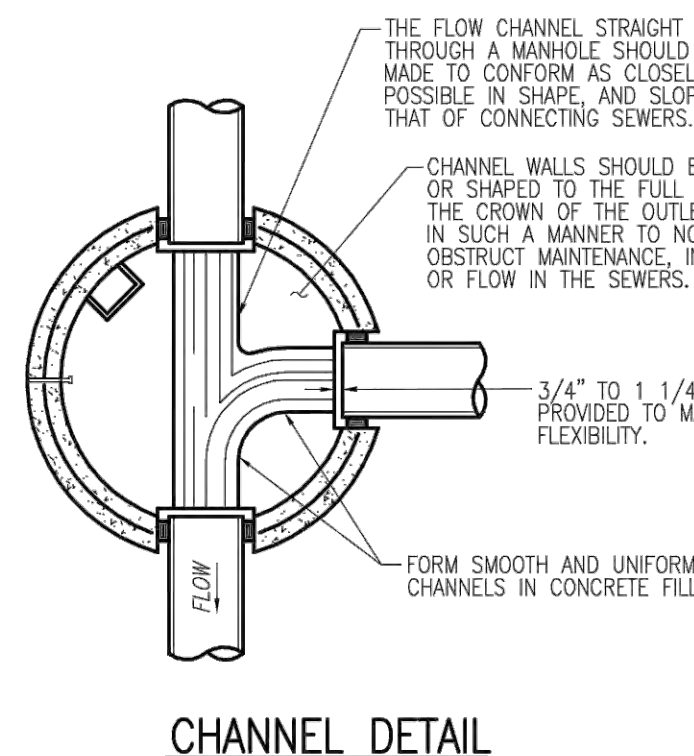
SANITARY MH. BUILT OVER
EX. SANITARY LINE
(SAME AS STANDARD SAN. MH EXCEPT AS INDICATED HERE)
(HYDROGEN SULFIDE PROTECTION)

SANITARY SEWER CONSTRUCTION NOTES

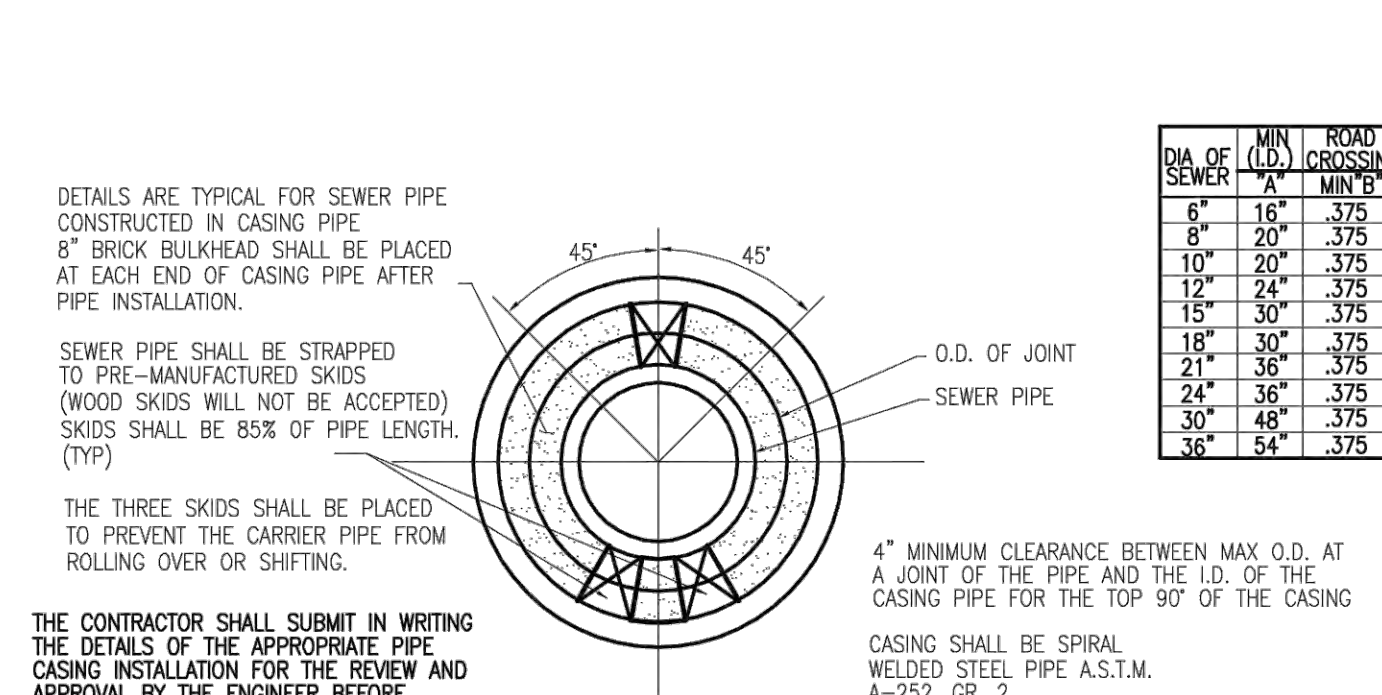
1. ALL MANHOLE RIMS SHALL BE SET TO GRADE AS FURNISHED BY THE ENGINEER.
2. RISERS ON SANITARY SEWERS SHALL BE INSTALLED WHERE SEWER ARE OVER 10' DEEP TO A DEPTH OF 10'.
3. PLACE ONE 6" WYE FOR EACH LOT ON SANITARY SEWERS UNLESS OTHERWISE SPECIFIED.
4. ALL MANHOLES SHALL USE ECCENTRIC CONES PLACED TOWARD THE PROPERTY LINE UNLESS OTHERWISE NOTED.
5. INFILTRATION FOR ANY SECTION OF SEWERS BETWEEN MANHOLES SHALL NOT EXCEED 200 GALLONS PER INCH IN DIAMETER PER MILE OF SEWER PER 24 HRS.
6. NO FOOTING OR ROOF DRAINS SHALL BE CONNECTED TO THE PROPOSED SEWER.
7. DIFFERENTIAL OF EXCAVATION AROUND EXISTING MANHOLES SHALL NOT EXCEED 6 FEET.
8. NO CONNECTION RECEIVING STORM WATER, SURFACE WATER, OF GROUND WATER SHALL BE MADE TO SANITARY SEWERS.
9. ALL SEWERS SHALL BE SUBJECT TO TELEVISION INSPECTION AND AIR INFILTRATION OR EXFILTRATION TESTS, OR A COMBINATION OF SAME WITHIN 30 DAY OF BACKFILL. PRIOR TO ACCEPTANCE. ALL SEWERS OVER 24" DIAMETER SHALL BE SUBJECT TO INFILTRATION TESTS. ALL SEWERS OF 24" DIAMETER OR SMALLER, WHERE THE GROUND WATER LEVEL ABOVE THE TOP OF THE SEWER IS OVER 2 FEET, SHALL BE SUBJECT TO INFILTRATION TESTS. ALL SEWERS OF 24" DIAMETER OR LESS, WHERE THE GROUND WATER LEVEL ABOVE THE TOP OF THE SEWER IS 2 FEET OR LESS, SHALL BE SUBJECT TO AIR TESTS OR EXFILTRATION TESTS.
10. ALL SEWER SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS OF THE AGENCY OR AGENCIES HAVING JURISDICTION OF THE SEWER SYSTEM AND CONSTRUCTION AREA.
11. ALL SEWERS SHALL BE TELEVIEWED, WITH TEST RESULTS APPROVED BY THE TOWNSHIP UTILITY DEPARTMENT PRIOR TO PLACING THE SEWER IN SERVICE.
12. NO SEWER SHALL BE CONSTRUCTED LESS THAN 8" IN DIAMETER.
13. ALL STUBS SHALL HAVE A WATER AND AIR TIGHT BULKHEAD.
14. ALL ELEVATIONS ARE BASED ON NAVD 88 (ORIGINAL).
15. THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES, LARGER DIAMETERS ARE PREFERRED FOR LARGER DIAMETER SEWERS. A MINIMUM ACCESS DIAMETER OF 22 INCHES SHALL BE PROVIDED.
16. CONTRACTOR SHALL PERFORM 9 POINT MANHOLE TESTING PER SECTION XI, OPEN OUT SEWERS OF THE SPECIFICATIONS.
17. SANITARY SEWER SHALL BE COMPOSITE ABS OR PVC TRUSS PIPE CONFORMING TO REQUIREMENTS OF ASTM D-2850 OR PVC PIPE CONFORMING TO ASTM D-3034 (SDR 26) MAY BE USED WHERE DEPTH IS LESS THAN 15'.
18. JOINTS FOR PLASTIC PIPE SHALL BE PUSH-ON TYPE OR IN SPECIAL APPLICATIONS SOLVENT JOINTS, WHERE SPECIFIED, SHALL CONFORM TO ASTM D-3112 AND F-477. SOLVENT-CEMENTED JOINTS, WHERE SPECIFIED, SHALL CONFORM TO ASTM D-2855.
19. JOINTS ON TRUSS PIPE SHALL CONSIST OF ABS PLASTIC COUPLINGS CHEMICALLY CEMENTED TO THE ENDS OF THE PIPE BEING CONNECTED. SOLVENTS AND METHODS USED IN MAKING THE CHEMICAL BOND SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS, AND THE INSTALLATION TECHNIQUE SHALL CONFORM TO ASTM D - 2321, OR LATEST REVISION.
20. MANHOLE STEPS TO BE PLASTIC COATED MEETING THE REQUIREMENTS IN ASTM D2146, TYPE II, GRADE 49108, M.A. INDUSTRIES P.S.I. POLYPROPYLENE, OR E.J.L.W. 8502.
21. A VIDEOTAPE (WITH LOG AND LEAD LOCATIONS) SHALL BE SUBMITTED AND APPROVED BY THE TOWNSHIP PRIOR TO THE FINAL ACCEPTANCE. SAID VIDEOTAPE SHALL BE PERFORMED PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.
22. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) A MINIMUM OF 30 DAYS AFTER DATES AFTER COMPLETION OF BACKFILL FOR THE LOCATION OF UNDER GROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES.
23. MINIMUM DEPTH TO TOP OF PIPE SHALL BE 4 FEET.
24. THE MAXIMUM DEPTH TO INVERT OF ANY SANITARY SEWER SHALL NOT EXCEED THE DEPTH RECOMMENDED BY THE MANUFACTURER FOR EACH SIZE AND CLASS AND PIPE.
25. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATER TIGHT CONNECTION THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE.
26. A BENCH SHALL BE PROVIDED ON EACH SIDE OF ANY MANHOLE CHANNEL WHEN THE PIPE DIAMETER IS LESS THAN THE MANHOLE DIAMETER. THE BENCH SHOULD BE SLOPED NO LESS THAN 1/2 INCH PER FOOT. NO LATERAL SEWER SERVICE CONNECTION, OR DROP MANHOLE PIPE SHALL DISCHARGE ONTO THE SURFACE OF THE BENCH.
27. WHERE WORK IS TO BE PERFORMED IN THE VICINITY OF A SUPERIOR TOWNSHIP MAIN, CONTRACTOR SHALL NOTIFY THE SUPERIOR TOWNSHIP UTILITY DEPARTMENT AT (734) 480-5500 AT LEAST 3 WORKING DAYS PRIOR TO START OF CONSTRUCTION AS WELL AS TOWNSHIP ENGINEER TO SCHEDULE INSPECTION.
28. AN ELASTOMERIC SEAL OR RUBBER WRAP SHALL BE PLACED AROUND EACH MANHOLE FRAME AND CONE SECTION FOR WATER TIGHTNESS.



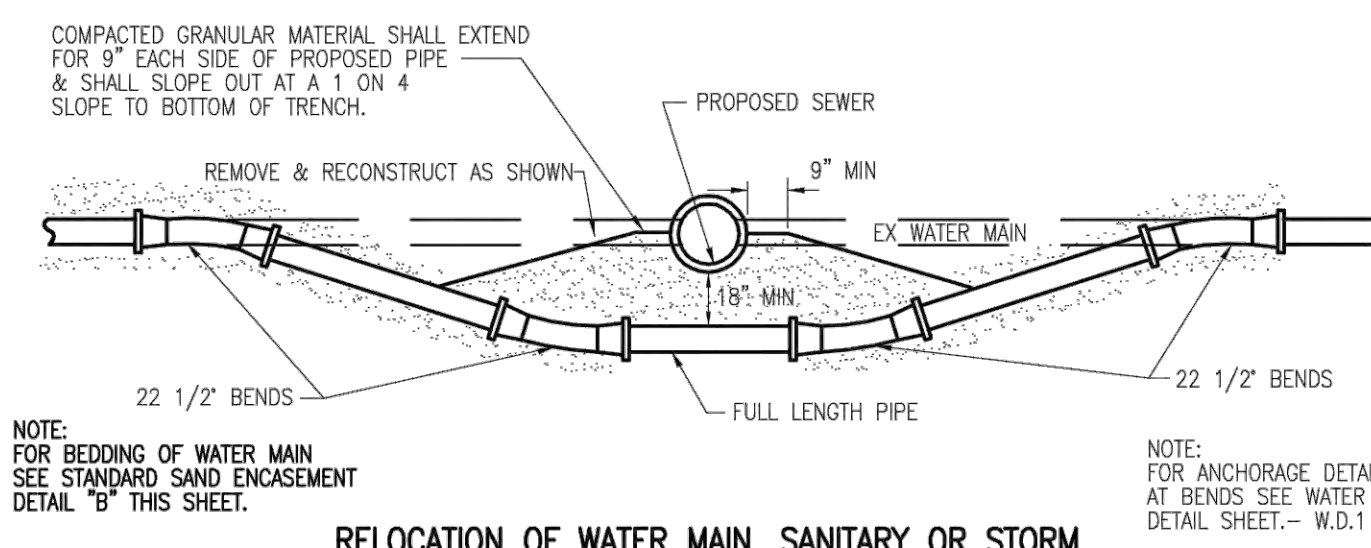
HOUSE LEAD DETAIL



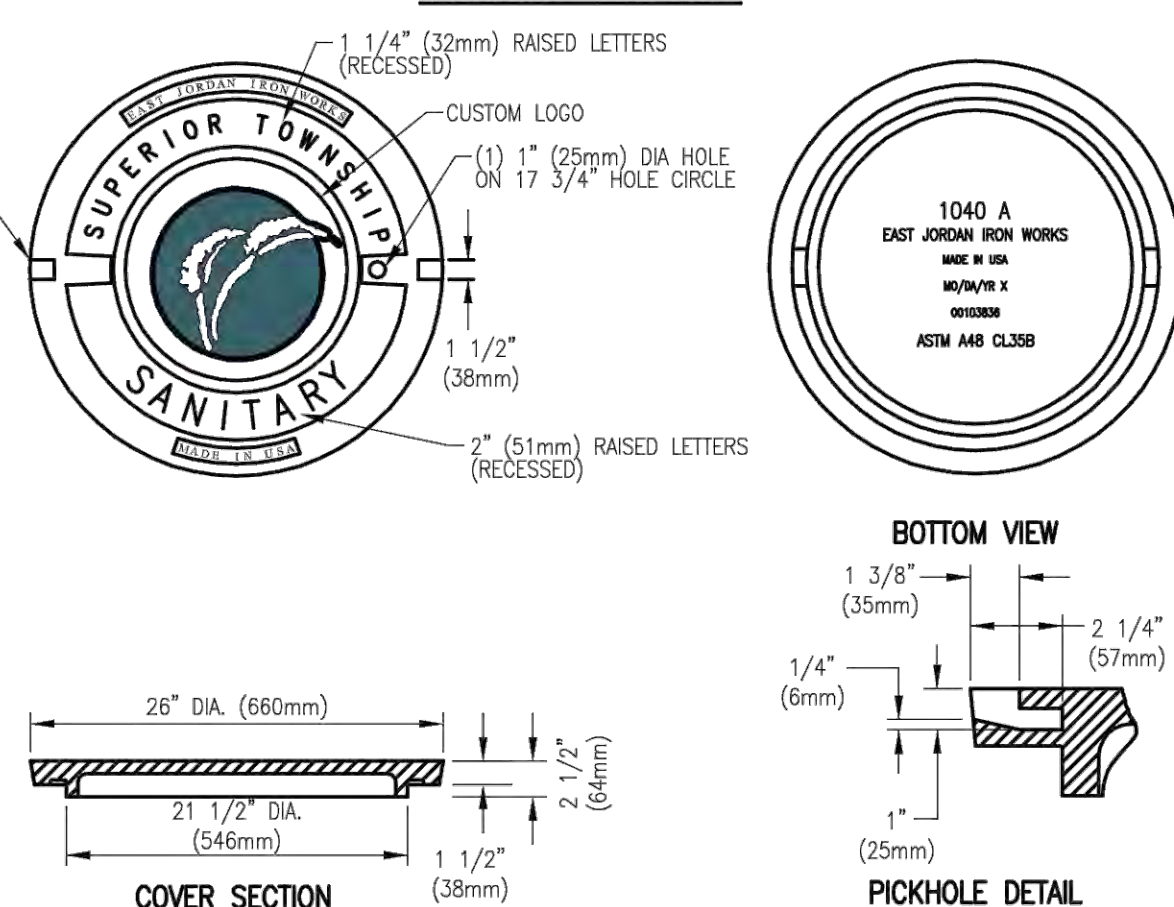
CHANNEL DETAIL



PIPE BARREL SUPPORT FOR SANITARY SEWER
CONSTRUCTED IN CASING PIPE



RELOCATION OF WATER MAIN, SANITARY OR STORM



STANDARD COVER & FRAME

DRAWING PATH: S:\07\Superior\TwpStandards\CAD\utility\SanitaryStandard.dwg Dec 20, 2011 - 4:30pm



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D KASSAB

APPROVED BY:

SHEET TITLE

DETAILS

SHEET NUMBER

CT-602

ISSUE



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VERTICAL DATUM: N/A
HORIZONTAL DATUM: N/A
SCALE: V. - N/A, H. - N/A
COUNTY: WASHTENAW
TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR
SECTION: REVISIONS

CHARTER TOWNSHIP OF SUPERIOR
STANDARD STORM SEWER DETAILS

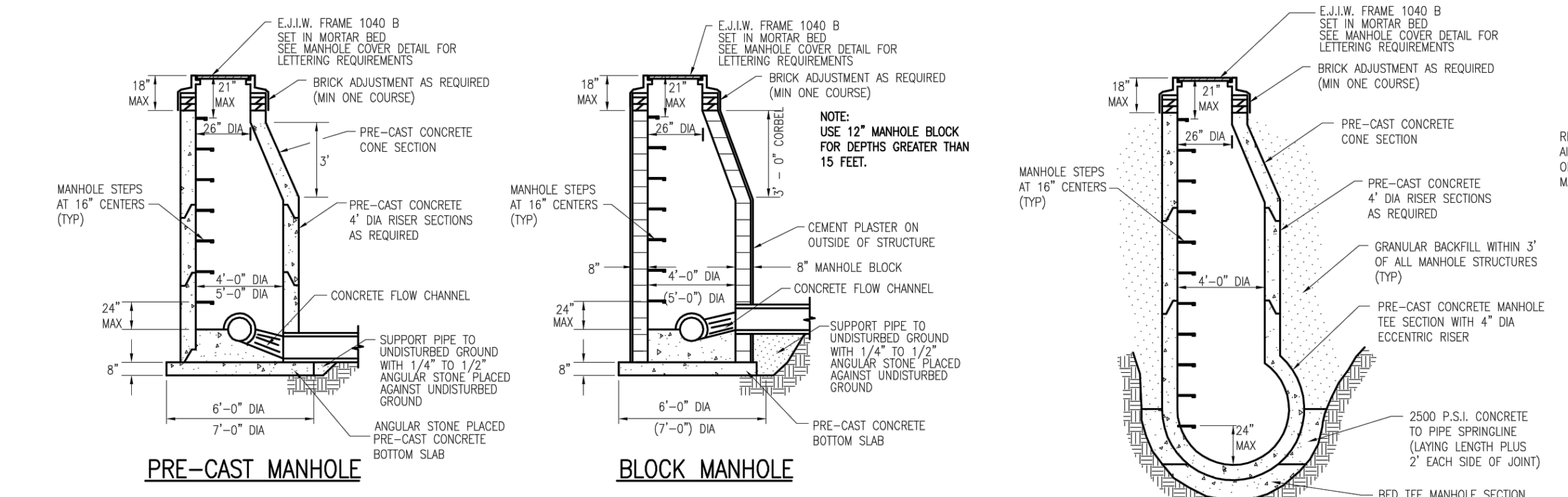
SHEET
1
OF 2

GENERAL NOTES FOR STORM SEWER CONSTRUCTION

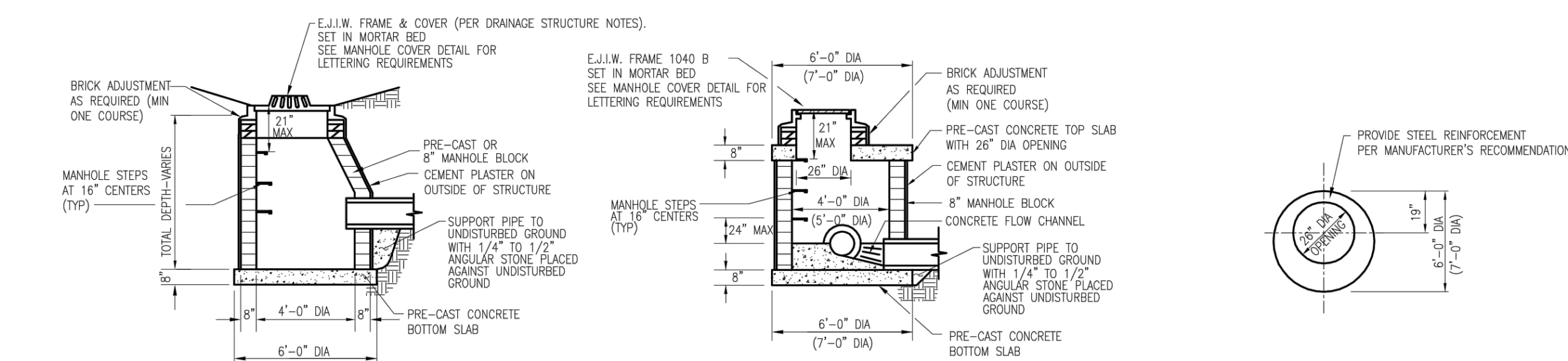
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF CHARTER TOWNSHIP OF SUPERIOR.
 - TYPE AND CLASS OF PIPE SHALL BE AS SPECIFIED ON PLANS.
 - SAND BEDDING SHALL BE USED THROUGHOUT, UNLESS OTHERWISE SPECIFIED ON THE PLAN.
 - ALL END SECTIONS 18" AND LARGER SHALL BE PROVIDED WITH A GALVANIZED BAR SCREEN.
- CONTRACTOR SHALL CONSTRUCT MANHOLES WITH PRECAST REINFORCED CONCRETE IN LIEU OF CONCRETE, BRICK AND BLOCK MANHOLES IN ACCORDANCE WITH THE FOLLOWING CONDITIONS:
 - NO OPENINGS SHALL BE MADE IN PRECAST UNITS WHICH WOULD LEAVE LESS THAN 12" OF UNDISTURBED PRECAST STRUCTURE WALL BETWEEN PIPES (AS MEASURED BETWEEN OUTSIDE PIPE WALLS) OR WOULD REMOVE MORE THAN 40% OF THE CIRCUMFERENCE ALONG ANY HORIZONTAL PLANE.
 - STRUCTURES FOR SEWERS LARGER THAN 18", OR THOSE NOT MEETING THE OPENING REQUIREMENTS, MAY BE BUILT OF BLOCK OR BRICK UP TO A MINIMUM OF 8" ABOVE THE TOP OF SEWER, WITH PRECAST UNITS BEING USED ABOVE THIS POINT. WHERE PRECAST UNITS REST ON THE BLOCK OR BRICK, THE GROOVE IN THE PRECAST UNIT SHALL BE FILLED WITH MORTAR.
 - OPENINGS FOR THE OUTLET SEWER SHALL BE PRECAST WITH A DIAMETER OF 3 INCHES LARGER THAN THE OUTSIDE DIAMETER OF THE OUTLET PIPE. ALL OTHER OPENINGS SHALL BE MADE IN THE FIELD AFTER THE MANHOLE HAS BEEN CONSTRUCTED.
- ALL VERTICAL OPENINGS IN CONCRETE BLOCK STRUCTURE WALLS SHALL BE COMPLETELY FILLED WITH MORTAR. ALL VERTICAL WALL JOINTS SHALL BE CEMENT POINTED.
 - THE CONTRACTOR SHALL PROVIDE REINFORCED CONCRETE PIPE AS SPECIFIED ON THE PLANS.
 - ALL ROUND REINFORCED CONCRETE PIPE SHALL HAVE MODIFIED GROOVE TONGUE JOINTS WITH O-RING TYPE RUBBER GASKET, PER A.S.T.M. SPECIFICATIONS C443. ALL ELLIPTICAL CONCRETE PIPE SHALL HAVE GROOVE TONGUE JOINTS WITH BITUMINOUS (DOWITT #10) JOINT MATERIAL AND INSIDE MORTAR POINTING. ELLIPTICAL CONCRETE PIPE JOINTS SHALL ALSO BE WRAPPED PER A.S.T.M. SPECIFICATION C877 FOR EXTERNAL SEALING BANDS FOR NON-CIRCULAR CONCRETE PIPE.
 - THE INSIDE JOINT OF PIPE SIZES OVER 27" DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
 - WHERE UNSTABLE GROUND CONDITIONS ARE ENCOUNTERED, STONE BEDDING SHALL BE USED AS DIRECTED BY THE ENGINEER IN ORDER TO PROVIDE A STABLE FOUNDATION FOR PIPE AND MANHOLES.
 - ALL PIPES ENTERING OR LEAVING A MANHOLE SHALL BE ADEQUATELY SUPPORTED WITH 1/4" TO 1/2" ANGULAR GRADED STONE FILL FROM UNDISTURBED EARTH TO SPRINGLINE OR WITH APPROVED CRUSHED AGGREGATE.

