

JOHN GRACE ARMS

21030 INDIAN ST.
SOUTHFIELD, MI 48033



DEVELOPED BY
JOHN GRACE ARMS LDHA LLC

PROJECT TEAM:

ARCHITECT:
SDG ASSOCIATES, LLC

607 SHELBY STREET
SUITE 704
DETROIT, MI 48226
PH: 313.961.9000
FAX: 313.964.3233

CIVIL ENGINEERS:
SPALDING DEDECKER ENGINEERS

905 SOUTH BOULEVARD EAST
ROCHESTER HILLS, MICHIGAN 48307
PH: 800-598-1600
INFO@SDA-ENG.COM

STRUCTURAL ENGINEERS:
IMEG

33533 W. TWELVE MILE
SUITE 200
FARMINGTON HILLS, MI 48331
PH: 248-344-2800
FAX: 248-344-1650

M.E.P. ENGINEERS:
A&A ENGINEERING & CONSULTING

28862 VISTA WAY
SOUTH LYON, MICHIGAN 48178
PH: 419-303-8503
SHENNARD@AAENGINEERCO.COM

PRESERVATION CONSULTANT:
KIDORF PRESERVATION CONSULTING

451 E. FERRY STREET
DETROIT, MICHIGAN 48202
PH: 313-300-9376
KRISTINE@KIDORFPRESERVATIONCONSULTING.COM

John Grace Arms
21030 Indian St, Southfield MI 48033
Developed by
John Grace Arms LDHA LLC

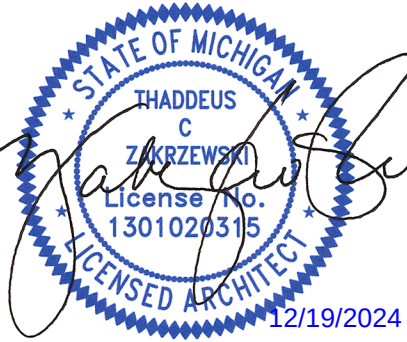
SDG
Architects + Planners
607 Shelby Street
Suite 704
Detroit, MI 48226
Tel: 313-961-9000
Fax: 313-964-3233

LOCATION MAP (NTS)



REGISTRATION SEAL

KEY PLANS



SHEET TITLE
TITLE SHEET

SCALE:	
ISSUED FOR	DATE
Review	03.28.2024
Permits	04.12.2024
For Permit	10.25.2024
Bulletin No. 1	02.19.2025
Bulletin No. 2	03.05.2025
Bulletin No. 3	05.21.2025
Bulletin No. 4	07.01.2025

EBH
DRAWN BY
TZ
CHECKED
JA
APPROVED
21026.00
FILE NO.
COVER
SHEET NO.

DEVELOPMENT TEAM

CIVIL ENGINEER

SPALDING DeDECKER
905 SOUTH BOULEVARD EAST
ROCHESTER HILLS, MICHIGAN 48307
PHONE (248) 844-5400

ARCHITECT

SDG ASSOCIATES
607 SHELBY, SUITE 704
DETROIT, MI 48226
JOHN ABELA
313-961-9000

LANDSCAPE ARCHITECT

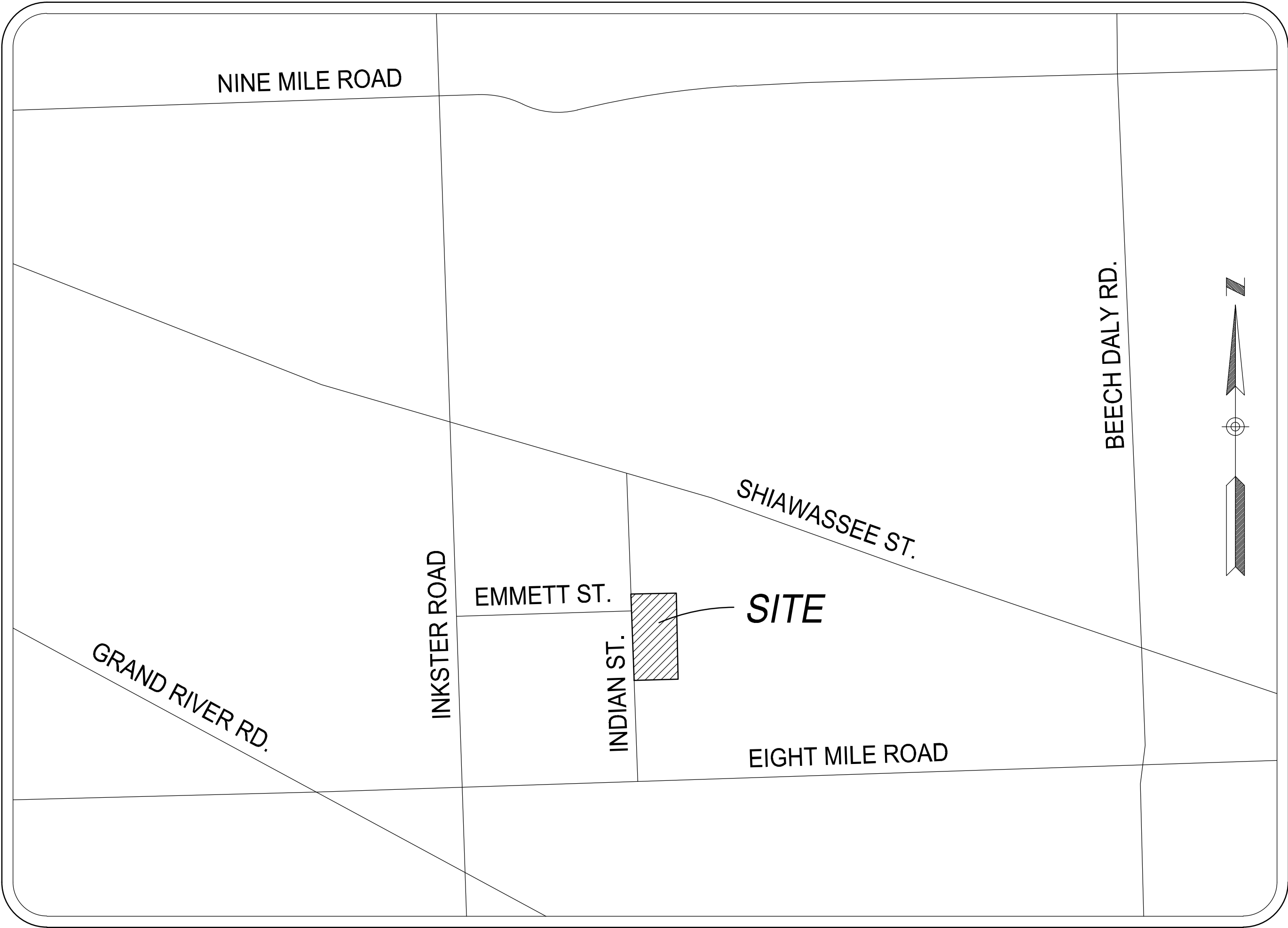
ECO LANDSCAPE & DESIGN, LLC.
ROBERT O'REILLY, R.L.A.
734-276-8446

OWNER

SOUTHFIELD NEIGHBORHOOD REVITALIZATION INITIATIVE, LLC.
19785 WEST 12 MILE ROAD, SUITE 404
SOUTHFIELD, MI 48076
CONTACT
PHONE 833-373-2313

(60) units total (42 addition)
(7) ADA
(5) 2BR
(55) 1BR

Pervious Area Land Use Data	Characteristic	Existing Conditions	Proposed Conditions
	Total Development Area (ac)	3.99 Acres	3.99 Acres
	Impervious Area (ac)	2.31 Acres	2.35 Acres
	Total Pervious Area (ac)	1.68 Acres	1.64 Acres
	Pervious Area Breakdown by Cover Type		
	Meadow/fallow/natural areas (non-cultivated)	0.00 Acres	0.00 Acres
	Predominant NRCS Soil Type (A, B, C, or D)	A	A
	Improved areas (turf grass, landscape, row crops)	1.68 Acres	1.64 Acres
	Predominant NRCS Soil Type (A, B, C, or D)	A	A
	Wooded Areas	0.00 Acres	0.00 Acres
Predominant NRCS Soil Type (A, B, C, or D)	A	A	
Proposed Pond Area (acres)			
CPVC Volume <i>Calculated</i> (cubic feet)		12,809 CU FT	
CPVC Volume <i>Provided</i> (cubic feet)		56,568 CU FT	
CPRC Volume <i>Calculated</i> (cubic feet)		18,809 CU FT	
CPRC Volume <i>Provided</i> (cubic feet)		18,809 CU FT	
The Professional Engineer who signs and seals this site plan certifies that the values in this table reflect the WRC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (i.e., CPVC Volume Control) is practicable.			



GOVERNING AGENCIES

PLANNING

CITY OF SOUTHFIELD PLANNING DEPARTMENT
26000 EVERGREEN ROAD
SOUTHFIELD, MI 48076
CONTACT JEFFREY SPENCE
PHONE 248-796-4150

ENGINEERING

CITY OF SOUTHFIELD ENGINEERING DEPARTMENT
26000 EVERGREEN ROAD
SOUTHFIELD, MI 48076
CONTACT LEIGH SCHULTZ
PHONE 248-796-4812

FIRE DEPT.

CITY OF SOUTHFIELD FIRE DEPARTMENT
26000 EVERGREEN ROAD
SOUTHFIELD, MI 48076
CONTACT MIKE ALBO
PHONE 248-796-5706

LANDSCAPE

CITY OF SOUTHFIELD
26000 EVERGREEN ROAD
SOUTHFIELD, MI 48076
CONTACT NOREEN LUSK
PHONE 248-796-4156

SITE DATA

CURRENT ZONING R-1, RUDD			
SITE AREA 44.62 ACRES			
SURROUNDING PROPERTY ZONING:			
SOUTH - R-1			
NORTH - R-1			
EAST - R-1			
WEST - R-1			
BUILDING & SETBACKS REQUIREMENTS REQUIRED			
FRONT	20'	PROPOSED	70.3' (EXISTING)
REAR	*RUDD		42.1'
SIDE (1)	*RUDD		180'
SIDE (2)	*RUDD		23' (EXISTING)
LOT COVERAGE CALCULATION			
MAXIMUM LOT COVERAGE = 75%			
PROVIDED LOT COVERAGE = 57%			
*LOT COVERAGE CALCULATION DOES NOT INCLUDE PROPOSED PARK AREA.			
PARKING CALCULATION			
PARKING REQUIRED = 32 SPACES			
CALCULATION: (.5 SPACES/UNIT * 60 UNITS) + 1 SPACE/2 EMPLOYEES			
PARKING PROVIDED = 45 SPACES			
LANDBANKED PARKING = 17 SPACES			
STREET PARKING (PARALLEL) PROVIDED = 18 SPACES			
ACCESSIBLE PARKING CALCULATION			
TOTAL 8 SPACES 3 SPACES 5 SPACES 51-75 TOTAL SPACES PROVIDED			
VAN 4 SPACES 2 SPACES 1/6 ACCESSIBLE SPACES			
BUILDING INFORMATION			
REFER TO ARCHITECTURAL FLOOR PLAN AND ELEVATIONS FOR BUILDING DETAILS.			

LOCATION MAP

NTS

LEGAL DESCRIPTION

ATA NATIONAL TITLE GROUP, LLC
COMMITMENT DATE: AUGUST 11, 2021
TAX PARCEL ID: 24-31-376-033
ADDRESS: 21030 INDIAN ST.

THE LAND REFERRED TO THIS TITLE COMMITMENT IS SITUATED IN THE CITY OF SOUTHFIELD, OAKLAND COUNTY, STATE OF MICHIGAN, AS FOLLOWS:

LOT 7, 9 AND THE NORTH 140 FEET OF LOT 11, THOMAS HITCHMAN'S SUBDIVISION, AS RECORDED IN LIBER 10, PAGE 49 OF PLATS, OAKLAND COUNTY RECORDS.

WETLANDS

THERE ARE NO EXISTING WETLANDS ON-SITE.

FLOODPLAIN NOTE

PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD MAP (MAP NO. 26125C0658F, DATED SEPTEMBER 29, 2006), THE SITE LIES WITHIN ZONE X WHICH ARE AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

PERMIT MATRIX

TYPE	ISSUED BY	STATUS
SITE PLAN	CITY OF SOUTHFIELD	APPROVED
ENGINEERING	CITY OF SOUTHFIELD	APPROVED
SESC	CITY OF SOUTHFIELD	APPROVED
WATER SUPPLY	EGLE	APPROVED

CIVIL SHEET INDEX	
Sheet Number	Sheet Title
C1.0	Cover
C2.1	Demolition Plan
C3.1	Utility Plan
C3.2	Storm Profiles
C3.3	Watermain Profiles
C4.1	Drainage Area Map
C4.2	Detention Calculations
C4.3	Operations & Maintenance Plan
C5.1	Paving Plan
C5.2	Paving Details
C6.1	Grading Plan
C6.2	Detailed Grading
C7.1	Right-of-Way Parking Plan
C8.1	SESC Plan
L1.1	Landscape Plan
L1.2	Landscape Details

ATTACHED PLANS

TOPOGRAPHICAL SURVEY BY SDA (3 SHEETS)
CITY OF SOUTHFIELD WATERMAIN DETAILS (4 SHEETS)
OCWRC SANITARY SEWER DETAILS AND NOTES (2 SHEETS)
OCWRC STORM DRAIN NOTES AND DETAILS (1 SHEET)
OCWRC SESC DETAILS (1 SHEET)

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PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

UTILITY NOTE

UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. UNDERGROUND UTILITIES WHICH ARE ON PRIVATE PROPERTY ARE USUALLY NOT DELINEATED UPON A UTILITY COMPANY'S PUBLISHED PLANS. THEIR LOCATION, IF SHOWN UPON THIS SURVEY, ARE APPROXIMATED FROM FOUND PAINT MARKSTAKES, ETC. AS LOCATED BY THIS FIRM FROM SOURCES WHICH ARE UNKNOWN. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

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JOHN GRACE ARMS

CONSTRUCTION PLANS

Cover

SECTION 31

TOWN 01N RANGE 10E

CITY OF SOUTHFIELD

OAKLAND COUNTY

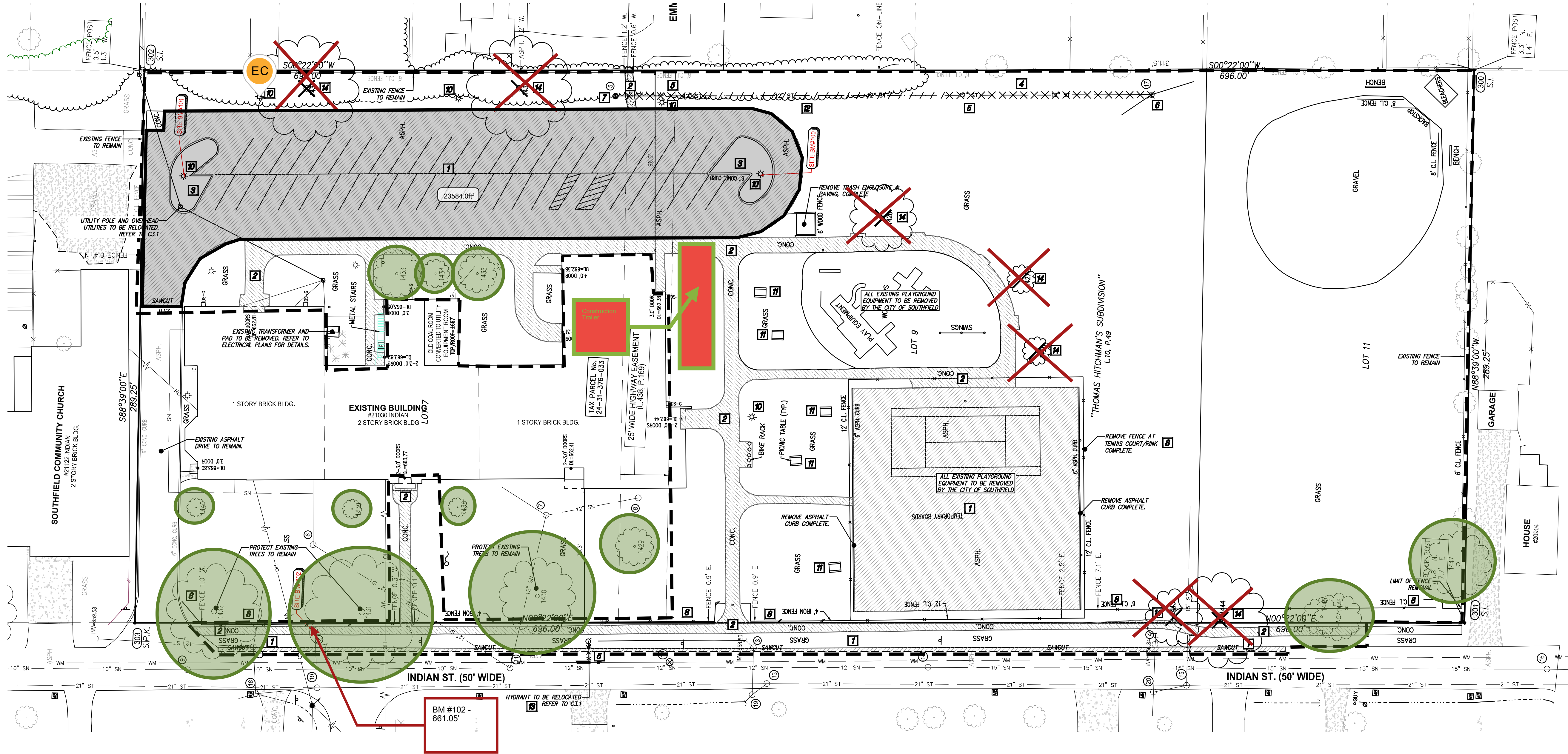
NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
2	03-22-2024	PAGE TURN
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10	12-12-2025	CITY ENG. APPROVED
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	04-13-2026	CITY ENG. REV.

VERIFY SCALES

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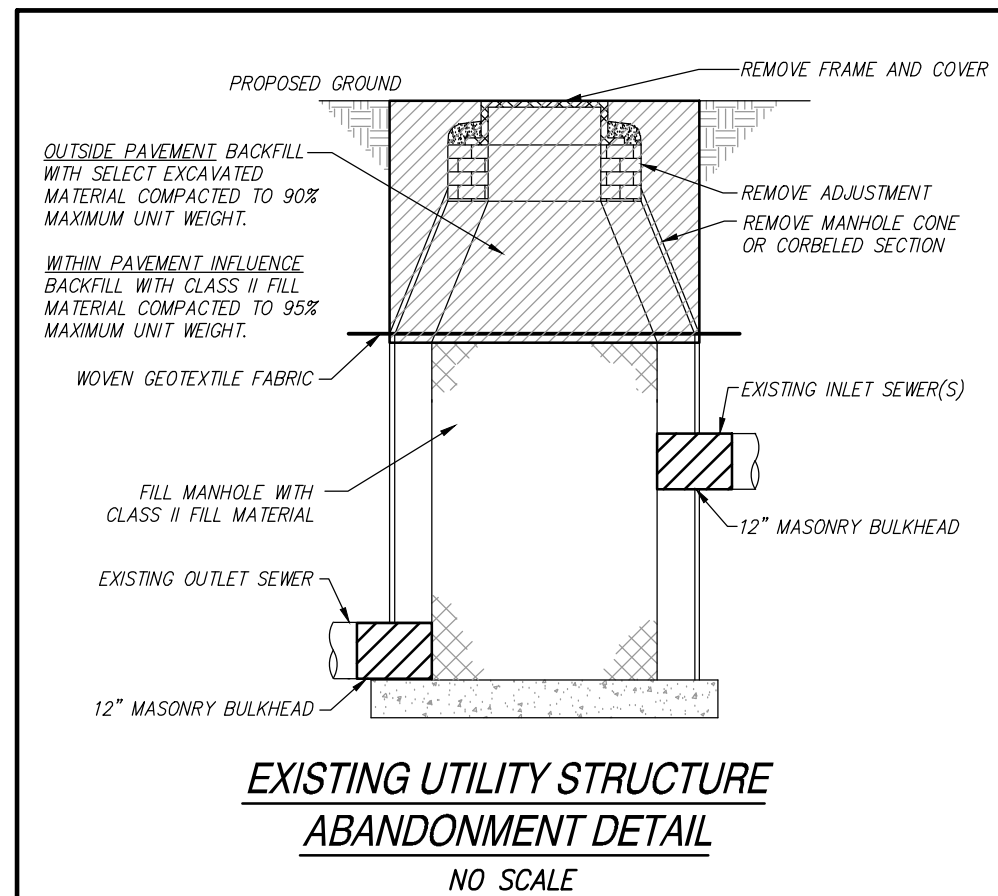
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DRAWER	DATE
DESIGNER	
J. CHRISTOPHER	24-01-26
CHECKED	
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	
DEPARTMENT MANAGER APPROVAL	DATE
JOB NO.	DRAWING NO.
NP22006	NP2006PAV
SCALE:	SHEET NO.
	C1.0



SURVEY NOTES

1. TOPOGRAPHIC AND/OR BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY, WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS MAY BE BASED ON RECORD DATA NOT MEASURED IN THE FIELD.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL INFORMATION SHOWN ON THIS SURVEY AND NOTIFYING THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL UTILIZE A PRIVATE UTILITY LOCATOR TO STAKE PUBLIC AND PRIVATE UTILITY LOCATIONS PRIOR TO START OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY, AT NO COST TO THE PROJECT, TO REPAIR OR REPLACE ANY DAMAGE CAUSED TO EXISTING UTILITY.
4. CONTRACTOR SHALL CONTACT MISS DIG (811) THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR STAKING OF UTILITIES.



DEMOLITION NOTES

1. REMOVE ASPHALT PAVEMENT TO FULL DEPTH, INCLUDING AGGREGATE BASE. SAWCUT FULL DEPTH WHERE NEW PAVEMENT WILL BE PLACED ADJACENT TO EXISTING PAVEMENT. REMOVAL LIMITS TO BE FIELD VERIFIED BY ENGINEER.
2. REMOVE CONCRETE PAVEMENT TO FULL DEPTH, INCLUDING AGGREGATE BASE. SAWCUT FULL DEPTH TO NEAREST JOINT WHERE NEW PAVEMENT WILL BE PLACED ADJACENT TO EXISTING PAVEMENT. REMOVAL LIMITS TO BE FIELD VERIFIED BY ENGINEER.
3. REMOVE CONCRETE CURB TO FULL DEPTH. SAWCUT FULL DEPTH TO NEAREST JOINT WHERE NEW CONCRETE CURB WILL BE PLACED ADJACENT TO EXISTING CONCRETE CURB. REMOVAL LIMITS TO BE FIELD VERIFIED BY ENGINEER.
4. CLEAR AND GRUB TO THE LIMITS SHOWN. INCLUDE REMOVAL OF ALL SIGNS, POSTS, FIXINGS, GRASS, BRUSH, SHRUBS, GRASS, AND TREES NOT INDICATED FOR PROTECTION, INCLUDING ROOTS. STRIP TOPSOIL AND STOCKPILE ON SITE IN DESIGNATED LOCATION.
5. REMOVE EXISTING UTILITY PIPE. BACKFILL WITH CLASS II FILL AND COMPACT TO 95% OF MAXIMUM DENSITY. INSTALL WATERTIGHT BULKHEADS AT STRUCTURES WHERE EXISTING PIPE IS TO BE REMOVED.
6. REMOVE EXISTING UTILITY STRUCTURE COMPLETE. BACKFILL WITH CLASS II FILL AND COMPACT TO 95% OF MAXIMUM DENSITY.
7. ABANDON EXISTING UTILITY STRUCTURE. REFER TO DETAIL ON THIS SHEET.
8. REMOVE AND SALVAGE EXISTING FENCE, INCLUDING ANY GATES.
9. REMOVE AND SALVAGE EXISTING FLAG POLE TO BE TURNED OVER TO OWNER. REMOVE AND DISPOSE EXISTING FOOTING.
10. REMOVE AND SALVAGE EXISTING LIGHT POST TO BE TURNED OVER TO OWNER. REMOVE AND DISPOSE OF EXISTING FOOTING.
11. REMOVE AND SALVAGE EXISTING PHONIC TABLE TO BE TURNED OVER TO THE OWNER.
12. ABANDON EXISTING UTILITY PIPE IN PLACE (CONTRACTOR TO CONFIRM NO CONFLICTS), CUT AND INSTALL WATERTIGHT CAP AT EXISTING PIPE AND INSTALL BULKHEAD AT STRUCTURES WHERE PIPE IS TO BE ABANDONED IN PLACE. FILL WITH FLOWABLE GROUT.
13. REMOVE AND SALVAGE EXISTING FIRE HYDRANT TO BE RELOCATED. REFER TO C3.1.
14. REMOVE EXISTING TREE, INCLUDE STUMP AND ROOTS.

EXISTING SIGNAGE AND MAILBOXES WITHIN THE CLEARING LIMITS ARE TO BE REMOVED AND SALVAGED. STAGE IN ON SITE LOCATION AS SPECIFIED BY OWNER.

ALL DEPRESSIONS CREATED BY DEMOLITION PROCEDURES SHALL BE BACKFILLED WITH CLASS II FILL MATERIAL, IN 8" LIFTS COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT, UP TO PROPOSED SUBGRADE.

CONTRACTOR IS RESPONSIBLE FOR DOING AN EARTHWORK CALCULATION FOR CUT AND FILL REQUIREMENTS, AND IS RESPONSIBLE FOR INCLUDING IMPORT AND EXPORT OF MATERIALS IN THEIR BID. ALL EXCESS MATERIAL (INCLUDING TOPSOIL, CLEAN FILL, AND WASTE MATERIAL) SHALL BE REMOVED FROM THE SITE.

EXISTING SUPPORTED SLABS AT BUILDING ENTRY/DOORS TO REMAIN, UNLESS OTHERWISE DIRECTED. CONTRACTOR TO VERIFY LIMITS OF EXISTING SUPPORTED SLAB AND REMOVE ADJACENT WALLS AS SHOWN ON PLANS.

CONTRACTOR TO PROTECT EXISTING WALKS, PAVEMENT, CURBS, GUTTERS, WALLS, FENCES, GATES, LANDSCAPING AND TREES TO REMAIN DURING CONSTRUCTION.

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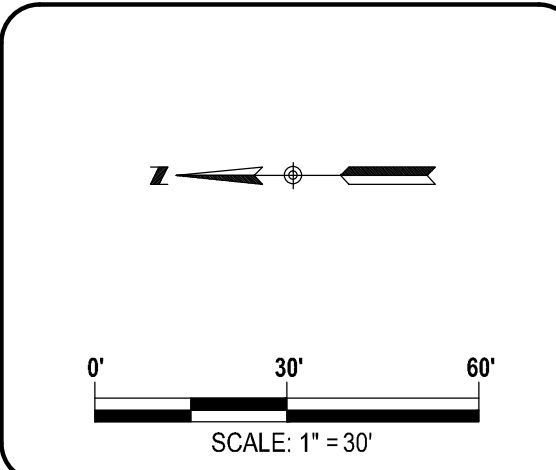
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811
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JOHN GRACE ARMS

CONSTRUCTION PLANS
Demolition Plan

SECTION 31
TOWN 01N RANGE 10E
CITY OF SOUTHFIELD
OAKLAND COUNTY

NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
2	03-23-2024	PAGE TURN
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12	04-13-2026	CITY ENG. REV.

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DESIGNER	DATE
J. CHRISTOPHER	24-01-26

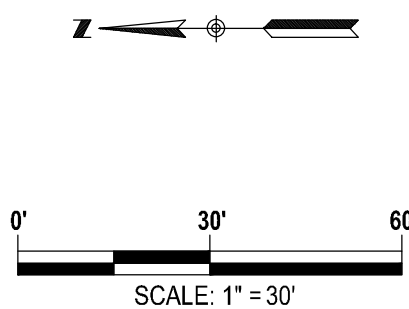
CHECKED	DATE
J. CHRISTOPHER	24-01-26

PROJECT MANAGER	BID PLAN DATE
T. SOVEL	

DEPARTMENT MANAGER APPROVAL	DATE

JOB NO.	DRAWING NO.
NP22006	NP2006PAV

SCALE:	SHEET NO.
1" = 30'	C2.1



CLIENT:

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26000 EVERGREEN ROAD
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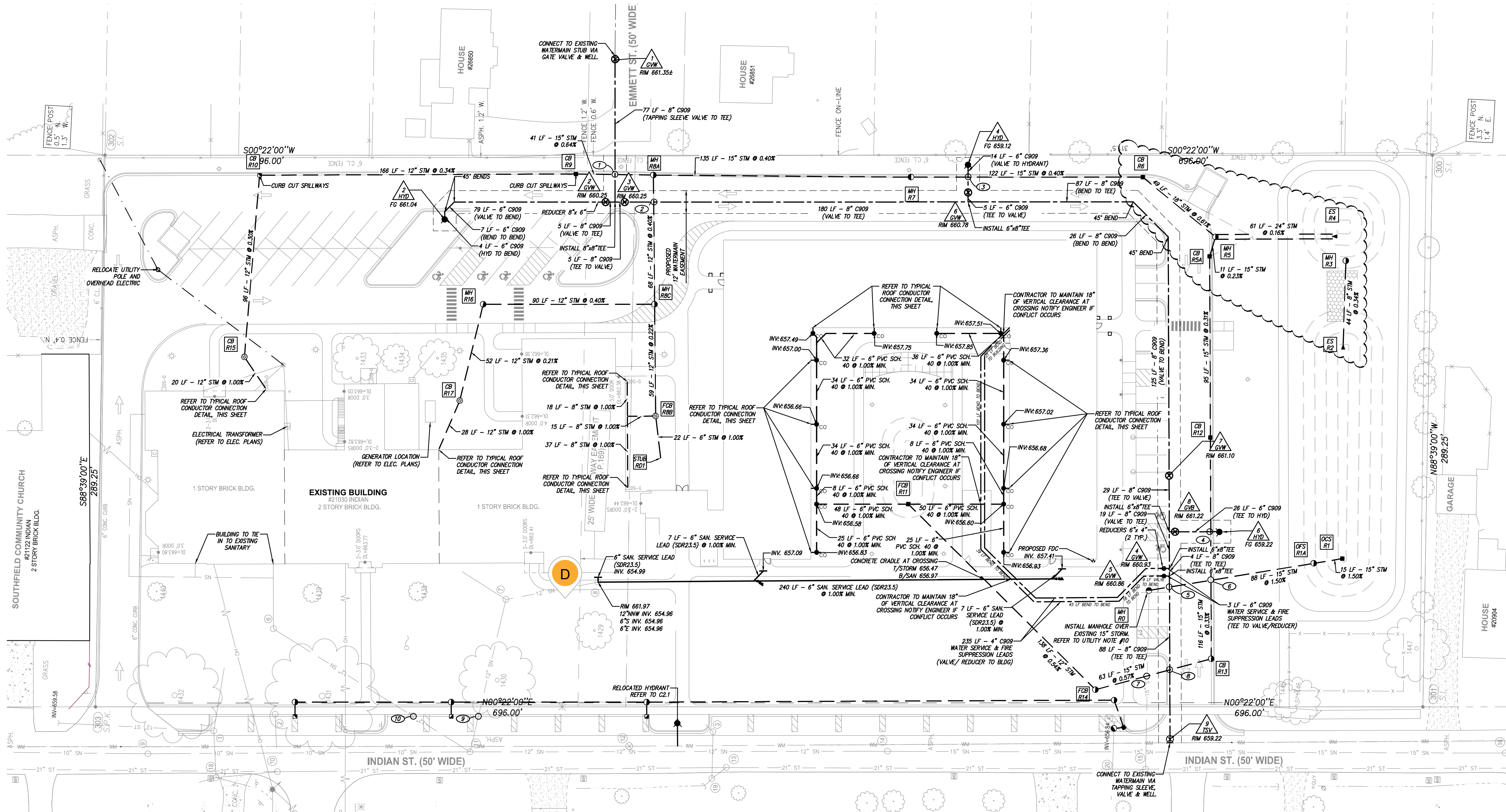
CONSTRUCTION PLANS
Utility Plan

SECTION 31
TOWN 01N RANGE 10E
CITY OF SOUTHFIELD
OAKLAND COUNTY

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12	04-13-2026	CITY ENG. REV.
13	06-23-2026	RFI 121
14	07-02-2026	RFI 115

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CHECKED	DATE
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NP22006	NP2006PAV
SCALE:	SHEET NO.
1" = 30'	C3.1



STORM STRUCTURE SCHEDULE					
STR. NO.	TYPE	RIM ELEV.	INV. SIZE	INV. DIR.	IN/OUT
R0	MH	660.86	15"	S	650.00' In
R1	OCS	655.64	15"	N	651.54' In
R1A	OFS	655.64	15"	S	651.31' In
R2	ES	654.52	8"	E	652.85' In
R3	MH	654.94	8"	W	653.00' Out
R4	ES	654.52	24"	N	653.00' In
R5	MH	660.12	16"	NE	653.50' In
			15"	W	653.10' Out
			24"	S	653.10' Out
R5A	CB	660.40	15"	W	653.90' In
			15"	E	653.80' In
R6	CB	660.10	18"	SW	653.90' In
			18"	S	653.80' Out
R7	MH	660.10	15"	N	654.39' Out
			15"	S	654.42' Out
R8A	MH	659.23	15"	N	654.96' In
			15"	S	654.96' Out
			12"	W	655.16' In
R8B	CB	661.85	6"	W	655.66' In
			12"	E	655.96' In
			8"	N	655.66' In
R8C	MH	661.02	12"	W	655.43' In
			12"	E	655.43' In
			12"	N	655.22' Out
R9	CB	660.15	12"	N	655.88' Out
			12"	S	655.98' Out
R10	CB	659.31	12"	S	656.00' Out
			12"	W	656.00' Out
R11	FCB	659.50	12"	SW	656.00' In
			6"	N	656.10' In
			6"	S	656.10' In
R12	CB	660.10	15"	E	654.20' In
			15"	W	654.30' In
R13	CB	659.45	15"	E	654.69' In
			15"	NE	655.25' In
R14	FCB	659.96	15"	S	655.15' In
			12"	NE	655.25' In
R15	CB	662.16	12"	SW	656.36' In
			12"	S	656.26' Out
R16	MH	661.28	12"	W	655.79' In
			12"	S	655.79' Out
R17	CB	662.45	12"	W	655.90' In
			12"	E	655.90' Out

CITY OF SOUTHFIELD STANDARD NOTES

- NOTIFY THE CITY OF SOUTHFIELD ENGINEERING DIVISION (248) 796-4810 A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF SOUTHFIELD.
- UTILITIES MUST BE LOCATED UNDERGROUND.
- CALL MISS DIG (1-800-482-7171 / 811) A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON-SITE.
- ALL EXCAVATION UNDER OR WITHIN THREE FEET (3') OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (CLASS II MOTT).
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
- PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT, ENGINEERING SITE INSPECTION IS REQUIRED.

UTILITY NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF SOUTHFIELD.
- STORM SEWER 12" AND LARGER SHALL BE C78 CL IV (PREMIUM), UNLESS OTHERWISE NOTED ON THE PLAN.
- STORM SEWER 6" AND SMALLER SHALL BE PVC SDR 23.5. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26.
- ALL UTILITY TRENCHES THAT FALL WITHIN A 1'-ON-1' INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 98% OF MAXIMUM DENSITY.
- ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
- ALL UTILITIES SHALL BE PLACED AT LEAST 10' FROM OTHER UTILITIES, SIGNIFICANT TREES, AND FIXED STRUCTURES.
- UNLESS OTHERWISE NOTED, ALL STORM SEWER STRUCTURES SHALL BE 4' DIAMETER (INLETS SHALL BE 2' DIAMETER). CONTRACTOR IS RESPONSIBLE FOR VERIFYING STRUCTURES SIZES IN RELATION TO PIPE SIZES AND ANGLES AND PROVIDING THEIR BID ACCORDINGLY. UNLESS OTHERWISE INDICATED ON THE STANDARD DETAIL SHEETS CASTINGS SHALL BE:
PWT: CATCH BASINS - EJM 1040 - "02"
YARD CATCH BASINS - EJM 1040 - "02"
MANHOLES - EJM 1040 - "A"
- PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET 04.3.
- FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL FOR BASIN STAKING RELATIVE TO THE CURB.
- CONTRACTOR TO VERIFY CONDITION OF EXISTING PIPE AND REPLACE IF NECESSARY. PASSAGE OF EXISTING UPSTREAM FLOW TO BE MAINTAINED.
- ALL DUCTILE IRON PIPES AND FITTINGS MUST BE WRAPPED IN POLYETHYLENE.
- NO ROOF DRAINS (EXISTING OR PROPOSED) MAY BE CONNECTED TO THE SANITARY SYSTEM. CONTRACTOR TO CONFIRM CONNECTION POINT OF EXISTING ROOF DRAIN AND RE-ROUTE IF NECESSARY.

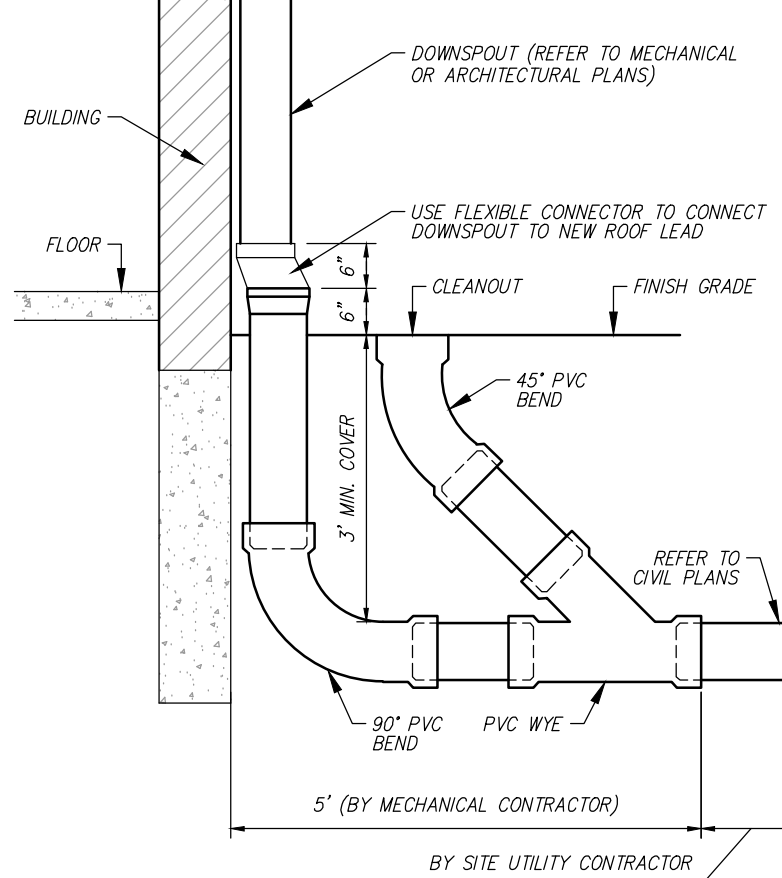
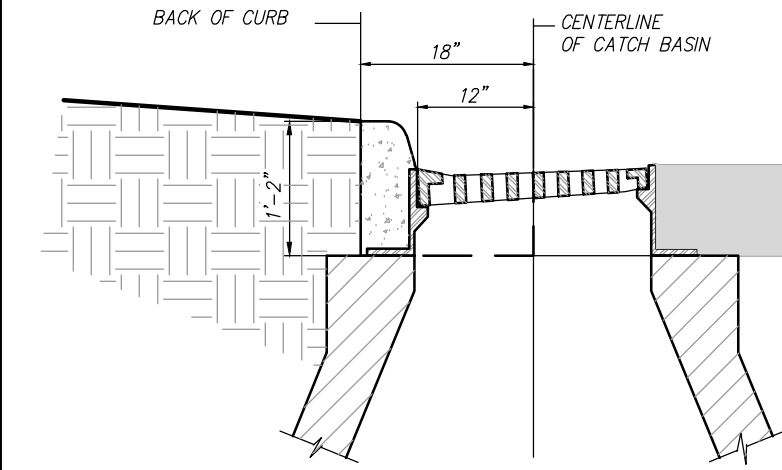
LEGEND

--- PROPOSED WATERMAIN	● PROPOSED SAN MANHOLE (SAN)
--- PROPOSED SANITARY	● PROPOSED STORM MANHOLE (MH)
--- PROPOSED STORM SEWER	■ PROPOSED CATCH BASIN (CB)
--- PROPOSED GAS MAIN	■ PROPOSED INLET (IN)
--- PROPOSED ELECTRIC	■ PROPOSED END SECTION (ES)
● PROPOSED HYDRANT	■ PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
● PROPOSED GATE VALVE & WELL (GVW)	② UTILITY CROSSING (SEE DATA TABLE)
● PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)	CB - STRUCT. TYPE
■ STANDARD BITUMINOUS PAVEMENT	2 - STRUCT. NO.
■ HEAVY-DUTY BITUMINOUS PAVEMENT	
■ DEEP-STRENGTH BITUMINOUS PAVEMENT	
■ CONCRETE PAVEMENT	
■ CONCRETE SIDEWALK	
■ MILL PAVEMENT	
	20 - STRUCT. NO.
	XXX - STRUCT. TYPE

PUBLIC WATERMAIN QUANTITY TABLE

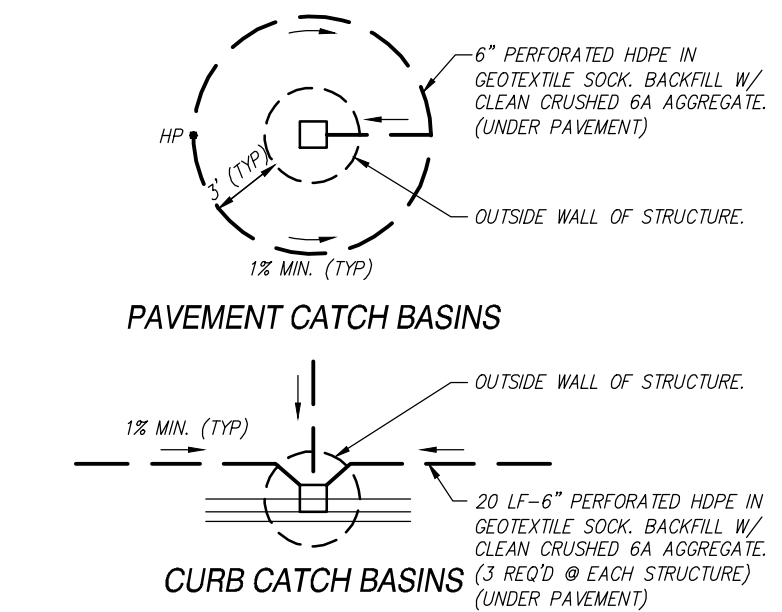
8" C909 PVC	640 LF
6" C909 PVC	246 LF
8" 45 DEG. BENDS	4 EA
8"x8"x6" TEE	4 EA
8"x8"x8" TEE	1 EA
6" GATE VALVE	5 EA
6" GATE VALVE	2 EA
HYDRANT ASSEMBLY	3 EA
REDUCERS 4"x4"	2 EA
REDUCERS 8"x6"	1 EA

CURB DRAINAGE STRUCTURE LOCATION
NO SCALE

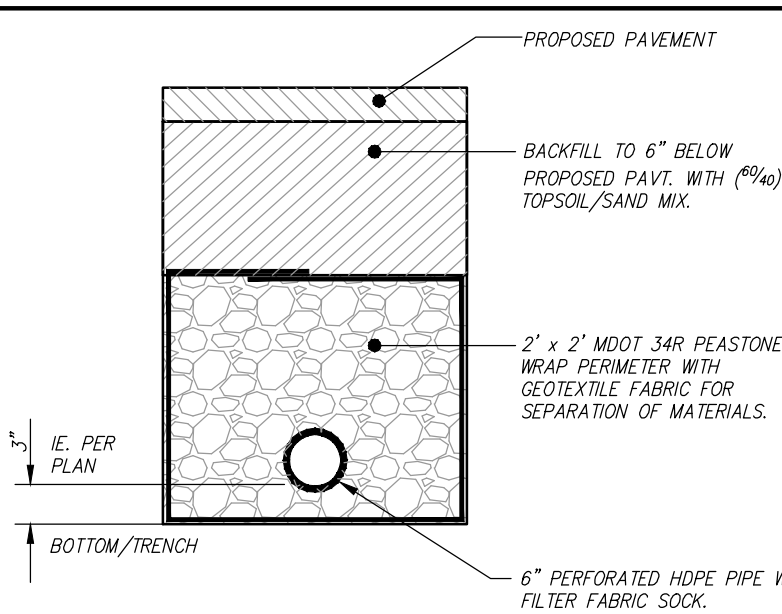


- NOTES:**
- ALL DOWNSPOUT LEADS TO BE AT 1.00% (UNLESS NOTED OTHERWISE)
 - EXTEND ALL DOWNSPOUTS LEADS TO 12" ABOVE GRADE & STUB FOR DOWNSPOUT CONNECTION (CONFIRM EXACT LOCATION WITH ARCHITECTURE PLANS)
 - ALL INVERT ELEVATIONS SHOWN FOR BUILDING ROOF LEADS ARE AT 1' FROM THE LOCATION OF THE DOWNSPOUT. THE SITE CONTRACTOR IS REQUIRED TO EXTEND THE LEADS TO THE DOWNSPOUT LOCATION AND STUB THE LEAD AT 12" ABOVE PROPOSED GROUND. THE MECHANICAL CONTRACTOR WILL MAKE THE FINAL CONNECTION WITH THE APPROPRIATE FITTINGS. COORDINATE EXACT DOWNSPOUT LOCATION WITH ARCHITECTURE PLANS
 - CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTING PROPOSED UTILITIES. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS.

TYPICAL ROOF CONDUCTOR CONNECTION
NOT TO SCALE



STRUCTURE UNDERDRAIN DETAIL
NO SCALE



EDGE DRAIN DETAIL
NO SCALE

Water Main Basis of Design

REU Calculation

Factor	Units	Equivalent Units (R.E.U.)
0.6	60	36
REU/Unit		
Total =		36

Total Population

3.5 people per units X R.E.U. = 126.0 people

Average Flow

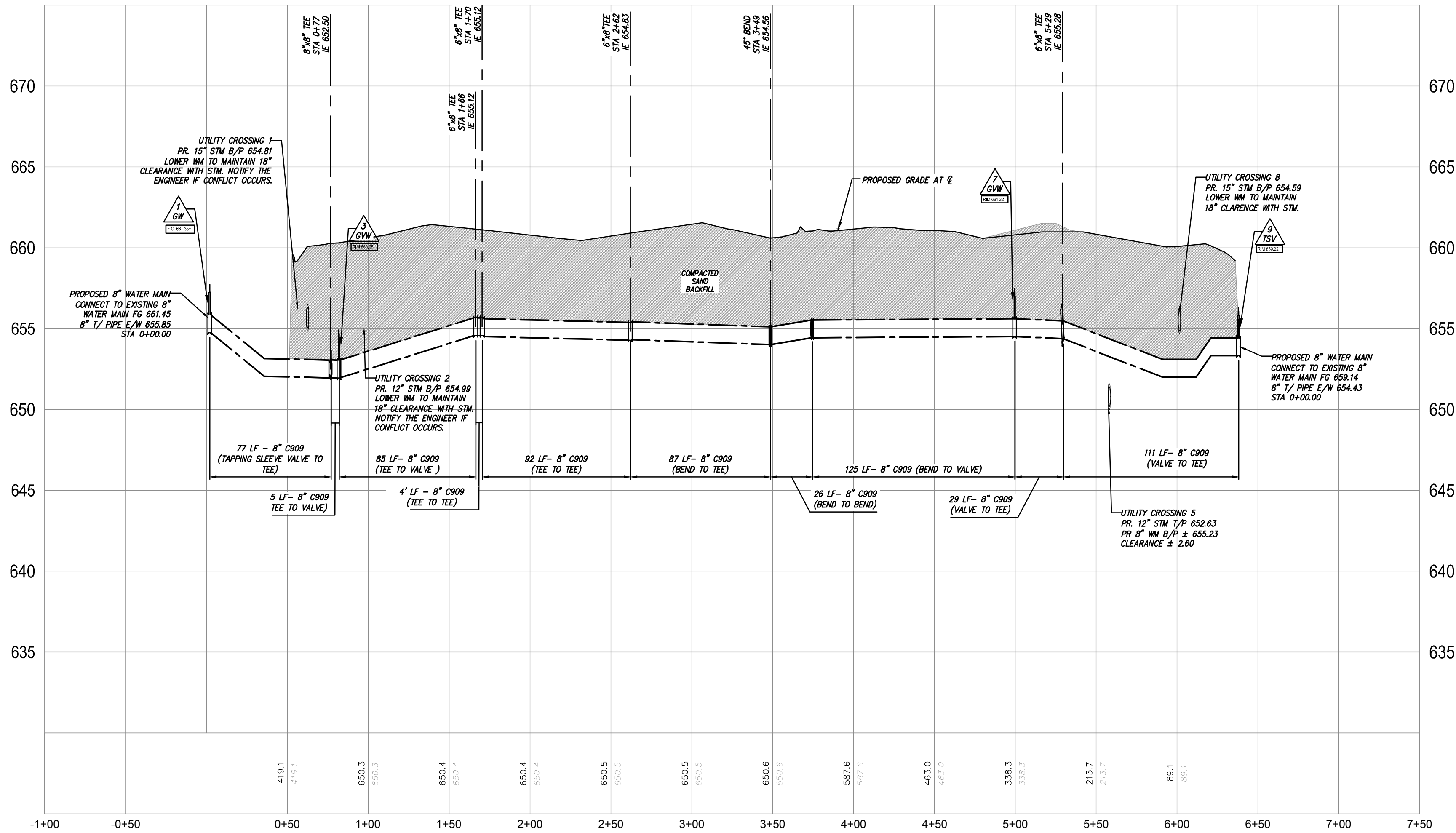
126.0 people X 100 GCPD = 12,600 gal/day = 0.01260 mgd
12,600 gal/day x 1day/86400 sec x 1cfs/7.48 gal = 0.0195 cfs

Peak Factor

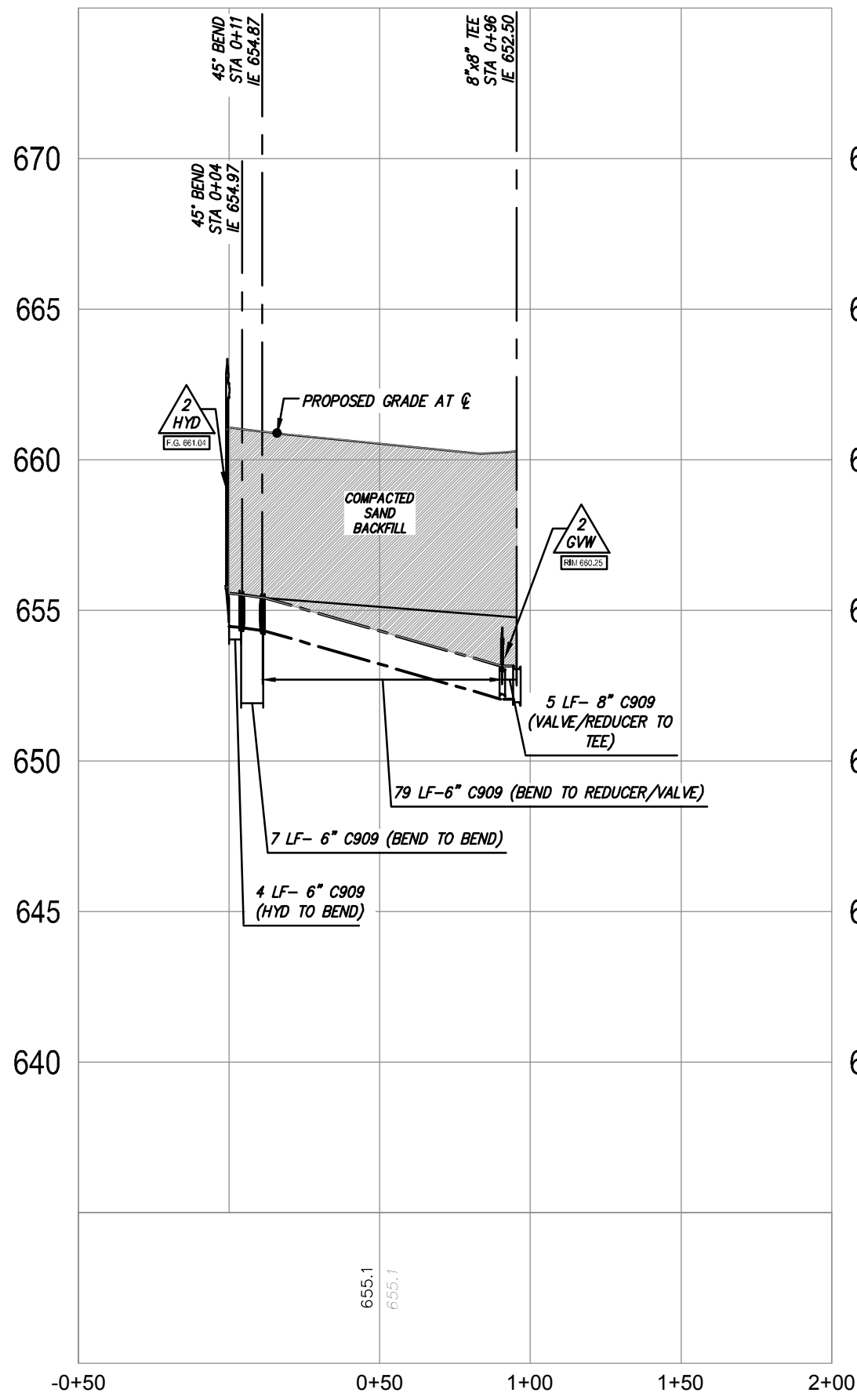
$Q = (18 + \sqrt{Q(p/1000)}) / (4 + \sqrt{Q(p/1000)}) = 4.2147$ (Ten States Standards)

Peak Flow

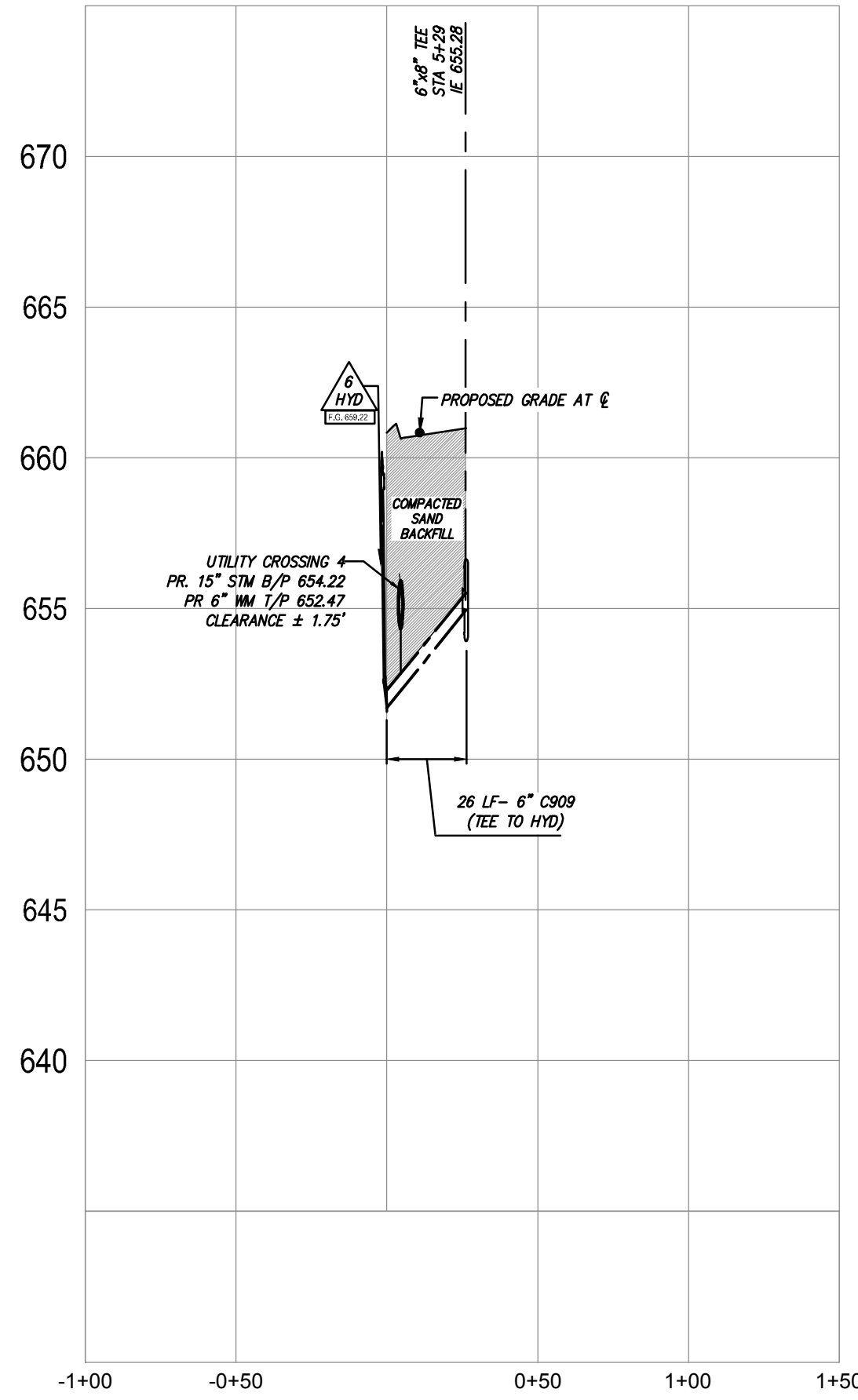
4.2147 x ave gal/day = 53,105 gal/day = 0.05311 mgd
53,105 gal/day x 1day/86400 sec x 1cfs/7.48 gal = 0.0822 cfs



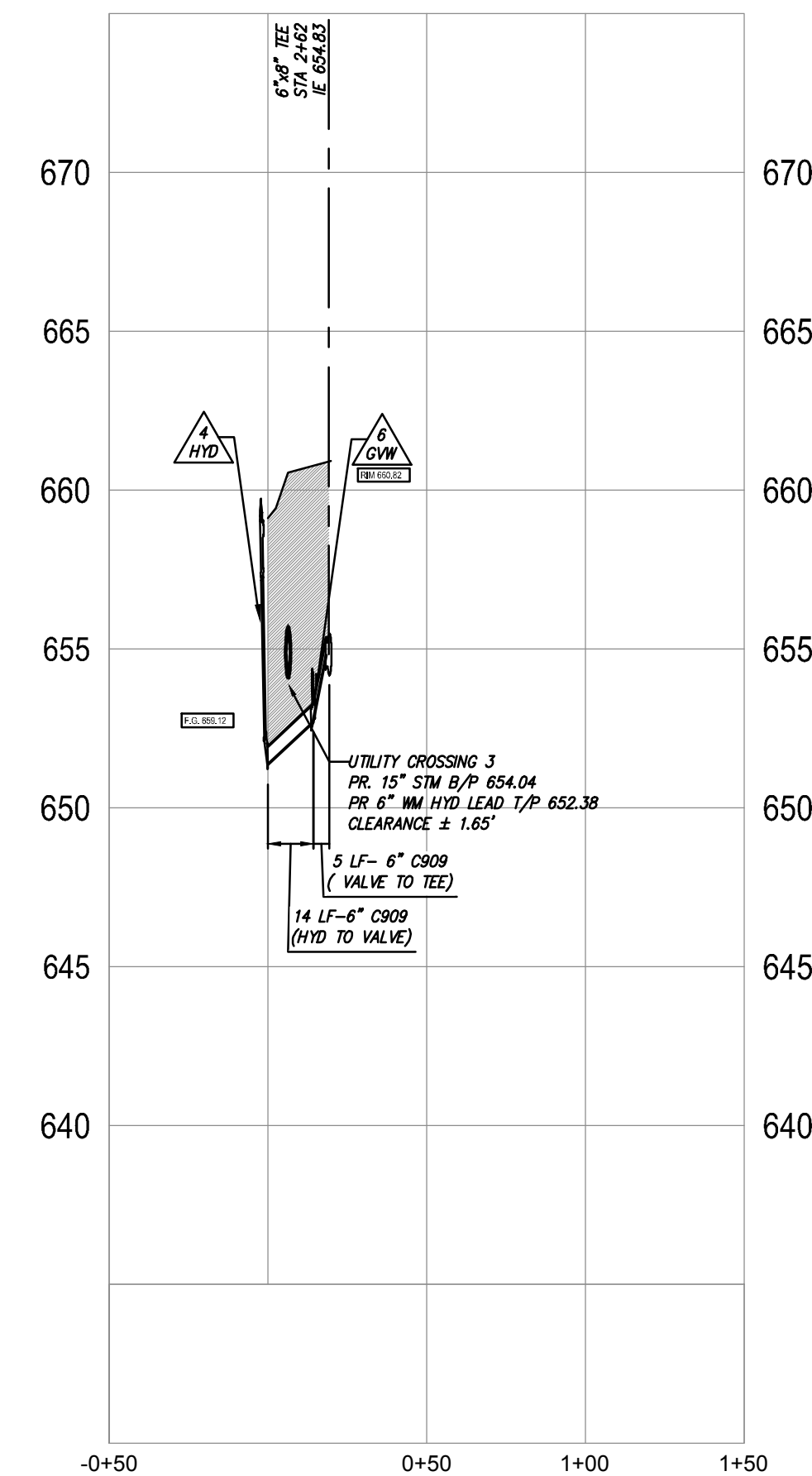
WATER MAIN PROFILES



NORTH PROPOSED HYDRANT - 2 LEAD



SOUTH PROPOSED HYDRANT - 6 LEAD



EAST PROPOSED HYDRANT - 4 LEAD



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CONSTRUCTION PLANS
Watermain Profiles

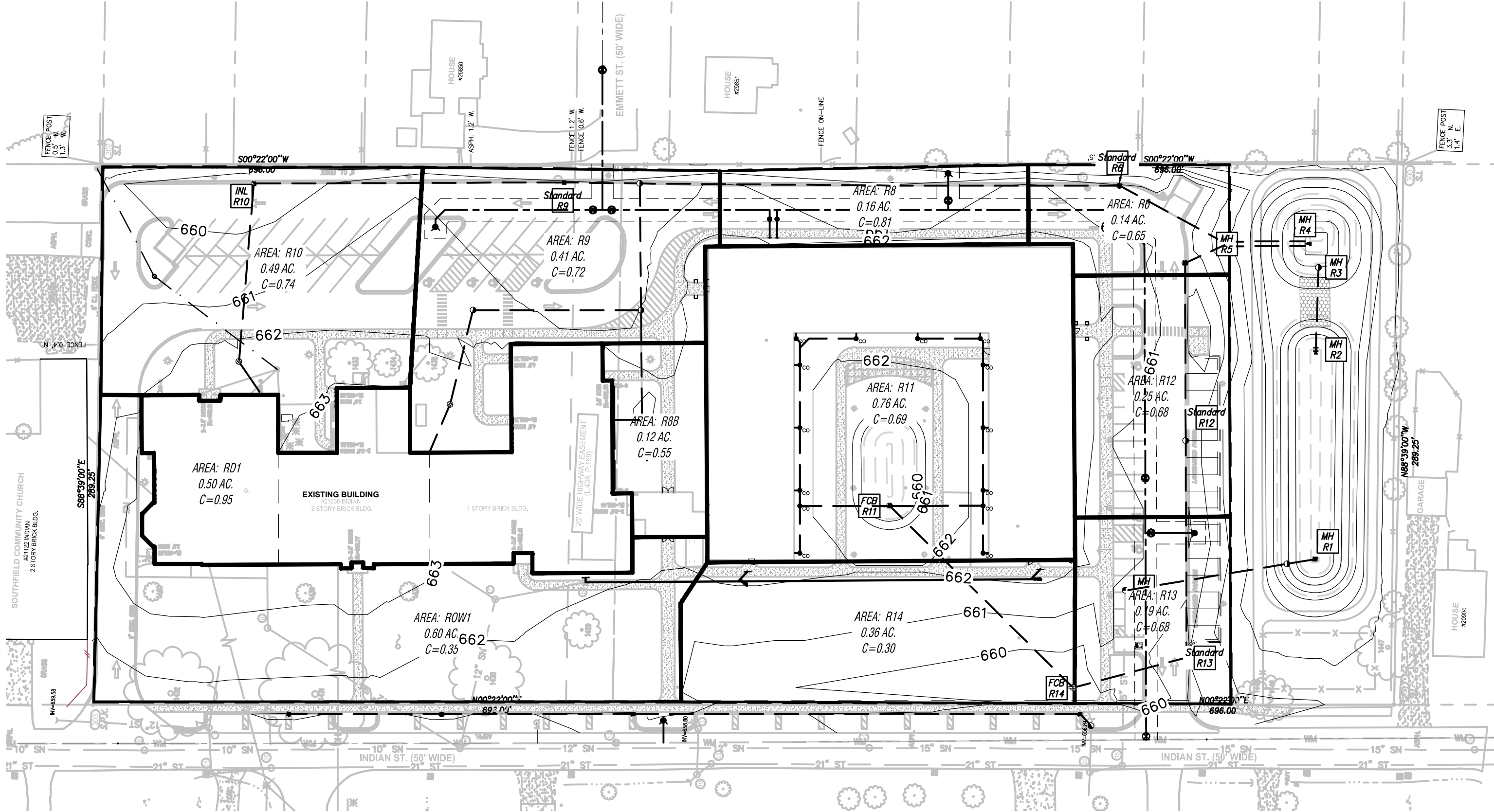
SECTION	31
TOWN	01N
RANGE	10E
CITY OF SOUTHFIELD	
OAKLAND COUNTY	

NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
2	03-23-2024	PAGE TURN
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9	11-19-2025	CITY ENG. REV.
10	12-12-2025	CITY ENG. APPROVED
11	03-02-2026	EGLE ENG. REV.
	04-13-2026	CITY ENG. REV.