DRAINAGE STRUCTURE REQUIREMENTS:

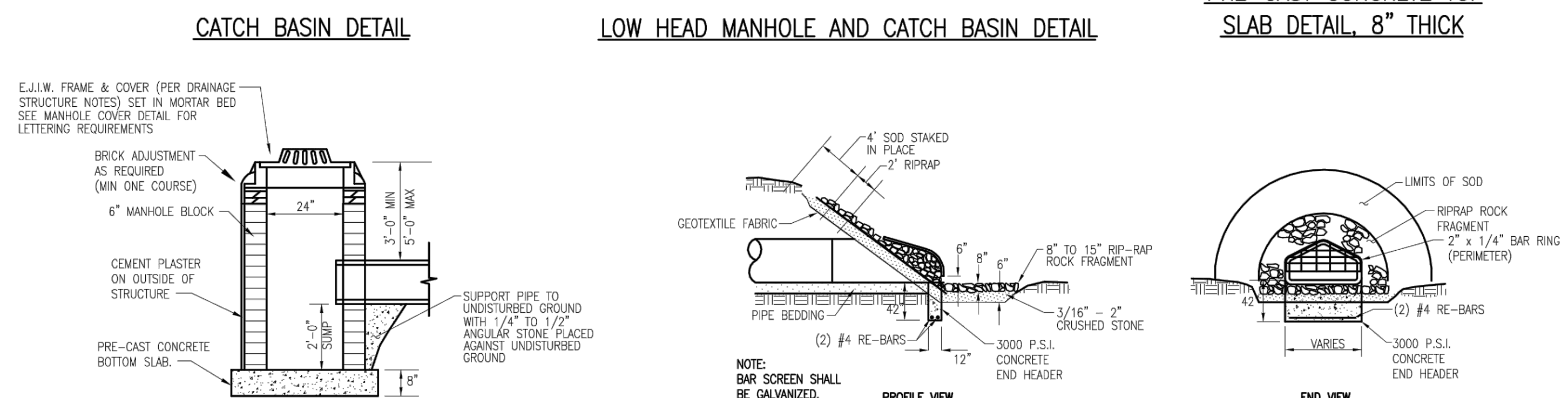
- ALL STRUCTURE(S) SHALL BE 4" IN DIAMETER UNLESS OTHERWISE INDICATED ON CONSTRUCTION DRAWINGS. 2' DIAMETER CATCH BASINS AND INLETS SHALL BE USED ONLY WITH PRIOR TOWNSHIP APPROVAL.
- MANHOLE STEPS SHALL BE STEEL ENCASED WITH POLYPROPYLENE PLASTIC OR APPROVED EQUIVALENT TO M.A. INDUSTRIES, INC., PS-1 FOR BRICK, OR PS-1B FOR BLOCK, EAST JORDAN IRON WORKS 8503 (OR APPROVED EQUAL). MANHOLE STEPS AT 16" CENTERS.
- CATCH BASIN STEPS SHALL BE EAST JORDAN IRON WORKS 8502 PLASTIC COATED (OR APPROVED EQUAL).
- MANHOLE COVERS AND FRAMES SHALL BE EAST JORDAN IRON WORKS 1040, TYPE "B" COVER OR AS PER CONSTRUCTION DRAWINGS.
 - EAST JORDAN IRON WORKS 5080, TYPE "M1" COVER WITH STRAIGHT FACE CURB AND GUTTER (OR AS APPROVED EQUAL).
 - EAST JORDAN IRON WORKS 5080, TYPE "M1" COVER WITH MOUNTABLE CURB AND GUTTER AND INTEGRAL CURB AND GUTTER (OR AS APPROVED EQUAL).
 - EAST JORDAN IRON WORKS 1040, TYPE "O2" COVER (BEEHIVE) TO BE USED ON OPEN DITCHES AND SWALES, REAR YARD CATCH BASIN (OR AS APPROVED EQUAL). IF WITHIN 8' OF ROAD, TYPE "N" COVER (LOW BEEHIVE) SHALL BE USED.
 - FRAMES SHALL BE SET IN FULL BED OF MORTAR AND THE SIDE SHALL BE OVERLAPPED TO PREVENT LEAKAGE.
- A PROPER CHANNEL SHALL BE CONSTRUCTED WITHIN THE EXISTING MANHOLE OR OTHER STRUCTURE AT WHICH THE CONNECTION IS TO BE MADE TO DIRECT THE FLOW TO THE EXISTING OUTLET IN A MANNER WHICH WILL TEND TO CREATE THE LEAST AMOUNT OF TURBULENCE. THE CHANNEL SHALL BE CONSTRUCTED TO THE SAME SIZE AS THE INSIDE DIAMETER OF THE EXISTING PIPES, AND SHALL BE BUILT TO HEIGHT OF 1/3 THE EXISTING PIPE DIAMETER WITH A MINIMUM OF 2% SLOPE ON THE BENCHES.
 - ALL BRICKS AND BLOCKS USED FOR ADJUSTMENT SHALL BE CONCRETE.
 - BLOCK USED FOR STANDARD CATCH BASINS AND MANHOLES SHALL BE 8" (FOR 0'-15" DEEP) AND 12" (FOR 15'-25" DEEP). BLOCK USED FOR 2' DIAMETER INLETS AND CATCH BASINS SHALL BE 6".
 - PRECAST REINFORCED CONCRETE SECTION AS MINIMUM SHALL CONFORM TO A.S.T.M. C-478.
 - CONCRETE BASE FOR MANHOLE, CATCH BASIN, AND INLET SHALL BE MDOT GRADE 30P (MIN), 8" THICK, 3000 PSI.
- STANDARD BRICK ADJUSTMENT: MINIMUM OF ONE COURSE AND A MAXIMUM OF 5 COURSES OF BRICK.
 - ALL BRICKS AND BLOCKS USED FOR ADJUSTMENT SHALL BE CONCRETE.
 - BLOCK USED FOR STANDARD CATCH BASINS AND MANHOLES SHALL BE 8" (FOR 0'-15" DEEP) AND 12" (FOR 15'-25" DEEP). BLOCK USED FOR 2' DIAMETER INLETS AND CATCH BASINS SHALL BE 6".
 - PRECAST REINFORCED CONCRETE SECTION AS MINIMUM SHALL CONFORM TO A.S.T.M. C-478.
 - CONCRETE BASE FOR MANHOLE, CATCH BASIN, AND INLET SHALL BE MDOT GRADE 30P (MIN), 8" THICK, 3000 PSI.
- PLASTER ALL OUTSIDE MASONRY SURFACES WITH 1:2 1/2 MASONRY CEMENT (TYPE II) 1/2" THICK.
- WHEN TAPPING INTO AN EXISTING STRUCTURE A BRICK COLLAR SHALL BE PLACED 12" THICK AROUND THE PIPE AND EXTENDED 12" BEYOND THE OPENING. IF PRE-CAST SECTION IS TAPPED, BEND MESH AND USE AS REINFORCEMENT WITH BRICK COLLAR.
- ALL PRECAST RISER(S) SHALL BE PLACED IN A FULL BED OF MORTAR. ALL JOINTS & LIFTHOLES SHALL BE POINTED UP WITH MORTAR ON THE OUTSIDE AND INSIDE.
 - ALL VERTICAL AND HORIZONTAL BARS SHALL BE TACK-WELDED TO THE ANGLE FRAME.
 - THE BAR GRATE SCREEN SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IS COMPLETE.



STANDARD MANHOLE DETAILS

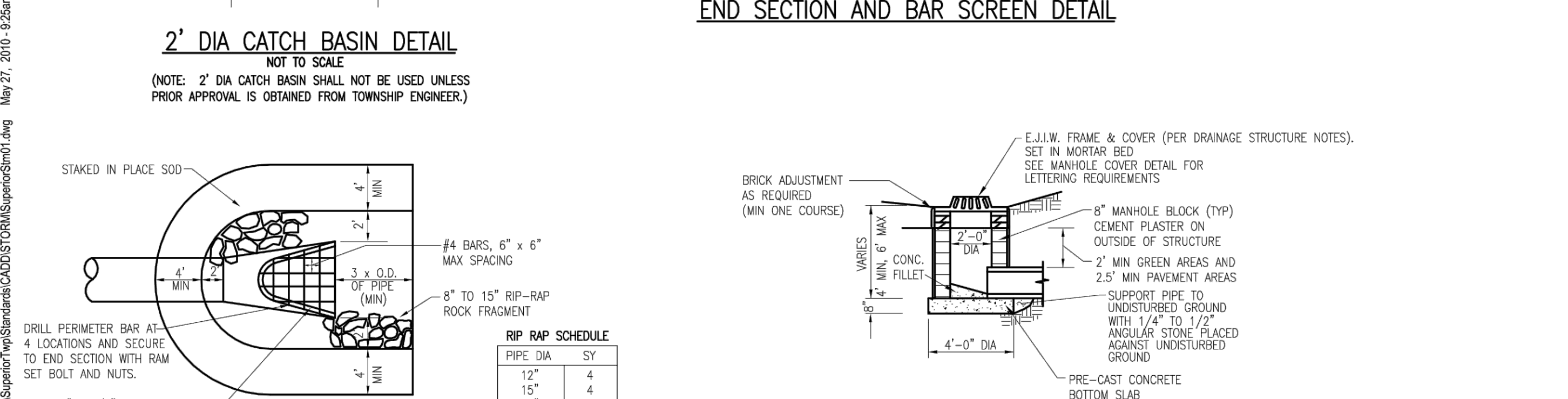


PRE-CAST TEE MANHOLE DETAIL



CATCH BASIN DETAIL

LOW HEAD MANHOLE AND CATCH BASIN DETAIL



2' DIA CATCH BASIN DETAIL

END SECTION AND BAR SCREEN DETAIL



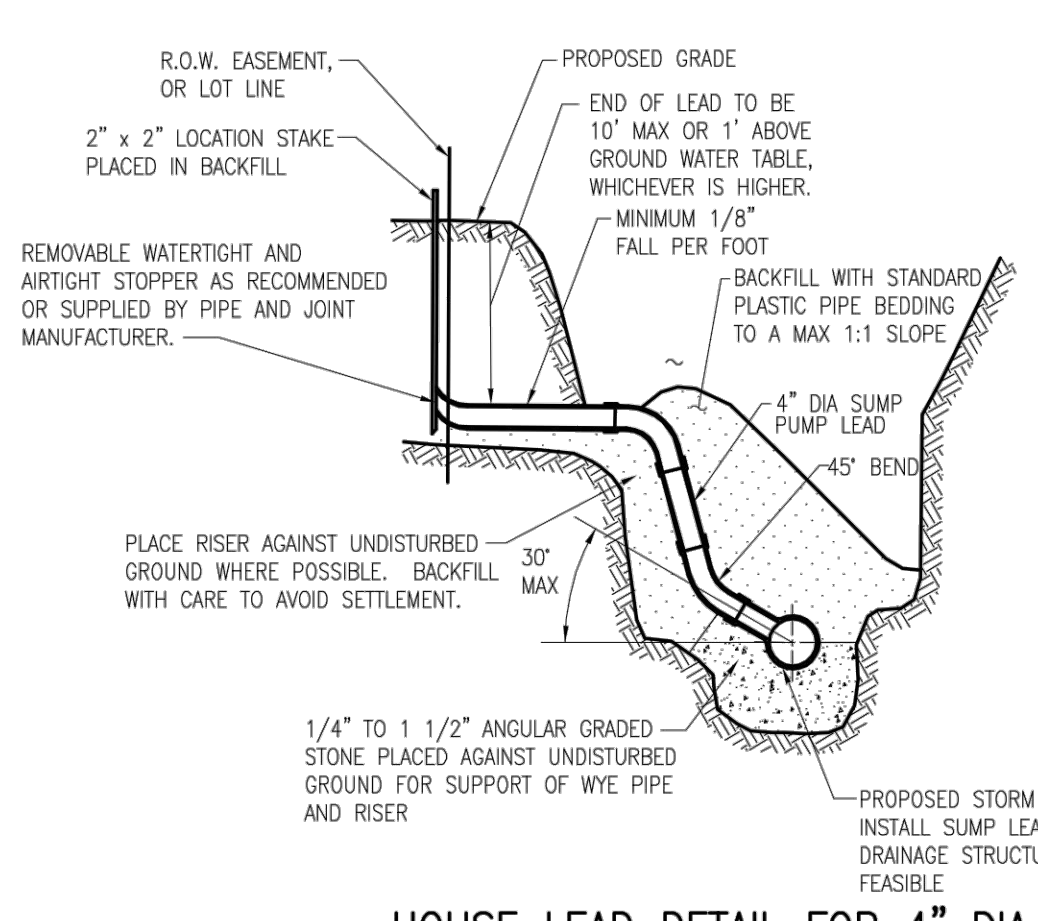
2' DIA INLET DETAIL

RIP RAP SCHEDULE

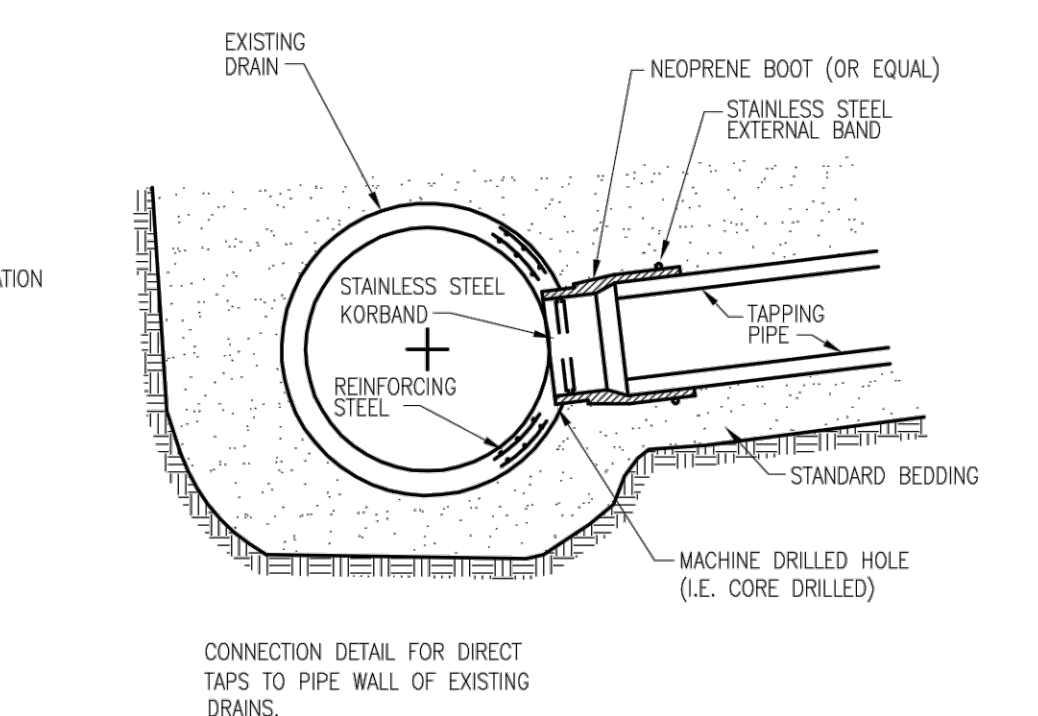
PIPE DIA	SY
12"	4
15"	4
18"	4
21"	5
24"	6
27"	7
30"	8
36"	10
42"	12
48"	14

(NOTE: MINIMUM REQUIREMENTS FOR RIP-RAP MATERIAL SHALL MEET MDOT SPECIFICATION 8.19.02.)

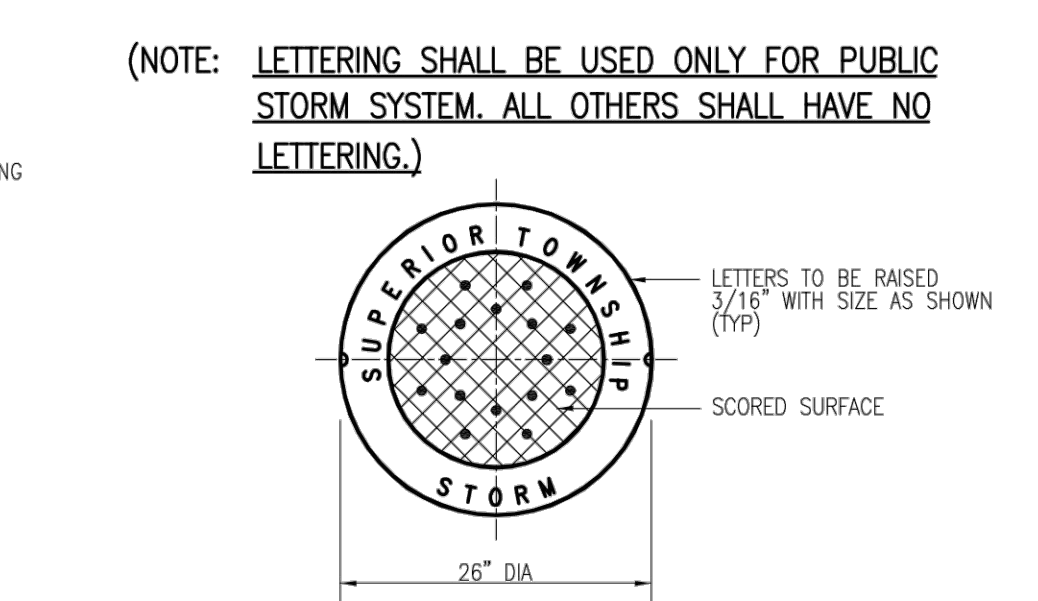
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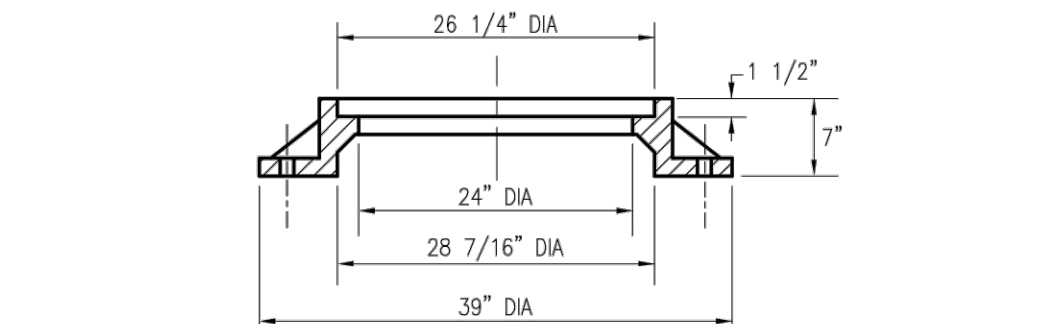
HOUSE LEAD DETAIL FOR 4" DIA PLASTIC SUMP PUMP LEADS



KOR-N-TEE TAP FOR CONCRETE PIPE

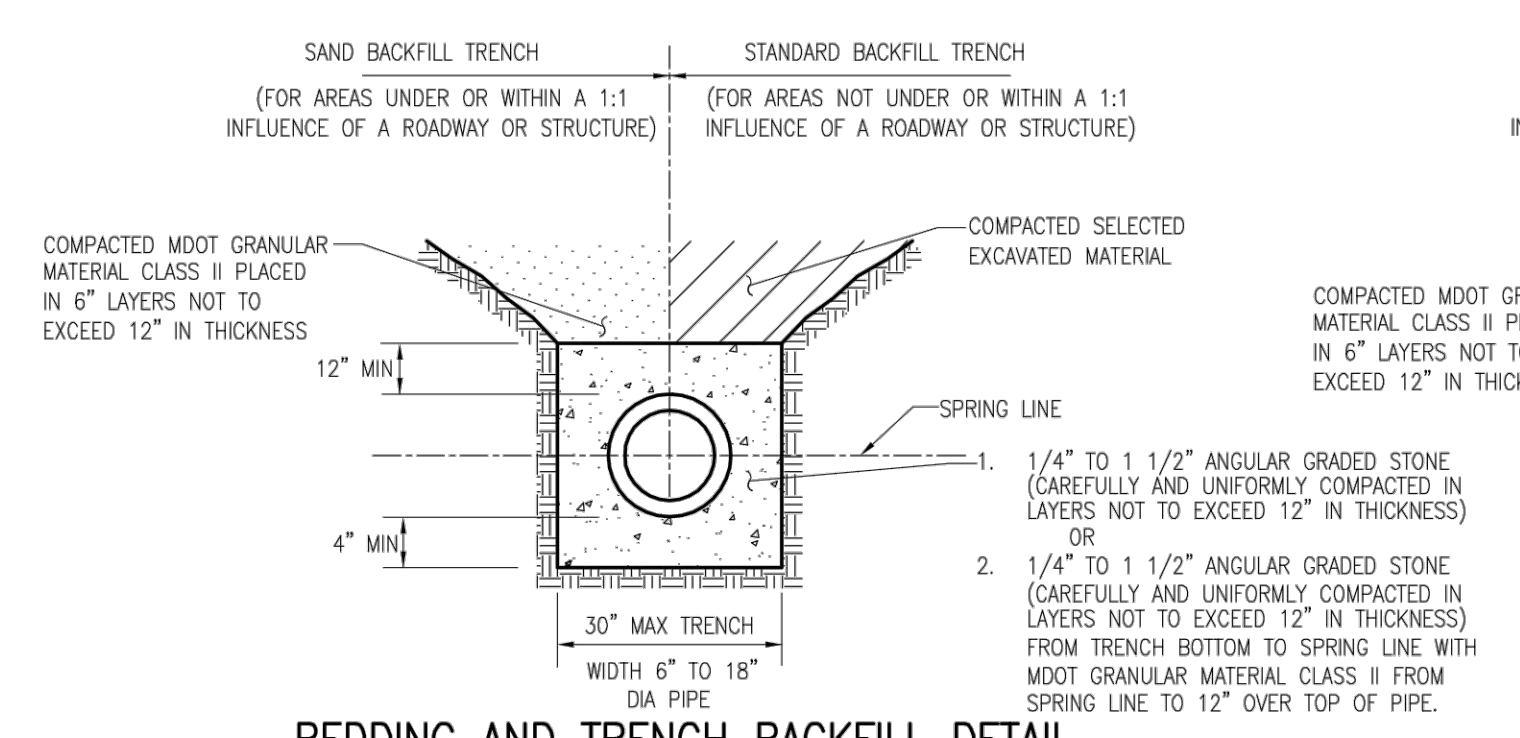


CAST IRON MANHOLE COVER E.J.I.W. 1040

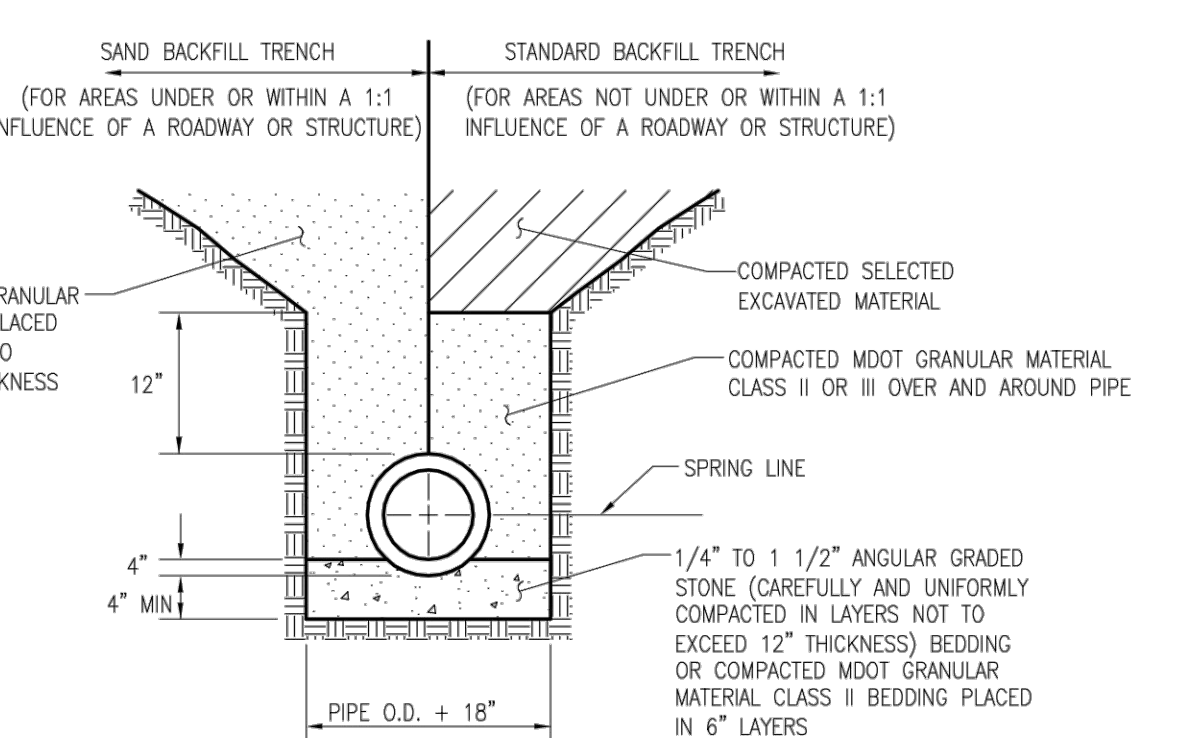


(NOTE: LETTERING SHALL BE USED ONLY FOR PUBLIC STORM SYSTEM. ALL OTHERS SHALL HAVE NO LETTERING.)