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWN	DATE
J. CHRISTOPHER	24-01-26
CHECKED	DATE
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	
DEPARTMENT MANAGER APPROVAL	DATE

JOB NO.	DRAWING NO.
NP22006	NP2006PAV
SCALE: H:1"= 50'	SHEET NO. C3.3
V:1"=5'	



STRUCTURE		A	C	EQUIV.	TOTAL	T	I	Q	CAPACITY	DIAM.	LENGTH	SLOPE	MIN HG	HG	VELOCITY	TIME	H.G.L. ELEV.		GROUND ELEV.		INVERT ELEV.	
UP	DOWN	DRAINAGE	RUNOFF	AREA	AREA	TIME	INTENSITY	FLOW	OF	OF	OF	OF	BASED	(%)	(FT / SEC)	OF	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
STREAM	STREAM	AREA	COEF.	100%	100%	(MIN.)	(IN / HR)	(C.F.S.)	PIPE	PIPE	PIPE	PIPE	ON "Q"	(%)		(MIN.)		END	END	END	END	
		(ACRES)		(C x A)	(SUM C x A)			(C x I x A)	(C.F.S.)	(IN.)	(FT.)	(%)										
ON-SITE DESIGN																						
R10	R9	0.49	0.74	0.36	0.36	10.00	5.00	1.82	2.25	12	166	0.40	0.26	0.40	2.9	1.00	657.19	656.52	659.25	659.01	655.98	655.32
R9	R8A	0.41	0.72	0.30	0.66	11.00	4.86	3.21	4.09	15	41	0.40	0.25	0.40	3.3	0.20	656.52	656.36	659.01	659.40	655.12	654.96
R8A	R8	0.00	0.00	0.00	0.73	11.20	4.83	3.51	4.09	15	135	0.40	0.29	0.40	3.3	0.70	656.36	655.82	659.40	659.08	654.96	654.42
R8	R7	0.16	0.81	0.13	0.85	11.90	4.74	4.05	4.09	15	9	0.40	0.39	0.40	3.3	0.00	655.82	655.78	659.08	660.10	654.42	654.38
R7	R6	0.00	0.00	0.00	0.85	11.90	4.74	4.05	4.09	15	122	0.40	0.39	0.40	3.3	0.60	655.78	655.30	660.10	660.10	654.38	653.90
R6	R5	0.14	0.65	0.09	0.94	12.50	4.67	4.40	5.75	18	65	0.30	0.18	0.30	3.3	0.30	655.30	655.10	660.10	658.23	653.70	653.50
R5	R4	0.00	0.00	0.00	1.88	12.80	4.63	8.71	11.08	24	42	0.24	0.15	0.24	3.5	0.20	655.10	655.00	658.23	654.52	653.10	653.00
R11	R14	0.76	0.69	0.53	0.53	10.00	5.00	2.63	2.31	12	138	0.42	0.55	0.42	2.9	0.80	657.18	656.43	659.53	658.96	655.83	655.25
R14	R13	0.36	0.30	0.11	0.64	10.80	4.89	3.11	4.19	15	63	0.42	0.23	0.42	3.4	0.30	656.43	656.16	658.96	659.45	655.05	654.79
R13	R12	0.19	0.68	0.13	0.77	11.10	4.85	3.72	4.19	15	116	0.42	0.33	0.42	3.4	0.60	656.16	655.67	659.45	660.10	654.79	654.30
R12	R5A	0.25	0.68	0.17	0.94	11.70	4.77	4.47	4.19	15	95	0.42	0.48	0.42	3.4	0.50	655.67	655.22	660.10	660.40	654.30	653.90
R5A	R5	0.00	0.00	0.00	0.94	12.20	4.70	4.47	4.19	15	25	0.42	0.48	0.42	3.4	0.10	655.22	655.10	660.40	658.23	653.90	653.80
R8B	R8A	0.12	0.55	0.06	0.06	10.00	5.00	0.32	2.31	12	133	0.42	0.01	0.42	2.9	0.80	656.92	656.36	662.20	659.40	655.71	655.16
R1	R0	0.00	0.00	0.00	0.00	10.00	5.00	6.88	7.91	15	103	1.50	1.13	1.50	6.5	0.30	652.79	651.25	655.00	660.85	651.54	650.00

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CONSTRUCTION PLANS
Drainage Area Map

SECTION 31

TOWN 01N RANGE 10E

CITY OF SOUTHFIELD

OAKLAND COUNTY

NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWN	DATE
-	-
DESIGNER	DATE
J. CHRISTOPHER	24-01-26
CHECKED	DATE
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	
DEPARTMENT MANAGER APPROVAL	DATE
JOB NO.	DRAWING NO.
NP22006	NP2006PAV
SCALE:	SHEET NO.
1" = 50'	C4,1

Plotted: Apr 13, 2026, 12:30 PM by user: 1111 -- Saved: 4/9/2026 by user: 1111
N:\NP\NLD Projects\NP22006 - Grace School - Senior Housing\DWG\NP22006DAM.dwg

Post-Development (Proposed Conditions) Runoff Coefficient Calculator (Area Weighted)			
	Area (acres)	Runoff Coefficient ("C")	Area X C
CATCHMENTS			
RD1	0.50	0.95	0.475
R8	0.49	0.74	0.3626
R7	0.41	0.72	0.2952
R9	0.16	0.74	0.1184
COURTYARD			
RD2	0.28	0.51	0.1428
R5	0.49	0.95	0.4655
R4 & R3	0.14	0.64	0.0896
ROW2	0.44	0.95	0.418
ROW1	0.36	0.3	0.108
	0.72	0.35	0.252
Subtotals	3.99	N/A	2.7271
Post Development Contributing Area (Acres) = A =			3.99
Post-Development Runoff Coefficient (Area Weighted) = C =			0.68

POST DEVELOPMENT C-FACTOR CALCULATION

EQ. 9 CHANNEL PROTECTION VOLUME CONTROL REQUIRED = 3630 x 1.30 x C x A			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Post-development Runoff Coefficient =	C =	0.68	Dimensionless
Required Channel Protection Volume =	V _{CP-R} =	12,869	CFT

CHANNEL PROTECTION VOLUME CONTROL

EQ. 19 SEDIMENT FOREBAY VOLUME = V _F = 0.15V _{WQ} = 545 x C x A			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Post-development Runoff Coefficient =	C =	0.68	Dimensionless
Required Water Quality Volume =	V _{WQ} =	9,163	CFT
Volume of Sediment Forebay =	V _F =	1,374	CFT

SEDIMENT FOREBAY VOLUME

EQ. 21 CHANNEL PROTECTION RATE CONTROL: EXTENDED DETENTION - 6,897 x C x A			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Post-development Runoff Coefficient =	C =	0.68	Dimensionless
Required Extended Detention Volume =	V _{ED} =	18,809	CFT

CHANNEL PROTECTION RATE CONTROL: EXTENDED DETENTION

EQ. 24: Q _{100IN} = C x I ₁₀₀ x A			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Post-development Runoff Coefficient =	C =	0.68	Dimensionless
Peak Rainfall Intensity (100 year event) =	I _{100Peak} =	6.31	in/hr
100-year post-development peak inflow rate	Q _{100IN} =	17.21	CFS
EQ. 25: RAINFALL INTENSITY (in/hr) = $I_{100Peak} = \frac{83.3}{(T_c + 9.17)^{0.81}}$			
Term	Variable	Value	Unit
Time of Concentration =	T _C =	15.00	Minutes
Peak Rainfall Intensity (100 year event) =	I _{100Peak} =	6.31	in/hr
EQ. 26: Q _{RR} = 1.1055 - 0.206 ln(A)			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Allowable release rate =	*Q _{RR} =	0.82	CFS/Acre
* = The Variable release rate (cfs/acre) is capped at 1.0 cfs/acre for developments 2 acres or less. For all developments equal to or greater than 100 acres, the variable release rate is 0.15 cfs/acre.			
Q _{100P} = Q _{RR} x A			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Allowable release rate =	*Q _{RR} =	0.82	CFS/Acre
Allowable 100-year post development peak flow rate =	Q _{100P} =	3.27	CFS
* = The Variable release rate (cfs/acre) is capped at 1.0 cfs/acre for developments 2 acres or less. For all developments equal to or greater than 100 acres, the variable release rate is 0.15 cfs/acre.			
EQ. 27: R = [0.206 - 0.15*LN(Q _{100P} /Q _{100IN})]			
Term	Variable	Value	Unit
Allowable 100-year post development peak flow rate =	Q _{100P} =	3.27	CFS
100-year post-development peak inflow rate	Q _{100IN} =	17.21	CFS
Storage Curve Factor =	R =	0.45	Dimensionless
EQ. 28: V _{100P} = 18,985 x C x A			
Term	Variable	Value	Unit
Contributing Area =	A =	3.99	Acres
Post-development Runoff Coefficient =	C =	0.68	Dimensionless
Post-development 100-year runoff volume =	V _{100P} =	51,774	CFT
EQ. 29 REQUIRED 100-YEAR DETENTION VOLUME = V _{100D} = (V _{100P} x R) - V _{CP-P}			
Term	Variable	Value	Unit
Post-development 100-year runoff volume =	V _{100P} =	51,774	CFT
Storage Curve Factor =	R =	0.45	Dimensionless
Provided CPVC volume =	V _{CP-P} =	4500.00	CFT
Required 100-yr detention volume =	V _{100D} =	19,056	CFT
Key Rule Check: Adjusted 100-year detention volume (V _{100D}) is ≥ the Extended Detention Volume (V _{ED}) =			
			PASS

100-YEAR FLOOD CONTROL

EQ. III-29: ORIFICE SIZING - EXTENDED DETENTION = Q _{h-AVG-ED} = C _O x A _O x SQRT(2 x g x h)			
Term	Variable	Value	Unit
Orifice diameter =	O _{ED-DIA} =	1.00	IN
Number of orifices at same elevation =	O _{ED-No} =	3.00	Dimensionless
Total head at V _{ED} water level =	h =	2.40	FT
Area of single orifice =	A _O =	0.0055	FT ²
Orifice coefficient =	C _O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S ²
Avg. outflow rate (Via V _{ED} orifice(s) W/ V _{ED} Event) =	Q _{P-AVG-ED} =	0.089	CFS
Extended Detention Volume =	V _{ED} =	18,809	CFT
Drain Time for V _{ED} =	T _{ED-D} =	58.6	HR
Key Rule Check: Extended Detention Volume (V _{ED}) must drain in no less than 48 hours			
Total head at V _{100D} water level =	h =	2.00	FT
Max outflow rate (Via V _{ED} orifice(s) w/ V _{100D} Event) =	Q _{P-MAX-ED} =	0.081	CFS

ORIFICE SIZING - MAX 100-YEAR OUTFLOW RATE = Q _P = C _O x A _O x SQRT(2 x g x h)			
Term	Variable	Value	Unit
Orifice diameter =	O _{ED-DIA} =	2.00	IN
Number of orifices at same elevation =	O _{ED-No} =	15.00	Dimensionless
Total head at V _{100D} water level =	h =	2.64	FT
Area of single orifice =	A _O =	0.0218	FT ²
Orifice coefficient =	C _O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S ²
Max outflow rate (thru 100-year orifice(s)) =	Q _{P-MAX-100} =	2.65	CFS

MAX COMBINED OUTFLOW RATE [VED Orifice(s) & V100D Orifice(s)]			
Max outflow rate (Via V _{ED} orifice(s) w/ V _{100D} Event) =	Q _{P-MAX-ED} =	0.081	CFS
Max outflow rate (thru 100-year orifice(s)) =	Q _{P-MAX-100} =	2.65	CFS
Allowable 100-year post development peak	Q _{100P} =	3.27	CFS
Provided 100-year post-dev peak release rate =	Q _{100-Design} =	2.727	CFS
Key Rule Check: Allowable 100-year peak flow rate must be ≥ the Provided 100-year peak release rate			
			PASS

ORIFICE SIZING CALCULATIONS

Equation 10: Average Infiltration Area = A _i = (A ₁ + A ₂)/2		
Bottom of Basin Area =		0 sq ft
Storage Elevation Area =		8,503 sq ft
A _i = (8503+0)/2 =		4251.5 sq ft

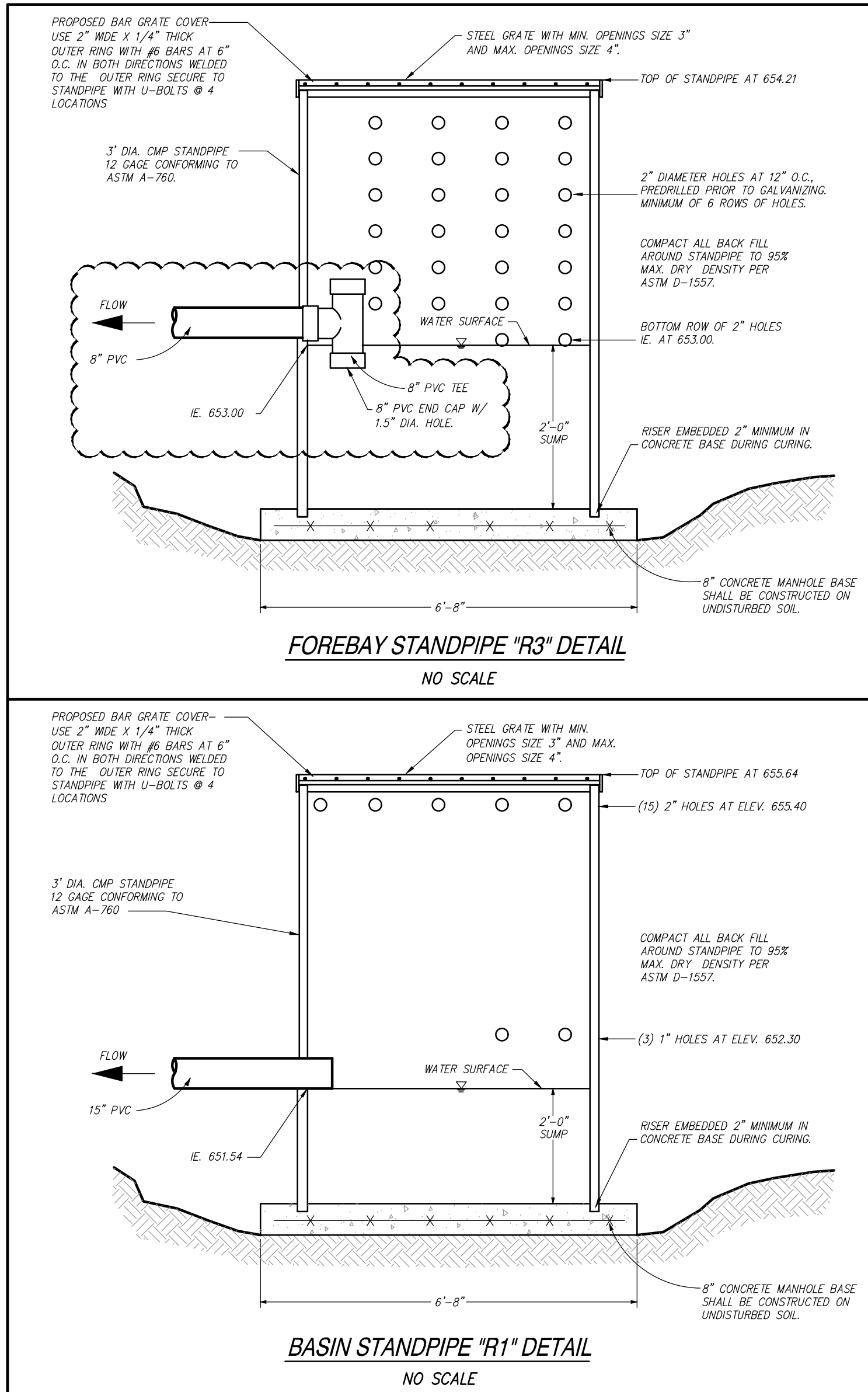
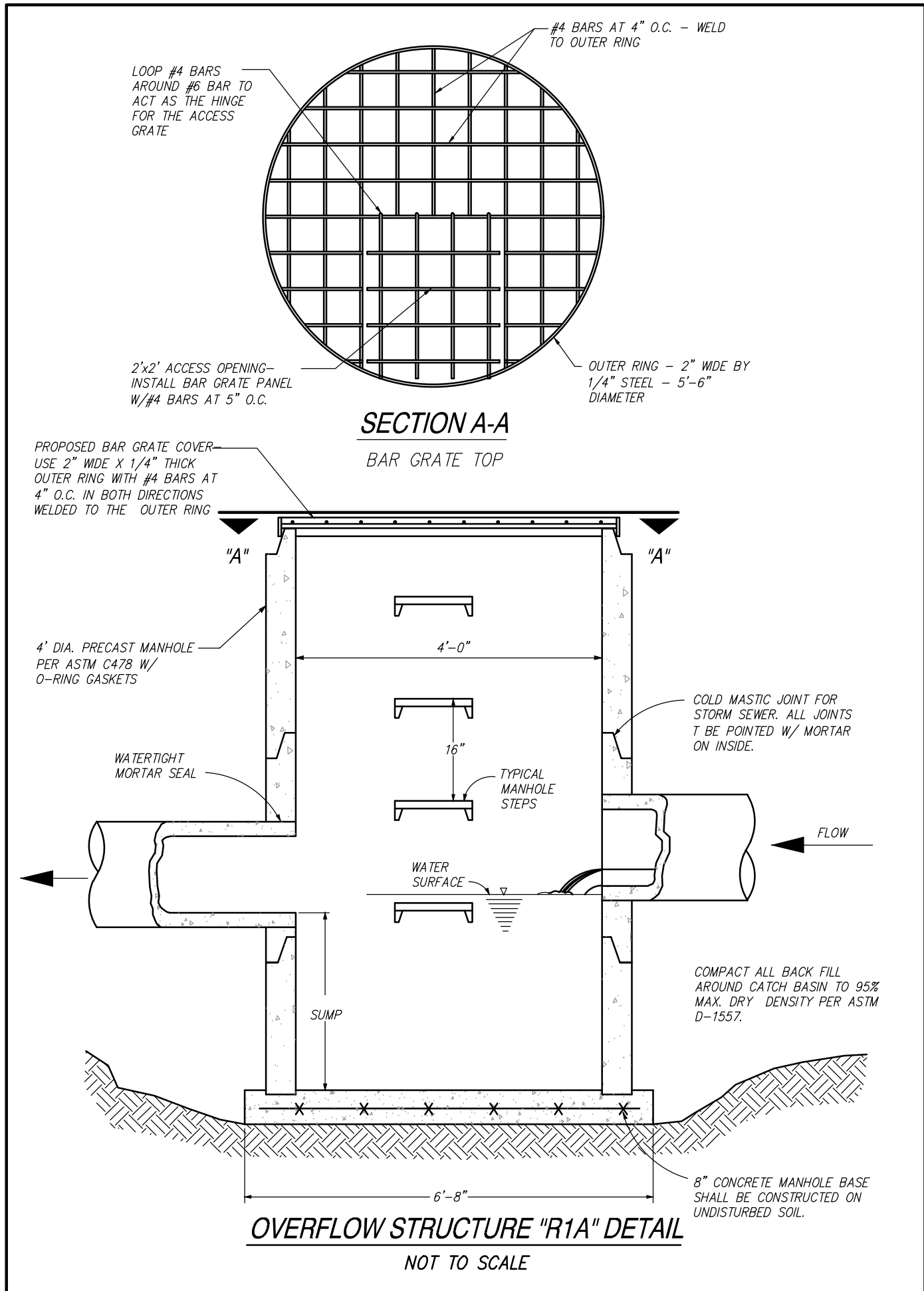
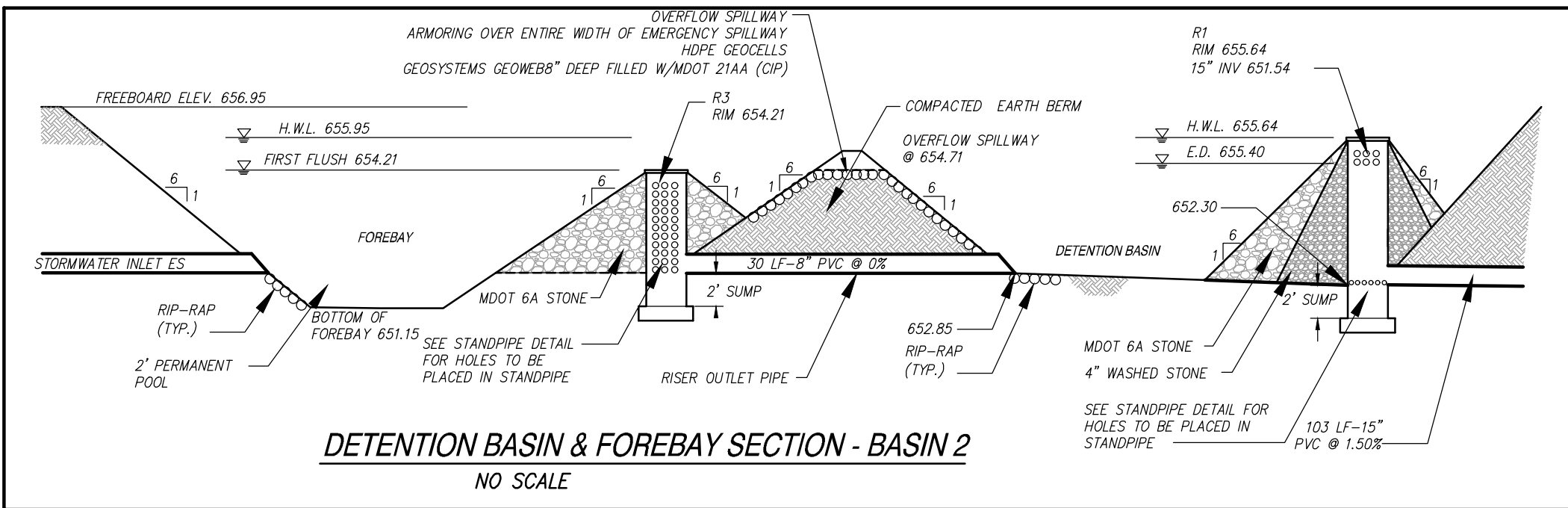
Equation 13: Infiltration Volume During 6 Hour Period		
V _i = (K _{sat} x S _y x 6 x A _i)/12		
K _{sat} =		25.67 in/hr
S _y =		1.00
A _i =		4251.5 sq ft
V _i =		54568 cu ft

INFILTRATION CALCULATIONS

Detention			
Elevation	Area	Incram. Vol	Cum. Vol.
653.00	2,656 sf	00 cf	00 cf
654.00	3,852 sf	3,254 cf	3,254 cf
655.00	5,149 sf	7,805 cf	11,059 cf
656.00	10,390 sf	19,569 cf	30,628 cf
657.00	12,965 sf	25,226 cf	55,854 cf
658.00	15,661 sf	14,313 cf	70,167 cf
	Storage Elev.		655.64
	Extended Detention		655.40

Forebay			
Elevation	Area	Incram. Vol	Cum. Vol.
653.00	534 sf	00 cf	00 cf
654.00	1,150 sf	842 cf	842 cf
655.00	1,994 sf	2,528 cf	3,370 cf
656.00	1,538 sf	2,688 cf	6,058 cf
657.00	2,488 sf	2,013 cf	8,071 cf
	Storage Elevation		654.21

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CONSTRUCTION PLANS
Detention Calculations

SECTION	31
TOWN	01N
RANGE	10E
CITY OF SOUTHFIELD	
OAKLAND COUNTY	

NO.	DATE	REVISION
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9	11-19-2025	CITY ENG. REV.
10	12-12-2025	CITY ENG. APPROVED
11	03-02-2026	EGL E. REV.
11	04-13-2026	CITY ENG. REV.
12	06-23-2026	RFI 121
13	07-02-2026	RFI 115

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DESIGNER	DATE
CHECKED	DATE
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	
DEPARTMENT MANAGER APPROVAL	DATE

JOB NO.	DRAWING NO.
NP22006	NP2006PAV
SCALE:	SHEET NO.
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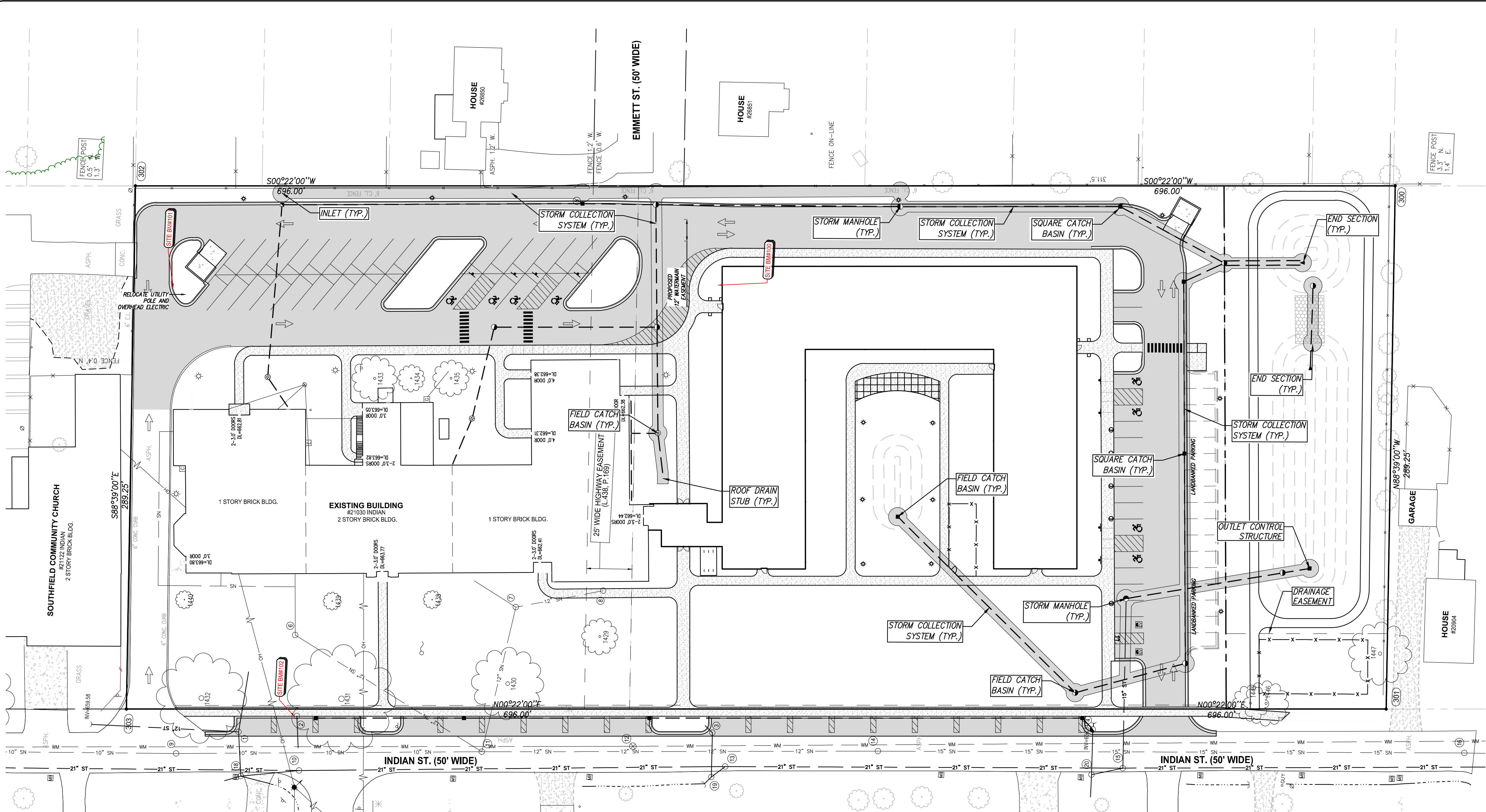


CHART A

MAINTENANCE TASKS AND SCHEDULE DURING CONSTRUCTION												
TASKS	COMPONENTS										SCHEDULE	
	Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Casings	Ditches and Swales	Outflow Control Structure	Rip-Rap	Filtration Basins	Storm Detention Areas	Wetlands	Emergency Overflow		
Inspect for sediment accumulation	X	X		X	X		X	X			Weekly	
Removal of sediment accumulation	X	X		X	X		X	X			As needed* & prior to turnover	
Inspect for floatables and debris			X	X	X		X	X			Quarterly	
Cleaning of floatables and debris			X	X	X		X	X			Quarterly & at turnover	
Inspection for erosion				X	X		X	X			Weekly	
Re-establish permanent vegetation on eroded slopes				X			X	X			As needed & at turnover	
Replacement of Stone					X						As needed* & prior to turnover	
Mowing			X	X	X	X	X	X			0 to 2 times per year	
Inspect Stormwater system components during wet weather and compare to as-built plans (by professional engineer reporting to XYZ Co.)				X	X		X	X			Annually and at turnover	
Make adjustments or replacements as determined by annual wet weather inspection	X	X	X	X	X	X	X	X	X	X	As needed	

*as needed means when sediment has accumulated to a maximum of one foot depth

CHART B

PERMANENT MAINTENANCE TASKS AND SCHEDULE												
TASKS	COMPONENTS										SCHEDULE	
	Catch Basin Inlet Casings	Ditches and Swales	Outflow Control Structure	Rip-Rap	Filtration Basins	Storm Detention Areas	Wetlands	Emergency Overflow				
Inspect for sediment accumulation		X	X		X	X					Annually	
Removal of sediment accumulation		X	X		X	X					Every 2 years as needed	
Inspect for floatables and debris	X	X	X		X	X					Annually	
Cleaning of floatables and debris	X	X	X		X	X					Annually	
Inspection for erosion		X	X		X	X					Annually	
Re-establish permanent vegetation on eroded slopes		X			X	X					As Needed	
Replacement of Stone			X								Every 3-5 years as needed	
Clean Streets											Semi-Annually	
Mowing		X			X	X					0-2 times per year	
Inspect Stormwater system components during wet weather and compare to as-built plans (by professional engineer reporting to XYZ Co.)	X	X	X	X	X	X	X	X	X	X	Annually	
Make adjustments or replacements as determined by annual wet weather inspection and report to XYZ Co.	X	X	X	X	X	X	X	X	X	X	As needed	
Keep records of all inspections and maintenance activities and report to XYZ Co.											Annually	
Keep records of all costs for inspections, maintenance and repairs. Report to XYZ Co.											Annually	

LEGEND

- COLLECTION SYSTEM
- MANHOLE
- SQUARE CATCH BASIN
- INLET
- ROUND CATCH BASIN
- END SECTION
- STORM SEWER COLLECTION SYSTEM

MAINTENANCE PLAN NOTES

- RESPONSIBILITY FOR MAINTENANCE:**
DURING CONSTRUCTION, IT IS THE DEVELOPER'S RESPONSIBILITY TO PERFORM THE MAINTENANCE. FOLLOWING CONSTRUCTION, IT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO PERFORM THE MAINTENANCE. THE MASTER DEED WILL SPECIFY THAT ROUTINE MAINTENANCE OF THE STORMWATER FACILITIES MUST BE COMPLETED WITHIN 14 DAYS OF RECEIPT OF WRITTEN NOTIFICATION THAT ACTION IS REQUIRED, UNLESS OTHER ACCEPTABLE ARRANGEMENTS ARE MADE WITH SALINE TOWNSHIP, THE OAKLAND COUNTY DRAIN COMMISSIONER OR SUCCESSORS. EMERGENCY MAINTENANCE (I.E. WHEN THERE IS ENDANGERMENT TO PUBLIC HEALTH, SAFETY OR WELFARE) SHALL BE PERFORMED IMMEDIATELY UPON RECEIPT OF WRITTEN NOTICE. SHOULD SALINE AREA SCHOOLS FAIL TO ACT WITHIN THESE TIME FRAMES, SALINE TOWNSHIP, OAKLAND COUNTY OR SUCCESSORS MAY PERFORM THE NEEDED MAINTENANCE AND ASSESS THE COSTS AGAINST THE PROPERTY OWNER.
- SOURCE OF FINANCING:**
THE PROPERTY OWNER IS REQUIRED TO PAY FOR ALL MAINTENANCE ACTIVITIES ON A CONTINUING BASIS.
- MAINTENANCE TASKS AND SCHEDULE:**
REFER TO CHARTS "A" AND "B" THIS SHEET. THE MAINTENANCE TASKS DURING CONSTRUCTION TO BE PERFORMED BY THE DEVELOPER, AND THE PERMANENT MAINTENANCE TASKS TO BE PERFORMED BY THE PROPERTY OWNER ARE DESCRIBED IMMEDIATELY FOLLOWING CONSTRUCTION. THE DEVELOPER WILL HAVE THE STORMWATER MANAGEMENT SYSTEM INSPECTED BY AN ENGINEER TO VERIFY GRADES OF THE DETENTION AND FILTRATION AREAS AND MAKE RECOMMENDATIONS FOR ANY NECESSARY SEDIMENT.

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CONSTRUCTION PLANS
Operations & Maintenance Plan

SECTION 31
TOWN 01N RANGE 10E
CITY OF SOUTHFIELD
OAKLAND COUNTY

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	04-13-2026	CITY ENG. REV.

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DRAWER	DATE
DESIGNER J. CHRISTOPHER	DATE 24-01-26
CHECKED J. CHRISTOPHER	DATE 24-01-26
PROJECT MANAGER T. SOVEL	BID PLAN DATE
DEPARTMENT MANAGER APPROVAL	DATE

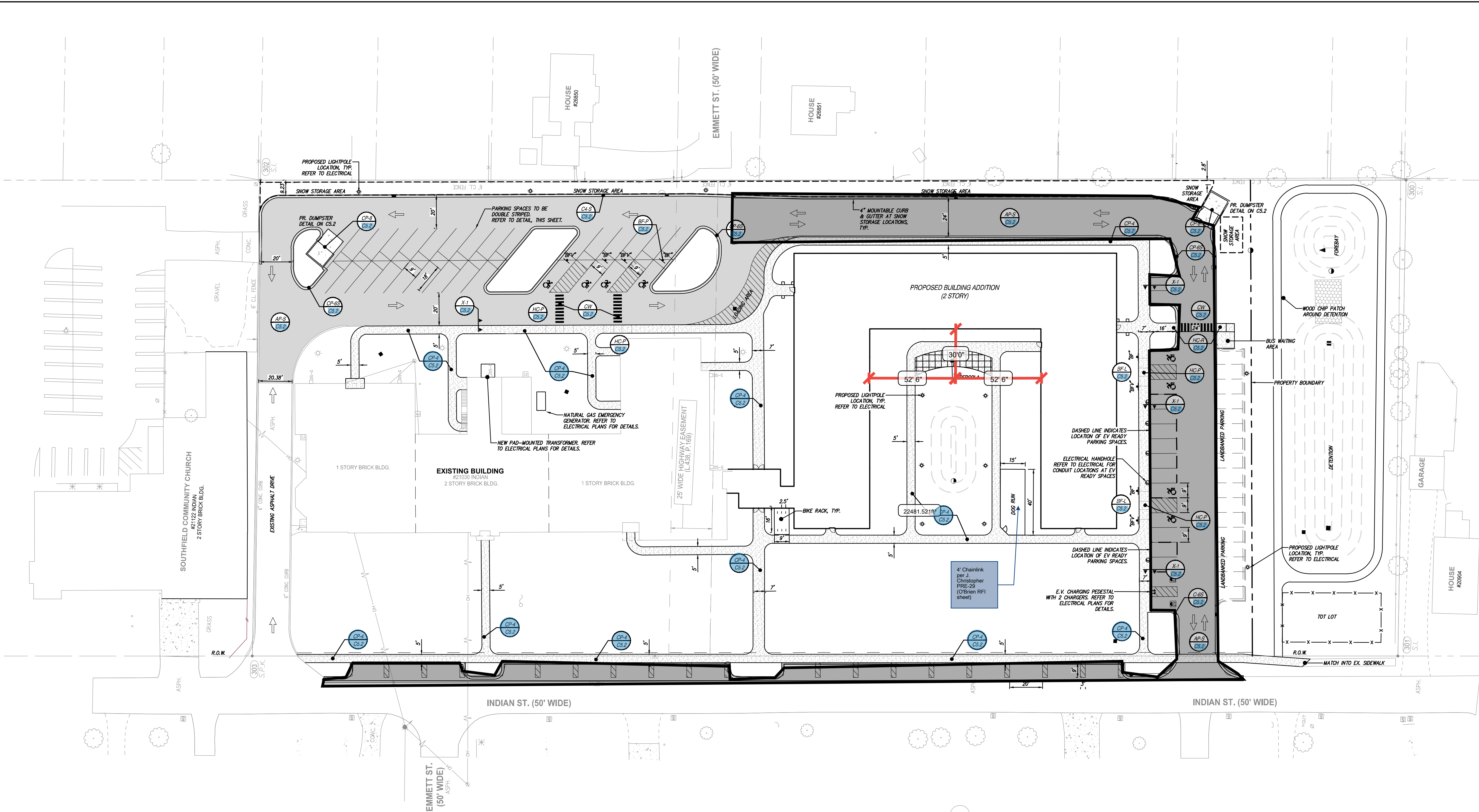
JOB NO.
NP22006

DRAWING NO.
NP2006PAV

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PAVING CONSTRUCTION NOTES

- EARTHWORK AND PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT MOOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNLESS OTHERWISE NOTED IN THE FOLLOWING ITEMS.
- REMOVE ANY EXISTING TOPSOIL, VEGETATION, TREES AND OTHER DELETERIOUS MATERIALS TO EXPOSE THE SUBGRADE SOIL. TREE ROOTS SHALL BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- THE TOP 12 INCHES OF THE EXPOSED SUBGRADE SHALL BE COMPACTED TO A DENSITY NO LESS THAN 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR (ASTM D 1557-91).
- THE FINAL SUBGRADE SHALL BE THOROUGHLY PRODFOLLED UNDER THE OBSERVATION OF A GEOTECHNICAL/PAVEMENT ENGINEER. LOOSE OR YIELDING AREAS WHICH CANNOT BE MECHANICALLY STABILIZED SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL OR AS INDICATED BY FIELD CONDITIONS.
- THE AGGREGATE BASE SHALL BE COMPACTED TO A DENSITY NO LESS THAN 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR (ASTM D 1557-91). THE BASE SHALL EXTEND A MINIMUM OF 1 FOOT BEYOND THE PAVED EDGE.
- ALL BITUMINOUS MATERIAL SHALL BE COMPACTED TO A DENSITY NO LESS THAN 97 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE MARSHALL METHOD.
- A BOND COAT OF SS-1H EMULSION IS REQUIRED BETWEEN THE LEVELING COURSE AND THE WEARING COURSE WHEN OTHER 24 HOURS HAVE ELAPSED BETWEEN PLACEMENT OF THE BITUMINOUS COURSES OR THE SURFACE OF THE PAVEMENT HAS BEEN CONTAMINATED WITH DIRT, DUST, OR FOREIGN MATERIAL. THE BOND COAT SHALL BE APPLIED IN A UNIFORM MANNER OVER THE SURFACE AT A RATE OF 0.1 GALLONS/S.Y. IN THE EVENT A BOND COAT IS NOT REQUIRED, THE LEVELING COURSE MAY REQUIRE LOCALIZED BROOM CLEANING.
- PERFORMANCE GRADE PG64-22 ASPHALT CEMENT SHALL BE USED IN THE PRODUCTION OF ALL BITUMINOUS MIXTURES. RECLAIMED ASPHALT PAVEMENT (RAP) SHALL BE ALLOWED ONLY AS SPECIFIED BY THE CURRENT MOOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, UNLESS NOTED ON THE PROJECT DETAILS.
- CONSTRUCTION TRAFFIC SHALL BE MINIMIZED ON THE NEW PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, THE PLACEMENT OF THE FINAL LIFT SHALL BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR TO ANY DAMAGED SECTION RESULTING FROM CONSTRUCTION ACTIVITY.
- TAPER CURB HEIGHT DOWN TO ZERO HEIGHT IN FIVE FEET AT ALL CURB ENDINGS UNLESS OTHERWISE NOTED ON THE PLAN.
- WHERE CURB AND GUTTER SECTION IS ADJACENT TO A HANDICAP RAMP, DROP CURB HEIGHT TO MAXIMUM 1/4" ACROSS THE RAMP OPENING.
- RESTRIPE PARKING LOTS AS SHOWN, USING 4" PAVEMENT MARKING - BLUE FOR RESERVED SPACES, YELLOW FOR STANDARD SPACES. IF NEW PARKING LAYOUT IS NOT INDICATED, MATCH ORIGINAL STRIPING PATTERN.
- DIRECTIONAL ARROW PAVEMENT MARKINGS AND PAVEMENT MARKING LETTERING WHERE INDICATED SHALL BE WHITE PREFORMED THERMOPLASTIC UNLESS OTHERWISE NOTED. INSTALLATION OF THESE PERMANENT PAVEMENT MARKINGS SHALL BE PERFORMED PER THE MOOT STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTIONS 811 AND 920.
- CONTRACTOR SHALL PROTECT EXISTING CURB, GUTTER, SIDEWALK, WALLS, FENCES AND ALL OTHER EXISTING SITE FEATURES NOT INDICATED FOR REMOVAL OR REHABILITATION.
- PLACE EXPANSION JOINTS WHERE NEW CONCRETE PAVEMENT OR WALKS ABUT BUILDING WALLS (PROPOSED OR EXISTING), CURB, OR EXISTING CONCRETE PAVEMENT. PLACE SILICONE JOINT SEALANT ON ALL EXPANSION JOINTS.
- CONTRACTOR TO CONSTRUCT CONTRACTION AND EXPANSION JOINTS IN ALL NEW CONCRETE PAVEMENT. CONTRACTION JOINTS SHALL BE TOOLED WHERE SIDEWALK WIDTH IS 8' OR LESS, AND SHALL BE SPACED EQUAL TO THE WIDTH OF THE PAVEMENT (I.E. 8' SPACING FOR 8' WIDE WALKS), BUT NOT MORE THAN 10' APART. PLACE EXPANSION JOINTS WITH SILICONE JOINT SEALANT AT MAXIMUM 50' SPACING. CONTRACTOR SHALL GENERALLY MATCH THE JOINT PATTERNS FOR CONCRETE PAVEMENT WHEN SHOWN ON THE PLANS.
- WHERE THESE PLANS DIFFER FROM THE STANDARD DETAILS OR MOOT STANDARD SPECIFICATIONS OF THE COMMUNITY, THE COMMUNITY REQUIREMENTS SHALL GOVERN.
- CONCRETE PAVEMENT SHALL MEET THE REQUIREMENTS FOR MOOT GRADE 4000 CONCRETE PER THE CURRENT MOOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

LEGEND

--- PROPOSED WATERMAIN	● PROPOSED SAN MANHOLE (SAN)
--- PROPOSED SANITARY	● PROPOSED STORM MANHOLE (MH)
--- PROPOSED STORM SENER	■ PROPOSED CATCH BASIN (CB)
--- PROPOSED GAS MAIN	▲ PROPOSED INLET (INL)
--- PROPOSED ELECTRIC	▶ PROPOSED END SECTION (ES)
● PROPOSED HYDRANT	⊕ PROPOSED FIELD CATCH BASIN (FCB) W/RETAINING COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
⊗ PROPOSED GATE VALVE & WELL (GVW)	② UTILITY CROSSING (SEE DATA TABLE)
⊗ PROPOSED TAPPING SLEEVE VALVE & WELL (TSVW)	CB- STRUCT. TYPE
	2- STRUCT. NO.
STANDARD BITUMINOUS PAVEMENT	
HEAVY-DUTY BITUMINOUS PAVEMENT	
DEEP-STRENGTH BITUMINOUS PAVEMENT	
CONCRETE PAVEMENT	
CONCRETE SIDEWALK	
MILL PAVEMENT	
STORM SEWER STRUCTURE	
SANITARY SEWER STRUCTURE	
WATERMAIN STRUCTURE	
	20
	10 XXX
	STRUCT. TYPE
	STRUCT. TYPE

SIGN LEGEND

"TS" - RESERVED PARKING ONLY
"TSV" - RESERVED PARKING ONLY VAN ACCESSIBLE
"ST" - STOP

ALL SIGNAGE SHALL BE IN ACCORDANCE WITH THE CURRENT M.M.U.T.C.D. AND THE MOOT TRAFFIC AND SAFETY SIGN SUPPORT STANDARD PLANS.

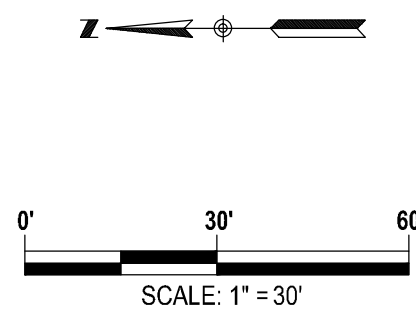
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CONSTRUCTION PLANS Paving Plan

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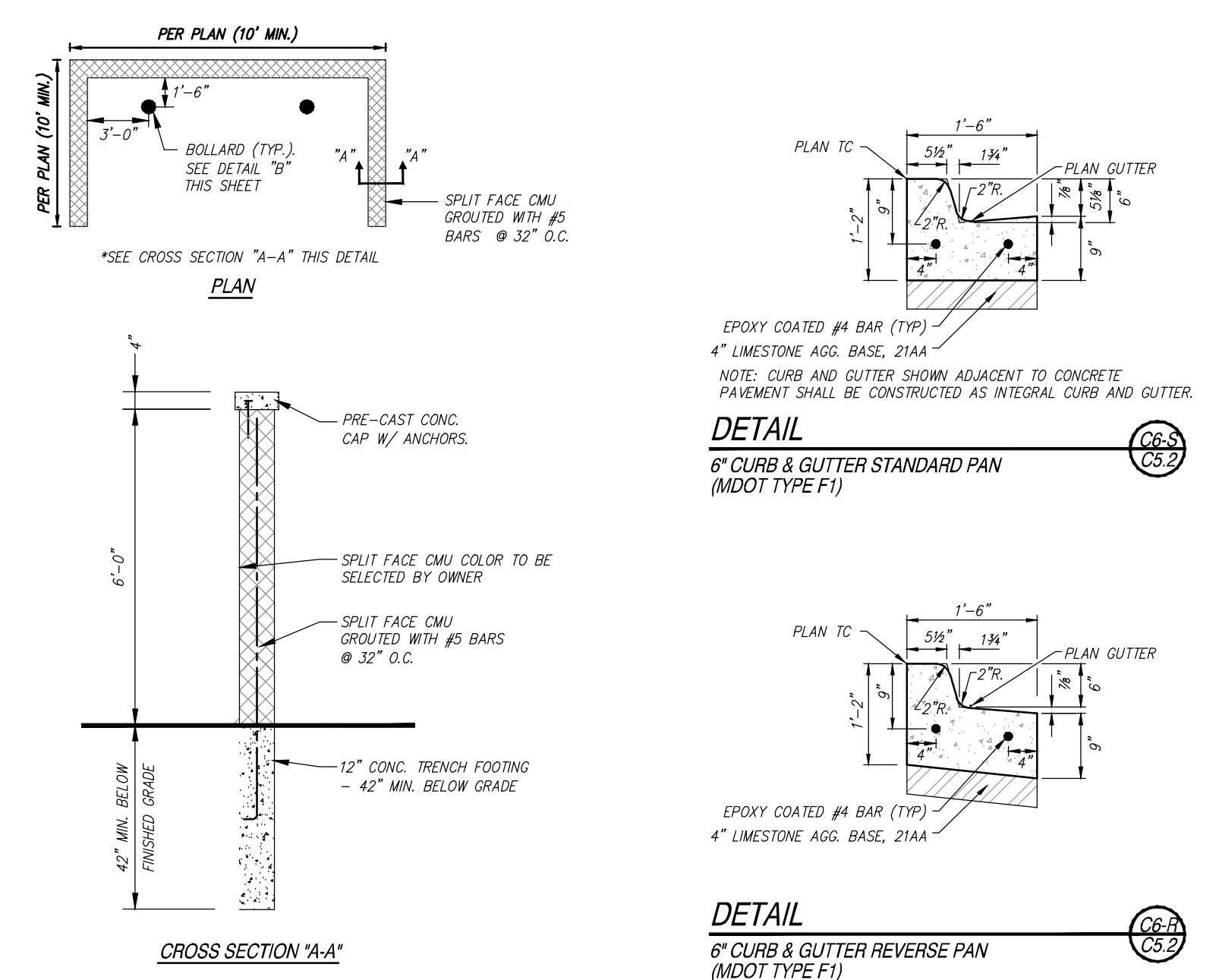
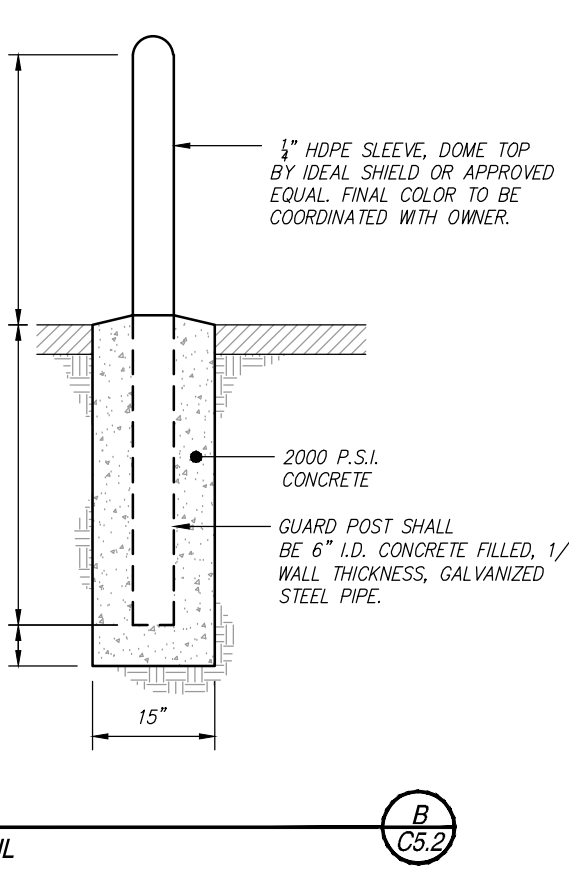
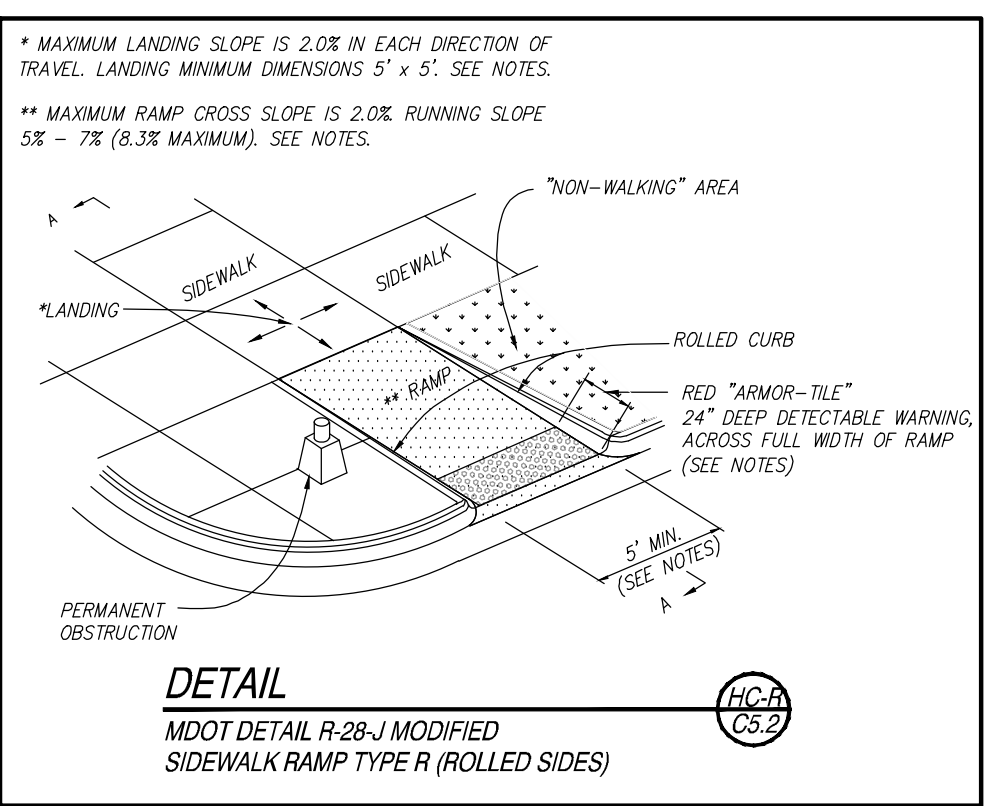
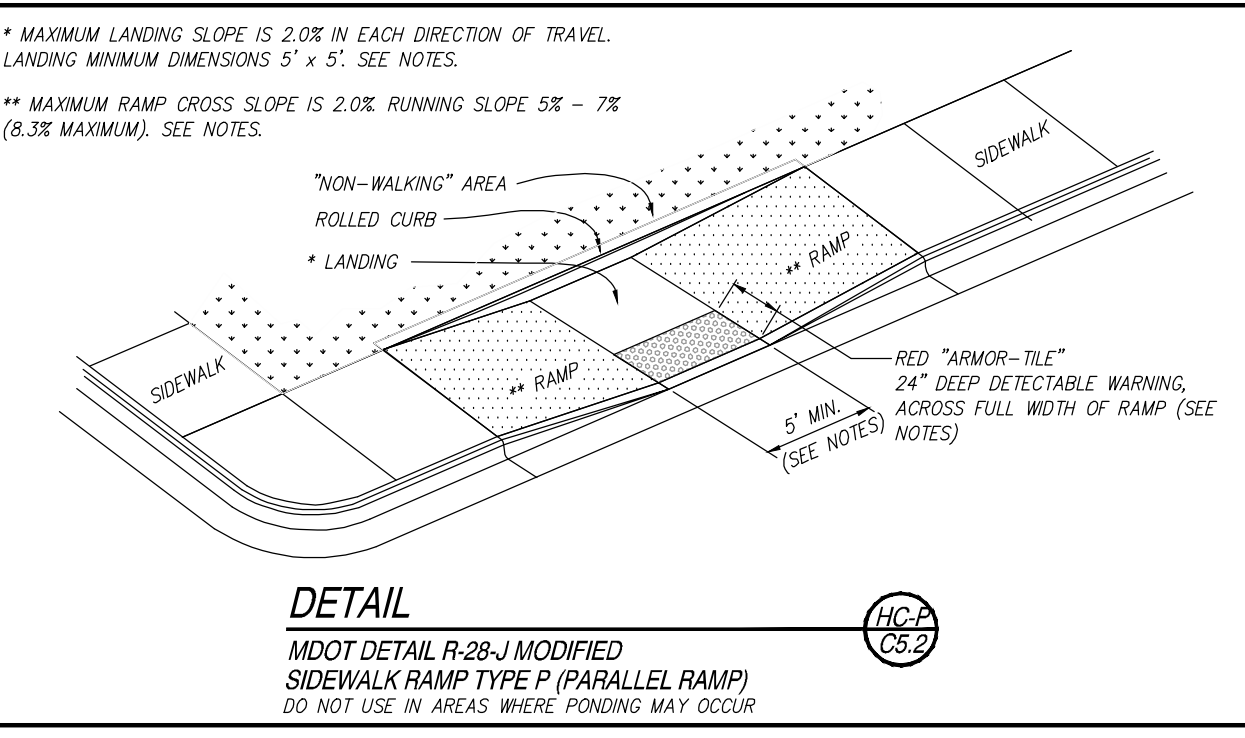
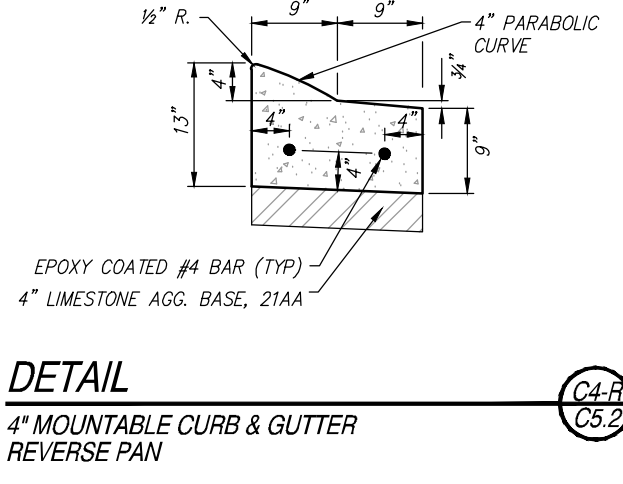
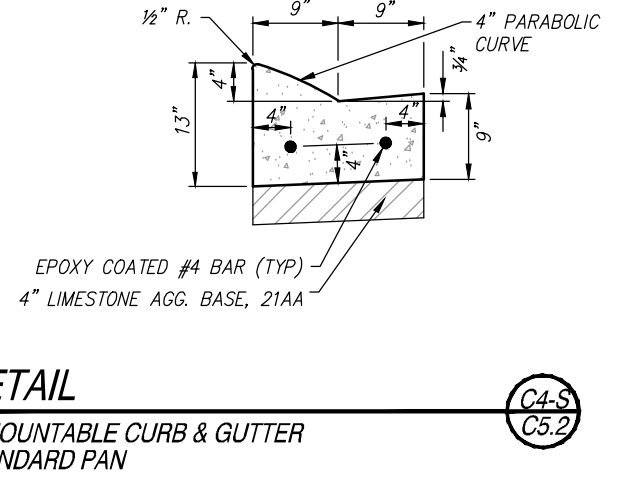
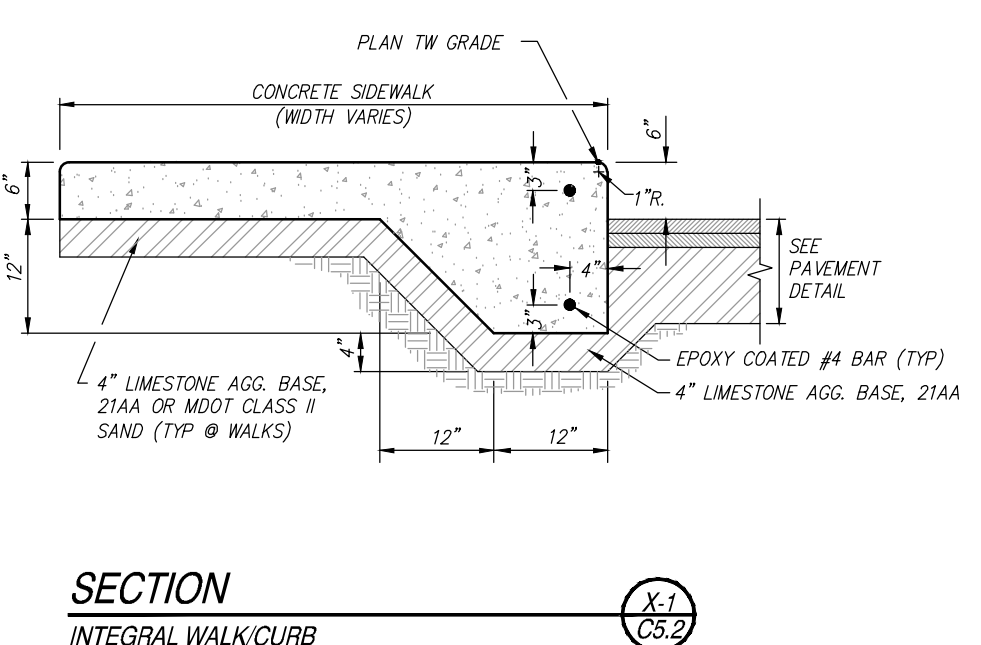
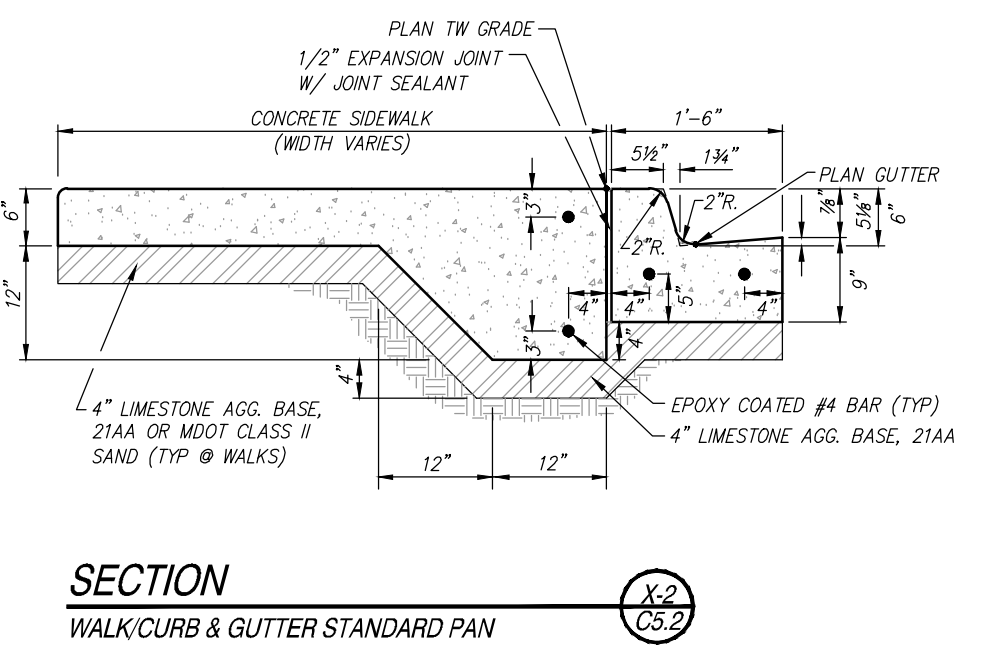
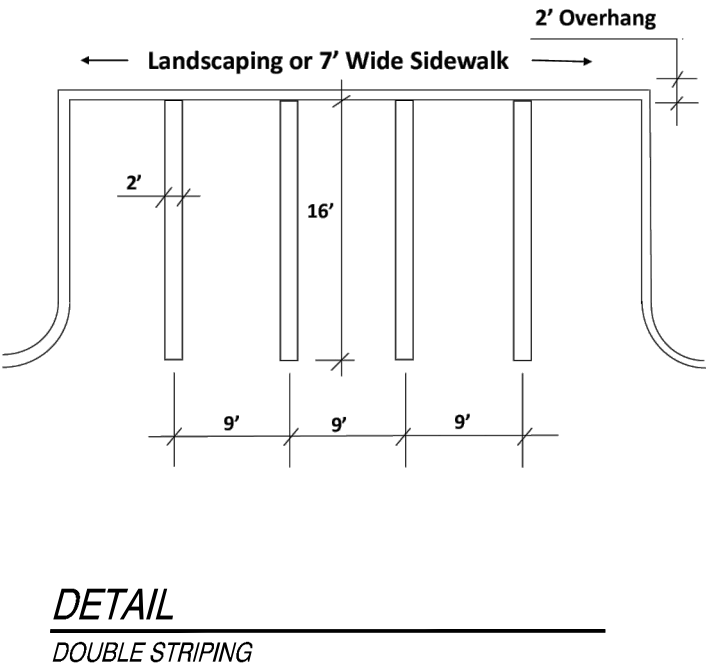
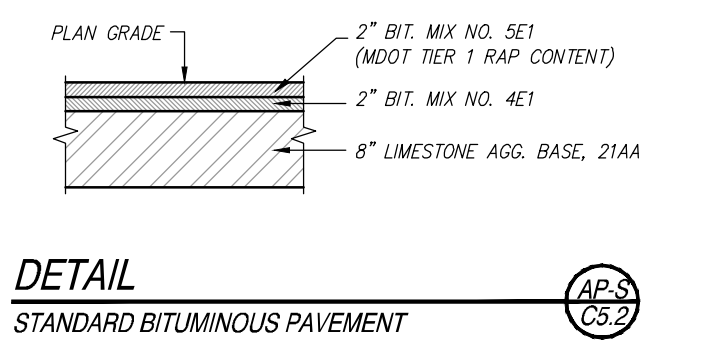
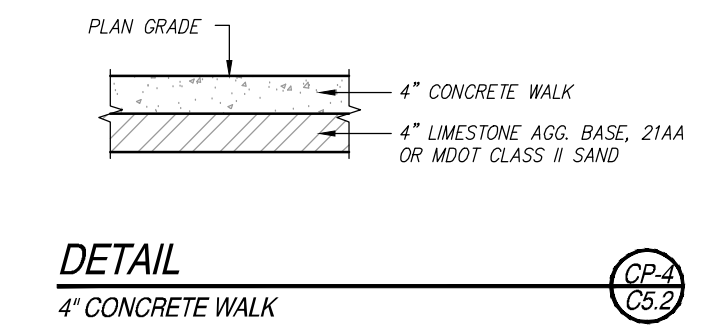
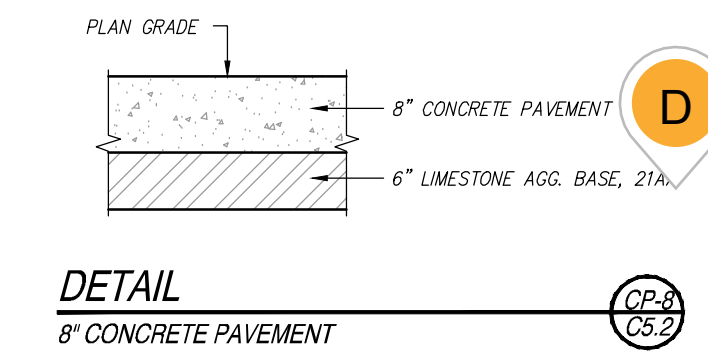
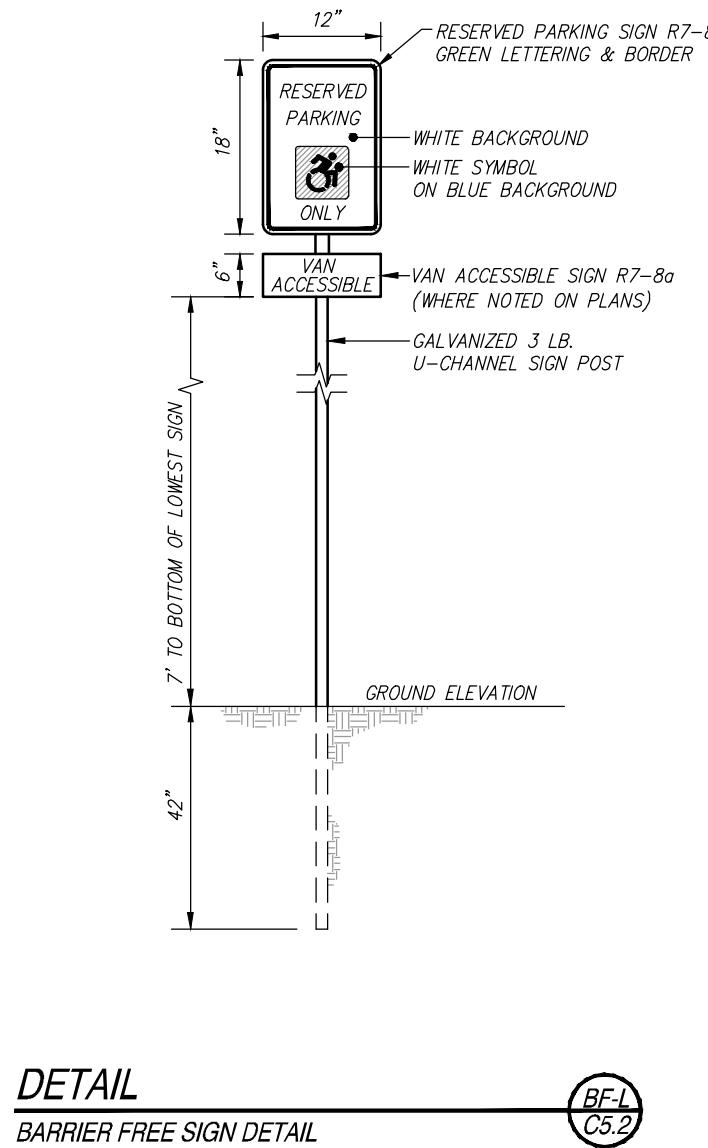
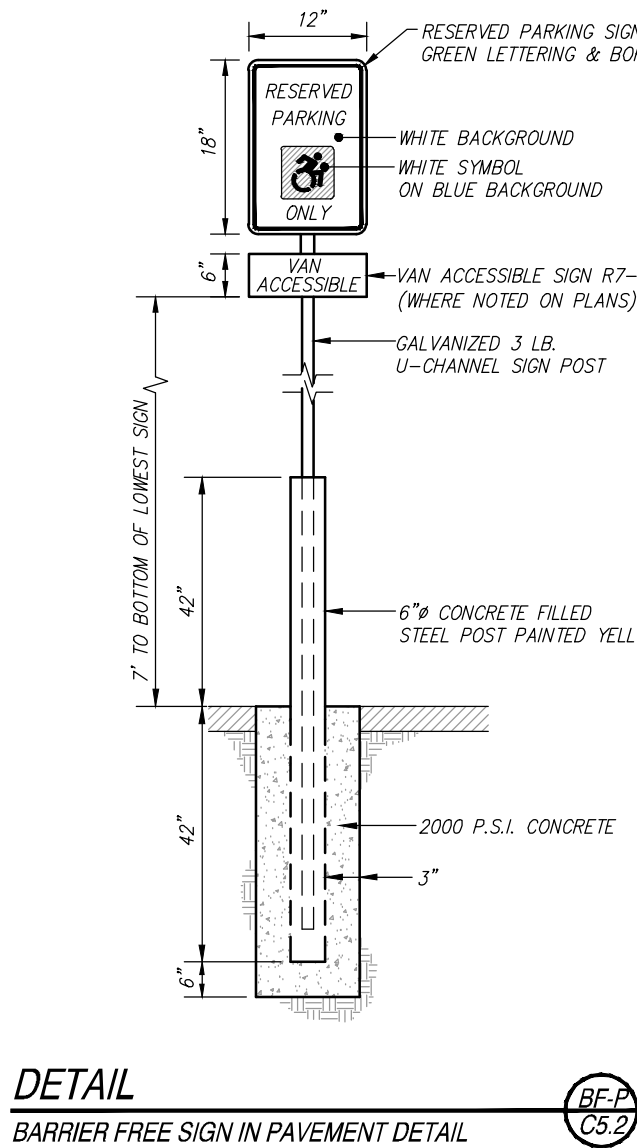
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	04-13-2026	CITY ENG. REV.