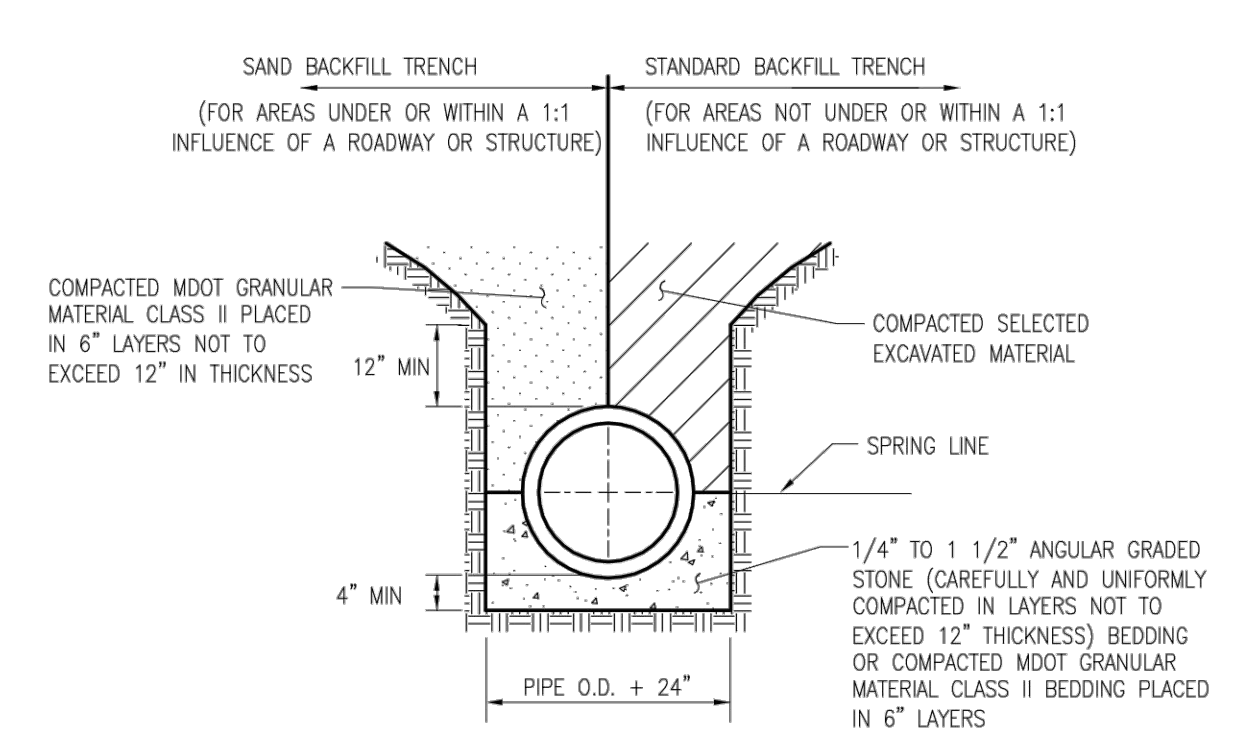
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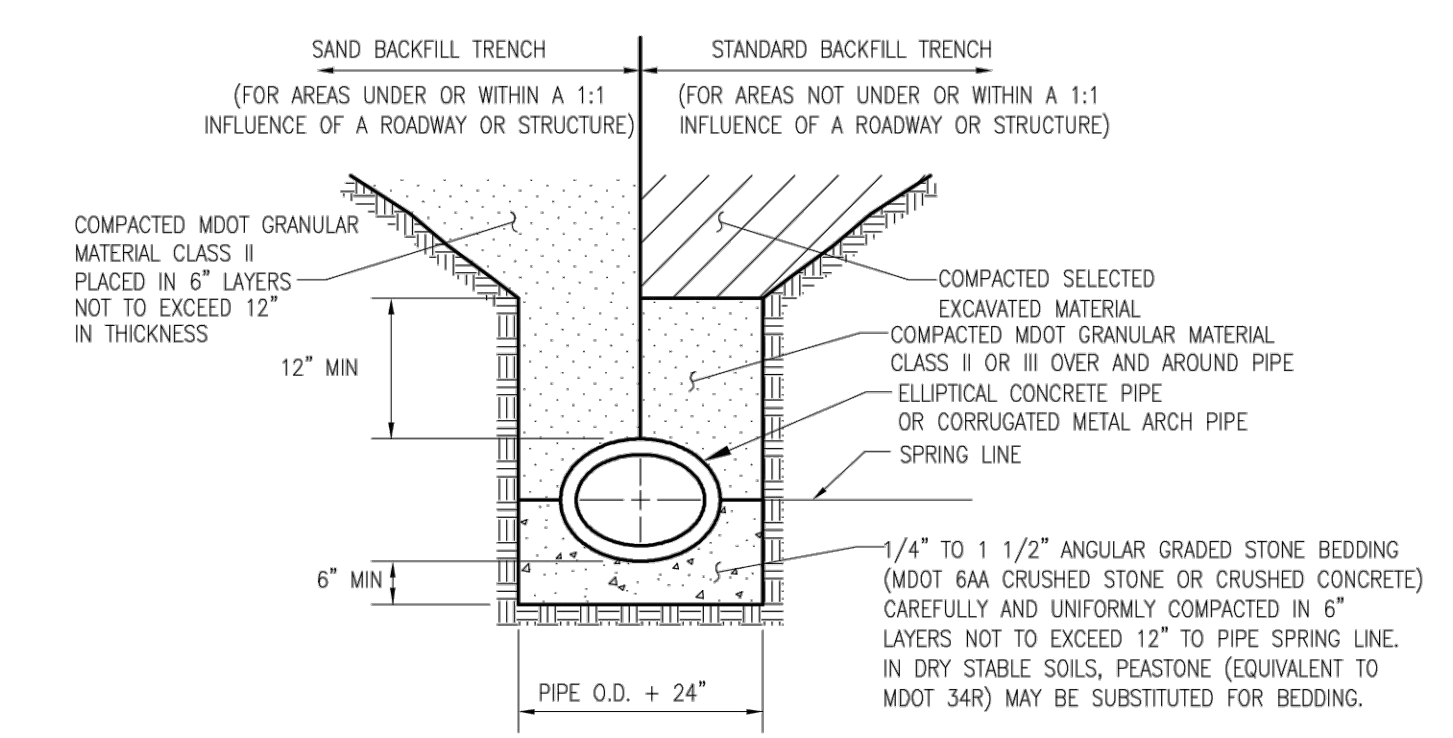
BEDDING AND TRENCH BACKFILL DETAIL FOR 18" DIAMETER AND SMALLER PIPE (PVC SOLID WALL AND TRUSS PIPE)



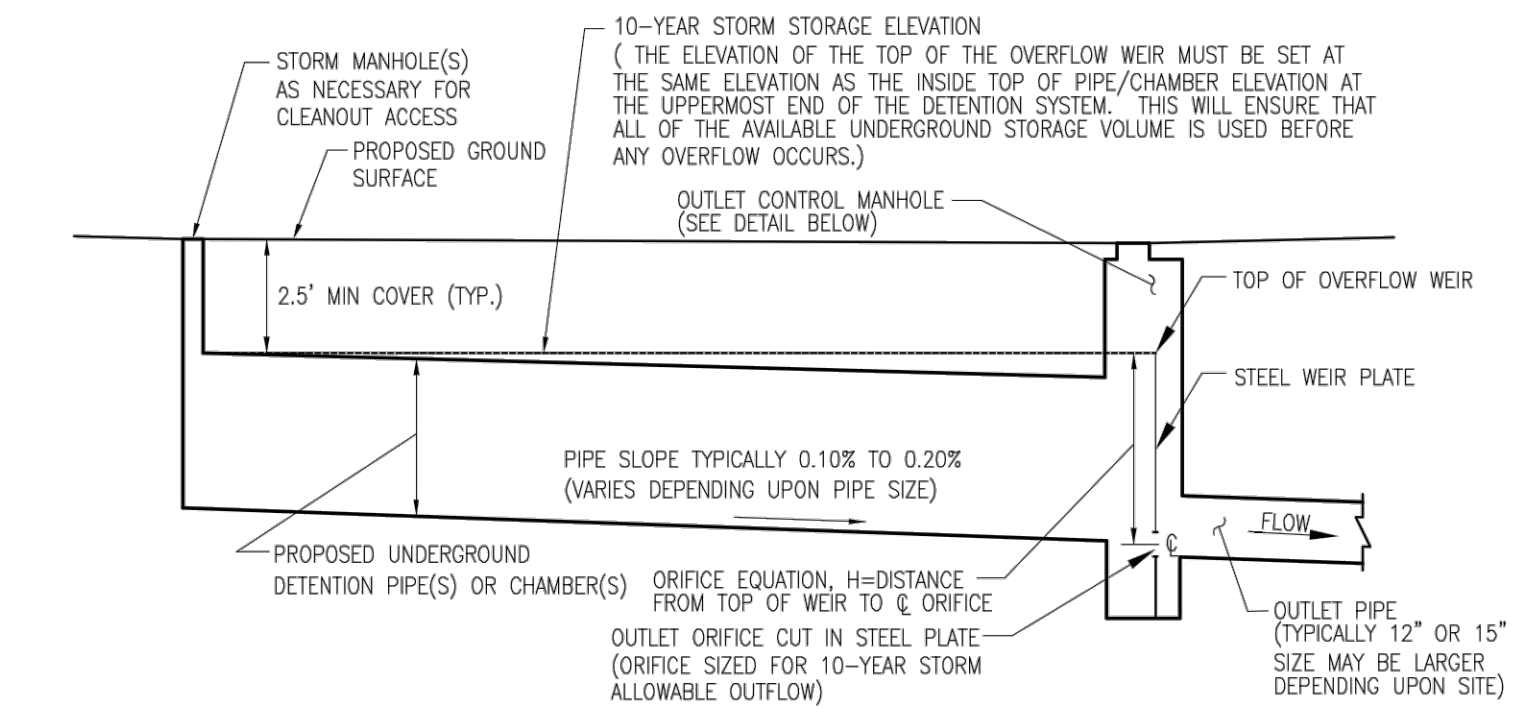
BEDDING AND TRENCH BACKFILL DETAIL FOR 24" DIAMETER AND SMALLER PIPE



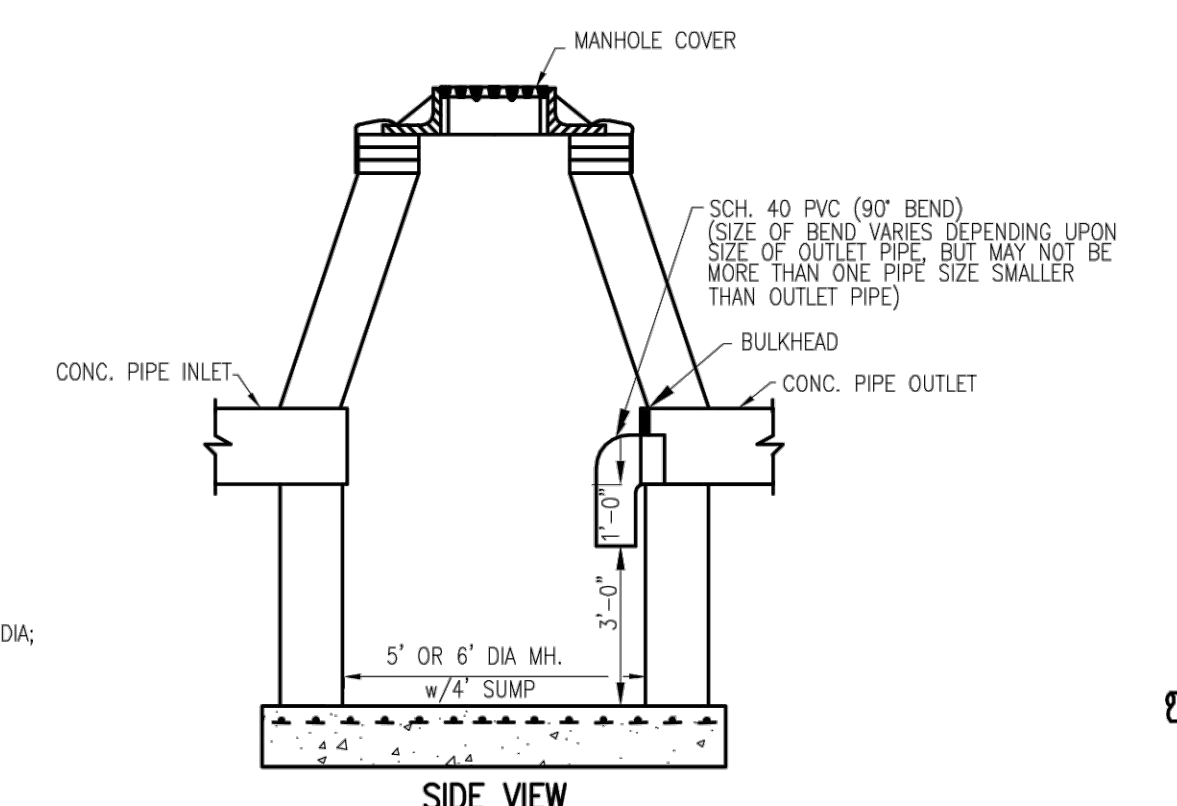
BEDDING AND TRENCH BACKFILL DETAIL FOR 27" DIAMETER AND LARGER PIPE



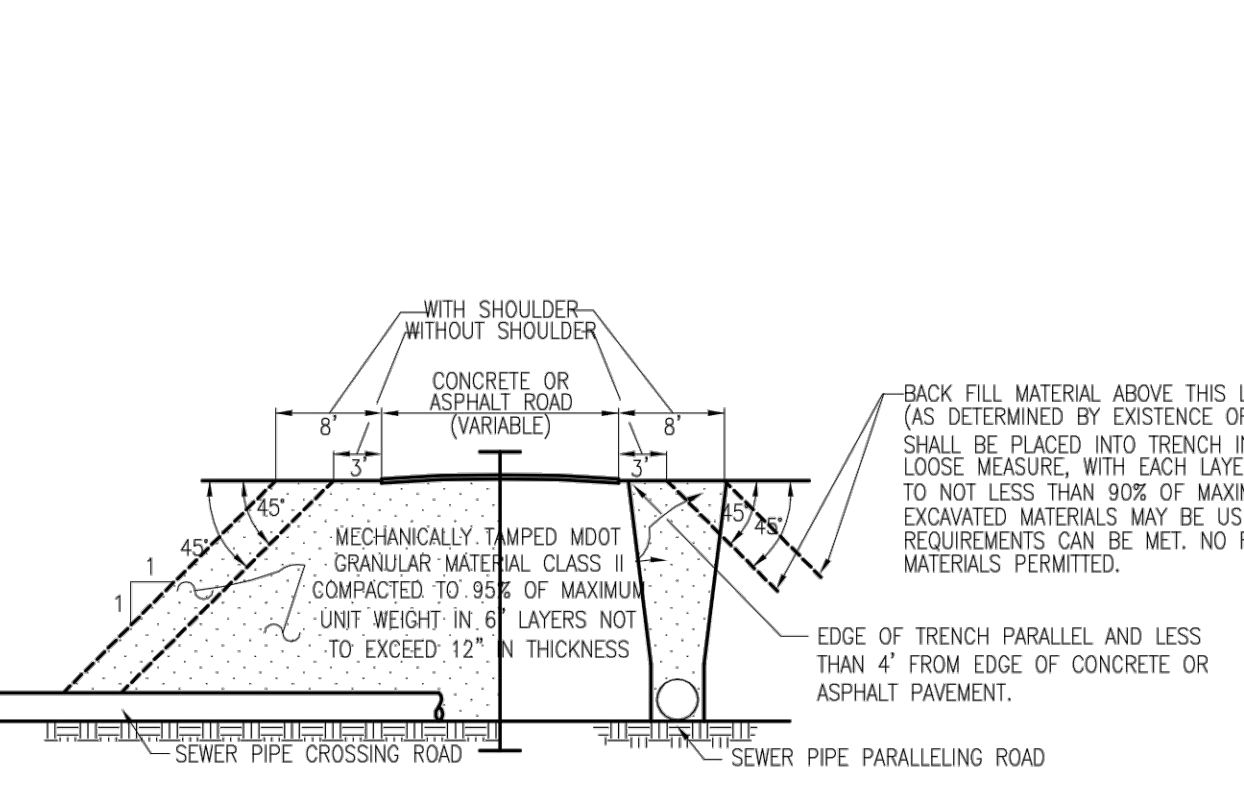
BEDDING AND TRENCH BACKFILL DETAIL FOR ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL ARCH PIPE



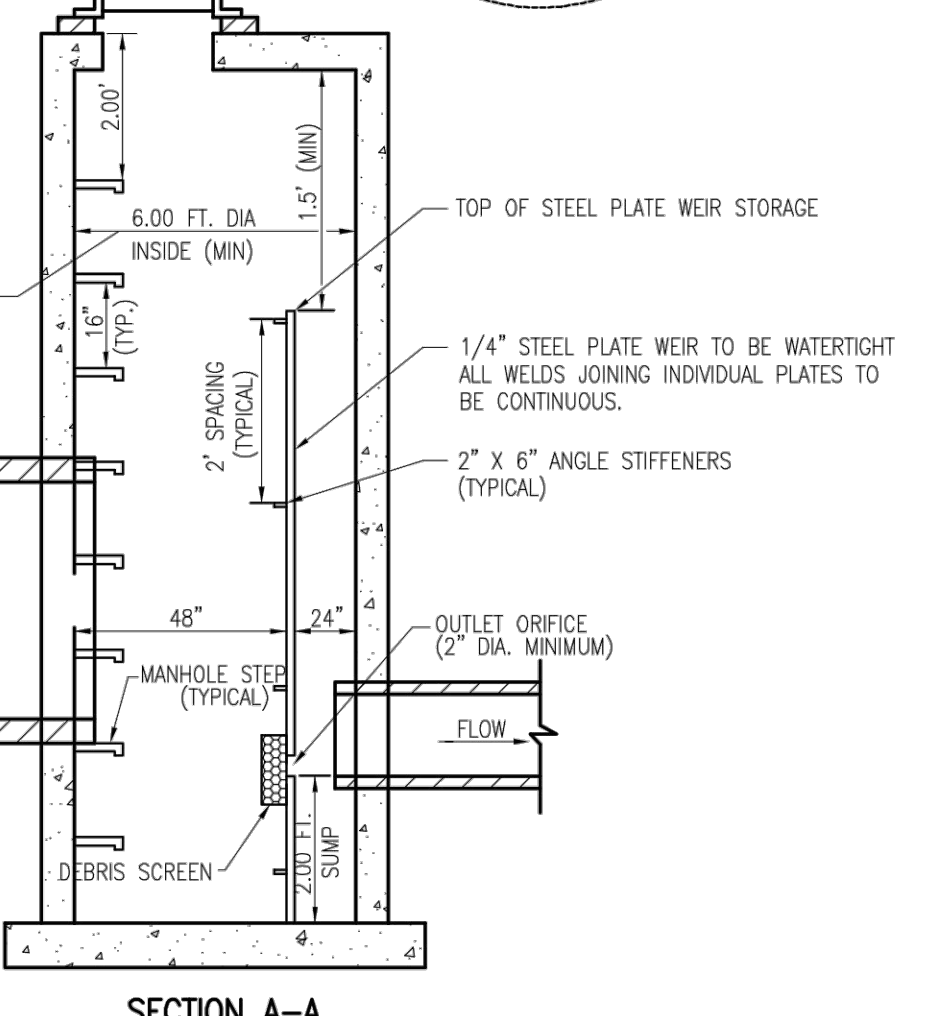
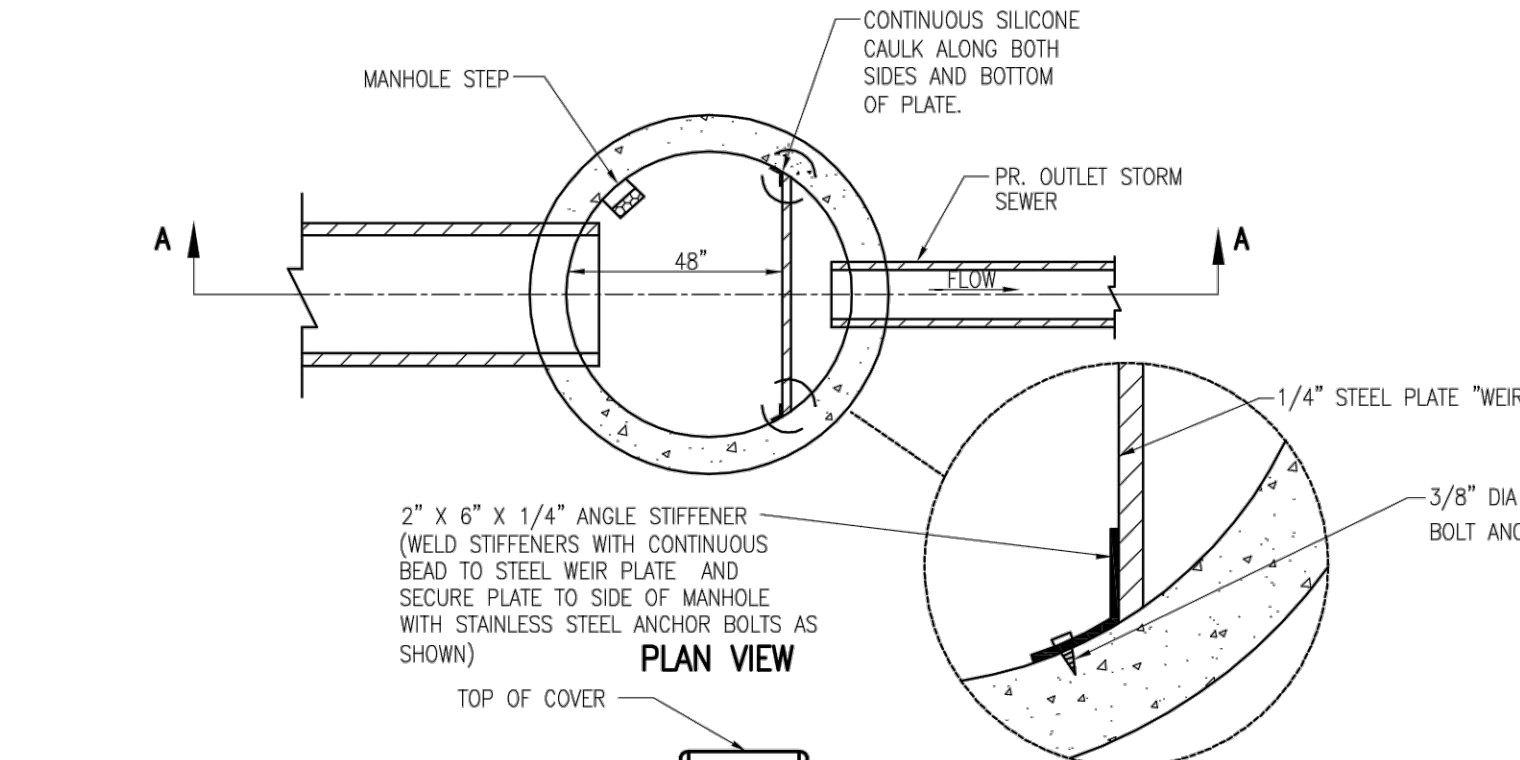
DETENTION SYSTEM PROFILE