VERIFY SCALES

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J. CHRISTOPHER	24-01-26
CHECKED	DATE
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	
DEPARTMENT MANAGER APPROVAL	DATE
JOB NO.	DRAWING NO.
NP22006	NP22006PAV
SCALE:	SHEET NO.
1" = 30'	C5.1

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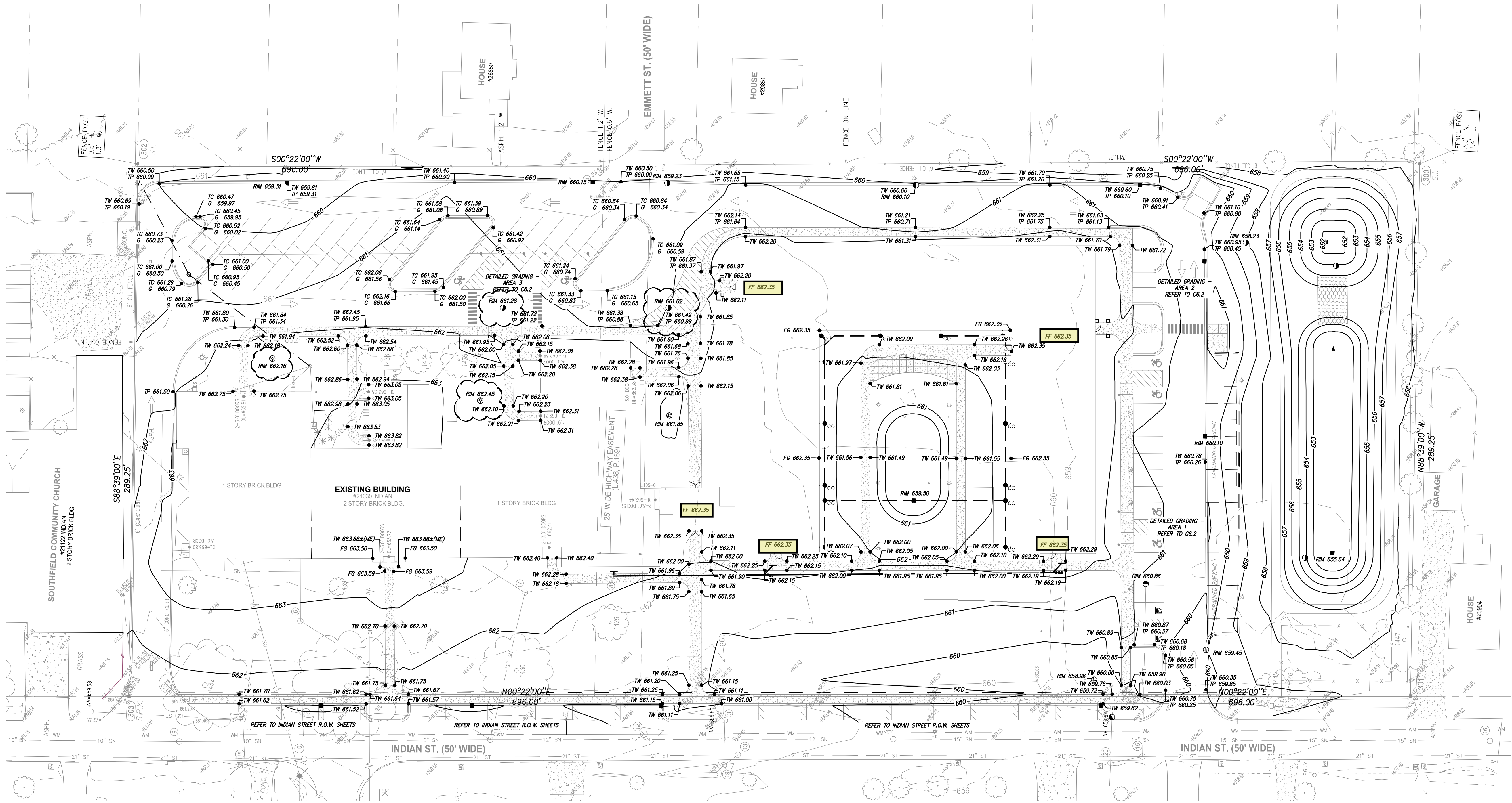
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CONSTRUCTION PLANS		
Paving Details		
SECTION	31	
TOWN	01N	RANGE 10E
CITY OF SOUTHFIELD		
OAKLAND COUNTY		
NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
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DEPARTMENT MANAGER APPROVAL	DATE	
JOB NO.	DRAWING NO.	
NP22006	NP2006PAV	
SCALE:	SHEET NO.	
NTS	C5.2	

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RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SOD PER SPEC SECTION 2920. REGRASS IN PLACE ON SLOPES IN EXCESS OF 10% HORIZONTAL TO 1 VERTICAL USING WOODEN PRESSES AT A MINIMUM OF 12" LONG. WATER SOD ON A REGULAR BASIS AS INDICATED IN THE SPECIFICATIONS.

RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 20% PERENNIAL RYEGRASS, 50% CREEPING RED FESCUE). PLACE MULCH IN ALL SEED AREAS. ON SLOPES IN EXCESS OF 10% HORIZONTAL TO 1 VERTICAL PLACE NORTH AMERICAN GREEN GEOTEXTILE MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURER'S RECOMMENDATIONS TO HOLD MATING IN PLACE.

GRADING LEGEND

EXISTING ELEVATION	TP 000.00	TOP OF PAVEMENT ELEVATION
PROPOSED TOP OF CURB ELEVATION	FW 000.00	TOP OF WALK ELEVATION
PROPOSED GUTTER ELEVATION	FG 000.00	FINISH GRADE ELEVATION
OUTSIDE GRADE ELEVATION	T/WALL 000.00	TOP OF WALL ELEVATION
EXISTING CONTOURS	ME 000.00	MATCH EXISTING ELEVATION
PROPOSED CONTOURS		FLOW ARROW

GRADING NOTES

- CONTRACTOR TO PLACE ALL NEW PAVEMENT TO THE GRADES INDICATED, OR MATCH ORIGINAL GRADES IF NEW GRADES ARE NOT SHOWN. CONTRACTOR SHALL MAINTAIN MINIMUM 1% PAVEMENT SLOPES ARE ATTAINED IN ALL AREAS.
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LEGEND

PROPOSED WATERMAIN	PROPOSED SAN MANHOLE (SM)
PROPOSED SANITARY	PROPOSED STORM MANHOLE (SM)
PROPOSED STORM SEWER	PROPOSED CATCH BASIN (CB)
PROPOSED GAS MAIN	PROPOSED INLET (INL)
PROPOSED ELECTRIC	PROPOSED END SECTION (ES)
PROPOSED HYDRANT	PROPOSED FIELD CATCH BASIN (FCB) W/ REEFING COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
PROPOSED GATE VALVE & WELL (GVW)	UTILITY CROSSING (SEE DATA TABLE)
PROPOSED TAPPING SLEEVE VALVE & WELL (TSVW)	STRUCT. TYPE
STANDARD BITUMINOUS PAVEMENT	STRUCT. NO.
HEAVY-DUTY BITUMINOUS PAVEMENT	STRUCT. TYPE
DEEP-STRENGTH BITUMINOUS PAVEMENT	STRUCT. NO.
CONCRETE PAVEMENT	STRUCT. TYPE
CONCRETE SIDEWALK	STRUCT. NO.
MILL PAVEMENT	STRUCT. TYPE

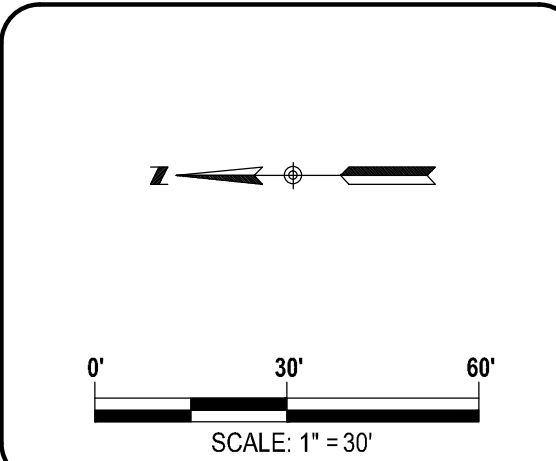
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CONSTRUCTION PLANS
Grading Plan

SECTION 31
TOWN 01N RANGE 10E
CITY OF SOUTHFIELD
OAKLAND COUNTY

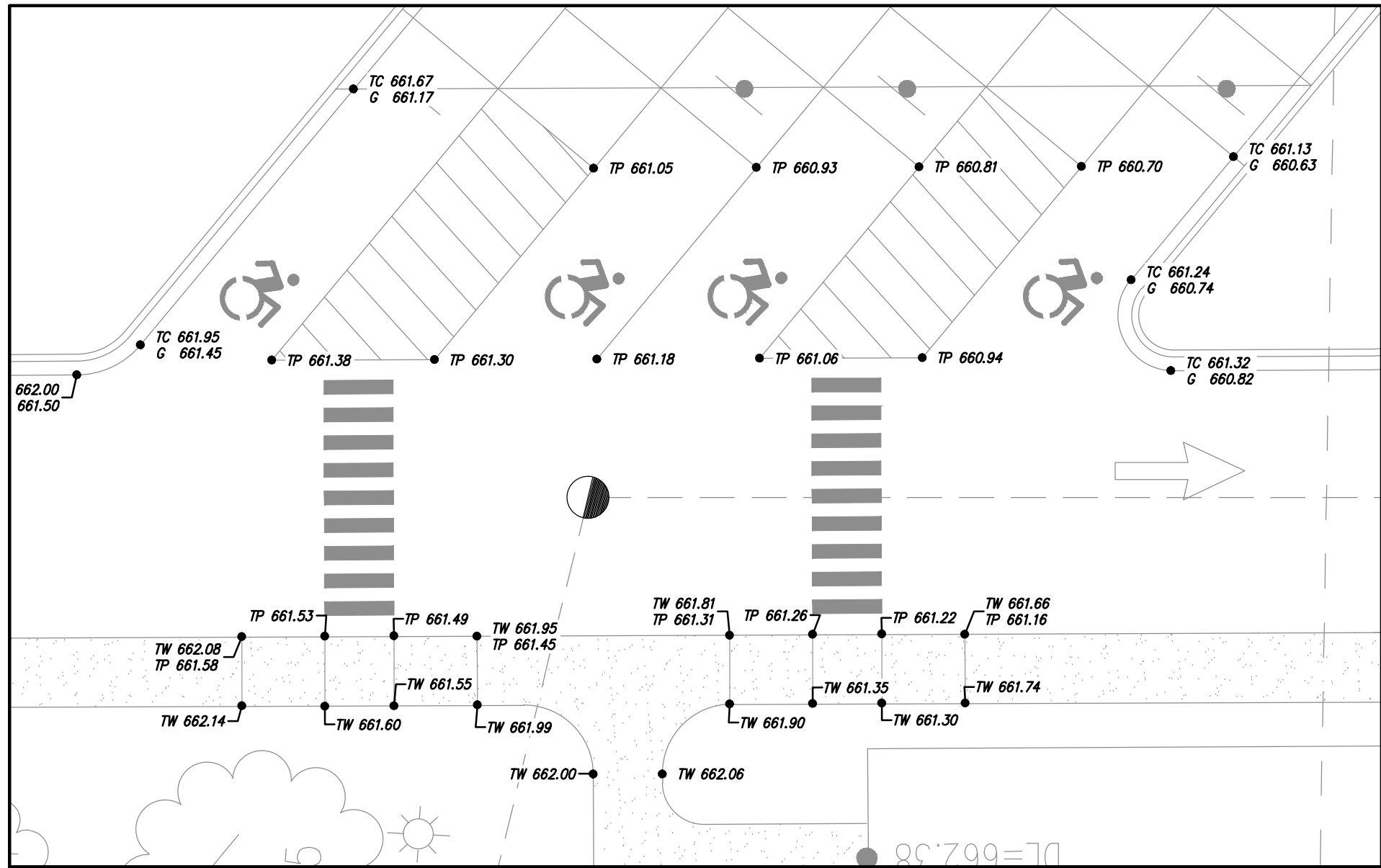
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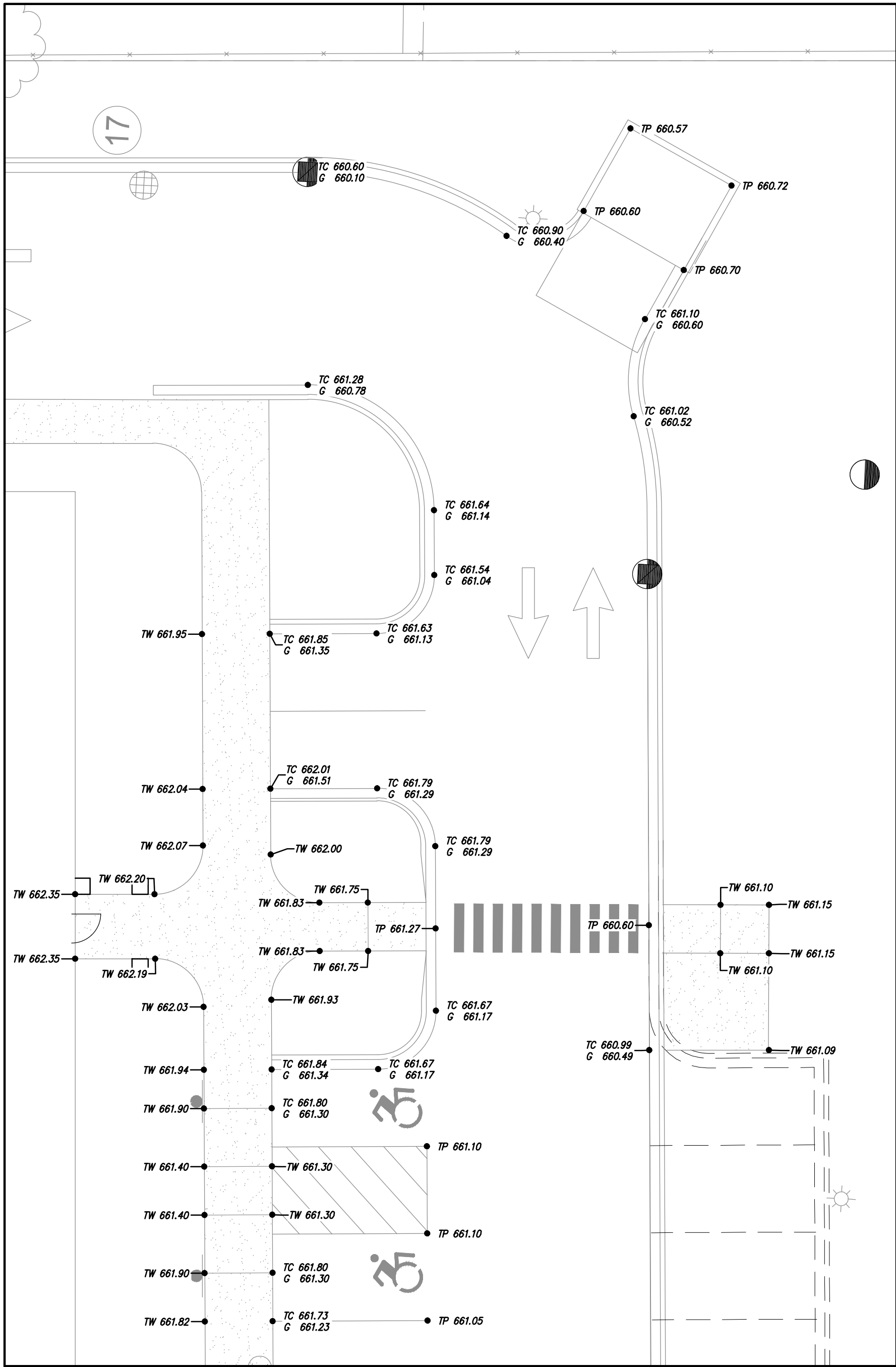
DRAWER	DATE
DESIGNER	DATE
J. CHRISTOPHER	24-01-26
CHECKED	DATE
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	
DEPARTMENT MANAGER APPROVAL	DATE

JOB NO.	DRAWING NO.
NP22006	NP2006PAV
SCALE:	SHEET NO.

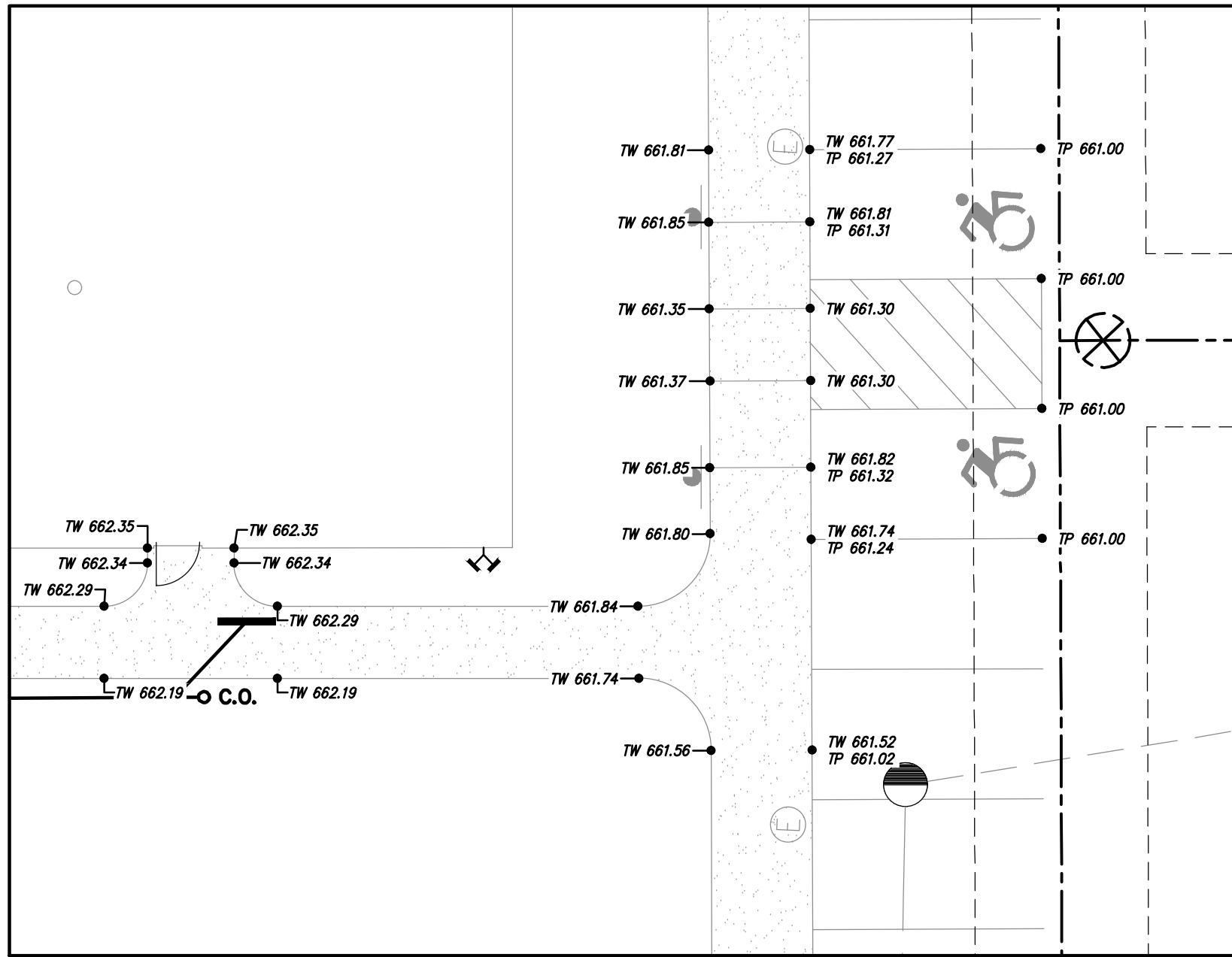
1" = 30'
C6.1



GRADING DETAIL - AREA 3



GRADING DETAIL - AREA 2



GRADING DETAIL - AREA 1

RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SOD PER SPEC SECTION 2920. PEG SOD IN PLACE ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL USING WOODEN PEGS A MINIMUM OF 12" LONG. WATER SOD ON A REGULAR BASIS AS INDICATED IN THE SPECIFICATIONS.

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GRADING LEGEND

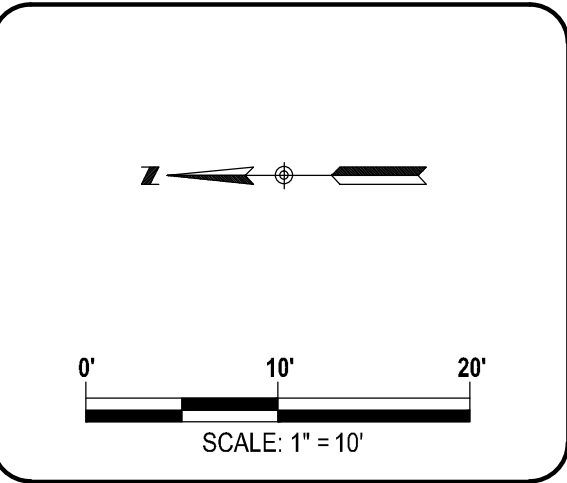
	EXISTING ELEVATION	• TP 000.00	TOP OF PAVEMENT ELEVATION
• TC 000.00	PROPOSED TOP OF CURB ELEVATION	• TW 000.00	TOP OF WALK ELEVATION
• G 000.00	PROPOSED GUTTER ELEVATION	• FG 000.00	FINISH GRADE ELEVATION
• OG 000.00	OUTSIDE GRADE ELEVATION	• T/WALL 000.00	TOP OF WALL ELEVATION
	EXISTING CONTOURS	• ME 000.00	MATCH EXISTING ELEVATION
			FLOW ARROW
	PROPOSED CONTOURS		

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LEGEND

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PROPOSED SANITARY	PROPOSED STORM MANHOLE (NMH)
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PROPOSED GAS MAIN	PROPOSED INLET (INL)
PROPOSED ELECTRIC	PROPOSED END SECTION (ES)
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DEEP-STRENGTH BITUMINOUS PAVEMENT	STRUCT. NO.
CONCRETE PAVEMENT	STRUCT. TYPE
CONCRETE SIDEWALK	STRUCT. NO.
MILL PAVEMENT	STRUCT. TYPE



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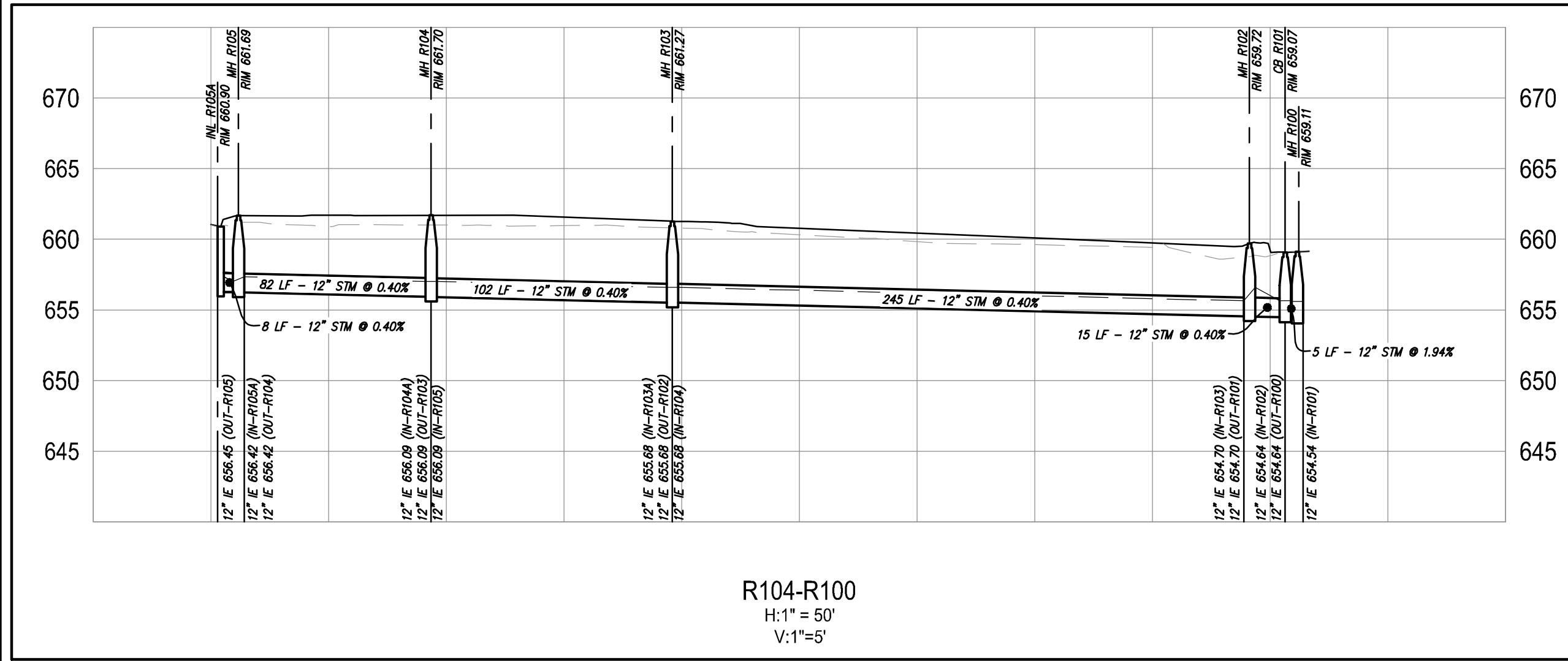
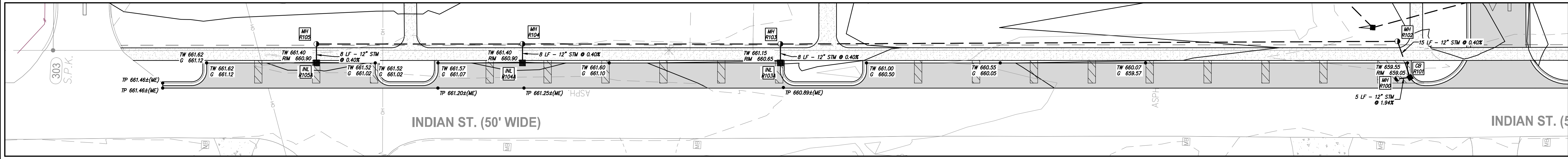
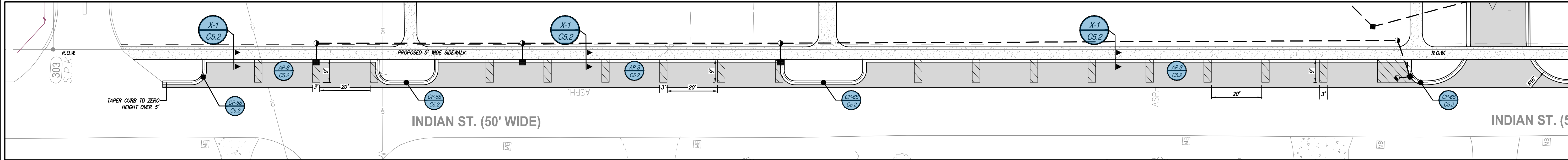
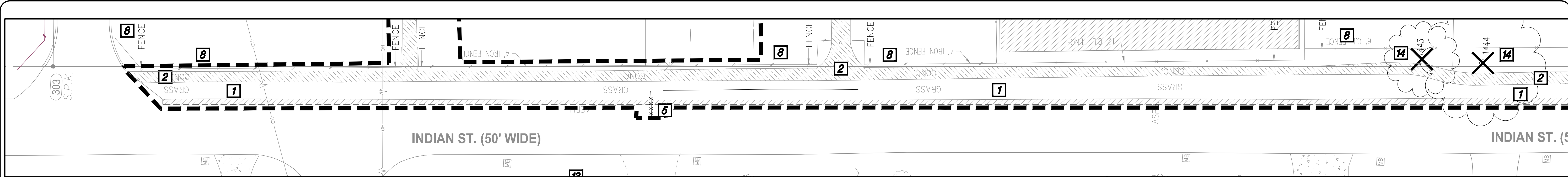
JOHN GRACE ARMS

CONSTRUCTION PLANS Detailed Grading

SECTION		31
TOWN	01N	RANGE 10E
CITY OF SOUTHFIELD		
OAKLAND COUNTY		
NO.	DATE	REVISION
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NP22006	NP2006PAV
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1" = 30'	C6.2

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N:\NP2006\Projects\NP22006 - Grace School - Senior Housing\DWG\NP22006RDW.dwg



RIGHT-OF-WAY STORM SEWER PROFILE

CITY OF SOUTHFIELD STANDARD NOTES

- NOTIFY THE CITY OF SOUTHFIELD ENGINEERING DIVISION (248) 796-4810 A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF SOUTHFIELD.
- UTILITIES MUST BE LOCATED UNDERGROUND.
- CALL MISS DIG (1-800-482-7171 / 811) A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON-SITE.
- ALL EXCAVATION UNDER OR WITHIN THREE FEET (3') OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (CLASS II MDOT).
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
- PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT, ENGINEERING SITE INSPECTION IS REQUIRED.

UTILITIES NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF SOUTHFIELD.
- STORM SEWER 12" AND LARGER SHALL BE C76 (PREM.) UNLESS OTHERWISE NOTED ON THE PLAN.
- STORM SEWER 6" AND SMALLER SHALL BE PVC SDR 23.5. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26.
- ALL UTILITY TRENCHES THAT FALL WITHIN A 1'-ON-1' INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
- ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
- ALL UTILITIES SHALL BE PLACED AT LEAST 10' FROM OTHER UTILITIES, SIGNIFICANT TREES, AND FIXED STRUCTURES.
- UNLESS OTHERWISE NOTED, ALL STORM SEWER STRUCTURES SHALL BE 4' DIAMETER (INLETS SHALL BE 2' DIAMETER). CONTRACTOR IS RESPONSIBLE FOR VERIFYING STRUCTURES SIZES IN RELATION TO PIPE SIZES AND ANGLES AND PRICING THEIR BID ACCORDINGLY. UNLESS OTHERWISE INDICATED ON THE STANDARD DETAIL SHEETS CASTINGS SHALL BE: P.W.M. CATCH BASINS - E.W.M. 2105 - "W" (FRAMES WITH CURB BODIES WILL NOT BE ALLOWED) YARD CATCH BASINS - E.W.M. 1040 - "10" PLACEMENT OF EDGE DRAINS AND FINISH DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C4.3.
- FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL FOR BASIN STAKING RELATIVE TO THE CURB.
- CONTRACTOR TO VERIFY CONDITION OF EXISTING PIPE AND REPLACE IF NECESSARY. PASSAGE OF EXISTING UPSTREAM FLOW TO BE MAINTAINED.
- ALL DUCTILE IRON PIPES AND FITTINGS MUST BE WRAPPED IN POLYETHYLENE.
- NO ROOF DRAINS (EXISTING OR PROPOSED) MAY BE CONNECTED TO THE SANITARY SYSTEM. CONTRACTOR TO CONFIRM CONNECTION POINT OF EXISTING ROOF DRAINS AND RE-ROUTE IF NECESSARY.

RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 20% PERENNIAL RYEGRASS, 50% CREEPING FESCUE). PLACE MULCH IN ALL SEEDING AREAS. ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL PLACE NORTH AMERICAN GREEN DISTO MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURERS RECOMMENDATIONS TO HOLD MATING IN PLACE.

GRADING LEGEND

- EXISTING ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED GUTTER ELEVATION
- OUTSIDE GRADE ELEVATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- TOP OF PAVEMENT ELEVATION
- TOP OF WALK ELEVATION
- FINISH GRADE ELEVATION
- TOP OF WALL ELEVATION
- MATCH EXISTING ELEVATION
- FLOW ARROW

GRADING NOTES

- CONTRACTOR TO PLACE ALL NEW PAVEMENT TO THE GRADES INDICATED, OR MATCH ORIGINAL GRADES IF NEW GRADES ARE NOT SHOWN. CONTRACTOR SHALL CONFIRM MINIMUM 1% PAVEMENT SLOPES ARE ATTAINED IN ALL AREAS.
- PROPOSED GRADES MAY BE BASED ON AN INTERPOLATION OF DATA SHOWN ON THE TOPOGRAPHIC SURVEY. THIS INTERPOLATED DATA IS APPROXIMATE AND COULD DIFFER SLIGHTLY BASED ON THE ACCURACY OF THE SURVEY. CONTRACTOR SHALL CONFIRM THAT THE PROPOSED GRADES SHOWN ON THIS PLAN WILL NOT CREATE A STANDING WATER CONDITION (I.E. A LOW SPOT) OR PAVEMENT SLOPES LESS THAN 1% OR AN UNSAFE CONDITION WITH SLOPES IN EXCESS OF 5%. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THEY BELIEVE THAT ONE OF THESE SITUATIONS WILL OCCUR BASED ON THE PROPOSED GRADES.
- ALL PAVEMENT PLACED WITHIN BARRIER FREE PARKING AREAS (STALLS AND ACCESS AISLES) SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION INCLUDING MEASURED DIAGONALLY ACROSS THE AREAS. CONTRACTOR SHALL ADJUST SLOPES AS NECESSARY TO PROMOTE ADA COMPLIANT SLOPES AS WELL AS PROVIDING RE-GRADED TRANSITION SLOPES OUTSIDE OF THE BARRIER FREE PARKING AREAS. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF TRANSITION ZONES WILL EXCEED MAXIMUM 5% SLOPES. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE PATTERNS WITH ALL NECESSARY PAVEMENT RE-GRADES.
- ALL BARRIER FREE RAMPS AND ADA ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF MDOT DETAIL R-28 "SIDEWALK RAMP AND DETECTABLE WARNING DETAIL".
- CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER RUNOFF DURING CONSTRUCTION OPERATIONS. OF PARTICULAR CONCERN WILL BE THE TIME PERIOD AFTER THE SITE HAS BEEN STRIPPED AND NOT YET RESTORED, BUILT UPON, OR PAVED. CONTRACTOR MUST INSTALL OR CONSTRUCT APPROPRIATE TEMPORARY MEASURES TO PROTECT ADJACENT PROPERTIES.

DEMOLITION NOTES

- REMOVE ASPHALT PAVEMENT TO FULL DEPTH, INCLUDING AGGREGATE BASE. SAWCUT FULL DEPTH WHERE NEW PAVEMENT WILL BE PLACED ADJACENT TO EXISTING PAVEMENT. REMOVAL LIMITS TO BE FIELD VERIFIED BY ENGINEER.
- REMOVE CONCRETE PAVEMENT TO FULL DEPTH, INCLUDING AGGREGATE BASE. SAWCUT FULL DEPTH TO NEAREST JOINT WHERE NEW PAVEMENT WILL BE PLACED ADJACENT TO EXISTING PAVEMENT. REMOVAL LIMITS TO BE FIELD VERIFIED BY ENGINEER.
- REMOVE CONCRETE CURB TO FULL DEPTH. SAWCUT FULL DEPTH TO NEAREST JOINT WHERE NEW CONCRETE CURB WILL BE PLACED ADJACENT TO EXISTING CONCRETE CURB. REMOVAL LIMITS TO BE FIELD VERIFIED BY ENGINEER.
- CLEAR AND GRUB TO THE LIMITS SHOWN, INCLUDING REMOVAL OF ALL SIGNS, POSTS, FOOTINGS, GRAVEL, BRUSH, SHRUBS, GRASS, AND TREES NOT INDICATED FOR PROTECTION, INCLUDING ROOTS. STRIP TOPSOIL AND STOCKPILE ON SITE IN DESIGNATED LOCATION.
- REMOVE EXISTING UTILITY PIPE. BACKFILL WITH CLASS II FILL AND COMPACT TO 95% OF MAXIMUM DENSITY. INSTALL WATER-TIGHT BULKHEADS AT STRUCTURES WHERE EXISTING PIPE IS TO BE REMOVED.
- REMOVE EXISTING UTILITY STRUCTURE COMPLETE. BACKFILL WITH CLASS II FILL AND COMPACT TO 95% OF MAXIMUM DENSITY.
- ABANDON EXISTING UTILITY STRUCTURE. REFER TO DETAIL ON THIS SHEET.
- REMOVE AND SALVAGE EXISTING FENCE, INCLUDING ANY GATES.
- REMOVE AND SALVAGE EXISTING FLAG POLE TO BE TURNED OVER TO OWNER. REMOVE AND DISPOSE EXISTING FOOTING.
- REMOVE AND SALVAGE EXISTING LIGHT POST TO BE TURNED OVER TO OWNER. REMOVE AND DISPOSE OF EXISTING FOOTING.
- REMOVE AND SALVAGE EXISTING PICNIC TABLE TO BE TURNED OVER TO THE OWNER.
- ABANDON EXISTING UTILITY PIPE IN PLACE (CONTRACTOR TO CONFIRM NO CONFLICTS), CUT AND INSTALL WATER-TIGHT CAP AT EXISTING PIPE AND INSTALL BULKHEAD AT STRUCTURES WHERE PIPE IS TO BE ABANDONED IN PLACE. FILL WITH FLOWABLE GROUT.
- REMOVE AND SALVAGE EXISTING FIRE HYDRANT TO BE RELOCATED. REFER TO C3.1.
- REMOVE EXISTING TREE, INCLUDE STUMP AND ROOTS.

- EXISTING DEPRESSIONS AND MOUNDINGS WITHIN THE CLEARING LIMITS ARE TO BE REMOVED AND SALVAGED. STAGE IN ON SITE LOCATION AS SPECIFIED BY OWNER.
- ALL DEPRESSIONS CREATED BY DEMOLITION PROCEDURES SHALL BE BACKFILLED WITH CLASS II FILL MATERIAL IN 8" LIFTS COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT, UP TO PROPOSED SUBGRADE.
- CONTRACTOR IS RESPONSIBLE FOR DOING AN EARTHWORK CALCULATION FOR CUT AND FILL REQUIREMENTS, AND IS RESPONSIBLE FOR INCLUDING IMPORT AND EXPORT OF MATERIALS IN THEIR BID. ALL EXCESS MATERIAL (INCLUDING TOPSOIL, CLEAN FILL, AND WASTE MATERIAL) SHALL BE REMOVED FROM THE SITE.
- EXISTING SUPPORTED SLABS AT BUILDING ENTRY/DOORS TO REMAIN, UNLESS OTHERWISE DIRECTED. CONTRACTOR TO VERIFY LIMITS OF EXISTING SUPPORTED SLAB AND REMOVE ADJACENT WALLS AS SHOWN ON PLANS.
- CONTRACTOR TO PROTECT EXISTING WALKS, PAVEMENT, CURBS, GUTTERS, WALLS, FENCES, GATES, LANDSCAPING AND TREES TO REMAIN DURING CONSTRUCTION.

STORM STRUCTURE SCHEDULE (Storm (NP22006))						
STR. NO.	TYPE	RIM ELEV.	INV. SIZE	INV. DIR.	INVERT	IN/OUT
R100	MH	659.11	12"	S	654.54'	In
R101	CB	659.07	12"	N	654.64'	In Out
R102	MH	659.72	12"	N	654.70'	In Out
R103	MH	661.27	12"	S	655.68'	In Out
R103A	2" DIA INLET	660.65	12"	E	655.71'	Out
R104	MH	661.70	12"	N	656.09'	In Out
R104A	2" DIA INLET	660.90	12"	E	656.12'	Out
R105	MH	661.69	12"	W	656.42'	In Out
R105A	2" DIA INLET	660.90	12"	S	656.45'	Out

LEGEND	
PROPOSED WATERMAIN	PROPOSED SAN MANHOLE (SAN)
PROPOSED SANITARY	PROPOSED STORM MANHOLE (MH)
PROPOSED STORM SEWER	PROPOSED CATCH BASIN (CB)
PROPOSED GAS MAIN	PROPOSED INLET (IN)
PROPOSED ELECTRIC	PROPOSED END SECTION (ES)
PROPOSED HYDRANT	PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STAIRWELL (SP) W/ BAR GRATE COVER
PROPOSED GATE	UTILITY CROSSING (SEE DATA TABLE)
PROPOSED VALVE & WELL (VW)	CB - STRUCT. TYPE
PROPOSED VALVE & WELL (VW)	20 - STRUCT. NO.
PROPOSED VALVE & WELL (VW)	10 - STRUCT. NO.
PROPOSED VALVE & WELL (VW)	12 - STRUCT. TYPE

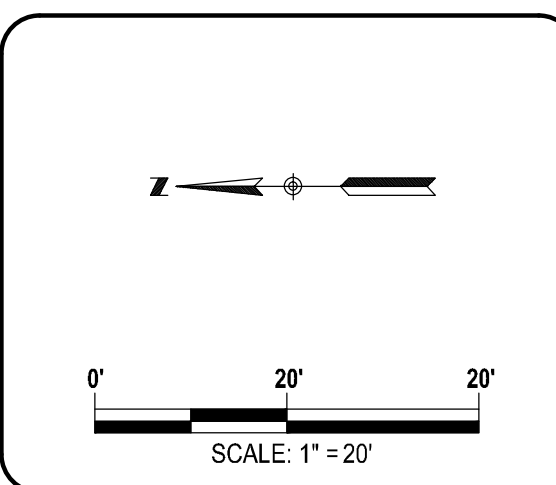
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811
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Call before you dig.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

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CONSTRUCTION PLANS
Right-of-Way Parking Plan

SECTION 31
TOWN 01N RANGE 10E
CITY OF SOUTHFIELD
OAKLAND COUNTY

NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
2	03-23-2024	PAGE TURN
3	03-29-2024	REV. OWNER REVIEW
4	10-25-2024	PERMIT
5	12-13-2024	HUB SUBMISSION
6	12-20-2024	PERMIT
7	02-19-2025	BULLETIN NO. 1
8	03-07-2025	BULLETIN NO. 2
9	11-19-2025	CITY ENG. REV.
10	12-12-2025	CITY ENG. APPROVED
11	03-02-2026	EGL ENG. REV.
11	04-13-2026	CITY ENG. REV.
12	06-23-2026	RFI 121
13	07-02-2026	RFI 115

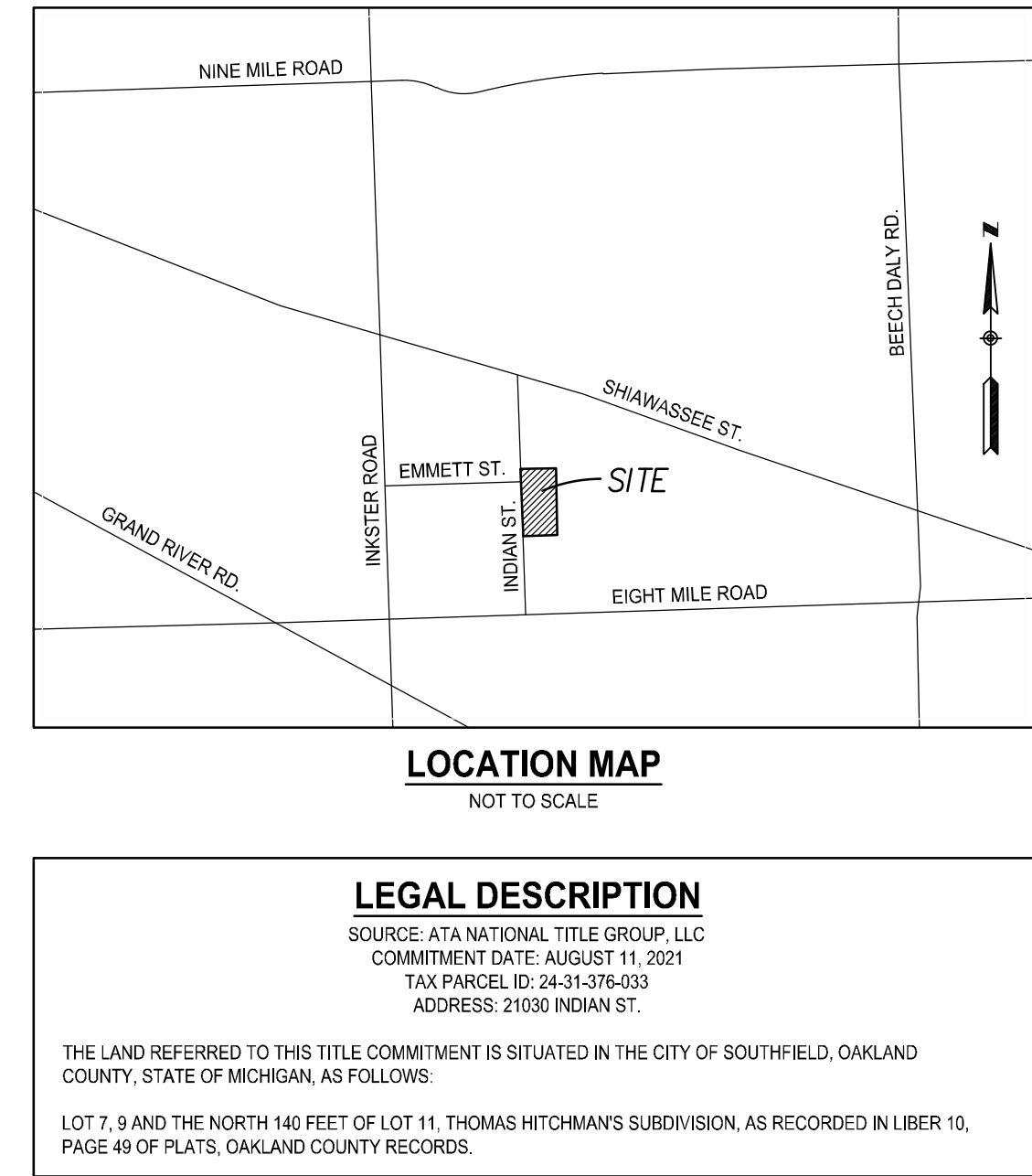
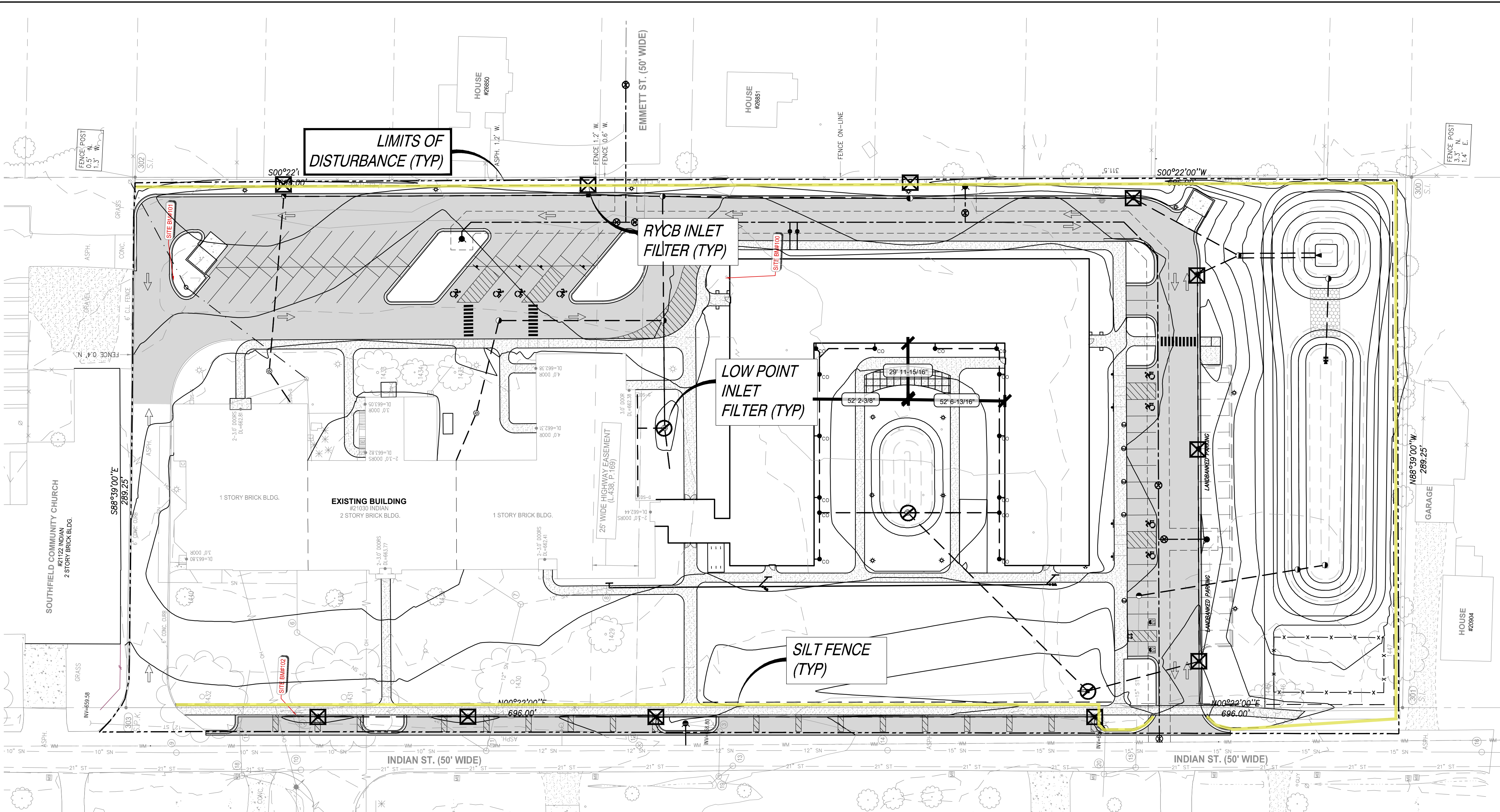
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET,
ADJUST SCALES ACCORDINGLY

DATE	DATE
DESIGNER J. CHRISTOPHER	DATE 24-01-26
CHECKED J. CHRISTOPHER	DATE 24-01-26
PROJECT MANAGER T. SOVEL	BID PLAN DATE
DEPARTMENT MANAGER APPROVAL	DATE

JOB NO. NP22006
SCALE: 1" = 30'

DRAWING NO. NP2006PAV
SHEET NO. C7.1

Plotted: Apr 13, 2026, 12:31 PM by user: 1111 - Saved: 12/9/2025 by user: 1111
N:\NP\NP22006 - Grace School - Senior Housing\DWG\NP22006SEC.dwg



SOIL EROSION/SEDIMENTATION CONTROL CONSTRUCTION SEQUENCE

1. INSTALL INLET FILTERS, AND SILT FENCE AROUND DENIED PERIMETER AS SHOWN.
2. COMPLETE SITE DEMOLITION ACTIVITIES INCLUDING PAVEMENT REMOVAL AND DISPOSAL, CLEAR, GRUB AND STRIP TOPSOIL IN AREAS OF EARTH DISRUPTION.
3. COMPLETE ROUGH GRADING LAND BALANCING OPERATIONS.
4. INSTALL PROPOSED UNDERGROUND UTILITIES AND PLACE INLET FILTERS IN NEW STORM STRUCTURES WHERE INDICATED. REPLACE INLET FILTERS WITHIN AFFECTED EXISTING STRUCTURES AS NECESSARY.
5. PERFORM FINE GRADING, PAVING OPERATIONS, AND FIELD.
6. COMPLETE LANDSCAPING ACTIVITIES INCLUDING LAWN RESTORATION.
7. EROSION CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL THE CITY AND/OR COUNTY GRANTS ITS APPROVAL. INLET FILTERS SHALL BE PERIODICALLY INSPECTED AND CLEANED/REPLACED AS NECESSARY.

ALL EROSION CONTROL MEASURES SHALL BE INSTALLED APPROXIMATELY ACCORDING TO THE FOLLOWING SEQUENCE OF CONSTRUCTION.

PROJECT COMMENCEMENT ON OR ABOUT MARCH 2024.

SCHEDULE

- | | |
|--|-----------|
| A. INSTALL SILT FENCE, AND INLET FILTERS IN EXISTING STRUCTURES. | 1-2 DAYS |
| B. STRIP AND STOCKPILE TOPSOIL, SITE DEMOLITION, AND ROUGH GRADE SITE. | 2-3 WEEKS |
| C. INSTALL PROPOSED UTILITIES AND NEW STRUCTURES. | 2-3 WEEKS |
| D. INSTALL INLET FILTERS IN DRAINAGE STRUCTURES | 1-2 DAYS |
| E. BUILDING ADDITION CONSTRUCTION. | 2 MONTHS |
| F. FINE GRADE SITE, PAVE, INSTALL LANDSCAPING AND ESTABLISH VEGETATION. | 2-3 WEEKS |
| G. CLEAN PAVEMENTS, WALKS, CULVERTS, AND WATERCOURSES OF ALL ACCUMULATED SEDIMENT IN CONJUNCTION WITH REMOVAL ALL TEMPORARY DEVICES. | 1-2 WEEKS |

PROJECT COMPLETION ON OR ABOUT NOVEMBER 2024.

RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 20% PERENNIAL RYEGRASS, 50% CREEPING RED FESCUE). PLACE MULCH IN ALL SEEDING AREAS. ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL, PLACE NORTH AMERICAN GREEN DISCO MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURERS RECOMMENDATIONS TO HOLD MATING IN PLACE.

APPROX. GROSS ACREAGE DISTURBED = 4.10± ACRES
DISTANCE TO NEAREST BODY OF WATER = 1.045± LF NORTH
(UNNAMED TRIBUTARY TO ROUGE RIVER)

SOIL TYPES:

- | | |
|---------|--|
| 14B | OAKVILLE FINE SAND, 0 TO 6 PERCENT SLOPES |
| AtruaB | ALTMAR-URBAN LAND COMPLEX, 0 TO 4 PERCENT SLOPES |
| TeduabB | TEDROW-URBAN LAND COMPLEX, 0 TO 4 PERCENT SLOPES |

THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED. THE SOIL EROSION AND SEDIMENT CONTROL ACT.

GRADING LEGEND

- | | | |
|--------------------------------|---------------|---------------------------|
| EXISTING ELEVATION | TP 000.00 | TOP OF PAVEMENT ELEVATION |
| PROPOSED TOP OF CURB ELEVATION | TW 000.00 | TOP OF WALK ELEVATION |
| PROPOSED OUTTER ELEVATION | FG 000.00 | FINISH GRADE ELEVATION |
| OUTSIDE GRADE ELEVATION | T/WALL 000.00 | TOP OF WALL ELEVATION |
| EXISTING CONTOURS | ME 000.00 | MATCH EXISTING ELEVATION |
| PROPOSED CONTOURS | | FLOW ARROW |

SOIL EROSION CONTROL DEVICES

- | |
|-------------------------------|
| LOW POINT INLET FILTER (SI-2) |
| RYCB INLET FILTER (SI-3) |
| SILT FENCE (SP-3) |
| LIMITS OF DISTURBANCE |
| CONSTRUCTION ENTRANCE (SP-9) |

SOIL EROSION/SEDIMENTATION CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PONTIAC AND/OR COUNTY OF OAKLAND.
2. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL DEVICES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
3. EROSION AND ANY SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
4. EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
5. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY DEVICES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED AND APPROVED BY THE CITY AND/OR COUNTY.
6. DEBRIS FROM PROJECT WILL BE LEFT ON THE SITE BY DELIVERY OR CONSTRUCTION VEHICLES THROUGH THE USE OF CLEAN STONE EXITS. SHOULD THE STONE BECOME LESS EFFECTIVE IT WILL BE REPLACED. ALL CONSTRUCTION TRAFFIC WILL USE THE CLEAN STONE EXIT.
7. DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTORS. SPRINKLING TANK TRUCKS WILL BE AVAILABLE AT ALL TIMES TO BE USED ON HAUL ROUTES OR OTHER PLACES WHERE DUST BECOMES A PROBLEM.
8. IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDING AREAS WITH UNWEATHERED SMALL GRASS STRAW OR HAY. SPREAD UNIFORMITY AT A RATE OF 1 1/2 TO 2 TONS PER ACRE OR 0.10 POUNDS PER SQUARE FEET. ANCHOR MULCH WITH DISC TYPE MULCH ANCHORING TOOL.
9. ALL MUD, DIRT, AND DEBRIS TRACKED ONTO EXISTING ROADS FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR OR BUILDER. ALL MUD, DIRT, AND DEBRIS TRACKED OR SPILLED ONTO PAVED SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
10. PERMANENT SOIL EROSION CONTROL DEVICES FOR ALL SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH CHANGES HAVE BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE, HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES TEMPORARY SOIL EROSION CONTROL DEVICES SHALL BE IMPLEMENTED WITHIN 30 CALENDAR DAYS. ALL TEMPORARY SOIL EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION DEVICES ARE IMPLEMENTED AND/OR ESTABLISHED. ALL PERMANENT SOIL EROSION CONTROL DEVICES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
11. ALL CONTRACTORS ARE TO KEEP EXCAVATED MATERIAL ON SITE. PARTICULAR CARE SHOULD BE TAKEN WHEN WORKING ALONG THE PERIMETER OF THE SITE. IN NO EVENT SHALL THE WORK AREA EXTEND BEYOND THE LIMITS INDICATED ON THE PLANS.
12. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR.