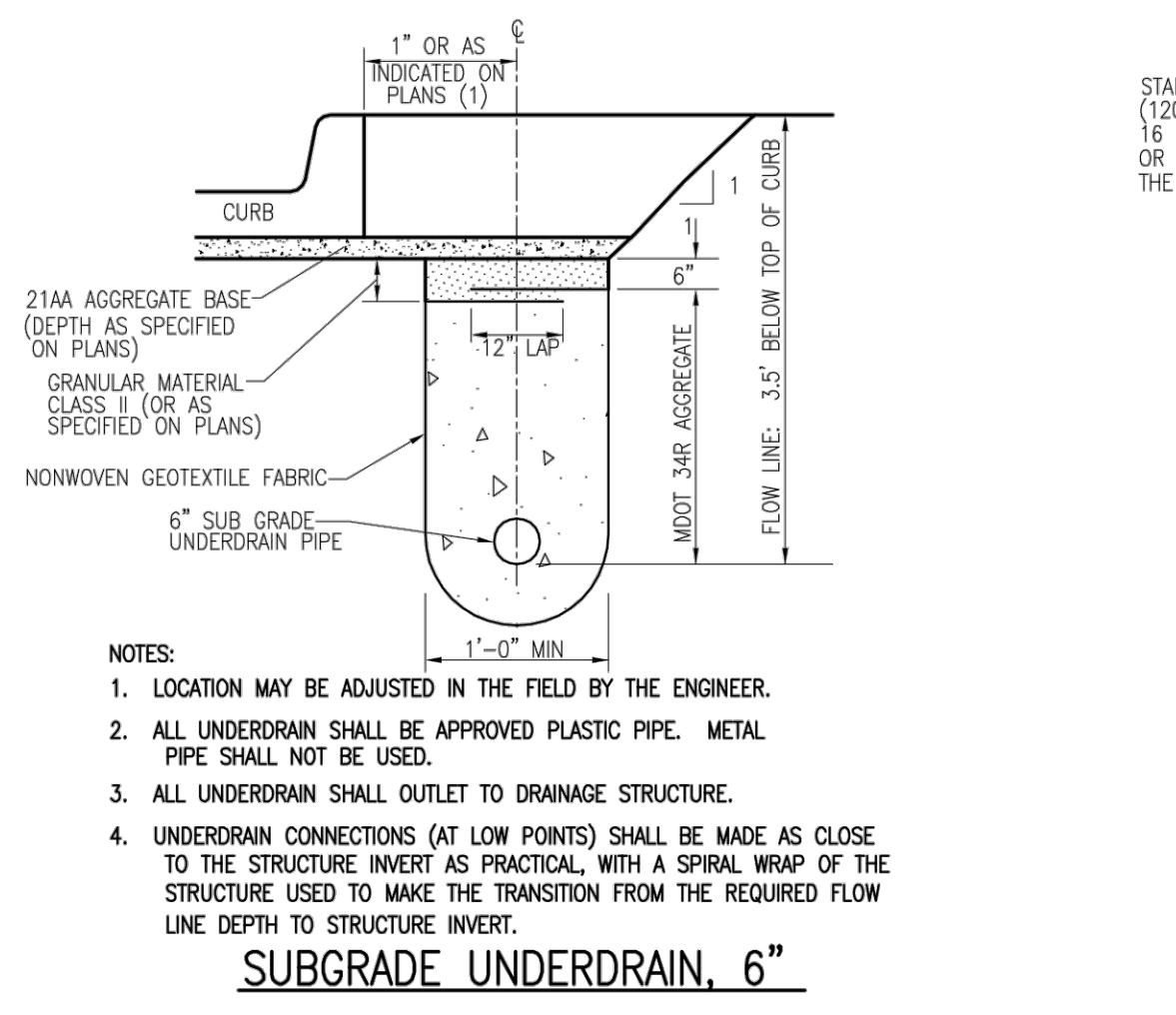
OIL/GAS SEPARATOR PLACEMENT DETAIL FOR 18" DIAMETER AND SMALLER OUTLET PIPE
(FOR OUTLET PIPES LARGER THAN 18" IN DIAMETER, AN ALTERNATE DESIGN MUST BE APPROVED BY THE TOWNSHIP ENGINEER)



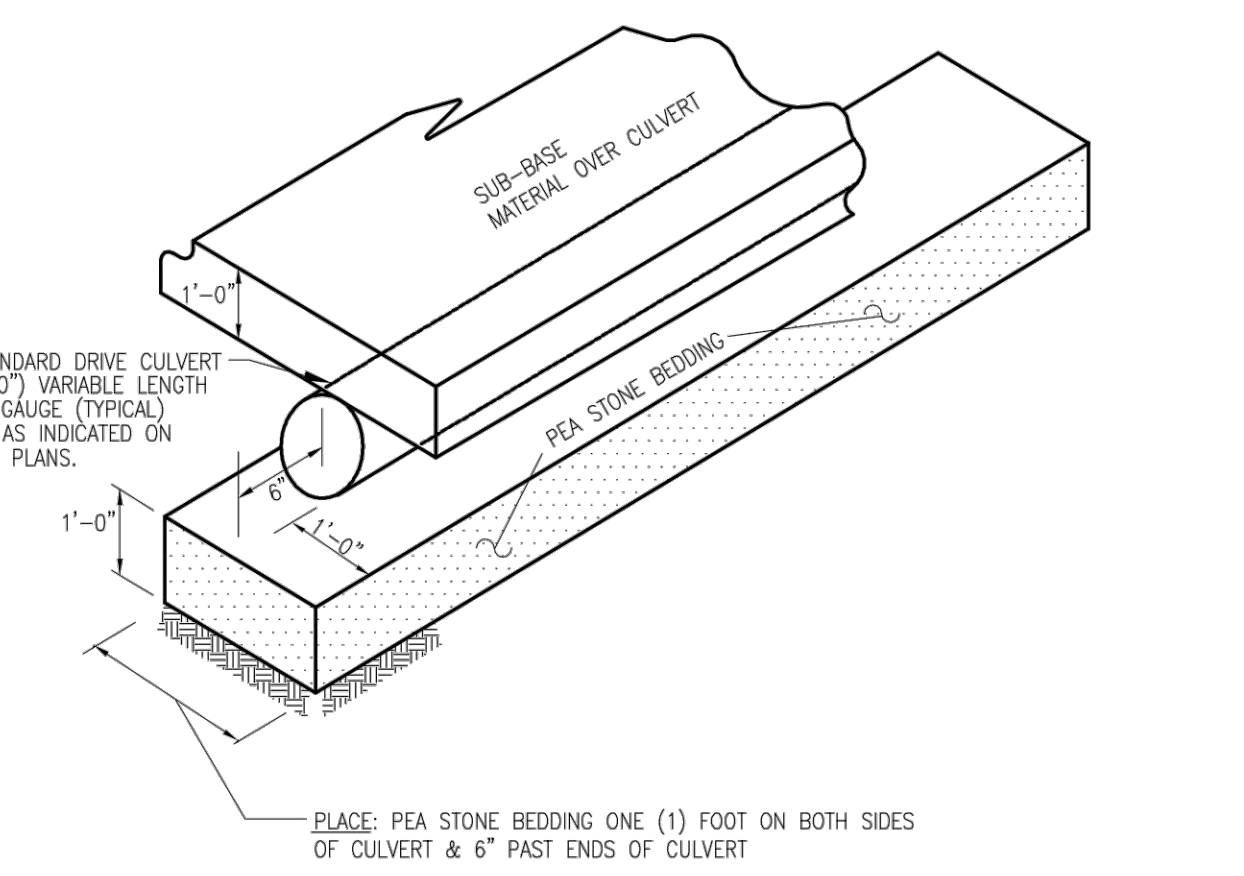
SAND OR GRAVEL BACKFILL DETAILS FOR SEWERS UNDER CONCRETE OR ASPHALT PAVEMENTS, SIDEWALKS, DRIVEWAYS AND PARKING AREAS



SECTION A-A 6 FT. DIA. OUTLET MANHOLE TYPICAL UNDERGROUND DETENTION AND OUTLET MANHOLE DETAILS



SUBGRADE UNDERDRAIN, 6"



DRIVE CULVERT BEDDING DETAIL

GENERAL NOTES FOR STORM SEWER CONSTRUCTION

- PIPE BEDDING AND BACKFILLING:**
BEDDING SHALL EXTEND A MINIMUM OF 4" BELOW PIPE, UNLESS OTHERWISE NOTED ON CONSTRUCTION PLANS. BEDDING SHALL BE UNIFORM IN GRADE. HOWEVER, IF THE EXISTING NATIVE SOILS MEET THE REQUIREMENTS FOR MDOT GRANULAR MATERIAL CLASS II (MINIMUM 4" THICK), THEN STORM STORM SEWER MAY BE LAID DIRECTLY ON COMPACTED NATIVE SUBGRADE SOILS.
BACKFILL SHALL BE COMPACTED ABOVE PIPE OR AS INDICATED ON CONSTRUCTION DRAWINGS. TRENCH BACKFILL SHALL BE OF A SUITABLE MATERIAL AND SHALL BE FREE OF ANY ORGANIC MATERIALS AND ROCKS LARGER THAN 3" IN SIZE. BACKFILL SHALL BE RAMPED INTO TRENCH AND COMPACTED WITH A SMALL DOZER OR OTHER, APPROVED METHODS. WHERE TRENCH IS WITHIN A 1:1 INFLUENCE OF STREETS, ALLEYS, SIDEWALKS, DRIVEWAYS AND PARKING AREAS, SAND BACKFILL SHALL BE USED WHICH SHALL CONSIST OF MDOT GRANULAR MATERIAL CLASS II OR III COMPACTED IN 6" LAYERS NOT TO EXCEED 12" TO A DENSITY OF 95% AS DETERMINED BY MSHTO 199. ALL BACKFILL PLACED WITHIN A 1:1 INFLUENCE OF STRUCTURES SHALL BE APPROVED SAND, PLACED IN 1' LAYERS AND COMPACTED. NO FROZEN MATERIAL SHALL BE BURIED MORE THAN 4" BELOW THE FINAL ELEVATION OF THE GROUND.
TRENCHES WHICH ARE TO BE LEFT OPEN OVERNIGHT SHALL BE ENCLOSED WITH SUITABLE FENCING AND LIGHTED BARRICADES, UNLESS OTHERWISE APPROVED BY THE TOWNSHIP.
- SUMP PUMP LEAD REQUIREMENTS:**
ALL SUMP PUMP LEADS CONNECTED TO A DRAIN SHALL BE PRE-MANUFACTURED.
SUMP PUMP MAINS AND LEADS SHALL BE A SDR 35, NON-PERFORATED, SOLID WALL, PVC, ARMO TRUSS PIPE, OR APPROVED EQUAL, WITH PREMIUM JOINTS.
TAPS TO 12" STORM SEWER SHALL BE MADE WITH A FERROD EZ TAP OR APPROVED EQUAL.
TAPS TO OTHER SIZE STORM SEWER SHALL BE MADE WITH A ROMAC SADDLE, KOR-N-TEE LATERAL CONNECTOR FOR CONCRETE PIPE, OR APPROVED EQUAL.
ENDS OF ALL 4" SUMP PUMP LEADS SHALL BE TEMPORARILY CAPPED AND THEIR LOCATION STAKED, WITNESSED AND RECORDED.
ALL SUMP PUMP LEADS TO BE TAKEN TO THE PROPERTY LINE, EASEMENT LINE OR AS INDICATED ON THE PLAN.
SUMP PUMP CLEANOUTS SHALL BE A MINIMUM INSIDE DIAMETER OF 24" AND BE CONSTRUCTED AT CHANGES OF ALIGNMENT, ENDS OF SUMP PUMP MAINS OR AS INDICATED ON THE PLAN.
- RESTORATION REQUIREMENTS:**
ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED AS FOLLOWS, UNLESS OTHERWISE NOTED ON CONSTRUCTION DRAWINGS:
FINISH GRADE
PLACE 3" THICKNESS OF "QUALITY" TOPSOIL ACCEPTABLE TO THE ENGINEER.
APPLY SOD OR SEED AND FERTILIZER AS FOLLOWS:

LOCATION	SODDING/ SEEDING REQUIREMENTS	FERTILIZER REQUIREMENT
SLOPES & DITCH BANKS, ETC.	MDOT "ROADSIDE" MIX (50% PERENNIAL RYE, 15% KENTUCKY BLUE, 35% RED FESCUE) APPLIED AT 100 LBS/ACRE	240 LBS/ACRE OF CHEMICAL FERTILIZER NUTRIENTS IN EQUAL PROPORTIONS OF NITROGEN, PHOSPHORIC ACID AND POTASH. (MUST BE A SLOW-RELEASE FERTILIZATION)
OTHER AREAS	MDOT "CLASS A" MIX (30% PERENNIAL RYE, 30% KENTUCKY BLUE, 40% RED FESCUE) APPLIED AT 100 LBS/ACRE	240 LBS/ACRE OF CHEMICAL FERTILIZER NUTRIENTS IN EQUAL PROPORTIONS OF NITROGEN, PHOSPHORIC ACID AND POTASH. (MUST BE A SLOW-RELEASE FERTILIZATION)
DITCH BOTTOMS, SLOPES EXCEEDING 3:1, AND AT STRUCTURES	3" TOPSOIL WITH CLASS A SOD	

APPLY STRAW MULCH AT THE RATE OF 2-3 BALES/1000 SQUARE FEET.
THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THE GROWTH OF ALL SEEDED AREAS, AND SHALL RE-SEED AS NECESSARY TO ACCOMPLISH THIS.

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CITY/TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR
COUNTY: WASHTENAW
RANGE: 1
SECTION: 1
TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR
RANGE: 1
SECTION: 1
TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR
RANGE: 1
SECTION: 1

SCALE: V. 1" = 4' H. 1" = 4' S. 1" = 4'

DATE: OCT 2003

HATCI MICHIGAN R&D CENTER SUPERIOR TOWNSHIP, MICHIGAN

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25000 Telegraph Road - Suite 300
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IBI GROUP PROFESSIONAL SERVICES (USA) INC.
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ISSUES

No.	DESCRIPTION	DATE
A	AREA PLAN	2021-10-27
B	AREA PLAN AMENDMENT	2021-11-29
C	PRELIMINARY SITE DESIGN	2022-01-26
D	30% OWNER REVIEW	2022-02-18
E	80% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

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CONSULTANTS

SEAL

PRIME CONSULTANT
IBI GROUP

PROJECT
Hyundai STIL
6800 Geddes Rd Superior Charter Twp, MI 48198

PROJECT NO: 134894
DRAWN BY: G TANNER
PROJECT MGR: D KASSAB

CHECKED BY:
APPROVED BY:

SHEET TITLE
DETAILS

SHEET NUMBER CT-603 **ISSUE**



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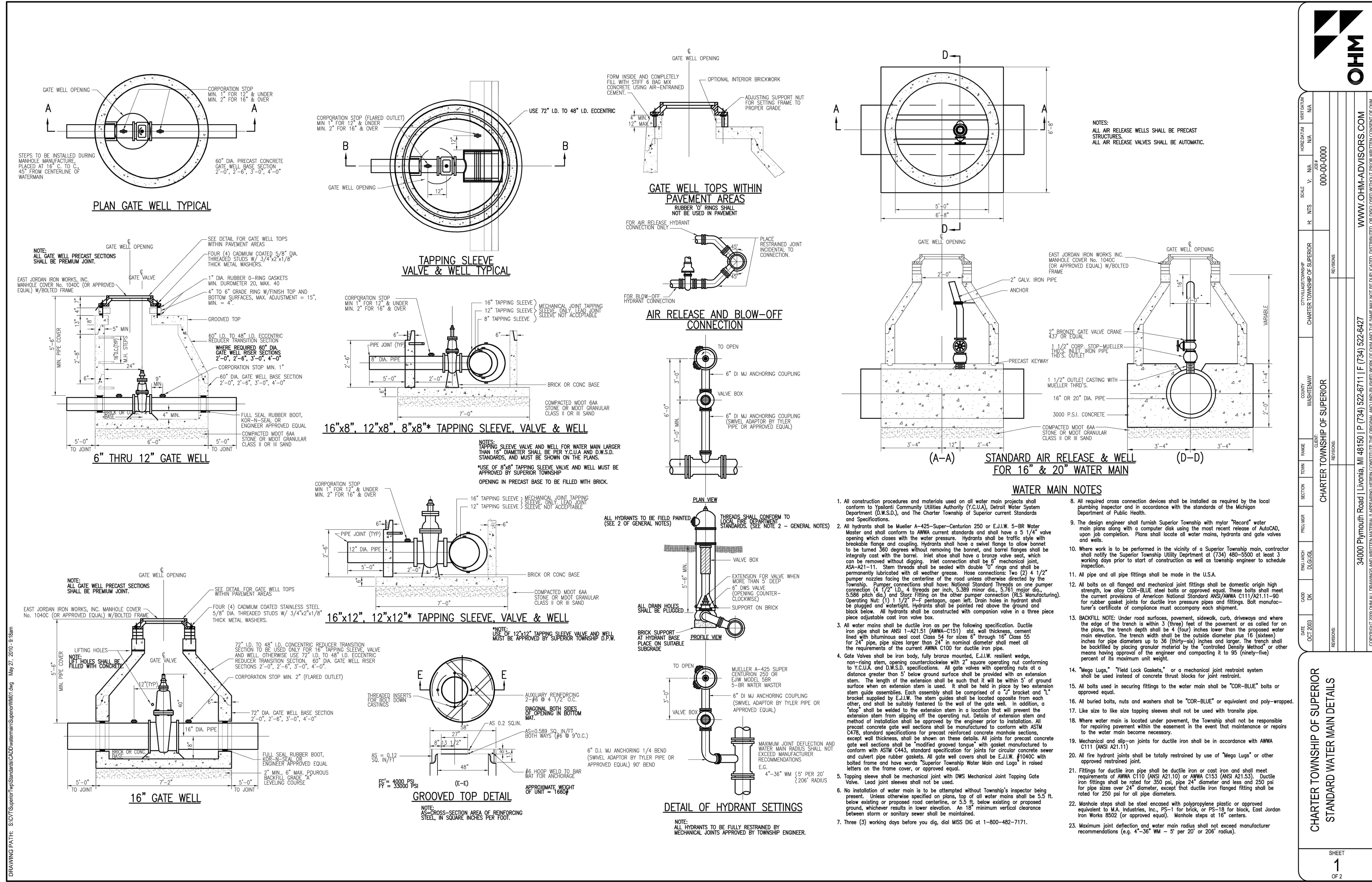
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PROJECT
Hyundai STIL
6800 Geddes Rd Superior Charter Twp,
MI 48198

PROJECT NO: 134894
DRAWN BY: G TANNER
PROJECT MGR: D KASSAB
CHECKED BY:
APPROVED BY:

DETAILS

SHEET NUMBER CT-604 **ISSUE**



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	0	ISSUED FOR BIDS	2022-04-01

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PROJECT

Hyundai STIL

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MI 48198

PROJECT NO:
134894

DRAWN BY:
G TANNER

PROJECT MGR:
D KASSAB

CHECKED BY:

APPROVED BY:

SHEET TITLE

DETAILS

SHEET NUMBER

CT-605

ISSUE



SCALE: VERTICAL: N/A
HORIZONTAL: N/A
JOB NO: 000-00-0000

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COUNTY: WASHTENAW

RANGE: CHARTER TOWNSHIP OF SUPERIOR

SECTION: CHARTER TOWNSHIP OF SUPERIOR

FRONTIER: CHARTER TOWNSHIP OF SUPERIOR

REG. ARCH. ENGR. NO. 1040 C

DATE: OCT 2023

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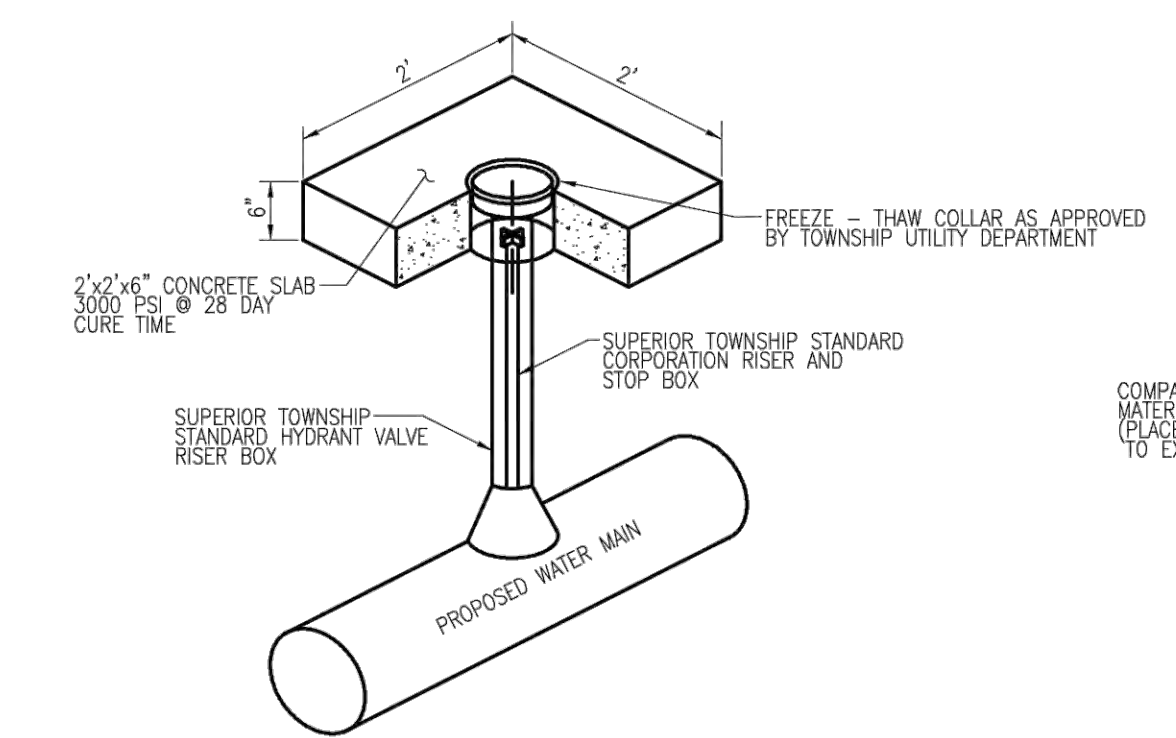
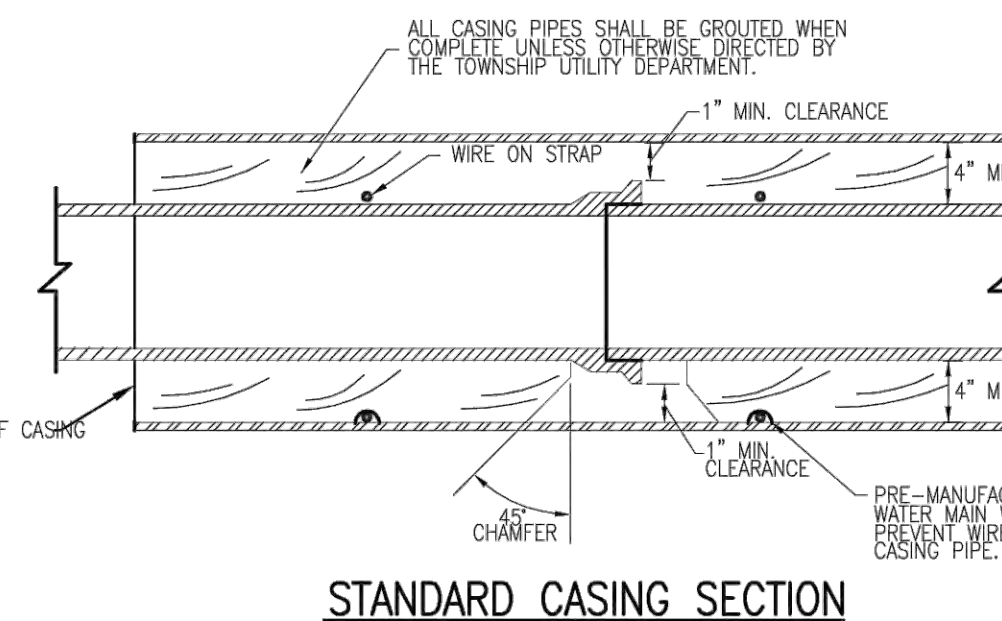
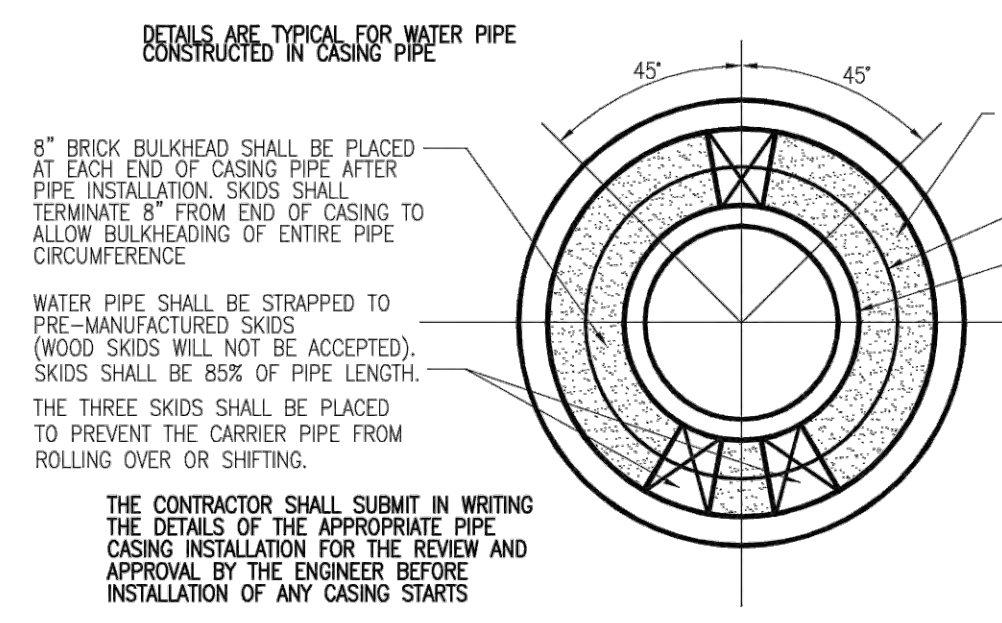
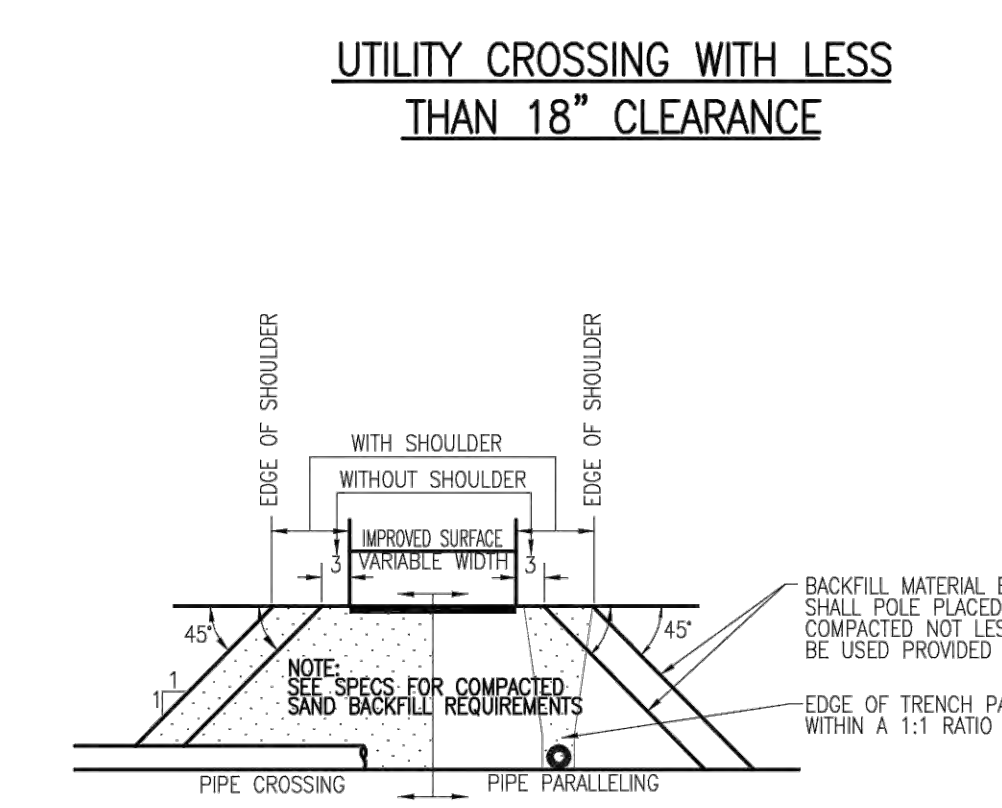
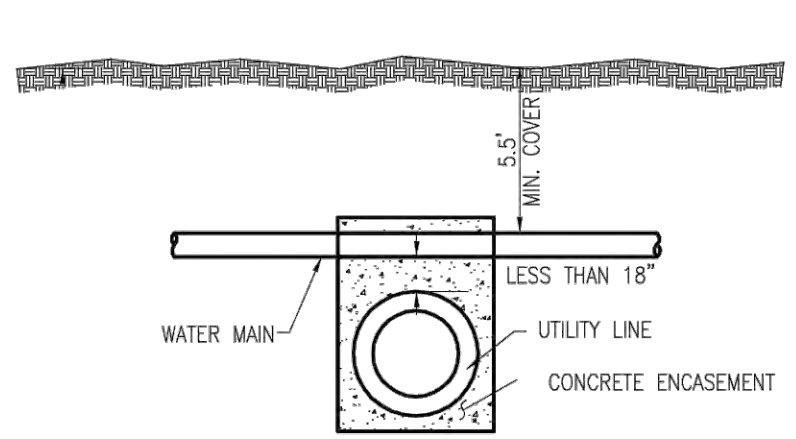
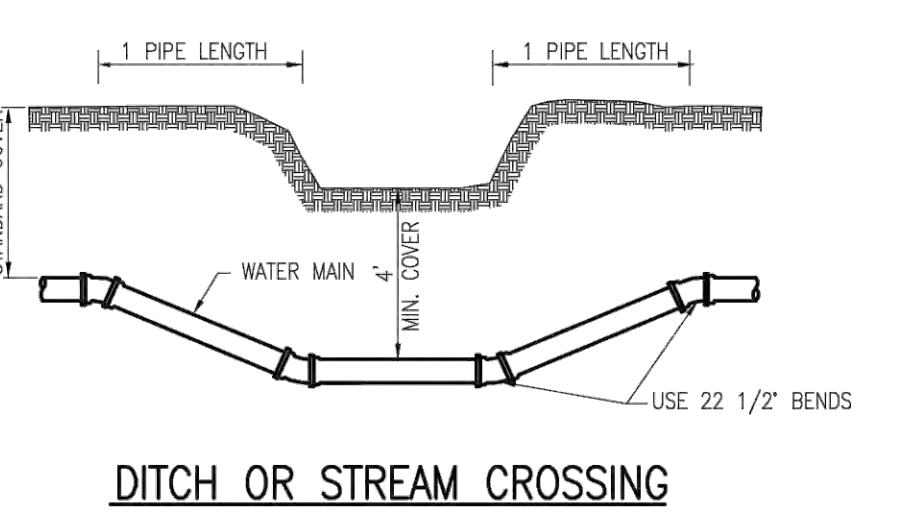
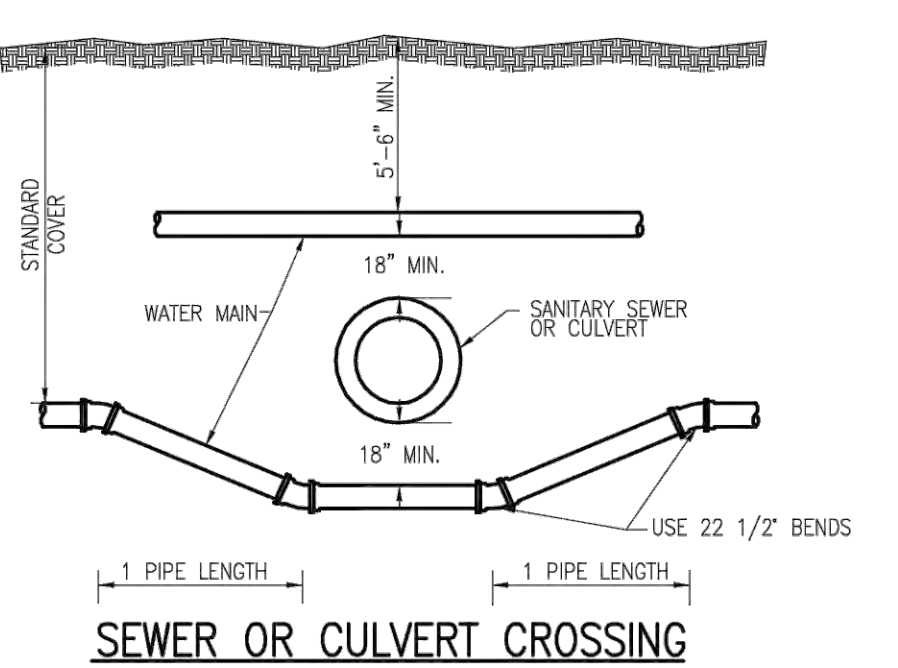
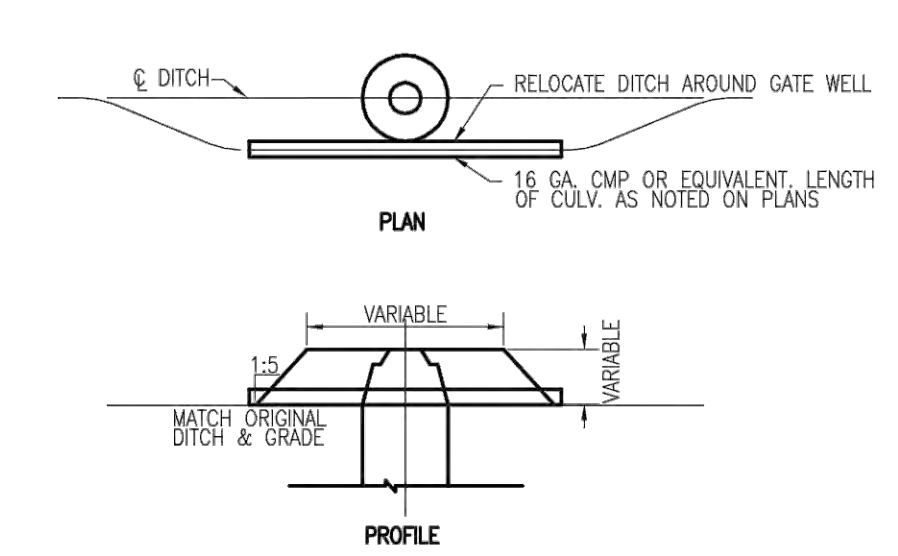
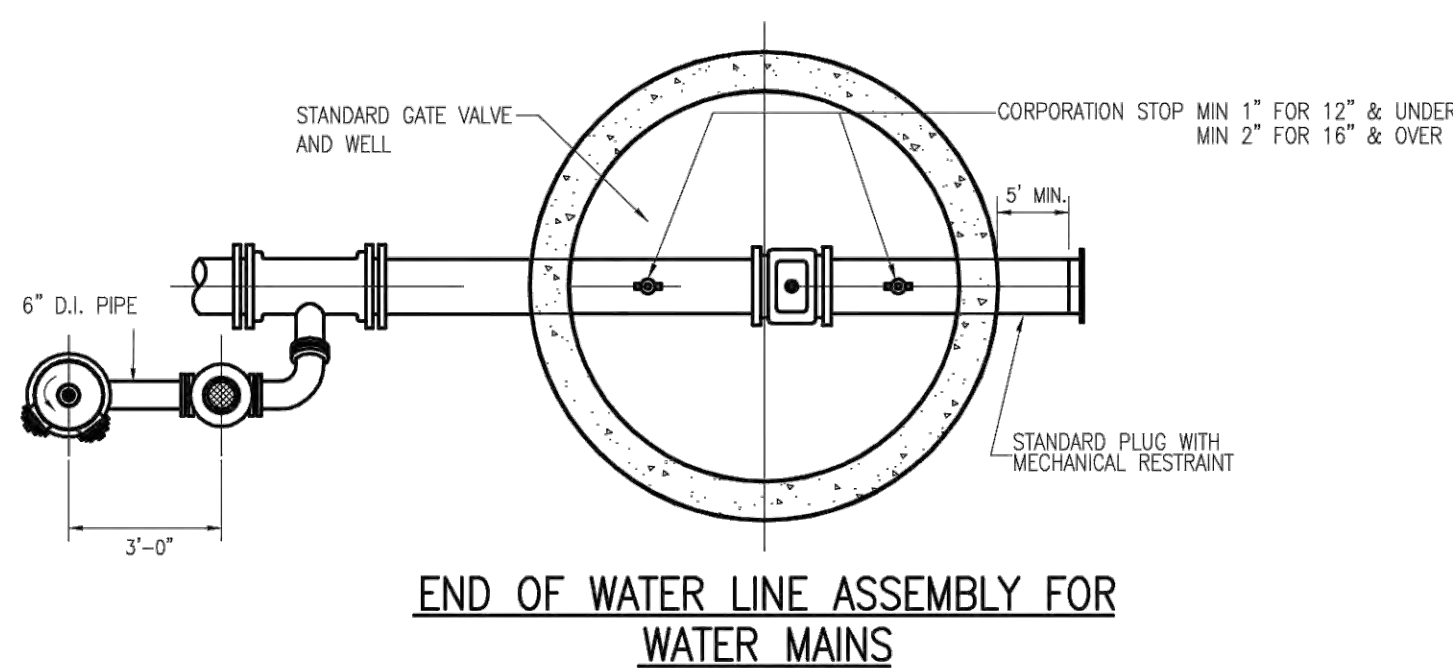
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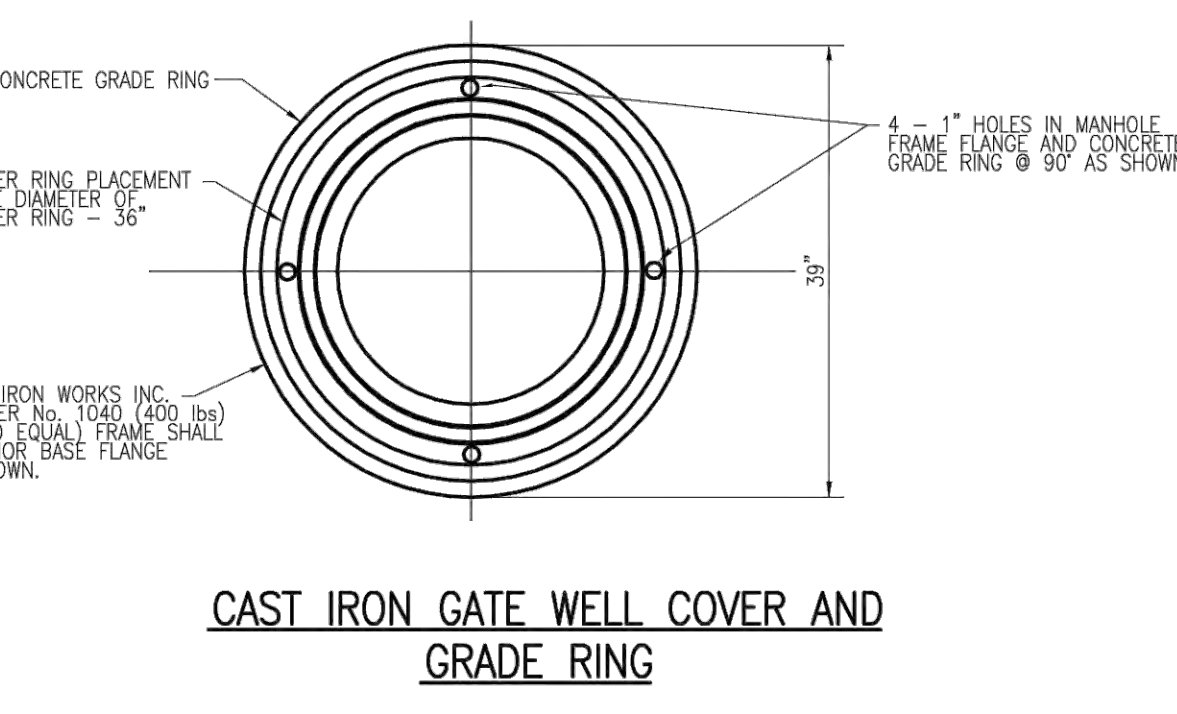
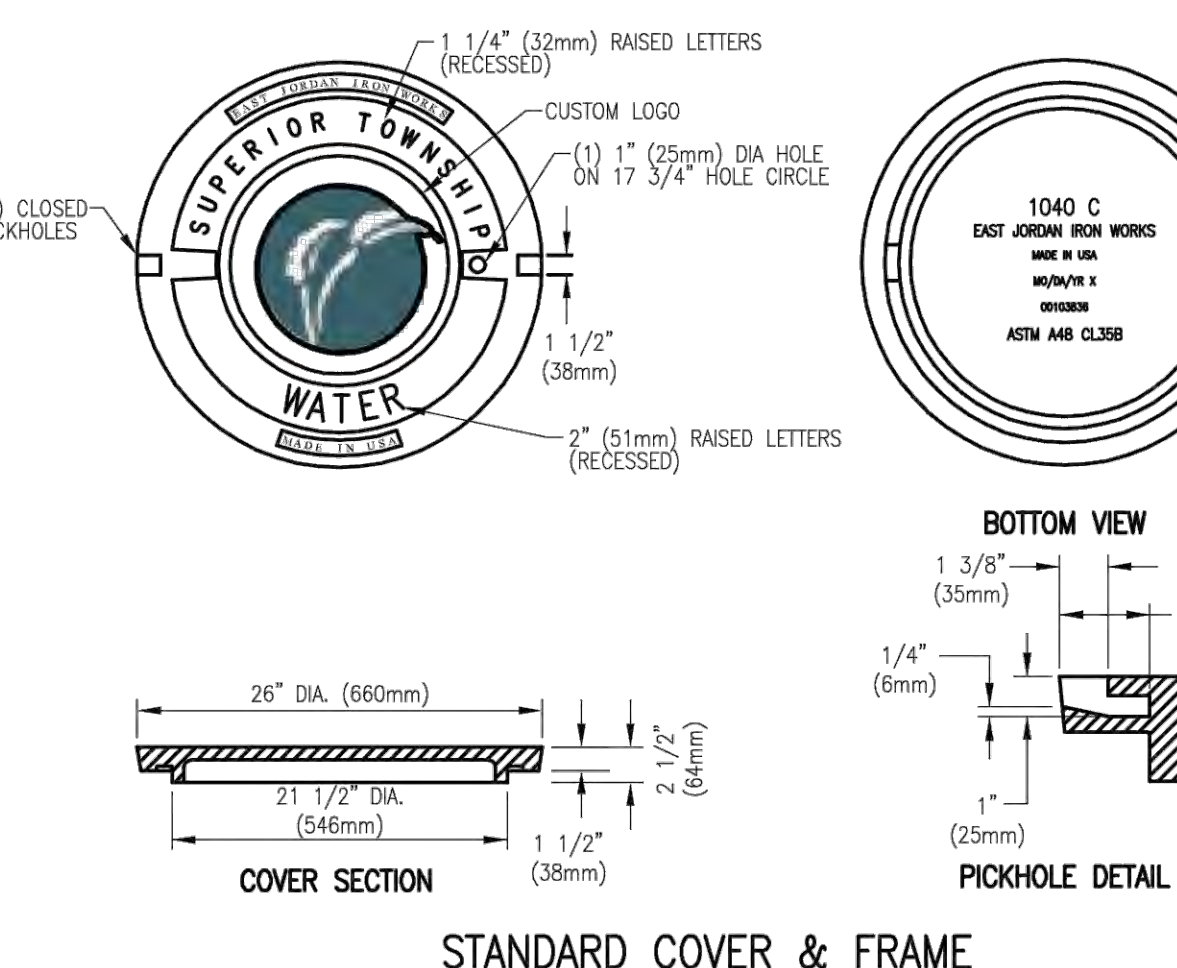
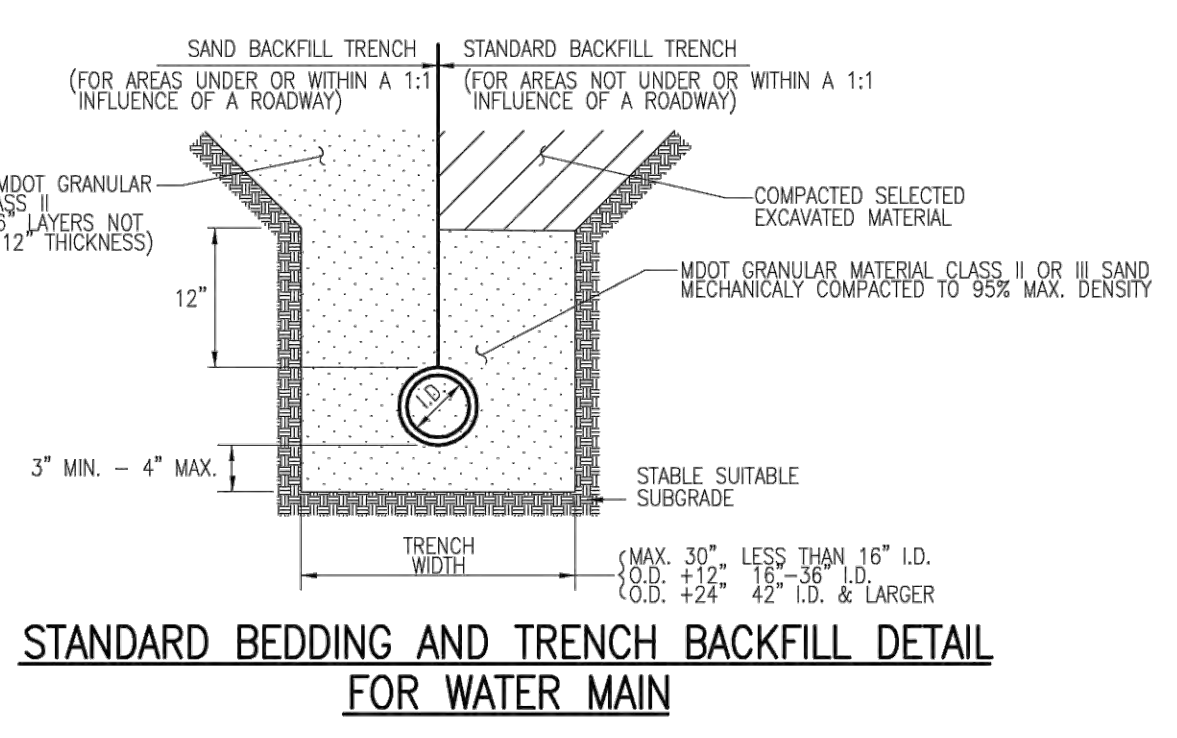
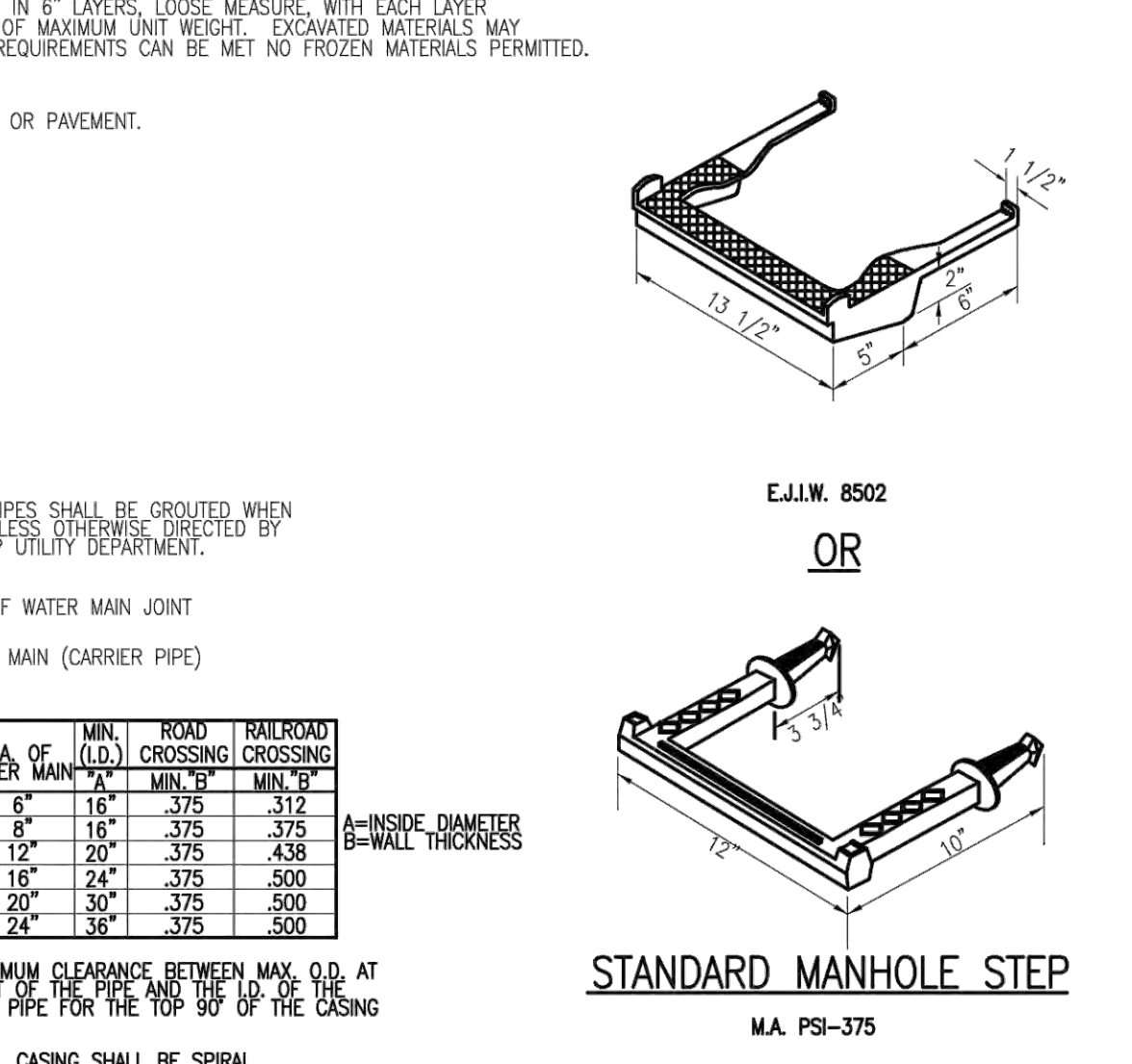
CHARTER TOWNSHIP OF SUPERIOR
STANDARD WATER MAIN DETAILS