LEGEND

- | | |
|--|---|
| PROPOSED WATERMAIN | PROPOSED SAN MANHOLE (SAN) |
| PROPOSED SANITARY | PROPOSED STORM MANHOLE (MH) |
| PROPOSED STORM SEWER | PROPOSED CATCH BASIN (CB) |
| PROPOSED GAS MAIN | PROPOSED INLET (INL) |
| PROPOSED ELECTRIC | PROPOSED END SECTION (ES) |
| PROPOSED HYDRANT | PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER |
| PROPOSED GATE VALVE & WELL (GVW) | UTILITY CROSSING (SEE DATA TABLE) |
| PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW) | STORM SEWER STRUCTURE |
| | SANITARY SEWER STRUCTURE |
| | WATERMAIN STRUCTURE |
| STANDARD BITUMINOUS PAVEMENT | HEAVY-DUTY BITUMINOUS PAVEMENT |
| DEEP-STRENGTH BITUMINOUS PAVEMENT | CONCRETE PAVEMENT |
| CONCRETE SIDEWALK | MILL PAVEMENT |

OWNER

John Grace Arms Limited Housing
26000 Evergreen Road
P.O. Box 2055
Southfield, MI 48037-2055
PHONE:

GRAPHIC SCALE

0 15 30 60
(IN FEET)
1 inch = 30 ft.

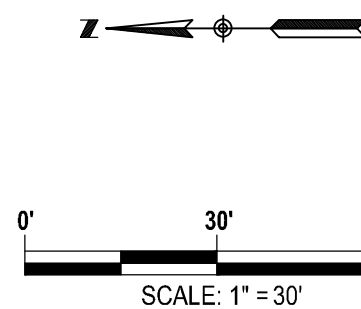
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CONSTRUCTION PLANS SESC Plan

SECTION 31		
TOWN	01N	RANGE 10E
CITY OF SOUTHFIELD		
OAKLAND COUNTY		
NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
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10	12-12-2025	CITY ENG. APPROVED
11	03-02-2026	EGLI ENG. REV.
11	04-13-2026	CITY ENG. REV.

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING		
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		
DRAWER	DATE	
DESIGNER	J. CHRISTOPHER	DATE 24-01-26
CHECKER	J. CHRISTOPHER	DATE 24-01-26
PROJECT MANAGER	T. SOVEL	BID PLAN DATE
DEPARTMENT MANAGER APPROVAL		DATE
JOB NO.	NP22006	DRAWING NO. NP22006PAV
SCALE:	1" = 30'	SHEET NO. CB.1



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P.O. BOX 2055
SOUTHFIELD, MI 48037-2055



PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

UTILITY NOTE

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DeDECKER ASSOCIATES, INC.

JOHN GRACE ARMS

CONSTRUCTION PLANS

SECTION 31
TOWN 01N RANGE 10E
CITY OF SOUTHFIELD
OAKLAND COUNTY

NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
2	03-22-2024	PAGE TURN
3	03-29-2024	REV. OWNER REVIEW
4	10-25-2024	PERMIT
5	12-13-2024	HUD SUBMISSION
6	12-20-2024	PERMIT

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET,
ADJUST SCALES ACCORDINGLY

DRAFTER	DATE
-	-
DESIGNER	DATE

J. CHRISTOPHER	24-01-26
CHECKED J. CHRISTOPHER	DATE 24-01-26

PROJECT MANAGER T. SOVEL	BID PLAN DATE
DEPARTMENT MANAGER APPROVAL	DATE

-	
JOB NO. NP22006	DRAWING NO. NP2006PAV

SCALE:	SHEET NO. L1.1
--------	-------------------



LANDSCAPE NOTES

Exceptions to the following specifications will be considered, if acceptable alternates are discussed with the City of Southfield Planning Department prior to landscape installation. Additional specifications are to be added by the landscape architect as needed.

- Prior to lay and clearing or construction, live protection fencing is to be installed by the contractor and inspected by the City. This fencing shall be installed at the edge of the work area, around all trees to be protected, and around the Tree Protection Area. It must be maintained as approved for the duration of the project. No other vehicles or equipment are allowed to enter the work area without prior approval from the City of Southfield Planning Department.
- Trees to be transplanted on the site shall be so marked in the field by the arboriculture architect, approved by the City of Southfield and transplanted using only one-way traffic flow. The arboriculture architect will provide a list of trees to be transplanted and a list of trees to be removed. Transplants are to be watered and mulched after planting.
- Any trees shown on the plan to save or transplant that are removed and damaged shall be replaced with one (1) 6" diameter - 3' caliper tree for each tree removed under 6" diameter and over 6" diameter. One replacement tree per tree removed. Caliper tree for each (1) 8" diameter. Type of replacement and location shall be determined by the arboriculture architect or the City of Southfield Planning Department.
- Plant trees and shrubs no closer than the proposed minimum distances from adjacent structures, parking areas, sidewalks, etc.
- | | |
|----------------------------|--------|
| Dwarf/Shrub | |
| Shade/Canopy Trees | 5 feet |
| Ornamental/Fowering Trees | 5 feet |
| Small Shrubs | 3 feet |
| Evergreen/Flowering Shrubs | 4 feet |
5. Dig small pits a minimum of 1' larger than shrub root ball and trees pits 2' larger than shrub root ball. Small pits to be dug around trees to be transplanted. The plants are planted alone. Plant trees and shrubs at the same grade level at which they were excavated. The nursery file, file, clay soils are evident; plant trees and shrubs high.
6. Remove all weeds, vines and burlap from the top 1-3' of tree and shrub earth balls and from tree trunks. Remove all biodegradable material such as plastic or paper.

- Lawn trees are to be mulched with a minimum of 4" deep dry deep colored bark rings or approved design for trunk protection.
- Shrub beds are to be mulched with shredded bark mulch to a minimum depth of 3" light-colored shredded hardwood bark mulch is accepted.
- Plantings are to be watered for the first 2 weeks after planting, in regular intervals and high volume. Pest and soil not acceptable.
- Existing lawn that the owner intends to save and areas that are damaged during construction are to be reseeded with the same seed as the existing lawn. If the lawn is found to be low, healthy, dense and free from weeds, lawn may be mowed and the seed broadcast. If the lawn is found to be thin, weak, or full of weeds, the lawn may be replaced by approved plan, then the following requirements will apply.
- Existing lawn found to be in poor condition must first be sprayed with herbicide to equal to label rate. Then the lawn must be reseeded. Allow for a minimum period of seven (7) days for the herbicide to take effect, then the lawn may be reseeded. The seed must be the same as the existing lawn. Allow a minimum of four (4) to six (6) inches of new topsoil to all lawn areas to be seeded and compacted. The seed must be broadcast and covered with a 1/2" of sodding. Regrade to eliminate low areas and depressions and resod all areas.
- Existing lawn found to be generally in good condition with low bare, sparse or weedy areas must be reseeded by filling in low areas, raking or topdressing, top dressing, and grass seeds and top dressings to the weed and feed product.
- Baclofil directly behind all curbs and along sidewalks and compact to the top of the curb. The top dressing and potting soil has spots and by the curb.
- All landscape areas, especially all parking lots and landscape beds next to buildings will be excavated of all building materials and landscape soils to a depth of 6" and replaced with a minimum of 6" of topsoil. The topsoil must be a minimum of 6" of yellow clay or better. If topsoil over 6" is available, a minimum of 6" of topsoil over 6" of yellow clay or better is setting in place and compacted to the landscape plan.
3. Materials and following procedure shall be followed:
- A. Remove trees and brush per City of Southfield direction.
- B. Remove trash and perform surface grading (if any) to fill in the low areas.

- D.** Remove, haul and dump ground waste from project seed media (shade or sunny area).
- E.** If area requires ground cover. Work very minimally, if necessary.
- F.** Landscaping shall be conducted through light yellow clay or heavy clay soils to be free of construction materials and debris. Use of team chairs for benching shall be prohibited. All slopes shall be no steeper than 1:3 unless otherwise noted.
- G.** Conversion of all slopes and gravel areas to landscape shall be done in the following manner:
- Remove all asphalt, gravel and compact earth to a depth of 6" - 18" depending on the depth of the root ball and dispose of it off site.
 - Call (202) 704-1546 for an inspection prior to backfilling.
 - Backfill with 1/2" to 3/4" clean washed sand or clean washed starting soil (lean or light yellow clay) to a minimum of 2' above top of curb or gutter.
 - Plant with 1" to 2" diameter trees or shrubs in the following order: adjacent curb and walk after setting, unless otherwise noted or required by the City of Fairfax.
- H.** All landscape areas including right-of-ways shall be irrigated by an automated underground irrigation system. Lawn and shrub/landscape areas shall be planted with the following:
- 1. All existing trees on site and in the right-of-way shall be protected as directed by the City of Fairfax.
 - 2. All existing lawns, including driveways and sidewalks, planted and deep-rooted trees (minimum 3" caliper) by a qualified tree service company licensed with the City of Fairfax.
- The construction of detention basins should be made with the following:
1. Concrete, free of joint opening gaps
 2. Slopes of 1:4 or flatter
 3. No fencing
 4. No water levels to be retained
 5. No erosion control or basin forcing to natural vegetation
- Provide continuous curbing around all landscape areas on site. Alternate landscape area protection such as decorative fences, retaining walls, etc.

-
- NOTES
- CONTINUED FROM PREVIOUS PAGE
- 1 DIRT
2 SLOTTED BALL
3 SLOTTED BALL
4 SLOTTED BALL
5 SLOTTED BALL
6 SLOTTED BALL
7 SLOTTED BALL
8 SLOTTED BALL
- HEDGE PLANTING DETAIL
- NOT TO SCALE

-

- [illegible]

-

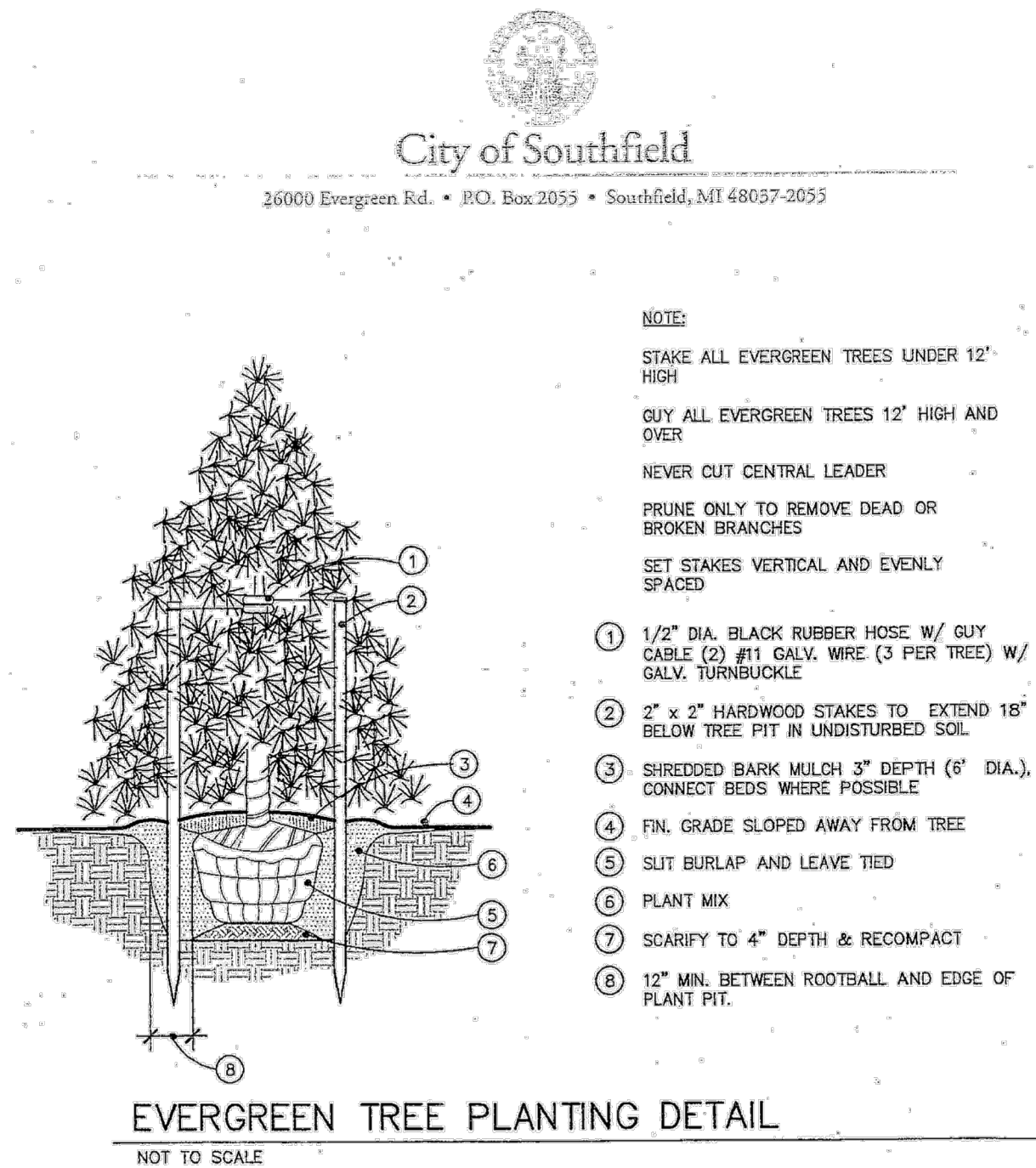
- [illegible]

DECIDUOUS TREE PLANTING

TREE PROTECTION DETAIL

CITY OF SOUTHFIELD STANDARD

Plotted: Dec 16, 2024, 11:24 AM by user: 1111 - Saved: 3/29/2024 by user: 1111
 \\NPANLD Projects\NP22006 - Grace School - Senior Housing\DWG\NP22006LSC.dwg



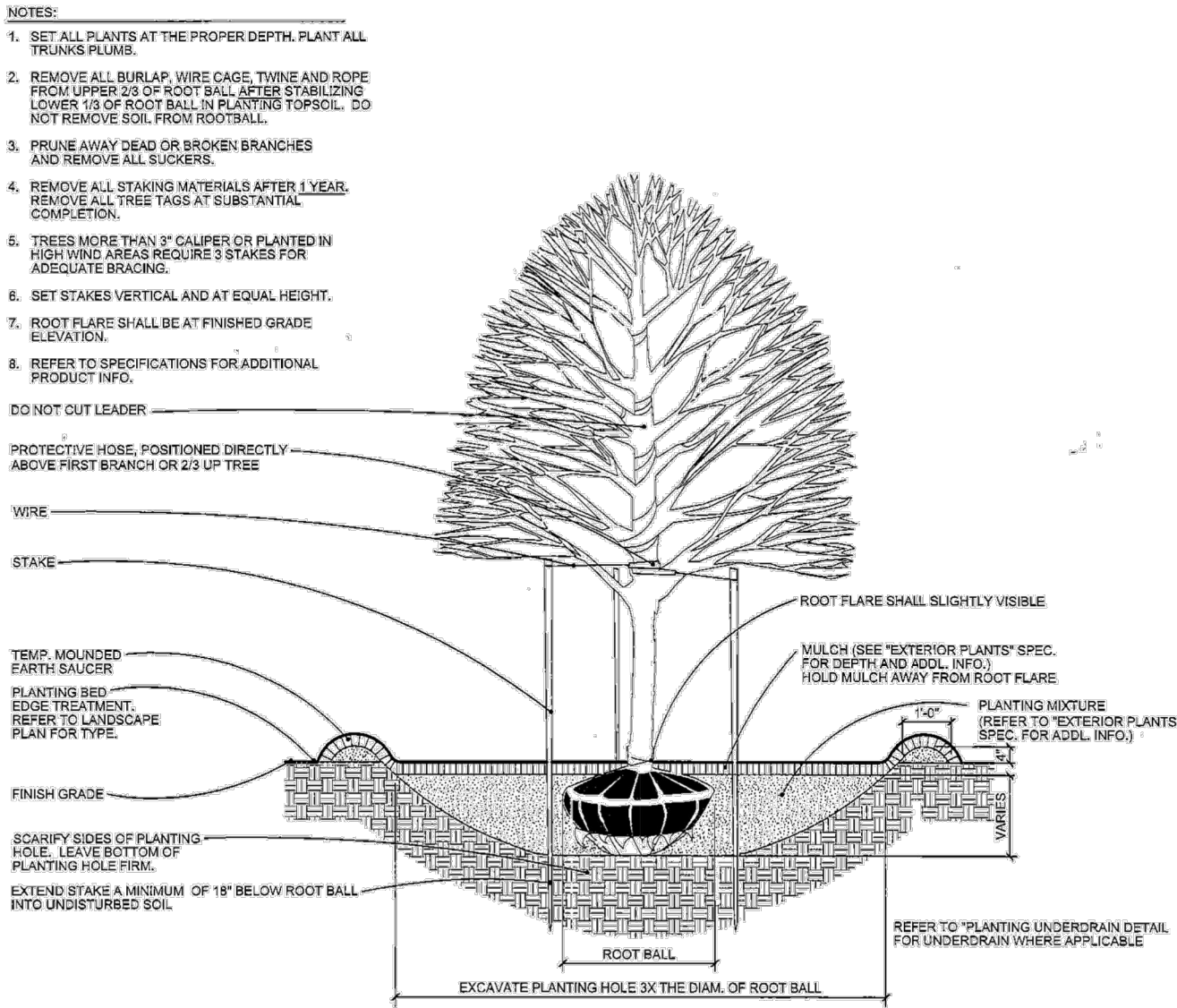
LANDSCAPE NOTES:

Exceptions to the following specifications will be considered, if acceptable alternates are discussed with the City of Southfield Planning Department prior to landscape installation. Additional specifications are to be added by the landscape architect as needed.

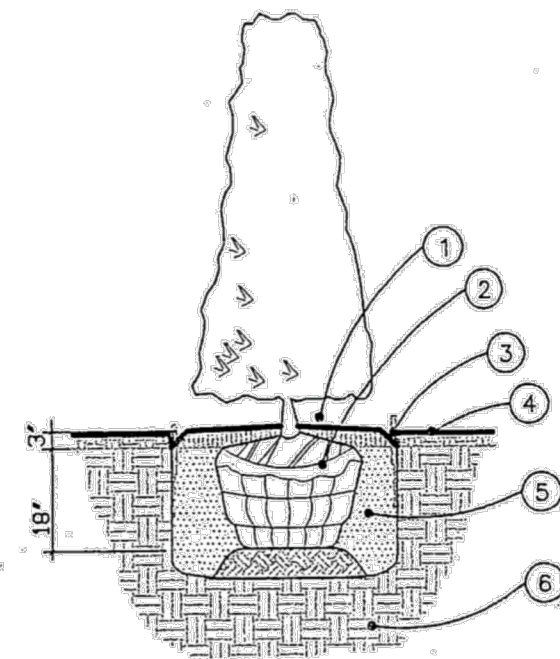
- Prior to any land clearing or construction, tree protection fencing is to be installed by the contractor and inspected by the City. This fencing shall be installed at the drip line of all trees and shrubs, in accordance with the City's Tree Protection Detail, and must be maintained as approved for the duration of the project. No cutting, filling or trespassing shall occur inside the fenced areas without prior approval from the City of Southfield Planning Department.
- Trees to be transplanted on the site shall be so marked in the field by the landscape architect, approved by the City of Southfield and transplanted using only the appropriate size tree spade, per the American Association of Nurserymen and City of Southfield Standards. Transplants are to be watered immediately following planting. See detail on landscape plan.
- Trees shown on the plan to save or transplant that are removed or damaged shall be replaced with one (1) 2 1/2 - 3" caliper tree for each tree removed under 6" diameter. Trees over 6" diameter shall be replaced with one (1) 2 1/2 - 3" caliper tree for each 6" in diameter removed. Type of replacement and location shall be determined by the project landscape architect or the City of Southfield Planning Department.
- Plant trees and shrubs no closer than the following minimum distances from sidewalks, curbs and parking stalls:

Shade/Canopy Trees	5 feet
Ornamental/Flowering Trees	10 feet
Evergreen Trees	10 feet
Evergreen/Flowering Shrubs	4 feet

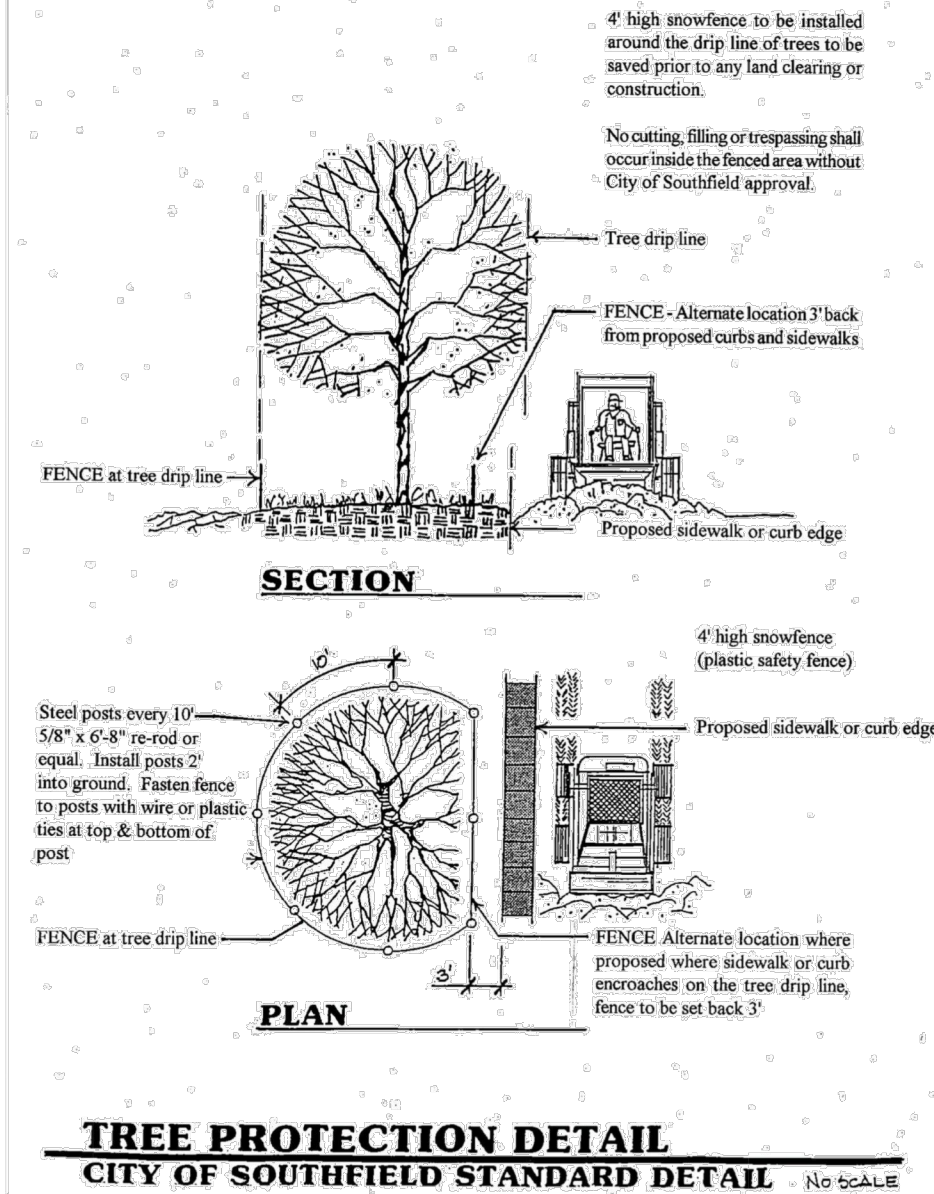
- Dig shrub pits a minimum of 1' larger than shrub root balls and tree pits 2' larger than root balls. Backfill with one part top soil and one part soil from the excavated planting hole. Plant trees and shrubs at the same grade level at which they were planted at the nursery. If wet, clay soils are evident, plant trees and shrubs higher.
- Remove all twine, wire and burlap from the top 1/3 of tree and shrub earth balls and from tree trunks. Remove all non-biodegradable material such as plastic or nylon completely.



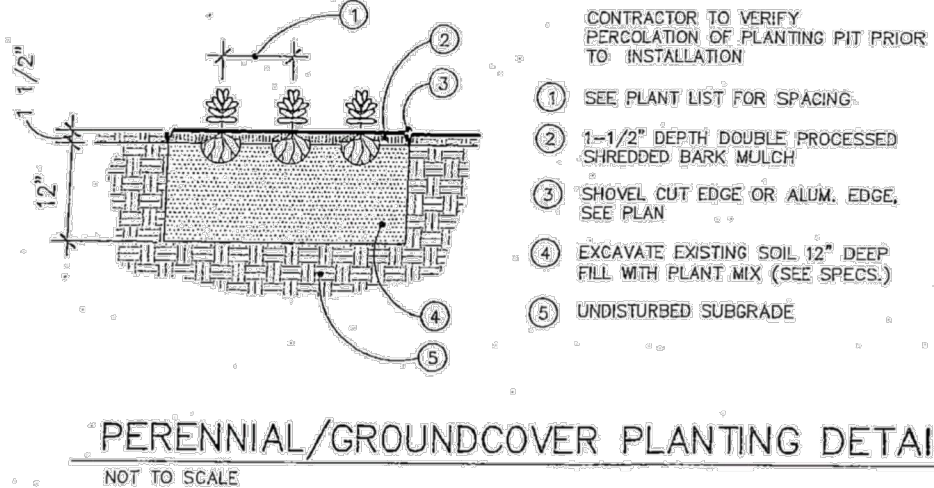
DECIDUOUS TREE PLANTING WITH TREE STAKES - B & B
SCALE: 1/8\"/>



HEDGE PLANTING DETAIL
NOT TO SCALE



TREE PROTECTION DETAIL
CITY OF SOUTHFIELD STANDARD DETAIL
No SCALE



PERENNIAL/GROUNDCOVER PLANTING DETAIL
NOT TO SCALE

- Lawn trees are to be mulched with a minimum of 4' wide by 4" deep shredded bark rings or approved design for trunk protection. Only natural-colored shredded hardwood bark mulch will be accepted.
- Shrub beds are to be mulched with shredded bark mulch to a minimum depth of 3". Only natural-colored shredded hardwood bark mulch will be accepted.
- Sod is to be provided for all new lawn areas, especially in right-of-ways and high use areas. Peat sod is not acceptable.
- Existing lawn that the owner intends to save and areas that are damaged during construction must be inspected by the City to determine viability. If the existing lawn is found to be level, healthy, dense and free from weeds, lawn may not require replacement or renovation. If renovation is required or is part of the approved plan, then the following requirements will apply:

Existing lawn found to be in poor condition must first be sprayed with Round-Up (or equal) to kill the existing lawn and weed areas. Wait for a minimum period of seven (7) days for the herbicide to take effect, then remove all dead sod and weeds to a minimum depth of two (2) inches. Add a minimum of four (4) to six (6) inches of new topsoil to all lawn areas. Back fill and compact topsoil to the top of all curbs and walks prior to sodding. Regrade to eliminate all bumps and depressions and resod all areas.

Existing lawn found to be generally in good condition but with bare, sparse or weedy areas must be renovated by filling in low areas, raking, overseeding and top dressing all sparse and bare spots and by initiating a weed and feed program.
- Backfill directly behind all curbs and along sidewalks and compact to the top of curb or walk to support vehicle and pedestrian weight without settling.
- All landscape areas, especially parking lot islands and landscape beds next to buildings shall be excavated of all building materials and poor soils to a depth of 12 - 18" and backfilled with good, medium textured planting soil (loam or light yellow clay). Add 4 - 6" of topsoil over fill material and crown a minimum of 6" above top of curbs and/or walks after earth settling unless otherwise noted on the landscape plan.
- In natural areas the following procedures shall be followed:

A. Remove any trees and brush per City of Southfield direction only.

B. Remove trash and perform surface grading (if any) only to fill in the worst low spots. Do not cut or fill around trees.
- C. Rake, hydroseed and mulch bare ground areas with proper seed mix (shade or sunny mix).
- D. Let area revert to trees and shrubs. Mow very minimally, if necessary.
- Landscape berms are to be constructed of light yellow clay or loam soils and are to be free of construction materials and debris. Use of heavy clays for berm construction must be approved by the City of Southfield Planning Department prior to installation. Slopes are to be no steeper than 1:3 unless otherwise specified on the landscape plan.
- Conversion of all asphalt and gravel areas to landscape shall be done in the following manner:

A. Remove all asphalt, gravel and compacted earth to a depth of 6 - 18" depending on the depth of the sub base and dispose of off site.

B. Call (248) 796-4156 for an inspection prior to backfilling.

C. Replace excavated material with good, medium textured planting soil (loam or light yellow clay) to a minimum of 2" above top of curb and sidewalk, add 4 - 6" of topsoil and crown to a minimum of 6" above adjacent curb and walk after earth settling, unless otherwise noted on the landscape plan.
- All landscape areas including right-of-ways shall be irrigated by an automatic underground irrigation system. Lawns and shrub/landscape areas shall be watered by separate zones to minimize overwatering.
- All existing trees on site and in the right-of-way shall be pruned as directed by the City of Southfield to remove dead, dying and hazardous limbs or to remove limbs which impede construction, driveways and sidewalks. Pruning and deep-root fertilizing is to be done only by a qualified tree service company licensed with the City of Southfield.
- The construction of detention basins should be made with the following goals in mind:

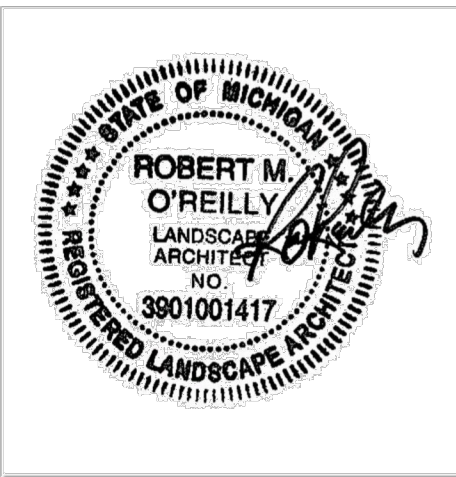
A. Natural, free form appearing grades

B. Slopes of 1:4 or flatter

C. No fencing

D. No water levels to be retained

E. Mow slopes and let bottom of basin revert to natural vegetation
- Provide continuous curbing around all landscape areas on site. Alternate landscape area protection such as decorative fences, retaining walls, etc., may be acceptable in lieu of curbing or may be required in addition to curbing to protect the landscape areas and properly deflect vehicular and pedestrian traffic.
- Ryerson steel edging typical around all beds that meet lawn.



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CLIENT:

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P.O. BOX 2055
SOUTHFIELD, MI 48037-2055



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JOHN GRACE ARMS

CONSTRUCTION PLANS Landscape Details

SECTION 31

TOWN 01N RANGE 10E

CITY OF SOUTHFIELD

OAKLAND COUNTY

NO.	DATE	REVISION
1	03-04-2024	OWNER REVIEW
2	03-22-2024	PAGE TURN
3	03-29-2024	REV. OWNER REVIEW
4	10-25-2024	PERMIT

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	
DRAWN	DATE
DESIGNER	DATE
J. CHRISTOPHER	24-01-26
CHECKED	DATE
J. CHRISTOPHER	24-01-26
PROJECT MANAGER	BID PLAN DATE
T. SOVEL	DATE
DEPARTMENT MANAGER APPROVAL	DATE
JOB NO.	DRAWING NO.
NP22006	NP2006PAV
SCALE:	SHEET NO.
	L12

MANHOLE
 CATCH BASIN
 GROSS CLEAN OUT
 FLOW LINE
 SEWER GULLY
 VALVE BOX
 GATE VALVE & WELL
 WATER SHUT OFF VALVE
 FIRE HYDRANT
 SPRINKLER VALVE BOX
 Y-MAIN SPRINKLER HEAD
 HAND HOE
 ELECTRIC RISER OR METER
 TELEPHONE RISER
 CABLE TV RISER
 TELEPHONE UNIT
 UTILITY POLE
 UTILITY POLE W/ TRANSFORMER
 UTILITY POLE W/ LAMP EXTENSION
 (ARROW INDICATES DIRECTION OF FLOW)
 LIGHT POLE
 UTILITY POLE W/ LAMP EXTENSION
 TRAFFIC SIGNAL
 SPRING TRAPPING SIGNAL (OVER ROAD)
 GUY WIRE
 GUY POLE
 GROUND LEVEL (DECORATIVE LIGHT)
 FLAG POLE
 PHONE OR POLE BOOTH
 METAL OR CONC. POST
 MAILBOX
 SIGN
 WATER FOUNTAIN
 PARKING METER
 BILLBOARD OR LARGE SIGN
 BASKETBALL HOOP
 BASKET
 STATUE OR SCULPTURE
 BENCH
 DUMP
 STUMP
 DOWN TO STORY DRAIN
 DOWN TO GROUND
 CONFERENCER TREE
 DECIDUOUS TREE
 DECIDUOUS SHRUB
 CONFERENCER SHRUB
 SECTION CORNER
 TRAVERSE POINT
 STATION NUMBER



DATUM: GPS-DERIVED NAVD88		
SITE BM#100	CHISELED ** ON WESTERN PLATE OF LIGHT POLE, LOCATED ±70' SOUTHEAST OF THE SOUTHEAST BUILDING CORNER OF #21030.	ELEV.=+661.24
SITE BM#101	CHISELED ** ON SOUTHWEST PLATE OF LIGHT POLE, LOCATED ±70' EAST OF THE NORTHEAST BUILDING CORNER OF #21030.	ELEV.=+661.68
SITE BM#102	CHISELED ** ON THE NORTH RIM OF STORM MANHOLE (STRUCTURE No. 2), LOCATED ON THE EAST SIDE OF INDIAN STREET ±100' SOUTHWEST OF THE NORTHEAST BUILDING CORNER OF #21030.	ELEV.=+661.05

1. THIS BOUNDARY AND TOPOGRAPHICAL SURVEY IS BASED UPON A FIELD SURVEY PERFORMED BY SPALDING DEEDERIK INC. DURING JANUARY OF 2022.
2. THE PROPERTY LINES/RIGHT-OF-WAY LINES SHOWN ON THIS TOPOGRAPHICAL SURVEY ARE INTENDED TO BE AN ACCURATE GRAPHICAL REPRESENTATION BASED UPON A COMBINATION OF A PROVIDED LEGAL DESCRIPTION, FOUND EVIDENCE DOCUMENTATION AND OCCUPATION. A COMPLETE PROPERTY LINE ANALYSIS HAS BEEN PERFORMED AND PROPERTY CORNERS HAVE BEEN SET IN THE FIELD PER THE AGREED TO SCOPE OF SERVICES.
3. THIS SURVEY HAS BEEN PREPARED WITH THE BENEFIT OF A CURRENT TITLE SEARCH, AN INFORMATIONAL TITLE SEARCH BY ATA NATIONAL, TITLE GROUP HAVING AN ORDER NUMBER OF C3-2796462-SCM AND AN EFFECTIVE DATE OF AUGUST 11, 2021. WITHIN THE LIMITS TO SPALDING DEEDERIK'S PLOTTABLE EXCHANGE AND EXCHANGE OF RIGHTS, THERE ARE NO EXCEPTIONS TO THIS SURVEY. THERE HAVE BEEN SHOWN ON THIS SURVEY IF THEY FALL WITHIN THE BOUNDS OF DETAILED MAPPING COMMENTS, EACH PLOTTABLE EXCHANGE IS DETAILED ON THE "INFORMATIONAL, TITLE EXCEPTION COMMENTS" TABLE ON THIS SURVEY.
4. THE BASIS OF BEARINGS FOR THIS SURVEY IS THE STATE PLANE GRID AND THE UNITS ARE INTERNATIONAL FEET AS ESTABLISHED WITH RTK GPS MEASUREMENTS USING A DATA LINK TO THE MOIST DESCRIPTION, OPEN END COORDINATE STATIONS (CSDS). THE COORDINATE SYSTEM FOR THIS SURVEY IS THE STATE PLANE COORDINATE SYSTEM (NAD83) SOUTH ZONE (213) BASED ON NAD83 (2011).
5. PROPERTY LINES HAVE BEEN NOTATED TO STATE PLANE GRID BEARINGS; THEREFORE, THE BEARINGS OF THE PROPERTY LINES ON THE DRAWING WILL NOT MATCH THOSE SHOWN IN THE LEGAL DESCRIPTION.
6. THE VERTICAL DATUM OF THIS SURVEY IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVDS83) AS ESTABLISHED WITH RTK GPS MEASUREMENTS USING A DATA LINK TO THE MOIST CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS).
7. THE PAVING LOT STRIPING SHOWN ON THIS SURVEY IS APPROXIMATE. DIMENSIONAL AND/OR ORIENTATION VARIATIONS MAY EXIST. THIS DRAWING SHOULD NOT BE USED FOR A PARKING SPACE COUNT.
8. THE UTILITY INFORMATION SHOWN ON THIS SURVEY IS BASED UPON A COMBINATION OF RECORD INFORMATION AND FIELD MEASUREMENTS. A MISS DIG DESIGN TICKET NUMBER OF 2022011200117 HAS BEEN REFERENCED TO THIS PROJECT AND A UTILITY PROVIDER CHART IS SHOWN ON THIS DRAWING. THERE ARE NO ASSURANCES THAT ALL PROVIDERS HAVE RESPONDED AND THE SURVEYOR DOES NOT GUARANTEE THAT ALL UNDERGROUND UTILITIES ARE SHOWN AND/OR POSITIONED PROPERLY ON THIS DRAWING. IT IS ADVISED THAT RECORDS AND RECORDS PROVIDED TO US, THE INFORMATION SHOWN ON THIS DRAWING IS INTENDED TO BE USED AS A GUIDE FOR POSSIBLE UNDERGROUND UTILITY CONFLICTS. IT IS THE RESPONSIBILITY OF OTHERS TO RESOLVE THE ACTUAL LOCATION OF ANY UNDERGROUND UTILITY THROUGH THE MISS DIG FIELD VERIFICATION SYSTEM PRIOR TO ANY SITE EXCAVATION. CALL 811 OR 800-482-7871.

SOURCE: ATA NATIONAL TITLE GROUP, LLC
COMMITMENT DATE: AUGUST 11, 2021
TAX PARCEL ID: 24-31-376-003
ADDRESS: 21030 INDIAN ST.

THE LAND REFERRED TO THIS TITLE COMMITMENT IS SITUATED IN THE CITY OF SOUTHFIELD, OAKLAND COUNTY, STATE OF MICHIGAN, AS FOLLOWS:

LOT 7, 9 AND THE NORTH 140 FEET OF LOT 11, THOMAS HITCHMAN'S SUBDIVISION, AS RECORDED IN LIBER 10, PAGE 49 OF PLATS, OAKLAND COUNTY RECORDS.

HIGHWAY EASEMENT
RECORDED DATE: 12-18-1984
LIBER/PAGE: 438 / 169
REMARKS: 25' HIGHWAY EASEMENT
SDA COMMENTS: SHOWN ON SURVEY

1 OF 3

LEGEND

	MANHOLE
	CATCH BASIN
	SEWER CLEAN OUT
	GAS METER
	GAS SHUT OFF VALVE
	VALVE BOX
	GATE VALVE & WELL
	WATER SHUT OFF VALVE
	FIRE HYDRANT
	SPRINKLER VALVE BOX
	LAWN SPRINKLER HEAD
	HAND HOLE
	ELECTRIC RISER OR METER
	TELEPHONE RISER
	CABLE TV RISER
	AIR CONDITION UNIT
	UTILITY POLE
	UTILITY POLE W/ TRANSFORMER
	UTILITY POLE W/ LAMP EXTENSION (ARROW INDICATES DIRECTION OF ARM)
	LIGHT POLE
	LIGHT POLE WITH LAMP EXTENSION
	TRAFFIC SIGNAL
	POLE W/ TRAFFIC SIGNAL (OVER ROAD)
	GUY WIRE
	GUY POLE
	GROUND LEVEL / DECORATIVE LIGHTING
	FLAG POLE
	PHONE OR PHONE BOOTH
	METAL OR CONC. POST
	MAILBOX
	SIGN
	WATER FOUNTAIN
	PARKING METER
	BILLBOARD OR LARGE SIGN
	BASKETBALL HOOP
	BOULDER
	STATUE OR SCULPTURE
	BENCH
	STUMP
	DS-5 DOWNSPOUT INTO STORM DRAIN
	DS-G DOWNSPOUT TO GROUND
	CONIFEROUS TREE
	DECIDUOUS TREE
	DECIDUOUS SHRUB
	CONIFEROUS SHRUB
	SECTION CORNER
	TRAVERSE POINT
	SDA #1
	STRUCTURE NUMBER
	SDA POINT No.
	SPOT ELEVATION
	TC TOP OF CURB ELEVATION
	GM GUTTER ELEVATION
	TP TOP OF PAVEMENT ELEVATION
	EM EDGE OF METAL ELEVATION
	TW TOP OF WALK ELEVATION
	TOP OF WALL ELEVATION
	BOTTOM OF WALL ELEVATION
	GR GROUND ELEVATION
	UG UNDERGROUND
	FO FIBER OPTIC
	CONC CONCRETE
	ASPH ASPHALT
	FF FINISH FLOOR ELEVATION
	DL DOOR LEDGE ELEVATION
	F.L FOUND IRON
	F.M FOUND MONUMENT
	F.P.K FOUND P.K. NAIL
	S.L SET IRON W/SDA CAP
	S.P.K SET P.K. NAIL
	S.P.K. NAIL W/SDA TAG
	MAG SET MAGNETIC NAIL
	SET MAGNETIC NAIL W/SDA TAG
	M MEASURED
	R RECORD
	C CALCULATED
	INV. INVERT ELEVATION
	CMP CORRUGATED METAL PIPE
	G GAS
	SN SANITARY SEWER (SAN.)
	ST STORM SEWER (STM)
	WM WATERMAIN (WM)
	OH OVERHEAD WIRE
	CS COMBINED SEWER
	STE STEAM LINE
	O OIL LINE
	F UG FIBER (COMM.)
	E UG ELECTRIC (ELEC.)
	T UG PHONE (PH)
	C UG CABLE (CBL)
	CHAIN LINK FENCE (CL)
	WOOD FENCE
	GUARD RAIL
	EDGE OF BRUSHWOODS
	CENTERLINE OF DITCH
	CULVERT
	BANKTOP OF SLOPE
	MAJOR CONTOUR
	MINOR CONTOUR
	BOUNDARY LINES
	ROW LINES
	SECTION LINES
	PROPERTY LINES
	ASPHALT
	CONCRETE
	GRAVEL
	BRICK / PAVERS
	WATER

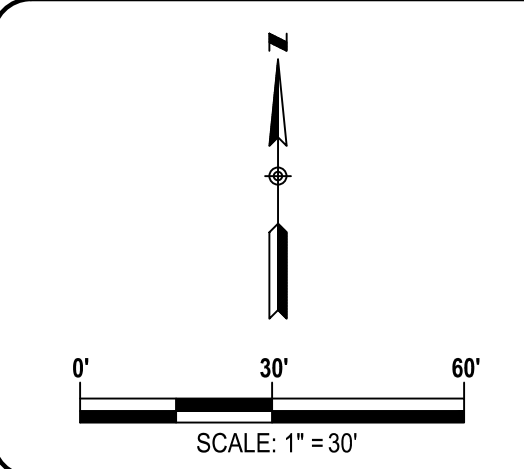
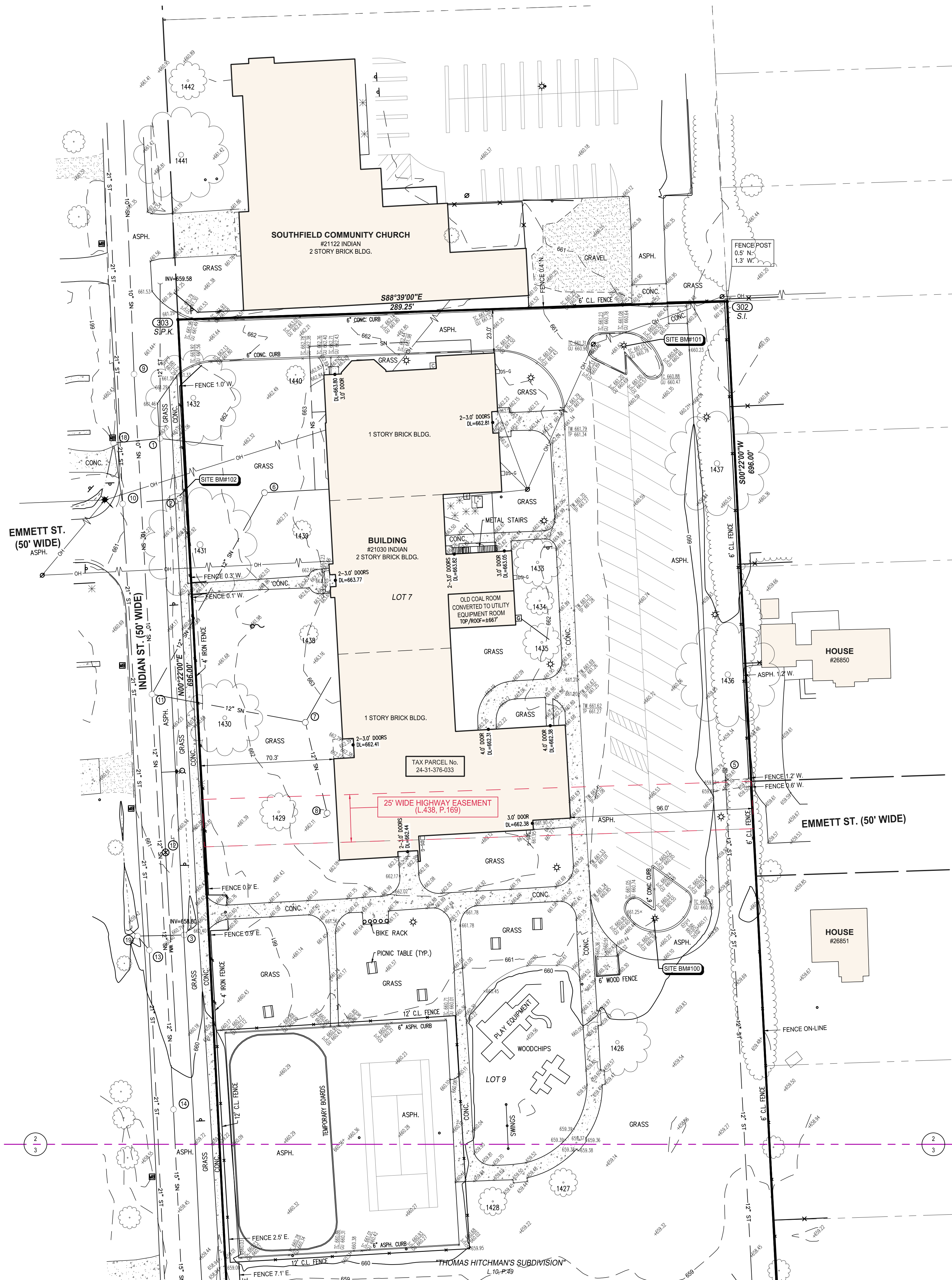
STRUCTURE TABLE

THE STRUCTURE TABLE ON THIS DRAWING IDENTIFIES THE AS-SURVEYED UNDERGROUND UTILITY MANHOLES THAT WERE FIELD MEASURED USING REASONABLE AND TRADITIONAL SURVEYING PRACTICES. PIPE SIZES, DIRECTIONS AND ELEVATIONS ARE INDICATED BY A COMBINATION OF FIELD EVIDENCE AND AVAILABLE RECORD INFORMATION. UNDERGROUND UTILITY PIPE SIZES AND CONNECTIONS ARE MANY TIMES AMBIGUOUS. SOME STRUCTURES MAY HAVE PIPES WITH UNKNOWN CONNECTIONS, Sumps AND / OR PIPES THAT ARE FILLED WITH DEBRIS. IT WILL BE UP TO THE DESIGN ENGINEER TO LOOK AT THE PRESENTED SURVEY RESULTS AND DECIDE IF FURTHER INVESTIGATION BY OTHER METHODS SUCH AS VACUUM CLEAN OUT, UNDERGROUND RADAR, SMOKE TESTING AND PHYSICAL EXCAVATION IS REQUIRED AS AN ADDITIONAL SERVICE.

#	TYPE	RIM	SIZE	MTRL	INVERT	DIRECTION	CONNECT
1	STORM MANHOLE	661.17	12"	CMP	659.12	EAST	ES
	BOTTOM	656.42	12"	RCP	656.67	WEST	18
2	STORM MANHOLE	661.05	12"	RCP	656.12	WEST	
	TOP / WATER	656.12					
	BOTTOM	652.85					
3	STORM MANHOLE	660.60	12"	CMP	658.70	NNE	ES
	TOP / WATER	658.70	12"	RCP	655.40	WEST	19
4	STORM MANHOLE	659.14	12"	CMP	656.74	EAST	ES
	TOP / WATER	656.74	12"	RCP	654.48	WEST	20
5	ROUND CATCH BASIN	659.06	12"	RCP	654.88	SOUTH	17
	TOP / WATER	654.88					
	BOTTOM	652.86					
6	SANITARY MANHOLE	662.39	4"	PVC	656.61	EAST	
	TOP / WATER	656.61	8"	PVC	656.61	EAST	
	BOTTOM	652.65	12"	RCP	652.65	SW	11
7	SANITARY MANHOLE	662.42	12"	RCP	653.92	SSE	8
	TOP / WATER	653.92	12"	RCP	654.12	NE	
	BOTTOM	653.02	12"	RCP	653.02	WNW	
8	SANITARY MANHOLE	661.97	12"	RCP	654.96	NNW	7
9	SANITARY MANHOLE	661.55	10"	RCP	652.00	NORTH	
	TOP / WATER	652.00	10"	RCP	651.99	SOUTH	11
10	STORM MANHOLE	661.23	12"	RCP	656.03	NORTH	18
	TOP / WATER	656.03	21"	RCP	646.15	NORTH	
	BOTTOM	646.13	21"	RCP	646.09	SOUTH	13
11	SANITARY MANHOLE	661.49	10"	RCP	649.87	NORTH	9
	TOP / WATER	649.87	12"	RCP	648.77	SOUTH	14
	BOTTOM	649.82	12"	RCP	650.79	NE	6
	FLOW DIRECTION:					ESE	7
12	GATE VALVE & WELL	661.11					
	TOP / PIPE	655.11				N / S	
	TOP / WATER	655.21					
	BOTTOM	654.01					
13	STORM MANHOLE	660.46	12"	RCP	654.48	NNW	19
	TOP / WATER	654.48	21"	RCP	645.51	NORTH	10
	BOTTOM	645.43	21"	RCP	645.43	SOUTH	15
14	SANITARY MANHOLE	659.86	12"	RCP	648.16	NORTH	11
	TOP / WATER	648.16	15"	RCP	648.56	SOUTH	16
15	STORM MANHOLE	659.43	12"	RCP	653.78	NORTH	20
	TOP / WATER	653.78	15"	RCP	645.43	EAST	
	BOTTOM	644.73	21"	RCP	644.73	NORTH	13
	BOTTOM	644.63	21"	RCP	644.63	SOUTH	
16	SANITARY MANHOLE	658.85	15"	RCP	647.63	NORTH	14
	TOP / WATER	647.63	15"	RCP	647.05	SOUTH	
17	ROUND CATCH BASIN	657.94	12"	RCP	653.49	NORTH	5
	TOP / WATER	653.49	12"	RCP	653.46	SSE	
	BOTTOM	653.23	4"	PVC	653.74	NNW	
18	STORM MANHOLE	661.05	12"	RCP	656.37	EAST	1
	TOP / WATER	656.37	12"	RCP	656.27	SOUTH	10
	BOTTOM	656.85	12"	CMP	658.85	NNW	
	TOP / WATER	658.85	12"	CMP	658.85	SSW	
19	STORM MANHOLE	659.93	12"	RCP	654.78	EAST	3
	TOP / WATER	654.78	12"	RCP	654.73	SE	13
	BOTTOM	652.23	12"	CMP	658.73	NW	ES
20	STORM MANHOLE	659.20	12"	RCP	654.10	EAST	4
	TOP / WATER	654.10	12"	RCP	654.02	SOUTH	15
	BOTTOM	656.35	12"	CMP	656.35	WEST	

UTILITY CHART

UTILITY PROVIDER	MISS-DIG RESULTS	DATE	CONTACT #
AT&T TELEPHONE	RECEIVED	1/13/2022	231-409-7939
CONSUMERS ENERGY GAS	NOT YET RECEIVED	N / A	517-788-1806
DTE ENERGY (ELECTRIC)	NOT YET RECEIVED	N / A	313-235-5824
DTE ENERGY (GAS)	RECEIVED	1/16/2022	248-916-7839
OAKLAND COUNTY DRAIN COMMISSIONER	NOT YET RECEIVED	N / A	248-856-1116
CITY OF SOUTHFIELD	NOT YET RECEIVED	N / A	248-796-4850
SUNOCO PIPELINE	RECEIVED	1/13/2022	713-888-7079



CLIENT:

JOHN GRACE ARMS LIMITED HOUSING
26000 EVERGREEN ROAD
P.O. BOX 2055
SOUTHFIELD, MI 48037-2055

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

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

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**SOUTHFIELD
GRACE SCHOOL**

**SOUTHFIELD, MI
BOUNDARY AND
TOPOGRAPHICAL SURVEY**

SECTION 31
TOWN 01 NORTH RANGE 10 EAST
CITY OF SOUTHFIELD
OAKLAND COUNTY, MICHIGAN

NO.	DATE	REVISION

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	
DRAFTER S.BROWN	DATE 01-27-22
CHECKED D.JACKSON	DATE 01-27-22
FIELD LEADER J.LONERO	PROJECT SURVEYOR D.JACKSON
PROJECT MANAGER D.JACKSON	DEPARTMENT MANAGER G.PLATZ
JOB NO. NP22006	DRAWING NO. NP22006TPG
SCALE: 1" = 30'	SHEET NO. 2 OF 3

LEGEND

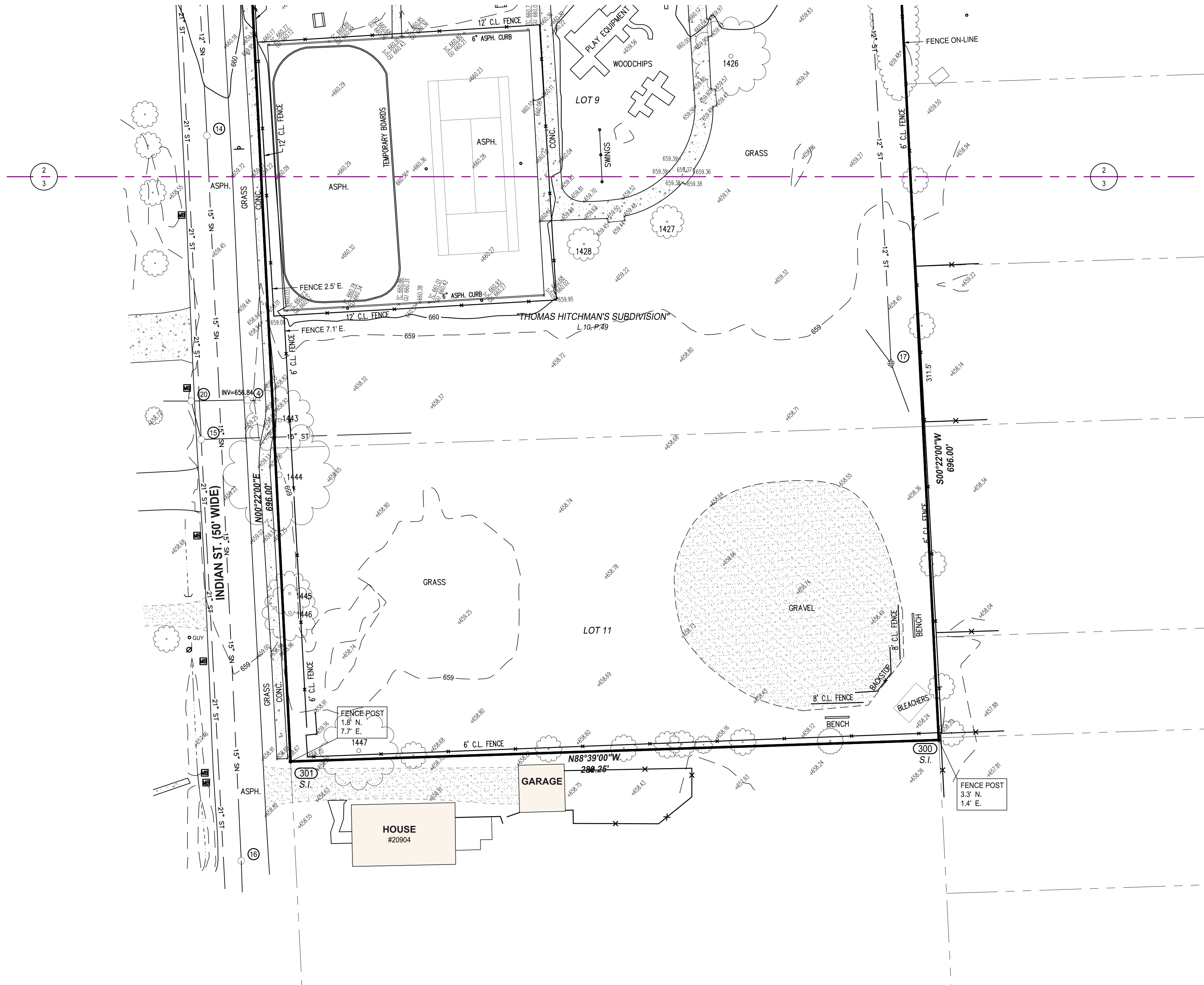
	MANHOLE
	CATCH BASIN
	SEWER CLEAN OUT
	GAS METER
	GAS SHUT OFF VALVE
	VALVE BOX
	GATE VALVE & WELL
	WATER SHUT OFF VALVE
	FIRE HYDRANT
	SPRINKLER VALVE BOX
	LAWN SPRINKLER HEAD
	HAND HOLE
	ELECTRIC RISER OR METER
	TELEPHONE RISER
	CABLE TV RISER
	AIR CONDITIONING UNIT
	UTILITY POLE
	UTILITY POLE W/ TRANSFORMER
	UTILITY POLE W/ LAMP EXTENSION (ARROW INDICATES DIRECTION OF ARM)
	LIGHT POLE
	LIGHT POLE WITH LAMP EXTENSION
	TRAFFIC SIGNAL
	POLE W/ TRAFFIC SIGNAL (OVER ROAD)
	GUY WIRE
	GUY POLE
	GROUND LEVEL / DECORATIVE LIGHTING
	FLAG POLE
	PHONE OR PHONE BOOTH
	METAL OR CONC. POST
	MAILBOX
	SIGN
	WATER FOUNTAIN
	PARKING METER
	BILLBOARD OR LARGE SIGN
	BASKETBALL HOOP
	BOULDER
	STATUE OR SCULPTURE
	BENCH
	STUMP
	DS-S DOWNSPOUT INTO STORM DRAIN
	DS-G DOWNSPOUT TO GROUND
	CONIFEROUS TREE
	DECIDUOUS TREE
	DECIDUOUS SHRUB
	CONIFEROUS SHRUB
	SECTION CORNER
	TRAVERSE POINT
	STRUCTURE NUMBER
	SDA POINT No.
	SPOT ELEVATION
	TOP OF CURB ELEVATION
	GUTTER ELEVATION
	TOP OF PAVEMENT ELEVATION
	EDGE OF METAL ELEVATION
	TOP OF WALK ELEVATION
	TOP OF WALL ELEVATION
	BOTTOM OF WALL ELEVATION
	GROUND ELEVATION
	UNDERGROUND
	FIBER OPTIC
	CONCRETE
	ASPHALT
	FINISH FLOOR ELEVATION
	DOOR LEDGE ELEVATION
	FOUND IRON
	FOUND MONUMENT
	FOUND P.K. NAIL
	SET IRON WSDA CAP
	SET P.K. NAIL
	SET P.K. NAIL WSDA TAG
	SET MAGNETIC NAIL
	SET MAGNETIC NAIL WSDA TAG
	MEASURED
	RECORD
	CALCULATED
	INVERT ELEVATION
	CORRUGATED METAL PIPE
	GAS
	SANITARY SEWER (SAN)
	STORM SEWER (STM)
	WATERMAIN (WM)
	OVERHEAD WIRE
	COMBINED SEWER
	STEAM LINE
	OIL LINE
	UG FIBER (COMM.)
	UG ELECTRIC (ELEC.)
	UG PHONE (PH)
	UG CABLE (CBL)
	CHAIN LINK FENCE (CL)
	WOOD FENCE
	WIRE FENCE (WW)
	GUARD RAIL
	EDGE OF BRUSH/WOODS
	CENTERLINE OF DITCH
	CULVERT
	BANKTOP OF SLOPE
	MAJOR CONTOUR
	MINOR CONTOUR
	BOUNDARY LINES
	ROW LINES
	SECTION LINES
	PROPERTY LINES
	ASPHALT
	CONCRETE
	GRAVEL
	BRICK / PAVERS
	WATER

TREE INVENTORY

PERFORMED BY: JOHN P. MOSES
REGISTERED FORESTER - MICHIGAN
ID# 45988

Tree Tag #	D.B.H. in Inches	Species Name (Common - Botanical)	Health Score*	Health Condition	Crown Spread**	Notes	Save / Remove
1426	23	Norway Maple - Acer platanoides	24	Good	35		
1427	11	Red Maple - Acer rubrum	25	Good	15	Landmark	
1428	8	Red Maple - Acer rubrum	26	Good	15		
1429	11	American Elm - Ulmus americana	26	Good	20		
1430	19	Norway Maple - Acer platanoides	23	Good	35	Landmark	
1431	49	Silver Maple - Acer saccharinum	22	Fair	65	Landmark	
1432	19	Black Walnut - Juglans nigra	24	Good	40		
1433	12	Red Maple - Acer rubrum	25	Good	20		
1434	8	Red Maple - Acer rubrum	24	Good	10		
1435	11	Red Maple - Acer rubrum	26	Good	15		
1436	36	Silver Maple - Acer saccharinum	14	Poor	45	EX	
1437	34	Siberian Elm - Ulmus pumila	18	Fair	50	Landmark	
1438	8	Crabapple - Malus spp.	26	Good	15		
1439	7	Crabapple - Malus spp.	26	Good	15		
1440	6	Redbud - Cercis canadensis	24	Good	15		
1441	26	Pin Oak - Quercus palustris	25	Good	45	Landmark	
1442	14	Norway Maple - Acer platanoides	23	Good	25		
1443	20	Siberian Elm - Ulmus pumila	23	Good	40		
1444	34	Silver Maple - Acer saccharinum	8	Very Poor	30	EX	
1445	15	Siberian Elm - Ulmus pumila	23	Good	35		
1446	18	Siberian Elm - Ulmus pumila	20	Fair	40		
1447	18,18	Black Walnut - Juglans nigra	23	Good	30		

Landmark = LANDMARK TREE AS DESCRIBED PER ORDINANCE SEC 5.56 (13) WITH A HEALTH SCORE OF >16 (FAIR AND GOOD TREES)
EX = REPLACEMENT EXEMPTION RECOMMENDED DUE TO EVALUATED HEALTH SCORE OF <16 (POOR AND VERY POOR TREES)
= HEALTH SCORE DETERMINED UTILIZING GUIDANCE PER ORDINANCE SEC. 5.56 (13) (B) EVALUATION CHART
* = CROWN SPREAD PROVIDED AS REQUIRED PER ORDINANCE SEC 5.56 (7) (B) 5. (IN FEET)



905 South Blvd. East
Rochester Hills, MI 48307
Phone (248) 844-5400
Fax (248) 844-5404

15 E. Baltimore St.
Detroit, MI 48202
Phone (313) 305-9120
Fax (313) 305-9121

27333 Meadowbrook Rd., Suite 210
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Phone (248) 844-6274

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Grand Rapids, MI 49504
Phone (616) 885-5802

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(800) 598-1600

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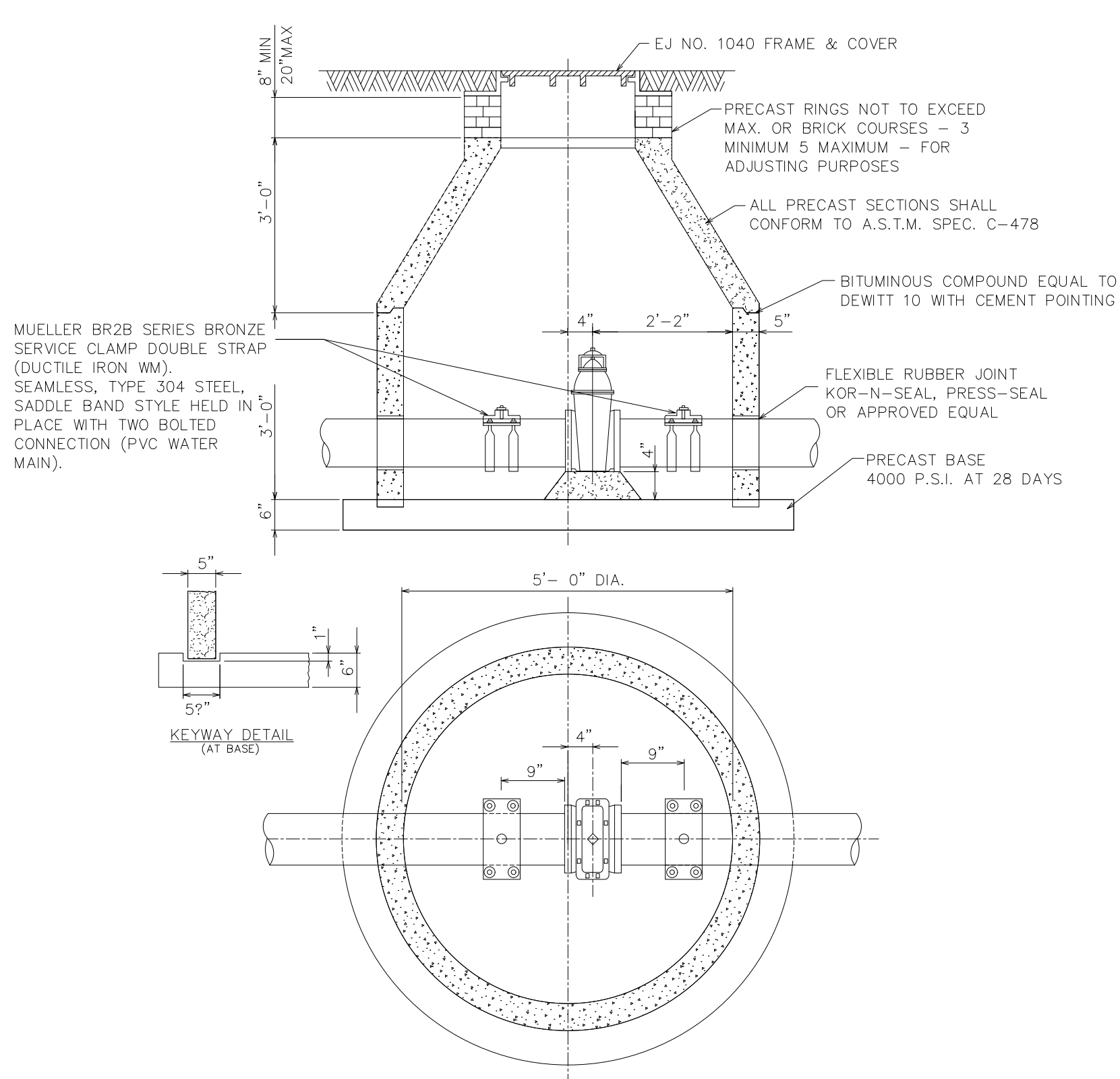
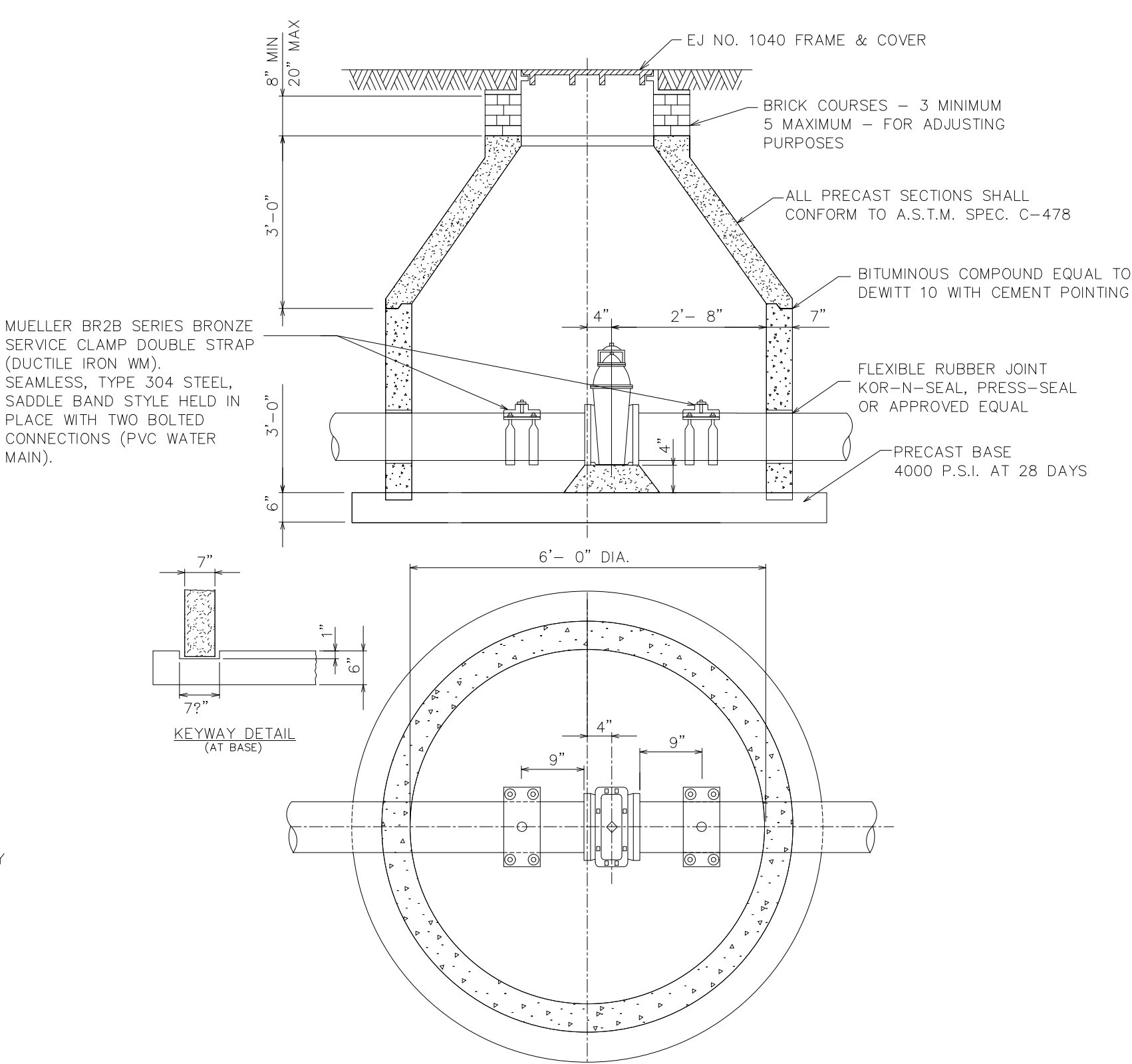
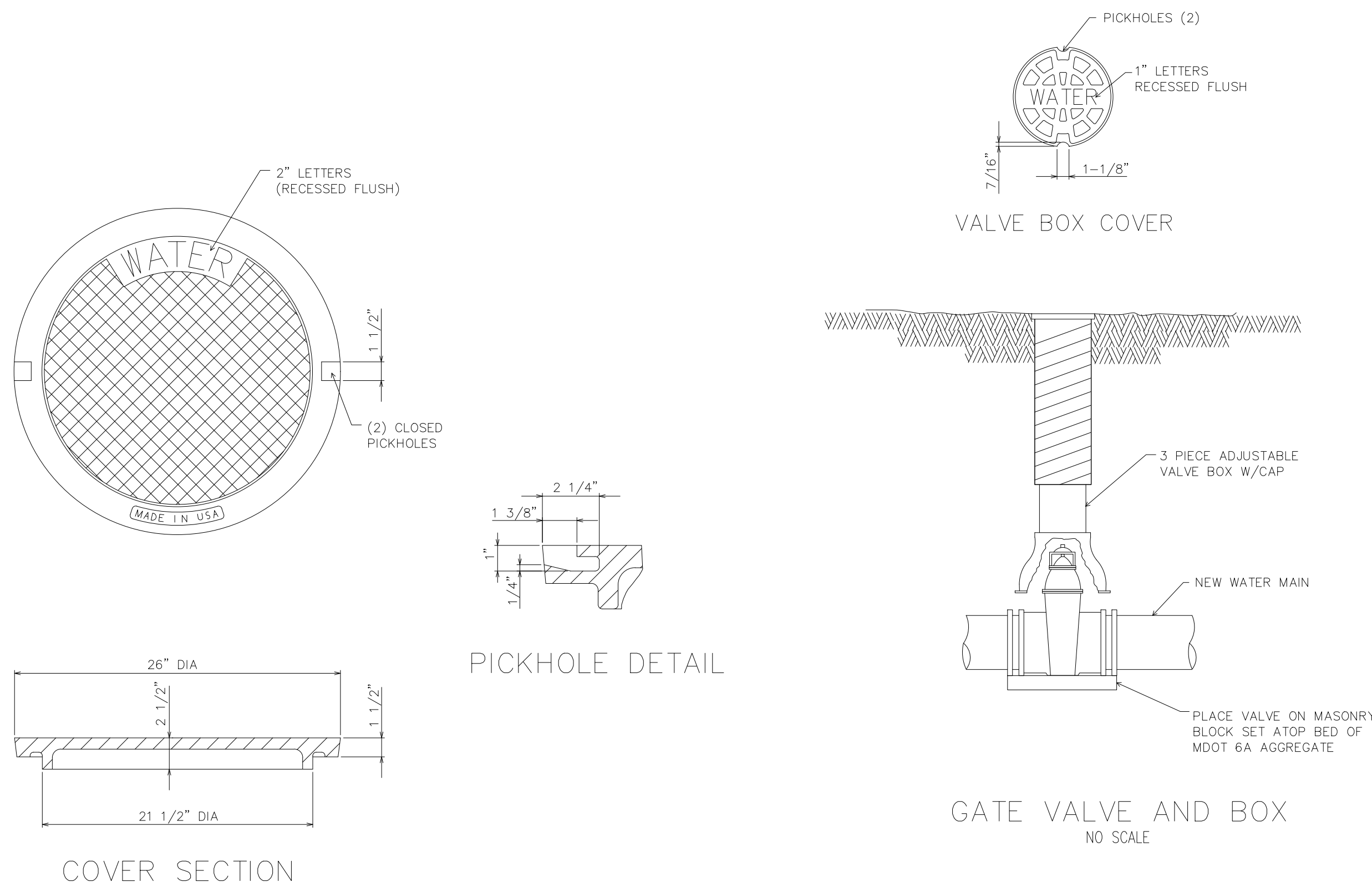
SOUTHFIELD GRACE SCHOOL

SOUTHFIELD, MI BOUNDARY AND TOPOGRAPHICAL SURVEY

SECTION 31
TOWN 01 NORTH RANGE 10 EAST
CITY OF SOUTHFIELD
OAKLAND COUNTY, MICHIGAN

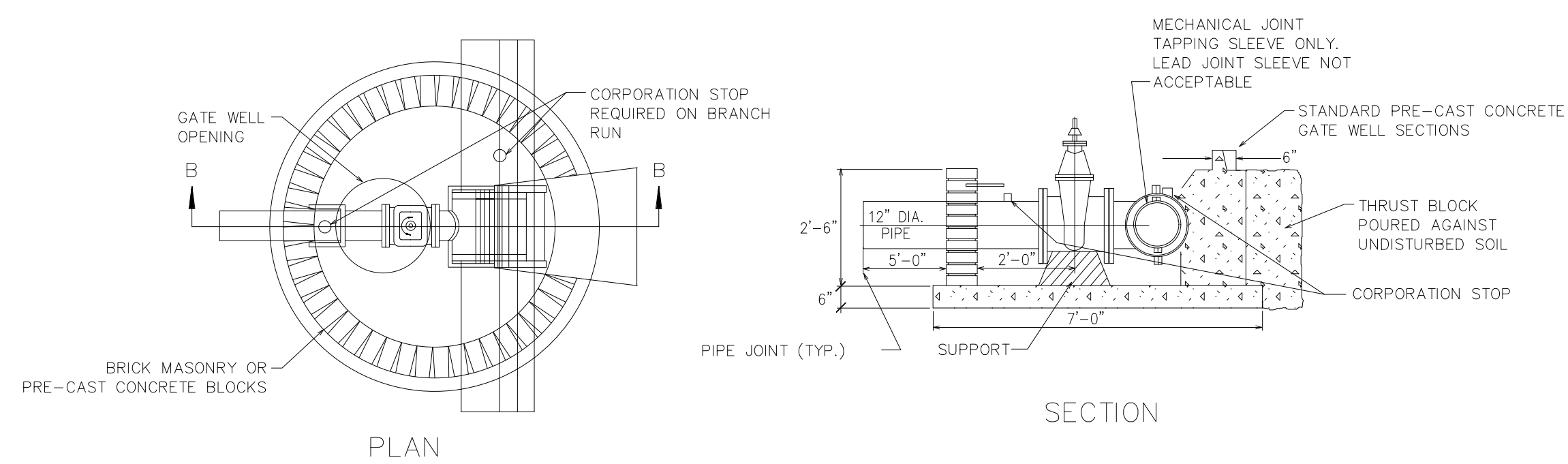
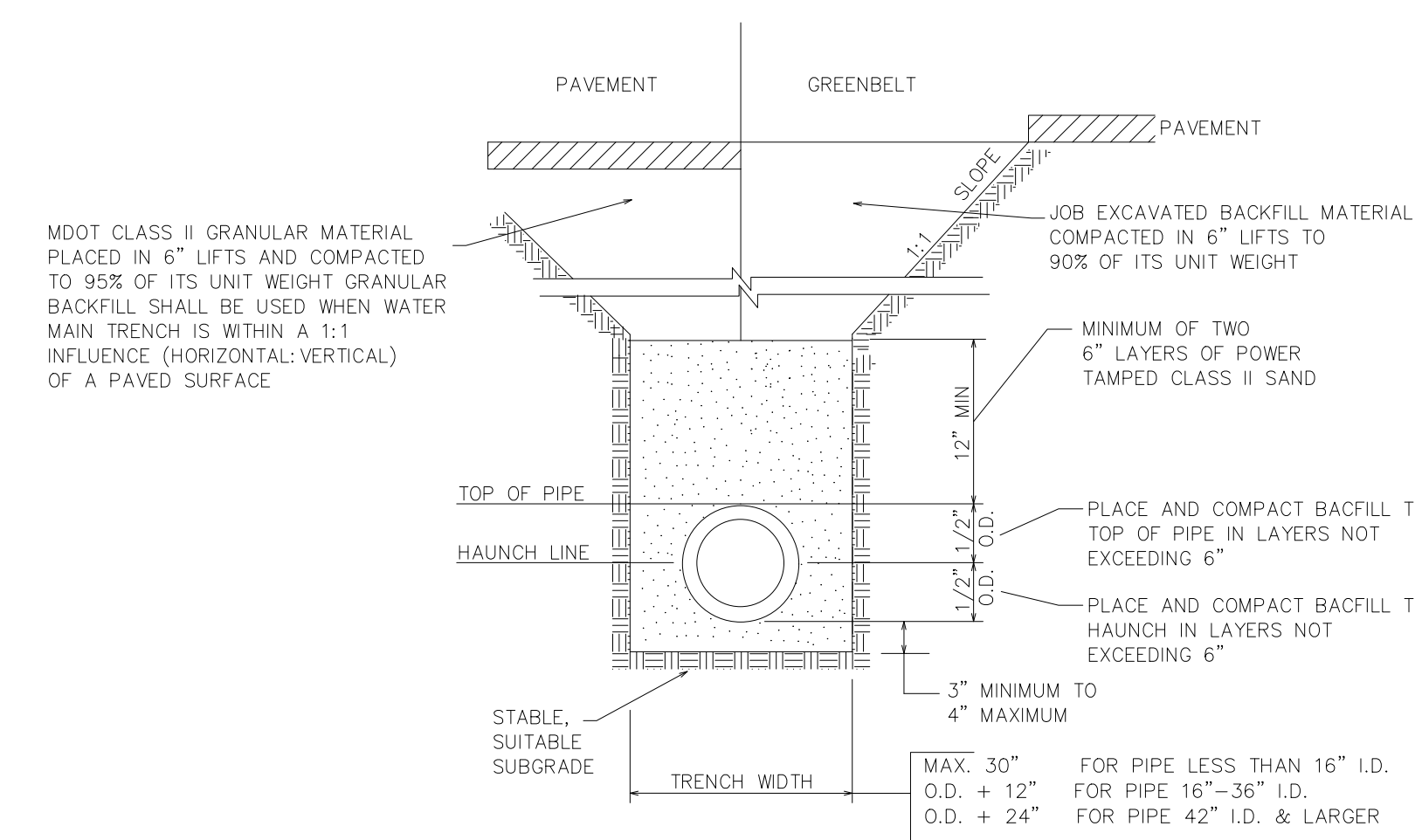
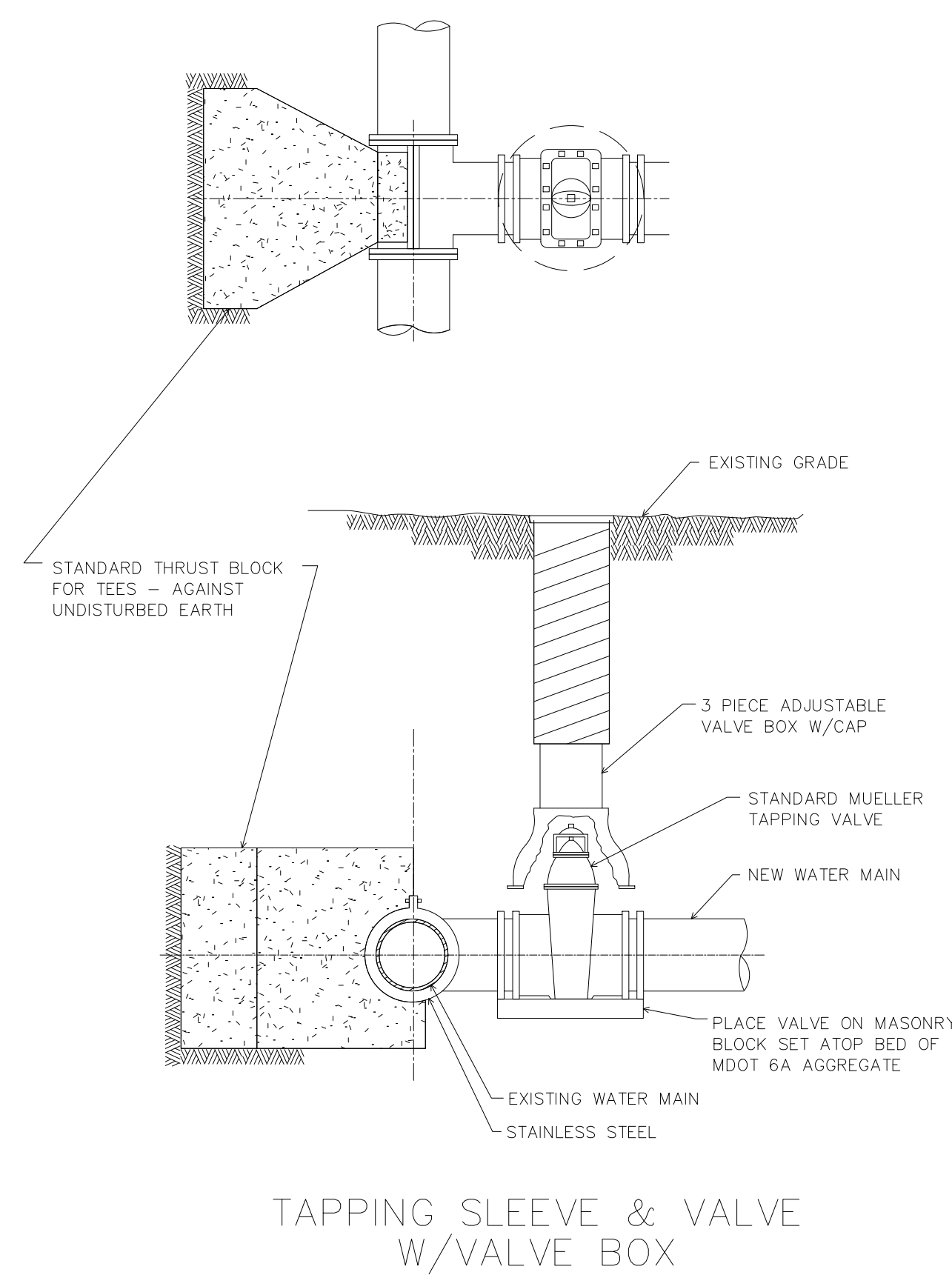
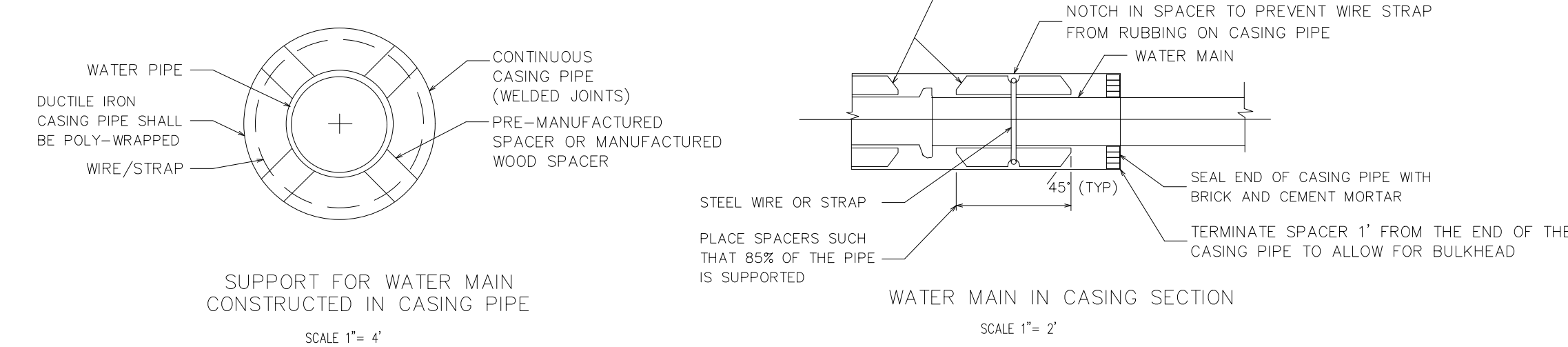
NO.	DATE	REVISION

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PROJECT MANAGER D.JACKSON	DEPARTMENT MANAGER G.PLATZ
JOB NO. NP22006	DRAWING NO. NP22006TPG
SCALE: 1" = 30'	SHEET NO. 3 OF 3

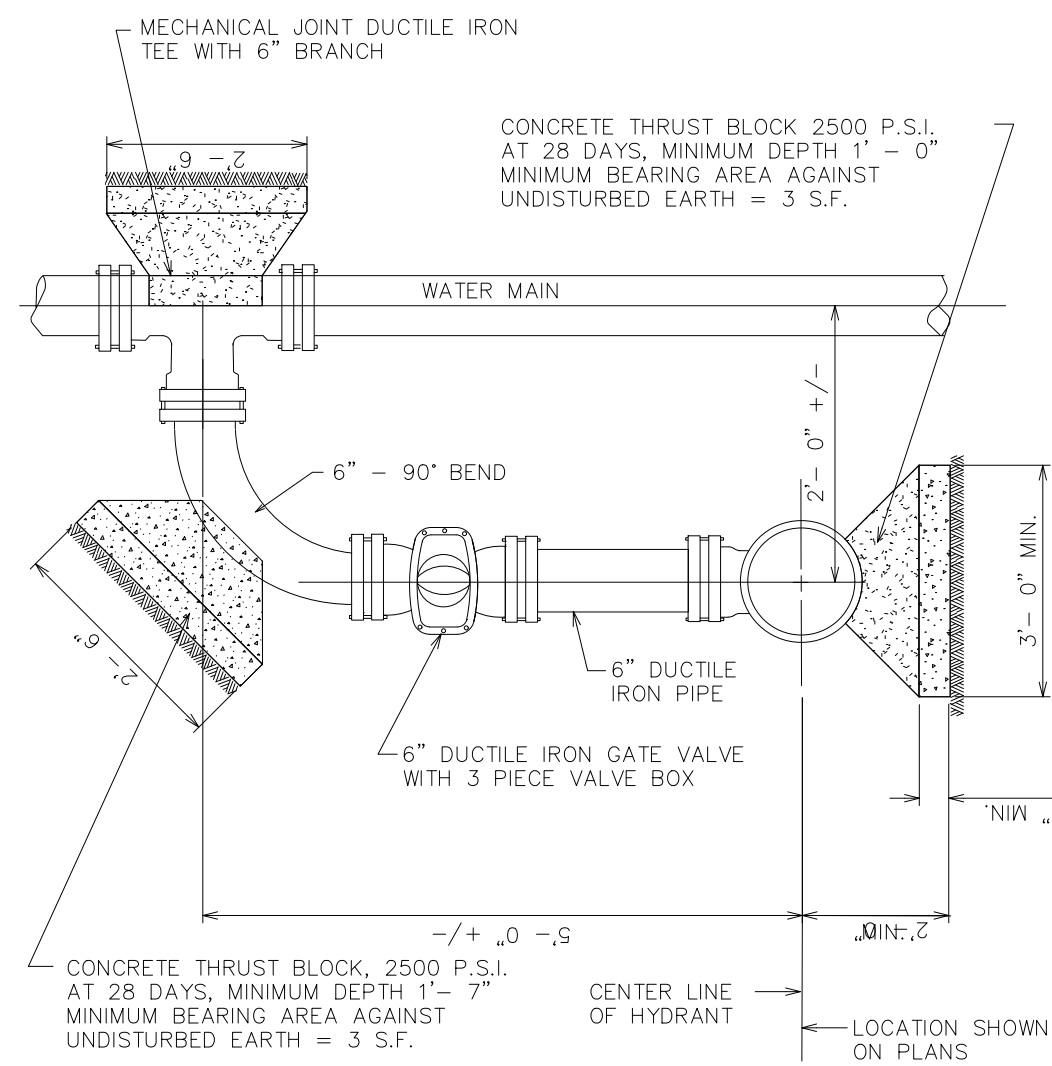


UNLESS OTHERWISE SPECIFIED, MINIMUM CASING PIPE SHALL BE ASTM A-139 GRADE B, WALL THICKNESS AS FOLLOWS:

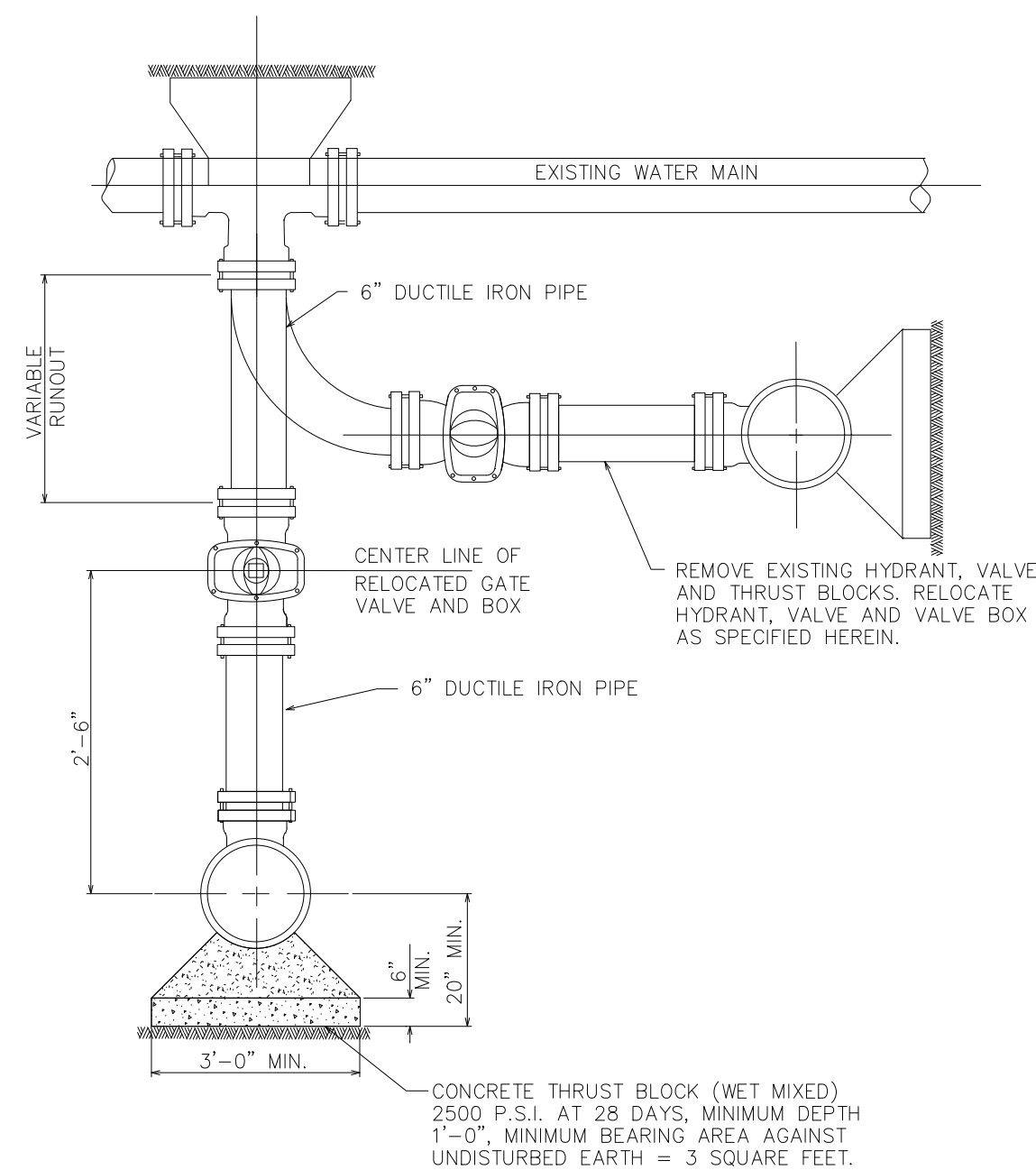
NOMINAL SIZE	MINIMUM WALL THICKNESS
8" - 42"	0.375
48" - 60"	0.500



CITY OF SOUTHFIELD					
PUBLIC SERVICES GROUP			ENGINEERING DEPARTMENT		
WATERMAIN DETAILS					
DRAWN BY		SP	REVISIONS		
DESIGNED BY	LS	No.	DESCRIPTION	DATE	BY
APPROVED BY	LS	1	SOUTHFIELD SPEC. UPDATES	05/22	ZJH
DATE	2014				
HORZ.	NTS				
SC: VERT.					
SHEET 1 OF 4					
JOB No.					

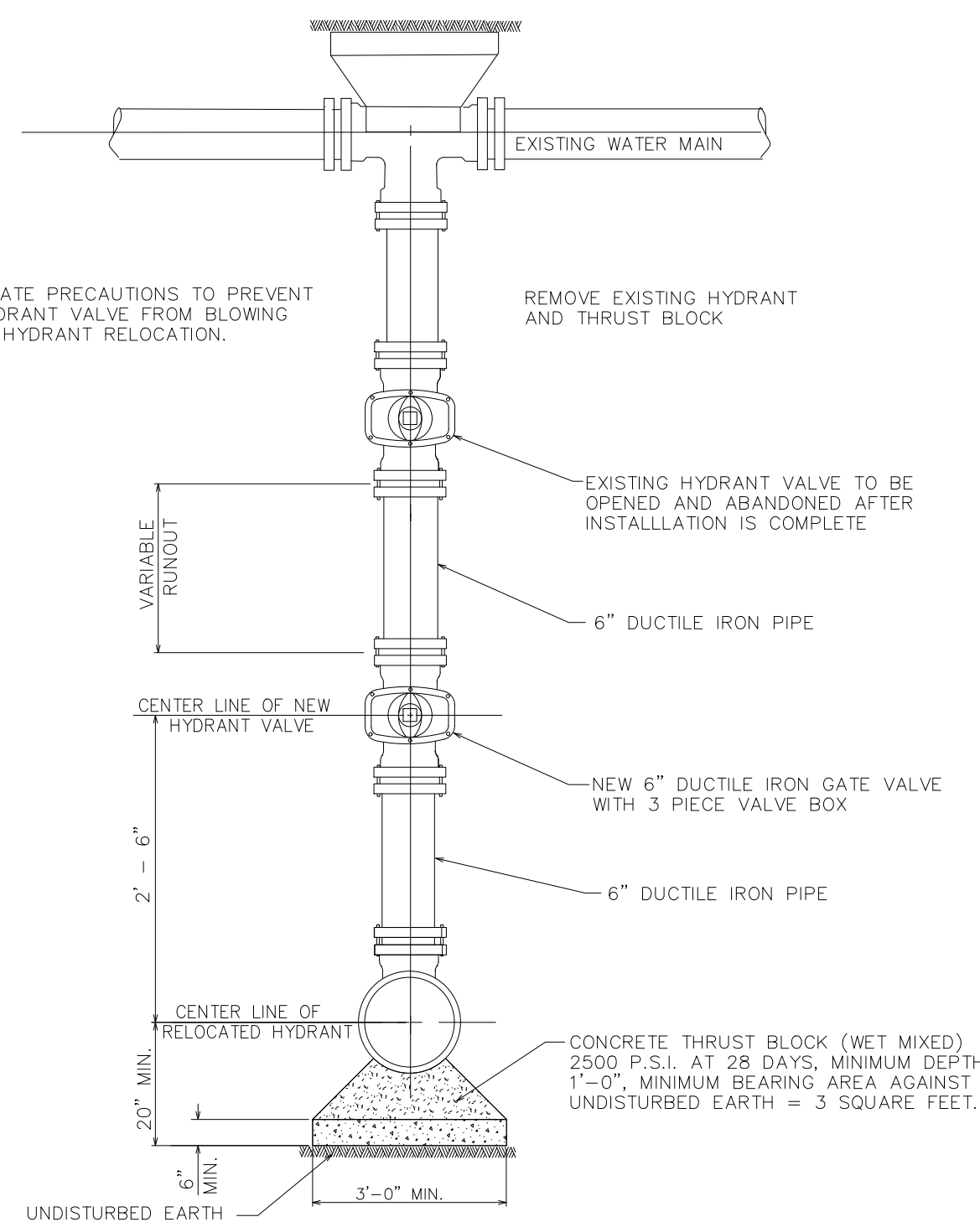


"L" HYDRANT CONNECTION



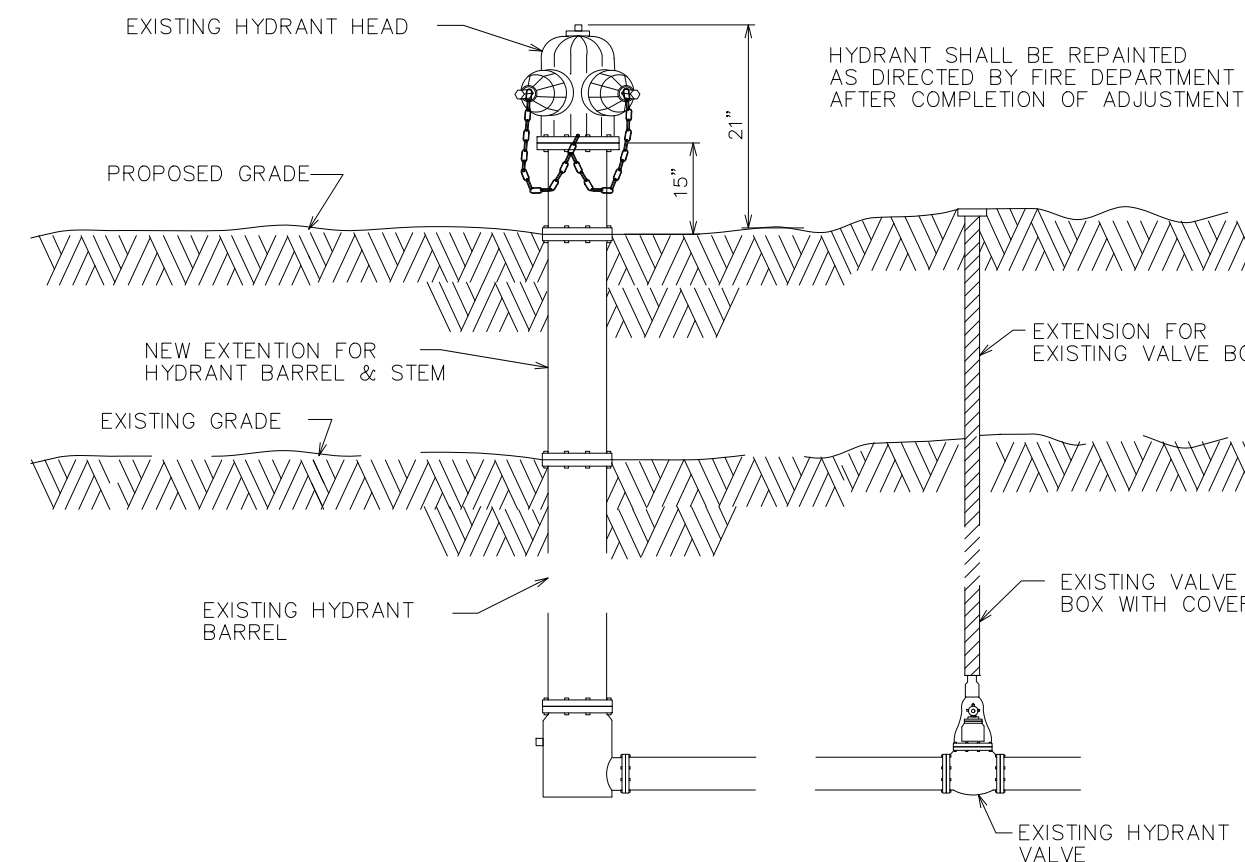
HYDRANT RELOCATION

NOTE: TRAVERSE CITY OF CITY OF DETROIT FIRE DEPARTMENT HYDRANTS SHALL BE REPLACED

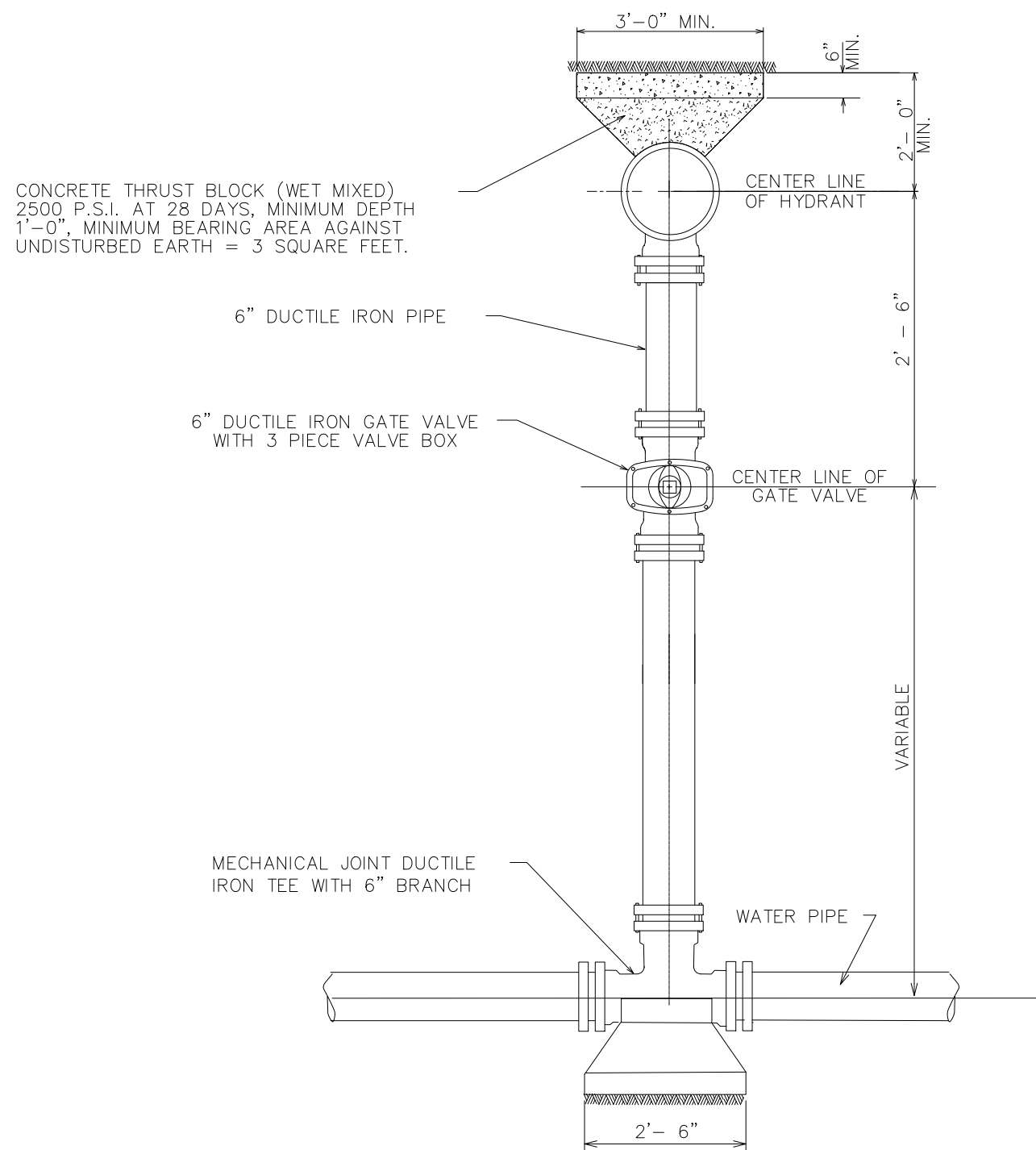


HYDRANT RELOCATION

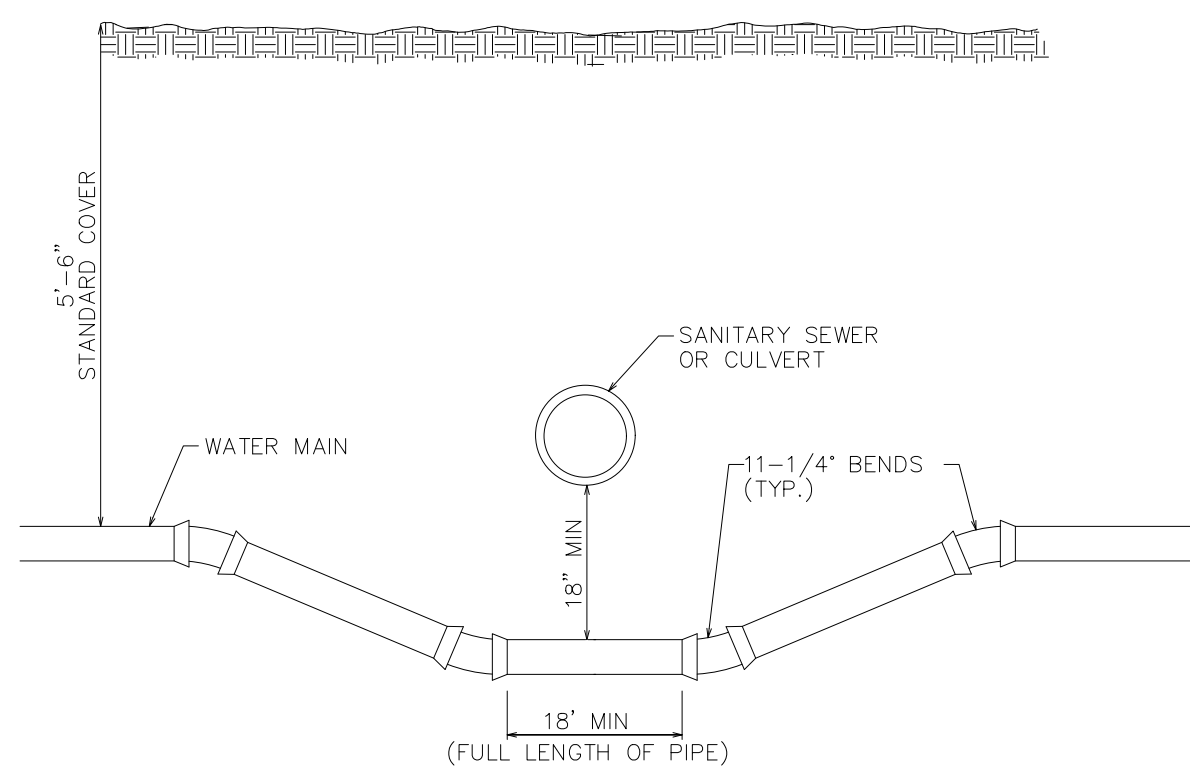
NOTE: TRAVERSE CITY OF CITY OF DETROIT FIRE DEPARTMENT HYDRANTS SHALL BE REPLACED



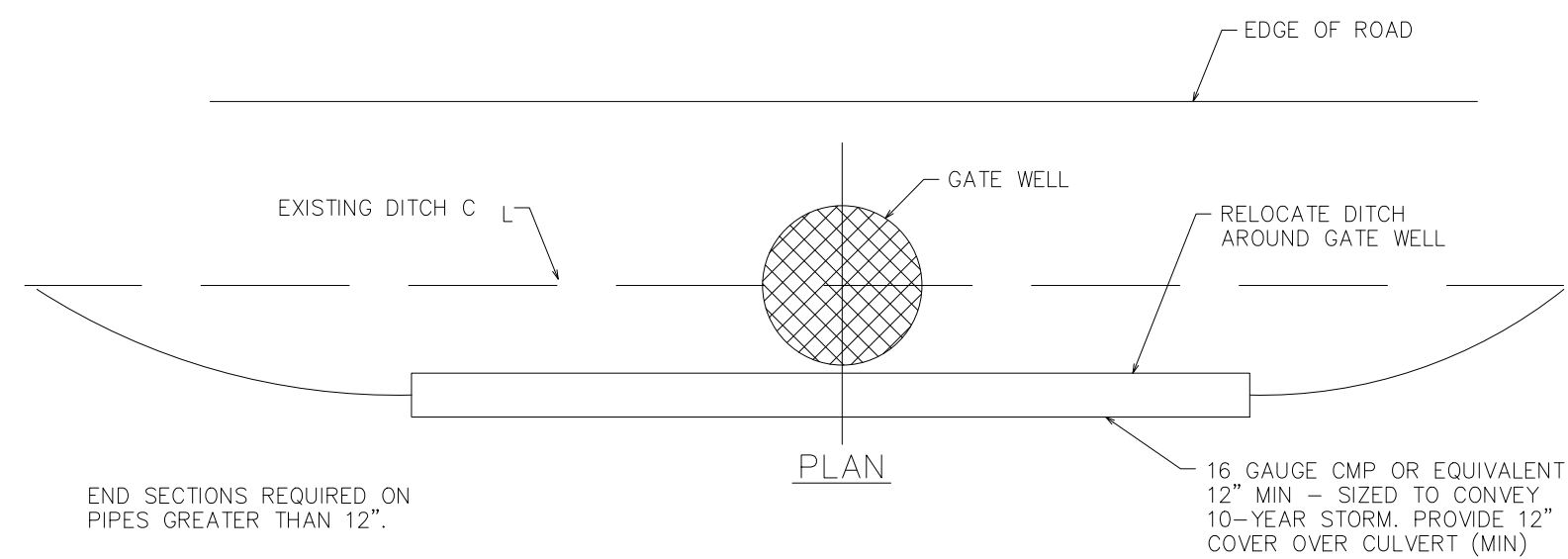
HYDRANT ADJUSTMENT



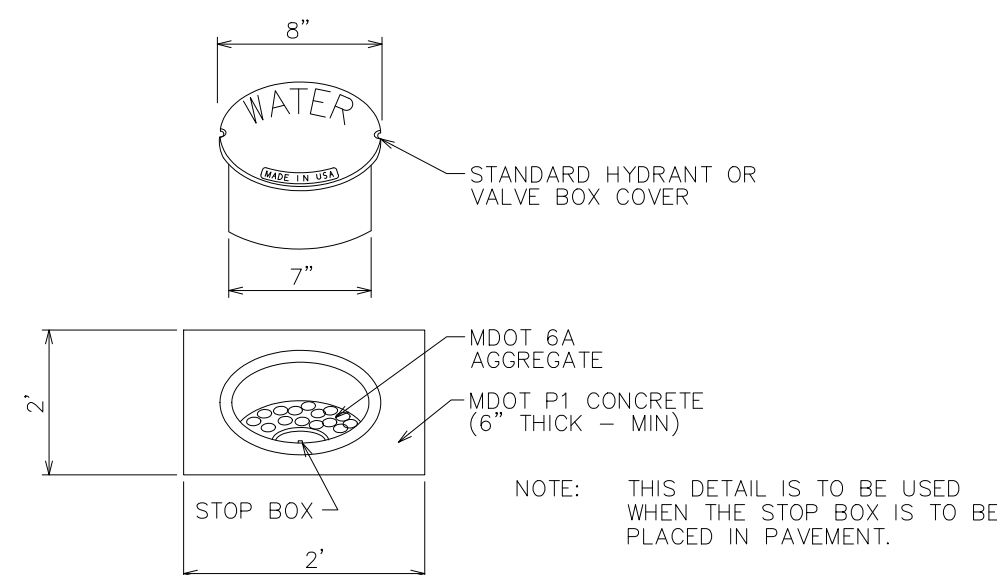
STRAIGHT HYDRANT CONNECTION



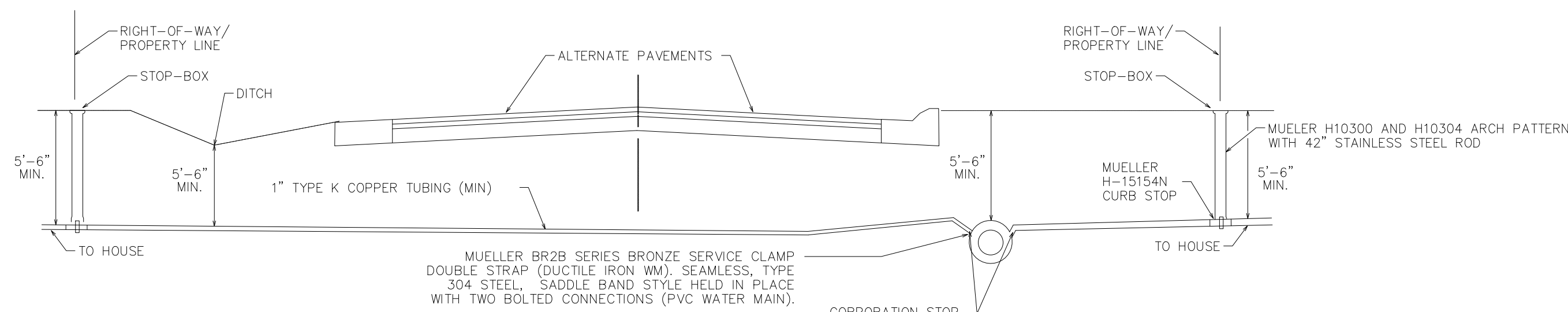
SEWER OR CULVERT CROSSING
NO SCALE



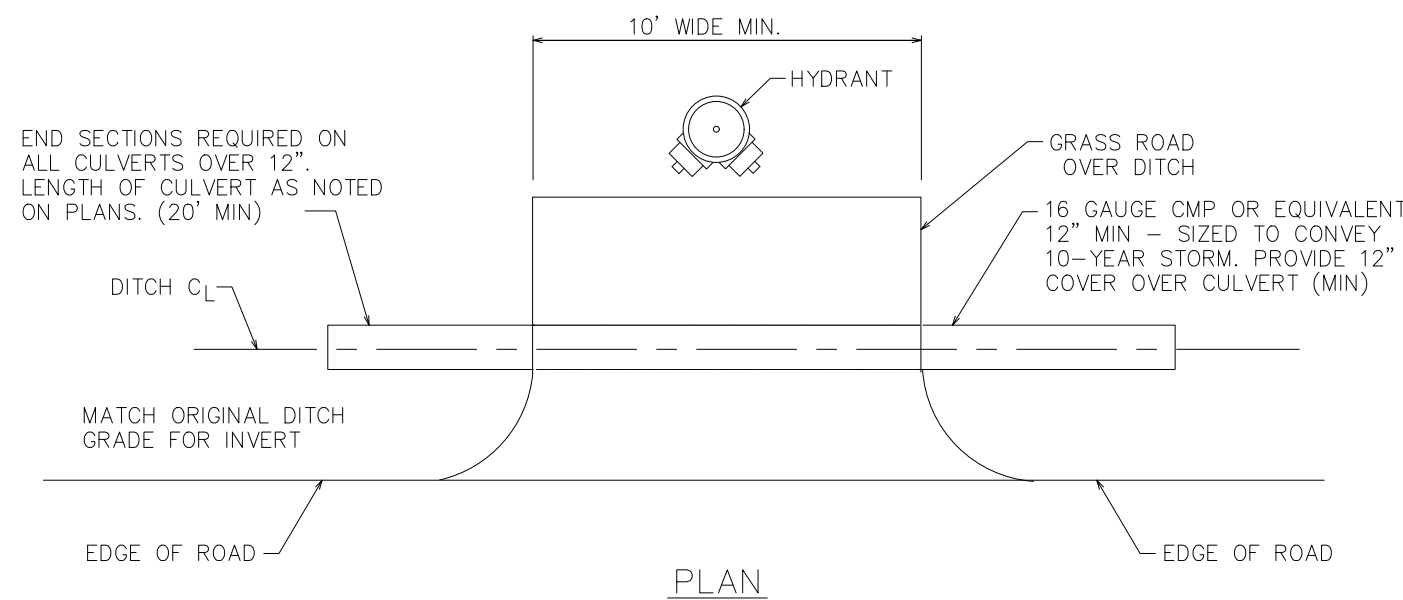
DITCH ENCLOSURE AT GATE WELL
NO SCALE



STOP BOX PROTECTION
(PAVED AREAS)



TYPICAL PUBLIC ROAD
WATER SERVICE CONNECTION
NO SCALE



DITCH ENCLOSURE AT HYDRANT
NO SCALE

CITY OF SOUTHFIELD					
PUBLIC SERVICES GROUP			ENGINEERING DEPARTMENT		
WATERMAIN DETAILS					
DRAWN BY		SP	REVISIONS		
DESIGNED BY		No.	DESCRIPTION	DATE	BY
APPROVED BY		LS	1 SOUTHFIELD SPEC. UPDATES	05/22	ZJH
DATE		2014			
HORZ.					
SC. VERT.		NTS			
SHEET		2 OF 4			
JOB No.					

SIZE	TEE	END CAP	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	REDUCERS	VERT OFFSET
6"	*	36'	14'	6'	3'	2'	19'	*
8"		47'	18'	8'	4'	2'	20'	
12"		67'	25'	11'	5'	3'	36'	

*ENGINEER SHALL PROVIDE CALCULATIONS FOR SPECIFIC RESTRAINT SCENARIOS

PIPE RESTRAINT NOTES

- THE ABOVE TABLE IS FOR INFORMATION ONLY. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING RESTRAINT SCHEDULES AND PROVIDING IT TO THE CITY OF SOUTHFIELD OR ITS REPRESENTATIVE FOR REVIEW.
- THE VALUES PROVIDED REPRESENT RESTRAINT LENGTH IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FROM TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM IS INCLUDED.
- REDUCER RESTRAINT LENGTH ASSUMES ONE STEP-DOWN IN SIZE.
- THE ABOVE PIPE RESTRAINT WAS CALCULATED USING THE EBAA IRON RESTRAINT CALCULATOR ASSUMING THE FOLLOWING PARAMETERS:
 - SOIL TYPE: CL GRAN. FILL
 - SAFETY FACTOR: 1.5 TO 1
 - TRENCH TYPE 4
 - DEPTH OF BURY: 5 FEET
 - TEST PRESSURE: 150 PSI

SIZE	TEE	END CAP	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	REDUCERS	VERT OFFSET
6"	*	56'	16'	7'	3'	2'	29'	*
8"		73'	20'	9'	4'	2'	31'	
12"		104'	28'	12'	6'	3'	55'	

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- REDUCER RESTRAINT LENGTH ASSUMES ONE STEP-DOWN IN SIZE.
- THE ABOVE PIPE RESTRAINT WAS CALCULATED USING THE EBAA IRON RESTRAINT CALCULATOR ASSUMING THE FOLLOWING PARAMETERS:
 - SOIL TYPE: CL GRAN. FILL
 - SAFETY FACTOR: 1.5 TO 1
 - TRENCH TYPE 4
 - DEPTH OF BURY: 5 FEET
 - TEST PRESSURE: 150 PSI

WATER MAIN NOTES

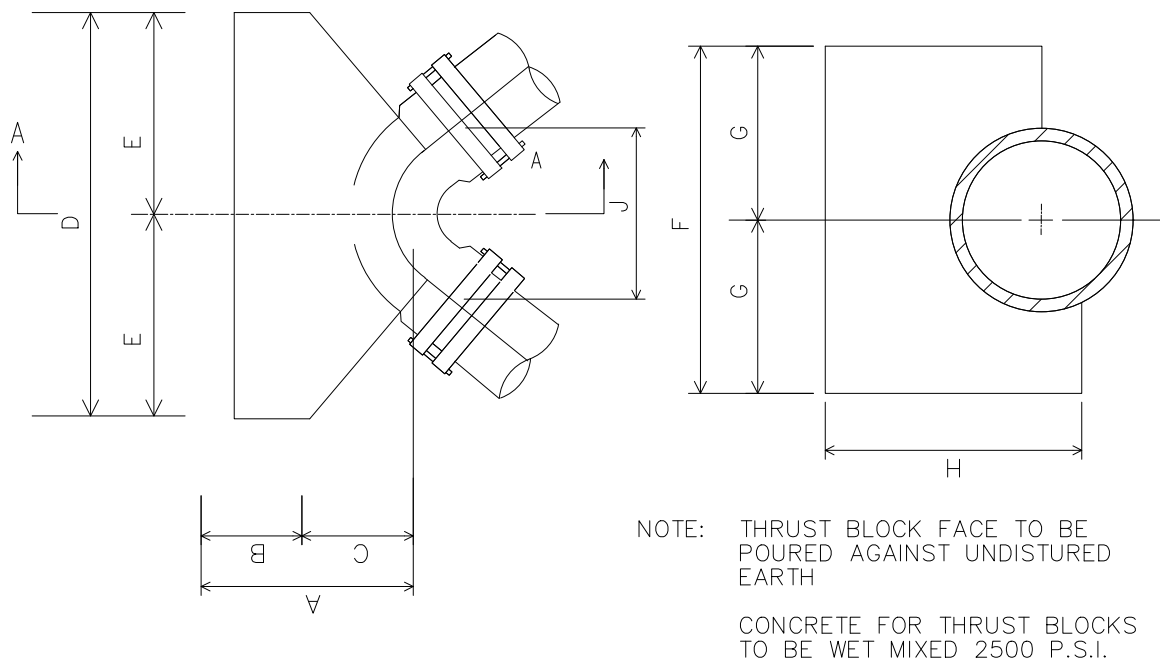
- All water main construction shall have full-time inspection provided by or caused to be provided by the City of Southfield Engineering Department. Contractor shall contact the Engineering Department for inspection at least 48 hours prior to start of construction.
- When it is necessary to shut down existing water mains, the contractor shall contact the City of Southfield Water and Sewer Department and shall cooperate with the City forces in closing the necessary gate valves and in notifying the affected residents and places of business.
- All water mains shall be constructed with a minimum cover of five and a half (5.5) feet and a maximum of seven (7) feet below finished grade. Where water mains must dip to pass under other utilities, the sections which are deeper than normal shall be kept to a minimum length by the use of 11-1/4 degree bends,properly anchored or restrained.
- Contractor shall use lengths of pipe and/or additional bends to accomplish horizontal and/or vertical deflections as indicated on the plan.
- All water main under or within three (3) feet of existing or proposed pavement shall be back filled with MDOT granular material, Class II, mechanically tamped in 12-inch lifts to 95% compaction.

If construction is within the Road Commission for Oakland County and/or Michigan Department of Transportation rights-of-way, permits shall be required from the respective agencies.
- All new water main and services shall include tracer wire and test points at ground appurtenances, valves and hydrants. Tracer wire layout and installation shall be in accordance with the special detail sheet.
- Please refer to the City of Southfield Water Main Specifications for additional requirements for construction, materials, etc..