SHEET
2
OF 2

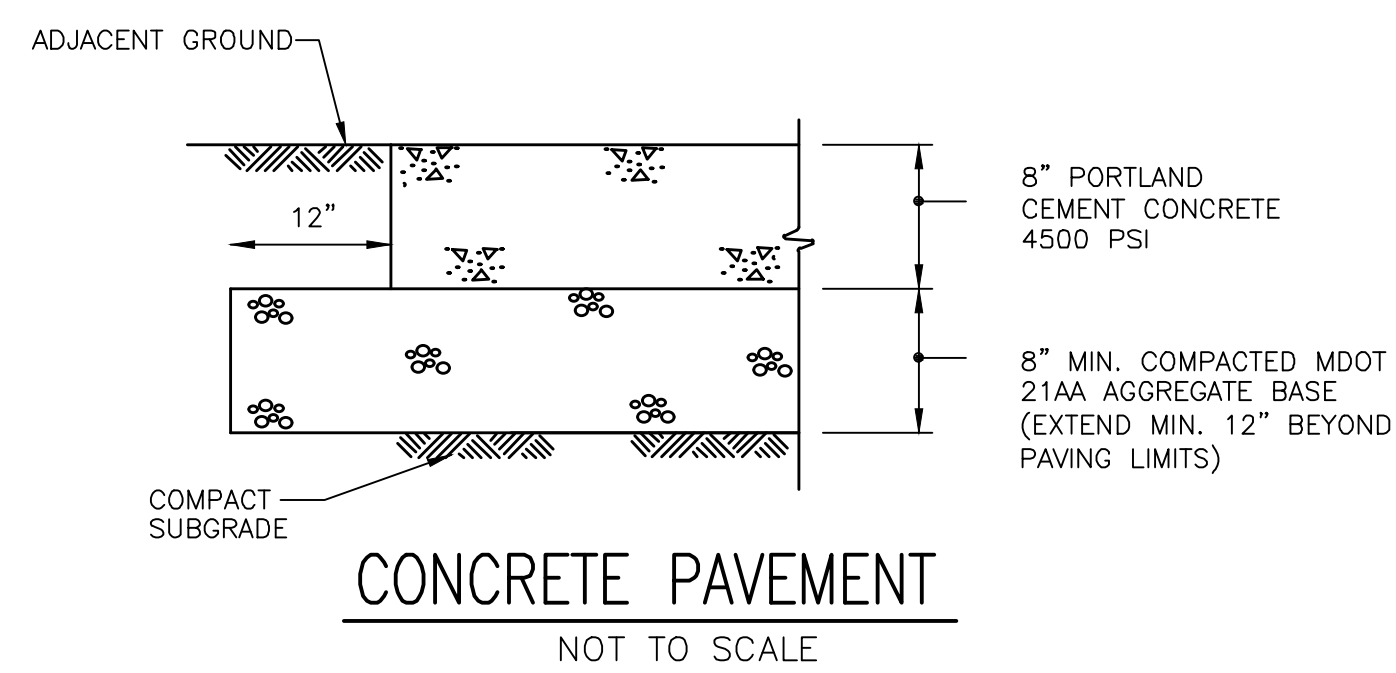
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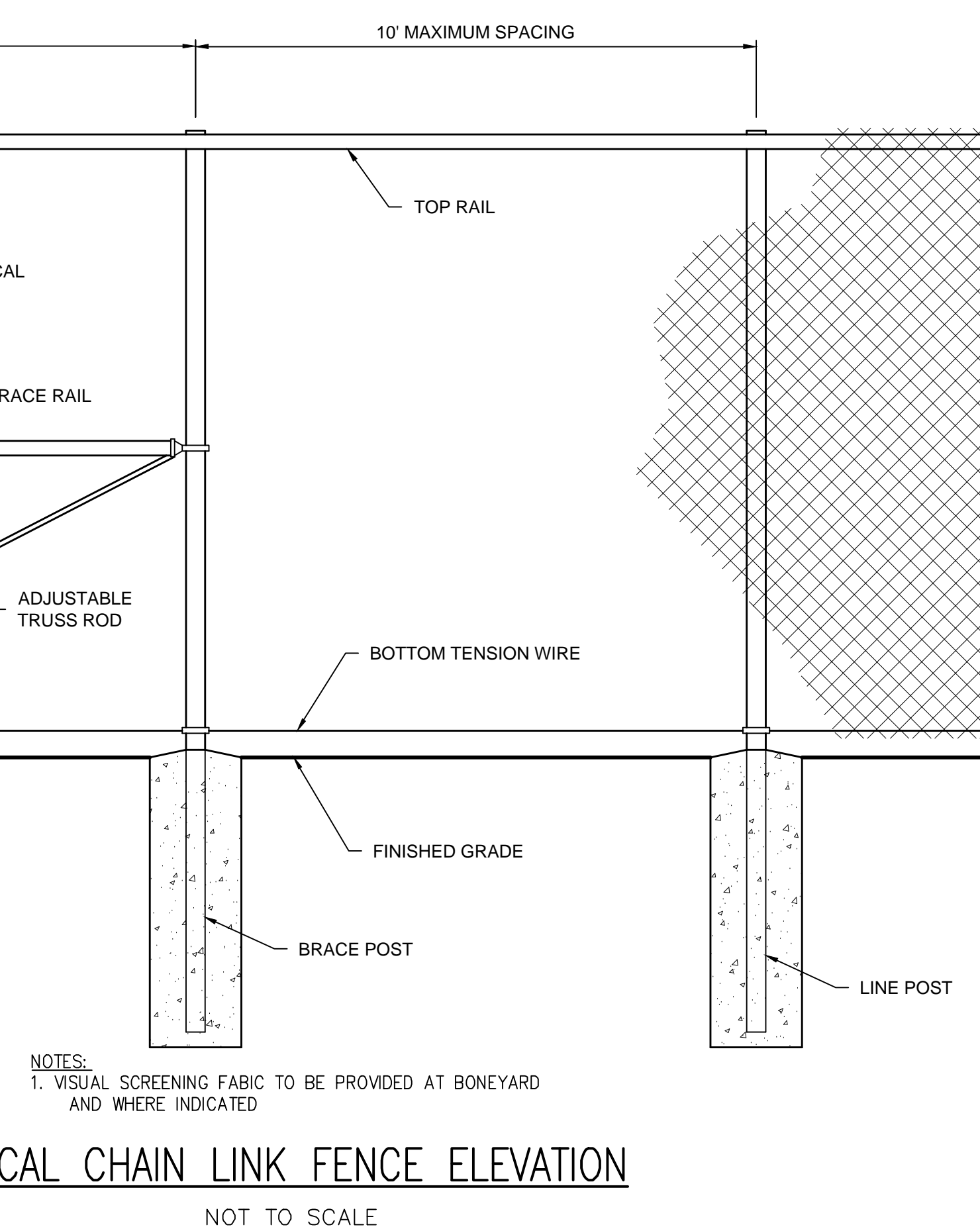
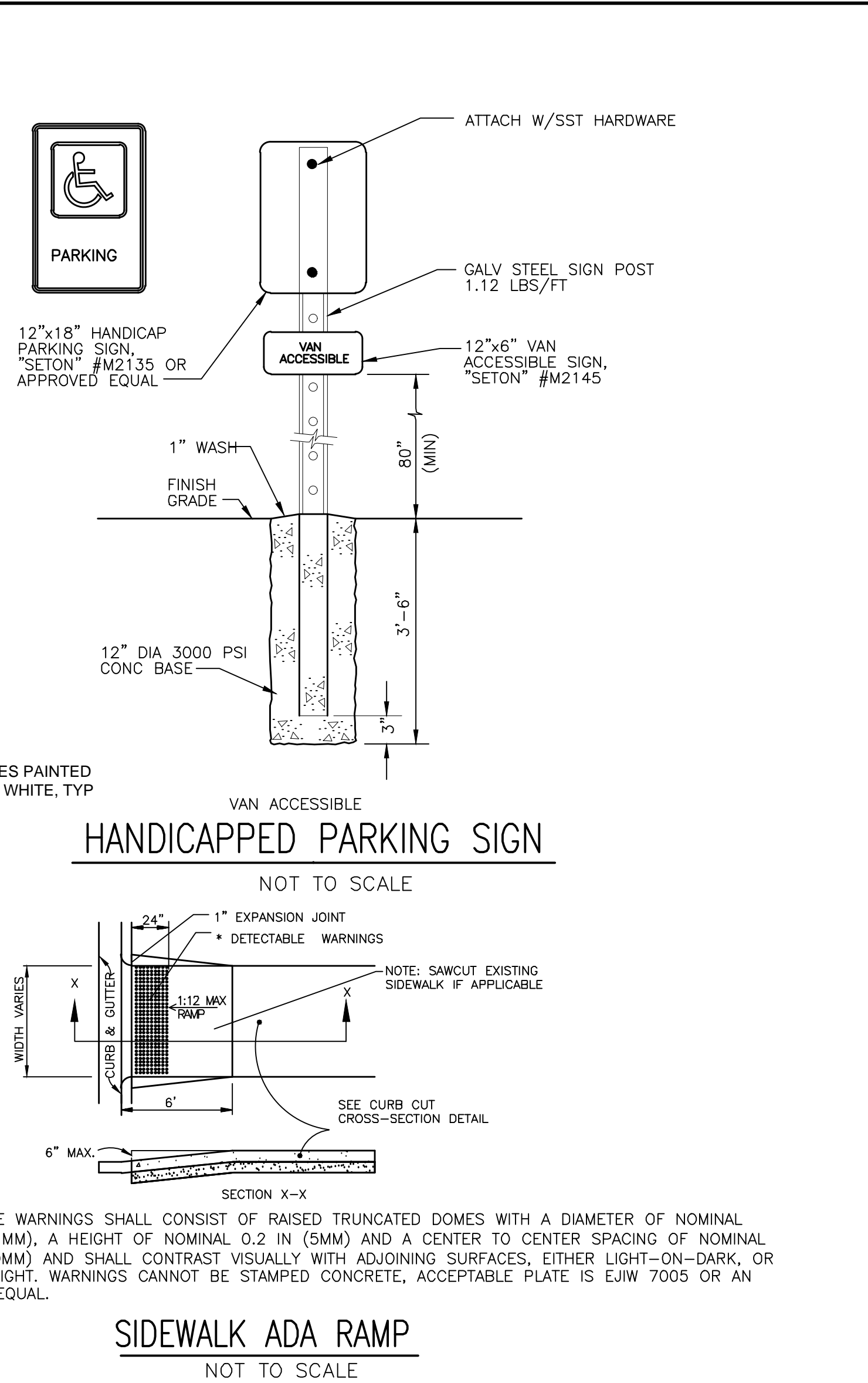
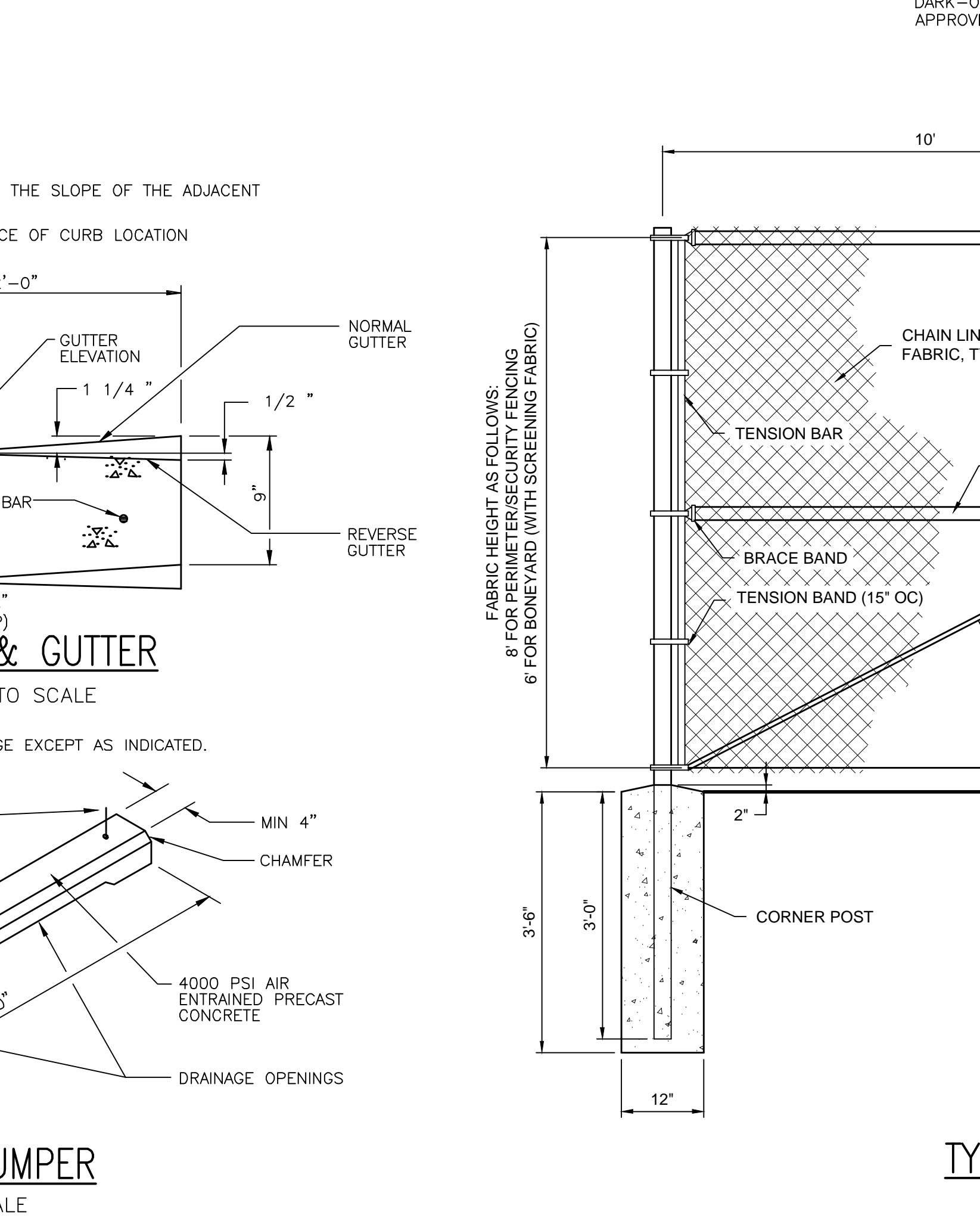
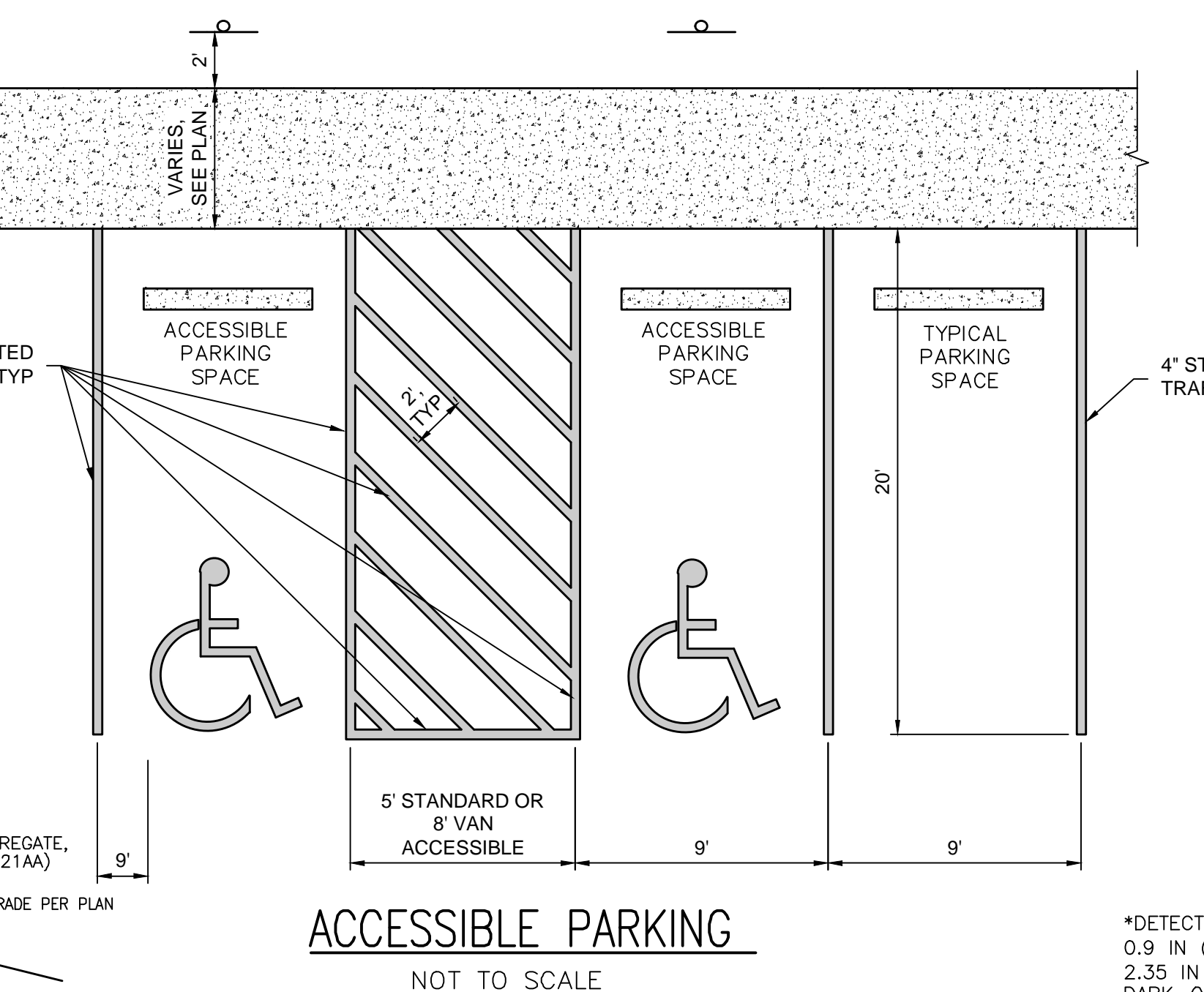
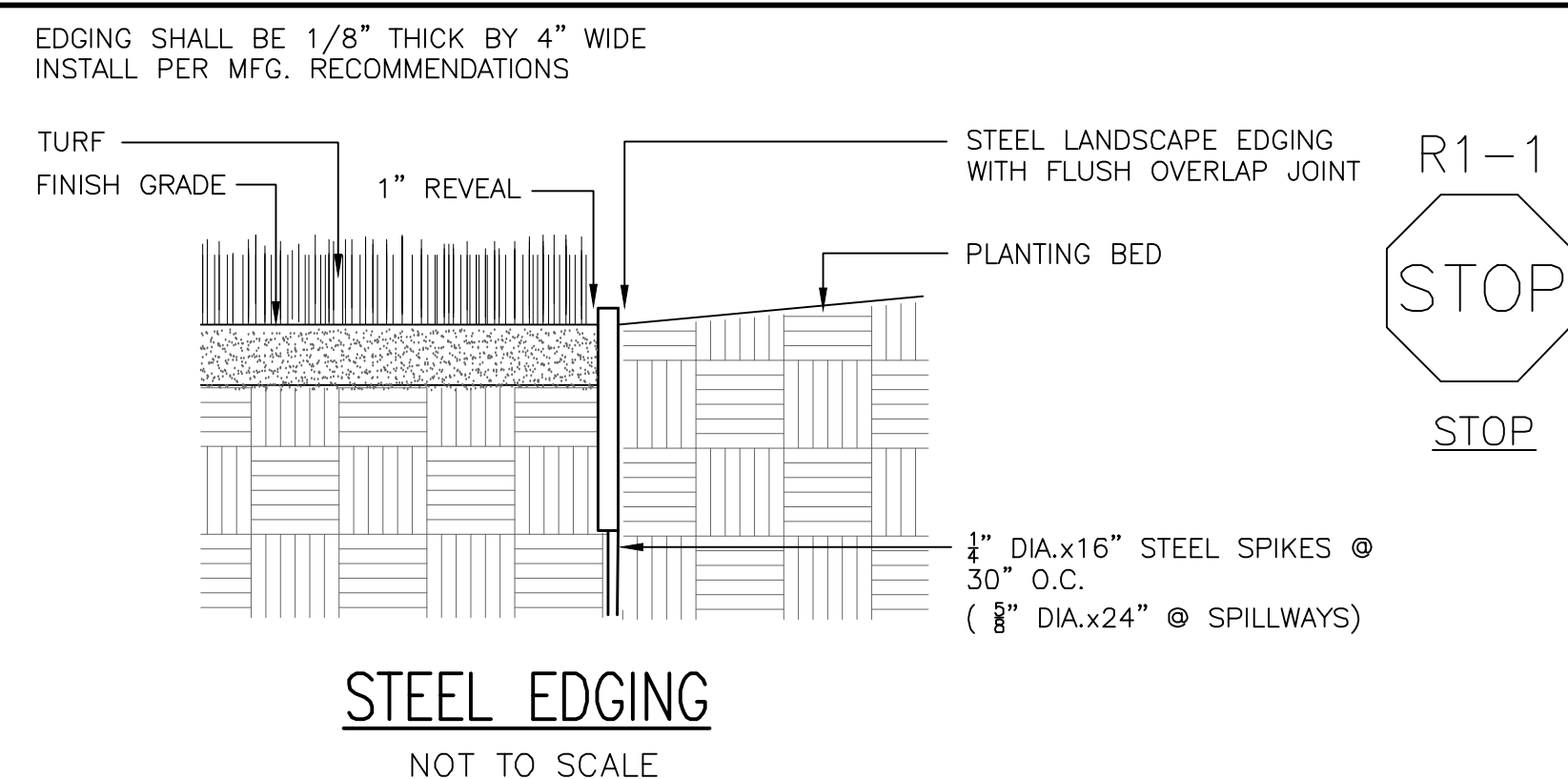
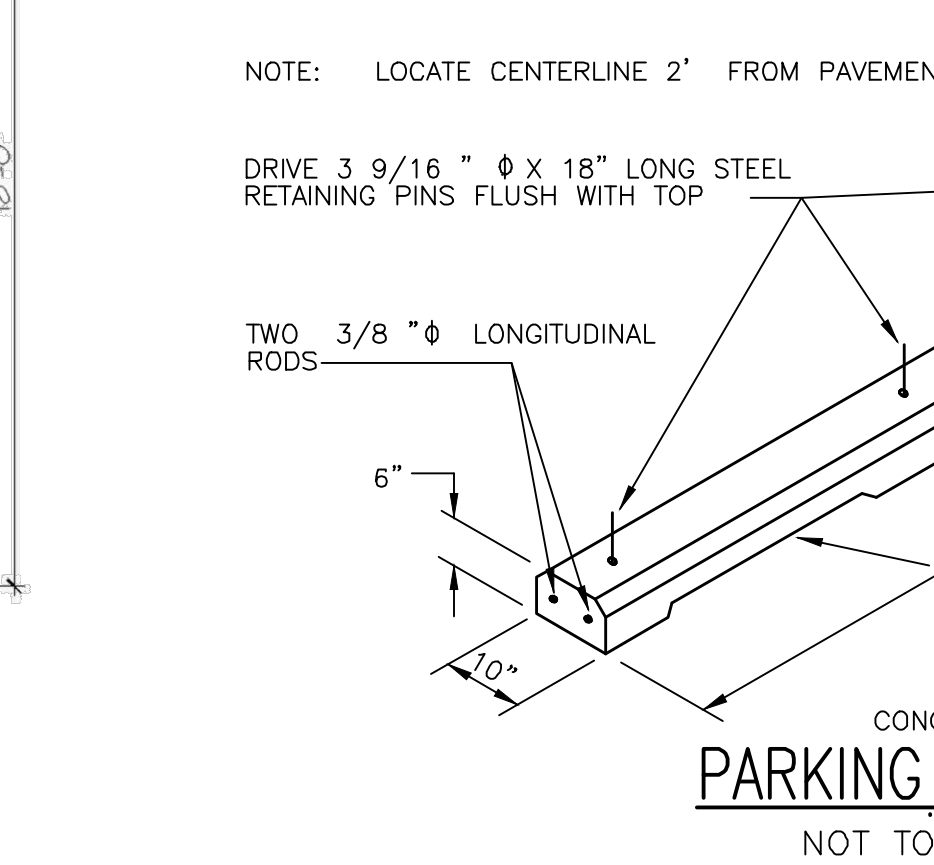
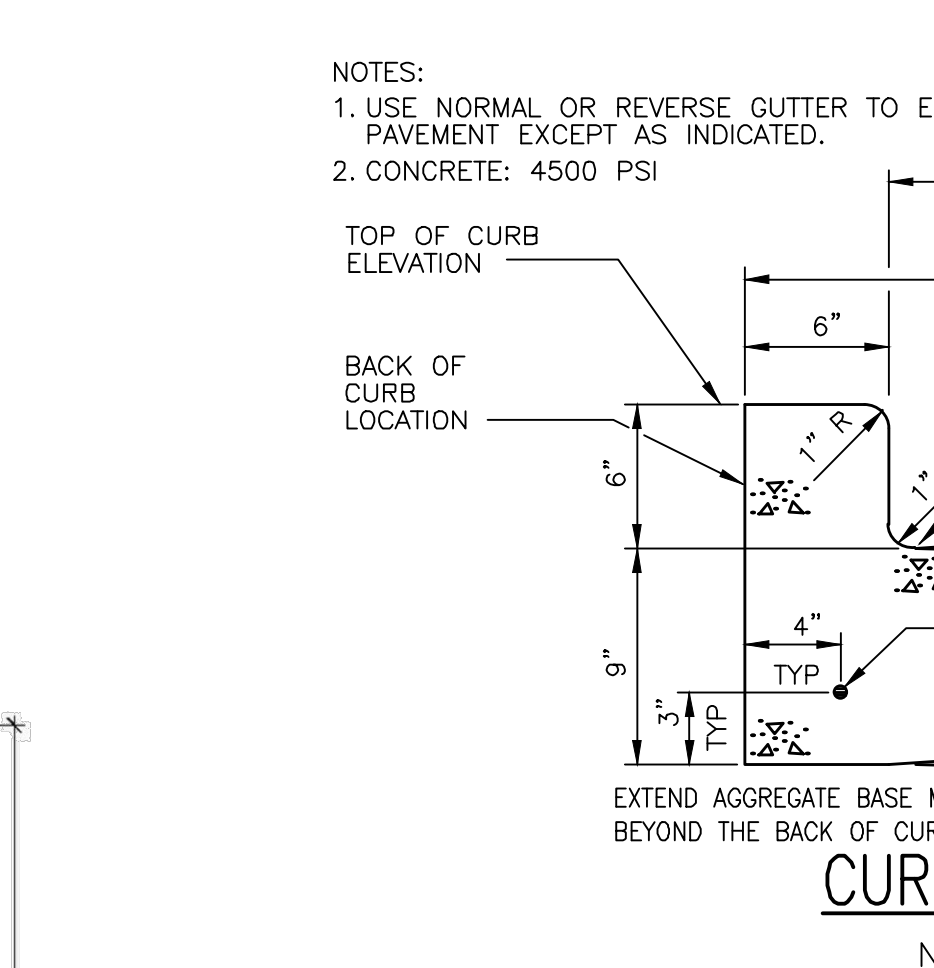
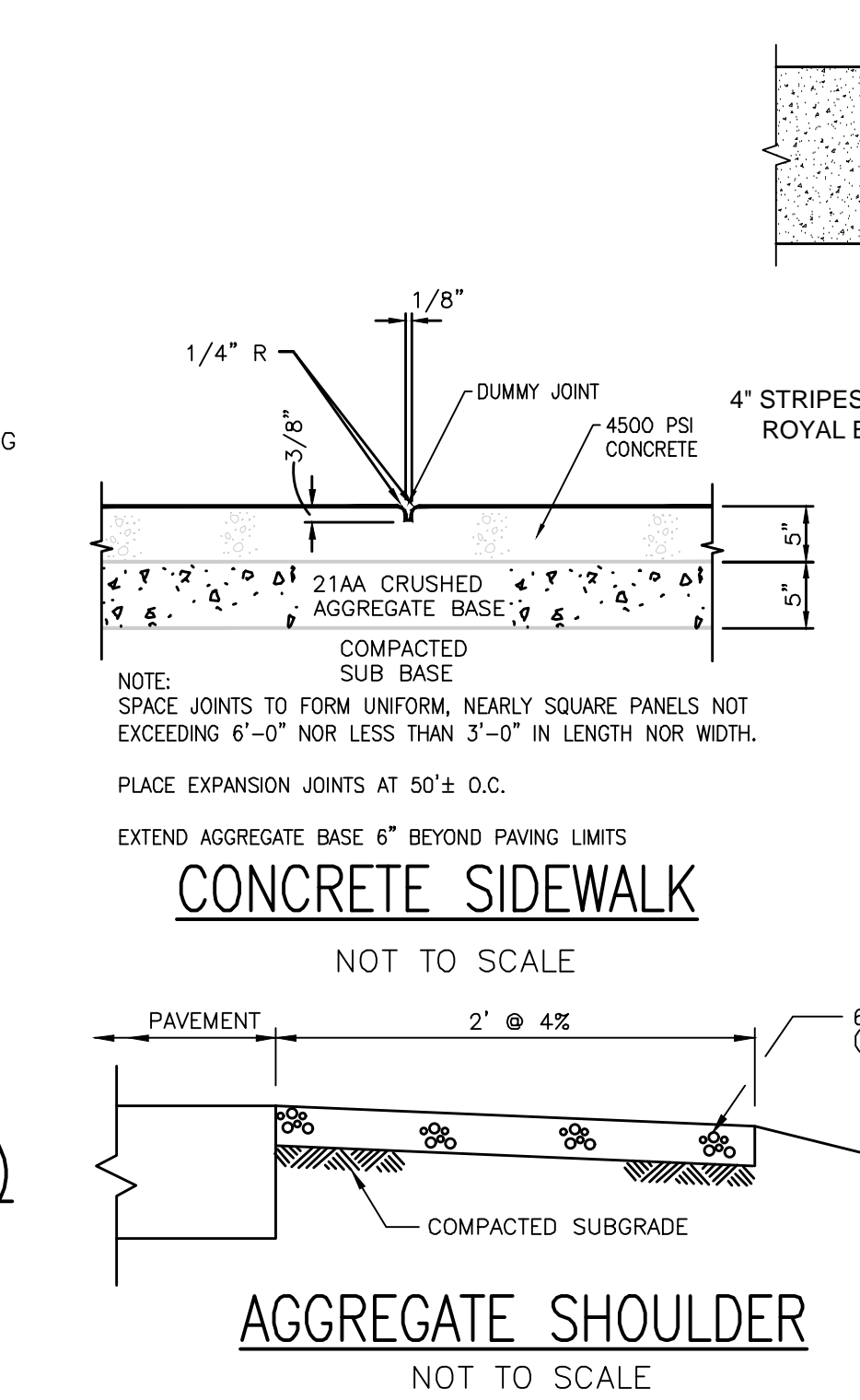
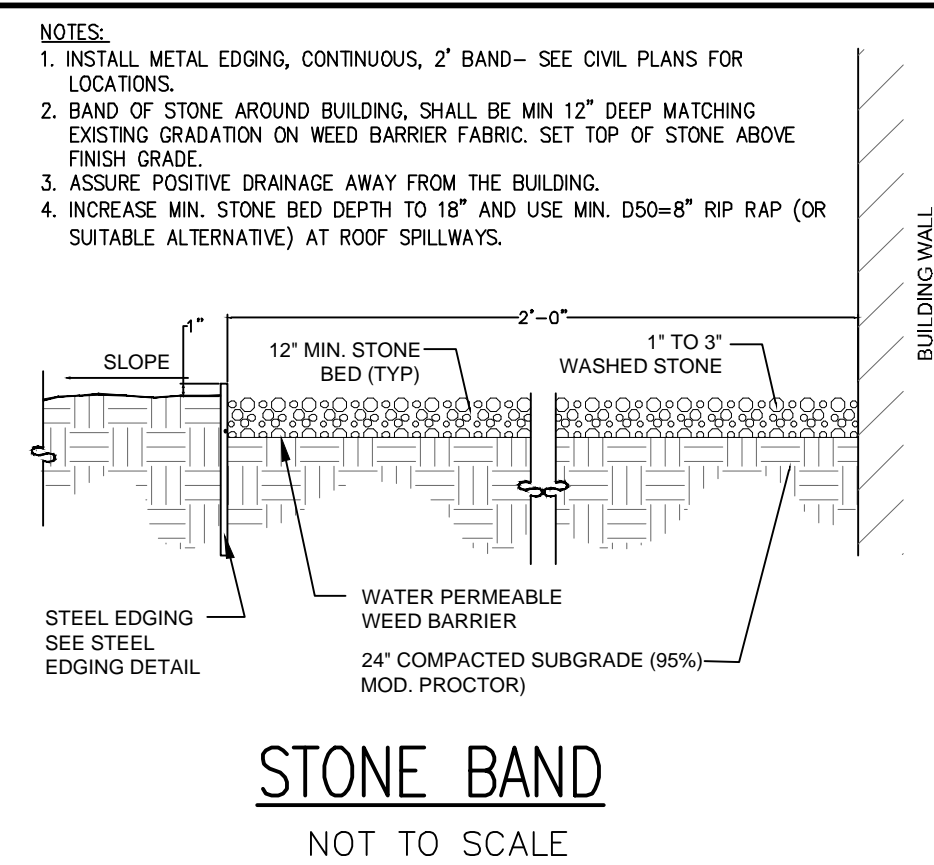
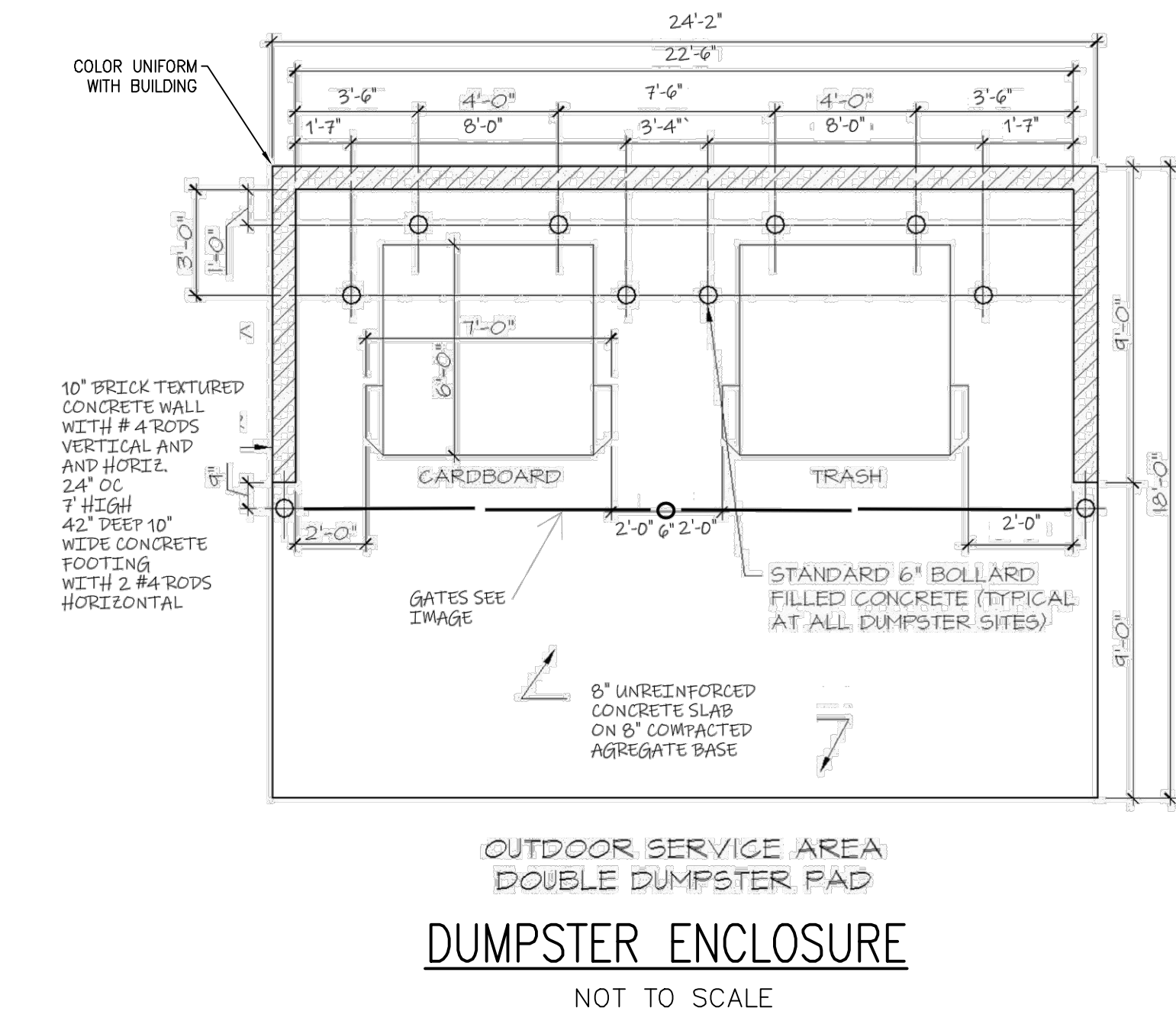
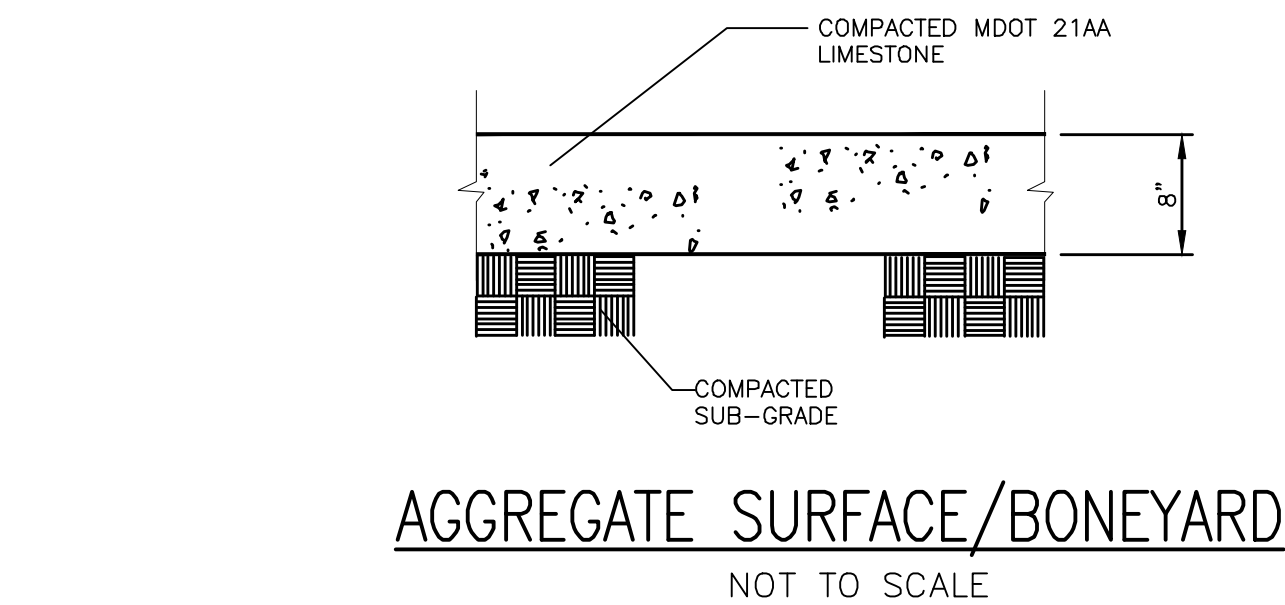
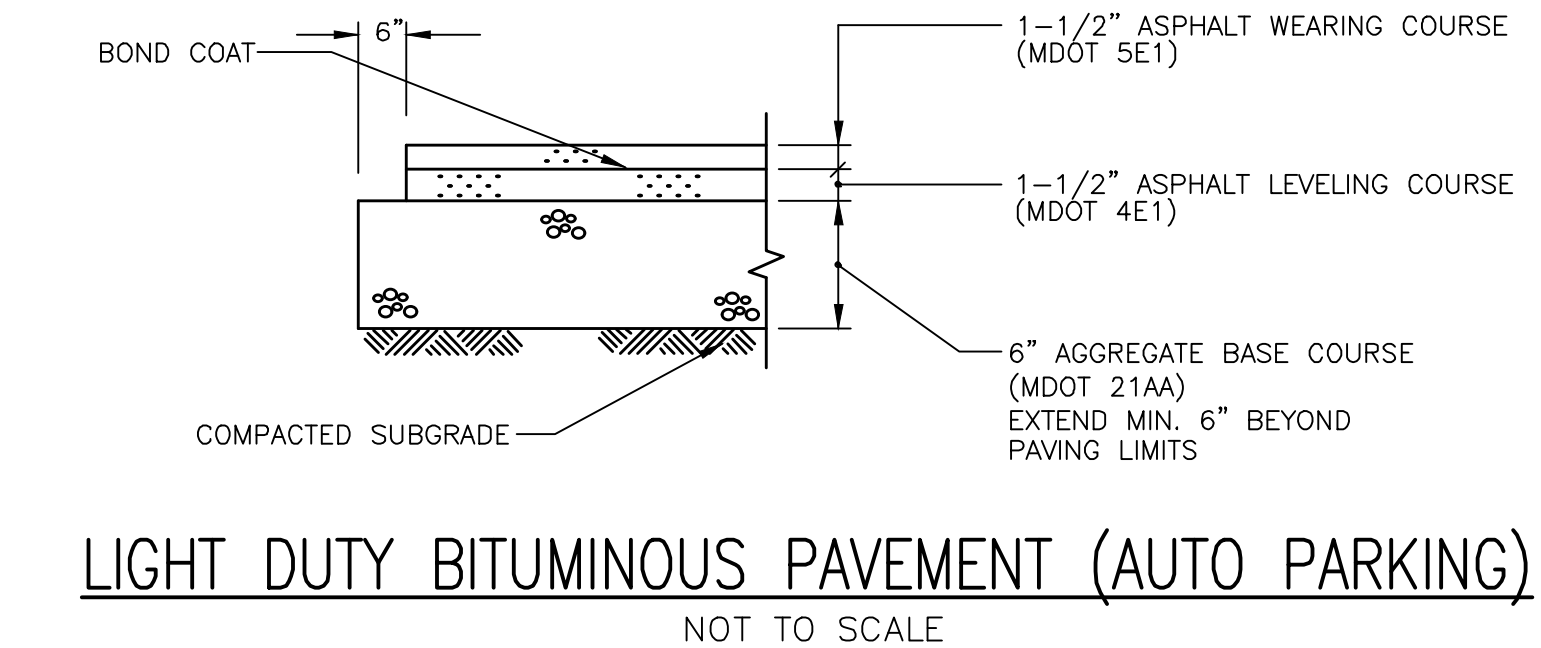
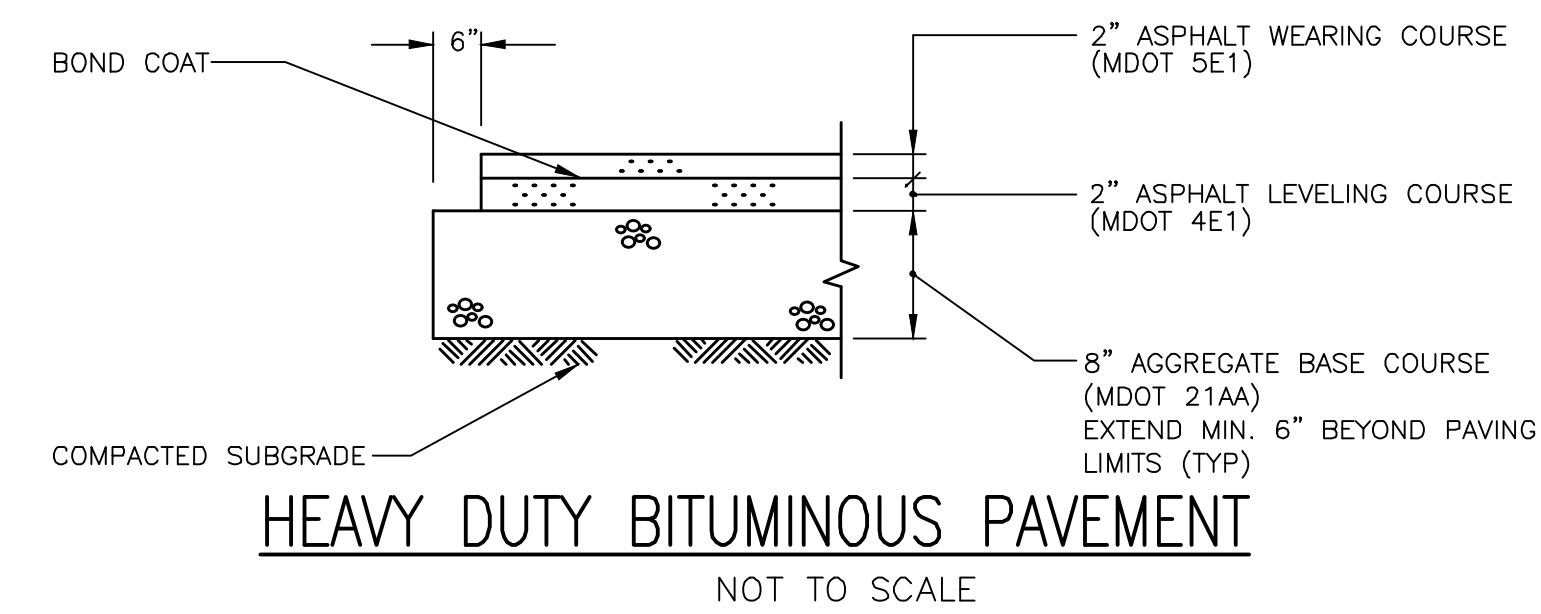
- WATER STOP BOX REQUIREMENTS**
- TWO HOLE ARCH PATTERN (ERIE PATTERN) TYPE WITH 1" UPPER AND 5' EXTENDED LENGTH WITH 42" ROD (FORD STOP BOX PART NO. EAT-50-40-42R OR APPROVED EQUAL). SMALL BOX REQUIRED FOR 3/4" AND 1" SERVICE. LARGE BOX REQUIRED FOR 1-1/2" AND 2" SERVICE. HYDRANT VALVE BOX REQUIRED FOR 3" AND 4" SERVICE. GATE WELL REQUIRED FOR 6" AND LARGER SERVICE.
 - WHERE WATER SERVICE CORPORATION BOX FALLS WITHIN A PAVED AREA (PARKING LOT, SERVICE DRIVE AREA, ETC.) THE STOP BOX SHALL BE PLACED IN A STANDARD HYDRANT VALVE BOX. THE VALVE BOX SHALL BE CENTERED IN A 2' x 2' x 6" CONCRETE SLAB.



DRAWING PATH: S:\C\T\Superior\wp\Standards\CAD\watermain\Superior\W02.dwg May 27, 2010 - 9:23am



NOTE:
PROVIDE CONCRETE COLLARS AT MANHOLES/CATCHBASINS/VALVES/CLEANOUTS/ETC.



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ISSUES

No.	DESCRIPTION	DATE
A	AREA PLAN	2021-10-27
B	AREA PLAN AMENDMENT	2021-11-29
C	PRELIMINARY SITE DESIGN	2022-01-26
D	30% OWNER REVIEW	2022-02-18
E	80% OWNER REVIEW	2022-03-18
0	ISSUED FOR BIDS	2022-04-01

NOT FOR CONSTRUCTION

PLEASE CONFIRM KEYPLAN BOX

CONSULTANTS

SEAL

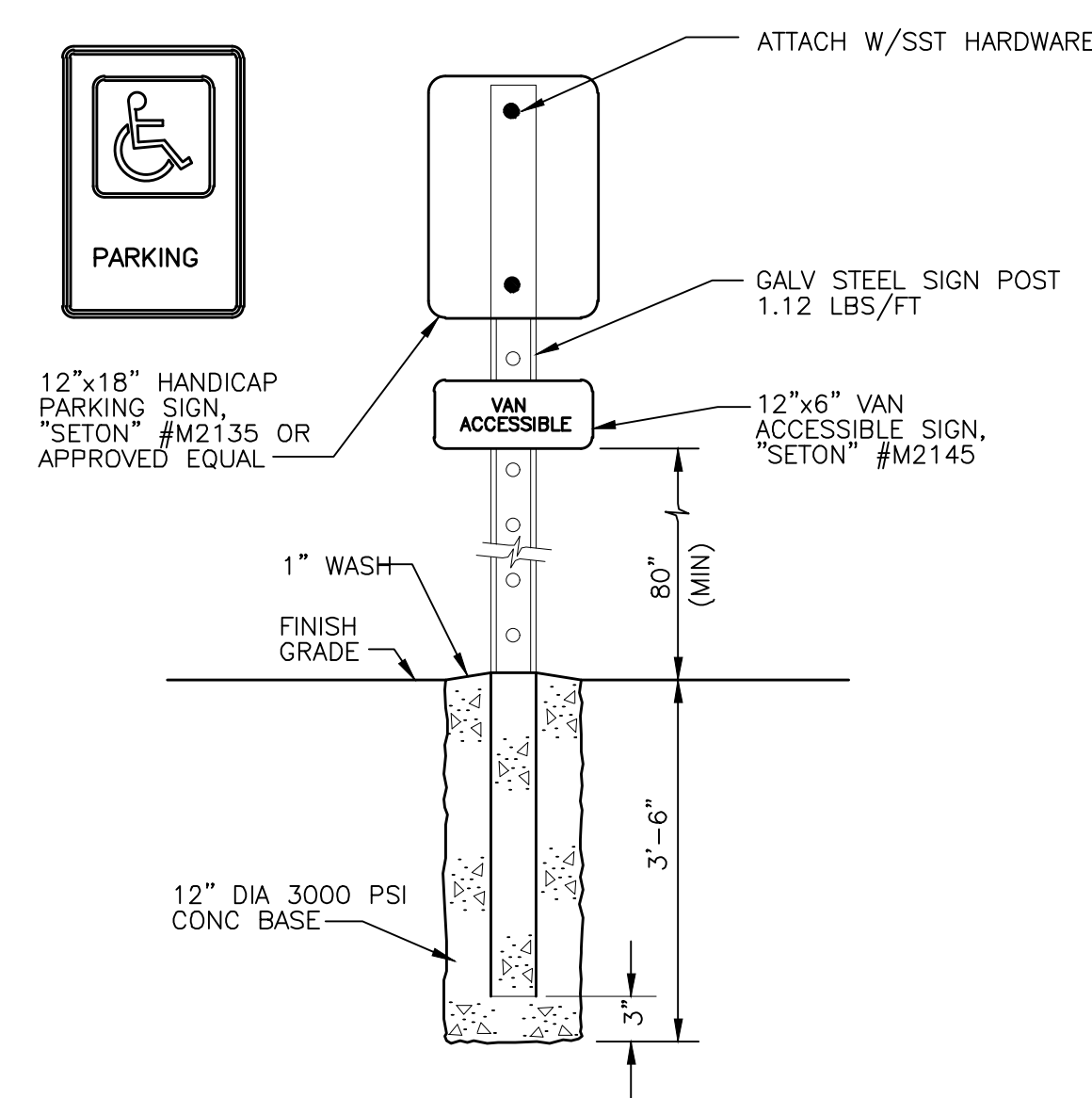
PRIME CONSULTANT
IBI GROUP
25200 Telegraph Road - Suite 300
Southfield MI 48033 USA
tel 248 936 8000 fax 248 936 8111
ibigroup.com