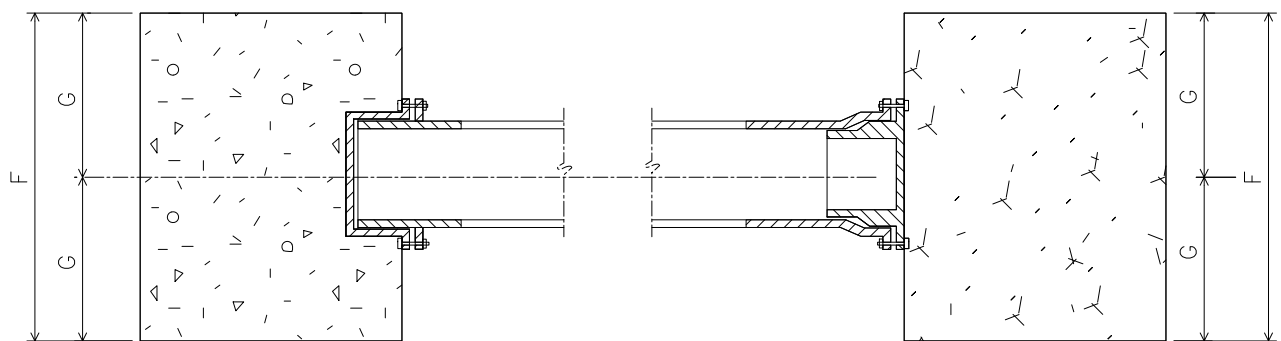
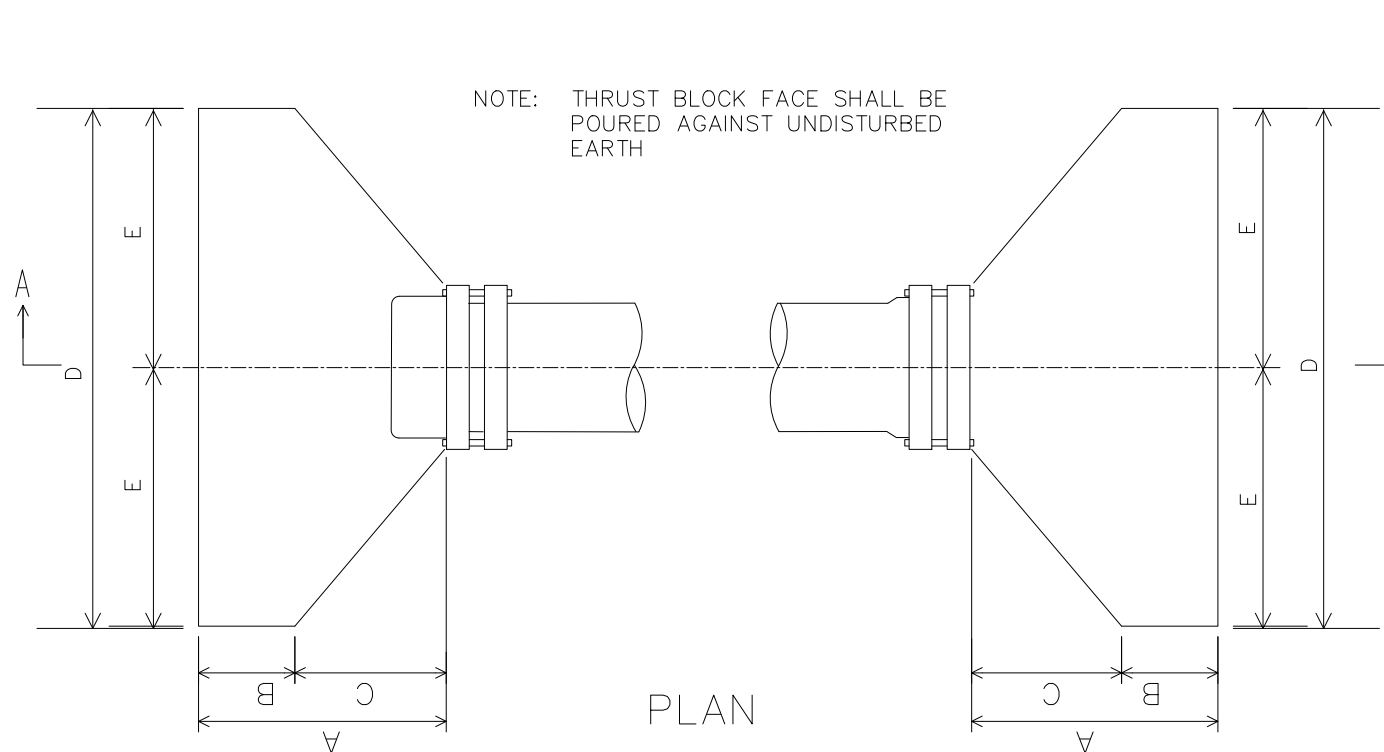
GENERAL CONSTRUCTION NOTES

- All construction shall conform to the current standards and specifications of the City of Southfield. A pre-construction meeting shall be held prior to start of construction and shall be scheduled by the City of Southfield Engineering Department at 248-796-4810.
- The Standard Details and Specifications of the City of Southfield are incorporated as part of these plans.
- Prior to any excavation, the Contractor shall contact " MISS DIG " (by dialing 811) forlocation of underground utilities and shall also notify representatives of other utilities located in the vicinity of the work. TheContractor shall make any necessary arrangements with utility companies for relocation of existing utilities, if required. Utility poles shall be properly supported, tunneled and/or temporarily relocated as required.
- No City street shall be closed without prior permission from the City of Southfield. Forty-eight (48) hours prior to closing any City street, the Contractor shall notify the City Police, Fire and Streets and Highway Department. Traffic control, routing and signing shall be in accordance with the requirements of the City of Southfield and the Michigan Manual of Uniform Traffic Control Devices.
- All property irons and monuments disturbed or destroyed by the Contractor's operation shall be replaced by a Registered Land Surveyor provided by or caused to be provided by the Contractor at the Contractor's expense.
- Existing fences shall be removed and restored to their original condition or better.
- Cost of protection of any removal and/or replacement of public and private utilities shall be borne by the Contractor
- All necessary easements for public water mains shall be provided in the name of the City of Southfield of the water main prior to acceptance of the water distribution system for operation.

MECHANICAL RESTRAINT FOR PVC



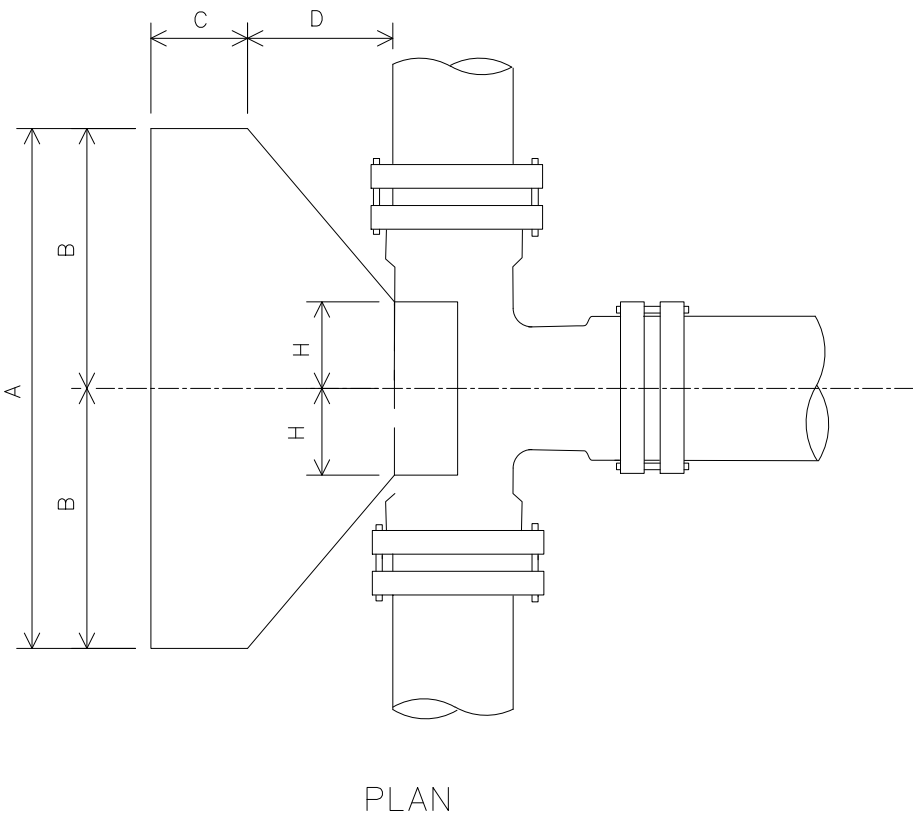
CONCRETE THRUST BLOCK FOR BENDS



SIZE	A MIN.	B MIN.	C	D	E	F	G
8"	1'- 11"	0'- 9"	1'- 2"	3'- 0"	1'- 6"	2'- 0"	1'- 0"
12"	2'- 1"	0'- 9"	1'- 4"	4'- 0"	2'- 0"	3'- 0"	1'- 6"
16"	2'- 8"	1'- 0"	1'- 8"	5'- 0"	2'- 6"	4'- 0"	2'- 0"

CONCRETE THRUST BLOCK FOR ENDS

MECHANICAL RESTRAINT FOR POLY-WRAPPED DUCTILE IRON

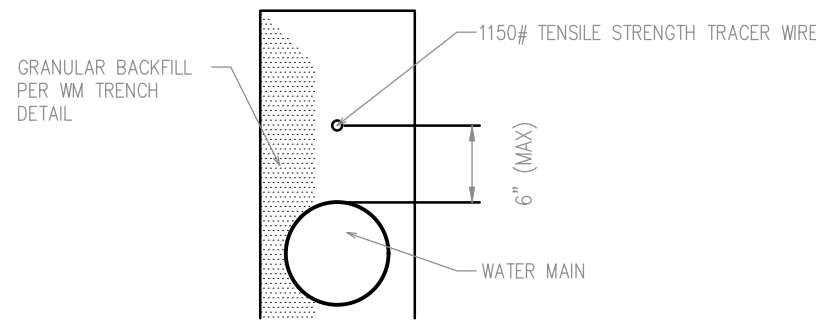


THRUST BLOCK FACE SHALL BE POURED AGAINST UNDISTURBED EARTH.
CONCRETE FOR THRUST BLOCKS TO BE WET MIXED 2500 P.S.I.

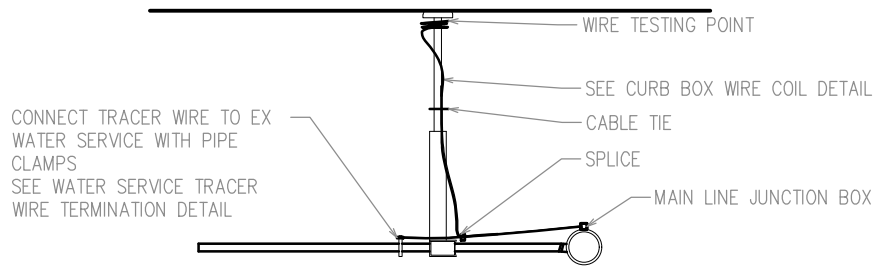
SCHEDULE OF THRUST BLOCK DIMENSIONS			
CODE	TEE SIZE		
	8"x8"	12"x12"	16"x16"
A	3'-0"	4'-0"	5'-0"
B	1'-6"	2'-0"	2'-6"
C	0'-9"	0'-9"	1'-0"
D	1'-0"	1'-4"	1'-8"
E	2'-0"	3'-0"	4'-0"
F	1'-0"	1'-6"	2'-0"
G	2'-2"	2'-10"	3'-8"
H	3'-3"	3'-3"	4'-2"
I	0'-6"	0'-10"	1'-0"
J	0'-6"	0'-10"	1'-0"

CONCRETE THRUST BLOCK FOR TEES

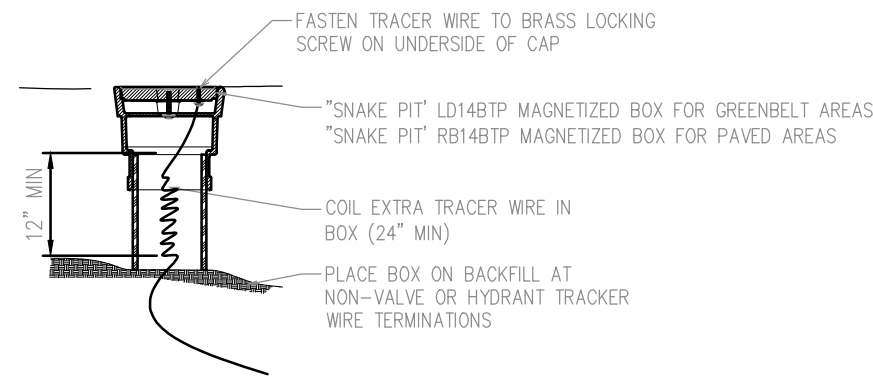
CITY OF SOUTHFIELD PUBLIC SERVICES GROUP ENGINEERING DEPARTMENT				
WATERMAIN DETAILS				
DRAWN BY	SP	REVISIONS		
DESIGNED BY	LS	No.	DESCRIPTION	DATE
APPROVED BY	LS	1	SOUTHFIELD SPEC. UPDATES	05/22/2014
DATE	2014			
HORZ.	NTS			
SC: VERT.				
SHEET	3 OF 4			
JOB No.				



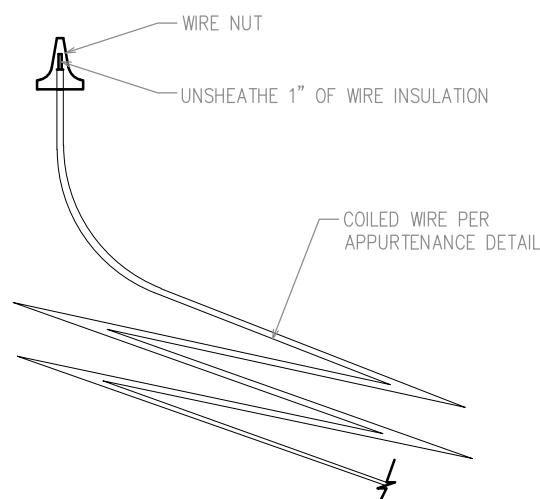
OPEN CUT MAIN LINE TRENCH
NO SCALE



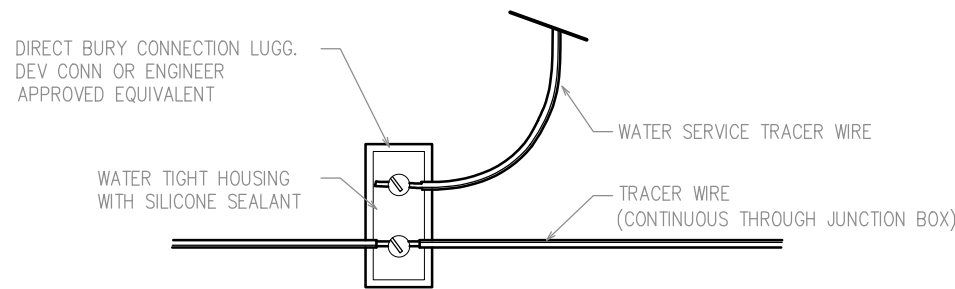
CURB STOP CONNECTION
NO SCALE



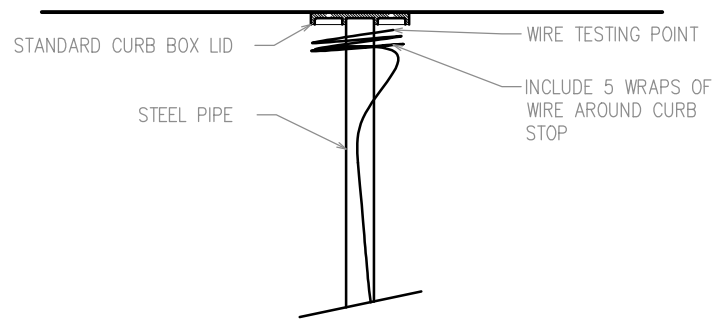
TRACER WIRE TEST POINT
NO SCALE



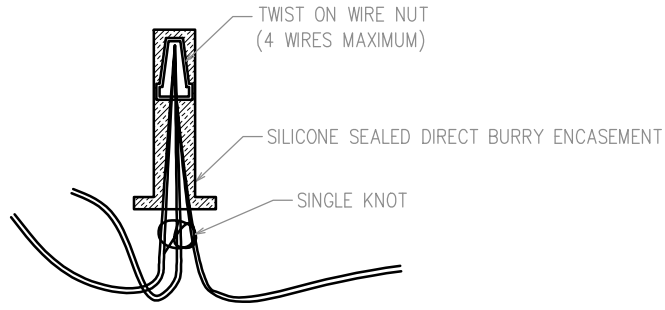
WIRE TESTING POINT
NO SCALE



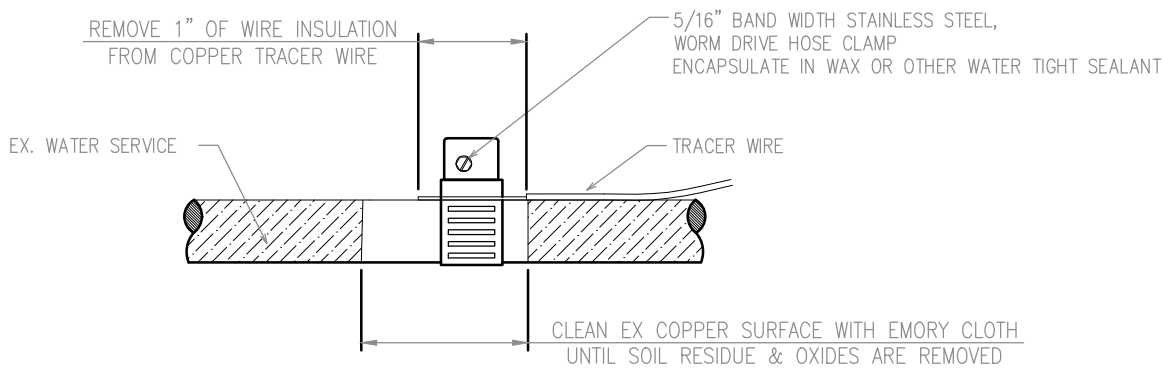
MAIN LINE JUNCTION BOX
NO SCALE



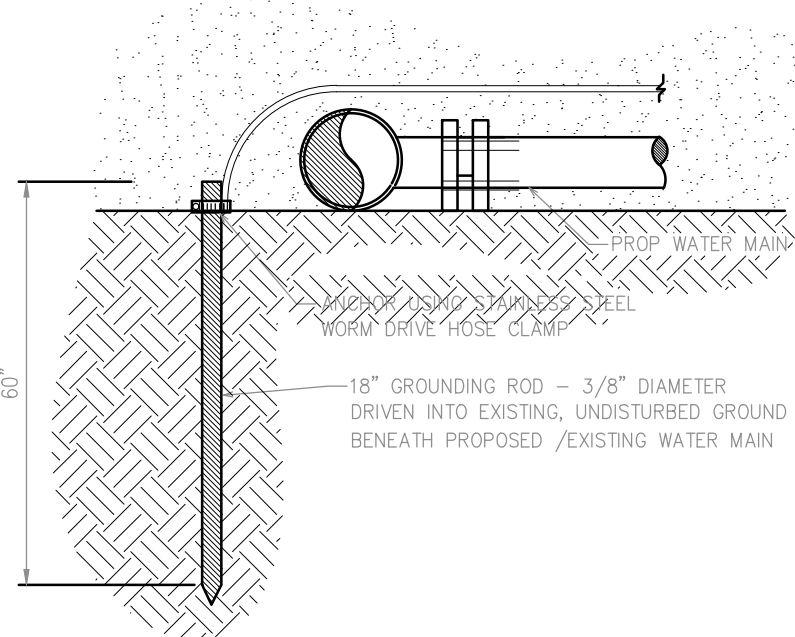
CURB BOX WIRE COIL
NO SCALE



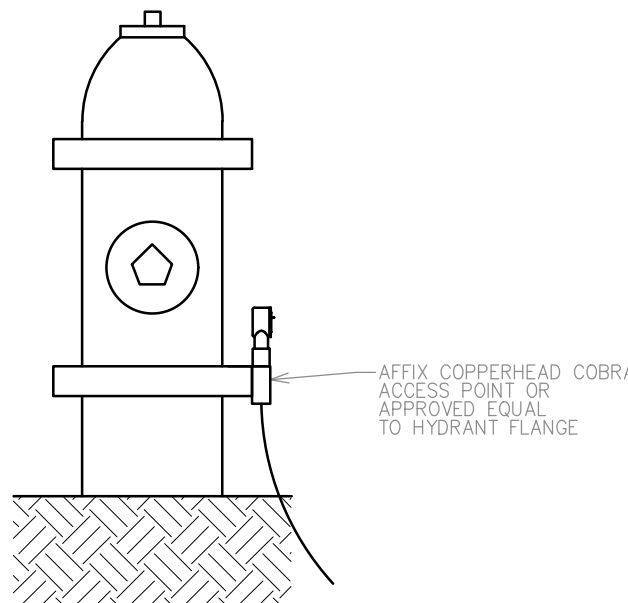
SPLICE CONNECTOR
NO SCALE



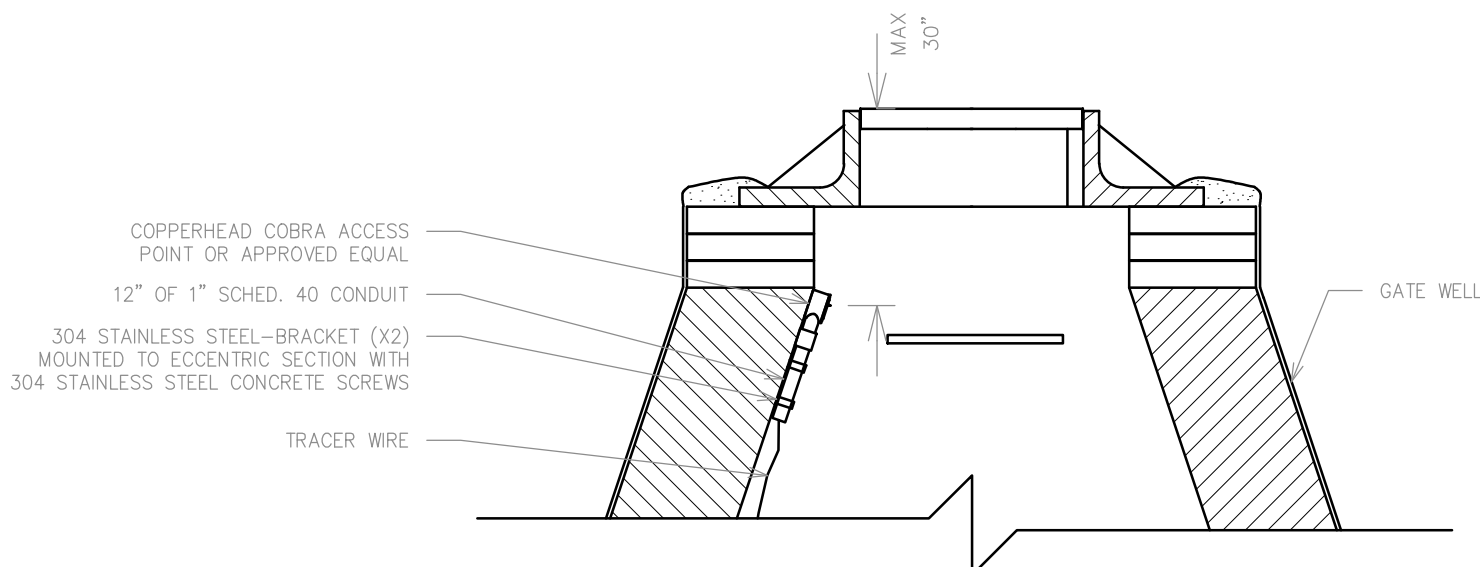
WATER SERVICE TERMINATION
NO SCALE



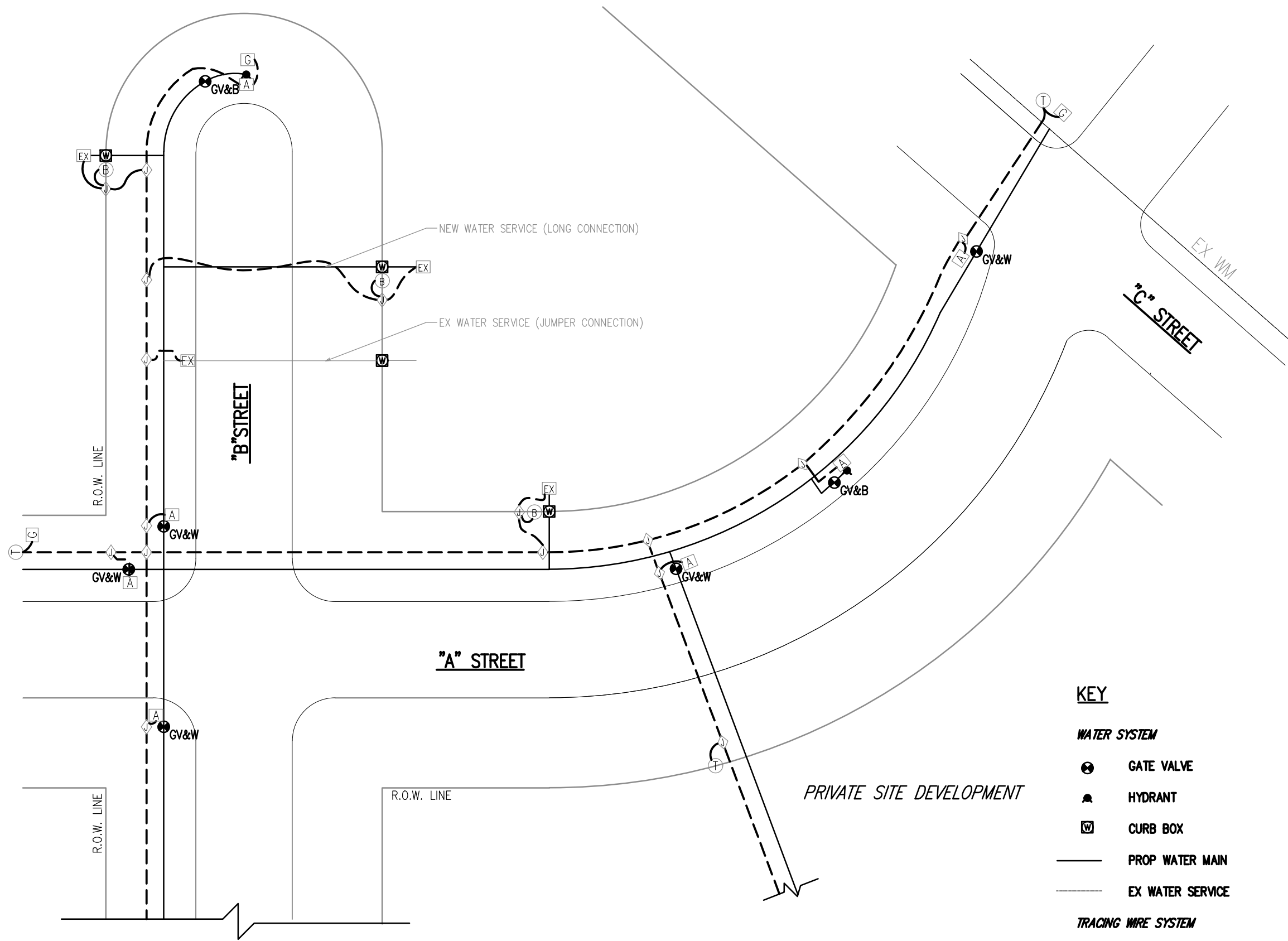
GROUNDING ROD TERMINATION
NO SCALE



HYDRANT TRACER WIRE ACCESS POINT
NO SCALE



GATE WELL TRACER WIRE ACCESS POINT
NO SCALE



TRACER WIRE SYSTEM SCHEMATIC

- KEY**
- WATER SYSTEM**
- GATE VALVE
 - HYDRANT
 - CURB BOX
 - PROP WATER MAIN
 - EX WATER SERVICE
- TRACING WIRE SYSTEM**
- JUNCTION
 - CURB BOX WIRE COIL
 - WATER SERVICE TERMINATION
 - TEST POINT
 - GROUNDING ROD TERMINATION
 - ACCESS POINT
 - TRACING WIRE

CITY OF SOUTHFIELD

PUBLIC SERVICES GROUPENGINEERING DEPARTMENT

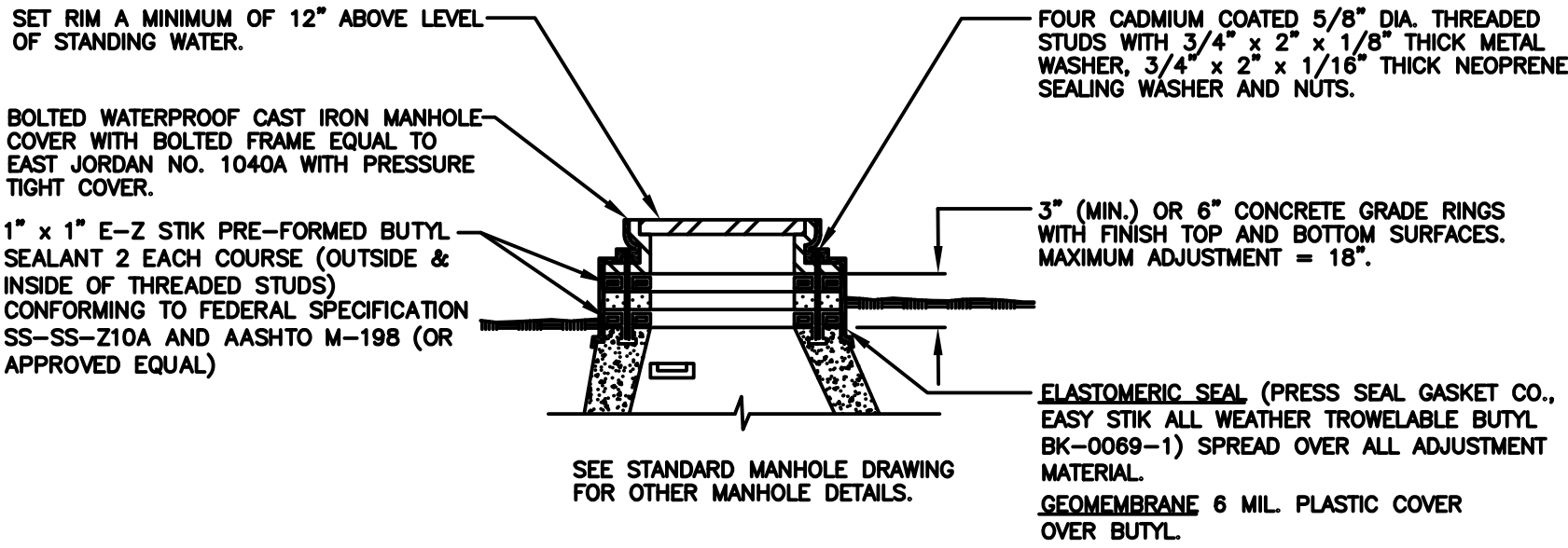
WATERMAIN TRACER
SYSTEM DETAILS

DRAWN BY	PD	REVISIONS			
DESIGNED BY	LS	No.	DESCRIPTION	DATE	BY
APPROVED BY	LS	1	ADD HYDRANT TEST POINT	01/17	LS
DATE	2014	2	SOUTHFIELD SPEC. UPDATES	05/22	ZJH
HORZ.	NTS				
SC. VERT.					
SHEET	4 OF 4				
JOB No.					

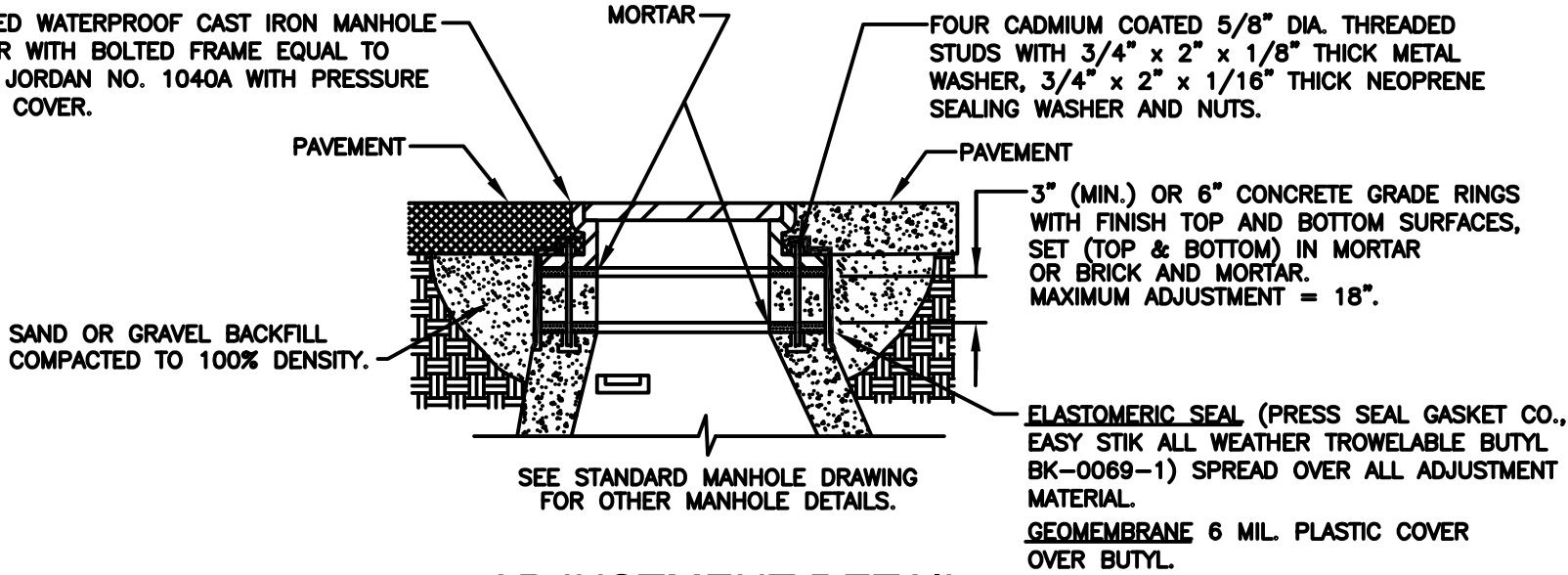
Profile Name: GISQtrs.ctb
File Location: J:\Drain\Mapping\Units\STANDARD\DETAIL\SWAppProduction\Standard\Sid-Sm\o2.dwg

- 2

MANHOLE RIM ADJUSTMENT CHART	
MANHOLE LOCATION	SET RIM ELEVATION
DITCH	12" ABOVE FINISH GRADE
FLOOD PLAIN	12" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



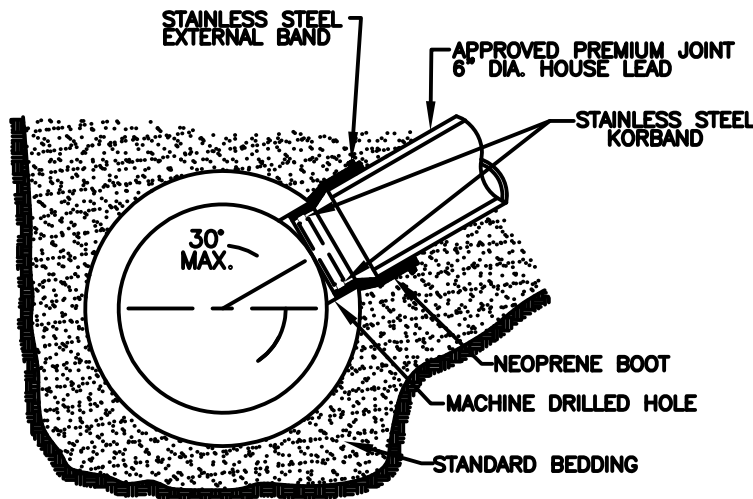
ADJUSTMENT DETAIL FOR
MANHOLE TOPS WITHIN FLOOD PRONE AREAS



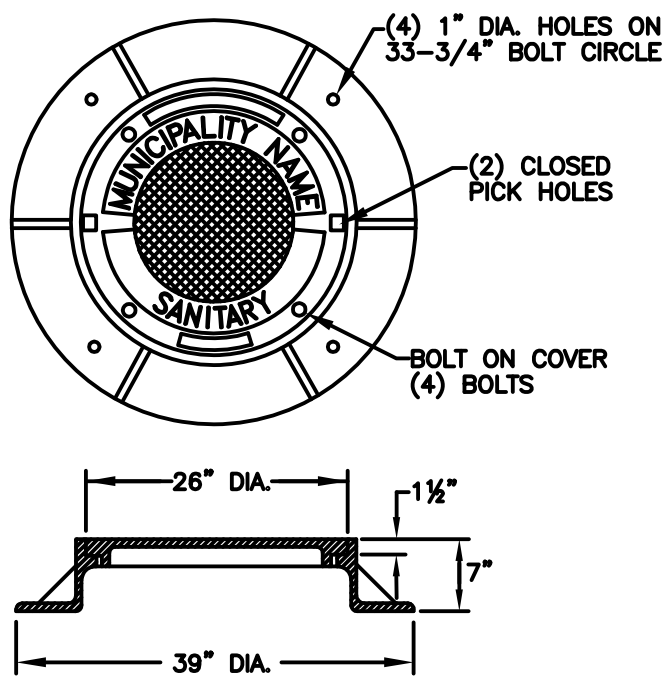
ADJUSTMENT DETAIL
MANHOLE TOPS WITHIN PAVEMENT AREAS

WATER RESOURCES COMMISSIONER GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

- ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER WATER RESOURCES COMMISSIONER (WRC) AND/OR LOCAL UNIT OF GOVERNMENT INSPECTION.
- FOR ALL WRC-OPERATED SYSTEMS, CALL 248-858-1110 24-HOURS IN ADVANCE OR WORK TO SCHEDULE INSPECTION.
- NO SANITARY SEWER MAY BE USED AS A CLEANOUT OF DEWATERING OUTLET.
- WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING AN WRC APPROVED ADAPTER.
- APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
 - ABS PLASTIC, ASTM D2751, SDR 23.5.
 - PVC PLASTIC, ASTM D3034, SDR 23.5 OR ASTM D2688, SCHEDULE 40.
 - DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54. JOINTS SHALL BE SUPER BEL TITE, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
 - ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY WRC.
- ALLOWABLE TYPES OF SEWER PIPE ADAPTERS:
 - FERNCO ADAPTER/REDUCER DONUTS.
 - FERNCO FLEXIBLE COUPLING.
 - MISSION CLAY BAND-SEAL COUPLING.
 - SMITH-BLAIR STAINLESS STEEL REPAIR CLAMP.
 - HURON-CLINTON O-RING ADAPTER.
 - HAMILTON-KENT GEAR GRIP ADAPTER.
 - PLANT FABRICATED JOINT CONVERSION PIPE.

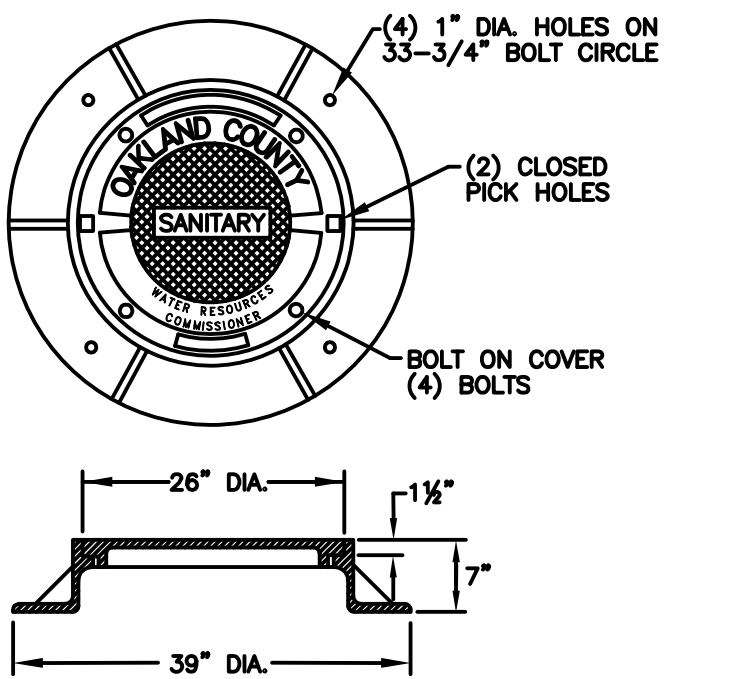


KOR-N-TEE TAP FOR CONCRETE PIPE



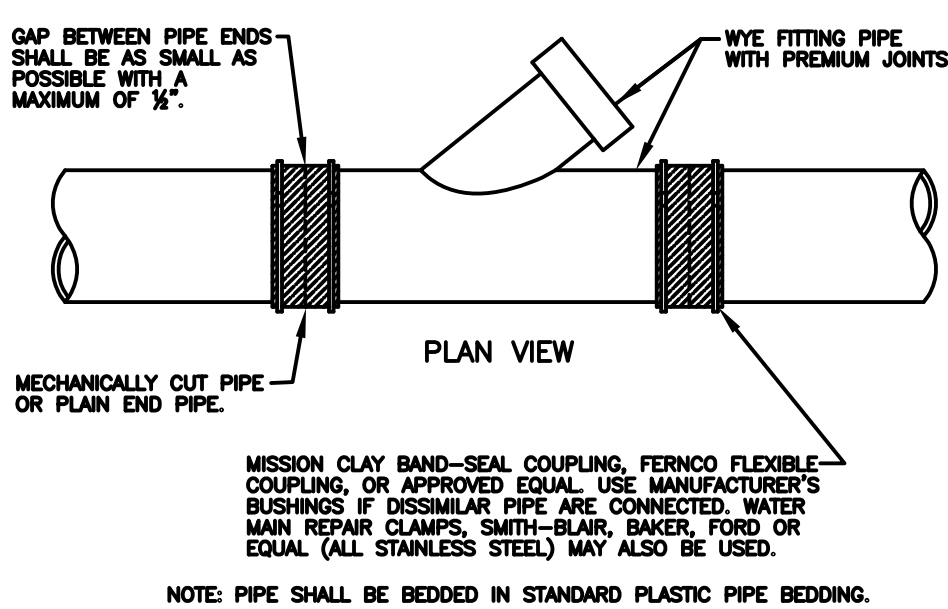
EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

LOCAL MUNICIPALITIES MANHOLE COVER

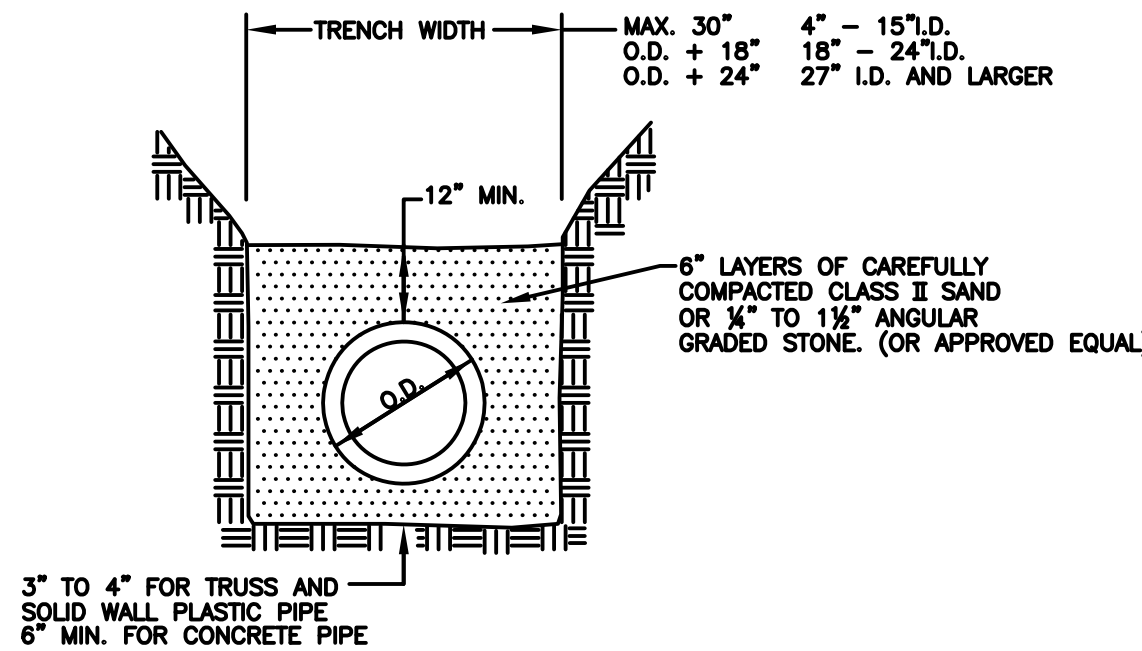


EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040APT
PATTERN NO. 1040A, PRODUCT NO. NCR09-1280 C
2" RAISED LETTERS, 1" RAISED LETTERS, 3/4" RAISED LETTERS
ALL RECESSED FLUSH.

W.R.C. LETTERED MANHOLE COVER

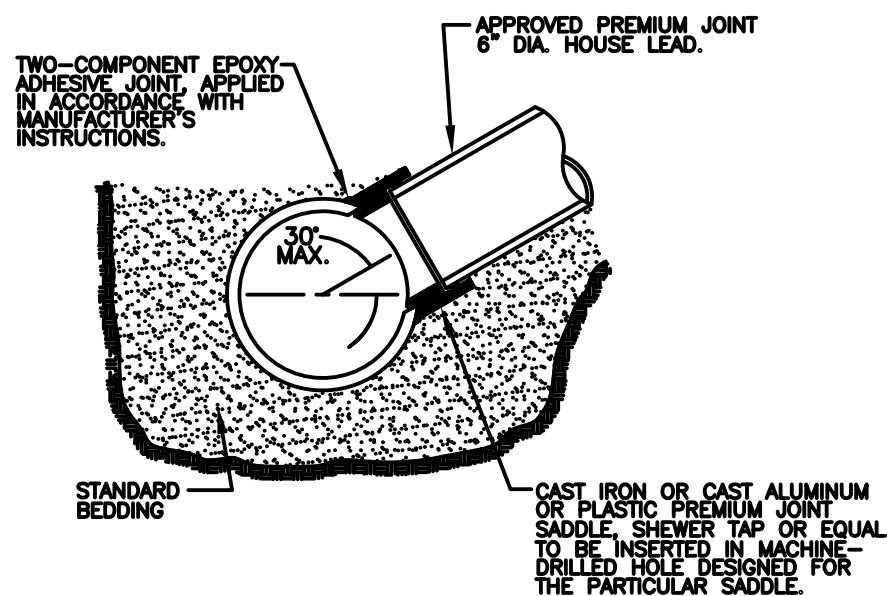


WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS
(RIGID PIPE)



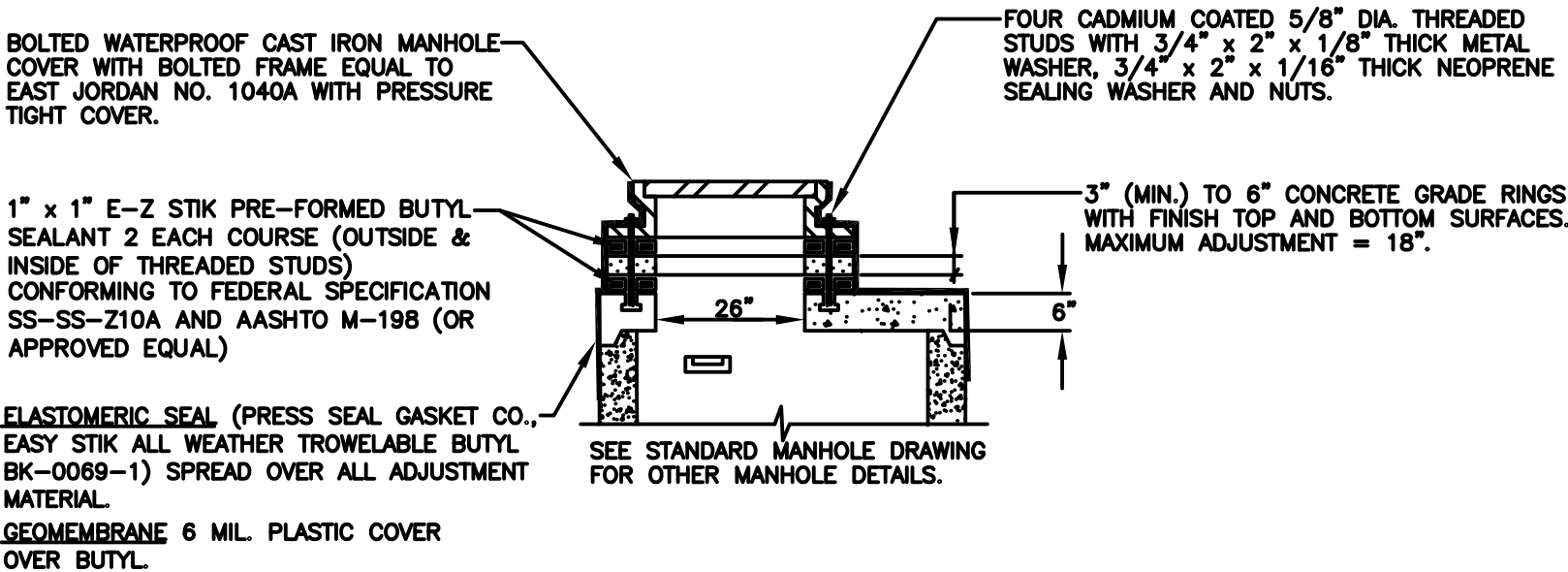
NOTE:
APPROVAL MAY BE GIVEN TO ALTERNATE MATERIALS AND METHODS TO ACHIEVE CLASS B BEDDING.

STANDARD BEDDING
(CLASS B)

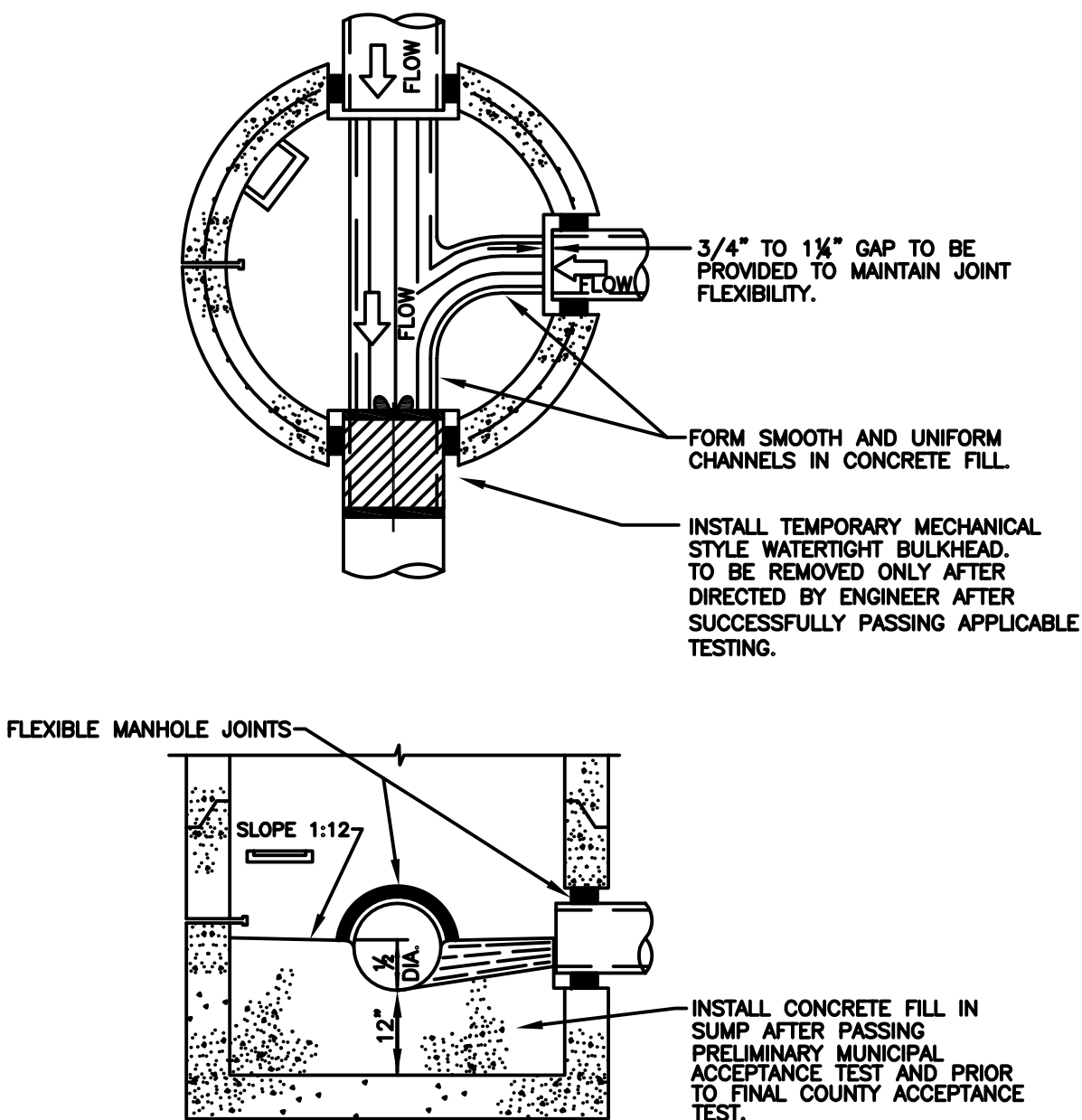


NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION. DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE, TEMPERATURE, ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