PROJECT
Hyundai STIL
6800 Geddes Rd Superior Charter Twp,
MI 48198

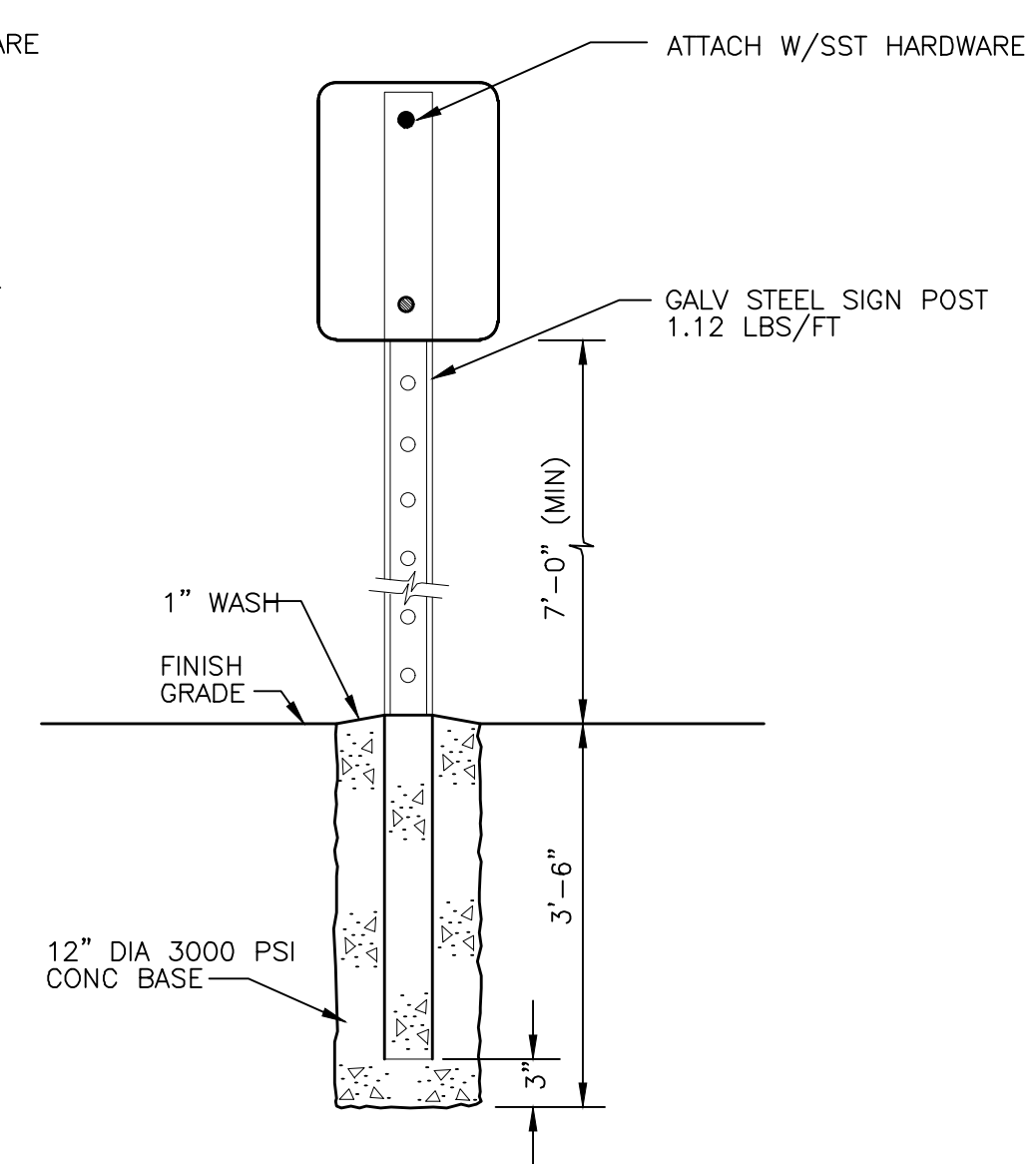
PROJECT NO: 134894
DRAWN BY: G TANNER
PROJECT MGR: D KASSAB
CHECKED BY:
APPROVED BY:

SHEET TITLE
DETAILS

SHEET NUMBER CT-606 **ISSUE**

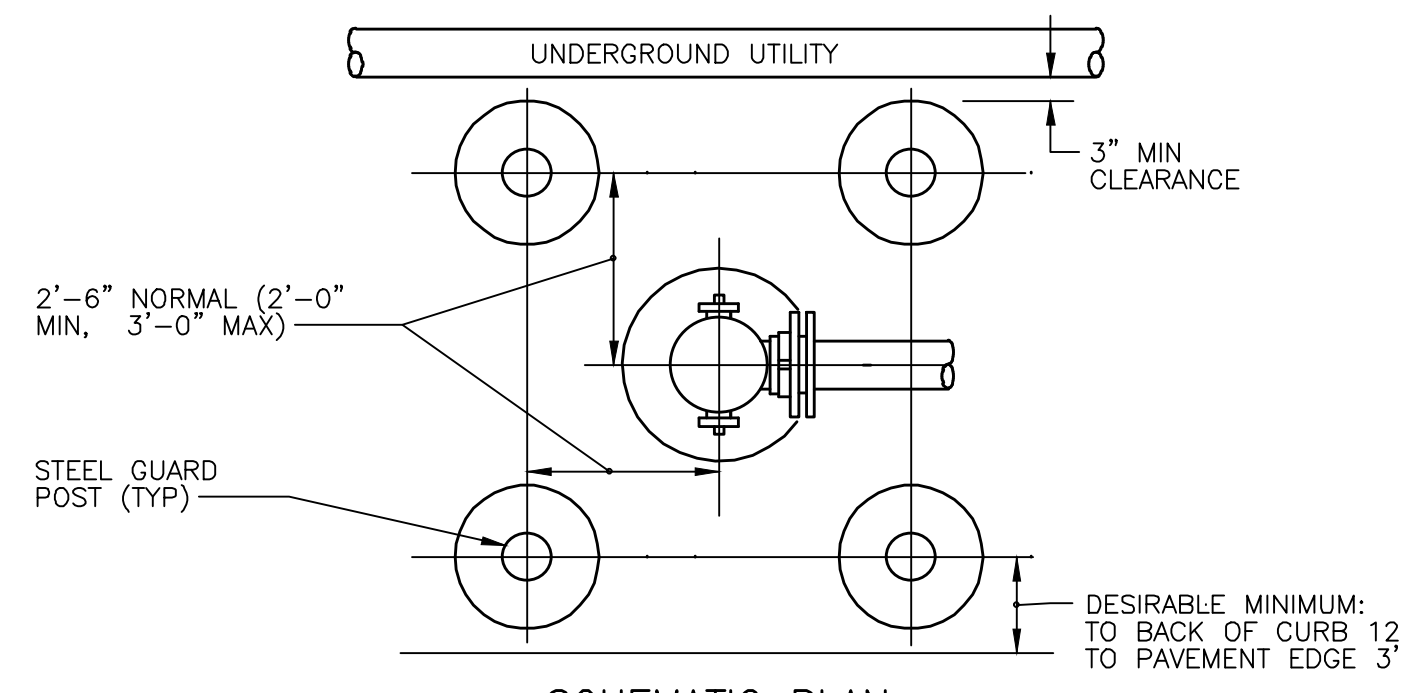


HANDICAPPED PARKING SIGN

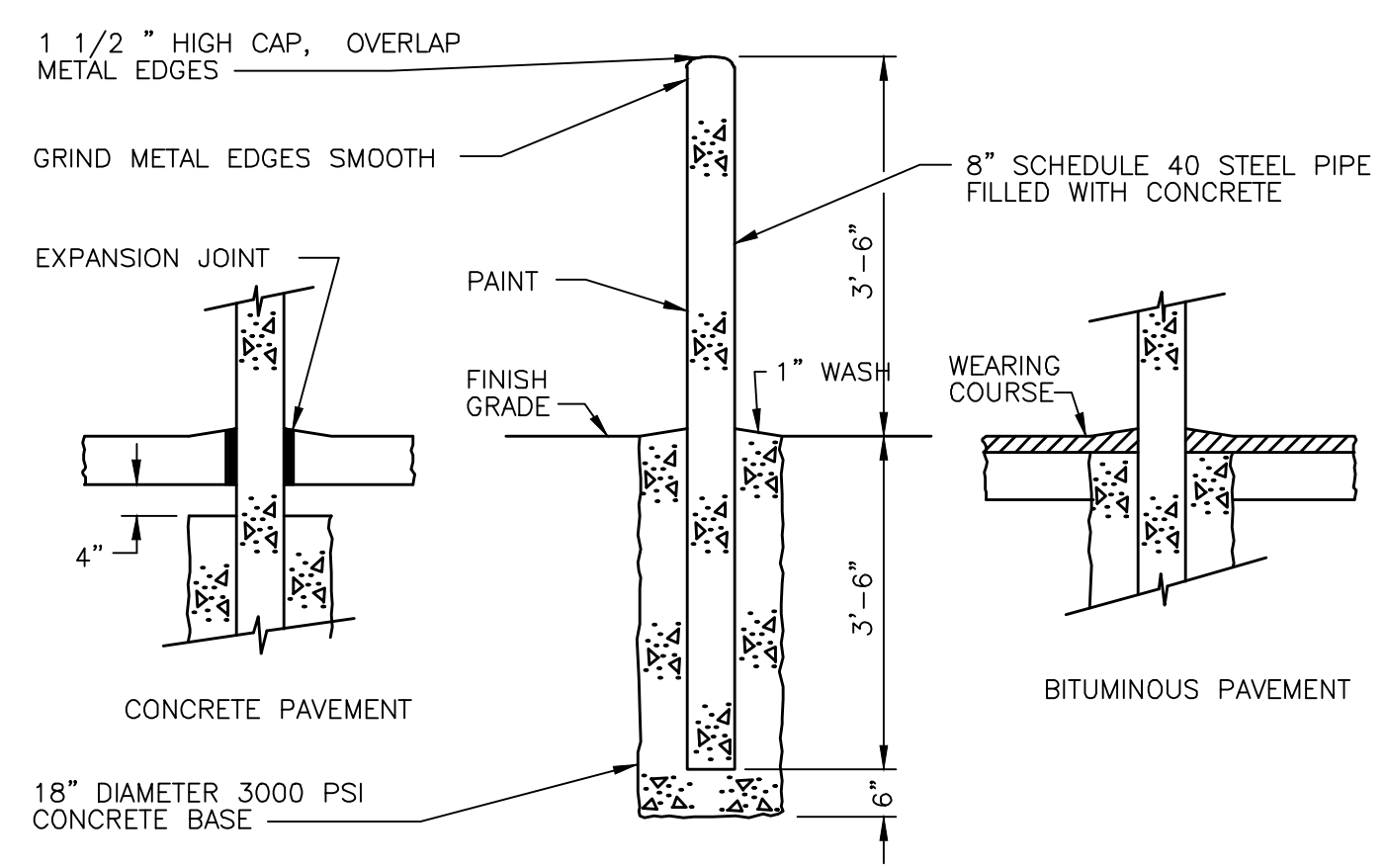


SIGN MOUNTING

NOTE: THIS DRAWING IS SCHEMATIC AND ILLUSTRATES A SINGLE PROTECTED UNIT SUCH AS A HYDRANT. PROVIDE A SIMILAR POST ARRANGEMENT FOR MULTIPLE UNITS.



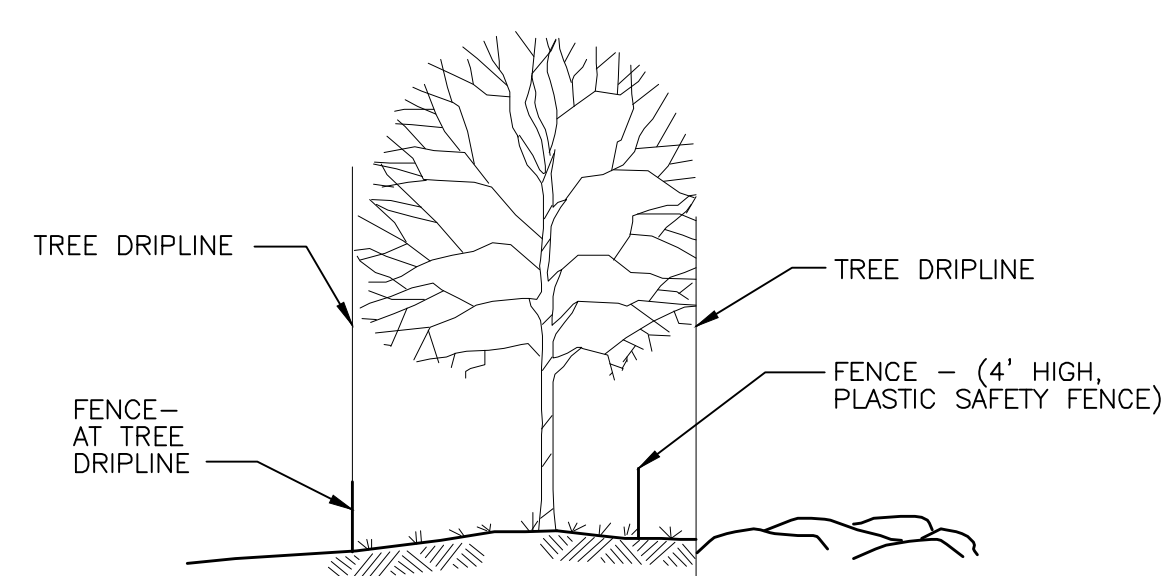
SCHEMATIC PLAN



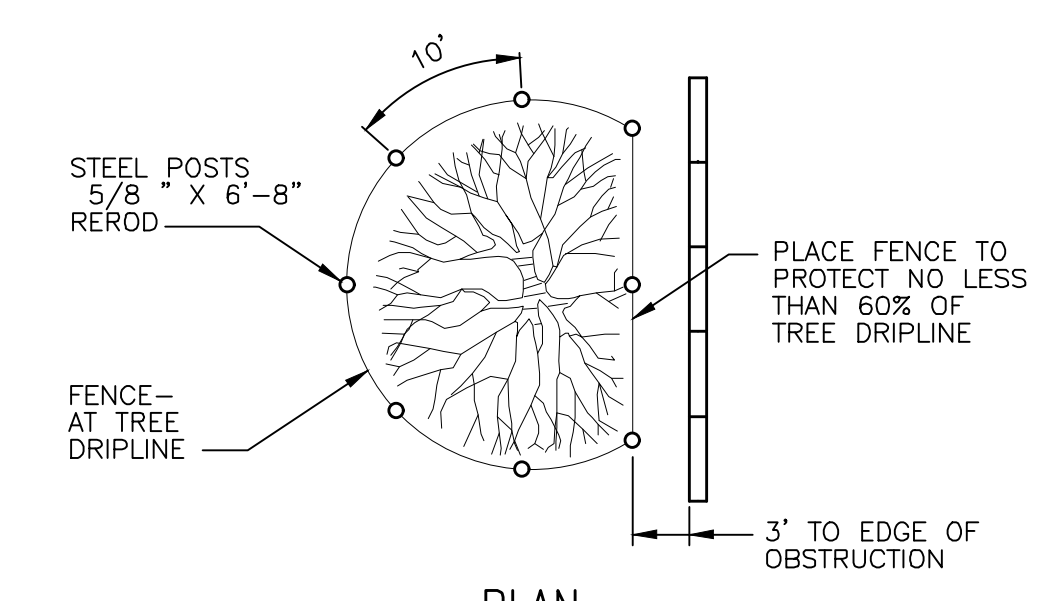
**TYPICAL SECTIONS
STEEL GUARD POST**

NOTES:

1. 4' HIGH FENCE TO BE INSTALLED AROUND DRIPLINE OF TREES TO BE SAVED PRIOR TO ANY LAND CLEARING OR CONSTRUCTION
2. NO CUTTING, FILLING OR TRESSPASSING SHALL OCCUR INSIDE THE FENCED AREA

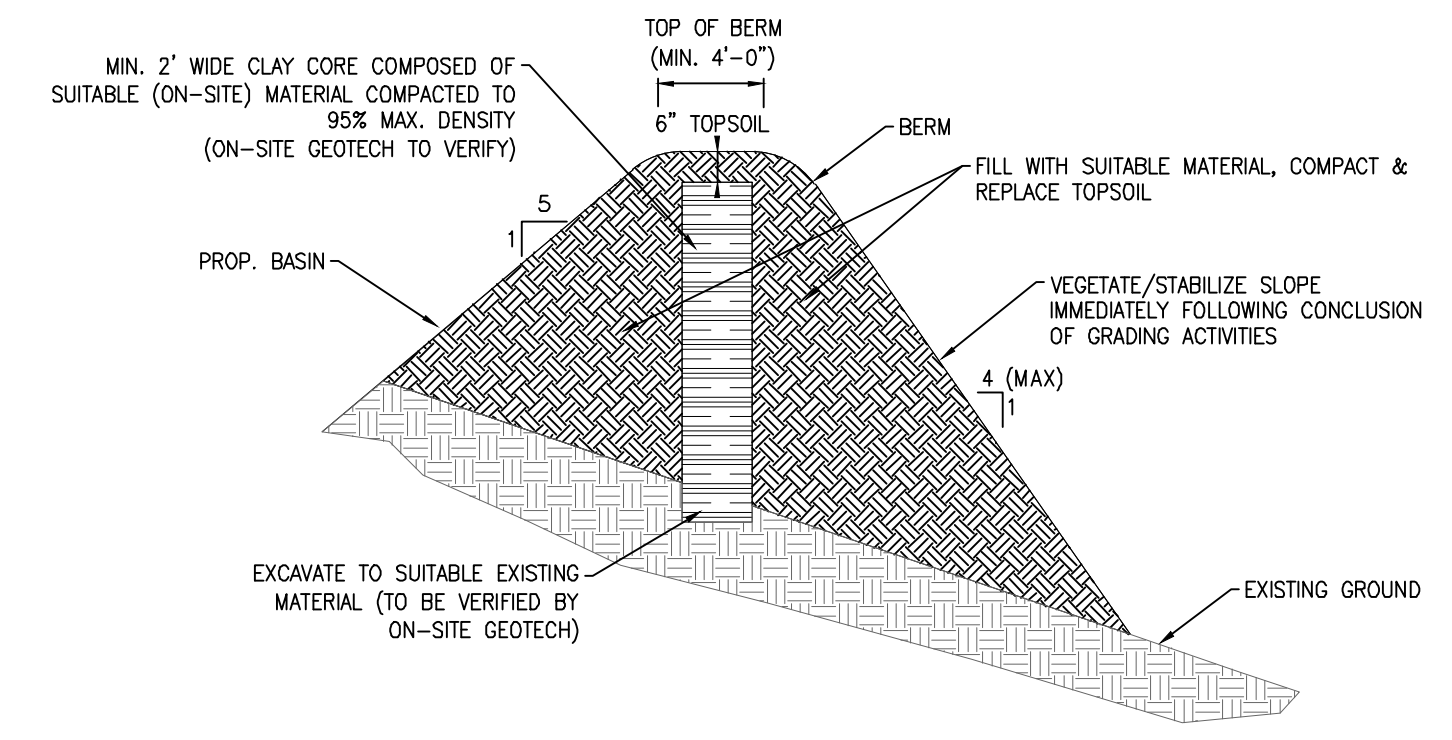


SECTION



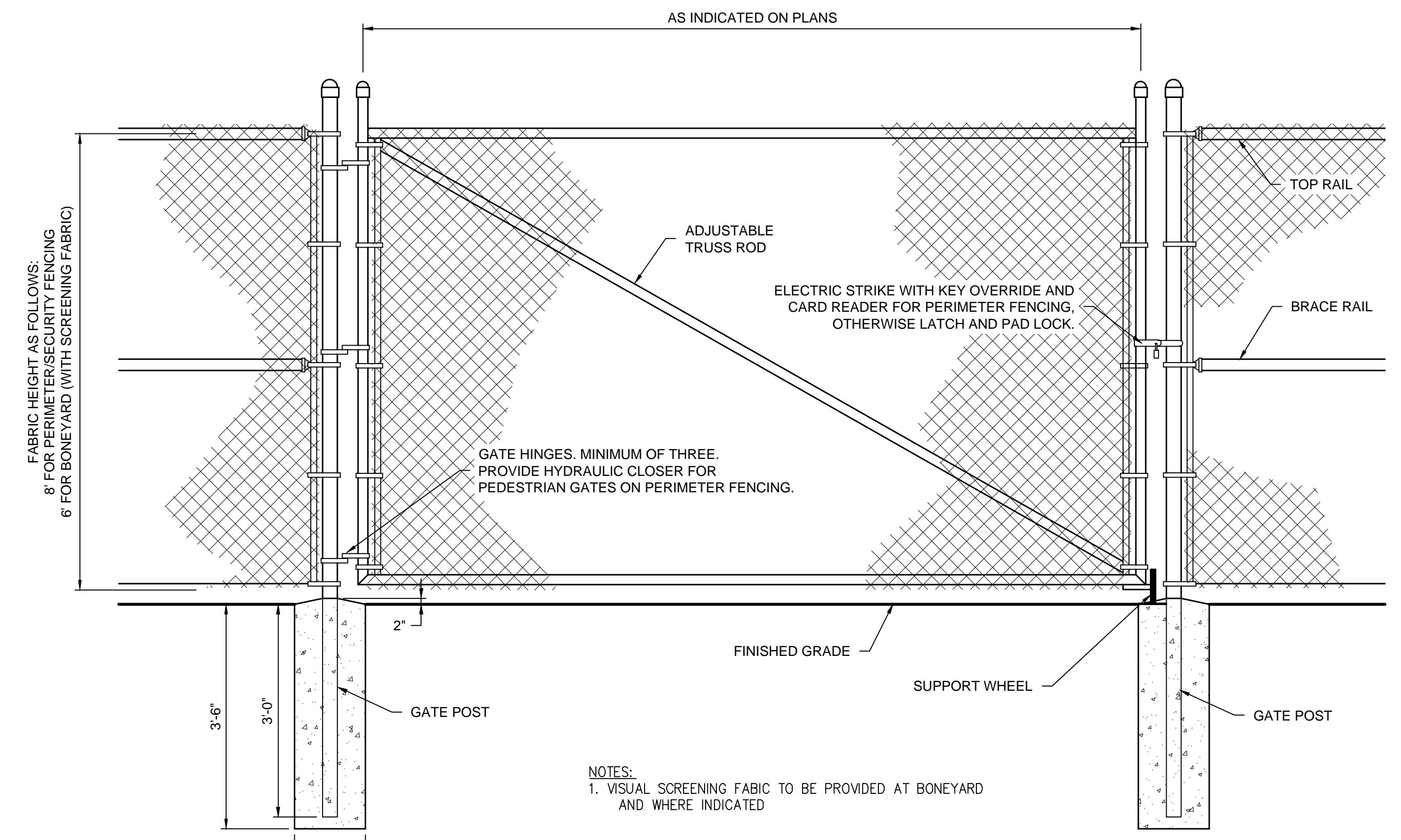
PLAN

TREE PROTECTION



TYPICAL CLAY CORE SECTION

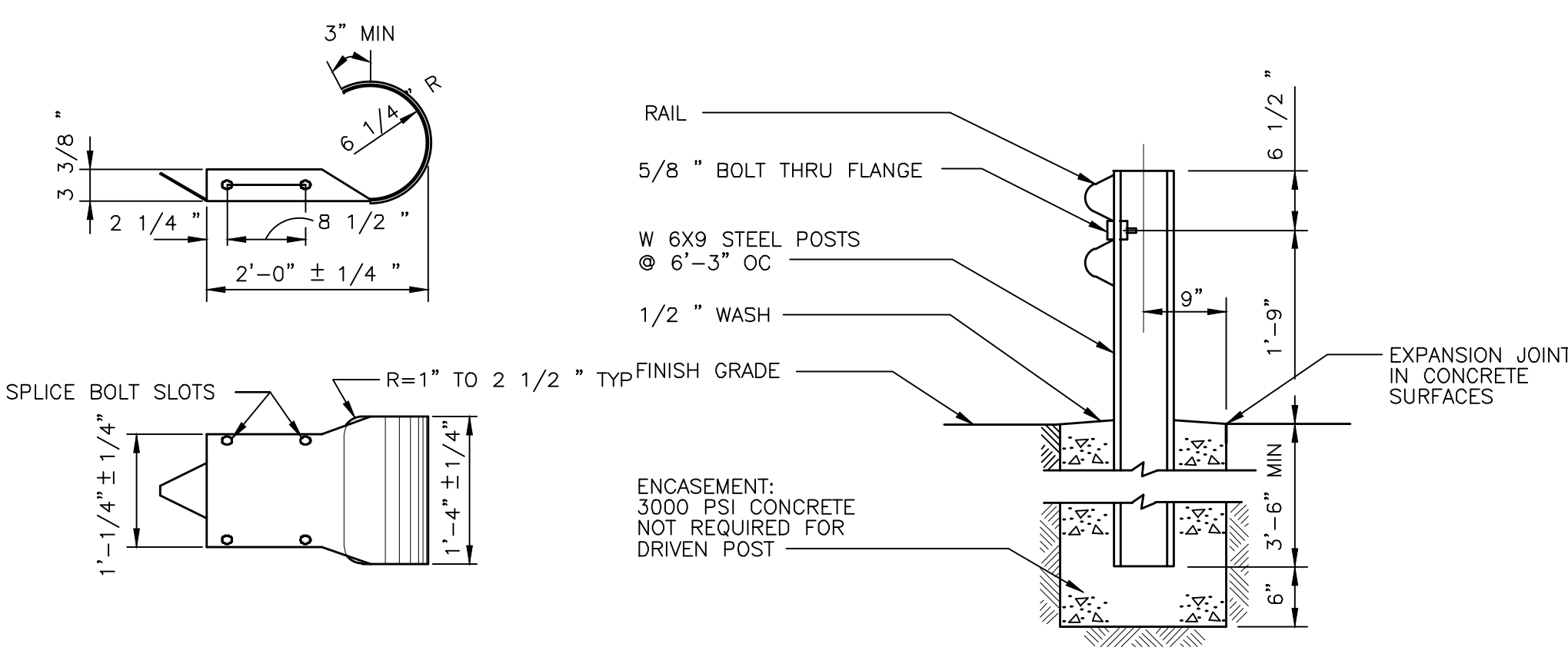
NOT TO SCALE



TYPICAL CHAIN LINK SWING/PERSONAL GATE

NOT TO SCALE

- NOTES:
1. VISUAL SCREENING FABRIC TO BE PROVIDED AT BONEYARD AND WHERE INDICATED



GUIDE RAIL TERMINAL END SHOE

GUIDE RAIL



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PROJECT
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MI 48198

PROJECT NO:
134894
DRAWN BY:
G TANNAR
PROJECT MGR:
D KASSAB
CHECKED BY:
APPROVED BY:

SHEET TITLE
DETAILS

SHEET NUMBER
CT-603
ISSUE