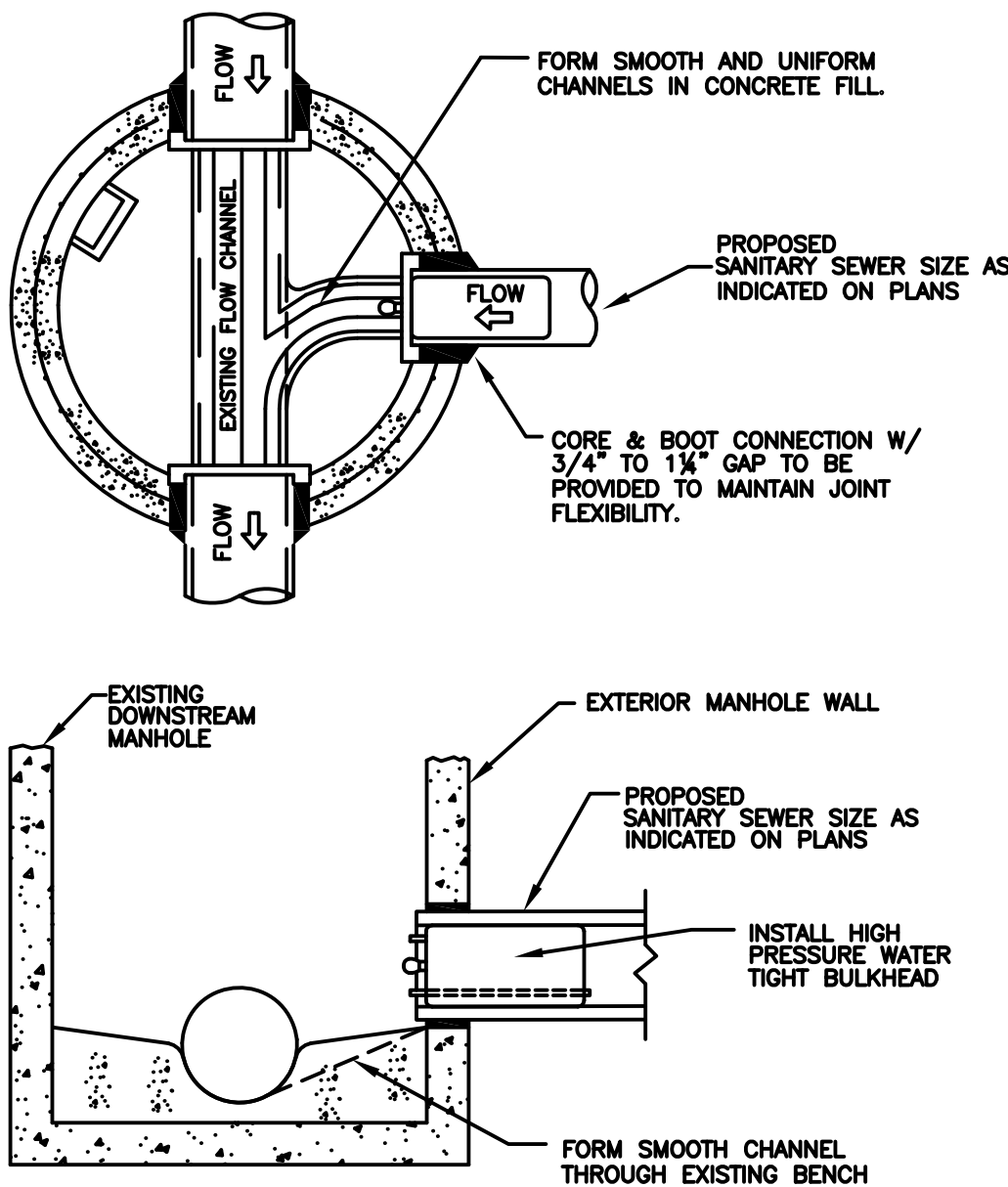
SEWER TAP-ALL SIZES OF MAIN SEWER PIPES
VITRIFIED CLAY



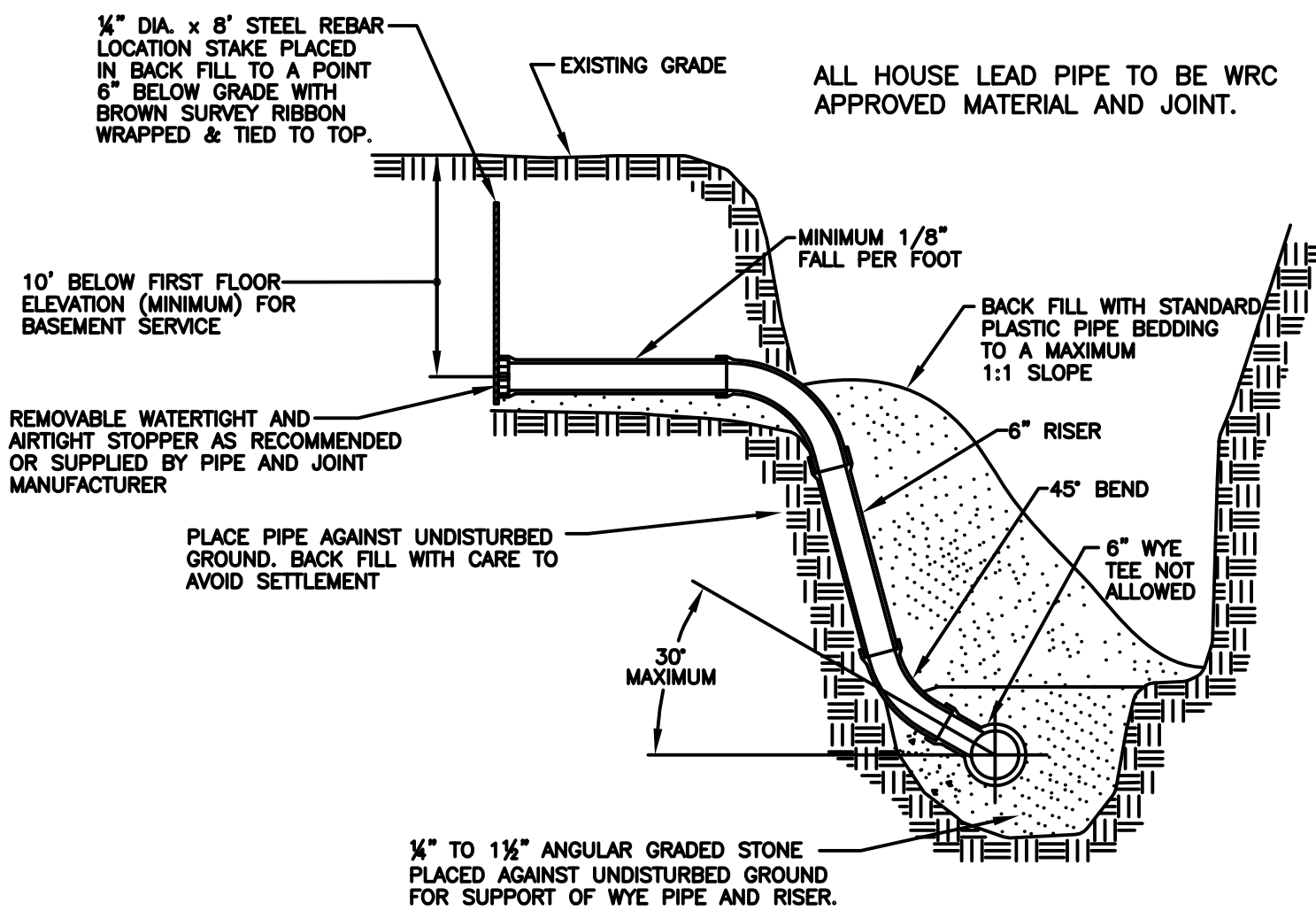
FLAT TOP MANHOLE



SUMP MANHOLE FOR TESTING,
CLEANING AND DEWATERING



TESTING BULKHEAD WITH PIPE TAP

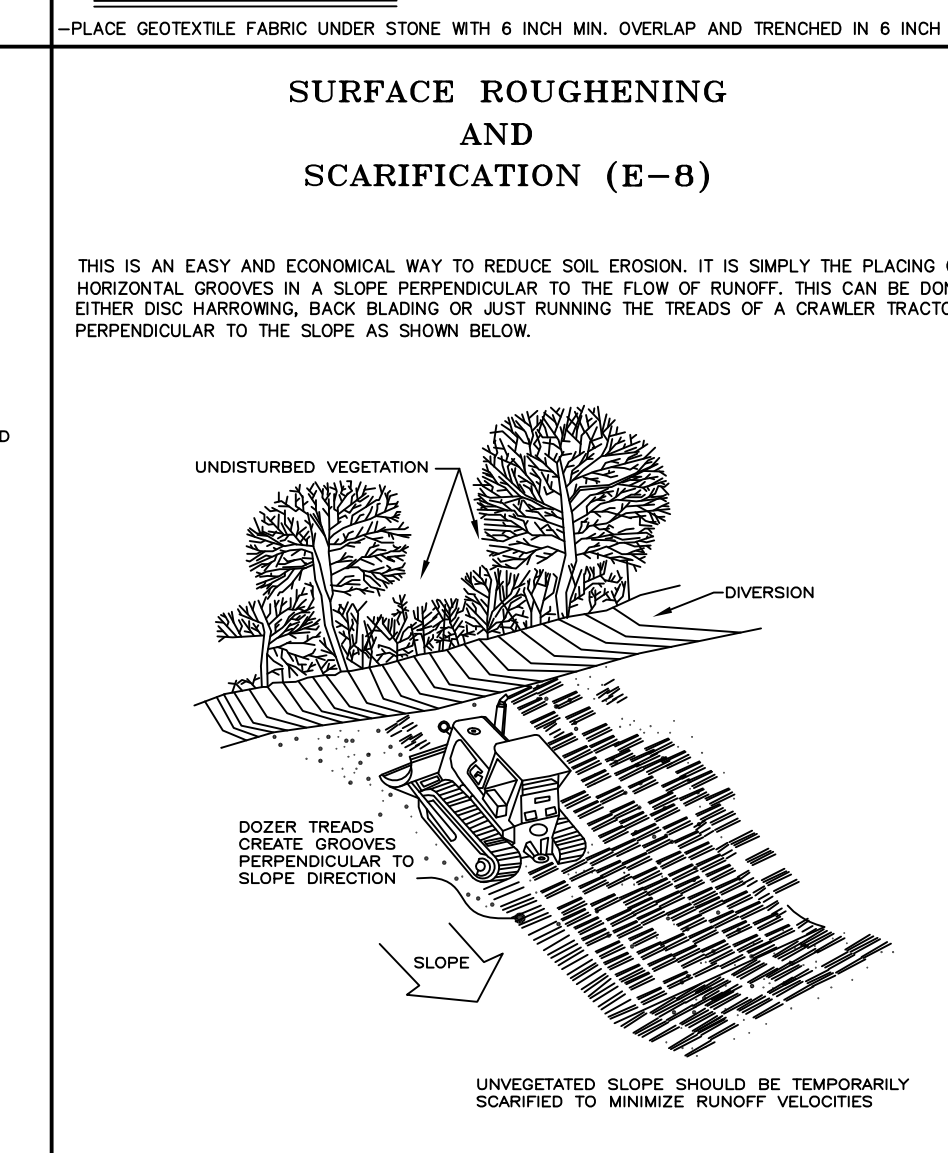
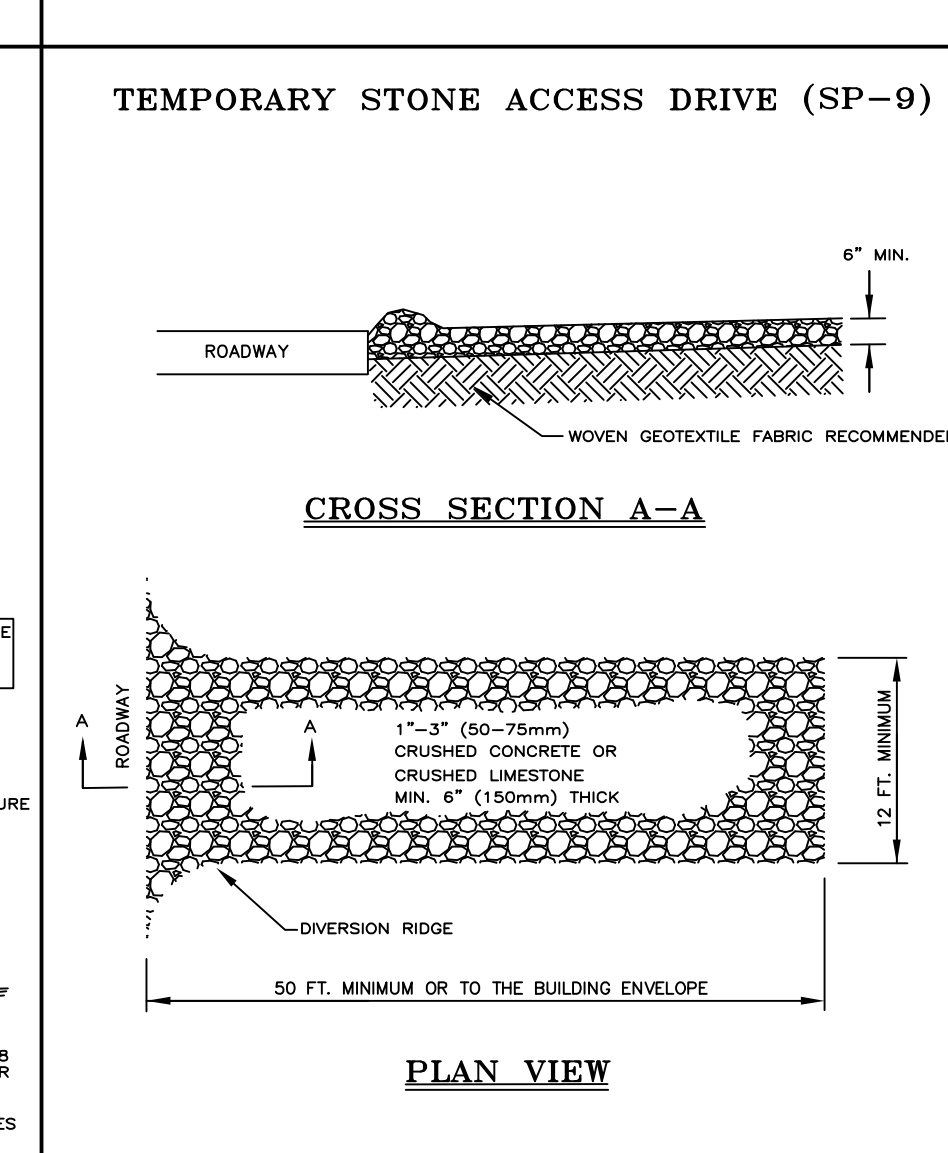
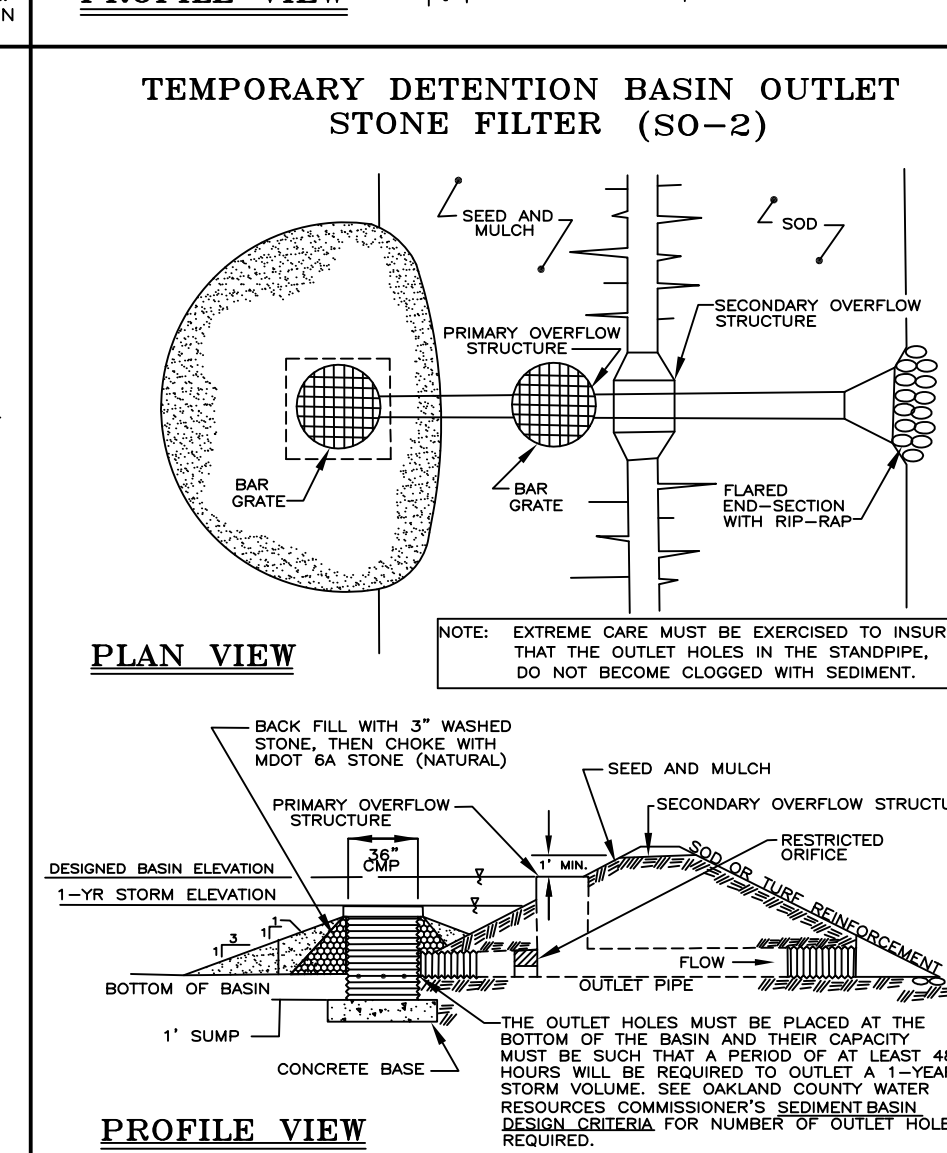
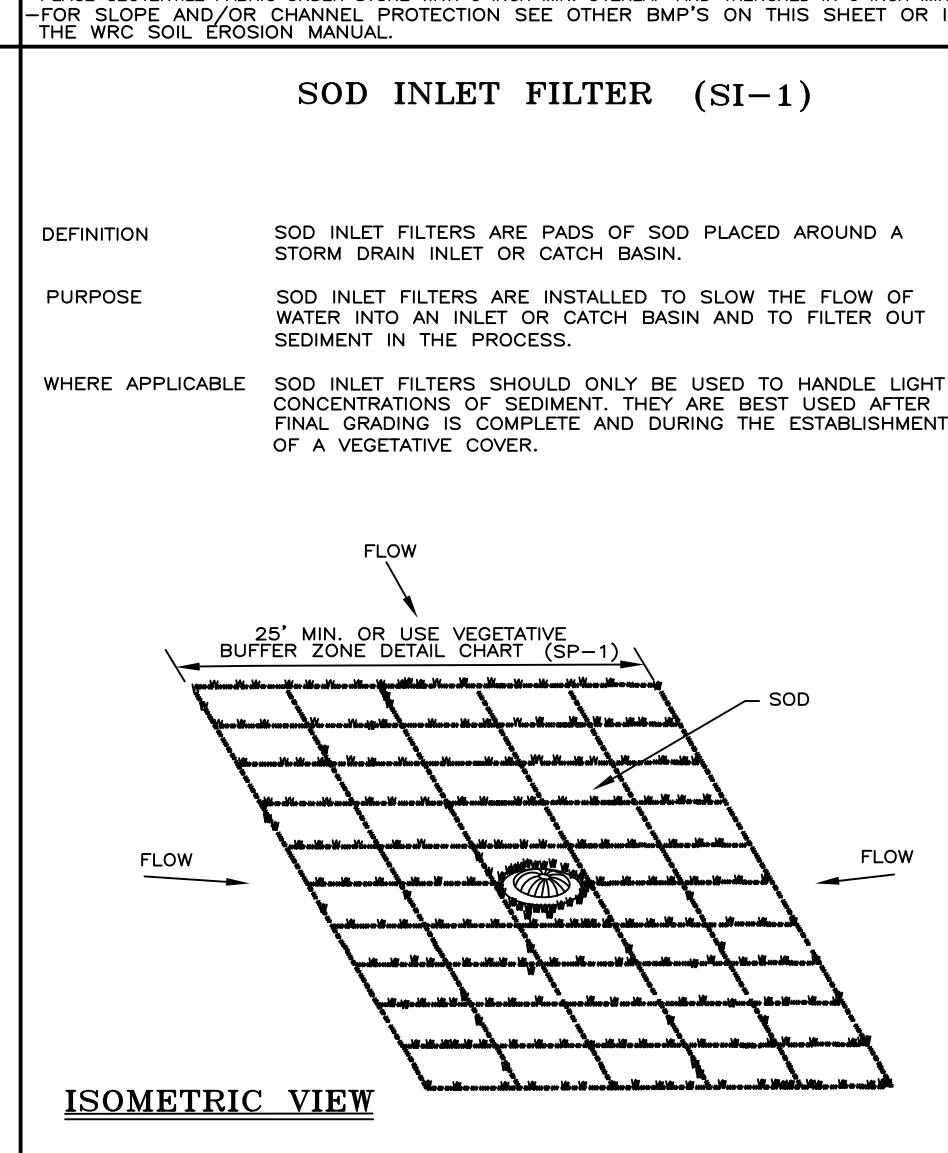
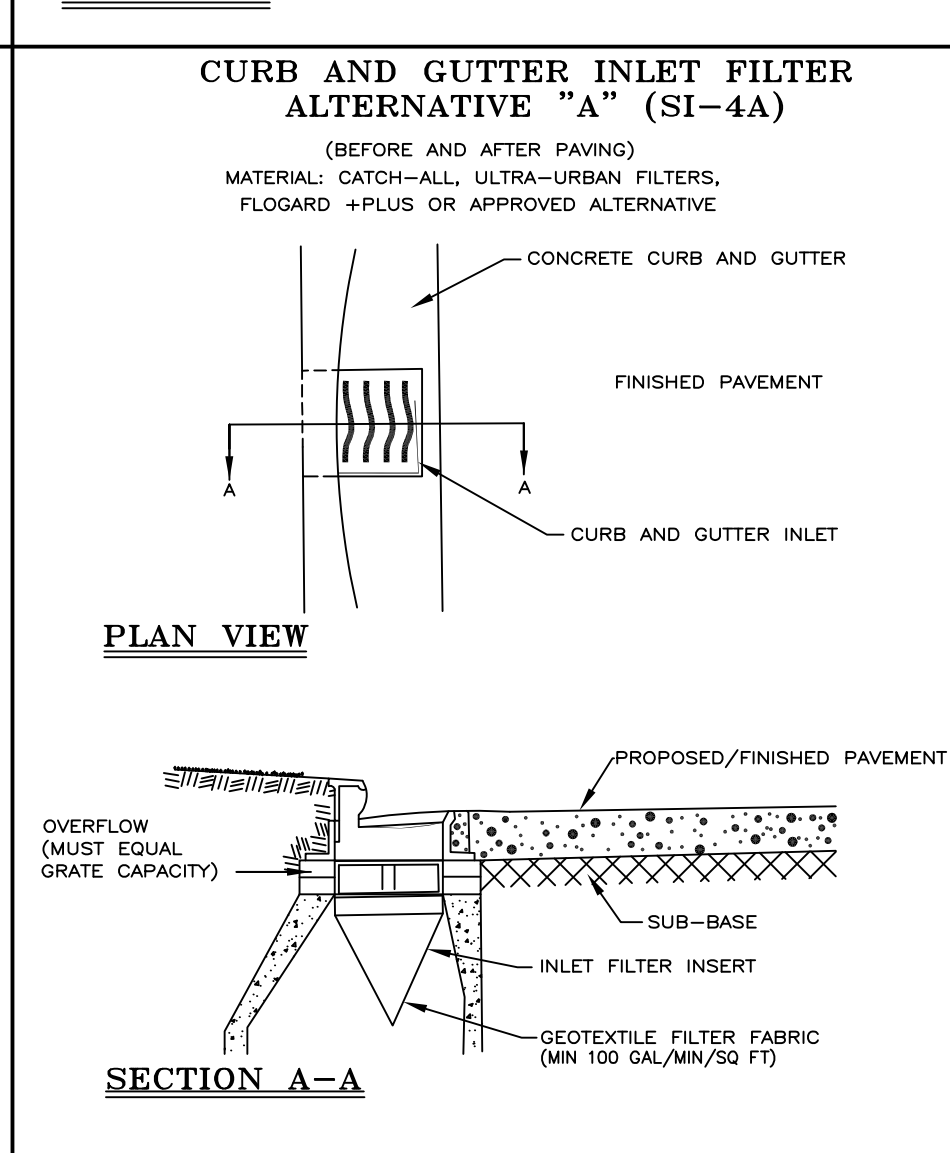
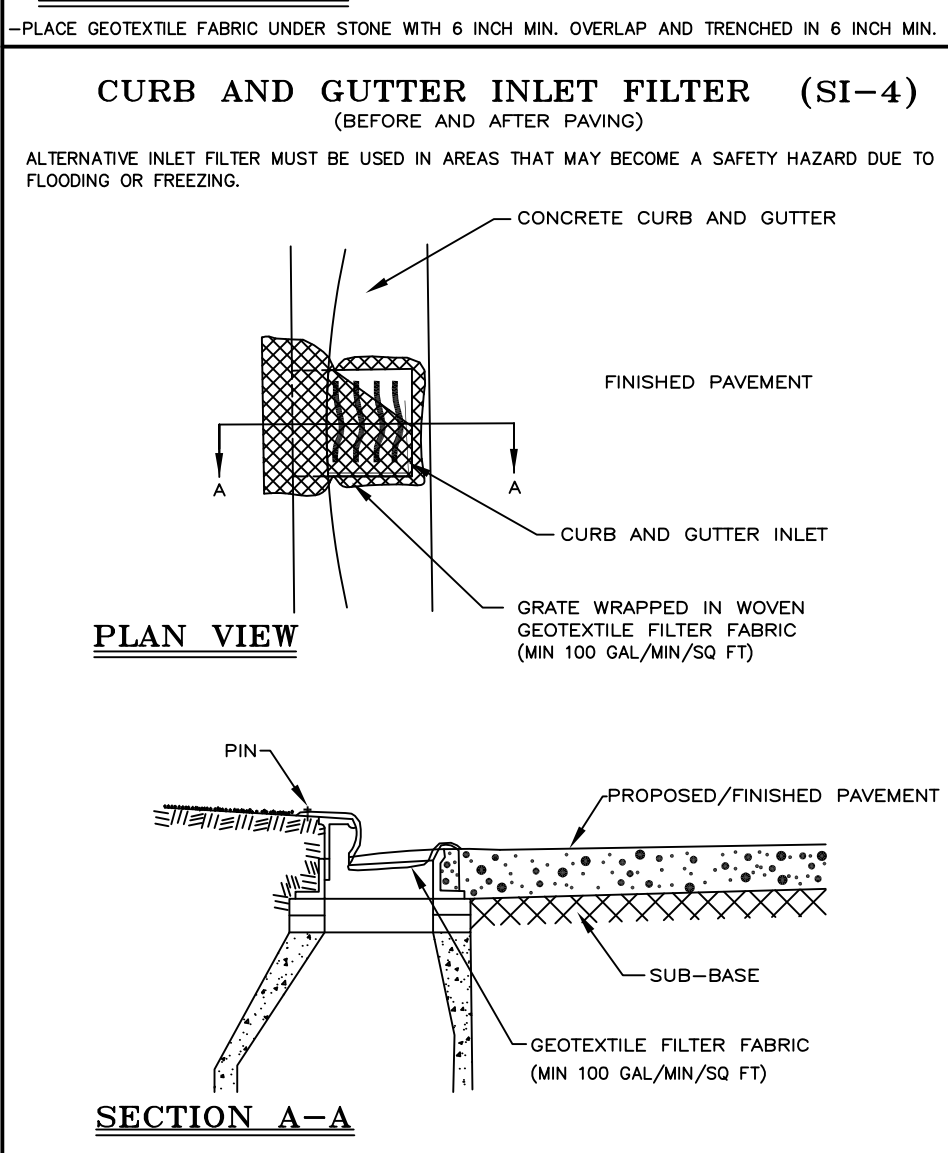
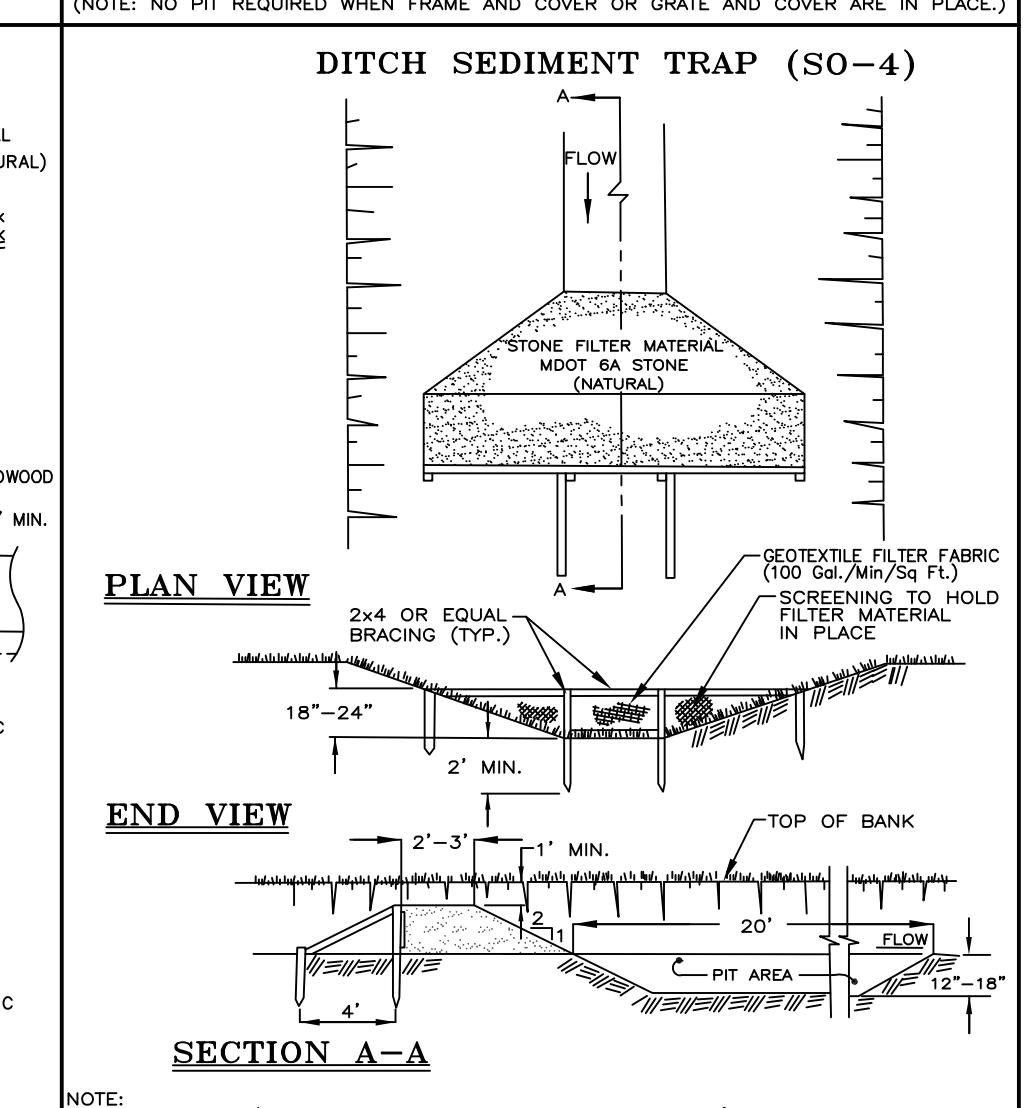
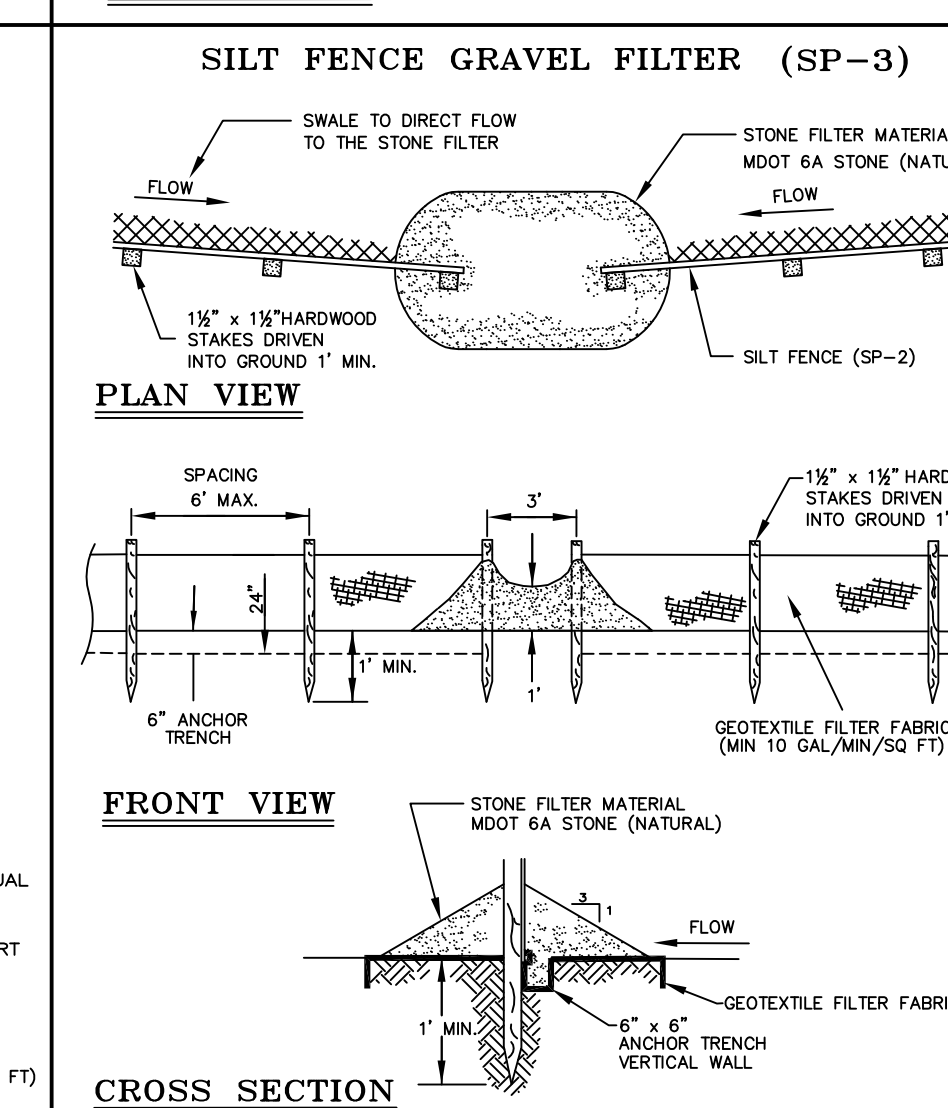
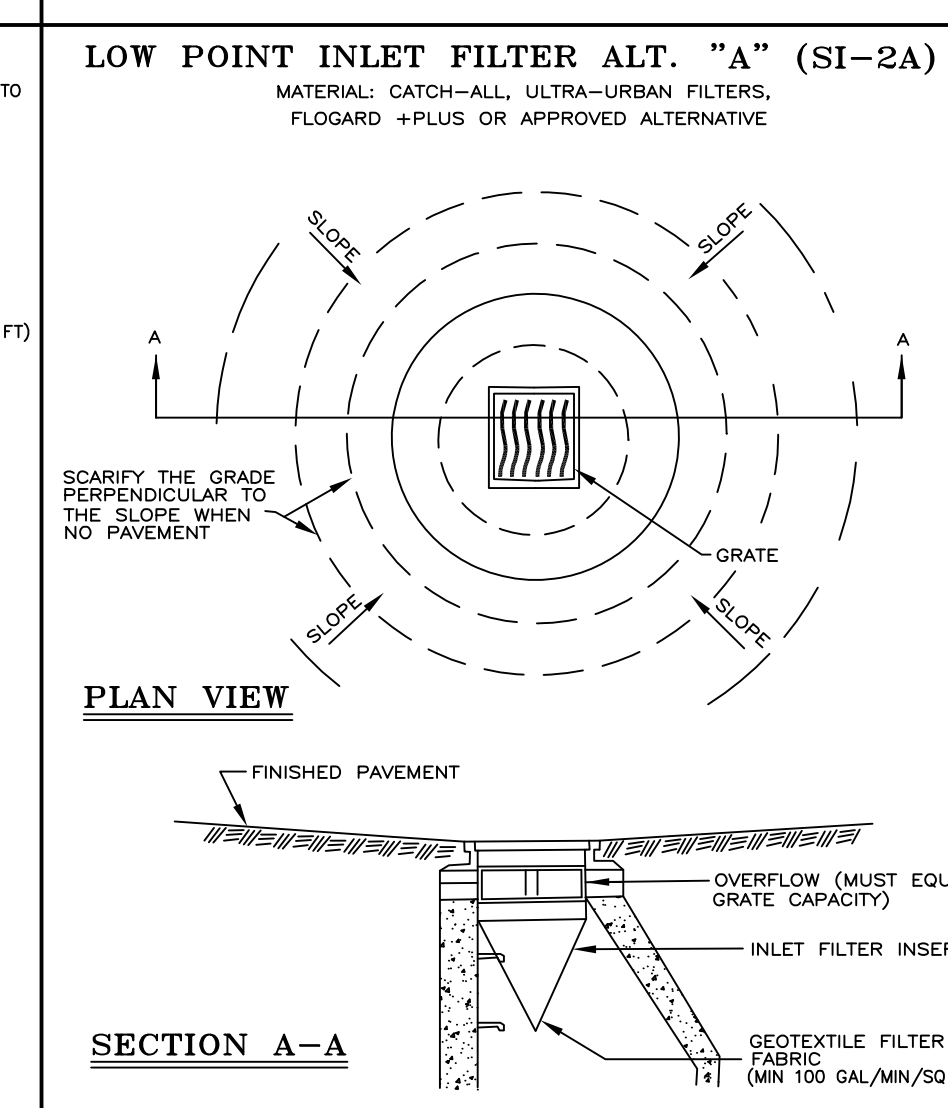
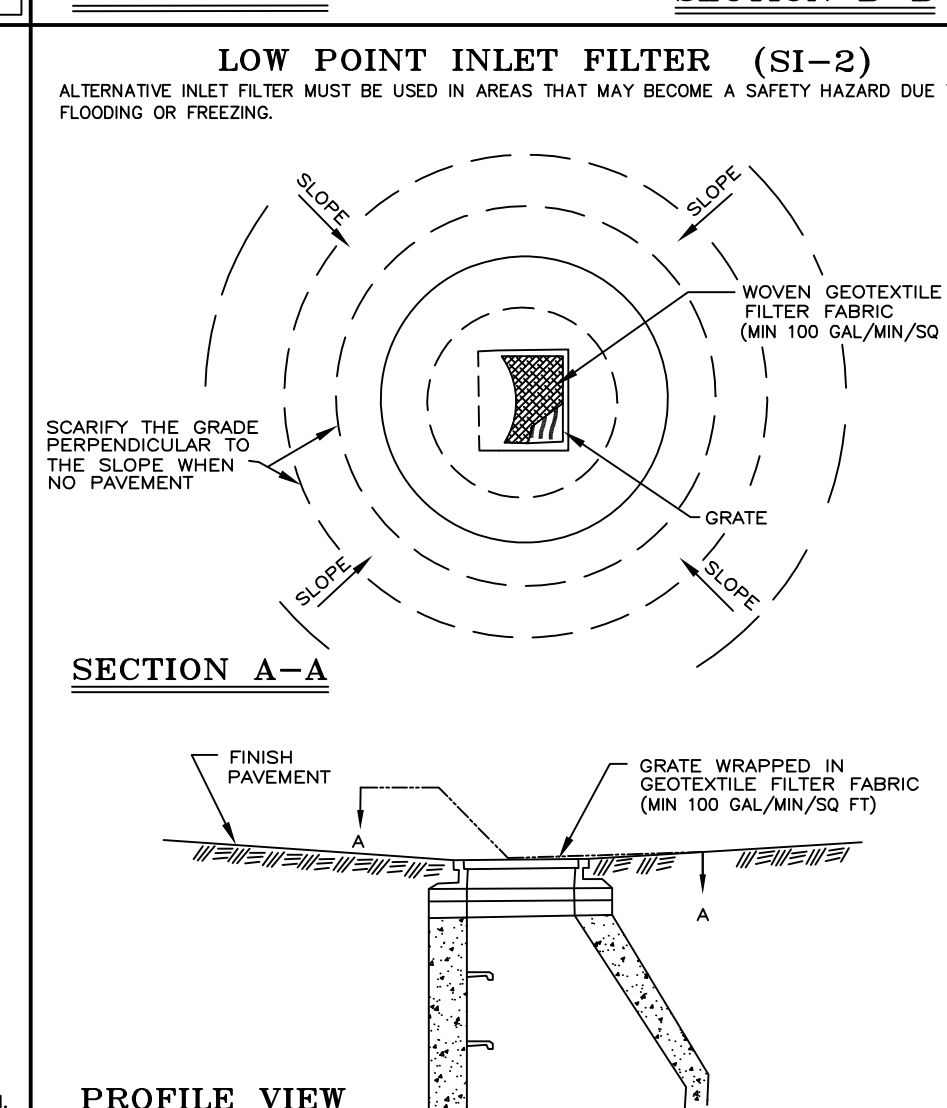
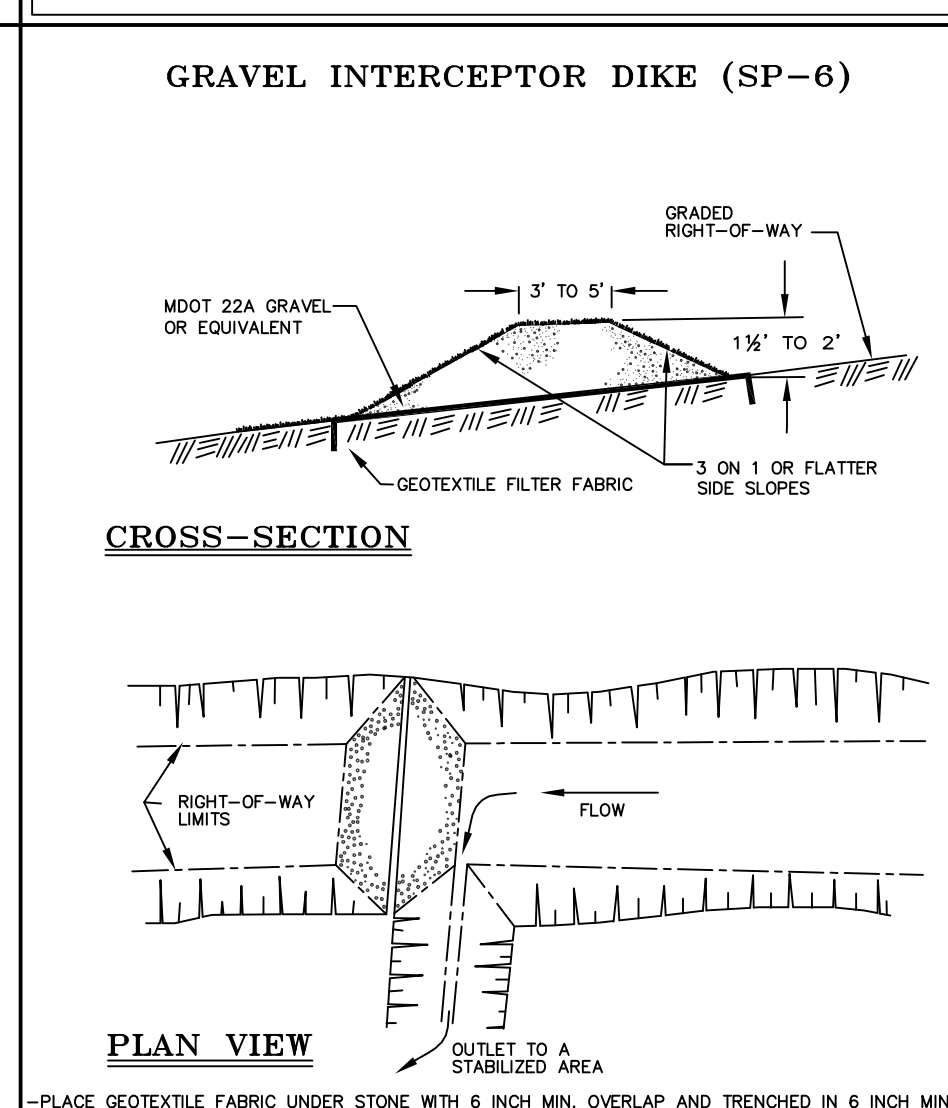
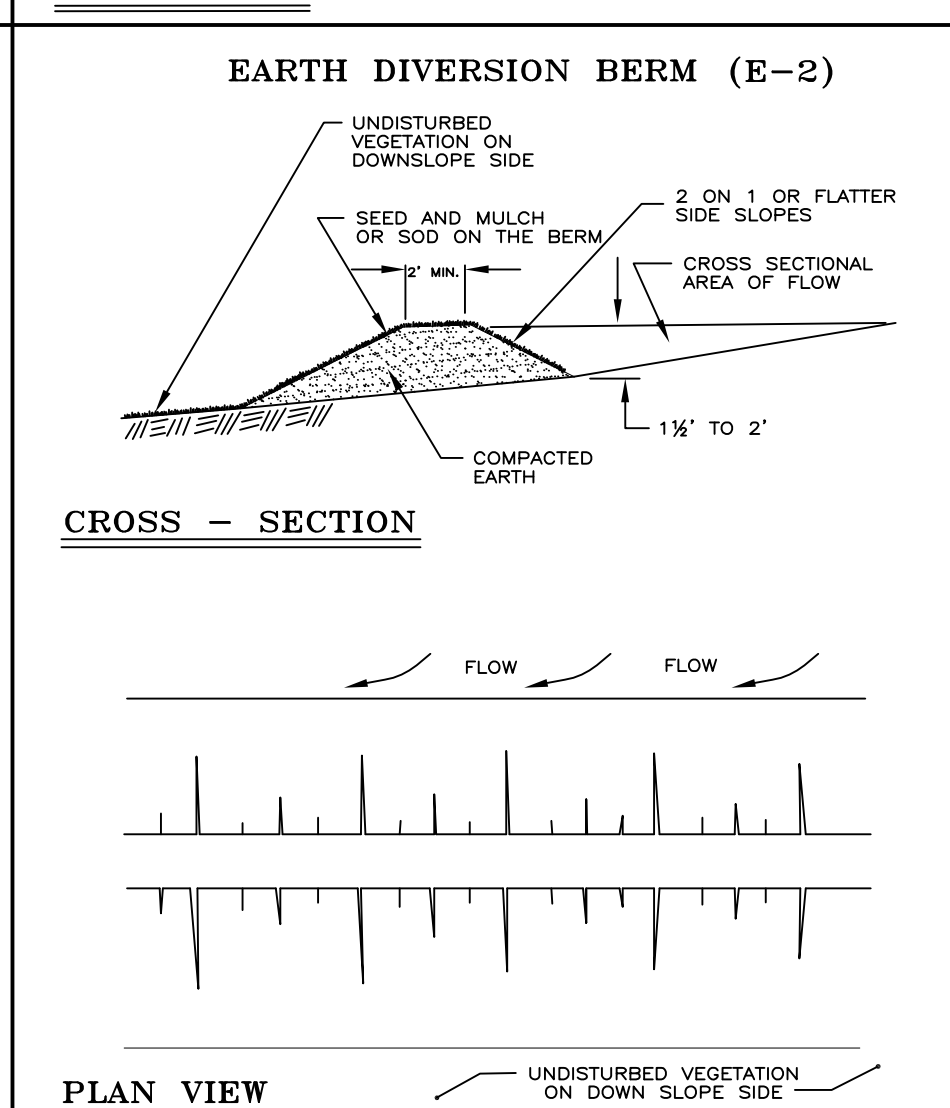
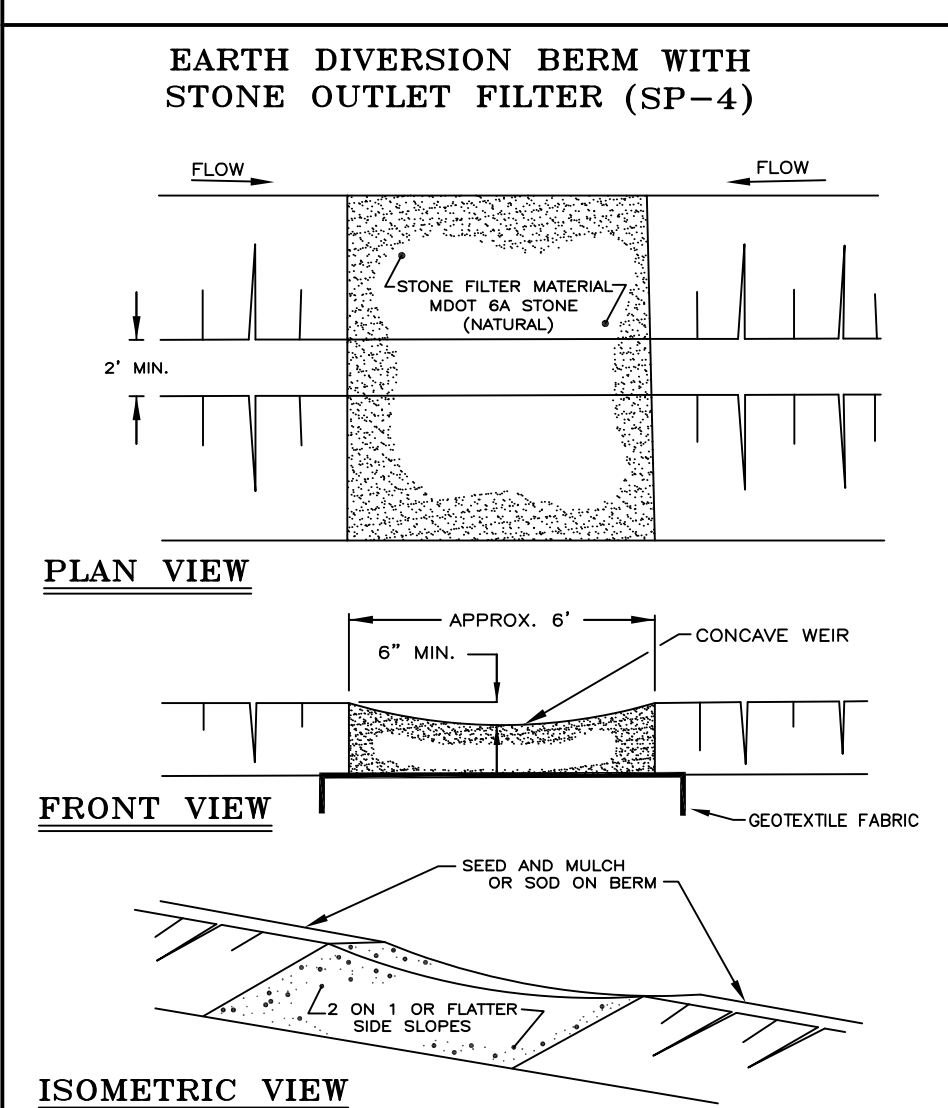
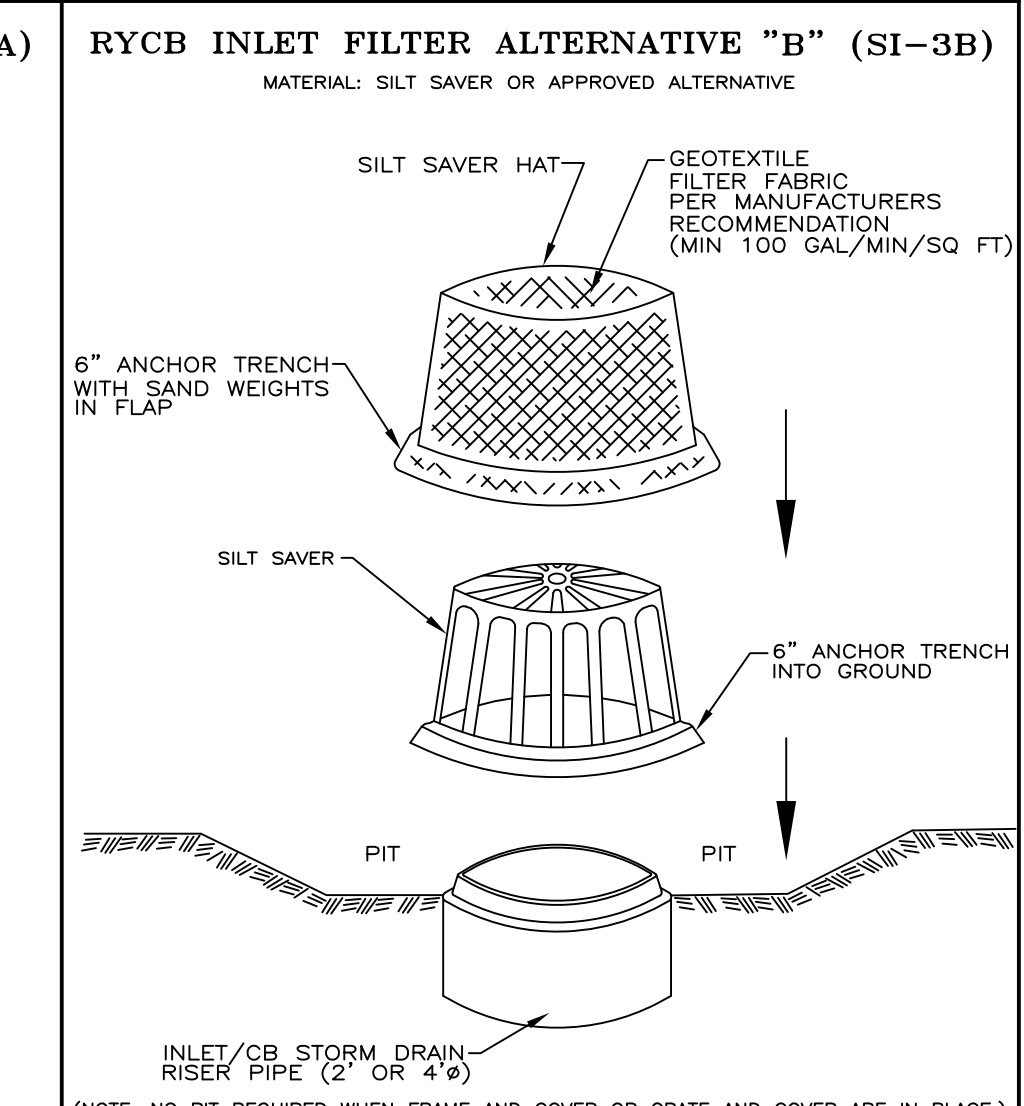
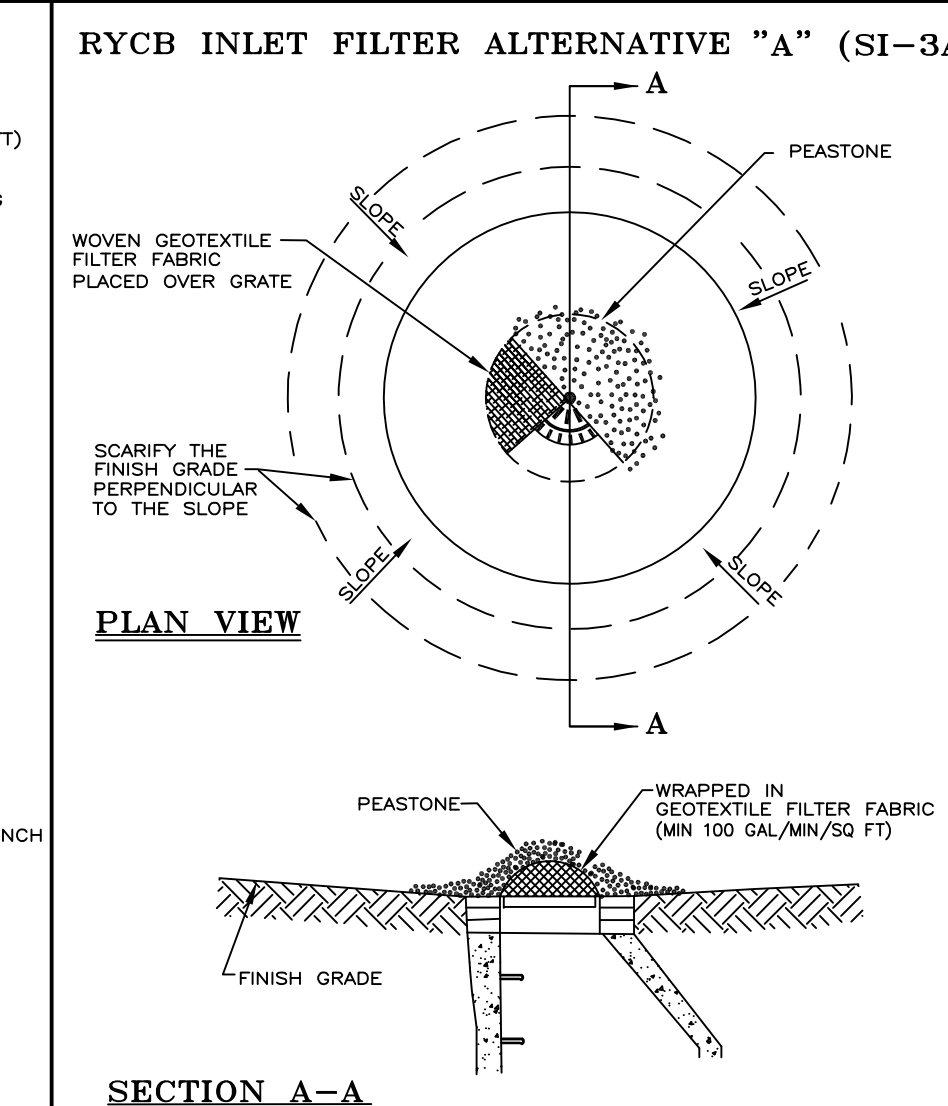
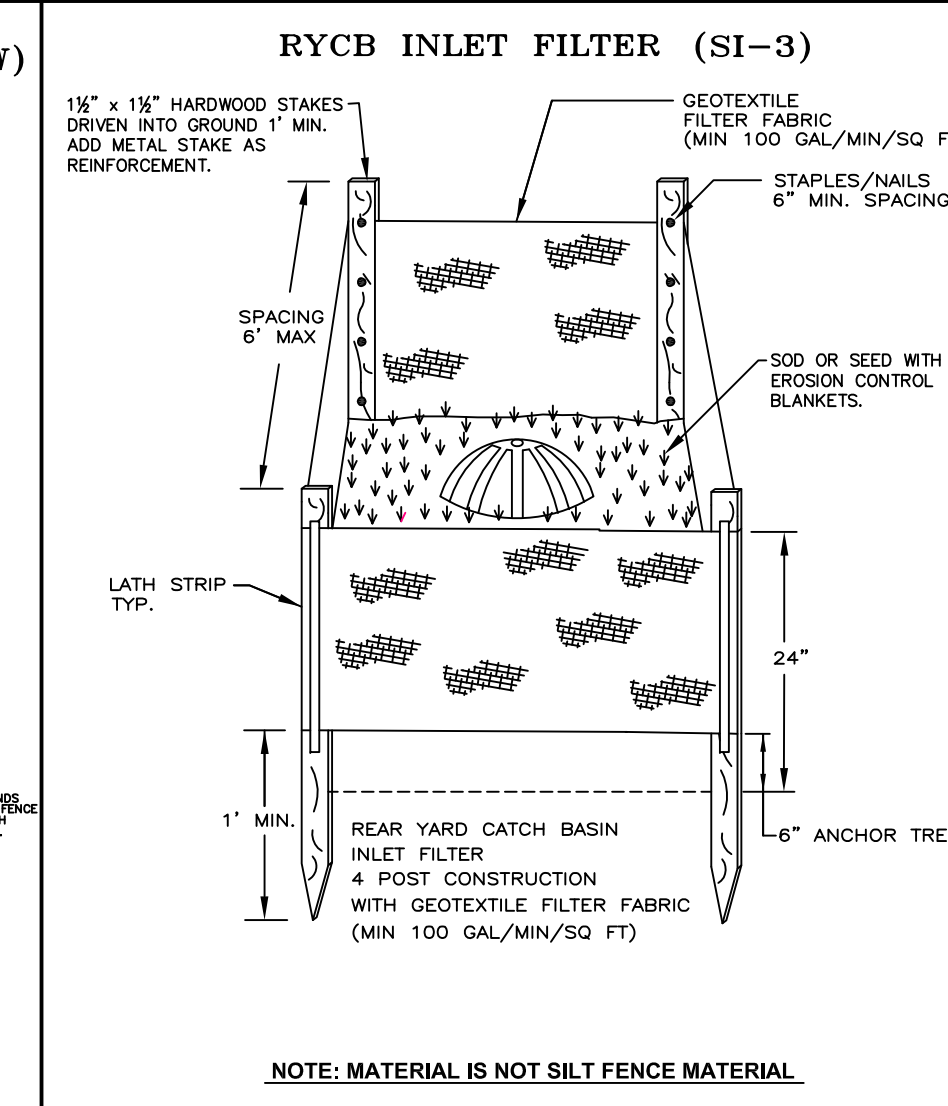
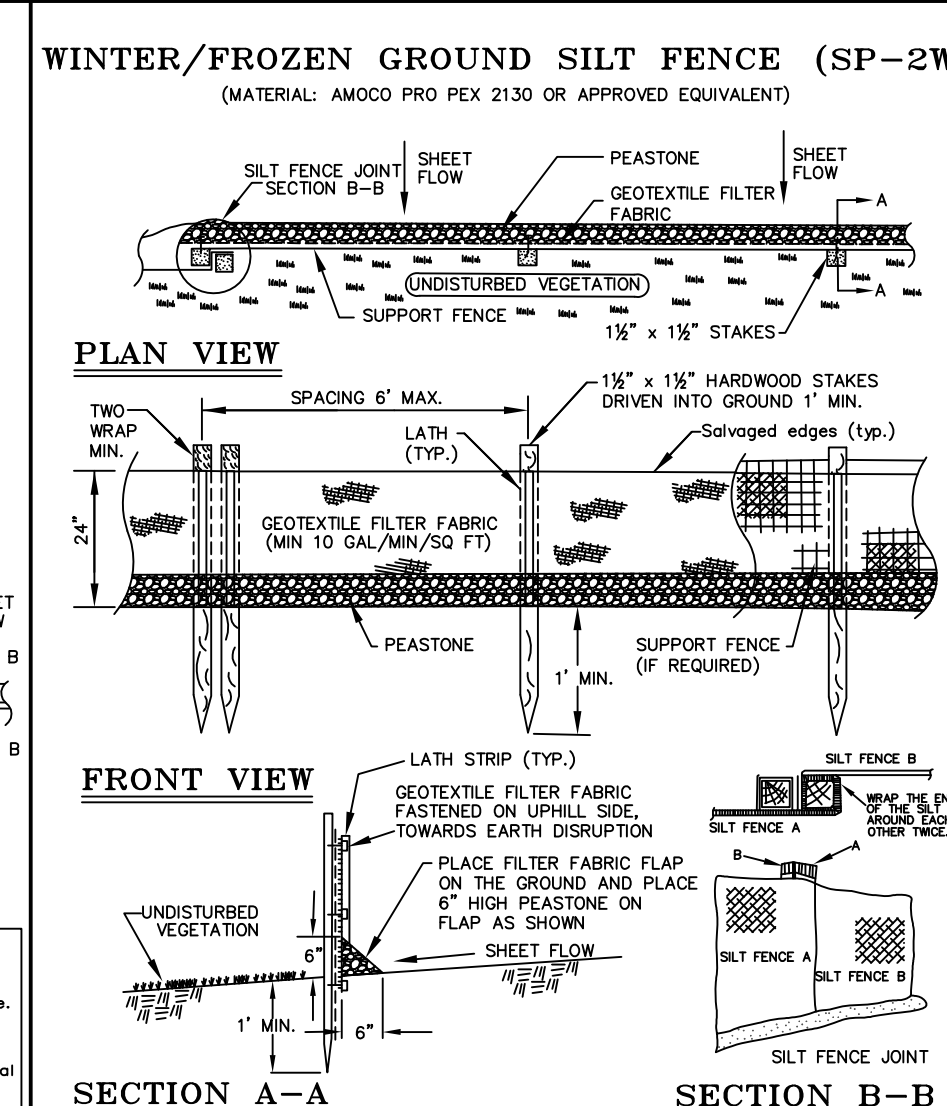
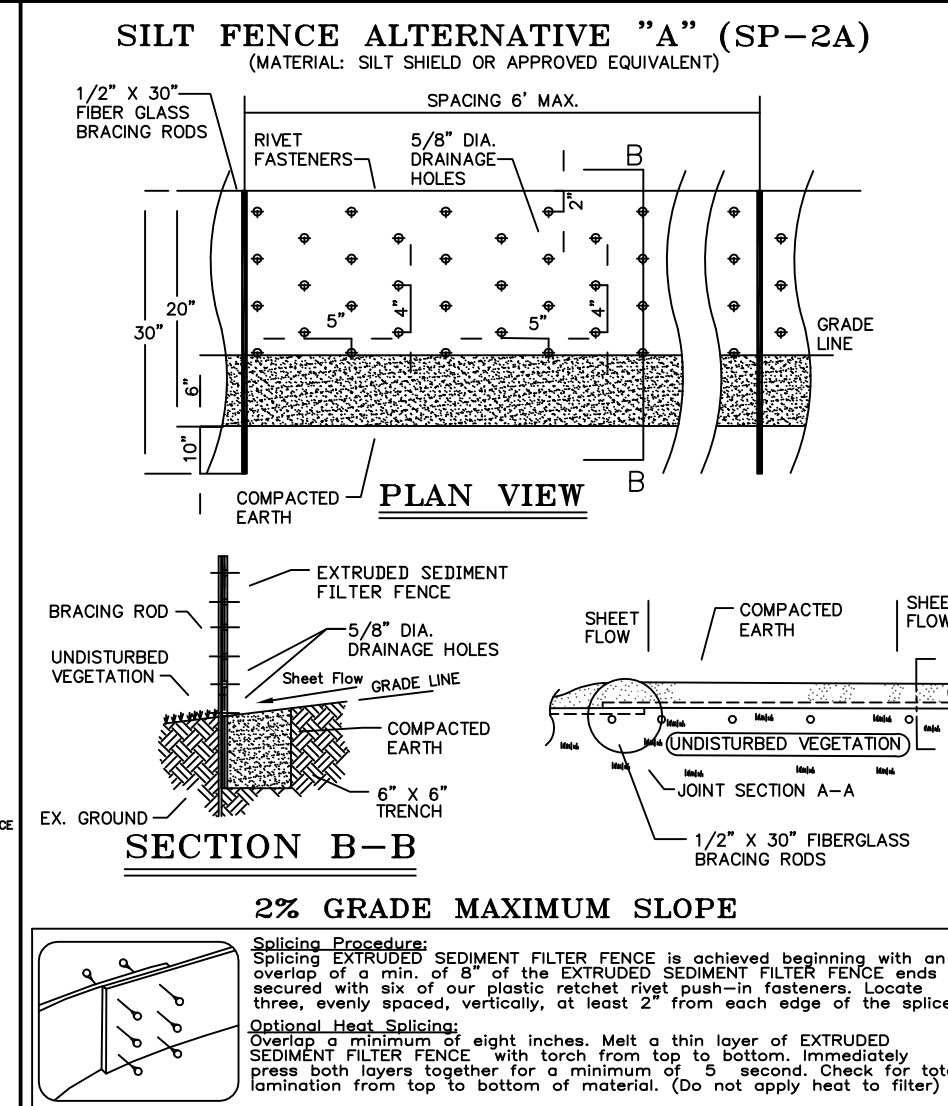
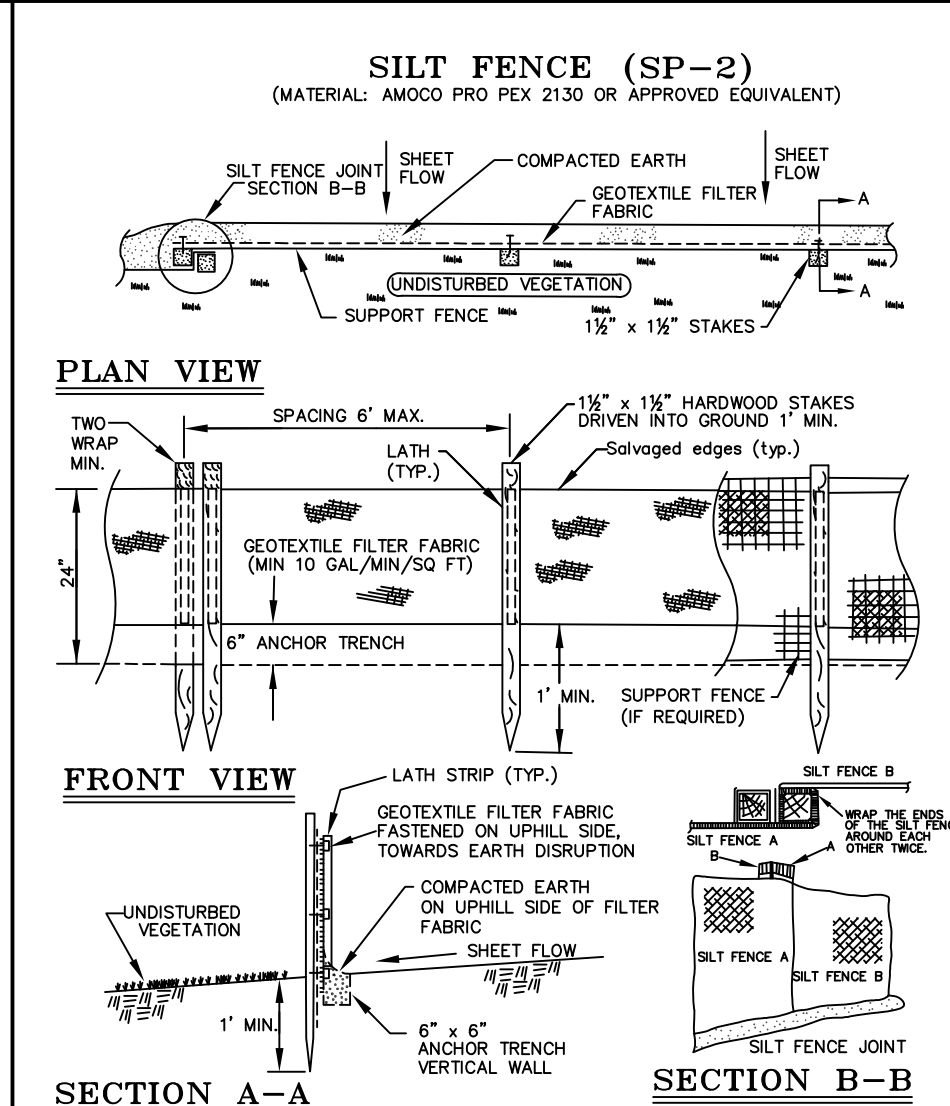
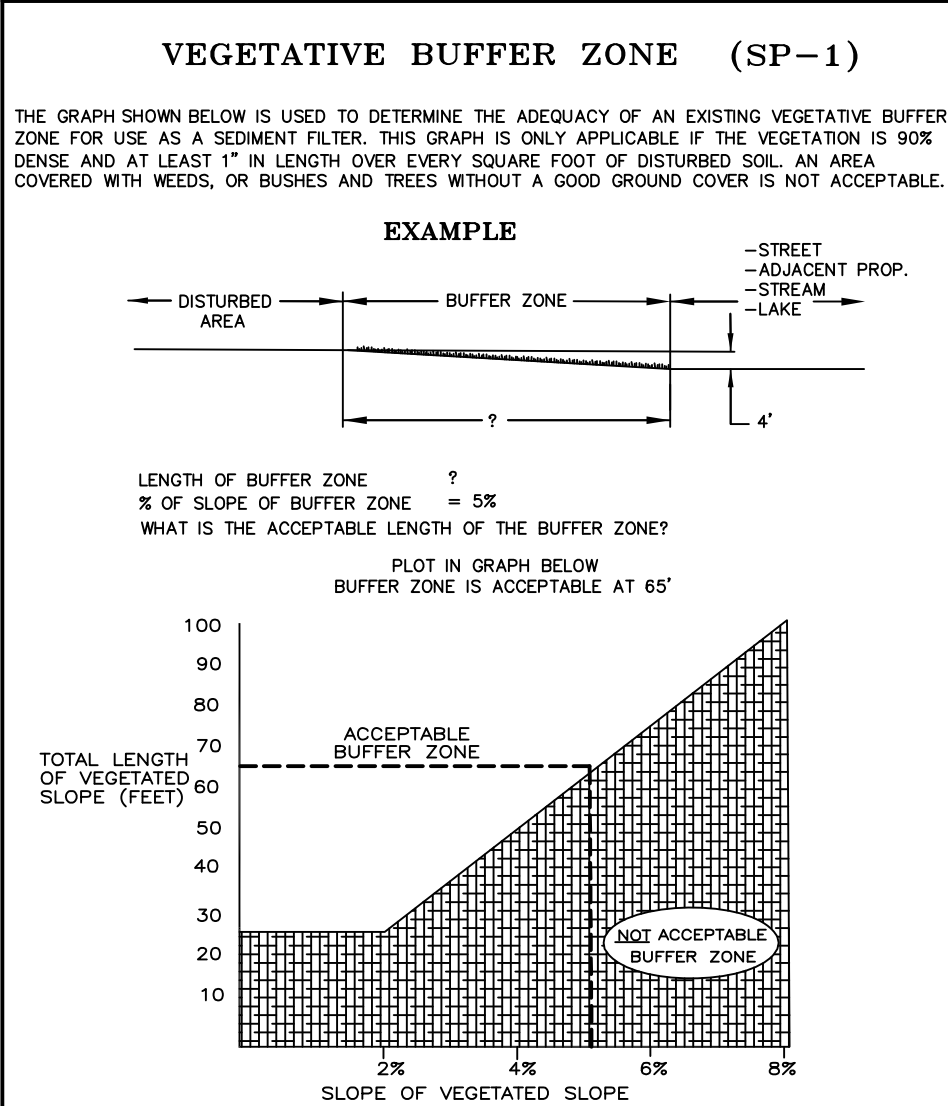
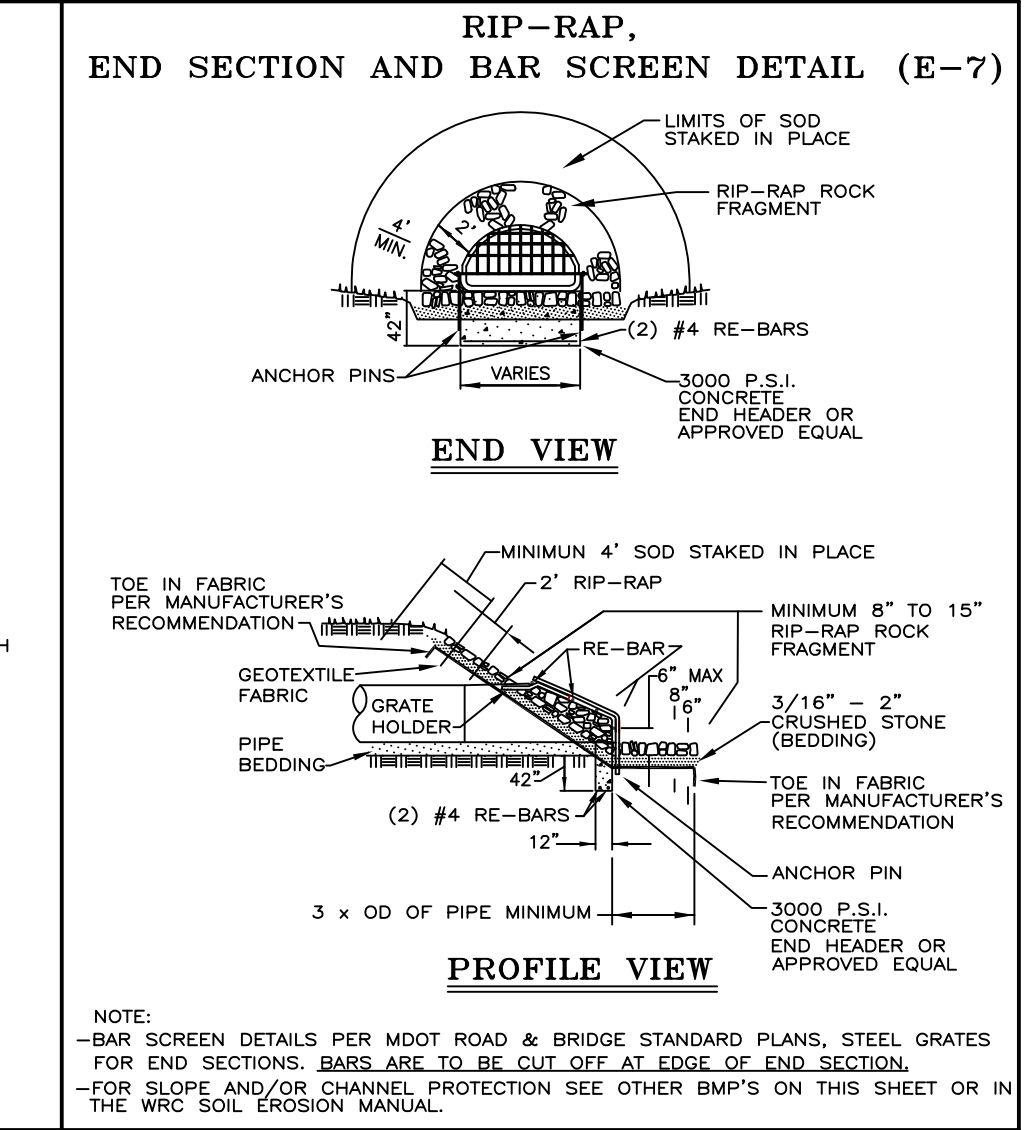
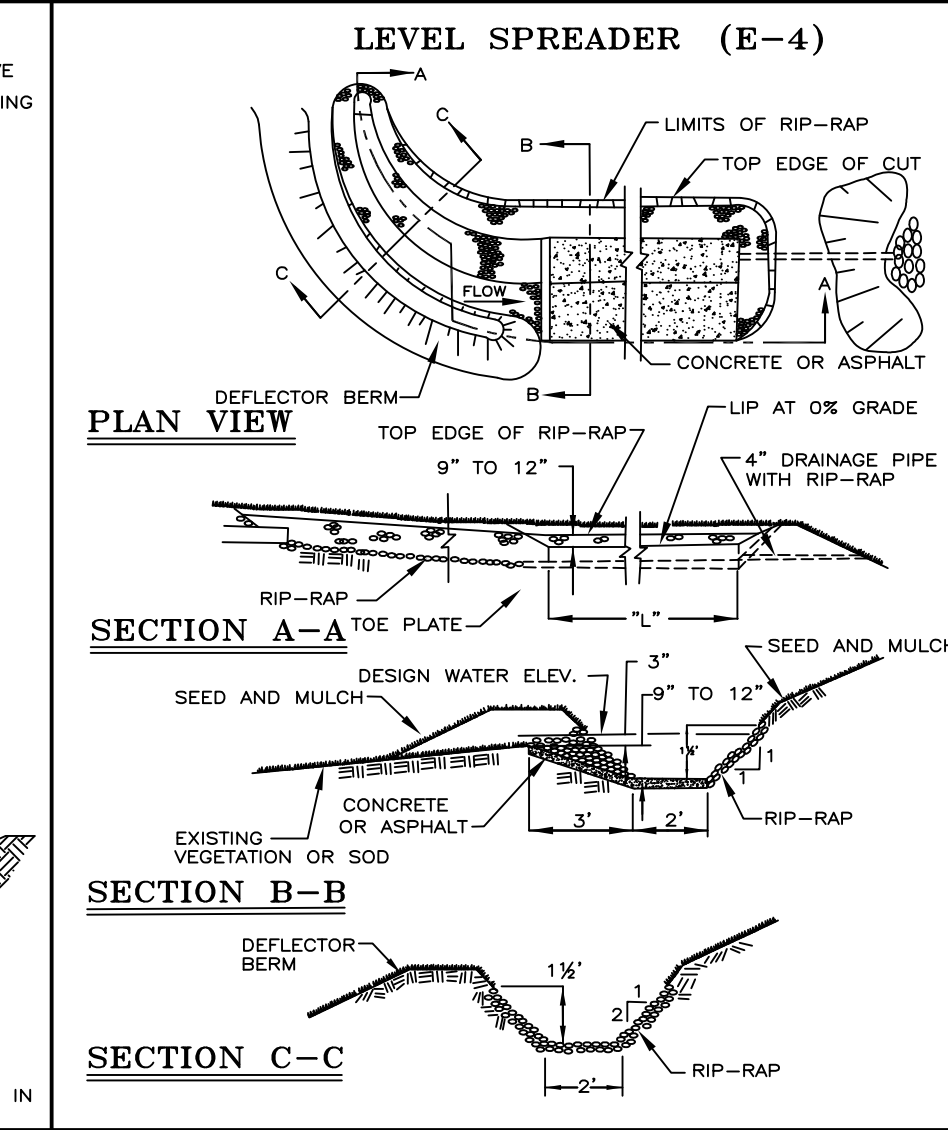
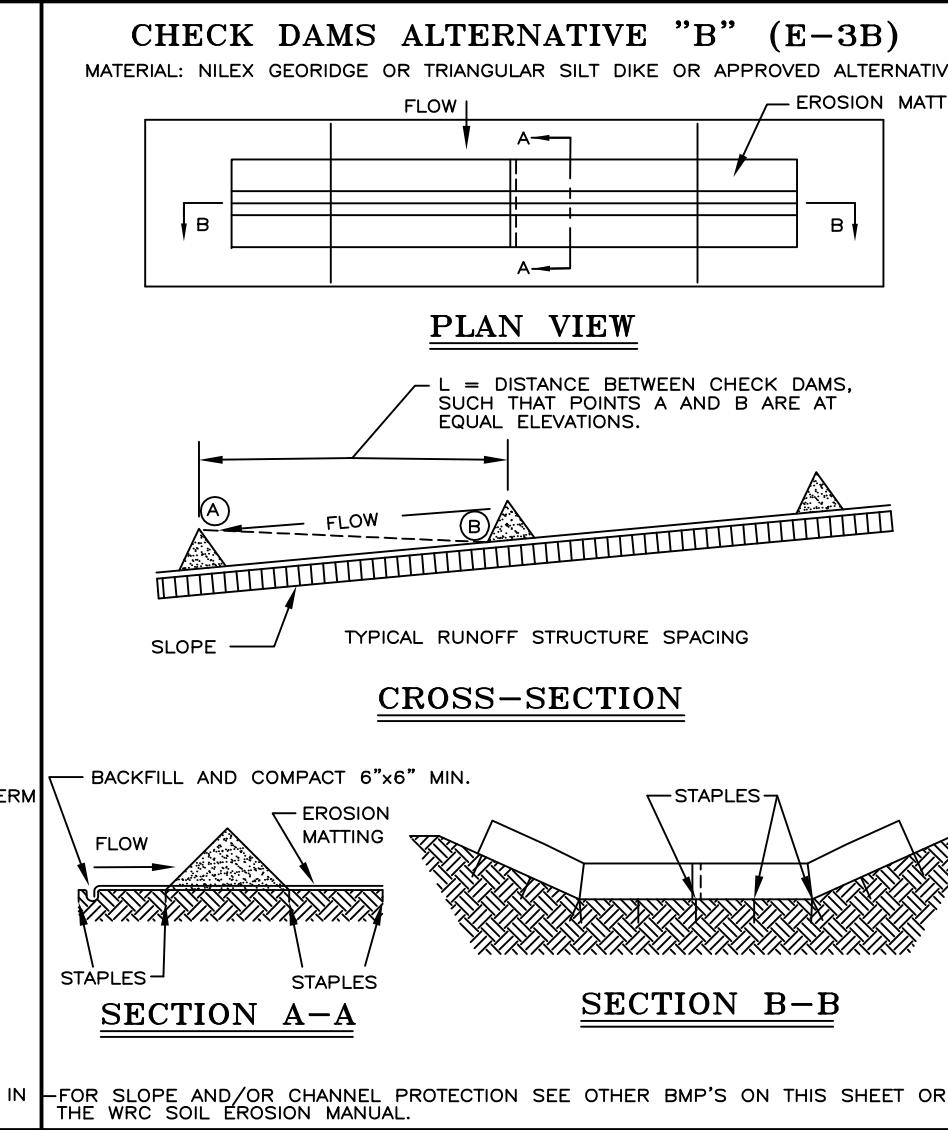
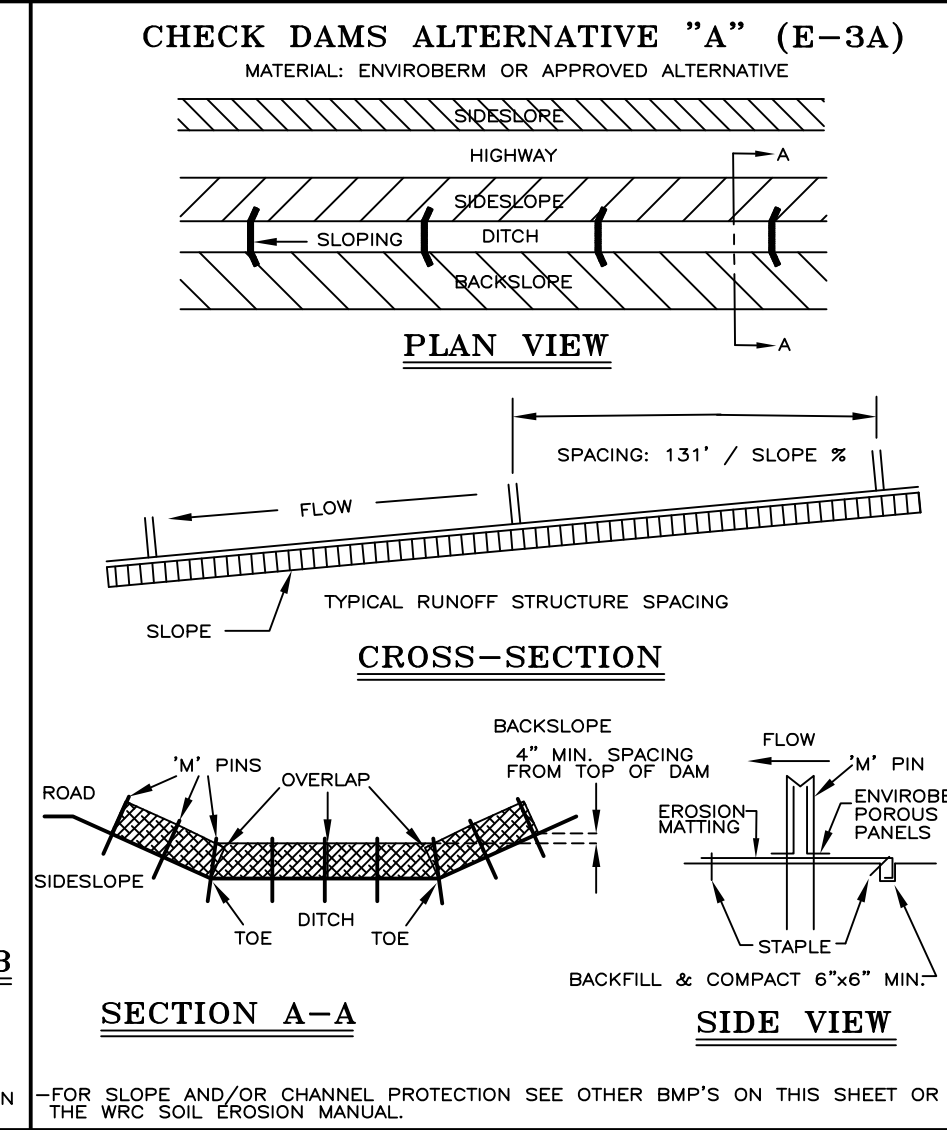
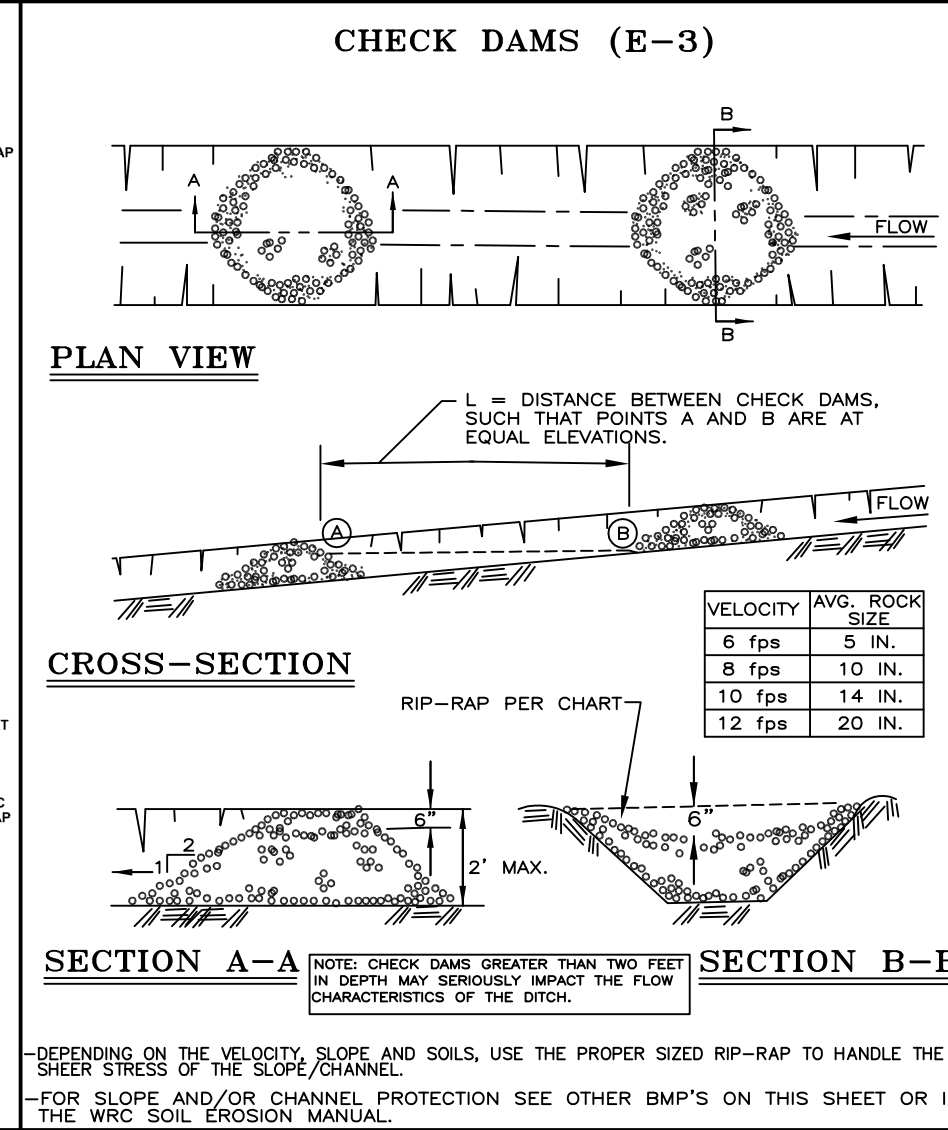
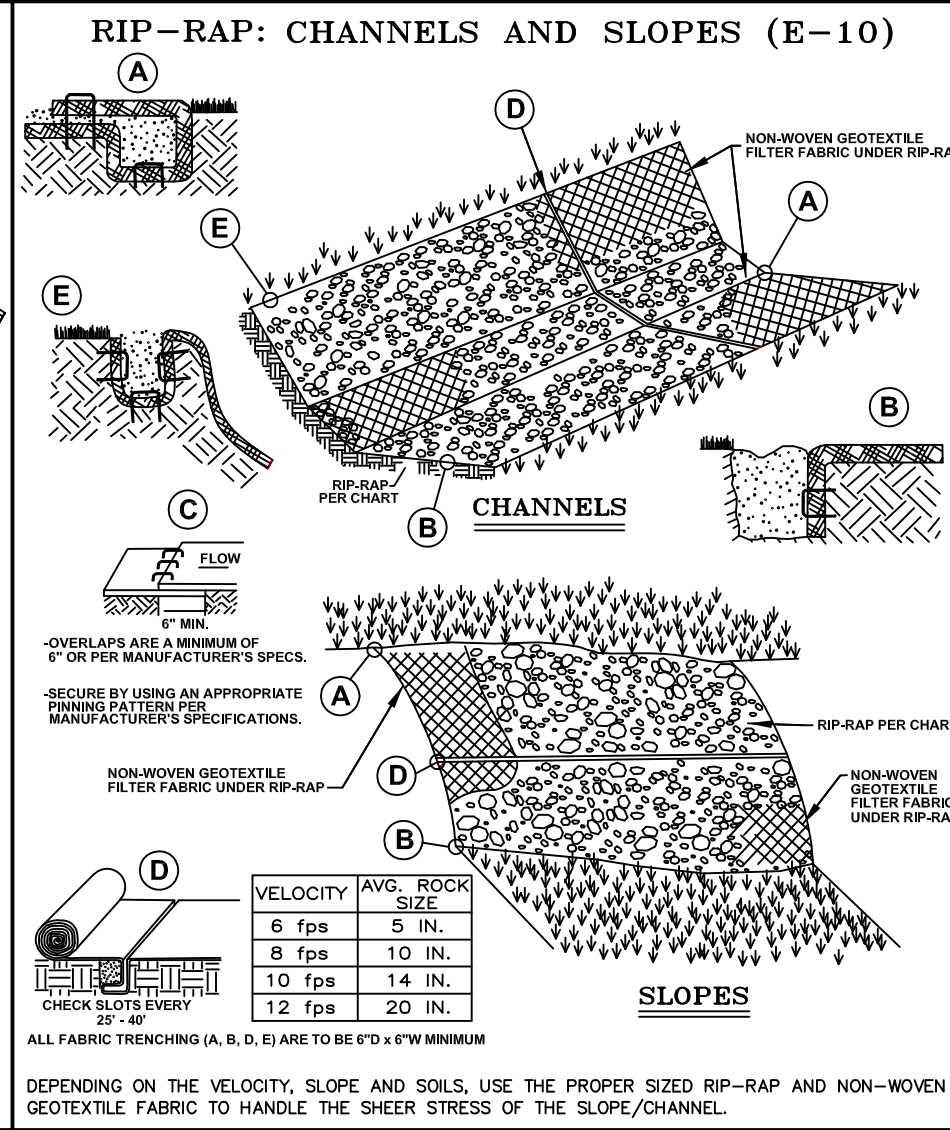
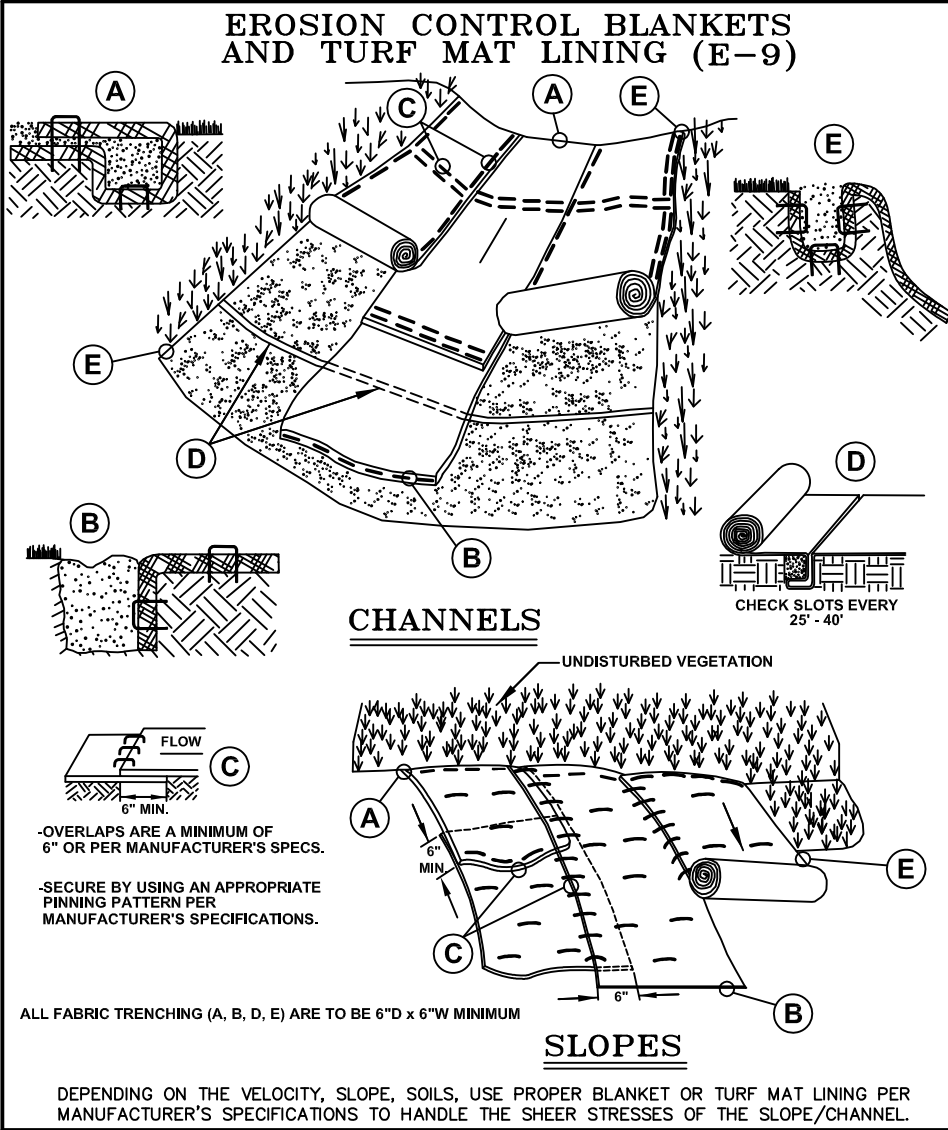


HOUSE LEAD DETAIL

REVISION BLOCK			
Parcel Base / Source Date: N/A			
Rev. No.	Rev. By:	Rev. Date:	Description:
1	DS	06/28/06	ADDED TESTING BULKHEAD WITH PIPE TAP DETAIL
2	IZ	05/28/09	MOVED DETAILS FROM SHEET 1 ONTO SHEET 2
3	IZ	07/14/09	STANDARDIS COMMITTEE APPROVAL FOR DETAIL CHANGES
4	DS	02/03/14	REPLACE UPDATE CCGC WITH WRC FOR THE MANHOLE COVER DETAIL

SANITARY SEWER DETAILS AND NOTES

ORIG. DATE:	05-09-03	 WRC WATER RESOURCES COMMISSIONER <i>Jim Nash</i>	ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907
SCALE:	NO SCALE		
DESIGNED BY:	MWD		SHEET NO.:
DRAWN BY:	Mapping Staff		2 of 2



NOTE:

WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPs), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPs SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REVISION BLOCK

Rev.	By	Desc.
1	WRC	PROPOSED DETAIL
2	WRC	FOR CONSTRUCTION APPROVAL / NAME CHANGES
3	WRC	FOR CONSTRUCTION APPROVAL / NAME CHANGES
4	WRC	FOR CONSTRUCTION APPROVAL / NAME CHANGES

ORIG. DATE: 01/01/01

SCALE: NONE

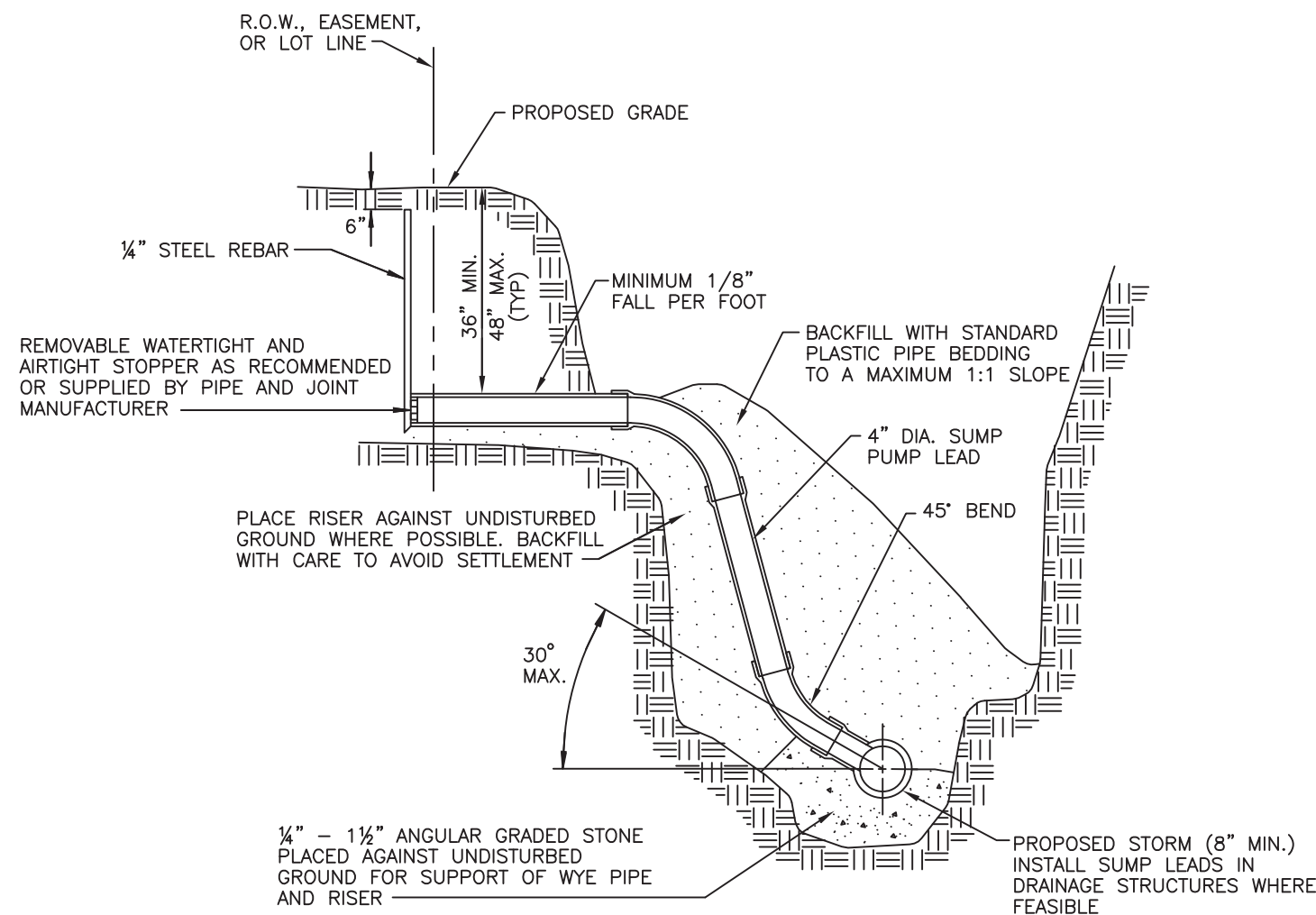
DESIGNED BY: WRC

DRAWN BY: Mapping

WRC WATER RESOURCES COMMSSION

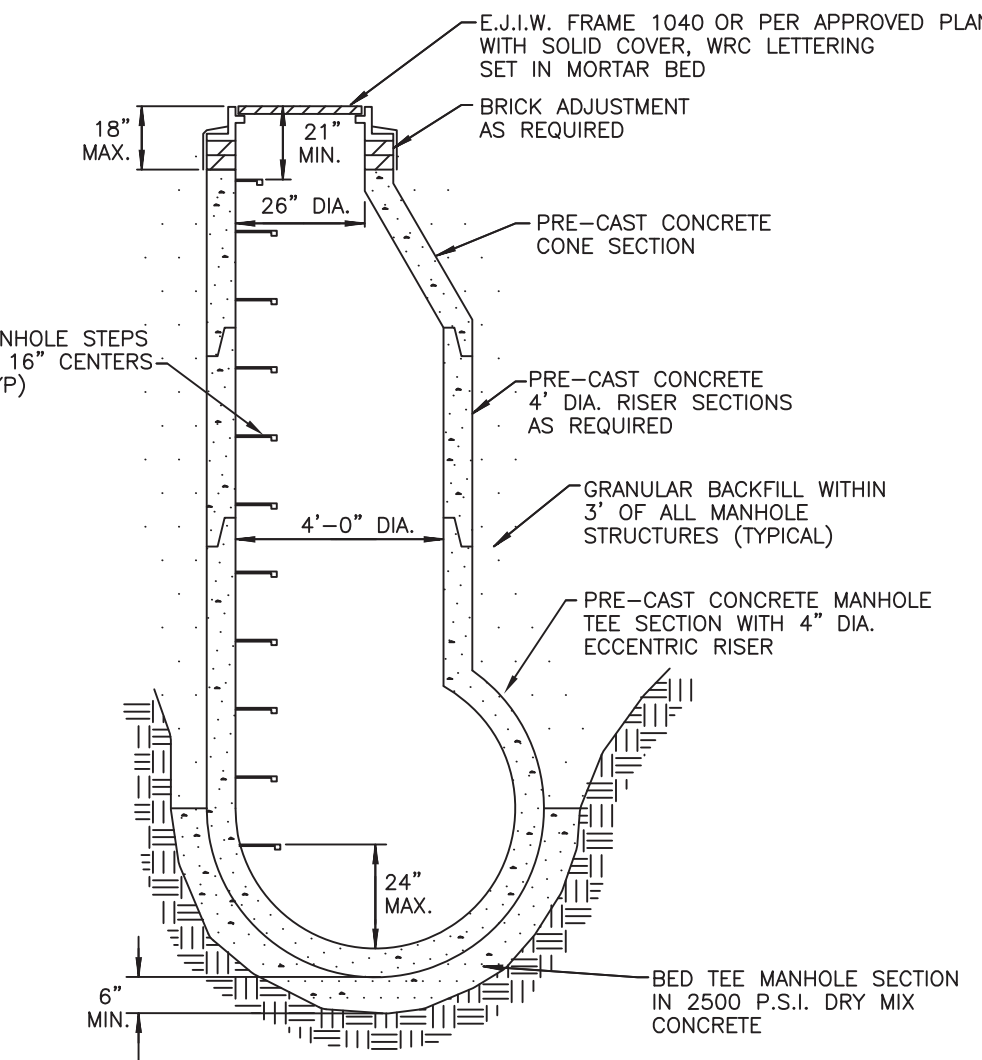
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907

SHEET NO.: 1 of 1



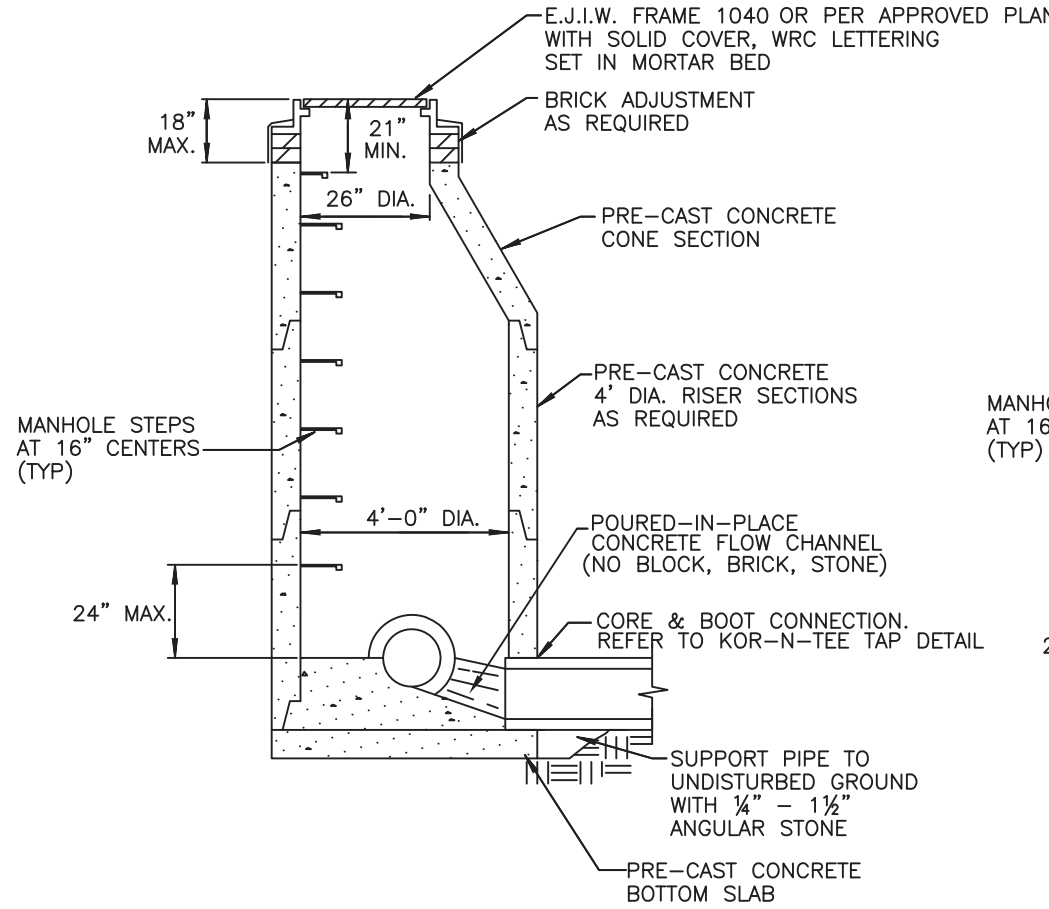
HOUSE LEAD DETAIL FOR 4" DIA.
PLASTIC SUMP PUMP LEADS

NO SCALE



PRE-CAST TEE MANHOLE DETAIL

NO SCALE

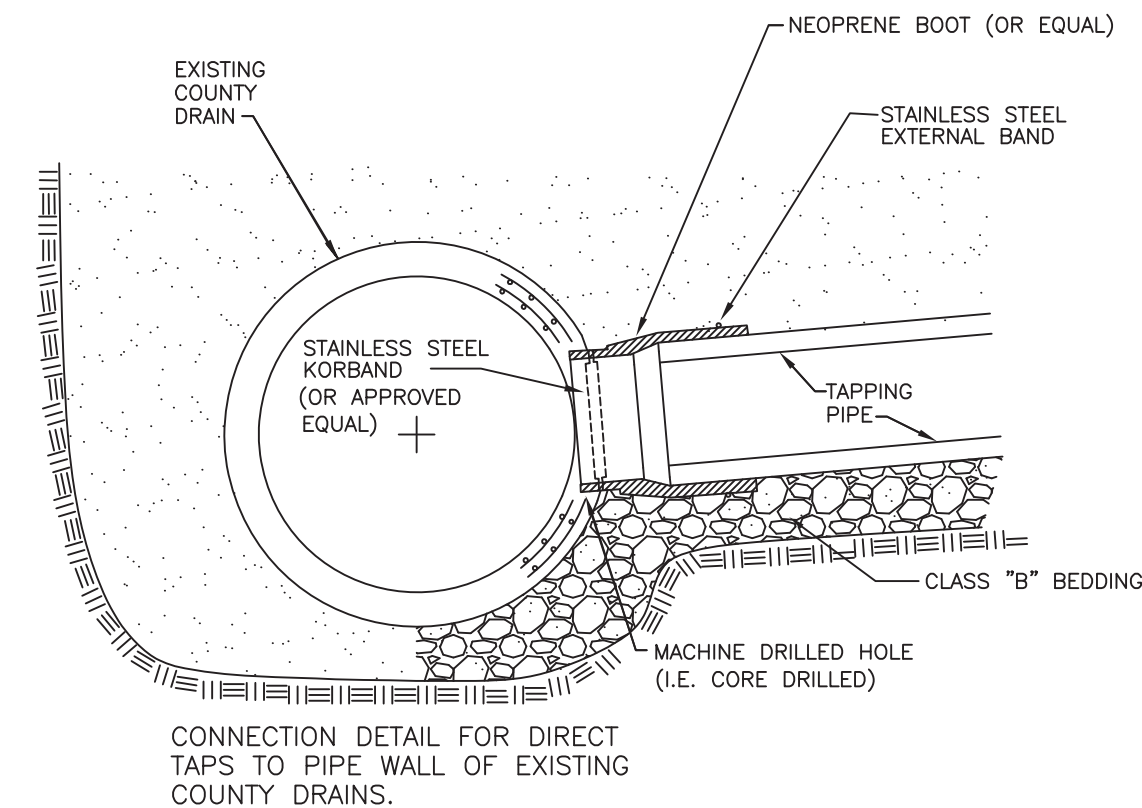


PRE-CAST MANHOLE

BLOCK MANHOLE (PRIOR APPROVAL ONLY)

STANDARD MANHOLE DETAILS

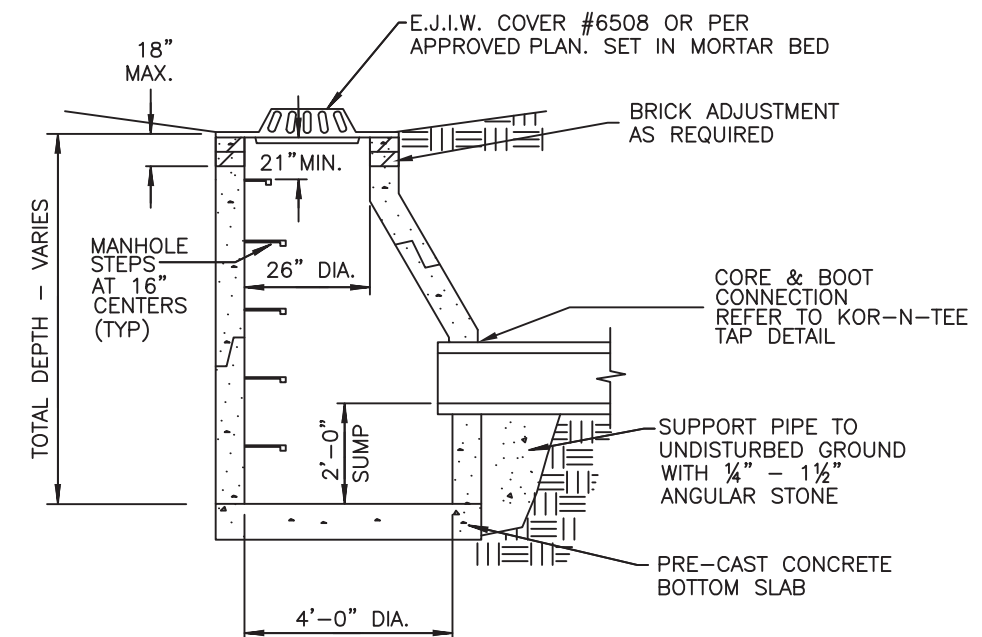
NO SCALE



KOR-N-TEE TAP (OR APPROVED EQUAL)

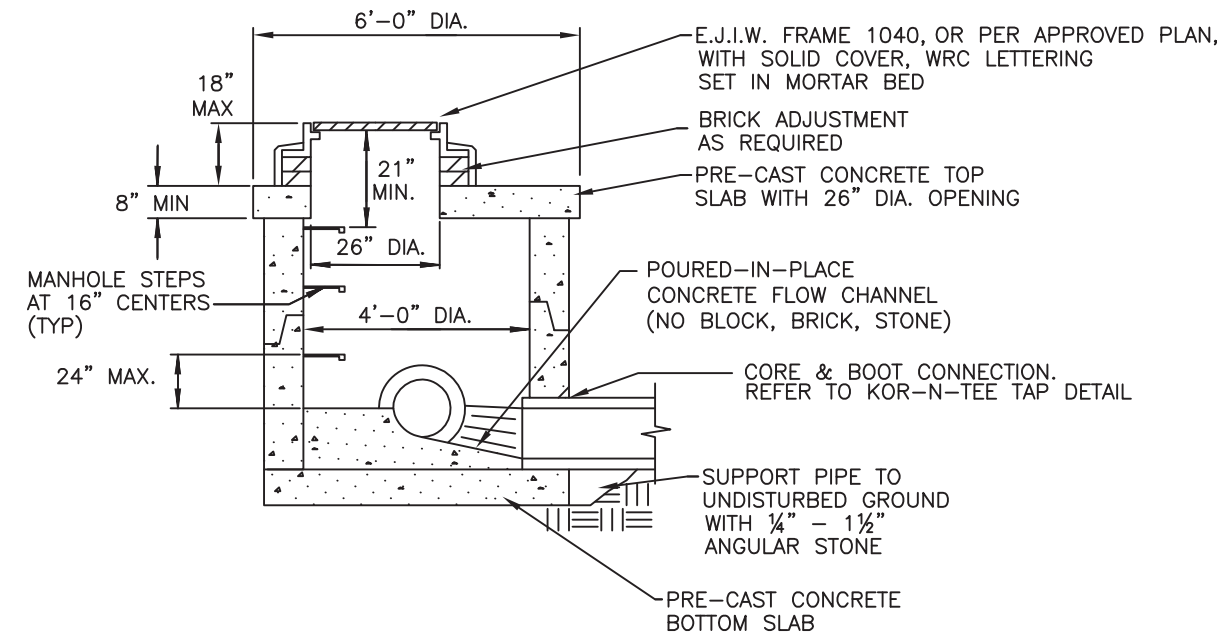
NO SCALE

- * For non-concrete to concrete taps.
- * Use link-seal, A-lock or approved equal for concrete to concrete taps.



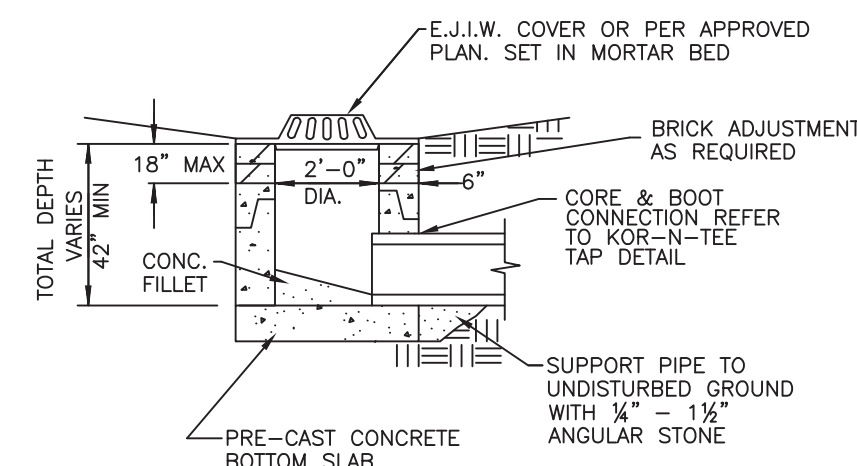
PRE-CAST CATCH BASIN DETAIL

NO SCALE



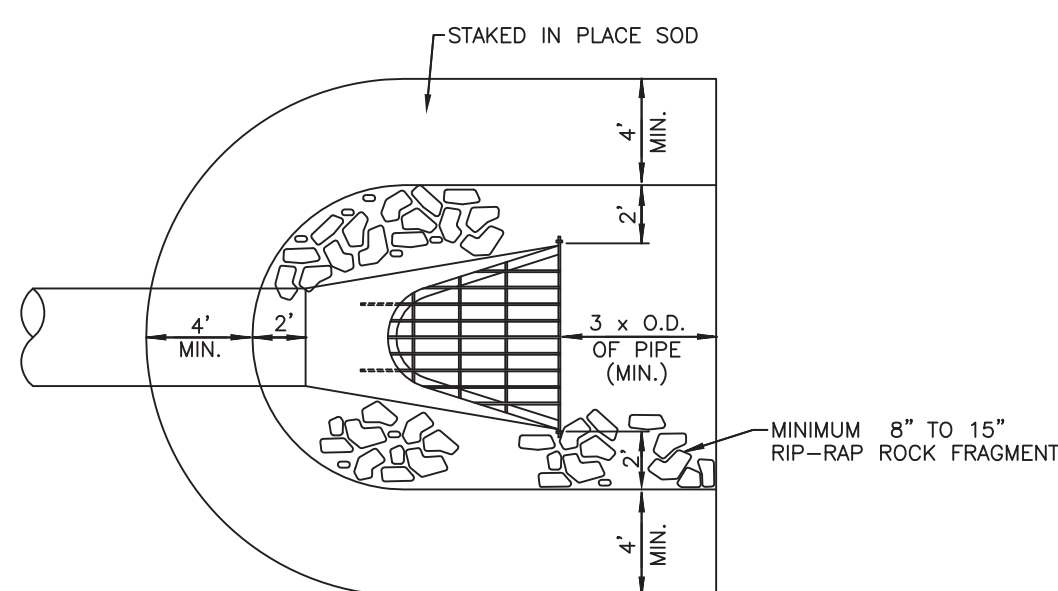
PRE-CAST LOW HEAD MANHOLE DETAIL

NO SCALE
(PRIOR APPROVAL ONLY)

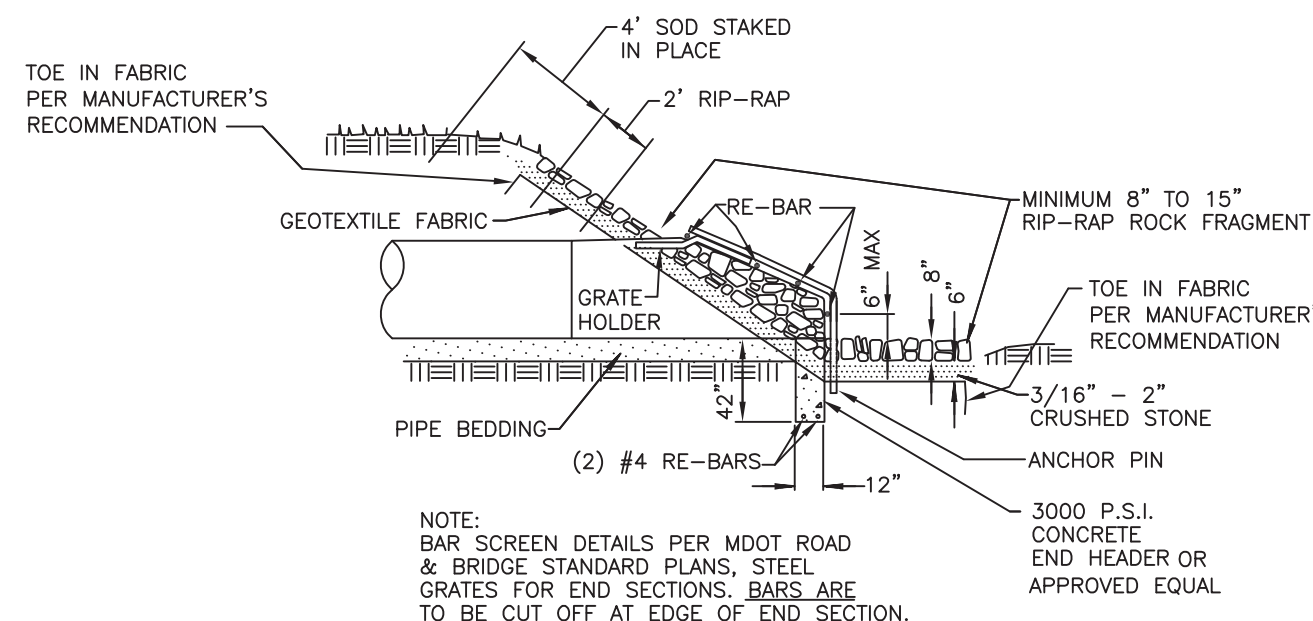


PRE-CAST INLET DETAIL

NO SCALE



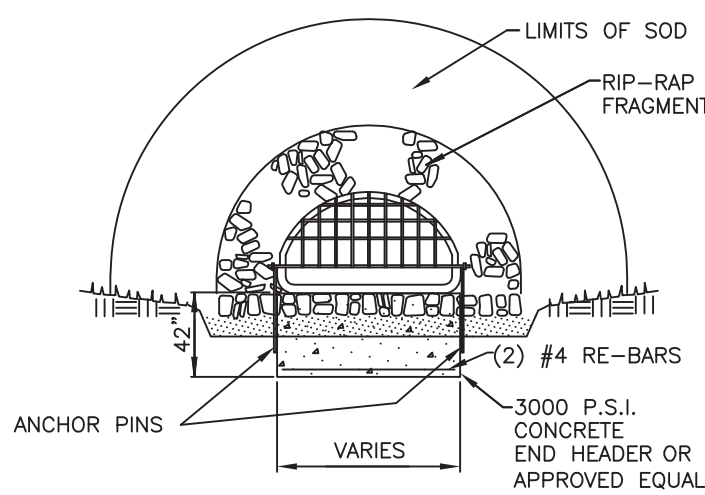
PLAN VIEW



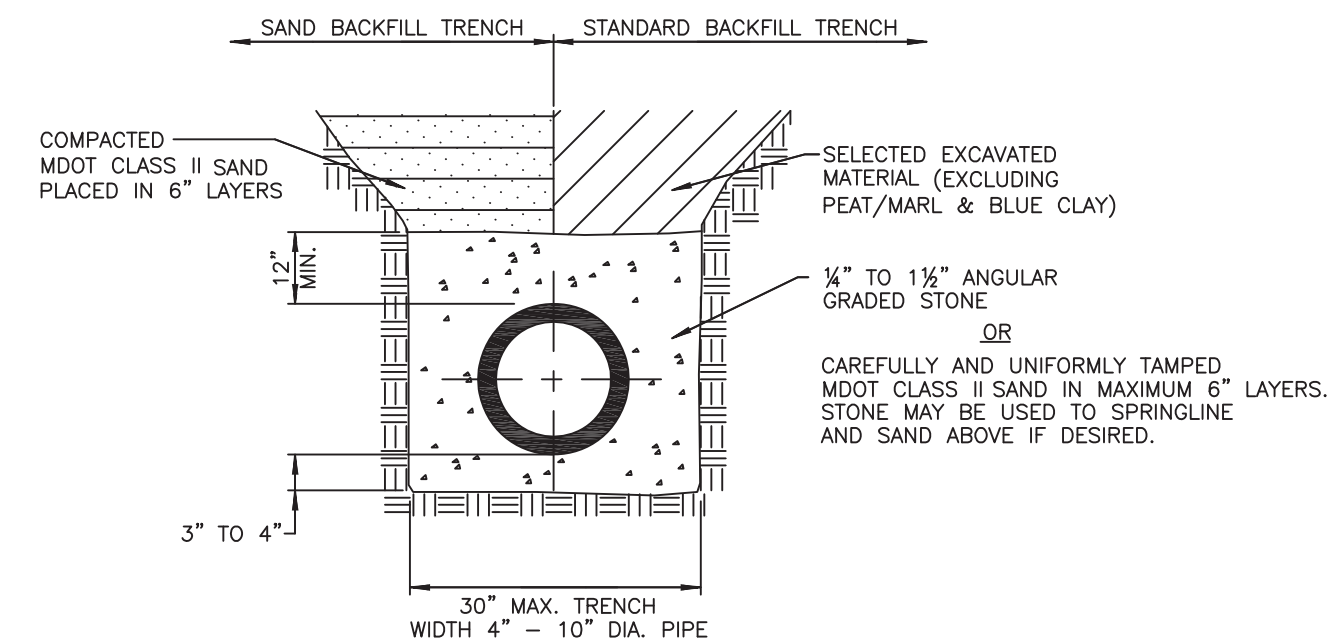
PROFILE VIEW

END SECTION AND BAR SCREEN DETAIL

NO SCALE

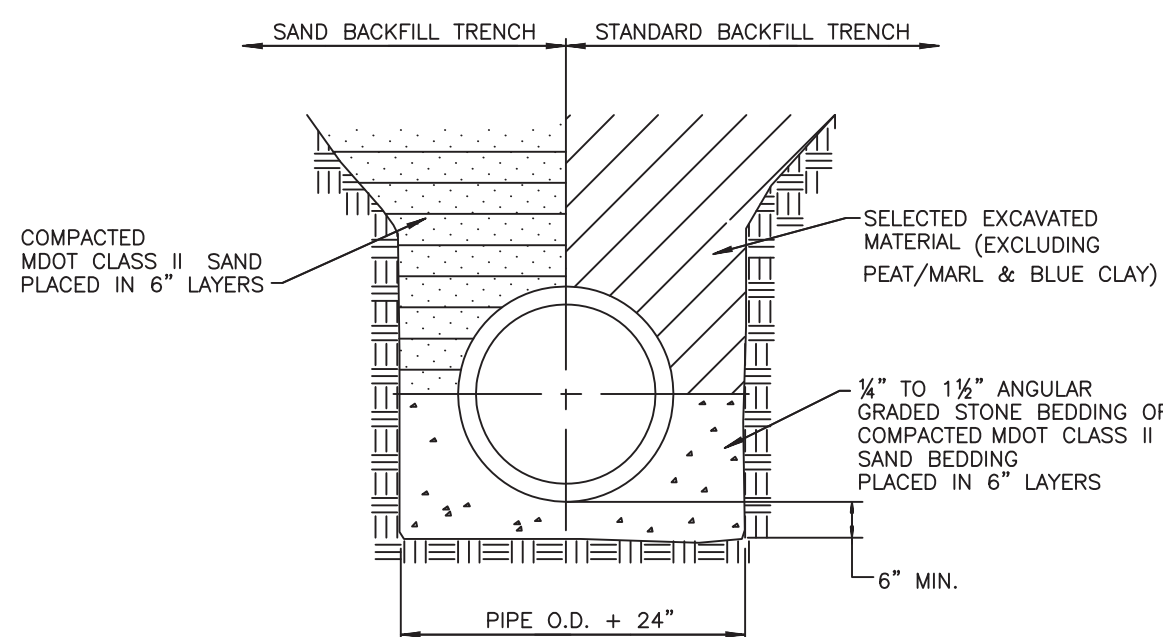


END VIEW



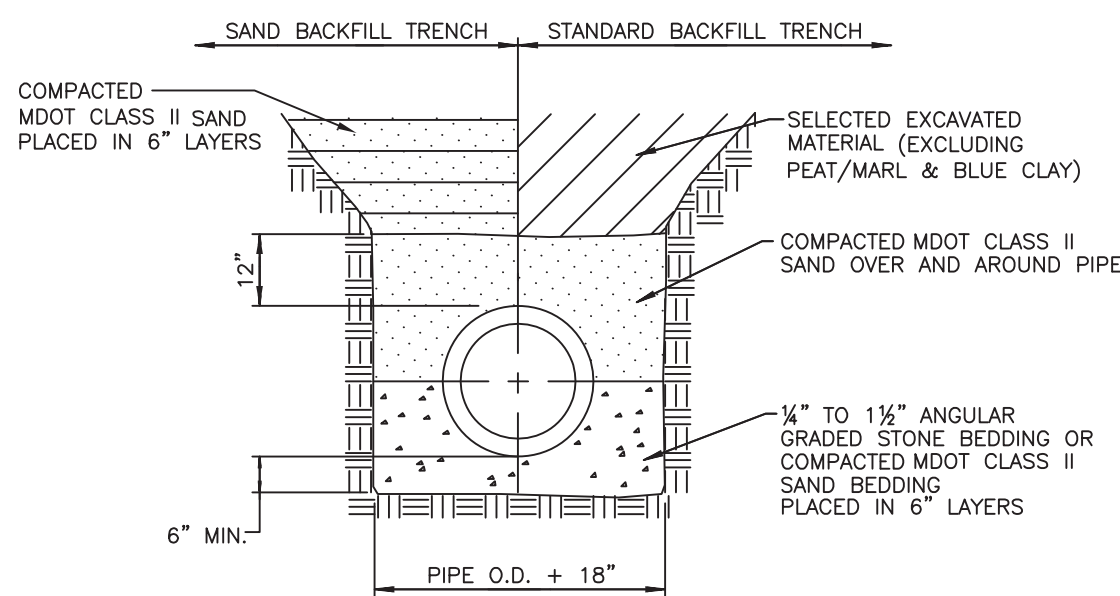
ABS (TRUSS AND SOLID WALL),
PVC (TRUSS, SOLID WALL, A2000),
ADS N-12 WT PIPE BEDDING DETAIL

NO SCALE



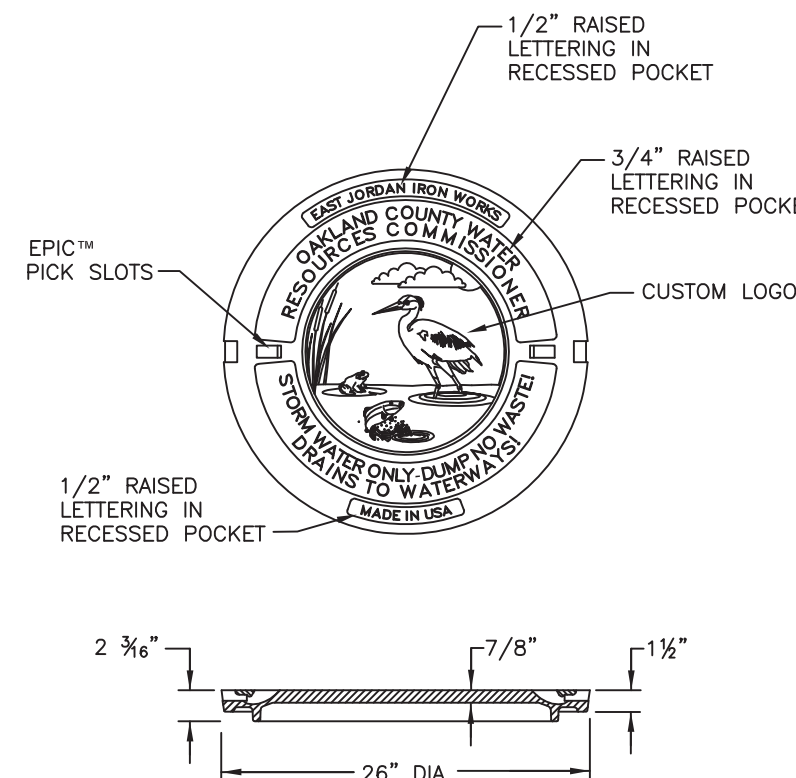
CLASS "B" BEDDING TRENCH DETAIL
FOR 27" DIAMETER AND LARGER
CONCRETE PIPE

NO SCALE



CLASS "B" BEDDING TRENCH DETAIL
FOR 24" DIAMETER AND SMALLER
CONCRETE PIPE

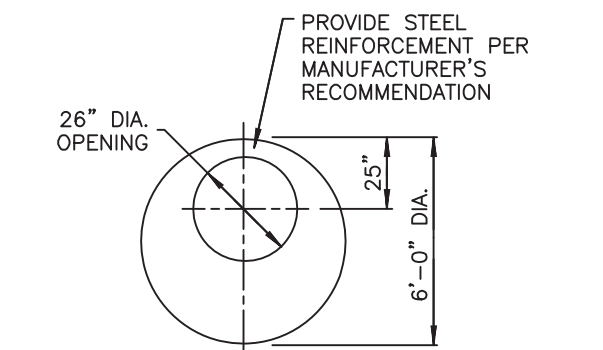
NO SCALE



EAST JORDAN IRON WORKS OR APPROVED EQUAL
HEAVY DUTY MATERIAL ASTM A48 CL35B
CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 104718 OAKCOSTD.
2" HIGH RAISED LETTERS, 1" WIDE RAISED LETTERS
ALL IN RECESSED POCKET.

LETTERED MANHOLE COVER
FOR WRC

NO SCALE



PRECAST CONCRETE TOP
SLAB DETAIL

GENERAL NOTES

- Type and class of pipe shall be as specified on plans.
- Class "B" bedding shall be used throughout, unless otherwise specified on the plan.
- All end sections 18" and larger shall be provided with a bar screen unless otherwise approved.
- Standard rip-rap shall be 8"-15" fragmented rock, heavy rip-rap shall be 16"-24" fragmented rock. (No Broken Concrete)
- MANHOLE REQUIREMENTS:
 - All new catch basins, inlets, and manholes are to be manufactured to ASTM C-478 specifications.
 - All new catch basins, inlets, and manholes shall have WRC approved flexible, watertight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Pre cast manhole cone sections shall be WRC approved modified eccentric cone type.
 - Taps through manhole joints or cone sections are prohibited unless otherwise approved.
 - Manhole steps to be plastic coated steel meeting the requirements in ASTM D 2146, Type II, Grade 49108, MA. Industries P.S.I. Polypropylene, (or approved equal). Steps to be installed during manhole manufacture. Place at 16" centers 45' from centerline of sewer.
 - Cone section with modified groove tongue joints and with stud inserts cast in place. Top to have flush surface.
 - ASTM C-478 riser section with modified groove tongue joints.
 - Res-seal, link-seal, press wedge II, or kor-n-seal boot (with stainless steel korbard) flexible rubber manhole joints. (or approved equal).
 - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
- CONCRETE PIPE REQUIREMENTS:
 - Concrete pipe to be per ASTM C76 standards.
 - It will be required to TV all pipe 30 days after installation
 - The contractor shall provide reinforced concrete pipe as specified on the plans.
 - All reinforced concrete pipe shall have modified grooved tongue joints with o-ring type rubber gasket, per A.S.T.M. specifications C443.
 - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
- SUMP PUMP LEAD REQUIREMENTS:
 - All sump pump leads connected to a County Drain pipe shall be pre-manufactured.
 - Sump pump leads connected to a manhole shall be cored and booted. Refer to Kor-N-Tee Tap Detail.
 - Sump pump mains and leads shall be ADS (truss and solid wall), PVC (truss, solid wall , A2000), ADS N-12 WT with premium joints.
 - 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 mains must have a cleanout with 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 area within the County Drain right-of-way shall be restored as follows:
 - Under roads, sidewalks, driveways and parking areas, backfill material shall be placed loosely into trenches in six (6) inch layers with each layer compacted to not less than 95% of maximum dry density as determined by the ASTM D 1557 Compaction Standard (modified proctor compaction test). All other areas shall have each layer compacted to not less than 90% of maximum dry density.
 - Finish subgrade
 - Place 3" thickness clean topsoil acceptable to the engineer to attain finished grade. Topsoil must not be contaminated and may not be a mixture of natural underlying soils, subbase materials, or other materials. It must consist of natural loam, sandy loam, silty loam or clay loam humus-bearing soil adapted to the sustenance of plant life. Topsoil must be neither excessively acidic nor excessively alkaline. It must be of mineral origin, exclusive of any peat or muck.
 - Apply seed and fertilizer as follows:*

Location	Seeding Requirements	Fertilizer Requirement
Slopes and Ditch, Banks, Etc.	M.D.O.T. "Roadside Mix" Turf Seed Mixture TGM (10% Kentucky Blue, 20% Perennial Rye, 30% Hard Fescue, 40% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
Other Areas	M.D.O.T. "Roadside Mix" Turf Seed Mixture THM (30% Kentucky Blue, 20% Perennial Rye, 50% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A

- * Sod is required in maintained lawn areas. Refer to WRC General Specifications for additional requirements and information.
- apply straw or marsh hay mulch in an air-dry condition to all seeded areas over the surface to a uniform thickness at 2 tons/acre.
- mulch shall be anchored in place with biodegradable netting, not larger than 1 1/2" by 2" nor smaller than 1/2" by 1/2".
- The contractor shall be responsible to insure the growth of all seeded areas, and shall re-seed as necessary to accomplish this.

- The Storm Drain Notes and Details Sheet shall be a supplement to WRC Standards and Specifications, which are available on the WRC website (www.oakgov.com/water/).

STORM DRAIN NOTES AND DETAILS

REVISION BLOCK			
Data Source / Source Date: N/A			
Rev. No.	Rev.	Date	Description
1	1	3/17/08	PROPOSED DETAIL CHANGES: NEW LOGO
2	1	06/12/09	APPROVAL: PER STANDARDS COMMITTEE
3	1	03/28/10	REVISED MH COVER DETAIL
4	05	04/27/10	REVISED GENERAL NOTES
ORIG. DATE: 05/05/97			
SCALE: NONE			
DESIGNED BY: WRC			
DRAWN BY: Mapping			



ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.:

1 of 1